

FACTUAL REPORT – INITIAL TRIAL PITTING.

SSI REDCAR – SSI 1

Prepared for

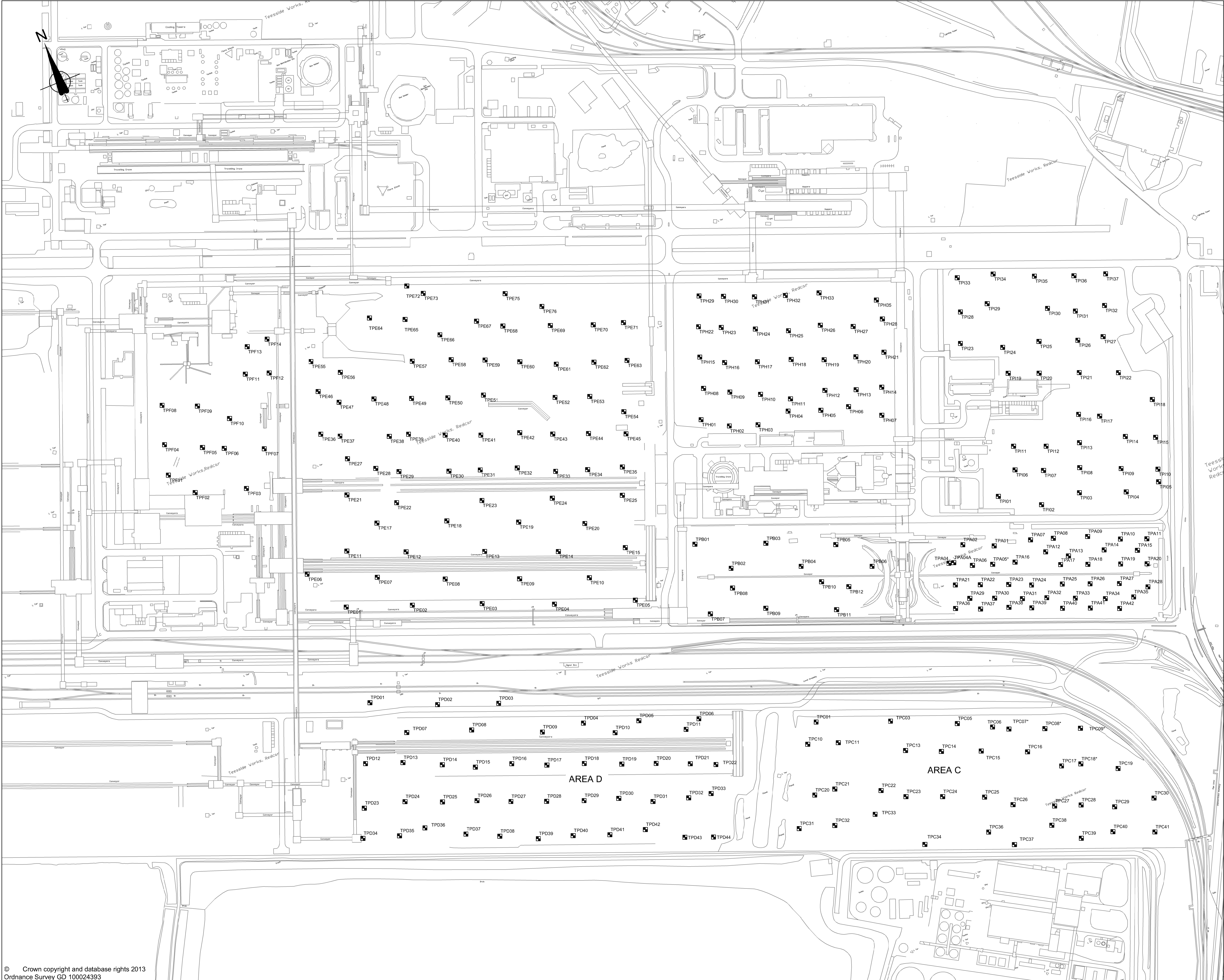
South Tees Site Company

November 2017



Dunedin House Riverside
Teesdale Business Park
Stockton-on-Tees,
TS17 6BJ
GB
+44 1642 632 800

Exploratory hole Location Plan



NOTES

1. POSITIONS SUBJECT TO CHANGE ON SITE, INDICATIVE ONLY.

KEY

- TRIAL PIT MAXIMUM 4.5M DEEP, 4M LONG, 1.5M WIDE
TOTAL = 328 HOLES
- BOREHOLES
- SSI 1 BOUNDARY
- AREAS CURRENTLY EXCLUDED DUE TO PLANT, BUILDINGS AND UTILITIES

TESTING

GEOTECHNICAL TESTS = ?? NO.
CHEMICAL TESTS = ?? NO.
SLAG TESTING = ?? NO.

01	FM	-	-	07/06/17	Updated to reflect correct south positions of trial pits
Rev	By	Chkd	Apprvd	Date	Description

Client

Homes & Communities Agency

CH2M
Dunedin House, Riverside, Stockton-on-Tees
Tel +44 (0)1642 632800
www.CH2M.com

Project

SSI REDCAR

Drawing

**Ground Investigation
As Dug Exploratory
Hole Location Plan - SSI 1**

Drawn by: LC	Date: 26/07/2016
Checked by: IDK	Date: 26/07/2016
Approved by: IDK	Date: 26/07/2016
Drawing No.	Revision
678079_600_003	-

Drawing Scale: 1:2500 @ A1; 1:5000 @A3

Drawing file path & name:
User and File Date

Exploratory hole logs

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456898.00 - 524797.00

Level:

Date

11/01/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.80

2.3

Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.05			0.05			MADE GROUND: Dark grey black fine to co GRAVEL of sinter MGR
	0.60	ES					MADE GROUND: Dark brown very gravelly SAND with occasional to frequent cobbles of grey & yellow slag. Gravel is fine to coarse slag & red brick fragments rebar. MGR
	1.70	B					From 1.5: Gravelly becoming slightly clayey.
							From 1.8: Hard slag layer approx 0.30m thick.
				2.80			End of pit at 2.80 m

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.	678079

Co-ords:	456858.00 - 524815.00

Level:

Date _____

30/11/2016

Location: SSI Redcar

Dimensions
(m):

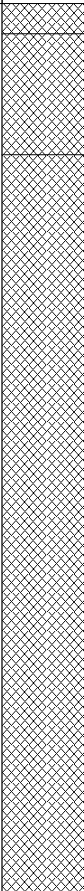
Depth
2.95

Scale

1:25

Logged

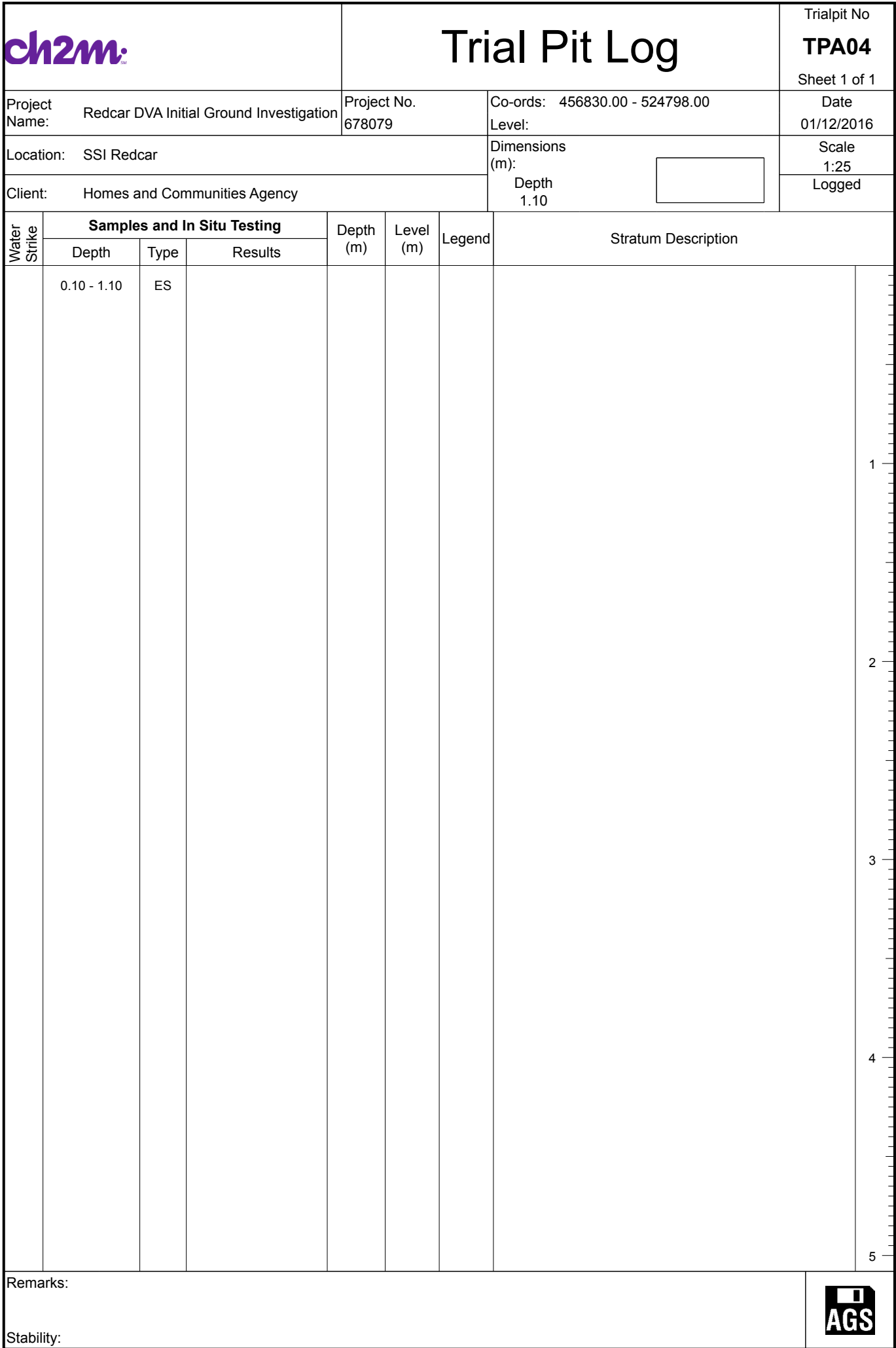
Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	1.00 - 1.40	B		0.10			MADE GROUND: Sinter MGR
	1.00 - 1.40	D		0.50			MADE GROUND: Dense grey slightly sandy slightly gravelly COBBLES and BOULDERS. Gravel is fine to coarse, angular to sub-angular of slag and occasional brick. Cobbles and boulders of slag, occasionally concrete. Sand is of ash. MGR MADE GROUND: Yellow brown gravelly cobbly SAND with medium boulder content. Gravel is fine to coarse, angular to sub-angular of slag and occasional red brick. Cobbles and boulders are of slag and concrete. MGR <u>Becoming brown</u> <u>Large boulder of slag in north face of pit</u> <u>Sulphur odour</u>
							
							<u>Increasing number of boulders</u>
				2.95			End of pit at 2.95 m

Remarks:

Stability:





Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456837.00 - 524796.00
Level:Date
12/01/2017

Location: SSI Redcar

Dimensions
(m):

4.9

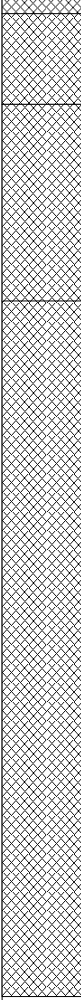
Scale
1:25

Client: Homes and Communities Agency

Depth
3.30

2.6

Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.10 - 1.10	ES		0.05			MADE GROUND: Dark grey black fine to coarse GRAVEL of sinter. MGR 	
				0.35			MADE GROUND: Grey sandy gravelly COBBLES of slag with occasional boulders. MGR 	
							MADE GROUND: Dark orangeish brown sandy GRAVEL. Gravel is fine to coarse of slag with frequent cobbles & occasional boulders of slag. MGR 	
	1.10	ES		1.00			MADE GROUND: Light to dark grey fine to coarse gravelly SAND. Gravel is of slag. Occasional cobbles of slag. MGR 	1
							<i>From 2m: Layer of refractory bricks; fragments and whole bricks.</i>	2
							<i>From 2.5m: Bricks becoming abundant, Red + refractor. Becoming slightly clayey. Demolition Rubble?</i>	3
				3.30			<i>From 3.2m: Groundwater in flow, Slightly discoloured.</i> End of pit at 3.30 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456887.00 - 524774.00

Level:

Date

30/11/2016

Location: SSI Redcar

Dimensions
(m):

3.9

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.9

Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.08			MADE GROUND: Sinter MGR MADE GROUND: Grey slightly sandy slightly gravelly COBBLES with medium boulder content. Sand locally white ash. Gravel, cobbles and boulders of slag. Occasional cobbles of yellow refractory brick - approx. 5%. MGR <i>From 0.4m: Sandy. Orange on south side of pit.</i> <i>From 0.4m to 1.2m: Orange layer, sandy cobbles of s</i>	1
	1.10 - 1.50	B		1.10			MADE GROUND: Dark grey gravelly SAND with low cobble content. Occasional cobble sized fragments of metal tube/pipe. Gravel is fine to coarse, angular to sub-angular of refractory brick fragments, slag and occasional red brick fragments. Cobbles are of brick and slag. MGR <i>At 1.2m: Hard layer. Identified as slag.</i> <i>Below 1.5m: Red brick content increasing to approx. 10%</i>	2
							<i>At 2.1m: Slight seepage.</i>	
							<i>Below 2.5m: Hard dig. Occasional timber and fabric.</i>	
	3.10 - 3.40	B					<i>Below 3.1m: Grey sand and gravel with ash, slag and occasionally brick, wire and pipe.</i>	3
▼				3.40			End of pit at 3.40 m	4
								5

Remarks: Position Approximate

Stability:

Trial Pit Log

Trialpit No

TPA06

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456860.00 - 524783.00

Level:

Date

12/01/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Scale

1:25

Client: Homes and Communities Agency

Depth
3.80

2.1

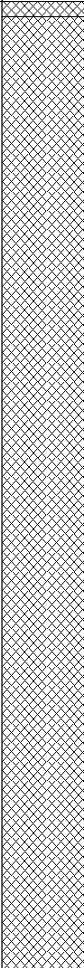
Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES		0.05			MADE GROUND: Dark grey black fine to coarse GRAVEL of sinter. MGR	
	1.10	B		0.40			MADE GROUND: Dark grey sandy fine to coarse GRAVEL of slag with occasional boulders and frequent cobbles of slag. MGR	
							MADE GROUND: Orangeish brown gravelly SAND with frequent cobbles and rare boulders of slag. MGR	
							From 0.9m: Fine to medium yellow sand.	
				1.20			MADE GROUND: Dark grey gravelly SAND with frequent cobbles & occasional boulders of slag, Cobbles include slag and red brick. MGR	
	2.00 2.10	ES B		1.90			MADE GROUND: Black/grey slightly sandy fine to medium, some coarse GRAVEL of porous slag. Occasional cobbles of slag. MGR	
							From 2.1m: Slightly ashy looking.	
				2.50			MADE GROUND: Dark brown slightly clayey gravelly SAND with frequent cobbles of brick, some wood & slag shoes & steel. MGR	
							From 2.5m: possible wall section.	
							From 3.5m: Faint hydrocarbon?	
	3.70	ES		3.80			End of pit at 3.80 m	

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPA07 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456949.00 - 524786.00 Level:		Date 11/01/2017	
Location: SSI Redcar						Dimensions (m): 2.5 4.5		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.20		Logged MW	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Dark grey black medium to coarse GRAVEL sinter. MGR
							MADE GROUND: Grey sandy fine to coarse GRAVEL with abundant cobbles & frequent boulders. Cobbles include slag, fragments of brick & refractory brick. MGR <i>From 0.5m: Hard dig, ashy?</i>
							<i>From 1.5m: Becoming brown.</i> <i>From 1.5m: Becoming cobbly.</i>
				3.20			End of pit at 3.20 m

Remarks:



Stability:

Trial Pit Log

Trialpit No

TPA08

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456979.00 - 524775.00

Level:

Date

29/11/2016

Location: SSI Redcar

Dimensions
(m):

4

Depth
3.40

2.3

Scale

1:25

Logged

AC

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10			MADE GROUND: Black to dark grey med coarse GRAVEL of sinter. MGR	
	1.20	B					MADE GROUND: Grey brown sandy gravelly COBBLES AND BOULDERS of slag. Occasional fragments of brick. Gravel is fine to coarse, subangular and angular of slag. MGR	1
	1.20	D					<i>Below 1.3m: Red brown slag.</i>	
				1.70			MADE GROUND: Red brown very sandy very gravelly COBBLES AND BOULDERS. Gravel is fine to coarse, subangular and angular. Cobbles are subangular and angular of slag. MGR	2
							<i>Below 2.2m: Slightly silty</i>	
	2.80	B						3
▼				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 457025.00 - 524760.00
Level:Date
10/01/2017

Location: SSI Redcar

Dimensions
(m):

5

2.4

Scale
1:25

Client: Homes and Communities Agency

Depth
3.50Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Dark grey black sinter. MGR
							MADE GROUND: Dark yellowish brown gravelly SAND with frequent cobbles and rare boulders of light grey slag. MGR
							From 1.0m: Becoming brown.
	1.50	B					
							From 2.5m: Very gravelly occasional cobbles.
	3.10	ES					From 3.2m: Seepage.
				3.50			End of pit at 3.50 m

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA10

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457066.00 - 524739.00

Level:

Date

28/11/2016

Location: SSI Redcar

Dimensions
(m):

4.2

Scale

1:25

Client: Homes and Communities Agency

Depth
3.25

2.2

Logged
AC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Black fine GRAVEL of Sintered MGR	
							MADE GROUND: Light grey sandy gravelly COBBLES and BOULDERS of slag. Gravel is fine to coarse, sub- angular to angular of slag. Cobbles are sub-angular and angular of slag. MGR	
	0.90 0.90	B D		0.90			MADE GROUND: Orange brown gravelly SAND with cobbles. Gravel is fine to coarse of sandstone and grey/ dark orange-brown slag. Cobbles are sub-angular and angular of slag. MGR	1
							Below 1.9m: Becoming very sandy gravelly Cobbles and Boulders	2
	3.00 - 3.10 3.00 - 3.10	B D					Below 3.0m: Becoming slightly clayey Below 3.0m: Becoming damp	3
				3.25			End of pit at 3.25 m	4
								5

Remarks: Sulphur odour during excavation

Stability:

Trial Pit Log

Trialpit No

TPA11

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 457101.00 - 524726.00
Level:Date
25/11/2016

Location: SSI Redcar

Dimensions
(m):Depth
3.60Scale
1:25Logged
FLM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.50 0.10 - 0.50	B D		0.10			MADE GROUND: Sinter MGR MADE GROUND: Very dense grey sandy GRAVEL and COBBLES with low boulder content. Gravel and cobbles are fine to coarse angular and subangular predominantly of slag, occasional brick. Boulders are sub-angular of slag up to 400x250x170mm. Sand is fine to coarse of ash. Brick are mostly refractory. MGR <i>From 0.5 to 1m: Higher proportion of bricks.</i> <i>Below 0.8m: Darker in colour</i> <i>Below 1.1m: Increasing proportion of cobbles are yellow brick.</i>	1
				1.70			MADE GROUND: Medium dense dark grey-black gravelly SAND with low to medium cobble content. Gravel is fine to coarse angular and subangular predominately slag occasional brick. Cobbles are slag and brick. MGR	2
				3.60			End of pit at 3.60 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA12

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456962.00 - 524762.00

Level:

Date

11/01/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Client: Homes and Communities Agency

Depth
2.90

2.1

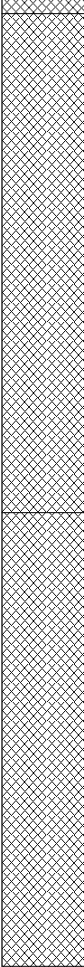
Scale
1:25Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.05			MADE GROUND: Dark grey black GRAVEL of silty clay. MGR	
							MADE GROUND: Dark brown very sandy GRAVEL of fine to coarse slag with abundant cobble & occasional boulders of slag. MGR	
								1
				1.40			MADE GROUND: Dark brown slightly clayey very sandy fine to coarse GRAVEL of slag with occasional cobbles of slag. MGR	
							From 1.4m: Sulphur odour.	
	1.80	ES						2
				2.90			End of pit at 2.90 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPA13 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456990.00 - 524745.00 Level:		Date 29/11/2016	
Location: SSI Redcar				Dimensions (m):		3.8 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.30				Logged AC	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.05			MADE GROUND: Black fine and medium GRAVEL of sinter MGR 	1 2 3 4 5
	0.60 - 1.00	B			MADE GROUND: Grey brown sandy gravelly COBBLES and BOULDERS. Occasional fragments of brick (Red & Refractory) rarely intact bricks. Gravel is fine to coarse, subangular and angular of slag. Cobbles and boulders are subangular and angular of slag. MGR <u>Below 0.6m: Dark grey brown</u>			
								
	2.40 2.40	B D		1.70		MADE GROUND: Red brown slightly clayey very sandy GRAVEL with cobbles and boulders of grey and orange brown slag. Gravel is subangular and angular, fine to coarse of slag. MGR 	<u>Below 2.5m: Slightly clayey/silty</u>	
				3.20			End of pit at 3.30 m	

Remarks:

 Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457039.00 - 524734.00

Level:

Date

10/01/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

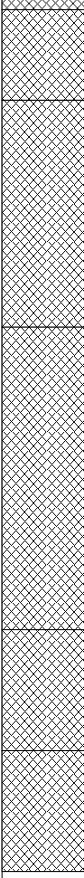
1:25

Client: Homes and Communities Agency

Depth
2.90

2.4

Logged
MW

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.05	ES		0.05			MADE GROUND: Greyish black sinter. MGR	
				0.35			MADE GROUND: Light grey sandy fine to coarse GRAVEL of slag with occasional cobbles. MGR	
	0.80						<i>From 0.05m: Reddish brown cobbles.</i> MADE GROUND: Dark yellowish brown slightly clayey gravelly SAND. Gravel includes slag, concrete, occasional refuse & cobbles. MGR	
				1.10			<i>From 0.9m: Reinforced concrete slab.</i>	1
	2.00	B					MADE GROUND: Dark brown gravelly SAND. Gravel is fine to coarse includes slag & brick. Occasional slag cobbles. MGR	
	2.30 2.30	D ES		2.10			MADE GROUND: Very soft white CLAY. MGR	
				2.50			<i>From 2.1m: Highly plastic odour. Lime?</i>	
				2.90			MADE GROUND: Dark brown speckled white sandy GRAVEL with cobbles. MGR	
							End of pit at 2.90 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA15

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457082.00 - 524716.00

Level:

Date

10/01/2017

Location: SSI Redcar

Dimensions
(m):

5.6

Depth
0.90

2.7

Scale
1:25Logged
MW

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.45	ES		0.05			MADE GROUND: Dark blackish grey sinter.  MGR
				0.40			MADE GROUND: Light grey sandy fine to coarse GRAVEL with frequent cobb  occasional boulders of slag. MGR
				0.90			MADE GROUND: Dark brownish grey gravelly SAND with some ash. Gravel is fine to coarse and includes slag. MGR  <u>From 0.6m: Becoming cobbly.</u>
							End of pit at 0.90 m

1

2

3

4

5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA16

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456917.00 - 524765.00

Level:

Date

29/11/2016

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10Logged
AC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.00 1.00	B D		0.10			MADE GROUND: Black/brown fine and med GRAVEL of Sinter MGR	1
				0.40			MADE GROUND: Grass over; firm orangeish brown very sandy CLAY; locally clayey gravelly sand with low cobble content. Gravel subangular to angular fine to coarse of mixed lithologies. Cobbles are mixed, some slag, some red brick fragments. MGR	
				0.90			MADE GROUND: Grey reddish brown sandy very gravelly COBBLES and BOULDERS of slag. Cobbles and boulders are angular to subangular. Gravel is fine to coarse, angular to subangular. Fragments of red and yellow refractory brick. MGR	
				1.60			Below 0.7m: Becoming red brown/grey. Below 1.1m: Light grey.	
▼	3.10 3.10	B D		1.60			MADE GROUND: Medium dense dark grey slightly gravelly SAND with low cobble content. Gravel is fine to coarse angular to rounded of slag pebbles, red brick frags, iron ore, yellow brick. Assorted metal scrap including steel plate, tin sheet, conveyor rollers and re-bar. MGR	2
							Below 0.7m: Becoming red brown/grey. MADE GROUND: Medium dense grey gravelly SAND with low cobble and boulder content. Gravel is fine to coarse, angular to subangular of slag, iron ore, brick frags. Cobbles are slag, iron ore and brick. Boulders are slag. Assorted metal scrap, see above (large electrical motor x2 approx. 2.0m depth.) MGR	
							Below 1.1m: Light grey.	
▼				3.10				3
				4.40			MADE GROUND: Reddish brown very sandy gravelly COBBLES and BOULDERS of red brown/grey slag. Cobbles and boulders are angular to subangular of slag. MGR	4
							End of pit at 3.10 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456975.00 - 524737.00

Level:

Date

11/01/2017

Location: SSI Redcar

Dimensions
(m):

5

1.8

Depth
3.20

Scale

1:25

Logged
MW

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.05			MADE GROUND: Dark grey black sinter MGR	
							MADE GROUND: Light grey sandy GRAVEL of slag with frequent cobbles and rare boulders of slag. MGR	
				0.80			MADE GROUND: Dark brown very gravelly SAND with frequent cobbles & rare boulders. Cobbles include slag & brick fragments. Boulders are slag. MGR	1
	2.20 2.20	B ES					From 2.3m: Sulphur odour.	2
				2.70			MADE GROUND: Brown slightly clayey sandy GRAVEL of fine to coarse slag. Rare cobbles of slag. MGR	
							From 2.7m: Sulphur odour.	3
				3.20			End of pit at 3.20 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457011.00 - 524724.00

Level:

Date

29/11/2016

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

2.7

Logged
AC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Black fine and medium GRAVEL of sinter MGR MADE GROUND: Light grey sandy gravelly COBBLES and BOULDERS of slag. Gravel is fine to coarse, subangular to angular of slag. Occasional fragments of red brick. MGR <i>Below 0.8m: Becoming dark grey brown, very sandy, no brick fragments.</i>
	1.50 - 1.70 1.50 - 1.70	B D					
	3.10	LB		3.10			End of pit at 3.10 m

1

2

3

4

5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457053.00 - 524707.00

Level:

Date

28/11/2016

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
3.20

2.8

Logged
AC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50 - 0.90 0.50 - 0.90	B D		0.05			MADE GROUND: Black fine GRAVEL of Sinter MGR MADE GROUND: Grey/brown sandy gravelly COBBLES and BOULDERS of slag with occasional fragments of brick. Gravel is fine to coarse, subangular and angular of slag. MGR
	2.00 - 2.20	B					Below 1.0m: Becoming very sandy and no brick fragments.
▼	3.10 - 3.20 3.10 - 3.20	B D		3.20			End of pit at 3.20 m

Remarks: Sulphur odour during excavation

Stability:

Trial Pit Log

Trialpit No

TPA20

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457088.00 - 524693.00

Level:

Date

09/01/2017

Location: SSI Redcar

Dimensions
(m):

5

Depth
3.40

2.4

Scale

1:25

Logged
MW

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.05			MADE GROUND: Loose dark grey black GRAVEL sinter MGR	
							MADE GROUND: Light grey sandy fine to coarse GRAVEL. Gravel of slag includes fragments of brick & refractory brick. MGR	
	1.10 - 1.40	B		0.80			MADE GROUND: Brown very sandy cobbly fine to coarse GRAVEL of slag. Gravel includes brick, refractory brick, rare boulders of slag. Rare wood fragments. MGR	1
	1.30	ES					From 0.8m: Sulphur odour, becoming gravelly SAND. From 1.0m: Ashy (black fine).	
								2
								3
▼	3.30	B		3.30			MADE GROUND: Dark reddish brown gravelly SAND with cobbles of brick. MGR	
				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456828.00 - 524767.00

Level:

Date

12/02/2016

Location: SSI Redcar

Dimensions
(m):

3.9

Scale

1:25

Client: Homes and Communities Agency

Depth
3.50

2.5

Logged
AC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.05			0.05			MADE GROUND: Black fine and medium GRAVEL of sinter MGR	
	0.90 - 1.10 0.90 - 1.10	B D		0.50			MADE GROUND: Red brown fine to coarse GRAVEL with cobbles and boulders of grey/brown slag. Gravel is subangular and angular. Cobbles are subangular and angular of slag with occasional fragments of red brick. MGR	
				1.40			MADE GROUND: Dark grey brown sandy gravelly COBBLES and BOULDERS. Subangular medium and coarse. Gravels are subangular and angular of slag. MGR	1
	1.70 - 2.20	B					MADE GROUND: Light grey very sandy gravelly COBBLES with boulders of grey slag. Gravel is fine to coarse, subangular and angular of slag. Some red/brown gravels. Cobbles of slag. MGR	
							<i>Below 1.7m: Becoming dark grey with occasional orange-brown sand. Slightly cobble very sandy gravel. Occasional refractory brick fragments.</i>	2
							<i>From 2.4 to 2.7m: Greyish brown layer of fine sandy gravel.</i>	
							<i>From 2.7 to 3.5m: As from 1.7m with more frequent fragments of brick. Dark grey colouration possibly ash.</i>	3
				3.50			End of pit at 3.50 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456860.00 - 524754.00

Level:

Date

15/12/2016

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.4

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20	ES		0.02			MADE GROUND: Loose dark grey/black sintered MGR	
				0.50			MADE GROUND: Loose grey very gravelly SAND with low cobble content. Gravel is fine to coarse, angular to subangular of slag and clinker. Cobbles are slag and clinker. MGR	
	0.70 - 1.10	B		1.20			MADE GROUND: Medium dense light grey very gravelly SAND with medium cobble and boulder content. Gravel is fine medium and coarse, subangular and angular of slag, clinker and rare brick fragments. Cobbles and boulders are slag, clinker and brick. MGR	1
	1.50 - 2.00	LB		2.10			MADE GROUND: Medium dense dark grey gravelly SAND with medium cobble content and low boulder content. Cobbles and boulders are slag. MGR	
	2.30	ES		3.40			At 2.0m: Large boulder. 1050 x 900 x 400mm. MADE GROUND: Loose to medium dense grey gravelly SAND with low cobble and low boulder content and fine sand-sized white 'ash'. Cobbles are slag and occasional yellow brick. Boulders are slag. MGR At 2.4m: Partially decomposed timber. Soaked in creosote. Strong odour. Below 2.5m: Low ash content.	2 3
							End of pit at 3.40 m	4 5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA23

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456897.00 - 524739.00

Level:

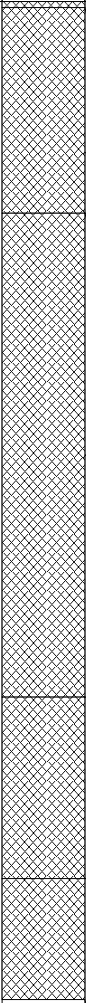
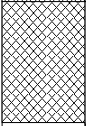
Date

05/12/2016

Location: SSI Redcar

Dimensions
(m):Depth
3.30Scale
1:25Logged
FLM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20 - 0.70	LB		0.02			MADE GROUND: Sinter MGR 	
							MADE GROUND: Loose to medium dense grey sandy GRAVEL with medium cobble content and occasional boulders. Gravel is fine to coarse, angular and subangular of slag and clinker. Occasional white ash. Cobbles are subangular of slag and clinker. Slight sulphur odour. Occasional coarse gravel-sized/small cobble sized metal. MGR 	
	0.80 - 1.20	B		0.70			From 0.5 to 0.7m: Slightly darker colouration. MADE GROUND: Loose to medium dense slightly clayey SAND and GRAVEL with low cobble content and occasional cobble-sized fragments of reworked brown grey firm laminated clay with coarse subangular gravel (possible slag). Locally reddish brown. MGR 	1
	2.10 - 2.30	B					Below 1.5m: Sidewalls unstable.	2
	2.50 - 2.80	LB		2.30			MADE GROUND: Medium dense grey slightly sandy slightly gravelly COBBLES and BOULDERS of slag and clinker. MGR 	
				2.90			MADE GROUND: Loose to medium dense slightly clayey SAND and GRAVEL with low cobble content and occasional cobble-sized fragments of reworked brown grey firm laminated clay with coarse subangular gravel (possible slag). Sand is probable ash. Locally reddish brown. MGR 	3
				3.30			End of pit at 3.30 m	4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPA24 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456927.00 - 524726.00 Level:		Date 06/12/2016	
Location: SSI Redcar				Dimensions (m):		4.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.40		2.1 		Logged TL	

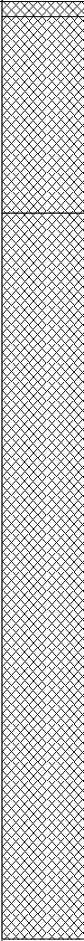
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Dark grey to black fine to medium gravel-sized sinter MGR
	0.50 - 0.80	B					MADE GROUND: Loose dark grey slightly sandy GRAVEL with medium cobble content and low boulder content. Gravel is subangular to angular, fine to coarse of slag, clinker and rare burnt lime. Rare red brick fragments less than 50mmx30mmx20mm. MGR <i>Between 0.1 and 0.7m: Discontinuous layer of loose brownish grey slightly sandy GRAVEL with occasional yellow refractory bricks approx 5-10% content.</i> <i>Between 0.7 and 2.4m: Medium boulder content. Very slightly sandy.</i>
							<i>Below 2.0m: Brownish grey.</i>
	2.70 - 3.00	B					
				3.40			End of pit at 3.40 m

Remarks:

 Stability:



				Trial Pit Log			Trialpit No TPA25 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456967.00 - 524712.00 Level:		Date 14/12/2016	
Location: SSI Redcar				Dimensions (m):		4.3 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.10				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.40	ES		0.05			MADE GROUND: Loose dark grey to black fine and medium gravel-sized sinter MGR 	1 2 3 4 5
				0.70			MADE GROUND: Loose reddish brown gravelly SAND with medium cobble and low boulder content. Gravel is fine medium and coarse, subangular and angular of slag, clinker and yellow brick fragments. Cobbles are slag and occasional yellow brick. Boulders are slag. MGR 	
							MADE GROUND: Loose becoming medium dense grey sandy GRAVEL with medium cobble and low to medium boulder content. Gravel and cobbles are slag and clinker. Boulders are slag, up to 500 x 250 x 200mm. Some slag boulders have white crystallisation on outer surface. MGR <i>Between 0.7 and 2.0m: Rare yellow 'refractory' brick.</i> 	
	2.20 - 2.50	B					<i>Below 2.5m: Medium dense</i>	
				3.10			End of pit at 3.10 m	

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457003.00 - 524697.00

Level:

Date

13/12/2016

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.20

2.5

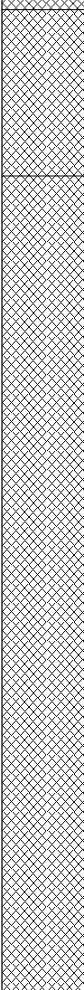
Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.05			0.05			MADE GROUND: Dense dark grey fine grained sinter MGR
	0.80	ES		0.80			MADE GROUND: Loose light grey very sandy GRAVEL with medium cobble and low boulder content. Gravel is fine medium and coarse, angular and subangular of slag, clinker and rare yellow brick. Cobbles and boulders are slag. MGR <i>Between 0.3 and 0.5m: Medium boulder content.</i>
	2.00	LB					MADE GROUND: Loose becoming medium dense very sandy GRAVEL with medium cobble and boulder content. Gravel is fine to coarse, subangular and angular of slag, clinker and burnt lime. Cobbles and boulders are slag and rare yellow brick (<5% content). Some slag fragments have white crystallisation on outer surface. MGR <i>Between 1.1 and 1.4m: High boulder content.</i>
	2.20 - 2.50	B					<i>Below 2.0m: Boulder size increasing.</i>
				3.20			End of pit at 3.20 m

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPA27 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457042.00 - 524682.00 Level:		Date 08/12/2016	
Location: SSI Redcar				Dimensions (m): Depth 3.30		4.6 2.7		Scale 1:25 Logged TL	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.30 - 0.60	B		0.05			MADE GROUND: Dark grey to black fine grained sinter MGR 
				0.60			MADE GROUND: Loose dark greyish brown very gravelly SAND with low cobble content. Gravel is fine and medium rarely coarse of slag and clinker. Cobbles are slag and red and yellow brick. MGR 
							Note: Yellow 'Refractory' bricks are approx. 5 - 10% of total content. MADE GROUND: Loose grey very sandy becoming sandy GRAVEL with medium cobble and boulder content. Gravel is fine medium and coarse of slag and some clinker. Cobbles and boulders are slag. MGR 
				3.30			End of pit at 3.30 m



 Remarks:



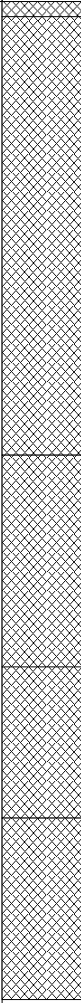
Stability:

				Trial Pit Log				Trialpit No TPA28 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457077.00 - 524663.00 Level:		Date 12/12/2016	
Location: SSI Redcar						Dimensions (m): 3.7 		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.40		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼	0.20 - 0.50	B		0.05			MADE GROUND: Medium dense dark grey fine and medium gravel-sized sinter MGR 	1	
	0.50	ES			MADE GROUND: Loose dark grey gravelly SAND with low cobble and low boulder content. Gravel is fine medium and coarse, subangular and angular of slag, clinker and red/yellow brick fragments. Cobbles and boulders are slag and red/yellow brick, rare clinker. MGR <i>Greyish yellow gravelly SAND with low cobble content. Gravel is fine to coarse subrounded to subangular of slag. Cobbles are subangular of slag.</i>				
				1.10			MADE GROUND: Loose dark grey very sandy GRAVEL with medium cobble and boulder content. Gravel is fine medium and coarse, subangular of slag and clinker. Cobbles and boulders are slag with rare red/yellow brick. MGR 		
				1.70			MADE GROUND: Loose light grey with light brown patches sandy GRAVEL and COBBLES with medium boulder content. Gravel is fine medium and coarse, subangular of slag, rare clinker. Boulders are slag. MGR 		2
	2.70 - 3.00	B		2.30			MADE GROUND: Loose to medium dense light brownish grey sandy GRAVEL with low cobble and low boulder content. Gravel is fine and medium rarely coarse, subangular and angular of slag and clinker. Cobbles and boulders are slag. MGR 		3
				3.40			End of pit at 3.40 m	4	
								5	

Remarks:	
Stability:	

				Trial Pit Log			Trialpit No TPA29 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456839.00 - 524742.00 Level:		Date 05/12/2016	
Location: SSI Redcar				Dimensions (m):		4.5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.30				Logged FLM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼				0.05			MADE GROUND: Sinter MGR <i>Top 0.5m: Occasional patches of white dust/sand possibly burnt lime ash on surface of slag.</i>
	0.50 - 0.80	LB			MADE GROUND: Medium dense dark grey sandy GRAVEL and COBBLES with low boulder content. Gravel is fine to coarse, angular to subrounded of slag, clinker and occasional refractory brick/tile. Cobbles of slag and clinker. Sand portion possibly ash with slag and clinker, all grey. Slight sulphur odour. MGR		
	0.80 - 1.00	B			<i>Below 0.8m: Slight lightening in colour.</i>		
	1.50 - 1.70	ES		1.50	MADE GROUND: Loose white and grey gravelly SAND with low cobble content and white ash of burnt lime. Gravel is fine to coarse, angular and subangular of slag, clinker and occasional lime/burnt lime. Cobbles are subangular and angular of clinker, slag and occasional red brick. MGR <i>Below 1.7m: Medium dense.</i> <i>From 1.7 to 1.85m: Pockets of red brick, approximately 40% of total volume.</i> <i>Below 2m: Becoming locally black & brown.</i> <i>Below 2.1m: Refractory bricks approximately 5-10% of total volume.</i>		
				2.20	MADE GROUND: Dense dark orange brown sandy GRAVEL with low cobble content. Gravel is slag and clinker. Cobbles are slag and clinker. MGR <i>Below 2.2m: Very dense/dense</i> <i>Below 2.6m: Occasional wood/timber cobbles.</i>		
	3.10 - 3.30	B		3.30		MADE GROUND: Medium dense grey black white sandy GRAVEL. Gravel is fine to coarse, subangular and angular of clinker and slag occasionally lime and yellow brick/tile. MGR End of pit at 3.30 m	

Remarks:

 Stability:



				Trial Pit Log				Trialpit No TPA30 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456872.00 - 524729.00 Level:		Date 06/12/2016	
Location: SSI Redcar				Dimensions (m):		4.3 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.00				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50 - 0.90	B		0.05	1.40		MADE GROUND: Dark grey to black fine and me gravel-sized sinter MGR	
				MADE GROUND: Loose to medium dense dark grey sandy GRAVEL with low cobble content. Gravel and cobbles are slag, clinker, yellow/red brick and rare burnt lime. MGR <u>At 0.4m: Metal debris. Sheet approx. 500 x 300mm. Bar approx 20mm diameter 500mm long.</u> <u>Below 0.5m: Grey</u>				
	<u>Below 0.9m: Low boulder content. Slag.</u>							
	2.10 - 2.30	B				MADE GROUND: Loose to medium dense light grey slightly sandy gravelly COBBLES with medium boulder content. Gravel and cobbles are subangular of slag, clinker and burnt lime. Boulders are mostly slag rarely clinker, up to 380 x 380 x 280mm. MGR		
						<u>Below 2.3m: Red brick and tile approx. 1-2% of total volume.</u> <u>Below 2.6m: Sandy.</u>		
				3.00		End of pit at 3.00 m		

Remarks:

 Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456908.00 - 524713.00

Level:

Date

15/12/2016

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.20

2.5

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.60	ES		0.02			MADE GROUND: Medium dense dark grey/black sinter MGR
				0.60			MADE GROUND: Loose light brownish grey sandy GRAVEL with low to medium cobble content. Gravel is fine medium and coarse, subangular of slag occasionally clinker. Cobbles are slag and rare heavy brick fragments.
							MGR
							Between 0.1 and 1.0m: Strong ammonia odour.
							At 0.5m: Large boulder. 1150 x 800 x 850mm. 'Conglomerate' of slag boulders.
							MADE GROUND: Loose becoming medium dense grey very sandy GRAVEL with low to medium cobble content and low boulder content. Gravel is fine medium and coarse, subangular and angular of slag, clinker and lime. Cobbles and boulders are slag and clinker, rare lime.
							MGR
							Below 1.5m: Low cobble content.
							Between 1.5 and 2.7m: Medium boulder content.
	2.30 - 2.60	B					
				3.20			Below 2.7m: Low boulder content.
							End of pit at 3.20 m

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords:	456940.00 - 524702.00

Level:

Date _____

07/12/2016

Location: SSI Redcar

Dimensions

48

Depth
3.30

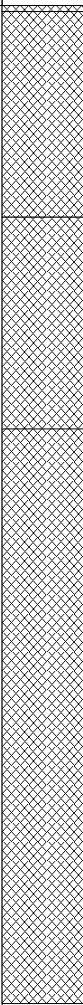
26

Scale

1:25

Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.70 - 1.00	B		0.02		MADE GROUND: Dark grey to black fine and medium gravel-sized sinter MGR	1 2 3 4 5
				0.70		MADE GROUND: Loose greyish brown and grey sandy GRAVEL with low cobble content. Gravel is fine medium and coarse, sub angular and angular of clinker, rare slag. MGR	
	2.60 - 3.00	B		1.40		MADE GROUND: Loose becoming medium dense grey very sandy GRAVEL with low to medium cobble and low boulder content. Gravel is fine, medium and coarse, subangular rare angular of slag, clinker and possible iron ore. Coarse gravels are mixed grey and reddish brown. MGR <i>Below 1.0m: No reddish brown iron ore.</i> <i>Between 1.2 and 1.4m: Dark grey.</i>	
				3.30		MADE GROUND: Loose locally dense grey slightly sandy GRAVEL with low cobble content and medium boulder content. Gravel is angular and subangular, fine medium and coarse of slag, rare clinker. Boulders are slag. MGR	
						At 3.1m: <i>Hard layer of compacted slag. Slowed excavation.</i> End of pit at 3.30 m	

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456977.00 - 524686.00

Level:

Date

07/12/2016

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

2.9

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.40	B		0.05			MADE GROUND: Dark grey to black fine and medium gravel-sized sinter MGR	
				0.70			MADE GROUND: Loose grey locally brownish grey sandy GRAVEL with low cobble and low boulder content. Gravels are clinker and slag, rare red/yellow brick. MGR <i>Between 0.5 and 0.7m: Greyish brown with approx. 5% yellow/red brick content.</i>	1
	1.80 - 2.10	B					MADE GROUND: Loose to medium dense grey becoming dark grey with depth sandy GRAVEL with medium cobble and boulder content. Gravel, cobbles and boulders are clinker and slag with some ferrous staining and white staining on edges. MGR <i>At 0.7m: Large boulder. Conglomerate of slag. 950 x 600 x 500mm. Between 0.7 and 1.1m: Medium grey.</i>	2
				3.10			<i>Below 2.5m: No red/yellow brick.</i>	3
							End of pit at 3.10 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA34

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457015.00 - 524670.00

Level:

Date

13/12/2016

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

2.6

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.30	ES		0.05			MADE GROUND: Dark grey/black sinter MGR
							MADE GROUND: Loose grey very sandy GRAVEL with medium cobble content. Gravel is fine medium and coarse, angular and subangular of clinker, slag and burnt lime. Cobbles are slag and clinker, rare yellow brick. MGR
	0.70 - 1.00	B		0.60			At 0.2m: Fragment of iron ore. 400 x 200 x 100mm. MADE GROUND: Medium dense dark brownish grey gravelly SAND with low cobble and low boulder content. Gravel is fine medium and coarse, subangular of slag and occasional yellow brick fragments. Cobbles and boulders are slag and red/yellow brick. MGR
				1.20			MADE GROUND: Loose locally medium dense grey very sandy GRAVEL and COBBLES with medium boulder content. Cobbles and boulders are slag. Gravel is fine medium and coarse, subangular and angular of slag, clinker and rare yellow brick fragments. MGR
				3.10			End of pit at 3.10 m

1

2

3

4

5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457053.00 - 524657.00

Level:

Date

09/12/2016

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

3.1

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Dark grey to black fine and medium gravel-sized sinter MGR
				0.60			MADE GROUND: Loose brownish grey very sandy GRAVEL with high cobble content and low boulder content. Gravel is fine medium and coarse, subangular, rarely angular mostly slag sinter. Cobbles are slag, clinker and yellow brick. MGR
				1.40			MADE GROUND: Loose dark brownish grey very sandy GRAVEL with medium cobble content and medium boulder content. Gravel is fine medium and coarse, subangular of slag and clinker. Cobbles and boulders are slag and clinker. MGR <i>Below 0.7m: Boulder size increasing with depth. At 1.0m: Two large boulders. 1150 x 900 x 550mm and 1800 x 1400 x 800mm.</i>
	1.70 - 2.00	B					MADE GROUND: Loose light grey very sandy GRAVEL with low to medium cobble content and low boulder content. MGR
	2.40 - 2.70	B					MADE GROUND: Loose to medium dense light orangeish brown very sandy GRAVEL/gravelly SAND with medium cobble content and low boulder content. Sand is medium to coarse. Gravel is fine medium and coarse, angular and subangular of slag and clinker. Cobbles are slag and clinker. Boulders are slag. MGR
				3.10			End of pit at 3.10 m

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456815.00 - 524736.00

Level:

Date

01/12/2016

Location: SSI Redcar

Dimensions
(m):

5

Depth
3.60

1.8

Scale
1:25Logged
FLM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.70 - 1.10 0.70 - 1.10	B D		0.05			MADE GROUND: Sinter MGR MADE GROUND: Loose to medium dense grey sandy GRAVEL with low cobble content. Gravel predominantly coarse, angular to subrounded of slag, clinker and occasional red/yellow brick. Cobbles of intact yellow brick and slag. Sand of ash, locally white, possibly burnt lime. MGR <i>Between 0.3 and 0.4m: Higher white ash content</i> <i>Below 1.1m: Increasing cobble content. Occasional boulders of slag. Brick content reduced to almost zero. Cobbles and boulders less aerated (air cooled slag?). Noticeable sulphur odour and sulphur deposits on some cobbles.</i>	1
	2.50 - 2.80	B		1.60			MADE GROUND: Dark grey gravelly SAND AND GRAVEL with low cobble content. Gravel is predominately coarse, angular to subrounded of slag, clinker and occasional red/yellow brick. Cobbles are slag and occasional fragments of subrounded lime. Fragments of yellow refractory tile and brick are approximately 5% of total volume. MGR <i>From 2.4m: Occasional gravel and cobble-sized fragments of red brick.</i>	2
				3.30			MADE GROUND: Dense to very dense dark grey gravelly SAND. Gravel is fine to coarse of slag and clinker with occasional cobbles of yellow tile/brick, <5% of total volume. Boulders of slag >320 x 250 x 200mm. Hard material slowed digging.	3
				3.60			MGR End of pit at 3.60 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456848.00 - 524722.00
Level:Date
16/12/2016

Location: SSI Redcar

Dimensions
(m):Depth
3.80Scale
1:25Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES		0.05			MADE GROUND: Medium dense dark grey/black SINTER MGR	
							MADE GROUND: Medium dense reddish brown gravelly SAND with low cobble content and low boulder content. Gravel and cobbles are slag and clinker. Boulders are slag. MGR	
							<i>Between 0.05 and 0.2m: Greyish brown.</i>	
							<i>At 1.00m: Red brick, intact.</i>	1
				1.10			MADE GROUND: Loose light grey very sandy GRAVEL with medium cobble and medium boulder content. Gravel is fine medium and coarse, subangular and angular of slag, clinker, burnt lime and occasional yellow brick fragments. Cobbles and boulders are slag rarely clinker and burnt lime. MGR	
				1.90			MADE GROUND: Dense dark grey gravelly SAND with low cobble and low boulder content. Sand is fine and medium some coarse. Gravel is fine medium and coarse, subangular and angular of slag, clinker and yellow brick fragments. Cobbles are slag and yellow brick. Boulders are slag. Red/yellow brick content <5%. MGR	2
	2.70 - 3.10	B					<i>Below 2.0m: Hard material. Slowed excavation.</i>	3
				3.80			End of pit at 3.80 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456886.00 - 524709.00

Level:

Date

06/12/2016

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.1

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50 - 0.80	B		0.05			MADE GROUND: Dark grey to black fine and medium gravel-sized SINTER MGR
							MADE GROUND: Loose dark grey slightly sandy GRAVEL with low cobble content and rare boulders. Gravel is fine, medium and coarse, subangular of clinker, slag and rare burnt lime. Slag has some white staining on outer edges. MGR
							<i>Below 0.8m: Medium cobble content. Sulphur odour.</i>
	1.70 - 2.00	B		1.10			MADE GROUND: Loose grey very sandy GRAVEL with medium cobble and boulder content. Gravels, cobbles and boulders are angular and subangular of slag and clinker. MGR
							<i>At 1.3m: Large boulder. Slag. 900 x 600 x 500mm.</i>
							<i>At 1.8m: Boulder of weak light yellow / white fine grained rock with black specks. Possible lime. 400 x 200 x 200mm.</i>
	2.20	B					<i>At 2.2m: Boulder of weak light yellow/white fine grained rock with black specks. Possible lime. 400 x 200 x 200mm.</i>
				3.40			End of pit at 3.40 m

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPA39

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456915.00 - 524696.00

Level:

Date

14/12/2016

Location: SSI Redcar

Dimensions
(m):

3.9

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.2

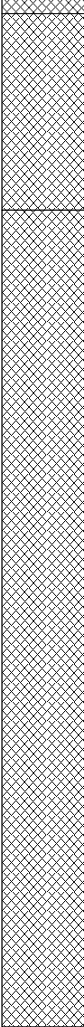
Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.02 0.10			MADE GROUND: Loose dark grey/bl  ne and medium gravel-sized SINTER MGR MADE GROUND: Loose greyish brown very gravelly SAND with low cobb  tent. Gravel is fine to coarse, subangular of slag, r  linker. Cobbles are slag. MGR MADE GROUND: Loose to medium dense light grey sandy GRAVEL with low cobble content. Gravel is fine to coarse, subangular of slag, clinke  brick fragments. Cobbles are slag, clinker and brick MGR MADE GROUND: Medium dense dark grey very sandy GRAVEL with medium cobble and boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and brick fragments. Cobbles and boulders are slag, occasionally clinker or yellow brick. MGR 	1
	1.00 - 1.30	B		0.90			At 1.5m: Large boulder. 1000 x 600 x 800mm. 	
	2.00	ES					Below 2.0m: Grey.	2
								3
				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPA40 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456954.00 - 524680.00 Level:		Date 14/12/2016	
Location: SSI Redcar						Dimensions (m): 4.4 2.3		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.40		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 - 0.70	B		0.05			MADE GROUND: Medium dense dark grey/black fine and medium gravel-sized SLAG and occasional yellow brick fragments. Boulders are slag, up to 650 x 600 x 400mm. MGR	
				0.70			MADE GROUND: Medium dense light grey sandy GRAVEL and COBBLES with low boulder content. Gravel and cobbles are slag and clinker and occasional yellow brick fragments. Boulders are slag, up to 650 x 600 x 400mm. MGR	1
							MADE GROUND: Medium dense dark grey very sandy GRAVEL with medium cobble and low boulder content. Gravel is fine to coarse of slag and clinker. Cobbles are slag and occasional yellow brick. Boulders are slag with white crystallisation on outer surface of some pieces. MGR	2
	2.60	ES					Between 2.2 and 2.4m: Medium boulder content.	3
▼				3.40			End of pit at 3.40 m	4
								5

Remarks:



Stability:

Project Name: Redcar DVA Initial Ground Investigation

 Project No.
678079

Co-ords: 456991.00 - 524666.00

Level:

Date

07/12/2016

Location: SSI Redcar

 Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

 Depth
3.20

2.2

 Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20 - 0.50	LB		0.70			MADE GROUND: Loose grey very sandy GRAVEL with medium cobble content and low boulder content. Gravel is fine to coarse subangular of slag and clinker. Cobbles and boulders are slag with rare red brick. MGR	
				1.30			MADE GROUND: Medium dense locally loose brownish grey sandy GRAVEL with low cobble and boulder content. Gravel is fine to coarse subangular of slag, rare clinker. Cobbles and boulders are slag. MGR <i>Below 1.00m: Medium boulder content. Boulders are slag.</i> <i>At 1.2m: Large boulder. Slag. 700 x 600 x 500mm.</i>	1
	1.50 - 1.80	B		3.20			MADE GROUND: Loose to medium dense grey becoming dark grey sandy locally very sandy GRAVEL with low cobble and medium boulder content. Gravel is fine to coarse, angular to subangular of slag with white crystallisation on outer edges of approximately 30%. Cobbles and boulders are slag. Boulders are up to 400 x 300 x 300mm. MGR <i>Below 2.6m: Low boulder content.</i>	2
▼							End of pit at 3.20 m	3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457029.00 - 524650.00

Level:

Date

12/12/2016

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40 0.50 - 0.80	ES B		0.05			MADE GROUND: Loose to medium dense dark grey/black SINTER MGR	
							MADE GROUND: Loose light brownish grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and brick. Cobbles and boulders are slag, red and yellow brick. Red and yellow bricks are approximately 5-10% of total content. MGR	
							From 0.05 to 0.1m: Brown coarse sand.	
				0.90			MADE GROUND: Loose becoming medium dense grey very sandy GRAVEL with medium cobble and medium boulder content with rare wood fragments up to 100 x 30 x 30mm. Gravel is fine to coarse, angular to subangular of slag, clinker and red/yellow brick frags. Cobbles and boulders are slag. Some slag pieces have white crystallisation and are very weak. Refractory bricks approximately 5% of total volume. MGR	1
	1.70 - 2.00	B					Below 1.5m: Dark grey.	
							Below 2.0m: Odour. Possibly hydrocarbon.	2
							Below 2.5m: Rare patches of stiff dark grey/black clay	
							At 2.6m: Steel 'L' Girder. 500 x 100 x 100mm.	
				2.80			MADE GROUND: Stiff brown CLAY with low cobble content. MGR	3
	3.40 - 3.70	B		3.40			MADE GROUND: Loose becoming medium dense grey very sandy GRAVEL with medium cobble and boulder content. Rare wood fragments up to 100 x 30 x 30mm. Gravel is fine to coarse, angular to subangular of slag, clinker and red/yellow brick fragments. Cobbles and boulders are slag. Some slag pieces have white crystallisation and are very weak. Refractory bricks approximately 5% of total volume. MGR	
	3.90	ES		4.00			Below 3.4m: Hydrocarbon odour with black staining on some boulders.	4
							End of pit at 4.00 m	
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456510.00 - 524956.00

Level:

Date

23/01/2017

Location: SSI Redcar

Dimensions
(m):

1.8

Scale

1:25

Client: Homes and Communities Agency

Depth
4.60Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.60			MADE GROUND: Medium dense dark reddish brown slightly gravelly fine to medium SAND with low cobble content. Gravel is fine to coarse of cemented sand and slag. Cobbles are cemented sand and slag. Some shiny lustre to sand grains. MGR <i>From 0.4m: Very dense compacted ground</i> <i>From 0.4m: Very hard layer. Slow excavation</i>	1
	2.00 - 2.30	B		2.70			MADE GROUND: Medium dense brown and grey SAND AND GRAVEL with medium cobble and low boulder content. Sand is fine to coarse. Gravel is of slag, clinker, red and yellow brick fragments. Boulders are slag up to 600x400x400mm. Some gravel is soft/weak with black specks. MGR <i>Below 1.4m: Boulder size increasing. Medium boulder</i> <i>At 2.0m: Cable</i>	2
	3.70 - 4.00	B					MADE GROUND: Loose brownish grey slightly gravelly fine to medium SAND with rare pockets (50x50x20mm) of stiff clay. Gravel is fine to medium, rarely coarse, angular to subangular of slag. Gravel is not uniformly distributed throughout the unit. Some black specked sand. MGR	3
	4.00	ES		4.60				4
							End of pit at 4.60 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPB02

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456545.00 - 524906.00

Level:

Date

19/01/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

2.3

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.30 - 0.60	B		0.05			MADE GROUND: Loose grey/black fine to medium SAND AND GRAVEL (Sinter) MGR	1
				0.20			MADE GROUND: Medium dense dark grey sandy GRAVEL with low cobble content. Gravel is fine to medium, occasionally coarse, angular to subangular and includes slag, clinker, yellow brick fragments and burnt lime. Cobbles are assorted types of slag and clinker with some white staining. MGR	
	2.60	ES		0.80			Below 0.1m: Sulphur odour @ 0.5m: iron ~ 400 x 400 x 100mm MADE GROUND: Loose light grey gravelly SAND with some white ash. MGR Below 0.1m: Sulphur odour @ 0.5m: iron ~ 400 x 400 x 100mm MADE GROUND: Medium dense light grey sandy GRAVEL AND COBBLES with low boulder content and abundant white ash/possible crystallisation. Gravel and cobbles are poorly sorted, angular to subangular of slag, clinker and occasional yellow brick fragments. Boulders are slag. MGR Below 1.5m: Ammonia odour At 1.7m: Hard compacted slag layer	2
				2.40			MADE GROUND: Medium dense brownish grey sandy GRAVEL with low cobble content and fragments of red and yellow brick. MGR	
				3.10			End of pit at 3.10 m	3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456603.00 - 524920.00

Level:

Date

23/01/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Depth
3.40

2.4

Scale
1:25Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES		0.50 0.60			MADE GROUND: Loose to medium dense dark grey/black coarse sand to medium gravel sized SINTER MGR <i>Below 0.2m: Sulphur odour</i> MADE GROUND: Loose dark grey very gravelly SAND with low cobble content. Gravel is slag, clinker and occasionally yellow brick fragments, angular to subangular fine to coarse. Cobble content is angular to subangular of slag, clinker and rare yellow brick MGR MADE GROUND: Loose grey very sandy GRAVEL with low to medium cobble content. Gravel is slag, clinker and rare yellow brick fragments and lime. Cobbles are mostly slag, rare yellow brick fragments and clinker. Boulders are slag. Some slag white crystallisation on outer surface. Locally sandy gravel. MGR <i>Below 1.5m: Dark grey. Refractory brick content < 5% of total volume.</i> <i>Below 2m: Ammonia odour, slight</i>	1
	2.60	ES						
	2.80 - 3.10	B						2
								3
				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPB04

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456637.00 - 524872.00

Level:

Date

19/01/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
3.50Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	ES		0.10			MADE GROUND: Loose dark grey/black coarse sand to medium gravel - sized SINTER MGR	
							MADE GROUND: Medium dense light brownish grey very gravelly SAND with medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag and clinker. Cobbles and boulders are slag, clinker, brick and weak white tufa. Fragments of tufa throughout MGR	
							At 0.9m: Hard layer of compacted slag - Took 15 mins to get through. From 0.9m to 1.4m: Medium to high boulder	1
	2.00 - 2.30	B		1.40			MADE GROUND: Medium dense grey very sandy GRAVEL with medium cobble content and low to medium boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker rare burnt lime, rare red and yellow brick fragments. Cobbles are slag, clinker, re & yellow brick fragments and rare burnt lime. Boulders are mostly slag and some clinker. MGR	2
				3.50			End of pit at 3.50 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPB05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456693.00 - 524882.00

Level:

Date

23/01/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.2

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES		0.50 0.60			MADE GROUND: Dense dark grey / black coarse sand to fine gravel - sized SINTER MGR <i>At Om: Dense material. Pit located on an area used by heavy plant.</i>	
	1.70 - 2.00	B		1.10			MADE GROUND: Loose to medium dense light grey sandy GRAVEL with very low cobbler content. Gravel is fine to coarse, angular to subangular of slag, sinter concrete fragments. MGR MADE GROUND: Medium dense dark grey slightly gravelly SAND with low cobbler content and rare (very low) boulders. Gravel and cobbles are of subangular slag MGR MADE GROUND: Loose grey very sandy GRAVEL with medium cobbler and low boulder content. Gravel and cobbles are slag, clinker occasionally. Yellow brick and fragments and burnt lime. Boulders are slag. MGR <i>From 1.5: medium boulder content</i> <i>Below 2.1m: Dark grey, very sandy.</i>	1 2 3 4 5
				3.40			End of pit at 3.40 m	

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPB06

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456729.00 - 524834.00

Level:

Date

20/01/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.20

2.5

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.05			MADE GROUND: Loose dark grey/black coarse sand to medium gravel - sized SINTE	
				0.40			MADE GROUND: Medium dense greyish brown gravelly SAND with low to medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, rarely burnt lime and brick fragments. Cobbles and boulders are slag & clinker occasionally yellow brick fragments.	
	1.00 - 1.30	B					MADE GROUND: Medium dense grey very gravelly SAND AND GRAVEL with medium cobble content and low to medium boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, rarely burnt lime. Cobbles are slag, clinker and occasional red brick fragments. Boulders are slag.	1
							MGR	
							Below 0.4m: Light grey with white ash tufa	
							Below 2.0m: Low boulder content	2
	2.50	ES					Below 2.5m: Boulder size increasing	
				3.20			End of pit at 3.20 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPB07 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456494.00 - 524858.00 Level:		Date 17/01/2017	
Location: SSI Redcar				Dimensions (m):		3.8 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.20				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.05			MADE GROUND: Loose to medium dense black fine to medium, GRAVEL AND SAND of sinter MGR	
	0.90	ES		0.80			MADE GROUND: Medium dense dark grey gravelly SAND with low to medium cobble content and very low (rare?) boulders with occasional fragments of wood and plastic. Gravel is fine to coarse, angular to subangular of slag, clinker and brick fragments. Cobbles are mostly slag less clinker and red yellow brick boulders are slag. MGR	1
	1.20 - 1.60	B					MADE GROUND: Medium dense dark brownish grey gravelly SAND with low to medium cobble content and very low boulder content. Gravel and cobbles are fine to coarse, angular to subangular of slag and clinker occasional red/yellow brick. MGR <i>Below 2.1m Red/Yellow brick 5-10% of total Almost no boulders</i>	2
	2.50 2.50 - 2.80	ES B		2.10			MADE GROUND: Loose yellowish brown gravelly SAND with low cobble content. Gravel is fine to coarse, subrounded to rounded of mixed cobbles are R-SR. Natural or reworked with pockets of 300 x 200 x 200 of soft yellowish brown sandy clay, high plasticity MGR	3
				3.20			End of pit at 3.20 m	4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPB08

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456536.00 - 524880.00

Level:

Date

18/01/2017

Location: SSI Redcar

Dimensions
(m):

3.7

Depth
3.40

2.2

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.02			MADE GROUND: Loose dark grey to black SINTER MGR	
							MADE GROUND: Medium dense grey gravelly SAND with low cobble content and occasional boulders. Gravel is fine to coarse, angular to subangular of slag, clinker, brick fragments. Cobbles are slag and clinker occasional yellow brick. Boulders are slag. Some gravel and sand is white possibly ash or tufa. MGR	
				0.80			MADE GROUND: Medium dense light grey gravelly SAND with medium locally high cobble and low medium boulder content. Gravel is slag, clinker burnt lime and yellow brick fragments, cobbles and boulders are slag, clinker and brick fragments. Intact bricks seen. White staining on some slag. MGR	1
	1.70 - 2.00	B					Below 1.0m: compacted slag, very dense, slow dig Below 1.5m: Medium boulder content. Suspected not natural possible hydraulic fill.	2
				2.20			MADE GROUND: Loose to medium dense yellowish brown slightly gravelly SAND with occasionally pockets > 300 x 200 x 200 of soft brown clay. Gravel is fine to medium, occasionally coarse, subangular to rounded of mixed lithologies. Some gravel. Natural possible drop down. MGR	3
	3.00	ES		3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPB09 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456569.00 - 524836.00 Level:		Date 17/01/2017	
Location: SSI Redcar				Dimensions (m):		3.7 		Scale 1:25	
Client: Homes and Communities Agency				Depth 0.50				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.30	ES		0.02			MADE GROUND: loose black fine to medium GRAVEL AND SAND of SINTER MGR <i>At 0m: Hole located on track used by dumpers 60-70 tonne trucks run along it. Very solid ground unable to progress without risking equipment or unreasonable length of time</i>
				0.50			MADE GROUND: Very dense grey gravelly fine to coarse SAND with low cobble content and rare boulders. Gravel is fine to coarse, and var to subangular of slag & clinkers cobbles are slag, clinker and yellow brick fragments and rare lime. Boulders are slag. MGR End of pit at 0.50 m

1

2

3

4

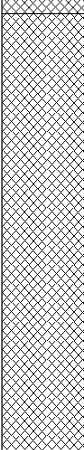
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Remarks:

 Stability:



				Trial Pit Log				Trialpit No TPB10 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456655.00 - 524841.00 Level:		Date 16/01/2017	
Location: SSI Redcar						Dimensions (m): 4.5 2.8		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.20		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70 - 1.00	B		0.05			MADE GROUND: Dark grey black gravel, sintered SINTER MGR <i>Below 0.5m: Becoming medium dense</i> MADE GROUND: Loose light yellowish grey very sandy GRAVEL with low becoming medium cobble content and low boulder content. Locally very gravelly sand. Gravel is fine to coarse, angular to subangular of slag, clinker, burnt lime and some yellow brick. Cobbles are slag, clinker burnt lime and yellow brick. Boulders are slag. MGR	1
	1.70 - 2.00	B		1.50			MADE GROUND: Loose to medium, dense grey sandy fine to coarse, angular to subangular of GRAVEL with medium cobble content and low boulder Gravel is of clinker and occasional burnt lime. Cobbles are subangular of Slag, clinker rare yellow brick. Boulders are slag. White staining tufa on some slag boulders. MGR <i>Below 2.0m: Tending to travel and cobbles</i>	2
				3.20			End of pit at 3.20 m	3
								4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPB11

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456660.00 - 524797.00

Level:

Date

17/01/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Depth
3.30

2.5

Scale

1:25

Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.02			0.02			MADE GROUND: Loose black fine to medium gravelly SAND of SINTER MGR 
	0.30 - 0.70	B					From OM: Slow excavation. Pit located on path used by dumpers soils are compacted
	0.70 - 2.00	ES					MADE GROUND: Medium dense light brownish grey gravelly SAND with low to medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of ash slag and clinker. Cobbles and boulders are mostly slag with some burnt lime and clinker. Some slag boulders have white staining on edges tufa some white sand/ash. MGR 
				3.30			End of pit at 3.30 m

1

2

3

4

5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPB12

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456688.00 - 524820.00

Level:

Date

16/01/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Depth
3.20

2.4

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES					MADE GROUND: Loose dark grey black gravelly SAND with low cobble content and rare boulders. Gravel is fine to coarse, angular to subangular of  and clinker and brick fragments. Cobbles and boulders are slag, clinker and yellow and red brick fragments MGR <i>At OM: TPB12 moved 10m west due to drain shown on service plan.</i>	
	1.00 - 1.30	B		0.70			MADE GROUND: Loose light brownish grey very sandy fine to coarse, angular to subangular GRAVEL with medium cobble content and low boulder content. Gravel is mostly slag with clinker, cobbles and boulders are slag. MGR <i>Below 1.0m: Gravelly sand.</i> <i>Below 1.0m: Ammonia odour</i>	1
							 <i>Below 2.0m: Grey, less sandy.</i>	2
				3.20			End of pit at 3.20 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log



Trialpit No

TPC01

Sheet 1 of 1

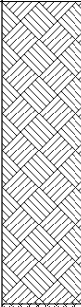
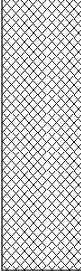
Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456575.00 - 524662.00
Level:Date
29/03/2017

Location: SSI Redcar

Dimensions
(m):Depth
1.90Scale
1:25Logged
EM

Client: Homes and Communities Agency

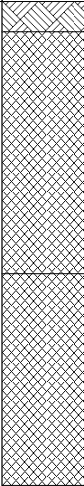
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00 - 1.90	ES		1.00			MADE GROUND: Topsoil TPS	
							MADE GROUND: Soft white slightly sandy, slightly gravelly CLAY. Mottled pink & light brown in places and locally sandy gravelly CLAY (possible lime) MGR	1
				1.90			End of pit at 1.90 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPC03 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456672.00 - 524624.00 Level:		Date 27/04/2017	
Location: SSI Redcar						Dimensions (m): 3.6 2.5		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.60		Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.00 - 0.40	ES		0.10			MADE GROUND: Topsoil TPS MADE GROUND: Loose brown slightly sandy slightly gravelly CLAY with low cobble and boulder content. Gravel is fine to coarse, angular to rounded. Gravel, cobbles and boulders are of brick, concrete, slag, sandstone and other lithologies. . MGR	
				0.90			MADE GROUND: Includes plastic bags, nylon wire, white powder, red powder/sand, brick, concrete, wood and piping. (Possible landfill) MGR	1
				1.60			End of pit at 1.60 m	2
								3
								4
								5

Remarks:

Stability:







Trial Pit Log

Trialpit No

TPC06

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 465801.00 - 524562.00

Level:

Date

28/03/2017

Location: SSI Redcar

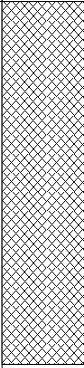
Dimensions
(m):Depth
1.20

Scale

1:25

Logged

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		1.20			MADE GROUND: Soft mottled orange gravelly CLAY. Contains scrap fencing, bags, bricks, cable plastic, rolled plastic, crushed glass, shredded plastic, plastic pellets and shredded green bag. ICI bag identified. MGR	1
							End of pit at 1.20 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log			Trialpit No TPC07 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456822.00 - 524551.00 Level:		Date 28/03/2017	
Location: SSI Redcar				Dimensions (m):		3.9 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.30				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00 1.00 - 4.00	B ES					MADE GROUND: Loose black gravelly SAND to sandy GRAVEL. Gravel is fine to coarse, angular of coke, occasional cobble of coke. Becoming medium dense thickly laminated grey to dark brown of coal and sand MGR	1
				2.60			MADE GROUND: Dark grey slightly gravelly SAND. Gravel is fine to coarse of coke. Sand of ash. Pockets of soft brown slightly gravelly CLAY with occasional brick fragments and pockets of soft grey sandy SILT MGR	3
				4.20				4
							End of pit at 4.30 m	5

Remarks: Position approximate

 Stability:



Trial Pit Log

Trialpit No
TPC08
Sheet 1 of 2

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456868.00 - 524533.00
Level:

Date
23/03/2017

Location: SSI Redcar

Dimensions (m):

4.2

Scale
1:25

Client: Homes and Communities Agency

Depth
5.40

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Topsoil TPS	
							MADE GROUND: Loose to medium dense black slightly silty SAND. Thinly to thickly laminated, slightly clayey in places. (damp but no obvious groundwater inflow) MGR	1
								2
								3
				3.90				
	4.10 - 5.40	ES		4.10			MADE GROUND: Stiff brown mottled orange slightly sandy gravelly CLAY. Gravel is fine and medium, angular of brick MGR	4
							MADE GROUND: Medium dense blackish grey SAND and sandy SILT. MGR	5

Continued on next sheet

Remarks: Position approximate

Stability:



Trial Pit Log

Trialpit No

TPC09

Sheet 1 of 2

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456715.00 - 524515.00

Level:

Date

23/03/2017

Location: SSI Redcar

Dimensions
(m):

3.9

Depth
5.50

2.7

Scale
1:25Logged
EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.50	ES		0.10			MADE GROUND: Topsoil TPS	
							MADE GROUND: Loose black to grey slightly silty SAND. Becoming medium dense with depth, thinly laminated (damp) MGR	1
								2
								3
				3.70			MADE GROUND: Stiff brown mottled orange slightly gravelly slightly sandy CLAY with occasional cobbles. Gravel of coal and brick. MGR	4
				4.30			MADE GROUND: Medium dense blackish grey slightly silty slightly clayey SAND MGR	5
							Continued on next sheet	

Remarks: Position approximate

Stability:

Trial Pit Log

Trialpit No
TPC10
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456552.00 - 524637.00
Level:

Date
29/03/2017

Location: SSI Redcar

Dimensions (m):

4.2

Scale
1:25

Client: Homes and Communities Agency

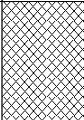
Depth
5.00

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.90	ES		0.10			MADE GROUND: Topsoil TPS MADE GROUND: Firm brown sandy gravelly CLAY with possible tar deposits MGR <i>From: 0.5m hydrocarbon smell</i>	
				0.90			MADE GROUND: Loose grey slightly silty SAND. Pockets white gravelly sand possibly lime. MGR	1
				1.20			MADE GROUND: Loose grey silty SAND with possible tar deposits MGR	
	2.45 - 5.00	ES						2
								3
								4
				5.00			End of pit at 5.00 m	5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPC11 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456593.00 - 524623.00 Level:		Date 27/04/2017	
Location: SSI Redcar				Dimensions (m):		3.6		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.60				Logged JNB	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.40	ES		0.40			MADE GROUND: Loose black brown slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular of coke, brick, cemented coal dust and pockets of firm organic brown clay. Rare wire and piping also present (500mmx15mm). Possible slight coal tar odour. MGR		
	2.00 - 2.50 2.00 - 2.50	ES ES		2.60			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND with low cobble content. Gravel is fine to coarse of weakly cemented coal dust, possible coal tar, occasional slag, wood, brick, conveyor belt and rubber strips. Rare pockets of very soft grey slightly sandy clay. MGR		
							End of pit at 2.60 m		
1 2 3 4 5									
Remarks:									
Stability:									



Trial Pit Log

Trialpit No
TPC14
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456722.00 - 524558.00
Level:

Date
28/03/2017

Location: SSI Redcar

Dimensions
(m):

3.7

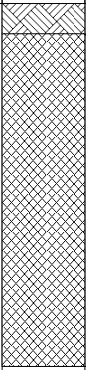
Depth
1.20

1.9

Scale
1:25

Logged
EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 1.20	ES		0.10			MADE GROUND: Topsoil TPS MADE GROUND: Soft grey to black sandy slightly clayey SILT to silty CLAY. Possible hydrocarbons from 0.1m MGR	1
				1.20			End of pit at 1.20 m	2
								3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No
TPC15
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456774.00 - 524537.00
Level:

Date
23/03/2017

Location: SSI Redcar

Dimensions (m):

3.9

Scale
1:25

Client: Homes and Communities Agency

Depth
1.20

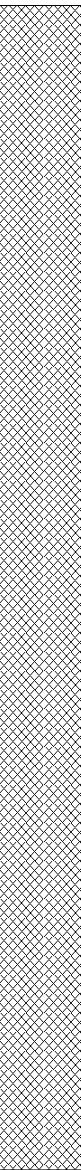
Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES					MADE GROUND: Soft laminated grey slightly sandy SILT. Possible hydrocarbons & tar, water has an oily sheen. MGR	1
				2.20				2
								3
								4
								5

End of pit at 1.20 m

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPC16 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456834.00 - 524512.00 Level:		Date 28/03/2017	
Location: SSI Redcar				Dimensions (m):		2.4		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.50				Logged FLM	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	3.10 - 3.30	ES		3.85			MADE GROUND: Grass over dark grey brown & black slightly sandy fine GRAVEL/ slightly gravelly SAND. Gravel is fine to coarse sub-angular of clinker, slag & coke. Fine gravel/coarse sand proportion of coal & coke (Possible breeze?) MGR		
	4.20 - 4.50	B					MADE GROUND: Loose light grey thinly to thickly laminated sandy SILT and silty SAND of coal dust and coarse sand. Occasional roots and rootlets MGR		
	4.20 - 4.50	D		4.50		End of pit at 4.50 m			
	4.20 - 4.50	ES							
Remarks:									
Stability:									



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456871.00 - 524475.00

Level:

Date

24/03/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.00Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Topsoil containing slag boulders TPS	
							MADE GROUND: Loose black slightly silty to silt slightly gravelly SAND. Gravel is fine to coarse subangular to subrounded of coke. MGR	
							<i>From: 2.5m bricks and very fast flowing water, potential burst pipe. Brick culvert at 2.9m water pouring in, pit extended to expose brick wall surrounded by gravel. Hole abandoned due to potential service</i>	
	1.30	B		1.30				1
							MADE GROUND: Firm to stiff brown mottled orange slightly sandy to sandy gravelly slightly cobble CLAY. Gravel is fine to coarse angular to subrounded of coke. Contains scrap metal, wood, bags, coal, coke. Cobbles are coarse subangular to subrounded of slag, coke and other various lithologies. MGR	2
	3.00	ES		3.00			End of pit at 3.00 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPC18 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456897.00 - 524468.00 Level:		Date 23/03/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 4.50		Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼	1.00	ES		0.10		 MADE GROUND: Topsoil TPS MADE GROUND: Loose black laminated slightly silty SAND. Becoming medium dense with depth, damp. MGR	1
							2
							3
				3.50		MADE GROUND: Firm brown mottled orange slightly sandy slightly gravelly CLAY. MGR <i>From: 3.5m broken pipe, hole abandoned at 4.5m</i>	4
				4.50		End of pit at 4.50 m	5

Remarks: Position approximate		
Stability:		

Trial Pit Log

Trialpit No
TPC19
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456943.00 - 524443.00
Level:

Date
22/03/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Scale
1:25

Client: Homes and Communities Agency

Depth
2.20

3.5

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.10			MADE GROUND: Grass over dark greyish brown sandy SILT with abundant rootlets and occasional shells (snails) MGR	
	0.70 0.80 - 1.10	ES B		0.50			MADE GROUND: Grey slightly clayey sandy SILT with frequent rootlets MGR	
				1.20			MADE GROUND: Firm brown mottled orange slightly gravelly slightly sandy CLAY. Gravel is fine to coarse, subrounded to subangular of various lithologies including sandstone and grey heavy stone. Occasional black fragments, (red) rare pottery fragments. MGR	1
				2.20			MADE GROUND: Grey laminated sandy silt with pockets of slightly gravelly SAND. Gravel is fine to medium, subrounded to subangular of grey stone. MGR	2
							End of pit at 2.20 m	3
								4
								5

Remarks:

Stability:









Trial Pit Log

Trialpit No

TPC22

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456623.00 - 524538.00

Level:

Date

29/03/2017

Location: SSI Redcar

Dimensions (m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.60

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	3.00 - 4.00	B					MADE GROUND: Loose grey silty SAND to sandy SILT. Becoming medium dense with depth, thickly laminated light grey SAND and dark grey SILT. MGR	1
	4.00 - 4.60	ES					Pockets of light brown coarse sand containing shells.	2
				4.60			End of pit at 4.60 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No
TPC23
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456652.00 - 524517.00
Level:

Date
29/03/2017

Location: SSI Redcar

Dimensions (m):

4.2

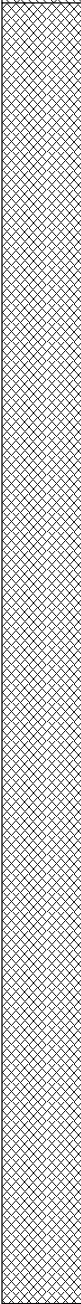
Depth
4.50

2.6

Scale
1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.20			MADE GROUND: Topsoil, grass over brownish grey gravelly SAND. Gravel is fine to coarse, subrounded to subangular of coke and slag, rare small red brick fragments TPS
	1.80 1.80	B ES					MADE GROUND: Grey with occasional dark grey laminations, sandy SILT with layers (pockets) of silty sand. Rare brick fragments (red) between 0.3 - 0.8m at the end away from excavator, with frequent cobbles of white slag. MGR
				4.50			End of pit at 4.50 m

1

2

3

4

5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPC24

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456700.00 - 524498.00

Level:

Date

28/03/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Depth
4.20

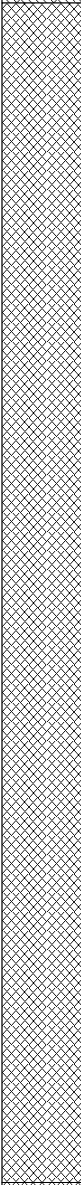
2.3

Scale

1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.30	ES		0.20			MADE GROUND: Topsoil TPS
	2.60	ES					MADE GROUND: Grey very sandy SILT with occasional dark grey laminations and layers (pockets) of silty sand. Between 2.5-2.6m layer 0.4m in thickness of light brown silty sand, feels like creamy texture. MGR
				4.10 4.20			MADE GROUND: Grey slightly gravelly silty SAND. Gravel is fine to coarse subrounded to subangular of coke. MGR
							End of pit at 4.20 m

1

2

3

4

5

Remarks:

Stability:





				Trial Pit Log			Trialpit No TPC26 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456787.00 - 524451.00 Level:		Date 28/03/2017	
Location: SSI Redcar				Dimensions (m):		3.6 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.60				Logged FLM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.90 - 1.00	ES					MADE GROUND: Grass over loose dark grey and brown thinly laminated to thickly bedded slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular of clinker, slag and occasional coal. Coarse sand includes coal, and occasional recovered as gravel and cobbled sized fragments MGR	1
				2.00			MADE GROUND: Loose/medium dense thinly laminated grey silty fine SAND. Recovered as gravel & cobble sized fragments (coal/coke breeze?) MGR	2
				2.30			MADE GROUND: Firm orange brown slightly gravelly CLAY (only on East side of pit). Gravel is fine, subangular to subrounded of possible sandstone, brick and occasional coal and other lithologies. MGR	
				2.90			MADE GROUND: Firm orange brown clay (in base and west wall of pit). Locally bands of silt and mottled yellow , grey and orange. Possibly reworked. MGR	3
				3.60			Stiff, locally water softened End of pit at 3.60 m	4
								5

Remarks:	
Stability:	

Trial Pit Log

Trialpit No

TPC27

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456841.00 - 524427.00

Level:

Date

24/03/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Depth
2.90

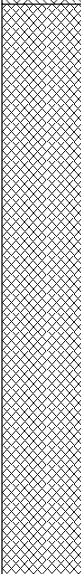
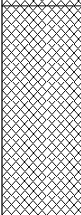
2.6

Scale

1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			MADE GROUND: Grass over blackish grey slightly gravelly silty sand with abundant rootlets. Gravel is medium to coarse subrounded to subangular of coke and slag. TPS
	1.50 - 1.80	B					MADE GROUND: Grey occasionally laminated dark grey sandy SILT with occasional layers (pockets) of silty sand MGR
	1.70	ES					MADE GROUND: Firm to stiff brown mottled orange slightly gravelly to gravelly CLAY Gravel is fine to coarse rounded to subangular of various lithologies including sandstone, possibly flint, light and dark grey stones. Occasional small brick fragments (red), 1 whole - 'Armitage 1957'. Rare small pockets of very dark grey organic material. MGR
				2.20			
				2.90			End of pit at 2.90 m

1

2

3

4

5

Remarks:

Stability:



				Trial Pit Log			Trialpit No TPC28 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456876.00 - 524415.00 Level:		Date 23/03/2017	
Location: SSI Redcar				Dimensions (m):		4.1 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.70				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.20			MADE GROUND: Grass and brambles over brownish grey slightly gravelly silty SAND with abundant rootlets. Gravel is fine to coarse subrounded to subangular of coke, rare shell fragments (snail) MGR MADE GROUND: Grey slightly laminated dark grey sandy SILT with layers (pockets) of silty sand MGR	1	
				1.70				MADE GROUND: Stiff brown mottled orange slightly gravelly to gravelly CLAY. Gravel is fine to coarse subrounded to subangular of various lithologies including sandstone, possibly flint, light brown and dark grey stones (igneous?). Occasional relict rootlets at top, occasional brick fragments (red) MGR	2
				2.50					MADE GROUND: Grey slightly gravelly sandy silt with layers (pockets) of slightly silty SAND. Sand layers are slightly brownish grey in colour. Gravel is medium to coarse, subrounded to subangular of coke MGR
				3.40	ES				
				3.70			End of pit at 3.70 m	4	
								5	

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456918.00 - 524395.00

Level:

Date

22/03/2017

Location: SSI Redcar

Dimensions
(m):

3.4

Depth
3.50

2.6

Scale
1:25Logged
EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES		0.10			MADE GROUND: Topsoil brown slightly sandy SILT TPS	
							MADE GROUND: Loose orange brown slightly silty SAND MGR	
	1.00 1.00	B ES		0.80			MADE GROUND: Soft slightly clayey sandy SILT. Rootlets and laminations of fine sand; suspected fines from coke MGR	1
								2
	2.50	ES		2.40			MADE GROUND: Firm brown slightly sandy slightly silty CLAY with occasional cobbles. (Suspected reworked natural as no evidence of lamination in wall of pit.) Containing brick made gravel MGR	
				2.60			MADE GROUND: soft grey slightly sandy gravelly SILT. MGR	3
							From 3.3m: groundwater fast inflow	
				3.50 3.50			MADE GROUND: Pockets of very soft CLAY to slightly gravelly CLAY. Gravel is fine to coarse of mixed lithologies. MGR	4
							End of pit at 3.50 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPC30

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456974.00 - 524385.00

Level:

Date

23/03/2017

Location: SSI Redcar

Dimensions
(m):

4.8

Depth
2.30

2.2

Scale

1:25

Logged

EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Topsoil TPS	
				0.20			MADE GROUND: Dense black sandy GRAVEL. Gravel is fine to coarse, angular of slag and coke MGR	
				0.60			MADE GROUND: Dense greyish brown & grey sandy GRAVEL. Occasional cobble of slag MGR	
							MADE GROUND: Firm to stiff brown mottled orange slightly sandy gravelly CLAY. Gravels composed of brick, sandstone and slag and coal MGR	1
	1.50 - 2.00	ES						
▼	2.10 - 3.00	ES		2.10			MADE GROUND: Loose grey sandy gravelly BOULDERS of slag. Hydrocarbon smell MGR	2
				2.30			From 2.3m: hydrocarbon odour. End of pit at 2.30 m	
								3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No
TPC32
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456545.00 - 524517.00
Level:

Date
29/03/2017

Location: SSI Redcar

Dimensions (m):

3.6

Client: Homes and Communities Agency

Depth
4.20

2.2

Scale
1:25
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Topsoil, grass over firm brown sandy CLAY with abundant rootlets. TPS	
							MADE GROUND: Grey with occasional dark grey laminations slightly gravelly sandy SILT with layers (pockets) of silty sand. Gravel is medium to coarse subangular of coke MGR	1
				3.50			MADE GROUND: Dark grey sandy GRAVEL. Gravel is fine to coarse, predominately fine, subrounded to subangular of black shiny material and rare slag. Occasional small brick fragments (red) MGR	2
				4.20			End of pit at 4.20 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPC33

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456603.00 - 524511.00

Level:

Date

29/03/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.60

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Topsoil TPS	
	2.00 - 2.60	ES					MADE GROUND: Loose blackish grey slightly silty SAND to sandy SILT. Slightly gravelly and thickly laminated in places MGR	1
				2.60				2
							MADE GROUND: Stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to rounded of various lithologies containing pockets of wood, brick, broken pipe, coal, (black sand). Contains brick and coke, occasional cobble of brick. Mottled orange - red in places MGR	3
				4.60				4
							End of pit at 4.60 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPC34

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456652.00 - 524445.00

Level:

Date

30/03/2017

Location: SSI Redcar

Dimensions
(m):Depth
4.50

Scale

1:25

Logged

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	ES					MADE GROUND: Soft to firm brown mottled orange slightly sandy slightly silty gravelly CLAY. Gravel is fine to coarse angular to subrounded of coke, possible tar and brick. Frequent rootlets and occasional cobbles of coke. Occasional boulders. MGR	1
				2.40				2
	4.00	ES					MADE GROUND: Medium dense grey thickly laminated slightly gravelly slightly silty SAND. Gravel is fine of coke. Slight hydrocarbon odour. MGR	3
				4.50				4
▼							End of pit at 4.50 m	5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPC36 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456741.00 - 524428.00 Level:		Date 28/03/2017	
Location: SSI Redcar						Dimensions (m): 4.8 		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.00		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20		[Pattern]	MADE GROUND: Slightly gravelly silty SAND. Gravel is medium to coarse subrounded to subangular of coke MGR	1
				0.90			MADE GROUND: Grey very sandy SILT with layers (pockets) of silty sand MGR	
	1.10	ES		1.30		[Pattern]	MADE GROUND: Firm to stiff brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse rounded to subangular of various lithologies including sandstone, slag Occasional red brick fragments MGR	2
	2.00	ES					MADE GROUND: Slightly gravelly sandy silt with layers (pockets) of silty SAND. Gravel is medium to coarse subrounded to subangular of coke MGR	
				3.00		[Pattern]	From 1.3m: Strong noxious smell like burnt rubber	3
							End of pit at 3.00 m	
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456768.00 - 524398.00
Level:Date
28/03/2017

Location: SSI Redcar

Dimensions
(m):Depth
5.00Scale
1:25Logged
FLM

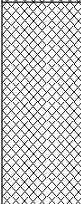
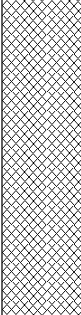
Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 - 0.50	ES		0.20			MADE GROUND: grass over brown topsoil TPS	
							MADE GROUND: loose dark grey silty fine SAND with medium boulder content of tyres. Sand possibly coke dust and thinly laminated. Rootlets MGR	
				1.00				1
	1.70 - 1.90	ES					MADE GROUND: Loose grey silty SAND. Strong odour below 1.5m (rotten eggs to organic, acidic burnt rubber smell). MGR	
							<i>Becoming dark grey / black in colour</i>	
				1.90			MADE GROUND: Firm to stiff orange brown slightly sandy slightly gravelly silt CLAY. Gravel is fine and medium subangular of limestone, possible sandstone, occasional coal and red brick. MGR	2
							<i>Odour much stronger below 2.5m</i>	
							<i>Perched water with slight odour as strata above. Clay appears in north wall from 2m in north wall, of pit, but much deeper in south wall c. 4.2-4.5mbgl.</i>	
							<i>Locally wet black grey sloppy (very soft) clay.</i>	3
	3.20	ES						
	3.30 - 3.40	ES					<i>Locally black.</i>	
								4
				4.50			MADE GROUND: Loose grey silty SAND. MGR	
				5.00				5
							End of pit at 5.00 m	

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPC38 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 465827.00 - 524404.00 Level:		Date 28/03/2017	
Location: SSI Redcar						Dimensions (m): 3.5 2.6		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.80		Logged LK	

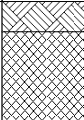
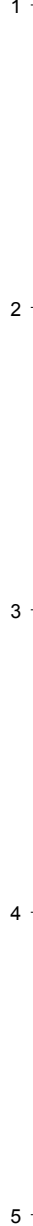
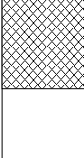
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.30			MADE GROUND: Grass and few brambles over brownish grey silty SAND with abundant rootlets MGR	1
							MADE GROUND: Grey and dark grey laminated slightly gravelly sandy SILT with layers (pockets) of silty sand. Gravel is medium to coarse subrounded to subangular of coke. One piece of cardboard. Strong antiseptic smell towards the bottom. MGR	
	1.60	ES		1.70			MADE GROUND: Stiff brown mottled orange slightly gravelly to gravelly CLAY. Gravel is fine to coarse subrounded to subangular of various lithologies including sandstone, possibly flint, light grey and dark grey rocks (igneous?), black shiny rock. Frequent relict rootlets at top, occasional small red brick fragments. Possible drain, terminated at 2.8m MGR	
				2.80			End of pit at 2.80 m	3
								4
								5

Remarks:

Stability:



				Trial Pit Log			Trialpit No TPC39 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456858.00 - 524371.00 Level:		Date 23/03/2017	
Location: SSI Redcar				Dimensions (m): Depth 4.60		4.3 		Scale 1:25 Logged LK	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over brownish grey slightly gravelly slightly silty SAND with abundant rootlets. Gravel is fine to coarse subangular of slag and coke. TPS	
				0.40			MADE GROUND: Grey slightly gravelly silty SAND. Gravel is medium to coarse subangular of various lithologies including coke, Rare brick fragments (red) MGR	
							MADE GROUND: Grey slightly laminated dark grey slightly gravelly SAND with layers of silty sand. Gravel is medium to coarse subangular of coke. MGR	
	3.50	ES						
				4.30				
				4.60			MADE GROUND: Firm to stiff brown mottled orange slightly gravelly CLAY with frequent relict rootlets. Gravel is fine to coarse subrounded to subangular of various lithologies including sandstone, possibly flint, slag. Possibly occasional gravel-sized red brick fragments (weathered, crumbles away easy) MGR	
							End of pit at 4.60 m	

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPC40

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456903.00 - 524363.00

Level:

Date

22/03/2017

Location: SSI Redcar

Dimensions
(m):

3.9

Depth
2.70

2.4

Scale

1:25

Logged

LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES		0.10			MADE GROUND: Grass over dark brownish grey sandy SILT with abundant rootlets TPS MADE GROUND: Grey slightly gravelly silty SAND. Gravel is medium to coarse subrounded to subangular of various lithologies, including sandstone & possibly coke MGR	
				0.90			MADE GROUND: Grey slightly gravelly sandy silt with pockets of silty SAND. Gravel is medium subangular of coke, occasional pockets of very dark grey material. Rare metal fragments MGR	1
	2.50	ES		2.10			MADE GROUND: Firm to stiff greyish brown slightly gravelly to gravelly CLAY. Gravel is fine to coarse rounded to subangular of various lithologies, including sandstone, slag. Abundant bricks, predominately red, rare refractory brick ((50/50) whole / broken) frequent wood and plastic fragments, occasional scrap metal fragments. Rare pottery fragments. MGR	2
				2.70			End of pit at 2.70 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No
TPC41
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456957.00 - 524341.00
Level:

Date
22/03/2017

Location: SSI Redcar

Dimensions
(m):

3.6

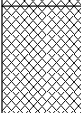
Scale
1:25

Client: Homes and Communities Agency

Depth
1.80

2.7

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.80 - 1.10	ES		0.10			MADE GROUND: Topsoil TPS	1
							MADE GROUND: Very dense black / brown slightly sandy GRAVEL. Gravel fine to coarse angular of slag and crushed brick MGR	
				0.80			MADE GROUND: loose grey slightly sandy GRAVEL. Gravel is fine to coarse angular of slag. Cobbles angular of slag MGR	
				1.10			<i>Very fast water inflow - pit full in 45 mins</i> MADE GROUND: firm brown slightly gravelly CLAY. Gravel is fine and medium of various lithologies including slag and brick. MGR	
				1.80			End of pit at 1.80 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456005.00 - 524921.00

Level:

Date

12/04/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

Depth
2.50Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 - 0.60	ES		0.30			MADE GROUND: Loose black slightly silty sandy GRAVEL. Gravel is fine to coarse, angular to rounded of slag and coal with bits of plastic and metal wire (coal and coal dust) MGR	
				0.60			MADE GROUND: Medium dense dark brown and grey silty fine to coarse, angular to sub rounded, SAND & GRAVEL with low cobble content MGR	
	1.20 - 1.80	B		1.20			MADE GROUND: Loose, yellow gravelly fine to coarse SAND. Gravel is fine to medium of various lithologies including shells (Possible hydraulic fill) MGR	1
							MADE GROUND: Loose yellow fine to coarse SAND & GRAVEL. Gravel is angular to rounded of various lithologies including abundant shell fragments. MGR	
							<i>From 1.8m: Becomes less gravelly</i>	2
				2.50			End of pit at 2.50 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No
TPD02
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456092.00 - 524883.00
Level:

Date
12/04/2017

Location: SSI Redcar

Dimensions (m):

3.7

Scale
1:25

Client: Homes and Communities Agency

Depth
2.80

2.3

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20 - 0.70	LB		0.20			MADE GROUND: Coal dust, loose black, silty, very gravelly fine to coarse SAND, gravel is fine to coarse of coal coke and rare slag MGR	
				0.70			MADE GROUND: Loose to medium dense brown silty very gravelly fine to coarse SAND, Gravel is fine to coarse angular to subangular of slag & brick (refractory brick) with medium cobble and low boulder content MGR	1
	2.50 - 2.80	ES		2.80			MADE GROUND: loose yellow very gravelly fine to coarse SAND, Gravel is angular to rounded fine to coarse of shell fragments and various waste MGR	2
							End of pit at 2.80 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPD03

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 465172.00 - 524853.00

Level:

Date

12/04/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.70

2.6

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.00 - 0.30	ES					MADE GROUND: Loose black silty very gravely fine to coarse SAND. (coal dust) Gravel is fine to coarse angular to subangular of coke, coal and slag, rare rootlets are present MGR	
	0.30 - 0.70	ES		0.30			MADE GROUND: Medium dense, grey brown, slightly silty fine to coarse, angular to subrounded SAND & GRAVEL & refractory brick MGR	
				0.70			MADE GROUND: Loose, yellow brown , gravelly fine to coarse SAND, gravel is fine to coarse of various lithologies & shells. Slightly damp at depth. Side walls unstable, terminated MGR	1
								2
								3
				2.70			End of pit at 2.70 m	4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No
TPD04
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456272.00 - 524782.00
Level:

Date
13/04/2017

Location: SSI Redcar

Dimensions
(m):

Scale
1:25

Client: Homes and Communities Agency

Depth
2.50

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40 - 0.50	ES		0.40			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND (coal dust). Gravel is fine to coarse of coal, coke and slag MGR	
				0.70			MADE GROUND: Loose to medium dense dark brown slightly silty fine to coarse SAND & GRAVEL. Gravel is fine to coarse angular to subrounded of slag MGR <i>Becoming light grey</i>	
							MADE GROUND: Loose yellow, gravelly, fine to coarse SAND, Gravel is fine to coarse of angular to rounded various lithologies and shells. (Hydraulic fill) MGR	1
				2.50			End of pit at 2.50 m	2
								3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPD05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456345.00 - 524756.00

Level:

Date

13/04/2017

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
2.10

2.2

Logged
JNB

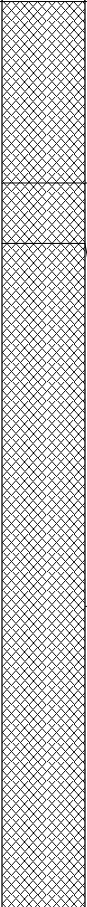
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.30	ES		0.10			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND (coal dust). Gravel is fine to coarse of coal and coke. MGR	
				0.30			MADE GROUND: Medium dense dark brown very gravelly fine to coarse SAND. Gravel is fine to coarse of slag, coke and coal. MGR	
				0.80			MADE GROUND: Medium dense light brown grey fine to coarse SAND & GRAVEL. Gravel is fine to coarse, angular to subangular of slag and rare refractory brick. Low cobble and boulder content. MGR	
							MADE GROUND: Loose yellow brown gravelly fine to coarse SAND. Gravel is fine to coarse of various lithologies and shells. MGR	1
				2.10			End of pit at 2.10 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log			Trialpit No TPD06 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456424.00 - 524727.00 Level:		Date 18/04/2017	
Location: SSI Redcar				Dimensions (m):		3.4		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.00				Logged AC	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	ES		0.60			MADE GROUND: Black to dark grey very sandy fine GRAVEL of clinker and brick. Frequent fine to coarse angular to subrounded gravel of coal, occasional fragments of wood. MGR	
				0.80			MADE GROUND: Light grey very sandy very gravelly COBBLES and BOULDERS of slag. Gravel is fine to coarse subangular to angular of slag with light orangeish brown sand. MGR	
							MADE GROUND: Light yellow brown SAND, with occasional light grey/black thin bands. Damp. MGR	1
								2
				3.00				3
								4
								5

Pit sides unstable

End of pit at 3.00 m

Remarks:



Stability:

Trial Pit Log

Trialpit No

TPD07

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456037.00 - 524863.00

Level:

Date

12/04/2017

Location: SSI Redcar

Dimensions
(m):

3.2

Scale

1:25

Client: Homes and Communities Agency

Depth
2.50Logged
LK

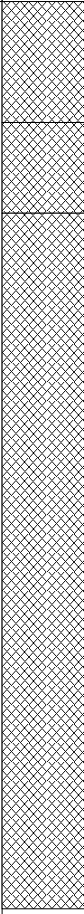
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20			MADE GROUND: Dark grey slightly silty slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal and coke. MGR	
				0.60			MADE GROUND: Brown gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular predominately. Subangular of slag. Cobbles and boulders of slag occasional brick fragments (refractory / red 50/50) MGR	
							MADE GROUND: Yellow occasionally laminated dark grey slightly gravelly SAND. Gravel is fine to coarse rounded to subangular of beach pebbles and slag. Frequent shells, predominately broken. Occasional layers of abundant shells, predominately, broken. TP terminated due to sides collapsing MGR	1
							From 2.5m: pit dimensions 2.0 x 3.2m	
	2.20	ES		2.50			End of pit at 2.50 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPD08 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456123.00 - 524832.00 Level:		Date 12/04/2017	
Location: SSI Redcar						Dimensions (m): 3.4 2.2 		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.00		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50	ES		0.40			MADE GROUND: Dark grey slightly silty slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal and coke. MGR	
				0.70			MADE GROUND: Brownish grey very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular, predominately subangular of slag. Cobbles and boulders of slag occasional brick fragments (70% red / 30% refractory). MGR	
				3.00			MADE GROUND: Yellow occasionally laminated dark grey slightly gravelly sand. Gravel is medium subangular of slag. Very small shell fragments throughout. MGR	
							Orangeish brown in colour	
							End of pit at 3.00 m	

Remarks:

 Stability:



				Trial Pit Log			Trialpit No TPD09 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456214.00 - 524792.00 Level:		Date 12/04/2017	
Location: SSI Redcar				Dimensions (m):		3 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.70				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal and coke. MGR	
				0.30			MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal, slag and coke. Frequent small brick fragments (red / refractory 50/50) MGR	
				0.60			MADE GROUND: Brownish grey very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular, predominately subangular of slag. Cobbles and boulders of slag MGR	
				2.70			MADE GROUND: Yellow occasionally laminated dark grey slightly gravelly SAND. Gravel is fine to coarse rounded to subangular of beach pebbles and slag. Frequent shell fragments predominately broken. Occasional layers of abundant shells, predominately broken and occasional beach pebbles. MGR	

1

2

3

4

5

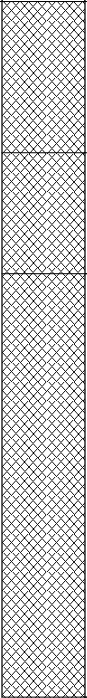
End of pit at 2.70 m

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPD10 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456308.00 - 524753.00 Level:		Date 13/04/2017	
Location: SSI Redcar				Dimensions (m):		3.7 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.30				Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50 - 0.90	LB		0.50			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND (coal dust). Gravel is fine to coarse, angular to sub-angular of coke and coal MGR	1 2 3 4 5
				0.90			MADE GROUND: Medium dense light grey brown sandy angular to subrounded, fine to coarse GRAVEL of slag, brick and rare coal with medium cobble and boulder content MGR	
							MADE GROUND: Loose yellow brown slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to rounded of various lithologies. At depth occasional layers of loose, black, medium to coarse , angular to subangular SAND, possibly coal dust. (Hydraulic fill) MGR	
	2.00 - 2.30	ES		2.30			<i>From 2.3m: pit dimensions 2.3 x 2.3 x 3.7 - W.D.L - slow water inflow at base of hole</i>	
	End of pit at 2.30 m							

Remarks:

Stability:

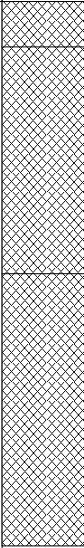


				Trial Pit Log			Trialpit No TPD11 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456402.00 - 524720.00 Level:		Date 13/04/2017	
Location: SSI Redcar				Dimensions (m):		3.7 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.30		2.2		Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.50			MADE GROUND: Dense to medium dense black slightly silty very gravelly fine to coarse SAND (Coal dust). Gravel is angular to subangular, fine to coarse of coal slag, cobble & rare brick, with low cobble and boulder content of weakly cemented coal dust. MGR	
				0.90			MADE GROUND: Medium dense light grey brown fine to coarse angular to sub-angular SAND & GRAVEL of slag, rare brick, low cobble and boulder content of slag MGR	
				2.20			MADE GROUND: Loose yellow gravelly medium to coarse SAND. Gravel is angular to subrounded, fine to coarse of various lithologies. Occasional bands of darker material, possibly coal dust. (Hydraulic fill) Water steady seepage from 2m MGR	1
							End of pit at 2.30 m	2
								3
								4
								5

Remarks:		
Stability:		

				Trial Pit Log				Trialpit No TPD12 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455967.00 - 524844.00 Level:		Date 06/04/2017	
Location: SSI Redcar						Dimensions (m): 3.6 2.2		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.80		Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.15			MADE GROUND: Loose to medium dense black sandy fine to coarse, angular to sub-angular GRAVEL, Gravel is of coal / slag. (Coal dust) MGR	
	0.90 - 1.80	B		0.90			MADE GROUND: Medium dense to dense grey and brown sandy angular to sub-angular fine to coarse GRAVEL with medium cobble content and low boulder content. Gravel is of slag and refractory brick MGR	1
	1.80 - 2.80	ES		1.80			MADE GROUND: Very loose to loose yellow brown slightly gravelly medium to coarse SAND. Gravel is fine to coarse, rounded to sub-angular of various lithologies. MGR	2
							End of pit at 2.80 m	3
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456016.00 - 524826.00

Level:

Date

06/04/2017

Location: SSI Redcar

Dimensions
(m):

3.5

Scale

1:25

Client: Homes and Communities Agency

Depth
2.50

2.1

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20 - 0.70	ES		0.20			MADE GROUND: Loose to medium dense black slightly silty sandy fine to coarse sub-angular to subrounded GRAVEL of coal and slag (Coal dust). MGR	
				0.70			MADE GROUND: Medium dense brown and light grey sandy angular to subangular fine to coarse GRAVEL of slag and rare brick. Low to medium cobble and low boulder content MGR	
	1.50 - 2.50	ES					MADE GROUND: Loose to very loose light brown grey gravelly medium to coarse to subangular SAND. Gravel is fine to coarse rounded to angular of various lithologies and with low cobble and boulder content . (Hydraulically placed fill) MGR	1
								2
				2.50			End of pit at 2.50 m	3
								4
								5

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456108.00 - 524782.00

Level:

Date

06/04/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Scale

1:25

Client: Homes and Communities Agency

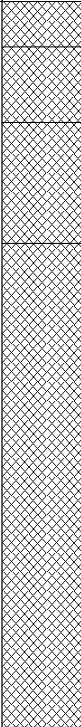
Depth
2.50Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.40			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to subangular of coal. (Coal dust) MGR	
	0.80 - 1.40	ES		0.80			MADE GROUND: Loose to medium dense light brown slightly very sandy fine to coarse angular to subangular GRAVEL of slag. Low cobble and boulder content MGR	
	1.40 - 2.40	ES					MADE GROUND: Loose light grey gravelly fine to coarse SAND. Gravel is fine to coarse, angular to subrounded of shell fragments and slag. MGR <i>From 1.4m: becoming light brown with occasional darker bands and low cobble content of slag.</i>	1
				2.50			End of pit at 2.50 m	2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPD16 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456157.00 - 524767.00 Level:		Date 06/04/2017	
Location: SSI Redcar						Dimensions (m): 3.6 Depth 2.40		Scale 1:25 Logged JNB	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.15 - 0.90	ES		0.15			MADE GROUND: Loose, black, slightly silty, fine to coarse, angular to subangular SAND & GRAVEL. Gravel is of coal (Coal dust). MGR	1 2 3 4 5
				0.40			MADE GROUND: Loose to medium dense dark brown slightly silty very gravelly fine to coarse SAND. Gravel is fine coarse, angular to subrounded of coal, slag, brick. MGR	
				0.80			MADE GROUND: Loose to medium dense yellow brown sandy angular to subangular fine to coarse GRAVEL of slag with medium cobble content and low boulder content and sulphur odour MGR	
							MADE GROUND: Loose yellow slightly gravelly fine to coarse SAND with low cobble content. Gravel is fine to coarse angular to sub-angular of slag and occasional pebbles of poorly cemented sands and sandstone (rounded). MGR	
	1.60 - 2.40	ES					Becoming dark grey with less gravel.	
				2.40			End of pit at 2.40 m	

Remarks:

Stability:



Trial Pit Log

Trialpit No
TPD17
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456202.00 - 524747.00
Level:

Date
07/04/2017

Location: SSI Redcar

Dimensions
(m):

3.2

Scale
1:25

Client: Homes and Communities Agency

Depth
2.90

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.40			MADE GROUND: Dark brown slightly clayey gravelly SAND. Gravel is fine to medium subrounded to subangular of coal and coke, rare small brick fragments (red) MGR	
				0.80			MADE GROUND: Light brown sandy GRAVEL with medium cobble content. Gravel is fine to coarse subrounded to subangular, predominately subangular of slag. Cobbles of slag. MGR	
				1.70			MADE GROUND: Yellow speckled grey slightly laminated SAND. Occasional small shell fragments, 1 plastic bag fragment MGR	1
				2.80			MADE GROUND: Yellowish grey laminated dark grey silty SAND. Very small shell fragments throughout. Occasional small pockets of dark grey/black organic material. MGR	2
	2.80	ES		2.90			End of pit at 2.90 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPD18 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456251.00 - 524729.00 Level:		Date 07/04/2017	
Location: SSI Redcar						Dimensions (m): 3.4 2.2		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.60		Logged LK	

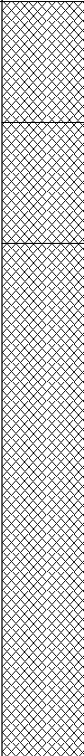
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES					MADE GROUND: Dark grey slightly silty gravelly SAND with low cobble content. Gravel is fine to coarse subrounded to subangular of coal and coke, cobbles of coal and coke. Rare small red brick fragments. MGR	1
	0.50 0.50 - 0.80	ES B		0.40			MADE GROUND: Light brown sandy GRAVEL with medium cobble content. Gravel is fine to coarse subangular of slag. Cobbles and boulders of slag, some pieces of cobbles have traces of iron. MGR	
				0.90			MADE GROUND: Yellow occasionally laminated dark grey SAND. Very small shell fragments throughout. MGR	
				1.50			MADE GROUND: Grey laminated silty SAND with occasional pockets of dark grey organic material. Very small shell fragments throughout MGR	
				2.60			End of pit at 2.60 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPD19 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456300.00 - 524709.00 Level:		Date 07/04/2017	
Location: SSI Redcar						Dimensions (m):		3.3 	
Client: Homes and Communities Agency						Depth 2.50		Scale 1:25 Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20 - 0.40	ES		0.40			MADE GROUND: Loose black slightly silty fine to coarse angular to subangular SAND and GRAVEL. Gravel is poorly cemented coal dust, coke, coal and slag. MGR <i>Becoming brown with de</i>	1
				0.80			MADE GROUND: Medium dense yellow brown sandy fine to coarse angular to subangular GRAVEL of slag and refractory brick. Medium cobble and low boulder content. MGR	
							MADE GROUND: Loose yellow slightly gravelly fine and medium SAND. Gravel is fine to coarse of slag. Gravel may be from overlying strata. MGR	
	1.50 - 2.50 1.50 - 2.50	B ES					<i>Becoming dark grey with sulphur odour</i>	2
				2.50			End of pit at 2.50 m	3
								4
								5

Remarks:		
Stability:		



Trial Pit Log

Trialpit No
TPD21
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456389.00 - 524673.00
Level:

Date
10/04/2017

Location: SSI Redcar

Dimensions (m):

3.7

Depth
1.70

2.2

Scale
1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.50	ES		0.50			MADE GROUND: Dark brown gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal, coke and slag, slightly shiny. MGR	1
							MADE GROUND: Light brown sandy gravel with medium cobble content. Gravel is fine to coarse subrounded to subangular, predominately subangular of slag. Cobbles of slag. Rare wood and plastic fragments, rare brick fragments (red / refractory) One large boulder. MGR	
				1.30				
				1.70			MADE GROUND: Firm to stiff brown mottled dark grey slightly sandy slightly gravelly CLAY. Gravel is fine to medium rounded to subangular of various lithologies including slag, sandstone, coal. MGR	2
							End of pit at 1.70 m	
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456422.00 - 524659.00

Level:

Date

10/04/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.90 - 2.00	ES		0.90			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse, angular to subangular of coke and coal. MGR	
	2.00 - 3.00 2.00 - 3.00	B D					MADE GROUND: Firm to stiff mottled brown and grey slightly sandy gravelly silty CLAY. Gravel is fine to coarse of brick, coal, slag with rate metal rods (400mm long, 25mm dia). MGR	1
								2
								3
	3.80 - 4.00	ES		3.80			MADE GROUND: Loose black slightly silty fine to coarse SAND. Possible hydrocarbon odour within a clay at interface. MGR	4
				4.00			End of pit at 4.00 m	5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPD24 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455998.00 - 524774.00 Level:		Date 11/04/2017	
Location: SSI Redcar						Dimensions (m): 3.5 		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.10		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼	0.70 0.80 - 1.10	ES B		0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse subrounded to subangular of coal and coke and slag. MGR	1	
				0.50					MADE GROUND: Light brown SAND & GRAVEL with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular, predominately subangular of slag cobbles and boulders of slag. MGR
▼				1.20			MADE GROUND: Brown slightly clayey gravelly SAND with medium cobble and boulder content. Rare large boulders. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag. Frequent brick fragments (70% refractory / 30% red) rare wood fragments MGR	2	
				1.60					MADE GROUND: Soft dark grey mottled brown silty CLAY MGR
	1.90	ES		2.10					MADE GROUND: White grey slightly clayey slightly sandy GRAVEL with medium cobble and boulder content. Gravel is fine to coarse subangular of slag, cobbles and boulders of slag. Occasional soft dark grey silty clay pockets, Occasional brick fragments (red / refractory 50/50) MGR
							End of pit at 2.10 m		

Remarks:

 Stability:



				Trial Pit Log				Trialpit No TPD25 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456047.00 - 524754.00 Level:		Date 11/04/2017	
Location: SSI Redcar						Dimensions (m): 4.3 		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.00		Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20 - 0.60	ES		0.20			MADE GROUND: Loose black slightly silty gravelled fine to coarse SAND. Gravel is fine to coarse angular to subangular of coke, coal and slag. (Coal dust) MGR	1
				0.60			MADE GROUND: Loose to medium dense grey brown slightly silty fine to coarse SAND and GRAVEL. Gravel is fine to coarse angular to subrounded of slag, brick and coal. MGR	
				1.10			MADE GROUND: Soft to very soft mottled black and dark green slightly sandy, gravelly silty CLAY with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag and rare brick and coal. MGR	
				1.70			MADE GROUND: Medium dense to dense blue green sandy clayey fine to coarse angular to subrounded GRAVEL of slag and rare brick with medium cobble and low boulder content. MGR	
	1.70 - 3.00 1.70 - 3.00	D ES		1.70			MADE GROUND: Very soft to soft dark brown slightly sandy gravelly CLAY with high cobble and boulder content. Gravel is fine to coarse angular to subrounded of slag. MGR	2
			3.00		End of pit at 3.00 m		3	
								4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPD26

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456092.00 - 524737.00

Level:

Date

11/04/2017

Location: SSI Redcar

Dimensions
(m):

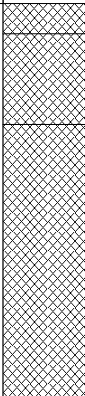
3.9

Scale

1:25

Client: Homes and Communities Agency

Depth
1.30Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	1.00 - 1.30	ES		0.10			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to subangular of of coke, coal and slag. (Coal dust) MGR
				0.40			MADE GROUND: Medium dense light brown slightly silty very sandy fine to coarse angular to subrounded GRAVEL of slag and coke. MGR
				1.30			MADE GROUND: Medium dense red brown silty fine to coarse SAND and GRAVEL. Gravel is fine to coarse angular to subrounded of slag, coke, brick and rare lime. MGR
							Becoming black in colour with potential hydrocarbon contamination.
							End of pit at 1.30 m
		</					

1

2

3

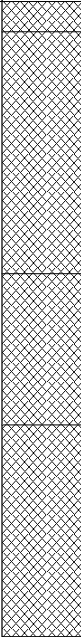
4

5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPD27 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456136.00 - 524718.00 Level:		Date 11/04/2017	
Location: SSI Redcar				Dimensions (m):		4		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.20				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.00 - 1.30 1.10	LB ES		0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse subangular of coke, slag and rare coal MGR	1
				0.90			MADE GROUND: Brown very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular, predominately. Subangular of slag. Cobble and boulder of slag. Occasional pockets of soft dark grey silty sand. Frequent brick fragments (red / refractory 50/50) between 0.3-0.6m, layers of abundant bricks. MGR	
				1.40			MADE GROUND: Light white grey sandy GRAVEL with high cobble and medium boulder content. Gravel is fine to coarse subrounded to subangular of white/greyish slag. Cobbles and boulders of white/greyish slag. MGR	
				2.10			MADE GROUND: Dark grey slightly sandy clayey GRAVEL with medium cobble, low boulder content and frequent soft silty clay pockets. Gravel is fine to coarse subrounded to subangular, predominately. Subangular of slag, some greyish / white slag. Cobbles and boulders of slag, some greenish / white slag. MGR	
							End of pit at 2.20 m	2
								3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPD29

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456232.00 - 524681.00

Level:

Date

10/04/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
1.60

2.2

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.20	ES		0.05			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to subangular of coke, coal and slag MGR	1
				0.40			MADE GROUND: Loose to medium dense, grey brown silty/clayey very sandy fine to coarse, angular to subangular GRAVEL with medium cobble and boulder content, Gravel is of slag, brick. MGR	
				1.20			MADE GROUND: Loose to medium dense red/orange silty/clayey very sandy GRAVEL with large pockets of clay. Clay is soft mottled black, grey and orange, silty CLAY.. Gravel is fine to coarse angular to subangular of slag and brick. MGR <i>Becoming black.</i>	
				1.60			MADE GROUND: Medium dense grey silty/clayey very sandy GRAVEL. Gravel is fine to coarse, angular to subangular of slag and brick. MGR <i>From 1.2m: Rapid inflow of water</i>	
							End of pit at 1.60 m	2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPD30 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456278.00 - 524666.00 Level:		Date 10/04/2017	
Location: SSI Redcar						Dimensions (m):		3.9 	
Client: Homes and Communities Agency						Depth 2.00		Scale 1:25 Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.70	ES		0.10		[Pattern]	MADE GROUND: Dark brown slightly silty gravelly SAND with occasional rootlets. Gravel is fine to coarse, subrounded to subangular of coke, slag and coal MGR	1
				1.20			MADE GROUND: Brown very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular of slag. Occasional brick fragments (red / refractory 50/50) one large boulder. MGR <i>Becoming orangeish red, slightly clayey and with medium boulder content.</i>	
	1.60	ES B		2.00		[Pattern]	MADE GROUND: Grey mottled light grey slightly sandy clayey to very clayey GRAVEL with medium cobble and medium boulder content and frequent soft dark grey silty clay pockets. Gravel is fine to coarse subrounded to subangular of slag, white/light grey slag. Rare brick fragments (red / refractory) MGR	2
	1.70 - 2.00						End of pit at 2.00 m	
								3
								4
								5

Remarks:	
Stability:	

Trial Pit Log

Trialpit No

TPD31

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456321.00 - 524644.00

Level:

Date

10/04/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
1.70Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.10			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to subangular of coke, coal and slag. (Coal dust) MGR	
				0.40			MADE GROUND: Medium dense light brown silty very sandy fine to coarse angular to subangular GRAVEL of slag with medium cobble content and low boulder content MGR	
	0.65 - 1.00	B		0.65			Becoming red/orange MADE GROUND: Firm mottled brown and black slightly sandy, gravelly silty CLAY. Gravel is angular to subrounded of slag, coal, brick with low cobble content. MGR	
	1.00 - 1.70	ES		1.00			MADE GROUND: Loose to medium dense brown clayey/silty fine to coarse angular to subrounded SAND & GRAVEL. Gravel is fine to coarse of slag. MGR	1
				1.70			MADE GROUND: Medium dense light grey clayey/silty very sandy GRAVEL. Gravel is fine to coarse angular to subrounded of slag with medium cobble & low boulder content. Possible slight hydrocarbon sheen on gravel and water. MGR From 1.5m: Rapid inflow of water End of pit at 1.70 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456369.00 - 524630.00

Level:

Date

10/04/2017

Location: SSI Redcar

Dimensions
(m):

3.3

Scale

1:25

Client: Homes and Communities Agency

Depth
1.70

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Dark brown slightly silty gravelly SAND with occasional rootlets. Gravel is fine to coarse, subrounded to subangular of coke, slag. MGR	
	0.50	ES					MADE GROUND: Brown slightly clayey SAND and GRAVEL with medium cobble, low boulder content and with occasional pockets of firm to stiff brown mottled light grey slightly sandy slightly gravelly clay. Gravel is fine to medium rounded to subangular of various lithologies including sandstone and beach pebble. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag. MGR	
	1.00	ES		1.00			MADE GROUND: Layers of COBBLES of slag MGR	1
	1.30 - 1.60	LB					MADE GROUND: No info MGR	
				1.70			End of pit at 1.70 m	
								2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456400.00 - 524624.00

Level:

Date

10/04/2017

Location: SSI Redcar

Dimensions
(m):

3.9

Scale

1:25

Client: Homes and Communities Agency

Depth
1.50

2.2

Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.00 - 1.50	ES		0.20			MADE GROUND: Loose black slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to subangular of coal, coke, and slag and poorly cemented coal dust. (Coal dust) MGR	
	1.00 - 1.50	LB		0.60			MADE GROUND: Medium dense light grey and brown silty very sandy GRAVEL. Gravel is fine to coarse, angular to subangular of slag, brick. Low cobble content MGR	
				1.50			MADE GROUND: Medium dense brown silty/clayey fine to coarse angular to subangular, SAND & GRAVEL. Gravel is of slag (dark green in parts). MGR <u>Becoming green grey.</u>	1
							End of pit at 1.50 m	2
								3
								4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPD35 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455973.00 - 524732.00 Level:		Date 05/04/2017	
Location: SSI Redcar						Dimensions (m): 2.2 3.4		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.90		Logged JNB	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.00 - 0.20	ES						
				0.80		X	MADE GROUND: Medium dense to dense light grey sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag, medium cobble content, low boulder content. (Required breaking with excavator bucket.) MGR	1
				1.20		X	MADE GROUND: Medium dense to dense black SAND and GRAVEL with low cobble content. Gravel is fine to coarse angular to subangular of slag. MGR	
				1.60		X	MADE GROUND: Soft mottled black & brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse of slag and refractory brick, low cobble content. MGR	
	1.80 - 1.90	ES		1.90		X	MADE GROUND: Medium dense black and light grey slightly silty SAND & GRAVEL with medium cobble content and low boulder content. Gravel is of slag and refractory brick, occasional pockets of clay. MGR	2
From 1.9m: pit dimensions 2.2 x 3.4 x 1.9 Possible hydrocarbon sheen End of pit at 1.90 m								
								3
								4
								5

Remarks:

Stability:





Trial Pit Log

Trialpit No

TPD37

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456061.00 - 524700.00

Level:

Date

04/04/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Scale

1:25

Client: Homes and Communities Agency

Depth
1.50

2.2

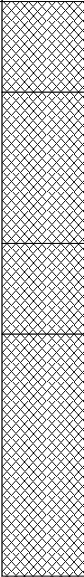
Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.90 - 1.20	ES		0.20			MADE GROUND: Medium dense black gravelly SAND with low cobble content. Gravel is fine to coarse, subangular to angular of coke, slag and brick. MGR MADE GROUND: Medium dense dark brown and red SAND & GRAVEL with medium cobble content and low boulder content. Gravel is of slag. Hydrocarbon odour, slightly damp. MGR <i>Becoming black and light brown in colour with sulphur odour.</i>	1
				0.90			MADE GROUND: Soft to firm, mottled black and light brown, slightly sandy, silty CLAY MGR	
				1.20			MADE GROUND: Dark brown clayey very sandy GRAVEL, slight hydrocarbon odour. Gravel is fine to coarse, subrounded to subangular MGR	
				1.40			MADE GROUND: Medium dense to dense black sandy GRAVEL with medium cobble content and low boulder content. Gravel is fine to coarse. MGR	
				1.50			MADE GROUND: Medium dense to dense black sandy GRAVEL with medium cobble content and low boulder content. Gravel is fine to coarse. MGR End of pit at 1.50 m	

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPD38 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456104.00 - 524679.00 Level:		Date 04/04/2017	
Location: SSI Redcar						Dimensions (m): 4 Depth 1.90		Scale 1:25	
Client: Homes and Communities Agency								Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼	0.50	ES		0.30			MADE GROUND: Dark grey gravelly SAND with medium cobble content. Gravel is fine to coarse subrounded to subangular of slag and coke. Cobbles of slag, rare small brick fragments (red / refractory) slightly shinny. MGR
				0.80			MADE GROUND: Orangeish brown sandy GRAVEL with medium cobble content. Gravel is fine to coarse subrounded to subangular of slag and some coke. MGR <i>Between 0.3-0.5 on the left side looking at excavator, layer of abundant refractory bricks.</i>
				1.10			MADE GROUND: Firm dark grey slightly gravelly CLAY. Gravel is fine to medium subangular of slag. MGR
		1.80	ES		1.90		
							End of pit at 1.90 m

Remarks:

 Stability:





Trial Pit Log

Trialpit No

TPD40

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456199.00 - 524641.00

Level:

Date

03/04/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
1.90

2.2

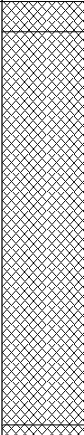
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.00	ES		0.10			MADE GROUND: Topsoil TPS	1
				0.40			MADE GROUND: Light brown very gravelly SAND with medium cobble content. Gravel is fine to coarse subrounded to subangular of slag. Cobbles of slag. MGR	
				1.30			MADE GROUND: Brownish orange slightly clayey sandy GRAVEL with medium cobble and boulder content. Gravel is fine to coarse subrounded to subangular of slag. Occasional gravel-cobble sized pieces of lime. MGR	
				2.20			MADE GROUND: Dark grey slightly sandy slightly gravelly CLAY with medium cobble and boulder content and with rare pockets of sandy silt. Rare large boulders. Gravel is fine to coarse subrounded to subangular of slag. Cobbles & boulders of slag. Rare small red brick fragments. MGR	
							End of pit at 1.90 m	2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPD41 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456247.00 - 524623.00 Level:		Date 06/04/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.50		Logged FLM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼	0.00 - 0.10	ES		0.10			MADE GROUND: Grass over loose black slightly gravelly silty SAND, Gravel is fine to coarse angular to subangular of coke and slag. MGR MADE GROUND: Medium dense dark brown mottled orange slightly sandy to sandy GRAVEL with low cobble content. Gravel is fine to coarse angular to subangular of slag. Orange staining possibly indicates a higher iron content. Low boulder content. MGR <i>Becoming orange brown colour with depth, yellow orange mottled at 1m.</i>
				1.40 1.50			MADE GROUND: Soft black and grey slight sandy to sandy slightly silty CLAY. Locally slight sandy slight gravelly, and gravel and clay pockets. Gravel is fine and medium, occasional coarse sub-angular of possible slag. MGR <i>End of pit at 1.50 m</i>

Remarks:

 Stability:



Trial Pit Log

Trialpit No
TPD42
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456296.00 - 524611.00
Level:

Date
03/04/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Scale
1:25

Client: Homes and Communities Agency

Depth
1.80

2.2

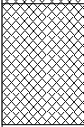
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.70 0.70 - 1.00	ES B		0.10			MADE GROUND: Topsoil TPS	
				0.30			MADE GROUND: Grey slightly clayey gravelly SAND with low cobble content. Gravel is fine to coarse subrounded to subangular of slag. Cobbles of slag. MGR	
				1.30			MADE GROUND: Orangeish brown slightly clayey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag, some light coloured slag, rare small red brick fragments. Strong smell of sulphur. MGR	1
				1.80			MADE GROUND: Dark grey slightly clayey sandy GRAVEL with medium cobble, low boulder content and occasional clay pockets. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag. Clay pockets comprise of firm dark grey mottled light grey slightly gravelly clay. Gravel is fine to medium of slag. MGR	2
							End of pit at 1.80 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPD43 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456343.00 - 524581.00 Level:		Date 03/04/2017	
Location: SSI Redcar				Dimensions (m):		3.4 		Scale 1:25	
Client: Homes and Communities Agency				Depth 1.30				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.10		   	MADE GROUND: Topsoil. Grass over dark brown gravelly sand with abundant rootlets. Gravel is fine to coarse subrounded to subangular of coke and slag. TPS	
	0.50	ES		0.40			MADE GROUND: Light grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag. MGR	
	1.10	ES		0.90			MADE GROUND: Brown mottled orange gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse subrounded to subangular of slag and with occasional red bricks (50/50 broken/whole). Rare round pellets MGR	
				1.30			MADE GROUND: Firm grey mottled light brown slightly sandy gravelly CLAY with low cobble content. Gravel is fine to coarse subrounded to subangular of slag. Slight oil odour. Frequent red bricks (50/50 broken/whole). Rare plastic fragments. MGR	
							End of pit at 1.30 m	

Remarks:



Stability:

				Trial Pit Log				Trialpit No TPD44 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456381.00 - 524566.00 Level:		Date 06/04/2017	
Location: SSI Redcar						Dimensions (m): 2.9 		Scale 1:25	
Client: Homes and Communities Agency						Depth 0.90		Logged FLM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50 - 0.70	ES		0.25			MADE GROUND: Rough grass over medium dense slightly gravelly SAND (coal dust) Gravel is fine to coarse angular of coke and slag , occasional coal. MGR	
	0.50 - 0.70	LB					MADE GROUND: Medium dense grey brown SAND and GRAVEL/sandy GRAVEL. Gravel is fine to coarse of slag and occasional brick. Medium cobble, low boulder content of slag occasional of brick. Sulphur odour. MGR	
	0.70 - 0.90	ES		0.70			MADE GROUND: Dense to medium dense black slight sandy GRAVEL with medium cobble and boulder content. Gravel is fine to coarse angular to subangular of slag. Rare coarse gravel of brick. Seepage at 0.7m. Water at 0.75m standing, hydrocarbon smell MGR	
				0.90			From 0.75m: Water at 0.75m standing, hydrocarbon smell , end at 0.9m End of pit at 0.90 m	

Remarks:

 Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456024.00 - 525058.00

Level:

Date

21/02/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00

2.1

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES					MADE GROUND: Dark reddish brown gravelly SAND with occasional cobbles. Gravel is fine to coarse subangular to sub rounded and includes slag and ore. Cobbles of slag. MGR 	
				0.70			MADE GROUND: Whitish grey very sandy gravel with abundant cobbles, occasional boulders and some large boulders. Gravel is fine to coarse subrounded to subangular including slag, whitish slag. Cobbles and boulders of slag, whitish slag. Rare scrap metal fragments. Sulphur odour noted. MGR 	1
							<i>Increase in cobble and boulder content</i>	2
							<i>Occasional gravel sized red material (ore?) has coloured the soil around.</i>	3
				3.20			MADE GROUND: Light brown with black patches, slightly gravelly SAND with rare firm brown clay pockets. Gravel is medium to coarse of sandstone and beach pebbles. Rare shell fragments. MGR 	
				4.00			End of pit at 4.00 m	4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE03

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456203.00 - 524991.00
Level:Date
22/02/2017

Location: SSI Redcar

Dimensions
(m):Depth
3.30Scale
1:25Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40			MADE GROUND: Dark reddish brown gravelly SAND with occasional cobbles. Gravel is fine to coarse subrounded to subangular including slag and some iron ore. Cobbles are slag. Shiny lustre, BOS Grit MGR	
							MADE GROUND: Grey very gravelly SAND with abundant cobbles and occasional boulders. Gravel is fine to coarse, subrounded to subangular and includes slag (some white mineralisation). Cobbles and boulders are of slag (some white mineralisation). Rare red and silica brick fragments. MGR	1
	1.50	ES		1.50			MADE GROUND: Greyish light brown gravelly to very gravelly SAND with occasional cobbles and frequent soft to firm brown clay lumps. Gravel is fine to coarse, rounded to subrounded of beach pebbles with some shell fragments. MGR	2
				3.30			End of pit at 3.30 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE04

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456296.00 - 524952.00

Level:

Date

20/02/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

Depth
3.30

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.70			MADE GROUND: Dark greyish brown very gravelly SAND with occasional cobbles and rare boulders. Gravel is fine to coarse, subangular to subrounded and includes slag and slag like material (lighter than slag). Rare red and silica brick fragments. MGR	
	1.00	ES					MADE GROUND: Greyish brown very sandy GRAVEL with occasional boulders. Gravel is fine to coarse, subangular to subrounded and includes slag. Boulders are slag (some white mineralisation). MGR	1
	1.50 - 1.80	ES						2
				2.50			MADE GROUND: Brownish yellow slightly gravelly SAND. Gravel is fine to coarse, subangular to rounded and includes slag, slag like material (lighter than slag) and some beach pebbles. Rare small shell fragments MGR	3
				3.30			End of pit at 3.30 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456404.00 - 524915.00

Level:

Date

20/02/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.00

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50 0.50 - 0.80	ES B					MADE GROUND: Dark greyish brown very gravelly SAND with occasional cobbles, rare boulders and occasional brown clay lenses. Gravel is fine to coarse, subangular to subrounded and includes slag, slag like material (lighter) and possibly crushed silica bricks. Rare wood fragments. MGR	
				1.30			Becoming yellow, frequent boulders of slag	1
	1.70	ES					MADE GROUND: Whitish grey sandy GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular and includes white, grey and greenish slag. Cobbles and boulders of slag (some white mineralisation). MGR	2
				2.20			MADE GROUND: Greyish light brown very gravelly SAND. Gravel is fine to coarse, subangular to rounded and includes sandstone, beach pebbles and possible slag. Rare cobble sized beach pebbles. Rare grey clay lenses. Rare small shell fragments. (POSSIBLE HYDRAULIC FILL) MGR	
				3.00			End of pit at 3.00 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE06

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 455991.00 - 525121.00
Level:Date
22/02/2017

Location: SSI Redcar

Dimensions
(m):Depth
1.70Scale
1:25Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.05			0.05			MADE GROUND: Loose dark greyish black sand MGR
	0.20			0.20			MADE GROUND: Dense brownish grey sandy GRAVEL with medium cobble content and rare boulders MGR
	0.80	ES					MADE GROUND: Dense grey very gravelly SAND with medium cobble content and rare boulders. Gravel is fine to coarse, subangular to angular of slag, clinker and rarely concrete. Cobbles and boulders are mostly slag up to 600x400x400mm. Occasional pockets/layers of high red brick content red sand/gravel. MGR
				1.70			200mm diameter black plastic pipe. Oily residue inside. Repaired.
							End of pit at 1.70 m

1

2

3

4

5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE07

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456080.00 - 525080.00

Level:

Date

21/02/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Depth
4.00

2.1

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.90			MADE GROUND: Loose dark brownish grey gravelly SAND with low cobble content and rare boulders. MGR <i>Reddish brown, red brick, crushed</i>  <i>Dark grey</i>	
	2.20 - 2.50	B					MADE GROUND: Medium dense grey sandy GRAVEL with medium to high cobble content and medium boulder content. Gravel is fine to coarse, subangular to angular of slag, clinker and rare brown ore. Cobbles and boulders are mostly slag with some clinker. Some slag has white mineralisation on the outer edge. Boulders are up to 500x400x400mm MGR <i>Dense, compacted</i> 	1 2 3
	3.90	ES		3.80 4.00			<i>Boulder size increasing</i> MADE GROUND: Loose yellowish grey slightly gravelly SAND. Gravel is rounded to subrounded. (POSSIBLE NATURAL) MGR  End of pit at 4.00 m	4 5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPE08 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456168.00 - 525042.00 Level:		Date 22/02/2017	
Location: SSI Redcar				Dimensions (m):		4.5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.20		2.4		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES		0.70			MADE GROUND: Dark greyish brown gravelly SAND with rare cobbles. Gravel is fine to coarse, subrounded to subangular of slag. Cobbles are of slag. Rare fragments of red and silica brick. Shiny appearance, BOS Grit. MGR 	1 2 3 4 5
							MADE GROUND: Whitish grey very sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse, subangular to subrounded of slag (some white mineralisation). Cobbles and boulders are of slag. MGR 	
							MADE GROUND: Greyish light brown slightly gravelly SAND with occasional small shell fragments. Gravel is subrounded to rounded and includes beach pebbles and sandstone. MGR 	
	3.20	B		3.20			End of pit at 3.20 m	
				3.60				

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE09

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456264.00 - 525003.00

Level:

Date

20/02/2017

Location: SSI Redcar

Dimensions
(m):

3.9

Depth
3.60

2.3

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.10 - 1.50	B		0.20			MADE GROUND: Loose dark greyish black slightly gravelly SAND. Gravel is fine to coarse possibly coal or compacted sand. MGR	
							MADE GROUND: Medium dense brownish grey very sandy GRAVEL with medium to high cobble content and medium boulder content. Gravel is slag, brick fragments and clinker. Cobbles are slag, brick, clinker, iron ore. Boulders are slag and occasional intact brick. Some slag has blue crystallisation. MGR	1
				1.90				
	2.50	ES					MADE GROUND: Loose greyish yellow slightly gravelly SAND, gravel is fine to medium and occasionally coarse, rounded of mixed lithologies with occasional pockets of stiff brown clay up to 150x100x100mm. (POSSIBLE NATURAL) MGR	2
								3
				3.60			End of pit at 3.60 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456356.00 - 524968.00

Level:

Date

20/02/2017

Location: SSI Redcar

Dimensions
(m):

3.9

Scale

1:25

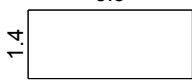
Client: Homes and Communities Agency

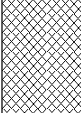
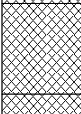
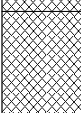
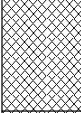
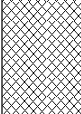
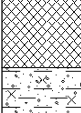
Depth
3.70Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30			MADE GROUND: Loose dark grey gravelly SAND with rare cobbles. Gravel is fine to medium occasionally coarse, subangular to angular including slag, coal and clinker. MGR	
							MADE GROUND: Medium dense dark grey very sandy GRAVEL with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular including slag, brick fragments, clinker and some rounded pellets. Cobbles and boulders are mostly slag with some clinker and brick fragments. Occasionally intact red and yellow bricks. White mineralisation on slag pieces. MGR	1
				1.70			MADE GROUND: Dark brownish grey gravelly SAND with low cobble and low to medium boulder content. Gravel is fine to coarse, angular to subangular and includes slag and clinker. Boulders are slag, some brick (intact) up to 500x400x300mm. MGR	2
	2.40	ES						
				3.00			MADE GROUND: Loose greyish yellow slightly gravelly SAND with rare shells. Gravel is medium to coarse, subrounded to rounded. MGR	3
				3.70			End of pit at 3.70 m	4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPE11 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456054.00 - 525130.00 Level:		Date 27/02/2017	
Location: SSI Redcar				Dimensions (m):		3.5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.35				Logged FLM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40			MADE GROUND: Loose red brown sandy GRAVEL. Gravel is fine of iron ore. MGR	
				0.70			MADE GROUND: Dense grey sandy GRAVEL with low cobble content. Gravel is fine to coarse angular to subangular of slag and iron. Occasional white dusting to slag. MGR	
				0.80			MADE GROUND: Loose yellow brown sandy gravelly SAND. Gravel is medium to coarse, angular to subangular of slag. MGR	
	1.50 - 1.70	ES		1.50			MADE GROUND: Very dense grey sandy GRAVEL and COBBLES with low boulder content. Cobble of slag. Orange staining noted. MGR	
	1.70 - 2.00	LB					MADE GROUND: Dense to very dense orange sandy gravelly COBBLES with low boulder content. Sulphur odour noted. Gravel, cobbles and boulders are of slag. Colour same as house brick but iron present. MGR	
	2.20 - 2.30	D		2.10			Stiff grey brown thinly laminated slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded of limestone possibly siltstone and iron lithologies	
				2.35			CL	
End of pit at 2.35 m								

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPE12

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456131.00 - 525098.00

Level:

Date

21/02/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Loose brown coal, sand & gravel composed of iron ore MGR	
	0.55 - 1.00	B		0.55			MADE GROUND: Medium dense black ~~slimy~~ SAND composed of coal clay sand is found, occasional pellets of iron ore, blackish purple colour MGR	
	1.00 - 1.25	B		1.00			MADE GROUND: Medium dense grey sli ~~imy~~ sandy GRAVEL medium cobble contents and bc composed of slag, cobbles are angular to sub rounded MGR	1
				2.15			MADE GROUND: Loose yellow slightly gravelling SAND containing shells, gravel is fine to coarse, well-rounded, occasional tar cobbles. Brick found at 1.9m MGR	2
				2.50			MADE GROUND: Very dense grey gravelle ~~imy~~ angular cobbles, boulders composed of slag MGR	
				3.10			MADE GROUND: Stiff grey brown slightly sandy gravelly CLAY showing occasional laminations, gravel is angular to rounded, poorly sorted fine to coarse composed of various lithologies incl ~~clay~~ slag containing pockets of coarse yellow SAND. Te ~~clay~~ ted in natural gravel MGR	3
							End of pit at 3.10 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE13

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456233.00 - 525057.00

Level:

Date

28/02/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Depth
2.50

2.4

Scale
1:25Logged
FLM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 - 0.50	ES		0.10			MADE GROUND: Loose black/dark grey coal and iron ore sand. MGR	
	0.50 - 0.60	B		0.60			MADE GROUND: Loose dark reddish brown slightly gravelly SAND with low cobble content. Gravel is fine to coarse, subangular to rounded of pellets, occasional brick and other lithologies including concrete. Cobbles are of concrete. MGR	
				0.70			MADE GROUND: Loose light yellowish grey slightly sandy gravel. Gravel is fine to coarse, angular subrounded of slag. MGR	
				2.10			MADE GROUND: Very dense grey sandy GRAVEL with low cobble content. Gravel is fine to coarse, angular to subrounded of slag and occasional brick and house brick. Cobbles are of slag. A metal strip was noted. Refractory brick content of approximately 1-2%. Occasional pockets of brown weakly laminated reworked slightly sandy clay with occasional coarse rounded pebbles and cobbles. MGR	1
				2.50			Loose brown gravelly SAND with cobble and boulder fragments of stiff brown slightly sandy slightly gravelly to gravelly CLAY, thinly laminated in places with fine sand on laminae. Gravel is fine to coarse subrounded to rounded of sandstone, possibly limestone and other lithologies. Some shell and coal fragments noted. ALV	2
							End of pit at 2.50 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE14

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456329.00 - 525018.00

Level:

Date

24/02/2017

Location: SSI Redcar

Dimensions (m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
3.60

2.2

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.50			MADE GROUND: Medium dense dark greyish black gravelly SAND with low cobble content and rare boulders. Possible BOS. MGR	
				1.10			MADE GROUND: Dense grey sandy GRAVEL with low to medium cobble content and rare boulders. Gravel is fine to coarse, angular to subangular including slag with some clinker. Cobbles and boulders mostly slag with some clinker. MGR <u>Reddish grey</u>	1
				3.00			MADE GROUND: Medium dense dark grey very sandy GRAVEL AND COBBLES with medium boulder content. Occasional layers (~200mm thick) of reddish grey sandy gravel. Boulders are slag and some concrete. Gravel and cobbles are slag and clinker. MGR <u>Ammonia odour</u> <u>Concrete boulder 700x700x300mm</u>	2
	3.20	ES		3.60			MADE GROUND: Loose yellowish grey gravelly SAND. Gravel is fine to coarse, subrounded to rounded of mixed lithologies. (POSSIBLE NATURAL) MGR	3
							End of pit at 3.60 m	4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPE15 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456418.00 - 524988.00 Level:		Date 24/02/2017	
Location: SSI Redcar						Dimensions (m): 4.6 2.3 		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.50		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.30			MADE GROUND: Dark brown slightly clayey sandy GRAVEL. Gravel is fine to coarse, predominantly fine to medium, subangular to subrounded of iron ore and sinter. (Shiny appearance - BOS Grit?) MGR	
				0.50			MADE GROUND: Dark brown slightly clayey very gravelly SAND with occasional cobbles. Gravel is fine to coarse, subangular to rounded and includes slag and coke. MGR	
	1.20	ES		1.50			MADE GROUND: Brownish grey slightly clayey very gravelly SAND with abundant cobbles and occasional boulders. Gravel is fine to coarse, subangular to subrounded of slag and some dolomite. Cobbles and boulders of slag and some dolomite. Occasional red and refractory brick fragments. Rare scrap metal, wood and rubble fragments. MGR	
							End of pit at 1.50 m	

Remarks:



Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456108.00 - 525151.00
Level:Date
28/02/2017

Location: SSI Redcar

Dimensions
(m):

4

Depth
3.90

2.2

Scale
1:25Logged
EM

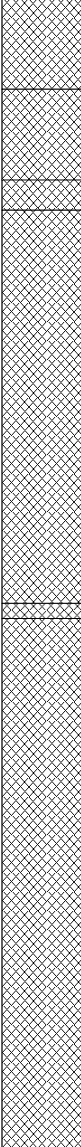
Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Medium dense black slightly gravelly silty SAND comprised of iron and coal, containing occasional pellets. Gravel is fine to coarse, angular to rounded. Occasional cobbles of slag and coke. MGR	
				0.60			MADE GROUND: Medium dense slightly sandy SILT. MGR	
							MADE GROUND: Very dense grey slightly sandy cobbly GRAVEL with occasional angular boulders of slag. Cobbles are angular to subangular of slag. Slag is aerated. MGR	1
								2
								3
	3.10	ES		3.10			Layer of boulders	
							MADE GROUND: Loose greyish brown slightly gravelly coarse SAND occasional cobbles of slag and pellets. MGR	
	3.60	D		3.60			MADE GROUND: Loose yellowish brown slightly gravelly slightly silty SAND with pockets of laminated soft brown clay. Gravel is subangular to rounded of various lithologies. (POSSIBLE NATURAL GROUND) MGR	4
				3.90			End of pit at 3.90 m	5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPE18 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456200.00 - 525117.00 Level:		Date 28/02/2017	
Location: SSI Redcar				Dimensions (m):		4.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.95				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	2.50 - 2.60	ES		0.30			MADE GROUND: Medium dense black slightly gravelly coarse SAND. Gravel is fine to coarse of BOS grit. MGR	1	
				0.60			MADE GROUND: Medium dense reddish brown slightly gravelly SAND of iron ore. Gravel is fine to coarse, subrounded to rounded. MGR		
				0.70			MADE GROUND: Very dense  ish brown slightly sandy GRAVEL. MGR		
							MADE GROUND: Very dense greyish brown sandy angular GRAVEL of slag with frequent cobbles and occasional boulders of slag and refractory bricks, pellets and lime and slag. MGR 		
				2.00			MADE GROUND: Medium dense yellow SAND. MGR 		2
				2.05					
				3.80			3		
				3.95					4

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPE19

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 465293.00 - 525077.00

Level:

Date

28/02/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00

2.5

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20 - 0.80	ES		0.20			MADE GROUND: Medium dense black slightly gravelly silty SAND containing occasional pellets. Gravel consists of slag, brick and BOS grit. MGR	
				0.50			MADE GROUND: Medium dense silty SAND of iron ore and BOS grit MGR <i>Laminations of black BOS grit</i>	
				1.10			MADE GROUND: Dense grey sandy GRAVEL with frequent cobbles are rare boulders of slag. Gravel is angular to rounded composed of slag. 5-6 refractory bricks. Occasional gravel and cobbles of lime. Slag is aerated. MGR <i>Sulfur odour noted</i>	1
	2.10 - 2.60 2.10 - 2.60	B LB		2.60			MADE GROUND: Medium dense reddish brown sandy GRAVEL of slag with abundant cobbles and occasional boulders of slag. 1-2 refractory bricks MGR	2
				3.00			MADE GROUND: Dense brown sandy gravelly cobbly BOULDERS. MGR	
				3.10			MADE GROUND: Ash band MGR	3
				3.30			MADE GROUND: Medium dense reddish brown sandy cobbly angular to rounded GRAVEL composed of slag with occasional boulders of 1-2 refractory bricks. MGR	
				3.80			MADE GROUND: Loose yellow and grey gravelly SAND with pockets of white and grey ash. Sand is composed of lime. Occasional rounded cobbles of lime. MGR	
				4.00			Loose yellow slightly gravelly SAND with interbeds of fine to coarse subrounded to rounded gravel of various lithologies. TFD	4
							End of pit at 4.00 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE20

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456378.00 - 525041.00

Level:

Date

01/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.30Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50 - 0.80 0.50 - 0.80	B ES		0.05 0.50 0.80 1.20 1.50			MADE GROUND: Loose dark grey black gravelly SAND. Gravel is fine to medium, angular to subangular of iron ore and slag. Sand of coal dust and occasional BOS grit MGR MADE GROUND: Loose dark orange brown slightly gravelly sand of iron ore MGR MADE GROUND: Medium dense grey sandy GRAVEL with low to medium cobble content. Gravel is fine to coarse angular to subangular of slag occasional clinker and rare refractory brick. Cobbles are of slag. Low boulder content. MGR MADE GROUND: Loose orange brown slightly gravelly SAND as above MGR MADE GROUND: Very dense light grey slightly sandy GRAVEL and COBBLES of slag. Low boulder content of slag. Gravel is fine to coarse angular to subangular of slag occasional clinker and rare refractory brick. MGR <i>Thin yellow brown sand band approx 0.05m</i> MADE GROUND: Dense to very dense mottled white slightly sandy GRAVEL and COBBLES with medium boulder content. MGR	1
	2.20 - 2.30	D		2.20 2.30			Stiff dark brown slightly sandy slightly gravelly CLAY with low cobble content. Gravel is fine to coarse angular to rounded of sandstone, limestone, rare clinker and other lithologies. GT End of pit at 2.30 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456084.00 - 525203.00

Level:

Date

28/04/2017

Location: SSI Redcar

Dimensions
(m):

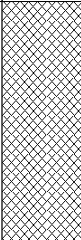
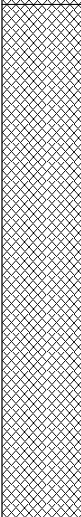
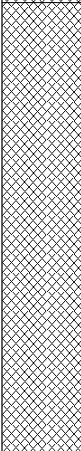
4.2

Scale

1:25

Client: Homes and Communities Agency

Depth
4.50Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.10 - 0.40	ES		0.80			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND of coal with low cobble content. Gravel is fine to coarse, angular to rounded and includes compacted coal dust, slag, iron ore pellets and coke. MGR	1
	0.20 - 0.50	B						
	0.20 - 0.50	ES						
	0.80 - 2.50	LB		2.50			MADE GROUND: Dense light grey sandy fine to coarse, angular to subangular GRAVEL AND COBBLES with rare boulders of slag and rare bricks. MGR	2
	1.00 - 1.50	LB						
▼	4.00 - 4.50	D		4.00			MADE GROUND: Medium dense to dense, greyish brown sandy fine to coarse, angular to subangular GRAVEL with medium cobble content and low boulder content. Gravel, cobbles and boulders are of slag. MGR	3
	4.00 - 4.50	ES						
				4.50			MADE GROUND: Very soft to firm grey slightly sandy silty CLAY with laminations of blackish red coarse sand. (POSSIBLE NATURAL) MGR	4
							End of pit at 4.50 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE22

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456144.00 - 525167.00

Level:

Date

01/03/2017

Location: SSI Redcar

Dimensions
(m):

3.1

Scale

1:25

Client: Homes and Communities Agency

Depth
2.80

2.3

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.80 - 1.00 0.80 - 1.00	B ES		0.50			MADE GROUND: Loose to medium dense black gravelly SAND composed of BOS grit. Gravel is subrounded to rounded. MGR	1
				1.10			MADE GROUND: Very dense grey sandy gravelly subrounded to rounded COBBLES of slag with occasional boulders of green slag.	
				1.30			MADE GROUND: Loose to medium dense yellow gravelly SAND. Gravel is fine to coarse subrounded to rounded of various lithologies including shells. MGR	
	2.00 - 2.50	ES		2.00			MADE GROUND: Medium dense brown gravelly SAND. Gravel is angular to subrounded, fine to coarse comprised of slag. MGR	2
				2.80			MADE GROUND: Medium dense slightly clayey sandy GRAVEL with occasional cobbles. MGR	
							End of pit at 2.80 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE24

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456349.00 - 525091.00

Level:

Date

01/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.00

2.3

Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Loose black slightly gravelly SAND of coal dust, BOS grit, iron ore and slag. MGR	
				0.40			MADE GROUND: Medium dense to very dense dark reddish brown grey slightly sandy gravel (compacted iron ore) with low cobble content of compacted ore. Gravel is fine to medium, subangular to subrounded of iron ore. MGR	
				0.70			MADE GROUND: Medium dense dark brown black silty SAND (coal dust) MGR	
				1.10			MADE GROUND: Medium dense yellowish grey slightly sandy GRAVEL MGR	1
				1.50			MADE GROUND: Medium dense grey and yellow brown gravelly SAND. Gravel is fine to coarse, subangular of slag. MGR	
	1.50 - 1.60	ES		2.00			MADE GROUND: Medium dense to dense yellow grey sandy GRAVEL with low cobble and boulder content. Gravel is fine to coarse angular to subangular of slag and rare clinker. Cobbles and boulders are of slag. MGR	
							At approximately 1.9m: Very dense, extended pit and cleared out pit but appears as flat surface. Pit terminated as unable to advance without breaker.	2
							End of pit at 2.00 m	
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPE25 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456442.00 - 525058.00 Level:		Date 01/03/2017	
Location: SSI Redcar				Dimensions (m):		4.4 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.70				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Dense brownish red slightly silty slightly gravelly SAND of iron ore. Gravel is angular. MGR	
				0.40			MADE GROUND: Loose black slightly silty gravelly SAND. Gravel is BOS grit and occasionally slag. MGR	
							MADE GROUND: Dense grey sandy cobbly GRAVEL of slag with occasional boulders of slag. Signs of sulfur mineralisation. MGR	
	2.70 - 3.70 2.70 - 3.70	ES LB					800x700x600mm boulder of slag	1
								2
							Sulfur odour	3
				3.70			End of pit at 3.70 m	4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE27

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456104.00 - 525250.00

Level:

Date

24/04/2017

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
1.50Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND. Gravel is fine to coarse of coal and coke MGR	
				0.50			MADE GROUND: Medium dense reddish brown silty very gravelly, fine to coarse SAND. Gravel is fine to coarse, angular to rounded of various lithologies including slag. MGR	
				1.00			MADE GROUND: Medium dense light greyish brown very sandy fine to coarse, angular to subrounded GRAVEL of slag. MGR	
				1.50			MADE GROUND: Very dense greyish brown slightly silty very sandy fine to coarse, angular to subrounded GRAVEL of slag and bricks. MGR	1
							End of pit at 1.50 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456135.00 - 525222.00

Level:

Date

13/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.30

2.3

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.80	ES		0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to rounded and includes coke and slag. MGR	
				1.40			MADE GROUND: Brown very gravelly SAND with medium cobble content and low boulder content. Gravel is fine to coarse, subangular to rounded to subangular of slag and beach pebbles. Rare red and refractory brick fragments. MGR	1
							MADE GROUND: Greyish brown sandy GRAVEL with high cobble and low boulder content. Gravel is fine to coarse, subangular to subrounded of slag. Cobbles and boulders are subangular. Rare red and refractory brick fragments. MGR	2
				3.30			End of pit at 3.30 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE29

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456164.00 - 525206.00

Level:

Date

01/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.50

2.1

Logged
FLM

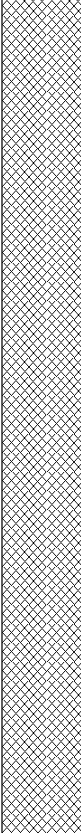
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50 - 0.60	ES		0.10 0.50 0.60			MADE GROUND: Loose black slightly gravelly silty SAND. Gravel is fine to coarse angular to subangular of slag and compacted coal dust. MGR MADE GROUND: Loose dark brown gravelly SAND. Gravel is fine to coarse subangular slag and occasional brick and clinker and low boulder content. MGR MADE GROUND: Loose slightly gravelly SAND with low cobble content. Gravel is fine to coarse subangular to rounded of slag, occasional brick and rounded pebbles. Rare shells fragments. Cobbles are of slag. (Hydraulic Fill) MGR MADE GROUND: Dense light grey slightly sandy GRAVEL with low boulder and medium cobble content. Gravel, cobbles and boulders are angular to subangular of slag. Gravel is fine to coarse. Sulphur is noted. MGR Becoming sandier with depth - sandy GRAVEL. MADE GROUND: Medium dense dark brown sandy GRAVEL with low cobble and boulder content. Cobbles and boulders of slag. Gravel is of slag, clinker and rare rounded pebbles. MGR MADE GROUND: Medium dense light brown yellowish grey SAND and GRAVEL with low cobble content. Gravel is fine to coarse, angular to subrounded of slag with occasional iron ore and rare brick (red and yellow), clinker and rounded pebbles. Cobbles are of slag. MGR	1
	2.60 - 2.90 2.60 - 2.90	B ES		1.40 1.80 3.50				2 3 4 5

End of pit at 3.50 m

Remarks:

Stability: West wall starting to undermine below c.1.4m. East wall from c.2.5m.

				Trial Pit Log			Trialpit No TPE30 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456229.00 - 525180.00 Level:		Date 02/03/2017	
Location: SSI Redcar				Dimensions (m):		3.7 2.5		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.60				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Medium dense blackish red gravelly SAND . Gravel is fine to coarse, angular to subrounded of iron ore MGR	
				0.50			MADE GROUND: Medium dense black slightly gravelly silting SAND. Sandy silty clay in places BOS grit MGR	
							MADE GROUND: Very dense grey sandy fine to coarse, angular to subrounded GRAVEL of slag with rare boulders and frequent cobbles. Slag cobbles are angular to subrounded of slag and refractory brick. Boulders are 500x600x400mm angular composed of slag, boulders and cobbles show signs of sulphur mineralisation - white coatings, green stain, large boulder at 1.9m overlain by sandy GRAVEL pockets containing bits of wood. Pockets of ash. MGR	1
								2
								3
	3.30 - 3.60	ES		3.30			MADE GROUND: Yellow loose slightly gravelly coarse SAND. Gravel is fine to coarse of various sizes found in pockets, interbedded with loose v to grey ASH. Ash thought to be from layer above MGR	
				3.60			End of pit at 3.60 m	4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPE31

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456271.00 - 525165.00

Level:

Date

02/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.30

2.7

Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10 0.20 0.30			MADE GROUND: Loose, dark grey black silty gravelly SAND. Gravel is fine to coarse angular to subangular of slag and coke. MGR MADE GROUND: Loose reddish orange brown sandy GRAVEL (iron ore). Gravel is fine to medium, occasionally coarse, angular to subrounded of iron ore. MGR MADE GROUND: Medium dense reddish brown silty SAND/sandy SILT. MGR MADE GROUND: Medium dense light grey/yellowish grey gravelly SAND with medium cobble content. Gravel is fine to coarse angular to subrounded of slag and ash with occasional clinker. Cobbles are of slag and ash. Sand included white ash. Low boulder content of slag. MGR <i>Becoming very dense</i> <i>Localised pockets of ashy material consolidated into gravel and cobbles sized fragments - more ashy below 1.4m</i>	1
	1.20 - 1.30	ES		1.60			MADE GROUND: Medium dense to loose grey sandy gravelly COBBLES of slag with high boulder content. Gravel is fine to coarse angular to subrounded of slag. Cobbles and boulders are of slag. MGR <i>Large slag boulder with sulphur deposits on surface (1.2 x 0.7 x 0.6m)</i> <i>Darker grey colour, slightly damp with rare clinker gravel. Possibly locally gravelly SAND / sandy GRAVEL pockets.</i> <i>Below 2.6m boulder content low.</i>	2
	3.40 - 3.50 3.60	B B		4.30			<i>Pockets of sand of ash: Loose grey, locally mottled white gravelly SAND with low cobble content. Gravel is fine to coarse angular to subangular of slag. Cobbles of slag and refractory brick (5%). Sand includes ash.</i> End of pit at 4.30 m	3 4 5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE32

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456320.00 - 525149.00

Level:

Date

02/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.10

2.9

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40			MADE GROUND: Medium dense black mottled reddish brown slightly cobble gravelly SAND base grit MGR <i>From 0m: lots of scrap metal</i>	
							MADE GROUND: Loose grey sandy fine to coarse, subangular GRAVEL, of slag with rare slag cobbles and boulders. Plastic containers - large boulders - scrap metal at 2m, pockets of loose black gravelly sand, slag material MGR	1
	2.80 - 3.30	ES		2.50			MADE GROUND: Medium dense brownish black slightly cobbly sandy fine to coarse, subangular to subrounded Gravel, composed of slag. Hydrocarbon odour Becoming gravelly SAND with depth. Pockets (300x600mm) of ash mixed with slag. MGR	3
	3.50 - 4.10 3.50 - 4.10	B ES		3.50			MADE GROUND: Loose white/grey slightly sandy slightly cobbly fine to coarse, subangular to subrounded GRAVEL composed of slag and ash. Hydrocarbon odour. MGR	4
				4.10			End of pit at 4.10 m	5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPE33 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456368.00 - 525124.00 Level:		Date 02/03/2017	
Location: SSI Redcar						Dimensions (m): Depth 3.50 2.7 4		Scale 1:25 Logged FLM	
Client: Homes and Communities Agency									

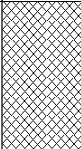
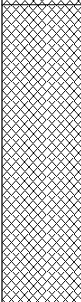
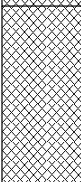
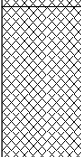
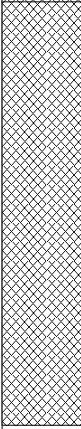
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10 - 0.30	ES		0.02 0.10		[Pattern]	MADE GROUND: Loose grey gravel of coke. Gravel is angular to subangular. MGR MADE GROUND: Loose reddish orange gravelly SAND (iron ore) MGR MADE GROUND: Medium dense black slightly gravelly slightly sandy SILT. Compacted coal (sus) with occasional angular to medium gravel, possibly of slag. MGR MADE GROUND: Medium dense light grey/yellowish grey sandy gravel wit low cobble and boulder content. Gravel and cobbles are fine to coarse, angular to subangular of slag with occasional clinker and ash. MGR <i>Becoming loose and slightly darker in colour. Localised thin bands of iron ore below 1m. Gravel and cobbles fine to coarse angular to subrounded of aerated slag, slag clinker and occasional ash. Slight sulphur odour noted.</i>
	3.40 - 3.50 3.40 - 3.50	B D		3.10 3.50			MADE GROUND: Firm brown gravelly sandy CLAY which is weakly thinly bedded with thin beds of slightly gravelly SAND. Gravel is fine to coarse angular to rounded of sandstone, possibly limestone, rare coal, shells and pebbles of other lithologies. Locally stiff. Gravel in sand is fine to medium subangular to rounded and includes shell fragments and pebbles. MGR End of pit at 3.50 m

Remarks:

 Stability:



				Trial Pit Log			Trialpit No TPE34 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456410.00 - 525109.00 Level:		Date 02/03/2017	
Location: SSI Redcar				Dimensions (m):		5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.10				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.50			MADE GROUND: Medium dense red slightly gravelly SAND, gravel is SA-SK of iron ore and coal laminations of black bos grit, ash band 10mm MGR	
				1.50			MADE GROUND: Loose grey sandy fine to coarse, angular to subrounded GRAVEL with occasional cobbles and boulders. Some cobbles are white with green staining and contains refractory bricks. Cluster of 6-10 pockets of ash. MGR	1
				2.10			MADE GROUND: Loose brown cobbly sandy fine to coarse, subangular to subrounded GRAVEL of slag. MGR	2
				2.60			MADE GROUND: Loose cobbly sandy fine to coarse, angular to subrounded GRAVEL of slag. MGR	
				4.00			MADE GROUND: Loose grey sandy fine to coarse, angular to rounded GRAVEL of slag with frequent cobbles of slag. Interbeds 0(.2m³) of ash. MGR <i>From 2.6m: very hard obstruction</i>	3
							End of pit at 4.10 m	4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPE35

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456456.00 - 525095.00

Level:

Date

02/03/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Depth
3.40

2.6

Scale
1:25Logged
FLM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.02			MADE GROUND: Dense yellow compacted lime recovered as fine to coarse angular GRAVEL. MGR MADE GROUND: Loose intermixed grey and reddish brown slightly sandy to sandy GRAVEL with medium cobble and low boulder content. Gravel is fine to coarse angular to subrounded of slag with occasional clinker, rare Coke and refractory brick fragments and occasional slag. MGR Becoming grey	1
	2.00 - 2.10	ES		1.80			MADE GROUND: Very stiff brown sandy very gravelly CLAY. Gravel is angular to rounded of pebbles and includes shell fragments (north wall only). Reworked. Pebbles are sandstone and limestone, rare coal and other lithologies. Rare angular red gravel (possibly brick). Rare thin metal wire. MGR Sand and gravel band at 1.8m in south wall with seepage	2
	3.00 - 3.20 3.00 - 3.20 3.20 - 3.40	B ES D		2.60			MADE GROUND: Dense grey sandy GRAVEL/gravelly SAND with low cobble and boulder content. Gravel is fine to coarse angular to subangular of slag. Rare red brick as fine gravel. MGR	3
				3.20			MADE GROUND: Soft grey streaky sandy SILT with black laminations of sand (coal) TFD/ALV	
				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE36

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456082.00 - 525296.00

Level:

Date

24/03/2017

Location: SSI Redcar

Dimensions
(m):

3.4

Depth
3.70

2.4

Scale

1:25

Logged

JNB

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Loose black slightly silty very gravelly fine to coarse SAND. Gravel is fine to coarse of coke and occasional coal. MGR	
				1.10			MADE GROUND: Loose light greyish brown very sandy fine to coarse, angular to subrounded GRAVEL of slag and brick with medium cobble content and low boulder content. MGR	1
				2.00			MADE GROUND: Loose reddish brown silty very sandy fine to coarse, angular to subangular GRAVEL of slag and brick with occasional pockets of soft yellow clay and low cobble content. MGR	2
				2.70			MADE GROUND: Loose yellow gravelly fine to coarse SAND. MGR	3
				3.70			MADE GROUND: Medium dense reddish brown clayey very gravelly fine to coarse SAND with low cobble and boulder content and abundant pockets of clay. Gravel is angular to rounded of various lithologies. MGR	4
							End of pit at 3.70 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE37

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456106.00 - 525283.00

Level:

Date

14/03/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Scale

1:25

Client: Homes and Communities Agency

Depth
5.00

2.7

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke. MGR <i>Slightly reddish</i>	
							MADE GROUND: Light greyish brown sandy GRAVEL with high cobble content and medium boulder content. Gravel is fine to coarse, subangular to subrounded of slag (some whitish). Cobbles and boulders are subangular slag. Traces of iron. Occasional refractory and red brick fragments. MGR <i>Slightly sandy GRAVEL with high cobble and medium boulder content.</i>	1
				2.40				2
	3.00	ES					MADE GROUND: Greyish brown very gravelly SAND with abundant cobbles and occasional boulders. Gravel is fine to coarse, subangular to subrounded and includes slag and black stone (possibly ore). Cobbles and boulders are of slag. Occasional fragments of refractory and red brick. MGR <i>Right hand side of pit, layer of large (approx. 1m dia.) boulders of whitish slag.</i>	3
	3.20 - 3.50	B						
				3.70				
				4.10			MADE GROUND: Interbedded orangish grey slightly gravelly SAND and firm greyish brown mottled very dark grey fissured CLAY with low boulder content. Gravel is fine to coarse rounded to subangular of each pebbles and slag. Occasional small pockets of dark grey organic matter with rare wood fragments. MGR <i>Right hand side of pit, layer of large (approx. 1m dia.) boulders of whitish slag.</i>	4
	4.50	ES					MADE GROUND: Whitish grey clayey slightly sandy GRAVEL with medium cobble, low boulder and high ash content. Gravel is fine to coarse, subangular to subrounded of slag. Occasional refractory brick fragments. Rare shell fragments. MGR <i>Evidence of possible oil (thick dark liquid) coming in at the base of the pit.</i>	5
				5.00			End of pit at 5.00 m	

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456170.00 - 525257.00

Level:

Date

21/04/2017

Location: SSI Redcar

Dimensions
(m):

4

Client: Homes and Communities Agency

Depth
4.20

2.2

Scale

1:25

Logged

TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Loose dark greyish SAND (coke/ash residual material)  MGR <i>Medium dense</i>	
				1.60			MADE GROUND: Medium dense sandy GRAVEL AND COBBLES with high boulder content. Gravel and cobbles are slag. Rare  fragments. MGR	1
	2.00	ES					MADE GROUND: Medium dense dark brown gravelly SAND with low cobble content and rare slag boulders. Gravel is angular to rounded of slag, clinker and occasional pellets. Boulders are up to 500x400x400mm. Locally very gravelly. Some slag boulders have white staining with blue and green colouration. MGR <i>Rare yellow and red brick, some intact</i>	2
	2.50 - 2.80	B						
				3.20			<i>Becoming very clayey SAND AND GRAVEL</i>	3
	3.50	ES						4
							End of pit at 4.20 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456196.00 - 525250.00
Level:Date
05/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.80

2.4

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Dark grey silty gravelly SAND. Gravel is fine to coarse, subrounded of coke. MGR MADE GROUND: Light greyish brown sandy to very sandy GRAVEL with abundant cobbles and boulders. Gravel is fine to coarse, subangular to subrounded of slag (occasionally whitish). Cobbles and boulders are slag. Some show traces of white mineralisation and iron. MGR	1
	1.80	ES						
	2.00 - 2.30	B					Abundant cobbles, occasional boulders	2
							Whitish grey (ash content)	3
				3.80			End of pit at 3.80 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456243.00 - 525229.00

Level:

Date

06/03/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00

2.2

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Medium dense black fine to coarse, angular to rounded black SAND AND GRAVEL. MGR MADE GROUND: Loose grey sandy fine to coarse, subangular to rounded GRAVEL of slag with cobbles and boulders of slag. Small pocket of builders sand around large boulders. MGR	
				2.00				1
				2.10			MADE GROUND: Loose yellow SAND. MGR MADE GROUND: Loose grey sandy gravelly COBBLES. Sand is fine to coarse, gravel is fine to coarse, angular to rounded. MGR	2
				3.40				3
	3.60	B		3.50			MADE GROUND: Dense red gravelly SAND of red brick. Gravel is fine to coarse, angular of red brick. MGR MADE GROUND: Loose grey sandy GRAVEL & COBBLES. Sand is fine to coarse, composed of ash. Gravel is fine to coarse, angular, subrounded. Pockets of natural soft brown laminated slightly sandy silty CLAY. MGR	
	3.60	ES		4.00			From 3.5m: strong smell of sulphur End of pit at 4.00 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE41

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456290.00 - 525210.00

Level:

Date

06/03/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Depth
4.00

2.8

Scale

1:25

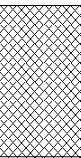
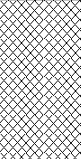
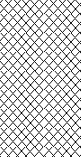
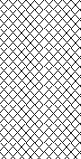
Logged
EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Medium dense black  fine to coarse, angular to rounded GRAVEL (BOS GRIT) MGR	
	1.70	ES					MADE GROUND: Loose grey sandy fine to coarse, rounded to subrounded GRAVEL of slag with cobbles and boulders. Cobbles angular to rounded of slag and refractory brick. Ash of mixed in with slag, no distinct layers. MGR	1
				2.80			MADE GROUND: Dense red gravelly SAND AND GRAVEL with occasional cobbles. MGR	2
				3.90 4.00			MADE GROUND: Laminated sandy SILT with coarse sand of coal and slag. (Possible n ) MGR From 3.9m: Smaell of sulphur	3
							End of pit at 4.00 m	4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPE42 Sheet 1 of 1					
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456341.00 - 525193.00 Level:		Date 06/03/2017				
Location: SSI Redcar				Dimensions (m):		3.9		Scale 1:25				
Client: Homes and Communities Agency				Depth 4.50				Logged EM				
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description					
	Depth	Type	Results									
				0.50			MADE GROUND: Medium dense black sandy fine to coarse GRAVEL of BOS grit MGR 			1 2 3 4 5		
								MADE GROUND: Loose grey sandy fine to coarse, subangular to rounded GRAVEL of slag with occasional cobbles and boulders of slag. Large slag boulder at 1m. Becoming medium dense with depth. MGR 				
									MADE GROUND: Medium dense orange sandy fine to coarse, subangular to rounded of GRAVEL of slag with cobbles and boulders of slag. Ashy in places. Pockets of firm laminated clay. MGR 			
											MADE GROUND: Loose grey/white slightly sandy fine to coarse, subangular to rounded GRAVEL of slag. Sand is of ash. Pockets of sandy clay silt recovered when digging, possible natural. 	
		3.00 - 3.10	ES		2.50							
	4.20 - 4.50	ES		4.00								
				4.50			End of pit at 4.50 m					
Remarks:												
Stability:												



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456383.00 - 525174.00

Level:

Date

05/03/2017

Location: SSI Redcar

Dimensions
(m):

4.7

Scale

1:25

Client: Homes and Communities Agency

Depth
4.10

2.3

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke. MGR	
	1.50	ES					MADE GROUND: Light greyish brown very sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse, subangular to subrounded. Predominantly subangular of slag (some whitish). Cobbles and boulders of slag. Occasional red and refractory brick fragments. Rare scrap metal fragments and rare firm brown clay lenses. MGR	1
				2.80			MADE GROUND: Greyish light brown gravelly SAND with frequent lenses of stiff brown clay. Gravel is fine to coarse, subangular to subrounded of slag. Possible lenses of organic material. MGR	2
	3.20	ES					MADE GROUND: Whitish grey sandy gravel with high ash content. Gravel is fine to coarse, subangular to subrounded of whitish slag. Occasional refractory brick fragments. MGR	3
				3.60				
				4.10			End of pit at 4.10 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE44

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456430.00 - 525156.00

Level:

Date

06/03/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Depth
4.70

2.5

Scale

1:25

Logged

LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke.  MGR MADE GROUND: Light greyish brown very sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse, subangular to subrounded and includes slag (some white mineralisation). Cobbles and boulders are of slag. Occasional red and refractory brick fragments. Rare scrap metal fragments. Two boots (PAIR?). MGR Orangish to left	1
				3.00			MADE GROUND: Light greyish brown slightly gravelly SAND with rare shell fragments. Gravel is fine to coarse, subangular to rounded of slag and beach pebbles. MGR 	3
				3.60			MADE GROUND: Whitish grey sandy GRAVEL with high ash content. Gravel is fine to coarse, subangular to subrounded of slag. Occasional refractory brick fragments. MGR 	4
	4.20	ES		4.70			End of pit at 4.70 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456479.00 - 525136.00

Level:

Date

06/03/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.30Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			MADE GROUND: Medium dense black SAND AND GRAVEL. Gravel is fine to coarse, subangular to rounded of BOS Grit and slag. MGR
				0.50			MADE GROUND: Loose to medium dense orange brown sandy fine to coarse, angular to subrounded GRAVEL of slag with occasional cobbles and boulders of slag. MGR
							MADE GROUND: Loose grey sandy fine to coarse, subangular to rounded GRAVEL of slag with occasional cobbles of slag and refractory brick. Pockets of ash. Red angular boulder at 2.8m MGR
	2.60 - 2.80	ES					
				2.80			
				2.90			MADE GROUND: Medium dense white/grey gravelly SAND. Gravel is subangular to rounded of angular slag. MGR
							MADE GROUND: Dense brownish grey gravelly SAND with ash and occasional cobbles of slag. MGR
				3.60			MADE GROUND: Medium dense brown silty fine to coarse SAND with laminations of black coarse sand of coal. MGR
	4.20 - 4.30	ES					Red angular boulder
				4.30			End of pit at 4.30 m

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456101.00 - 525353.00

Level:

Date

24/04/2017

Location: SSI Redcar

Dimensions
(m):

3

Depth
4.20

2.2

Scale

1:25

Logged

JNB

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 - 1.10	LB		0.30			MADE GROUND: Loose black slightly silty gravelly, fine to coarse SAND. Gravel is angular to subrounded of coke. (Slightly shiny) MGR	
				1.10			MADE GROUND: Medium dense, reddish brown, very sandy fine to coarse, angular to subrounded GRAVEL with medium cobble and boulder content of slag and rare refractory brick. MGR	1
	1.50	ES		2.20			MADE GROUND: Loose brown slightly clayey fine to coarse SAND with medium cobble content, low boulder content and occasional red and refractory brick fragments. Gravel is fine to coarse subangular to rounded of various lithologies including beach pebbles and slag. MGR	2
	3.40	ES		4.20			MADE GROUND: Soft brown slightly sandy gravelly CLAY with medium cobble content and low boulder content. Gravel is angular to rounded of various lithologies including beach pebbles, slag and red and refractory brick. MGR	3
							<u>Pockets of white sandy gravel</u>	
							End of pit at 4.20 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE47

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 465122.00 - 525328.00

Level:

Date

15/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.30

2.7

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			MADE GROUND: Loose black slightly sandy to coarse GRAVEL of coke. MGR
							MADE GROUND: Loose brown sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant angular cobbles of slag and pockets of ash. MGR
				0.80			MADE GROUND: Loose slightly sandy fine to coarse, angular to subrounded GRAVEL of slag, with cobbles and boulders of slag. MGR
				1.30			MADE GROUND: Loose red slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with cobbles and boulders. MGR
	2.00	ES		2.50			MADE GROUND: Loose yellow slightly gravelly SAND. Gravel is fine to coarse, angular to subangular of slag. MGR
				3.40			MADE GROUND: Dense grey slightly sandy fine to coarse GRAVEL of slag with occasional pockets of firm clayey silt (possible natural). MGR
							From 3.4m: Sulphur smell
				4.30			End of pit at 4.30 m

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456170.00 - 525314.00

Level:

Date

13/03/2017

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
3.50

2.2

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20						MADE GROUND: Loose black slightly sandy fine to coarse, angular to subrounded GRAVEL of coke and BOS grit. MGR
	1.50	ES					MADE GROUND: Loose brown slightly sandy fine to coarse, angular to subrounded GRAVEL with abundant boulders and cobbles of slag. Occasional pockets of ash. MGR
	3.50						End of pit at 3.50 m

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE49

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456219.00 - 525294.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.10

2.5

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50	ES		0.20			MADE GROUND: Medium dense brown sandy GRAVEL (BOS GRIT) MGR
				0.80			MADE GROUND: Loose grey sandy fine to coarse, angular to rounded GRAVEL of slag with occasional cobbles and boulders of slag. Pockets of speckled white and grey sand (ash). MGR
				0.90			MADE GROUND: Loose yellowish brown SAND ID MGR
							MADE GROUND: Loose greyish brown sandy fine to coarse, angular to rounded GRAVEL with occasional cobbles interlaminated with black fine to coarse sand of coal and pockets (500x600mm) of firm brown laminated clayey silt and soft brown clay. Some wire and plastic. MGR
							<i>From 0.9m: refractory bricks at 3.5m</i>
	3.40	ES		4.20			End of pit at 4.10 m

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456266.00 - 525276.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Depth
4.30

2.4

Scale

1:25

Logged

LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is subangular to subrounded of coke. MGR	
							MADE GROUND: Light greyish brown very sandy gravel with abundant cobble and frequent boulders. Gravel is fine to coarse, subangular to subrounded of slag (some white staining). Cobbles and boulders are of slag, some traces of iron staining. Rare red brick fragments. MGR	1
							Becoming brown very gravelly SAND	2
				3.70			MADE GROUND: Light whitish grey slightly silty, slightly sandy GRAVEL with high ash content and occasional small cobbles. Gravel is fine to coarse, subangular to subrounded of slag. MGR	3
	4.00	ES		4.30			End of pit at 4.30 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE51

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456314.00 - 525261.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

1:25

Client: Homes and Communities Agency

Depth
3.40

2.2

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Medium dense black sandy fine to coarse, angular to rounded GRAVEL of BOS grit. MGR	
				0.40			Reddish material MADE GROUND: Brown staining pellets MGR	
				1.00			MADE GROUND: Loose greyish brown sandy fine to coarse, angular to rounded GRAVEL of slag with occasional cobbles and boulders MGR	
							MADE GROUND: Loose grey sandy fine to coarse, angular to subangular GRAVEL of slag with frequent cobbles of slag. Some sulfur mineralisation. MGR	1
	2.00	ES						2
								3
				3.40			End of pit at 3.40 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE52

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456406.00 - 525220.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):Depth
4.50

Scale

1:25

Logged

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.90	ES		0.50			MADE GROUND: Dark grey slightly silty  elly SAND. Gravel is fine to coarse, subangular to subrounded of coke and occasional slag. MGR	1
							MADE GROUND: Orange very gravelly SAND with frequent cobbles and occasional boulders. Gravel is fine to coarse, subangular to subrounded of slag and iron ore. Cobbles and boulders  are slag. MGR	
				1.40			MADE GROUND: Grey very gravelly SAND with frequent cobbles and occasional boulders. Gravel is fine to coarse, subangular to subrounded of slag. Cobbles and boulders are of slag. Occasional fragments of refractory bricks. Rare Scrap metal fragments. MGR 	2
				3.80			MADE GROUND: Greyish yellow gravelly SAND with occasional  ages of firm to stiff brown clay and black organic material. Gravel is fine to coarse, subangular to rounded of various lithologies including beach pebbles and sandstone. (Possibly natural) MGR	4
				4.50			End of pit at 4.50 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE53

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456451.00 - 525203.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Scale

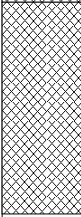
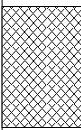
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Client: Homes and Communities Agency

Depth
4.10

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke. (Slightly shiny - BOS Grit) MGR	
				1.00			MADE GROUND: Greyish red very gravelly SAND with frequent cobbles and occasional boulders. Gravel is fine to coarse, subangular to subrounded of slag. Cobbles and boulders are of slag. Refractory brick fragments. MGR	
							MADE GROUND: Whitish grey slightly silty very gravelly SAND with high ash content. Gravel is fine to coarse subangular of slag. Occasional refractory, rare red brick fragments. MGR	1
	2.50	ES						2
	3.80 - 4.10	B						3
				4.10			End of pit at 4.10 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE54

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456488.00 - 525166.00

Level:

Date

04/05/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Scale

1:25

Client: Homes and Communities Agency

Depth
3.30

2.2

Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.15			MADE GROUND: Loose dark grey to black slightly gravelly SAND of coal and coke dust. Gravel is fine to medium occasionally coarse of coke and occasionally slag. MGR	
				0.40			MADE GROUND: Loose to medium dense dark reddish brown SAND AND GRAVEL with low cobble content of slag. Gravel is fine to coarse, subangular to angular of slag. MGR	
							MADE GROUND: Medium dense grey slightly sandy fine to coarse, angular to subangular GRAVEL of slag with a low cobble and boulder content of slag. Rare gravel to cobble size fragments of refractory brick. MGR	1
							Localised pockets of white ash Becoming dense and orangish brown in colour, sandy gravelly with low medium cobbles and low boulder content. Sulfur odour noted	
							1.4x1.45x0.5m boulder of fused slag, iron and brick	
				1.90			MADE GROUND: Black to yellowish grey sandy GRAVEL with low cobble and boulder content. Rare red and refractory brick fragments and whole red bricks. MGR	2
							Becoming medium dense to dense	
	2.80 - 2.90 2.80 - 2.90 2.80 - 2.90	B ES LB		3.10			MADE GROUND: Dense brown GRAVEL AND SAND. Gravel is fine to coarse of slag. Occasional and refractory brick. Rare cobbles of iron. Low to medium cobble content of slag. MGR	3
				3.40			End of pit at 3.30 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE56

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456140.00 - 525366.00

Level:

Date

13/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.90

2.6

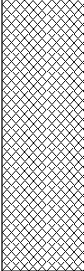
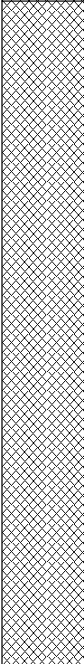
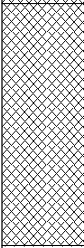
Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.50			MADE GROUND: Loose black slightly sandy fine to coarse, angular to subrounded GRAVEL of coke and BOS grit. MGR	
				0.80			MADE GROUND: Very dense grey slag MGR	
				1.20			MADE GROUND: Loose slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant cobbles and occasional boulders of slag. Some ash. MGR	1
				2.40			MADE GROUND: Loose reddish brown slightly sandy fine to coarse, angular to subrounded GRAVEL with abundant cobbles. MGR	2
	2.60	ES		3.80			MADE GROUND: Loose yellow slightly gravelly coarse SAND with occasional cobbles of slag. Gravel is fine to coarse, angular of slag. MGR	3
				3.90			MADE GROUND: Firm brown thickly laminated with fine brown sand, clayey SILT. (POSSIBLE NATURAL) MGR	4
							End of pit at 3.90 m	5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPE57 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456239.00 - 525342.00 Level:		Date 08/03/2017	
Location: SSI Redcar				Dimensions (m):		3.3 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.20				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	2.50	ES		0.20			MADE GROUND: Loose black sandy fine to coarse, angular to subrounded GRAVEL of BOS grit. MGR	1
				1.10			MADE GROUND: Very dense grey sandy fine to coarse, angular to subangular GRAVEL with abundant cobbles and boulders, ash bands and refractory brick. MGR	
				3.30		MADE GROUND: Loose greyish brown slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant cobbles and boulders of slag. MGR	2	
				4.10		MADE GROUND: Loose grey/white mottled brown sandy GRAVEL with some ash. MGR	3	
				4.20			MADE GROUND: Loose grey/white mottled brown sandy GRAVEL with some ash. MGR	4
4.20		Firm brown clayey SILT. TFD/ALV	5					

End of pit at 4.20 m

Remarks:

Stability:



				Trial Pit Log			Trialpit No TPE58 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456291.00 - 525324.00 Level:		Date 08/03/2017	
Location: SSI Redcar				Dimensions (m):		3.8 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.50				Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		0.10			MADE GROUND: Dark grey silty gravelly SAND. Gravel is fine to coarse, predominantly medium to coarse, subangular to subrounded of coke.  MGR MADE GROUND: Light greyish brown very sandy GRAVEL with abundant cobbles and boulders of whitish slag with rare red and refractory brick fragments. Gravel is fine to coarse, subangular to subrounded and includes slag and whitish slag. MGR <u>Asphalt</u>	1
								2
				2.70			<u>Becoming very gravelly SAND</u>	
				4.50			MADE GROUND: Greyish white slightly silty, slightly sandy GRAVEL with occasional cobbles and high ash content. Gravel is fine to coarse, subangular to subrounded and includes slag and occasional refractory brick fragments. MGR 	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE59

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456334.00 - 525306.00

Level:

Date

08/03/2017

Location: SSI Redcar

Dimensions
(m):Depth
4.30

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Loose black angular to subrounded GRAVEL fine to coarse, MGR MADE GROUND: Very dense grey sandy GRAVEL with abundant cobbles and boulders. Ash band 0.1m MGR	
				1.00			MADE GROUND: Dense greyish brown sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant boulders and cobbles of slag, some rare plastic. MGR	1
				3.30			MADE GROUND: Medium dense speckled white and grey sandy GRAVEL ash, MGR	3
	3.50 3.50	B ES		4.30			End of pit at 4.30 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456379.00 - 525285.00

Level:

Date

08/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Depth
4.90

2.3

Scale

1:25

Logged

LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Dark grey silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded and includes coke. MGR	
							MADE GROUND: Light greyish brown very sandy GRAVEL with abundant cobbles and frequent cobbles of whitish slag, rare refractory and red brick fragments. Gravel is fine to coarse, subangular to subrounded of slag. Rare scrap metal and wood fragments. MGR <i>Hard digging</i>	
								1
								2
								3
	3.50	ES					2 800x600mm greyish white boulders	
				3.80				
							MADE GROUND: Whitish grey sandy GRAVEL with occasional cobbles with a high ash content, frequent refractory and red brick fragments and rare wood fragments. MGR <i>Oil Odour</i>	4
	4.50	ES						
				4.90			End of pit at 4.90 m	5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPE61 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456425.00 - 525263.00 Level:		Date 08/03/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.30		Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		0.30		MADE GROUND: Medium dense b and red slightly sandy GRAVEL (Iron ore and BOS MGR)	1	
			0.80		MADE GROUND: Medium dense becoming loose orange sandy gravelly COBBLES AND BOULDERS of slag. Gravel is fine to coarse, angular to subrounded of slag. MGR			
			2.30		MADE GROUND: Loos y sandy GRAVEL with abundant cobbles MGR			
End of pit at 2.30 m								2
								3
								4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPE62

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456475.00 - 525246.00

Level:

Date

07/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Depth
4.50

2.7

Scale

1:25

Logged

EM

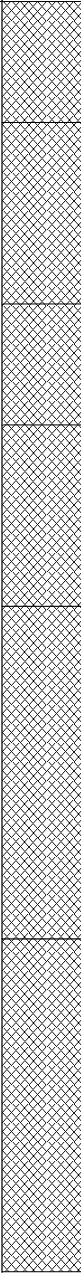
Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Medium dense black slightly sandy GRAVEL (BOS grit). MGR	
				1.60			MADE GROUND: Loose brown slightly sandy fine to coarse, angular to rounded GRAVEL with occasional cobbles and rare boulders. Iron ore mixed in, ammonia smell. MGR	1
							MADE GROUND: Loose grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with frequent cobbles and rare boulders of slag and refractory brick. MGR <i>From 1.6m: Strong ammonia smell, unstable sides, becoming damp</i>	2
	3.20	ES						3
				4.50			End of pit at 4.50 m	4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPE63 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456518.00 - 525231.00 Level:		Date 07/03/2017	
Location: SSI Redcar						Dimensions (m): 4.5 4.20		Scale 1:25	
Client: Homes and Communities Agency								Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00 - 1.40	ES		0.40			MADE GROUND: Dense grey sandy fine to coarse, angular to subrounded GRAVEL. MGR 	1
				1.00	MADE GROUND: Dense greyish brown sandy fine to coarse, angular to rounded GRAVEL of slag with occasional cobbles and boulders of iron ore. MGR 			
				1.40	MADE GROUND: Dense red sandy fine to coarse, angular to rounded GRAVEL of slag and iron ore with frequent cobbles. MGR <i>From 1.4m: railway sleeper</i>			
				2.00	MADE GROUND: Loose grey fine to coarse, angular to rounded GRAVEL with occasional cobbles and boulders, pockets of ash. MGR			
				3.10	MADE GROUND: Loose grey white slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with frequent cobbles. MGR			
				4.20	MADE GROUND: Loose grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with frequent cobbles. MGR 			
							End of pit at 4.20 m	5

Remarks:	
Stability:	

Trial Pit Log

Trialpit No

TPE64

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456206.00 - 525421.00

Level:

Date

08/03/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Depth
3.80

2.7

Scale

1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10						MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke. MGR
	1.30	ES					MADE GROUND: Light greyish brown slightly silty sandy GRAVEL with abundant cobbles and boulders of whitish slag and rare refractory brick fragments. Gravel is fine to coarse, subangular to subrounded and includes slag. MGR
							Frequent boulders, rare red brick fragments, rare metal and glass fragments.
				3.80			End of pit at 3.80 m

1

2

3

4

5

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456252.00 - 525401.00

Level:

Date

09/02/2017

Location: SSI Redcar

Dimensions
(m):

5

Depth
4.10

2.7

Scale

1:25

Logged

LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		1.20			MADE GROUND: Dark grey slightly silty very gravelly SAND with frequent cobbles and occasional boulders of coke and slag with occasional red and refractory brick fragments. Gravel is fine to coarse, subangular to subrounded of coke and slag. MGR 	1
							MADE GROUND: Whitish grey SAND AND GRAVEL with abundant cobbles, frequent cobbles with occasional fragments of refractory and red brick. Gravel is fine to coarse, subangular to subrounded and includes slag (some white staining). MGR <i>Ashy</i> 	2
				4.10			<i>Rare wood fragments</i> End of pit at 4.10 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE66

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456289.00 - 525362.00

Level:

Date

20/04/2017

Location: SSI Redcar

Dimensions
(m):

4

Depth
2.80

2.6

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Loose dark greyish black gravelly fine SAND. Gravel is fine to medium. Possibly ash/coke dust with mixed slag and coke gravel. MGR	
	1.50	ES					MADE GROUND: Medium dense grey very gravelly SAND with medium cobble content and rare boulders. Gravel is angular to subangular and includes slag with some clinker, concrete and occasional brick fragments. Locally very sandy gravel. MGR <u>Dense</u> <u>Some light grey/white coated gravel.</u> <u>Low boulder content of slag</u>	1
	2.50	ES		2.40			MADE GROUND: Dense light greyish brown slightly gravelly SAND. Gravel is angular to subangular and includes slag and mixed lithologies. MGR	
				2.80			<u>Very dense layer, no progress after 15 mins.</u> <u>N.B. Gravel dries out and turns light grey/white after 10 minute exposure to air</u> End of pit at 2.80 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPE67 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456344.00 - 525361.00 Level:		Date 09/03/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 0.10		Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10		 MADE GROUND: Loose black sandy GRAVEL (BOS grit). MGR From 0.1: Abandoned due to copper water pipe being uncovered End of pit at 0.10 m	1 2 3 4 5
Remarks:							
Stability:							



				Trial Pit Log			Trialpit No TPE68 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456375.00 - 525341.00 Level:		Date 13/03/2017	
Location: SSI Redcar				Dimensions (m):		4.5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.10				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	2.30 - 2.60	B					MADE GROUND: Light greyish brown very gravelly SAND with medium cobble and low boulder content of slag. Gravel is fine to coarse, subangular to subrounded and includes slag and whitish slag. MGR	1
	2.50	ES						2
				4.10			Rare wood fragments. Frequent refractory and red brick fragments	3
							End of pit at 4.10 m	4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPE69

Sheet 1 of 1

Project Name:

Redcar DVA Initial Ground Investigation

Project No.

678079

Co-ords:

456437.00 - 525316.00

Date

10/03/2017

Location:

SSI Redcar

Dimensions (m):

3

2.1

Scale

1:25

Client:

Homes and Communities Agency

Depth

3.90

Logged

EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			MADE GROUND: Medium dense black slightly sandy fine to coarse, angular to subrounded GRAVEL grit. MGR <i>From 0.1: welded slag layer very difficult to break through</i> MADE GROUND: Very dense grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with frequent cobbles and occasional boulders. MGR
				0.80			MADE GROUND: Very dense yellow SAND. MGR
				1.00			MADE GROUND: Very dense grey slightly sandy ashy fine to coarse, angular to subrounded GRAVEL of slag with occasional cobbles. MGR
				1.30			MADE GROUND: Loose grey fine to coarse, angular GRAVEL of slag with frequent cobbles. Strong hydrocarbon smell. Some scrap metal. MGR <i>Pile of refractory bricks</i>
	3.80	ES		3.90			End of pit at 3.90 m

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE70

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456493.00 - 525295.00

Level:

Date

09/03/2017

Location: SSI Redcar

Dimensions
(m):

6.2

Scale

1:25

Client: Homes and Communities Agency

Depth
4.20

2.1

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		0.20			MADE GROUND: Loose black silt fine to coarse, angular to subrounded GRAVEL with S grit. MGR	1
				1.30			MADE GROUND: Medium dense grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant cobbles and boulders of slag. MGR	
				1.50			From 0.2m: sulphur smell, refractory brick, pockets of Ash	
							MADE GROUND: Welded slag layer. MGR	
							MADE GROUND: Dense grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant cobbles and boulders of slag. MGR	2
				2.60			MADE GROUND: Medium dense reddish brown slightly sandy GRAVEL with cobbles. MGR	3
	3.50	ES		3.40			MADE GROUND: Welded slag layer. MGR	
				3.50			MADE GROUND: Medium dense brown slightly sandy GRAVEL AND COBBLES. MGR	
	4.20	D		4.00			Soft brown slightly sandy clayey SILT pockets of fine black sand. TFD/ALV	4
				4.20			End of pit at 4.20 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE71

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456534.00 - 525282.00

Level:

Date

09/03/2017

Location: SSI Redcar

Dimensions
(m):

5

Depth
4.40

2.6

Scale

1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			MADE GROUND: Dark grey slightly silty very gravelly SAND with occasional cobbles of  Gravel is fine to coarse, subangular to subrounded  ke. (shiny - BOS Grit) MGR MADE GROUND: Reddish brown sandy to very sandy GRAVEL with abundant cobbles and boulders of white slag. Gravel is fine to coarse, subangular to subrounded and includes slag (some white staining). MGR <i>Light greyish brown. Rare refractory brick fragments.</i> <i>Very gravelly SAND with abundant cobbles and boulders of slag.</i> 
				4.40			End of pit at 4.40 m

1

2

3

4

5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456289.00 - 525425.00

Level:

Date

20/04/2017

Location: SSI Redcar

Dimensions
(m):

3.7

Scale

1:25

Client: Homes and Communities Agency

Depth
4.30

2.3

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.20			MADE GROUND: Loose dark grey/black fine SAND. Possible coke/coal and ash MGR	
				1.20			MADE GROUND: Loose grey very gravelly SAND with low cobble content and rare boulders. Gravel is fine to coarse, angular to subangular including slag, concrete, some clinker and some yellow/silica brick fragments. MGR <i>Dense</i>	1
							MADE GROUND: Medium dense dark grey sandy GRAVEL with low to medium cobble content. Gravel is fine to coarse, angular to subangular and includes clinker, slag and some concrete and brick fragments. Cobbles are slag and clinker, rare intact and fragmented brick. Boulders are mostly slag and some clinker. MGR <i>Band of blueish dark grey gravel. Discontinuous dipping steeply south.</i>	2
	2.40	ES						
							<i>Very sandy</i>	3
	3.50	ES						
				4.30			End of pit at 4.30 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPE75

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456395.00 - 525382.00

Level:

Date

20/04/2017

Location: SSI Redcar

Dimensions
(m):

4.7

Client: Homes and Communities Agency

Depth
4.20

2.5

Scale

1:25

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.05						MADE GROUND: Loose light and grey fine gravelly ash/fine to coarse SAND. (Possible /coal) MGR	
	1.00	ES					MADE GROUND: Loose grey very gravelly SAND with low medium cobble content and rare ash/clinker/cemented sand boulders. Gravel is angular to subangular, fine to coarse and includes ash, clinker, cement and brick. Cobbles are angular to subrounded of cement and brick. Rare intact yellow brick. MGR <i>Whitish grey gravel</i>	1
							<i>Slight hydrocarbon odour</i>	
							<i>Very sandy gravel</i>	2
							<i>600x500x300mm boulder of slag</i>	
	3.00	ES					<i>Occasional pockets of light grey/white sandy gravel</i>	3
								4
				4.20			End of pit at 4.20 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456436.00 - 525346.00

Level:

Date

19/04/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
4.40Logged
FLM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.50 - 1.60	ES		0.10			MADE GROUND: Loose grey to light sandy GRAVEL. Gravel is fine to coarse angular to subangular of coke MGR	
				0.50			MADE GROUND: Dense light yellow to grey slightly sandy GRAVEL with low boulder and low to medium cobble content. Gravel is fine to coarse angular of slag and consolidated white ash. Rare refractory brick gravel and cobbles. MGR	
							MADE GROUND: Loose white grey gravelly SAND to very gravelly SAND. Gravel is fine to coarse angular to subangular of slag, occasional clinker coke, ash, burnt lime and refractory brick (2-4%). Low cobble content of angular slag. MGR	1
							<i>Notably ashy below 0.5m</i>	
							<i>Notably grey c. 0.9m</i>	
				2.10			MADE GROUND: Gravel of slag occasional clinker ash/ burnt lime and yellow refractory brick. MGR	2
							<i>Rare small yellow refractory bricks.</i>	3
							<i>Small ash bands/pockets</i>	
				4.00				
				4.40			MADE GROUND: Loose brown slightly sandy GRAVEL with low cobble content. Gravel is fine to coarse subangular to angular of slag. Rare fragments of pottery, metal white, lime and yellow brick. Rare cobbles of refractory brick. Slivers of shell (coarse gravel sized) MGR	4
							End of pit at 4.40 m	
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 455862.00 - 525323.00
Level:Date
16/03/2017

Location: SSI Redcar

Dimensions
(m):

4.6

1:9

Scale
1:25

Client: Homes and Communities Agency

Depth
4.00Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES					MADE GROUND: Slightly reddish brown gravelly to very gravelly SAND with low cobble content of slag. Gravel is fine to coarse, subangular to subrounded of slag. Rare fine black shiny mineral/rock. Occasional red and refractory brick fragments. MGR	1
	2.00	ES					MADE GROUND: Yellow with occasional thin dark grey laminations (likely organic material) slightly gravelly SAND. Gravel is fine to coarse, rounded of beach pebbles. Frequent shell fragments. MGR <i>Gravelly sand with abundant brown shells</i>	2
				4.00			End of pit at 4.00 m	4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPF02 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455888.00 - 525286.00 Level:		Date 16/03/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 4.50		Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.25			MADE GROUND: Medium dense black slightly sandy GRAVEL of coal/coke. MGR	
							MADE GROUND: Medium dense reddish black slightly silty SAND. MGR	
				1.00			MADE GROUND: Loose yellow coarse SAND. MGR	
				1.10			MADE GROUND: Medium dense grey slightly sandy fine to coarse, angular to sub rounded GRAVEL of slag with occasional cobbles. MGR	
				1.40			MADE GROUND: Loose yellow slightly gravelly SAND with laminations of black sand. Gravel is fine to coarse, subangular to rounded of various lithologies and shell fragments. MGR	
	2.50	ES						
				4.50			End of pit at 4.50 m	

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPF03

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 455957.00 - 525264.00

Level:

Date

16/03/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Depth
4.50

2.7

Scale

1:25

Logged
EM

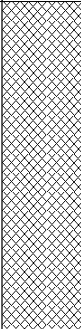
Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Loose black slightly gravelly SAND. MGR	
				0.60			MADE GROUND: Dense grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with frequent coarse sand and occasional boulders of slag. MGR	
							MADE GROUND: Loose yellow slightly gravelly SAND. Gravel is fine to coarse, angular to rounded of mixed lithologies including shells. MGR	
	3.00	ES						
				4.50			End of pit at 4.50 m	

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPF04 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455873.00 - 525364.00 Level:		Date 16/03/2017	
Location: SSI Redcar						Dimensions (m): 4.2 2.2		Scale 1:25	
Client: Homes and Communities Agency						Depth 4.30		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70 - 1.00 0.80	B ES		1.10			MADE GROUND: Dark grey slightly silty very gravelly SAND. Gravel is fine to coarse, subangular to subrounded of coke and slag. Rare red and refractory brick fragments. Rare wood fragments. MGR 	1
							Reddish MADE GROUND: Yellow with some thin dark grey laminations, slightly gravelly SAND. Gravel is fine to medium, rounded of beach pebbles. Occasional shell fragments. MGR 	2
	4.00	ES		4.30			End of pit at 4.30 m	4
								5

Remarks:

 Stability:



Trial Pit Log

Trialpit No

TPF05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 455921.00 - 525341.00

Level:

Date

16/03/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.70

2.4

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	ES					MADE GROUND: Medium dense black slightly sandy fine, angular to subrounded GRAVEL of coke. Becoming very dense with depth. MGR	
				1.00				
				1.20			MADE GROUND: Loose orange slightly sandy fine to coarse, angular GRAVEL of slag. MGR	1
							MADE GROUND: Loose yellow slightly gravelly SAND with occasional cobbles and interlaminae of black sand/silt. Gravel is subangular to subrounded of various lithologies containing shells. MGR	
								2
								3
								4
				4.70			End of pit at 4.70 m	5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPF06 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 455949.00 - 525328.00 Level:		Date 16/03/2017	
Location: SSI Redcar				Dimensions (m):		3.5 2.5		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.70				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.80			MADE GROUND: Slightly reddish brown very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, subangular to rounded of slag and some iron ore. Occasional scrap metal fragments. Rare wood and plastic fragments. Occasional red and refractory brick fragments. MGR	
				1.10			MADE GROUND: Brownish grey slightly sandy GRAVEL with high cobble content. Gravel subrounded to subangular of slag MGR	1
							MADE GROUND: Yellow with occasional thin dark grey laminations of slightly gravelly sand. Gravel is fine to medium rounded to subrounded of beach pebbles. MGR	2
				3.70			End of pit at 3.70 m	3
								4
								5

Remarks:

 Stability:



Trial Pit Log

Trialpit No

TPF07

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456001.00 - 525306.00

Level:

Date

17/03/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
3.90

2.2

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50 - 0.60	ES		0.10			MADE GROUND: Loose black sandy fine to coarse, angular to subrounded GRAVEL of coke and coal with occasional pellets. MGR	
				0.50			MADE GROUND: Loose grey sandy fine to coarse, angular to subrounded GRAVEL of slag and coal, rare wood. 200x300mm reinforced concrete block. MGR	
				0.60			MADE GROUND: Dense black sandy SAND. MGR	
				0.90			MADE GROUND: Loose grey/yellow very sandy GRAVEL. MGR	
							MADE GROUND: Loose yellow slightly gravelly coarse SAND. MGR	1
								2
								3
				3.90			End of pit at 3.90 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 455890.00 - 525416.00
Level:Date
15/03/2017

Location: SSI Redcar

Dimensions
(m):

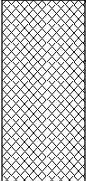
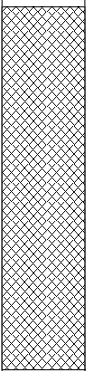
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Client: Homes and Communities Agency

Depth
4.20

2.4

Scale
1:25Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20 - 0.80	ES		0.30			MADE GROUND: Dark grey slightly silty very gravelly SAND. Gravel is fine to coarse subrounded to subangular of coke. Shiny. MGR	
				0.90			Reddish MADE GROUND: Brown slightly sandy GRAVEL with high cobble and low boulder content both of slag. Gravel is fine to coarse subangular to subrounded of slag. MGR Large boulder 0.8m dia.	
							MADE GROUND: Yellow slightly gravelly SAND with occasional thin dark grey layers (possible organic material) with low cobble and medium boulder content. Rare refractory brick fragments. MGR	1
								2
								3
				4.20				4
							End of pit at 4.20 m	5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPF09

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 455936.00 - 525397.00

Level:

Date

15/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Depth
3.00

2.5

Scale

1:25

Logged
EM

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.40			MADE GROUND: Medium dense black slightly sandy fine to medium, angular GRAVEL of slag. MGR	
				0.80			MADE GROUND: Dense grey slightly sandy fine to coarse, angular to subrounded GRAVEL of slag with abundant cobbles of slag. MGR	
				3.00			MADE GROUND: Loose yellow slightly gravelly SAND. MGR	1
				3.00			MADE GROUND: Yellow slightly gravelly SAND with occasional thin dark grey interbeds (possibly organic). Gravel is subrounded to subangular of slag. Occasional broken shell fragments. MGR	2
							End of pit at 3.00 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPF10

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 455972.00 - 525364.00

Level:

Date

16/03/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
5.00

3.5

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20 - 0.60	ES		0.20			MADE GROUND: Medium dense black mottled red and brown, slightly sandy fine to coarse, angular to subrounded GRAVEL of coke and coal. MGR
				0.60			MADE GROUND: Loose grey slightly sandy slightly GRAVEL with frequent cobbles. Sulfur smell from slag. MGR
							MADE GROUND: Loose yellow slightly gravelly SAND with occasional cobbles. Gravel subrounded to angular of various lithologies to coke shell fragments. MGR
				5.00			End of pit at 5.00 m

1

2

3

4

5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPF11

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456015.00 - 525413.00
Level:

Date
15/03/2017

Location: SSI Redcar

Dimensions
(m):

4

Scale

1:25

Client: Homes and Communities Agency

Depth
4.00

2.5

Logged
EM

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Loose black slightly sandy GRAVEL. MGR	
				0.30			MADE GROUND: Medium dense slightly sandy GRAVEL. MGR	
	1.00	ES					MADE GROUND: Loose yellow slightly gravelly SAND with laminations of black silty sand. Gravel is fine to medium, subangular to rounded of various lithologies including shells. MGR	1
	2.00	B						2
	3.00	ES						3
				4.00			End of pit at 4.00 m	4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPF12

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456047.00 - 525402.00

Level:

Date

15/03/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
3.10

2.4

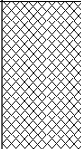
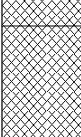
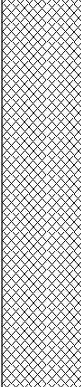
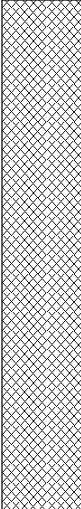
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Dark grey slightly silty gravelly SAND. Gravel is fine to coarse subrounded to subangular of coke and slag. MGR	
				0.60			MADE GROUND: Brownish grey slightly sandy fine to coarse, subangular to subrounded GRAVEL with high cobble and medium boulder content both of subrounded slag. MGR	
							MADE GROUND: Yellow slightly gravelly SAND with occasional thin layers of dark grey material (organic) and shell fragments. Gravel is fine to coarse, subangular to rounded of beach pebbles and some slag. MGR	1
							Railway sleeper	
							No gravel	
	2.00	ES						2
				3.10				3
							End of pit at 3.10 m	
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPF13 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456032.00 - 525448.00 Level:		Date 15/03/2017	
Location: SSI Redcar				Dimensions (m):		4.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.10		2.6 		Logged EM	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		0.50 0.60			MADE GROUND: Medium dense black slightly sandy fine to coarse, angular to subrounded GRAVEL of coke, coal and BOS grit. MGR	
							MADE GROUND: Very dense grey welded SLAG. MGR MADE GROUND: Loose grey slightly sandy slightly fine to coarse angular GRAVEL of slag with low whitish grey ash content. MGR	1
								2
				2.30			MADE GROUND: Loose brownish grey slightly sandy slightly fine to coarse, angular GRAVEL of slag with frequent cobbles of slag. MGR 	3
							<i>Grey with dark grey patches of silty sand and base of pit (organic)</i>	
	4.00	ES		4.00 4.10			MADE GROUND: Loose beige slightly gravelly slightly silty SAND. Gravel is fine to coarse, angular slag. MGR End of pit at 4.10 m 	4
								5

Remarks:		
Stability:		

				Trial Pit Log				Trialpit No TPF14 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456062.00 - 525447.00 Level:		Date 15/03/2017	
Location: SSI Redcar						Dimensions (m): 2.4 4.2		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.80		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			MADE GROUND: Dark grey slightly silty gravelly SAND with low cobble content of slag. Gravel is fine to coarse, subangular to subrounded of coke and slag. MGR
							Light whitish grey sandy GRAVEL with medium to high cobble content and low boulder content, possibly low ash content. Gravel is fine to coarse, subangular to subrounded of whitish slag. Occasional refractory and red brick fragments. MGR <u>Appears oblique-layered bedding</u>
							
				3.80			End of pit at 3.80 m

Remarks:

 Stability:



Trial Pit Log

Trialpit No
TPH01
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456584.00 - 525115.00
Level:

Date
13/02/2017

Location: SSI Redcar

Dimensions (m):

4.5

Scale
1:25

Client: Homes and Communities Agency

Depth
2.40

2.3

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10			MADE GROUND: Grass over dark brown slightly gravelly SAND with abundant rootlets. Gravel is fine to coarse of slag. TPS	
	1.00 - 1.30	B					MADE GROUND: Brownish grey very sandy GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders of slag. Rare stiff brown clay pockets, rare bricks, predominately whole (red, refractory) MGR	1
	1.20	ES						
				1.50			MADE GROUND: Grey slightly sandy slightly silty GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse, subrounded to subangular of whitish slag and slag. Occasional bricks mostly broken (red, refractory). Rare scrap metal fragments. Dark grey clay at the bottom of the trial pit (cannot see exact level due to presence of ground water) MGR	2
				2.40			End of pit at 2.40 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPH02

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456617.00 - 525092.00

Level:

Date

14/02/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
2.10

2.4

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.70	ES		0.10		 MADE GROUND: Grass over TOPSOIL - medium dense dark brown/black slightly gravelly sandy SILT with numerous rootlets. TPS MADE GROUND: Medium dense grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, red brick and concrete. Cobbles and boulders are mostly of slag, rarely clinker, occasionally contact red and yellow brick. Rare wire and metal. Rare pockets of brownish grey and dark grey - possibly ash/sinter and sand content. Some slag has white crystallisation on the edges. MGR Very dense Sulfur odour Very gravelly Steel H-Beam ~1m long		1
				2.10			End of pit at 2.10 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456655.00 - 525078.00
Level:Date
14/02/2017

Location: SSI Redcar

Dimensions
(m):Depth
0.80Scale
1:25Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			MADE GROUND: Grass over TOPSOIL: Medium dense dark brown/black slightly gravelly sandy SILT with rare cobbles and abundant rootlets. TPS
				0.80			MADE GROUND: Medium  e grey very gravelly SAND with medium to high cobble content and low to medium boulder content. Gavel is fine to coarse, angular to subangular and includes slag, clinker and some brick fragments. Cobbles and boulders are mostly slag with some clinker and red/refractory brick. Occasional pockets (<500x200x400mm) of greyish brown clayey sand. Some slag pieces have white crystallisation on the outer edge. MGR <i>Very dense, compacted</i>
							End of pit at 0.80 m

1

2

3

4

5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.	678079

Co-ords:	456701.00 - 525080.00

Level:

Date _____

25/04/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Depth
2.50

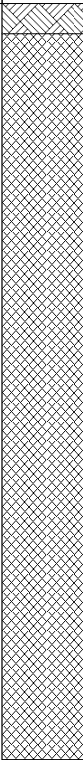
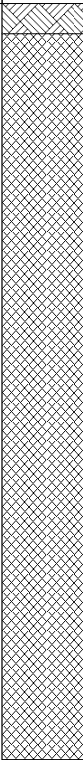
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Scale

1:25

Logged
AC

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.90	ES		0.10			MADE GROUND: Grass  dark brown/black silty TOPSOIL. TPS MADE GROUND: Light grey and dark greyish brown very sandy medium to coarse, angular to subangular GRAVEL of slag and red brick with cobbles and boulders. Occasional whole refractory and red bricks. MGR 
	2.40	ES		2.50			Occasional metal bars. Yellowish Slightly clayey End of pit at 2.50 m

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPH05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456744.00 - 525064.00

Level:

Date

25/04/2017

Location: SSI Redcar

Dimensions
(m):

3.2

Scale

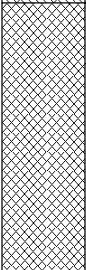
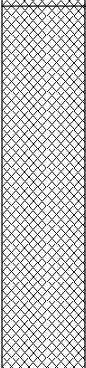
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Client: Homes and Communities Agency

Depth
2.30

2.1

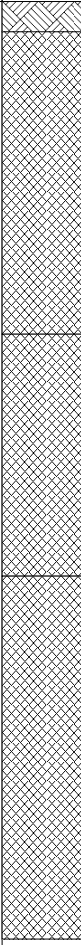
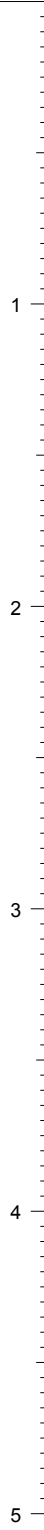
Logged
JNB

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.20			TOPSOIL TPS	
	0.40 - 1.10	ES					MADE GROUND: Loose greyish brown slightly clayey very gravelly fine to coarse SAND with low cobble and boulder content. Gravel is of slag, red and refractory brick and lime (?). MGR <u>Grey very sandy gravel.</u>	1
	1.10 - 1.80 1.10 - 1.80	D ES		1.10			MADE GROUND: Soft to firm brown and white slightly sandy slightly gravelly CLAY with a low cobble content. Gravel is of red and refractory brick and slag. MGR <u>Increased sand and gravel content</u>	2
				2.30			End of pit at 2.30 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPH06 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456782.00 - 525054.00 Level:		Date 25/04/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.80		Logged AC	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.10		MADE GROUND: Grass over dark brown slightly gravelly sandy silty TOPSOIL. TPS		
	0.50			MADE GROUND: Grey brown clayey gravelly SAND with cobbles. Gravel is fine to coarse grey slag. Fragments and whole red and refractory brick. Occasional fragments of cloth. Occasional cobble sized lumps of black clayey material and decomposed wood. MGR				
	1.10			MADE GROUND: Greyish brown clayey gravelly SAND with occasional fragments of brick concrete and black organic matter. MGR				
	1.90	ES		Slightly gravelly sand, occasional intact yellow brick	MADE GROUND: soft to firm grey gravelly very sandy CLAY. Gravel is fine to coarse, angular to subangular and includes slag, whole and fragmented red brick and concrete. Fragments of wood. MGR			
	2.50			 				
	3.00	D		3.10		End of pit at 2.80 m		

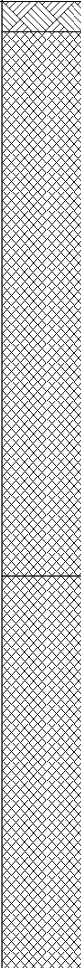
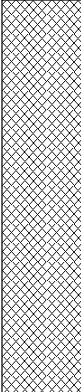
Remarks:		
Stability:		

				Trial Pit Log			Trialpit No TPH07 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456821.00 - 525026.00 Level:		Date 16/02/2017	
Location: SSI Redcar				Dimensions (m):		3.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.10		1.8 		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50	ES		0.20			MADE GROUND: Grass over brown and very dark grey slightly gravelly silty SAND with abundant rootlets. Gravel is fine to coarse subrounded to subangular of slag and coke. TPS	1
	2.00	ES		2.10			MADE GROUND: Greyish brown very sandy GRAVEL with abundant cobbles and occasional boulders. Some pockets of firm brown clay in the upper metre. Gravel is fine to coarse subrounded to subangular of slag, some whitish slag. Cobbles and boulders of slag. Occasional brick fragments (red, refractory) Rare scrap metal, small wood, plastic and glass fragments. Lump of tufa at around 0.5m. Rope of wire at the side looking at excavation at around 0.3m going around the side. Frequent bricks towards bottom, broken and whole (red, refractory) slightly clayey at the bottom 0.5m. Evidence of Oil on bricks. MGR	2
							End of pit at 2.10 m	3
								4
								5

Remarks:	
Stability:	

				Trial Pit Log			Trialpit No TPH08 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456604.00 - 525154.00 Level:		Date 13/02/2017	
Location: SSI Redcar				Dimensions (m):		4.7 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.20				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over TOPSOIL: Loose dark grey/black slightly gravelly silty SAND with numerous rootlets. TPS	
	0.60	ES			MADE GROUND: Medium dense grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, red and refractory brick. Cobbles are mostly slag with some clinker and brick. Boulders are slag. Occasional layers of sandy gravel (~400mm thick). MGR <i>Vertical red brick wall face exposed in east of pit.</i>			
	1.20 - 1.50	B			1.90		MADE GROUND: Firm to stiff greyish brown slightly gravelly CLAY with rare subangular cobbles and occasional patches of reddish brown clay. Gravel is fine to coarse, angular to subangular of slag and clinker. Some lenses of ~10mm thick of white/light grey friable clay. MGR	
	2.50	ES		3.20		End of pit at 3.20 m		

Remarks:

 Stability:





Trial Pit Log

Trialpit No

TPH10

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456674.00 - 525116.00

Level:

Date

14/02/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
2.40

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over dark brown slightly gravelly silty SAND. Gravel is fine to coarse subrounded to subangular of slag. TPS	
				0.70			MADE GROUND: Grey slightly sandy GRAVEL with frequent cobbles and rare boulders. Gravel is fine to coarse subrounded to subangular of slag, reddish slag. Rare brick fragments (red, refractory). MGR	
							MADE GROUND: Greyish brown slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular. Difficult to tell lithologies due to sand, probably slag. Rare very small shell fragments. Rare cobbles of slag. Some very dark grey coloured layers, some pockets of dark brown clay in the upper part. MGR	1
	1.50	ES						
	1.70 - 2.00	B						2
				2.40			End of pit at 2.40 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPH11 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456711.00 - 525095.00 Level:		Date 16/02/2017	
Location: SSI Redcar				Dimensions (m):		4.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.10				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.20			MADE GROUND: Grass over dark green brown gravelly silty SAND with abundant cobbles and frequent boulders. Some firm brown and light brown clay pockets. Gravel is fine to coarse subrounded to subangular of slag and coke. TPS	1
	1.70	ES					MADE GROUND: Brown very sandy gravel to very gravelly SAND with abundant cobbles and frequent boulders. Some firm brown and light brown clay pockets. Gravel is fine to coarse subrounded to subangular slag, some whitish slag. Cobbles and boulders of slag, whitish slag. Rare wood fragments, one is up to 1.5m long. Rare glass fragments, clay line, wood sleepers, frequent bricks (mostly broken red 50% and 50% refractory) occasional scrap metal, wood fragments at the bottom of TP (associated with railway line) slightly clayey towards bottom, slight hydrocarbon odour. MGR	2
				2.10			End of pit at 2.10 m	3
								4
								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No
TPH12
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456760.00 - 525088.00
Level:

Date
15/02/2017

Location: SSI Redcar

Dimensions (m):

4.7

Scale
1:25

Client: Homes and Communities Agency

Depth
1.90

2.4

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.00 - 1.30	B		0.20			MADE GROUND: Grass over dark brown gravelly silty SAND with abundant rootlets. Gravel is fine to coarse subrounded to subangular of Rare gravel size brick fragments. TPS	1
				1.90			MADE GROUND: Brownish grey very sandy GRAVEL with frequent cobbles, occasional boulders and rare large boulders. Gravel is fine to coarse subrounded to subangular of slag, whitish slag. Cobbles and boulders of slag, whitish slag. Occasional cobbles, both whole and broken (red, refractory). Layer of abundant red bricks with black material underneath, between 0.8-1.2m at the side looking at excavator. MGR TP Terminated at 1.9m due to groundwater	2
							End of pit at 1.90 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPH13

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456801.00 - 525072.00

Level:

Date

16/02/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
2.00

2.3

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50	ES		0.10			MADE GROUND: Grass over TOPSOIL: Loose dark brown slightly gravelly silty SAND with numerous rootlets. TPS	
				0.80			MADE GROUND: Medium dense brownish grey very gravelly SAND with medium cobble and low boulder content and numerous pockets (<100x50x50mm) of stiff brown sandy clay. Gravel is fine to coarse, angular to subangular of slag, clinker and refractory brick. Cobbles are mostly slag with some brick. Boulders are slag, rarely intact brick. MGR	
				1.50			MADE GROUND: Stiff greyish brown sandy gravelly CLAY with pockets of very gravelly sand throughout. MGR	1
								2
							End of pit at 2.00 m	2
								3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPH14

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456836.00 - 525062.00

Level:

Date

16/02/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Scale

1:25

Client: Homes and Communities Agency

Depth
2.50

2.3

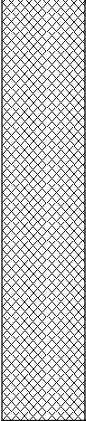
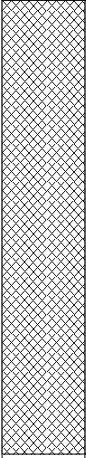
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over dark brown silty gravelly SAND with abundant rootlets. Gravel is fine to coarse subrounded to subangular of slag. TPS	
				0.90			MADE GROUND: Grey sandy GRAVEL with abundant cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag, whitish slag. Cobbles and boulders of slag: 1 large boulder 1m long. Occasional brick fragments (red, refractory). MGR	
							MADE GROUND: Firm brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse subrounded to subangular of slag. Cobbles are of slag. Pockets of firm clay, rare small wood fragments. MGR	1
							TP Terminated at 2.5m due to groundwater - fast inflow	
								2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPH15 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456615.00 - 525197.00 Level:		Date 13/02/2017	
Location: SSI Redcar						Dimensions (m): Depth 3.10 2.5 4.4		Scale 1:25 Logged LK	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.20			MADE GROUND: Grass over dark brown very gravelly silty SAND with abundant cobbles. Gravel is fine to coarse subrounded of (predominately) and slag. Metal wire also present. TPS	1
	1.40	ES		1.60			MADE GROUND: Light brownish grey very sandy gravel to very gravelly SAND with abundant cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of whitish slag and slag. Cobbles and boulders of whitish slag, rare brick fragments (red, refractory) MGR	
	3.00	ES		3.10			MADE GROUND: Light brownish grey very sandy gravel to very gravelly SAND with frequent cobbles and occasional bricks (mostly broken). Occasional wood fragments up to 0.5m long. Rare scrap metal fragments. Lumps of dark grey/light greyish grey/brown slightly sandy slightly gravelly clay at the bottom (exact level unknown due to groundwater). Fragment of tile (pipe?) within the clay. More bricks towards the bottom. MGR <i>TP Terminated at 3.1m due to groundwater</i>	
							End of pit at 3.10 m	3
								4
								5

Remarks:

Stability:



Trial Pit Log

Trialpit No
TPH16
Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456644.00 - 525177.00
Level:

Date
14/02/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Scale
1:25

Client: Homes and Communities Agency

Depth
2.60

2.5

Logged
TL

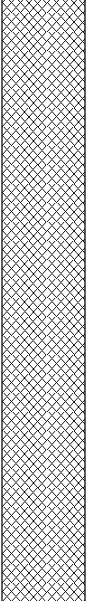
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over TOPSOIL: Loose dark brown/black silty sand with abundant fine to coarse subangular gravel of coke and numerous rootlets. TPS	
	0.70	ES		0.90			MADE GROUND: Medium dense brownish grey gravelly SAND with medium cobble content and rare pockets (<500x300x300mm) of stiff brown sandy clay. Gravel is fine to coarse, angular to subangular of slag, clinker, occasional brick fragments. Cobbles are mostly slag, lesser red and yellow brick (silica and refractory) MGR	
▼	1.40 - 1.70	B					MADE GROUND: Medium dense grey gravelly clayey SAND with medium cobble content and rare boulders. Gravel is fine to coarse, angular to subangular of slag, clinker and brick fragments. Cobbles are slag and brick. Boulders are slag rarely intact yellow and red brick with occasional wire casing. Locally very clayey to sandy clay. MGR	1
	2.20	ES						2
▼				2.60			End of pit at 2.60 m	3
								4
								5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPH18 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456733.00 - 525146.00 Level:		Date 15/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.20		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	1.30	ES		0.20			MADE GROUND: Grass over dark grey silty sandy gravel with abundant rootlets. Gravel is fine to medium of coke (predominately) and slag. TPS	1
				2.20		MADE GROUND: Greyish brown very gravelly SAND with frequent cobbles, occasional boulders, rare large boulders and occasional clay pockets. Gravel is fine to coarse subrounded to subangular of slag, cobbles and boulders of clay, some whitish slag, occasional bricks, 50/50 broken/whole (red, refractory) frequent towards the bottom of TP. Rare wood and scrap metal fragments. Occasional clay pockets, greyish brown with light brown and black patches. Rare slate, glass and pottery fragments. Very sandy slightly clayey/silty gravel at the bottom of the TP. MGR TP Terminated at 2.2m due to groundwater 	2	
							End of pit at 2.20 m	3
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456775.00 - 525128.00

Level:

Date

15/02/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Scale

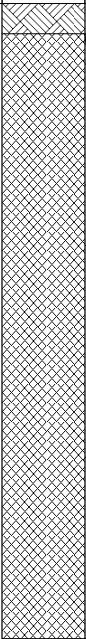
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Client: Homes and Communities Agency

Depth
2.10

2.1

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.80	ES		0.10			MADE GROUND: Grass over TOPSOIL: loose very dark brown/black slightly gravelly sandy SILT with abundant rootlets. Gravel is medium to coarse, some fine, subangular of coke and assorted lithologies TPS MADE GROUND: Medium dense dark grey gravelly SAND with low to medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, some brick fragments and concrete. Cobbles are slag, some brick fragments and clinker. Boulders are slag and occasional intact refractory brick. Bricks ~5-10% of total volume. Rare scrap metal waste. MGR <u>Very dense</u> <u>Numerous intact refractory bricks</u>	1
				2.10			 <u>Rare partially decomposed wood waste</u> End of pit at 2.10 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456818.00 - 525115.00

Level:

Date

15/02/2017

Location: SSI Redcar

Dimensions
(m):

4.2

Scale

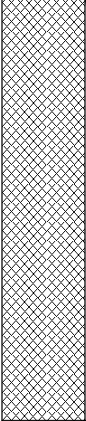
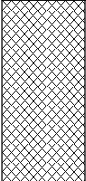
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Client: Homes and Communities Agency

Depth
2.20

2.7

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	2.00	ES		0.20			MADE GROUND: Grass over dark brown silty gravelly SAND with abundant rootlets. Gravel is fine to coarse subrounded to subangular of sandstone and possibly slag. There are brick fragments (red). TPS	1
				1.60			MADE GROUND: Brown very gravelly sand to very sandy GRAVEL with abundant cobbles, occasional boulders and rare large boulders. Rare clay pockets. Gravel is fine to coarse subrounded to subangular of slag. Cobbles and boulders are of slag. Frequent bricks, mostly broken (red, refractory). Rare tile fragments (pipe?), wood and pottery fragments. MGR	
				2.20			MADE GROUND: Stiff greyish brown mottled black, slightly gravelly CLAY. Gravel is fine to coarse subrounded of sandstone and possibly slag. MGR	
							End of pit at 2.20 m	2
								3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPH21

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456857.00 - 525106.00

Level:

Date

16/02/2017

Location: SSI Redcar

Dimensions
(m):

3.6

Scale

1:25

Client: Homes and Communities Agency

Depth
2.40Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over TOPSOIL: Dark brown silty SAND with gravel and rootlets. TPS	
							MADE GROUND: Medium dense, locally dense, dark grey very gravelly SAND with low to medium cobble and low boulder content with occasional pockets (500x300x400mm) of brown sand clay. Gravel is fine to coarse, angular to subangular of slag, clinker, brick (red/yellow), concrete. Cobble are slag, concrete, brick. Boulders are slag, rare intact brick. MGR	
							<u>Dense</u>	
							<u>Dark grey black possible ash in eastern wall of pit.</u>	
							<u>Disused pipe, discontinuous.</u>	
	1.60	ES						1
								2
				2.40			End of pit at 2.40 m	3
								4
								5

Remarks:

Stability:

Project Name:	Redcar DVA Initial Ground Investigation

Project No.	678079

Co-ords:	456629.00 - 525237.00

Level:

Date _____

13/02/2017

Location: SSI Redcar

Dimensions
(m):

3

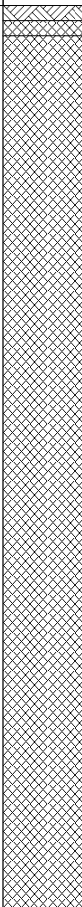
Scale

1:25

Client: Homes and Communities Agency

Depth
3.00

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.05 0.10		MADE GROUND: Grass over TOPSOIL: dark greyish brown slightly gravelly silty SAND. TPS MADE GROUND: Loose dark grey/black medium to coarse GRAVEL of coke with assorted fine gravel. MGR MADE GROUND: Dense light brownish grey very gravelly SAND with low to medium cobble content. Gravel is fine to coarse, angular to subangular of slag, clinker and rare brick fragments. Cobbles are mostly slag. Abundant white medium to coarse, subangular gravel (crystallised slag?). Rare yellow brick fragments. MGR Very dense, slow excavation.	1
	1.20	ES				2	
				Large pockets of stiff brownish grey clay.			
			3.00			End of pit at 3.00 m	3
							4
							5

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456658.00 - 525224.00

Level:

Date

14/02/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Depth
3.60

2.7

Scale
1:25Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20 0.30			MADE GROUND: Grass over very dark grey slightly silty very gravelly SAND with abundant pebbles. Gravel is fine to coarse subrounded of coke and slag. TPS MADE GROUND: Layer of grey slag. MGR MADE GROUND: Stiff brown / orangish brown slightly gravelly to gravelly CLAY. Gravel is fine to coarse subrounded of various lithologies, including sandstone, coal. Slight hydrocarbon odour. Two blocks of concrete 0.9 x 0.2m. Small layers of brown slightly sandy gravel within. Gravel is fine to coarse subrounded to subangular of slag. Rare glass fragments MGR	1
	1.50	ES						
	2.50 - 2.80	B						2
	3.40	ES		3.50 3.60			TP Terminated at 3.6m due to groundwater MADE GROUND: Dark grey gravelly clayey SAND to very sandy CLAY at the bottom of the trial pit. Gravel is fine to coarse of slag, sandstone. Hydrocarbon odour. Occasional shell fragments, rare scrap metal fragments, rare gravel size brick fragments (red). MGR TP Terminated at 3.6m due to groundwater End of pit at 3.60 m	3 4 5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPH24

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456702.00 - 525204.00

Level:

Date

14/02/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Client: Homes and Communities Agency

Depth
2.70

2.7

Scale
1:25Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	2.30	ES		0.20			MADE GROUND: Grass over dark brown slightly clayey gravelly SAND with frequent cobbles and abundant rootlets. Gravel is fine to coarse subrounded to subangular of slag and coke. Rare brick fragments (red, refractory). TPS	1
				1.60			MADE GROUND: Brown very gravelly to gravelly SAND with frequent cobbles and occasional boulders both of slag. Greyish brown from around 1m. Gravel is fine to coarse subrounded to subangular of slag. Occasional bricks, both broken and whole (red, refractory). Rare scrap metal fragments up to 1m long. MGR	2
				2.70			MADE GROUND: Dense brownish grey slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular of various lithologies (difficult to tell due to sand). Some beach pebbles, possibly slag. Rare shell fragments. Occasional rootlets and black patches. Slight hydrocarbon odour. MGR	3
							End of pit at 2.70 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456744.00 - 525185.00

Level:

Date

15/02/2017

Location: SSI Redcar

Dimensions
(m):

3.4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.20

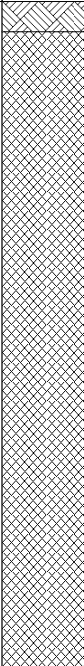
Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼	1.20	ES		0.10		 MADE GROUND: Grass over TOPSOIL: loose very dark brown/black slightly silty gravelly SAND. TPS MADE GROUND: Medium dense brownish grey gravelly SAND with low to medium cobble and low boulder content with pockets (<500x400x300mm) of stiff brown sandy clay. Gravel is fine to coarse subangular to angular of slag, clinker, possibly mortar or some concrete. Cobble and boulders are mostly slag with some clinker and possible lime material. Occasional wood pieces, partially decomposed up to 500mm long. Some small pockets of black possibly ashy material. MGR <u>25mm dia. cable</u> <u>Hydrocarbon odour</u>	1
				2.20			2
						Three cables tied together, redundant. 	3
						End of pit at 2.20 m	4
							5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPH26 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456788.00 - 525175.00 Level:		Date 15/02/2017	
Location: SSI Redcar				Dimensions (m):		3.5 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.20				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.10			MADE GROUND: Grass over TOPSOIL: Loose dark brown/black slightly gravelly slightly silty SAND with numerous rootlets with abundant coke, ash and gravel. TPS	
	0.60	ES			MADE GROUND: Medium dense brownish grey very gravelly SAND with medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag and clinker with some yellows brick fragments. Cobbles are slag and some brick fragments. Boulders are slag with occasional intact yellow brick. Occasional pockets (<200x100x100mm) of stiff greyish brown clay. Rare scrap metal waste. MGR <u>Very dense.</u> <u>Dark grey, possible ash content</u>			
	1.50	ES			<u>Boulder, slag 650x400x200mm</u> <u>Greyish brown, clayey</u>			
				2.20			End of pit at 2.20 m	

Remarks:

 Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456830.00 - 525156.00

Level:

Date

15/02/2017

Location: SSI Redcar

Dimensions
(m):

3.5

Scale

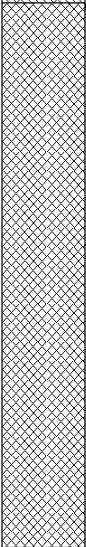
1:25

Client: Homes and Communities Agency

Depth
2.00

2.2

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.20			MADE GROUND: Grass over TOPSOIL: Loose dark brown/black slightly gravelly silty SAND with abundant medium to coarse, subangular gravel of coke at the base, numerous rootlets throughout.
							MADE GROUND: Dense very gravelly SAND with medium cobble content and rare boulders. Gravel is fine to coarse, angular to subangular of slag, clinker and brick fragments. Cobbles are slag and brick fragments. Boulders are slag and intact yellow bricks. Rare partially decomposed wood fragments.
	1.20	ES					TPS MGR
	1.50 - 1.80	B					Dark grey Pockets of stiff brown clay up to 500x300x200mm.
				2.00			End of pit at 2.00 m

1

2

3

4

5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPH28

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456872.00 - 525151.00

Level:

Date

16/02/2017

Location: SSI Redcar

Dimensions
(m):

3.8

Depth
2.00

2.5

Scale

1:25

Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.10			MADE GROUND: Grass over TOPSOIL: loose dark brown slightly gravelly silty SAND with numerous rootlets. TPS	
							MADE GROUND: Dense brownish grey, very gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and red/yellow brick fragments. Cobbles are slag, clinker and mostly yellow, some red brick. Boulders are slag and intact brick. Some wood fragments, metal waste. MGR Very dense Dark grey	1
	1.50	ES					Stiff brown sandy clay in north wall	
							Stiff brown sandy clay in west wall	
				2.00			End of pit at 2.00 m	2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPH29 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456646.00 - 525277.00 Level:		Date 13/02/2017	
Location: SSI Redcar				Dimensions (m):		3.9 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.00		2.7		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.80	ES		0.10		MADE GROUND: Grass over TOPSOIL: dark brown slightly gravelly slightly sandy SILT with abundant rootlets. MGR	1	
				0.70		MADE GROUND: Dense grey gravelly SAND with low cobble content. Gravel is fine to coarse, angular to subangular of slag, clinker, red and yellow brick and tile. Cobbles are slag, clinker and brick fragments. MGR		
				3.00		MADE GROUND: Dense brownish grey gravelly clayey SAND with low to medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and rarely red brick. Cobbles and boulders are slag, rarely intact brick and fragments of brick. With rare metal waste, 20mm rebar, pockets of sandy clay. MGR <u>Sandy clay</u> <u>Black, possible as content</u>		2
							End of pit at 3.00 m	3
								4
								5

Remarks:

 Stability:



Trial Pit Log

Trialpit No

TPH30

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456678.00 - 525263.00

Level:

Date

14/02/2017

Location: SSI Redcar

Dimensions
(m):

5

Scale

1:25

Client: Homes and Communities Agency

Depth
2.90

2.9

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Dark grey sandy GRAVEL with abundant rootlets. Gravel is fine to coarse subrounded to subangular of coke and slag. MGR	
				1.10			MADE GROUND: Grey very sandy GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag, some whitish slag. Rare brick fragments (red, refractory). Cobbles and boulders of slag MGR	1
	1.80 1.80 - 2.10	ES B					MADE GROUND: Yellowish brown / greyish brown slightly gravelly SAND with rare cobbles. Gravel is fine to coarse subrounded of slag. Cobbles of slag. Rare pockets of clay. Rare wood fragments, some very dark grey patches. MGR	
							TP Terminated at 2.9m due to groundwater and collapsing	2
				2.90			End of pit at 2.90 m	3
								4
								5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPH31 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456718.00 - 525246.00 Level:		Date 15/02/2017	
Location: SSI Redcar				Dimensions (m):		3.8 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.90				Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.10			MADE GROUND: Grass over dark brown gravelly silty SAND with abundant rootlets. Gravel is fine to coarse subrounded of predominately coke and some slag. MGR	1
				0.30			MADE GROUND: Dark brown sandy silty GRAVEL. Gravel is fine to coarse subrounded of coke (predominately) and slag. MGR	
				1.50			MADE GROUND: Brownish grey very gravelly sand with frequent cobbles, occasional boulders and rare large boulders (up to 0.8m long) Rare brick fragments (red, refractory) MGR	2
	2.00	ES					MADE GROUND: Greyish light brown/yellow slightly gravelly SAND. Gravel is fine to coarse subrounded of possibly slag. Rare shell fragments. MGR <i>TP Terminated at 2.9m due to groundwater and collapsing</i>	
				2.90			 End of pit at 2.90 m	3
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

 Project No.
678079

Co-ords: 456759.00 - 525232.00

Level:

Date

15/02/2017

Location: SSI Redcar

 Dimensions
(m):

3.4

Scale

1:25

Client: Homes and Communities Agency

 Depth
2.50

2.3

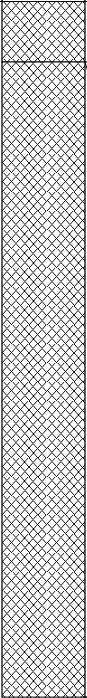
 Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Thin grass cover over TOPSOIL: loose dark brown/black slightly gravelly silty SAND with frequent rootlets. TPS	
	1.50	ES					MADE GROUND: Medium dense light brownish grey gravelly SAND with low to medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and yellow brick fragments. Cobbles are mostly slag with some yellow brick fragments and clinker. Boulders are slag. Some slag pieces have white mineralisation on outer edge. MGR	
				2.50			End of pit at 2.50 m	

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPH33 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456804.00 - 525218.00 Level:		Date 15/02/2017	
Location: SSI Redcar				Dimensions (m):		4 		Scale 1:25	
Client: Homes and Communities Agency				Depth 2.30				Logged LK	

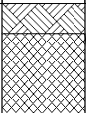
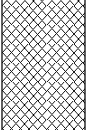
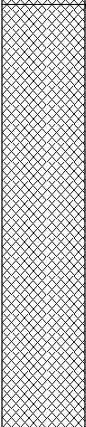
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Occasional grass over brown gravelly silty SAND with occasional rootlets. Gravel is fine to coarse subrounded of slag and coke. MGR	1
							MADE GROUND: Brownish grey very gravelly sand to very sandy gravel with abundant cobbles and occasional boulders. Gravel is fine coarse subrounded to subangular of slag. Whitish slag in the upper metre. Cobbles and boulders of slag (with whitish slag in the upper metre). Occasional bricks, frequent towards bottom of trial pit, both broken and whole (red, refractory). Rare wood fragments up to 0.4m long. Rare fragments of plastic material, fragment of metal pipe 0.4m long. Rare scrap metal and glass fragments. Slight hydrocarbon odour from around 2m. MGR	2
▼	2.00	ES		2.30			End of pit at 2.30 m	3
								4
								5

Remarks:

Stability:

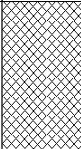
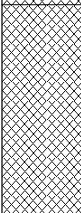


				Trial Pit Log				Trialpit No TPH35 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456875.00 - 525178.00 Level:		Date 16/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.20		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.50	ES		0.10		 MADE GROUND: Grass over brown grey silty sand with abundant rootlets. Gravel is fine to coarse subrounded to subangular of slag. Rare small brick fragments (red). TPS	1	
				0.80		 MADE GROUND: Brownish grey very sandy gravel with frequent cobbles and occasional boulders. Gravel is fine to coarse, subrounded to subangular and whitish slag. Cobbles and boulders of slag, with slag. Occasional brick both whole and broken (red, refractory). Rare scrap metal and wood fragments. MGR		
				2.20		 MADE GROUND: Firm to stiff brown slightly sandy gravelly clay. Gravel is fine to coarse subrounded to subangular of slag and possibly sandstone. Occasional brick fragments (red, refractory). scrap metal, pottery and glass fragments. So dark grey layers. Gravel of grey slag at the bottom of the trial pit. MGR <i>TP Terminated at 2.2m due to groundwater - fast inflow from 2m</i>		2
End of pit at 2.20 m							3	
							4	
							5	

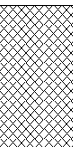
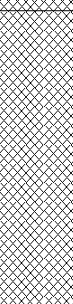
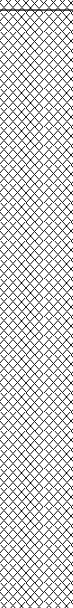
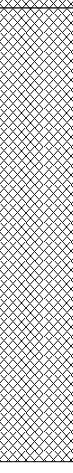
Remarks:		
Stability:		

				Trial Pit Log				Trialpit No TPI01 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456930.00 - 524859.00 Level:		Date 31/01/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.20		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.80	ES		0.50		 MADE GROUND: Grass over loose orangeish brown gravelly clayey SAND with numerous roots and rootlets, large pieces of red brickwork intact, up to 800x400x200mm. Occasional pieces of rebar <1000mm. MGR	1
				1.20		 MADE GROUND: Loose dark brown slightly gravelly SAND with very low cobble content of slag and brick. Locally clayey. Gravel is fine to coarse, angular to subangular of slag, red/yellow brick, clinker. At 1.2m solid concrete base covering full extent of hole. Hole abandoned. MGR	
End of pit at 1.20 m							2
							3
							4
							5

Remarks:		
Stability:		

				Trial Pit Log				Trialpit No TPI02 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456982.00 - 524826.00 Level:		Date 31/01/2017	
Location: SSI Redcar						Dimensions (m): 4.3 Depth 5.00		Scale 1:25 Logged TL	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.50		 MADE GROUND: Grass over loose slightly gravelly clayey SAND with low cobble content. Gravel medium, occasionally coarse. Numerous roots to rootlets. TPS From 0.3m: Sulphur odour.	1	
				1.50		 MADE GROUND: Medium dense grey sandy GRAVEL with low cobble and low boulder content. Cobble are slag, red brick frags, and concrete frags. Boulders same as cobbles. MGR From 0.6m: Concrete, fractured rebar in place.	2	
	2.70 - 3.00	B		3.50		 MADE GROUND: Medium dense brownish grey gravelly SAND with low cobble content and rare boulders both of slag and brick. Gravel is fine to coarse, angular to subangular of slag, clinker, brick fragments and burnt lime. MGR	3	
	4.00	ES		5.00		 MADE GROUND: Soft to firm dark brownish grey sandy gravelly CLAY with low cobble content of slag, occasionally brick and concrete. Gravel is fine to coarse, angular to subangular of slag, occasionally brick fragments. MGR From 3.9m: No water seen until hole reached depth and stopped. Strong inflow of water after 10 mins.	4	
							5	

End of pit at 5.00 m

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPI03

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457037.00 - 524821.00

Level:

Date

30/01/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Scale

1:25

Client: Homes and Communities Agency

Depth
4.30Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30 0.40 - 0.70	ES B		1.40			MADE GROUND: Grass over loose orangeish brown clayey SAND with low gravel, cobble and boulder content. Locally sandy clay. Occasional red brick and white tile. MGR	1
							MADE GROUND: Loose dark grey gravelly SAND with medium cobble and low boulder content both of slag with occasional red/yellow brick, yellow brick content ~5%, some intact. Occasional areas of high white/grey ash content. Gravel is fine to coarse, angular to subangular of slag, slate, sinter, yellow and red brick fragments with rare glass fragments. MGR	2
	3.40 - 3.70	B						3
	4.00	ES		4.30				4
							From 3.0m: Hydrocarbon odour. Example taken. No groundwater encountered.	5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPI04 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457099.00 - 524798.00 Level:		Date 30/01/2017	
Location: SSI Redcar				Dimensions (m):		4.2 		Scale 1:25	
Client: Homes and Communities Agency				Depth 5.00				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.50			MADE GROuND: Grass over soft to firm orangish brown slightly sandy CLAT with occasional fine gravel and rare cobbles with numerous rootlets. MGR 	
	2.20 - 2.50	B					MADE GROUND: Loose dark grey gravelly SAND with low cobble and low boulder content. High scrap metal content throughout, lots of rebar, corrugated plate, cable trays, tread boards and some concrete with rebar in place. Boulders are slag and concrete. Rebar ~30mm dia <2.5m long. Gravel includes pellets. MGR <i>From 0.5m: More like demolition than trial pitting.</i> 	1
	3.00	ES						2
				4.50				3
				5.00			MADE GROUND: Firm to stiff grey and reddish grey v.sandy gravelly CLAY with low boulder content. Boulders are slag. Numerous pieces of rebar, 30mm diameter up to 1.5m long. Rare yellow brick. Some clay is yellowish brown. MGR	4
End of pit at 5.00 m								5

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPI05

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457146.00 - 524794.00

Level:

Date

02/02/2017

Location: SSI Redcar

Dimensions
(m):

4.8

Scale

1:25

Client: Homes and Communities Agency

Depth
4.20

2.9

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.60			MADE GROUND: Grass over; loose orangeish brown slightly clayey SAND with occasional fine to medium gravel. Pockets of firm sandy CLAY <80x50x50mm. MGR <u>From 0.3m: Sulphur odour.</u>	
	1.40	ES					MADE GROUND: Medium dense grey gravelly SAND with medium cobble and medium boulder content of slag. Gravel is fine to coarse, angular to subangular of slag and clinker and abundant rounded iron ore pellets. Gravel includes abundant rounded iron ore pellets. Boulders up to 600x300x300mm, rare metal waste. MGR <u>From 0.6m: Dark purplish grey, possible iron ore.</u> <u>From 1.2m: Reddish grey, iron ore rich.</u>	1
				2.70			<u>From 2.4m: Reddish grey, iron ore rich.</u>	2
	3.00 - 3.30	B					MADE GROUND: Medium dense dark grey gravelly SAND with medium cobble & low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, red & yellow brick fragments and rounded pellets. Cobbles are slag & red/yellow brick. Boulders are slag. Refractory brick content 5-10% of total volume. MGR	3
	3.50	ES						
				4.20			<u>From 4.0m: Groundwater settled after 10 mins at 4.0m.</u> End of pit at 4.20 m	4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPI06

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 456966.00 - 524885.00
Level:Date
26/01/2017

Location: SSI Redcar

Dimensions
(m):Depth
1.00Scale
1:25Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			MADE GROUND: Grass over; soft brown sandy CLAY with occasional fine to medium gravels and numerous rootlets. MGR	
				1.00			MADE GROUND: Medium dense brownish grey gravelly SAND with low boulder & low cobble content. Gravel is fine to coarse, rounded to subrounded of slag, pellets (iron ore), clinker and red/yellow brick. Boulders are slag. Cobbles are slag & brick fragments of debris: rebar up to 1m long ~30mm diameter. Tin sheeting, cable trays, yellow brick ~10% of total volume. MGR	
							End of pit at 1.00 m	1
								2
								3
								4
								5
	3.50	ES						

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457002.00 - 524869.00

Level:

Date

25/01/2017

Location: SSI Redcar

Dimensions
(m):

4

Depth
4.30

2.5

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			MADE GROUND: Grass over soft to firm greyish brown sandy CLAY with occasional fine to medium gravels. MGR	
	1.50	ES					MADE GROUND: Medium dense dark grey gravelly SAND with medium cobble content and rare boulders. Gravel is fine to coarse, angular to subangular of slag, clinker, occasional red/yellow brick. Cobbles are mostly slag, occasional red/yellow brick frags. Boulders are slag, Wood fragments, iron wire, cable casing, rebar noted. Wood is partially decomposed without creosote. MGR <i>From 0.3m: Very dense. Excavation slowed.</i> <i>From 0.3m: Light grey, ~5-10% yellow brick.</i> <i>From 0.3m: Cable casing is yellow plastic with inner aluminium core removed.</i> <i>From 0.5m: On south side of pit, reinforced concrete approx 300mm thick with wire ~20mm diameter. Noted by excavation controller and cleared to proceed.</i>	1
	2.70 - 3.00	B						2
				4.30			End of pit at 4.30 m	3
								4
								5

Remarks:

Stability:

Trial Pit Log

Trialpit No

TPI08

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457051.00 - 524834.00

Level:

Date

25/01/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

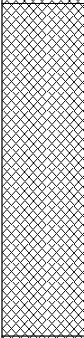
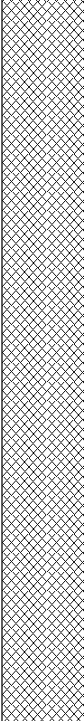
Depth
4.40Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.40			MADE GROUND: Grass over; firm orangeish brown very sandy CLAY with rare fine to medium gravels. Clay is reworked, low plasticity, red brick frag and piece of rusted metal recovered. MGR	
	1.80 - 2.10	B					MADE GROUND: Loose dark grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, subangular of slag, clinker, lesser yellow brick frags. Cobbles are mostly slag, lesser clinker and yellow/red brick. Boulders are slag. Silica bricks noted. MGR <u>From 0.4m: Very dense layer approximately 0.3m thick compacted slag.</u> <u>From 0.6m: Eastern face of pit: concrete, not reinforced, approximately 0.2m thick.</u>	1
	3.00	ES						2
								3
							<u>From 3.5m: Numerous pieces of timber. Partially decomposed. No Creosote noted.</u>	
							<u>From 4.0m: Clayey locally very clayey. Low cobble content.</u>	4
				4.40			End of pit at 4.40 m	5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPI09 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457104.00 - 524831.00 Level:		Date 25/01/2017	
Location: SSI Redcar				Dimensions (m):		3.6 1.8		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.90				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.40			MADE GROUND: Grass over soft to firm brown slightly sandy CLAY with occasional fine to medium gravel and rare subangular cobbles. MGR	1
							MADE GROUND: Medium dense becoming loose grey gravelly SAND with low to medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and rare brick. Cobbles and boulders are slag. MGR <i>From 0.4m: Sharp contact with layer below.</i> <i>From 0.5m: Very dense.</i> <i>From 1.0m: Boulder of slag with white and ferrous stain ~500x500x300mm.</i>	
	2.50 - 2.80	B		1.50			MADE GROUND: Loose dark grey gravelly SAND with low cobble content and rare boulders. Gravel is fine to medium, rarely coarse, subangular of slag, clinker and red/yellow brick. Cobbles are slag and fragments/rarely intact yellow refractory brick. Boulders are slag. Yellow bricks are approximately 5% of the total volume. MGR	2
							<i>From 2.4m: Approximately 10% yellow refractory brick.</i>	
	3.00	ES		3.90			End of pit at 3.90 m	3
								4
								5

Remarks:		
Stability:		

				Trial Pit Log				Trialpit No TPI10 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457151.00 - 524811.00 Level:		Date 02/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.80		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
							MADE GROUND: Grass over; loose yellowish brown clayey SAND with occasional fine to medium gravel and occasional pockets of firm sandy clay (<60x30x30mm). MGR	
	1.50	ES		0.80			MADE GROUND: Very dense gravelly SAND with medium cobble and medium boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, red iron ore, yellow brick frags, pellets. Cobbles are slag, brick frags and red iron ore. Boulders are mostly slag occasionally red iron ore. Occasional layers approximately 150mm thick of high red ore content. MGR <i>From 0.8m: Purplish grey, ore rich.</i> <i>From 0.8m: Very dense material, very slow excavation.</i>	1
	2.70 - 3.00	B						2
				3.80			End of pit at 3.80 m	3
								4
								5

Remarks:



Stability:

				Trial Pit Log				Trialpit No TPI11 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456976.00 - 524916.00 Level:		Date 26/01/2017	
Location: SSI Redcar						Dimensions (m): 5 2.2		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.40		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
							MADE GROUND: Grass over; Loose orangeish brown clayey SAND with occasional fine to medium gravels. MGR	
	1.00	ES		0.50			MADE GROUND: Loose dark grey/black silty SAND with low cobble content and medium boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, red/yellow brick frags. Cobbles are slag, concrete, red/yellow brick. Abundant waste including cable tray, rebar, assorted steelwork, red/yellow brick, lead and tin sheeting. Boulders of slag up to 750x600x400mm. MGR	1
				1.40			End of pit at 1.40 m	2
								3
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457018.00 - 524899.00

Level:

Date

26/01/2017

Location: SSI Redcar

Dimensions
(m):

Depth
4.60

Scale
1:25

Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.60	ES		0.40			MADE GROUND: Grass over; loose orangeish brown clayey SAND with rare fine to medium gravels. With numerous rootlets and roots. MGR	
							MADE GROUND: Loose dark grey slightly gravelly SAND with low cobble content and low boulder content. Yellow bricks (look like building, not refractory) abundant throughout - approx 10% total. Volume of cobbles & gravels are SA of slag and red/yellow brick. Boulders are slag. Lots of tin sheet, rebar, metalwork throughout. MGR <i>From 0.5m: Sulphur odour.</i> <i>From 0.7m: Approx 70% yellow brick.</i>	1
							<i>From 2.0m: Hydrocarbon odour, creosote?</i>	2
							<i>From 2.2m: Light grey</i>	
	2.70 - 3.00	B		2.40			MADE GROUND: Orangeish brown clayey SAND (as above.) No roots. MGR	
				3.00			MADE GROUND: Medium dense dark grey gravelly SAND with low cobble content. Gravel is slag and clinker. Cobbles are slag and yellow brick. Wood frags, some soaked in creosote. HC odour. MGR <i>From 3.0m: Occasional frags of timber partially decomposed.</i> <i>From 3.5m: Slightly gravelly.</i>	3
	3.80	ES						4
				4.60			End of pit at 4.60 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457064.00 - 524886.00

Level:

Date

31/01/2017

Location: SSI Redcar

Dimensions
(m):

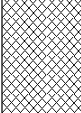
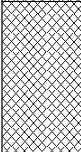
4.6

Client: Homes and Communities Agency

Depth
0.90

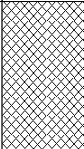
2.2

Scale
1:25Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES		0.40			MADE GROUND: Grass over; firm orangeish brown sandy CLAY with occasional fine gravels and rootlets. MGR 	
				0.90			MADE GROUND: Medium dense dark grey gravelly SAND with rebar, metalwork, wood, red and yellow brick, slate (roofing), low cobble content. Gravel is fine to medium, rarely coarse, angular to rounded of pellets (round) slag. Red/yellow brick. Concrete base at 0.9m unable to break out. Covers full length and width of pit, hole aborted.  MGR	1
							End of pit at 0.90 m	2
								3
								4
								5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TP114 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457127.00 - 524870.00 Level:		Date 31/01/2017	
Location: SSI Redcar				Dimensions (m):		4.7 		Scale 1:25	
Client: Homes and Communities Agency				Depth 0.70		2.1 		Logged TL	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.60	ES		0.50			MADE GROUND: Grass over; firm orangeish brown slightly sandy CLAY with rare fine to medium gravels and rootlets throughout. MGR 		
				0.70				MADE GROUND: Medium dense dark grey gravelly SAND with low cobble content and rare boulders. Metalwork, gravel is fine to coarse, angular to subangular of slag, red/yellow bricks, pellets. Cobbles and boulders are slag, concrete frags and red/yellow bricks. Concrete base at 0.7m, full length and width covered, unable to break out, hole abandoned. MGR 	
							End of pit at 0.70 m		
1 2 3 4 5									
Remarks:									
Stability:									

Trial Pit Log

Trialpit No

TPI15

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457165.00 - 524853.00

Level:

Date

02/02/2017

Location: SSI Redcar

Dimensions
(m):Depth
5.00

Scale

1:25

Logged

TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.60			MADE GROUND: Grass over; firm brownish grey slightly gravelly sandy CLAY. Gravel is fine to medium, subangular. Numerous rootlets. MGR	
	0.80	ES					MADE GROUND: Dense dark grey gravelly SAND with low to medium cobble content and low boulder content. With occasional partially decomposed timber frags. Gravel is fine to medium, subangular to angular of slag, clinker, cement. Cobbles are slag and clinker. Boulders are slag up to 300x200x300mm. Waste includes cables <20mm and rebar <20mm. Rare red brick. MGR	1
	1.50 - 1.80	B					From 0.6m: Dark purplish grey high iron ore content. Approx 10% red brick frags.	
	2.00	ES						2
				2.50			MADE GROUND: Medium dense yellowish brown and grey slightly gravelly SAND. Gravel is fine to coarse, angular to subangular of slag rare red brick frags. Rare cobbles of slag. MGR	3
	4.00 - 4.30	B						4
				5.00			End of pit at 5.00 m	5

Remarks:

Stability:



Trial Pit Log

Trialpit No

TPI16

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079Co-ords: 457077.00 - 524924.00
Level:Date
01/02/2017

Location: SSI Redcar

Dimensions
(m):

5.6

Client: Homes and Communities Agency

Depth
4.40

2.7

Scale
1:25Logged
TL

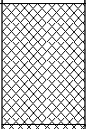
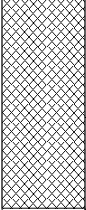
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70	ES						1
	3.20 - 3.50	B						2
	4.00	ES						3
								4
								5

Remarks:

Stability:



				Trial Pit Log			Trialpit No TP117 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457104.00 - 524910.00 Level:		Date 01/02/2017	
Location: SSI Redcar				Dimensions (m):		4.3 2.4		Scale 1:25	
Client: Homes and Communities Agency				Depth 1.10		2.4		Logged TL	

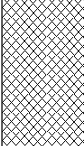
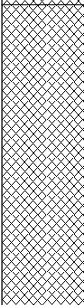
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.40			MADE GROUND: Grass over; medium dense brown slightly gravelly clayey SAND with occasional cobbles and numerous rootlets. Gravel is  to medium, subangular of mixed lithologies.  es are slag. Locally sandy CLAY. MGR
	0.60 - 0.90	B					MADE GROUND: Medium dense dark grey gravelly SAND with low cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag, red/yellow brick, concrete, pellets. Cobbles are slag, yellow/red brick, concrete. Boulders are brick, concrete, slag. Waste includes metalwork, rebar, cable tray, conveyor rollers. Conveyor belts, misc. Rubber waste. Concrete base at 1.1m. Hole terminated. MGR
	1.00	ES		1.10			From 0.8m: Polythene sheet, waste. End of pit at 1.10 m

Remarks:

 Stability:



				Trial Pit Log			Trialpit No TPI18 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457181.00 - 524904.00 Level:		Date 03/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 1.50		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.50			MADE GROUND: Firm yellowish brown slightly gravelly sandy CLAY with rare subangular cobbles. Gravel is fine to coarse, angular to subangular with a  ant rootlets. MGR	
				1.50			MADE GROUND: Medium dense, locally loose grey gravelly SAND with low to medium cobble content and low boulder content with occasional timber fragments and metal waste. Gravel is fine to coarse, angular to subangular of slag, clinker and  bw brick fragments. Boulders are slag, rarely intact  k. Gravel includes iron ore pellets. MGR	1
							End of pit at 1.50 m	2
								3
								4
								5

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457007.00 - 525014.00

Level:

Date

08/02/2017

Location: SSI Redcar

Dimensions
(m):Depth
4.20

Scale

1:25

Logged
LK

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over dark brown slightly gravelly silty SAND with frequent rootlets. Gravel is fine to coarse subrounded to subangular of occasional gravel size red brick fragments. MGR	
	1.00	ES					MADE GROUND: Grey whitish grey slightly sandy to sandy GRAVEL with abundant cobbles and frequent boulders. Rare large boulders (up to 0.8m). Gravel is fine to coarse subrounded to subangular of whitish slag, slag, possibly some clinker. Cobbles and boulders subrounded of whitish grey slag, slag. Occasional brick fragments (gravel - small cobble sized) both yellow (refractory) and red. Frequent brick around 2m, both whole and broken, mostly from gravel size to cobble size - 65% refractory, 35% red. Rare scrap metal fragments, wood fragments. N.B. between 1-2m occasional cobble size lumps of grey white speckled material, crumbles easily. It was suggested it is refractory brick being affected by water. MGR	1
	3.40 - 3.70	B						2
				3.90				3
				4.20			MADE GROUND: Yellow slightly gravelly SAND. Gravel is fine to coarse difficult to describe due to material being mixed. MGR	4
							End of pit at 4.20 m	5

Remarks:

Stability:

				Trial Pit Log			Trialpit No TPI20 Sheet 1 of 1		
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457048.00 - 524998.00 Level:		Date 08/02/2017	
Location: SSI Redcar				Dimensions (m):		3.9 		Scale 1:25	
Client: Homes and Communities Agency				Depth 4.00				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	1.00	ES					MADE GROUND: Medium dense dark grey SAND & GRAVEL with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, rare brick fragments. Cobbles are slag, lesser clinker and brick fragments. Boulders are slag. Rare intact refractory brick. Occasional bands approximately 150mm thick, light grey, white mineralisation on slag (possible ash). MGR <i>Slight sulfur odour</i>	1	
								Gravelly sand	2
								3	
				4.00			End of pit at 4.00 m	4	
								5	

Remarks:

 Stability:



Trial Pit Log

Trialpit No

TPI21

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457099.00 - 524978.00

Level:

Date

06/02/2017

Location: SSI Redcar

Dimensions
(m):

5.1

Scale

1:25

Client: Homes and Communities Agency

Depth
3.60

2.5

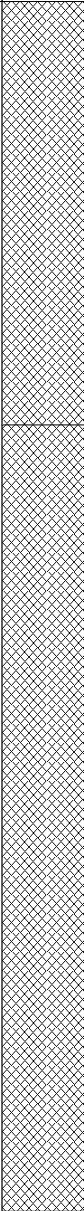
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.90	ES		0.20			MADE GROUND: Grass over brown gravelly silty SAND with frequent rootlets. Gravel is fine to coarse of slag, possibly sandstone. TPS	
	1.90 - 2.10	B					MADE GROUND: Dark grey sandy GRAVEL with occasional cobbles and coke boulders. Sand is medium to coarse. Gravel is fine to coarse subrounded to subangular of slag, clinker. Cobbles and boulders of slag. Occasional brick, both broken and whole, bricks are red, silica, refractory with similar proportions. Occasional wood fragments. Some white staining on slag. MGR <i>TP Terminated at 3.6m due to groundwater</i>	1
								2
								3
								4
								5
				3.60			End of pit at 3.60 m	

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPI22 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457151.00 - 524957.00 Level:		Date 06/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 4.00		Logged TL	

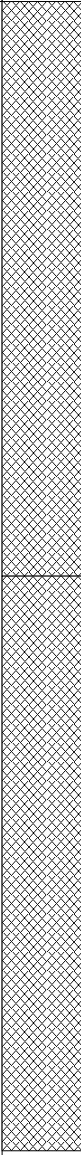
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼	1.00	ES		1.40			MADE GROUND: Grass over medium dense dark grey gravelly SAND with low to medium cobble content. Gravel is angular to subangular fine to coarse of slag, yellow brick (silica and refractory) fragments, clinker and concrete fragments. Occasional tile fragments. MGR <u>Some light grey ash.</u> <u>Very dense</u>		1
	1.60	ES					MADE GROUND: Loose yellow fine to medium SAND with rare rounded to angular, fine to coarse gravel. MGR <u>200mm dia clayware pipe</u>		2
				4.00			End of pit at 4.00 m		4
									5

Remarks:

Stability:



				Trial Pit Log				Trialpit No TPI23 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456960.00 - 525078.00 Level:		Date 08/02/2017	
Location: SSI Redcar				Dimensions (m):		4.9 		Scale 1:25	
Client: Homes and Communities Agency				Depth 3.80				Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼							MADE GROUND: Medium dense dark grey gravelly SAND with medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, occasional brick and burnt lime. Boulders are of slag. Locally very gravelly. MGR	1
	2.20 2.30 - 2.60	ES B		1.90			MADE GROUND: Medium dense brownish grey very gravelly SAND with numerous pockets (up to 100x100x100mm) of firm brownish grey clay. Low to medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, rare brick fragments. Cobbles are slag rarely clinker and brick fragments. Boulders are slag, rare intact yellow brick. Some wood fragments and clayware tile/pipe. MGR <u>Very clayey on east edge of pit.</u>	2
				3.80			End of pit at 3.80 m	3
								4
								5

Remarks:	
Stability:	

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457013.00 - 525050.00

Level:

Date

08/02/2017

Location: SSI Redcar

Dimensions
(m):

5.5

Client: Homes and Communities Agency

Depth
3.80

2.2

Scale
1:25Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			TOPSOIL: Grass over dark brown sandy SILT.  TPS MADE GROUND: Medium dense brownish grey gravelly SAND with low to medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker and occasional brick fragments. Cobbles are slag, clinker, occasional yellow brick fragments. Boulders are slag. MGR <i>Light grey (slag mineralisation?). Intact red brick wall in east of pit.</i>	1
	1.50	ES						
				2.40			 MADE GROUND: medium dense dark grey gravelly SAND with low cobble and low boulder content and occasional intact yellow and red brick. Gravel and cobbles are mostly slag, rarely clinker and brick fragments. Boulders are slag. MGR	2
	2.60	ES						3
				3.80			End of pit at 3.80 m	4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457064.00 - 525039.00

Level:

Date

09/02/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
3.80

2.2

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over dark brown slightly gravelly silty SAND. Gravel is fine to coarse subrounded to subangular of slag. TPS	
	1.50	ES					MADE GROUND: Grey slightly sandy to sandy GRAVEL with abundant cobbles, frequent boulders and rare large boulders. Gravel is fine to coarse subrounded to subangular of slag/whitish slag. Cobbles and boulders of slag/whitish slag. Some whitish staining. Light grey in colour between 0.2-0.6m. Orangish red in colour between 0.4-0.6m. Rare yellow and red brick fragments (gravel - small cobble size). More sandy, frequent cobbles and occasional boulders towards base. Rare wood fragments 200mm long. MGR	1
	2.70 - 3.00	B						2
	3.70	ES		3.70	3.80		MADE GROUND: Yellow slightly gravelly SAND. Gravel is fine to coarse of slag(?). Frequent broken (red, refractory, silica) at the bottom of the trial pit. Rare tiny shell fragments. Pocket of dark grey/black slightly sandy silt. Beach odour. MGR	4
							TP Terminated at 3.8m due to groundwater End of pit at 3.80 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457115.00 - 525020.00

Level:

Date

06/02/2017

Location: SSI Redcar

Dimensions
(m):

4.3

Client: Homes and Communities Agency

Depth
4.70

2.6

Scale

1:25

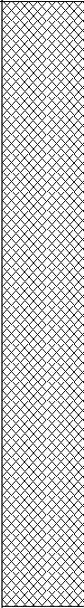
Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over dark brown slightly gravelly silt with frequent rootlets. TPS	
							MADE GROUND: Dark grey very sandy GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag, clinker. Cobbles and boulders of slag. Frequent bricks both whole and broken of silica, red and refractory. Most bricks are yellow, occasional wood fragments. MGR	1
	2.60	ES		2.80			MADE GROUND: Light brown/grey slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular of sandstone or slag. Occasional shell fragments, rare ceramic fragments, occasional large wood fragments, damp. MGR	3
							TP Terminated at 4.7m due to reaching limit of excavator	
	4.50 - 4.70	B		4.70			End of pit at 4.70 m	5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPI27 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457150.00 - 525012.00 Level:		Date 09/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 2.00		Logged TL	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.70 - 1.00	B					MADE GROUND: Grass over loose to medium dense and dark grey gravelly SAND with low cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, brick and rare burnt lime. Cobbles are of slag, clinker, brick fragments and rare burnt lime. Boulders are slag rarely clinker, intact/ large brick fragments. Occasional yellow rory bricks in upper meter.
	1.30	ES					MGR 800x300x300mm concrete beam in north face,
				2.00			Below 1.1 light grey ashy coloured sand
							End of pit at 2.00 m

Remarks:		
Stability:		

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 456978.00 - 525119.00

Level:

Date

08/02/2017

Location: SSI Redcar

Dimensions
(m):

4.1

Scale

1:25

Client: Homes and Communities Agency

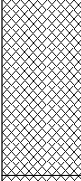
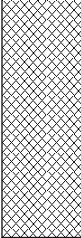
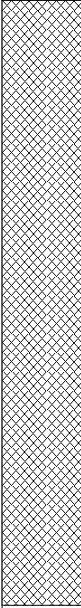
Depth
4.10Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			MADE GROUND: Grass over dark brown slightly gravelly silty sand with frequent nodules. Gravel is fine to coarse. Subrounded to subangular of slag. TPS
							MADE GROUND: Dark grey sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse subrounded to subangular of slag, whitish slag, possibly some clinker. Cobbles and boulders of slag, whitish slag. Rare large boulders. Occasional bricks, broken, mostly gravel sized (red, refractory). From 3m frequent cobbles and occasional boulders, more sandy. Rare pockets of clay. MGR
	3.50	ES					
				3.90			
				4.10			MADE GROUND: Dark grey sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse subrounded to subangular of slag, whitish slag, possibly some clinker. Cobbles and boulders of slag, whitish slag. Rare large boulders. Frequent bricks at base, broken, mostly gravel sized (red, refractory). Rare pockets of clay. Occasional wood fragments up to 0.5m in length. Rare scrap metal fragments. Solid metal bar 1.5m long at the base of pit. MGR
							TP Terminated at 4.1m due to groundwater End of pit at 4.10 m

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPI29 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457016.00 - 525115.00 Level:		Date 08/02/2017	
Location: SSI Redcar						Dimensions (m): Depth 3.60 2.6 5		Scale 1:25 Logged LK	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.60	ES		0.20		 MADE GROUND: Grass over dark brown slightly gravelly silty SAND with frequent rootlets. Gravel is fine to coarse subrounded to subangular of slag. Rare gravel-size red brick fragments	1	
				0.80		 MADE GROUND: Dark brown very gravelly SAND with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag, possibly some clinker. Cobbles and boulders are subrounded of slag. Rare gravel-cobble size brick fragments (red, refractory). Some bright red material, possibly an ore in the excavator end of trial pit. Has coloured the soli and slag around it.		
				1.60		 MADE GROUND: Greyish white slightly sandy GRAVEL with abundant cobbles of frequent boulders. Gravel is fine to coarse subrounded to subangular of whitish slag, slag. Cobbles and boulders of whitish slag, slag. Rare gravel-cobble size brick fragments (refractory, red) >5%.		
				3.60		 MADE GROUND: Dark brown slightly sandy GRAVEL with abundant cobbles and frequent boulders. Gravel is fine to coarse subrounded to subangular of slag, some whitish slag. Cobbles and boulders of slag, some whitish slag. Some pieces of slag have holes in it. Rare gravel-cobble size brick fragments, mostly red, some refractory (total <5%)		2
						End of pit at 3.60 m		3
								4
								5

Remarks:		
Stability:		



				Trial Pit Log				Trialpit No TPI31 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 457127.00 - 525059.00 Level:		Date 07/02/2017	
Location: SSI Redcar						Dimensions (m): Depth 4.00 2.7 4.3		Scale 1:25 Logged LK	
Client: Homes and Communities Agency									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.30	ES		0.20			MADE GROUND: Grass over dark brown slightly sandy slightly gravelly silt with frequent red brick. Gravel is fine to coarse of slag. MGR	1
							TPS MADE GROUND: Dark grey very sandy GRAVEL with occasional cobbles and boulders. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of slag, some clinker. Cobbles and boulders of slag. Occasional scrap metal fragments up to 0.5m, occasional bricks, mostly brown with red, refractory. Rare tile fragments. MGR	
	1.30	ES		1.10			MADE GROUND: Light grey slightly sandy to sandy GRAVEL. Gravel is fine to coarse subrounded to subangular of slag. Slag is whitish grey in colour (lime and dolomite mix suggested). Rare wood fragments. MGR	2
				1.60			MADE GROUND: Dark grey very sandy GRAVEL with occasional cobbles and boulders. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of slag, some clinker. Cobbles and boulders of slag. Occasional scrap metal fragments up to 0.5m, occasional bricks, mostly brown with red, refractory. Rare tile fragments. MGR	
				2.70			MADE GROUND: Light brown/grey slightly gravelly SAND. Gravel is fine to coarse of slag. Occasional brick, mostly whole of red and refractory. Some Gravel sized red brick fragments. Rare ceramic fragments. MGR	
			4.00			TP Terminated at 4m due to groundwater MGR	3	
							End of pit at 4.00 m	4
								5

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457168.00 - 525051.00

Level:

Date

09/02/2017

Location: SSI Redcar

Dimensions
(m):

4.4

Scale

1:25

Client: Homes and Communities Agency

Depth
2.10

3.6

Logged
TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10						TOPSOIL: Dark brown sandy gravelly silt.  TPS <u>Roots/rootlets</u> MADE GROUND: Very dense grey and brownish grey sandy GRAVEL AND COBBLES with medium to high boulder content. Gravel is fine to coarse, angular to subangular of mostly slag with clinker. Cobbles are slag, rare red brick fragments. Boulders are slag up to 600x500x500mm. Numerous fragments of pig iron. 30mm thick up to 1000x800mm. Locally dark grey/black. MGR <u>Large section of dark brickwork, not in-situ, north face of pit. 1000x800x800mm piece of pig iron (possible bottom of ladle)</u> <u>Yellow sand on east wall of pit.</u> 
	0.80	ES					
	1.40	ES					
	1.70 - 2.00	B					
	2.10						End of pit at 2.10 m

1

2

3

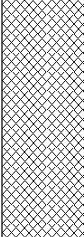
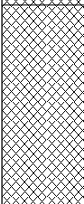
4

5

Remarks:

Stability:

				Trial Pit Log				Trialpit No TPI33 Sheet 1 of 1	
Project Name: Redcar DVA Initial Ground Investigation				Project No. 678079		Co-ords: 456991.00 - 525165.00 Level:		Date 07/02/2017	
Location: SSI Redcar						Dimensions (m):		Scale 1:25	
Client: Homes and Communities Agency						Depth 3.70		Logged LK	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over slightly gravelly sandy SILT with frequent rootlets. Gravel is fine to coarse subrounded to subangular of whitish slag. TPS	
				1.00			MADE GROUND: Whitish grey slightly sandy GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of whitish slag (white mineral ingrow), rare clinker. Rare bricks, both broken and whole (red, refractory). Bricks gravel-cobble sized. MGR	
							MADE GROUND: Dark greyish brown SAND AND GRAVEL with frequent cobbles and occasional boulders. Gravel is fine to coarse subrounded to subangular of slag, rare clinker?. Cobbles and boulders of slag (whitish), less cobbly towards base. Rare refractory and red brick fragments (gravel-cobble sized). Solid slag at the bottom of the trial pit. MGR	
							TP Terminated at 3.7m due to groundwater	
	2.80	ES						
	3.30 - 3.60	B						
				3.70			End of pit at 3.70 m	

Remarks:		
Stability:		

Trial Pit Log

Trialpit No

TPI34

Sheet 1 of 1

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457040.00 - 525151.00

Level:

Date

07/02/2017

Location: SSI Redcar

Dimensions
(m):

4.5

Depth
3.80

2.5

Scale

1:25

Logged
TL

Client: Homes and Communities Agency

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			TOPSOIL: Grass and dark brown silt TPS MADE GROUND: Medium dense dark grey very gravelly SAND with low to medium cobble content and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, brick fragments and concrete. Boulders are slag. Ref content 5-10%. MGR <i>Dense compacted slag</i> <i>Up to 20% refractory brick, fragments and intact.</i>
				3.80			End of pit at 3.80 m

1

2

3

4

5

Remarks:

Stability:



Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457093.00 - 525126.00

Level:

Date

07/02/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Client: Homes and Communities Agency

Depth
2.40

2.6

Scale
1:25Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			MADE GROUND: Grass over dark brown slightly gravelly sandy silt with frequent rootlets. Gravel is fine to coarse of slag. TPS	
				1.00			MADE GROUND: Dark grey very gravelly SAND with occasional cobbles and rare boulders. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of slag, clinker. Cobble and boulders of slag. Rare bricks mostly broken and refractory. MGR	
	1.40 - 1.60 1.50	B ES		1.90			MADE GROUND: whitish grey slightly sandy gravel with occasional cobbles. Gravel is fine to coarse subrounded to subangular of slag (white mineral ingrow). MGR	1
				2.40			MADE GROUND: Greyish yellow slightly gravelly SAND. Gravel is fine to coarse subrounded to subangular of slag. Rare gravel-cobble sized broken brick fragments (red and refractory). MGR TP Terminated at 2.4m due to suspected services. End of pit at 2.40 m	2
								3
								4
								5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457144.00 - 525106.00

Level:

Date

07/02/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Client: Homes and Communities Agency

Depth
4.20

2.6

Scale

1:25

Logged

TL

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.50	ES					MADE GROUND: Grass over medium dense dark grey gravelly SAND with low to medium cobble and low boulder content. Gravel is fine to coarse, angular to subangular of slag, clinker, brick and burnt lime. Cobbles are slag, clinker and brick. Abundant white straining on slag pieces. MGR	
	2.00 - 2.40	LB					Strong sulfur odour noted Railways sleeper in east wall	1
				2.40				2
	3.50	ES					MADE GROUND: Loose greyish yellow slightly gravelly SAND with occasional shells. Gravel is rounded, fine to coarse of mixed lithologies. Occasional horizontal dark grey bands ~50mm thick. Occasional interbeds of light grey sandy gravel dipping west. (POSSIBLE NATURAL) MGR	3
				4.20				4
							End of pit at 4.20 m	5

Remarks:

Stability:

Project Name: Redcar DVA Initial Ground Investigation

Project No.
678079

Co-ords: 457186.00 - 525092.00

Level:

Date

09/02/2017

Location: SSI Redcar

Dimensions
(m):

4.6

Scale

1:25

Client: Homes and Communities Agency

Depth
4.20

2.7

Logged
LK

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	1.00	ES		0.20			MADE GROUND: Grass over dark brown slightly gravelly silty sand with frequent rootlets and rare cobbles. Gravel is fine to coarse subrounded to subangular of slag. TPS	
				1.20			MADE GROUND: Greyish brown gravelly SAND with occasional cobbles and boulders. Gravel is fine to coarse subrounded to subangular of slag, possibly some clinker. Occasional bricks, mostly broken gravel - cobble size (70% red, 30% refractory) total <5%. Rare gravel size pieces of white weak material (possibly like shale). Patches of orangish red material. Patches of light yellow sand, yellow sand, black gravelly sand around the pipes. 2 cast iron pipes @0.6m (possibly waste). Rare roof tiles/slate. Red brick wall with a coating on the right side looking at excavator, from around 0.8m to the bottom of the trial pit, dipping slightly away from excavator. MGR	1
				2.20			MADE GROUND: Whitish grey slightly sandy GRAVEL with frequent cobbles and rare boulders. Gravel is fine to coarse subrounded to subangular of whitish slag, slag. Cobbles and boulders of whitish slag, slag. Reddish on the left side looking at the excavator, more sandy. MGR	2
				2.90			MADE GROUND: Layer of abundant silica, red and refractory bricks on the left hand side looking at excavator 50/50 broken/whole MGR	
				4.20			MADE GROUND: Greyish yellow slightly gravelly SAND. Sand is fine to coarse subangular to subrounded of slag. Occasional gravel size brick fragments (red and possibly refractory. Rare glass fragments, occasional small shell fragments. MGR TP Terminated at 2.4m due to groundwater	3
							End of pit at 4.20 m	4
								5

Remarks:

Stability:

Chemical laboratory results



Certificate of Analysis

Certificate Number 16-86621-1

02-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 16-86621-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 2 Soil samples, 1 Leachate sample.

Date Received Tuesday, December 13, 2016

Date Started Tuesday, December 13, 2016

Date Completed Thursday, February 2, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 16-86621. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TP29	3	1.50-1.70	1099050	02-Feb-17	Grey brown clayey, gravelly SAND
TP04	1	0.00-0.10	1099051	02-Feb-17	Brown clayey, gravelly GRAVEL (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1099050	1099051
Sample ID	TP29	TP04
Depth	1.50-1.70	0.00-0.10
Other ID	3	1
Sample Type	ES	ES
Sampling Date	09-Dec-16	09-Dec-16
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	4.0	
Arsenic	DETSC 2301#	0.2	mg/kg	5.5	
Barium	DETSC 2301#	1.5	mg/kg	190	
Beryllium	DETSC 2301#	0.2	mg/kg	2.0	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	8.2	
Cadmium	DETSC 2301#	0.1	mg/kg	1.3	
Chromium	DETSC 2301#	0.15	mg/kg	440	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	23	
Lead	DETSC 2301#	0.3	mg/kg	16	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg	2.7	
Nickel	DETSC 2301#	1	mg/kg	9.5	
Vanadium	DETSC 2301	0.8	mg/kg	910	
Zinc	DETSC 2301#	1	mg/kg	66	
Inorganics					
pH	DETSC 2008#			8.1	9.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	
Organic matter	DETSC 2002#	0.1	%	0.5	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1200	< 10
Sulphur as S, Total	DETSC 2320	0.01	%		< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.55
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	

Summary of Chemical Analysis

Soil Samples

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1099050	1099051
Sample ID	TP29	TP04
Depth	1.50-1.70	0.00-0.10
Other ID	3	1
Sample Type	ES	ES
Sampling Date	09-Dec-16	09-Dec-16
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.05	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03	
Chrysene	DETSC 3303	0.03	mg/kg	0.06	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.35	
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1099050
Sample ID	TP29
Depth	1.50-1.70
Other ID	3
Sample Type	ES
Sampling Date	09-Dec-16
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1099050
Sample ID	TP29
Depth	1.50-1.70
Other ID	3
Sample Type	ES
Sampling Date	09-Dec-16
Sampling Time	n/s

Test	Method	LOD	Units	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	0.02
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.02
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 16-86621-1
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	1099052
Sample ID	TP29
Depth	1.50-1.70
Other ID	3
Sample Type	ES
Sampling Date	09-Dec-16
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 10:1	DETS 036*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	< 0.16
Boron	DETSC 2123	100	ug/l	190
Boron, Dissolved	DETSC 2306*	12	ug/l	14
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	2.5
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3
Inorganics				
pH	DETSC 2008			8.9

Summary of Asbestos Analysis Soil Samples

Our Ref 16-86621-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1099050	TP29 3 1.50-1.70	SOIL	NAD	none	Keith Wilson

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 16-86621-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1099050	TP29 1.50-1.70 SOIL	09/12/16	GJ 1L, GJ 250ml x2		
1099051	TP04 0.00-0.10 SOIL	09/12/16	GJ 1L, GJ 250ml x2		
1099052	TP29 1.50-1.70 LEACHATE	09/12/16	GJ 1L, GJ 250ml x2		

Key: G-Glass J-Jar

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 16-87182-1

02-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 16-87182-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 5 Soil samples, 3 Leachate samples.

Date Received Monday, December 19, 2016

Date Started Monday, December 19, 2016

Date Completed Thursday, February 2, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 16-87182. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102233	1102234	1102235	1102236
Sample ID	TP28	TP42	TP42	TP34	TP26
Depth	0.50	0.40	3.90	0.30	0.80
Other ID	2	1	5	1	1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	12-Dec-16	13-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0		N		Y		
Metals								
Antimony	DETSC 2301*	1	mg/kg	3.7		2.8		< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	19		21	10	10
Barium	DETSC 2301#	1.5	mg/kg	310		310		160
Beryllium	DETSC 2301#	0.2	mg/kg	5.6		2.6		6.6
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.0		3.7	4.3	5.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.5		0.4	0.3	1.4
Chromium	DETSC 2301#	0.15	mg/kg	120		69	73	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0				
Copper	DETSC 2301#	0.2	mg/kg	52		84	42	15
Lead	DETSC 2301#	0.3	mg/kg	100		49	38	86
Mercury	DETSC 2325#	0.05	mg/kg	0.11		0.15	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.6		5.6		0.7
Nickel	DETSC 2301#	1	mg/kg	17		42	11	6.7
Vanadium	DETSC 2301	0.8	mg/kg	360		150		92
Zinc	DETSC 2301#	1	mg/kg	160		150	130	1200
Inorganics								
pH	DETSC 2008#			11.1	10.9	8.7	10.6	10.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1		0.2	< 0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		0.2	< 0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.7		2.3	1.0	< 0.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	750	560	1400	1000	1400
Sulphur as S, Total	DETSC 2320	0.01	%		0.33			
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.44			
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	5.6		< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	18		6.4	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	62		50	22	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	86		57	23	< 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		< 0.01	< 0.01	< 0.01
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	1.4		5.0	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	5.4		16	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102233	1102234	1102235	1102236
Sample ID	TP28	TP42	TP42	TP34	TP26
Depth	0.50	0.40	3.90	0.30	0.80
Other ID	2	1	5	1	1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	12-Dec-16	13-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	22		56	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	29		78	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	120		130	23	< 10
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05		< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.05	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.05	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.20		0.28	0.04	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.05		0.05	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.53		0.44	0.12	0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.65		0.41	0.10	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.34		0.18	0.07	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.40		0.19	0.06	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.50		0.25	0.10	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.19		0.10	0.04	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.28		0.18	0.06	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.18		0.08	0.04	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05		< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.20		0.11	0.04	< 0.03
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2		< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.3		< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.6		2.4	0.67	< 0.10
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6		< 1.6	< 1.6	< 1.6
PCBs								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01

Summary of Chemical Analysis Soil Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102233	1102234	1102235	1102236
Sample ID	TP28	TP42	TP42	TP34	TP26
Depth	0.50	0.40	3.90	0.30	0.80
Other ID	2	1	5	1	1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	12-Dec-16	13-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	0.4

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102234	1102235
Sample ID	TP28	TP42	TP34
Depth	0.50	3.90	0.30
Other ID	2	5	1
Sample Type	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg		< 0.01	
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg		< 0.01	
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg		< 0.01	
1,1-dichloroethane	DETSC 3431	0.01	mg/kg		< 0.01	
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg		< 0.01	
2,2-dichloropropane	DETSC 3431	0.01	mg/kg		< 0.01	
Bromochloromethane	DETSC 3431	0.01	mg/kg		< 0.01	
Chloroform	DETSC 3431	0.01	mg/kg		< 0.01	
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg		< 0.01	
1,1-dichloropropene	DETSC 3431	0.01	mg/kg		< 0.01	
Carbon tetrachloride	DETSC 3431	0.01	mg/kg		< 0.01	
Benzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2-dichloroethane	DETSC 3431	0.01	mg/kg		< 0.01	
Trichloroethylene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2-dichloropropane	DETSC 3431	0.01	mg/kg		< 0.01	
Dibromomethane	DETSC 3431	0.01	mg/kg		< 0.01	
Bromodichloromethane	DETSC 3431	0.01	mg/kg		< 0.01	
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg		< 0.01	
Toluene	DETSC 3431	0.01	mg/kg		0.04	
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg		< 0.01	
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg		< 0.01	
Tetrachloroethylene	DETSC 3431	0.01	mg/kg		< 0.01	
1,3-dichloropropane	DETSC 3431	0.01	mg/kg		< 0.01	
Dibromochloromethane	DETSC 3431	0.01	mg/kg		< 0.01	
1,2-dibromoethane	DETSC 3431	0.01	mg/kg		< 0.01	
Chlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg		< 0.01	
Ethylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
m+p-Xylene	DETSC 3431	0.01	mg/kg		< 0.01	
o-Xylene	DETSC 3431	0.01	mg/kg		< 0.01	
Styrene	DETSC 3431*	0.01	mg/kg		< 0.01	
Bromoform	DETSC 3431	0.01	mg/kg		< 0.01	
Isopropylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
Bromobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg		< 0.01	
n-propylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
2-chlorotoluene	DETSC 3431	0.01	mg/kg		< 0.01	
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
4-chlorotoluene	DETSC 3431	0.01	mg/kg		< 0.01	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102234	1102235
Sample ID	TP28	TP42	TP34
Depth	0.50	3.90	0.30
Other ID	2	5	1
Sample Type	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102232	1102234	1102235
Sample ID	TP28	TP42	TP34
Depth	0.50	3.90	0.30
Other ID	2	5	1
Sample Type	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102237	1102238	1102239
Sample ID	TP28	TP42	TP26
Depth	0.50	3.90	0.80
Other ID	2	5	1
Sample Type	ES	ES	ES
Sampling Date	12-Dec-16	12-Dec-16	13-Dec-16
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
Leachate 10:1	DETS 036*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETS 2306	0.16	ug/l	1.3	3.1	0.66
Barium, Dissolved	DETS 2306	0.26	ug/l	40	75	120
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETS 2306*	12	ug/l	18	12	26
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	0.26	< 0.25	< 0.25
Copper, Dissolved	DETS 2306	0.4	ug/l	< 0.4	0.6	< 0.4
Iron, Dissolved	DETS 2306	5.5	ug/l	< 5.5	14	< 5.5
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	0.49	2.5	6.4
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.51	0.60	0.92
Vanadium, Dissolved	DETS 2306	0.6	ug/l	5.1	15	1.4
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	2.9
Inorganics						
pH	DETS 2008			8.3	8.6	6.9
Cyanide, Total	DETS 2130	40	ug/l	< 40	< 40	< 40
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	0.19	0.13	
PAHs						
Naphthalene	DETS 3304	0.01	ug/l	< 0.01	0.05	< 0.01
Acenaphthylene	DETS 3304	0.01	ug/l	< 0.01	0.01	< 0.01
Acenaphthene	DETS 3304	0.01	ug/l	< 0.01	0.05	< 0.01
Fluorene	DETS 3304	0.01	ug/l	< 0.01	0.03	< 0.01
Phenanthrene	DETS 3304	0.01	ug/l	< 0.01	0.05	< 0.01
Anthracene	DETS 3304	0.01	ug/l	< 0.01	0.01	< 0.01
Fluoranthene	DETS 3304	0.01	ug/l	0.03	0.07	< 0.01
Pyrene	DETS 3304	0.01	ug/l	0.04	0.07	0.01
Benzo(a)anthracene	DETS 3304	0.01	ug/l	0.02	0.03	0.01
Chrysene	DETS 3304	0.01	ug/l	0.02	0.03	0.01
Benzo(b)fluoranthene	DETS 3304	0.01	ug/l	0.03	0.05	0.01
Benzo(k)fluoranthene	DETS 3304	0.01	ug/l	0.02	0.03	0.01
Benzo(a)pyrene	DETS 3304	0.01	ug/l	0.02	0.03	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 3304*	0.01	ug/l	0.04	0.04	0.02
Dibenzo(a,h)anthracene	DETS 3304	0.01	ug/l	0.02	0.02	0.02
Benzo(g,h,i)perylene	DETS 3304*	0.01	ug/l	0.04	0.05	0.02
PAH Total	DETS 3304	0.04	ug/l	0.26	0.62	0.12
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

Summary of Asbestos Analysis

Soil Samples

Our Ref 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1102232	TP28 2 0.50	SOIL	NAD	none	Michael Kay
1102234	TP42 5 3.90	SOIL	Crocidolite	Small bundle of Crocidolite	Michael Kay
1102235	TP34 1 0.30	SOIL	NAD	none	Michael Kay
1102236	TP26 1 0.80	SOIL	NAD	none	Michael Kay

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 16-87182-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1102234
Sample ID	TP42
Depth	3.90
Other ID	5
Sample Type	SOIL
Sampling Date	12-Dec-16
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	38.63
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
% Chrysotile bundles in sample		Mass %	<0.001
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 16-87182-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1102232	TP28 0.50 SOIL	12/12/16	GJ 1L, GJ 250ml, GJ 60ml		
1102233	TP42 0.40 SOIL	12/12/16	GJ 1L, GJ 250ml, GJ 60ml		
1102234	TP42 3.90 SOIL	12/12/16	GJ 1L, GJ 250ml, GJ 60ml		
1102235	TP34 0.30 SOIL	13/12/16	GJ 250ml, GJ 60ml, PT 1L		
1102236	TP26 0.80 SOIL	13/12/16	GJ 250ml, GJ 60ml, PT 1L		
1102237	TP28 0.50 LEACHATE	12/12/16	GJ 1L, GJ 250ml, GJ 60ml		
1102238	TP42 3.90 LEACHATE	12/12/16	GJ 1L, GJ 250ml, GJ 60ml		
1102239	TP26 0.80 LEACHATE	13/12/16	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass J-Jar P-Plastic 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, inappropriate containers etc 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 16-87341-1

02-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 16-87341-1

Client Reference SLS1015

Order No (not supplied)

Contract Title Redcar Site

Description 9 Soil samples, 6 Leachate samples.

Date Received Tuesday, December 20, 2016

Date Started Tuesday, December 20, 2016

Date Completed Thursday, February 2, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 16-87341. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103209	1103210	1103211	1103212	1103213	1103214	1103215
Sample ID	TP25	TP40	TP39	TP39	TP31	TP22	TP22
Depth	0.30	2.60	0.30	2.00	0.60	0.30	2.30
Other ID	1	2	2	3	1	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	15-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0		N					N	Y
Metals										
Antimony	DETSC 2301*	1	mg/kg	< 1.0				7.5		
Arsenic	DETSC 2301#	0.2	mg/kg	9.1	7.0	11	0.3	17	11	6.6
Barium	DETSC 2301#	1.5	mg/kg	300				260		
Beryllium	DETSC 2301#	0.2	mg/kg	7.2				2.0		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	2.8	5.1	6.3	5.0	6.7	4.2	4.4
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	1.7	0.3	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	37	29	610	1.1	640	41	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	11	8.2	56	0.5	58	17	7.1
Lead	DETSC 2301#	0.3	mg/kg	7.8	7.1	72	< 0.3	49	24	6.4
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.6				5.4		
Nickel	DETSC 2301#	1	mg/kg	6.2	5.4	13	< 1.0	26	5.2	2.7
Vanadium	DETSC 2301	0.8	mg/kg	130				130		
Zinc	DETSC 2301#	1	mg/kg	37	32	210	1.6	170	67	18
Inorganics										
pH	DETSC 2008#			10.7	10.8	10.9	10.8	8.3	10.9	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	< 0.1	0.4	< 0.1	0.2	12
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	0.2
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	11
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	1.3	< 0.6		< 0.6	< 0.6	0.7
Organic matter	DETSC 2002#	0.1	%	0.8	0.7	0.3	0.5	0.5	0.8	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	1400	1400	1300	1400	1400	990
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	3.8	2.0	1.8	1.9	1.8
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	3.0	2.3	< 1.2	< 1.2	2.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	2.7	< 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	4.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 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	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 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	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 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	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103209	1103210	1103211	1103212	1103213	1103214	1103215
Sample ID	TP25	TP40	TP39	TP39	TP31	TP22	TP22
Depth	0.30	2.60	0.30	2.00	0.60	0.30	2.30
Other ID	1	2	2	3	1	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	15-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	0.05	< 0.03	0.13	< 0.03	0.20
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	0.06	0.10	< 0.03	0.21	0.04	0.32
Pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.07	0.08	< 0.03	0.23	0.04	0.36
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.03	0.04	< 0.03	0.10	< 0.03	0.14
Chrysene	DETSC 3303	0.03	mg/kg	0.15	0.06	0.09	< 0.03	0.24	0.03	0.22
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.07	< 0.03	0.14	< 0.03	0.15
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.03	< 0.03	0.04	< 0.03	0.05
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.71	0.21	0.46	< 0.10	1.1	0.12	1.6
PCBs										
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 52	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 101	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 153	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 138	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 180	DETSC 3401#	0.01	mg/kg					< 0.01		
PCB 7 Total	DETSC 3401#	0.01	mg/kg					< 0.01		
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103216	1103217
Sample ID	TP37	TP37
Depth	0.40	2.10
Other ID	1	2
Sample Type	ES	ES
Sampling Date	16-Dec-16	16-Dec-16
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0			N
Metals					
Antimony	DETSC 2301*	1	mg/kg		< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg		8.5
Barium	DETSC 2301#	1.5	mg/kg		310
Beryllium	DETSC 2301#	0.2	mg/kg		7.0
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		1.9
Cadmium	DETSC 2301#	0.1	mg/kg		0.2
Chromium	DETSC 2301#	0.15	mg/kg		39
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg		20
Lead	DETSC 2301#	0.3	mg/kg		18
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		0.7
Nickel	DETSC 2301#	1	mg/kg		6.3
Vanadium	DETSC 2301	0.8	mg/kg		130
Zinc	DETSC 2301#	1	mg/kg		58
Inorganics					
pH	DETSC 2008#				10.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg		1.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		1.6
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6
Organic matter	DETSC 2002#	0.1	%		0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		1100
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		7.0
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		31
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		39
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		4.3
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		14
Aromatic C5-C35	DETSC 3072*	10	mg/kg		18

Summary of Chemical Analysis

Soil Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103216	1103217
Sample ID	TP37	TP37
Depth	0.40	2.10
Other ID	1	2
Sample Type	ES	ES
Sampling Date	16-Dec-16	16-Dec-16
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		57
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.54	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.38	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.25	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.0	0.39
Anthracene	DETSC 3303	0.03	mg/kg	0.35	0.06
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.8	0.49
Pyrene	DETSC 3303#	0.03	mg/kg	1.7	0.47
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.42	0.16
Chrysene	DETSC 3303	0.03	mg/kg	0.56	0.23
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.45	0.18
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	0.07
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.30	0.09
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.16	0.07
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.07
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.3	2.3
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103209	1103211	1103213	1103214	1103217
Sample ID	TP25	TP39	TP31	TP22	TP37
Depth	0.30	0.30	0.60	0.30	2.10
Other ID	1	2	1	1	2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	16-Dec-16
Sampling Time	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
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	0.01		< 0.01		< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103209	1103211	1103213	1103214	1103217
Sample ID	TP25	TP39	TP31	TP22	TP37
Depth	0.30	0.30	0.60	0.30	2.10
Other ID	1	2	1	1	2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	16-Dec-16
Sampling Time	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
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	0.01		< 0.01		< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.03		< 0.01		< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	0.04		< 0.01		< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.03		< 0.01		< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103209	1103211	1103213	1103214	1103217
Sample ID	TP25	TP39	TP31	TP22	TP37
Depth	0.30	0.30	0.60	0.30	2.10
Other ID	1	2	1	1	2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	16-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1
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 Chemical Analysis

Leachate Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103218	1103219	1103220	1103221	1103222	1103223
Sample ID	TP25	TP39	TP39	TP31	TP22	TP37
Depth	0.30	0.30	2.00	0.60	2.30	2.10
Other ID	1	2	3	1	3	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	16-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.81	0.59	0.81	0.25	0.68	4.9
Barium, Dissolved	DETSC 2306	0.26	ug/l	74	100	61	48	31	59
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	63	14	30	< 12	14	25
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	5.0	7.3	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	11	< 5.5	5.8	7.7	< 5.5	6.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.0	0.61	1.5	0.27	3.4	2.5
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	0.7	0.6	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	2.0	0.59	0.61	< 0.25	0.30	0.27
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	8.3	3.7	3.8	2.8	11	8.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.0	4.4	9.2	< 1.3	2.7	4.6
Inorganics									
pH	DETSC 2008			8.2	8.5	9.9	9.1	10.8	10.7
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.039	0.026	0.060	0.11	0.029	0.056
Chloride	DETSC 2055	0.1	mg/l	0.51	0.46	0.71	0.54	1.1	1.6
PAHs									
Naphthalene	DETSC 3304	0.01	ug/l	0.03	0.03	0.04	0.03	0.05	0.06
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	0.14	0.12	0.05
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.09	0.04	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	0.05	0.02	0.02	0.19	0.72	0.23
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.06	0.09	0.04
Fluoranthene	DETSC 3304	0.01	ug/l	0.07	0.02	0.02	0.14	0.55	0.38
Pyrene	DETSC 3304	0.01	ug/l	0.06	0.03	0.03	0.11	0.44	0.37
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.01	0.03	0.13	0.18
Chrysene	DETSC 3304	0.01	ug/l	0.06	0.02	0.01	0.05	0.16	0.27
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.06	0.02	0.01	0.05	0.18	0.31
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.01	< 0.01	0.02	0.06	0.12
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01	0.02	0.08	0.18
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	0.02	< 0.01	< 0.01	0.03	0.10	0.18
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.04
Benzo(g,h,i)perylene	DETSC 3304*	0.01	ug/l	0.04	0.01	0.01	0.05	0.13	0.23
PAH Total	DETSC 3304	0.04	ug/l	0.44	0.15	0.18	1.0	2.9	2.7

Summary of Chemical Analysis

Leachate Samples

Our Ref 16-87341-1
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	1103218	1103219	1103220	1103221	1103222	1103223
Sample ID	TP25	TP39	TP39	TP31	TP22	TP37
Depth	0.30	0.30	2.00	0.60	2.30	2.10
Other ID	1	2	3	1	3	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14-Dec-16	14-Dec-16	14-Dec-16	15-Dec-16	15-Dec-16	16-Dec-16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Asbestos Analysis Soil Samples

Our Ref 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1103209	TP25 1 0.30	SOIL	NAD	none	Michael Kay
1103210	TP40 2 2.60	SOIL	NAD	none	Michael Kay
1103211	TP39 2 0.30	SOIL	NAD	none	Michael Kay
1103212	TP39 3 2.00	SOIL	NAD	none	Michael Kay
1103213	TP31 1 0.60	SOIL	NAD	none	Michael Kay
1103214	TP22 1 0.30	SOIL	NAD	none	Michael Kay
1103215	TP22 3 2.30	SOIL	Amosite	Small bundle of Amosite	Michael Kay
1103217	TP37 2 2.10	SOIL	NAD	none	Michael Kay

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 16-87341-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1103215
Sample ID	TP22
Depth	2.30
Other ID	3
Sample Type	SOIL
Sampling Date	15-Dec-16
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	1087.06
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 %	<0.001
% Chrysotile bundles in sample		Mass %	na
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 16-87341-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1103209	TP25 0.30 SOIL	14/12/16	GJ 250ml x2, GV, PT 1L		
1103210	TP40 2.60 SOIL	14/12/16	GJ 250ml x2, GV, PT 1L		
1103211	TP39 0.30 SOIL	14/12/16	GJ 250ml x2, GV, PT 1L		
1103212	TP39 2.00 SOIL	14/12/16	GJ 250ml x2, GV, PT 1L		
1103213	TP31 0.60 SOIL	15/12/16	GJ 250ml x2, GV, PT 1L		
1103214	TP22 0.30 SOIL	15/12/16	GJ 250ml x2, GV, PT 1L		
1103215	TP22 2.30 SOIL	15/12/16	GJ 250ml x2, GV, PT 1L		
1103216	TP37 0.40 SOIL	16/12/16	GJ 250ml x2, GV, PT 1L		
1103217	TP37 2.10 SOIL	16/12/16	GJ 250ml x2, GV, PT 1L		
1103218	TP25 0.30 LEACHATE	14/12/16	GJ 250ml x2, GV, PT 1L		
1103219	TP39 0.30 LEACHATE	14/12/16	GJ 250ml x2, GV, PT 1L		
1103220	TP39 2.00 LEACHATE	14/12/16	GJ 250ml x2, GV, PT 1L		
1103221	TP31 0.60 LEACHATE	15/12/16	GJ 250ml x2, GV, PT 1L		
1103222	TP22 2.30 LEACHATE	15/12/16	GJ 250ml x2, GV, PT 1L		
1103223	TP37 2.10 LEACHATE	16/12/16	GJ 250ml x2, GV, PT 1L		

Key: G-Glass P-Plastic J-Jar V-Vial 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, inappropriate containers etc 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 17-88864-2

28-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-88864-2

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 12 Soil samples, 11 Leachate samples.

Date Received 17-Jan-17

Date Started 17-Jan-17

Date Completed 28-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-88864-1. Testing amended.**

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TP20	2	1.3	1111041	06/02/2017	Dark brown gravelly, sandy CLAY
TP15	1	0.45	1111042	06/02/2017	Brown gravelly, sandy CLAY
TP14	1	0.8	1111043	06/02/2017	Brown gravelly, sandy CLAY
TP14	4	2.3	1111044	06/02/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TP09	2	3.1	1111045	06/02/2017	Brown white gravelly, sandy CLAY
TP17	1	2.1	1111046	06/02/2017	Brown gravelly, sandy CLAY
TP12	1	1.8	1111047	06/02/2017	Brown gravelly, sandy CLAY
TP01	1	0.6	1111048	06/02/2017	Brown gravelly, sandy CLAY
TP06	1	0.7	1111049	06/02/2017	Brown gravelly, sandy CLAY
TP06	3	2	1111050	06/02/2017	Brown gravelly, sandy CLAY
TP06	4	3.7	1111051	06/02/2017	Brown gravelly, sandy CLAY
TP04A	1	1.1	1111052	06/02/2017	Brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111041	1111042	1111043	1111044	1111045	1111046
Sample ID	TP20	TP15	TP14	TP14	TP09	TP17
Depth	1.30	0.45	0.80	2.30	3.10	2.10
Other ID	2	1	1	4	2	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	10/01/17	10/01/17	11/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0			N	N		N	
Metals									
Antimony	DETSC 2301*	1	mg/kg			3.0	< 1.0		
Arsenic	DETSC 2301#	0.2	mg/kg	16	36	150	47	11	6.7
Barium	DETSC 2301#	1.5	mg/kg			340	440		
Beryllium	DETSC 2301#	0.2	mg/kg			3.9	7.4		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.9	4.7	3.6	2.5	3.5	2.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.7	0.6	0.9	0.5	0.9	0.4
Chromium	DETSC 2301#	0.15	mg/kg	210	110	160	44	25	500
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg	68	28	27	15	16	23
Lead	DETSC 2301#	0.3	mg/kg	190	75	130	43	30	32
Mercury	DETSC 2325#	0.05	mg/kg	0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg			6.9	2.0		
Nickel	DETSC 2301#	1	mg/kg	19	10	33	9.1	10	8.6
Vanadium	DETSC 2301	0.8	mg/kg			530	150		
Zinc	DETSC 2301#	1	mg/kg	380	230	410	210	110	95
Inorganics									
pH	DETSC 2008#			11.3	10.8	10.6	10.8	12.6	12.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	< 0.1	< 0.1	0.7	3.3	1.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	0.5	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.4	< 0.2	< 0.2	0.6	2.9	1.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.6	1.0	0.5	0.7	0.6	0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	260	550	1500	1400	88	1000
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
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	13	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	45	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	59	< 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	1.2	< 0.5	< 0.5	1.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	14	< 0.6	< 0.6	7.4	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111041	1111042	1111043	1111044	1111045	1111046
Sample ID	TP20	TP15	TP14	TP14	TP09	TP17
Depth	1.30	0.45	0.80	2.30	3.10	2.10
Other ID	2	1	1	4	2	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	10/01/17	10/01/17	11/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	53	< 1.4	< 1.4	4.6	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	68	< 10	< 10	14	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	130	< 10	< 10	14	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03	0.10	< 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	0.15	< 0.03	< 0.03	0.14	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.12	< 0.03	< 0.03	0.10	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.2	0.08	0.30	0.56	0.26	0.34
Anthracene	DETSC 3303	0.03	mg/kg	0.26	< 0.03	< 0.03	0.10	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.0	0.20	0.70	0.47	0.41	0.60
Pyrene	DETSC 3303#	0.03	mg/kg	1.8	0.21	0.64	0.37	0.37	0.61
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.81	0.12	0.43	0.10	0.22	0.33
Chrysene	DETSC 3303	0.03	mg/kg	0.73	0.12	0.54	0.11	0.33	0.48
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.90	0.13	0.63	0.07	0.29	0.42
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37	0.06	0.25	< 0.03	0.09	0.16
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.55	0.07	0.29	0.05	0.10	0.17
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.34	0.06	0.19	< 0.03	0.10	0.13
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	0.07	< 0.03	< 0.03	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.34	0.04	0.19	< 0.03	0.08	0.12
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.8	1.1	4.2	2.2	2.3	3.4
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01					
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 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111047	1111048	1111049	1111050	1111051	1111052
Sample ID	TP12	TP01	TP06	TP06	TP06	TP04A
Depth	1.80	0.60	0.70	2.00	3.70	1.10
Other ID	1	1	1	3	4	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	11/01/17	11/01/17	12/01/17	12/01/17	12/01/17	12/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0		N	N		N	Y	
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0	3.6	13			2.3
Arsenic	DETSC 2301#	0.2	mg/kg	14	210	4.1	14	51	280
Barium	DETSC 2301#	1.5	mg/kg	200	200	120			160
Beryllium	DETSC 2301#	0.2	mg/kg	6.9	3.2	0.7			4.6
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.4	2.9	1.9	3.5	2.4	3.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	7.9	0.2	0.6	1.2	3.4
Chromium	DETSC 2301#	0.15	mg/kg	57	160	1200	460	380	52
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	39	42	62	49	27
Lead	DETSC 2301#	0.3	mg/kg	21	390	29	53	75	280
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.2	8.5	5.9			10
Nickel	DETSC 2301#	1	mg/kg	6.9	79	12	22	22	48
Vanadium	DETSC 2301	0.8	mg/kg	150	500	470			170
Zinc	DETSC 2301#	1	mg/kg	120	7200	70	400	560	1700
Inorganics									
pH	DETSC 2008#			12.4	10.2	12.4	11.5	11.8	10.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.1	0.1	0.6	0.3	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	0.6	0.3	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	1.7	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.3	0.7	0.2	1.4	0.6	< 0.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1300	1500	750	540	870	1500
Sulphur as S, Total	DETSC 2320	0.01	%		1.7	0.21			
Sulphate as SO4, Total	DETSC 2321#	0.01	%		5.3	0.54			
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	6.1
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	4.1	24
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	30
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	1.1	1.2
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	0.7	< 0.6	< 0.6	6.4	11

Summary of Chemical Analysis

Soil Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111047	1111048	1111049	1111050	1111051	1111052
Sample ID	TP12	TP01	TP06	TP06	TP06	TP04A
Depth	1.80	0.60	0.70	2.00	3.70	1.10
Other ID	1	1	1	3	4	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	11/01/17	11/01/17	12/01/17	12/01/17	12/01/17	12/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	18	30
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	26	42
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	30	73
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.28	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.53	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.12	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	1.5	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.37	0.06	4.1	0.29
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	4.7	0.06
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	0.04	0.68	0.10	4.0	0.71
Pyrene	DETSC 3303#	0.03	mg/kg	0.06	0.04	0.67	0.06	3.1	0.65
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.03	0.37	0.04	1.4	0.38
Chrysene	DETSC 3303	0.03	mg/kg	0.06	0.03	0.56	0.05	1.2	0.45
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.61	0.05	1.3	0.61
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.24	< 0.03	0.49	0.23
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.20	< 0.03	0.90	0.35
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.21	< 0.03	0.47	0.26
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.07	< 0.03	0.13	0.07
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.24	< 0.03	0.46	0.29
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.31	0.15	4.3	0.37	25	4.4
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01			
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 VOC/SVOC Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111041	1111043	1111044	1111046	1111047	1111051	1111052
Sample ID	TP20	TP14	TP14	TP17	TP12	TP06	TP04A
Depth	1.30	0.80	2.30	2.10	1.80	3.70	1.10
Other ID	2	1	4	1	1	4	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	11/01/17	11/01/17	12/01/17	12/01/17
Sampling Time	n/s	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 VOC/SVOC Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111041	1111043	1111044	1111046	1111047	1111051	1111052
Sample ID	TP20	TP14	TP14	TP17	TP12	TP06	TP04A
Depth	1.30	0.80	2.30	2.10	1.80	3.70	1.10
Other ID	2	1	4	1	1	4	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	11/01/17	11/01/17	12/01/17	12/01/17
Sampling Time	n/s	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
MTBE	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	
Aniline	DETSC 3433*	0.1	mg/kg	< 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	
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 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	
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 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	
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 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	
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 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	
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	0.2	
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 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	
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 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	
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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	
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1	0.2	< 0.1	0.5	
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 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	
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 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	
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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	
Diphenylamine	DETSC 3433	0.1	mg/kg	< 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	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111041	1111043	1111044	1111046	1111047	1111051	1111052
Sample ID	TP20	TP14	TP14	TP17	TP12	TP06	TP04A
Depth	1.30	0.80	2.30	2.10	1.80	3.70	1.10
Other ID	2	1	4	1	1	4	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	11/01/17	11/01/17	12/01/17	12/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 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
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 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
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 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
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 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
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 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
Azobenzene	DETSC 3433	0.1	mg/kg	< 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	0.6

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111053	1111054	1111055	1111056	1111057	1111058	1111059
Sample ID	TP20	TP15	TP14	TP14	TP17	TP12	TP01
Depth	1.30	0.45	0.80	2.30	2.10	1.80	0.60
Other ID	2	1	1	4	1	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	09/01/17	10/01/17	10/01/17	10/01/17	11/01/17	11/01/17	11/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.9	1.1	5.1	0.23	2.7	1.8	2.2
Barium, Dissolved	DETSC 2306	0.26	ug/l		7.5	13	7.3	18		
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.1	< 0.1	< 0.1	< 0.1		
Boron	DETSC 2123	100	ug/l	110	< 100	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.56	< 0.03	< 0.03	0.05
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.2	< 0.25	< 0.25	0.41	< 0.25	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.5	< 0.4	0.5	2.0	< 0.4	< 0.4	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l		< 5.5	5.9	< 5.5	< 5.5		
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	0.18	< 0.09	< 0.09	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l		0.44	1.3	< 0.22	1.6		
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.26	< 0.25	< 0.25	5.3	1.1	0.29	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		1.9	2.2	7.8	< 0.6		
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	1.6	7.2
Inorganics										
pH	DETSC 2008			9.7	8.4	7.7	11.9	8.1	7.6	7.0
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l		0.055	0.069	0.056	0.024		
Chloride	DETSC 2055	0.1	mg/l		1.9	1.2	1.7	1.7		

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111060	1111061	1111062	1117385
Sample ID	TP06	TP06	TP04A	TP06
Depth	2.00	3.70	1.10	0.70
Other ID	3	4	1	1
Sample Type	ES	ES	ES	ES
Sampling Date	12/01/17	12/01/17	12/01/17	12/01/16
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Leachate 10:1	DETS 036*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.83	3.0	0.66	2.7
Barium, Dissolved	DETSC 2306	0.26	ug/l	32		10	45
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1		< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.08	< 0.03	0.14	0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	16	0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	7.0	0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5		10	34
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	0.26	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	12		< 0.22	1.7
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	9.0	0.26
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.6		8.0	1.1
Zinc, Dissolved	DETSC 2306	1.3	ug/l	9.4	3.5	< 1.3	30
Inorganics							
pH	DETSC 2008			6.7	6.7	12.0	7.1
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.027		0.036	< 0.015
Chloride	DETSC 2055	0.1	mg/l	1.5		2.9	2.2

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-88864-2
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1111041	TP20 2 1.30	SOIL	NAD	none	Michael Kay
1111042	TP15 1 0.45	SOIL	NAD	none	Michael Kay
1111043	TP14 1 0.80	SOIL	NAD	none	Michael Kay
1111044	TP14 4 2.30	SOIL	NAD	none	Michael Kay
1111045	TP09 2 3.10	SOIL	NAD	none	Michael Kay
1111046	TP17 1 2.10	SOIL	NAD	none	Michael Kay
1111047	TP12 1 1.80	SOIL	NAD	none	Michael Kay
1111048	TP01 1 0.60	SOIL	NAD	none	Michael Kay
1111049	TP06 1 0.70	SOIL	NAD	none	Colin Patrick
1111050	TP06 3 2.00	SOIL	NAD	none	Michael Kay
1111051	TP06 4 3.70	SOIL	Chrysotile	Bundle of Chrysotile	Michael Kay
1111052	TP04A 1 1.10	SOIL	NAD	none	Michael Kay

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 17-88864-2

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1111051
Sample ID	TP06
Depth	3.70
Other ID	4
Sample Type	SOIL
Sampling Date	12/01/17
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.047
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.047
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	1304.58
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
% Chrysotile bundles in sample		Mass %	0.047

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-88864-2

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1111041	TP20 1.30 SOIL	09/01/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1111042	TP15 0.45 SOIL	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111043	TP14 0.80 SOIL	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111044	TP14 2.30 SOIL	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111045	TP09 3.10 SOIL	10/01/17	GJ 250ml, GJ 60ml x3, PT 1L		
1111046	TP17 2.10 SOIL	11/01/17	GJ 250ml, GJ 60ml x3, PT 1L		
1111047	TP12 1.80 SOIL	11/01/17	GJ 60ml x5, PT 1L		
1111048	TP01 0.60 SOIL	11/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111049	TP06 0.70 SOIL	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111050	TP06 2.00 SOIL	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111051	TP06 3.70 SOIL	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111052	TP04A 1.10 SOIL	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111053	TP20 1.30 LEACHATE	09/01/17	GJ 250ml, GJ 60ml, PT 1L		
1111054	TP15 0.45 LEACHATE	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111055	TP14 0.80 LEACHATE	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111056	TP14 2.30 LEACHATE	10/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111057	TP17 2.10 LEACHATE	11/01/17	GJ 250ml, GJ 60ml x3, PT 1L		
1111058	TP12 1.80 LEACHATE	11/01/17	GJ 60ml x5, PT 1L		
1111059	TP01 0.60 LEACHATE	11/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111060	TP06 2.00 LEACHATE	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111061	TP06 3.70 LEACHATE	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1111062	TP04A 1.10 LEACHATE	12/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1117385	TP06 0.70 LEACHATE	12/01/16	GJ 1L (1L)		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-90043

06-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-90043

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 11 Soil samples, 3 Leachate samples.

Date Received 30-Jan-17

Date Started 30-Jan-17

Date Completed 06-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPB12	1	0.3	1117386	06/02/2017	Dark grey clayey, sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPB11	2	2	1117387	06/02/2017	Brown sandy, very gravelly CLAY
TPB09	1	0.3	1117388	06/02/2017	Brown sandy, very gravelly CLAY
TPB07	2	0.9	1117389	06/02/2017	Dark brown gravelly, sandy CLAY (Made ground - brick)
TPB07	4	2.5	1117390	06/02/2017	Brown gravelly, sandy CLAY
TPB08	1	0.3	1117391	06/02/2017	Dark grey clayey, sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPB08	3	3	1117392	06/02/2017	Brown SAND
TPB02	2	2.6	1117393	06/02/2017	Brown gravelly, sandy CLAY
TPB04	1	0.5	1117394	06/02/2017	Brown clayey, sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPB06	1	0.2	1117395	06/02/2017	Brown gravelly, sandy CLAY
TPB06	3	2.5	1117396	06/02/2017	Brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117386	1117387	1117388	1117389	1117390	1117391	1117392
Sample ID	TPB12	TPB11	TPB09	TPB07	TPB07	TPB08	TPB08
Depth	0.30	2.00	0.30	0.90	2.50	0.30	3.00
Other ID	1	2	1	2	4	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	16/01/17	17/01/17	17/01/17	17/01/17	17/01/17	18/01/17	18/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Antimony	DETSC 2301*	1	mg/kg	1.4			5.6		1.2	
Arsenic	DETSC 2301#	0.2	mg/kg	13	73	23	20	7.8	12	6.7
Barium	DETSC 2301#	1.5	mg/kg	300			230		410	
Beryllium	DETSC 2301#	0.2	mg/kg	5.6			3.5		6.1	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	5.3	4.4	5.2	2.7	0.9	5.5	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	1.2	0.4	0.8	0.2	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	73	89	140	330	24	92	11
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	33	24	25	41	10	31	7.0
Lead	DETSC 2301#	0.3	mg/kg	70	83	39	110	18	24	13
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.22	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9			1.3		1.0	
Nickel	DETSC 2301#	1	mg/kg	7.8	26	9.8	12	8.9	8.3	4.8
Vanadium	DETSC 2301	0.8	mg/kg	250			800		290	
Zinc	DETSC 2301#	1	mg/kg	260	1200	120	190	43	70	25
Inorganics										
pH	DETSC 2008#			11.4	10.8	11.2	11.4	10.6	11.1	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1			< 0.1		< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.2			< 0.2		< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6			< 0.6		< 0.6	
Organic matter	DETSC 2002#	0.1	%	1.9	1.0	0.9	0.9	0.8	1.2	0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	180	1500	980	500	280	1200	190
Sulphur as S, Total	DETSC 2320	0.01	%		0.85	0.60				
Sulphate as SO4, Total	DETSC 2321#	0.01	%		1.9	1.0				
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 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	3.9	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	4.3	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 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	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 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	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.0	0.7	< 0.6	< 0.6	< 0.6	2.4	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	2.8	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117386	1117387	1117388	1117389	1117390	1117391	1117392
Sample ID	TPB12	TPB11	TPB09	TPB07	TPB07	TPB08	TPB08
Depth	0.30	2.00	0.30	0.90	2.50	0.30	3.00
Other ID	1	2	1	2	4	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	16/01/17	17/01/17	17/01/17	17/01/17	17/01/17	18/01/17	18/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	14	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.12	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.31	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.34	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.29	0.25	0.14	0.10	< 0.03	2.4	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.07	< 0.03	0.03	< 0.03	< 0.03	0.62	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	0.37	0.30	0.18	< 0.03	3.4	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.78	0.31	0.24	0.12	< 0.03	2.8	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.41	0.21	0.13	0.08	< 0.03	1.4	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.37	0.28	0.13	0.09	< 0.03	1.1	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.52	0.26	0.19	0.09	< 0.03	1.1	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.26	0.10	0.07	0.03	< 0.03	0.49	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.27	0.10	0.09	0.03	< 0.03	0.75	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.21	0.08	0.07	0.04	< 0.03	0.38	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03	0.11	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.08	0.07	0.03	< 0.03	0.37	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.5	2.1	1.5	0.80	< 0.10	16	< 0.10
PCBs										
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01					< 0.01	
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117393	1117394	1117395	1117396
Sample ID	TPB02	TPB04	TPB06	TPB06
Depth	2.60	0.50	0.20	2.50
Other ID	2	1	1	3
Sample Type	ES	ES	ES	ES
Sampling Date	19/01/17	19/01/17	19/01/17	19/01/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Antimony	DETSC 2301*	1	mg/kg				< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg		22		16
Barium	DETSC 2301#	1.5	mg/kg				230
Beryllium	DETSC 2301#	0.2	mg/kg				6.1
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		5.1		4.5
Cadmium	DETSC 2301#	0.1	mg/kg		0.2		0.2
Chromium	DETSC 2301#	0.15	mg/kg		37		45
Chromium, Hexavalent	DETSC 2204*	1	mg/kg				< 1.0
Copper	DETSC 2301#	0.2	mg/kg		9.9		14
Lead	DETSC 2301#	0.3	mg/kg		38		21
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05		< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg				0.9
Nickel	DETSC 2301#	1	mg/kg		11		7.3
Vanadium	DETSC 2301	0.8	mg/kg				180
Zinc	DETSC 2301#	1	mg/kg		100		140
Inorganics							
pH	DETSC 2008#			11.3	10.7	10.8	10.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1		< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg				< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg				< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg				< 0.6
Organic matter	DETSC 2002#	0.1	%		0.8		0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	510	1600	1500	1600
Sulphur as S, Total	DETSC 2320	0.01	%	0.68		0.50	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	1.4		0.93	
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4		< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117393	1117394	1117395	1117396
Sample ID	TPB02	TPB04	TPB06	TPB06
Depth	2.60	0.50	0.20	2.50
Other ID	2	1	1	3
Sample Type	ES	ES	ES	ES
Sampling Date	19/01/17	19/01/17	19/01/17	19/01/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		< 10		< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.05		< 0.03
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03		< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.16		0.04
Pyrene	DETSC 3303#	0.03	mg/kg		0.12		0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.08		0.03
Chrysene	DETSC 3303	0.03	mg/kg		0.11		0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.09		0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.03		< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.63		0.18
PCBs							
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg				< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg				< 0.01
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3		< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117391
Sample ID	TPB08
Depth	0.30
Other ID	1
Sample Type	ES
Sampling Date	18/01/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117391
Sample ID	TPB08
Depth	0.30
Other ID	1
Sample Type	ES
Sampling Date	18/01/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117391
Sample ID	TPB08
Depth	0.30
Other ID	1
Sample Type	ES
Sampling Date	18/01/17
Sampling Time	n/s

Test	Method	LOD	Units	
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	0.2

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1117397	1117398	1117399
Sample ID	TPB12	TPB08	TPB06
Depth	0.30	0.30	2.50
Other ID	1	1	3
Sample Type	ES	ES	ES
Sampling Date	16/01/17	18/01/17	19/01/17
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
Leachate 10:1	DETS 036*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.8	1.8	0.96
Barium, Dissolved	DETSC 2306	0.26	ug/l	14	39	51
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	0.2	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.08	0.20	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.91	1.9	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7	2.3	0.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	22	11	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.60	1.3	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	7.7	11	3.3
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.9	2.0	0.6
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.83	1.0	0.63
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	14	16	2.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	4.6	5.1	31
Inorganics						
pH	DETSC 2008			9.0	7.2	9.1
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-90043

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1117386	TPB12 1 0.30	SOIL	NAD	none	D Wilkinson
1117387	TPB11 2 2.00	SOIL	NAD	none	D Wilkinson
1117388	TPB09 1 0.30	SOIL	NAD	none	D Wilkinson
1117389	TPB07 2 0.90	SOIL	NAD	none	D Wilkinson
1117390	TPB07 4 2.50	SOIL	NAD	none	D Wilkinson
1117391	TPB08 1 0.30	SOIL	NAD	none	D Wilkinson
1117392	TPB08 3 3.00	SOIL	NAD	none	D Wilkinson
1117394	TPB04 1 0.50	SOIL	NAD	none	D Wilkinson
1117396	TPB06 3 2.50	SOIL	NAD	none	D Wilkinson

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 17-90043
Client Ref SLS1015
Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1117386	TPB12 0.30 SOIL	16/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117387	TPB11 2.00 SOIL	17/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117388	TPB09 0.30 SOIL	17/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117389	TPB07 0.90 SOIL	17/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117390	TPB07 2.50 SOIL	17/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117391	TPB08 0.30 SOIL	18/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117392	TPB08 3.00 SOIL	18/01/17	GJ 250ml x2, PT 500ml x2	pH + Conductivity (7 days)	
1117393	TPB02 2.60 SOIL	19/01/17	GJ 250ml x2, GJ 60ml, PT 500ml x2	pH + Conductivity (7 days)	
1117394	TPB04 0.50 SOIL	19/01/17	GJ 250ml x2, GJ 60ml, PT 500ml x2	pH + Conductivity (7 days)	
1117395	TPB06 0.20 SOIL	19/01/17	GJ 250ml x2, GJ 60ml, PT 500ml x2	pH + Conductivity (7 days)	
1117396	TPB06 2.50 SOIL	19/01/17	GJ 250ml x2, GJ 60ml, PT 500ml x2	pH + Conductivity (7 days)	
1117397	TPB12 0.30 LEACHATE	16/01/17	GJ 250ml x2, PT 500ml x2		
1117398	TPB08 0.30 LEACHATE	18/01/17	GJ 250ml x2, PT 500ml x2		
1117399	TPB06 2.50 LEACHATE	19/01/17	GJ 250ml x2, GJ 60ml, PT 500ml 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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-90393-1

16-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-90393-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 13 Soil samples, 4 Leachate samples.

Date Received 02-Feb-17

Date Started 02-Feb-17

Date Completed 16-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-90393, 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPB05	1	0.7	1119385	09/02/2017	Dark brown clayey, gravelly SAND
TPB03	1	0.4	1119386	09/02/2017	Dark brown clayey, gravelly SAND
TPB03	2	2.6	1119387	09/02/2017	Dark grey clayey, sandy GRAVEL (Made ground - metal, concrete) (sample matrix outside MCERTS scope of accreditation)
TPB01	1	0.3	1119388	09/02/2017	Dark brown clayey, gravelly SAND
TPB01	3	4	1119389	09/02/2017	Light brown gravelly SAND
TPI09	1	0.2	1119390	09/02/2017	Dark brown sandy CLAY including odd rootlets
TPI09	3	3	1119391	09/02/2017	Dark brown clayey, gravelly SAND including odd rootlets (Possible made ground - brick)
TPI08	1	0.2	1119392	09/02/2017	Brown gravelly, very sandy CLAY including odd rootlets
TPI08	3	3	1119393	09/02/2017	Grey clayey, gravelly SAND
TPI07	1	1.3	1119394	09/02/2017	Dark brown clayey, gravelly SAND (Possible made ground - brick)
TPI12	1	0.6	1119395	09/02/2017	Brown clayey, gravelly SAND (Made ground - brick)
TPI12	3	3.8	1119396	09/02/2017	Dark brown clayey, gravelly SAND
TPI11	1	1	1119397	09/02/2017	Brown clayey, gravelly SAND (Made ground - brick)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119385	1119386	1119387	1119388	1119389	1119390	1119391
Sample ID	TPB05	TPB03	TPB03	TPB01	TPB01	TPI09	TPI09
Depth	0.70	0.40	2.60	0.30	4.00	0.20	3.00
Other ID	1	1	2	1	3	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	23/01/17	23/01/17	23/01/17	23/01/17	23/01/17	25/01/17	25/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0			N		N	N		Y
Metals										
Antimony	DETSC 2301*	1	mg/kg		1.8		3.7			13
Arsenic	DETSC 2301#	0.2	mg/kg		23		12	8.8		16
Barium	DETSC 2301#	1.5	mg/kg		340		110			630
Beryllium	DETSC 2301#	0.2	mg/kg		4.3		0.7			3.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		7.3		2.1	2.9		6.6
Cadmium	DETSC 2301#	0.1	mg/kg		0.6		0.8	0.2		2.0
Chromium	DETSC 2301#	0.15	mg/kg		110		35	30		240
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0		< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg		35		32	10		97
Lead	DETSC 2301#	0.3	mg/kg		74		38	19		290
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05		< 0.05	< 0.05		0.08
Molybdenum	DETSC 2301#	0.4	mg/kg		1.9		3.2			2.7
Nickel	DETSC 2301#	1	mg/kg		16		37	6.4		18
Vanadium	DETSC 2301	0.8	mg/kg		340		58			450
Zinc	DETSC 2301#	1	mg/kg		350		100	51		560
Inorganics										
pH	DETSC 2008#			10.3	10.5	10.6	10.5	10.5	8.4	10.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.2		0.1	< 0.1		0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1		< 0.1			< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		0.2		< 0.2			0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6		< 0.6			< 0.6
Organic matter	DETSC 2002#	0.1	%		0.7		2.0	0.3		1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1300	1400	230	1100	31	1000
Sulphur as S, Total	DETSC 2320	0.01	%	0.76	0.45	0.80			0.03	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	1.4	0.71	1.1			0.06	
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		6.7
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		18		< 3.4	< 3.4		46
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		18		< 10	< 10		52
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		< 0.01	< 0.01		< 0.01
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		2.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6		< 0.6	< 0.6		29

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119385	1119386	1119387	1119388	1119389	1119390	1119391
Sample ID	TPB05	TPB03	TPB03	TPB01	TPB01	TPI09	TPI09
Depth	0.70	0.40	2.60	0.30	4.00	0.20	3.00
Other ID	1	1	2	1	3	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	23/01/17	23/01/17	23/01/17	23/01/17	23/01/17	25/01/17	25/01/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4		< 1.4	< 1.4	110
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10		< 10	< 10	140
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		18		< 10	< 10	190
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03		0.10	< 0.03	0.08
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03	< 0.03	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03	< 0.03	0.62
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03		< 0.03	< 0.03	0.42
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.20		0.26	< 0.03	3.7
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03		0.03	< 0.03	0.73
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.33		0.16	< 0.03	6.2
Pyrene	DETSC 3303#	0.03	mg/kg		0.25		0.11	< 0.03	6.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.18		0.09	< 0.03	2.9
Chrysene	DETSC 3303	0.03	mg/kg		0.20		0.10	< 0.03	2.6
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.23		0.12	< 0.03	3.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.10		0.04	< 0.03	1.5
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.14		0.06	< 0.03	2.3
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.10		0.04	< 0.03	1.3
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03		< 0.03	< 0.03	0.40
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.09		0.04	< 0.03	1.5
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		1.8		1.2	< 0.10	34
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3		< 0.3	0.9	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119392	1119393	1119394	1119395	1119396	1119397
Sample ID	TPI08	TPI08	TPI07	TPI12	TPI12	TPI11
Depth	0.20	3.00	1.30	0.60	3.80	1.00
Other ID	1	3	1	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/01/17	25/01/17	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0		N		Y		N	Y
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0		9.5		3.7	
Arsenic	DETSC 2301#	0.2	mg/kg	5.3		16		26	10
Barium	DETSC 2301#	1.5	mg/kg	93		390		270	
Beryllium	DETSC 2301#	0.2	mg/kg	0.8		1.1		1.7	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.1		4.4		3.5	3.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2		1.9		0.8	0.3
Chromium	DETSC 2301#	0.15	mg/kg	19		550		200	57
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	17		130		41	23
Lead	DETSC 2301#	0.3	mg/kg	19		200		52	24
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		0.98		0.13	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9		4.0		2.9	
Nickel	DETSC 2301#	1	mg/kg	15		19		18	16
Vanadium	DETSC 2301	0.8	mg/kg	48		1400		870	
Zinc	DETSC 2301#	1	mg/kg	60		1200		300	180
Inorganics									
pH	DETSC 2008#			10.4	10.9	11.9	11.4	11.7	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		12		0.9	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		0.3		< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		12		0.9	
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3		0.8		< 0.6	
Organic matter	DETSC 2002#	0.1	%	1.4		1.9		1.2	1.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	15	26	94	460	630	320
Sulphur as S, Total	DETSC 2320	0.01	%		0.26		0.09		0.18
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.37		0.29		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		2.9	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		13	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4		39	47
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10		55	49
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		< 0.01		< 0.01	< 0.01
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

Summary of Chemical Analysis

Soil Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119392	1119393	1119394	1119395	1119396	1119397
Sample ID	TPI08	TPI08	TPI07	TPI12	TPI12	TPI11
Depth	0.20	3.00	1.30	0.60	3.80	1.00
Other ID	1	3	1	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/01/17	25/01/17	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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 Total	DETSC 3072*	10	mg/kg	< 10		< 10		55	49
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		0.20		0.08	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.06		0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.18		1.1	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.15		1.4	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03		2.1		11	0.11
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.55		1.8	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		3.1		6.0	0.24
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		2.9		4.0	0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.99		1.3	0.09
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03		1.1		1.1	0.10
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		1.1		1.1	0.13
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.41		0.39	0.05
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.64		0.61	0.07
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.34		0.29	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.12		0.10	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.41		0.36	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10		14		30	1.1
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119398	1119399	1119400	1119401
Sample ID	TPB01	TPI09	TPI08	TPI12
Depth	0.30	3.00	0.20	3.80
Other ID	1	3	1	3
Sample Type	ES	ES	ES	ES
Sampling Date	23/01/17	25/01/17	25/01/17	n/s
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Leachate 10:1	DETS 036*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	4.8	1.5	0.43	1.4
Barium, Dissolved	DETSC 2306	0.26	ug/l	6.9	37	2.4	18
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.35	1.5	< 0.25	3.4
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	0.5	0.8	1.3
Iron, Dissolved	DETSC 2306	5.5	ug/l	97	< 5.5	600	15
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.12	< 0.09	0.36	0.12
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.2	0.42	5.1	0.38
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	6.5	0.88	< 0.25	0.72
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	10	18	1.7	12
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	2.0	< 1.3
Inorganics							
pH	DETSC 2008			8.4	9.5	8.0	10.5
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	3.8	0.79	1.1	1.6

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1119386	TPB03 1 0.40	SOIL	NAD	none	Michael Kay
1119388	TPB01 1 0.30	SOIL	NAD	none	Michael Kay
1119389	TPB01 3 4.00	SOIL	NAD	none	Michael Kay
1119391	TPI09 3 3.00	SOIL	Amosite Chrysotile	Amosite and Chrysotile present in microscopic fibrous asbestos debris	Michael Kay
1119392	TPI08 1 0.20	SOIL	NAD	none	Michael Kay
1119394	TPI07 1 1.30	SOIL	Chrysotile	Small bundles of Chrysotile	Michael Kay
1119396	TPI12 3 3.80	SOIL	NAD	none	Michael Kay
1119397	TPI11 1 1.00	SOIL	Amosite Chrysotile	Small bundles of Chrysotile and Amosite	Michael Kay

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 17-90393-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1119391	1119394	1119397
Sample ID	TPI09	TPI07	TPI11
Depth	3.00	1.30	1.00
Other ID	3	1	1
Sample Type	SOIL	SOIL	SOIL
Sampling Date	25/01/17	n/s	n/s
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.019	< 0.001	0.002
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.019	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	<0.001	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	973.76	1043.18	1042.46
ACMs present*		type	LFAD		
Mass of ACM in sample		g	0.21		
% ACM by mass		%	0.02		
% asbestos in ACM		%	85.00		
% asbestos in sample		%	0.02		
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	na	na	<0.001
% Chrysotile bundles in sample		Mass %	na	<0.001	0.001
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	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 17-90393-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1119385	TPB05 0.70 SOIL	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119386	TPB03 0.40 SOIL	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119387	TPB03 2.60 SOIL	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119388	TPB01 0.30 SOIL	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119389	TPB01 4.00 SOIL	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119390	TPI09 0.20 SOIL	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119391	TPI09 3.00 SOIL	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119392	TPI08 0.20 SOIL	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119393	TPI08 3.00 SOIL	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1119394	TPI07 1.30 SOIL		GJ 250ml x2, GV, PB 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), PCB (30 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1119395	TPI12 0.60 SOIL		GJ 250ml x2, GV, PB 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1119396	TPI12 3.80 SOIL		GJ 250ml, GV, PB 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), PCB (30 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1119397	TPI11 1.00 SOIL		GJ 250ml, GV, PB 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1119398	TPB01 0.30 LEACHATE	23/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1119399	TPI09 3.00 LEACHATE	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1119400	TPI08 0.20 LEACHATE	25/01/17	GJ 250ml x2, GJ 60ml, PT 1L		
1119401	TPI12 3.80 LEACHATE		GJ 250ml, GV, PB 1L	Sample date not supplied	

Information in Support of the Analytical Results

Our Ref 17-90393-1

Client Ref SLS1015

Contract Redcar Site

Key: G-Glass P-Plastic J-Jar T-Tub B-Bottle V-Vial

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-91173-1

28-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-91173-1

Client Reference SSI REDCAR

Order No (not supplied)

Contract Title SSI REDCAR

Description 12 Soil samples, 5 Leachate samples.

Date Received 09-Feb-17

Date Started 09-Feb-17

Date Completed 28-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-91173. Testing amended.**

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-91173-1
 Client Ref SSI REDCAR
 Contract Title SSI REDCAR

Lab No	1124110	1124111	1124112	1124113	1124114	1124115
Sample ID	TPI04	TPI03	TPI03	TPI02	TPI02	TPI01
Depth	3.00	0.30	4.00	0.20	4.00	0.80
Other ID	2	1	4	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETS 1102	0				Y			
Metals									
Antimony	DETS 2301*	1	mg/kg	4.4	1.8	2.0		< 1.0	
Arsenic	DETS 2301#	0.2	mg/kg	5.2	6.7	7.7	6.1	8.6	8.0
Barium	DETS 2301#	1.5	mg/kg	160	180	210		340	
Beryllium	DETS 2301#	0.2	mg/kg	0.5	1.0	1.6		1.7	
Boron, Water Soluble	DETS 2123#	0.2	mg/kg	2.7	1.1	7.4	0.5	1.4	1.0
Cadmium	DETS 2301#	0.1	mg/kg	0.3	0.2	1.4	0.2	0.3	0.4
Chromium	DETS 2301#	0.15	mg/kg	160	40	44	23	29	17
Chromium, Hexavalent	DETS 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0	
Copper	DETS 2301#	0.2	mg/kg	23	25	100	17	22	27
Lead	DETS 2301#	0.3	mg/kg	31	37	230	20	31	78
Magnesium Aqueous Extract	DETS 2076*	10	mg/l				< 10		
Mercury	DETS 2325#	0.05	mg/kg	< 0.05	< 0.05	0.08	< 0.05	< 0.05	0.12
Molybdenum	DETS 2301#	0.4	mg/kg	1.7	1.3	1.3		0.6	
Nickel	DETS 2301#	1	mg/kg	22	18	26	23	25	16
Vanadium	DETS 2301	0.8	mg/kg	200	68	61		49	
Zinc	DETS 2301#	1	mg/kg	170	100	180	51	87	220
Inorganics									
pH	DETS 2008#			10.8	9.3	10.1	8.9	9.7	8.6
Cyanide, Total	DETS 2130#	0.1	mg/kg	0.2	< 0.1	0.9	< 0.1	< 0.1	0.4
Cyanide, Free	DETS 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	
Thiocyanate	DETS 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6		< 0.6	
Organic matter	DETS 2002#	0.1	%	1.1	1.4	3.3	1.2	2.3	3.8
Chloride Aqueous Extract	DETS 2055	1	mg/l				8.3		
Nitrate Aqueous Extract as NO3	DETS 2055	1	mg/l				< 1.0		
Sulphate Aqueous Extract as SO4	DETS 2076#	10	mg/l	33	71	600	15	460	67
Sulphate, Total Potential as SO4	*	0.03	%				0.07		
Sulphur as S, Total	DETS 2320	0.01	%				0.02		
Sulphate as SO4, Total	DETS 2321#	0.01	%				0.04		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETS 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	1.7	< 1.5
Aliphatic C12-C16	DETS 3072#	1.2	mg/kg	< 1.2	< 1.2	5.3	< 1.2	6.1	< 1.2
Aliphatic C16-C21	DETS 3072#	1.5	mg/kg	2.5	< 1.5	11	< 1.5	6.4	< 1.5
Aliphatic C21-C35	DETS 3072#	3.4	mg/kg	33	< 3.4	24	< 3.4	9.3	< 3.4
Aliphatic C5-C35	DETS 3072*	10	mg/kg	35	< 10	41	< 10	23	< 10
Aromatic C5-C7	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETS 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 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124110	1124111	1124112	1124113	1124114	1124115
Sample ID	TPI04	TPI03	TPI03	TPI02	TPI02	TPI01
Depth	3.00	0.30	4.00	0.20	4.00	0.80
Other ID	2	1	4	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	16
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	28
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	44
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	35	< 10	41	< 10	23	44

PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.06	< 0.03	0.04	0.04
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.09
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.13	< 0.03	< 0.03	0.13
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.20	0.03	< 0.03	0.23
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.08	0.13	1.3	0.21	0.09	2.9
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.23	0.05	< 0.03	0.72
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	0.29	1.9	0.30	0.06	5.2
Pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.23	1.3	0.23	0.07	4.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.10	0.57	0.09	< 0.03	1.8
Chrysene	DETSC 3303	0.03	mg/kg	0.07	0.08	0.47	0.08	< 0.03	1.5
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.10	0.46	0.12	< 0.03	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.03	0.20	0.05	< 0.03	0.55
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.25	0.09	< 0.03	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.15	0.12	< 0.03	0.42
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	0.03	< 0.03	0.11
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.16	0.13	< 0.03	0.47
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.74	1.1	7.3	1.5	0.26	21

PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg			0.02		< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg			0.02		< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg			< 0.01		< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg			< 0.01		< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg			< 0.01		< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg			< 0.01		< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg			< 0.01		< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg			0.04		< 0.01	< 0.01

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 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124116	1124117	1124118	1124119	1124120	1124121
Sample ID	TPI13	TPI14	TPI17	TPI17	TPI16	TPI16
Depth	0.70	0.60	0.20	1.00	0.70	4.00
Other ID	1	1	1	3	1	3
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETS 1102	0							Y
Metals									
Antimony	DETS 2301*	1	mg/kg	4.2				5.2	5.8
Arsenic	DETS 2301#	0.2	mg/kg	4.6	5.0	9.3	4.4	20	11
Barium	DETS 2301#	1.5	mg/kg	250				670	620
Beryllium	DETS 2301#	0.2	mg/kg	0.6				1.5	1.8
Boron, Water Soluble	DETS 2123#	0.2	mg/kg	2.0	1.8	1.1	2.1	7.6	3.5
Cadmium	DETS 2301#	0.1	mg/kg	0.4	0.6	0.3	0.5	1.1	0.7
Chromium	DETS 2301#	0.15	mg/kg	61	43	26	20	310	410
Chromium, Hexavalent	DETS 2204*	1	mg/kg	< 1.0				< 1.0	< 1.0
Copper	DETS 2301#	0.2	mg/kg	20	68	24	27	94	62
Lead	DETS 2301#	0.3	mg/kg	28	43	49	30	81	71
Magnesium Aqueous Extract	DETS 2076*	10	mg/l				< 10		
Mercury	DETS 2325#	0.05	mg/kg	< 0.05	< 0.05	0.06	< 0.05	0.29	0.15
Molybdenum	DETS 2301#	0.4	mg/kg	1.7				5.2	3.5
Nickel	DETS 2301#	1	mg/kg	46	19	19	29	30	20
Vanadium	DETS 2301	0.8	mg/kg	150				750	1500
Zinc	DETS 2301#	1	mg/kg	190	440	130	400	370	220
Inorganics									
pH	DETS 2008#			10.2	9.7	9.3	11.3	11.3	11.4
Cyanide, Total	DETS 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.6	0.5
Cyanide, Free	DETS 2130#	0.1	mg/kg	< 0.1				< 0.1	< 0.1
Thiocyanate	DETS 2130#	0.6	mg/kg	< 0.6				< 0.6	< 0.6
Organic matter	DETS 2002#	0.1	%	1.1	1.4	2.6	1.6	1.5	1.8
Chloride Aqueous Extract	DETS 2055	1	mg/l				9.7		
Nitrate Aqueous Extract as NO3	DETS 2055	1	mg/l				1.3		
Sulphate Aqueous Extract as SO4	DETS 2076#	10	mg/l	150	130	120	210	260	240
Sulphate, Total Potential as SO4	*	0.03	%				0.48		
Sulphur as S, Total	DETS 2320	0.01	%				0.16		
Sulphate as SO4, Total	DETS 2321#	0.01	%				0.55		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETS 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETS 3072#	1.2	mg/kg	< 1.2	3.4	< 1.2	3.1	22	6.0
Aliphatic C16-C21	DETS 3072#	1.5	mg/kg	4.4	7.4	3.1	6.9	61	19
Aliphatic C21-C35	DETS 3072#	3.4	mg/kg	120	53	34	160	190	77
Aliphatic C5-C35	DETS 3072*	10	mg/kg	120	65	38	170	270	100
Aromatic C5-C7	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETS 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 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124116	1124117	1124118	1124119	1124120	1124121
Sample ID	TPI13	TPI14	TPI17	TPI17	TPI16	TPI16
Depth	0.70	0.60	0.20	1.00	0.70	4.00
Other ID	1	1	1	3	1	3
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	0.9	< 0.5	8.6	1.6
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.6	< 0.6	3.6	< 0.6	35	12
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	58	19	60	9.1	100	43
Aromatic C5-C35	DETSC 3072*	10	mg/kg	60	19	65	< 10	150	56
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	180	84	100	170	420	160
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	0.48	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.08	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.36	< 0.03	< 0.03	< 0.03	0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.45	< 0.03	< 0.03	< 0.03	0.11	0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.1	0.04	0.17	0.08	0.72	0.32
Anthracene	DETSC 3303	0.03	mg/kg	0.24	< 0.03	0.04	< 0.03	0.27	0.08
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	< 0.03	0.38	0.10	1.3	0.70
Pyrene	DETSC 3303#	0.03	mg/kg	0.90	0.04	0.31	0.10	1.3	0.67
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.21	< 0.03	0.15	0.03	0.73	0.28
Chrysene	DETSC 3303	0.03	mg/kg	0.16	< 0.03	0.12	0.06	0.63	0.29
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.16	0.08	0.94	0.33
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03	0.33	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.10	0.03	0.59	0.18
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03	0.30	0.08
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.09	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	0.03	0.34	0.09
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.0	< 0.10	1.6	0.57	8.2	3.2
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg					< 0.01	< 0.01
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 VOC/SVOC Samples

Our Ref 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124112	1124121
Sample ID	TPI03	TPI16
Depth	4.00	4.00
Other ID	4	3
Sample Type	ES	ES
Sampling Date	02/02/17	02/02/17
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124112	1124121
Sample ID	TPI03	TPI16
Depth	4.00	4.00
Other ID	4	3
Sample Type	ES	ES
Sampling Date	02/02/17	02/02/17
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124112	1124121
Sample ID	TPI03	TPI16
Depth	4.00	4.00
Other ID	4	3
Sample Type	ES	ES
Sampling Date	02/02/17	02/02/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
VOC TICs					
none (TIC)	DETSC 3431*		mg/kg	None	None

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124122	1124123	1124124	1124125	1124126
Sample ID	TPI04	TPI02	TPI13	TPI16	TPI16
Depth	3.00	4.00	0.70	0.70	4.00
Other ID	2	3	1	1	3
Sample Type	ES	ES	ES	ES	ES
Sampling Date	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
NRA Leachate Preparation	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.99	0.70	0.51	1.4	0.94
Barium, Dissolved	DETS 2306	0.26	ug/l	10	17	14	13	12
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETS 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	0.93	< 0.25	0.38	1.4	2.8
Copper, Dissolved	DETS 2306	0.4	ug/l	1.7	0.6	0.8	1.4	1.9
Iron, Dissolved	DETS 2306	5.5	ug/l	23	7.1	95	12	< 5.5
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	0.16	< 0.09	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	0.48	4.4	35	1.0	0.37
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.06	0.03	0.05	0.03	0.04
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	0.6	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.41	0.41	< 0.25	1.4	0.95
Vanadium, Dissolved	DETS 2306	0.6	ug/l	3.0	1.4	1.7	17	24
Zinc, Dissolved	DETS 2306	1.3	ug/l	2.7	2.2	10	5.3	2.7
Inorganics								
pH	DETS 2008			10.7	7.9	7.4	9.9	10.7
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	< 0.015	0.028	< 0.015	< 0.015	< 0.015

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-91173-1
 Client Ref SSI REDCAR
 Contract Title SSI REDCAR

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1124110	TPI04 2 3.00	SOIL	NAD	none	Colin Patrick
1124111	TPI03 1 0.30	SOIL	NAD	none	Colin Patrick
1124112	TPI03 4 4.00	SOIL	Amosite	bundle of Amosite fibres	Colin Patrick
1124113	TPI02 1 0.20	SOIL	NAD	none	Colin Patrick
1124114	TPI02 3 4.00	SOIL	NAD	none	Colin Patrick
1124115	TPI01 1 0.80	SOIL	NAD	none	Colin Patrick
1124116	TPI13 1 0.70	SOIL	NAD	none	Colin Patrick
1124117	TPI14 1 0.60	SOIL	NAD	none	Colin Patrick
1124118	TPI17 1 0.20	SOIL	NAD	none	Colin Patrick
1124119	TPI17 3 1.00	SOIL	NAD	none	Colin Patrick
1124120	TPI16 1 0.70	SOIL	NAD	none	Colin Patrick
1124121	TPI16 3 4.00	SOIL	Chrysotile	bundle of Chrysotile fibres	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.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 17-91173-1

Client Ref SSI REDCAR

Contract Title SSI REDCAR

Lab No	1124112	1124121
Sample ID	TPI03	TPI16
Depth	4.00	4.00
Other ID	4	3
Sample Type	SOIL	SOIL
Sampling Date	02/02/17	02/02/17
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.011	0.023
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.010	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.023
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample		g	823.83	17.96
ACMs present*		type	LFAD	
Mass of ACM in sample		g	0.10	
% ACM by mass		%	0.01	
% asbestos in ACM		%	85.00	
% asbestos in sample		%	0.01	
Breakdown of Detailed Gravimetric Analysis (b)				
% Amphibole bundles in sample		Mass %	<0.001	na
% Chrysotile bundles in sample		Mass %	na	0.023
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	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 17-91173-1

Client Ref SSI REDCAR

Contract SSI REDCAR

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1124110	TPI04 3.00 SOIL	02/02/17	GJ 250ml, GJ 60ml, PT 1L		
1124111	TPI03 0.30 SOIL	02/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1124112	TPI03 4.00 SOIL	02/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1124113	TPI02 0.20 SOIL	02/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1124114	TPI02 4.00 SOIL	02/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1124115	TPI01 0.80 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124116	TPI13 0.70 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124117	TPI14 0.60 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124118	TPI17 0.20 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124119	TPI17 1.00 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124120	TPI16 0.70 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124121	TPI16 4.00 SOIL	02/02/17	GJ 250ml x2, PT 1L		
1124122	TPI04 3.00 LEACHATE	02/02/17	GJ 250ml, GJ 60ml, PT 1L		
1124123	TPI02 4.00 LEACHATE	02/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1124124	TPI13 0.70 LEACHATE	02/02/17	GJ 250ml x2, PT 1L		
1124125	TPI16 0.70 LEACHATE	02/02/17	GJ 250ml x2, PT 1L		
1124126	TPI16 4.00 LEACHATE	02/02/17	GJ 250ml x2, PT 1L		

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, inappropriate containers etc 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 17-91184

22-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-91184

Client Reference SLS1015

Order No CH-1332

Contract Title REDCAR

Description 4 Soil samples, 2 Leachate samples.

Date Received 09-Feb-17

Date Started 09-Feb-17

Date Completed 22-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	1124258	1124259	1124260	1124261
Sample ID	TPI22	TPI34	TPI36	TPI36
Depth	1.00	0.80	1.50	3.50
Other ID	1	1	1	3
Sample Type	ES	ES	ES	ES
Sampling Date	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0		Y			
Metals							
Antimony	DETSC 2301*	1	mg/kg	2.8	9.8		< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	13			8.3
Barium	DETSC 2301#	1.5	mg/kg	360	380		17
Beryllium	DETSC 2301#	0.2	mg/kg	4.3	1.3		< 0.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.7			0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.8			< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	140			7.7
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	76			28
Lead	DETSC 2301#	0.3	mg/kg	110			19
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05			< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.0	5.2		< 0.4
Nickel	DETSC 2301#	1	mg/kg	12			4.0
Vanadium	DETSC 2301	0.8	mg/kg	360	1000		29
Zinc	DETSC 2301#	1	mg/kg	570			82
Inorganics							
pH	DETSC 2008#			10.8	12.0	11.9	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5			< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1			
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.5			
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6			
Organic matter	DETSC 2002#	0.1	%	1.7			0.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	660	370	150	110
Sulphur as S, Total	DETSC 2320	0.01	%		0.26	0.14	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.74	0.24	
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2			< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4			< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9			< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	0.5			< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	12			< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	1124258	1124259	1124260	1124261
Sample ID	TPI22	TPI34	TPI36	TPI36
Depth	1.00	0.80	1.50	3.50
Other ID	1	1	1	3
Sample Type	ES	ES	ES	ES
Sampling Date	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	25			< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	37			< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	37			< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04			< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.06			< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.28			< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.23			< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.7			< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.67			< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	7.0			< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	7.0			< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	3.4			< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	2.8			< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	5.4			< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	2.2			< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	3.4			< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	1.3			< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.39			< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.5			< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	38			< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3			< 0.3

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	1124258
Sample ID	TPI22
Depth	1.00
Other ID	1
Sample Type	ES
Sampling Date	n/s
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 17-91184
 Client Ref SLS1015
 Contract Title REDCAR

Lab No	1124258
Sample ID	TPI22
Depth	1.00
Other ID	1
Sample Type	ES
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	1124262	1124263
Sample ID	TPI22	TPI36
Depth	1.00	3.50
Other ID	1	3
Sample Type	ES	ES
Sampling Date	n/s	n/s
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
BS EN 12457 10:1	DETS 036*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.4	0.79
Barium, Dissolved	DETSC 2306	0.26	ug/l	6.7	13
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	220
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.60	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	4.5	0.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	12	24
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.20	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	2.3	2.8
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.06	0.04
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.64	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	20	0.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.8	2.8
Inorganics					
pH	DETSC 2008			9.1	8.4
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.078	0.14
Chloride	DETSC 2055	0.1	mg/l	6.4	3.5

Summary of Asbestos Analysis Soil Samples

Our Ref 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1124258	TPI22 1 1.00	SOIL	Amosite	Small bundle of Amosite	Michael Kay
1124261	TPI36 3 3.50	SOIL	NAD	none	Michael Kay

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 17-91184

Client Ref SLS1015

Contract Title REDCAR

Lab No	1124258
Sample ID	TPI22
Depth	1.00
Other ID	1
Sample Type	SOIL
Sampling Date	n/s
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	759.09
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 %	<0.001
% Chrysotile bundles in sample		Mass %	na
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-91184

Client Ref SLS1015

Contract REDCAR

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1124258	TPI22 1.00 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), VOC (14 days)	
1124259	TPI34 0.80 SOIL		GJ 250ml, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Chromium, Hexavalent (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), pH + Conductivity (7 days)	
1124260	TPI36 1.50 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1124261	TPI36 3.50 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1124262	TPI22 1.00 LEACHATE		GJ 250ml x2, GV, PT 1L	Sample date not supplied	
1124263	TPI36 3.50 LEACHATE		GJ 250ml x2, GV, PT 1L	Sample date not supplied	

Key: G-Glass P-Plastic J-Jar V-Vial 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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-91184

Client Ref SLS1015

Contract REDCAR

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 17-91559-1

28-Feb-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-91559-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 14 Soil samples, 7 Leachate samples.

Date Received 13-Feb-17

Date Started 13-Feb-17

Date Completed 28-Feb-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-91559. Testing added.**

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPI 19	1	1	1126365	21/02/2017	Grey gravelly SAND (Made ground - brick, concrete)
TPI 21	1	0.9	1126366	21/02/2017	Dark grey sandy GRAVEL (Made ground - slag) (sample matrix outside MCERTS scope of accreditation)
TPI 23	1	2.2	1126367	21/02/2017	Grey gravelly SAND (Made ground - slag)
TPI 24	1	1.5	1126368	21/02/2017	Brown clayey, gravelly SAND including odd rootlets (Made ground - concrete)
TPI 25	3	3.7	1126369	21/02/2017	Dark grey clayey SAND including odd rootlets
TPI 26	1	2.6	1126370	21/02/2017	Dark grey very gravelly SAND including odd rootlets (Made ground - slag)
TPI 27	2	1.3	1126371	21/02/2017	Grey sandy GRAVEL (Made ground - slag) (sample matrix outside MCERTS scope of accreditation)
TPI 28	1	3.5	1126372	21/02/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPI 29	1	0.6	1126373	21/02/2017	Red gravelly SAND including odd rootlets
TPI 31	2	1.3	1126374	21/02/2017	Grey gravelly SAND (Made ground - slag)
TPI 32	1	1.4	1126375	21/02/2017	Dark brown clayey, gravelly SAND (Made ground - brick)
TPI 33	1	2.8	1126376	21/02/2017	Brown gravelly SAND (Possible made ground - slag)
TPI 35	1	1.5	1126377	21/02/2017	Dark grey sandy GRAVEL (Made ground - slag) (sample matrix outside MCERTS scope of accreditation)
TPI 37	1	1	1126378	21/02/2017	Dark brown gravelly SAND (Made ground - slag)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126365	1126366	1126367	1126368	1126369	1126370
Sample ID	TPI 19	TPI 21	TPI 23	TPI 24	TPI 25	TPI 26
Depth	1.00	0.90	2.20	1.50	3.70	2.60
Other ID	1	1	1	1	3	1
Sample Type	E	E	E	E	E	E
Sampling Date	n/s	n/s	n/s	08/02/17	09/02/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.4			7.0	< 1.0	11
Arsenic	DETSC 2301#	0.2	mg/kg	6.6		8.3	7.1	12	33
Barium	DETSC 2301#	1.5	mg/kg	110			350	79	510
Beryllium	DETSC 2301#	0.2	mg/kg	4.2			2.0	0.4	2.8
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.4		3.3	6.5	1.3	4.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2		0.2	0.5	0.4	2.9
Chromium	DETSC 2301#	0.15	mg/kg	120		140	560	20	660
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	18		19	35	13	290
Lead	DETSC 2301#	0.3	mg/kg	22		25	53	73	580
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	< 0.05	0.18	0.09
Molybdenum	DETSC 2301#	0.4	mg/kg	0.5			3.0	27	3.9
Nickel	DETSC 2301#	1	mg/kg	6.9		8.0	14	7.2	33
Vanadium	DETSC 2301	0.8	mg/kg	330			1500	51	1400
Zinc	DETSC 2301#	1	mg/kg	34		43	130	95	740
Inorganics									
pH	DETSC 2008#			8.5	9.4	9.5	12.1	10.3	11.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	0.4	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		< 0.2	0.4	< 0.2	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.4		0.5	0.6	1.1	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	520	140	610	91	260	100
Sulphur as S, Total	DETSC 2320	0.01	%		0.25				
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.24				
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.03		0.02	0.02	0.03	0.03
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.04		0.04	0.10	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 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
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	< 1.5	2.7
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4	< 3.4	27
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	30
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	3.3	< 0.6	3.0
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	16	< 1.4	25

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126365	1126366	1126367	1126368	1126369	1126370
Sample ID	TPI 19	TPI 21	TPI 23	TPI 24	TPI 25	TPI 26
Depth	1.00	0.90	2.20	1.50	3.70	2.60
Other ID	1	1	1	1	3	1
Sample Type	E	E	E	E	E	E
Sampling Date	n/s	n/s	n/s	08/02/17	09/02/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	20	< 10	28
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	20	< 10	58
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	0.06	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 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
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03	0.05	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06		0.18	0.49	< 0.03	0.54
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03	0.10	< 0.03	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.16		0.50	0.74	< 0.03	1.1
Pyrene	DETSC 3303#	0.03	mg/kg	0.13		0.46	0.65	< 0.03	1.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07		0.12	0.45	< 0.03	0.93
Chrysene	DETSC 3303	0.03	mg/kg	0.08		0.16	0.46	< 0.03	0.85
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06		0.15	0.69	< 0.03	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.05	0.18	< 0.03	0.61
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.08	0.43	< 0.03	1.0
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03		0.05	0.27	< 0.03	0.79
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	0.08	< 0.03	0.15
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.03		0.05	0.30	< 0.03	0.79
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.61		1.8	5.0	< 0.10	9.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126371	1126372	1126373	1126374	1126375	1126376
Sample ID	TPI 27	TPI 28	TPI 29	TPI 31	TPI 32	TPI 33
Depth	1.30	3.50	0.60	1.30	1.40	2.80
Other ID	2	1	1	2	1	1
Sample Type	E	E	E	E	E	E
Sampling Date	09/02/17	n/s	08/02/17	n/s	09/02/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	11		3.7	15	4.1	1.9
Arsenic	DETSC 2301#	0.2	mg/kg	8.5		350	8.9	9.5	13
Barium	DETSC 2301#	1.5	mg/kg	1200		280	880	620	320
Beryllium	DETSC 2301#	0.2	mg/kg	2.1		3.3	1.4	2.8	4.9
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.5		3.3	4.2	3.4	5.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.0		1.7	3.8	0.2	0.8
Chromium	DETSC 2301#	0.15	mg/kg	970		160	1300	360	130
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	70		42	95	28	32
Lead	DETSC 2301#	0.3	mg/kg	110		190	54	23	100
Mercury	DETSC 2325#	0.05	mg/kg	0.19		< 0.05	0.08	< 0.05	0.08
Molybdenum	DETSC 2301#	0.4	mg/kg	6.0		15	8.3	3.3	1.0
Nickel	DETSC 2301#	1	mg/kg	20		94	24	8.2	9.7
Vanadium	DETSC 2301	0.8	mg/kg	2100		490	2700	880	330
Zinc	DETSC 2301#	1	mg/kg	150		740	150	57	410
Inorganics									
pH	DETSC 2008#			12.1	11.1	9.8	12.3	11.7	11.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.8		1.2	0.8	0.9	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	1300	1600	130	350	1300
Sulphur as S, Total	DETSC 2320	0.01	%		0.49				
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.92				
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.02		< 0.01	< 0.01	< 0.01	0.03
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.06		< 0.01	< 0.01	< 0.01	0.02
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 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
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 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
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.3		< 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	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126371	1126372	1126373	1126374	1126375	1126376
Sample ID	TPI 27	TPI 28	TPI 29	TPI 31	TPI 32	TPI 33
Depth	1.30	3.50	0.60	1.30	1.40	2.80
Other ID	2	1	1	2	1	1
Sample Type	E	E	E	E	E	E
Sampling Date	09/02/17	n/s	08/02/17	n/s	09/02/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 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	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 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	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.26		0.05	0.27	< 0.03	0.47
Anthracene	DETSC 3303	0.03	mg/kg	0.07		< 0.03	0.04	< 0.03	0.11
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.77		0.07	0.63	0.07	0.54
Pyrene	DETSC 3303#	0.03	mg/kg	0.86		0.06	0.48	0.07	0.50
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.04	0.22	0.06	0.30
Chrysene	DETSC 3303	0.03	mg/kg	0.39		0.05	0.20	0.06	0.26
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.68		0.07	0.19	0.11	0.33
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.19		< 0.03	0.07	0.04	0.12
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.32		< 0.03	0.11	0.06	0.19
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.25		< 0.03	0.09	0.03	0.12
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.27		< 0.03	0.09	0.04	0.12
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.1		0.34	2.4	0.53	3.2
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01					
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	0.5	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126377	1126378
Sample ID	TPI 35	TPI 37
Depth	1.50	1.00
Other ID	1	1
Sample Type	E	E
Sampling Date	n/s	09/02/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	14	2.3
Arsenic	DETSC 2301#	0.2	mg/kg	4.2	26
Barium	DETSC 2301#	1.5	mg/kg	900	180
Beryllium	DETSC 2301#	0.2	mg/kg	0.8	2.8
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.9	2.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	1.5
Chromium	DETSC 2301#	0.15	mg/kg	1300	77
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	54	150
Lead	DETSC 2301#	0.3	mg/kg	23	96
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.08
Molybdenum	DETSC 2301#	0.4	mg/kg	5.2	6.7
Nickel	DETSC 2301#	1	mg/kg	11	56
Vanadium	DETSC 2301	0.8	mg/kg	3000	340
Zinc	DETSC 2301#	1	mg/kg	53	360
Inorganics					
pH	DETSC 2008#			12.0	11.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.6	14
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	21	280
Sulphur as S, Total	DETSC 2320	0.01	%		
Sulphate as SO4, Total	DETSC 2321#	0.01	%		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	0.04
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	0.04
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	0.02
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126377	1126378
Sample ID	TPI 35	TPI 37
Depth	1.50	1.00
Other ID	1	1
Sample Type	E	E
Sampling Date	n/s	09/02/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.15
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.09
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.67
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1126379	1126380	1126381	1126382	1126383	1126384	1126385
Sample ID	TPI 19	TPI 24	TPI 25	TPI 27	TPI 29	TPI 35	TPI 37
Depth	1.00	1.50	3.70	1.30	0.60	1.50	1.00
Other ID	1	1	3	2	1	1	1
Sample Type	E	E	E	E	E	E	E
Sampling Date	n/s	08/02/17	09/02/17	09/02/17	08/02/17	n/s	09/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.55	0.94	17	1.1	55	0.60	2.6
Barium, Dissolved	DETSC 2306	0.26	ug/l	77	43	9.6	22	36	42	13
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	0.42	< 0.03	0.04	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.26	6.7	< 0.25	12	0.72	9.6	0.41
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.9	2.6	1.1	1.9	0.7	1.3	1.1
Iron, Dissolved	DETSC 2306	5.5	ug/l	14	< 5.5	38	< 5.5	< 5.5	< 5.5	68
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	2.4	< 0.09	< 0.09	< 0.09	1.3
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.72	0.34	7.4	0.41	8.6	0.31	5.5
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	0.01	0.03	0.04	0.01	0.09	0.02
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	2.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.64	0.48	0.49	0.51	0.42	0.49	0.32
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	17	17	37	31	8.6	14	9.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	2.4	4.4	1.7	5.4	< 1.3	9.4
Inorganics										
pH	DETSC 2008			10.0	11.1	8.3	10.6	7.7	11.4	8.2
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	0.040	0.019	< 0.015	< 0.015	< 0.015

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-91559-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1126365	TPI 19 1 1.00	SOIL	NAD	none	Colin Patrick
1126367	TPI 23 1 2.20	SOIL	NAD	none	Colin Patrick
1126368	TPI 24 1 1.50	SOIL	NAD	none	Colin Patrick
1126369	TPI 25 3 3.70	SOIL	NAD	none	Colin Patrick
1126370	TPI 26 1 2.60	SOIL	NAD	none	Colin Patrick
1126371	TPI 27 2 1.30	SOIL	NAD	none	Colin Patrick
1126373	TPI 29 1 0.60	SOIL	NAD	none	Colin Patrick
1126374	TPI 31 2 1.30	SOIL	NAD	none	Colin Patrick
1126375	TPI 32 1 1.40	SOIL	NAD	none	Colin Patrick
1126376	TPI 33 1 2.80	SOIL	NAD	none	Colin Patrick
1126377	TPI 35 1 1.50	SOIL	NAD	none	Colin Patrick
1126378	TPI 37 1 1.00	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 17-91559-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1126365	TPI 19 1.00 SOIL		GV, PT 1L, PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126366	TPI 21 0.90 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Chromium, Hexavalent (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), pH + Conductivity (7 days)	
1126367	TPI 23 2.20 SOIL		GJ 250ml, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126368	TPI 24 1.50 SOIL	08/02/17	GJ 250ml, PT 1L		
1126369	TPI 25 3.70 SOIL	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126370	TPI 26 2.60 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126371	TPI 27 1.30 SOIL	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126372	TPI 28 3.50 SOIL		GJ 250ml, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Chromium, Hexavalent (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), pH + Conductivity (7 days)	
1126373	TPI 29 0.60 SOIL	08/02/17	GJ 250ml, GJ 60ml, PT 1L		

Information in Support of the Analytical Results

Our Ref 17-91559-1

Client Ref SLS1015

Contract Redcar Site

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1126374	TPI 31 1.30 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126375	TPI 32 1.40 SOIL	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126376	TPI 33 2.80 SOIL		GJ 250ml, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126377	TPI 35 1.50 SOIL		GJ 250ml, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1126378	TPI 37 1.00 SOIL	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126379	TPI 19 1.00 LEACHATE		GV, PT 1L, PT 500ml	Sample date not supplied	
1126380	TPI 24 1.50 LEACHATE	08/02/17	GJ 250ml, PT 1L		
1126381	TPI 25 3.70 LEACHATE	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126382	TPI 27 1.30 LEACHATE	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1126383	TPI 29 0.60 LEACHATE	08/02/17	GJ 250ml, GJ 60ml, PT 1L		
1126384	TPI 35 1.50 LEACHATE		GJ 250ml, GV, PT 1L	Sample date not supplied	
1126385	TPI 37 1.00 LEACHATE	09/02/17	GJ 250ml x2, GJ 60ml, PT 1L		

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

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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-91559-1

Client Ref SLS1015

Contract Redcar Site

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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-92379-1

15-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-92379-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 21 Soil samples, 7 Leachate samples.

Date Received Tuesday, February 21, 2017

Date Started Tuesday, February 21, 2017

Date Completed Wednesday, March 15, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-92379. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131597	1131598	1131599	1131600	1131601	1131602	1131603
Sample ID	TPH01	TPH02	TPH07	TPH07	TPH09	TPH10	TPH11
Depth	1.20	0.70	0.50	2.00	0.40	1.50	1.70
Other ID	1	1	1	2	1	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	13-Feb-17	14-Feb-17	n/s	n/s	14-Feb-17	14-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0					Y			Y
Metals										
Antimony	DETSC 2301*	1	mg/kg	1.4		< 1.0	16	< 1.0	1.4	7.8
Arsenic	DETSC 2301#	0.2	mg/kg	9.1		1.8	84	8.6	11	19
Barium	DETSC 2301#	1.5	mg/kg	430		43	160	380	41	350
Beryllium	DETSC 2301#	0.2	mg/kg	4.2		< 0.2	0.8	5.7	< 0.2	1.3
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	5.1		3.5	3.5	2.8	1.5	4.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.4		0.6	0.7	0.2	0.3	0.6
Chromium	DETSC 2301#	0.15	mg/kg	92		12	160	100	51	470
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26		8.4	670	18	26	70
Lead	DETSC 2301#	0.3	mg/kg	42		420	110	13	52	97
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	0.07	< 0.05	< 0.05	0.10
Molybdenum	DETSC 2301#	0.4	mg/kg	1.2		2.8	36	1.3	1.7	4.2
Nickel	DETSC 2301#	1	mg/kg	7.8		6.7	220	5.4	12	32
Vanadium	DETSC 2301	0.8	mg/kg	240		19	110	170	79	1100
Zinc	DETSC 2301#	1	mg/kg	63		20	190	46	83	150
Inorganics										
pH	DETSC 2008#			11.7	11.6	13.0	12.9	12.9	12.1	12.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2		0.3	2.1	0.2	< 0.1	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		0.3	2.1	0.2	< 0.2	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	1.5	1.9	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.4		0.8	7.6	1.1	1.1	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1200	1200	290	620	270	140	270
Sulphur as S, Total	DETSC 2320	0.01	%		0.31					
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.81					
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	7.2	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	87	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	520	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		22	3000	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		23	3600	< 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	6.0	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	44	< 0.6	< 0.6	3.1

Summary of Chemical Analysis

Soil Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131597	1131598	1131599	1131600	1131601	1131602	1131603
Sample ID	TPH01	TPH02	TPH07	TPH07	TPH09	TPH10	TPH11
Depth	1.20	0.70	0.50	2.00	0.40	1.50	1.70
Other ID	1	1	1	2	1	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	13-Feb-17	14-Feb-17	n/s	n/s	14-Feb-17	14-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	200	< 1.4	< 1.4	6.5
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	250	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		23	3800	< 10	< 10	< 10
PAHs										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	0.3
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	7.7	< 0.1	< 0.1	0.2
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	0.6
Phenanthrene	DETSC 3301	0.1	mg/kg	0.3		< 0.1	5.5	< 0.1	< 0.1	1.6
Anthracene	DETSC 3301	0.1	mg/kg	0.2		< 0.1	< 0.1	< 0.1	< 0.1	0.4
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4		< 0.1	4.9	< 0.1	< 0.1	3.7
Pyrene	DETSC 3301	0.1	mg/kg	0.3		< 0.1	5.5	< 0.1	0.1	3.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	5.7	< 0.1	< 0.1	2.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	3.3	< 0.1	< 0.1	1.7
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	1.2
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	0.7
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	1.7
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	0.9
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	0.9
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	1.3
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6		< 1.6	33	< 1.6	< 1.6	21
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 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131604	1131605	1131606	1131607	1131608	1131609	1131610
Sample ID	TPH13	TPH14	TPH15	TPH15	TPH16	TPH17	TPH21
Depth	0.50	2.00	1.40	3.00	2.20	1.50	1.60
Other ID	1	1	1	2	3	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	n/s	13-Feb-17	13-Feb-17	14-Feb-17	14-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0								
Metals										
Antimony	DETSC 2301*	1	mg/kg	8.3	1.9		< 1.0	3.1		4.7
Arsenic	DETSC 2301#	0.2	mg/kg	16	14		7.7	7.3		12
Barium	DETSC 2301#	1.5	mg/kg	230	250		120	270		350
Beryllium	DETSC 2301#	0.2	mg/kg	0.9	1.8		0.7	1.0		2.1
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.6	3.1		2.1	1.8		7.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.6		0.3	0.4		1.0
Chromium	DETSC 2301#	0.15	mg/kg	660	130		21	220		370
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	44	39		60	34		38
Lead	DETSC 2301#	0.3	mg/kg	41	63		22	28		64
Mercury	DETSC 2325#	0.05	mg/kg	0.29	0.07		< 0.05	< 0.05		< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	5.2	1.0		1.3	1.8		2.8
Nickel	DETSC 2301#	1	mg/kg	21	18		25	27		20
Vanadium	DETSC 2301	0.8	mg/kg	1500	160		33	460		810
Zinc	DETSC 2301#	1	mg/kg	160	170		77	82		240
Inorganics										
pH	DETSC 2008#			12.3	11.6	12.0	11.9	11.5	11.9	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2		9.5	0.2		0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1		0.2	< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2		9.3	0.2		0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.4		< 0.6	< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%	1.2	1.3		1.8	1.5		0.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	800	530	850	69	320	270	1400
Sulphur as S, Total	DETSC 2320	0.01	%			0.26			0.08	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.91			0.23	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2		< 1.2	< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	13	< 1.5		< 1.5	< 1.5		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	52	< 3.4		< 3.4	< 3.4		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	65	< 10		< 10	< 10		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 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		5.8

Summary of Chemical Analysis

Soil Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131604	1131605	1131606	1131607	1131608	1131609	1131610
Sample ID	TPH13	TPH14	TPH15	TPH15	TPH16	TPH17	TPH21
Depth	0.50	2.00	1.40	3.00	2.20	1.50	1.60
Other ID	1	1	1	2	3	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	n/s	13-Feb-17	13-Feb-17	14-Feb-17	14-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4		< 1.4	< 1.4		23
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10		< 10	< 10		29
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	65	< 10		< 10	< 10		29
PAHs										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		0.2
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		0.4
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	0.2		2.5
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		0.6
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1		< 0.1	0.3		5.7
Pyrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1		< 0.1	0.2		5.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		4.3
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		4.0
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		2.9
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		1.9
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		4.0
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		2.4
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		0.9
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		2.7
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6		< 1.6	< 1.6		38
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3		< 0.3	< 0.3		< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131611	1131612	1131613	1131614	1131615	1131616	1131617
Sample ID	TPH23	TPH23	TPH24	TPH25	TPH27	TPH29	TPH33
Depth	1.50	3.40	2.30	1.20	1.20	0.80	2.00
Other ID	1	3	1	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	14-Feb-17	14-Feb-17	14-Feb-17	15-Feb-17	n/s	13-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0								
Metals										
Antimony	DETSC 2301*	1	mg/kg		< 1.0		3.8	9.0	7.4	10
Arsenic	DETSC 2301#	0.2	mg/kg	8.8	7.1	12	77	6.1	8.9	15
Barium	DETSC 2301#	1.5	mg/kg		190		610	340	320	150
Beryllium	DETSC 2301#	0.2	mg/kg		1.6		1.2	1.2	0.6	0.7
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.5	1.9	2.1	3.2	4.9	3.1	5.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.4	2.9	0.4	0.8	8.9
Chromium	DETSC 2301#	0.15	mg/kg	36	35	73	170	810	680	420
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30	92	15	72	41	49	220
Lead	DETSC 2301#	0.3	mg/kg	22	20	51	59	45	71	500
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.24	< 0.05	0.10	0.11	< 0.05	0.11
Molybdenum	DETSC 2301#	0.4	mg/kg		0.8		10	3.4	4.7	8.1
Nickel	DETSC 2301#	1	mg/kg	30	22	8.4	70	19	13	43
Vanadium	DETSC 2301	0.8	mg/kg		62		420	2200	1400	1200
Zinc	DETSC 2301#	1	mg/kg	66	71	130	190	130	110	2100
Inorganics										
pH	DETSC 2008#			10.0	9.8	9.9	9.9	10.3	10.7	11.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.2	0.2	0.1	0.4	0.2	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.3	< 0.2	0.2	< 0.2	0.4	< 0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	1.3
Organic matter	DETSC 2002#	0.1	%	1.4	1.7	1.7	0.9	0.5	1.5	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160	310	290	390	600	180	210
Sulphur as S, Total	DETSC 2320	0.01	%							
Sulphate as SO4, Total	DETSC 2321#	0.01	%							
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.07	< 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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	210	< 1.2	4.6	< 1.2	4.8
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	1100	< 1.5	26	< 1.5	41
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	740	< 3.4	73	< 3.4	190
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	2000	< 10	100	< 10	240
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	2.4	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	8.3	56	< 0.5	< 0.5	< 0.5	1.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	22	280	< 0.6	12	2.5	24

Summary of Chemical Analysis

Soil Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131611	1131612	1131613	1131614	1131615	1131616	1131617
Sample ID	TPH23	TPH23	TPH24	TPH25	TPH27	TPH29	TPH33
Depth	1.50	3.40	2.30	1.20	1.20	0.80	2.00
Other ID	1	3	1	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	14-Feb-17	14-Feb-17	14-Feb-17	15-Feb-17	n/s	13-Feb-17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	26	220	< 1.4	34	6.9	92
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	59	550	< 10	47	< 10	120
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	59	2600	< 10	150	< 10	360
PAHs										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	3.0	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	12	11	< 0.1	< 0.1	< 0.1	0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	18	2.8	< 0.1	0.8	0.2	0.4
Phenanthrene	DETSC 3301	0.1	mg/kg	0.5	71	8.4	0.1	0.4	0.3	0.7
Anthracene	DETSC 3301	0.1	mg/kg	0.3	20	3.8	< 0.1	0.2	< 0.1	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	0.6	67	< 0.1	0.3	1.0	0.4	1.0
Pyrene	DETSC 3301	0.1	mg/kg	0.4	50	< 0.1	0.5	1.7	0.4	1.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	21	< 0.1	< 0.1	1.1	0.2	0.5
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	18	< 0.1	< 0.1	1.2	0.2	0.4
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	13	< 0.1	< 0.1	1.1	0.1	0.4
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	8.2	< 0.1	< 0.1	0.7	< 0.1	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	17	< 0.1	< 0.1	1.6	0.3	0.8
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	10	< 0.1	< 0.1	0.9	< 0.1	0.6
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	1.9	< 0.1	< 0.1	0.6	< 0.1	0.7
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	7.6	< 0.1	< 0.1	1.3	0.5	0.9
PAH Total	DETSC 3301	1.6	mg/kg	1.8	330	29	< 1.6	13	2.6	8.6
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131600	1131602	1131603	1131611	1131612	1131613
Sample ID	TPH07	TPH10	TPH11	TPH23	TPH23	TPH24
Depth	2.00	1.50	1.70	1.50	3.40	2.30
Other ID	2	1	1	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	14-Feb-17	n/s	14-Feb-17	14-Feb-17	14-Feb-17
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 VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131600	1131602	1131603	1131611	1131612	1131613
Sample ID	TPH07	TPH10	TPH11	TPH23	TPH23	TPH24
Depth	2.00	1.50	1.70	1.50	3.40	2.30
Other ID	2	1	1	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	14-Feb-17	n/s	14-Feb-17	14-Feb-17	14-Feb-17
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
MTBE	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	0.2	< 0.1	< 0.1	< 0.1	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	1.0	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	1.1	< 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	0.7	< 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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131600	1131602	1131603	1131611	1131612	1131613
Sample ID	TPH07	TPH10	TPH11	TPH23	TPH23	TPH24
Depth	2.00	1.50	1.70	1.50	3.40	2.30
Other ID	2	1	1	1	3	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	14-Feb-17	n/s	14-Feb-17	14-Feb-17	14-Feb-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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	0.5	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131614	1131617
Sample ID	TPH25	TPH33
Depth	1.20	2.00
Other ID	1	1
Sample Type	ES	ES
Sampling Date	15-Feb-17	n/s
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131614	1131617
Sample ID	TPH25	TPH33
Depth	1.20	2.00
Other ID	1	1
Sample Type	ES	ES
Sampling Date	15-Feb-17	n/s
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131614	1131617
Sample ID	TPH25	TPH33
Depth	1.20	2.00
Other ID	1	1
Sample Type	ES	ES
Sampling Date	15-Feb-17	n/s
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131618	1131619	1131620	1131621	1131622	1131623	1131624
Sample ID	TPH07	TPH10	TPH15	TPH23	TPH25	TPH27	TPH33
Depth	2.00	1.50	3.00	3.40	1.20	1.20	2.00
Other ID	2	1	2	3	1	2	1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	14-Feb-17	13-Feb-17	14-Feb-17	15-Feb-17	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	6.4	1.7	1.7	1.7	3.5	8.0	1.3
Barium, Dissolved	DETSC 2306	0.26	ug/l	3.8	3.7	4.3	6.5	5.6	1.1	4.5
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12	< 12	60	< 12	32	26	34
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	0.06	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.28	< 0.25	3.4	2.0	0.89	1.0	7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	16	1.5	3.2	3.6	1.1	4.0	1.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	26	51	14	14	21	30	6.3
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.31	< 0.09	< 0.09	0.49	0.97	0.16
Manganese, Dissolved	DETSC 2306	0.22	ug/l	< 0.22	3.7	0.63	0.40	3.4	2.3	0.43
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	< 0.01	0.01	0.01	0.02	0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	4.4	< 0.5	< 0.5	0.6	1.0	1.4	0.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	5.4	1.5	1.4	0.90	0.51	0.69	0.30
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	25	5.3	29	31	17	32	23
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	3.0	1.4	< 1.3
Inorganics										
pH	DETSC 2008			11.1	8.7	10.1	10.5	8.8	9.6	10.9
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	4.0	3.9	3.0	3.3	3.2	3.4	3.8

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-92379-1
Client Ref SLS1015
Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1131597	TPH01 1 1.20	SOIL	NAD	none	Steven Lambert
1131599	TPH07 1 0.50	SOIL	NAD	none	Steven Lambert
1131600	TPH07 2 2.00	SOIL	Amosite	Amosite present as fibre bundle	Steven Lambert
1131601	TPH09 1 0.40	SOIL	NAD	none	Steven Lambert
1131602	TPH10 1 1.50	SOIL	NAD	none	Steven Lambert
1131603	TPH11 1 1.70	SOIL	Amosite	Amosite present as fibre bundle	Steven Lambert
1131604	TPH13 1 0.50	SOIL	NAD	none	Steven Lambert
1131605	TPH14 1 2.00	SOIL	NAD	none	Steven Lambert
1131607	TPH15 2 3.00	SOIL	NAD	none	Steven Lambert
1131608	TPH16 3 2.20	SOIL	NAD	none	Steven Lambert
1131610	TPH21 1 1.60	SOIL	NAD	none	Steven Lambert
1131611	TPH23 1 1.50	SOIL	NAD	none	Steven Lambert
1131612	TPH23 3 3.40	SOIL	NAD	none	Steven Lambert
1131613	TPH24 1 2.30	SOIL	NAD	none	Steven Lambert
1131614	TPH25 1 1.20	SOIL	NAD	none	Steven Lambert
1131615	TPH27 2 1.20	SOIL	NAD	none	Steven Lambert
1131616	TPH29 1 0.80	SOIL	NAD	none	Steven Lambert
1131617	TPH33 1 2.00	SOIL	NAD	none	Steven Lambert

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 17-92379-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1131600	1131603
Sample ID	TPH07	TPH11
Depth	2.00	1.70
Other ID	2	1
Sample Type	SOIL	SOIL
Sampling Date	n/s	n/s
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample		g	1058.82	1441.54
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 %	<0.001	<0.001
% Chrysotile bundles in sample		Mass %	na	na
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	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 17-92379-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1131597	TPH01 1.20 SOIL	13/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1131598	TPH02 0.70 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131599	TPH07 0.50 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1131600	TPH07 2.00 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), SVOC (14 days)	
1131601	TPH09 0.40 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131602	TPH10 1.50 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131603	TPH11 1.70 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), SVOC (14 days)	

Information in Support of the Analytical Results

Our Ref 17-92379-1

Client Ref SLS1015

Contract Redcar Site

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1131604	TPH13 0.50 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1131605	TPH14 2.00 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1131606	TPH15 1.40 SOIL	13/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1131607	TPH15 3.00 SOIL	13/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1131608	TPH16 2.20 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131609	TPH17 1.50 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131610	TPH21 1.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	Aliphatics/Aromatics, BTEX, Naphthalene, PAH FID
1131611	TPH23 1.50 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131612	TPH23 3.40 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		

Information in Support of the Analytical Results

Our Ref 17-92379-1

Client Ref SLS1015

Contract Redcar Site

1131613	TPH24 2.30 SOIL	14/02/17	GJ 250ml x2, GV, PT 1L		
1131614	TPH25 1.20 SOIL	15/02/17	GJ 250ml x2, GV, PT 1L		
1131615	TPH27 1.20 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1131616	TPH29 0.80 SOIL	13/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1131617	TPH33 2.00 SOIL		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), SVOC (14 days)	
1131618	TPH07 2.00 LEACHATE		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied	
1131619	TPH10 1.50 LEACHATE	14/02/17	GJ 250ml x2, GV, PT 1L		
1131620	TPH15 3.00 LEACHATE	13/02/17	GJ 250ml x2, GV, PT 1L		
1131621	TPH23 3.40 LEACHATE	14/02/17	GJ 250ml x2, GV, PT 1L		
1131622	TPH25 1.20 LEACHATE	15/02/17	GJ 250ml x2, GV, PT 1L		
1131623	TPH27 1.20 LEACHATE		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied	
1131624	TPH33 2.00 LEACHATE		GJ 250ml x2, GJ 60ml, PT 1L	Sample date not supplied	

Key: G-Glass P-Plastic J-Jar V-Vial 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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-92379-1

Client Ref SLS1015

Contract Redcar Site

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 17-93477-1

22-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-93477-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 16 Soil samples, 6 Leachate samples.

Date Received 06-Mar-17

Date Started 06-Mar-17

Date Completed 22-Mar-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-93477, 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138784	1138785	1138786	1138787	1138788	1138789	1138790
Sample ID	TPE10	TPE10	TPE09	TPE02	TPE07	TPE05	TPE05
Depth	0.10	2.40	2.50	0.30	3.90	0.50	1.70
Other ID	1	2	2	1	2	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/02/17	20/02/17	20/02/17	21/02/17	21/02/17	20/02/17	20/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0								Y
Metals										
Antimony	DETSC 2301*	1	mg/kg	7.4		< 1.0				4.4
Arsenic	DETSC 2301#	0.2	mg/kg	11	37	5.3	7.8	3.9		66
Barium	DETSC 2301#	1.5	mg/kg	110		77				36
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		< 0.2				3.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	2.1	12	1.2	2.4	0.6		21
Cadmium	DETSC 2301#	0.1	mg/kg	6.2	2.3	0.6	0.7	0.1		1.3
Chromium	DETSC 2301#	0.15	mg/kg	50	92	9.0	54	6.4		290
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0				< 1.0
Copper	DETSC 2301#	0.2	mg/kg	66	40	8.7	26	14		72
Lead	DETSC 2301#	0.3	mg/kg	570	210	69	40	14		38
Mercury	DETSC 2325#	0.05	mg/kg	0.08	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.3		0.7				11
Nickel	DETSC 2301#	1	mg/kg	28	21	5.9	34	4.3		38
Vanadium	DETSC 2301	0.8	mg/kg	150		24				210
Zinc	DETSC 2301#	1	mg/kg	2400	790	240	170	40		160
Inorganics										
pH	DETSC 2008#			8.9	9.5	9.3	10.0	8.7	7.7	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.0	7.0	0.8	0.6	< 0.1		7.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1		< 0.1				0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	4.9		0.8				7.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6				1.7
Organic matter	DETSC 2002#	0.1	%	1.9	1.7	0.5	1.8	0.4		1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	1500	160	270	170	1300	1400
Sulphur as S, Total	DETSC 2320	0.01	%		0.36				0.18	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		1.3				0.76	
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		6.0
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4		31
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10		38
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	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6		< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138784	1138785	1138786	1138787	1138788	1138789	1138790
Sample ID	TPE10	TPE10	TPE09	TPE02	TPE07	TPE05	TPE05
Depth	0.10	2.40	2.50	0.30	3.90	0.50	1.70
Other ID	1	2	2	1	2	1	3
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/02/17	20/02/17	20/02/17	21/02/17	21/02/17	20/02/17	20/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4		2.8
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10		41
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03	0.12	< 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	0.09	0.17	< 0.03	0.20	< 0.03		0.16
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.03	< 0.03	0.04	< 0.03		0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.21	< 0.03	0.19	< 0.03		0.28
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.16	< 0.03	0.14	< 0.03		0.25
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.07	< 0.03	0.08	< 0.03		0.10
Chrysene	DETSC 3303	0.03	mg/kg	0.05	0.08	< 0.03	0.10	< 0.03		0.12
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	0.08	< 0.03		0.12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03		0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	0.04	< 0.03		0.07
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	< 0.03		0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 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	< 0.03		0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.41	0.82	< 0.10	1.1	< 0.10		1.3
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	0.5	0.7	0.4		< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138791	1138792	1138793	1138794	1138795	1138796	1138797
Sample ID	TPE04	TPE01	TPE03	TPE03	TPE08	TPE15	TPE15
Depth	1.00	0.40	1.50	3.00	0.40	0.20	1.20
Other ID	1	1	1	2	1	1	2
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/02/17	21/02/17	22/02/17	22/02/17	22/02/17	24/02/17	24/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0								
Metals										
Antimony	DETSC 2301*	1	mg/kg		4.0			4.6		
Arsenic	DETSC 2301#	0.2	mg/kg	22	22	18		25	6.2	
Barium	DETSC 2301#	1.5	mg/kg		170			470		
Beryllium	DETSC 2301#	0.2	mg/kg		4.0			1.0		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.6	9.4	6.2		1.7	21	
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.6	0.8		3.6	0.6	
Chromium	DETSC 2301#	0.15	mg/kg	240	240	110		68	150	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0			< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	40	40	28		46	27	
Lead	DETSC 2301#	0.3	mg/kg	64	64	60		260	34	
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.09	0.07		0.12	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg		2.6			3.2		
Nickel	DETSC 2301#	1	mg/kg	22	22	12		27	19	
Vanadium	DETSC 2301	0.8	mg/kg		200			290		
Zinc	DETSC 2301#	1	mg/kg	170	170	190		950	130	
Inorganics										
pH	DETSC 2008#			11.1	11.3	11.0	10.0	1.3	11.2	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	1.6	0.4		5.1	1.3	
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1			0.1		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		1.6			5.0		
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6			1.2		
Organic matter	DETSC 2002#	0.1	%	1.3	3.1	0.9		1.5	1.1	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	740	1600	670	930	96	1500
Sulphur as S, Total	DETSC 2320	0.01	%				0.11			0.60
Sulphate as SO4, Total	DETSC 2321#	0.01	%				0.24			1.5
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 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	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4		< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10		< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 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	< 0.6	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138791	1138792	1138793	1138794	1138795	1138796	1138797
Sample ID	TPE04	TPE01	TPE03	TPE03	TPE08	TPE15	TPE15
Depth	1.00	0.40	1.50	3.00	0.40	0.20	1.20
Other ID	1	1	1	2	1	1	2
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/02/17	21/02/17	22/02/17	22/02/17	22/02/17	24/02/17	24/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4		< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10		< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10		< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.11	< 0.03		0.05	0.22
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.03		< 0.03	0.10
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03		< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.03	0.04		< 0.03	0.11
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.23	0.25	0.32		0.10	0.99
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.06	0.06		< 0.03	0.21
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	0.25	0.54		0.15	0.86
Pyrene	DETSC 3303#	0.03	mg/kg	0.25	0.18	0.40		0.14	0.67
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.15	0.13	0.20		0.07	0.30
Chrysene	DETSC 3303	0.03	mg/kg	0.15	0.15	0.19		0.09	0.30
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.17	0.14	0.23		0.09	0.29
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	0.05	0.11		0.03	0.12
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.07	0.13		0.05	0.20
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.05	0.10		0.05	0.13
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03		< 0.03	0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	0.05	0.09		0.05	0.13
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.7	1.6	2.5		0.85	4.7
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138798	1138799
Sample ID	TPE14	TPE14
Depth	0.30	3.20
Other ID	1	2
Sample Type	ES	ES
Sampling Date	24/02/17	24/02/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0			
Metals					
Antimony	DETSC 2301*	1	mg/kg	8.6	
Arsenic	DETSC 2301#	0.2	mg/kg	31	47
Barium	DETSC 2301#	1.5	mg/kg	270	
Beryllium	DETSC 2301#	0.2	mg/kg	0.9	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	10	4.3
Cadmium	DETSC 2301#	0.1	mg/kg	18	0.8
Chromium	DETSC 2301#	0.15	mg/kg	72	96
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	110	20
Lead	DETSC 2301#	0.3	mg/kg	1000	77
Mercury	DETSC 2325#	0.05	mg/kg	0.34	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.9	
Nickel	DETSC 2301#	1	mg/kg	37	11
Vanadium	DETSC 2301	0.8	mg/kg	150	
Zinc	DETSC 2301#	1	mg/kg	4100	320
Inorganics					
pH	DETSC 2008#			9.1	10.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	60	1.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	60	
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	
Organic matter	DETSC 2002#	0.1	%	2.7	2.4
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	860	1600
Sulphur as S, Total	DETSC 2320	0.01	%		0.52
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%		1.4
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138798	1138799
Sample ID	TPE14	TPE14
Depth	0.30	3.20
Other ID	1	2
Sample Type	ES	ES
Sampling Date	24/02/17	24/02/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.19	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.06	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.16	0.06
Anthracene	DETSC 3303	0.03	mg/kg	0.07	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.87	0.18
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138800	1138801	1138802	1138803	1138804	1138805
Sample ID	TPE10	TPE09	TPE05	TPE01	TPE08	TPE14
Depth	0.10	2.50	1.70	0.40	0.40	0.30
Other ID	1	2	3	1	1	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	20/02/17	20/02/17	20/02/17	21/02/17	22/02/17	24/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.51	< 0.16	1.8	2.0	2.4	1.3
Barium, Dissolved	DETSC 2306	0.26	ug/l	12	8.3	53	10	6.9	27
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100	170
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	3.1	0.53	18	< 0.25	0.52	3.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0	0.6	1.4	1.0	0.7	0.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	67	53	30	140	13	27
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.87	0.77	0.45	0.34	0.39	0.35
Manganese, Dissolved	DETSC 2306	0.22	ug/l	8.0	8.2	3.2	4.3	2.6	16
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	0.27	0.44	2.8	1.6
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.9	< 0.6	3.3	6.4	4.5	1.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	4.0	1.9	< 1.3	< 1.3	< 1.3	1.6
Inorganics									
pH	DETSC 2008			8.1	7.6	9.5	8.9	8.6	7.8
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	3.0	2.1	4.6	2.1	3.8	4.4

Summary of Asbestos Analysis Soil Samples

Our Ref 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1138784	TPE10 1 0.10	SOIL	NAD	none	Jeff Cruddas
1138785	TPE10 2 2.40	SOIL	NAD	none	Jeff Cruddas
1138786	TPE09 2 2.50	SOIL	NAD	none	Jeff Cruddas
1138787	TPE02 1 0.30	SOIL	NAD	none	Jeff Cruddas
1138788	TPE07 2 3.90	SOIL	NAD	none	Jeff Cruddas
1138790	TPE05 3 1.70	SOIL	Amosite	Amosite present as fibre bundles	Jeff Cruddas
1138791	TPE04 1 1.00	SOIL	NAD	none	Jeff Cruddas
1138792	TPE01 1 0.40	SOIL	NAD	none	Jeff Cruddas
1138793	TPE03 1 1.50	SOIL	NAD	none	Jeff Cruddas
1138795	TPE08 1 0.40	SOIL	NAD	none	Jeff Cruddas
1138796	TPE15 1 0.20	SOIL	NAD	none	Jeff Cruddas
1138798	TPE14 1 0.30	SOIL	NAD	none	Jeff Cruddas
1138799	TPE14 2 3.20	SOIL	NAD	none	Jeff Cruddas

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 17-93477-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1138790
Sample ID	TPE05
Depth	1.70
Other ID	3
Sample Type	SOIL
Sampling Date	20/02/17
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	1082.27
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 %	<0.001
% Chrysotile bundles in sample		Mass %	na
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-93477-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

					Inappropriate container for tests
Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	
1138784	TPE10 0.10 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138785	TPE10 2.40 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138786	TPE09 2.50 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138787	TPE02 0.30 SOIL	21/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138788	TPE07 3.90 SOIL	21/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138789	TPE05 0.50 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138790	TPE05 1.70 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138791	TPE04 1.00 SOIL	20/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138792	TPE01 0.40 SOIL	21/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138793	TPE03 1.50 SOIL	22/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138794	TPE03 3.00 SOIL	22/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138795	TPE08 0.40 SOIL	22/02/17	GJ 250ml x2, GV, PT 1L	pH + Conductivity (7 days)	
1138796	TPE15 0.20 SOIL	24/02/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1138797	TPE15 1.20 SOIL	24/02/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1138798	TPE14 0.30 SOIL	24/02/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1138799	TPE14 3.20 SOIL	24/02/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1138800	TPE10 0.10 LEACHATE	20/02/17	GJ 250ml x2, GV, PT 1L		
1138801	TPE09 2.50 LEACHATE	20/02/17	GJ 250ml x2, GV, PT 1L		
1138802	TPE05 1.70 LEACHATE	20/02/17	GJ 250ml x2, GV, PT 1L		
1138803	TPE01 0.40 LEACHATE	21/02/17	GJ 250ml x2, GV, PT 1L		
1138804	TPE08 0.40 LEACHATE	22/02/17	GJ 250ml x2, GV, PT 1L		
1138805	TPE14 0.30 LEACHATE	24/02/17	GJ 250ml x2, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar V-Vial 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, inappropriate containers etc 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 17-93766

20-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-93766

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 7 Soil samples, 2 Leachate samples.

Date Received 08-Mar-17

Date Started 08-Mar-17

Date Completed 20-Mar-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-93766

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1140329	1140330	1140331	1140332	1140333	1140334	1140335
Sample ID	TPE35	TPE35	TPE31	TPE30	TPE32	TPE32	TPE34
Depth	2.00	3.00	1.20	3.30	2.80	3.50	3.50
Other ID	E1	E2	E1	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Antimony	DETSC 2301*	1	mg/kg		1.1	2.2		1.6		
Arsenic	DETSC 2301#	0.2	mg/kg	6.8	8.6	41	6.3	8.8	6.1	
Barium	DETSC 2301#	1.5	mg/kg		290	120		330		
Beryllium	DETSC 2301#	0.2	mg/kg		4.5	3.7		4.5		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	5.2	4.0	6.6	1.9	5.9	2.3	
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.6	0.7	1.3	0.7	
Chromium	DETSC 2301#	0.15	mg/kg	46	110	72	400	32	480	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	16	11	25	44	22	27	
Lead	DETSC 2301#	0.3	mg/kg	30	21	41	42	160	78	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.10	< 0.05	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg		1.6	1.6		1.0		
Nickel	DETSC 2301#	1	mg/kg	12	6.1	24	9.2	11	8.1	
Vanadium	DETSC 2301	0.8	mg/kg		250	260		150		
Zinc	DETSC 2301#	1	mg/kg	65	100	270	140	660	260	
Inorganics										
pH	DETSC 2008#			10.6	11.2	10.8	11.9	10.5	11.8	11.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9	0.2	3.2	1.4	0.9	0.3	
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1	0.2		< 0.1		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		0.2	3.1		0.9		
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6	< 0.6		< 0.6		
Organic matter	DETSC 2002#	0.1	%	1.2	0.4	0.7	0.7	0.6	0.1	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	1600	1500	1200	1600	850	1500
Sulphur as S, Total	DETSC 2320	0.01	%	0.23			0.34			0.57
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.75			0.78			1.2
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	< 0.6	< 0.6	< 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	< 1.4	< 1.4	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-93766

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1140329	1140330	1140331	1140332	1140333	1140334	1140335
Sample ID	TPE35	TPE35	TPE31	TPE30	TPE32	TPE32	TPE34
Depth	2.00	3.00	1.20	3.30	2.80	3.50	3.50
Other ID	E1	E2	E1	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17	02/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	
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	0.08	0.14	0.38	0.08	0.08	< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	0.03	< 0.03	< 0.03	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	0.26	0.61	0.11	0.19	< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.19	0.46	0.10	0.14	< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12	0.22	0.05	0.07	< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.12	0.31	0.08	0.12	< 0.03	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12	0.27	0.07	0.10	< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	0.11	< 0.03	0.03	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	0.11	< 0.03	0.04	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	0.10	< 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	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	0.11	< 0.03	0.04	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.21	1.3	2.8	0.49	0.85	< 0.10	
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3	0.5	< 0.3	< 0.3	0.5	< 0.3	

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-93766

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1140336	1140337
Sample ID	TPE35	TPE31
Depth	3.00	1.20
Other ID	E2	E1
Sample Type	ES	ES
Sampling Date	02/03/17	02/03/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
Leachate 10:1	DETS 036*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.2	0.31
Barium, Dissolved	DETSC 2306	0.26	ug/l	15	37
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.46
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6	0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.3	4.6
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	4.5	2.0
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.1	4.5
Inorganics					
pH	DETSC 2008			8.9	8.0
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	1.8	1.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-93766

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1140329	TPE35 E1 2.00	SOIL	NAD	none	D Wilkinson
1140330	TPE35 E2 3.00	SOIL	NAD	none	D Wilkinson
1140331	TPE31 E1 1.20	SOIL	NAD	none	D Wilkinson
1140332	TPE30 E1 3.30	SOIL	NAD	none	D Wilkinson
1140333	TPE32 E1 2.80	SOIL	NAD	none	D Wilkinson
1140334	TPE32 E2 3.50	SOIL	NAD	none	D Wilkinson

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 17-93766
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1140329	TPE35 2.00 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140330	TPE35 3.00 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140331	TPE31 1.20 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140332	TPE30 3.30 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140333	TPE32 2.80 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140334	TPE32 3.50 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140335	TPE34 3.50 SOIL	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140336	TPE35 3.00 LEACHATE	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1140337	TPE31 1.20 LEACHATE	02/03/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 17-94108

24-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-94108

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 21 Soil samples, 7 Leachate samples.

Date Received 11-Mar-17

Date Started 11-Mar-17

Date Completed 24-Mar-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142175	1142176	1142177	1142178	1142179	1142180
Sample ID	TPE39	TPE40	TPE41	TPE42	TPE43	TPE44
Depth	1.80	3.60	1.70	3.00-3.10	3.20	0.10
Other ID	E1	E1	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06/03/17	06/03/17	06/03/17	06/03/17	06/03/17	06/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0		< 1.0		< 1.0	
Arsenic	DETSC 2301#	0.2	mg/kg	17		12	37	7.2	3.6
Barium	DETSC 2301#	1.5	mg/kg	110		230		210	
Beryllium	DETSC 2301#	0.2	mg/kg	4.1		5.2		2.2	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.0		5.3	5.4	4.4	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.5		0.5	0.7	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg	38		50	29	35	4.8
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	8.2		13	15	15	7.0
Lead	DETSC 2301#	0.3	mg/kg	35		49	75	31	14
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.8		1.0		0.6	
Nickel	DETSC 2301#	1	mg/kg	6.9		7.9	9.5	5.7	2.9
Vanadium	DETSC 2301	0.8	mg/kg	110		170		92	
Zinc	DETSC 2301#	1	mg/kg	150		260	700	130	59
Inorganics									
pH	DETSC 2008#			10.3	11.1	10.6	10.7	10.5	8.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	2.7		0.5	0.4	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1		< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	2.7		0.5		< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6		< 0.6	
Organic matter	DETSC 2002#	0.1	%	0.5		0.5	0.7	4.0	24
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1600	1500	1700	1500	130
Sulphur as S, Total	DETSC 2320	0.01	%		0.65				
Sulphate as SO4, Total	DETSC 2321#	0.01	%		2.5				
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	3.4	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	0.9	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	2.6	2.3	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	< 1.4	3.6	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142175	1142176	1142177	1142178	1142179	1142180
Sample ID	TPE39	TPE40	TPE41	TPE42	TPE43	TPE44
Depth	1.80	3.60	1.70	3.00-3.10	3.20	0.10
Other ID	E1	E1	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06/03/17	06/03/17	06/03/17	06/03/17	06/03/17	06/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		0.03	< 0.03	< 0.03	0.05
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 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
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06		0.08	0.05	0.04	0.17
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.07		0.09	0.14	0.06	0.15
Pyrene	DETSC 3303#	0.03	mg/kg	0.04		0.06	0.11	0.06	0.08
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03		0.04	0.05	< 0.03	0.05
Chrysene	DETSC 3303	0.03	mg/kg	0.04		0.06	0.08	< 0.03	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03		0.05	0.08	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		< 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	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	0.04	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	0.04	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.28		0.42	0.62	0.15	0.60
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142181	1142182	1142183	1142184	1142185	1142186
Sample ID	TPE44	TPE49	TPE50	TPE51	TPE52	TPE53
Depth	4.20	3.40	4.00	2.00	0.90	2.50
Other ID	E2	E2	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06/03/17	07/03/17	07/03/17	07/03/17	07/03/17	07/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	10	< 1.0			2.2	
Arsenic	DETSC 2301#	0.2	mg/kg	3.2	20		3.3	280	
Barium	DETSC 2301#	1.5	mg/kg	210	240			100	
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	4.9			2.0	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	19	4.1		6.4	2.8	
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.4		0.4	0.2	
Chromium	DETSC 2301#	0.15	mg/kg	720	46		9.7	55	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0			< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	52	8.8		4.0	14	
Lead	DETSC 2301#	0.3	mg/kg	78	28		24	150	
Mercury	DETSC 2325#	0.05	mg/kg	0.10	< 0.05		< 0.05	0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg	5.6	1.0			11	
Nickel	DETSC 2301#	1	mg/kg	12	9.2		2.9	32	
Vanadium	DETSC 2301	0.8	mg/kg	1400	150			160	
Zinc	DETSC 2301#	1	mg/kg	170	270		83	350	
Inorganics									
pH	DETSC 2008#			12.3	10.4	11.7	10.4	9.4	10.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.5		3.5	0.2	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1			< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	0.5			< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	< 0.6			< 0.6	
Organic matter	DETSC 2002#	0.1	%	1.0	1.1		0.1	0.7	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	95	1600	480	1700	1700	1200
Sulphur as S, Total	DETSC 2320	0.01	%			0.34			0.23
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.96			0.92
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	< 0.01		< 0.01	< 0.01	
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	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142181	1142182	1142183	1142184	1142185	1142186
Sample ID	TPE44	TPE49	TPE50	TPE51	TPE52	TPE53
Depth	4.20	3.40	4.00	2.00	0.90	2.50
Other ID	E2	E2	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06/03/17	07/03/17	07/03/17	07/03/17	07/03/17	07/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10		< 10	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10		< 10	< 10	
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03		0.54	0.08	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03		< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03		< 0.03	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	0.05	< 0.03		0.12	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.34	0.16		0.93	0.19	
Anthracene	DETSC 3303	0.03	mg/kg	0.04	< 0.03		0.09	0.04	
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.18		0.41	0.16	
Pyrene	DETSC 3303#	0.03	mg/kg	0.13	0.14		0.40	0.11	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.09		0.10	0.11	
Chrysene	DETSC 3303	0.03	mg/kg	0.05	0.13		0.29	0.13	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.11		0.12	0.17	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04		0.03	0.07	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04		0.04	0.10	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04		0.03	0.08	
Dibenzo(a,h)anthracene	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	0.04		0.05	0.08	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.93	0.99		3.2	1.3	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3		< 0.3	< 0.3	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142187	1142188	1142189	1142191	1142192	1142193
Sample ID	TPE58	TPE59	TPE60	TPE61	TPE62	TPE65
Depth	1.00	3.50	3.50	1.00	3.20	1.50
Other ID	E1	E1	E1	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/03/17	08/03/17	08/03/17	08/03/17	08/03/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg		5.7	< 1.0		< 1.0	
Arsenic	DETSC 2301#	0.2	mg/kg		21	7.6		21	5.3
Barium	DETSC 2301#	1.5	mg/kg		280	260		140	
Beryllium	DETSC 2301#	0.2	mg/kg		0.8	3.6		3.5	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		4.2	6.2		6.8	3.1
Cadmium	DETSC 2301#	0.1	mg/kg		0.9	< 0.1		0.8	0.2
Chromium	DETSC 2301#	0.15	mg/kg		410	29		23	170
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg		35	4.9		13	16
Lead	DETSC 2301#	0.3	mg/kg		64	12		79	19
Mercury	DETSC 2325#	0.05	mg/kg		0.09	< 0.05		< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		3.1	0.5		1.2	
Nickel	DETSC 2301#	1	mg/kg		15	4.3		5.7	3.9
Vanadium	DETSC 2301	0.8	mg/kg		1300	90		97	
Zinc	DETSC 2301#	1	mg/kg		280	29		310	29
Inorganics									
pH	DETSC 2008#				10.6	11.9	11.0	10.9	10.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg			0.6	0.2		0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg			< 0.1	< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg			0.6	< 0.2		< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg			0.8	< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%			0.7	0.5		1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		1500	1200	1600	1500	1500
Sulphur as S, Total	DETSC 2320	0.01	%		0.45	0.37	0.43	0.33	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		1.3	1.3	1.2	1.5	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			< 1.5	< 1.5		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			< 1.2	< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			< 1.5	< 1.5		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			< 3.4	< 3.4		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg			< 10	< 10		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01	< 0.01		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			< 0.9	< 0.9		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			< 0.5	< 0.5		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			5.3	< 0.6		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			11	< 1.4		< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142187	1142188	1142189	1142191	1142192	1142193
Sample ID	TPE58	TPE59	TPE60	TPE61	TPE62	TPE65
Depth	1.00	3.50	3.50	1.00	3.20	1.50
Other ID	E1	E1	E1	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/03/17	08/03/17	08/03/17	08/03/17	08/03/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg		16	< 10		< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		16	< 10		< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg		0.06	< 0.03		< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		0.04	< 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		0.07	< 0.03		< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		1.2	< 0.03		0.06	0.09
Anthracene	DETSC 3303	0.03	mg/kg		0.23	< 0.03		< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		1.8	< 0.03		0.10	0.14
Pyrene	DETSC 3303#	0.03	mg/kg		1.3	< 0.03		0.08	0.11
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.60	< 0.03		0.06	0.08
Chrysene	DETSC 3303	0.03	mg/kg		0.60	< 0.03		0.07	0.10
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.54	< 0.03		0.07	0.10
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.23	< 0.03		< 0.03	0.04
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.29	< 0.03		0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.19	< 0.03		0.03	0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		0.06	< 0.03		< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.19	< 0.03		0.03	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		7.4	< 0.10		0.52	0.81
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142194	1142203
Sample ID	TPE71	TPE63
Depth	2.40	1.14
Other ID	E1	E1
Sample Type	ES	ES
Sampling Date	n/s	08/03/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg		
Arsenic	DETSC 2301#	0.2	mg/kg		110
Barium	DETSC 2301#	1.5	mg/kg		
Beryllium	DETSC 2301#	0.2	mg/kg		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		3.7
Cadmium	DETSC 2301#	0.1	mg/kg		0.7
Chromium	DETSC 2301#	0.15	mg/kg		110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg		15
Lead	DETSC 2301#	0.3	mg/kg		96
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		
Nickel	DETSC 2301#	1	mg/kg		22
Vanadium	DETSC 2301	0.8	mg/kg		
Zinc	DETSC 2301#	1	mg/kg		440
Inorganics					
pH	DETSC 2008#			10.6	10.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		
Thiocyanate	DETSC 2130#	0.6	mg/kg		
Organic matter	DETSC 2002#	0.1	%		0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1500
Sulphur as S, Total	DETSC 2320	0.01	%	0.73	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	2.6	
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142194	1142203
Sample ID	TPE71	TPE63
Depth	2.40	1.14
Other ID	E1	E1
Sample Type	ES	ES
Sampling Date	n/s	08/03/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.08
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.10
Pyrene	DETSC 3303#	0.03	mg/kg		0.08
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.04
Chrysene	DETSC 3303	0.03	mg/kg		0.06
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.07
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.55
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142182	1142188	1142189	1142190	1142192
Sample ID	TPE49	TPE59	TPE60	TPE60	TPE62
Depth	3.40	3.50	3.50	4.50	3.20
Other ID	E2	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/03/17	08/03/17	08/03/17	08/03/17	08/03/17
Sampling Time	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
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 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
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 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
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 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
Chloroform	DETSC 3431	0.01	mg/kg	< 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
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
Benzene	DETSC 3431	0.01	mg/kg	< 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
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 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
Dibromomethane	DETSC 3431	0.01	mg/kg	< 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
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 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
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 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
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 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
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 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
o-Xylene	DETSC 3431	0.01	mg/kg	< 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
Bromoform	DETSC 3431	0.01	mg/kg	< 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
Bromobenzene	DETSC 3431	0.01	mg/kg	< 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
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 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
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142182	1142188	1142189	1142190	1142192
Sample ID	TPE49	TPE59	TPE60	TPE60	TPE62
Depth	3.40	3.50	3.50	4.50	3.20
Other ID	E2	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/03/17	08/03/17	08/03/17	08/03/17	08/03/17
Sampling Time	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
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 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
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 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
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 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
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 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
Naphthalene	DETSC 3431	0.01	mg/kg				0.21	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 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
Aniline	DETSC 3433*	0.1	mg/kg	< 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
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 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
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 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
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 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
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 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
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.3	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 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
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 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
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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
Acenaphthylene	DETSC 3433	0.1	mg/kg				2.4	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg				0.6	
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	0.1	< 0.1	3.0	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	0.2	< 0.1	3.5	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 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
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 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
Fluorene	DETSC 3433	0.1	mg/kg				1.6	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142182	1142188	1142189	1142190	1142192
Sample ID	TPE49	TPE59	TPE60	TPE60	TPE62
Depth	3.40	3.50	3.50	4.50	3.20
Other ID	E2	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/03/17	08/03/17	08/03/17	08/03/17	08/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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
Diphenylamine	DETSC 3433	0.1	mg/kg	< 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
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg				20	
Anthracene	DETSC 3433	0.1	mg/kg				4.3	
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg				15	
Pyrene	DETSC 3433	0.1	mg/kg				11	
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg				6.2	
Chrysene	DETSC 3433	0.1	mg/kg				5.0	
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 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
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg				6.2	
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg				2.5	
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg				4.7	
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg				2.7	
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg				0.8	
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg				2.6	
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 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
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 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
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 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
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	0.2	< 0.1	1.6	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-94108

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1142195	1142196	1142197	1142199	1142200	1142201	1142202
Sample ID	TPE39	TPE41	TPE44	TPE49	TPE52	TPE59	TPE62
Depth	1.80	1.70	4.20	3.40	0.90	3.50	3.20
Other ID	E1	E1	E2	E2	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	06/03/17	06/03/17	06/03/17	07/03/17	07/03/17	08/03/17	08/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.0	0.80	0.55	2.3	8.8	5.3	2.9
Barium, Dissolved	DETSC 2306	0.26	ug/l	58	33	22	59	17	41	21
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.10	0.05	0.13	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.3	< 0.25	0.51	0.38	1.1	0.44	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6	0.9	6.5	< 0.4	< 0.4	0.5	0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	11	< 5.5	< 5.5	< 5.5	6.0	< 5.5	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.10	< 0.09	0.39	< 0.09	0.10	< 0.09	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	15	24	< 0.22	10	9.4	6.6	7.1
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.04	0.04	0.08	0.01	0.05	0.03	0.02
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	3.9	2.0	12	1.7	1.4	1.3	1.0
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.1	1.0	14	2.3	1.0	8.3	6.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.5	4.1	< 1.3	30	4.5	1.6	2.4
Inorganics										
pH	DETSC 2008			7.5	7.3	11.6	7.8	7.4	7.3	8.0
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.021	0.018	0.021	< 0.015	< 0.015	< 0.015	0.055
Chloride	DETSC 2055	0.1	mg/l	2.9	2.0	14	1.9	2.6	2.6	3.4

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-94108
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1142175	TPE39 E1 1.80	SOIL	NAD	none	D Wilkinson
1142177	TPE41 E1 1.70	SOIL	NAD	none	D Wilkinson
1142178	TPE42 E1 3.00-3.10	SOIL	NAD	none	D Wilkinson
1142179	TPE43 E2 3.20	SOIL	NAD	none	D Wilkinson
1142180	TPE44 E1 0.10	SOIL	NAD	none	D Wilkinson
1142181	TPE44 E2 4.20	SOIL	NAD	none	D Wilkinson
1142182	TPE49 E2 3.40	SOIL	NAD	none	D Wilkinson
1142184	TPE51 E1 2.00	SOIL	NAD	none	D Wilkinson
1142185	TPE52 E1 0.90	SOIL	NAD	none	D Wilkinson
1142188	TPE59 E1 3.50	SOIL	NAD	none	D Wilkinson
1142189	TPE60 E1 3.50	SOIL	NAD	none	D Wilkinson
1142192	TPE62 E1 3.20	SOIL	NAD	none	D Wilkinson
1142193	TPE65 E2 1.50	SOIL	NAD	none	D Wilkinson
1142203	TPE63 E1 1.14	SOIL	NAD	none	D Wilkinson

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 17-94108
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1142175	TPE39 1.80 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142176	TPE40 3.60 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142177	TPE41 1.70 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142178	TPE42 3.00-3.10 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142179	TPE43 3.20 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142180	TPE44 0.10 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142181	TPE44 4.20 SOIL	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142182	TPE49 3.40 SOIL	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142183	TPE50 4.00 SOIL	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142184	TPE51 2.00 SOIL	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142185	TPE52 0.90 SOIL	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142186	TPE53 2.50 SOIL	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142187	TPE58 1.00 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142188	TPE59 3.50 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142189	TPE60 3.50 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142190	TPE60 4.50 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142191	TPE61 1.00 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142192	TPE62 3.20 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142193	TPE65 1.50 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1142194	TPE71 2.40 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1142195	TPE39 1.80 LEACHATE	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142196	TPE41 1.70 LEACHATE	06/03/17	No containers logged		Cannot evaluate
1142197	TPE44 4.20 LEACHATE	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142198	TPE44 4.20 LEACHATE	06/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142199	TPE49 3.40 LEACHATE	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142200	TPE52 0.90 LEACHATE	07/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142201	TPE59 3.50 LEACHATE	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142202	TPE62 3.20 LEACHATE	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1142203	TPE63 1.14 SOIL	08/03/17	GJ 250ml x2, GJ 60ml, PT 1L		

Information in Support of the Analytical Results

Our Ref 17-94108

Client Ref SLS1015

Contract Redcar Site

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

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, inappropriate containers etc 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 17-94460

24-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-94460

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 13 Soil samples, 5 Leachate samples.

Date Received 15-Mar-17

Date Started 15-Mar-17

Date Completed 24-Mar-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1143854	1143855	1143856	1143857	1143858	1143859	1143860
Sample ID	TPE11	TPE20	TPE24	TPE29	TPE29	TPE12	TPE17
Depth	1.50	0.50	1.50	0.50	2.60	1.00	3.10
Other ID	E1	E2	E1	E1	E3	E3	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	27/02/17	01/03/17	01/03/17	01/03/17	01/03/17	27/02/17	28/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Antimony	DETSC 2301*	1	mg/kg	1.7	4.9		1.6	< 1.0		< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	270	27	11	12	8.9	6.5	7.0
Barium	DETSC 2301#	1.5	mg/kg	110	560		210	260		320
Beryllium	DETSC 2301#	0.2	mg/kg	6.1	3.6		1.6	6.0		4.9
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	7.9	4.0	4.9	3.7	6.8	4.3	6.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.7	0.1	1.2	0.2	0.5	0.1
Chromium	DETSC 2301#	0.15	mg/kg	82	350	25	67	17	15	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19	31	5.2	23	7.4	9.9	8.6
Lead	DETSC 2301#	0.3	mg/kg	110	56	8.7	100	12	42	11
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	20	3.1		1.0	0.7		0.8
Nickel	DETSC 2301#	1	mg/kg	78	16	3.8	10	3.4	4.6	6.0
Vanadium	DETSC 2301	0.8	mg/kg	260	1000		170	77		96
Zinc	DETSC 2301#	1	mg/kg	120	150	23	330	39	95	37
Inorganics										
pH	DETSC 2008#			9.7	11.6	10.8	11.3	10.9	11.7	10.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.4	0.1	< 0.1	1.5	0.3	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	0.4		< 0.2	1.5		0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6		< 0.6	< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	1.4	0.4	1.3	0.6	0.8	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	2000	1200	1400	600	1300	270	1500
Sulphur as S, Total	DETSC 2320	0.01	%					0.80	0.12	
Sulphate as SO4, Total	DETSC 2321#	0.01	%					1.4	0.41	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 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	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 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	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	5.0	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	6.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1143854	1143855	1143856	1143857	1143858	1143859	1143860
Sample ID	TPE11	TPE20	TPE24	TPE29	TPE29	TPE12	TPE17
Depth	1.50	0.50	1.50	0.50	2.60	1.00	3.10
Other ID	E1	E2	E1	E1	E3	E3	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	27/02/17	01/03/17	01/03/17	01/03/17	01/03/17	27/02/17	28/02/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	12	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	12	< 10	< 10	< 10	< 10	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.21	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5	< 0.03	0.04	0.04	< 0.03	0.12
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.80	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8	< 0.03	0.07	0.08	< 0.03	0.21
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.0	< 0.03	0.04	0.08	< 0.03	0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.6	< 0.03	0.04	0.04	< 0.03	0.11
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.3	< 0.03	0.03	0.03	< 0.03	0.09
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	2.2	< 0.03	0.03	< 0.03	< 0.03	0.12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.78	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.0	< 0.03	< 0.03	< 0.03	< 0.03	0.07
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.55	< 0.03	< 0.03	< 0.03	< 0.03	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	15	< 0.10	0.27	0.27	< 0.10	1.0
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1143861	1143862	1143863	1143864	1143865	1143866
Sample ID	TPE18	TPE19	TPE19	TPE23	TPE22	TPE22
Depth	2.50	0.20	3.30	3.50	0.50	2.00
Other ID	E1	E1	E4	E1	E1	E3
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	28/02/17	28/02/17	28/02/17	01/03/17	01/03/17	01/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg		2.8				2.3
Arsenic	DETSC 2301#	0.2	mg/kg		5.7	6.1		6.4	25
Barium	DETSC 2301#	1.5	mg/kg		330				360
Beryllium	DETSC 2301#	0.2	mg/kg		2.0				2.9
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		3.3	2.8		7.3	6.7
Cadmium	DETSC 2301#	0.1	mg/kg		0.5	0.5		1.1	1.0
Chromium	DETSC 2301#	0.15	mg/kg		93	390		180	67
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0				< 1.0
Copper	DETSC 2301#	0.2	mg/kg		20	39		24	32
Lead	DETSC 2301#	0.3	mg/kg		22	41		83	73
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05	< 0.05		< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		1.6				1.4
Nickel	DETSC 2301#	1	mg/kg		13	9.6		7.3	22
Vanadium	DETSC 2301	0.8	mg/kg		280				230
Zinc	DETSC 2301#	1	mg/kg		80	70		300	390
Inorganics									
pH	DETSC 2008#			11.1	11.3	12.0	10.8	11.6	10.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1	0.1		< 0.1	4.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1				< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		< 0.2				4.6
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6				0.9
Organic matter	DETSC 2002#	0.1	%		2.9	0.6		1.8	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1100	1100	550	1500	430	1400
Sulphur as S, Total	DETSC 2320	0.01	%	0.63			0.93		
Sulphate as SO4, Total	DETSC 2321#	0.01	%	1.5			1.6		
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	6.5		< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4	11		< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10	17		< 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	< 0.01		< 0.01	< 0.01
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		0.9	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6	11		2.2	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4	27		< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1143861	1143862	1143863	1143864	1143865	1143866
Sample ID	TPE18	TPE19	TPE19	TPE23	TPE22	TPE22
Depth	2.50	0.20	3.30	3.50	0.50	2.00
Other ID	E1	E1	E4	E1	E1	E3
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	28/02/17	28/02/17	28/02/17	01/03/17	01/03/17	01/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10	38		< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		< 10	55		< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg		0.06	< 0.03		1.6	0.26
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		0.12	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		1.6	0.21
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03		0.51	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.12	0.14		1.2	0.28
Anthracene	DETSC 3303	0.03	mg/kg		0.04	0.15		0.30	0.06
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.15	0.53		1.1	0.24
Pyrene	DETSC 3303#	0.03	mg/kg		0.12	1.3		0.83	0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.09	0.23		0.42	0.08
Chrysene	DETSC 3303	0.03	mg/kg		0.07	0.24		0.31	0.06
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.11	0.69		0.49	0.07
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.04	0.22		0.13	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.06	0.31		0.22	0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.04	0.21		0.11	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.05		0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.04	0.20		0.10	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.95	4.2		9.1	1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1143867	1143868	1143869	1143870	1143871
Sample ID	TPE11	TPE20	TPE29	TPE17	TPE22
Depth	1.50	0.50	0.50	3.10	2.00
Other ID	E1	E2	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	27/02/17	01/03/17	01/03/17	28/02/17	01/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETS 2306	0.16	ug/l	16	1.2	1.6	0.51	1.6
Barium, Dissolved	DETS 2306	0.26	ug/l	30	16	5.0	21	15
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETS 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	< 0.25	0.33	2.6	< 0.25	0.28
Copper, Dissolved	DETS 2306	0.4	ug/l	< 0.4	0.6	0.7	0.6	0.6
Iron, Dissolved	DETS 2306	5.5	ug/l	< 5.5	10	23	5.8	57
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	0.63	0.39	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	6.2	1.0	1.8	1.3	1.1
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.02	< 0.01	0.02	< 0.01	0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	1.1	0.57	0.68	0.91	0.69
Vanadium, Dissolved	DETS 2306	0.6	ug/l	4.1	6.9	6.5	2.5	4.7
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics								
pH	DETS 2008			7.4	7.7	8.1	7.8	8.0
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	0.015	< 0.015	< 0.015	< 0.015	< 0.015
Chloride	DETS 2055	0.1	mg/l	5.6	2.7	1.9	2.5	2.6

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-94460

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1143854	TPE11 E1 1.50	SOIL	NAD	none	D Wilkinson
1143855	TPE20 E2 0.50	SOIL	NAD	none	D Wilkinson
1143856	TPE24 E1 1.50	SOIL	NAD	none	D Wilkinson
1143857	TPE29 E1 0.50	SOIL	NAD	none	D Wilkinson
1143858	TPE29 E3 2.60	SOIL	NAD	none	D Wilkinson
1143859	TPE12 E3 1.00	SOIL	NAD	none	D Wilkinson
1143860	TPE17 E1 3.10	SOIL	NAD	none	D Wilkinson
1143862	TPE19 E1 0.20	SOIL	NAD	none	D Wilkinson
1143863	TPE19 E4 3.30	SOIL	NAD	none	D Wilkinson
1143865	TPE22 E1 0.50	SOIL	NAD	none	D Wilkinson
1143866	TPE22 E3 2.00	SOIL	NAD	none	D Wilkinson

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 17-94460
Client Ref SLS1015
Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1143854	TPE11 1.50 SOIL	27/02/17	GJ 250ml x2, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1143855	TPE20 0.50 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143856	TPE24 1.50 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143857	TPE29 0.50 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143858	TPE29 2.60 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143859	TPE12 1.00 SOIL	27/02/17	GJ 250ml x2, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1143860	TPE17 3.10 SOIL	28/02/17	GJ 250ml x2, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1143861	TPE18 2.50 SOIL	28/02/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143862	TPE19 0.20 SOIL	28/02/17	GJ 250ml x2, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1143863	TPE19 3.30 SOIL	28/02/17	GJ 250ml x2, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1143864	TPE23 3.50 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143865	TPE22 0.50 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143866	TPE22 2.00 SOIL	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1143867	TPE11 1.50 LEACHATE	27/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1143868	TPE20 0.50 LEACHATE	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1143869	TPE29 0.50 LEACHATE	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1143870	TPE17 3.10 LEACHATE	28/02/17	GJ 250ml x2, GJ 60ml, PT 1L		
1143871	TPE22 2.00 LEACHATE	01/03/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 17-94721-1

30-Mar-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-94721-1

Client Reference SLS1015

Order No (not supplied)

Contract Title Redcar Site

Description 16 Soil samples, 7 Leachate samples.

Date Received 17-Mar-17

Date Started 17-Mar-17

Date Completed 30-Mar-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-94721. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145606	1145607	1145608	1145609	1145610	1145611	1145612
Sample ID	TPE28	TPE37	TPE37	TPE47	TPE48	TPE56	TPE64
Depth	0.80	3.00	4.50	2.00	1.50	2.60	1.30
Other ID	E1	E1	E3	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	13/03/17	14/03/17	14/03/17	13/03/17	13/03/17	13/03/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg		< 1.0	5.4		2.3	
Arsenic	DETSC 2301#	0.2	mg/kg	18	8.8	4.7	33	12	11
Barium	DETSC 2301#	1.5	mg/kg		130	180		260	
Beryllium	DETSC 2301#	0.2	mg/kg		1.0	0.7		2.7	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.4	3.6	1.6	2.4	5.5	5.8
Cadmium	DETSC 2301#	0.1	mg/kg	1.4	0.4	0.7	0.5	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	33	20	420	33	190	190
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	16	19	50	14	31	19
Lead	DETSC 2301#	0.3	mg/kg	61	29	48	38	29	22
Mercury	DETSC 2325#	0.05	mg/kg	0.67	0.05	0.11	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		0.8	2.2		1.1	
Nickel	DETSC 2301#	1	mg/kg	7.7	11	10	13	9.8	8.7
Vanadium	DETSC 2301	0.8	mg/kg		42	1200		870	
Zinc	DETSC 2301#	1	mg/kg	1600	210	190	340	130	110
Inorganics									
pH	DETSC 2008#			9.7	9.4	11.5	9.4	10.6	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	2.0	0.3	0.7	0.3		0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1	< 0.1		< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		0.3	0.7		< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6	< 0.6		< 0.6	
Organic matter	DETSC 2002#	0.1	%	3.0	1.8	1.2	0.2	0.4	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	580	820	1600	1600	800
Sulphur as S, Total	DETSC 2320	0.01	%			0.61	0.49	0.86	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			1.8	0.91	1.7	
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	3.7	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	39	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	43	< 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	< 0.6	< 0.6	< 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	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145606	1145607	1145608	1145609	1145610	1145611	1145612
Sample ID	TPE28	TPE37	TPE37	TPE47	TPE48	TPE56	TPE64
Depth	0.80	3.00	4.50	2.00	1.50	2.60	1.30
Other ID	E1	E1	E3	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	13/03/17	14/03/17	14/03/17	13/03/17	13/03/17	13/03/17	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10		< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	43	< 10		< 10	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	< 0.03	< 0.03		< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	0.04	< 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	0.17	0.14	0.17	0.08		0.12	0.07
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.04	0.05	< 0.03		< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.25	0.12	0.14	0.10		0.15	0.10
Pyrene	DETSC 3303#	0.03	mg/kg	0.19	0.12	0.13	0.08		0.12	0.08
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.11	0.04	0.07	< 0.03		0.05	0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.14	< 0.03	0.07	< 0.03		0.06	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	< 0.03	0.07	< 0.03		0.05	0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03	< 0.03		< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.04	< 0.03		< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 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
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03	< 0.03		< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.4	0.49	0.78	0.27		0.54	0.37
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 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145613	1145615	1145616	1145617	1145618	1145619	1145620
Sample ID	TPE69	TPF11	TPF11	TPF12	TPF13	TPF13	TPF14
Depth	3.80	1.00	4.00	2.00	1.00	2.40	1.00
Other ID	E1	E1	E3	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	15/03/17	15/03/17	15/03/17	15/03/17	15/03/17	15/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Antimony	DETSC 2301*	1	mg/kg	7.4	< 1.0			10		13
Arsenic	DETSC 2301#	0.2	mg/kg	9.3	30		9.8	4.4	4.0	7.4
Barium	DETSC 2301#	1.5	mg/kg	530	100			1800		2100
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.5			0.5		0.7
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.2	1.2		0.7	3.2	6.0	4.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.5		0.1	0.7	0.9	0.7
Chromium	DETSC 2301#	0.15	mg/kg	630	23		8.2	860	960	1200
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0			< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	32	32		7.5	52	83	67
Lead	DETSC 2301#	0.3	mg/kg	71	140		40	48	58	39
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.18		< 0.05	< 0.05	< 0.05	0.14
Molybdenum	DETSC 2301#	0.4	mg/kg	1.8	1.8			5.9		9.7
Nickel	DETSC 2301#	1	mg/kg	13	12		4.9	13	15	15
Vanadium	DETSC 2301	0.8	mg/kg	2300	59			2800		3300
Zinc	DETSC 2301#	1	mg/kg	110	91		35	76	120	62
Inorganics										
pH	DETSC 2008#			12.0	10.3	10.3	9.4	12.0	12.0	12.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2		0.1	0.1	0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1			< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.2	< 0.2			< 0.2		< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.4			< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%	0.3	15		2.7	0.6	< 0.1	0.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	35	830	190	320	11	50	< 10
Sulphur as S, Total	DETSC 2320	0.01	%			0.05	0.09	0.17	0.20	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.15	0.11	0.32	0.36	
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	0.03	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	7.3	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	100	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	130	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	63	< 3.4		< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	300	< 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	28	2.7		< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	65	12		< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	34	28		< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145613	1145615	1145616	1145617	1145618	1145619	1145620
Sample ID	TPE69	TPF11	TPF11	TPF12	TPF13	TPF13	TPF14
Depth	3.80	1.00	4.00	2.00	1.00	2.40	1.00
Other ID	E1	E1	E3	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	n/s	15/03/17	15/03/17	15/03/17	15/03/17	15/03/17	15/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C5-C35	DETSC 3072*	10	mg/kg	130	43		< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	430	43		< 10	< 10	< 10	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.23		< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09		< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14		< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.24		< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.03	1.7		0.06	0.11	0.36	0.09
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.62		0.06	< 0.03	0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	2.4		0.06	0.32	1.2	0.10
Pyrene	DETSC 3303#	0.03	mg/kg	0.14	1.9		0.05	0.26	0.91	0.07
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	1.2		0.03	0.12	0.35	0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.05	1.0		< 0.03	0.15	0.42	0.04
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	1.0		< 0.03	0.15	0.41	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.41		< 0.03	0.08	0.16	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.76		< 0.03	0.08	0.17	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.35		< 0.03	0.07	0.14	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12		< 0.03	< 0.03	0.04	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.34		< 0.03	0.07	0.15	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.43	12		0.28	1.4	4.3	0.33
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 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150702	1150703
Sample ID	TPF08	TPF09
Depth	0.20	0.20
Other ID		
Sample Type	ES	ES
Sampling Date	15/03/17	15/03/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	2.4	
Arsenic	DETSC 2301#	0.2	mg/kg	5.4	
Barium	DETSC 2301#	1.5	mg/kg	82	
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.6	
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	
Chromium	DETSC 2301#	0.15	mg/kg	32	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	22	
Lead	DETSC 2301#	0.3	mg/kg	17	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg	2.3	
Nickel	DETSC 2301#	1	mg/kg	29	
Vanadium	DETSC 2301	0.8	mg/kg	37	
Zinc	DETSC 2301#	1	mg/kg	82	
Inorganics					
pH	DETSC 2008#			9.3	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	
Organic matter	DETSC 2002#	0.1	%	9.4	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	160
Sulphur as S, Total	DETSC 2320	0.01	%		0.07
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.15
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.5	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	12	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	110	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	130	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150702	1150703
Sample ID	TPF08	TPF09
Depth	0.20	0.20
Other ID		
Sample Type	ES	ES
Sampling Date	15/03/17	15/03/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	130	
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.57	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.17	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.07	
Fluorene	DETSC 3303	0.03	mg/kg	0.17	
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.2	
Anthracene	DETSC 3303	0.03	mg/kg	0.46	
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.48	
Chrysene	DETSC 3303	0.03	mg/kg	0.56	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.76	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.25	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.38	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.21	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.20	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.1	
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145613
Sample ID	TPE69
Depth	3.80
Other ID	E1
Sample Type	ES
Sampling Date	n/s
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145613
Sample ID	TPE69
Depth	3.80
Other ID	E1
Sample Type	ES
Sampling Date	n/s
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145613
Sample ID	TPE69
Depth	3.80
Other ID	E1
Sample Type	ES
Sampling Date	n/s
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-94721-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1145621	1145622	1145623	1145624	1145625	1145626	1150704
Sample ID	TPE37	TPE56	TPE69	TPF11	TPF14	TPE70	TPF08
Depth	3.00	2.60	3.80	1.00	1.00	1.00	0.20
Other ID	E1	E1	E1	E1	E1	E1	
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	14/03/17	13/03/17	n/s	15/03/17	15/03/17	n/s	15/03/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.5	3.4	1.0	1.3	1.2	1.0	1.6
Barium, Dissolved	DETSC 2306	0.26	ug/l	28	60	6.9	14	110		5.8
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Boron	DETSC 2123	100	ug/l	170	< 100	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.04	0.04	0.04	0.19	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.31	0.47	1.3	< 0.25	36	2.7	0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	1.6	1.3	1.3	4.6	0.6	0.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5	14	12	63	9.3		120
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	0.86	0.26	0.11	0.11
Manganese, Dissolved	DETSC 2306	0.22	ug/l	14	12	1.0	1.1	< 0.22		7.8
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	0.01	< 0.01	0.03	0.17	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	1.1	< 0.25	2.6	14	1.9	0.76
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	7.1	5.3	3.2	0.6	8.0		5.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.5	6.0	1.8	1.8	< 1.3	< 1.3	< 1.3
Inorganics										
pH	DETSC 2008			7.3	6.9	9.9	7.6	11.9	8.9	8.6
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.15	0.10	0.018	0.026	0.018		0.14
Chloride	DETSC 2055	0.1	mg/l							2.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-94721-1
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1145606	TPE28 E1 0.80	SOIL	NAD	none	Steven Lambert
1145607	TPE37 E1 3.00	SOIL	NAD	none	Steven Lambert
1145608	TPE37 E3 4.50	SOIL	NAD	none	Steven Lambert
1145609	TPE47 E1 2.00	SOIL	NAD	none	Steven Lambert
1145611	TPE56 E1 2.60	SOIL	NAD	none	Steven Lambert
1145612	TPE64 E1 1.30	SOIL	NAD	none	Steven Lambert
1145613	TPE69 E1 3.80	SOIL	NAD	none	Steven Lambert
1145615	TPF11 E1 1.00	SOIL	NAD	none	Steven Lambert
1145617	TPF12 E1 2.00	SOIL	NAD	none	Steven Lambert
1145618	TPF13 E1 1.00	SOIL	NAD	none	Steven Lambert
1145619	TPF13 E2 2.40	SOIL	NAD	none	Steven Lambert
1145620	TPF14 E1 1.00	SOIL	NAD	none	Steven Lambert
1150702	TPF08 0.20	SOIL	NAD	none	Keith Wilson

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 17-94721-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1145606	TPE28 0.80 SOIL	13/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145607	TPE37 3.00 SOIL	14/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145608	TPE37 4.50 SOIL	14/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145609	TPE47 2.00 SOIL	13/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145610	TPE48 1.50 SOIL	13/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145611	TPE56 2.60 SOIL	13/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145612	TPE64 1.30 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days)	
1145613	TPE69 3.80 SOIL		GJ 250ml x2, GV, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), Boron (365 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (730 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (365 days), SVOC (14 days)	
1145614	TPE70 1.00 SOIL		GJ 250ml x2, GV, PT 1L		
1145615	TPF11 1.00 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145616	TPF11 4.00 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145617	TPF12 2.00 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145618	TPF13 1.00 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145619	TPF13 2.40 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145620	TPF14 1.00 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145621	TPE37 3.00 LEACHATE	14/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145622	TPE56 2.60 LEACHATE	13/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145623	TPE69 3.80 LEACHATE		GJ 250ml x2, GV, PT 1L	Sample date not supplied	
1145624	TPF11 1.00 LEACHATE	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145625	TPF14 1.00 LEACHATE	15/03/17	GJ 250ml, GJ 60ml, PT 1L		
1145626	TPE70 1.00 LEACHATE		GJ 250ml x2, GV, PT 1L	Sample date not supplied	
1150702	TPF08 0.20 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150703	TPF09 0.20 SOIL	15/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150704	TPF08 0.20 LEACHATE	15/03/17	GJ 250ml, GJ 60ml, PT 1L		

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

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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-94721-1

Client Ref SLS1015

Contract Redcar Site

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 17-95545-1

13-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-95545-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 21 Soil samples, 7 Leachate samples.

Date Received Monday, March 27, 2017

Date Started Monday, March 27, 2017

Date Completed Thursday, April 13, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-95545. 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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150242	1150243	1150244	1150245	1150246	1150247	1150248
Sample ID	TPF01	TPF01	TPF02	TPF04	TPF05	TPF06	TPF07
Depth	0.70	2.00	2.50	4.00	0.50	2.50	0.50-0.60
Other ID	1	2	1	3	1	1	1
Sample Type	S	ES	ES	ES	ES	ES	ES
Sampling Date	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	17-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0								
Metals										
Antimony	DETSC 2301*	1	mg/kg	4.4	1.2	< 1.0		3.1	< 1.0	
Arsenic	DETSC 2301#	0.2	mg/kg	7.1	6.9	6.9		11	7.0	
Barium	DETSC 2301#	1.5	mg/kg	130	110	88		210	100	
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	0.4	< 0.2		2.1	0.4	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	2.0	1.3	0.8		1.2	1.0	
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	< 0.1	< 0.1		0.3	< 0.1	
Chromium	DETSC 2301#	0.15	mg/kg	51	65	6.1		38	8.3	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	34	13	5.7		32	8.6	
Lead	DETSC 2301#	0.3	mg/kg	27	19	23		21	25	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg	5.3	0.8	0.5		2.3	0.5	
Nickel	DETSC 2301#	1	mg/kg	34	7.6	4.2		22	6.1	
Vanadium	DETSC 2301	0.8	mg/kg	55	84	16		100	23	
Zinc	DETSC 2301#	1	mg/kg	160	32	27		92	33	
Inorganics										
pH	DETSC 2008#			11.3	12.0	9.3	9.6	10.1	9.3	11.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6	0.1	0.1		0.2	0.1	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1		< 0.1	< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.5	< 0.2	< 0.2		< 0.2	< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6		< 0.6	< 0.6	
Organic matter	DETSC 2002#	0.1	%	7.8	0.2	2.3		5.6	0.9	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	230	25	61	31	150	62	230
Sulphur as S, Total	DETSC 2320	0.01	%	0.06		0.04	0.02			0.25
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.18		0.07	0.06			0.53
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2		< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	8.1	5.8	< 1.5		< 1.5	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	91	14	< 3.4		< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	99	19	< 10		< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	5.6	< 0.5	< 0.5		< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	14	3.1	< 0.6		3.8	< 0.6	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150242	1150243	1150244	1150245	1150246	1150247	1150248
Sample ID	TPF01	TPF01	TPF02	TPF04	TPF05	TPF06	TPF07
Depth	0.70	2.00	2.50	4.00	0.50	2.50	0.50-0.60
Other ID	1	2	1	3	1	1	1
Sample Type	S	ES	ES	ES	ES	ES	ES
Sampling Date	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	16-Mar-17	17-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	41	4.8	< 1.4		12	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	61	< 10	< 10		16	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	160	27	< 10		16	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.89	0.04	< 0.03		0.11	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.19	< 0.03	< 0.03		< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.63	< 0.03	< 0.03		< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.40	< 0.03	< 0.03		0.04	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.5	0.06	< 0.03		0.20	0.06
Anthracene	DETSC 3303	0.03	mg/kg	0.75	< 0.03	< 0.03		0.04	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	0.07	< 0.03		0.20	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	0.05	< 0.03		0.16	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.49	0.03	< 0.03		0.10	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.52	0.03	< 0.03		0.12	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.54	0.03	< 0.03		0.13	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03	< 0.03		0.05	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.34	< 0.03	< 0.03		0.08	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.18	< 0.03	< 0.03		0.05	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03		< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03	< 0.03		0.06	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.4	0.32	< 0.10		1.4	0.15
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3		< 0.3	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150249	1150250	1150251	1150252	1150253	1150254	1150255
Sample ID	TPF10	TPC08	TPC09	TPC19	TPC19	TPC28	TPC28
Depth	0.20-0.60	4.10-5.40	0.10-0.50	0.30	0.70	2.20	3.40
Other ID	1	1	1	1	2	1	
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	16-Mar-17	23-Mar-17	23-Mar-17	22-Mar-17	22-Mar-17	23-Mar-17	24-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0					Y		
Metals									
Antimony	DETSC 2301*	1	mg/kg		5.1			< 1.0	3.2
Arsenic	DETSC 2301#	0.2	mg/kg	21	76	83	9.0	7.8	63
Barium	DETSC 2301#	1.5	mg/kg		190			210	650
Beryllium	DETSC 2301#	0.2	mg/kg		2.2			1.2	1.8
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.5	21	9.4	4.5	3.0	14
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	1.4	1.0	0.1	0.2	0.7
Chromium	DETSC 2301#	0.15	mg/kg	110	34	43	26	28	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0			< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	44	89	120	22	20	85
Lead	DETSC 2301#	0.3	mg/kg	29	120	88	20	18	63
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.18	0.26	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		2.1			2.4	1.7
Nickel	DETSC 2301#	1	mg/kg	18	46	52	28	26	40
Vanadium	DETSC 2301	0.8	mg/kg		160			42	100
Zinc	DETSC 2301#	1	mg/kg	93	160	160	58	67	120
Inorganics									
pH	DETSC 2008#			11.0	10.0	8.8	8.9	8.3	9.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1		0.1	0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1				< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		< 0.2				< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6				< 0.6
Organic matter	DETSC 2002#	0.1	%	0.5	1.7		1.7	1.5	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	330	780	57	82	180	110
Sulphur as S, Total	DETSC 2320	0.01	%		0.15	0.04			0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.55	0.12			0.10
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 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
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4		< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10		< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	14	< 0.5		< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	74	< 0.6		< 0.6	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150249	1150250	1150251	1150252	1150253	1150254	1150255
Sample ID	TPF10	TPC08	TPC09	TPC19	TPC19	TPC28	TPC28
Depth	0.20-0.60	4.10-5.40	0.10-0.50	0.30	0.70	2.20	3.40
Other ID	1	1	1	1	2	1	
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	16-Mar-17	23-Mar-17	23-Mar-17	22-Mar-17	22-Mar-17	23-Mar-17	24-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	81	< 1.4		< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	170	< 10		< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	170	< 10		< 10	< 10	< 10	< 10
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	0.18	< 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	0.10	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.98	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.31	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.0	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1.5	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.84	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.73	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.86	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.57	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.30	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.33	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.3	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10
PCBs										
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg							
PCB 52	DETSC 3401#	0.01	mg/kg							
PCB 101	DETSC 3401#	0.01	mg/kg							
PCB 118	DETSC 3401#	0.01	mg/kg							
PCB 153	DETSC 3401#	0.01	mg/kg							
PCB 138	DETSC 3401#	0.01	mg/kg							
PCB 180	DETSC 3401#	0.01	mg/kg							
PCB 7 Total	DETSC 3401#	0.01	mg/kg							
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3		0.5	< 0.3	< 0.3	3.2

Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150256	1150257	1150258	1150259	1150260	1150261	1150262
Sample ID	TPC29	TPC30	TPC30	TPC38	TPC40	TPC40	TPC41
Depth	1.00	1.50-2.00	2.10-2.30	1.60	0.70	2.50	0.80-1.10
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	22-Mar-17	23-Mar-17	23-Mar-17	23-Mar-17	22-Mar-17	22-Mar-17	22-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0				Y				Y
Metals										
Antimony	DETSC 2301*	1	mg/kg		1.2	1.3	4.8	3.5		1.1
Arsenic	DETSC 2301#	0.2	mg/kg		7.8	8.8	67	46		8.2
Barium	DETSC 2301#	1.5	mg/kg		130	590	260	260		200
Beryllium	DETSC 2301#	0.2	mg/kg		1.0	2.8	2.4	1.6		0.9
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		1.5	12	22	10		1.4
Cadmium	DETSC 2301#	0.1	mg/kg		0.2	0.3	1.0	0.7		0.1
Chromium	DETSC 2301#	0.15	mg/kg		29	110	37	22		28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		1.6	< 1.0	< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg		24	22	100	94		22
Lead	DETSC 2301#	0.3	mg/kg		25	62	79	45		23
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05	< 0.05	0.17	0.19		0.07
Molybdenum	DETSC 2301#	0.4	mg/kg		0.8	1.5	4.0	3.0		0.7
Nickel	DETSC 2301#	1	mg/kg		31	14	56	39		30
Vanadium	DETSC 2301	0.8	mg/kg		41	260	160	85		42
Zinc	DETSC 2301#	1	mg/kg		64	76	190	130		57
Inorganics										
pH	DETSC 2008#			9.0	8.2	11.1	9.5	9.8	10.7	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.2	0.2	0.2	0.1		0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		< 0.2	< 0.2	< 0.2	< 0.2		< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6	< 0.6	< 0.6	< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%		1.1	0.6	20	4.6		1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	500	76	510	660	330	500	36
Sulphur as S, Total	DETSC 2320	0.01	%	0.18					0.59	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.25					1.0	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 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		3.1
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4	< 3.4	< 3.4		5.0
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	< 10		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5	< 0.5	< 0.5	< 0.5		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6	0.8	< 0.6	< 0.6		0.9

Summary of Chemical Analysis

Soil Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150256	1150257	1150258	1150259	1150260	1150261	1150262
Sample ID	TPC29	TPC30	TPC30	TPC38	TPC40	TPC40	TPC41
Depth	1.00	1.50-2.00	2.10-2.30	1.60	0.70	2.50	0.80-1.10
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	22-Mar-17	23-Mar-17	23-Mar-17	23-Mar-17	22-Mar-17	22-Mar-17	22-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4	2.8	< 1.4	< 1.4		2.2
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	< 10		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	< 10		11
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	0.05	< 0.03	< 0.03		< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.13	< 0.03	< 0.03		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	0.10	< 0.03	< 0.03		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.31	< 0.03	< 0.03		0.42
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	0.07	< 0.03	< 0.03		0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.77	< 0.03	< 0.03		2.1
Pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.74	< 0.03	< 0.03		1.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.36	< 0.03	< 0.03		0.92
Chrysene	DETSC 3303	0.03	mg/kg		< 0.03	0.32	< 0.03	< 0.03		0.85
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.40	< 0.03	< 0.03		1.1
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.15	< 0.03	< 0.03		0.46
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.26	< 0.03	< 0.03		0.75
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.13	< 0.03	< 0.03		0.44
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.04	< 0.03	< 0.03		0.11
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03	0.14	< 0.03	< 0.03		0.42
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		< 0.10	4.0	< 0.10	< 0.10		9.6
PCBs										
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 52	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 101	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 118	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 153	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 138	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 180	DETSC 3401#	0.01	mg/kg				< 0.01			
PCB 7 Total	DETSC 3401#	0.01	mg/kg				< 0.01			
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3	< 0.3	1.8		3.8

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150258	1150259
Sample ID	TPC30	TPC38
Depth	2.10-2.30	1.60
Other ID		
Sample Type	ES	ES
Sampling Date	23-Mar-17	23-Mar-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	0.02
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	0.02
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150258	1150259
Sample ID	TPC30	TPC38
Depth	2.10-2.30	1.60
Other ID		
Sample Type	ES	ES
Sampling Date	23-Mar-17	23-Mar-17
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150258	1150259
Sample ID	TPC30	TPC38
Depth	2.10-2.30	1.60
Other ID		
Sample Type	ES	ES
Sampling Date	23-Mar-17	23-Mar-17
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150263	1150264	1150265	1150266	1150267	1150268	1150269
Sample ID	TPF01	TPF02	TPF06	TPC08	TPC28	TPC38	TPC40
Depth	2.00	2.50	2.50	4.10-5.40	2.20	1.60	0.70
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	16-Mar-17	16-Mar-17	16-Mar-17	23-Mar-17	23-Mar-17	23-Mar-17	22-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.5	0.85	1.1	35	0.42	22	1.2
Barium, Dissolved	DETSC 2306	0.26	ug/l	2.3	2.8	4.4	6.7	2.0	3.1	5.9
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	100	340	180	230	190
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.41	< 0.25	< 0.25	0.65	< 0.25	5.7	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.1	< 0.4	< 0.4	0.8	0.5	0.5	0.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	20	16	20	< 5.5	190	8.6	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.12	0.17	0.19	< 0.09	0.15	0.11	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.41	2.0	3.5	0.88	0.61	0.76	3.7
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.29	< 0.25	< 0.25	31	0.63	8.9	1.2
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	13	1.4	1.2	85	2.0	21	20
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics										
pH	DETSC 2008			10.8	8.1	8.3	9.8	7.7	9.0	9.6
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.017	< 0.015	< 0.015	< 0.015	0.020	0.021	0.015
Chloride	DETSC 2055	0.1	mg/l	6.9	4.2	6.6	4.4	2.3	1.9	3.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-95545-1
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1150242	TPF01 1 0.70	SOIL	NAD	none	D Wilkinson
1150243	TPF01 2 2.00	SOIL	NAD	none	D Wilkinson
1150244	TPF02 1 2.50	SOIL	NAD	none	D Wilkinson
1150246	TPF05 1 0.50	SOIL	NAD	none	D Wilkinson
1150247	TPF06 1 2.50	SOIL	NAD	none	D Wilkinson
1150249	TPF10 1 0.20-0.60	SOIL	NAD	none	D Wilkinson
1150250	TPC08 1 4.10-5.40	SOIL	NAD	none	D Wilkinson
1150252	TPC19 1 0.30	SOIL	Chrysotile	Chrysotile present as small fibre bundle	D Wilkinson
1150253	TPC19 2 0.70	SOIL	NAD	none	D Wilkinson
1150254	TPC28 1 2.20	SOIL	NAD	none	D Wilkinson
1150255	TPC28 3.40	SOIL	NAD	none	D Wilkinson
1150257	TPC30 1.50-2.00	SOIL	NAD	none	D Wilkinson
1150258	TPC30 2.10-2.30	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1150259	TPC38 1.60	SOIL	NAD	none	D Wilkinson
1150260	TPC40 0.70	SOIL	NAD	none	D Wilkinson
1150262	TPC41 0.80-1.10	SOIL	Chrysotile	Chrysotile present as fibre bundle	D Wilkinson

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 17-95545-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1150252	1150258	1150262
Sample ID	TPC19	TPC30	TPC41
Depth	0.30	2.10-2.30	0.80-1.10
Other ID	1		
Sample Type	SOIL	SOIL	SOIL
Sampling Date	22-Mar-17	23-Mar-17	22-Mar-17
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.001	0.004	0.006
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.001	0.004	0.006
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	797.89	31.35	23.37
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	na	na
% Chrysotile bundles in sample		Mass %	0.001	0.004	0.006
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	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 17-95545-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1150242	TPF01 0.70 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150243	TPF01 2.00 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150244	TPF02 2.50 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150245	TPF04 4.00 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150246	TPF05 0.50 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150247	TPF06 2.50 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150248	TPF07 0.50-0.60 SOIL	17/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150249	TPF10 0.20-0.60 SOIL	16/03/17	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1150250	TPC08 4.10-5.40 SOIL	23/03/17	No containers logged		Cannot evaluate
1150251	TPC09 0.10-0.50 SOIL	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150252	TPC19 0.30 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150253	TPC19 0.70 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150254	TPC28 2.20 SOIL	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150255	TPC28 3.40 SOIL	24/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150256	TPC29 1.00 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150257	TPC30 1.50-2.00 SOIL	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150258	TPC30 2.10-2.30 SOIL	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150259	TPC38 1.60 SOIL	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150260	TPC40 0.70 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150261	TPC40 2.50 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150262	TPC41 0.80-1.10 SOIL	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150263	TPF01 2.00 LEACHATE	16/03/17	GJ 250ml, GJ 60ml, PT 1L		
1150264	TPF02 2.50 LEACHATE	16/03/17	GJ 250ml, GJ 60ml, PT 1L		
1150265	TPF06 2.50 LEACHATE	16/03/17	GJ 250ml, GJ 60ml, PT 1L		
1150266	TPC08 4.10-5.40 LEACHATE	23/03/17	No containers logged		Cannot evaluate
1150267	TPC28 2.20 LEACHATE	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150268	TPC38 1.60 LEACHATE	23/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1150269	TPC40 0.70 LEACHATE	22/03/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 17-96098-1

24-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-96098-1

Client Reference SLS 1015

Order No CH-1332

Contract Title SSI Redcar

Description 23 Soil samples, 10 Leachate samples.

Date Received Saturday, April 1, 2017

Date Started Saturday, April 1, 2017

Date Completed Monday, April 24, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-96098. 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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPC01	E1	1	1153085	11-Apr-17	Light grey gravelly, sandy CLAY
TPC05	E1	0.3	1153086	11-Apr-17	Dark brown gravelly, sandy CLAY including odd rootlets
TPC05	E2	0.3	1153087	11-Apr-17	White brown clayey, SAND including odd wood
TPC06	E1	1	1153088	11-Apr-17	Dark brown gravelly, sandy CLAY including odd rootlets (Made ground - plastic, glass, brick)
TPC10	E1	0.1	1153089	11-Apr-17	Dark brown gravelly, sandy CLAY including odd rootlets
TPC10	E2	4.5	1153090	11-Apr-17	Dark grey sandy CLAY petrol odour
TPC14	E1	0.5	1153091	11-Apr-17	Dark grey sandy CLAY
TPC15	E1	1	1153092	11-Apr-17	Dark brown gravelly SAND
TPC16	E1	3.1	1153093	11-Apr-17	Dark brown sandy, clayey GRAVEL including odd rootlets petrol odour (sample matrix outside MCERTS scope of accreditation)
TPC20	E1	0.4	1153094	11-Apr-17	Dark grey clayey SAND
TPC21	E1	0	1153095	11-Apr-17	Grey, clayey SAND including odd rootlets
TPC22	E2	4	1153096	11-Apr-17	Grey clayey SAND
TPC24	E2	2.6	1153097	11-Apr-17	Grey clayey SAND
TPC25	E1	3.8	1153098	11-Apr-17	Dark brown gravelly, sandy CLAY including odd rootlets (Made ground - plastic, brick, glass)
TPC26	E1	0.9	1153099	11-Apr-17	Dark brown gravelly SAND
TPC31	E2	3.2	1153100	11-Apr-17	Dark grey, clayey, gravelly SAND
TPC32	E2	3.8	1153101	11-Apr-17	Dark brown gravelly SAND
TPC33	E1	2	1153102	11-Apr-17	Dark grey gravelly, clayey SAND
TPC36	E1	1.1	1153103	11-Apr-17	Brown gravelly, sandy CLAY
TPC37	E1	0.3	1153104	11-Apr-17	Dark grey clayey SAND including odd rootlets
TPC37	E2	1.7	1153105	11-Apr-17	Dark grey clayey SAND
TPC37	E3	3.2	1153106	11-Apr-17	Black gravelly, sandy CLAY
TPC37	E4	3.3	1153107	11-Apr-17	Brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153085	1153086	1153087	1153088	1153089	1153090
Sample ID	TPC01	TPC05	TPC05	TPC06	TPC10	TPC10
Depth	1.00	0.30	0.30	1.00	0.10	4.50
Other ID	E1	E1	E2	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	28-Mar-17	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0			Y		Y	Y	
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.1	13	5.1	10	1.3	3.7
Arsenic	DETSC 2301#	0.2	mg/kg	2.3	9.6	12	15	10	65
Barium	DETSC 2301#	1.5	mg/kg	41	310	37	280	260	390
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	1.5	0.5	1.1	1.1	2.0
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	13	2.2	< 0.2	1.9	2.4	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	6.7	10	12	0.4	1.2
Chromium	DETSC 2301#	0.15	mg/kg	16	180	14	230	49	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	4.7	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	700	140	220	52	79
Lead	DETSC 2301#	0.3	mg/kg	10	100	35	170	28	80
Mercury	DETSC 2325#	0.05	mg/kg	0.08	2.1	1.6	3.9	0.65	0.09
Molybdenum	DETSC 2301#	0.4	mg/kg	2.4	3.4	3.6	12	1.1	2.8
Nickel	DETSC 2301#	1	mg/kg	9.0	37	13	94	31	35
Vanadium	DETSC 2301	0.8	mg/kg	32	48	29	61	80	110
Zinc	DETSC 2301#	1	mg/kg	19	380	6600	610	130	150
Inorganics									
pH	DETSC 2008#			12.6	9.3	11.0	10.3	9.3	10.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	2.5	0.4	1.0	2.5	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.4	< 0.1	< 0.1	1.2	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	2.1	0.4	1.0	1.4	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.8	0.8	0.7	3.7	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.6	7.9	< 0.1	6.7	20	U/S
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	180	650	120	100	300
Sulphur as S, Total	DETSC 2320	0.01	%				0.08		
Sulphate as SO4, Total	DETSC 2321#	0.01	%				0.18		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	11
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.02	< 0.01	0.06	7.5
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	12
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	36	2.2	110	4.3
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	29	2.0	68	14
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	180	17	120	23
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	6.5	< 3.4	1100	170	220	57
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	1400	190	530	130
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.04	7.5
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.21	< 0.01	0.13	23
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.22	< 0.01	0.69	87
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	4.9	< 0.9	3900	330
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	5.1	< 0.5	2100	270
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	28	2.7	2500	160

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153085	1153086	1153087	1153088	1153089	1153090
Sample ID	TPC01	TPC05	TPC05	TPC06	TPC10	TPC10
Depth	1.00	0.30	0.30	1.00	0.10	4.50
Other ID	E1	E1	E2	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	28-Mar-17	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	180	23	5600	280
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	220	26	14000	1200
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	1600	220	15000	1300
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.30	< 0.03	1.3	290
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	1.1	< 0.03	< 0.30	19
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	5.8	< 0.03	< 0.30	9.6
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	7.1	< 0.03	< 0.30	14
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.04	0.07	29	0.07	< 0.30	22
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.06	1.8	< 0.03	< 0.30	4.5
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.25	4.7	0.13	< 0.30	1.4
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.32	9.7	0.12	< 0.30	3.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.74	7.9	0.11	< 0.30	1.2
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.79	22	0.12	< 0.30	2.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.75	6.2	0.44	0.46	0.66
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.75	1.0	0.82	< 0.30	< 0.30
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.56	0.44	0.17	< 0.30	0.95
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.66	0.46	0.14	< 0.30	< 0.30
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.72	0.93	0.07	< 0.30	< 0.30
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.71	0.46	0.18	< 0.30	< 0.30
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	6.4	< 83.56	2.4	1.8	360
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	200	3.8	51	18	2.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153091	1153092	1153093	1153094	1153096	1153097
Sample ID	TPC14	TPC15	TPC16	TPC20	TPC22	TPC24
Depth	0.50	1.00	3.10	0.40	4.00	2.60
Other ID	E1	E1	E1	E1	E2	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	28-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0					Y		Y
Metals									
Antimony	DETSC 2301*	1	mg/kg	7.3	1.4	1.5	4.2	3.9	
Arsenic	DETSC 2301#	0.2	mg/kg	110	9.8	10	69	74	62
Barium	DETSC 2301#	1.5	mg/kg	460	680	330	420	900	
Beryllium	DETSC 2301#	0.2	mg/kg	3.3	3.9	2.3	2.8	2.0	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	10	6.8	4.3	2.5	3.0	6.9
Cadmium	DETSC 2301#	0.1	mg/kg	2.8	0.1	0.4	1.0	1.1	0.8
Chromium	DETSC 2301#	0.15	mg/kg	73	68	63	34	33	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	190	120	98	110	100	89
Lead	DETSC 2301#	0.3	mg/kg	170	17	30	88	86	71
Mercury	DETSC 2325#	0.05	mg/kg	0.67	0.08	0.85	0.35	0.12	0.14
Molybdenum	DETSC 2301#	0.4	mg/kg	6.5	3.2	1.8	2.1	3.0	
Nickel	DETSC 2301#	1	mg/kg	68	66	47	51	46	40
Vanadium	DETSC 2301	0.8	mg/kg	230	190	110	140	220	
Zinc	DETSC 2301#	1	mg/kg	290	67	91	190	150	120
Inorganics									
pH	DETSC 2008#			9.9	10.8	8.4	8.7	8.7	9.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.4	6.7	0.2	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.3	2.1	0.1	< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	4.6	< 0.2	< 0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	16	< 0.6	< 0.6	
Organic matter	DETSC 2002#	0.1	%	12	3.3	21	5.3	3.6	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	710	180	120	47	660	510
Sulphur as S, Total	DETSC 2320	0.01	%	0.17		0.11	0.02	0.14	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.61		0.13	0.05	0.42	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	11	< 0.01	< 0.01	0.17	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	16	< 0.01	< 0.01	2.6	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	23	< 0.01	< 0.01	2.2	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	14	< 1.5	< 1.5	80	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	57	< 1.2	< 1.2	62	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	88	< 1.5	< 1.5	170	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	190	< 3.4	< 3.4	410	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	400	< 10	< 10	720	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.55	0.10	< 0.01	11	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	8.3	0.04	< 0.01	18	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	100	0.10	< 0.01	29	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	1400	29	< 0.9	2200	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1600	25	< 0.5	1200	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1100	15	< 0.6	1300	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153091	1153092	1153093	1153094	1153096	1153097
Sample ID	TPC14	TPC15	TPC16	TPC20	TPC22	TPC24
Depth	0.50	1.00	3.10	0.40	4.00	2.60
Other ID	E1	E1	E1	E1	E2	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	28-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	2000	35	< 1.4	4300	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	6200	100	< 10	9000	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	6600	100	< 10	9800	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	580	5.2	0.20	2200	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	49	0.16	< 0.03	62	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	26	0.10	< 0.03	75	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	40	0.08	< 0.03	83	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	77	0.08	< 0.03	280	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	16	< 0.03	< 0.03	32	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.7	< 0.03	< 0.03	37	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	14	< 0.03	< 0.03	67	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	6.4	< 0.03	< 0.03	56	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	12	< 0.03	< 0.03	110	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	4.7	< 0.03	< 0.03	63	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	< 0.03	< 0.03	7.9	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.86	< 0.03	< 0.03	2.2	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.30	< 0.03	< 0.03	1.5	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.30	< 0.03	< 0.03	3.2	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.30	< 0.03	< 0.03	0.91	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	830	5.6	0.20	3000	< 0.10	< 0.10
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	20	3.5	87	2.6	5.0	1.8

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153098	1153099	1153100	1153101	1153102	1153103
Sample ID	TPC25	TPC26	TPC31	TPC32	TPC33	TPC36
Depth	3.80	0.90	3.20	3.80	2.00	1.10
Other ID	E1	E1	E2	E2	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	27-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	28-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0							
Metals									
Antimony	DETSC 2301*	1	mg/kg			1.3			4.9
Arsenic	DETSC 2301#	0.2	mg/kg		39	9.7		5.5	84
Barium	DETSC 2301#	1.5	mg/kg			910			960
Beryllium	DETSC 2301#	0.2	mg/kg			3.4			2.8
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		15	1.6		24	9.7
Cadmium	DETSC 2301#	0.1	mg/kg		0.6	0.1		< 0.1	1.4
Chromium	DETSC 2301#	0.15	mg/kg		23	55		70	42
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg		140	110		120	130
Lead	DETSC 2301#	0.3	mg/kg		41	15		10	100
Mercury	DETSC 2325#	0.05	mg/kg		0.07	< 0.05		< 0.05	0.26
Molybdenum	DETSC 2301#	0.4	mg/kg			2.9			4.2
Nickel	DETSC 2301#	1	mg/kg		48	60		70	51
Vanadium	DETSC 2301	0.8	mg/kg			160			170
Zinc	DETSC 2301#	1	mg/kg		120	66		49	220
Inorganics									
pH	DETSC 2008#			9.5	10.8	9.2	10.5	10.2	10.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1	< 0.1		< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg			< 0.1			< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg			< 0.2			< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg			< 0.6			< 0.6
Organic matter	DETSC 2002#	0.1	%		3.2	< 0.1		1.1	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	560	290	61	360	150	630
Sulphur as S, Total	DETSC 2320	0.01	%	0.12	0.11		0.09		0.11
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.31	0.27		0.30		0.40
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	< 0.01		< 0.01	< 0.01
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

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153098	1153099	1153100	1153101	1153102	1153103
Sample ID	TPC25	TPC26	TPC31	TPC32	TPC33	TPC36
Depth	3.80	0.90	3.20	3.80	2.00	1.10
Other ID	E1	E1	E2	E2	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	27-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	28-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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 Total	DETSC 3072*	10	mg/kg		< 10	< 10		< 10	< 10
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		< 0.03	< 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		< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		< 0.03	< 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
Indeno(1,2,3-c,d)pyrene	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
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		< 0.10	< 0.10		< 0.10	< 0.10
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		1.3	1.9		1.1	2.7

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153104	1153105	1153106	1153107
Sample ID	TPC37	TPC37	TPC37	TPC37
Depth	0.30	1.70	3.20	3.30
Other ID	E1	E2	E3	E4
Sample Type	ES	ES	ES	ES
Sampling Date	27-Mar-17	27-Mar-17	27-Mar-17	27-Mar-17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0					
Metals							
Antimony	DETSC 2301*	1	mg/kg		4.8	2.3	2.3
Arsenic	DETSC 2301#	0.2	mg/kg	20	88	45	48
Barium	DETSC 2301#	1.5	mg/kg		300	210	240
Beryllium	DETSC 2301#	0.2	mg/kg		3.0	1.2	1.7
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	7.1	5.1	11	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	1.2	0.5	0.8
Chromium	DETSC 2301#	0.15	mg/kg	650	39	29	31
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	51	130	68	67
Lead	DETSC 2301#	0.3	mg/kg	28	100	29	58
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.27	0.07	0.13
Molybdenum	DETSC 2301#	0.4	mg/kg		2.0	2.8	15
Nickel	DETSC 2301#	1	mg/kg	29	64	35	35
Vanadium	DETSC 2301	0.8	mg/kg		160	92	120
Zinc	DETSC 2301#	1	mg/kg	74	200	88	140
Inorganics							
pH	DETSC 2008#			10.3	9.8	9.3	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		< 0.2	< 0.2	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6	0.8	1.2
Organic matter	DETSC 2002#	0.1	%	1.5	1.4	2.2	1.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	150	340	340
Sulphur as S, Total	DETSC 2320	0.01	%				
Sulphate as SO4, Total	DETSC 2321#	0.01	%				
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	0.02	< 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	0.05	0.23	0.01
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

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153104	1153105	1153106	1153107
Sample ID	TPC37	TPC37	TPC37	TPC37
Depth	0.30	1.70	3.20	3.30
Other ID	E1	E2	E3	E4
Sample Type	ES	ES	ES	ES
Sampling Date	27-Mar-17	27-Mar-17	27-Mar-17	27-Mar-17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	2.0	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
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	< 0.03	< 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	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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
Indeno(1,2,3-c,d)pyrene	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
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
PCBs							
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg			< 0.01	< 0.01
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.9	1.0	1.1	1.2

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153086	1153087	1153088	1153089	1153090	1153091	1153092
Sample ID	TPC05	TPC05	TPC06	TPC10	TPC10	TPC14	TPC15
Depth	0.30	0.30	1.00	0.10	4.50	0.50	1.00
Other ID	E1	E2	E1	E1	E2	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17
Sampling Time	n/s	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	0.05	< 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	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 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	0.02	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 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	0.02	1.1	0.14	0.10
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 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	0.02	< 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	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	0.04	< 0.01	< 0.01	0.06	7.8	0.84	1.5
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	0.02	< 0.01	< 0.01	0.02	5.2	1.3	0.65
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.08	22	5.7	2.7
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.05	12	3.5	1.8
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.04	12	4.5	1.6
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 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	0.23	0.15	0.02
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.01	2.0	1.6	0.11
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	0.08	10	4.9	0.45
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	0.04	< 0.01	< 0.01	0.16	34	22	2.9

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153086	1153087	1153088	1153089	1153090	1153091	1153092
Sample ID	TPC05	TPC05	TPC06	TPC10	TPC10	TPC14	TPC15
Depth	0.30	0.30	1.00	0.10	4.50	0.50	1.00
Other ID	E1	E2	E1	E1	E2	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17
Sampling Time	n/s	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	0.07	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 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	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.03	< 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	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg							
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs										
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	1.1	< 0.1	19	0.5	< 1.0	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	4.2	< 0.1	< 1.0	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	3.7	< 0.1	10	< 0.1	< 1.0	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	8.4	< 0.1	49	0.5	< 1.0	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	46	< 0.1	33	< 0.1	< 1.0	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.6	< 0.1	< 1.0	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	3.3	< 0.1	13	< 0.1	< 1.0	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	71	< 0.1	220	120	240	14
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 1.0	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg							
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg							
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	22	< 0.1	8.9	< 0.1	< 1.0	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Fluorene	DETSC 3433	0.1	mg/kg							

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153086	1153087	1153088	1153089	1153090	1153091	1153092
Sample ID	TPC05	TPC05	TPC06	TPC10	TPC10	TPC14	TPC15
Depth	0.30	0.30	1.00	0.10	4.50	0.50	1.00
Other ID	E1	E2	E1	E1	E2	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg							
Anthracene	DETSC 3433	0.1	mg/kg							
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	0.2	15	3.1	1.8	0.4	4.5	0.3
Fluoranthene	DETSC 3433	0.1	mg/kg							
Pyrene	DETSC 3433	0.1	mg/kg							
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg							
Chrysene	DETSC 3433	0.1	mg/kg							
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.7	0.3
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg							
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg							
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg							
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg							
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg							
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg							
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	7.6	< 0.1	< 0.1	21	< 1.0	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	1.7	< 0.1	29	< 0.1	< 1.0	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	19	< 0.1	6.7	0.4	< 1.0	0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153094	1153095	1153096	1153105	1153106	1153107
Sample ID	TPC20	TPC21	TPC22	TPC37	TPC37	TPC37
Depth	0.40	0.00	4.00	1.70	3.20	3.30
Other ID	E1	E1	E2	E2	E3	E4
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	29-Mar-17	29-Mar-17	27-Mar-17	27-Mar-17	27-Mar-17
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	0.04	< 0.01	< 0.01	0.01	0.02
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	4.5	0.61	< 0.01	0.04	0.07	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.19	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	0.29	0.37	< 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	41	0.73	0.13	< 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	0.03	< 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	6.1	0.11	0.06	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	110	0.31	0.18	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	14	0.16	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	17	0.14	0.12	< 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	0.10	< 0.01	< 0.01	0.27	0.72	0.09
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	1.2	< 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	3.6	< 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	13	< 0.10	0.30	0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153094	1153095	1153096	1153105	1153106	1153107
Sample ID	TPC20	TPC21	TPC22	TPC37	TPC37	TPC37
Depth	0.40	0.00	4.00	1.70	3.20	3.30
Other ID	E1	E1	E2	E2	E3	E4
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	29-Mar-17	29-Mar-17	27-Mar-17	27-Mar-17	27-Mar-17
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
Naphthalene	DETSC 3431	0.01	mg/kg		5.3				
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	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	18	< 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	4.6	< 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	6.6	< 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	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	19	< 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	260	< 0.1	< 0.1	< 0.1	< 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
Acenaphthylene	DETSC 3433	0.1	mg/kg		< 0.1				
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg		< 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	8.1	< 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
Fluorene	DETSC 3433	0.1	mg/kg		< 0.1				

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153094	1153095	1153096	1153105	1153106	1153107
Sample ID	TPC20	TPC21	TPC22	TPC37	TPC37	TPC37
Depth	0.40	0.00	4.00	1.70	3.20	3.30
Other ID	E1	E1	E2	E2	E3	E4
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	29-Mar-17	29-Mar-17	29-Mar-17	27-Mar-17	27-Mar-17	27-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg		< 0.1				
Anthracene	DETSC 3433	0.1	mg/kg		< 0.1				
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1				
Pyrene	DETSC 3433	0.1	mg/kg		< 0.1				
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg		< 0.1				
Chrysene	DETSC 3433	0.1	mg/kg		< 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
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1				
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1				
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg		< 0.1				
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg		< 0.1				
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg		< 0.1				
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg		< 0.1				
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	31	< 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	6.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153108	1153109	1153110	1153111	1153112	1153113
Sample ID	TPC05	TPC06	TPC10	TPC15	TPC16	TPC24
Depth	0.30	1.00	0.10	1.00	3.10	2.60
Other ID	E2	E1	E1	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17	29-Mar-17	28-Mar-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Leachate 2:1 250g Non-WAC	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.77	0.47	2.3	29	20	52
Barium, Dissolved	DETS 2306	0.26	ug/l	81	21	4.8	27	22	
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Boron	DETS 2123	100	ug/l	< 100	< 100	110	240	220	310
Cadmium, Dissolved	DETS 2306	0.03	ug/l	0.56	0.10	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	< 0.25	8.3	4.4	0.65	1.4	0.48
Copper, Dissolved	DETS 2306	0.4	ug/l	0.8	8.8	15	2.1	2.3	1.5
Iron, Dissolved	DETS 2306	5.5	ug/l	31	91	2400	21	6.1	
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	0.21	1.0	< 0.09	< 0.09	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	62	17	15	1.2	0.55	
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	0.03	0.03	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	6.5	4.2	9.3	0.7	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.31	1.5	1.0	38	10	31
Vanadium, Dissolved	DETS 2306	0.6	ug/l	< 0.6	< 0.6	4.6	42	5.2	
Zinc, Dissolved	DETS 2306	1.3	ug/l	4800	8.8	3.9	2.1	< 1.3	6.2
Inorganics									
pH	DETS 2008			6.7	7.4	7.7	10.0	10.2	10.1
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	0.90	0.46	0.68	0.46	0.067	
Chloride	DETS 2055	0.1	mg/l	2.2	5.1	6.4	8.1	1.7	

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153114	1153115	1153116	1153117
Sample ID	TPC31	TPC33	TPC37	TPC37
Depth	3.20	2.00	1.70	3.20
Other ID	E2	E1	E2	E3
Sample Type	ES	ES	ES	ES
Sampling Date	28-Mar-17	29-Mar-17	27-Mar-17	27-Mar-17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Leachate 2:1 250g Non-WAC	DETS 036*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETS 2306	0.16	ug/l	10	34	4.0	1.6
Barium, Dissolved	DETS 2306	0.26	ug/l	35		58	27
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1		< 0.1	< 0.1
Boron	DETS 2123	100	ug/l	5400	750	740	500
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	0.29	9.0	< 0.25	0.34
Copper, Dissolved	DETS 2306	0.4	ug/l	1.0	1.6	1.1	1.6
Iron, Dissolved	DETS 2306	5.5	ug/l	< 5.5		< 5.5	740
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	0.51
Manganese, Dissolved	DETS 2306	0.22	ug/l	2.2		20	35
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	0.6	1.0
Selenium, Dissolved	DETS 2306	0.25	ug/l	27	28	2.2	0.49
Vanadium, Dissolved	DETS 2306	0.6	ug/l	28		1.6	0.6
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	1.6	2.2	1.8
Inorganics							
pH	DETS 2008			9.7	9.3	7.7	7.5
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	0.69		4.2	3.6
Chloride	DETS 2055	0.1	mg/l	8.7		25	17

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-96098-1
 Client Ref SLS 1015
 Contract Title SSI Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1153085	TPC01 E1 1.00	SOIL	NAD	none	Steven Lambert
1153086	TPC05 E1 0.30	SOIL	Amosite	Small bundle of Amosite	Steven Lambert
1153087	TPC05 E2 0.30	SOIL	NAD	none	Steven Lambert
1153088	TPC06 E1 1.00	SOIL	Amosite Chrysotile	Microscopic loose fibrous asbestos debris & Bundles of Chrysotile and Amosite	Steven Lambert
1153089	TPC10 E1 0.10	SOIL	Amosite Chrysotile	bundle of Amosite & bundle of Chrysotile	Steven Lambert
1153090	TPC10 E2 4.50	SOIL	NAD	none	Steven Lambert
1153091	TPC14 E1 0.50	SOIL	NAD	none	Steven Lambert
1153092	TPC15 E1 1.00	SOIL	NAD	none	Steven Lambert
1153093	TPC16 E1 3.10	SOIL	NAD	none	Steven Lambert
1153094	TPC20 E1 0.40	SOIL	Chrysotile	Bundles of Chrysotile	Steven Lambert
1153096	TPC22 E2 4.00	SOIL	NAD	none	Steven Lambert
1153097	TPC24 E2 2.60	SOIL	Amosite	Small bundle of Amosite	Steven Lambert
1153099	TPC26 E1 0.90	SOIL	NAD	none	Steven Lambert
1153100	TPC31 E2 3.20	SOIL	NAD	none	Steven Lambert
1153102	TPC33 E1 2.00	SOIL	NAD	none	Steven Lambert
1153103	TPC36 E1 1.10	SOIL	NAD	none	Steven Lambert
1153104	TPC37 E1 0.30	SOIL	NAD	none	Steven Lambert
1153105	TPC37 E2 1.70	SOIL	NAD	none	Steven Lambert
1153106	TPC37 E3 3.20	SOIL	NAD	none	Steven Lambert
1153107	TPC37 E4 3.30	SOIL	NAD	none	Steven Lambert

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 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153086	1153088	1153089	1153094
Sample ID	TPC05	TPC06	TPC10	TPC20
Depth	0.30	1.00	0.10	0.40
Other ID	E1	E1	E1	E1
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	28-Mar-17	28-Mar-17	29-Mar-17	29-Mar-17
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003	0.086	0.004	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.039	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003	0.047	0.004	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	7.20	12.48	5.33	7.54
ACMs present*		type		LFAD		
Mass of ACM in sample		g		0.01		
% ACM by mass		%		0.05		
% asbestos in ACM		%		85		
% asbestos in sample		%		0.039		
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	0.003	0.011	0.002	na
% Chrysotile bundles in sample		Mass %	na	0.036	0.002	0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	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

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 17-96098-1

Client Ref SLS 1015

Contract Title SSI Redcar

Lab No	1153097
Sample ID	TPC24
Depth	2.60
Other ID	E2
Sample Type	SOIL
Sampling Date	28-Mar-17
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003
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	3.17
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 %	0.003
% Chrysotile bundles in sample		Mass %	na
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-96098-1

Client Ref SLS 1015

Contract SSI Redcar

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1153085	TPC01 1.00 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153086	TPC05 0.30 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153087	TPC05 0.30 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153088	TPC06 1.00 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153089	TPC10 0.10 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153090	TPC10 4.50 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153091	TPC14 0.50 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153092	TPC15 1.00 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153093	TPC16 3.10 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153094	TPC20 0.40 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153095	TPC21 0.00 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153096	TPC22 4.00 SOIL	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153097	TPC24 2.60 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153098	TPC25 3.80 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153099	TPC26 0.90 SOIL	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153100	TPC31 3.20 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153101	TPC32 3.80 SOIL	29/03/17	GJ 60ml, PB to 250ml x2, PT 1L		
1153102	TPC33 2.00 SOIL	29/03/17	GJ 60ml, PB to 250ml x2, PT 1L		
1153103	TPC36 1.10 SOIL	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153104	TPC37 0.30 SOIL	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153105	TPC37 1.70 SOIL	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153106	TPC37 3.20 SOIL	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153107	TPC37 3.30 SOIL	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153108	TPC05 0.30 LEACHATE	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153109	TPC06 1.00 LEACHATE	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153110	TPC10 0.10 LEACHATE	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153111	TPC15 1.00 LEACHATE	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153112	TPC16 3.10 LEACHATE	29/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153113	TPC24 2.60 LEACHATE	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153114	TPC31 3.20 LEACHATE	28/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153115	TPC33 2.00 LEACHATE	29/03/17	GJ 60ml, PB to 250ml x2, PT 1L		
1153116	TPC37 1.70 LEACHATE	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		
1153117	TPC37 3.20 LEACHATE	27/03/17	GJ 250ml x2, GJ 60ml, PT 1L		

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

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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-96098-1

Client Ref SLS 1015

Contract SSI Redcar

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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-96291

13-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-96291

Client Reference SLS1015

Order No (not supplied)

Contract Title Redcar Site

Description 1 Soil sample, 1 Leachate sample.

Date Received 04-Apr-17

Date Started 04-Apr-17

Date Completed 13-Apr-17

Test Procedures Identified by prefix DETSn (details on request).

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



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-96291

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1154663
Sample ID	TPC18
Depth	3.00
Other ID	E1
Sample Type	ES
Sampling Date	23/03/17
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Antimony	DETSC 2301*	1	mg/kg	2.7
Arsenic	DETSC 2301#	0.2	mg/kg	49
Barium	DETSC 2301#	1.5	mg/kg	520
Beryllium	DETSC 2301#	0.2	mg/kg	1.8
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	12
Cadmium	DETSC 2301#	0.1	mg/kg	0.7
Chromium	DETSC 2301#	0.15	mg/kg	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	140
Lead	DETSC 2301#	0.3	mg/kg	50
Mercury	DETSC 2325#	0.05	mg/kg	0.08
Molybdenum	DETSC 2301#	0.4	mg/kg	4.7
Nickel	DETSC 2301#	1	mg/kg	57
Vanadium	DETSC 2301	0.8	mg/kg	110
Zinc	DETSC 2301#	1	mg/kg	140
Inorganics				
pH	DETSC 2008#			9.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	510
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96291

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1154663
Sample ID	TPC18
Depth	3.00
Other ID	E1
Sample Type	ES
Sampling Date	23/03/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-96291

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1154664
Sample ID	TPC18
Depth	3.00
Other ID	E1
Sample Type	ES
Sampling Date	23/03/17
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 10:1	DETS 036*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.2
Barium, Dissolved	DETSC 2306	0.26	ug/l	35
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron	DETSC 2123	100	ug/l	280
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.2
Copper, Dissolved	DETSC 2306	0.4	ug/l	7.1
Iron, Dissolved	DETSC 2306	5.5	ug/l	250
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.6
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.90
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.75
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.8
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.5
Inorganics				
pH	DETSC 2008			8.9
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.18
Chloride	DETSC 2055	0.1	mg/l	3.8

Summary of Asbestos Analysis Soil Samples

Our Ref 17-96291

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1154663	TPC18 E1 3.00	SOIL	NAD	none	Jeff Cruddas

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 17-96291
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
1154663	TPC18 3.00 SOIL	23/03/17		GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1154664	TPC18 3.00 LEACHATE	23/03/17		GJ 250ml x2, GJ 60ml, PT 1L		

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

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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 17-96515-1

24-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-96515-1

Client Reference (not supplied)

Order No CH-1332

Contract Title Redcar Site

Description 12 Soil samples, 5 Leachate samples.

Date Received 06-Apr-17

Date Started 06-Apr-17

Date Completed 24-Apr-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-96515. 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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155753	1155754	1155755	1155756	1155757	1155758	1155759
Sample ID	TPD44	TPD43	TPD43	TPD41	TPD40	TPD38	TPD38
Depth	0.70-0.90	0.50	1.10	1.40	1.00	0.50	1.80
Other ID	E3	E1	E2	E3	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	03/04/17	03/04/17	03/04/17	04/04/17	04/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0				Y	Y			
Metals										
Antimony	DETSC 2301*	1	mg/kg	< 1.0	1.2	1.9		1.0		
Arsenic	DETSC 2301#	0.2	mg/kg	92	99	23	15	80	82	87
Barium	DETSC 2301#	1.5	mg/kg	410	770	400		270		
Beryllium	DETSC 2301#	0.2	mg/kg	5.6	5.0	2.6		4.8		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.8	3.4	5.1	13	5.5	5.5	12
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4	0.4	0.6	1.4	1.5	2.7
Chromium	DETSC 2301#	0.15	mg/kg	63	65	48	50	65	49	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	15	19	44	270	49	60	62
Lead	DETSC 2301#	0.3	mg/kg	48	47	35	62	90	140	110
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.18	1.9	0.30	0.35	0.42
Molybdenum	DETSC 2301#	0.4	mg/kg	3.6	2.8	1.7		2.8		
Nickel	DETSC 2301#	1	mg/kg	23	26	28	28	21	24	28
Vanadium	DETSC 2301	0.8	mg/kg	210	210	130		210		
Zinc	DETSC 2301#	1	mg/kg	220	250	330	170	520	860	1100
Inorganics										
pH	DETSC 2008#			9.7	9.3	9.1	8.9	10.0	9.2	9.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	4.9	0.4	0.3	0.6	0.5	0.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.5	4.9	0.4		0.6		
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	0.7	1.1		< 0.6		
Organic matter	DETSC 2002#	0.1	%	1.8	4.4	1.9	2.3	1.7	5.6	5.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1800	340	710	970	1600	1900	2200
Sulphur as S, Total	DETSC 2320	0.01	%	0.55	0.30	0.50	0.41		0.86	0.93
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.78	0.42	0.46	0.43		1.4	1.3
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	2.6	< 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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	15	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	60	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	8.0	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	86	< 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	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	0.97	0.10	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	3.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	49	3.1	< 0.6	< 0.6	< 0.6	6.5	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155753	1155754	1155755	1155756	1155757	1155758	1155759
Sample ID	TPD44	TPD43	TPD43	TPD41	TPD40	TPD38	TPD38
Depth	0.70-0.90	0.50	1.10	1.40	1.00	0.50	1.80
Other ID	E3	E1	E2	E3	E1	E1	E2
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	03/04/17	03/04/17	03/04/17	04/04/17	04/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	9.5	12	< 1.4	< 1.4	< 1.4	9.8	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	63	16	< 10	< 10	< 10	16	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	150	16	< 10	< 10	< 10	16	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.57	1.6	0.06	0.33	0.15	1.8	0.39
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.21	0.29	< 0.03	< 0.03	< 0.03	1.6	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.64	0.43	< 0.03	0.06	< 0.03	0.45	0.04
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.29	< 0.03	0.07	0.04	2.6	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.27	1.3	0.05	0.14	0.31	9.9	0.40
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.41	< 0.03	0.04	0.06	3.3	0.12
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.28	1.9	0.09	0.09	0.39	10	0.55
Pyrene	DETSC 3303#	0.03	mg/kg	0.21	1.7	0.08	0.09	0.32	6.5	0.41
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.93	< 0.03	< 0.03	0.15	2.6	0.17
Chrysene	DETSC 3303	0.03	mg/kg	0.10	0.96	0.04	< 0.03	0.20	2.4	0.19
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.97	0.04	< 0.03	0.17	2.2	0.17
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.37	< 0.03	< 0.03	0.07	0.89	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.69	< 0.03	< 0.03	0.08	1.4	0.09
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.30	< 0.03	< 0.03	0.05	0.55	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	< 0.03	< 0.03	< 0.03	0.20	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.09	0.46	< 0.03	< 0.03	0.06	0.59	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.9	13	0.36	0.81	2.0	47	2.8
PCBs										
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01						
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01						
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.5	< 0.3	< 0.3	< 0.3	< 0.3	0.8

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155760	1155762	1155763	1155767
Sample ID	TPD37	TPD35	TPD35	TPD39
Depth	0.90	0.00-0.20	1.80-1.90	0.70-0.85
Other ID	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES
Sampling Date	04/04/17	05/04/17	05/04/17	03/04/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0					
Metals							
Antimony	DETSC 2301*	1	mg/kg			2.3	
Arsenic	DETSC 2301#	0.2	mg/kg	16	51	22	27
Barium	DETSC 2301#	1.5	mg/kg			230	
Beryllium	DETSC 2301#	0.2	mg/kg			1.2	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	7.9	5.5	5.5	6.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.2	0.8	1.0
Chromium	DETSC 2301#	0.15	mg/kg	18	47	40	40
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	43	20	100	88
Lead	DETSC 2301#	0.3	mg/kg	110	38	210	280
Mercury	DETSC 2325#	0.05	mg/kg	0.77	0.10	1.2	1.3
Molybdenum	DETSC 2301#	0.4	mg/kg			1.6	
Nickel	DETSC 2301#	1	mg/kg	8.2	21	30	30
Vanadium	DETSC 2301	0.8	mg/kg			59	
Zinc	DETSC 2301#	1	mg/kg	230	110	330	400
Inorganics							
pH	DETSC 2008#			9.2	9.7	7.8	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	0.3	0.2	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg			< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg			0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg			< 0.6	
Organic matter	DETSC 2002#	0.1	%	2.8	2.0	7.3	8.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1300	1500	1700	1800
Sulphur as S, Total	DETSC 2320	0.01	%				
Sulphate as SO4, Total	DETSC 2321#	0.01	%				
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	12
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	27
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	39
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	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	1.7	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	7.8	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.2	48	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155760	1155762	1155763	1155767
Sample ID	TPD37	TPD35	TPD35	TPD39
Depth	0.90	0.00-0.20	1.80-1.90	0.70-0.85
Other ID	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES
Sampling Date	04/04/17	05/04/17	05/04/17	03/04/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	99	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	160	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	160	< 10	39
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	1.1	11	0.25	0.41
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.14	3.5	< 0.03	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.26	2.4	0.09	0.12
Fluorene	DETSC 3303	0.03	mg/kg	0.36	4.2	0.16	0.15
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.3	19	0.66	0.61
Anthracene	DETSC 3303	0.03	mg/kg	0.32	6.1	0.16	0.25
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	27	0.56	0.69
Pyrene	DETSC 3303#	0.03	mg/kg	0.86	20	0.44	0.92
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.27	12	0.16	0.18
Chrysene	DETSC 3303	0.03	mg/kg	0.28	11	0.16	0.21
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.22	15	0.13	0.19
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	5.5	0.04	0.07
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.13	9.6	0.09	0.11
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.06	4.6	0.04	0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.7	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	5.1	0.06	0.07
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.7	160	3.0	4.1
PCBs							
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				
PCB 52	DETSC 3401#	0.01	mg/kg				
PCB 101	DETSC 3401#	0.01	mg/kg				
PCB 118	DETSC 3401#	0.01	mg/kg				
PCB 153	DETSC 3401#	0.01	mg/kg				
PCB 138	DETSC 3401#	0.01	mg/kg				
PCB 180	DETSC 3401#	0.01	mg/kg				
PCB 7 Total	DETSC 3401#	0.01	mg/kg				
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155753	1155755	1155761	1155763
Sample ID	TPD44	TPD43	TPD36	TPD35
Depth	0.70-0.90	1.10	1.40	1.80-1.90
Other ID	E3	E2	E1	E2
Sample Type	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	05/04/17	05/04/17
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	0.10	0.04	< 0.01	0.04
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	0.06	< 0.01	0.04	0.01
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	< 0.01	0.05	0.08
m+p-Xylene	DETSC 3431	0.01	mg/kg	0.03	< 0.01	0.01	0.01
o-Xylene	DETSC 3431	0.01	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.02	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.01	0.06
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	< 0.01	< 0.01	< 0.01
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	< 0.01	< 0.01	< 0.01
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	< 0.01	< 0.01	0.02

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155753	1155755	1155761	1155763
Sample ID	TPD44	TPD43	TPD36	TPD35
Depth	0.70-0.90	1.10	1.40	1.80-1.90
Other ID	E3	E2	E1	E2
Sample Type	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	05/04/17	05/04/17
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	< 0.01	< 0.01
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	< 0.01
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	0.02
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg			0.07	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	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	0.7	< 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
Acenaphthylene	DETSC 3433	0.1	mg/kg			< 0.1	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg			< 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	0.2	< 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
Fluorene	DETSC 3433	0.1	mg/kg			< 0.1	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155753	1155755	1155761	1155763
Sample ID	TPD44	TPD43	TPD36	TPD35
Depth	0.70-0.90	1.10	1.40	1.80-1.90
Other ID	E3	E2	E1	E2
Sample Type	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	05/04/17	05/04/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg			< 0.1	
Anthracene	DETSC 3433	0.1	mg/kg			< 0.1	
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg			< 0.1	
Pyrene	DETSC 3433	0.1	mg/kg			< 0.1	
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg			< 0.1	
Chrysene	DETSC 3433	0.1	mg/kg			< 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
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg			< 0.1	
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg			< 0.1	
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg			< 0.1	
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg			< 0.1	
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg			< 0.1	
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg			< 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 Chemical Analysis

Leachate Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155764	1155765	1155766	1157592	1157593
Sample ID	TPD44	TPD43	TPD35	TPD35	TPD41
Depth	0.70-0.90	0.50	1.80-1.90	0.00-0.20	1.40
Other ID	E3	E1	E2	E1	E3
Sample Type	ES	ES	ES	ES	ES
Sampling Date	03/04/17	03/04/17	05/04/17	05/04/17	03/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETS 2306	0.16	ug/l	3.2	3.7	1.3	0.52	1.7
Barium, Dissolved	DETS 2306	0.26	ug/l	26	4.7	3.3		
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1		
Boron	DETS 2123	100	ug/l	< 100	< 100	< 100	< 100	360
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	< 0.25	< 0.25	0.63	< 0.25	< 0.25
Copper, Dissolved	DETS 2306	0.4	ug/l	0.5	1.2	1.1	< 0.4	< 0.4
Iron, Dissolved	DETS 2306	5.5	ug/l	11	120	150		
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	0.83	0.38	0.24	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	200	17	6.1		
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	0.8	0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.53	0.91	1.2	< 0.25	< 0.25
Vanadium, Dissolved	DETS 2306	0.6	ug/l	< 0.6	4.2	6.8		
Zinc, Dissolved	DETS 2306	1.3	ug/l	3.9	1.5	< 1.3	3.8	1.6
Inorganics								
pH	DETS 2008			6.9	7.3	7.4	7.3	7.4
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015		
Chloride	DETS 2055	0.1	mg/l	1.6	2.1	1.6		

Summary of Asbestos Analysis Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1155753	TPD44 E3 0.70-0.90	SOIL	NAD	none	Colin Patrick
1155754	TPD43 E1 0.50	SOIL	NAD	none	Colin Patrick
1155755	TPD43 E2 1.10	SOIL	Chrysotile Amosite	bundle of Amosite+ Chrysotile fibres	Colin Patrick
1155756	TPD41 E3 1.40	SOIL	Amosite	small bundle of Amosite fibres	Colin Patrick
1155757	TPD40 E1 1.00	SOIL	NAD	none	Colin Patrick
1155758	TPD38 E1 0.50	SOIL	NAD	none	Colin Patrick
1155759	TPD38 E2 1.80	SOIL	NAD	none	Colin Patrick
1155760	TPD37 E1 0.90	SOIL	NAD	none	Colin Patrick
1155762	TPD35 E1 0.00-0.20	SOIL	NAD	none	Colin Patrick
1155763	TPD35 E2 1.80-1.90	SOIL	NAD	none	Colin Patrick
1155767	TPD39 E1 0.70-0.85	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.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 17-96515-1

Client Ref

Contract Title Redcar Site

Lab No	1155755	1155756
Sample ID	TPD43	TPD41
Depth	1.10	1.40
Other ID	E2	E3
Sample Type	SOIL	SOIL
Sampling Date	03/04/17	03/04/17
Sampling Time		

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.688		< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.144		na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.535		<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	0.009		na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na		na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	1386.23		812.98
ACMs present*		type	Cement	Insulation	
Mass of ACM in sample		g	5.88	1.31	
% ACM by mass		%	0.42	0.09	
% asbestos in ACM		%	15.00	85	
% asbestos in sample		%	0.06	0.080	
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	0.028		<0.001
% Chrysotile bundles in sample		Mass %	0.507		na
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	0.009		na
% Chrysotile fibres in sample		Mass %	<0.001		na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na		na
Chrysotile fibres		Fibres/g	na		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 17-96515-1

Client Ref

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1155753	TPD44 0.70-0.90 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155754	TPD43 0.50 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155755	TPD43 1.10 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155756	TPD41 1.40 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155757	TPD40 1.00 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155758	TPD38 0.50 SOIL	04/04/17	GJ 60ml x7, PT 1L		
1155759	TPD38 1.80 SOIL	04/04/17	GJ 60ml x7, PT 1L		
1155760	TPD37 0.90 SOIL	04/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155761	TPD36 1.40 SOIL	05/04/17	GJ 60ml x7, PT 1L		
1155762	TPD35 0.00-0.20 SOIL	05/04/17	GJ 60ml x7, PT 1L		
1155763	TPD35 1.80-1.90 SOIL	05/04/17	GJ 60ml x7, PT 1L		
1155764	TPD44 0.70-0.90 LEACHATE	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155765	TPD43 0.50 LEACHATE	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1155766	TPD35 1.80-1.90 LEACHATE	05/04/17	GJ 60ml x7, PT 1L		
1155767	TPD39 0.70-0.85 SOIL	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157592	TPD35 0.00-0.20 LEACHATE	05/04/17	GJ 60ml x7, PT 1L		
1157593	TPD41 1.40 LEACHATE	03/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 17-96874

19-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-96874

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 9 Soil samples, 5 Leachate samples.

Date Received Tuesday, April 11, 2017

Date Started Tuesday, April 11, 2017

Date Completed Wednesday, April 19, 2017

Test Procedures Identified by prefix DETSn (details on request).

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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPD12	E1	1.80-2.80	1157574	19-Apr-17	Grey clayey SAND
TPD13	E2	1.50-2.50	1157575	19-Apr-17	Grey clayey SAND
TPD14	E1	0.30-0.90	1157576	19-Apr-17	Dark brown clayey, gravelly SAND (Made ground - coal)
TPD15	E1	0.80-1.40	1157577	19-Apr-17	Brown clayey SAND
TPD16	E1	0.15-0.40	1157578	19-Apr-17	Dark brown clayey, gravelly SAND (Possible made ground - coal)
TPD17	E1	2.8	1157579	19-Apr-17	Brown clayey SAND
TPD19	E1	0.20-0.40	1157580	19-Apr-17	Dark brown clayey, gravelly SAND (Made ground - coal, slag, brick)
TPD19	E2	1.50-2.50	1157581	19-Apr-17	Brown clayey SAND
TPD20	E1	1.00-1.50	1157582	19-Apr-17	Black sandy GRAVEL hydrocarbon odour (Made ground - oil) (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157575	1157576	1157577	1157578	1157579	1157580
Sample ID	TPD13	TPD14	TPD15	TPD16	TPD17	TPD19
Depth	1.50-2.50	0.30-0.90	0.80-1.40	0.15-0.40	2.80	0.20-0.40
Other ID	E2	E1	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06-Apr-17	06-Apr-17	06-Apr-17	06-Apr-17	07-Apr-17	07-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg				< 1.0		
Arsenic	DETSC 2301#	0.2	mg/kg	6.9	4.9	35	4.8	36	
Barium	DETSC 2301#	1.5	mg/kg				83		
Beryllium	DETSC 2301#	0.2	mg/kg				< 0.2		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.6	2.0	4.1	1.6	1.9	
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	1.3	< 0.1	3.8	
Chromium	DETSC 2301#	0.15	mg/kg	16	6.3	210	5.5	9.9	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg				< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	5.0	5.0	52	4.0	59	
Lead	DETSC 2301#	0.3	mg/kg	16	13	150	15	180	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.12	< 0.05	0.25	
Molybdenum	DETSC 2301#	0.4	mg/kg				< 0.4		
Nickel	DETSC 2301#	1	mg/kg	4.8	3.0	22	3.8	18	
Vanadium	DETSC 2301	0.8	mg/kg				15		
Zinc	DETSC 2301#	1	mg/kg	22	20	1200	25	750	
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%					35	
pH	DETSC 2008#			10.2	9.9	11.0	9.4	8.2	8.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	5.9	< 0.1	9.5	
Cyanide, Free	DETSC 2130#	0.1	mg/kg				< 0.1		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg				< 0.2		
Thiocyanate	DETSC 2130#	0.6	mg/kg				< 0.6		
Organic matter	DETSC 2002#	0.1	%	1.2	1.6	3.9	0.2	> 25	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	59	360	1300	130	1700	180
Sulphur as S, Total	DETSC 2320	0.01	%		0.12	0.35			0.05
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.21	1.1			0.10
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	3.3	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	7.9	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	14	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	50	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	75	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	1.6	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	1.6	< 0.5	1.7	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	7.2	< 0.6	6.8	< 0.6	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157575	1157576	1157577	1157578	1157579	1157580
Sample ID	TPD13	TPD14	TPD15	TPD16	TPD17	TPD19
Depth	1.50-2.50	0.30-0.90	0.80-1.40	0.15-0.40	2.80	0.20-0.40
Other ID	E2	E1	E1	E1	E1	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	06-Apr-17	06-Apr-17	06-Apr-17	06-Apr-17	07-Apr-17	07-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	18	< 1.4	5.6	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	27	< 10	16	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	27	< 10	90	< 10	
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.15	< 0.03	1.6	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	< 0.03	1.1	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09	< 0.03	0.38	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.23	< 0.03	1.3	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8	< 0.03	5.8	< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.49	< 0.03	1.2	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.1	< 0.03	4.8	< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.3	< 0.03	3.1	< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.0	< 0.03	1.3	< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.93	< 0.03	1.1	0.04	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.2	< 0.03	1.3	< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.47	< 0.03	0.45	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.65	< 0.03	0.83	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.38	< 0.03	0.34	< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.11	< 0.03	0.12	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.42	< 0.03	0.28	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	13	< 0.10	25	< 0.10	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157581	1157582
Sample ID	TPD19	TPD20
Depth	1.50-2.50	1.00-1.50
Other ID	E2	E1
Sample Type	ES	ES
Sampling Date	07-Apr-17	07-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	1.3	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	41	6.9
Barium	DETSC 2301#	1.5	mg/kg	100	330
Beryllium	DETSC 2301#	0.2	mg/kg	0.8	3.7
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.6	2.4
Cadmium	DETSC 2301#	0.1	mg/kg	3.4	0.4
Chromium	DETSC 2301#	0.15	mg/kg	7.0	78
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	68	22
Lead	DETSC 2301#	0.3	mg/kg	170	25
Mercury	DETSC 2325#	0.05	mg/kg	0.24	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	2.8	1.0
Nickel	DETSC 2301#	1	mg/kg	22	4.4
Vanadium	DETSC 2301	0.8	mg/kg	29	210
Zinc	DETSC 2301#	1	mg/kg	660	67
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%		
pH	DETSC 2008#			7.6	9.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	19	2.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	19	2.9
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	21	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	2200	190
Sulphur as S, Total	DETSC 2320	0.01	%		
Sulphate as SO4, Total	DETSC 2321#	0.01	%		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	2.1
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	2.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157581	1157582
Sample ID	TPD19	TPD20
Depth	1.50-2.50	1.00-1.50
Other ID	E2	E1
Sample Type	ES	ES
Sampling Date	07-Apr-17	07-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.62
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.12
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.56
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.64
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.43
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.10
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	3.2
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157574	1157582
Sample ID	TPD12	TPD20
Depth	1.80-2.80	1.00-1.50
Other ID	E1	E1
Sample Type	ES	ES
Sampling Date	06-Apr-17	07-Apr-17
Sampling Time	n/s	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157574	1157582
Sample ID	TPD12	TPD20
Depth	1.80-2.80	1.00-1.50
Other ID	E1	E1
Sample Type	ES	ES
Sampling Date	06-Apr-17	07-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	0.02	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	0.3
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	< 0.1	
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	0.2
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157574	1157582
Sample ID	TPD12	TPD20
Depth	1.80-2.80	1.00-1.50
Other ID	E1	E1
Sample Type	ES	ES
Sampling Date	06-Apr-17	07-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	0.2	
Anthracene	DETSC 3433	0.1	mg/kg	< 0.1	
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	0.1	
Pyrene	DETSC 3433	0.1	mg/kg	< 0.1	
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	
Chrysene	DETSC 3433	0.1	mg/kg	< 0.1	
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	< 0.1	
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1157583	1157584	1157585	1157586	1157587
Sample ID	TPD13	TPD16	TPD17	TPD19	TPD20
Depth	1.50-2.50	0.15-0.40	2.80	1.50-2.50	1.00-1.50
Other ID	E2	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	06-Apr-17	06-Apr-17	07-Apr-17	07-Apr-17	07-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.6	0.32	0.40	0.74	0.88
Barium, Dissolved	DETSC 2306	0.26	ug/l		31		4.5	17
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.1		< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	< 100	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.24	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.33	< 0.25	< 0.25	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	0.9	0.5	0.9	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.13	< 0.09	< 0.09	< 0.09	0.10
Manganese, Dissolved	DETSC 2306	0.22	ug/l		15		4.7	15
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	0.79	0.40	0.30	0.40
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		1.0		< 0.6	1.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.5	51	14	7.1	1.5
Inorganics								
pH	DETSC 2008			8.0	7.3	7.4	7.3	7.2
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l		0.38		0.25	0.69
Chloride	DETSC 2055	0.1	mg/l		4.0		6.0	2.2

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-96874

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1157575	TPD13 E2 1.50-2.50	SOIL	NAD	none	Colin Patrick
1157576	TPD14 E1 0.30-0.90	SOIL	NAD	none	Colin Patrick
1157577	TPD15 E1 0.80-1.40	SOIL	NAD	none	Colin Patrick
1157578	TPD16 E1 0.15-0.40	SOIL	NAD	none	Colin Patrick
1157579	TPD17 E1 2.80	SOIL	NAD	none	Colin Patrick
1157581	TPD19 E2 1.50-2.50	SOIL	NAD	none	Colin Patrick
1157582	TPD20 E1 1.00-1.50	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 17-96874
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1157574	TPD12 1.80-2.80 SOIL	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157575	TPD13 1.50-2.50 SOIL	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157576	TPD14 0.30-0.90 SOIL	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157577	TPD15 0.80-1.40 SOIL	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157578	TPD16 0.15-0.40 SOIL	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157579	TPD17 2.80 SOIL	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157580	TPD19 0.20-0.40 SOIL	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157581	TPD19 1.50-2.50 SOIL	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157582	TPD20 1.00-1.50 SOIL	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157583	TPD13 1.50-2.50 LEACHATE	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157584	TPD16 0.15-0.40 LEACHATE	06/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157585	TPD17 2.80 LEACHATE	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157586	TPD19 1.50-2.50 LEACHATE	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1157587	TPD20 1.00-1.50 LEACHATE	07/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-97219-1

28-Apr-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-97219-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 19 Soil samples, 8 Leachate samples.

Date Received 15-Apr-17

Date Started 15-Apr-17

Date Completed 28-Apr-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-97219. 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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPD01	E1	0.3	1159337	24/04/2017	Brown clayey SAND
TPD02	E2	2.5	1159338	24/04/2017	Brown, clayey SAND
TPD03	E2	0.3	1159339	24/04/2017	Brown gravelly,, sandy CLAY
TPD07	E1	0.1	1159340	24/04/2017	Black gravelly SAND coal
TPD07	E2	2.2	1159341	24/04/2017	Brown, clayey SAND
TPD08	E1	0.5	1159342	24/04/2017	Brown gravelly,, sandy CLAY
TPD21	E1	1.5	1159343	24/04/2017	Brown gravelly,, sandy CLAY
TPD22	E4	3.8	1159344	24/04/2017	Light brown clayey CLAY
TPD24	E1	0.7	1159345	24/04/2017	Brown gravelly,, sandy CLAY
TPD24	E3	1.9	1159346	24/04/2017	Brown gravelly,, sandy CLAY
TPD25	E2	1.7	1159347	24/04/2017	Brown gravelly,, sandy CLAY
TPD26	E1	1	1159348	24/04/2017	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPD27	E2	1.1	1159349	24/04/2017	Grey sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPD28	E1	0.9	1159350	24/04/2017	Brown gravelly,, sandy CLAY
TPD29	E1	1.2	1159351	24/04/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPD30	E1	0.7	1159352	24/04/2017	Brown gravelly,, sandy CLAY
TPD30	E2	1.6	1159353	24/04/2017	Brown gravelly,, sandy CLAY
TPD31	E2	1	1159354	24/04/2017	Brown gravelly,, sandy CLAY
TPD32	E1	0.5	1159355	24/04/2017	Brown gravelly,, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159337	1159338	1159339	1159340	1159341	1159342
Sample ID	TPD01	TPD02	TPD03	TPD07	TPD07	TPD08
Depth	0.30	2.50	0.30	0.10	2.20	0.50
Other ID	E1	E2	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	12/04/17	12/04/17	12/04/17	12/04/17	11/04/17	11/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0				Y			
Metals									
Antimony	DETSC 2301*	1	mg/kg		< 1.0	< 1.0	< 1.0		2.6
Arsenic	DETSC 2301#	0.2	mg/kg		6.0	7.4	4.5		27
Barium	DETSC 2301#	1.5	mg/kg		92	190	66		230
Beryllium	DETSC 2301#	0.2	mg/kg		< 0.2	1.4	0.2		1.7
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		1.2	2.6	0.6		2.0
Cadmium	DETSC 2301#	0.1	mg/kg		< 0.1	0.3	< 0.1		0.9
Chromium	DETSC 2301#	0.15	mg/kg		5.5	46	3.3		110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg		4.7	11	12		27
Iron	DETSC 2301	25	mg/kg		8000		5100		36000
Lead	DETSC 2301#	0.3	mg/kg		16	31	8.7		73
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05	< 0.05	0.05		0.09
Molybdenum	DETSC 2301#	0.4	mg/kg		0.5	0.5	0.9		2.0
Nickel	DETSC 2301#	1	mg/kg		3.5	4.2	3.1		14
Vanadium	DETSC 2301	0.8	mg/kg		14	150	11		210
Zinc	DETSC 2301#	1	mg/kg		24	100	25		190
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%				89		
pH	DETSC 2008#			10.7	8.8	10.9	8.1	10.6	9.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1	0.1	0.6		2.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1	< 0.1	< 0.1		0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		< 0.2	< 0.2	0.6		2.1
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6	< 0.6	1.2		< 0.6
Organic matter	DETSC 2002#	0.1	%		0.8	4.1	> 25		8.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	410	97	310	34	53	1600
Sulphur as S, Total	DETSC 2320	0.01	%	0.13		0.10		0.05	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.31		0.27		0.10	
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		1.8	< 1.5	6.3		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2	12		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5	15		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4	44		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	77		< 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	< 0.01	< 0.01		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9	2.6		< 0.9

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159337	1159338	1159339	1159340	1159341	1159342
Sample ID	TPD01	TPD02	TPD03	TPD07	TPD07	TPD08
Depth	0.30	2.50	0.30	0.10	2.20	0.50
Other ID	E1	E2	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	12/04/17	12/04/17	12/04/17	12/04/17	11/04/17	11/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		0.8	3.0	15		1.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		0.7	5.9	48		1.1
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4	31	62		3.6
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10	41	130		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		< 10	41	200		< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	0.15	12		0.70
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	0.15	6.7		0.10
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	1.2		0.06
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	0.08	4.7		0.13
Phenanthrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.96	24		0.68
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	0.26	8.7		0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	1.6	34		0.63
Pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	1.1	23		0.44
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.65	11		0.18
Chrysene	DETSC 3303	0.03	mg/kg		< 0.03	0.63	10		0.19
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.87	13		0.22
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.32	5.6		0.07
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.54	8.7		0.13
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.29	3.7		0.07
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.10	1.3		< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03	0.31	3.8		0.08
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		< 0.10	8.0	170		3.8
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3	0.5		< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159343	1159344	1159345	1159346	1159347	1159348
Sample ID	TPD21	TPD22	TPD24	TPD24	TPD25	TPD26
Depth	1.50	3.80	0.70	1.90	1.70	1.00
Other ID	E1	E4	E1	E3	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	10/04/17	11/04/17	11/04/17	11/04/17	11/04/17	11/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0		Y				Y	
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.2	< 1.0				< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	15	6.4	60	35	160	19
Barium	DETSC 2301#	1.5	mg/kg	160	20				130
Beryllium	DETSC 2301#	0.2	mg/kg	1.3	< 0.2				3.9
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	65	5.8	6.1	7.6	7.9	8.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	1.1	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	35	4.8	59	17	31	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0				< 1.0
Copper	DETSC 2301#	0.2	mg/kg	15	25	78	8.1	55	27
Iron	DETSC 2301	25	mg/kg	30000					
Lead	DETSC 2301#	0.3	mg/kg	22	39	220	27	87	22
Mercury	DETSC 2325#	0.05	mg/kg	0.08	0.13	< 0.05	< 0.05	0.48	0.15
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9	0.6				1.2
Nickel	DETSC 2301#	1	mg/kg	23	2.9	44	8.1	31	7.4
Vanadium	DETSC 2301	0.8	mg/kg	97	15				100
Zinc	DETSC 2301#	1	mg/kg	70	58	630	340	120	97
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						
pH	DETSC 2008#			9.2	8.7	9.4	9.8	8.9	9.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1	0.2	0.2	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1				< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.2	< 0.2				< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6				0.6
Organic matter	DETSC 2002#	0.1	%	2.5	0.8	2.6	1.2	5.5	1.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	740	150	1500	1700	2500	1900
Sulphur as S, Total	DETSC 2320	0.01	%	0.14			0.37	0.94	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.17			2.0	2.0	
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	0.10	< 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	0.02	0.04
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	1.4	< 0.9	< 0.9	< 0.9	< 0.9

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159343	1159344	1159345	1159346	1159347	1159348
Sample ID	TPD21	TPD22	TPD24	TPD24	TPD25	TPD26
Depth	1.50	3.80	0.70	1.90	1.70	1.00
Other ID	E1	E4	E1	E3	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	10/04/17	11/04/17	11/04/17	11/04/17	11/04/17	11/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.9	3.2	2.8	2.9	1.8	1.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	4.7	2.2	2.6	3.2	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	10	9.5	9.0	10	3.0	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	19	16	15	17	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	19	16	15	17	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15	1.1	0.05	0.19	0.15	0.09
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.08	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.06	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.12	0.05	0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.11	0.10	0.22	0.88	0.16	0.15
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.19	0.05	0.05
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.19	0.52	0.28	2.4	0.17	0.23
Pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.26	0.21	1.8	0.13	0.20
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.14	0.14	0.49	0.05	0.09
Chrysene	DETSC 3303	0.03	mg/kg	0.06	0.08	0.18	0.51	0.05	0.09
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.11	0.24	0.41	0.05	0.10
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	0.12	0.19	< 0.03	0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.07	0.12	0.24	< 0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.07	0.10	< 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
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.08	0.11	< 0.03	0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.84	2.5	1.7	7.7	0.87	1.2
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 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159349	1159350	1159351	1159352	1159353	1159354
Sample ID	TPD27	TPD28	TPD29	TPD30	TPD30	TPD31
Depth	1.10	0.90	1.20	0.70	1.60	1.00
Other ID	E2	E1	E1	E1	E2	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	10/04/17	10/04/17	10/04/17	10/04/17	10/04/17	10/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0							Y
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0		< 1.0	2.5		4.6
Arsenic	DETSC 2301#	0.2	mg/kg	5.0		18	370		21
Barium	DETSC 2301#	1.5	mg/kg	89		110	110		220
Beryllium	DETSC 2301#	0.2	mg/kg	2.3		1.9	3.1		2.6
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.5		6.5	5.1		6.0
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1		0.1	1.2		0.4
Chromium	DETSC 2301#	0.15	mg/kg	9.9		14	61		22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	7.5		7.9	25		770
Iron	DETSC 2301	25	mg/kg	4600		9500	72000		16000
Lead	DETSC 2301#	0.3	mg/kg	6.5		12	170		62
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	0.06		0.10
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4		0.7	14		0.9
Nickel	DETSC 2301#	1	mg/kg	2.3		5.9	58		10
Vanadium	DETSC 2301	0.8	mg/kg	32		51	220		86
Zinc	DETSC 2301#	1	mg/kg	24		60	500		250
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						
pH	DETSC 2008#			10.7	9.7	9.7	8.9	10.5	9.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1		0.3	0.2		0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1		< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2		0.3	< 0.2		0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	< 0.6		< 0.6
Organic matter	DETSC 2002#	0.1	%	1.2		2.0	1.1		3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1300	1600	1600	1500	1600	1500
Sulphur as S, Total	DETSC 2320	0.01	%		0.96			0.25	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		4.1			1.3	
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		2.3	< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		3.4	< 1.5		1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		14	< 3.4		32
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		21	< 10		33
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		< 0.01	< 0.01		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9		< 0.9

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159349	1159350	1159351	1159352	1159353	1159354
Sample ID	TPD27	TPD28	TPD29	TPD30	TPD30	TPD31
Depth	1.10	0.90	1.20	0.70	1.60	1.00
Other ID	E2	E1	E1	E1	E2	E2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	10/04/17	10/04/17	10/04/17	10/04/17	10/04/17	10/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		1.9	1.8		2.0
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	< 0.6		1.4
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		2.7	2.7		11
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10		15
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		25	< 10		48
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		0.31	0.05		0.19
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.11	< 0.03		0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.10	< 0.03		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.10		0.54	0.13		0.53
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.22	< 0.03		0.55
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.15		0.75	0.15		0.78
Pyrene	DETSC 3303#	0.03	mg/kg	0.12		0.53	0.11		0.60
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05		0.35	0.06		0.31
Chrysene	DETSC 3303	0.03	mg/kg	0.06		0.40	0.08		0.37
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05		0.26	0.07		0.35
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.19	< 0.03		0.14
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.25	0.04		0.18
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.17	< 0.03		0.10
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03		0.04
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.19	< 0.03		0.11
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.53		4.4	0.68		4.3
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3		< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159355
Sample ID	TPD32
Depth	0.50
Other ID	E1
Sample Type	ES
Sampling Date	10/04/17
Sampling Time	n/s

Test	Method	LOD	Units	
Asbestos Quantification	DETSC 1102	0		
Metals				
Antimony	DETSC 2301*	1	mg/kg	
Arsenic	DETSC 2301#	0.2	mg/kg	17
Barium	DETSC 2301#	1.5	mg/kg	
Beryllium	DETSC 2301#	0.2	mg/kg	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.3
Chromium	DETSC 2301#	0.15	mg/kg	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	
Copper	DETSC 2301#	0.2	mg/kg	13
Iron	DETSC 2301	25	mg/kg	
Lead	DETSC 2301#	0.3	mg/kg	25
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	
Nickel	DETSC 2301#	1	mg/kg	6.1
Vanadium	DETSC 2301	0.8	mg/kg	
Zinc	DETSC 2301#	1	mg/kg	140
Inorganics				
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	
pH	DETSC 2008#			10.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	
Thiocyanate	DETSC 2130#	0.6	mg/kg	
Organic matter	DETSC 2002#	0.1	%	3.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400
Sulphur as S, Total	DETSC 2320	0.01	%	0.16
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.63
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159355
Sample ID	TPD32
Depth	0.50
Other ID	E1
Sample Type	ES
Sampling Date	10/04/17
Sampling Time	n/s

Test	Method	LOD	Units	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.6
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	2.9
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	8.8
Aromatic C5-C35	DETSC 3072*	10	mg/kg	14
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	14
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.53
Anthracene	DETSC 3303	0.03	mg/kg	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.90
Pyrene	DETSC 3303#	0.03	mg/kg	0.71
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.41
Chrysene	DETSC 3303	0.03	mg/kg	0.49
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.56
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.22
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.31
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.20
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.0
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159343	1159344	1159346	1159348	1159354
Sample ID	TPD21	TPD22	TPD24	TPD26	TPD31
Depth	1.50	3.80	1.90	1.00	1.00
Other ID	E1	E4	E3	E1	E2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	10/04/17	11/04/17	11/04/17	11/04/17	10/04/17
Sampling Time	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
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 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
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 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
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 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
Chloroform	DETSC 3431	0.01	mg/kg	< 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
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
Benzene	DETSC 3431	0.01	mg/kg	< 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
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 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
Dibromomethane	DETSC 3431	0.01	mg/kg	< 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
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 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
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 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
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 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
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 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
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.02	0.05	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 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
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 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
Bromobenzene	DETSC 3431	0.01	mg/kg	< 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
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 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
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 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	0.05

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159343	1159344	1159346	1159348	1159354
Sample ID	TPD21	TPD22	TPD24	TPD26	TPD31
Depth	1.50	3.80	1.90	1.00	1.00
Other ID	E1	E4	E3	E1	E2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	10/04/17	11/04/17	11/04/17	11/04/17	10/04/17
Sampling Time	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
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 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
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 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
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 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
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	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
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.02	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 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
Aniline	DETSC 3433*	0.1	mg/kg	< 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
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 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
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 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
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 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
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 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
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 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
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 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
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 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
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 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
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 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
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 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
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 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
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159343	1159344	1159346	1159348	1159354
Sample ID	TPD21	TPD22	TPD24	TPD26	TPD31
Depth	1.50	3.80	1.90	1.00	1.00
Other ID	E1	E4	E3	E1	E2
Sample Type	ES	ES	ES	ES	ES
Sampling Date	10/04/17	11/04/17	11/04/17	11/04/17	10/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 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
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 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
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 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
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 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
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 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
Azobenzene	DETSC 3433	0.1	mg/kg	< 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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159356	1159357	1159358	1159359	1159360	1159361
Sample ID	TPD02	TPD07	TPD08	TPD21	TPD27	TPD29
Depth	2.50	0.10	0.50	1.50	1.10	1.20
Other ID	E2	E1	E1	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	12/04/17	12/04/17	11/04/17	10/04/17	10/04/17	10/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.43	0.28	0.39	2.6	1.1	0.87
Barium, Dissolved	DETS 2306	0.26	ug/l	31	7.6	45	7.0	49	34
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	DETS 2123	100	ug/l	< 100	< 100	< 100	680	110	< 100
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	< 0.25	< 0.25	0.34	< 0.25	< 0.25	< 0.25
Copper, Dissolved	DETS 2306	0.4	ug/l	0.9	0.7	1.0	1.2	1.2	1.2
Lead, Dissolved	DETS 2306	0.09	ug/l	0.11	0.14	< 0.09	0.09	< 0.09	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	2.3	9.2	20	14	0.99	190
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.71	0.66	0.78	0.56	0.90	0.77
Vanadium, Dissolved	DETS 2306	0.6	ug/l	< 0.6	< 0.6	< 0.6	3.0	6.7	1.0
Zinc, Dissolved	DETS 2306	1.3	ug/l	11	3.8	28	12	< 1.3	24
Inorganics									
pH	DETS 2008			7.2	6.9	6.8	7.6	9.1	7.3
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	< 0.015	< 0.015	0.041	1.7	0.21	< 0.015
Chloride	DETS 2055	0.1	mg/l	3.2	2.8	2.9	6.0	2.4	2.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159362	1159363
Sample ID	TPD30	TPD31
Depth	0.70	1.00
Other ID	E1	E2
Sample Type	ES	ES
Sampling Date	10/04/17	10/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
Leachate 10:1	DETS 036*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.5	1.5
Barium, Dissolved	DETSC 2306	0.26	ug/l	23	28
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.05	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.1	1.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	30	46
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.7	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.71	0.52
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.7	1.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	20	3.6
Inorganics					
pH	DETSC 2008			7.0	7.2
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	2.6	3.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-97219-1
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1159338	TPD02 E2 2.50	SOIL	NAD	none	Keith Wilson
1159339	TPD03 E2 0.30	SOIL	Chrysotile	Small bundle of Chrysotile fibres	Keith Wilson
1159340	TPD07 E1 0.10	SOIL	NAD	none	Keith Wilson
1159342	TPD08 E1 0.50	SOIL	NAD	none	Keith Wilson
1159343	TPD21 E1 1.50	SOIL	Chrysotile	Small bundles of Chrysotile fibres	Keith Wilson
1159344	TPD22 E4 3.80	SOIL	NAD	none	Keith Wilson
1159345	TPD24 E1 0.70	SOIL	NAD	none	Keith Wilson
1159346	TPD24 E3 1.90	SOIL	NAD	none	Keith Wilson
1159347	TPD25 E2 1.70	SOIL	Amosite	Small bundle of Amosite fibres	Keith Wilson
1159348	TPD26 E1 1.00	SOIL	NAD	none	Keith Wilson
1159349	TPD27 E2 1.10	SOIL	NAD	none	Keith Wilson
1159351	TPD29 E1 1.20	SOIL	NAD	none	Keith Wilson
1159352	TPD30 E1 0.70	SOIL	NAD	none	Keith Wilson
1159354	TPD31 E2 1.00	SOIL	Amosite	Small bundle of Amosite fibres	Keith Wilson
1159355	TPD32 E1 0.50	SOIL	NAD	none	Keith Wilson

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 17-97219-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1159339	1159343	1159347	1159354
Sample ID	TPD03	TPD21	TPD25	TPD31
Depth	0.30	1.50	1.70	1.00
Other ID	E2	E1	E2	E2
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/17	10/04/17	11/04/17	10/04/17
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	38.95	52.45	47.47	65.12
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	na	<0.001	<0.001
% Chrysotile bundles in sample		Mass %	<0.001	0.001	na	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	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 17-97219-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1159337	TPD01 0.30 SOIL	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159338	TPD02 2.50 SOIL	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159339	TPD03 0.30 SOIL	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159340	TPD07 0.10 SOIL	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159341	TPD07 2.20 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159342	TPD08 0.50 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159343	TPD21 1.50 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159344	TPD22 3.80 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159345	TPD24 0.70 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159346	TPD24 1.90 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159347	TPD25 1.70 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159348	TPD26 1.00 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159349	TPD27 1.10 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159350	TPD28 0.90 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159351	TPD29 1.20 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159352	TPD30 0.70 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159353	TPD30 1.60 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159354	TPD31 1.00 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159355	TPD32 0.50 SOIL	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159356	TPD02 2.50 LEACHATE	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159357	TPD07 0.10 LEACHATE	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159358	TPD08 0.50 LEACHATE	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159359	TPD21 1.50 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159360	TPD27 1.10 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159361	TPD29 1.20 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159362	TPD30 0.70 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159363	TPD31 1.00 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159364	TPD02 2.50 LEACHATE	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159365	TPD07 0.10 LEACHATE	12/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159366	TPD08 0.50 LEACHATE	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159367	TPD21 1.50 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159368	TPD27 1.10 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159369	TPD29 1.20 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159370	TPD30 0.70 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1159371	TPD31 1.00 LEACHATE	10/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		

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, inappropriate containers etc 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.

Information in Support of the Analytical Results

Our Ref 17-97219-1

Client Ref SLS1015

Contract Redcar Site

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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-97916-1

05-May-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-97916-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 7 Soil samples, 1 Leachate sample.

Date Received 25-Apr-17

Date Started 25-Apr-17

Date Completed 05-May-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-97916, 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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPE75	E1	1	1163524	02/05/2017	Dark brown very sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPE75	E2	3	1163525	02/05/2017	Dark grey sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPE73	E1	0.2	1163526	02/05/2017	Black gravelly SAND including odd rootlets
TPE73	E2	3.5	1163527	02/05/2017	Dark grey sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPE66	E1	1.5	1163528	02/05/2017	Dark brown clayey, gravelly SAND
TPE66	E2	2.5	1163529	02/05/2017	Brown clayey, gravelly SAND
TPE38	E1	2	1163530	02/05/2017	Dark brown clayey gravelly SAND

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163524	1163525	1163526	1163527	1163528	1163529	1163530
Sample ID	TPE75	TPE75	TPE73	TPE73	TPE66	TPE66	TPE38
Depth	1.00	3.00	0.20	3.50	1.50	2.50	2.00
Other ID	E1	E2	E1	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/04/17	20/04/17	20/04/17	20/04/17	20/04/17	20/04/17	21/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0						Y		
Metals										
Antimony	DETSC 2301*	1	mg/kg	13			15	11		
Arsenic	DETSC 2301#	0.2	mg/kg	8.0		3.0	4.7	8.7		16
Barium	DETSC 2301#	1.5	mg/kg	400			450	1000		
Beryllium	DETSC 2301#	0.2	mg/kg	0.7			0.7	0.8		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.7		0.4	4.9	2.7		6.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.1		0.3	3.2	1.1		0.6
Chromium	DETSC 2301#	0.15	mg/kg	1100		66	1300	1000		110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	130		22	71	64		31
Iron	DETSC 2301	25	mg/kg				130000			
Lead	DETSC 2301#	0.3	mg/kg	63		15	120	69		57
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	< 0.05	0.07		0.40
Molybdenum	DETSC 2301#	0.4	mg/kg	7.1			6.7	5.8		
Nickel	DETSC 2301#	1	mg/kg	28		27	13	16		14
Vanadium	DETSC 2301	0.8	mg/kg	2300			2500	3000		
Zinc	DETSC 2301#	1	mg/kg	190		61	420	150		220
Inorganics										
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			30				
pH	DETSC 2008#			12.7	12.6	11.1	12.5	12.2	12.4	11.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2		0.2	< 0.1	0.4		3.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1			< 0.1	< 0.1		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2			< 0.2	0.4		
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6			1.8	< 0.6		
Organic matter	DETSC 2002#	0.1	%	0.6		> 25	0.8	1.5		2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	27	< 10	< 10	12	< 10
Sulphur as S, Total	DETSC 2320	0.01	%		0.16				0.17	0.33
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.38				0.33	0.84
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.7		< 1.2	< 1.2	< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	14		< 1.5	< 1.5	9.2		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	54		< 3.4	< 3.4	40		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	70		< 10	< 10	50		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163524	1163525	1163526	1163527	1163528	1163529	1163530
Sample ID	TPE75	TPE75	TPE73	TPE73	TPE66	TPE66	TPE38
Depth	1.00	3.00	0.20	3.50	1.50	2.50	2.00
Other ID	E1	E2	E1	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	20/04/17	20/04/17	20/04/17	20/04/17	20/04/17	20/04/17	21/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.0		4.6	< 0.5	2.6	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	9.3		18	< 0.6	17	1.8
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	24		22	< 1.4	34	6.0
Aromatic C5-C35	DETSC 3072*	10	mg/kg	35		45	< 10	53	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	110		45	< 10	100	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		1.6	< 0.03	0.03	0.12
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.89	< 0.03	0.10	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.11	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.35	< 0.03	< 0.03	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.93		3.9	< 0.03	2.6	0.29
Anthracene	DETSC 3303	0.03	mg/kg	0.07		1.2	< 0.03	0.10	0.10
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.79		6.6	0.12	2.2	0.39
Pyrene	DETSC 3303#	0.03	mg/kg	0.50		5.3	0.11	1.4	0.28
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.21		2.1	0.05	0.63	0.15
Chrysene	DETSC 3303	0.03	mg/kg	0.29		2.1	0.05	0.74	0.15
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.30		2.5	0.08	0.87	0.16
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13		0.90	0.03	0.37	0.07
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.14		1.4	0.03	0.33	0.09
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.11		0.63	< 0.03	0.28	0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.18	< 0.03	0.08	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.11		0.65	< 0.03	0.31	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.6		30	0.48	10	2.0
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163528
Sample ID	TPE66
Depth	1.50
Other ID	E1
Sample Type	ES
Sampling Date	20/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163528
Sample ID	TPE66
Depth	1.50
Other ID	E1
Sample Type	ES
Sampling Date	20/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163528
Sample ID	TPE66
Depth	1.50
Other ID	E1
Sample Type	ES
Sampling Date	20/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163531
Sample ID	TPE73
Depth	3.50
Other ID	E2
Sample Type	ES
Sampling Date	20/04/17
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 10:1	DETS 036*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.2
Barium, Dissolved	DETSC 2306	0.26	ug/l	13
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron	DETSC 2123	100	ug/l	< 100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	11
Copper, Dissolved	DETSC 2306	0.4	ug/l	7.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.21
Manganese, Dissolved	DETSC 2306	0.22	ug/l	< 0.22
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	8.7
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	15
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3
Inorganics				
pH	DETSC 2008			11.8
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.017
Chloride	DETSC 2055	0.1	mg/l	4.6

Summary of Asbestos Analysis Soil Samples

Our Ref 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1163524	TPE75 E1 1.00	SOIL	NAD	none	Michael Kay
1163526	TPE73 E1 0.20	SOIL	NAD	none	Michael Kay
1163527	TPE73 E2 3.50	SOIL	NAD	none	Michael Kay
1163528	TPE66 E1 1.50	SOIL	Chrysotile	Small bundle of Chrysotile	Michael Kay
1163530	TPE38 E1 2.00	SOIL	NAD	none	Michael Kay

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 17-97916-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163528
Sample ID	TPE66
Depth	1.50
Other ID	E1
Sample Type	SOIL
Sampling Date	20/04/17
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	1456.63
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
% Chrysotile bundles in sample		Mass %	<0.001
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-97916-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1163524	TPE75 1.00 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163525	TPE75 3.00 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163526	TPE73 0.20 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163527	TPE73 3.50 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163528	TPE66 1.50 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163529	TPE66 2.50 SOIL	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163530	TPE38 2.00 SOIL	21/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163531	TPE73 3.50 LEACHATE	20/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-97921-1

05-May-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-97921-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 7 Soil samples, 3 Leachate samples.

Date Received 25-Apr-17

Date Started 25-Apr-17

Date Completed 05-May-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-97521, 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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPE54	E3	2.80-2.90	1163536	02/05/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPE76	E1	1.50-1.60	1163537	02/05/2017	Grey sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPD06	E1	0.5	1163538	02/05/2017	Dark brown gravelly SAND
TPD06	E2	1.5	1163539	02/05/2017	Light brown slightly clayey SAND
TPD04	E1	0.40-0.50	1163540	02/05/2017	Black sandy GRAVEL (Made ground - slag, brick) (sample matrix outside MCERTS scope of accreditation)
TPD10	E2	2.00-2.30	1163541	02/05/2017	Brown slightly clayey SAND
TPD11	E1	0.50-0.90	1163542	02/05/2017	Dark brown sandy GRAVEL (Made ground - slag, brick) (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163536	1163537	1163538	1163539	1163540	1163541	1163542
Sample ID	TPE54	TPE76	TPD06	TPD06	TPD04	TPD10	TPD11
Depth	2.80-2.90	1.50-1.60	0.50	1.50	0.40-0.50	2.00-2.30	0.50-0.90
Other ID	E3	E1	E1	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	19/04/17	19/04/17	18/04/17	18/04/17	11/04/17	11/04/17	13/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0		Y					
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0	12	1.0	2.2	1.2	
Arsenic	DETSC 2301#	0.2	mg/kg	6.6	6.2	30	5.4	9.4	18
Barium	DETSC 2301#	1.5	mg/kg	370	650	62	200	170	
Beryllium	DETSC 2301#	0.2	mg/kg	6.0	0.8	3.1	0.4	0.4	
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	2.7	2.5	1.9	1.3	2.1	3.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	1.0	3.3	0.3	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	61	1000	37	170	85	88
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	20	74	58	15	13	17
Iron	DETSC 2301	25	mg/kg	19000	110000			20000	
Lead	DETSC 2301#	0.3	mg/kg	44	67	130	28	30	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.06	0.18	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9	6.3	2.0	1.2	0.8	
Nickel	DETSC 2301#	1	mg/kg	4.6	13	14	5.8	6.6	6.2
Vanadium	DETSC 2301	0.8	mg/kg	160	2600	100	320	160	
Zinc	DETSC 2301#	1	mg/kg	94	170	520	69	58	65
Inorganics									
pH	DETSC 2008#			11.0	12.3	10.0	12.0	8.0	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.2	82	1.8	1.1	1.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	< 0.1	
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	82	1.8	1.1	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	0.8	< 0.6	< 0.6	
Organic matter	DETSC 2002#	0.1	%	1.7	0.9	18	1.3	4.2	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	16	1700	330	2300	370
Sulphur as S, Total	DETSC 2320	0.01	%		0.13	2.2	0.15	3.9	0.93
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.27	3.2	0.25	4.4	1.8
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	2.0	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	5.1	11	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	25	45	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	30	58	< 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	1.2	< 0.5	< 0.5	< 0.5	< 0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163536	1163537	1163538	1163539	1163540	1163541	1163542
Sample ID	TPE54	TPE76	TPD06	TPD06	TPD04	TPD10	TPD11
Depth	2.80-2.90	1.50-1.60	0.50	1.50	0.40-0.50	2.00-2.30	0.50-0.90
Other ID	E3	E1	E1	E2	E1	E2	E1
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	19/04/17	19/04/17	18/04/17	18/04/17	11/04/17	11/04/17	13/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	8.8	6.5	< 0.6		< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	19	6.4	< 1.4		< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	29	13	< 10		< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	31	87	13	< 10		< 10	< 10
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 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	0.07	1.0	0.31	< 0.03		< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	0.05	< 0.03		< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.73	0.26	< 0.03		< 0.03	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.44	0.21	< 0.03		< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.18	0.10	< 0.03		< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.07	0.25	0.10	< 0.03		< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	0.27	0.09	< 0.03		< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.11	0.03	< 0.03		< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.11	0.05	< 0.03		< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.08	< 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
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.08	< 0.03	< 0.03		< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.79	3.3	1.3	< 0.10		< 0.10	< 0.10
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

Leachate Samples

Our Ref 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163543	1163544	1163545
Sample ID	TPE54	TPE76	TPD10
Depth	2.80-2.90	1.50-1.60	2.00-2.30
Other ID	E3	E1	E2
Sample Type	ES	ES	ES
Sampling Date	19/04/17	19/04/17	11/04/17
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
Leachate 10:1	DETS 036*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.9	0.77	0.87
Barium, Dissolved	DETSC 2306	0.26	ug/l	29	200	21
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	< 100	< 100	180
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.2	21	1.7
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7	9.2	1.1
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.92	0.16
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.5	0.36	3.3
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.2	4.2	1.1
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	9.7	8.4	2.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	2.2	< 1.3
Inorganics						
pH	DETSC 2008			9.7	12.2	8.4
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	0.017	0.029
Chloride	DETSC 2055	0.1	mg/l	1.6	5.7	3.7

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1163536	TPE54 E3 2.80-2.90	SOIL	Chrysotile	Small bundle of Chrysotile	Michael Kay
1163537	TPE76 E1 1.50-1.60	SOIL	NAD	none	Michael Kay
1163538	TPD06 E1 0.50	SOIL	NAD	none	Michael Kay
1163539	TPD06 E2 1.50	SOIL	NAD	none	Michael Kay
1163541	TPD10 E2 2.00-2.30	SOIL	NAD	none	Michael Kay
1163542	TPD11 E1 0.50-0.90	SOIL	NAD	none	Michael Kay

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 17-97921-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1163536
Sample ID	TPE54
Depth	2.80-2.90
Other ID	E3
Sample Type	SOIL
Sampling Date	19/04/17
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	805.35
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
% Chrysotile bundles in sample		Mass %	<0.001
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-97921-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1163536	TPE54 2.80-2.90 SOIL	19/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163537	TPE76 1.50-1.60 SOIL	19/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163538	TPD06 0.50 SOIL	18/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1163539	TPD06 1.50 SOIL	18/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1163540	TPD04 0.40-0.50 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L	pH + Conductivity (7 days)	
1163541	TPD10 2.00-2.30 SOIL	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L	pH + Conductivity (7 days)	
1163542	TPD11 0.50-0.90 SOIL	13/04/17	GJ 250ml x2, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
1163543	TPE54 2.80-2.90 LEACHATE	19/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163544	TPE76 1.50-1.60 LEACHATE	19/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		
1163545	TPD10 2.00-2.30 LEACHATE	11/04/17	GJ 250ml x2, GJ 60ml x2, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-98147

02-May-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-98147

Client Reference (not supplied)

Order No (not supplied)

Contract Title Redcar Site

Description 2 Soil samples, 1 Leachate sample.

Date Received 27-Apr-17

Date Started 27-Apr-17

Date Completed 02-May-17

Test Procedures Identified by prefix DETSn (details on request).

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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Sample ID	Depth	Lab No	Completed	Matrix Description
TPD34	0.20-0.80	1164624	02/05/2017	Dark brown gravelly SAND (Made ground - breezeblock/brick)
TPD23	0.90-1.40	1164625	02/05/2017	Dark grey slightly gravelly SAND

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164624	1164625
Sample ID	TPD34	TPD23
Depth	0.20-0.80	0.90-1.40
Other ID		
Sample Type	ES	ES
Sampling Date	05/04/17	05/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg	2.4	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	42	8.3
Barium	DETSC 2301#	1.5	mg/kg	210	200
Beryllium	DETSC 2301#	0.2	mg/kg	5.4	0.4
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	5.5	2.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	72	8.9
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	25	8.3
Iron	DETSC 2301	25	mg/kg	40000	
Lead	DETSC 2301#	0.3	mg/kg	44	22
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.4	< 0.4
Nickel	DETSC 2301#	1	mg/kg	27	5.6
Vanadium	DETSC 2301	0.8	mg/kg	260	20
Zinc	DETSC 2301#	1	mg/kg	320	37
Inorganics					
pH	DETSC 2008#			9.7	8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.3	< 0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	1.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1800	700
Sulphur as S, Total	DETSC 2320	0.01	%	0.85	0.09
Sulphate as SO4, Total	DETSC 2321#	0.01	%	2.2	0.16
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	18
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	18
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164624	1164625
Sample ID	TPD34	TPD23
Depth	0.20-0.80	0.90-1.40
Other ID		
Sample Type	ES	ES
Sampling Date	05/04/17	05/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	18
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	2.0	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.58	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.56	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.97	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	5.8	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	1.7	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	7.5	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	5.8	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	3.5	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	3.4	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	4.3	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.9	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	2.7	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	1.3	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.45	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.4	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	44	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164625
Sample ID	TPD23
Depth	0.90-1.40
Other ID	
Sample Type	ES
Sampling Date	05/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164625
Sample ID	TPD23
Depth	0.90-1.40
Other ID	
Sample Type	ES
Sampling Date	05/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164625
Sample ID	TPD23
Depth	0.90-1.40
Other ID	
Sample Type	ES
Sampling Date	05/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	1164626
Sample ID	TPD34
Depth	0.20-0.80
Other ID	
Sample Type	ES
Sampling Date	05/04/17
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 10:1	DETS 036*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.96
Barium, Dissolved	DETSC 2306	0.26	ug/l	29
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron	DETSC 2123	100	ug/l	280
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	230
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.91
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.4
Zinc, Dissolved	DETSC 2306	1.3	ug/l	9.5
Inorganics				
pH	DETSC 2008			6.8
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Chloride	DETSC 2055	0.1	mg/l	1.4

Summary of Asbestos Analysis Soil Samples

Our Ref 17-98147

Client Ref

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1164624	TPD34 0.20-0.80	SOIL	NAD	none	Colin Patrick
1164625	TPD23 0.90-1.40	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 17-98147
 Client Ref
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1164624	TPD34 0.20-0.80 SOIL	05/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1164625	TPD23 0.90-1.40 SOIL	05/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1164626	TPD34 0.20-0.80 LEACHATE	05/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-98272

05-May-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-98272

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 14 Soil samples, 5 Leachate samples.

Date Received Friday, April 28, 2017

Date Started Friday, April 28, 2017

Date Completed Friday, May 5, 2017

Test Procedures Identified by prefix DETSn (details on request).

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



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPH04	1	0.9	1165305	05-May-17	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPH04	2	2.4	1165306	05-May-17	Brown gravelly, sandy CLAY
TPH06	1	0.5	1165307	05-May-17	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPH06	2	2.50-3.00	1165308	05-May-17	Brown sandy CLAY
TPE27	1	0.20-0.50	1165309	05-May-17	Brown gravelly, sandy CLAY
TPE36	2	2.70-3.70	1165310	05-May-17	Brown gravelly, sandy CLAY
TPE46	2	1.5	1165311	05-May-17	Brown gravelly, sandy CLAY
TPE46	3	3.4	1165312	05-May-17	Brown gravelly, sandy CLAY
TPH05	1	0.40-1.10	1165313	05-May-17	Brown gravelly, sandy CLAY
TPH05	2	1.10-1.80	1165314	05-May-17	White sandy CLAY
TPI30	1	1.00-1.50	1165315	05-May-17	Brown gravelly, sandy CLAY
TPE26	1	1.4	1165316	05-May-17	Brown gravelly, sandy CLAY
TPE26	3	2.8	1165317	05-May-17	Brown gravelly SAND
TPE55	3	3.8	1165318	05-May-17	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165305	1165306	1165307	1165308	1165309	1165310
Sample ID	TPH04	TPH04	TPH06	TPH06	TPE27	TPE36
Depth	0.90	2.40	0.50	2.50-3.00	0.20-0.50	2.70-3.70
Other ID	1	2	1	2	1	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25-Apr-17	25-Apr-17	25-Apr-17	25-Apr-17	24-Apr-17	24-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	13		3.9			
Arsenic	DETSC 2301#	0.2	mg/kg	8.3		12	11	37	120
Barium	DETSC 2301#	1.5	mg/kg	960		280			
Beryllium	DETSC 2301#	0.2	mg/kg	0.7		1.9			
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.9		2.5	2.1	4.2	2.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.7		1.2	0.5	7.6	0.5
Chromium	DETSC 2301#	0.15	mg/kg	1200		120	48	39	69
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	39		45	28	54	19
Iron	DETSC 2301	25	mg/kg	94000		48000			
Lead	DETSC 2301#	0.3	mg/kg	37		79	41	450	76
Mercury	DETSC 2325#	0.05	mg/kg	0.06		< 0.05	< 0.05	< 0.05	0.26
Molybdenum	DETSC 2301#	0.4	mg/kg	5.4		1.9			
Nickel	DETSC 2301#	1	mg/kg	11		19	26	40	16
Vanadium	DETSC 2301	0.8	mg/kg	2000		130			
Zinc	DETSC 2301#	1	mg/kg	110		310	110	1900	310
Inorganics									
pH	DETSC 2008#			12.4	11.9	11.2	10.0	9.8	10.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4		9.6	1.8	46	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1			
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.4		9.6			
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6			
Organic matter	DETSC 2002#	0.1	%	0.9		4.1	5.6	1.2	0.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	140	330	270	400	1500
Sulphur as S, Total	DETSC 2320	0.01	%		0.01			0.04	0.12
Sulphate as SO4, Total	DETSC 2321#	0.01	%		1.2			0.20	2.2
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		26	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		370	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		390	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		0.6	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		13	< 0.6	< 0.6	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165305	1165306	1165307	1165308	1165309	1165310
Sample ID	TPH04	TPH04	TPH06	TPH06	TPE27	TPE36
Depth	0.90	2.40	0.50	2.50-3.00	0.20-0.50	2.70-3.70
Other ID	1	2	1	2	1	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25-Apr-17	25-Apr-17	25-Apr-17	25-Apr-17	24-Apr-17	24-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		220	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		230	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		630	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	0.15	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.07	< 0.03	0.05	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.08	< 0.03	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.11	< 0.03	0.03	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.14		0.46	0.15	0.21	0.20
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.24	< 0.03	0.08	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.28		0.75	0.19	0.25	0.24
Pyrene	DETSC 3303#	0.03	mg/kg	0.22		0.64	0.13	0.17	0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.09		0.23	0.05	0.10	0.11
Chrysene	DETSC 3303	0.03	mg/kg	0.10		0.29	0.04	0.11	0.11
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11		0.36	< 0.03	0.12	0.12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04		0.14	< 0.03	0.03	0.05
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06		0.23	< 0.03	0.06	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04		0.14	< 0.03	0.05	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04		0.18	< 0.03	0.06	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.1		3.9	0.57	1.5	1.3
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165311	1165312	1165313	1165314	1165315	1165316
Sample ID	TPE46	TPE46	TPH05	TPH05	TPI30	TPE26
Depth	1.50	3.40	0.40-1.10	1.10-1.80	1.00-1.50	1.40
Other ID	2	3	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24-Apr-17	24-Apr-17	25-Apr-17	25-Apr-17	26-Apr-17	24-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.1			< 1.0		
Arsenic	DETSC 2301#	0.2	mg/kg	7.8	7.1	22	3.2	8.5	39
Barium	DETSC 2301#	1.5	mg/kg	120			170		
Beryllium	DETSC 2301#	0.2	mg/kg	0.9			< 0.2		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	2.3	4.6	1.8	2.3	3.6	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.6	0.5	0.4	0.1	1.5
Chromium	DETSC 2301#	0.15	mg/kg	23	770	66	18	15	540
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	11	31	16	5.0	6.0	86
Iron	DETSC 2301	25	mg/kg					14000	82000
Lead	DETSC 2301#	0.3	mg/kg	23	34	33	6.7	6.0	230
Mercury	DETSC 2325#	0.05	mg/kg	0.17	0.09	0.22	< 0.05	0.05	0.12
Molybdenum	DETSC 2301#	0.4	mg/kg	0.6			1.3		
Nickel	DETSC 2301#	1	mg/kg	11	7.8	22	4.7	22	23
Vanadium	DETSC 2301	0.8	mg/kg	57			40		
Zinc	DETSC 2301#	1	mg/kg	89	160	110	22	24	310
Inorganics									
pH	DETSC 2008#			9.4	12.4	11.7	12.6	12.6	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.2	0.3	0.5	< 0.1	0.2	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1			< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	1.2			< 0.2	0.2	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6			< 0.6	1.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.1	0.4	1.3	1.8	1.6	0.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	320	190	440	35	100	1500
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
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	2.4	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	19	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	93	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	120	< 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	< 0.6	< 0.6	< 0.6	< 0.6	1.7	< 0.6

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165311	1165312	1165313	1165314	1165315	1165316
Sample ID	TPE46	TPE46	TPH05	TPH05	TPI30	TPE26
Depth	1.50	3.40	0.40-1.10	1.10-1.80	1.00-1.50	1.40
Other ID	2	3	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24-Apr-17	24-Apr-17	25-Apr-17	25-Apr-17	26-Apr-17	24-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	16	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	18	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	130	< 10
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	0.08	< 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	< 0.03	< 0.03	0.17	0.43	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.22	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	0.28	4.1	< 0.03	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.22	5.6	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.12	2.0	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	0.13	1.8	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.16	4.8	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.06	2.1	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.09	3.2	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.07	2.2	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.38	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.09	2.2	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.35	< 0.10	1.4	29	< 0.10	< 0.10
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
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 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165317	1165318
Sample ID	TPE26	TPE55
Depth	2.80	3.80
Other ID	3	3
Sample Type	ES	ES
Sampling Date	24-Apr-17	24-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Antimony	DETSC 2301*	1	mg/kg		
Arsenic	DETSC 2301#	0.2	mg/kg	43	7.0
Barium	DETSC 2301#	1.5	mg/kg		
Beryllium	DETSC 2301#	0.2	mg/kg		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.5	4.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	42	760
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg	13	48
Iron	DETSC 2301	25	mg/kg		
Lead	DETSC 2301#	0.3	mg/kg	42	50
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		
Nickel	DETSC 2301#	1	mg/kg	9.2	10
Vanadium	DETSC 2301	0.8	mg/kg		
Zinc	DETSC 2301#	1	mg/kg	200	85
Inorganics					
pH	DETSC 2008#			11.3	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	1.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		
Thiocyanate	DETSC 2130#	0.6	mg/kg		
Organic matter	DETSC 2002#	0.1	%	0.6	0.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1600	92
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	1.7	
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	3.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	16
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	72
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	92
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	4.3
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	24

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165317	1165318
Sample ID	TPE26	TPE55
Depth	2.80	3.80
Other ID	3	3
Sample Type	ES	ES
Sampling Date	24-Apr-17	24-Apr-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	71
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	99
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	190
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.25
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.23
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.74
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	3.1
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.3
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.63
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.88
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	16
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		
PCB 52	DETSC 3401#	0.01	mg/kg		
PCB 101	DETSC 3401#	0.01	mg/kg		
PCB 118	DETSC 3401#	0.01	mg/kg		
PCB 153	DETSC 3401#	0.01	mg/kg		
PCB 138	DETSC 3401#	0.01	mg/kg		
PCB 180	DETSC 3401#	0.01	mg/kg		
PCB 7 Total	DETSC 3401#	0.01	mg/kg		
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25-Apr-17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25-Apr-17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25-Apr-17
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-98272

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165319	1165320	1165321	1165322	1165323
Sample ID	TPH04	TPH06	TPE36	TPI30	TPE26
Depth	0.90	0.50	2.70-3.70	1.00-1.50	1.40
Other ID	1	1	2	1	1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	25-Apr-17	25-Apr-17	24-Apr-17	26-Apr-17	24-Apr-17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETS 2306	0.16	ug/l	1.3	4.0	3.2	4.4	1.5
Barium, Dissolved	DETS 2306	0.26	ug/l	6.5	12		25	40
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1		< 0.1	< 0.1
Boron	DETS 2123	100	ug/l	180	140	100	160	150
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	16	1.4	< 0.25	10	0.32
Copper, Dissolved	DETS 2306	0.4	ug/l	4.8	2.1	1.4	7.9	1.0
Lead, Dissolved	DETS 2306	0.09	ug/l	0.27	0.16	< 0.09	0.69	< 0.09
Manganese, Dissolved	DETS 2306	0.22	ug/l	0.27	2.3		12	13
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	0.6	2.2	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	2.3	1.6	0.48	0.29	< 0.25
Vanadium, Dissolved	DETS 2306	0.6	ug/l	14	18		22	< 0.6
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	2.8	7.4	1.6
Inorganics								
pH	DETS 2008			11.5	9.8	6.6	10.9	7.9
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	37	< 0.015		0.11	0.026
Chloride	DETS 2055	0.1	mg/l	2.7	1.7		2.0	1.6

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-98272
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1165305	TPH04 1 0.90	SOIL	NAD	none	Steven Lambert
1165307	TPH06 1 0.50	SOIL	NAD	none	Steven Lambert
1165308	TPH06 2 2.50-3.00	SOIL	NAD	none	Steven Lambert
1165309	TPE27 1 0.20-0.50	SOIL	Chrysotile	Small bundle of Chrysotile	Steven Lambert
1165310	TPE36 2 2.70-3.70	SOIL	Chrysotile	Bundle of Chrysotile	Steven Lambert
1165311	TPE46 2 1.50	SOIL	NAD	none	Steven Lambert
1165312	TPE46 3 3.40	SOIL	NAD	none	Steven Lambert
1165313	TPH05 1 0.40-1.10	SOIL	NAD	none	Steven Lambert
1165314	TPH05 2 1.10-1.80	SOIL	NAD	none	Steven Lambert
1165315	TPI30 1 1.00-1.50	SOIL	NAD	none	Steven Lambert
1165316	TPE26 1 1.40	SOIL	NAD	none	Steven Lambert
1165317	TPE26 3 2.80	SOIL	NAD	none	Steven Lambert
1165318	TPE55 3 3.80	SOIL	Chrysotile	Bundle of Chrysotile	Steven Lambert

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 17-98272
Client Ref SLS1015
Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1165305	TPH04 0.90 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165306	TPH04 2.40 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165307	TPH06 0.50 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165308	TPH06 2.50-3.00 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165309	TPE27 0.20-0.50 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165310	TPE36 2.70-3.70 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165311	TPE46 1.50 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165312	TPE46 3.40 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165313	TPH05 0.40-1.10 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165314	TPH05 1.10-1.80 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165315	TPI30 1.00-1.50 SOIL	26/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165316	TPE26 1.40 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165317	TPE26 2.80 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165318	TPE55 3.80 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165319	TPH04 0.90 LEACHATE	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165320	TPH06 0.50 LEACHATE	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165321	TPE36 2.70-3.70 LEACHATE	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165322	TPI30 1.00-1.50 LEACHATE	26/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165323	TPE26 1.40 LEACHATE	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-98272-1

02-Jun-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-98272-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 14 Soil samples, 5 Leachate samples.

Date Received 28-Apr-17

Date Started 28-Apr-17

Date Completed 02-Jun-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-98272. Extra testing.**

Opinions and interpretations are outside the laboratory's scope of ISO 10725 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. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPH04	1	0.9	1165305	05/05/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPH04	2	2.4	1165306	05/05/2017	Brown gravelly, sandy CLAY
TPH06	1	0.5	1165307	05/05/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
TPH06	2	2.50-3.00	1165308	05/05/2017	Brown sandy CLAY
TPE27	1	0.20-0.50	1165309	05/05/2017	Brown gravelly, sandy CLAY
TPE36	2	2.70-3.70	1165310	05/05/2017	Brown gravelly, sandy CLAY
TPE46	2	1.5	1165311	05/05/2017	Brown gravelly, sandy CLAY
TPE46	3	3.4	1165312	05/05/2017	Brown gravelly, sandy CLAY
TPH05	1	0.40-1.10	1165313	05/05/2017	Brown gravelly, sandy CLAY
TPH05	2	1.10-1.80	1165314	05/05/2017	White sandy CLAY
TPI30	1	1.00-1.50	1165315	05/05/2017	Brown gravelly, sandy CLAY
TPE26	1	1.4	1165316	05/05/2017	Brown gravelly, sandy CLAY
TPE26	3	2.8	1165317	05/05/2017	Brown gravelly SAND
TPE55	3	3.8	1165318	05/05/2017	Brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165305	1165306	1165307	1165308	1165309	1165310
Sample ID	TPH04	TPH04	TPH06	TPH06	TPE27	TPE36
Depth	0.90	2.40	0.50	2.50-3.00	0.20-0.50	2.70-3.70
Other ID	1	2	1	2	1	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/04/17	25/04/17	25/04/17	25/04/17	24/04/17	24/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0						Y	Y
Metals									
Antimony	DETSC 2301*	1	mg/kg	13		3.9			
Arsenic	DETSC 2301#	0.2	mg/kg	8.3		12	11	37	120
Barium	DETSC 2301#	1.5	mg/kg	960		280			
Beryllium	DETSC 2301#	0.2	mg/kg	0.7		1.9			
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.9		2.5	2.1	4.2	2.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.7		1.2	0.5	7.6	0.5
Chromium	DETSC 2301#	0.15	mg/kg	1200		120	48	39	69
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	39		45	28	54	19
Iron	DETSC 2301	25	mg/kg	94000		48000			
Lead	DETSC 2301#	0.3	mg/kg	37		79	41	450	76
Mercury	DETSC 2325#	0.05	mg/kg	0.06		< 0.05	< 0.05	< 0.05	0.26
Molybdenum	DETSC 2301#	0.4	mg/kg	5.4		1.9			
Nickel	DETSC 2301#	1	mg/kg	11		19	26	40	16
Vanadium	DETSC 2301	0.8	mg/kg	2000		130			
Zinc	DETSC 2301#	1	mg/kg	110		310	110	1900	310
Inorganics									
pH	DETSC 2008#			12.4	11.9	11.2	10.0	9.8	10.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4		9.6	1.8	46	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1			
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	0.4		9.6			
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6			
Organic matter	DETSC 2002#	0.1	%	0.9		4.1	5.6	1.2	0.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	140	330	270	400	1500
Sulphur as S, Total	DETSC 2320	0.01	%		0.01			0.04	0.12
Sulphate as SO4, Total	DETSC 2321#	0.01	%		1.2			0.20	2.2
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		26	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		370	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		390	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		0.6	< 0.5	< 0.5	< 0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165305	1165306	1165307	1165308	1165309	1165310
Sample ID	TPH04	TPH04	TPH06	TPH06	TPE27	TPE36
Depth	0.90	2.40	0.50	2.50-3.00	0.20-0.50	2.70-3.70
Other ID	1	2	1	2	1	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/04/17	25/04/17	25/04/17	25/04/17	24/04/17	24/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		13	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		220	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		230	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		630	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	0.15	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.07	< 0.03	0.05	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.08	< 0.03	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		0.11	< 0.03	0.03	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.14		0.46	0.15	0.21	0.20
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.24	< 0.03	0.08	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.28		0.75	0.19	0.25	0.24
Pyrene	DETSC 3303#	0.03	mg/kg	0.22		0.64	0.13	0.17	0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.09		0.23	0.05	0.10	0.11
Chrysene	DETSC 3303	0.03	mg/kg	0.10		0.29	0.04	0.11	0.11
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11		0.36	< 0.03	0.12	0.12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04		0.14	< 0.03	0.03	0.05
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06		0.23	< 0.03	0.06	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04		0.14	< 0.03	0.05	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04		0.18	< 0.03	0.06	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.1		3.9	0.57	1.5	1.3
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01			
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165311	1165312	1165313	1165314	1165315	1165316
Sample ID	TPE46	TPE46	TPH05	TPH05	TPI30	TPE26
Depth	1.50	3.40	0.40-1.10	1.10-1.80	1.00-1.50	1.40
Other ID	2	3	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/04/17	24/04/17	25/04/17	25/04/17	26/04/17	24/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETS 1102	0							
Metals									
Antimony	DETS 2301*	1	mg/kg	1.1			< 1.0		
Arsenic	DETS 2301#	0.2	mg/kg	7.8	7.1	22	3.2	8.5	39
Barium	DETS 2301#	1.5	mg/kg	120			170		
Beryllium	DETS 2301#	0.2	mg/kg	0.9			< 0.2		
Boron, Water Soluble	DETS 2123#	0.2	mg/kg	2.3	4.6	1.8	2.3	3.6	1.3
Cadmium	DETS 2301#	0.1	mg/kg	0.3	0.6	0.5	0.4	0.1	1.5
Chromium	DETS 2301#	0.15	mg/kg	23	770	66	18	15	540
Chromium, Hexavalent	DETS 2204*	1	mg/kg	< 1.0			< 1.0		
Copper	DETS 2301#	0.2	mg/kg	11	31	16	5.0	6.0	86
Iron	DETS 2301	25	mg/kg					14000	82000
Lead	DETS 2301#	0.3	mg/kg	23	34	33	6.7	6.0	230
Mercury	DETS 2325#	0.05	mg/kg	0.17	0.09	0.22	< 0.05	0.05	0.12
Molybdenum	DETS 2301#	0.4	mg/kg	0.6			1.3		
Nickel	DETS 2301#	1	mg/kg	11	7.8	22	4.7	22	23
Vanadium	DETS 2301	0.8	mg/kg	57			40		
Zinc	DETS 2301#	1	mg/kg	89	160	110	22	24	310
Inorganics									
pH	DETS 2008#			9.4	12.4	11.7	12.6	12.6	11.1
Cyanide, Total	DETS 2130#	0.1	mg/kg	1.2	0.3	0.5	< 0.1	0.2	0.4
Cyanide, Free	DETS 2130#	0.1	mg/kg	< 0.1			< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETS 2130*	0.2	mg/kg	1.2			< 0.2	0.2	0.4
Thiocyanate	DETS 2130#	0.6	mg/kg	< 0.6			< 0.6	1.6	< 0.6
Organic matter	DETS 2002#	0.1	%	1.1	0.4	1.3	1.8	1.6	0.5
Sulphate Aqueous Extract as SO4	DETS 2076#	10	mg/l	320	190	440	35	100	1500
Sulphur as S, Total	DETS 2320	0.01	%						
Sulphate as SO4, Total	DETS 2321#	0.01	%						
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETS 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETS 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	2.4	< 1.2
Aliphatic C16-C21	DETS 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	19	< 1.5
Aliphatic C21-C35	DETS 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	93	< 3.4
Aliphatic C5-C35	DETS 3072*	10	mg/kg	< 10	< 10	< 10	< 10	120	< 10
Aromatic C5-C7	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETS 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETS 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165311	1165312	1165313	1165314	1165315	1165316
Sample ID	TPE46	TPE46	TPH05	TPH05	TPI30	TPE26
Depth	1.50	3.40	0.40-1.10	1.10-1.80	1.00-1.50	1.40
Other ID	2	3	1	2	1	1
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/04/17	24/04/17	25/04/17	25/04/17	26/04/17	24/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	1.7	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	16	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	18	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	130	< 10
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	0.08	< 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	< 0.03	< 0.03	0.17	0.43	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.22	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	0.28	4.1	< 0.03	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.22	5.6	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.12	2.0	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	0.13	1.8	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.16	4.8	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.06	2.1	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.09	3.2	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.07	2.2	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.38	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.09	2.2	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.35	< 0.10	1.4	29	< 0.10	< 0.10
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
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 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165317	1165318
Sample ID	TPE26	TPE55
Depth	2.80	3.80
Other ID	3	3
Sample Type	ES	ES
Sampling Date	24/04/17	24/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0			Y
Metals					
Antimony	DETSC 2301*	1	mg/kg		
Arsenic	DETSC 2301#	0.2	mg/kg	43	7.0
Barium	DETSC 2301#	1.5	mg/kg		
Beryllium	DETSC 2301#	0.2	mg/kg		
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.5	4.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	42	760
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg	13	48
Iron	DETSC 2301	25	mg/kg		
Lead	DETSC 2301#	0.3	mg/kg	42	50
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg		
Nickel	DETSC 2301#	1	mg/kg	9.2	10
Vanadium	DETSC 2301	0.8	mg/kg		
Zinc	DETSC 2301#	1	mg/kg	200	85
Inorganics					
pH	DETSC 2008#			11.3	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	1.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg		
Cyanide, Complex	DETSC 2130*	0.2	mg/kg		
Thiocyanate	DETSC 2130#	0.6	mg/kg		
Organic matter	DETSC 2002#	0.1	%	0.6	0.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1600	92
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	1.7	
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	3.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	16
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	72
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	92
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	4.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165317	1165318
Sample ID	TPE26	TPE55
Depth	2.80	3.80
Other ID	3	3
Sample Type	ES	ES
Sampling Date	24/04/17	24/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	24
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	71
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	99
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	190
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.25
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.23
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.74
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	3.1
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.3
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.63
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.88
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	16
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		
PCB 52	DETSC 3401#	0.01	mg/kg		
PCB 101	DETSC 3401#	0.01	mg/kg		
PCB 118	DETSC 3401#	0.01	mg/kg		
PCB 153	DETSC 3401#	0.01	mg/kg		
PCB 138	DETSC 3401#	0.01	mg/kg		
PCB 180	DETSC 3401#	0.01	mg/kg		
PCB 7 Total	DETSC 3401#	0.01	mg/kg		
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165308
Sample ID	TPH06
Depth	2.50-3.00
Other ID	2
Sample Type	ES
Sampling Date	25/04/17
Sampling Time	n/s

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

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165319	1165320	1165321	1165322	1165323
Sample ID	TPH04	TPH06	TPE36	TPI30	TPE26
Depth	0.90	0.50	2.70-3.70	1.00-1.50	1.40
Other ID	1	1	2	1	1
Sample Type	ES	ES	ES	ES	ES
Sampling Date	25/04/17	25/04/17	24/04/17	26/04/17	24/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3	4.0	3.2	4.4	1.5
Barium, Dissolved	DETSC 2306	0.26	ug/l	6.5	12		25	40
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1		< 0.1	< 0.1
Boron	DETSC 2123	100	ug/l	180	140	100	160	150
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	16	1.4	< 0.25	10	0.32
Copper, Dissolved	DETSC 2306	0.4	ug/l	4.8	2.1	1.4	7.9	1.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.27	0.16	< 0.09	0.69	< 0.09
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.27	2.3		12	13
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	0.6	2.2	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	2.3	1.6	0.48	0.29	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	14	18		22	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	2.8	7.4	1.6
Inorganics								
pH	DETSC 2008			11.5	9.8	6.6	10.9	7.9
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	37	< 0.015		0.11	0.026
Chloride	DETSC 2055	0.1	mg/l	2.7	1.7		2.0	1.6

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1165305	TPH04 1 0.90	SOIL	NAD	none	Steven Lambert
1165307	TPH06 1 0.50	SOIL	NAD	none	Steven Lambert
1165308	TPH06 2 2.50-3.00	SOIL	NAD	none	Steven Lambert
1165309	TPE27 1 0.20-0.50	SOIL	Chrysotile	Small bundle of Chrysotile	Steven Lambert
1165310	TPE36 2 2.70-3.70	SOIL	Chrysotile	Bundle of Chrysotile	Steven Lambert
1165311	TPE46 2 1.50	SOIL	NAD	none	Steven Lambert
1165312	TPE46 3 3.40	SOIL	NAD	none	Steven Lambert
1165313	TPH05 1 0.40-1.10	SOIL	NAD	none	Steven Lambert
1165314	TPH05 2 1.10-1.80	SOIL	NAD	none	Steven Lambert
1165315	TPI30 1 1.00-1.50	SOIL	NAD	none	Steven Lambert
1165316	TPE26 1 1.40	SOIL	NAD	none	Steven Lambert
1165317	TPE26 3 2.80	SOIL	NAD	none	Steven Lambert
1165318	TPE55 3 3.80	SOIL	Chrysotile	Bundle of Chrysotile	Steven Lambert

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 17-98272-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1165309	1165310	1165318
Sample ID	TPE27	TPE36	TPE55
Depth	0.20-0.50	2.70-3.70	3.80
Other ID	1	2	3
Sample Type	SOIL	SOIL	SOIL
Sampling Date	24/04/17	24/04/17	24/04/17
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.006	0.005
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.006	0.005
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	980.75	716.09	1010.61
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	na	na
% Chrysotile bundles in sample		Mass %	<0.001	0.006	0.005
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	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 17-98272-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1165305	TPH04 0.90 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165306	TPH04 2.40 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165307	TPH06 0.50 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165308	TPH06 2.50-3.00 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165309	TPE27 0.20-0.50 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165310	TPE36 2.70-3.70 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165311	TPE46 1.50 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165312	TPE46 3.40 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165313	TPH05 0.40-1.10 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165314	TPH05 1.10-1.80 SOIL	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165315	TPI30 1.00-1.50 SOIL	26/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165316	TPE26 1.40 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165317	TPE26 2.80 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165318	TPE55 3.80 SOIL	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165319	TPH04 0.90 LEACHATE	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165320	TPH06 0.50 LEACHATE	25/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165321	TPE36 2.70-3.70 LEACHATE	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165322	TPI30 1.00-1.50 LEACHATE	26/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1165323	TPE26 1.40 LEACHATE	24/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 17-98534-1

01-Jun-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-98534-1

Client Reference SLS1015

Order No CH-1332

Contract Title Redcar Site

Description 5 Soil samples.

Date Received 02-May-17

Date Started 03-May-17

Date Completed 01-Jun-17

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 17-98534. Extra testing.**

Opinions and interpretations are outside the laboratory's scope of ISO 10725 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. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
TPC11	E2	2.00-2.50	1166961	09/05/2017	Black gravelly, sandy CLAY hydrocarbon odour
TPC11	E3	2.00-2.50	1166962	09/05/2017	Dark grey sandy CLAY
TPC03	E1	0.00-0.40	1166963	09/05/2017	Brown gravelly, sandy CLAY (Made ground - brick, coal)
TPE21	E1	0.10-0.40	1166964	09/05/2017	Dark brown gravelly SAND (Made ground - brick)
TPE21	E4	4.00-4.50	1166965	09/05/2017	Brown sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166961	1166962	1166963	1166964	1166965
Sample ID	TPC11	TPC11	TPC03	TPE21	TPE21
Depth	2.00-2.50	2.00-2.50	0.00-0.40	0.10-0.40	4.00-4.50
Other ID	E2	E3	E1	E1	E4
Sample Type	ES	ES	ES	ES	ES
Sampling Date	27/04/17	27/04/17	27/04/17	28/04/17	28/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0				Y		
Metals								
Antimony	DETSC 2301*	1	mg/kg				2.4	1.8
Arsenic	DETSC 2301#	0.2	mg/kg	45	15	9.6	8.7	3.5
Barium	DETSC 2301#	1.5	mg/kg				140	72
Beryllium	DETSC 2301#	0.2	mg/kg				0.8	0.4
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	4.7	2.7	3.6	3.7	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	1.6	1.7	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	25	89	52	36	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg				< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	59	40	36	72	16
Lead	DETSC 2301#	0.3	mg/kg	65	44	55	30	32
Mercury	DETSC 2325#	0.05	mg/kg	0.16	5.4	0.20	0.70	0.18
Molybdenum	DETSC 2301#	0.4	mg/kg				1.2	1.2
Nickel	DETSC 2301#	1	mg/kg	28	27	61	28	7.9
Vanadium	DETSC 2301	0.8	mg/kg				35	37
Zinc	DETSC 2301#	1	mg/kg	150	180	250	92	130
Inorganics								
pH	DETSC 2008#			8.5	9.2	11.7	8.3	8.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.9	2.6	0.5	0.6	46
Cyanide, Free	DETSC 2130#	0.1	mg/kg			< 0.1	< 0.1	3.8
Cyanide, Complex	DETSC 2130*	0.2	mg/kg			0.5	0.6	42
Thiocyanate	DETSC 2130#	0.6	mg/kg			< 0.6	< 0.6	1.4
Organic matter	DETSC 2002#	0.1	%	5.6	5.3	3.2	2.9	23
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	37	94	27	330	15
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.02	0.03	< 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
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	2100	38	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2500	23	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	3000	58	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	1000	33	< 3.4	37	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	8600	150	< 10	38	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.51	0.61	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.28	0.13	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	1.3	0.70	< 0.01	< 0.01	0.03
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	800	6.0	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1100	5.7	< 0.5	3.8	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	2500	19	< 0.6	8.7	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	1800	29	< 1.4	24	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	6100	61	< 10	37	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166961	1166962	1166963	1166964	1166965
Sample ID	TPC11	TPC11	TPC03	TPE21	TPE21
Depth	2.00-2.50	2.00-2.50	0.00-0.40	0.10-0.40	4.00-4.50
Other ID	E2	E3	E1	E1	E4
Sample Type	ES	ES	ES	ES	ES
Sampling Date	27/04/17	27/04/17	27/04/17	28/04/17	28/04/17
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	15000	210	< 10	74	< 10
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	4100	39	0.18	0.87	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	930	1.1	0.29	0.16	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	500	1.4	0.03	1.0	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	970	1.3	0.07	0.40	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2900	2.9	0.27	1.4	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	750	0.47	0.10	0.30	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1800	1.5	0.41	0.71	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1200	0.92	0.34	0.46	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	460	0.24	0.24	0.23	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	380	0.24	0.32	0.25	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	420	0.24	0.41	0.26	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	180	0.08	0.07	0.10	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	290	0.15	0.16	0.16	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	130	0.08	0.09	0.10	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	41	< 0.03	0.05	0.04	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	130	0.08	0.10	0.11	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15000	49	3.1	6.5	< 0.10
PCBs								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg					< 0.01
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.0	1.1	< 0.3	< 0.3	14

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166961	1166962
Sample ID	TPC11	TPC11
Depth	2.00-2.50	2.00-2.50
Other ID	E2	E3
Sample Type	ES	ES
Sampling Date	27/04/17	27/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	2.8	0.64
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	1.3	0.18
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	0.07	0.12
m+p-Xylene	DETSC 3431	0.01	mg/kg	1.7	0.56
o-Xylene	DETSC 3431	0.01	mg/kg	0.82	0.54
Styrene	DETSC 3431*	0.01	mg/kg	0.58	0.07
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	0.01	0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	0.02	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	2.0	0.45
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	0.35	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	2.0	1.2

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166961	1166962
Sample ID	TPC11	TPC11
Depth	2.00-2.50	2.00-2.50
Other ID	E2	E3
Sample Type	ES	ES
Sampling Date	27/04/17	27/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	0.02	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	0.14	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	13	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	0.4	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	9.8	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	18	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	12	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	600	2.2
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	960	3.5
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166961	1166962
Sample ID	TPC11	TPC11
Depth	2.00-2.50	2.00-2.50
Other ID	E2	E3
Sample Type	ES	ES
Sampling Date	27/04/17	27/04/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	180	2.7

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1166961	TPC11 E2 2.00-2.50	SOIL	NAD	none	Colin Patrick
1166962	TPC11 E3 2.00-2.50	SOIL	NAD	none	Colin Patrick
1166963	TPC03 E1 0.00-0.40	SOIL	Amosite Chrysotile	bundle of Amosite+ Chrysotile fibres	Colin Patrick
1166964	TPE21 E1 0.10-0.40	SOIL	NAD	none	Colin Patrick
1166965	TPE21 E4 4.00-4.50	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.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 17-98534-1

Client Ref SLS1015

Contract Title Redcar Site

Lab No	1166963
Sample ID	TPC03
Depth	0.00-0.40
Other ID	E1
Sample Type	SOIL
Sampling Date	27/04/17
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.010
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.010
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	677.56
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 %	0.005
% Chrysotile bundles in sample		Mass %	0.004
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile 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 17-98534-1

Client Ref SLS1015

Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1166961	TPC11 2.00-2.50 SOIL	27/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1166962	TPC11 2.00-2.50 SOIL	27/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1166963	TPC03 0.00-0.40 SOIL	27/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1166964	TPE21 0.10-0.40 SOIL	28/04/17	GJ 250ml x2, GJ 60ml, PT 1L		
1166965	TPE21 4.00-4.50 SOIL	28/04/17	GJ 250ml x2, GJ 60ml, PT 1L		

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, inappropriate containers etc 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 A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Geotechnical laboratory results

TRS REPORT

Report Ref: BG7F/AEG/RED/TRS/07/17/RP1
Date Issued: 21 July 2017
TRS Sample Refs: BG7F01-14
Order No: LA1855

EXAMINATION OF FOURTEEN BULK SAMPLES
FROM REDCAR SLS1015
FOR
ALLIED EXPLORATION & GEOTECHNICS LTD



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A Limited Company registered in England. Company Registration No: 2518421

**EXAMINATION OF FOURTEEN BULK SAMPLES
FROM REDCAR SLS1015
FOR
ALLIED EXPLORATION & GEOTECHNICS LTD**

1. BACKGROUND

Fourteen bulk samples were received from the above site on 6th June 2017. Each sample was weighed and allocated a unique TRS reference number, the details of which are recorded below:-

<u>TRS Ref</u>	<u>Site Ref</u>	<u>Depth/m</u>	<u>Mass/kg</u>
BG7F01	TP22 LB4	1.5	14.2
BG7F02	TP26 LB3	2.0	24.7
BG7F03	TP41 LB1	0.2	30.0
BG7F04	TPC23 LB2	0.3	13.9
BG7F05	TPD10 LB1	0.5	20.0
BG7F06	TPD32 LB2	1.3	13.5
BG7F07	TPD33 LB2	1.0	15.1
BG7F08	TPD44 LB1	0.5	14.4
BG7F09	TPE09 LB1	1.0	19.9
BG7F10	TPE11 LB2	1.7	16.1
BG7F11	TPE31 LB3	3.6	16.3
BG7F12	TPE46 LB1	0.3	16.7
BG7F13	TPE76 LB2	2.1	26.5
BG7F14	TPI36 LB2	2.0	21.0

The purpose of the exercise was to identify the range and relative concentrations of any iron and steelmaking slags present in the samples, and whether there was any potential for volumetric instability from the materials.

2. SAMPLE PREPARATION & PROGRAMME OF ANALYSIS

The fourteen samples were primary crushed to reduce particle size down to <50mm, portions then being selected and dried at low temperature to constant weight. The dried material was subjected to a regime of stage crushing and quartering to further reduce particle size down to <5mm. Portions of this <5mm material were made up into resin bound blocks, one face of which was ground flat and polished using diamond pastes. Further portions of the <5mm material were milled to a fine powder. Fractions of material were extracted throughout the preparation procedure to provide the materials necessary for the tests and analyses required in the programme.

A petrological examination was made of the polished blocks using reflected light microscopy, the complete findings of which are recorded in appendix A. On the basis of these results, and after discussions with the client, the following tests were carried out on samples BG7F 01, 06, 10, 11, 12, 13 & 14:-

- Water & acid soluble sulphates (table 1)
- Total sulphur (table 1)
- Free CaO & free MgO (samples BG7F 13 & 14 only) (table 2)
- Thermal analysis (DTA & TGA) (table 3)
- TRS accelerated expansion test (table 4)

3. DISCUSSION OF RESULTS

3.1 Petrology

A petrological examination was made of the fourteen samples using reflected light microscopy. The complete findings of this examination are recorded in appendix A.

All of the samples except BG7F13 contained large or very large amounts of blast furnace slag. Basic steel slag was the dominant constituent in sample BG7F13, as was present in medium amounts in sample 14, and small amounts in samples 3 and 4. Very small amounts of basic refractory material were seen in samples 8 and 14.

Some of the samples, especially sample 4, contained loosely compacted fume/dust. Other constituents seen, generally in minor amounts, included quartz, iron ore, ooidal (local) ironstone, metallic iron, clay, coal, coke and used Portland cement.

The blast furnace slag was predominantly crystalline with a mineralogy dominated by melilite, although some glassy or ceramic material was seen. The slag was moderately altered due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material. Potential for expansion can only be assessed with direct expansion testing (see sections 3.2 to 3.5).

The basic steel slag was fairly significantly altered due to weathering. The mineralogy of the material would suggest that there may be significant potential for expansion. Potential for expansion can only be assessed with direct expansion testing (see sections 3.2 to 3.5).

The basic refractory material, if present in greater concentrations on the site, could have significant potential for expansion.

3.2 Sulphur Species

The following range of analyses were performed on samples BG7F 01, 06, 10, 11, 12, 13 & 14. The results are recorded in table 1:-

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur

Total sulphur values were in the range 0.19 to 1.13 percent. Acid soluble sulphates were in the range 0.10 to 2.21 percent, with corresponding water soluble sulphates of 0.03 to 1.70 g/l. The lower sulphate and sulphur values were generally in samples with lower blast furnace slag contents. However,

some values were very high, and consequently, care should be taken when specifying concrete that may come into contact with the slag. Calculations show that between 4 and 78 percent of the available sulphur is present as sulphate.

3.3 Thermal Analysis

Simultaneous differential thermal analysis (DTA) and thermo-gravimetric analysis (TGA) were performed on samples BG7F 01, 06, 10, 11, 12, 13 & 14. The results are recorded in table three.

Ettringite was seen in all but two of the samples examined, at levels between 0.6 and 1.6 percent. Gypsum was seen in all but one of the samples, at between 0.3 and 3.3 percent. The presence of ettringite would suggest past expansion has occurred in the blast furnace slag.

Both calcium hydroxide and magnesium hydroxide were measured in sample BG7F13 at 0.6 and 0.5 percent. These values were used to correct the free CaO and free MgO analyses recorded in table 2.

Calcite was present in all of the samples examined at between 0.1 and 1.6 percent.

3.4 Free CaO & Free MgO

Free CaO & free MgO analyses were carried out on samples BG7F 13 & 14. The results are recorded in table 2. Both original and corrected values are recorded. The original values include both the oxide (CaO and MgO) and the hydroxide ((Ca(OH)₂ and Mg(OH)₂)) contents. The corrected values report only the oxide content (CaO and MgO) after correction using the hydroxide values from the thermal analyses. These corrected values are the more significant, as it is only the oxides that are still free to hydrate, i.e. expand.

Free lime was recorded in the samples at 1.8 and 0.4 percent. Free magnesia was recorded at 0.3 and 0.3 percent. These corrected free lime and free magnesia levels record oxides that are potentially still free to hydrate (i.e. expand).

3.5 TRS Accelerated Expansion Test

The TRS accelerated expansion test was performed on samples BG7F 01, 06, 10, 11, 12, 13 & 14. The results are recorded in table four. The samples were subjected to the test for a period of 14 days, this being extended to 28 days for samples 13 & 14 due to the presence of basic steel slag. Note that the test measures potential for future expansion, and is not a measure of expansion that may have taken place in the past.

Most of the blast furnace slag samples recorded modest expansions, the exception being sample 1 that recorded 0.34% at 14 days. Sample 13, which was predominantly basic steel slag, recorded 1.55 % at 28 days. Sample 14, which was mixed slag, reached 0.36 % at 28 days.

4. CONCLUSIONS & RECOMMENDATIONS

The following conclusions can be drawn:-

- All but one of the samples contained significant amounts of blast furnace slag. The blast furnace slag was mainly crystalline and showed some alteration due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material. Potential for expansion can only be assessed with direct expansion testing.
- Basic steel slag was the dominant constituent of one sample, and a more minor constituent of three. The basic steel slag, which was substantially altered due to weathering, could be a significant source of expansion. Potential for expansion can only be assessed with direct expansion testing.
- Minor amounts of basic refractory material were seen in two of the samples. If pockets of this material were to be present on the site, there could be significant risk of expansion.
- Other materials present, generally in minor concentrations, included quartz, iron ore, ooidal (local) ironstone, metallic iron, clay, coal, coke and used Portland cement.
- Some of the samples, especially sample 4, contained loosely compacted fume/dust.
- Further testing of the blast furnace slag indicated some high sulphate levels which should be taken into account when specifying concrete that may come into contact with the slag. There was also some evidence of past expansion with the presence of ettringite. Expansion testing recorded some potential for expansion, with one sample recording 0.34 percent

- Significant potential for expansion was recorded for the sample that was predominantly basic steel slag, with 1.55 percent recorded. Again, there was also evidence of past expansion with this material.

The following recommendations are made:-

The site from which these samples were taken is of significant size, potentially containing huge amounts of iron and steel industry slag. To date, only 14 samples have been examined, with expansion testing carried out on only 7. A much more significant site investigation, commensurate with the volume of material on site, should now be undertaken. This should aim to determine the distribution of slag types across the site, and further assess the expansive properties of the slag.

It is highly likely that material will be present on the site with far greater potential for expansion than that recorded in this small batch of samples.

Note

These conclusions apply only to the samples tested and may not represent the bulk of the material on the site from which they were taken.

Ian D. Thomas

Ian D Thomas BSc(Hons)

21 July 2017

TABLE 1 **SULPHUR SPECIES ANALYSES**

TRS Ref	Site Ref	Water Sol. SO ₃ (g/l)	Acid Sol. SO ₃ (%)	Total S (%)
BG7F01	TP22 - 1.5m	0.97	2.21	1.13
BG7F06	TPD32 - 1.3m	1.00	0.96	0.94
BG7F10	TPE11 - 1.7m	1.70	1.22	1.13
BG7F11	TPE31 - 3.6m	1.33	1.15	0.89
BG7F12	TPE46 - 0.3m	0.49	0.49	0.80
BG7F13	TPE76 - 2.1m	0.03	0.12	0.19
BG7F14	TPI36 - 2.0m	0.28	0.1	0.95

TABLE 2 **ANALYSIS FOR FREE CaO AND FREE MgO**

TRS Ref	Site Ref	Free CaO Original (%)	Free CaO Corrected (%)	Free MgO Original (%)	Free MgO Corrected (%)
BG7F13	TPE76 - 2.1m	2.3	1.8	0.6	0.3
BG7F14	TPI36 - 2.0m	0.4	0.4	0.3	0.3

TABLE 3 **RESULTS FROM THERMAL ANALYSIS**

TRS Ref	Site Ref	Mass % by Thermal Analysis						
		L.O.I.	Ettringite	Gypsum	Calcite	Ca(OH) ₂	Mg(OH) ₂	Others
BG7F01	TP22 - 1.5m	3.42	1.4	3.3	0.1	0.0	0.0	-
BG7F06	TPD32 - 1.3m	2.93	1.6	1.0	0.4	0.0	0.0	-
BG7F10	TPE11 - 1.7m	2.87	1.0	1.5	0.3	0.0	0.0	-
BG7F11	TPE31 - 3.6m	2.40	0.9	1.3	0.1	0.0	0.0	quartz
BG7F12	TPE46 - 0.3m	2.21	0.6	0.6	0.5	0.0	0.0	-
BG7F13	TPE76 - 2.1m	2.74	0.0	0.0	1.6	0.6	0.5	-
BG7F14	TPI36 - 2.0m	1.66	0.0	0.3	0.5	0.0	0.0	-

TABLE 4 **TRS ACCELERATED EXPANSION TEST**

TRS Ref	Site Ref	7 day (%)	14 day (%)	21 day (%)	28 day (%)
BG7F01	TP22 - 1.5m	0.22	0.34	-	-
BG7F06	TPD32 - 1.3m	0.01	0.03	-	-
BG7F10	TPE11 - 1.7m	0.00	0.00	-	-
BG7F11	TPE31 - 3.6m	0.00	0.00	-	-
BG7F12	TPE46 - 0.3m	0.01	0.02	-	-
BG7F13	TPE76 - 2.1m	0.72	1.05	1.39	1.55
BG7F14	TPI36 - 2.0m	0.22	0.31	0.34	0.36

APPENDIX A

PETROLOGICAL REPORT ON SAMPLES BG7F 01-14

A petrological examination has been carried out of fourteen samples, BG7F 01 to 14.

Polished blocks were prepared using particulate material crushed to a nominal size of –5mm. Representative material was made up into resin-bonded blocks. One face of each of these was ground flat and polished using diamond pastes. In addition, when appropriate, the surfaces were selectively etched with water, 10% MgSO₄ solution and 0.1%N HCl in order to help with the phase identification.

The detailed results are given in the accompanying Table.

Blast furnace slag occurs in large to very large amounts in all the samples except no. 13. Basic steel slag occurs in small amounts in samples 03 and 04 and in medium to large amounts in samples 13 and 14. A little basic refractory material (dolomet) was seen in samples 08 and 14. Several samples contain small amounts of particles consisting of loosely compacted fume/dust. Sample 04 has a medium amount of this material.

The blast furnace slag is mostly vesicular and crystalline with vesicles infilled by secondary material. It is mostly dark grey or greenish in colour.

The unaltered slag consists mainly of melilite (Ca,Mg,Al silicate) with spinel (MgAl₂O₄) as a second principle phase. Minor amounts of merwinite (Ca,Mg silicate) and dicalcium silicate (e.g. larnite (β-Ca₂SiO₄) and bredigite (Ca₂SiO₄ with some Mg in solid solution)) are present and other silicates such as wollastonite (Ca silicate). These form a matrix to the melilite crystals. Some glassy slag is present, again mostly as a matrix phase. There is also some finely crystalline ceramic slag. Very small amounts of Ca, Mn and Fe sulphides are present and graphitic iron occurs as minute spherules and occasional larger prills. Secondary alteration is moderate in amount mainly infilling pores and occurring as surface rinds. Some has replaced the original phases especially the calcium-rich silicates. It consists mainly of granular material and aggregates of needle shaped crystals that are probably silicate and sulpho-aluminate hydrates such as ettringite. Calcite (CaCO₃) occurs in some samples and most samples have copious amounts of well-crystallised gypsum (CaSO₄.2H₂O).

The unaltered basic steel slag consists mainly of dicalcium silicate, RO and R₃O₄ phases (FeO and Fe₃O₄ with some Al, Mn, Mg and Ca in solid solution) and CaF phases (complex Ca alumino-ferrites). There are minor amounts of another

silicate, probably melilite (Ca,Mg,Al silicate). There are small amounts of lime phase (CaO with some Fe, Mn and Mg in solid solution) and periclase (MgO with some Fe in solid solution). The lime phase mostly forms spongy grains up to about 0.3 mm in size or is finely crystalline, well dispersed at other phase boundaries. The periclase occurs mostly as rounded grains up to about 0.1 mm in size that are often encapsulated in RO phase. The slag is extensively altered with the formation of secondary phases difficult to identify specifically under the microscope.

A little basic refractory material is present. This consists of partly hydrated dolomet (originally finely crystalline periclase and lime phase bonded by minor amounts of silicates).

The compacted fume/dust is made up of particles ranging in size from less than 1 to about 100 microns of iron oxides, glass, coke, etc. embedded in an extremely fine-grained matrix.

Other constituents include quartz (as sand, sandstone and silt), iron ore, ooidal (local) ironstone, metallic iron with associated rust, clay, coal, coke and used Portland cement. There are small to medium amounts of cementitious material binding the smaller and adherent to the larger particles. This appears to be similar to the slag alteration products but may also include clay.

TRS SAMPLES BG7F 01-14 (Sheet 1 of 2)

	1	2	3	4	5	6	7	8	9	10
BLAST FURNACE SLAG										
Amount	L	L	L	I	L	L	I	L	L	L
Phases present:-										
Melilite	L	L	L	L	L	L	L	L	L	L
Merwinite	-	-	-	-	vs	vs	-	-	-	-
Larnite & bredigite	-	vs	-	-	vs	-	vs	-	-	vs
Matrix & other silicates	s	s	s	s	s	s	s	s	s	s
Ca & Fe,Mn sulphides	vs	vs	vs	vs	vs	vs	vs	vs	vs	vs
Metal, rust, scale etc.	vs	vs	vs	vs	s	vs	s	s	vs	vs
Spinel	s	s	s	s	s	s	s	s	s	s
RO phase (R mainly Fe)	-	-	-	-	s	-	-	-	-	-
Glassy slag	s	vs	vs	s	vs	vs	vs	vs	vs	vs
Ceramic slag	vs	vs	vs	vs	vs	vs	vs	vs	vs	vs
Alteration products	m	m	m	m	m	m	m	m	m	m
Calcite	-	-	-	-	-	-	-	s	-	-
Gypsum	s	s	m	m	m	s	s	s	m	s
BASIC STEEL SLAG										
Amount	-	-	s	s	-	-	-	-	-	-
Phases present:-										
Dicalcium silicate	-	-	l	s	-	-	-	-	-	-
Unetched silicates	-	-	s	-	-	-	-	-	-	-
RO phase	-	-	m	m	-	-	-	-	-	-
CaF phase	-	-	vs	s	-	-	-	-	-	-
R3O4 phase	-	-	s	s	-	-	-	-	-	-
Metal & rust	-	-	-	-	-	-	-	-	-	-
Spinel	-	-	vs	-	-	-	-	-	-	-
Lime phase	-	-	vs	-	-	-	-	-	-	-
Periclase	-	-	vs	-	-	-	-	-	-	-
Fluorite	-	-	vs	-	-	-	-	-	-	-
Alteration products	-	-	m	l	-	-	-	-	-	-
BASIC REFRACTORIES										
Amount	-	-	-	-	-	-	-	vs	-	-
OTHER CONSTITUENTS										
Quartz, sandstone, etc.	s	vs	vs	vs	-	vs	s	vs	-	s
Acid steel slag	-	-	-	-	-	-	s	-	-	-
Metal, rust & scale	vs	vs	vs	vs	vs	-	vs	vs	vs	vs
Fume	-	-	-	m	vs	-	-	-	-	-
Iron ore, ironstone, sinter, etc.	vs	-	-	-	-	vs	-	vs	-	s
Shale, clay & ash	-	-	-	-	vs	vs	s	vs	-	s
Coke	s	vs	vs	s	vs	vs	s	vs	vs	s
Coal & char	vs	-	-	-	-	-	vs	vs	-	vs
Cementitious material & clay	s	s	s	s	s	s	s	s	s	s
Used Portland cement	vs	-	-	-	-	-	vs	-	-	-

**L = very large, I = large, m = medium, s = small
and vs = very small amounts**

TRS SAMPLES BG7F 01-14 (Sheet 2 of 2)

	11	12	13	14
BLAST FURNACE SLAG				
Amount	L	L	s	I
Phases present:-				
Melilite	L	L	L	L
Merwinite	-	vs	-	-
Larnite & bredigite	-	vs	-	-
Matrix & other silicates	s	s	s	s
Ca & Fe,Mn sulphides	vs	vs	vs	s
Metal, rust, scale etc.	vs	vs	vs	vs
Spinel	s	s	s	vs
RO phase (R mainly Fe)	vs	-	-	s
Glassy slag	vs	vs	-	-
Ceramic slag	vs	vs	-	-
Alteration products	m	m	s	s
Calcite	-	s	-	s
Gypsum	s	s	-	s
BASIC STEEL SLAG				
Amount	-	-	L	m
Phases present:-				
Dicalcium silicate	-	-	l	l
Unetched silicates	-	-	s	s
RO phase	-	-	m	m
CaF phase	-	-	s	s
R3O4 phase	-	-	s	s
Metal & rust	-	-	s	vs
Spinel	-	-	-	-
Lime phase	-	-	s	s
Periclase	-	-	s	s
Fluorite	-	-	-	-
Alteration products	-	-	m	m
BASIC REFRACTORIES				
Amount	-	-	-	vs
OTHER CONSTITUENTS				
Quartz, sandstone, etc.	m	vs	s	-
Acid steel slag	-	-	-	m
Metal, rust & scale	vs	vs	vs	s
Fume	-	-	s	-
Iron ore, ironstone, sinter, etc.	vs	-	vs	vs
Shale, clay & ash	s	-	-	-
Coke	vs	vs	s	vs
Coal & char	-	-	vs	vs
Cementitious material & clay	s	s	s	s
Used Portland cement	-	-	-	-

**L = very large, I = large, m = medium, s = small
and vs = very small amounts**

GENERAL EXPLANATION

L = very large, l = large, m = medium, s = small and vs = very small amounts.

Blast furnace slag. When present this consists mainly of melilite (Ca,Mg,Al silicate ranging in composition between $\text{Ca}_2\text{Al}_2\text{SiO}_7$ and $\text{Ca}_2\text{MgSi}_2\text{O}_7$). Other common phases are merwinite ($\text{Ca}_3\text{MgSi}_2\text{O}_8$), larnite ($\beta\text{-Ca}_2\text{SiO}_4$) and bredigite (Ca_2SiO_4 with some Mg in solid solution). The matrix often consists of some of the above phases, especially melilite, but may also contain other phases such as wollastonite (CaSiO_3), anorthite ($\text{CaAl}_2\text{Si}_2\text{O}_8$) and pyroxene ($(\text{CaMg})\text{SiO}_3$). Spinel (MgAl_2O_4) may be present. Sulphides and metal usually occur and are mostly finely dispersed, but the metal sometimes occurs as prills and may contain some graphite and Ti carbo-nitride (TiCN). Material reported as ceramic in appearance is very finely crystalline. The alteration products often include calcite and gypsum but are mostly silicate and/or sulpho-aluminate hydrates that are difficult to identify specifically under the microscope.

Basic steel slag. When present this consists mainly of dicalcium silicate, mostly the β -form (larnite) but sometimes the alpha form. Phosphoric slags may contain nagelschmidtite (Ca_2SiO_4 with $\text{Ca}_3\text{P}_2\text{O}_8$ in solid solution). Other silicate often present in small amounts, unetched by dilute HCl, is probably melilite. RO, R_3O_4 and RF phases are typically present and are mainly FeO and Fe_3O_4 with some Mg, Mn, Ca, etc. in solid solution and complex Ca alumino-ferrites. There may also be some Fe_2O_3 and spinel ($(\text{Mg,Fe})\text{Al}_2\text{O}_4$). The slag typically carries minor amounts of periclase (MgO with some Fe in solid solution) and lime phase (CaO with some Fe, Mn & Mg in solid solution). Other possible minor constituents include fluorite (CaF_2) and apatite (Ca fluoro-phosphate), the last present in phosphoric slags. The alteration products are, again, difficult to identify specifically but are probably, mainly, hydrated silicates. Portlandite ($\text{Ca}(\text{OH})_2$) may be present.

Basic refractory material. When present, this is mainly magnesian and consists of granular periclase (MgO) with interstitial silicates. Sometimes samples contain chrome-magnesia material with chromite present in addition to the other phases. Hot face material (from close to the furnace) may also occur. The periclase and interstitial silicates show secondary alteration similar to that of the basic steel slag. Brucite ($\text{Mg}(\text{OH})_2$) is likely.

Acid steel slag. When present this consists mainly of fayalite ($(\text{Fe,Mn})_2\text{SiO}_4$), Fe,Mn oxides and cristobalite (high temperature SiO_2).

Other slags. The 'intermediate slag' (probably primary flush slags from steel furnaces) has a variable phase assemblage, being mainly formed of silicates, particularly dicalcium silicate, melilite, merwinite and a complex olivine phase together with spinel and wustite (FeO). Sometimes it contains significant amounts of periclase, well embedded in the slag. The 'ferrous slag' (probably from foundry operations) has similar silicates but much more substantial content of iron oxides, usually wustite. It is often associated with scale (iron oxides formed on the surface of steel during reheating/cooling). When present, the 'cindery slag' consists of various silicates and silicate glass with Fe oxides, hercynite (FeAl_2O_4) and, sometimes, corundum (Al_2O_3). It is usually derived from heating furnaces and is often associated with burnt shale. When present, the 'siliceous clinker' is similar but devoid of iron oxides.

Other constituents The alumino-silicate brick includes a range of refractory firebrick, common brick and alumina-rich refractories. The 'quartz, sandstone, etc.' may include used silica refractory material consisting of quartz and its high temperature forms. Sometimes there is a distinct granular texture and it is derived from silcrete, a kind of chert. Cementitious material may bond the finer particles together. It is similar to the other alteration products consisting mostly of complex hydrates difficult to identify under the microscope. Sometimes some is used Portland cement recognised by the relict textures of the clinker and the embedded quartz sand.

APPENDIX B

MECHANISMS OF VOLUMETRIC INSTABILITY IN IRON AND STEEL INDUSTRY SLAGS

Volumetric change with time can occur in some types of iron and steel industry slags. These mechanisms are briefly described in this section.

Blast Furnace Slags

Fresh-make air-cooled, i.e. crystalline, blast furnace slags are almost always volumetrically stable after cooling. The two mechanisms for volumetric instability listed in BS1047:1983 – “Air Cooled Blast furnace Slag for use in Construction” are:-

- a) Beta to gamma inversion of dicalcium silicate.**
- b) Iron unsoundness.**

a) Research by G H Thomas on this phase transformation has shown the transformation to be athermal rather than isothermal. In practical terms this means that inversion, and the expansion associated with it, can only occur during the cooling cycle. In fully cooled material there would appear to be no further risk of instability from this mechanism.

b) Iron unsoundness is a very rare form of instability frequently associated with operating problems in the blast furnace. TRS know of only one instance in over 40 years. The mechanism, which is a hydrolysis reaction, is immediately triggered off by the presence of water. Once water has initiated the reaction, the mechanism proceeds to completion. It is impossible to arrest the process once started; at least by methods operating in normal ambient conditions.

It follows that the risk of late expansion from either of these mechanisms in blast furnace slag is remote.

c) Sulphoaluminate Type Activity

Some years ago, G. H. Thomas discovered a third mechanism that may give rise to volumetric instability. The process is possible only in some old blast furnace slag altered by weathering. When the sulphide sulphur in the blast furnace slags is oxidised during

weathering to sulphate, under some circumstances reactions can take place within the slag to produce an 'ettringite' type product. The process is somewhat analogous to sulphatic attack on concrete and has a similar result - expansion of the mass and associated disruption.

For the mechanism to have any significance, the slag needs to have residual potential for this reaction. Evidence of past activity does not necessarily indicate further reaction is possible.

The TRS accelerated expansion test is, we believe, uniquely capable of identifying such slags, as well as instability attributable to free CaO and free MgO in steel slag & etc.

Basic Steel Slags

Basic steel slags commonly contain significant quantities of free CaO and free MgO. These free oxides are well known for the massive expansion associated with their hydration. In practical terms, it is impossible to forecast when hydration will take place, but it can be up to decades after the material was cooled – or placed. The reasons are complex, but include the varying density of the oxides, due to the variation in temperatures at which the products have been held in the furnace. Other factors influencing rate of hydration include:-

- the protection of slags by a reaction product at the oxide interface with the slag.
- the presence of the oxides as lime or magnesia rich solid solutions instead of the pure oxide.

The result is potential future volumetric instability but at an unforeseeable date. Periclase, i.e. free MgO, is relatively much slower than free CaO to hydrate.

Scrap High Magnesia Refractories

These are particularly undesirable components in fill as they commonly result in high concentrations of free MgO. The problems associated with these concentrations are similar to those where periclase is found in basic steel slag.

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LABORATORY REPORT CERTIFICATE



Contract Title: Redcar Site

AEG Reference: SLS1015

Client Address: CH2M
Dunedin House
Riverside
Teesdale Business Park
TS17 6BJ

We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received from December 2016 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited

- ☐ Nick Vater (Technical Director)
☐ Kevin Warriner (HSE & Quality Director)
☒ Michelle Selkirk (Laboratory Manager)

Signed

Date: 17 August 2017

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation.

Please note the material was derived from samples taken outside the control of the laboratory.

LABORATORY REPORT CERTIFICATE

ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		5
2	Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	1
2	Plasticity Index and Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	1
-	Determination of Density by Linear Measurement	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-2:2014)	-
3	Determination of Particle Density	Yes	BS 1377 Part 2 1990	1
4	Particle Size Distribution Sieving	Yes	BS 1377 Part 2 1990	52
4	Particle Size Distribution Sedimentation	No	BS 1377 Part 2 1990	7
5	Determination of Organic Content and Loss on Ignition (Tested externally)	No	See DETS certificates	3
6	Determination of Dry Density/Moisture Content Relationship	Yes	BS 1377 Part 4 1990	23
7	Determination of Resistance to Fragmentation (Tested externally)	No	BS EN 1097-2:2010	4
-	Determination of Moisture Condition Value	Yes	BS 1377 Part 4 1990	-
-	Determination of MCV / Moisture Relationship	Yes	BS 1377 Part 4 1990	-
-	Determination of California Bearing Ratio	Yes	BS 1377 Part 4 1990	-
-	Determination of One Dimensional Consolidation Properties	Yes	BS 1377 Part 5 1990	-
-	Determination of Permeability (Falling Head)	Yes	In-house Method	-
-	Determination of Permeability in a Triaxial Cell	Yes	BS 1377 Part 6 1990	-
-	Shear Strength by Hand Vane	No		-
8	Shear Strength by Direct Shear (Some tested externally)	Yes	BS 1377 Part 7 1990	40
-	Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement	Yes	BS 1377 Part 7 1990	-
-	Consolidated Undrained Shear Strength in Triaxial Cell with Measurement of Pore Pressure	No	BS 1377 Part 8 1990	-
-	Consolidated Drained Shear Strength in Triaxial Cell with Measurement of Volume Change	No	BS 1377 Part 8 1990	-
9	Asbestos Screening (Tested externally)	No		3
10	Slag Analysis (Tested externally)	No		16

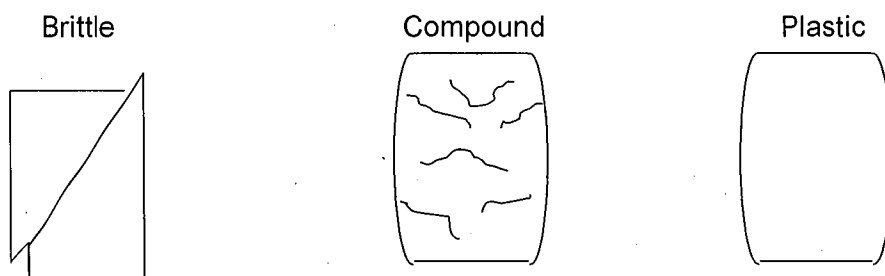
LABORATORY REPORT CERTIFICATE

ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

Br	Brittle	PSD	Particle Size Distribution by sieve analysis
C	Compound	SB	Shear Box
CBR	California Bearing Ratio	SED	Sedimentation Analysis
CDT	Consolidated Drained Triaxial	SO4	Sulphate (total, water extract, groundwater)
CL	Chloride content (water or soil)	CP2	Dry Density/Moisture Content 2.5kg rammer
US	Unsuitable sample for test	CP4	As above using 4.5kg rammer
UUT	Undrained Unconsolidated Triaxial	CPV	As above using vibrating hammer
HSV	Vane Test	CUT	Consolidated Undrained Triaxial
IS	Insufficient sample for test	R	Remoulded
LOI	Loss On Ignition	U	Undisturbed
M	Multi-stage testing	MC	Moisture Content
MCV	Moisture Content Value	PL	Point Load
NAT	Natural preparation method	NMC	Natural (or as received) moisture content
P	Plastic	PFH	Permeability Falling Head Method
OED	Oedometer	PTXL	Permeability in Triaxial Cell
OMC	Optimum Moisture Content	ORG	Organic content
B	Large disturbed (bulk) sample	PD	Particle Density (SG)
J	Small disturbed (jar) sample	PI	Liquid limit, plastic limit and plasticity index

Typical Mode of Failure for Triaxial Testing



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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth	ID	Description	Laboratory Tests/Remarks
TP-06	1.10	B1	MADE GROUND (Brown clayey very sandy gravel with a medium cobble content. Gravel includes slag).	MC PSD Combined with B2 @ 3.10m US for CP4
TP-10	0.90	B1	MADE GROUND (Brown clayey very sandy gravel including slag).	PSD PD Combined with B3 @ 3.10m US for CP4
TP-10	0.90	D2	MADE GROUND (Dark brown slightly clayey sand and gravel).	MC
TP-11	0.50	D1	MADE GROUND (Dark brown slightly clayey sand and gravel).	MC
TP-11	0.50	B2	MADE GROUND (Dark brown slightly clayey sandy gravel with a high cobble content).	PSD US for CP4
TP-14	2.00	B	Brown clayey very sandy GRAVEL.	PSD PD CP4
TP-16	1.00	B1	MADE GROUND (Dark brown slightly clayey very sandy gravel).	PSD
TP-16	1.00	D2	MADE GROUND (Dark brown slightly clayey gravelly sand).	MC
TP-16	3.10	B3	MADE GROUND (Brown clayey very sandy gravel with a medium cobble content).	PSD
TP-16	3.10	D4	MADE GROUND (Brown slightly clayey sandy gravel).	MC
TP-18	1.50	B1	MADE GROUND (Brown slightly clayey sandy gravel with a low cobble content. Gravel includes slag and brick fragments).	PSD Combined with B3 @ 3.10m US for CPV and SB
TP-18	1.50	D2	MADE GROUND (Dark brown slightly clayey sand and gravel).	MC
TP-19	0.50	B1	MADE GROUND (Dark brown grey slightly clayey very sandy gravel with a medium cobble content. Gravel includes slag).	PSD Combined with B3 @ 2.00m & B4 @ 3.10m US for CPV
TP-19	0.50	D2	MADE GROUND (Dark brown slightly clayey sandy gravel).	MC
TP-20	1.10	B	Brown gravelly SAND.	ORG
TP-21	1.10	B1	MADE GROUND (Grey sandy gravel).	PD US for CP4
TP-21	2.20	B3	MADE GROUND (Grey sandy gravel).	PD
TP-22	0.70	B	MADE GROUND (Brown grey sandy gravel).	PD CP4
TP-23	0.80	B2	MADE GROUND (Brown clayey sandy gravel with a medium cobble content. Gravel includes slag).	MC PSD PD Combined with B3 @ 2.10m US for CP4
TP-24	2.70	B2	MADE GROUND (Brown slightly clayey sandy gravel with a medium cobble content. Gravel includes slag).	MC PSD US for CP4
TP-28	0.20	B	MADE GROUND (Dark brown slightly clayey very sandy gravel including ash and slag fragments).	PSD

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth	ID	Description	Laboratory Tests/Remarks
TP-29	0.50	B1	MADE GROUND (Dark brown grey slightly sandy cobbles).	US for MC PSD CP4
TP-29	0.80	B2	MADE GROUND (Grey slightly clayey sandy gravel with a high cobble content. Gravel includes ash and slag fragments).	PSD SB
TP-31	2.30	B	Brown slightly clayey sandy GRAVEL.	PSD
TP-36	0.70	B1	MADE GROUND (Brown clayey very sandy gravel including slag).	PSD PD US for CP4 and SB
TP-36	0.70	D2	MADE GROUND (Dark brown slightly clayey sandy gravel).	MC
TP-39	1.00	B	MADE GROUND (Brown slightly clayey sandy gravel including slag).	PSD
TP-42	0.50	B	MADE GROUND (Brown clayey very sandy gravel).	PSD CP4
TP-42	1.70	B2	MADE GROUND (Brown clayey very sandy gravel with a medium cobble content. Gravel includes ash, slag and brick fragments).	PSD SB
TP-42	3.40	B	MADE GROUND (Brown clayey very sandy gravel including ash and slag. (Clay of low to intermediate plasticity)).	MC PI PSD SED
TPB-01	3.70	B	Brown gravelly SAND with occasional clay pockets.	PSD
TPB-02	0.30	B	MADE GROUND (Brown slightly clayey very sandy gravel including slag fragments).	PSD CPV
TPB-06	1.30	B	Brown slightly clayey very sandy GRAVEL.	PSD
TPB-07	2.50	B	Brown clayey very sandy GRAVEL with occasional clay pockets.	PSD SB
TPB-12	1.00	B	Brown clayey very sandy GRAVEL.	PSD PD CP4
TPC-07	1.00	B	MADE GROUND (Grey gravelly sand. Gravel includes ash and coal fragments).	ORG
TPC-16	4.20	B	Grey sandy slightly gravelly SILT.	PSD SED
TPC-16	4.20	D	Grey organic SILT of high to very high plasticity.	MC PI
TPC-17	1.30	B	Brown slightly sandy CLAY.	ORG
TPC-19	0.80	B	Brown slightly sandy slightly gravelly CLAY.	PSD SED
TPC-22	3.00	B	Dark grey very silty SAND.	SB
TPC-27	1.50	B	Grey slightly sandy slightly gravelly SILT.	PSD SED

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth	ID	Description	Laboratory Tests/Remarks
TPC-29	1.00	B	Brown silty SAND.	MC PI(NP) CP4
TPC-32	3.70	B	Brown black gravelly SAND.	CP4
TPD-01	1.20	B	Brown slightly gravelly SAND. Gravel includes shell fragments.	PD CP4
TPD-02	0.20	B	MADE GROUND (Grey gravel and cobbles including slag).	PSD
TPD-19	1.50	B	Brown slightly clayey SAND.	PSD CP4
TPD-22	2.00	D	Brown slightly sandy CLAY of intermediate to high plasticity.	MC PI ORG
TPD-22	2.00	B	Brown slightly sandy slightly gravelly CLAY.	PSD SED CP4
TPD-23	0.90	B	Brown clayey slightly gravelly SAND with occasional clay pockets.	PSD SB
TPD-23	0.90	D	Brown slightly gravelly SAND with occasional clay pockets.	MC
TPD-24	0.80	B	MADE GROUND (Dark brown clayey very sandy gravel with a medium cobble content. Gravel includes ash and slag fragments).	PSD
TPD-25	1.70	D	Brown grey slightly sandy slightly gravelly CLAY of intermediate plasticity.	MC PI
TPD-28	1.20	D	Grey organic CLAY/SILT of high plasticity.	MC PI
TPD-30	1.70	B	Brown clayey very sandy GRAVEL.	PSD CP4
TPD-41	1.40	D	Brown slightly sandy slightly gravelly CLAY of intermediate plasticity.	MC PI
TPE-04	1.50	B	MADE GROUND (Brown clayey very sandy gravel including ash, clinker and slag fragments).	PSD PD SB
TPE-05	0.50	B	MADE GROUND (Brown sandy gravel).	CP4
TPE-07	2.20	B	MADE GROUND (Brown slightly clayey sandy gravel including slag).	PSD
TPE-12	0.60	B	MADE GROUND (Brown clayey sandy gravel with a high cobble content).	PSD US for CP4
TPE-12	1.00	B	Dark yellow brown slightly gravelly SAND. Gravel includes shell fragments.	SB
TPE-20	0.50	B	MADE GROUND (Brown slightly clayey very sandy gravel with a medium cobble content).	PSD CP4
TPE-22	0.50	B	MADE GROUND (Brown sandy gravel with a high cobble content).	US for CP4

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth	ID	Description	Laboratory Tests/Remarks
TPE-25	2.70	B	MADE GROUND (Grey cobbles of slag).	PSD
TPE-33	3.40	B	Brown very clayey very sandy GRAVEL.	PSD SED CP4
TPE-33	3.40	D	Brown very clayey very sandy GRAVEL. (Clay of low plasticity).	MC PI
TPE-35	3.20	D	Grey slightly clayey sandy GRAVEL.	MC US for PI
TPE-38	2.50	B	Brown clayey very sandy GRAVEL.	PSD CP4
TPE-39	2.00	B	Brown clayey very sandy GRAVEL.	PSD CP4
TPE-53	3.80	B	Brown clayey very sandy GRAVEL.	PSD PD
TPE-55	1.50	B	MADE GROUND (Grey clayey sandy gravel including slag and concrete).	PSD
TPE-57	4.20	D	Brown CLAY/SILT of high plasticity.	MC PI
TPE-59	3.50	B	MADE GROUND (Brown slightly clayey sandy gravel including slag).	CP4
TPF-04	0.70	B	MADE GROUND (Brown sandy gravel).	CP4
TPF-11	2.00	B	Brown SAND.	PSD PD SB
TPH-01	1.00	B	MADE GROUND (Brown clayey very sandy gravel).	PSD CP4
TPH-10	1.70	B	Brown gravelly SAND with occasional clay pockets.	PSD SB
TPH-14	2.10	B	Brown clayey sandy GRAVEL.	MC PI (IS for LL) PSD ORG
TPH-23	2.50	B	Brown slightly sandy slightly gravelly CLAY.	CP4
TPH-30	1.80	B	Brown slightly clayey gravelly SAND.	PSD
TPI-02	2.70	B	Brown clayey very sandy GRAVEL.	PSD
TPI-03	0.40	B	Brown slightly sandy slightly gravelly CLAY.	PSD SED CP4
TPI-15	4.00	B	Brown slightly clayey gravelly SAND.	PSD
TPI-17	0.60	B	MADE GROUND (Brown very clayey very sandy gravel including metal fragments).	PSD CP4

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth	ID	Description	Laboratory Tests/Remarks
TPI-19	3.40	B	MADE GROUND (Grey sandy gravel including slag).	ORG
TPI-26	4.50	B	Brown gravelly SAND.	PSD CP4

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MOISTURE CONTENT CERTIFICATE

BS 1377 : Part 2 : Clause 3.2 (BS EN ISO 17892-1:2014)

Exploratory Hole No.	Sample Depth (m)	Sample ID	Moisture Content (%)	Date Tested	Remarks
TP-06	1.10	B1	19.8	25/04/2017	
TP-10	0.90	D2	14.6	24/04/2017	
TP-11	0.50	D1	12.5	24/04/2017	
TP-16	1.00	D2	12.0	24/04/2017	
TP-16	3.10	D4	25.6	24/04/2017	
TP-18	1.50	D2	15.9	24/04/2017	
TP-19	0.50	D2	11.0	24/04/2017	
TP-23	0.80	B2	9.7	25/04/2017	
TP-24	2.70	B2	15.0	25/04/2017	
TP-36	0.70	D2	9.0	24/04/2017	
TPE-35	3.20	D	17.0	12/07/2017	

For description of sample please refer to the Laboratory Sample Description Sheet

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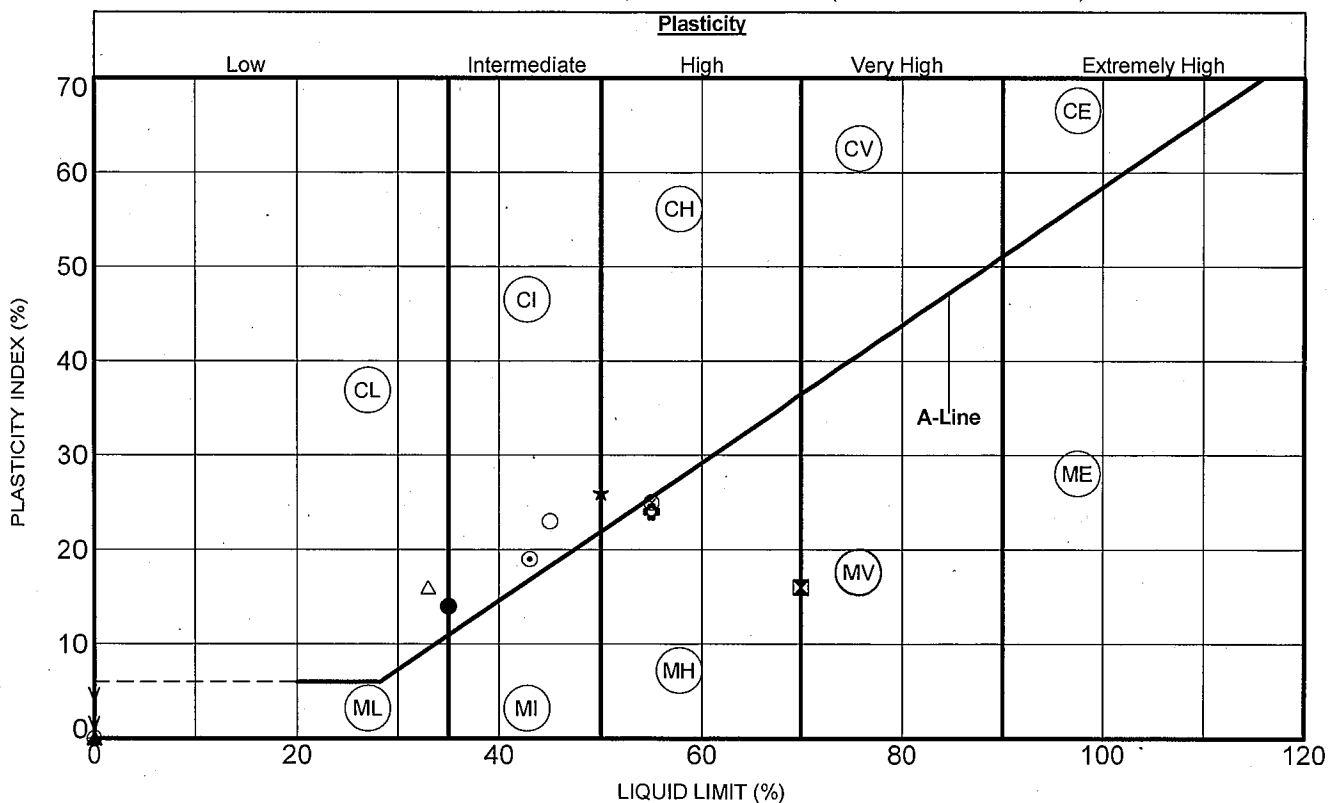


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ATTERBERG LIMITS & NATURAL MOISTURE CONTENT

Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990 (BS EN ISO 17892-1:2014)



Specimen Identification				LL	PL	PI	I _c	<0.425mm (%)	m/c (%)	Date Tested	
●	TP-42	3.40	B	35	21	14	1.28	24.8	17.1	21/07/2017	
⊠	TPC-16	4.20	D	70	54	16	-3.55	NAT	126.8	11/07/2017	
▲	TPC-29	1.00	B	0	0	0		NAT	81.3	11/07/2017	NP
★	TPD-22	2.00	D	50	24	26	1.21	NAT	18.6	11/07/2017	
⊙	TPD-25	1.70	D	43	24	19	0.75	NAT	28.7	20/07/2017	
⊕	TPD-28	1.20	D	55	31	24	0.55	NAT	41.9	11/07/2017	
○	TPD-41	1.40	D	45	22	23	0.08	NAT	43.2	20/07/2017	
△	TPE-33	3.40	D	33	17	16	1.19	29	14.0	12/07/2017	#
⊗	TPE-57	4.20	D	55	30	25	0.49	NAT	42.7	11/07/2017	
⊕	TPH-14	2.10	B		27		0.89	16	24.1	11/07/2017	#

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI
NAT = Sample prepared in the natural state therefore we are unable to determine % retained on the 0.425mm test sieve.

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DETERMINATION OF PARTICLE DENSITY

BS1377 : Part 2 : Clause 8.2 : 1990

Exploratory Hole No.	Depth (m)	Sample Type & No.	Particle Density (Mg/m ³)	Date Tested
TP-10	0.90	B1	2.83	27/04/2017
TP-14	2.00	B	2.51	13/07/2017
TP-21	1.10	B1	2.61	25/04/2017
TP-21	2.20	B3	3.17	25/04/2017
TP-22	0.70	B	2.73	24/07/2017
TP-23	0.80	B2	2.67	25/04/2017
TP-36	0.70	B1	2.82	27/04/2017
TPB-12	1.00	B	2.72	17/07/2017
TPD-01	1.20	B	2.69	13/07/2017
TPE-04	1.50	B	2.73	03/08/2017
TPE-53	3.80	B	2.74	13/07/2017
TPF-11	2.00	B	2.58	01/07/2017

For description of sample please refer to the Laboratory Sample Description Sheet

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Figure 1 is a semi-logarithmic graph showing the percentage of aggregate passing through various sieve sizes. The y-axis is labeled 'PERCENTAGE PASSING' and ranges from 0 to 100. The x-axis is labeled 'SIEVE SIZES' and includes both millimeter (mm) and micrometer (μm) scales. The curve represents the gradation of the aggregate, showing that approximately 95% of the aggregate passes through a 75 μm sieve, and about 5% passes through a 75 mm sieve.

Sieve Size	Percentage Passing (%)
75 mm	5
4.75 mm	95
2.5 mm	98
1.18 mm	100
600 μm	100
300 μm	100
150 μm	100
75 μm	95
37.5 μm	90
19 μm	85
9.5 μm	75
4.75 mm	65
2.5 mm	55
1.18 mm	45
600 μm	35
300 μm	25
150 μm	15
75 μm	10

[illegible]

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

 UKAS TESTING 1367		Page 1 of 1	
Date of issue :- 08/05/2017	Certificate No :- PSD/SLS1015/TP-06/B1/1.10	Signed :- 	Name :- M. SELVARAJ
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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

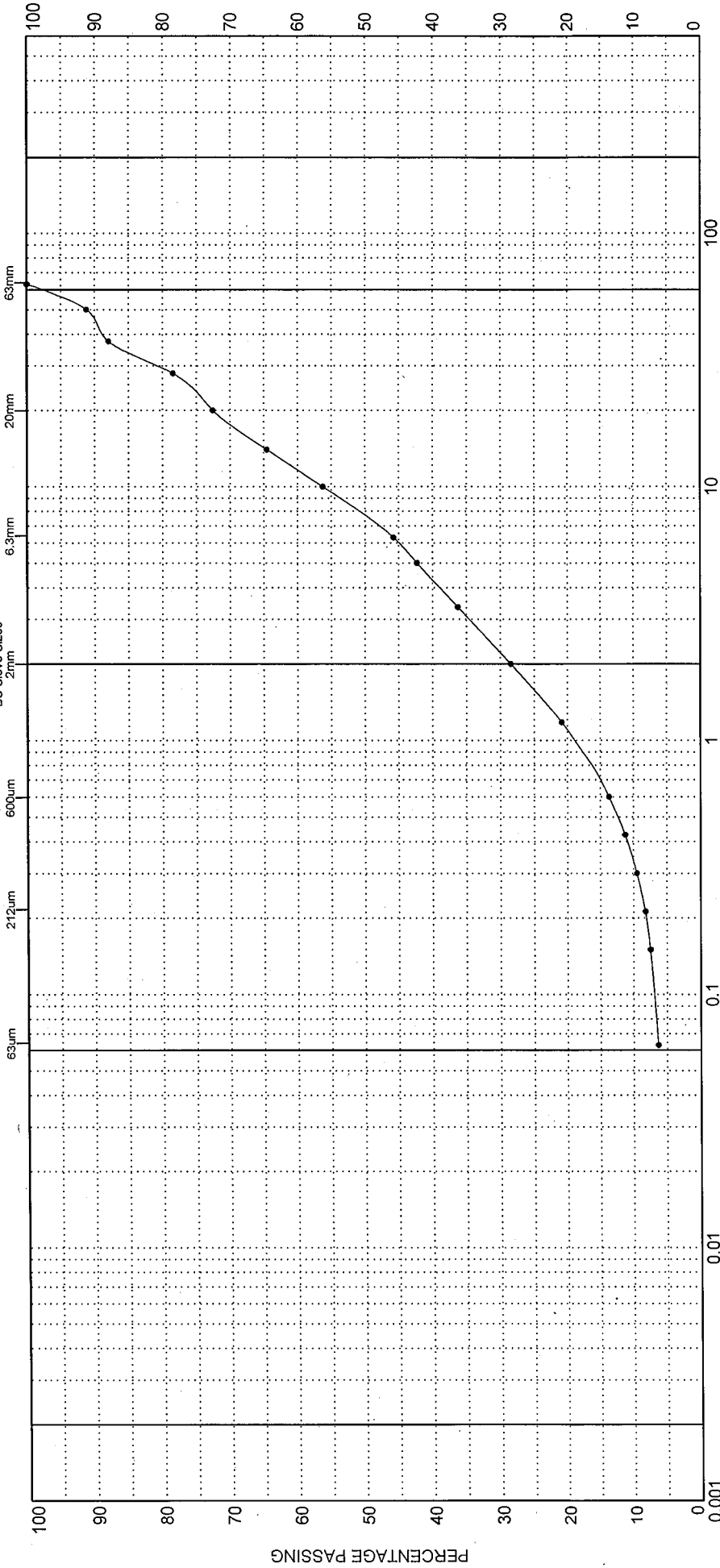
Exploratory Hole No :- TP-10

Depth :- 0.90

Sample Type & No :- B1

Date Tested :- 24/04/2017

PARTICLE SIZE DISTRIBUTION CURVE



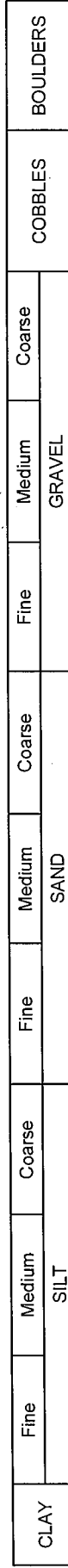
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

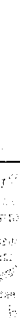
			
Date of issue :- 08/05/2017		Certificate No :- PSD/SLS1015/TP-10/B1/0.90	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- <i>msore</i>		Name :- <i>M. SELKIRK</i>	
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Date Tested :- 25/04/2017

BS Sieve Sizes



For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

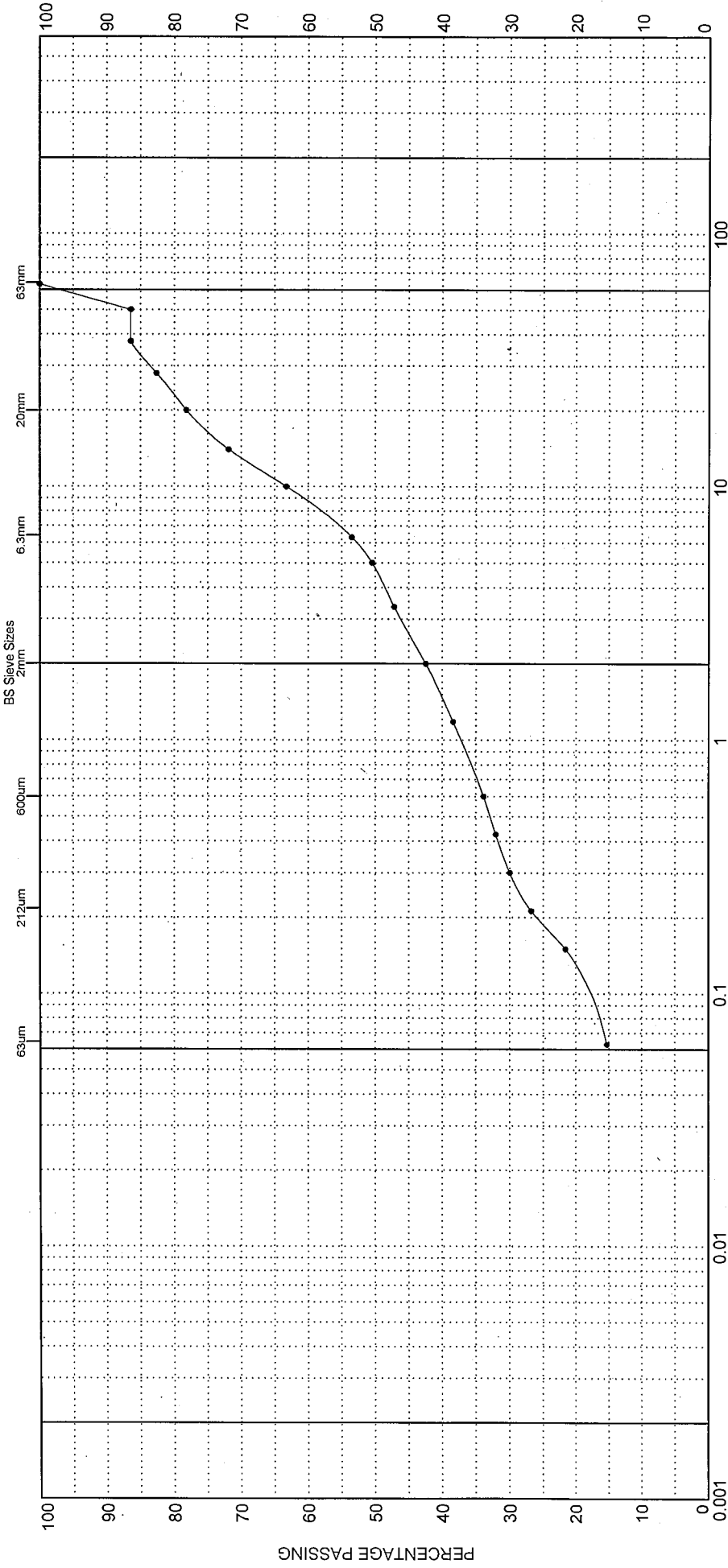
Exploratory Hole No :- TP-14

Depth :- 2.00

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS

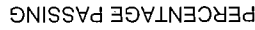
For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

			
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Date Tested :- 24/04/2017

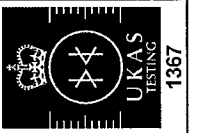
BS Sieve Sizes



For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

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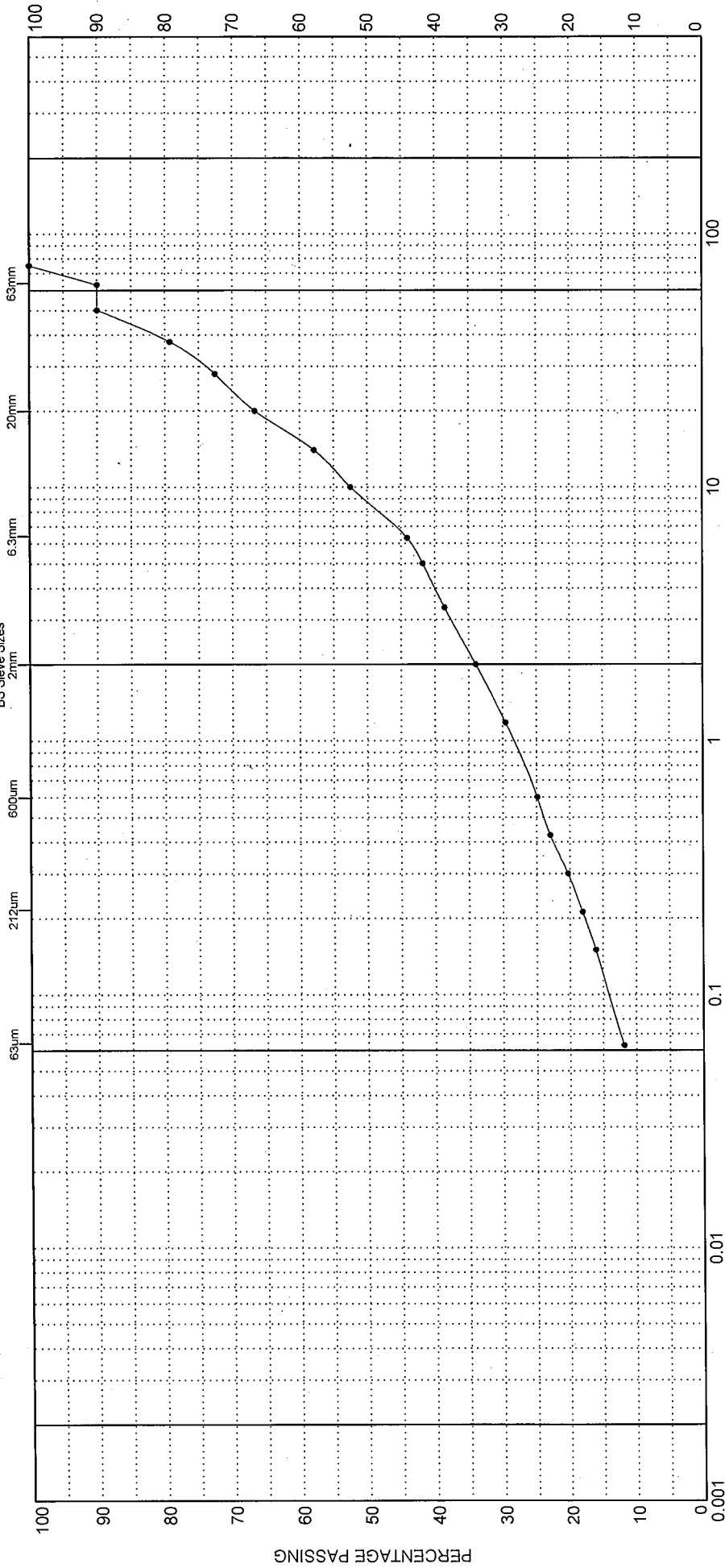
Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 387 4700 Fax: 0191 387 4710
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Exploratory Hole No :- TP-16

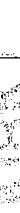
Sample Type & No :- B3

Date Tested :- 24/04/2017

PARTICLE SIZE DISTRIBUTION CURVE

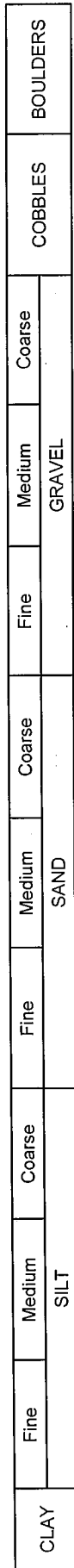
[illegible]

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

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PARTICLE SIZE DISTRIBUTION CURVE



For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 08/05/2017		Certificate No :- PSD/SLS1015/TP-19/B1/0.50	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name :-	
AEG		AEG Contract No :- SLS1015	
1367			

	Date of issue :- 08/05/2017	Certificate No :- PSD/SLS1015/TP-23/B2/0.80	Signed :- 	Name :- 	Page 1 of 1	
	Client :- CH2M	Contract Title :- Redcat Site				

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Date Tested :- 25/04/2017

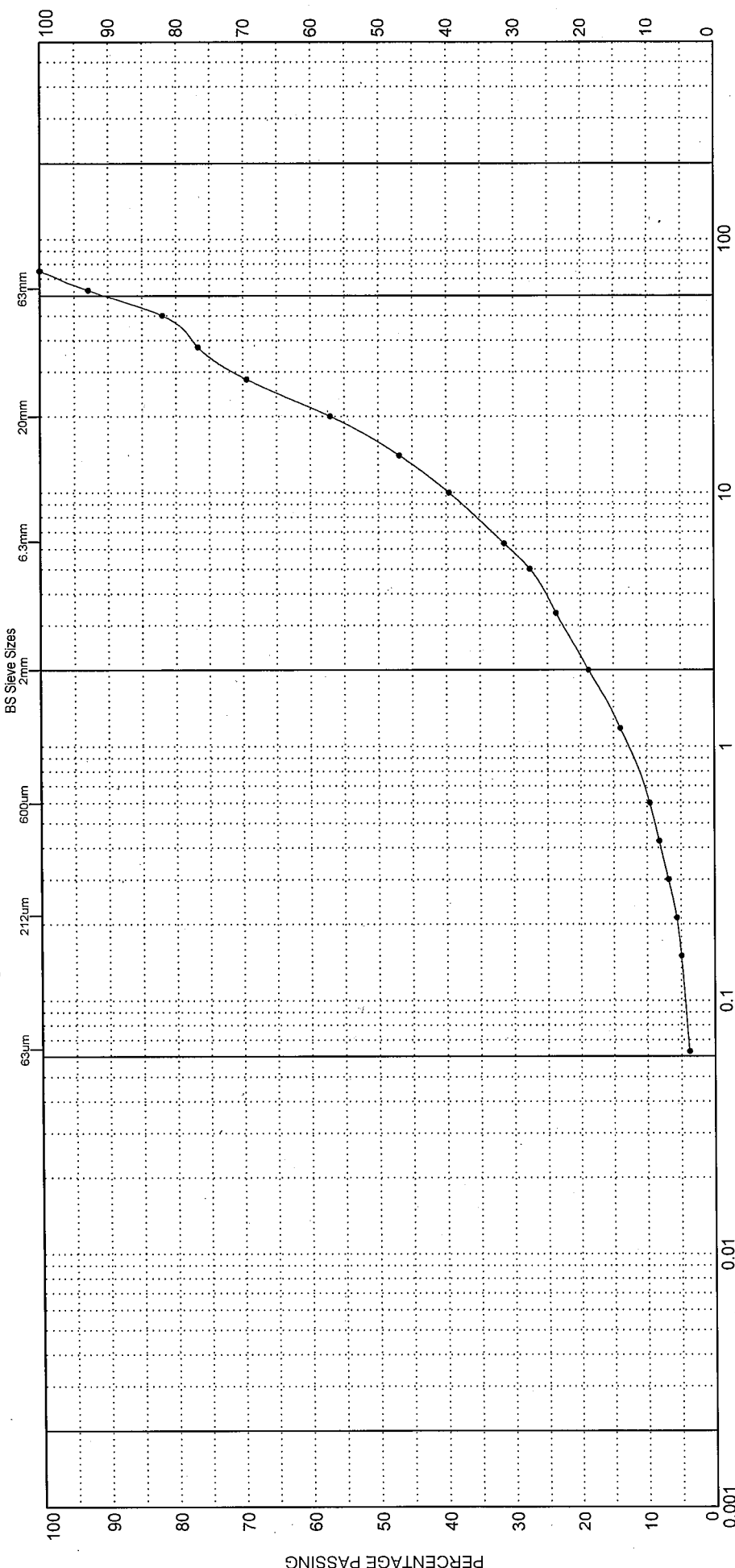
Sample Type & No :- B2

Depth :- 2.70

Exploratory Hole No :- TP-24

Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

PARTICLE SIZE DISTRIBUTION CURVE

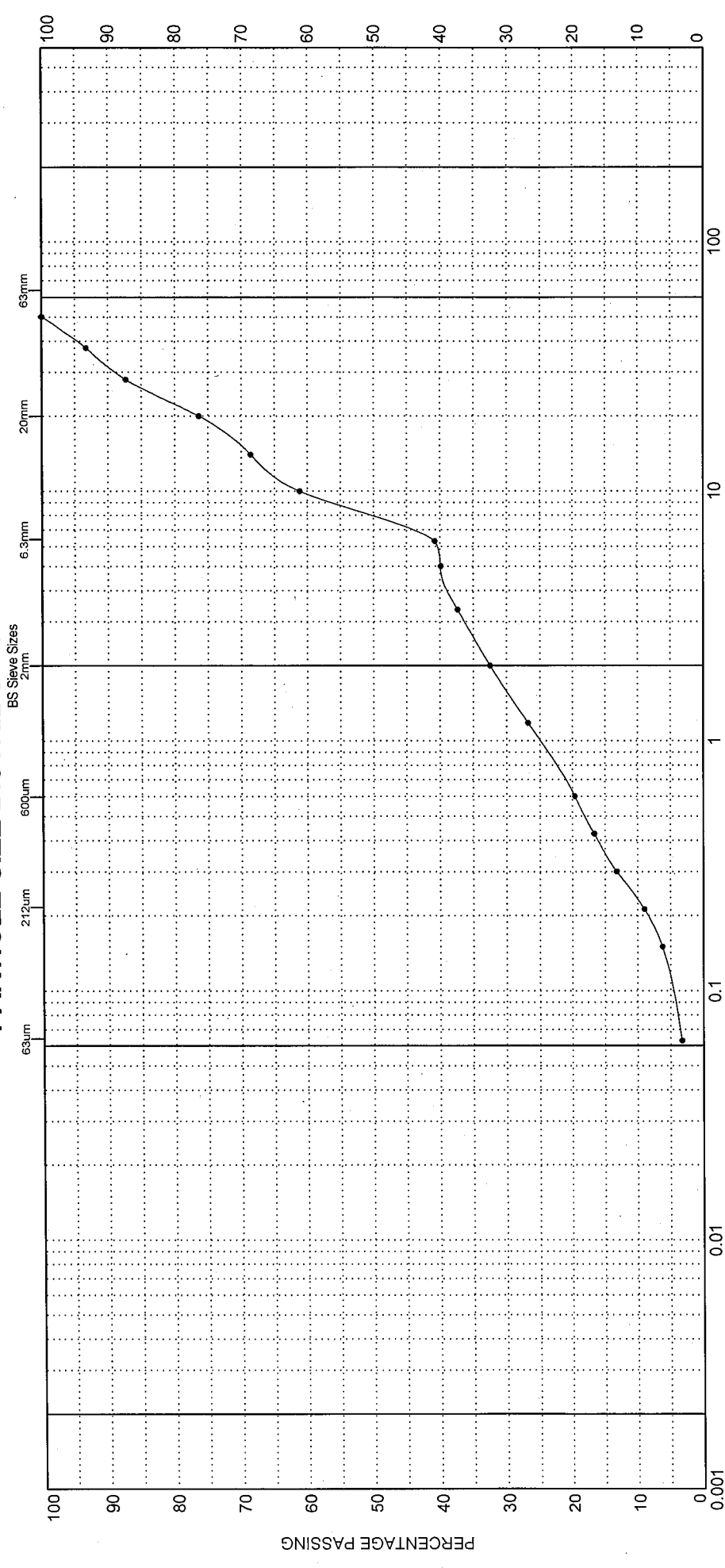


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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990	Exploratory Hole No :- TP-28	Depth :- 0.20
	Sample Type & No :- B	Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TP-28/B/0.20	Signed :- <i>M. Selvaraj</i>	Name :- M. SELVARAJ	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site		AEG Contract No :- SLS1015	



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

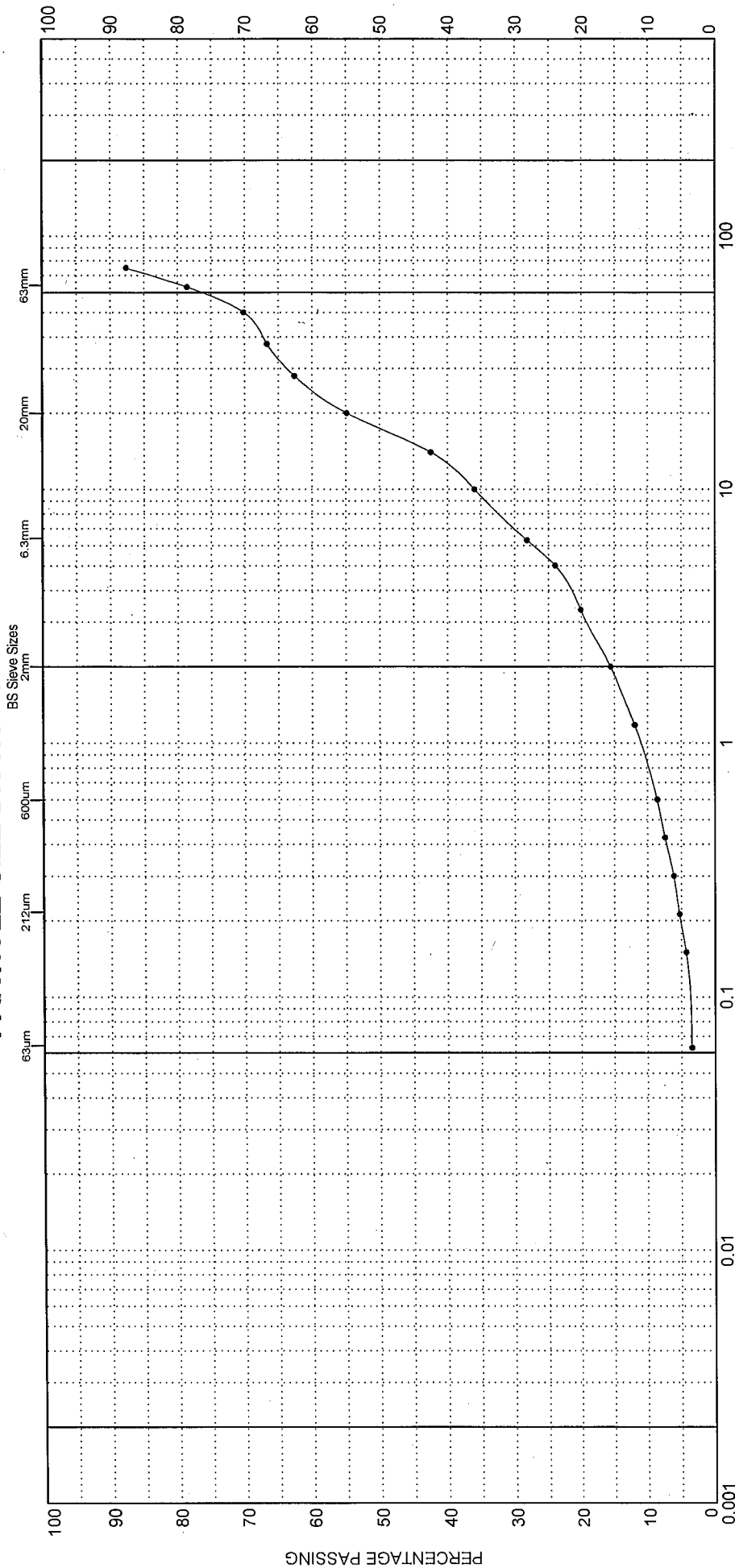
Exploratory Hole No :- TP-29

Depth :- 0.80

Sample Type & No :- B2

Date Tested :- 31/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.



Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TP-29/B2/0.80

Contract Title :-

CH2M

Signed :-

msore

Name :-

M. SURESH

Page 1 of 1

AEG Contract No :-

SLS1015



1367

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

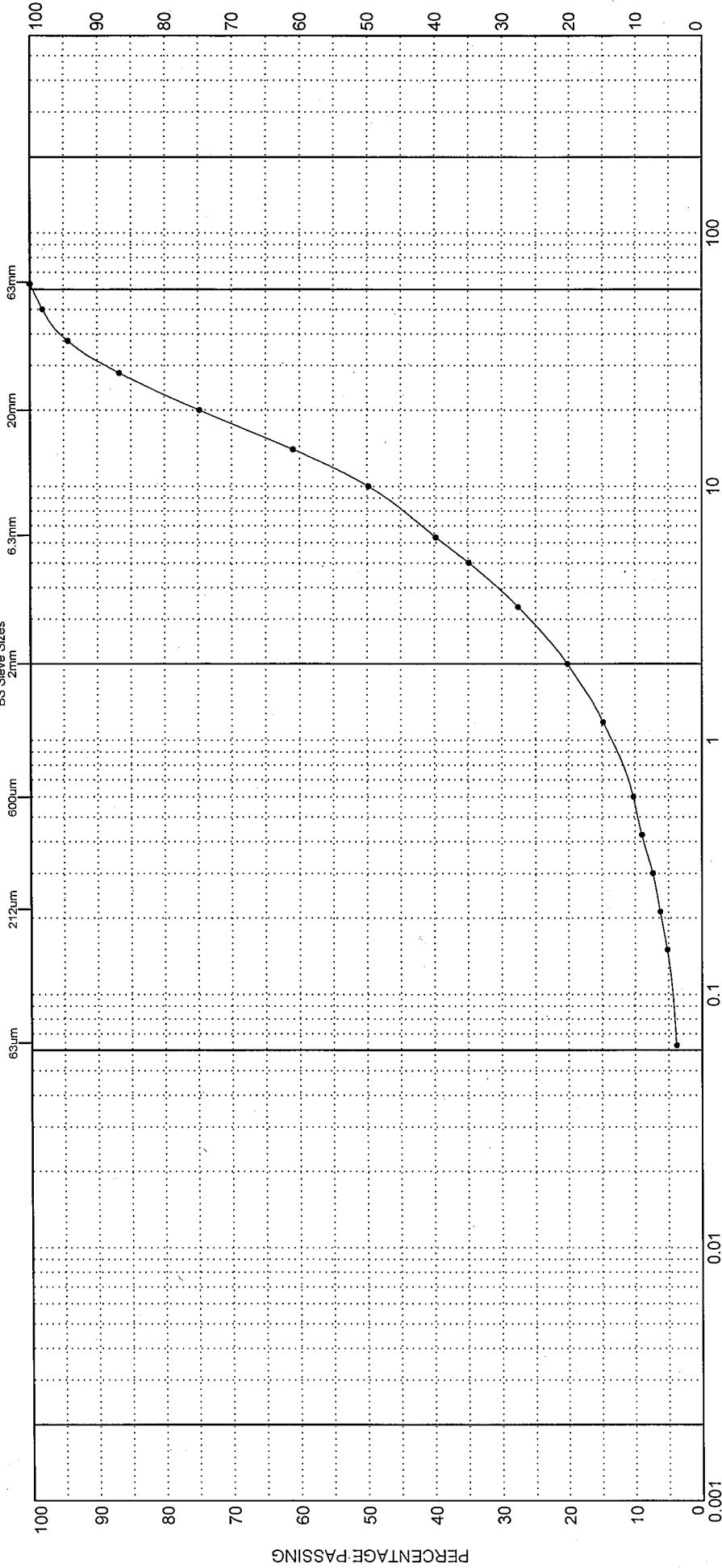
Exploratory Hole No :- TP-31

Depth :- 2.30

Sample Type & No :- B

Date Tested :- 27/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



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Regional Office: Unit 20, Business Development Centre, Earsall Wharf, Blackburn, BB1 3SL - Tel: 01772 735 300 Fax: 01772 735 999

Date Tested :- 24/04/2017

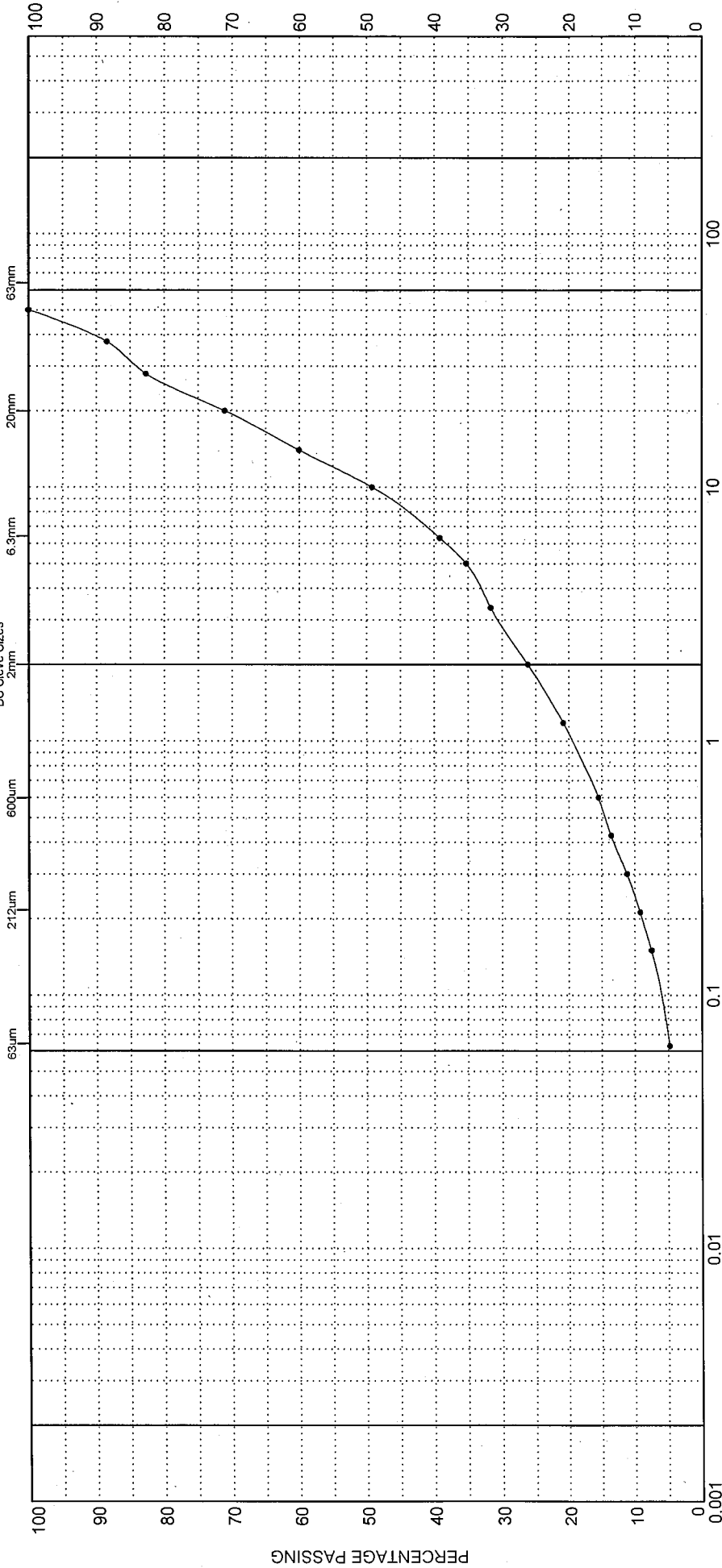
Sample Type & No :- B1

Depth :- 0.70

Exploratory Hole No :- TP-36

Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 09/05/2017		Certificate No :- PSD/SLS1015/TP-36/B1/0.70	
Client :- CH2M		Contract Title :-	
Signed :- <i>msore</i>		Name :-	
Redcar Site		AEG Contract No :- SLS1015	

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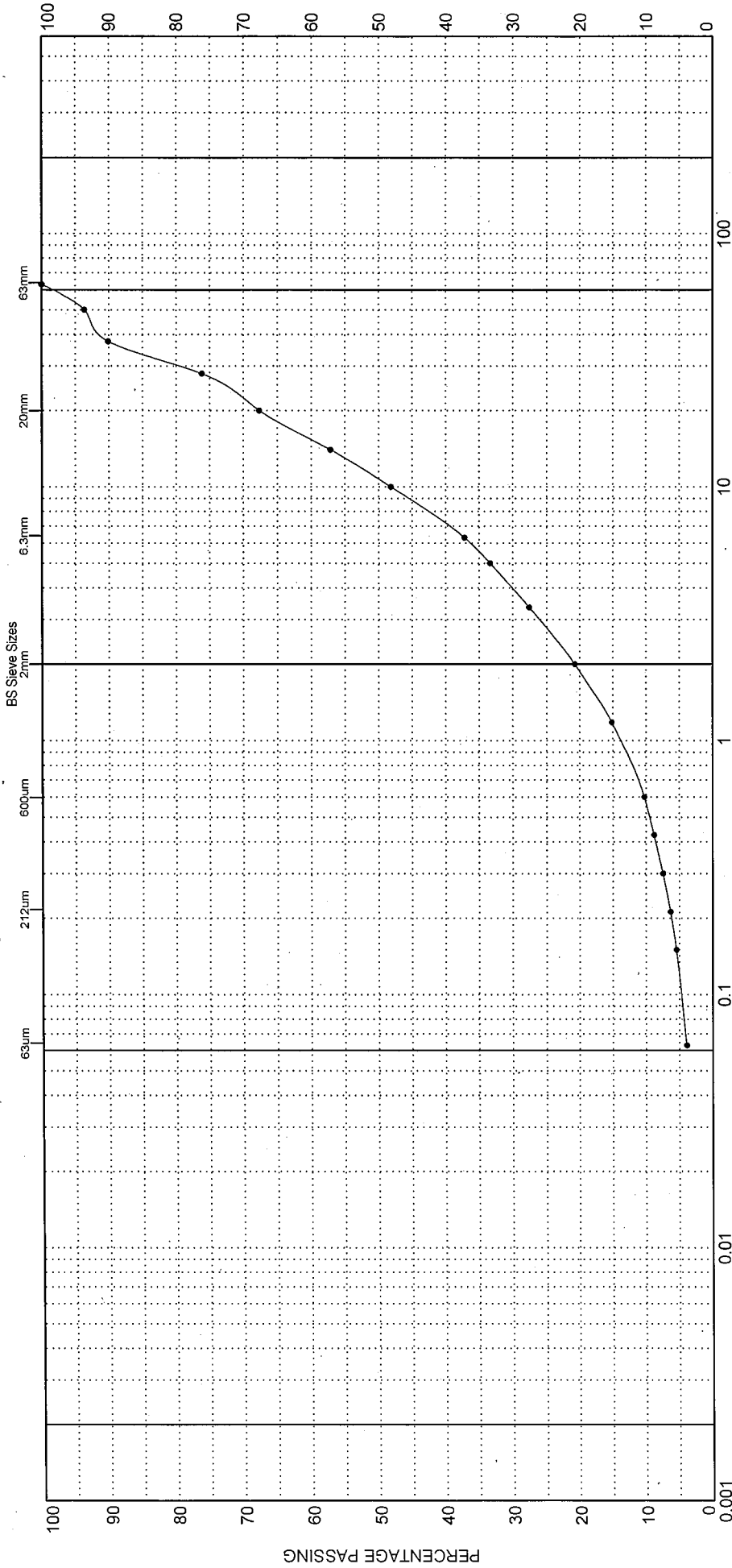
Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 # Exploratory Hole No :- TP-39

Depth :- 1.00

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

			
Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TP-39/B/1.00	Signed :- <i>M. Selkirk</i> Name :- M. SELKIRK	
Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015	
		Page 1 of 1	

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

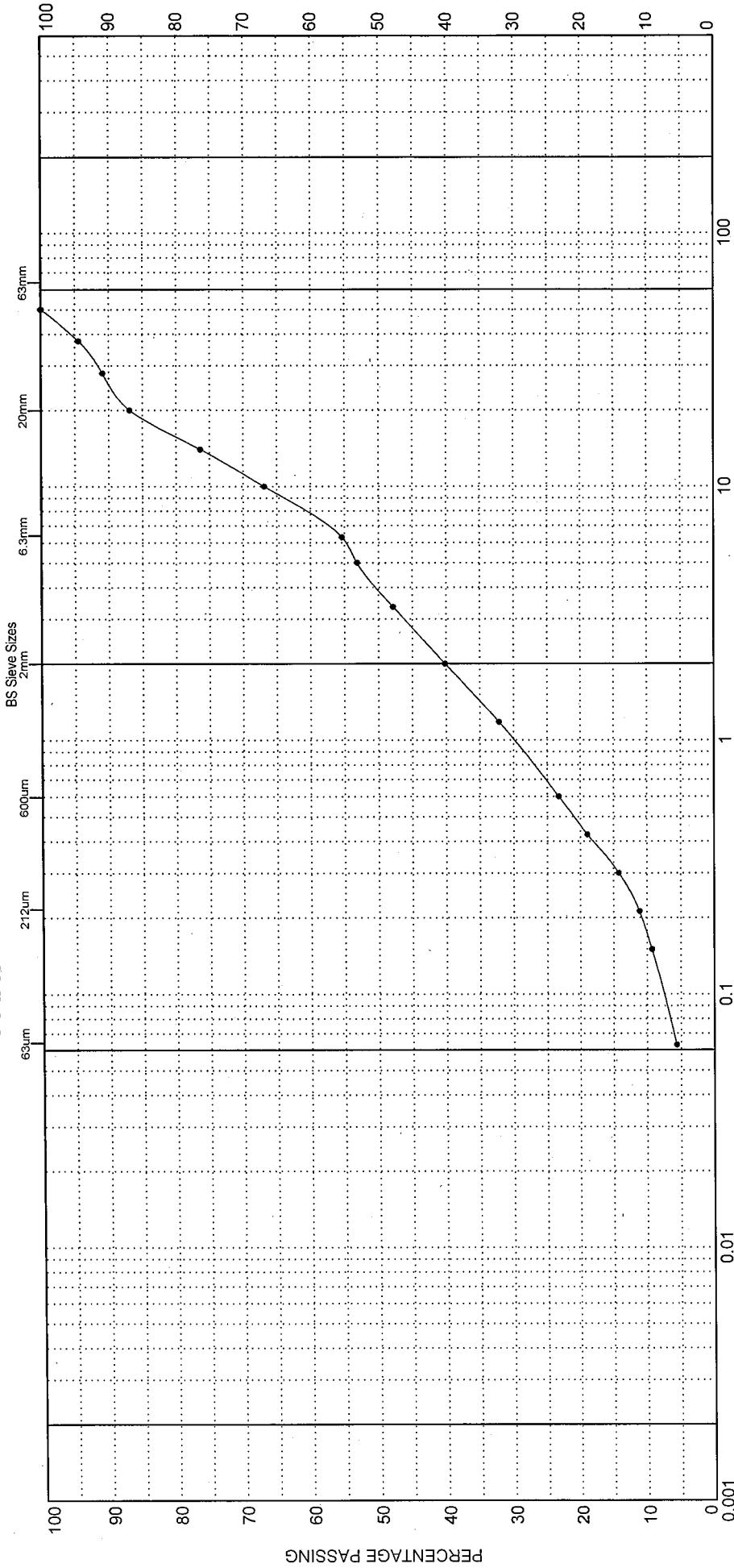
Exploratory Hole No :- TP-42

Depth :- 0.50

Sample Type & No :- B

Date Tested :- 24/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS	

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :- PSD/SLS1015/TP-42/B/0.50

Client :- CH2M

Signed :- *MSO*

Name :- *W. SELKIRK*

Page 1 of 1

AEG Contract No :- SLS1015

Redcar Site



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

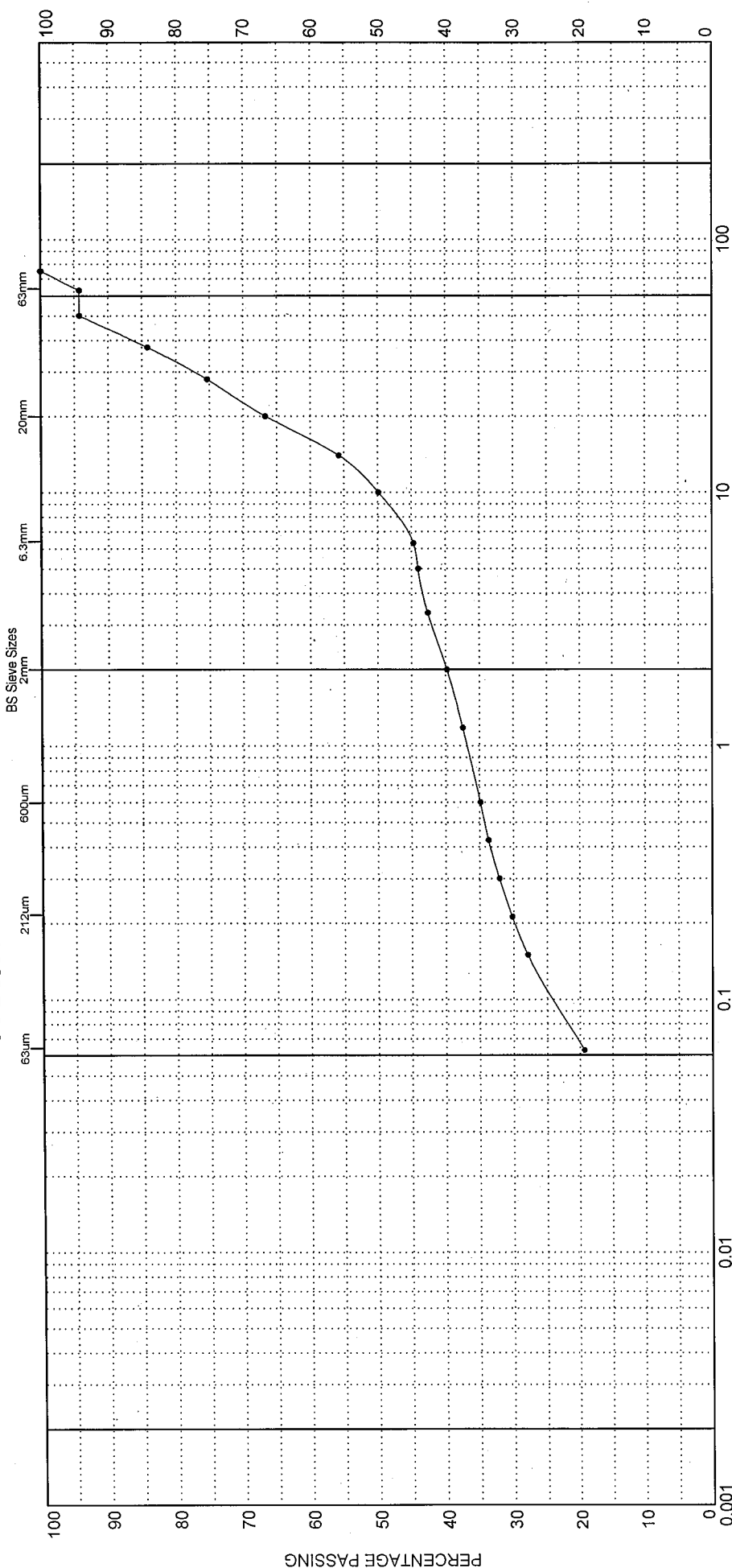
Exploratory Hole No :- TP-42

Depth :- 1.70

Sample Type & No :- B2

Date Tested :- 31/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

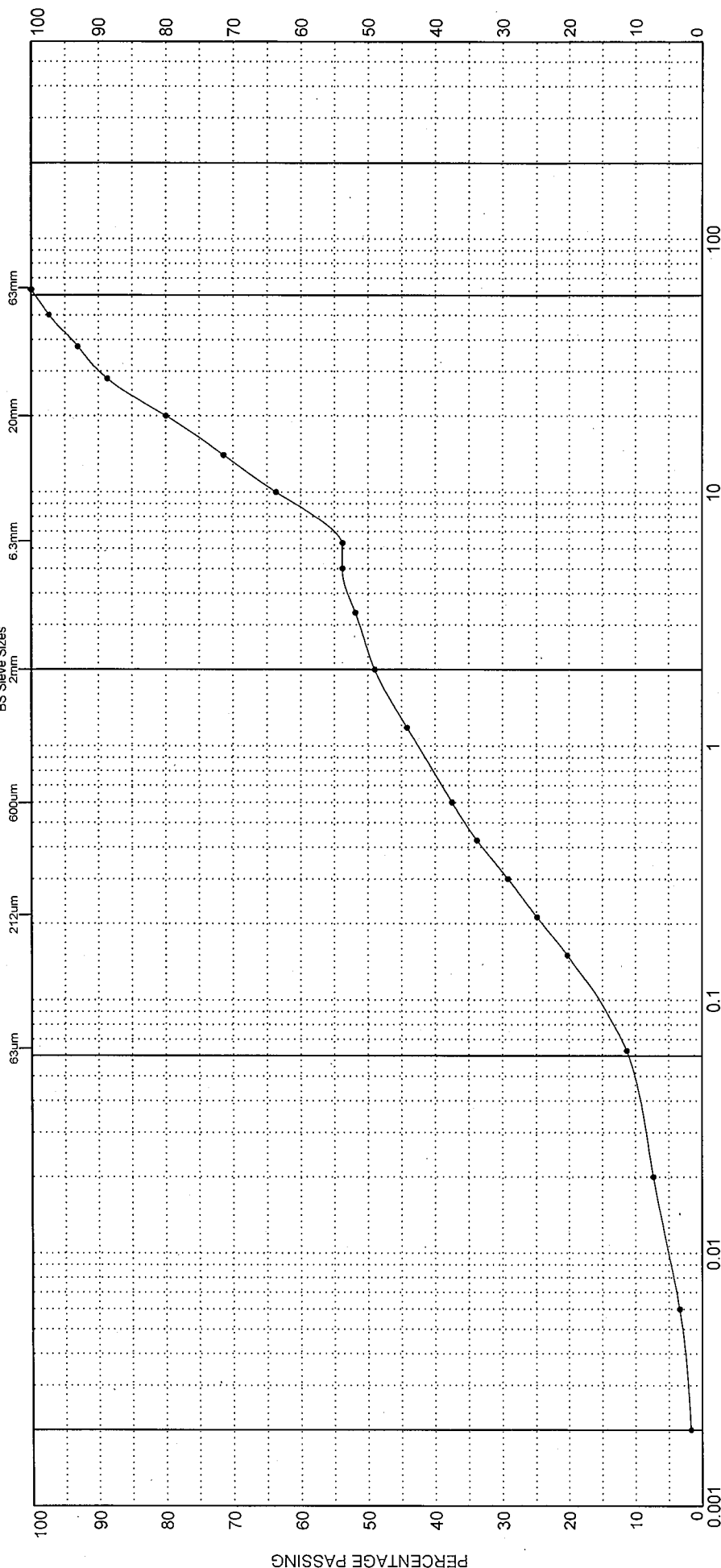
Exploratory Hole No :- TP-42

Depth :- 3.40

Sample Type & No :- B

Date Tested :- 21/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :- PSD/SLS1015/TP-42/B/3.40

Signed :-

msop

Name :-

MSOP

Page 1 of 1

AEG Contract No :- SLS1015

Client :-

CH2M

Contract Title :-

Redcar Site



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

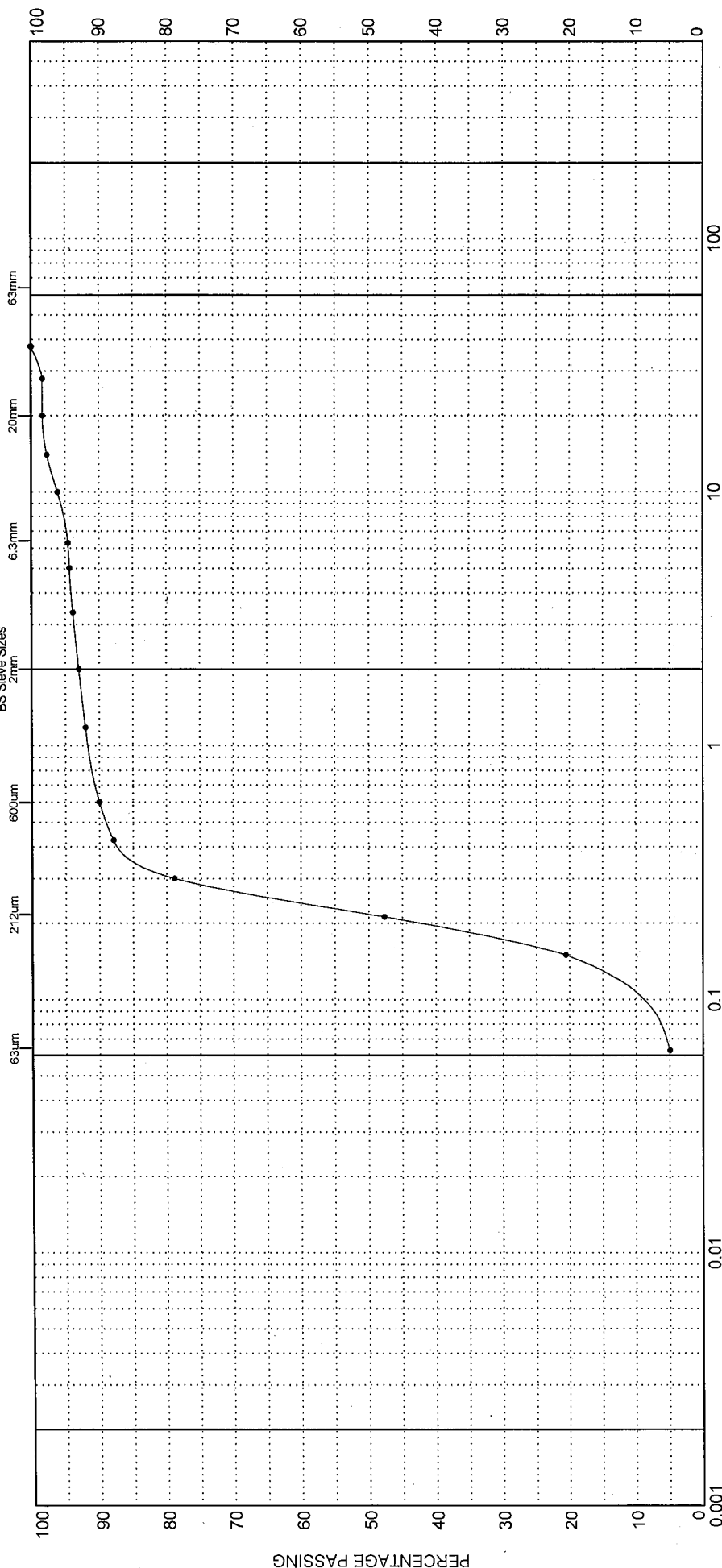
Exploratory Hole No :- TPB-01

Depth :- 3.70

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			BOULDERS		
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TPB-01/B/3.70

Signed :-

MSO

Name :-

MSO

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Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

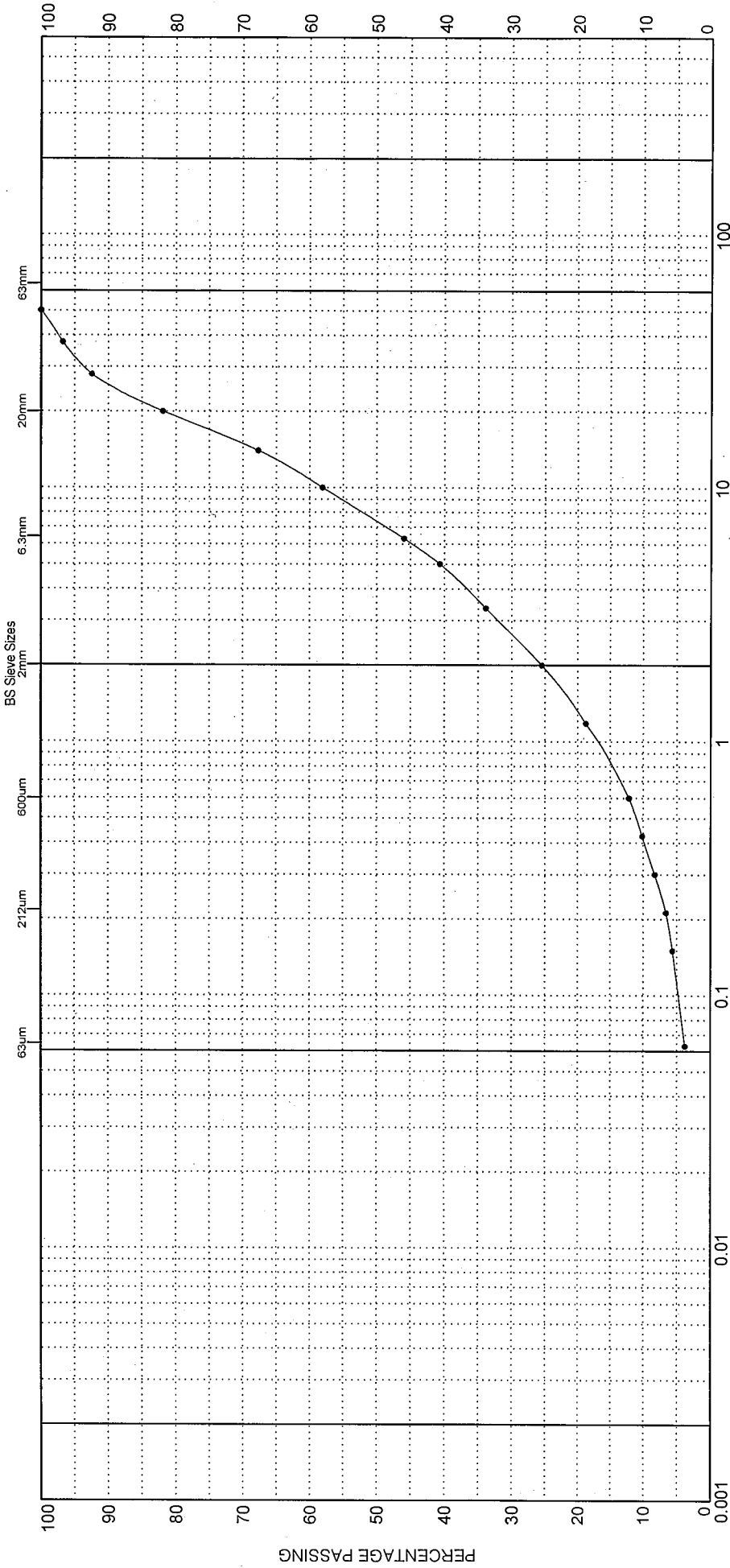
Exploratory Hole No :- TPB-02

Depth :- 0.30

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE

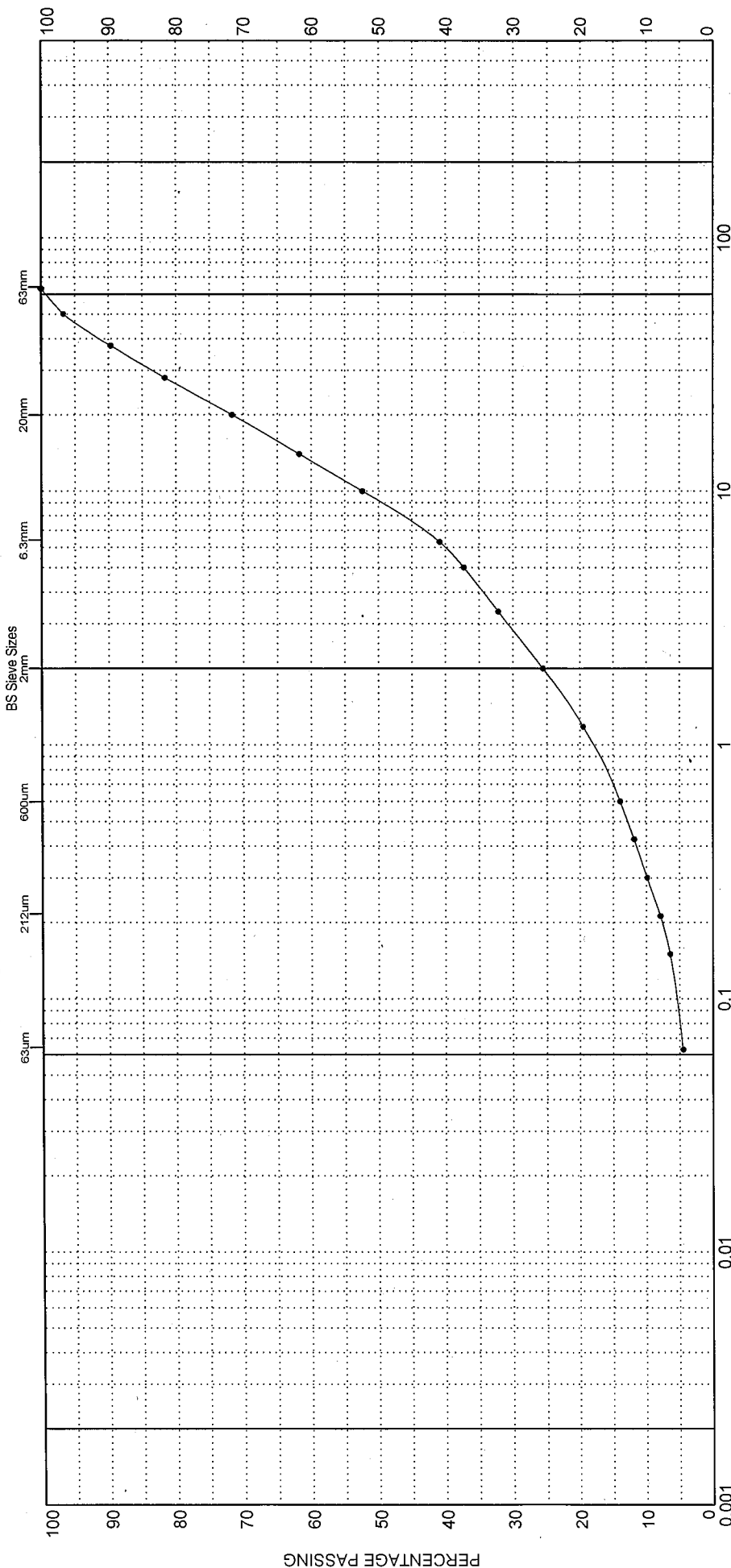


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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990	Exploratory Hole No :- TPB-06	Depth :- 1.30
Sample Type & No :- B		Date Tested :- 11/07/2017

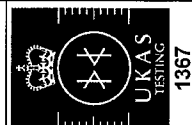
PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT		SAND				GRAVEL			BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPB-06/B/1.30	Signed :- <i>msw</i>	Name :- <i>M. SELKIRK</i>	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site		AEG Contract No :- SLS1015	



Date Tested :- 28/07/2017

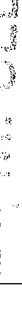
Figure 1 is a semi-logarithmic graph showing the percentage of aggregate passing through various sieve sizes. The y-axis is labeled 'PERCENTAGE PASSING' and ranges from 0 to 100. The x-axis is labeled 'SIEVE SIZES' and includes values in millimeters (mm) and micrometers (μm). The curve shows a typical gradation for a concrete mix.

Sieve Size	Percentage Passing
63mm	100
20mm	95
6.3mm	85
2.5mm	75
600μm	45
212μm	35
63μm	10

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	GRAVEL	COBBLES	BOULDERS
	SILT			SAND					

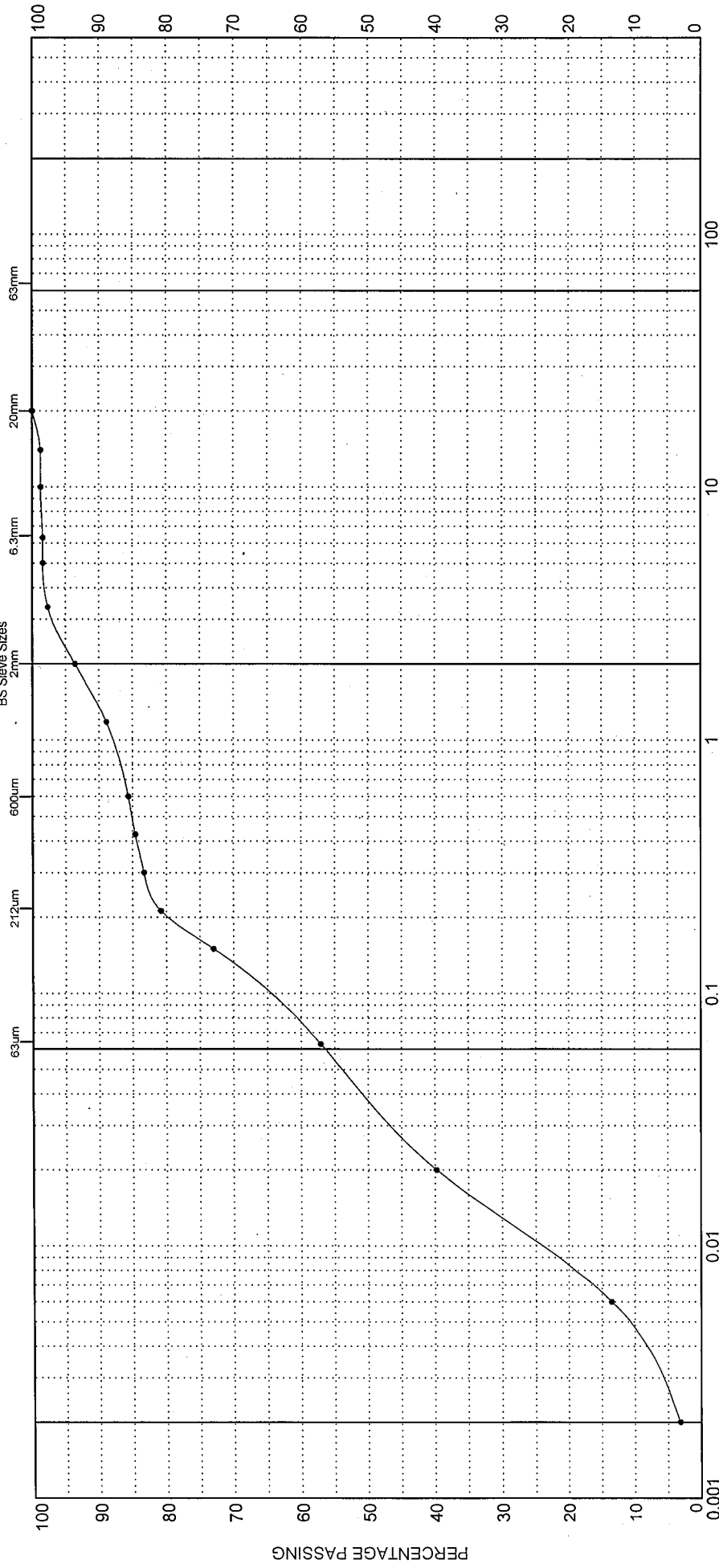
For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

			
Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPB-07/B/2.50	Signed :- 	Name :- M. S. K. S.
Client :- CH2M	Contract Title :- Redcar Site	Page 1 of 1	AEG Contract No :- SLS1015

		Page 1 of 1	
Date of issue :- 08/08/2017		Certificate No :- PSD/SLS1015/TPB-12/B/1.00	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name :- 	
AEG		AEG Contract No :- SLS1015	

Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990	Exploratory Hole No :- TPC-16	Depth :- 4.20	Sample Type & No :- B	Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse		SAND	GRAVEL	COBBLES	BOULDERS
	SILT							

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPC-16/B/4.20	Signed :- 	Name :- M. S. Kulkarni	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015		

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

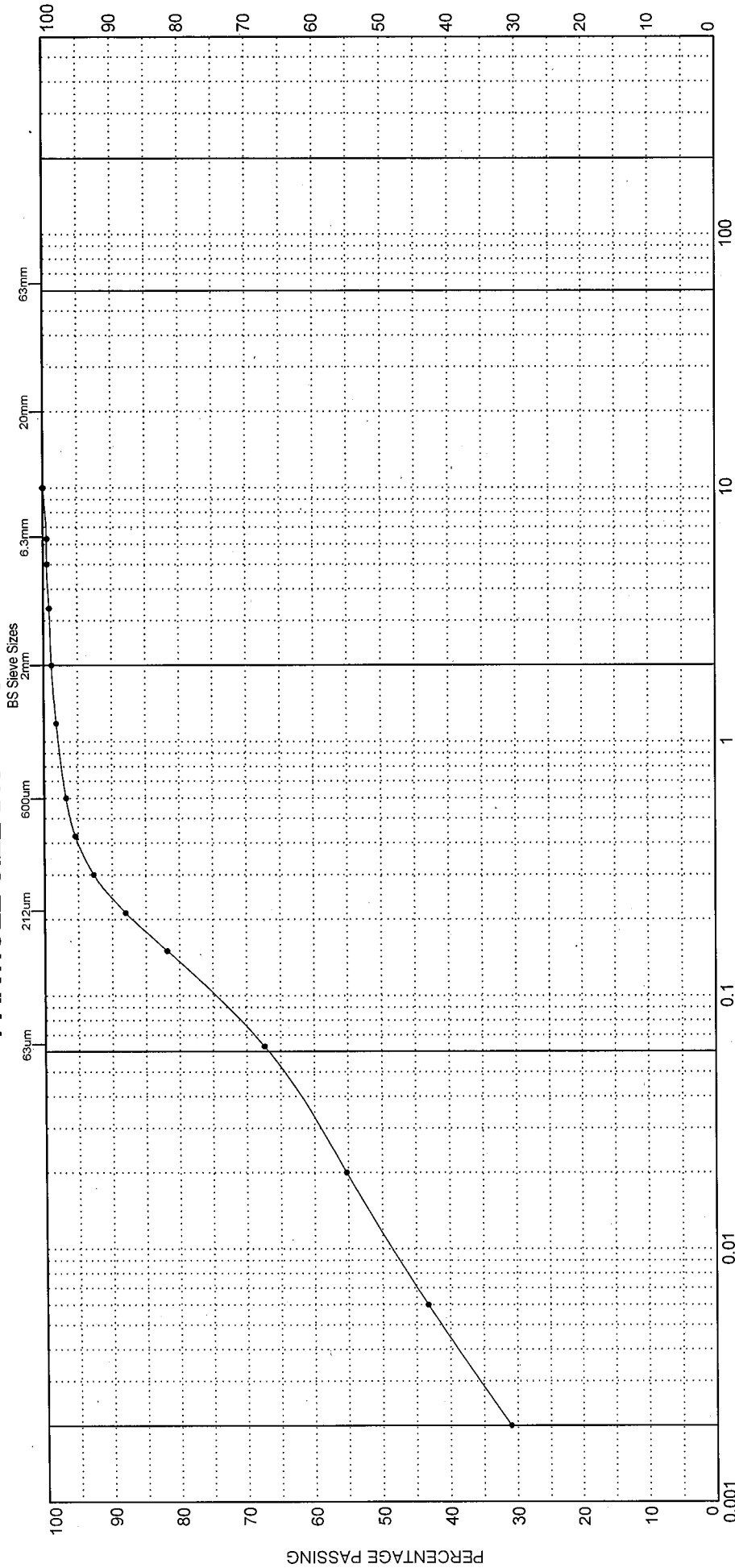
Exploratory Hole No :- TPC-19

Depth :- 0.80

Sample Type & No :- B

Date Tested :- 20/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

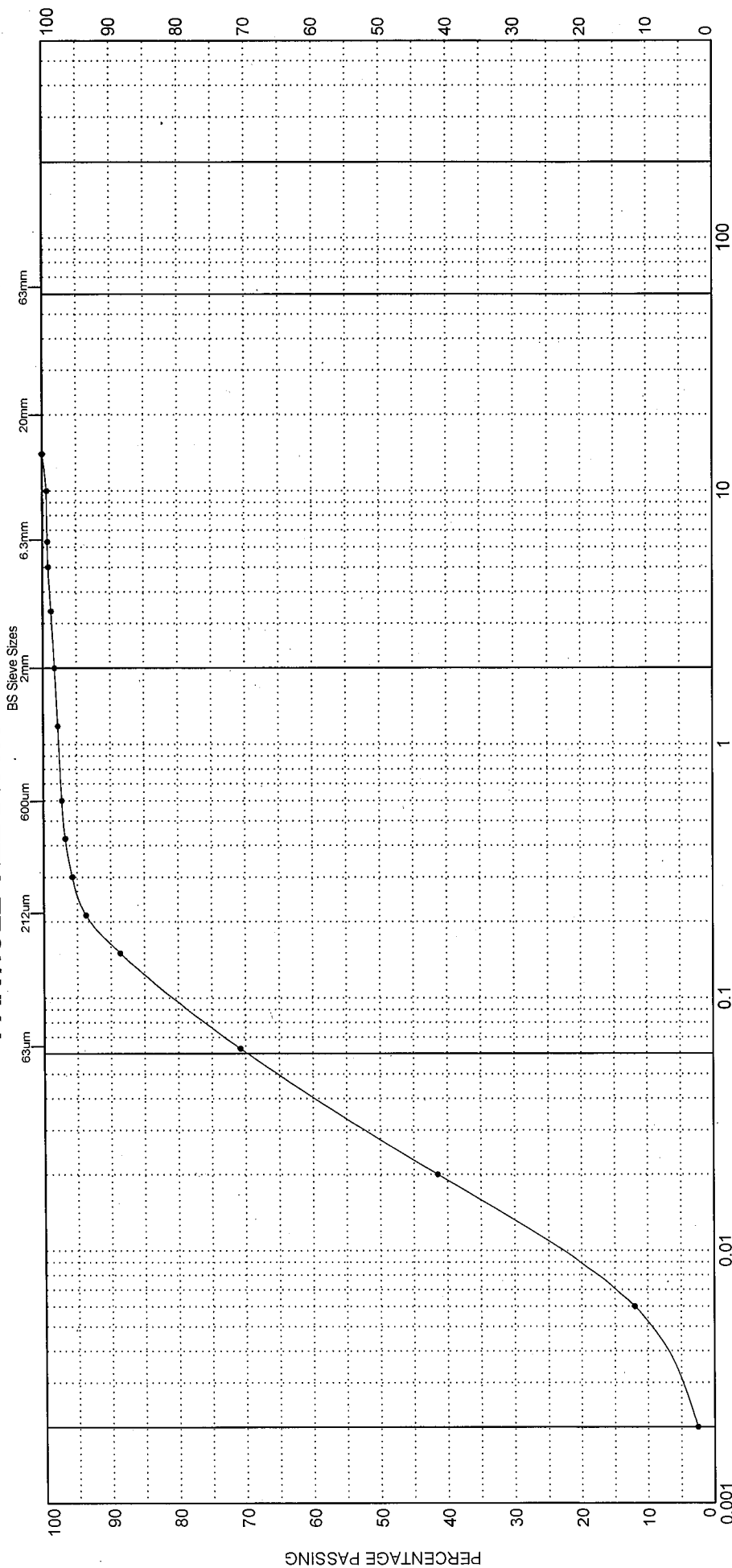
Exploratory Hole No :- TPC-27

Depth :- 1.50

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES		BOULDERS	
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse				

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

			
Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPC-27/B/1.50	Signed :- <i>msone</i> Name :- <i>M SELKIRK</i>	
Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015	
		Page 1 of 1	

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

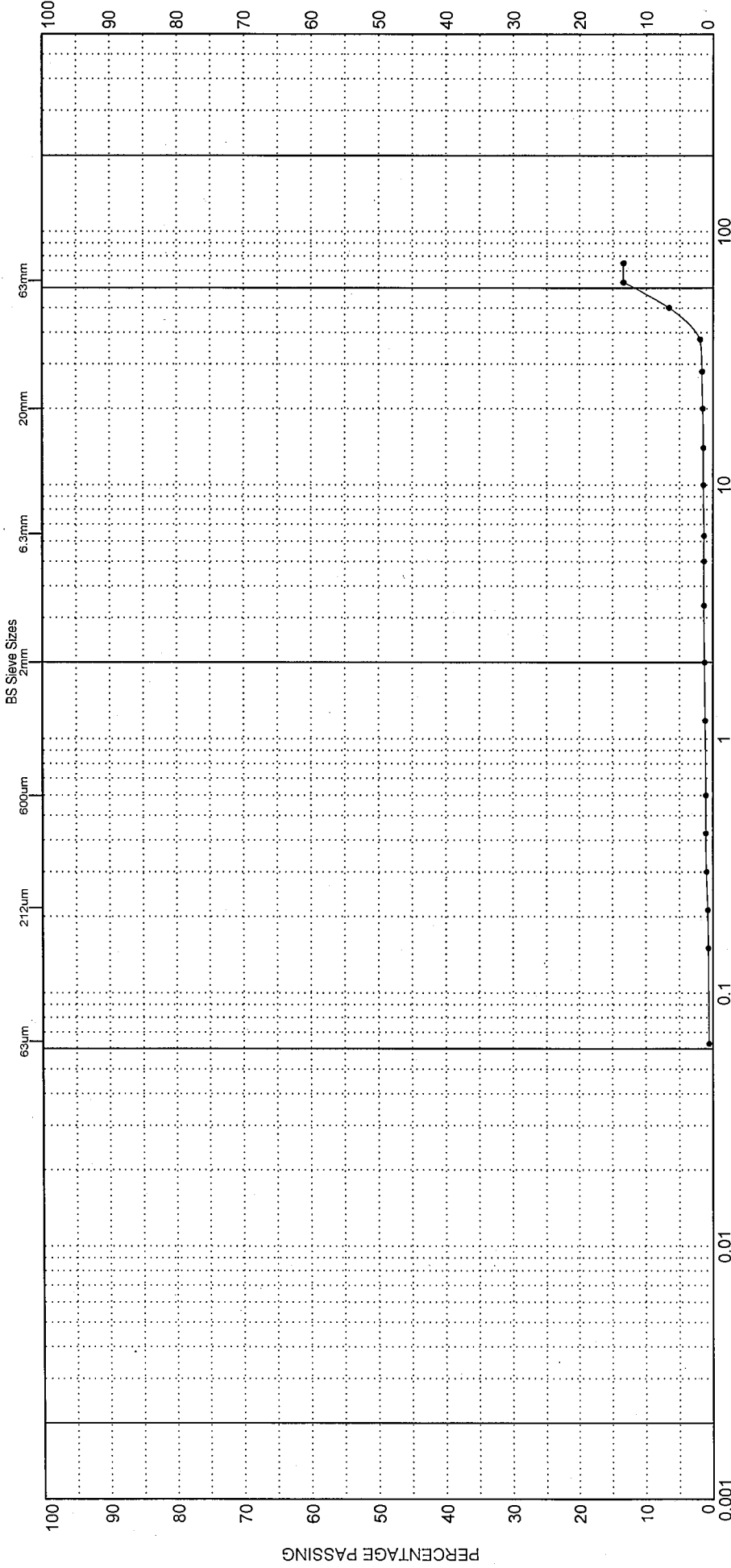
Exploratory Hole No :- TPD-02

Depth :- 0.20

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPD-02/B/0.20	Signed :- <i>msore</i>	Name :- M. SELKIRK	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015		



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

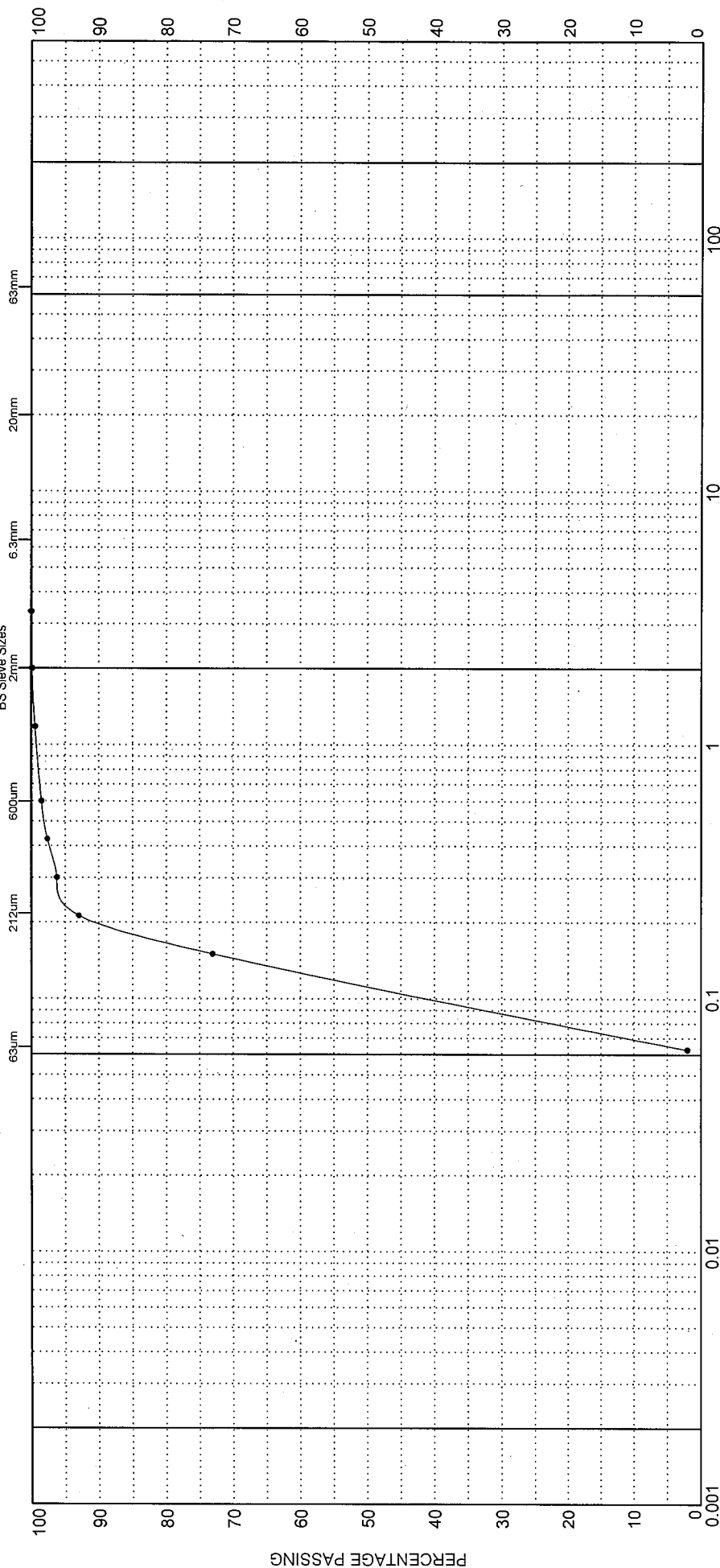
Exploratory Hole No :- TPD-19

Depth :- 1.50

Sample Type & No :- B

Date Tested :- 27/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TPD-19/B/1.50

Client :-

CH2M

Contract Title :-

Redcar Site

Signed :-

MSB

Name :-

M. SELKIRK

Page 1 of 1

AEG Contract No :-

SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

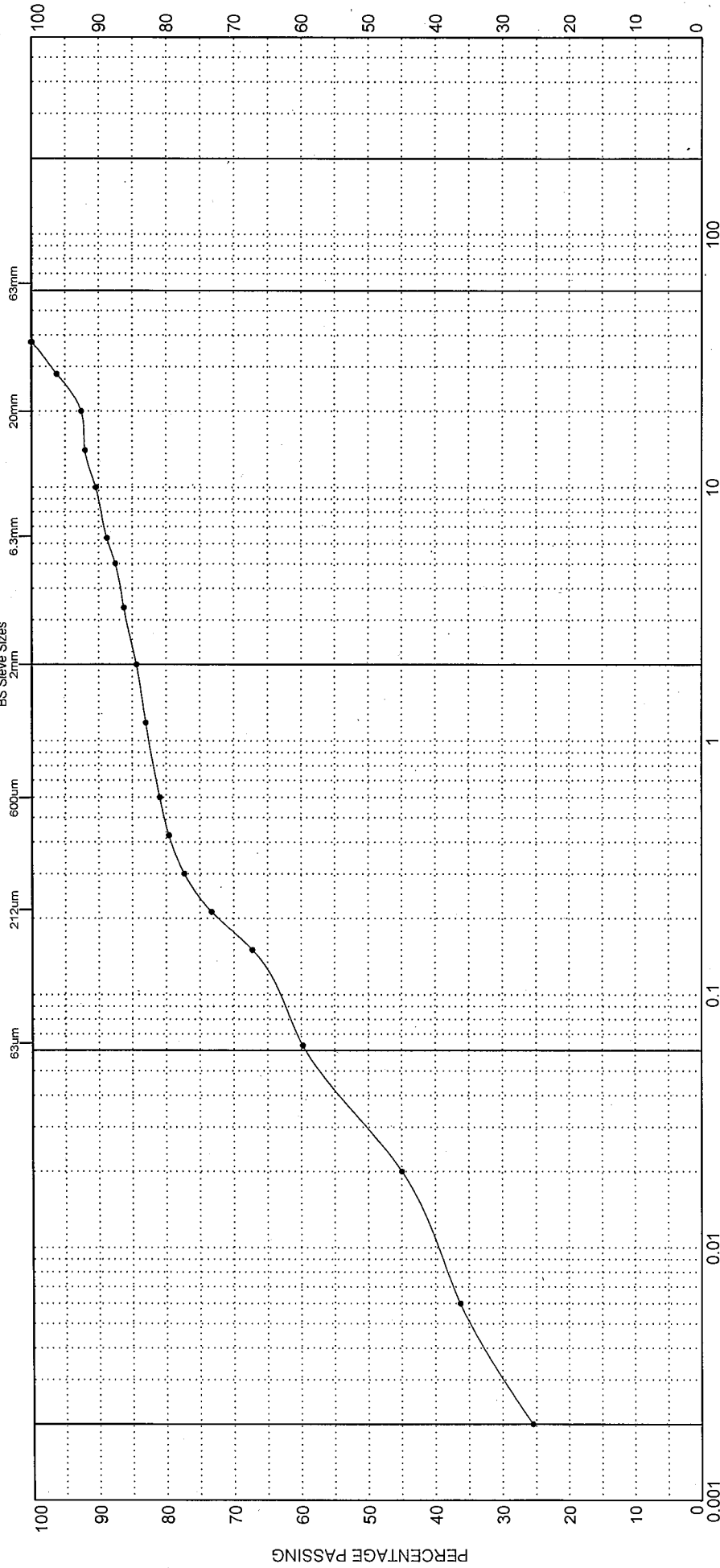
Exploratory Hole No :- TPD-22

Depth :- 2.00

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPD-22/B/2.00	Signed :- <i>msa</i>	Name :- W. SELLERK	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015		



Date Tested :- 28/07/2017

The graph displays the cumulative percentage of material passing through different sieve sizes. The data points are as follows:

Sieve Size	Percentage Passing
63µm	100
75µm	100
106µm	100
150µm	98
212µm	95
300µm	90
425µm	85
600µm	80
850µm	75
1180µm	70
1600µm	65
2240µm	60
3000µm	55
4250µm	50
6000µm	45
8500µm	40
11800µm	35
16000µm	30
22400µm	25
30000µm	20
42500µm	15
60000µm	10
85000µm	5
118000µm	5
160000µm	5
224000µm	5
300000µm	5
425000µm	5
600000µm	5
850000µm	5
1180000µm	5
1600000µm	5
2240000µm	5
3000000µm	5
4250000µm	5
6000000µm	5
8500000µm	5
11800000µm	5
16000000µm	5
22400000µm	5
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42500000µm	5
60000000µm	5
85000000µm	5
118000000µm	5
160000000µm	5
224000000µm	5
300000000µm	5
425000000µm	5
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3000000000µm	5
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6000000000µm	5
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16000000000µm	5
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16000000000000µm	5
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300000000000000µm	5
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1600000000000000µm	5
2240000000000000µm	5
3000000000000000µm	5
4250000000000000µm	5
6000000000000000µm	5
8500000000000000µm	5
11800000000000000µm	5
16000000000000000µm	5
22400000000000000µm	5
30000000000000000µm	5
42500000000000000µm	5
60000000000000000µm	5
85000000000000000µm	5
118000000000000000µm	5
160000000000000000µm	5
224000000000000000µm	5
300000000000000000µm	5
425000000000000000µm	5
600000000000000000µm	5
850000000000000000µm	5
1180000000000000000µm	5
1600000000000000000µm	5
2240000000000000000µm	5
3000000000000000000µm	5
4250000000000000000µm	5

[illegible]

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 08/08/2017		Certificate No :- PSD/SLS1015/TPD-23/B/0.90	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name :- M. Sone	
AEG		AEG Contract No :- SLS1015	
1367		1367	

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

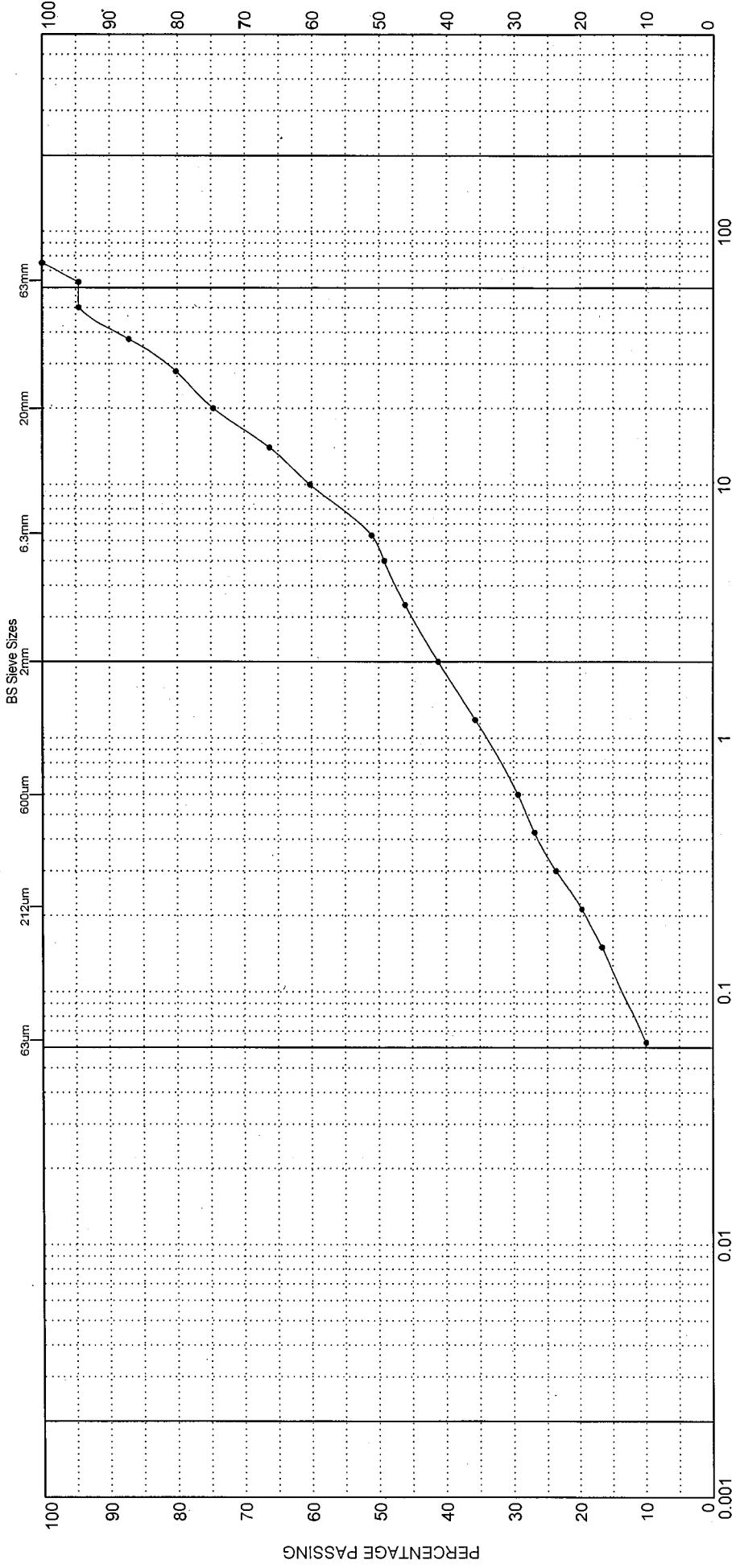
Exploratory Hole No :- TPD-24

Depth :- 0.80

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.



Date of issue :-
08/08/2017

Certificate No :-
PSD/SLS1015/TPD-24/B/0.80

Signed :- *msore*

Name :- *M. S. S. S. S.*

Page 1 of 1



Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :-
SLS1015

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

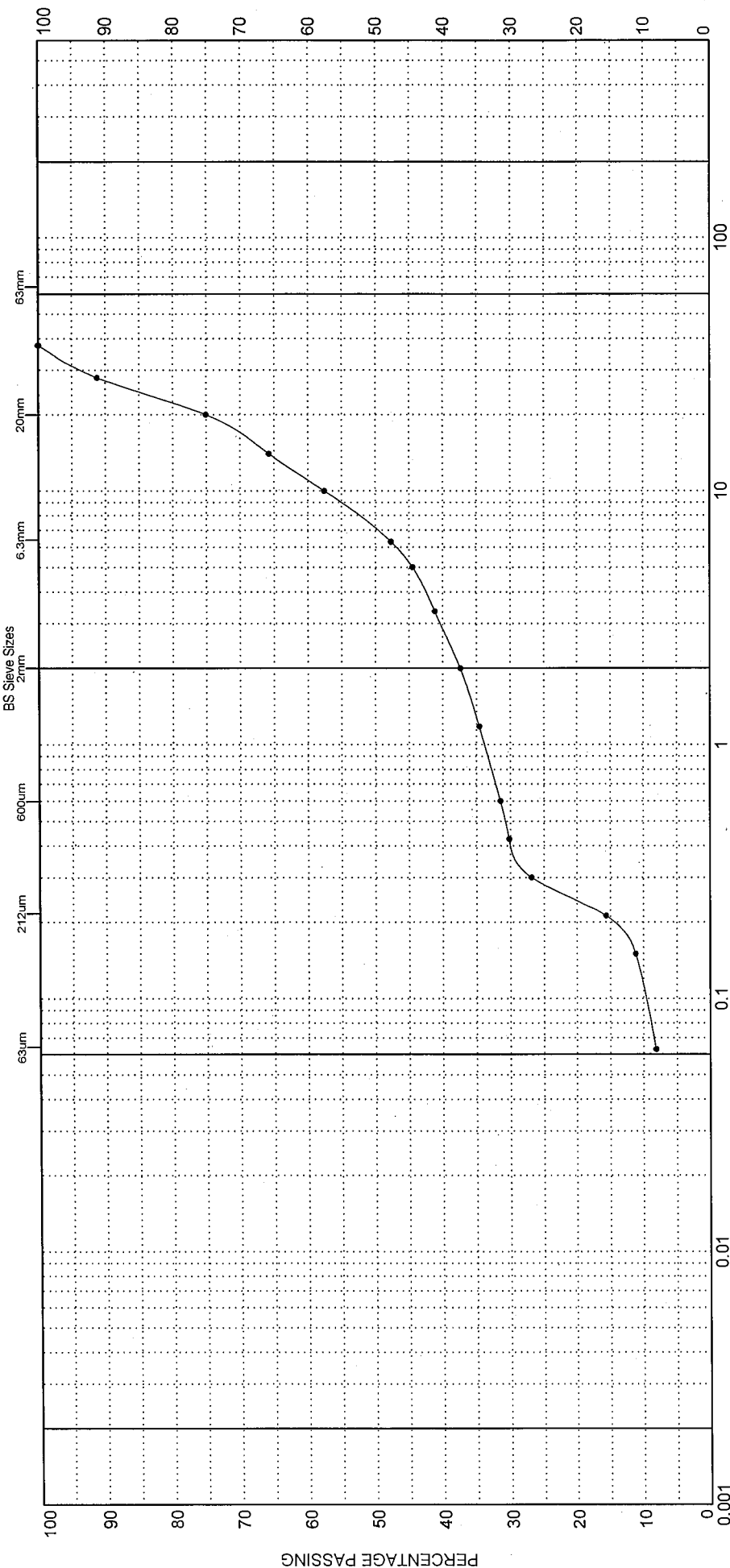
Exploratory Hole No :- TPD-30

Depth :- 1.70

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Date of issue :- 09/08/2017		Certificate No :- PSD/SLS1015/TPD-30/B/1.70		Signed :- <i>msn</i>		Name :- <i>M. SEUKIRK</i>		Page 1 of 1		
Client :- CH2M		Contract Title :-		Redcar Site		AEG Contract No :- SLS1015						

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

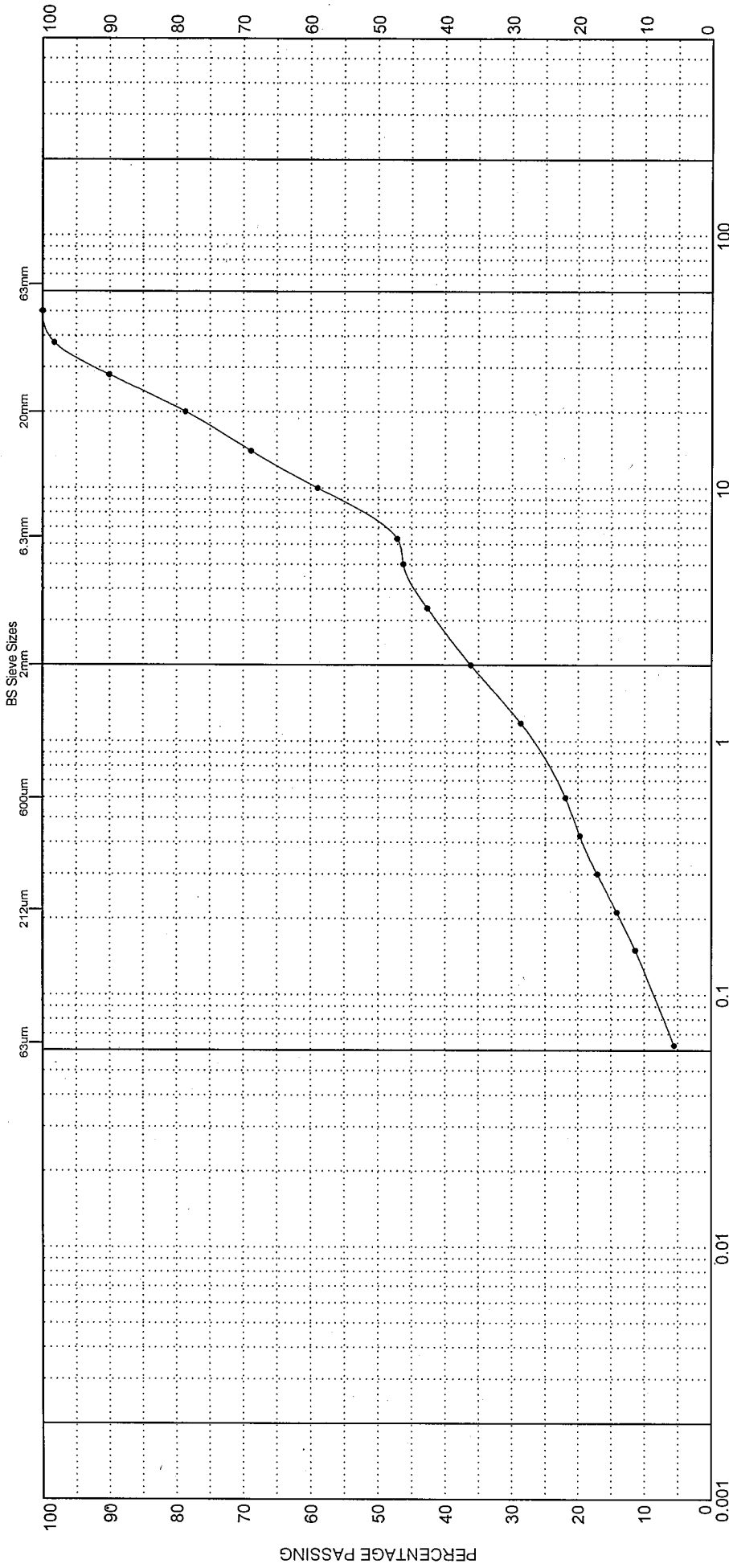
Exploratory Hole No :- TPE-04

Depth :- 1.50

Sample Type & No :- B

Date Tested :- 31/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :-
08/08/2017

Certificate No :-
PSD/SLS1015/TPE-04/B/1.50

Signed :-

MSO

Name *W. SELVAK*

Page 1 of 1

Client :-

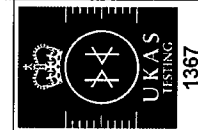
CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

SLS1015



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Date Tested :- 11/07/2017

The graph illustrates the particle size distribution of a material. The y-axis represents the percentage of material passing through a given sieve size, ranging from 0 to 100. The x-axis represents the sieve size in millimeters (mm) and micrometers (µm). The curve shows that approximately 100% of the material passes through a 63mm sieve, while 0% passes through a 63µm sieve. The distribution is skewed towards larger particle sizes, with a significant portion of the material being retained on the 2mm and 6.3mm sieves.

Sieve Size	Percentage Passing (%)
63mm	100
20mm	95
6.3mm	85
2mm	75
600µm	55
212µm	40
63µm	0

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		COBBLES	BOULDERS
CLAY												
		SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 08/08/2017		Certificate No :- PSD/SLS1015/TPE-07/B/2.20	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name :- M. S. S. S. S.	
AEG		AEG Contract No :- SLS1015	

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

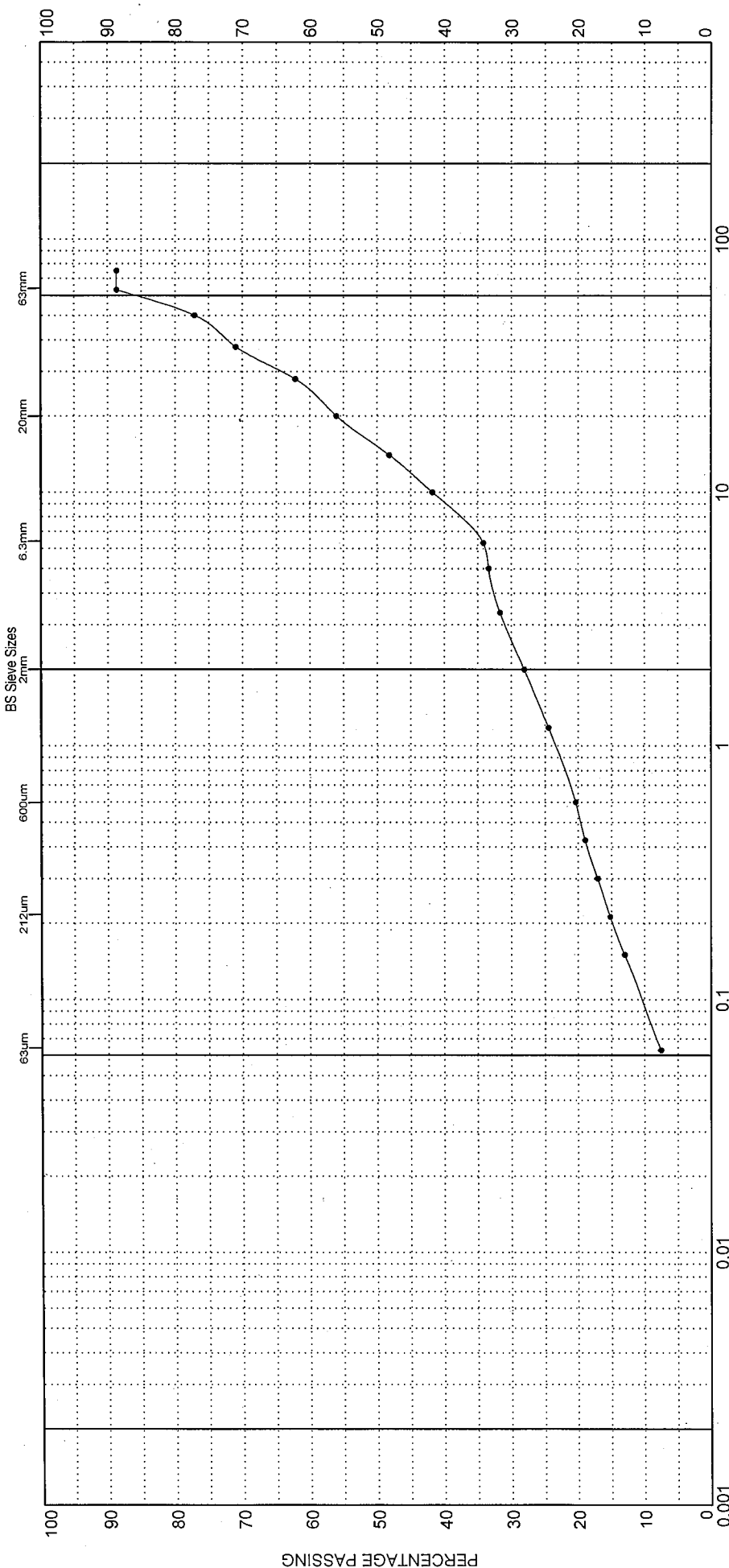
Exploratory Hole No :- TPE-12

Depth :- 0.60

Sample Type & No :- B

Date Tested :- 26/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	COBBLES	COBBLES	BOULDERS	BOULDERS	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TPE-12/B/0.60

Client :-

CH2M

Contract Title :-

Redcar Site

Signed :-

MSO

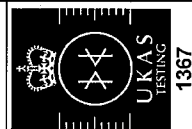
Name :-

M. SLEEK

Page 1 of 1

AEG Contract No :-

SLS1015

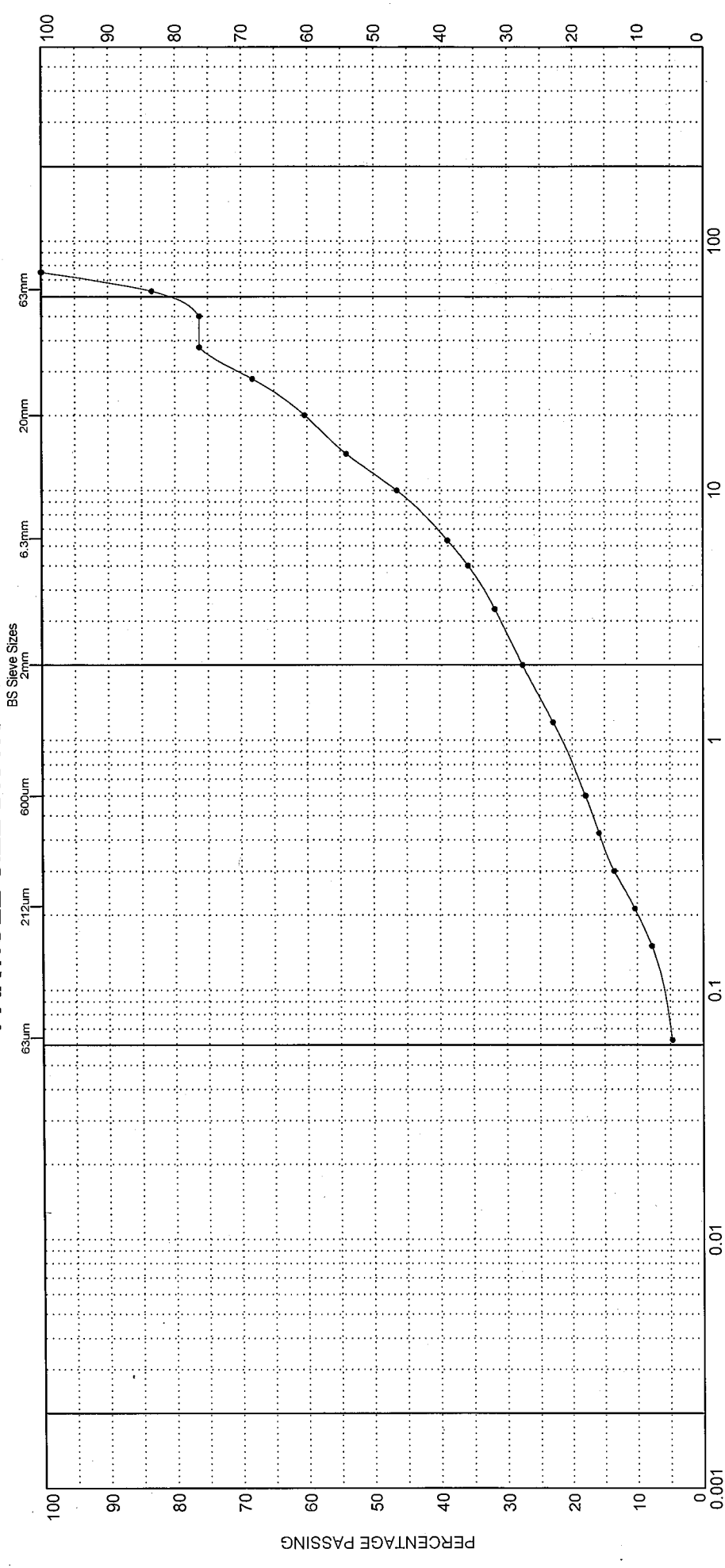


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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #	Exploratory Hole No :- TPE-20	Depth :- 0.50
Sample Type & No :- B		Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

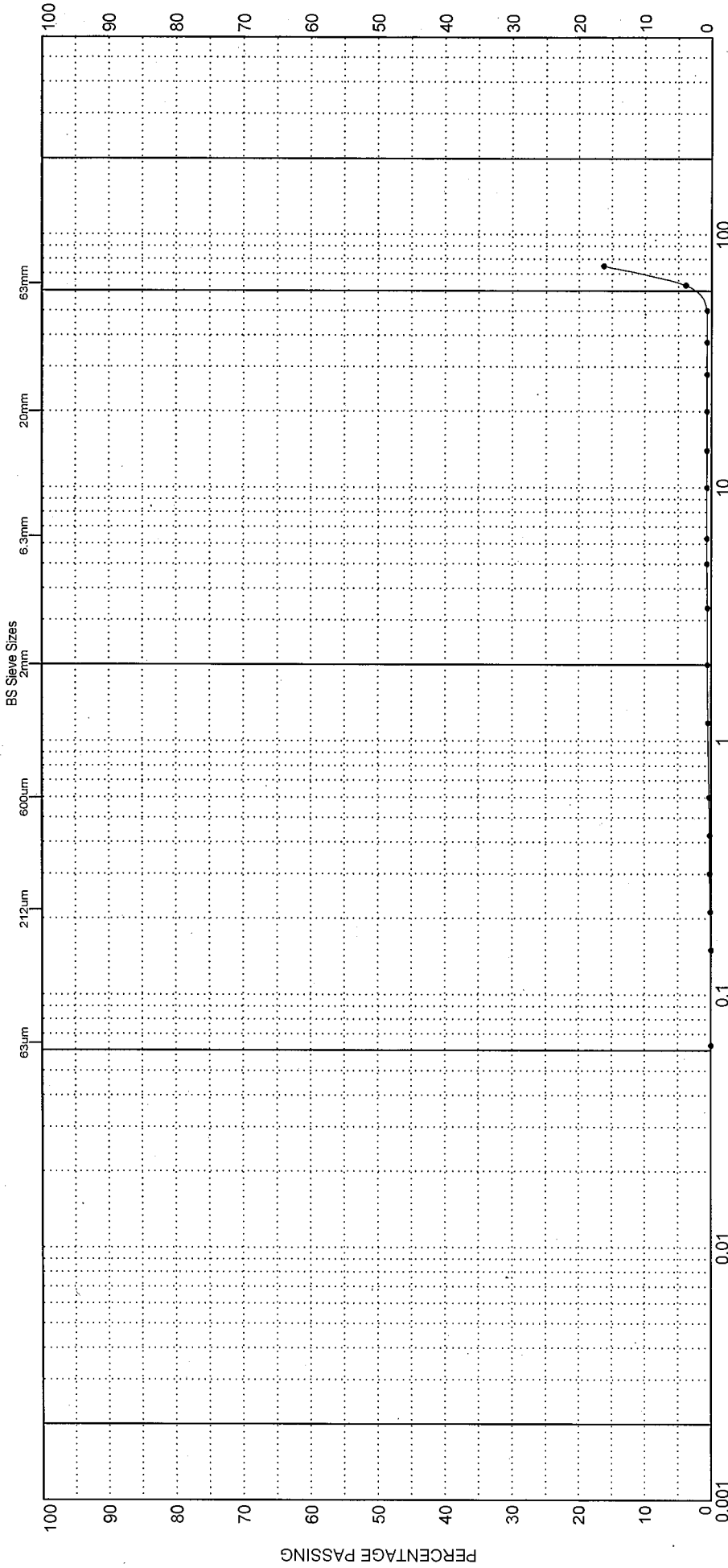
Exploratory Hole No :- TPE-25

Depth :- 2.70

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :-

08/08/2017

Certificate No :-

PSD/SLS1015/TPE-25/B/2.70

Signed :-

[Signature]

Name :-

[Signature]

Page 1 of 1

Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

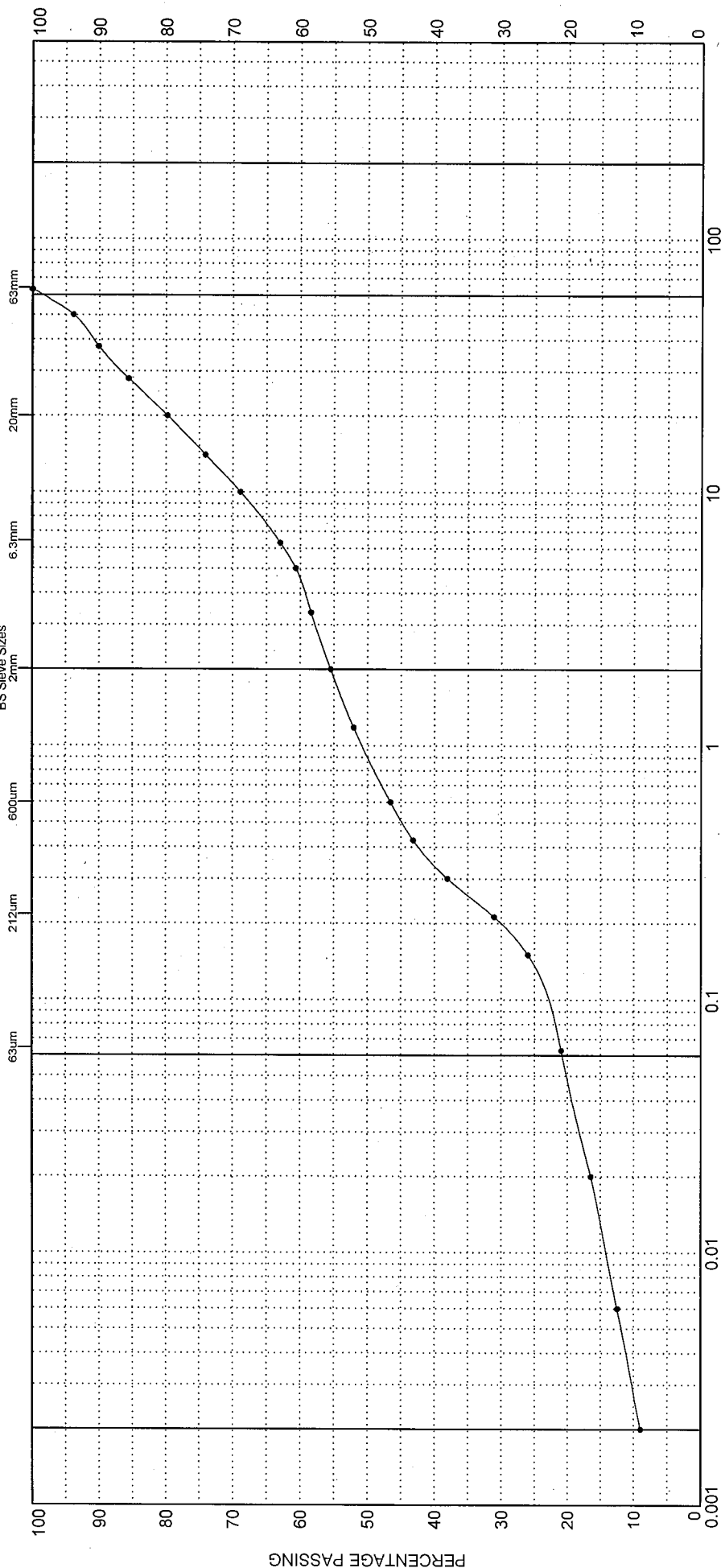
SLS1015



1367

Date Tested :- 12/07/2017

BS Sieve Sizes

[illegible]

	#	Denotes method deviates from standard due to insufficient sample mass.
For description of sample please refer to the Laboratory Sample Description Sheet.		

					
AEGS	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPE-33/B/3.40	Signed :- 	Name :- M. S. JAYAKUMAR	Page 1 of 1
Client :- CH2M	Contract Title :- Redcar Site		AEG Contract No :- SLS1015		

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

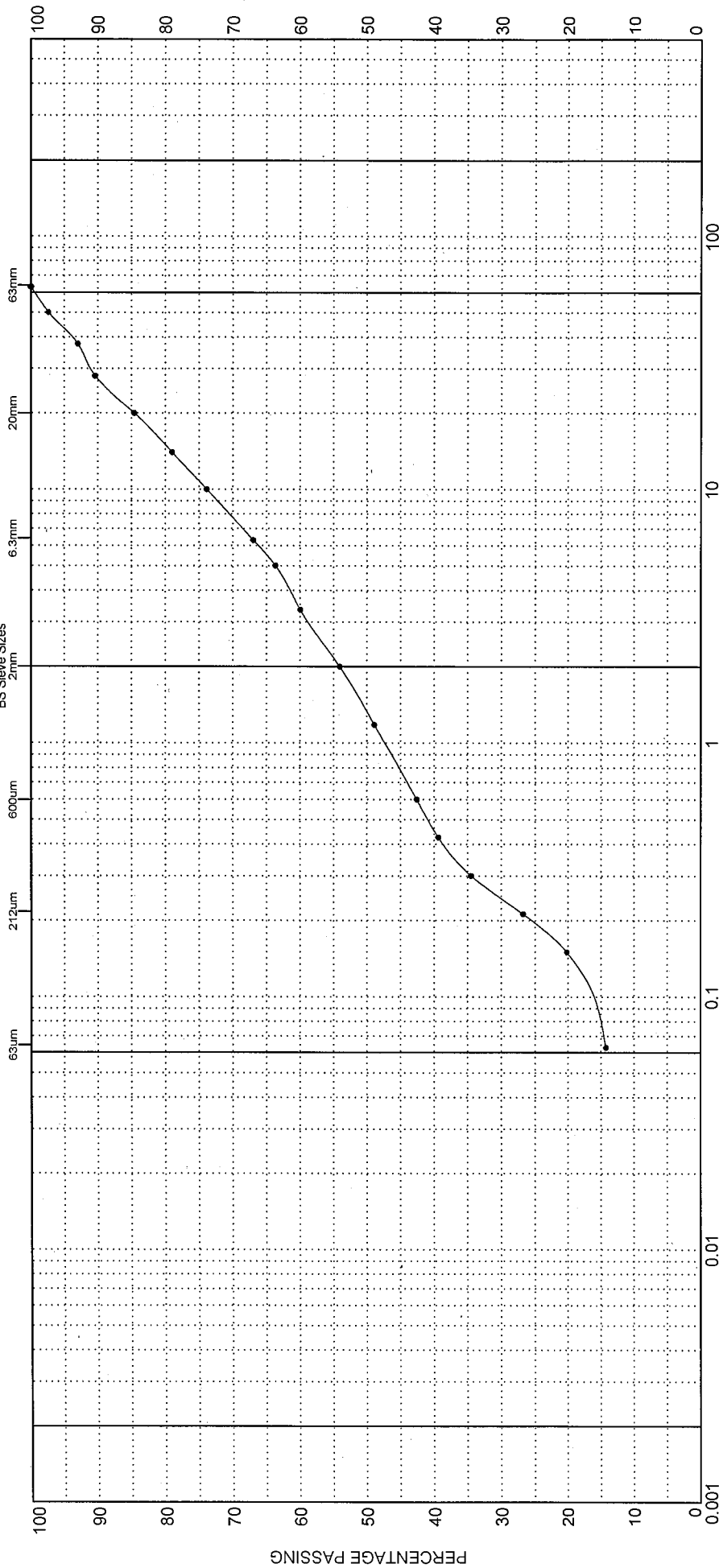
Exploratory Hole No :- TPE-38

Depth :- 2.50

Sample Type & No :- B

Date Tested :- 12/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY		SILT		SAND		GRAVEL		COBBLES		BOULDERS	
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TPE-38/B/2.50

Signed :-

msone

Name :-

M. SELLARAK

Page 1 of 1

Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990 #

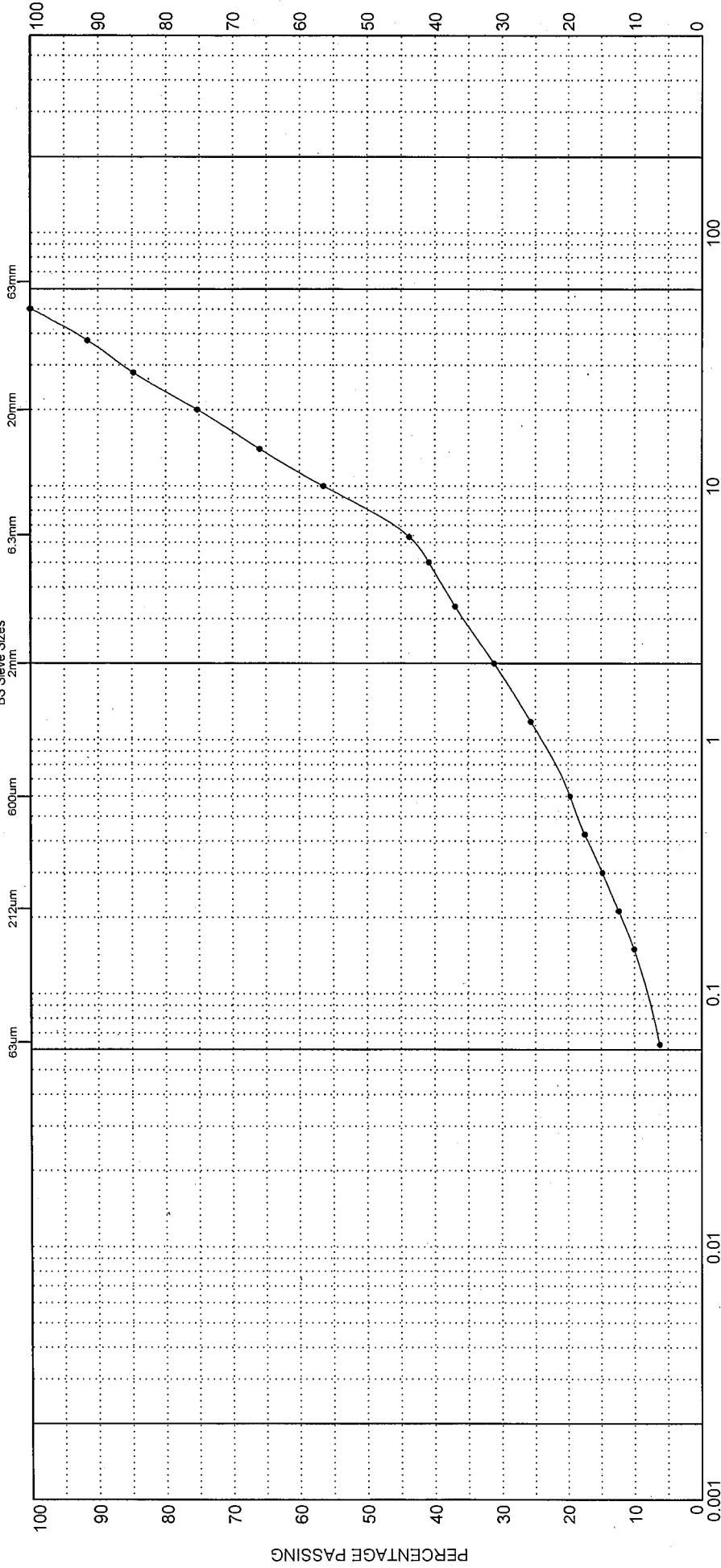
Exploratory Hole No :- TPE-39

Depth :- 2.00

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

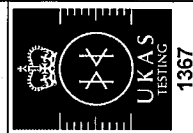
Date of issue :-
08/08/2017

Certificate No :-
PSD/SLS 1015/TPE-39/B/2.00

Signed :-

Name :- M. SELVARAJ

Page 1 of 1



Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :-
SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

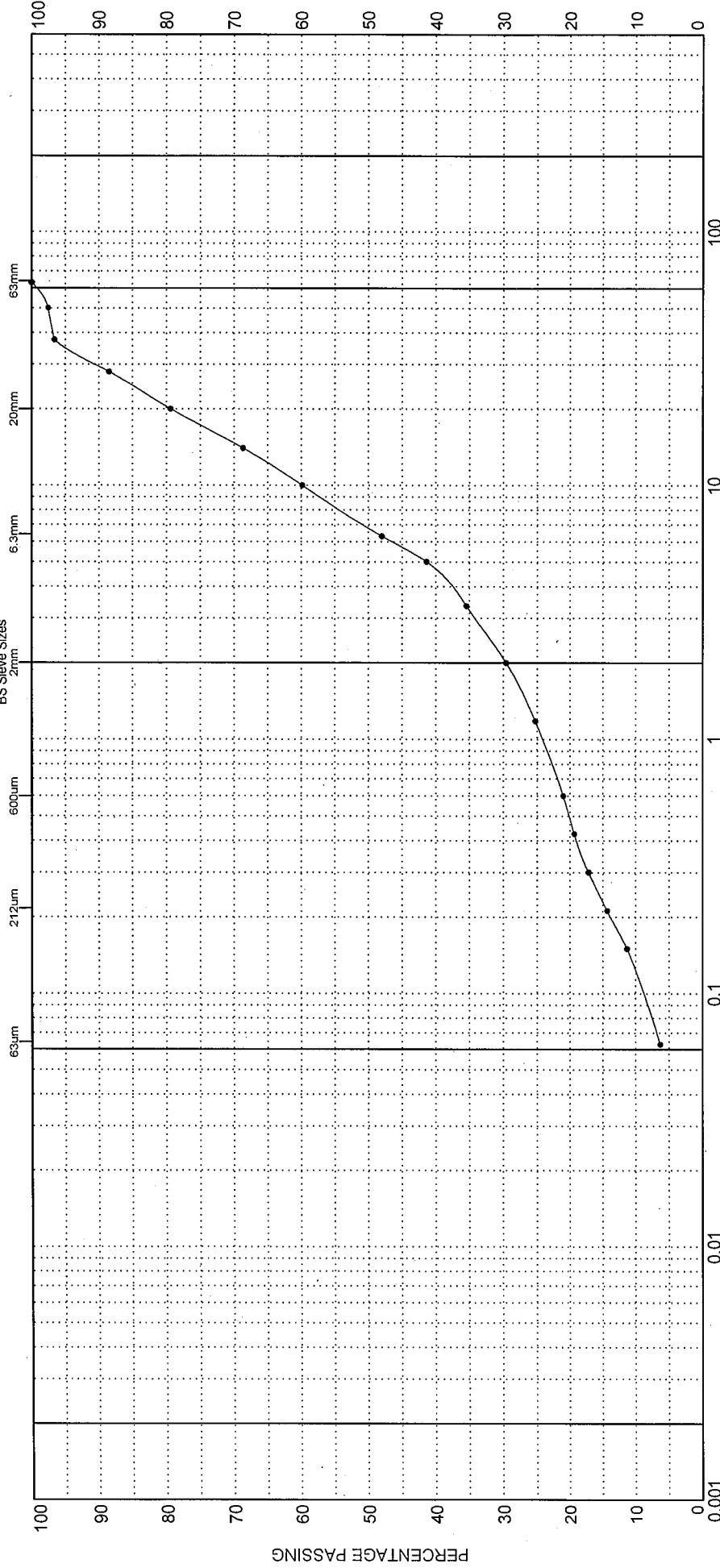
Exploratory Hole No :- TPE-53

Depth :- 3.80

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :-

08/08/2017

Certificate No :-

PSD/SLS1015/TPE-53/B/3.80

Signed :-

msone

Name :-

GELKIRK

Page 1 of 1

AEG Contract No :-

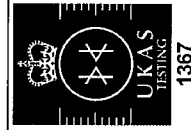
SLS1015

Client :-

CH2M

Contract Title :-

Redcar Site



Date Tested :- 12/07/2017

The graph illustrates the particle size distribution of a material. The y-axis represents the percentage of material passing through a given sieve size, ranging from 0 to 100. The x-axis represents the sieve size in millimeters, on a logarithmic scale from 0.001 to 100 mm. The curve shows that approximately 95% of the material passes through a 75 mm sieve, 80% through a 20 mm sieve, and about 5% passes through a 0.075 mm sieve.

Sieve Size (mm)	Percentage Passing (%)
100	100
75	95
60	90
47.5	85
37.5	80
30	75
25	70
20	65
15	60
12.5	55
10	50
7.5	45
6	40
4.75	35
3.75	30
3	25
2.5	20
2	15
1.5	10
1.18	8
0.85	6
0.6	4
0.425	3
0.3	2
0.25	1
0.18	0.5
0.15	0.2
0.106	0.1

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 08/08/2017		Certificate No :- PSD/SLS1015/TPE-55/B/1.50	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name :- 	
AEG Contract No :- SLS1015			

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

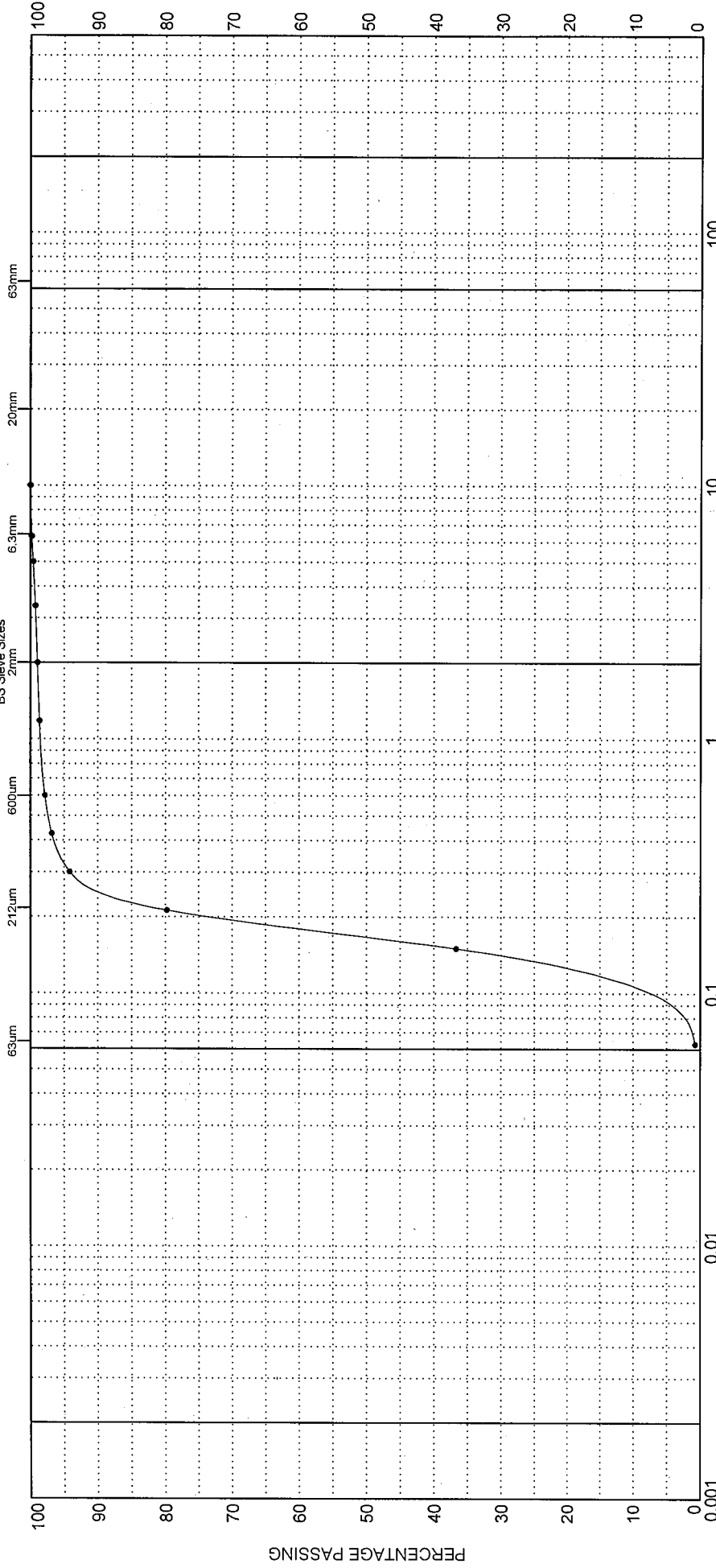
Exploratory Hole No :- TPF-11

Sample Type & No :- B

Depth :- 2.00

Date Tested :- 28/09/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	BOULDERS
	SILT			SAND			GRAVEL			

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.



Date of issue :-

08/08/2017

Certificate No :-

PSD/SLS1015/TPF-11/B/2.00

Signed :-

msn

Name :-

M. SELVARAJ

Page 1 of 1

AEG Contract No :-

SLS1015

Client :-

CH2M

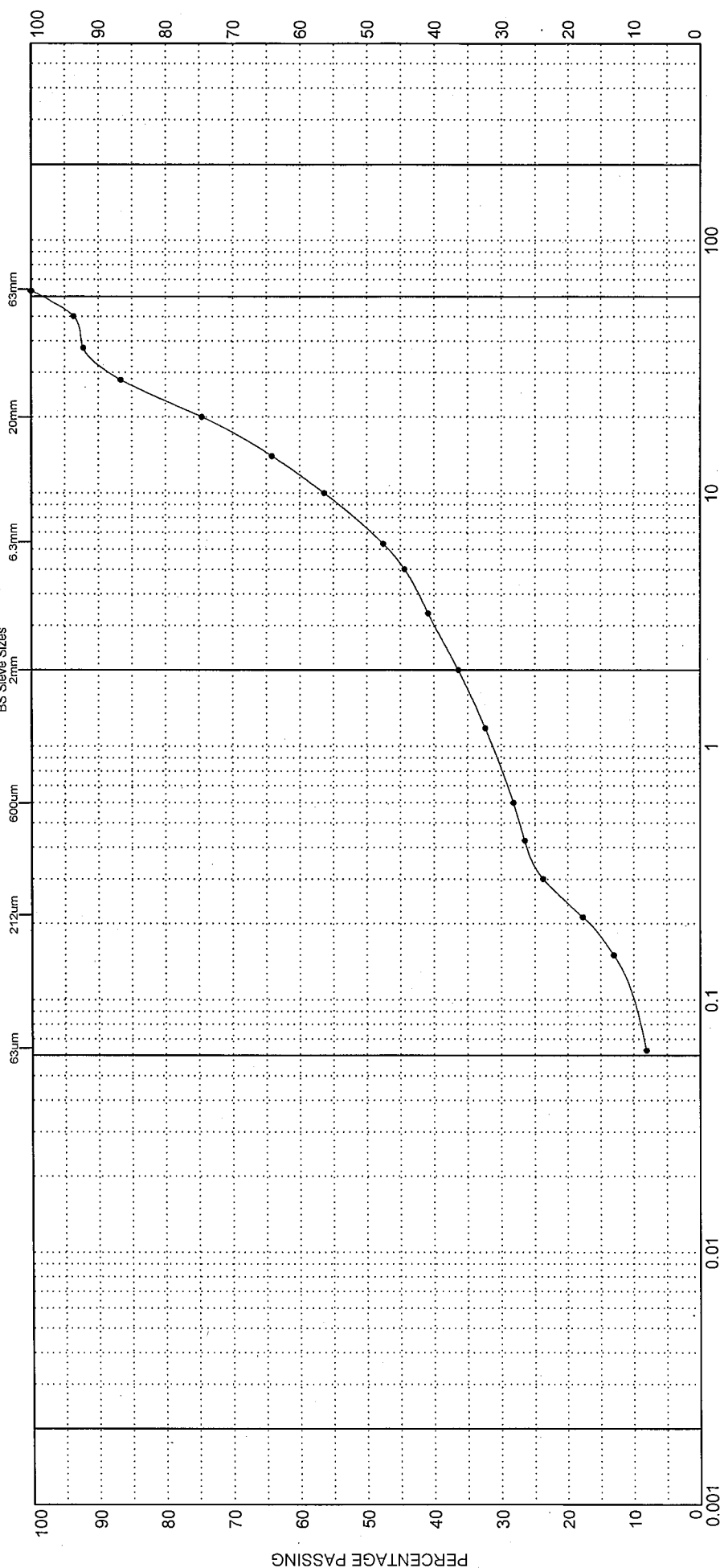
Contract Title :-

Redcar Site



1367

BS Sieve Sizes



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	GRAVEL	COBBLES	BOULDERS
	SILT			Fine	Medium	Coarse			

For description of sample please refer to the Laboratory Sample Description Sheet # Denotes method deviates from standard due to insufficient sample mass.

		Page 1 of 1	
Date of issue :- 08/08/2017		Certificate No :- PSD/SLS1015/TPH-01/B/1.00	
Client :- CH2M		Contract Title :- Redcar Site	
Signed :- 		Name M. SELVARAJ	
AEG		AEG Contract No :- SLS1015	

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

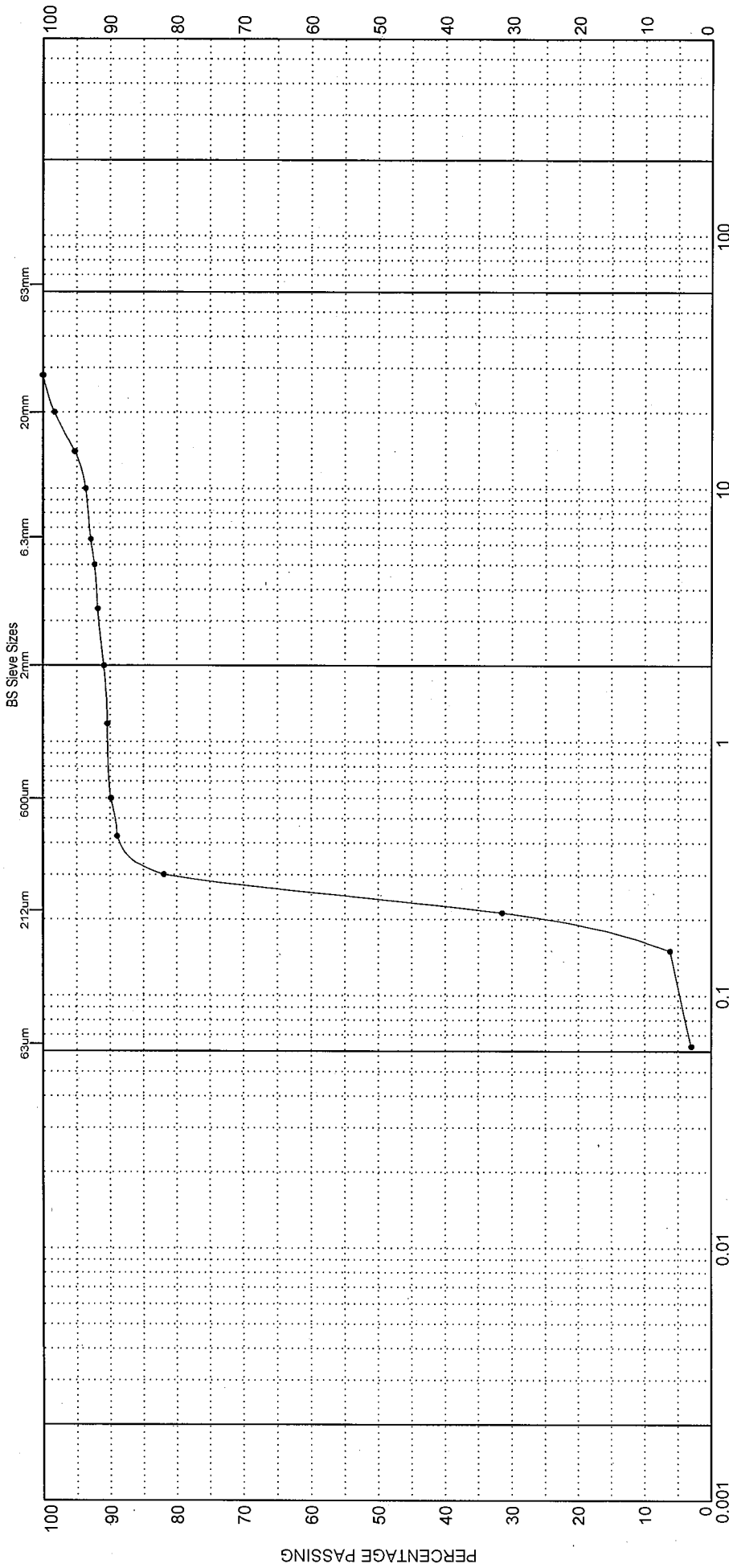
Exploratory Hole No :- TPH-10

Depth :- 1.70

Sample Type & No :- B

Date Tested :- 28/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :-

PSD/SLS1015/TPH-10/B/1.70

Signed :-

M. SELLAR

Name :-

M. SELLAR

Page 1 of 1

Client :-

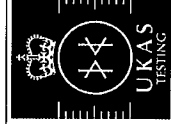
CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

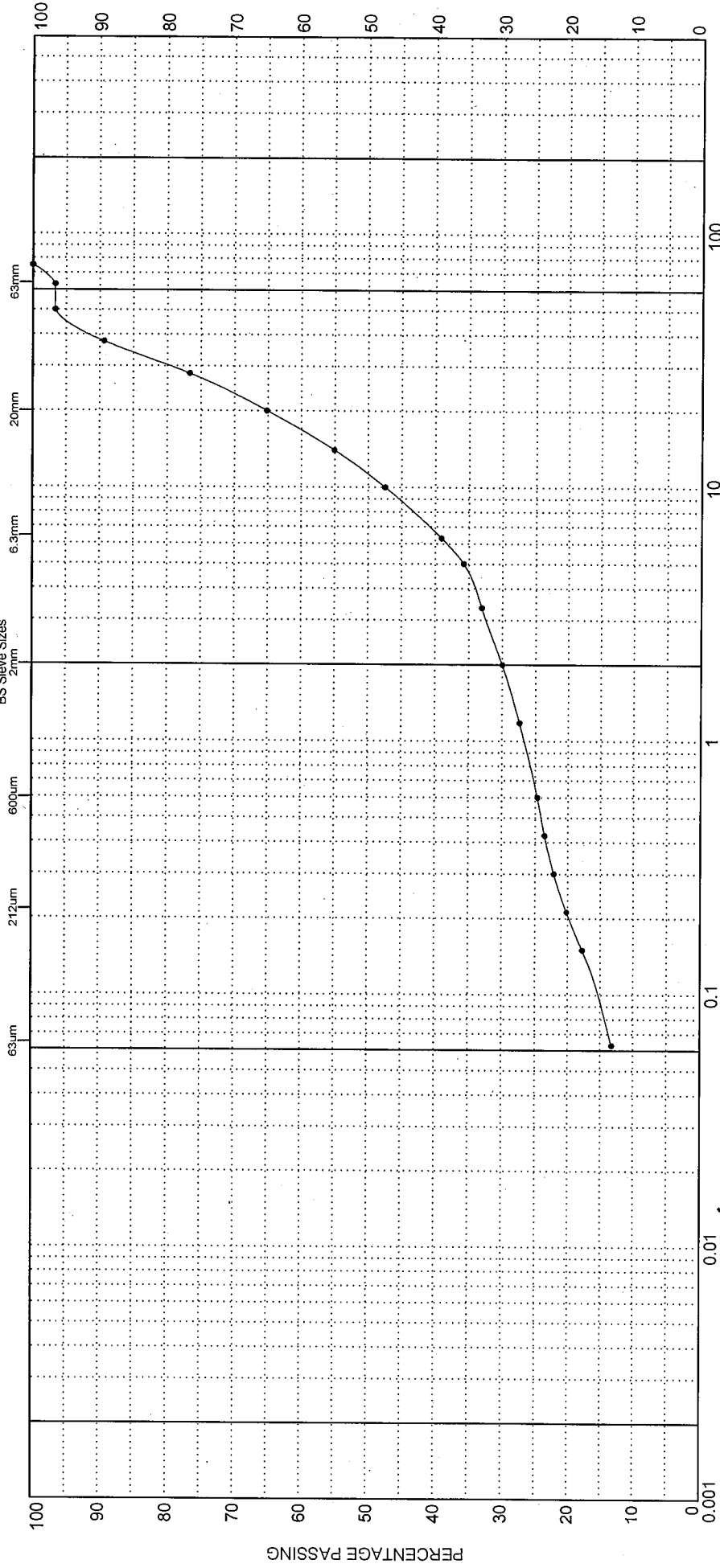
Exploratory Hole No :- TPH-14

Depth :- 2.10

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

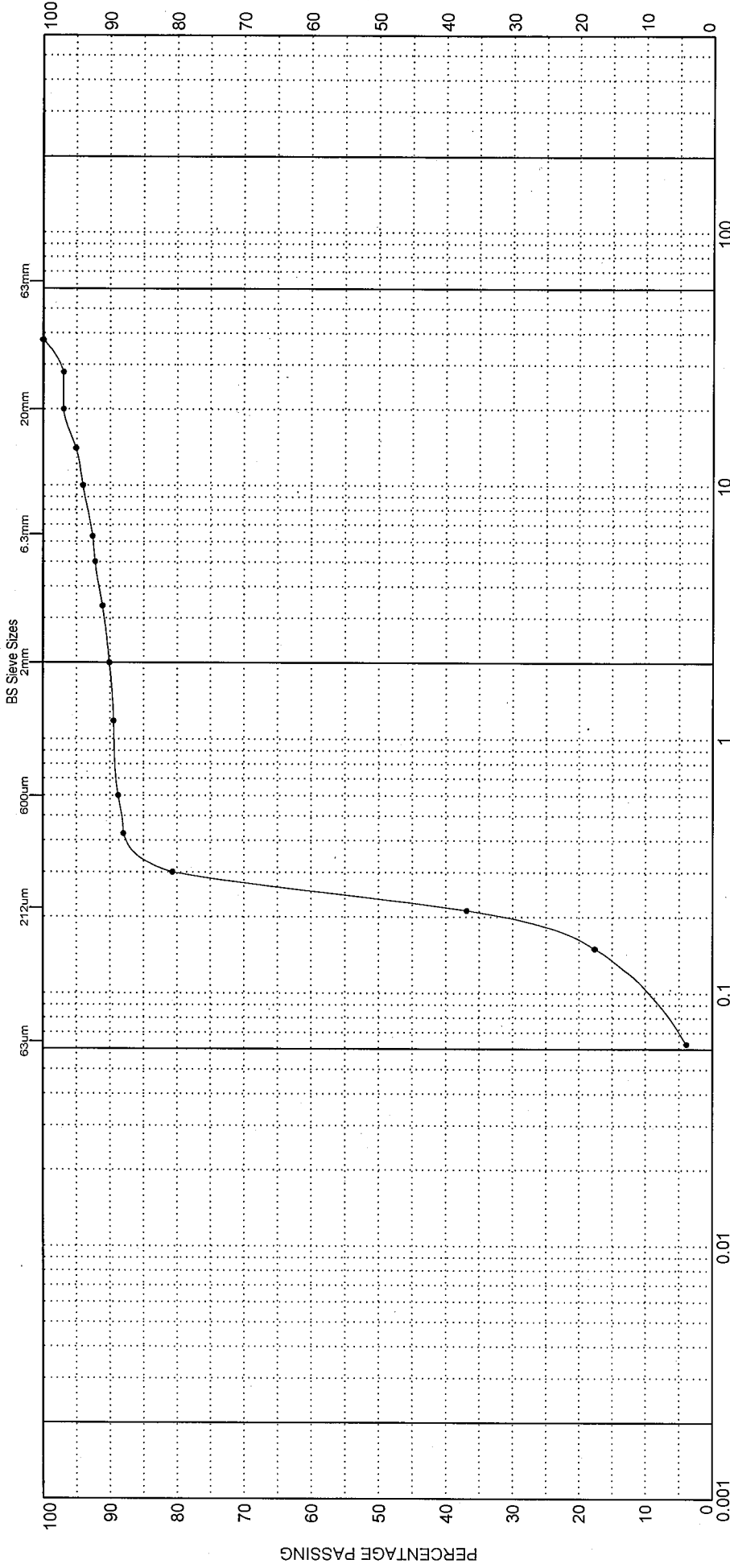
Exploratory Hole No :- TPH-30

Depth :- 1.80

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :-

08/08/2017

Certificate No :-

PSD/SLS1015/TPH-30/B/1.80

Signed :-

MSO

Name :-

M SELVARAJ

Page 1 of 1

Client :-

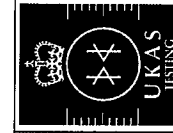
CH2M

Contract Title :-

Redcar Site

AEG Contract No :-

SLS1015



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

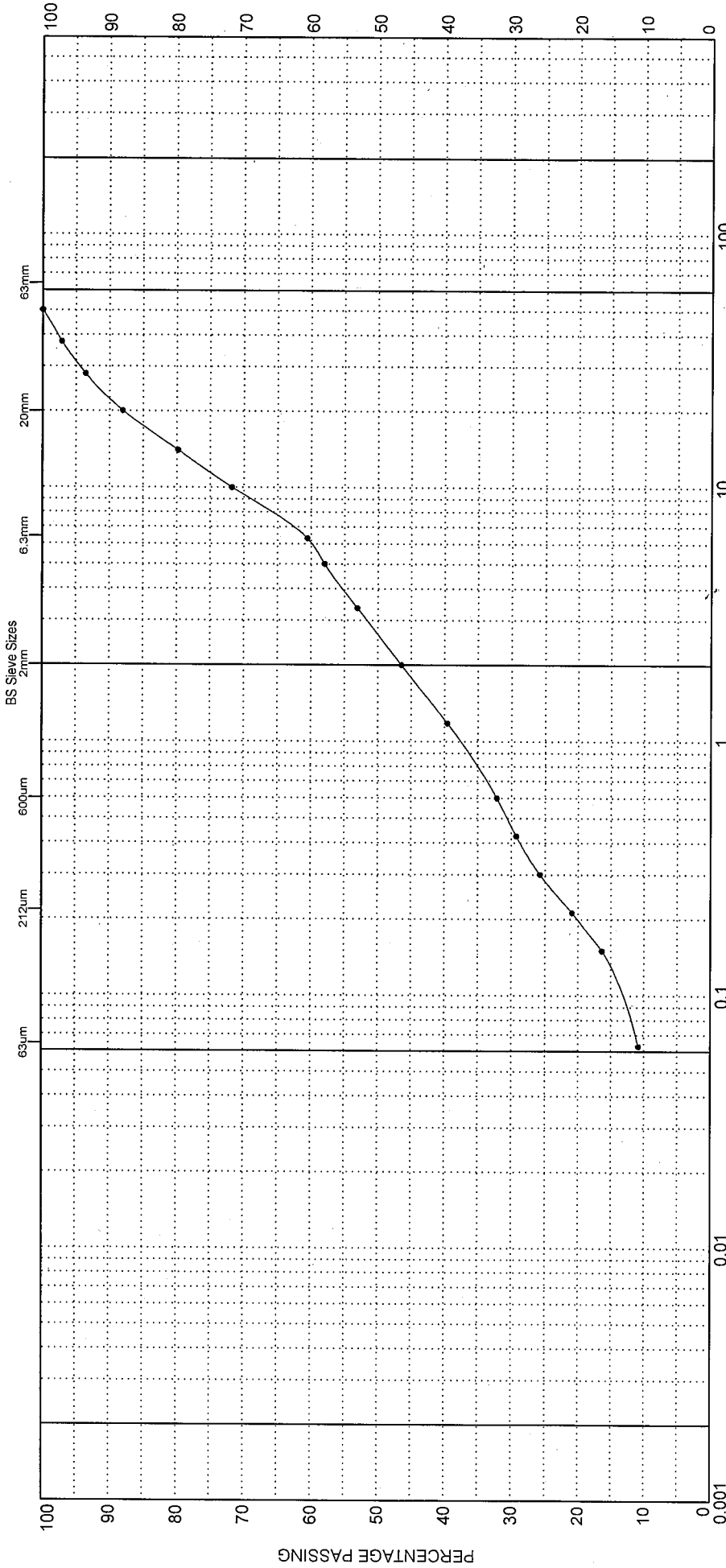
Exploratory Hole No :- TPI-02

Depth :- 2.70

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

Date of issue :- 08/08/2017

Certificate No :- PSD/SLS1015/TPI-02/B/2.70

Signed :-

Name :- M. SELKIRK

Page 1 of 1



Client :-

CH2M

Contract Title :-

Redcar Site

AEG Contract No :- SLS1015



1367

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

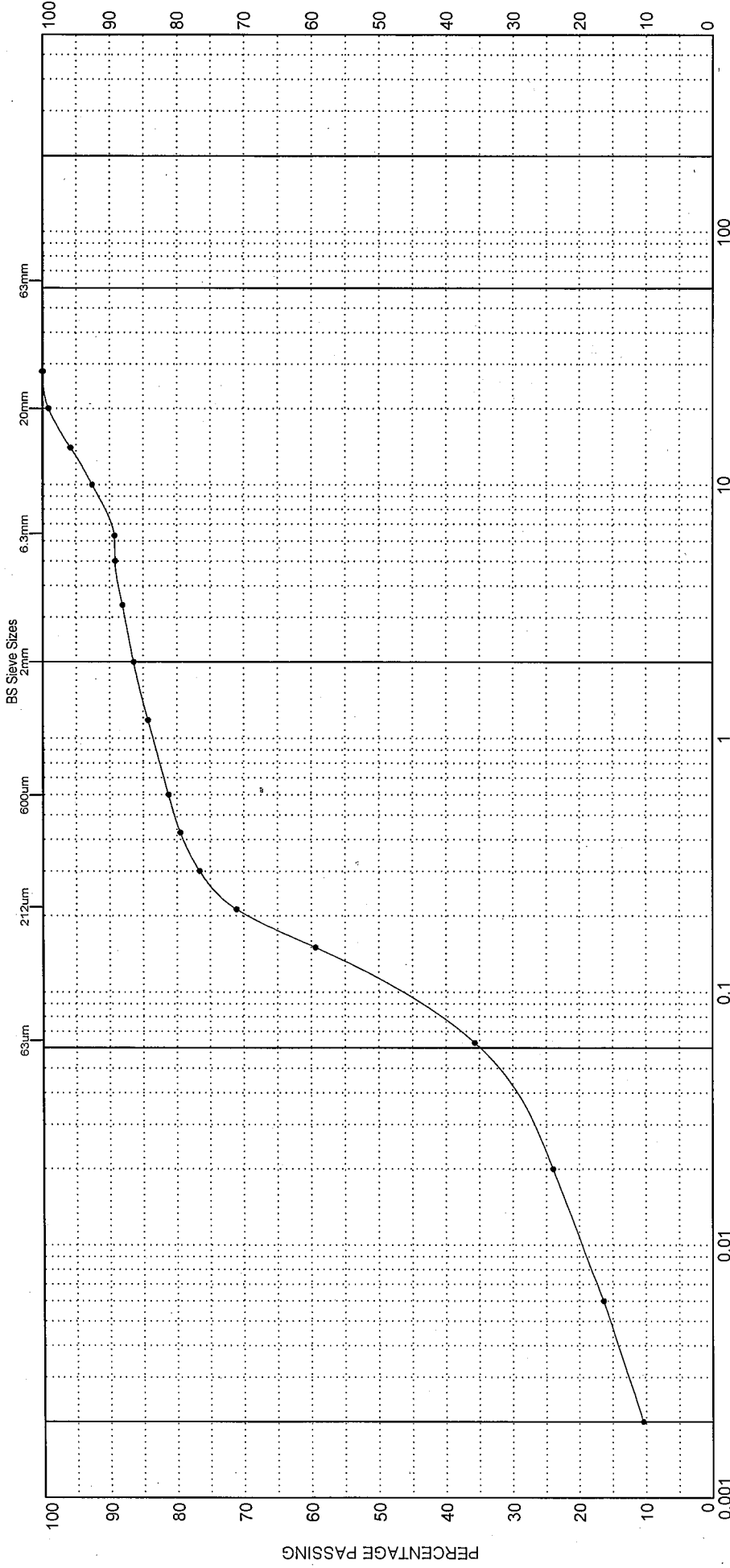
Exploratory Hole No :- TPI-03

Depth :- 0.40

Sample Type & No :- B

Date Tested :- 20/07/2017

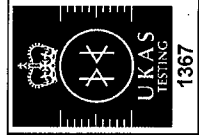
PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES		BOULDERS	
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse				

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPI-03/B/0.40	Signed :- <i>msore</i>	Name :- M. SELKIRK	Page 1 of 1
	Client :- CH2M	Contract Title :-	Redcar Site	AEG Contract No :- SLS1015	



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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

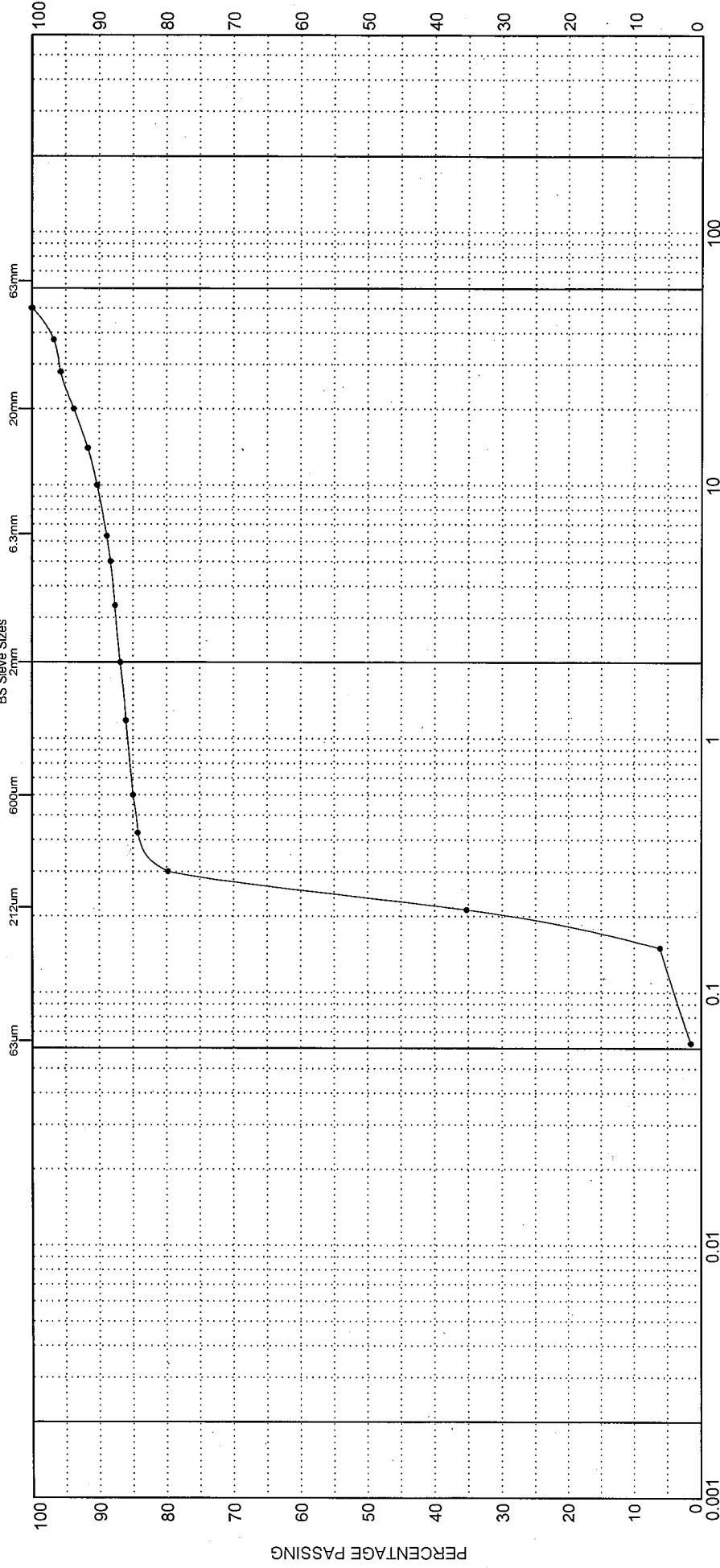
Exploratory Hole No :- TPI-15

Depth :- 4.00

Sample Type & No :- B

Date Tested :- 11/07/2017

PARTICLE SIZE DISTRIBUTION CURVE



CLAY			SILT			SAND			GRAVEL			COBBLES			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.



Date of issue :- 08/08/2017

Certificate No :- PSD/SLS1015/TPI-15/B/4.00

Signed :- *msone*

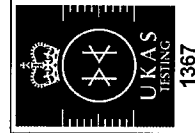
Name :- *msone*

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AEG Contract No :- SLS1015

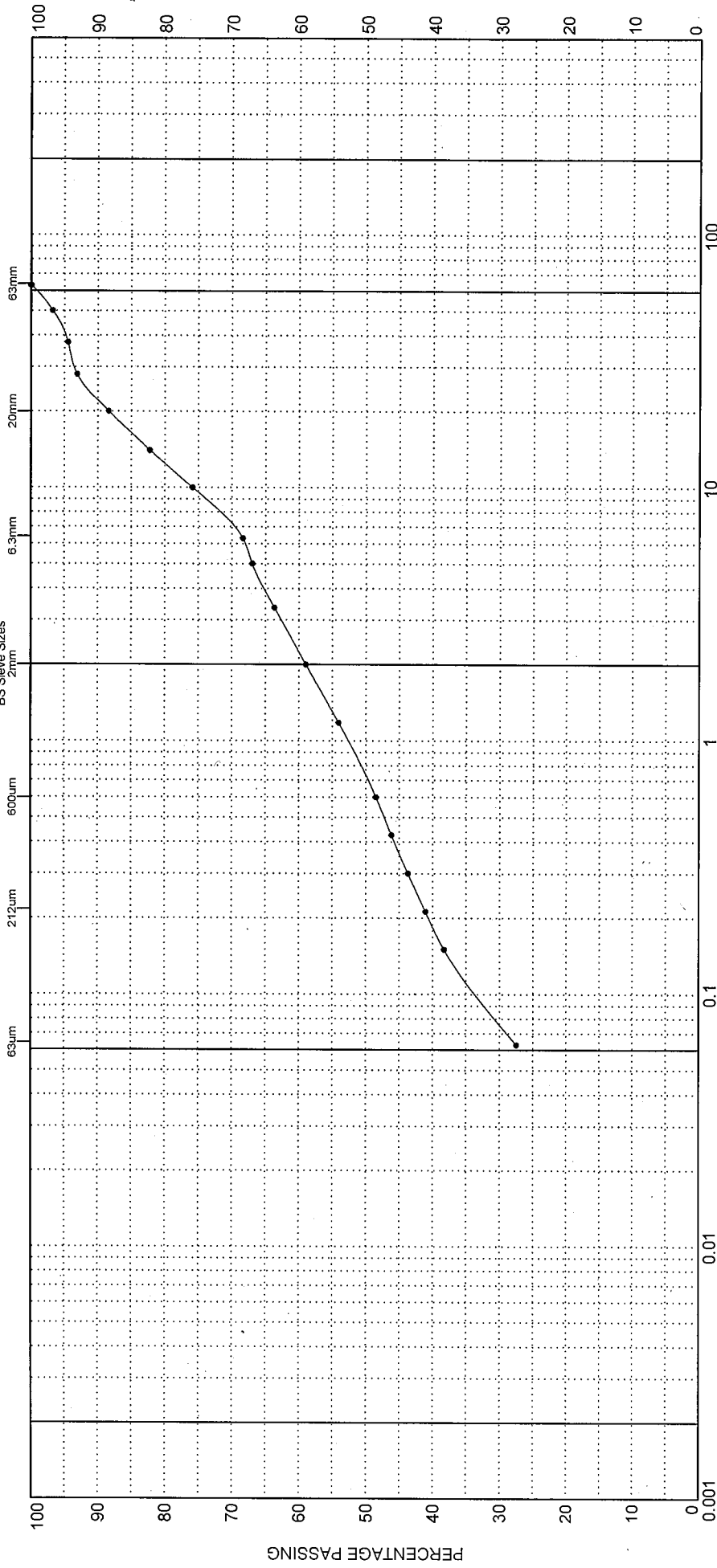
Client :- CH2M

Contract Title :- Redcar Site



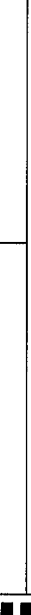
Date Tested :- 12/07/2017

BS Sieve Sizes



	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse					
CLAY										SILT	SAND	GRAVEL	COBBLES	BOULDERS

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

		
Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPI-17/B/0.60	Signed :- 
Client :- CH2M	Contract Title :- Redcar Site	
	Name :- W. SLOTTAK	Page 1 of 1 AEG Contract No :- SLS1015

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Test Method :- BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

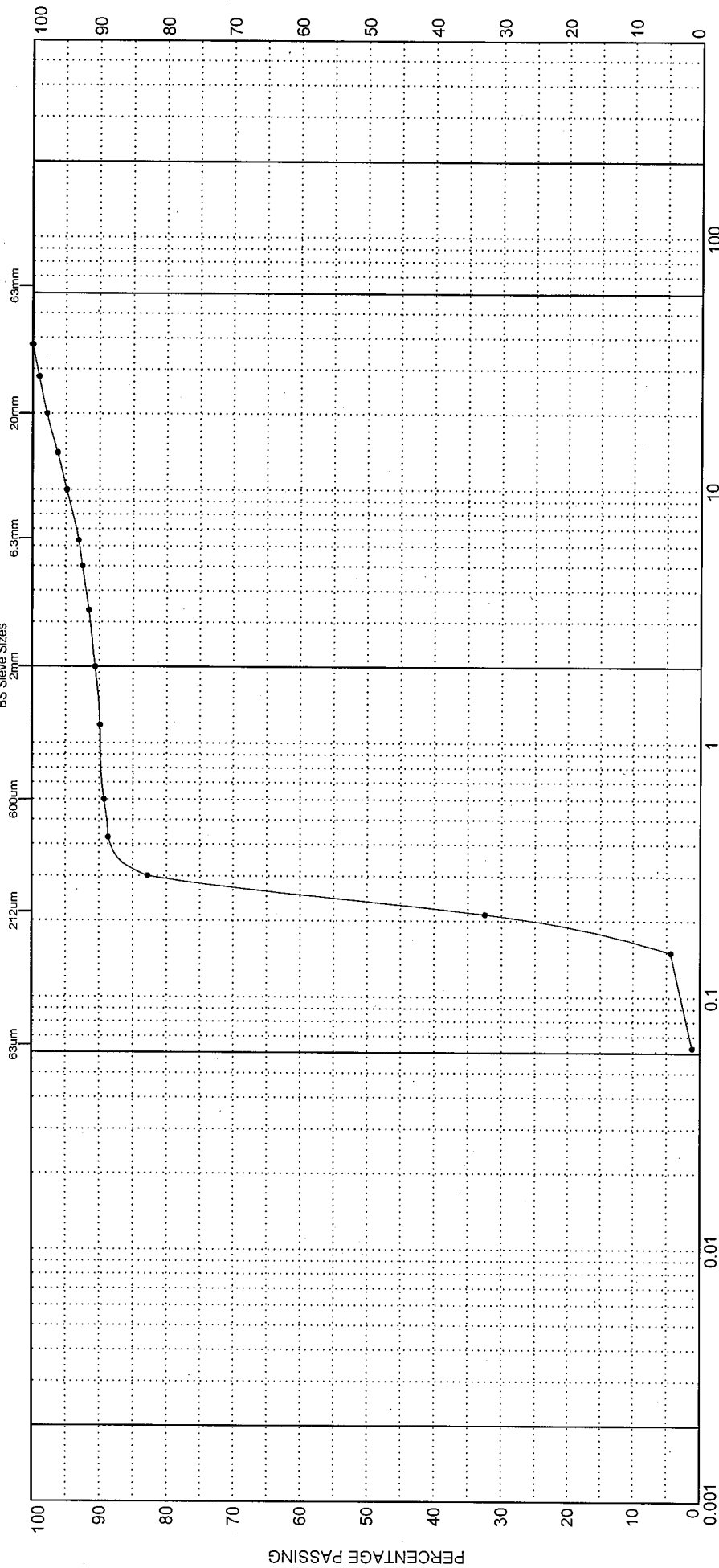
Exploratory Hole No :- TPI-26

Depth :- 4.50

Sample Type & No :- B

Date Tested :- 12/07/2017

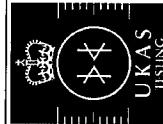
PARTICLE SIZE DISTRIBUTION CURVE

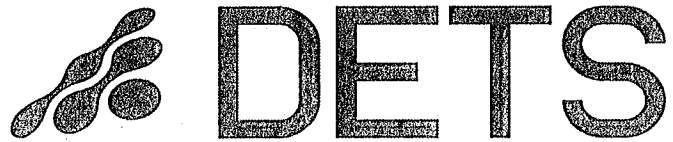


CLAY			SILT			SAND			GRAVEL			COBBLES		BOULDERS	
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse				

For description of sample please refer to the Laboratory Sample Description Sheet. # Denotes method deviates from standard due to insufficient sample mass.

	Date of issue :- 08/08/2017	Certificate No :- PSD/SLS1015/TPI-26/B/4.50	Signed :- <i>[Signature]</i>	Name :- M. SELKIRK	Page 1 of 1
	Client :- CH2M	Contract Title :- Redcar Site	AEG Contract No :- SLS1015		





Certificate of Analysis

Certificate Number 17-05607

24-Jul-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-05607

Client Reference SLS1015

Order No 1869

Contract Title Redcar Site

Description 6 Soil samples.

Date Received 18-Jul-17

Date Started 18-Jul-17

Date Completed 24-Jul-17

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 10725 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. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager





Summary of Chemical Analysis

Soil Samples

Our Ref 17-05607
 Client Ref SLS1015
 Contract Title Redcar Site

Lab No	1206090	1206091	1206092	1206093	1206094	1206095
Sample ID	TP-20	TPC-17	TPD-22	TPH-14	TPI-19	TPC-07
Depth	1.10	1.30	2.00	2.10	3.40	1.00
Other ID						
Sample Type	B	B	D	B	B	B
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%		4.7	4.7	4.6		0.59
Organic matter	DETSC 2002#	0.1	%	0.7	2.1	1.5	1.5	0.7	

Information in Support of the Analytical Results

Our Ref 17-05607
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1206090	TP-20 1.10 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (730 days)	
1206091	TPC-17 1.30 SOIL		PT 500ml	Sample date not supplied, Loss on Ignition (730 days), Organic Matter (Manual) (730 days)	
1206092	TPD-22 2.00 SOIL		PT 500ml	Sample date not supplied, Loss on Ignition (730 days), Organic Matter (Manual) (730 days)	
1206093	TPH-14 2.10 SOIL		PT 500ml	Sample date not supplied, Loss on Ignition (730 days), Organic Matter (Manual) (730 days)	
1206094	TPI-19 3.40 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (730 days)	
1206095	TPC-07 1.00 SOIL		PT 500ml	Sample date not supplied, Loss on Ignition (730 days)	

Key: P-Plastic 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, inappropriate containers etc 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

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TP-14

Depth (mBGL) :- 2.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 12.5

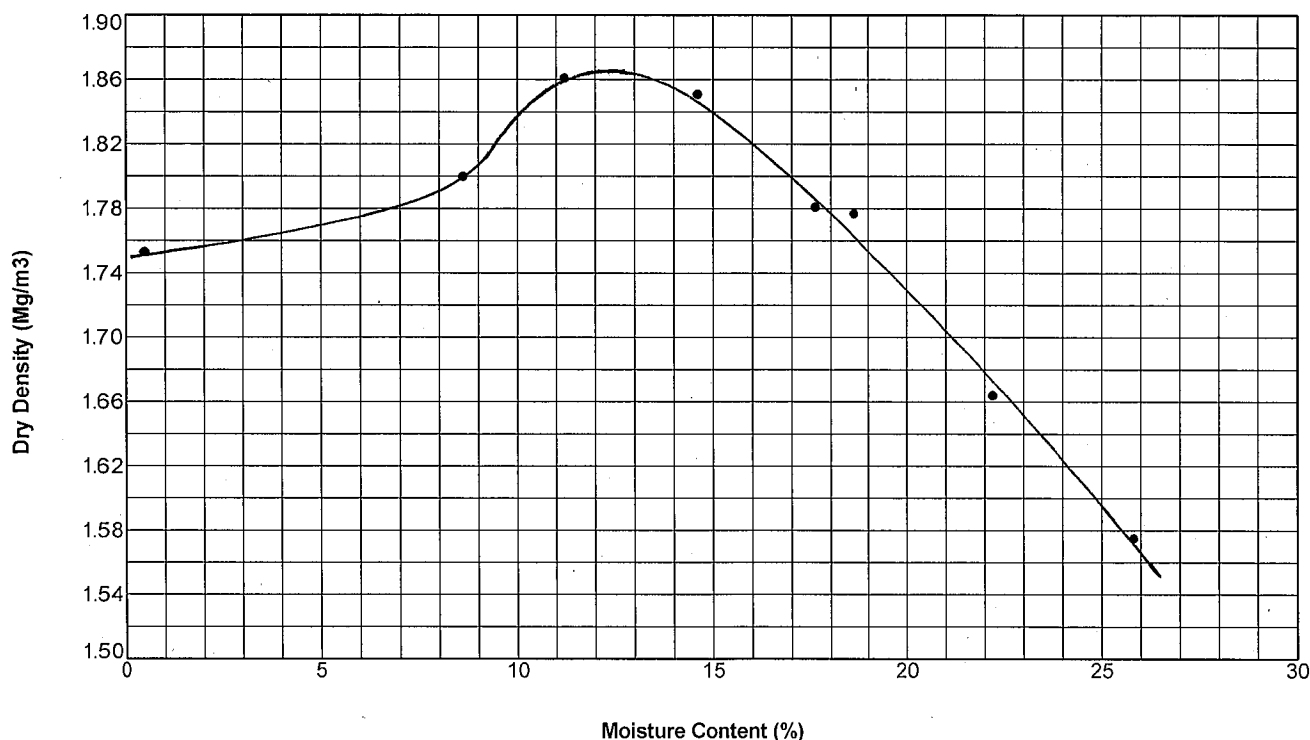
Particle Density (Measured) = 2.51

Maximum Dry Density (Mg/m³) = 1.86

Retained on 20mm Sieve (%) = 18.1

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 7.5



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msone

Name :-

M. SELKIRK

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Date of issue :-

09/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TP-22

Depth (mBGL) :- 0.70

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 11.7

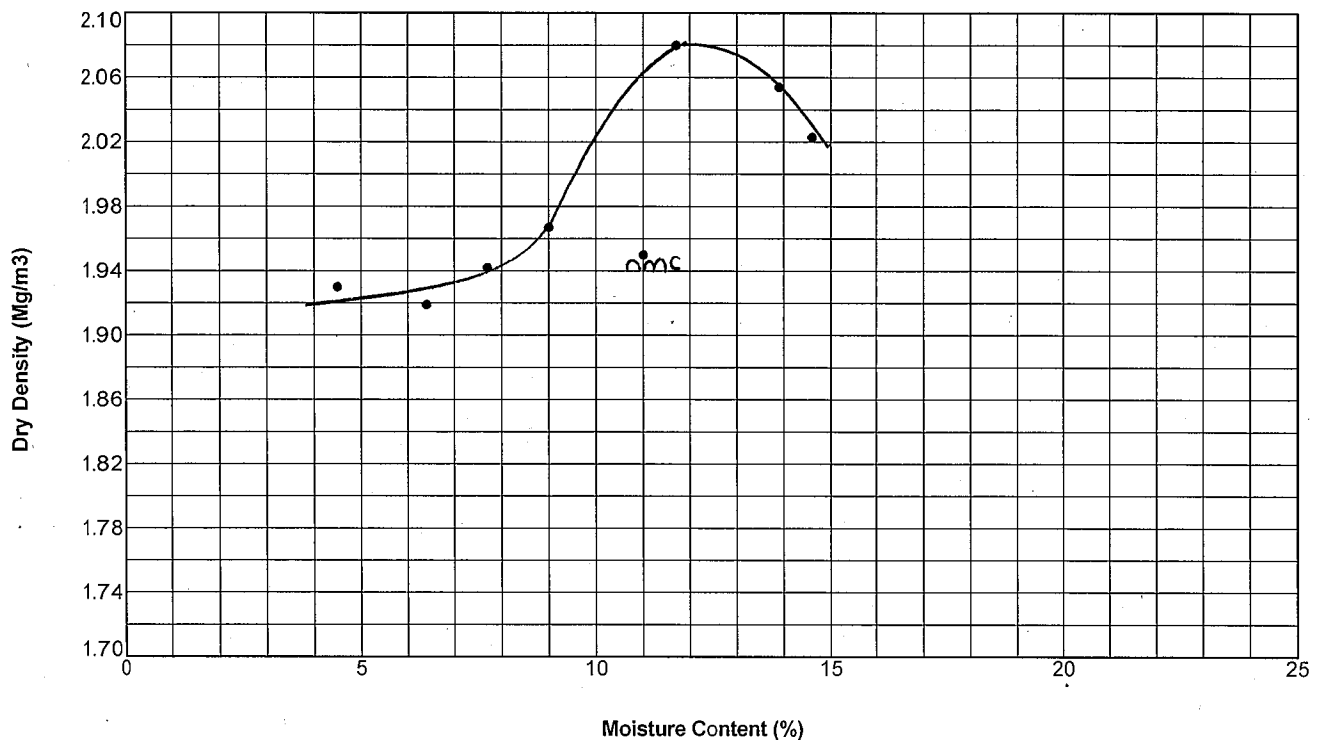
Particle Density (Measured) = 2.73

Maximum Dry Density (Mg/m³) = 2.08

Retained on 20mm Sieve (%) = 20.5

Date Tested = 20/07/2017

Retained on 37.5mm Sieve (%) = 5.1



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

09/08/2017

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TP-42

Depth (mBGL) :- 0.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 12.2

Particle Density (Assumed) = 2.85

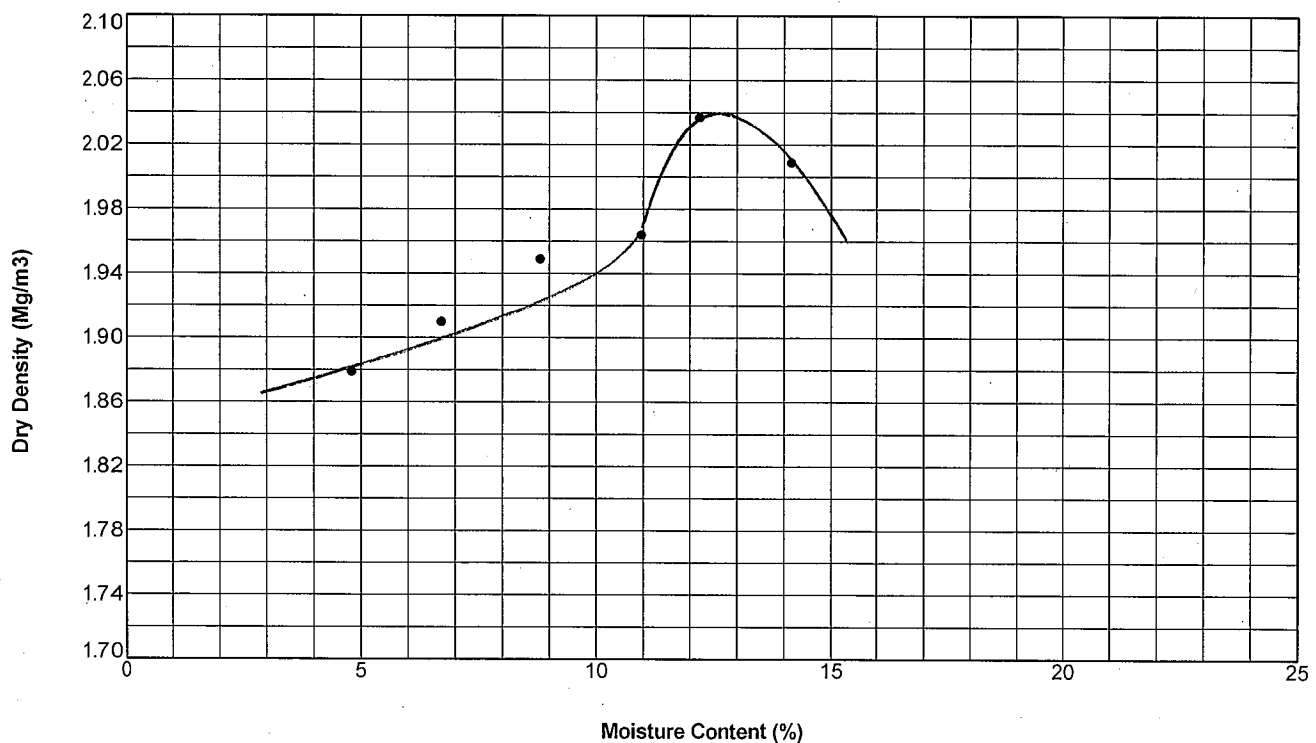
Maximum Dry Density (Mg/m³) = 2.04

Retained on 20mm Sieve (%) = 27.0

Date Tested = 27/07/2017

Retained on 37.5mm Sieve (%) = 9.5

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

14/08/2017

Certificate No :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPB-02

Depth (mBGL) :- 0.30

Sample Type & No :- B

Test Method

Vibro Hammer Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 10.6

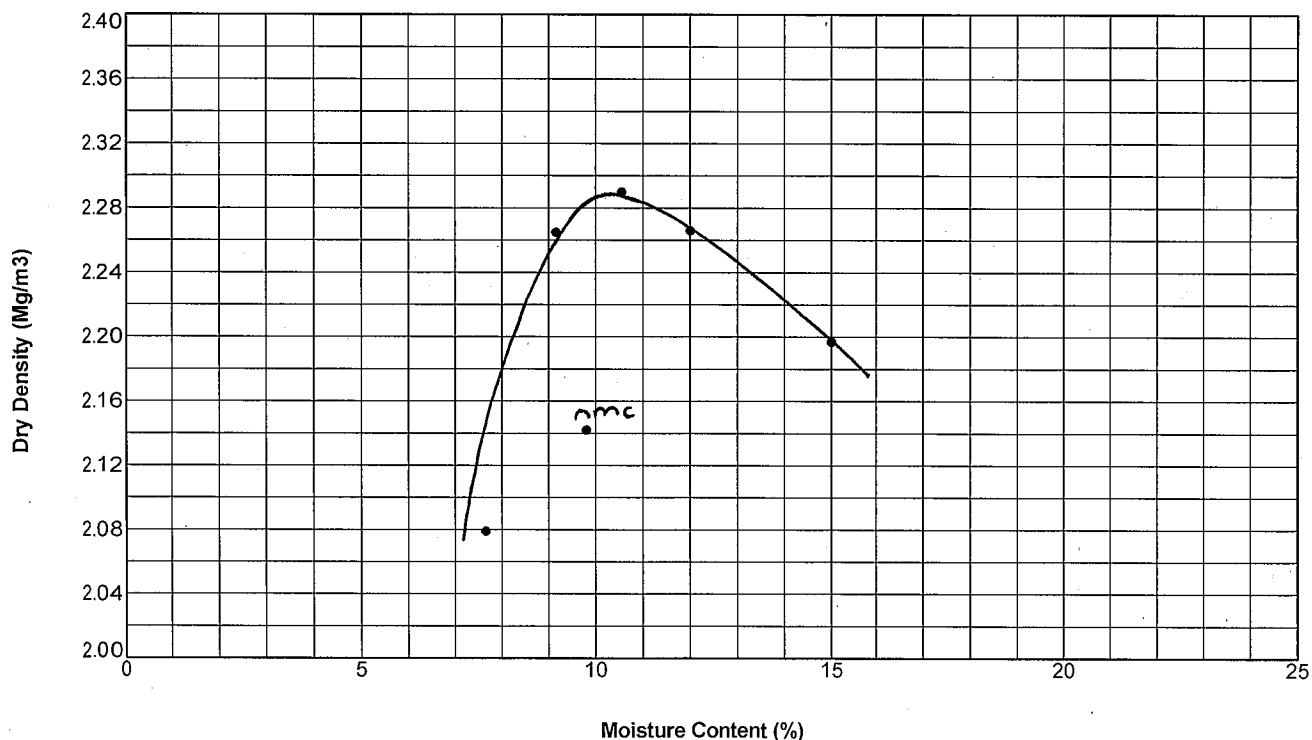
Particle Density (Assumed) = 3.35

Maximum Dry Density (Mg/m³) = 2.29

Retained on 20mm Sieve (%) = 18.9

Date Tested = 19/07/2017

Retained on 37.5mm Sieve (%) = 3.6



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

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Name :-

M SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPB-12

Depth (mBGL) :- 1.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 13.5

Particle Density (Measured) = 2.72

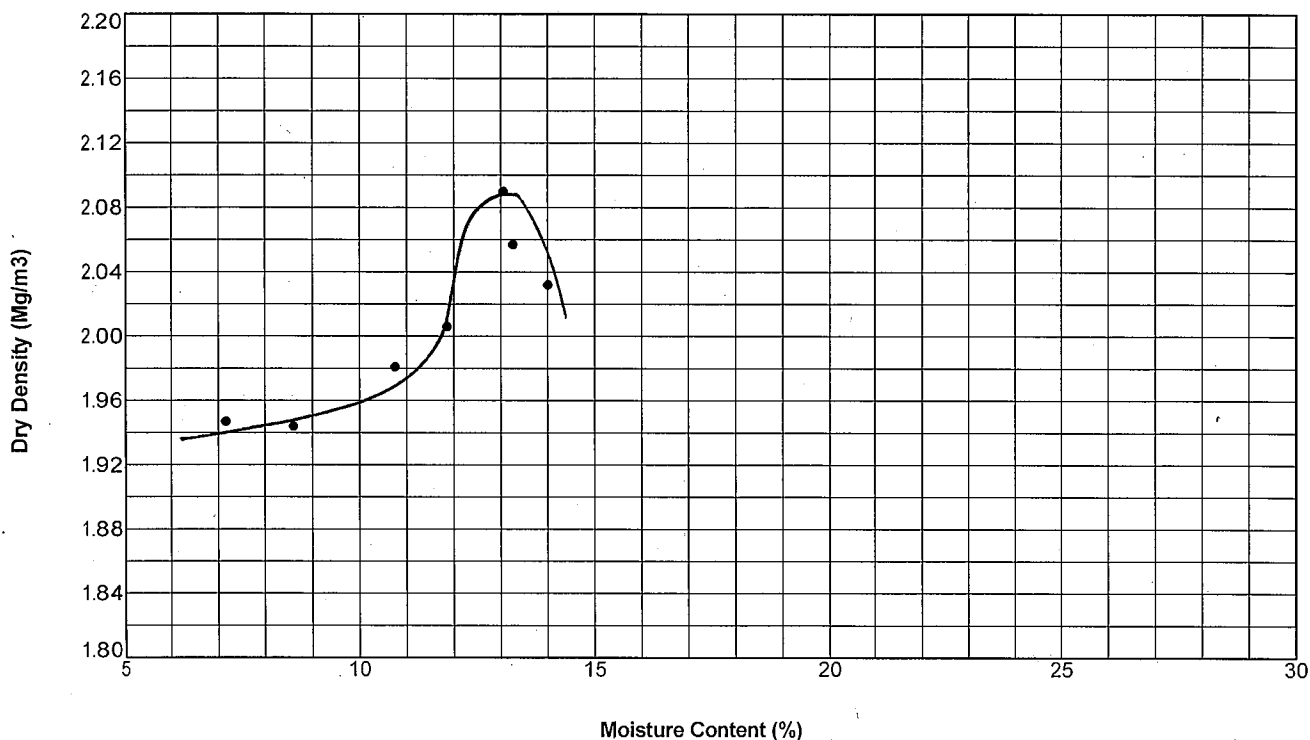
Maximum Dry Density (Mg/m³) = 2.06

Retained on 20mm Sieve (%) = 38.8

Date Tested = 31/07/2017

Retained on 37.5mm Sieve (%) = 17.3

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

MSone

Name :-

12/05/2017

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Date of issue :-

14/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPC-29

Depth (mBGL) :- 1.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 38.0

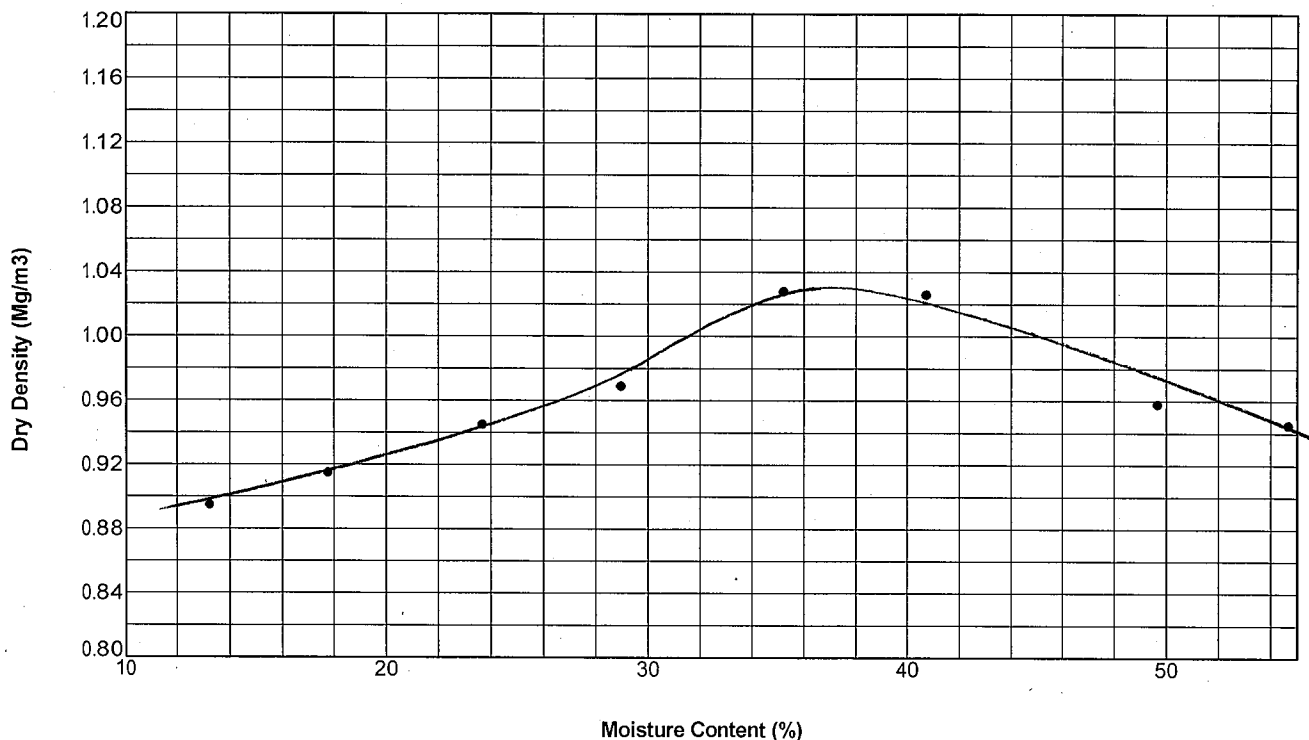
Particle Density (Assumed) = 2.00

Maximum Dry Density (Mg/m³) = 1.03

Retained on 20mm Sieve (%) = 0.2

Date Tested = 21/07/2017

Retained on 37.5mm Sieve (%) = 0.0



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

09/08/2017

Certificate No :-

COMP/SLS1015/1

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPC-32

Depth (mBGL) :- 3.70

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 12.1

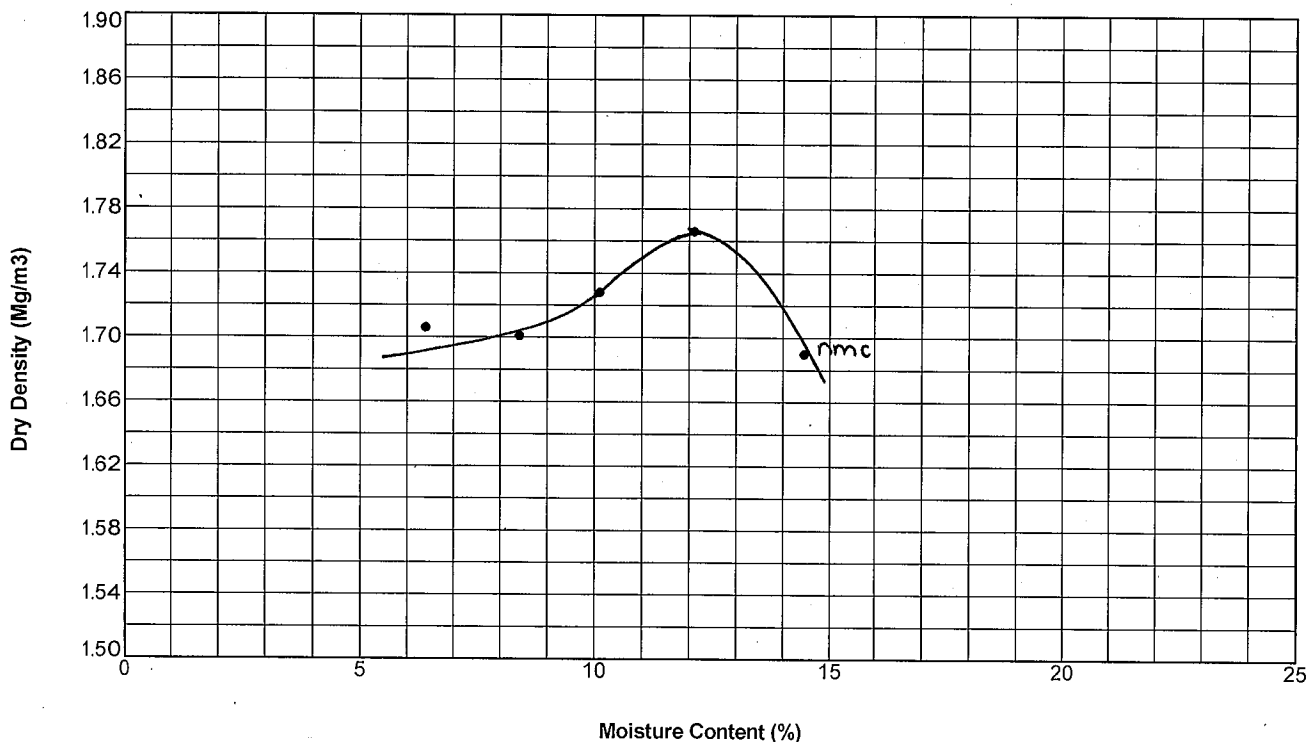
Particle Density (Assumed) = 2.30

Maximum Dry Density (Mg/m³) = 1.77

Retained on 20mm Sieve (%) = 1.8

Date Tested = 17/07/2017

Retained on 37.5mm Sieve (%) = 0.8



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msore

Name :-

M. Sallam

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Date of issue :-

08/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPD-01

Depth (mBGL) :- 1.20

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) =

Particle Density (Measured) = 2.69

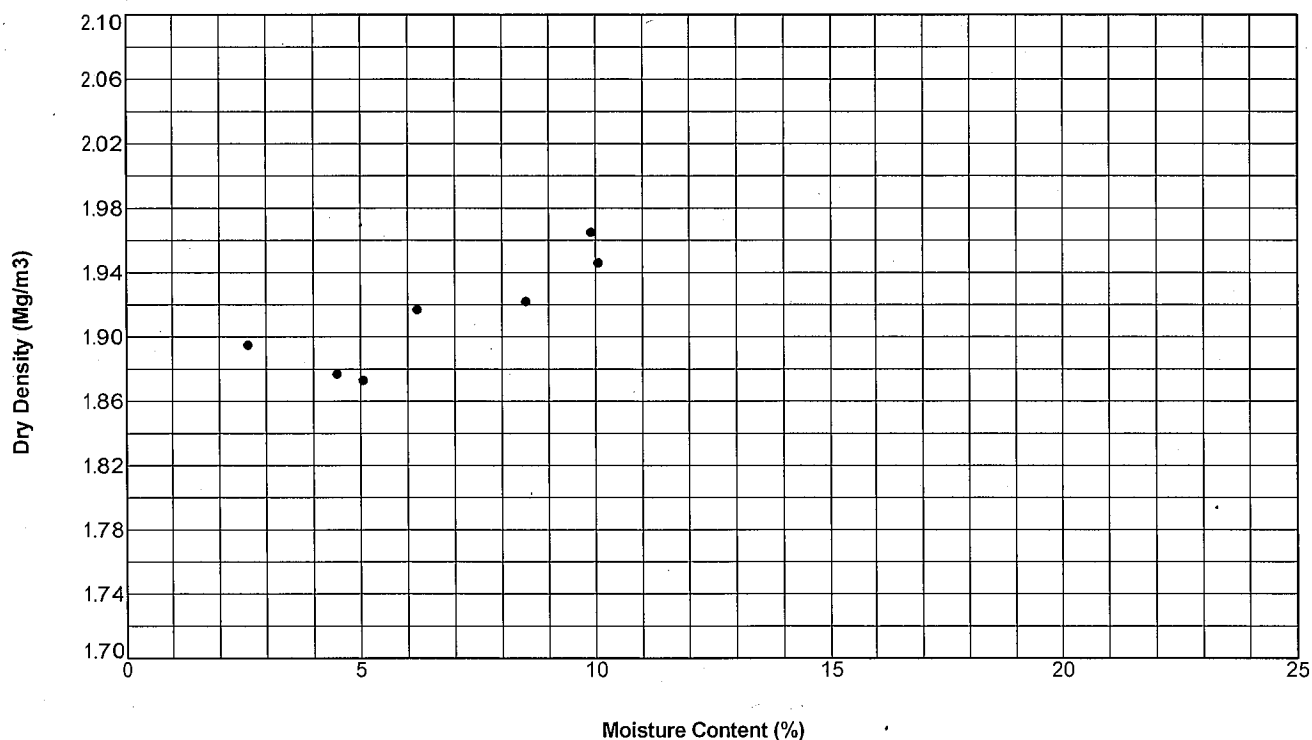
Maximum Dry Density (Mg/m³) = 1.97

Retained on 20mm Sieve (%) = 0.3

Date Tested = 17/07/2017

Retained on 37.5mm Sieve (%) = 0.0

Remarks: Unable to determine OMC.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

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Name :-

M. SELKIRK

Page 1 of 1

Date of issue :-

14/08/2017

Certificate No :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPD-19

Depth (mBGL) :- 1.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 14.5

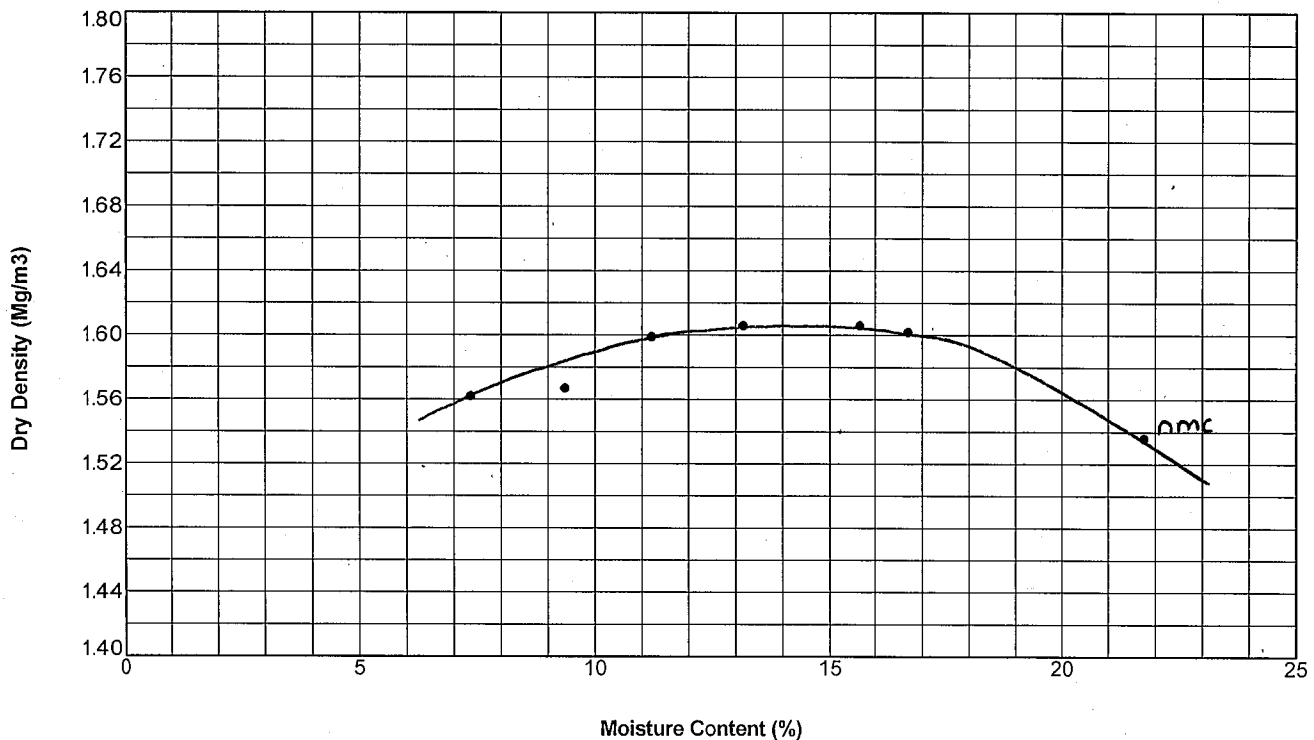
Particle Density (Assumed) = 2.35

Maximum Dry Density (Mg/m³) = 1.61

Retained on 20mm Sieve (%) = 0.0

Date Tested = 01/08/2017

Retained on 37.5mm Sieve (%) = 0.0



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

mson

Date of issue :-

08/08/2017

Name :-

M. SELKIRK

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPD-22

Depth (mBGL) :- 2.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 11.3

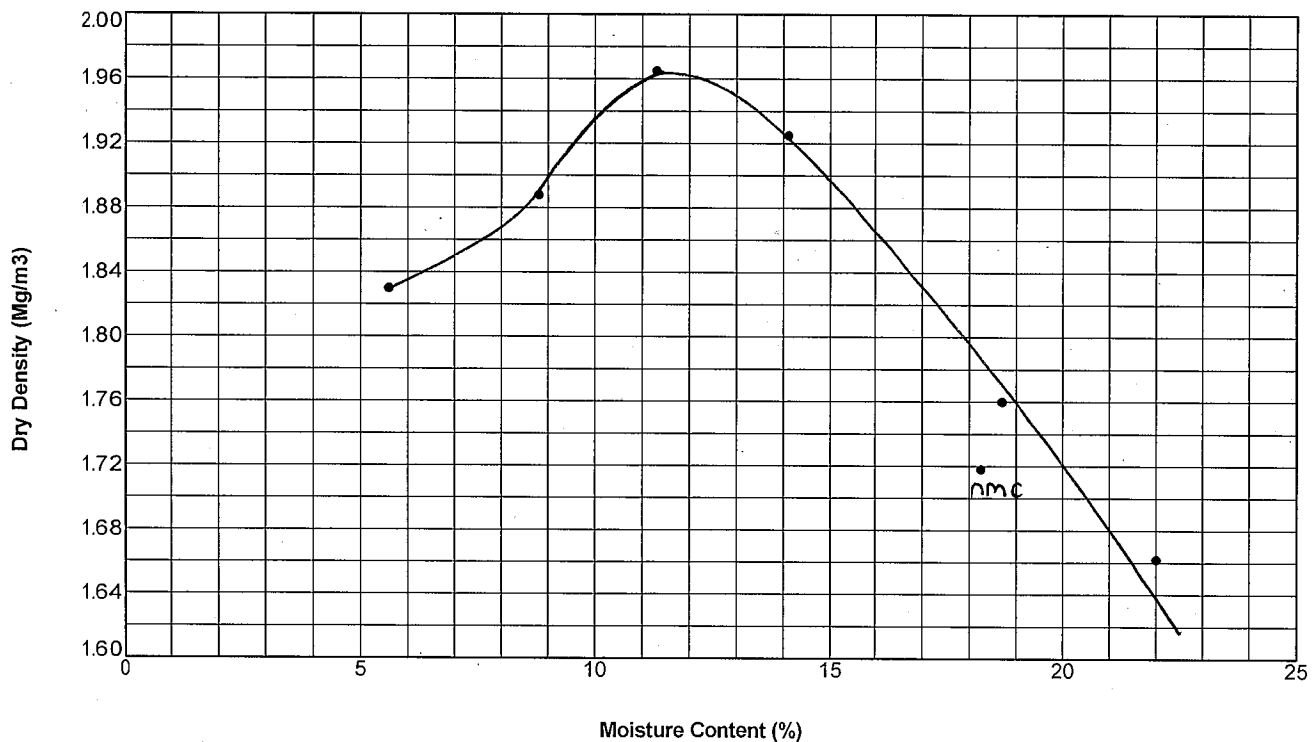
Particle Density (Assumed) = 2.75

Maximum Dry Density (Mg/m³) = 1.97

Retained on 20mm Sieve (%) = 4.2

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 0.0



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :- *[Signature]*

Name :-

M. SELKIRK

Page 1 of 1

Date of issue :-

09/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPD-30

Depth (mBGL) :- 1.70

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 12.8

Particle Density (Assumed) = 2.70

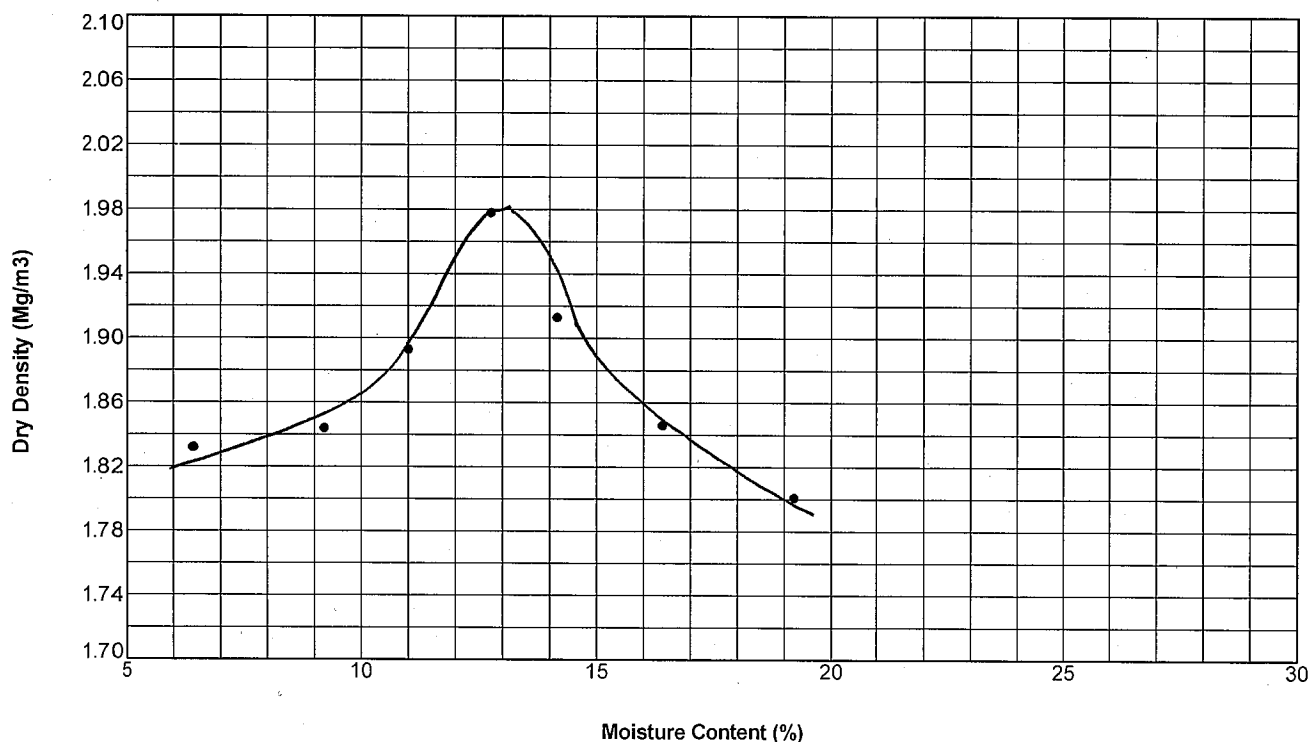
Maximum Dry Density (Mg/m³) = 1.98

Retained on 20mm Sieve (%) = 40.6

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 14.3

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msore

Name :-

M. Sore

Page 1 of 1

Date of issue :-

14/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No :-

SLS1015



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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-05

Depth (mBGL) :- 0.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 8.5

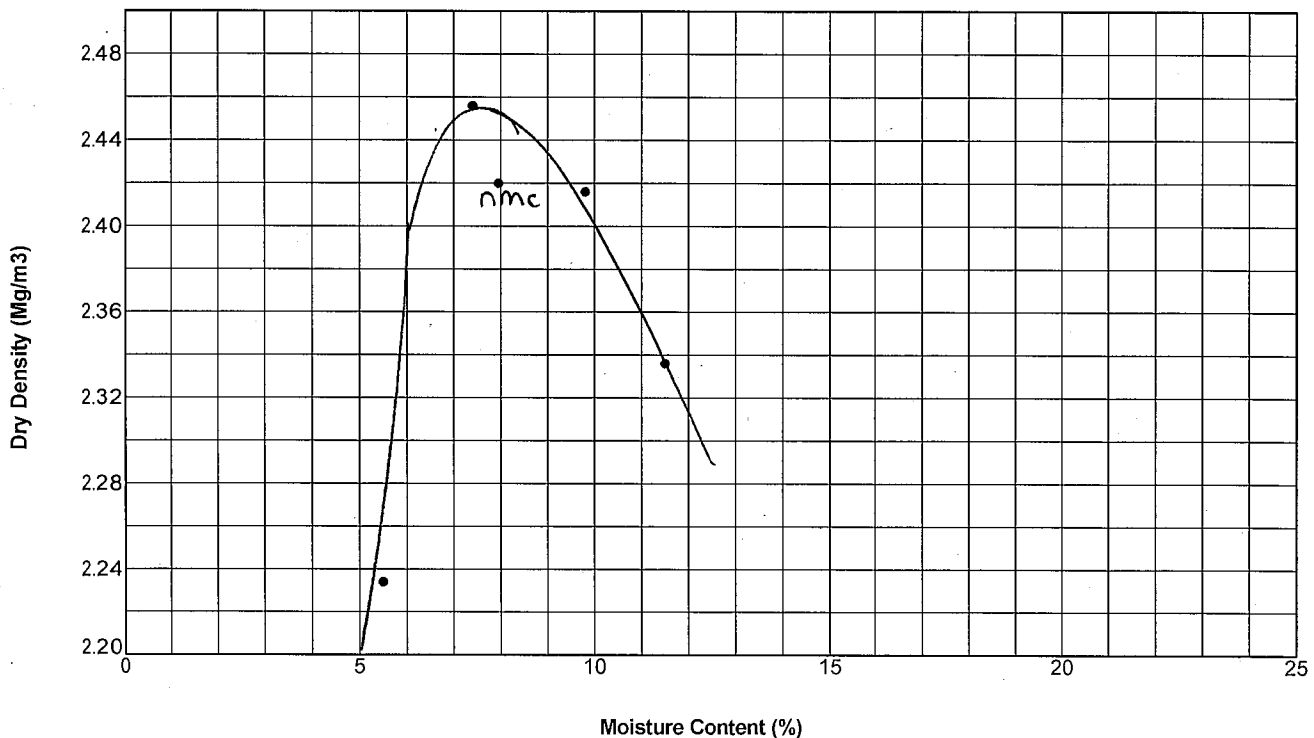
Particle Density (Assumed) = 3.00

Maximum Dry Density (Mg/m³) = 2.45

Retained on 20mm Sieve (%) = 22.2

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 0.6



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msene

Date of issue :-

08/08/2017

Name :-

M. SELKIRK

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-20

Depth (mBGL) :- 0.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 13.0

Particle Density (Assumed) = 2.90

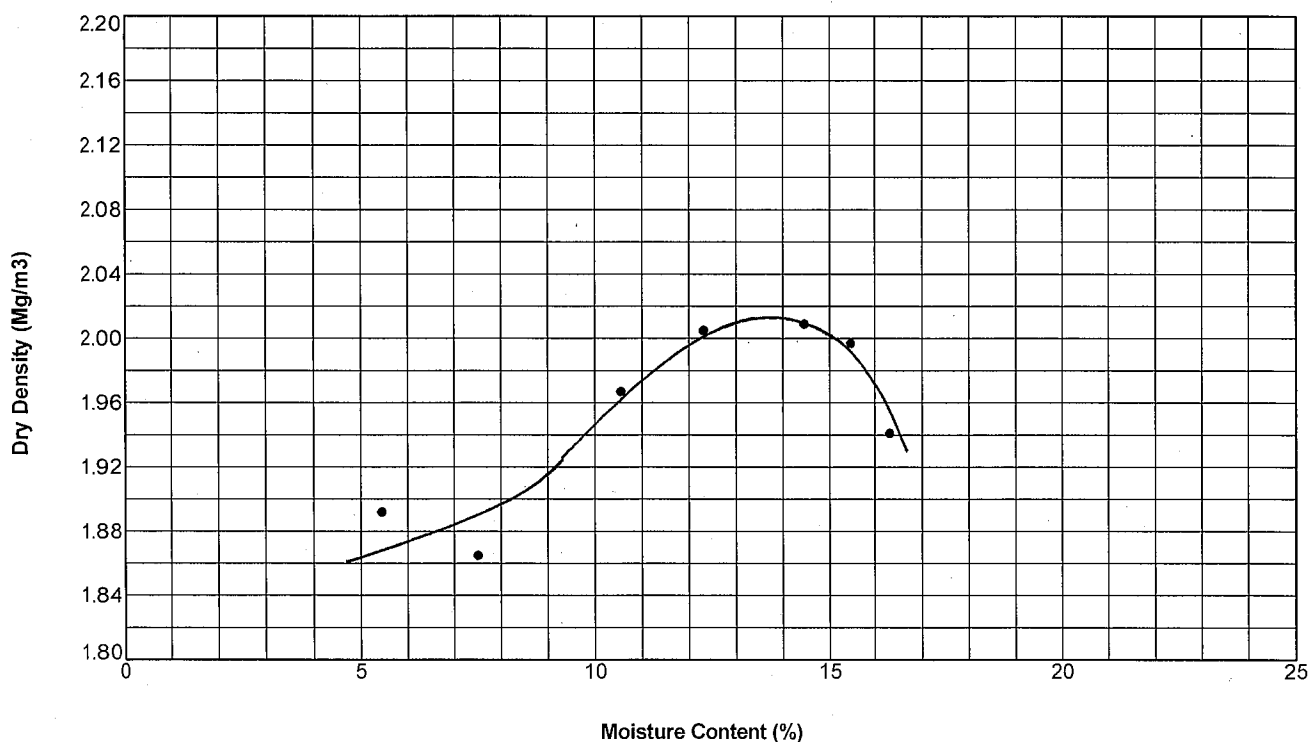
Maximum Dry Density (Mg/m³) = 2.01

Retained on 20mm Sieve (%) = 41.3

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 25.2

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

Name :-

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Date of issue :-

14/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-33

Depth (mBGL) :- 3.40

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 6.5

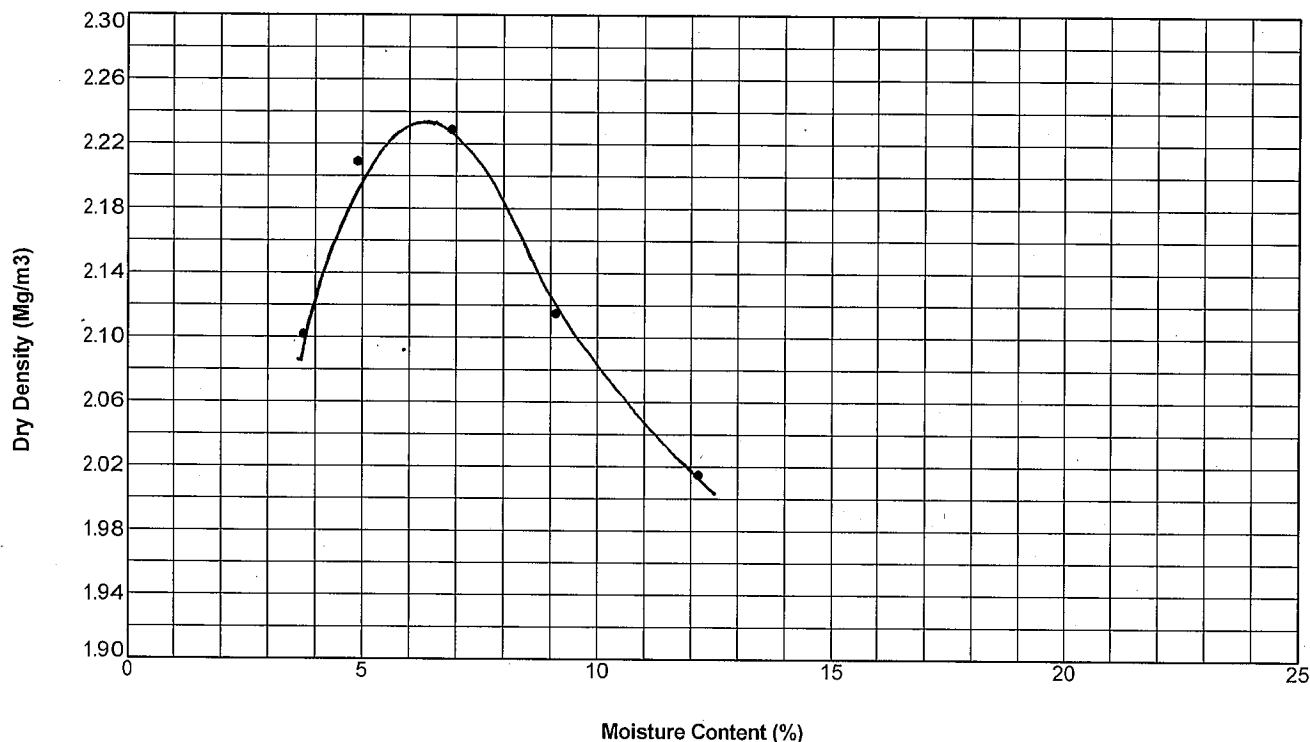
Particle Density (Assumed) = 2.70

Maximum Dry Density (Mg/m³) = 2.22

Retained on 20mm Sieve (%) = 21.2

Date Tested = 24/07/2017

Retained on 37.5mm Sieve (%) = 8.3



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-38

Depth (mBGL) :- 2.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 8.0

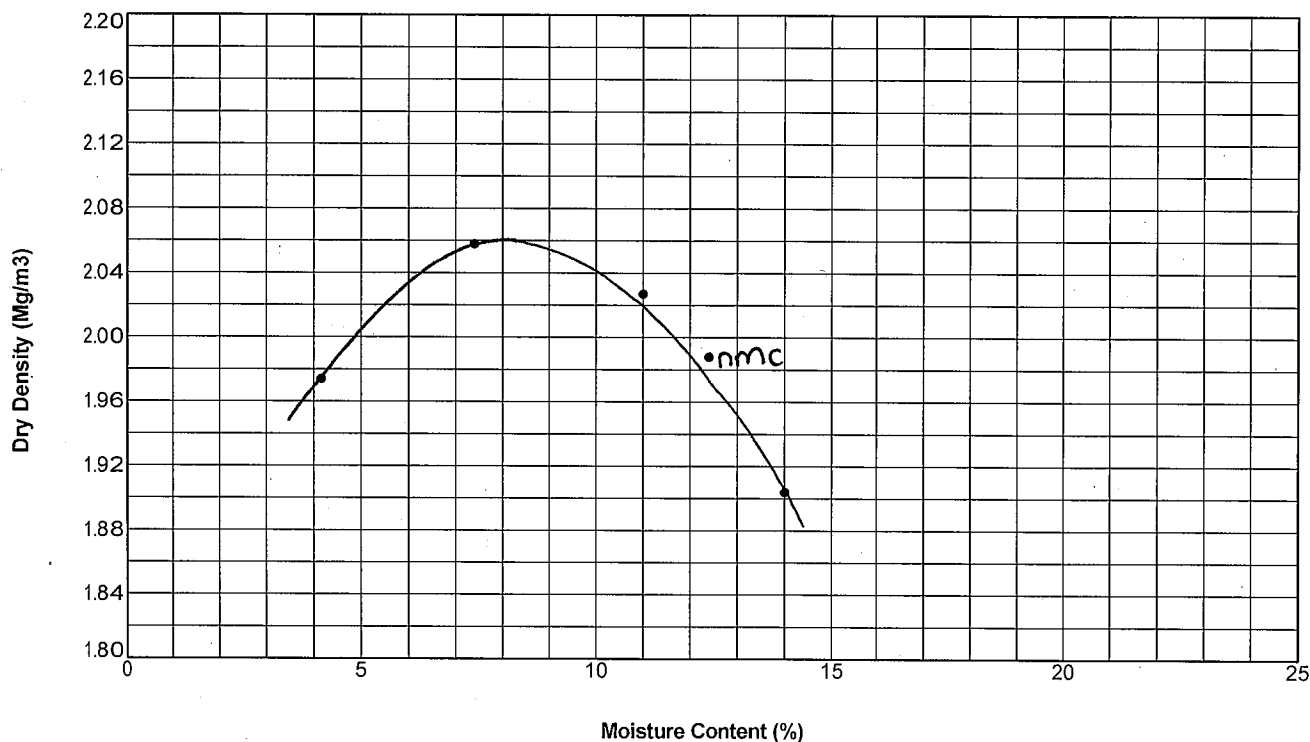
Particle Density (Assumed) = 2.75

Maximum Dry Density (Mg/m³) = 2.06

Retained on 20mm Sieve (%) = 17.1

Date Tested = 20/07/2017

Retained on 37.5mm Sieve (%) = 6.4



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msore

Date of issue :-

08/08/2017

Name :-

M. SELKIRK

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

SLS1015

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-39

Depth (mBGL) :- 2.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 13.0

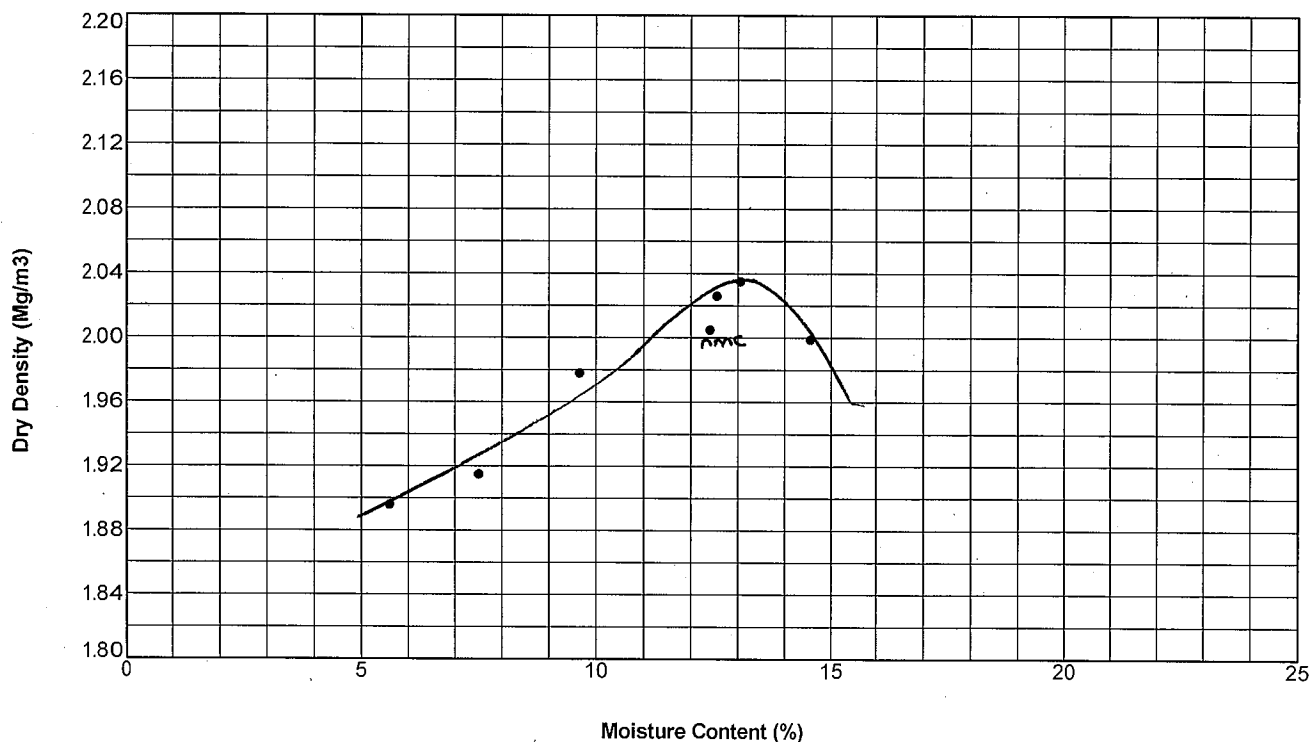
Particle Density (Assumed) = 2.85

Maximum Dry Density (Mg/m³) = 2.04

Retained on 20mm Sieve (%) = 31.2

Date Tested = 26/07/2017

Retained on 37.5mm Sieve (%) = 9.7



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPE-59

Depth (mBGL) :- 3.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 14.1

Particle Density (Assumed) = 3.15

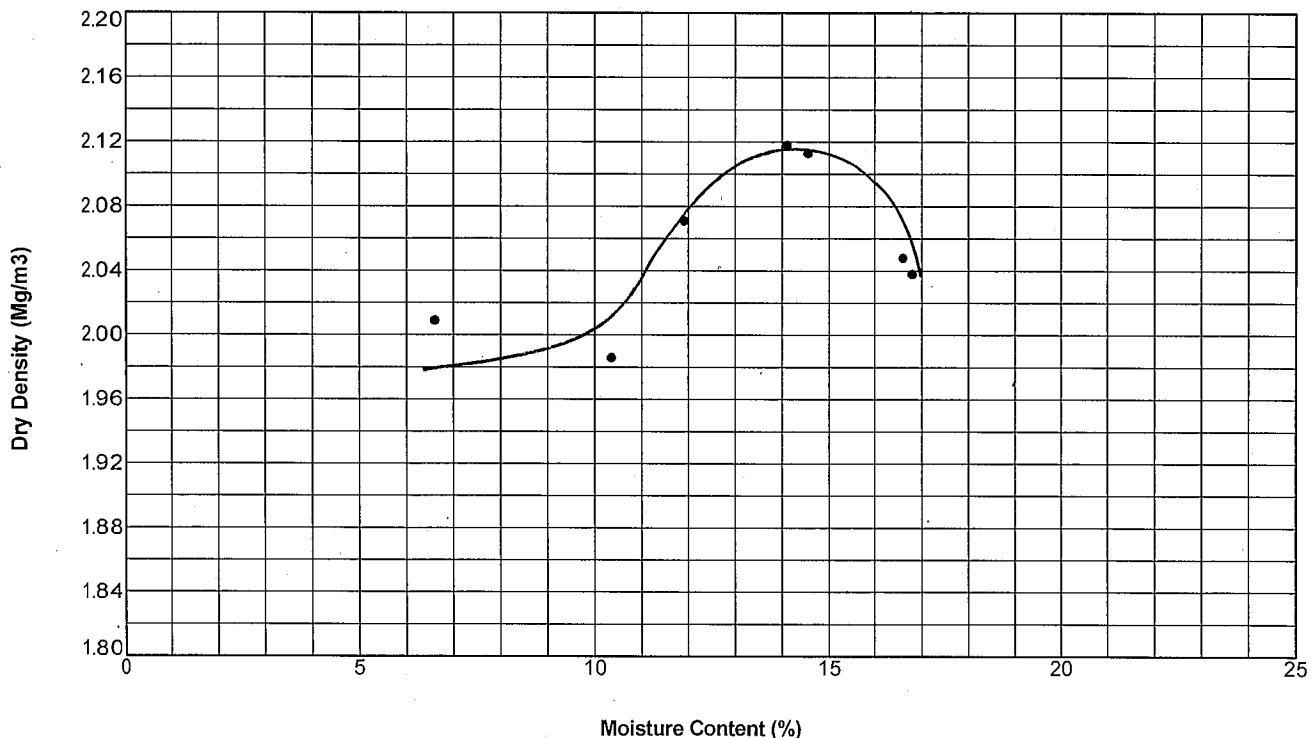
Maximum Dry Density (Mg/m³) = 2.12

Retained on 20mm Sieve (%) = 35.8

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 17.8

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

Name :-

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Date of issue :-

14/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPF-04

Depth (mBGL) :- 0.70

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 4.9

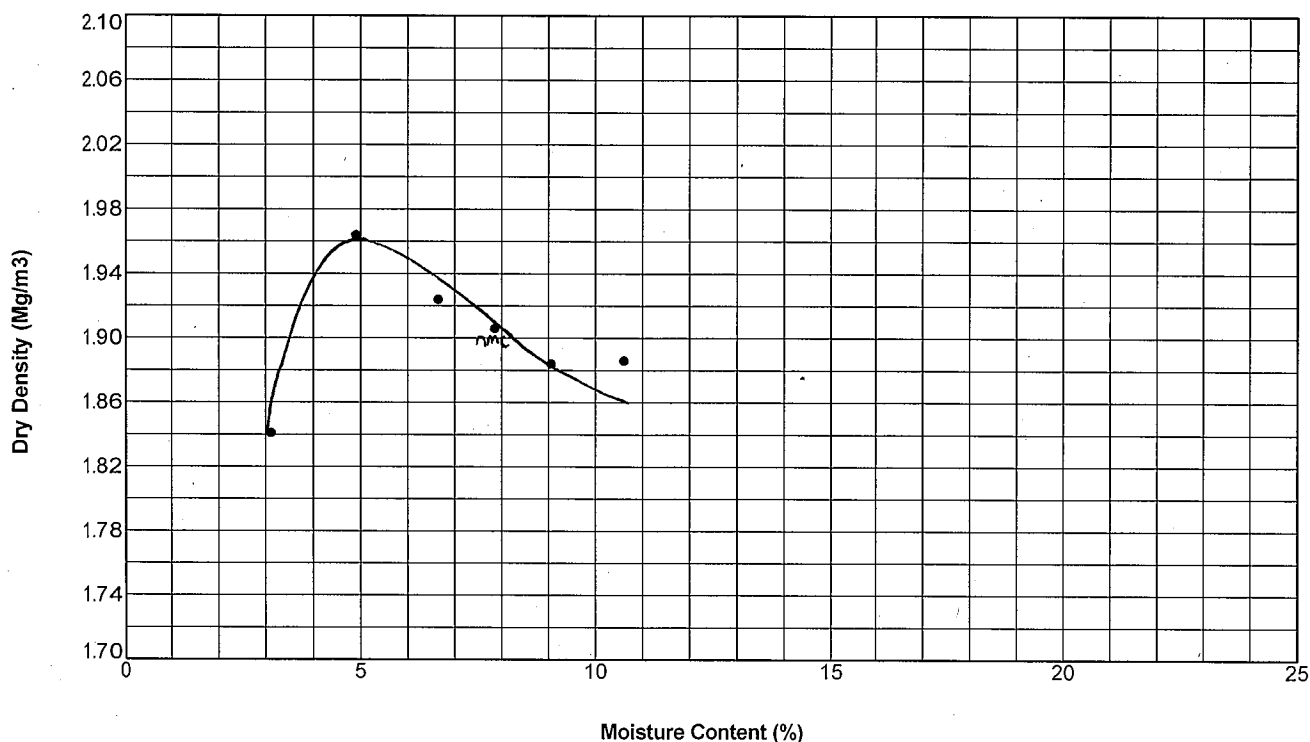
Particle Density (Assumed) = 2.35

Maximum Dry Density (Mg/m³) = 1.96

Retained on 20mm Sieve (%) = 13.6

Date Tested = 21/07/2017

Retained on 37.5mm Sieve (%) = 1.1



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

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Name :-

M. SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPH-01

Depth (mBGL) :- 1.00

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 11.3

Particle Density (Assumed) = 2.75

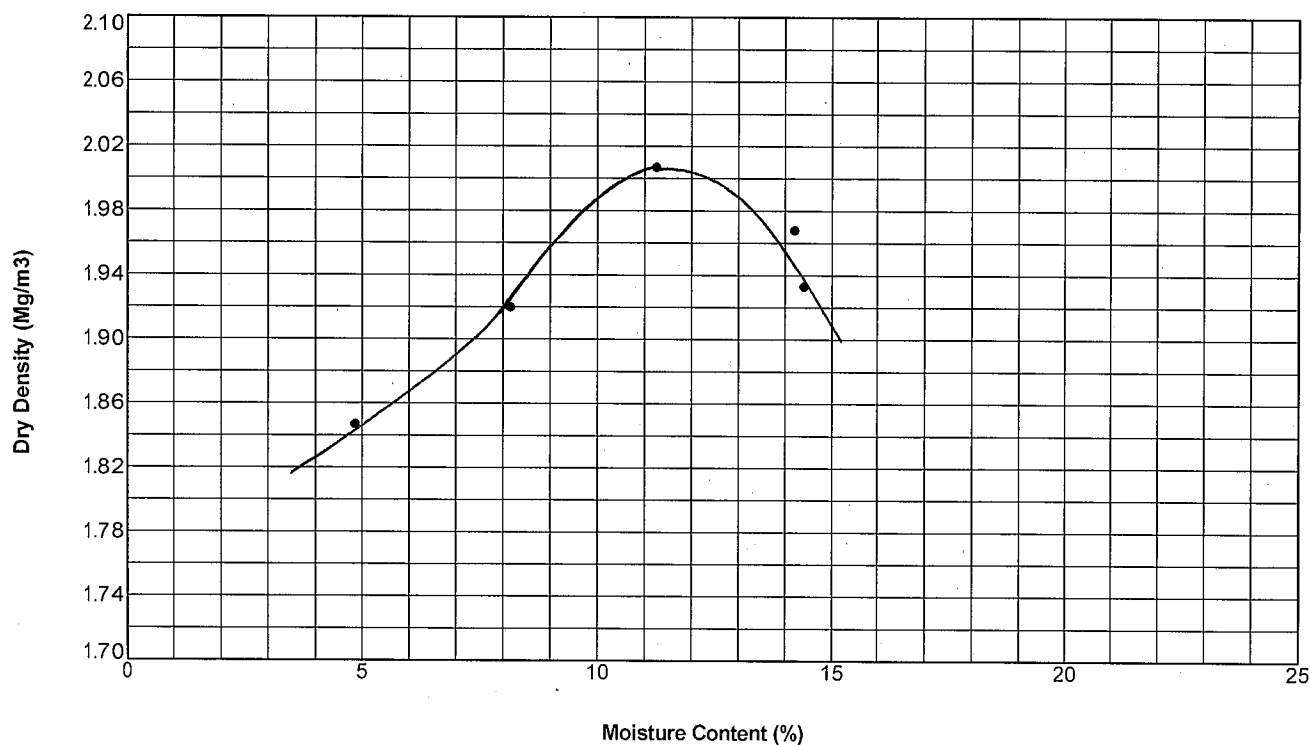
Maximum Dry Density (Mg/m³) = 2.01

Retained on 20mm Sieve (%) = 27.2

Date Tested = 20/07/2017

Retained on 37.5mm Sieve (%) = 7.5

Remarks: Non-standard test due to excessive coarse material.



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

msore

Name :-

M. SELKIRK

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Date of issue :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPH-23

Depth (mBGL) :- 2.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 13.2

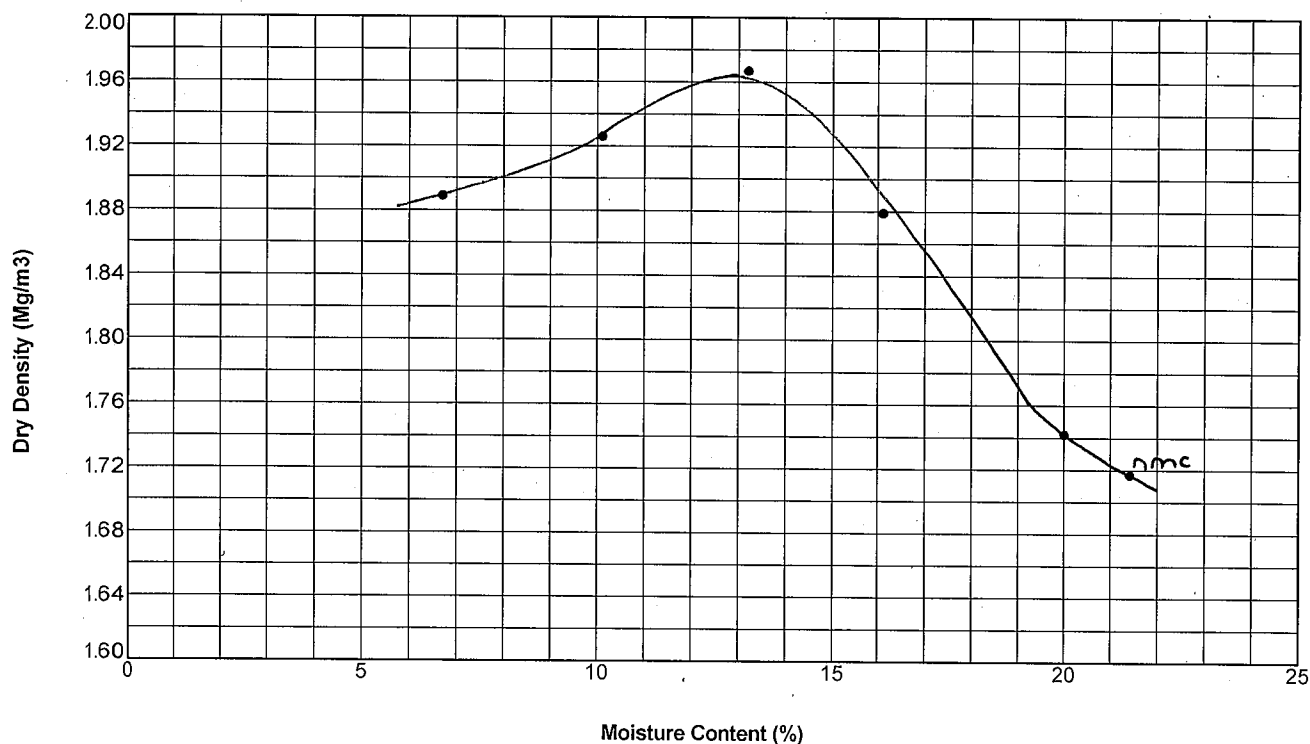
Particle Density (Assumed) = 2.75

Maximum Dry Density (Mg/m³) = 1.97

Retained on 20mm Sieve (%) = 1.4

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 0.7



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

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AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPI-03

Depth (mBGL) :- 0.40

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 10.6

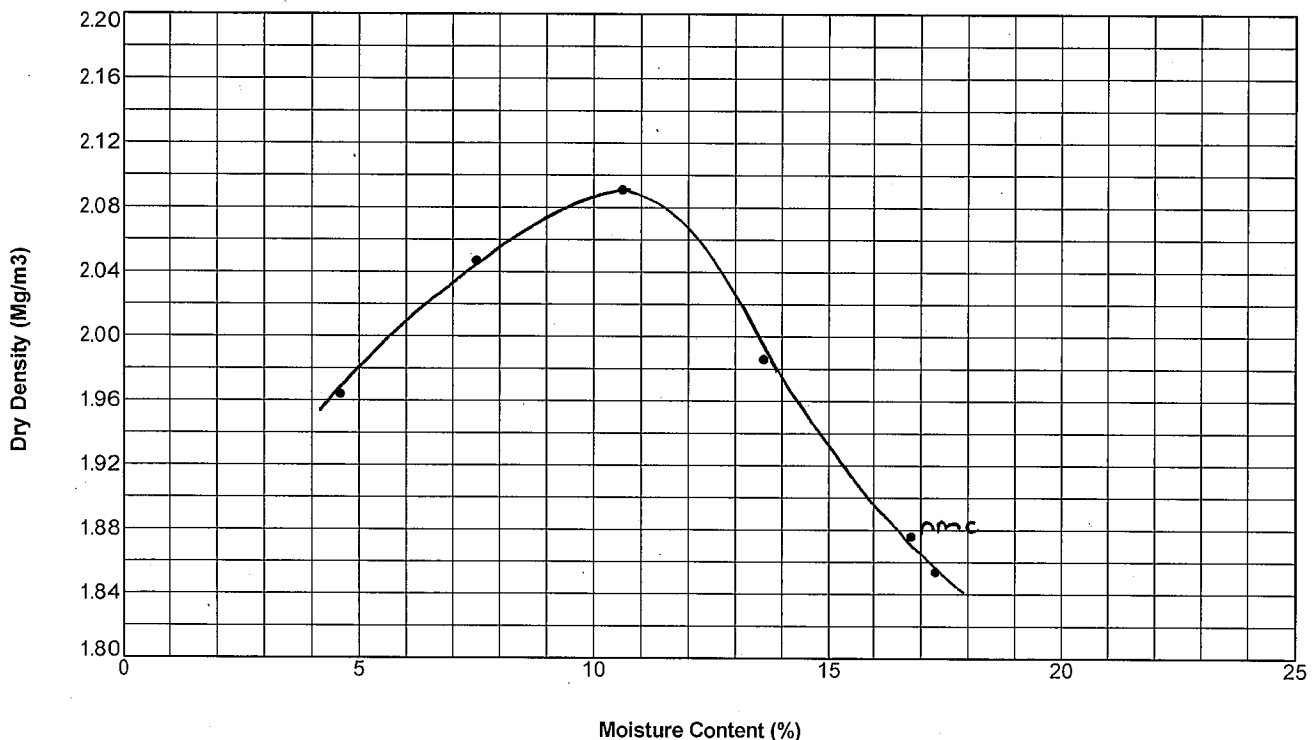
Particle Density (Assumed) = 2.75

Maximum Dry Density (Mg/m³) = 2.09

Retained on 20mm Sieve (%) = 3.8

Date Tested = 02/08/2017

Retained on 37.5mm Sieve (%) = 0.4



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

Name :-

M. SELKIRK

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Date of issue :-

08/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPI-17

Depth (mBGL) :- 0.60

Sample Type & No :- B

Test Method

4.5kg Compaction

Single Sample

Test Results

Optimum Moisture Content (%) = 11.3

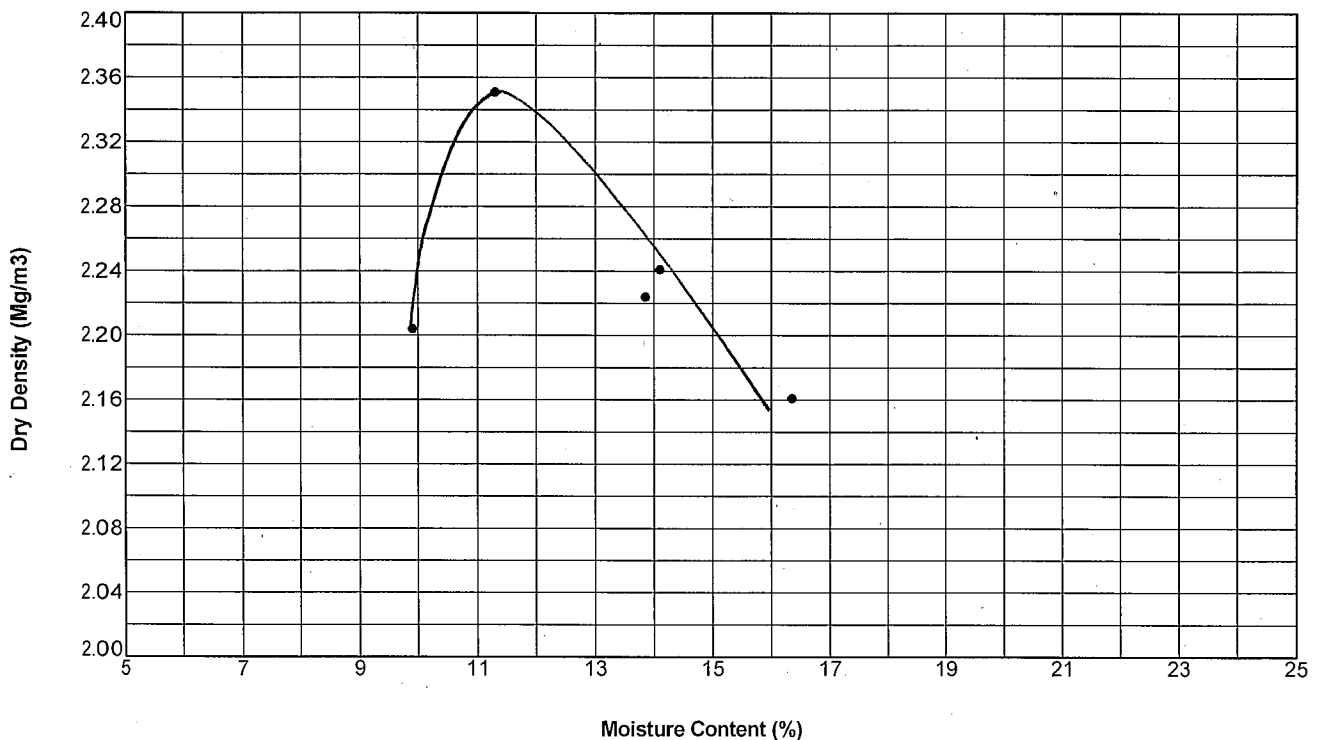
Particle Density (Assumed) = 3.40

Maximum Dry Density (Mg/m³) = 2.35

Retained on 20mm Sieve (%) = 14.1

Date Tested = 21/07/2017

Retained on 37.5mm Sieve (%) = 6.0



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

Name :-

M. SELKIRK

Page 1 of 1

Date of issue :-

09/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

SLS1015



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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- TPI-26

Depth (mBGL) :- 4.50

Sample Type & No :- B

Test Method

4.5kg Compaction

Separate Samples

Test Results

Optimum Moisture Content (%) = 14.6

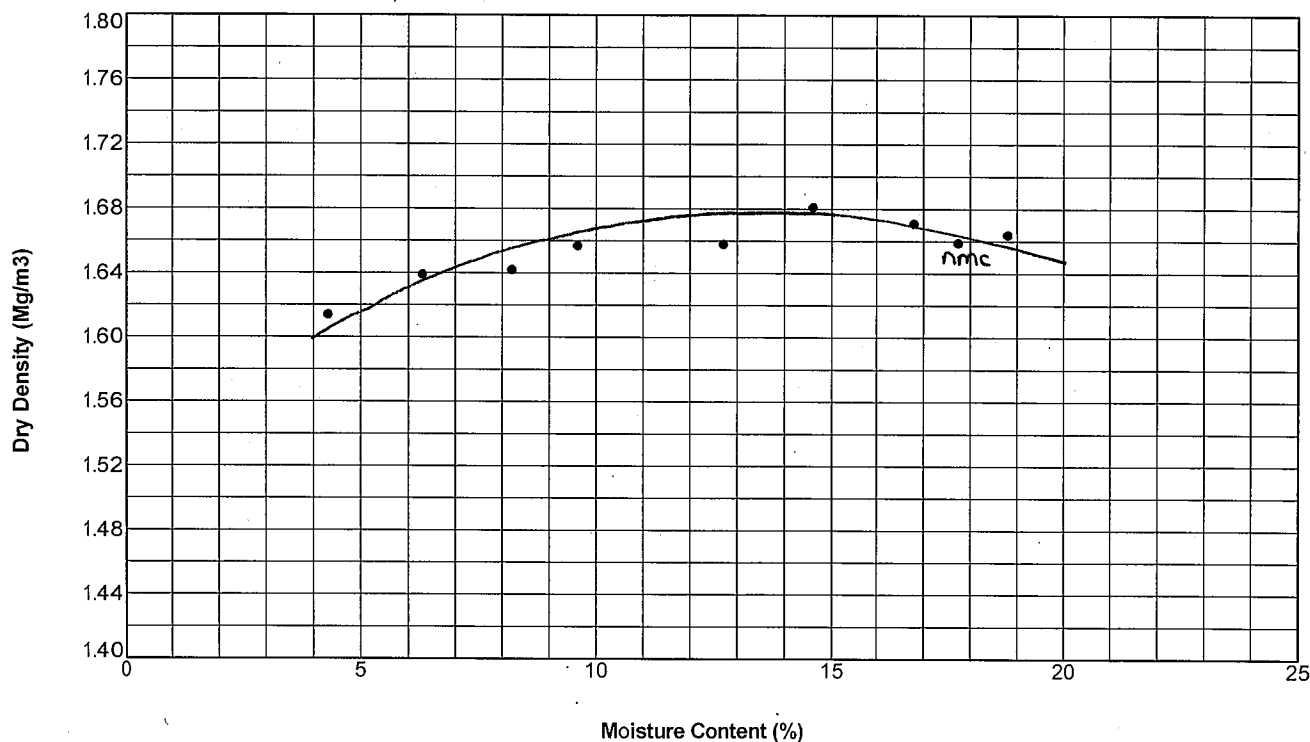
Particle Density (Assumed) = 2.50

Maximum Dry Density (Mg/m³) = 1.68

Retained on 20mm Sieve (%) = 3.5

Date Tested = 28/07/2017

Retained on 37.5mm Sieve (%) = 1.0



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Redcar Site

Client :-

CH2M



Signed :-

M. Selkirk

Name :-

M. SELKIRK

Page 1 of 1

Date of issue :-

08/08/2017

Certificate No :-

COMP/SLS1015/1

AEG Contract No. :-

SLS1015



**Test Report: Method of the Determination of Resistance to Fragmentation
by Los Angeles test Method
BS EN 1097:2:2010**

Client: Allied Exploration & Geotechnics Limited
Client Ref: SLS1015
Contract Number: 36014
Location: SSI Redcar
Date Sampled: Unknown
Date tested: 27/07/2017
Hole Number: TPD 27
Sample Number:
Depth (m): From 1.00 to 1.30
Method of Sampling: BS 932-1 General requirements and sample preparation
Sampled By: Unknown
Aggregate Type and Nominal Size: 14-10mm
Target Specification: N/A

Los Angeles Coefficient

43

Remarks: Non-standard test.

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. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Wayne Honey (Office/Quality Assistant)

W. Honey

Date: 30.7.17

GSTL
GEO SITE & TESTING SERVICES LTD



Test Report: **Method of the Determination of Resistance to Fragmentation
by Los Angeles test Method
BS EN 1097:2:2010**

Client: Allied Exploration & Geotechnics Limited
Client Ref: SLS1015
Contract Number: 36014
Location: SSI Redcar
Date Sampled: Unknown
Date tested: 27/07/2017
Hole Number: TPE 19
Sample Number:
Depth (m): From 2.10 to 2.60
Method of Sampling: BS 932-1 General requirements and sample preparation
Sampled By: Unknown
Aggregate Type and Nominal Size: 14-10mm
Target Specification: N/A

Los Angeles Coefficient

35

Remarks: Non-standard test.

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. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Wayne Honey (Office/Quality Assistant)

W. Honey

GSTL
GEO SITE & TESTING SERVICES LTD

Date: 30.7.17



Test Report: **Method of the Determination of Resistance to Fragmentation
by Los Angeles test Method
BS EN 1097-2:2010**

Client: Allied Exploration & Geotechnics Limited
Client Ref: SLS1015
Contract Number: 36014
Location: SSI Redcar
Date Sampled: Unknown
Date tested: 27/07/2017
Hole Number: TPE 29
Sample Number:
Depth (m): From 2.60 to
Method of Sampling: BS 932-1 General requirements and sample preparation
Sampled By: Unknown
Aggregate Type and Nominal Size: 14-10mm
Target Specification: N/A

Los Angeles Coefficient

34

Remarks: Non-standard test.

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. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Wayne Honey (Office/Quality Assistant)

W. Honey

Date: 30.7.17

GSTL
GEO SITE & TESTING SERVICES LTD



**Test Report: Method of the Determination of Resistance to Fragmentation
by Los Angeles test Method
BS EN 1097:2:2010**

Client: Allied Exploration & Geotechnics Limited
Client Ref: SLS1015
Contract Number: 36014
Location: SSI Redcar
Date Sampled: Unknown
Date tested: 27/07/2017
Hole Number: TPI 19
Sample Number:
Depth (m): From 3.40 to
Method of Sampling: BS 932-1 General requirements and sample preparation
Sampled By: Unknown
Aggregate Type and Nominal Size: 14-10mm
Target Specification: N/A

Los Angeles Coefficient

35

Remarks: Non-standard test.

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. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Wayne Honey (Office/Quality Assistant)

W. Honey

Date: 30.7.17

GSTL
GEO SITE & TESTING SERVICES LTD

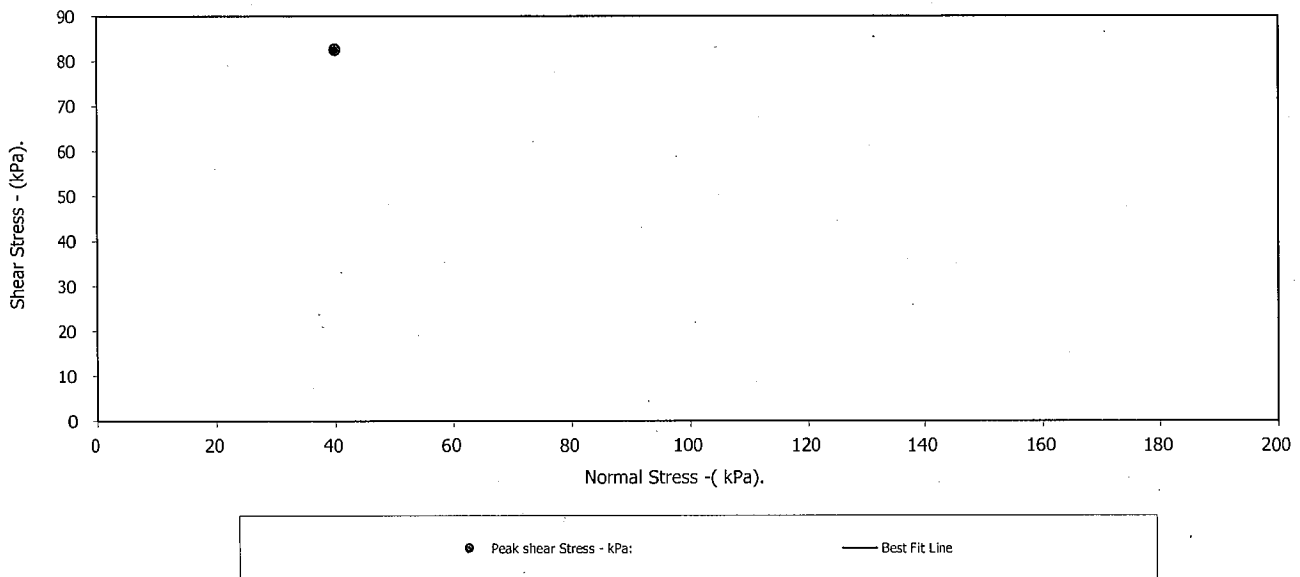


Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole Number:	TP01 + TP02	Depth from (m):	1.70 + 1.00
Sample Number :	B2 + B1	Depth to (m):	0.00
Sample Type:	B		
Particle Density - Mg/m3:	2.65 (Assumed)		
Specimen Tested:	At natural moisture content, Remoulded (Light Tamping) Material above 20mm removed.		
Sample Description:			
Dark brown slightly clayey sandy GRAVEL (fine-coarse/angular-subrounded)			
STAGE	1	2	3
Initial Conditions			
Height - mm:	145.00		
Length - mm:	300.00		
Moisture Content - %:	14		
Bulk Density - Mg/m3:	1.73		
Dry Density - Mg/m3:	1.51		
Voids Ratio:	0.7537		
Normal Pressure- kPa	40		
Consolidation			
Consolidated Height - mm:	142.71		
Shear			
Rate of Strain (mm/min)	0.667		
Strain at peak shear stress (%)	65.01		
Peak shear Stress - kPa:	83		
PEAK			
Angle of Shearing Resistance:(θ)			0.0
Effective Cohesion - kPa:			0

FAILURE CONDITIONS



D P Gans 14/08/17

Checked Pages 1-4 by: Date

D P Gans 14/08/17

Approved Pages 1-4 by: Date

Contract No.:
36162

Redcar Site

Client Ref Number:
SLS1015

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

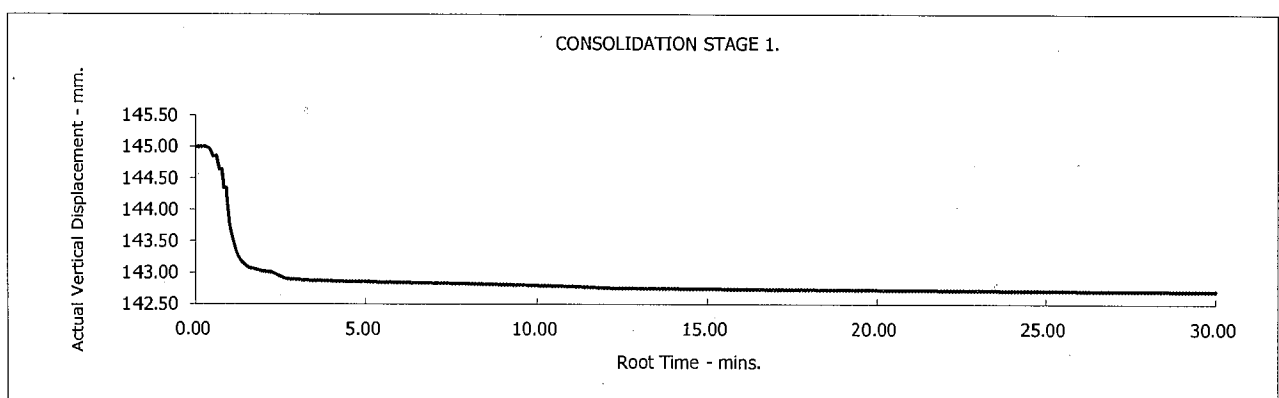
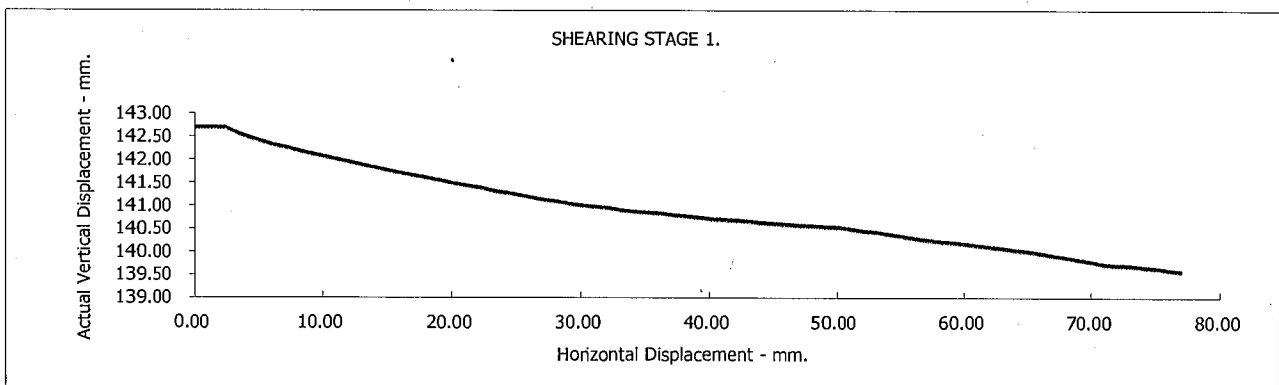
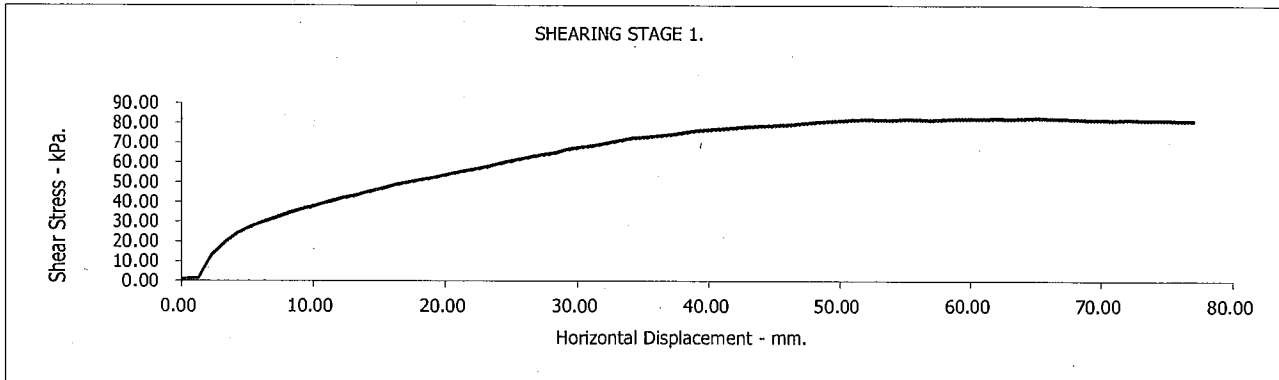
BS1377:Part 7:5 :1990.

Borehole/Sample Number:

TP01 + TP02

Depth (m):

1.70 + 1.00



Redcar Site

Contract No.:

36162

Client Ref Number:

SLS1015

Figure.

GSTL

GEO SITE & TESTING SERVICES LTD

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole Number: TP-B10 +TP-B05 Depth from (m): 1.70
Sample Number : 1 Depth to (m): 0.00

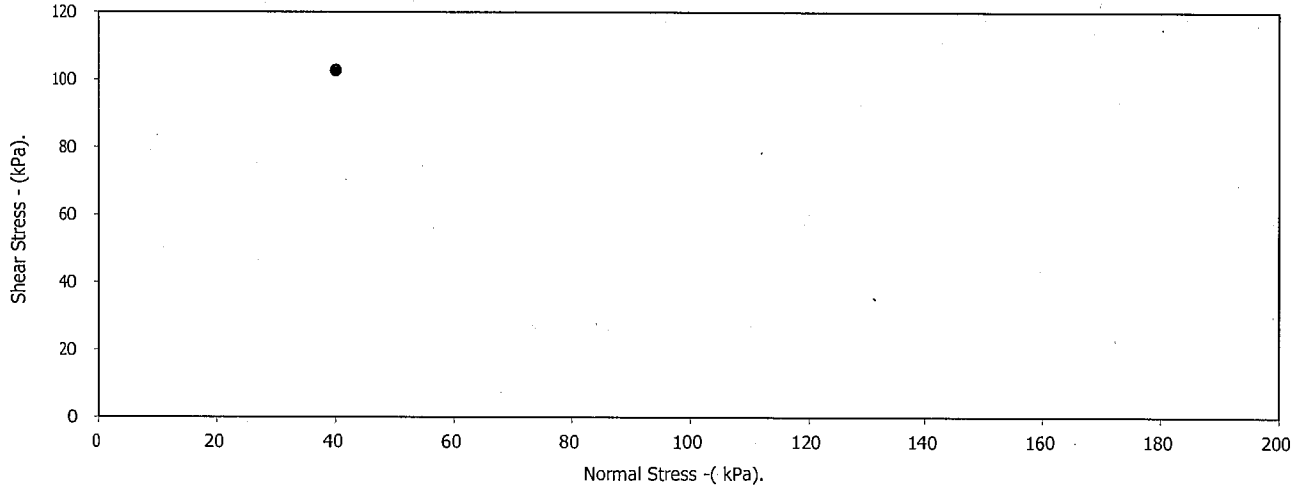
Sample Type:	B
Particle Density - Mg/m3:	2.65 (Assumed)
Specimen Tested:	At natural moisture content, Remoulded (Light Tamping) Material above 20mm removed.

Sample Description:**Dark brown sandy GRAVEL (fine-medium/angular-subangular)**

STAGE	1	2	3
Initial Conditions			
Height - mm:	147.00		
Length - mm:	300.00		
Moisture Content - %:	9		
Bulk Density - Mg/m3:	1.77		
Dry Density - Mg/m3:	1.62		
Voids Ratio:	0.6386		
Normal Pressure- kPa	40		
Consolidation			
Consolidated Height - mm:	145.88		
Shear			
Rate of Strain (mm/min)	0.667		
Strain at peak shear stress (%)	32.93		
Peak shear Stress - kPa:	103		

PEAK

Angle of Shearing Resistance:(θ)	0.0
Effective Cohesion - kPa:	0

FAILURE CONDITIONS

● Peak shear Stress - kPa:

— Best Fit Line

D P Gans 14/08/17

Checked Pages 1-4 by: Date

D P Gans 14/08/17

Approved Pages 1-4 by: Date

Contract No.:
36162

Redcar Site

Client Ref Number:
SLS1015

GSTL

GEO SITE & TESTING SERVICES LTD

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

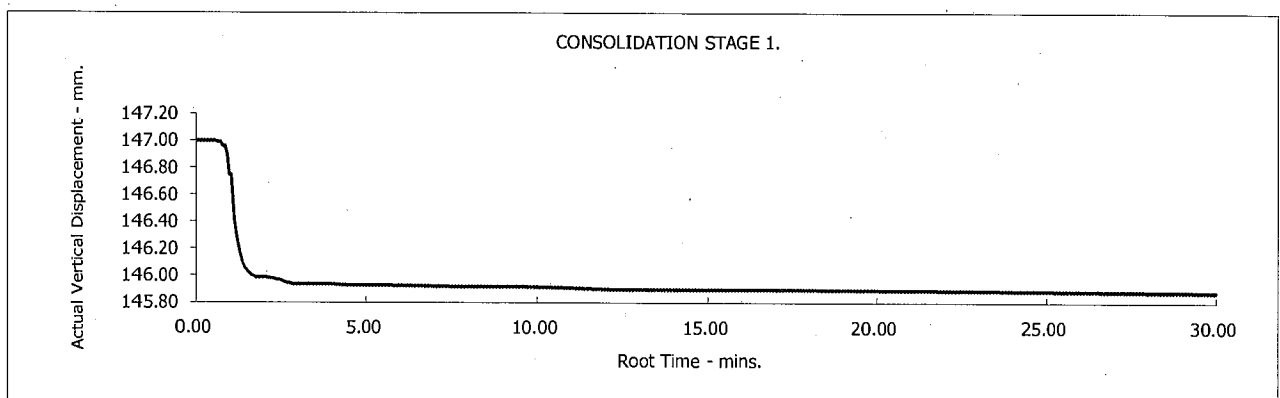
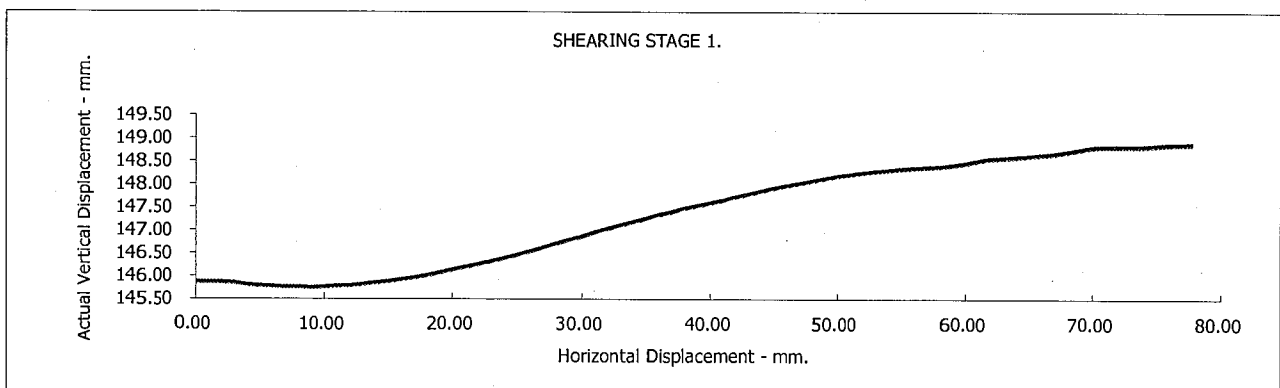
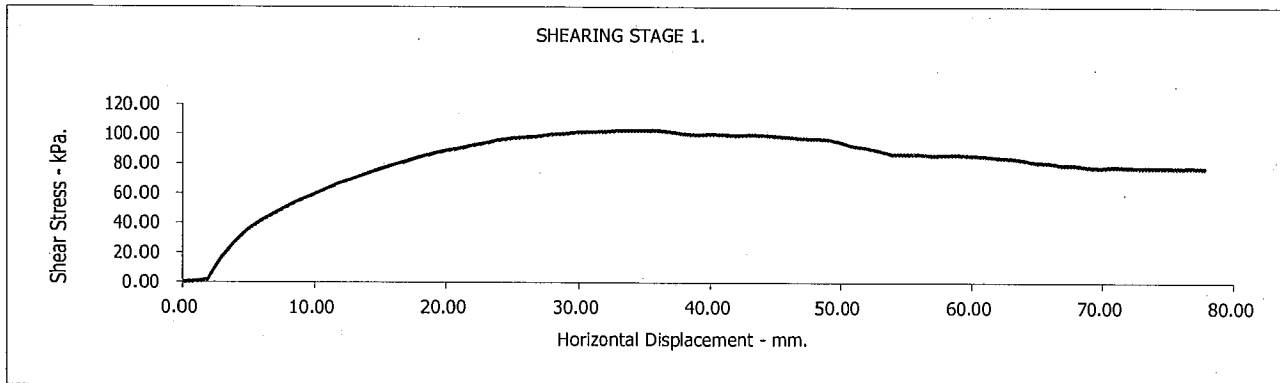
BS1377:Part 7:5 :1990.

Borehole/Sample Number:

TP-B10 +TP-B05

Depth (m):

1.70



Redcar Site

Contract No.:

36162

Client Ref Number:

SLS1015

Figure.

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole Number: TP-D42 + TP-D24 + TP-D31

Depth from (m): 0.7 + 0.8 + 0.65

Sample Number: B2 + B2 + B1

Depth to (m): 0.00

Sample Type:	B
Particle Density - Mg/m ³ :	2.65 (Assumed)
Specimen Tested:	At natural moisture content, Remoulded (Light Tamping) Material above 20mm removed.

Sample Description:

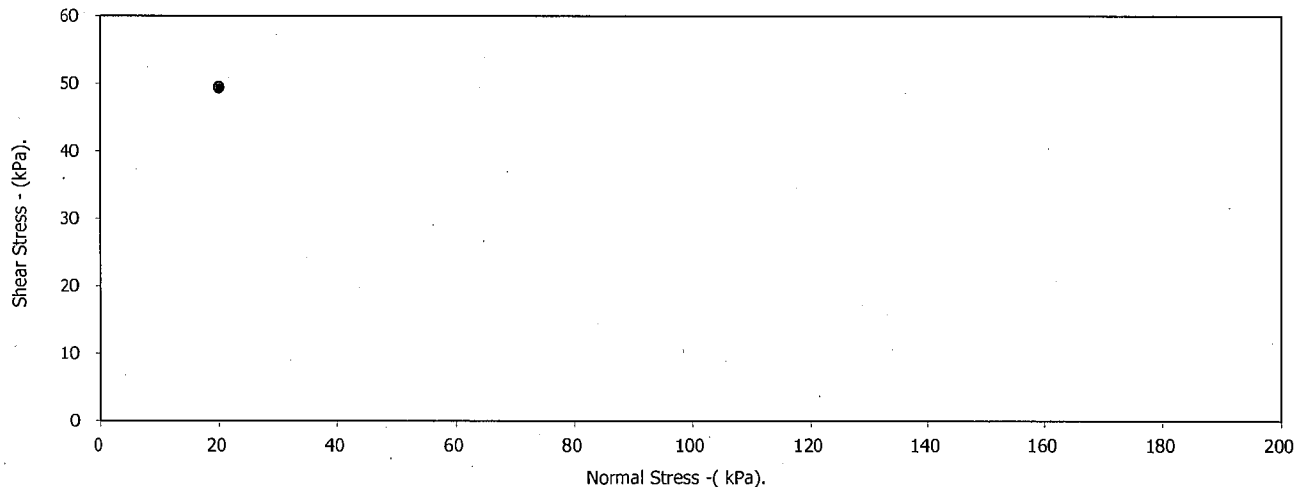
Dark brown slightly clayey sandy GRAVEL (fine-medium/angular-subrounded)

STAGE	1	2	3
Initial Conditions			
Height - mm:	142.00		
Length - mm:	300.00		
Moisture Content - %:	17		
Bulk Density - Mg/m ³ :	1.69		
Dry Density - Mg/m ³ :	1.44		
Voids Ratio:	0.8391		
Normal Pressure- kPa	20		
Consolidation			
Consolidated Height - mm:	141.32		
Shear			
Rate of Strain (mm/min)	0.667		
Strain at peak shear stress (%)	32.44		
Peak shear Stress - kPa:	49		

PEAK

Angle of Shearing Resistance:(θ)	0.0
Effective Cohesion - kPa:	0

FAILURE CONDITIONS



● Peak shear Stress - kPa:

— Best Fit Line

DP Gans 14/08/17

Checked Pages 1-4 by: Date

DP Gans 14/08/17

Approved Pages 1-4 by: Date

Contract No.:
36162

Redcar Site

Client Ref Number:
SLS1015**GSTL**

GEO SITE & TESTING SERVICES LTD

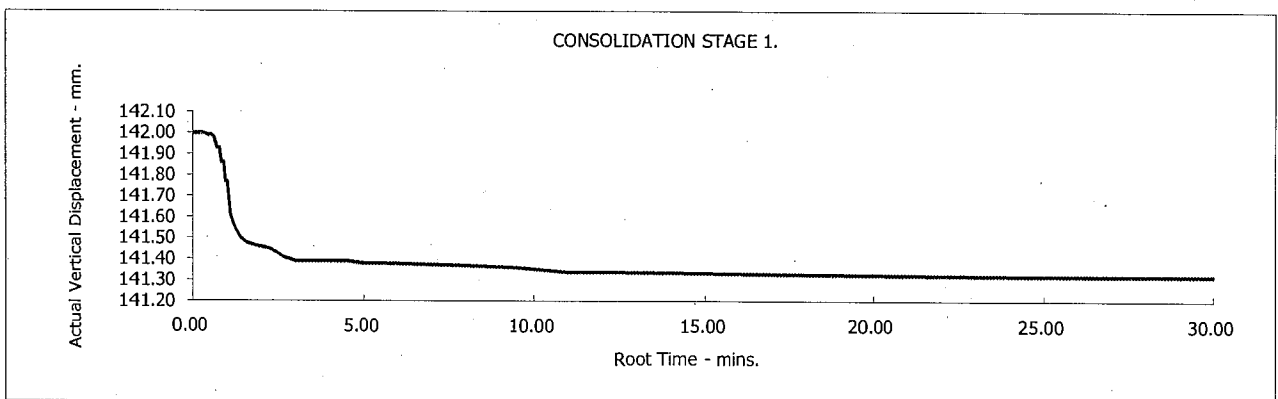
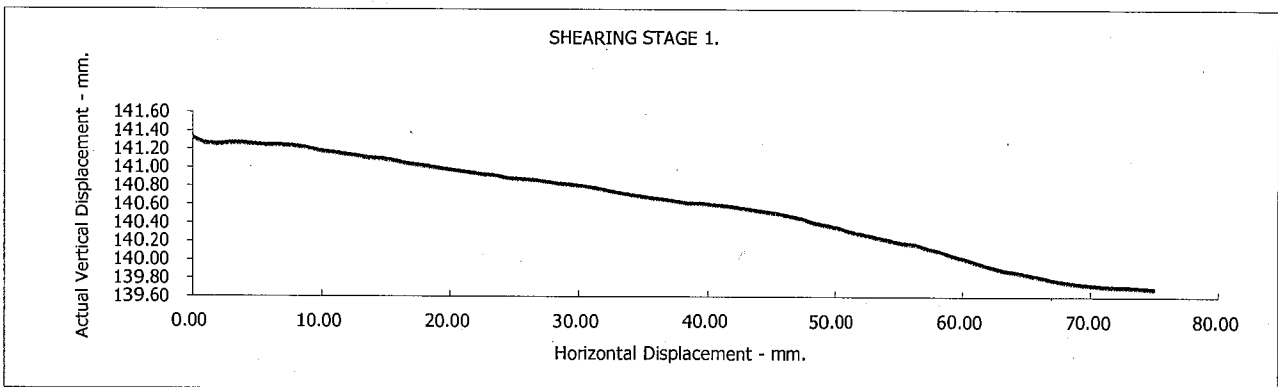
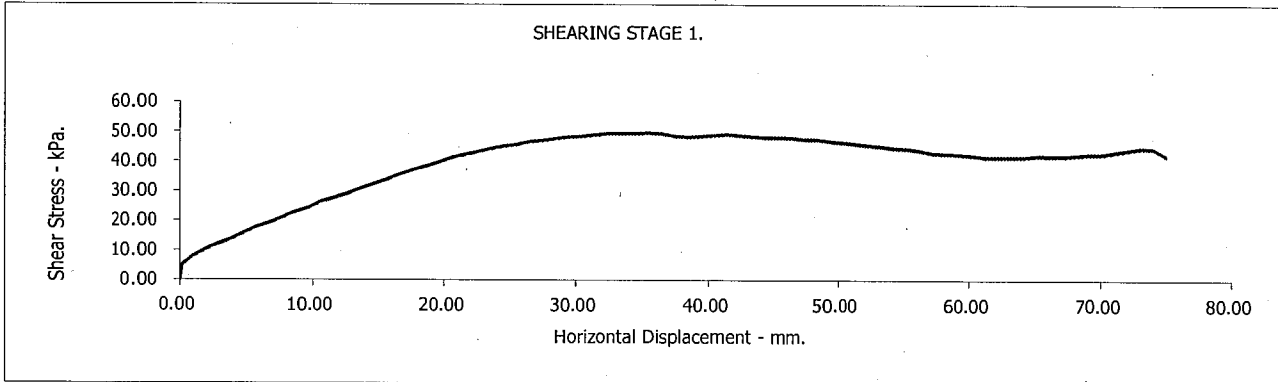
Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole/Sample Number:

TP-D42 + TP-D24 + TP Depth (m):

0.7 + 0.8 + 0.65



Redcar Site

Contract No.:

36162

Client Ref Number:

SLS1015

Figure.

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole Number: TP-I08 + TP-I09 Depth from (m): 1.80
Sample Number : B2 Depth to (m): 2.50

Sample Type:	B
Particle Density - Mg/m3:	2.65 (Assumed)
Specimen Tested:	At natural moisture content, Remoulded (Light Tamping) Material above 20mm removed.

Sample Description:

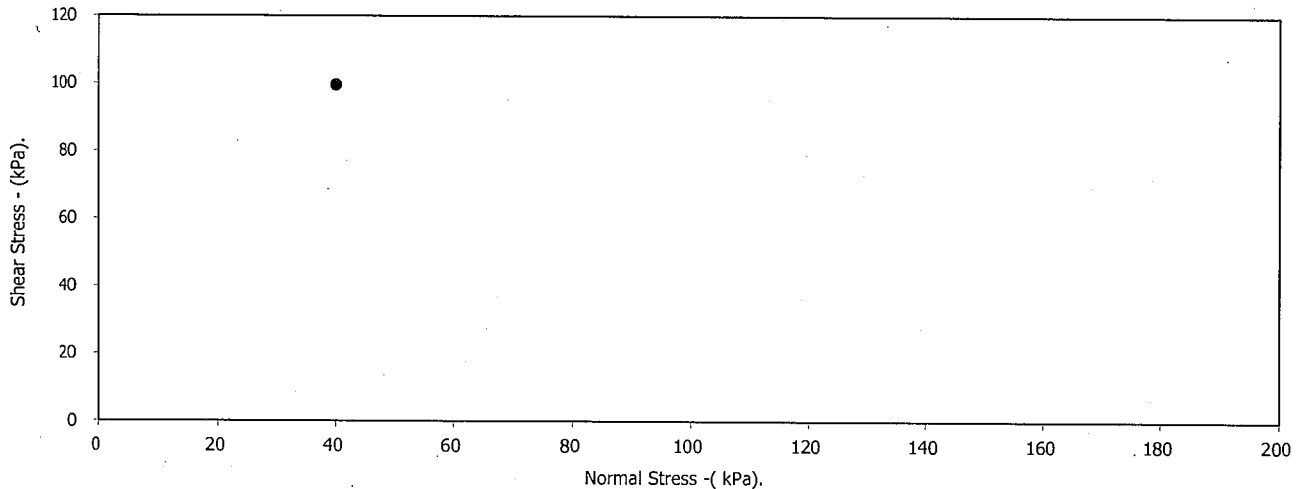
Dark brown slightly clayey sandy GRAVEL (fine-medium/angular-subrounded)

STAGE	1	2	3
Initial Conditions			
Height - mm:	140.00		
Length - mm:	300.00		
Moisture Content - %:	13		
Bulk Density - Mg/m3:	1.80		
Dry Density - Mg/m3:	1.60		
Voids Ratio:	0.6539		
Normal Pressure- kPa	40		
Consolidation			
Consolidated Height - mm:	139.12		
Shear			
Rate of Strain (mm/min)	0.667		
Strain at peak shear stress (%)	39.01		
Peak shear Stress - kPa:	100		

PEAK

Angle of Shearing Resistance:(θ)	0.0
Effective Cohesion - kPa:	0

FAILURE CONDITIONS



● Peak shear Stress - kPa:

— Best Fit Line

D P Gans 14/08/17

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D P Gans 14/08/17

Approved Pages 1-4 by: Date

Contract No.:
36162

Redcar Site

Client Ref Number:
SLS1015

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

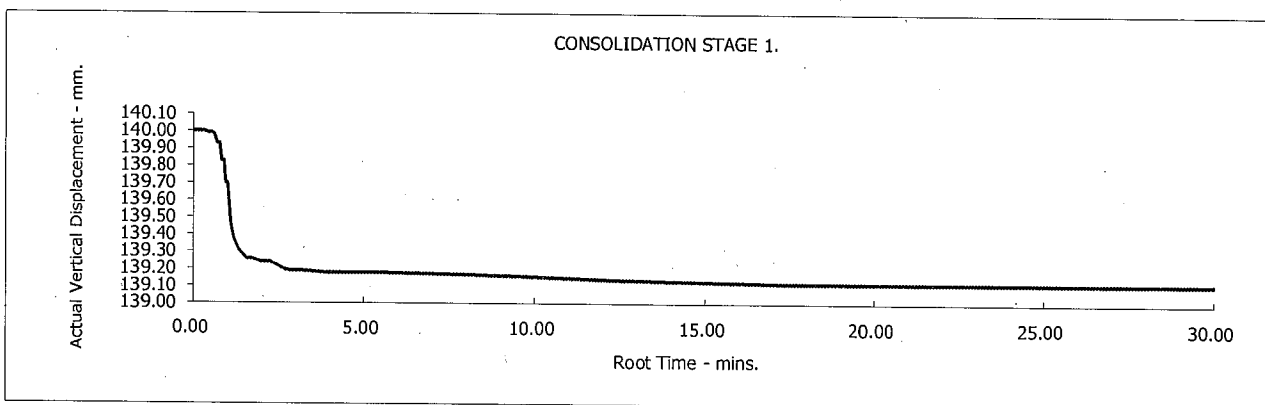
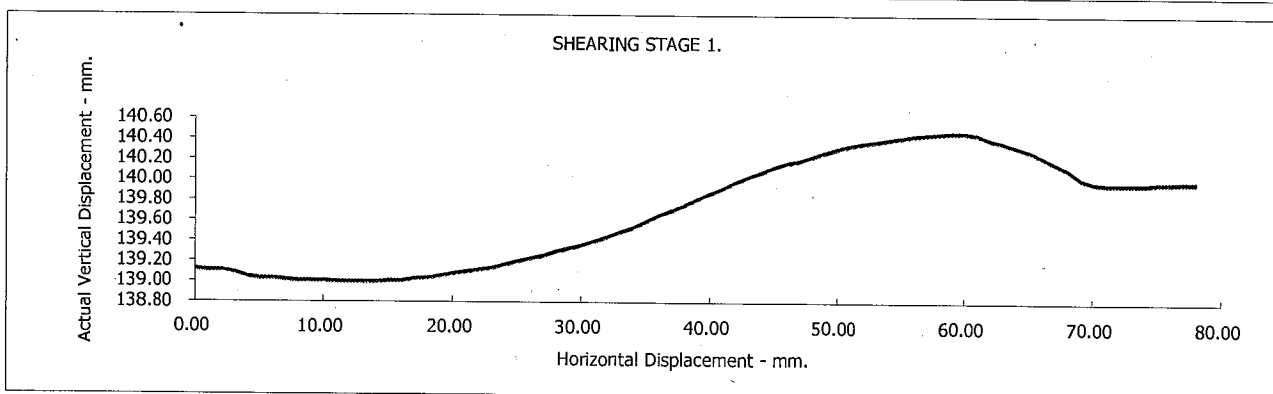
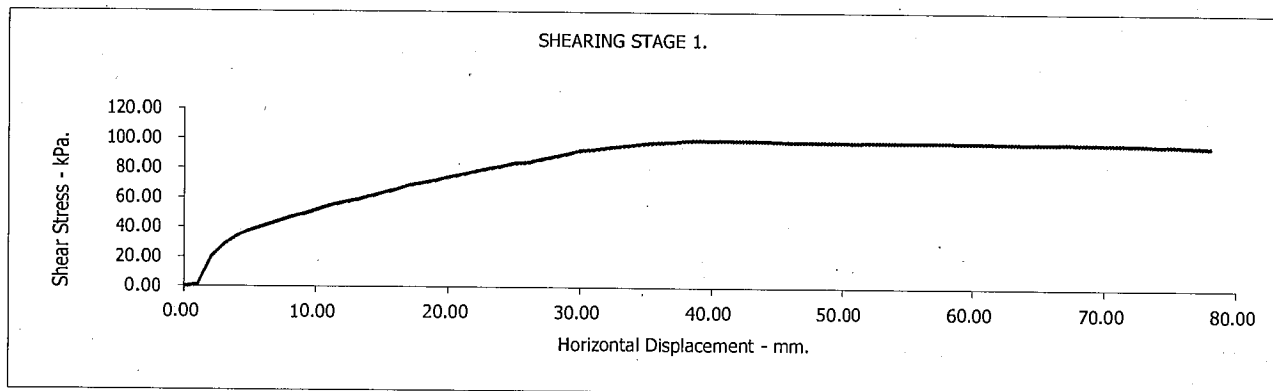
BS1377:Part 7:5 :1990.

Borehole/Sample Number:

TP-I08 + TP-I09

Depth (m):

1.80



Redcar Site

Contract No.:

36162

Client Ref Number:

SL51015

Figure.

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

BS1377:Part 7:5 :1990.

Borehole Number: TP-I27 + TP-I21 Depth from (m): 0.70 + 1.90
Sample Number : B2 Depth to (m): 0.00

Sample Type:	B
Particle Density - Mg/m3:	2.65 (Assumed)
Specimen Tested:	At natural moisture content, Remoulded (Light Tamping) Material above 20mm removed.

Sample Description:

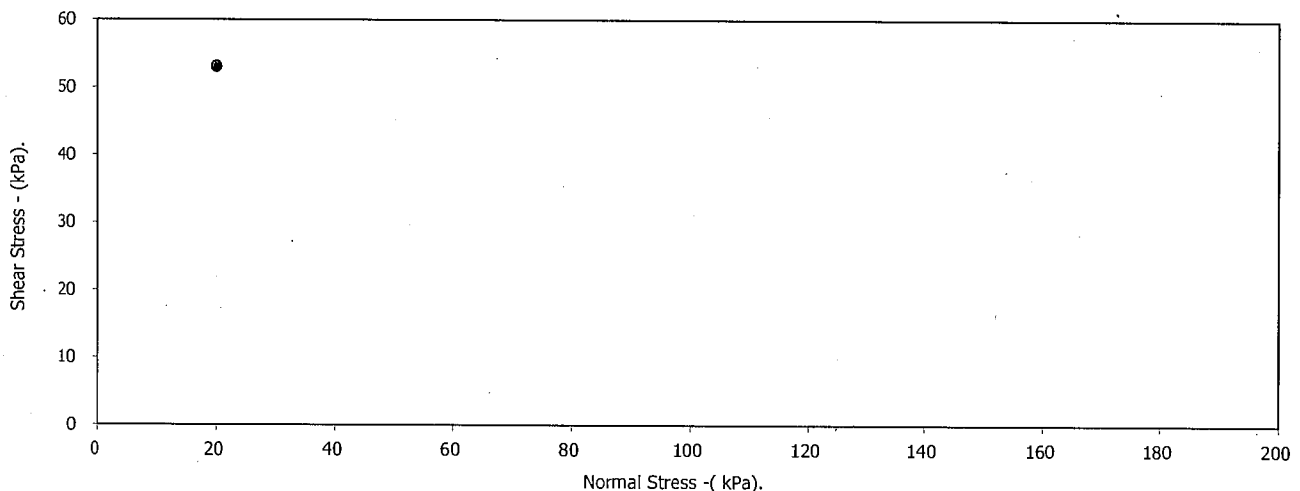
Dark brown sandy GRAVEL (fine-medium/angular-subrounded)

STAGE	1	2	3
Initial Conditions			
Height - mm:	138.00		
Length - mm:	300.00		
Moisture Content - %:	11		
Bulk Density - Mg/m3:	1.63		
Dry Density - Mg/m3:	1.47		
Void Ratio:	0.8082		
Normal Pressure- kPa	20		
Consolidation			
Consolidated Height - mm:	136.91		
Shear			
Rate of Strain (mm/min)	0.667		
Strain at peak shear stress (%)	40.07		
Peak shear Stress - kPa:	53		

PEAK

Angle of Shearing Resistance:(θ)	0.0
Effective Cohesion - kPa:	0

FAILURE CONDITIONS



● Peak shear Stress - kPa:

— Best Fit Line

D P Gans 14/08/17

Checked Pages 1-4 by: Date

D P Gans 14/08/17

Approved Pages 1-4 by: Date

Contract No.:
36162

Redcar Site

Client Ref Number:
SLS1015

Test Report: CONSOLIDATED DRAINED LARGE SHEARBOX TEST.

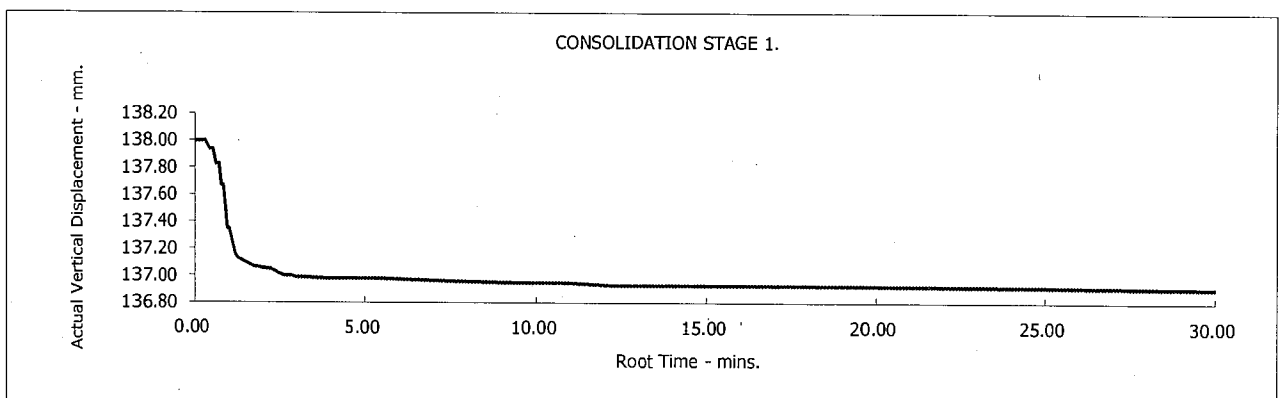
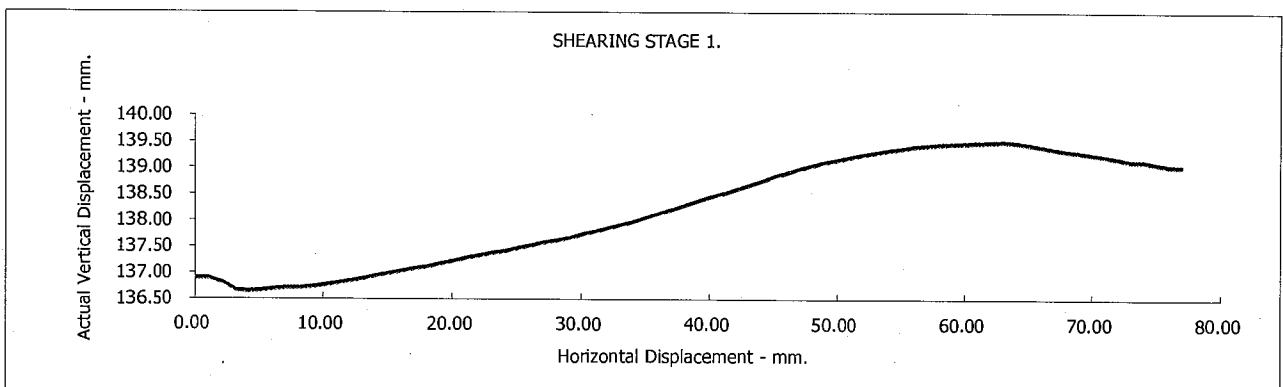
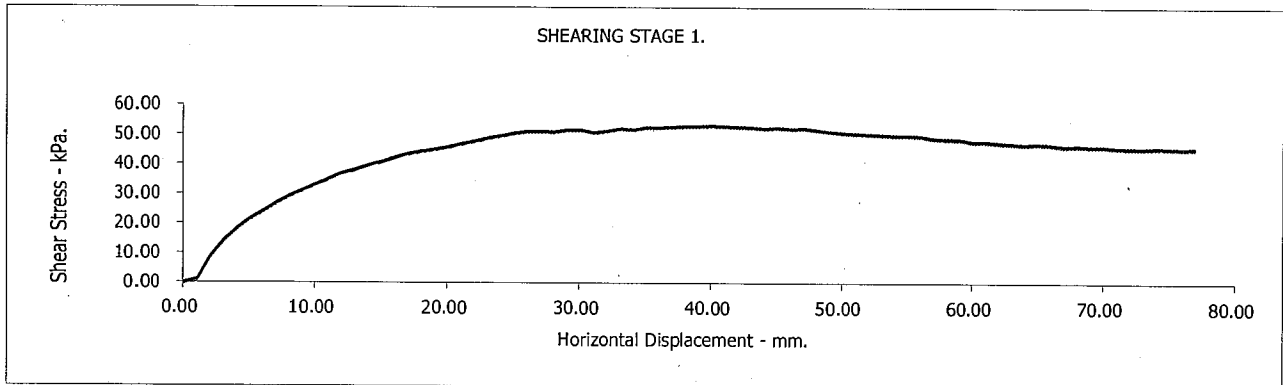
BS1377:Part 7:5 :1990.

Borehole/Sample Number:

TP-I27 + TP-I21

Depth (m):

0.70 + 1.90

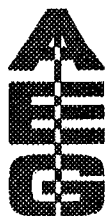


Redcar Site

Contract No.:
36162

Client Ref Number:
SLS1015

Figure.



ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPB-07

Sample: B

Depth: 2.50 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	22.5	21.9	22.4
Initial Moisture Content	%	5.0	5.0	5.0
Initial Wet density	mg/m ³	1.72	1.77	1.74
Initial Dry density	mg/m ³	1.64	1.68	1.65

CONSOLIDATION

Normal Stress	kPa	25	50	100
Height at end of Stage	mm	22.4	21.3	21.8
Duration	Day(s)	0.5	1.0	1.0

SHEARING

Rate of Strain	mm/min	0.168	0.178	0.178
Peak Shear Stress	kPa	14.6	24.3	52.8
Displacement at Peak Stress	mm	3.28	5.66	7.66
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	17.4	16.7	16.5
Final Wet Density	mg/m ³	1.93	2.02	1.98
Final Dry Density	mg/m ³	1.64	1.73	1.70

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi'	Deg	28°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi'	Deg	N/A

REMARKS:

DATE TESTED 09/08/2017
DATE OF ISSUE 15/08/2017

NAME Nick Vater
APPROVED BY

pp
msenl

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

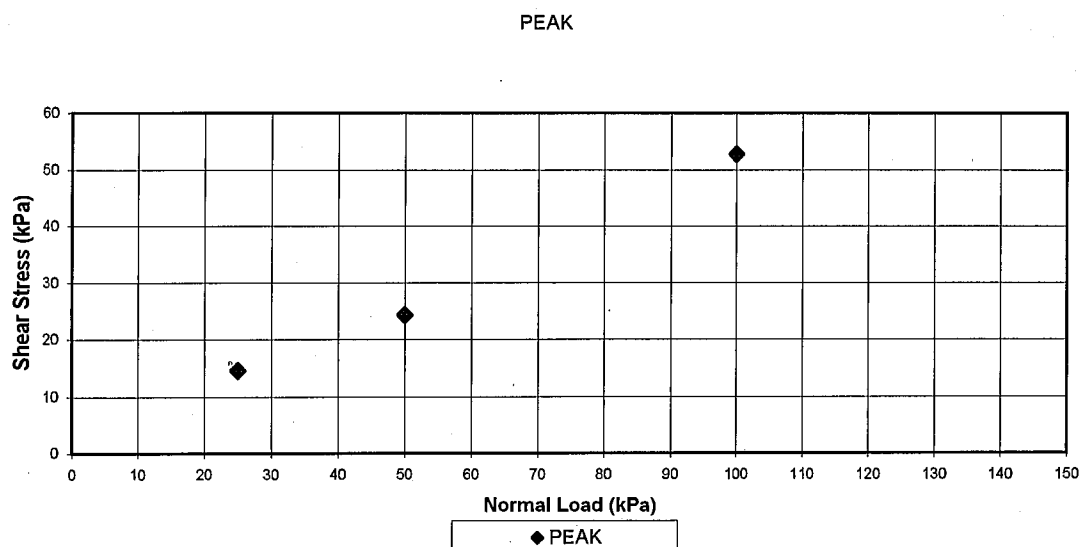
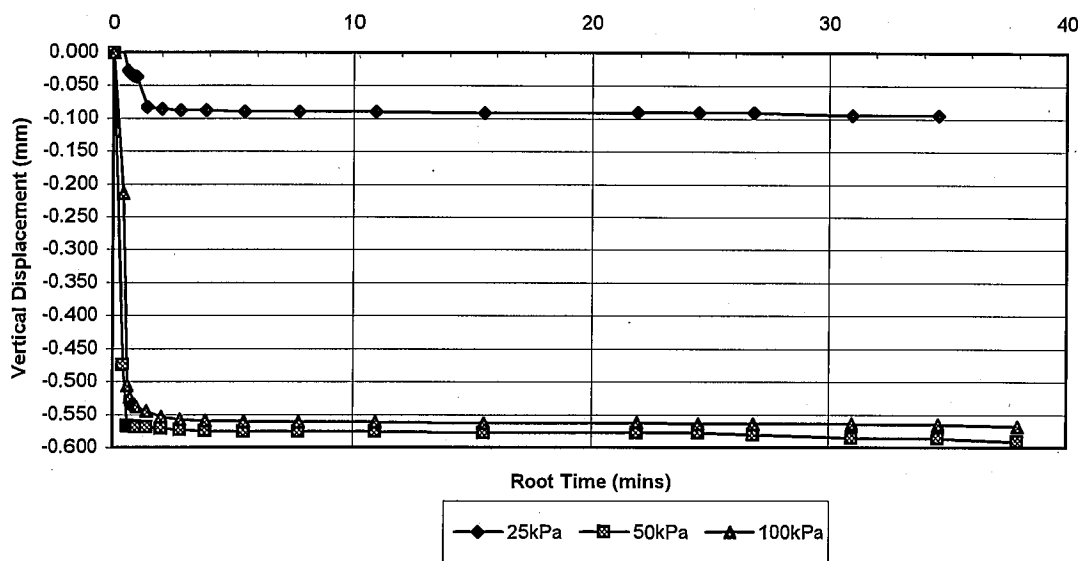
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.** SLS1015**Borehole:** TPB-07**Sample:** B**Depth:** 2.50 m.

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell

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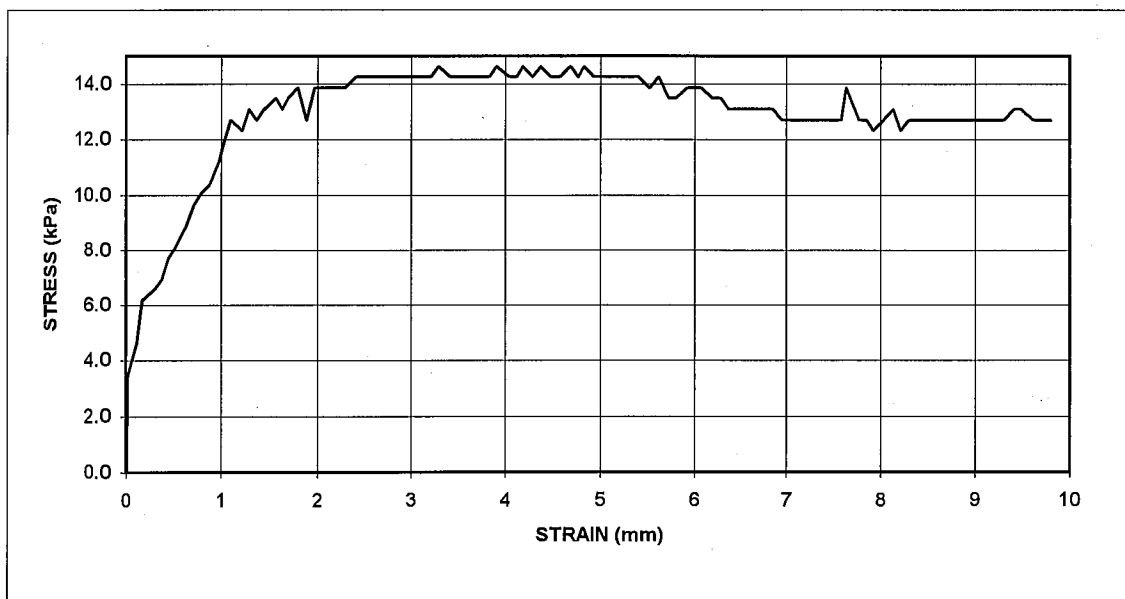
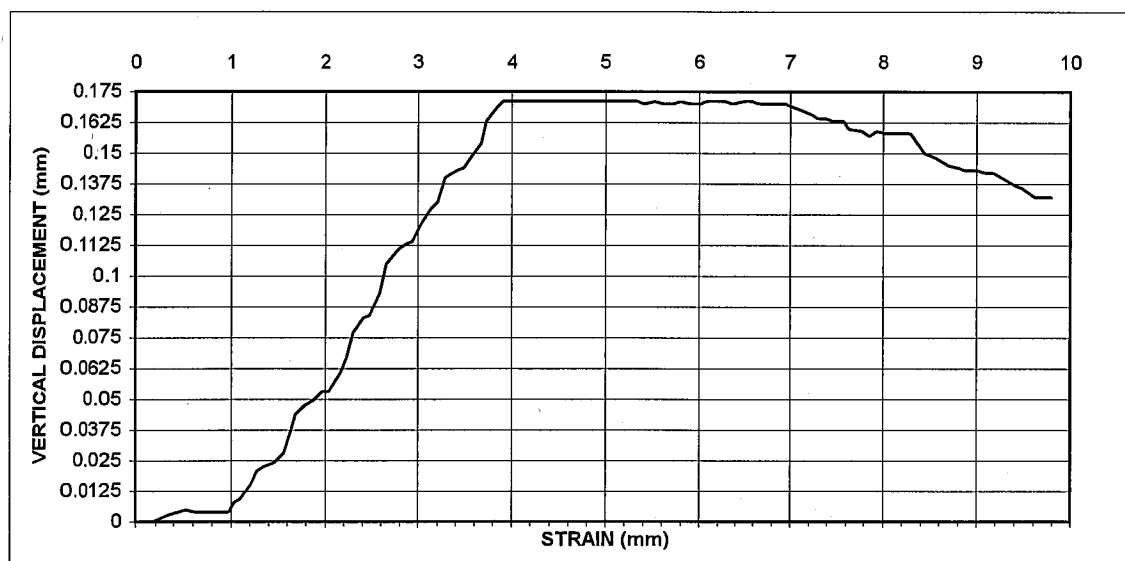
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPB-07**Sample:** B**Depth:** 2.50 m.**Stage Number** 1**Pressure** 25 kPa

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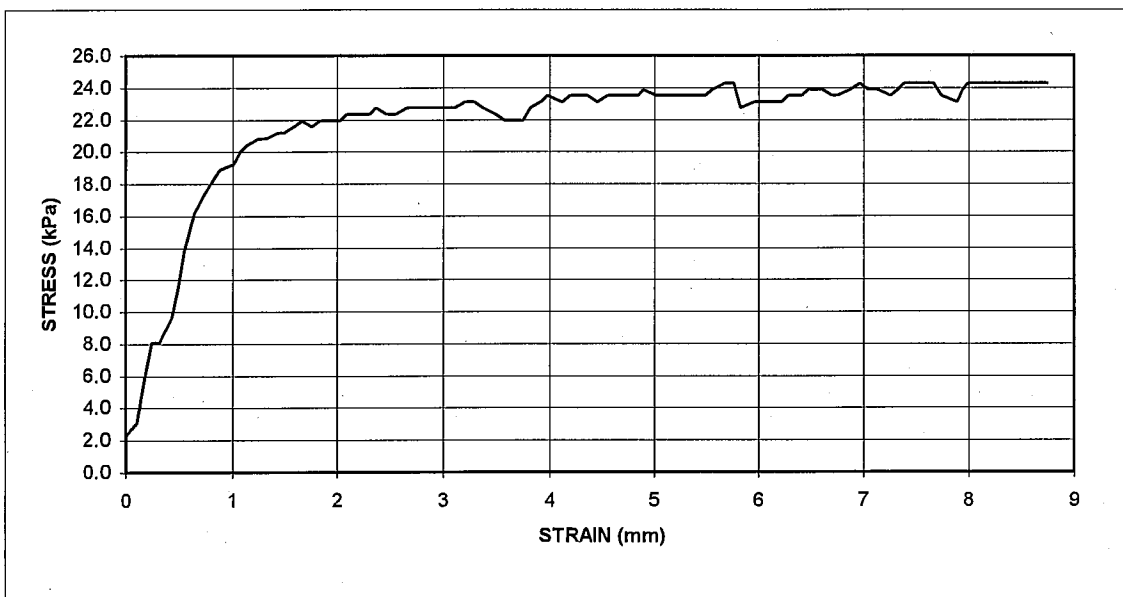
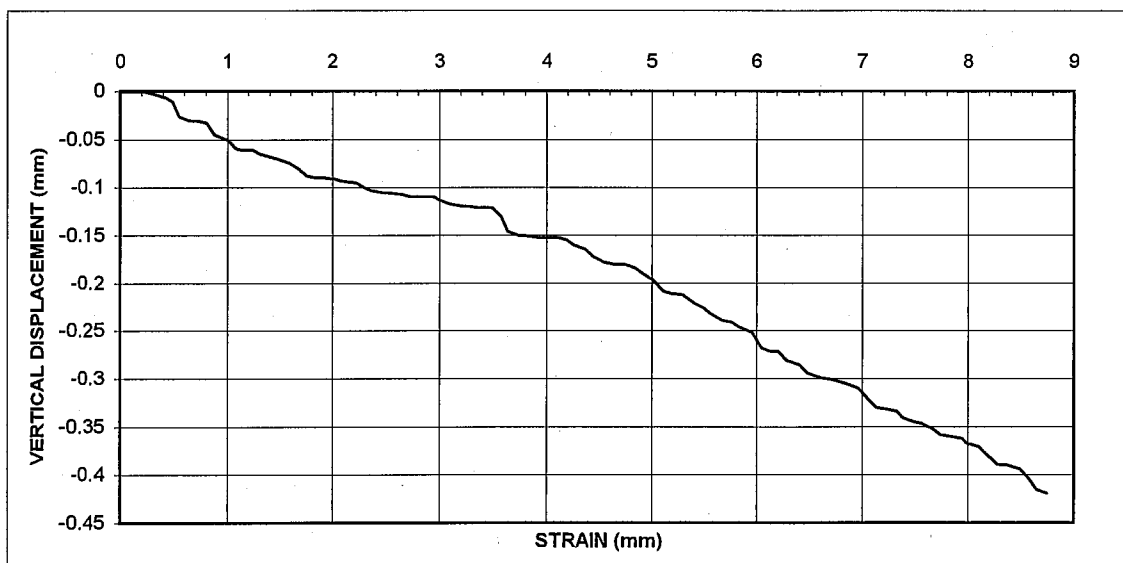
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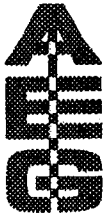
Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPB-07**Sample:** B**Depth:** 2.50 m.**Stage Number** 2**Pressure** 50 kPa

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

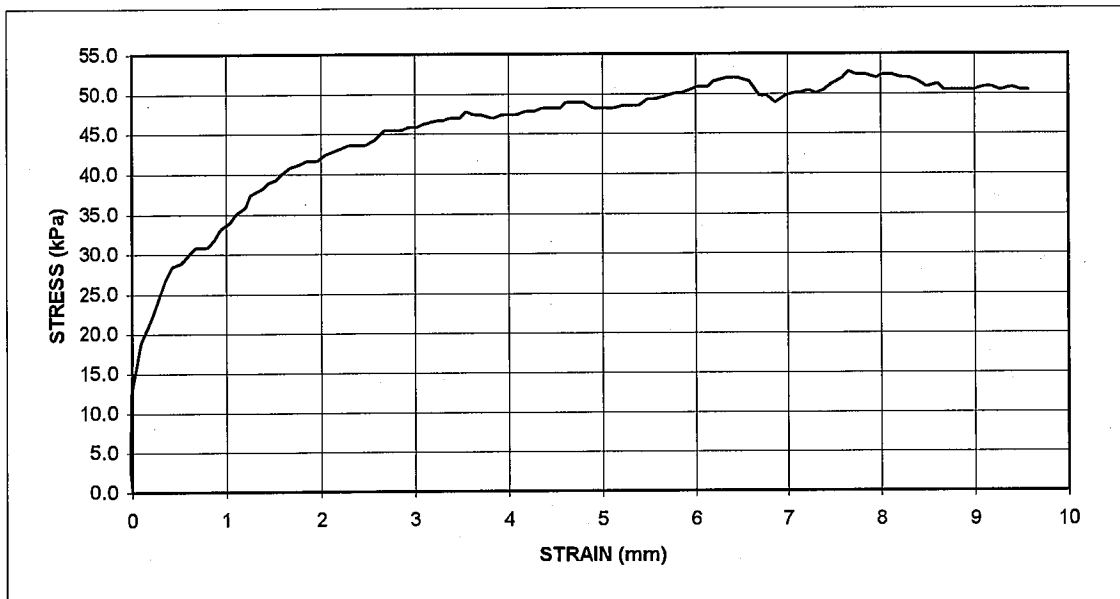
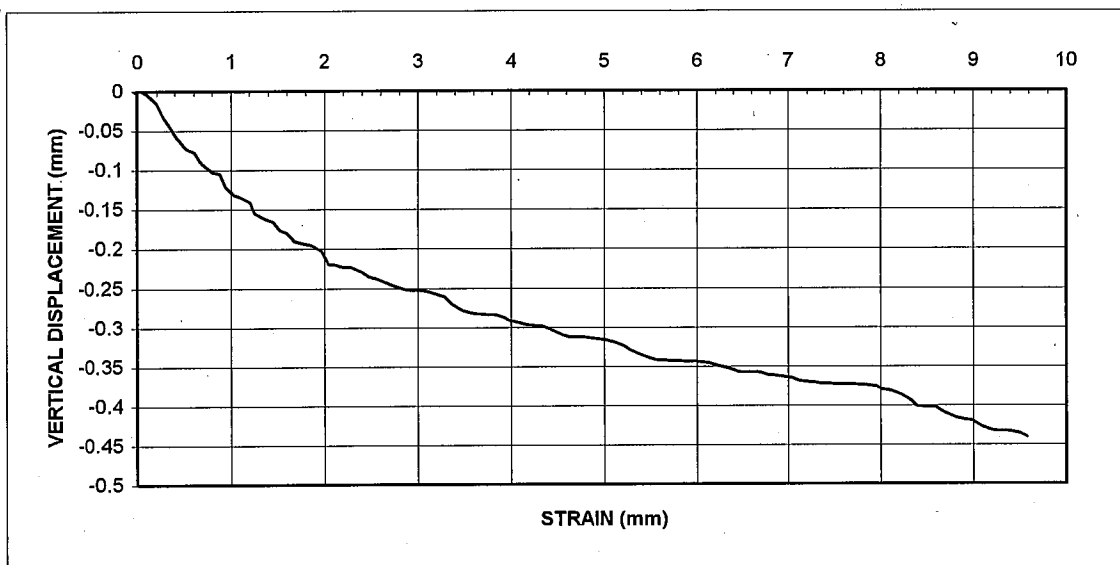
a UKAS LABORATORY Testing No. 1367

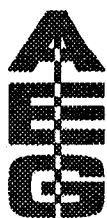
Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPB-07**Sample:** B**Depth:** 2.50 m.**Stage Number** 3**Pressure** 100 kPa



ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPC-22

Sample: B

Depth: 3.00 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	23.9	22.4	23.4
Initial Moisture Content	%	50.5	50.5	50.5
Initial Wet density	mg/m ³	1.66	1.70	1.68
Initial Dry density	mg/m ³	1.10	1.13	1.11

CONSOLIDATION

Normal Stress	kPa	30	60	120
Height at end of Stage	mm	22.9	21.0	21.8
Duration	Day(s)	0.5	0.5	0.5

SHEARING

Rate of Strain	mm/min	0.219	0.220	0.215
Peak Shear Stress	kPa	23.8	40.7	84.0
Displacement at Peak Stress	mm	1.78	2.21	2.42
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	42.5	42.6	42.2
Final Wet Density	mg/m ³	1.64	1.72	1.70
Final Dry Density	mg/m ³	1.15	1.21	1.19

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	1
Angle of Shearing Resistance phi '	Deg	34.5°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

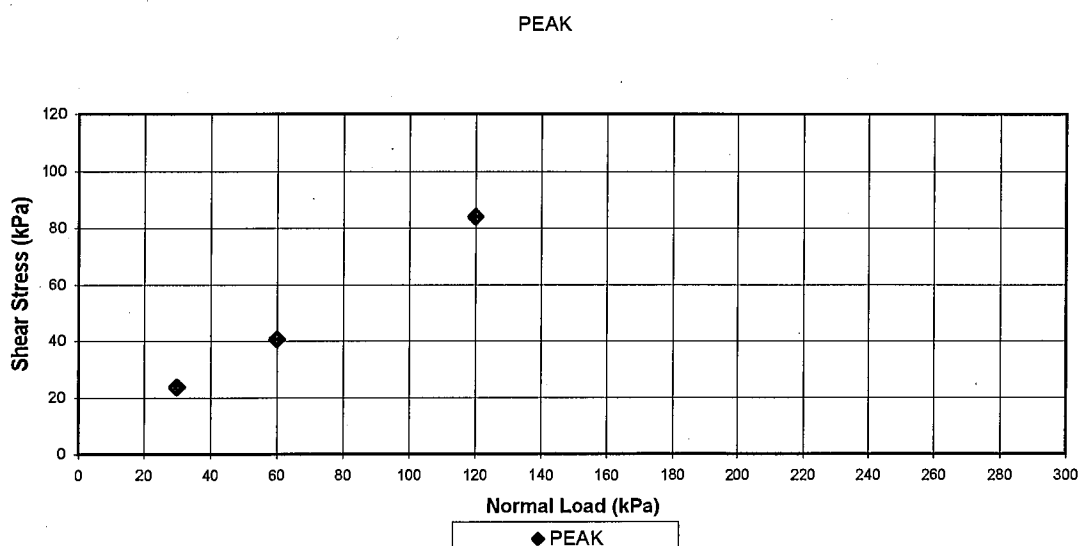
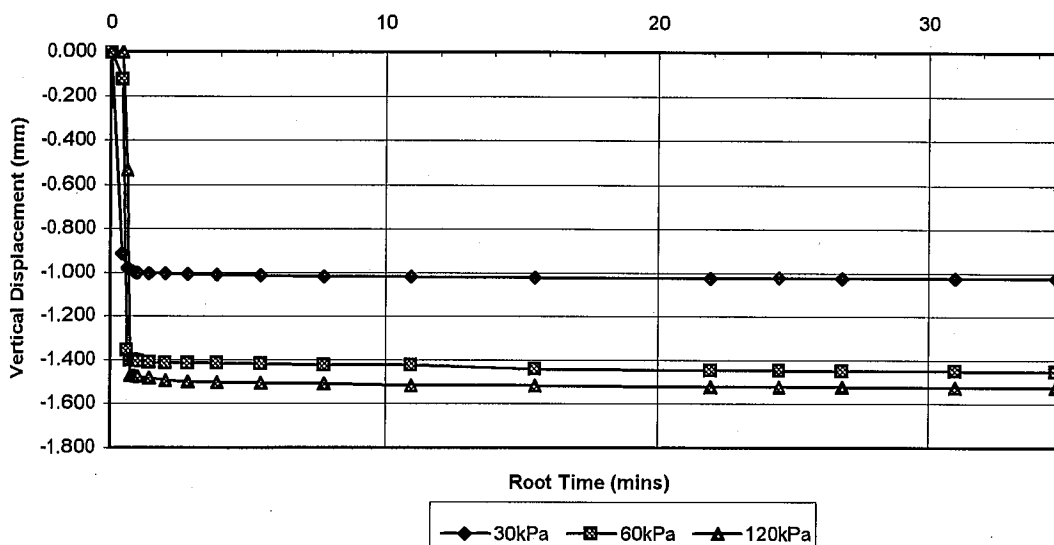
REMARKS:

DATE TESTED 04/08/2017
DATE OF ISSUE 16/08/2017

NAME Nick Vater
APPROVED BY *msore*

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell
Chester-le-Street, Co.Durham. DH2 2RG
a UKAS LABORATORY Testing No. 1367

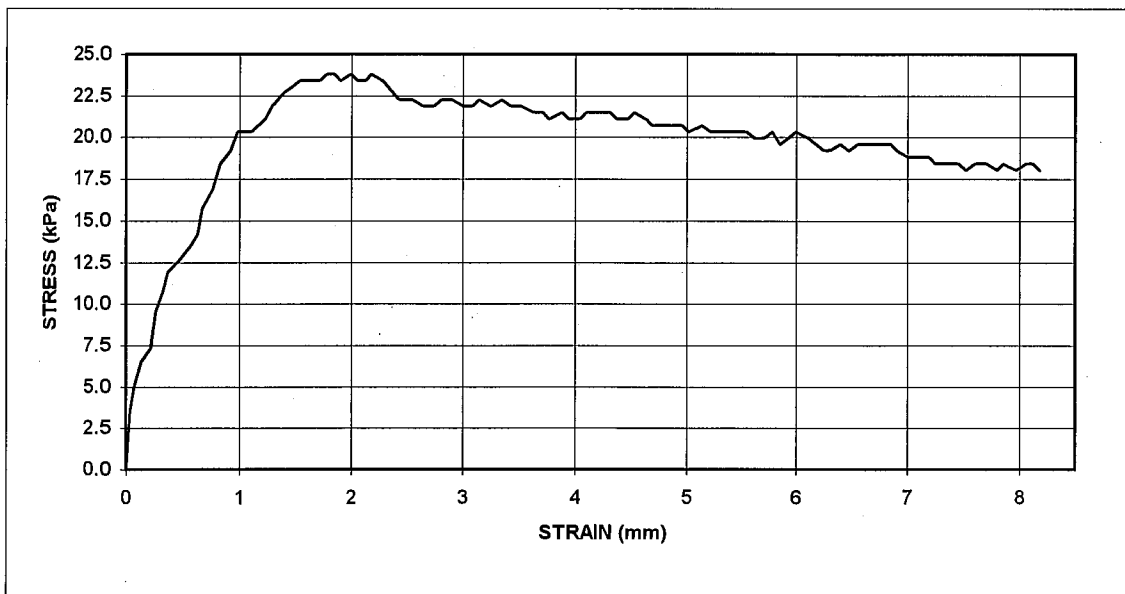
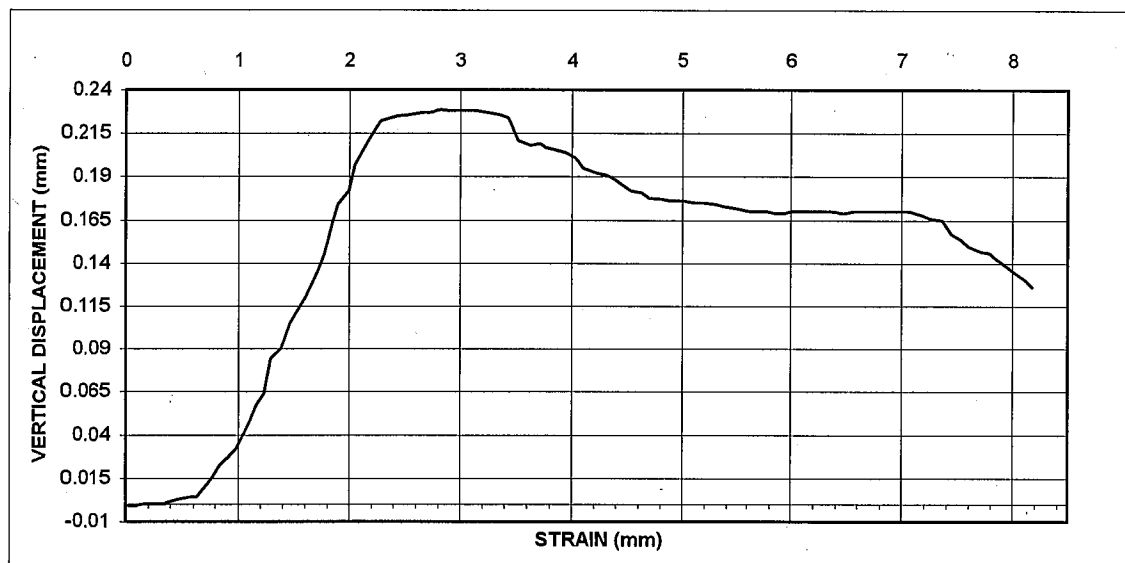
Consolidated Drained Shear Box Test**BS 1377 : PART 7 : 1990 Clause 4****Site:** Redcar Site**Client:** CH2M**Job No.** SLS1015**Borehole:** TPC-22**Sample:** B**Depth:** 3.00 m.

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell
Chester-le-Street, Co.Durham. DH2 2RG
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test**BS 1377 : PART 7 : 1990 Clause 4**

1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPC-22**Sample:** B**Depth:** 3.00 m.**Stage Number** 1**Pressure** 30 kPa

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

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Chester-le-Street, Co. Durham. DH2 2RG

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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No.: SLS1015

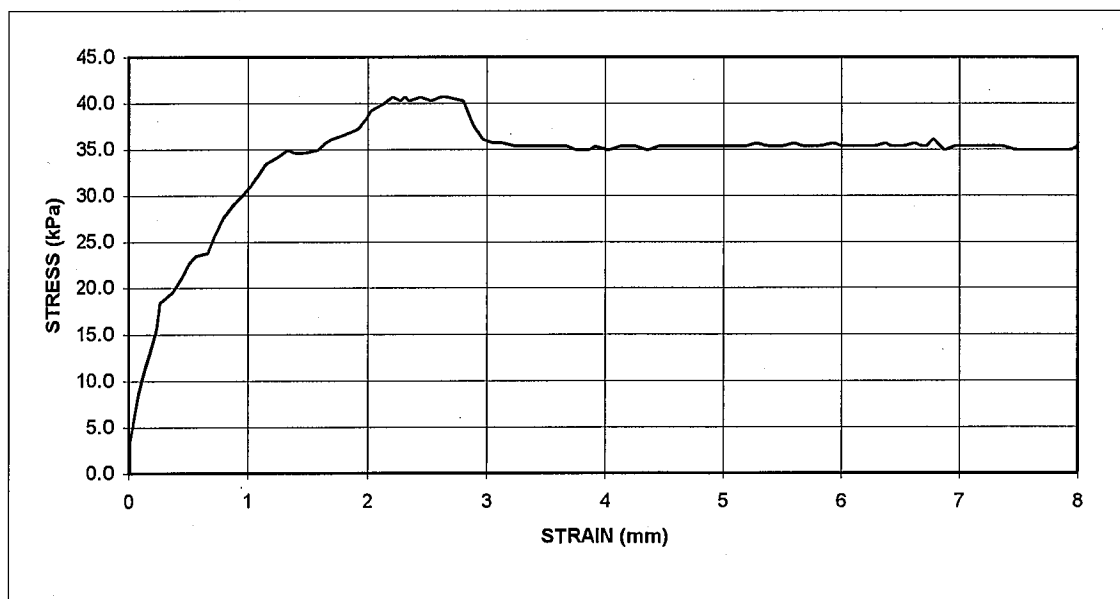
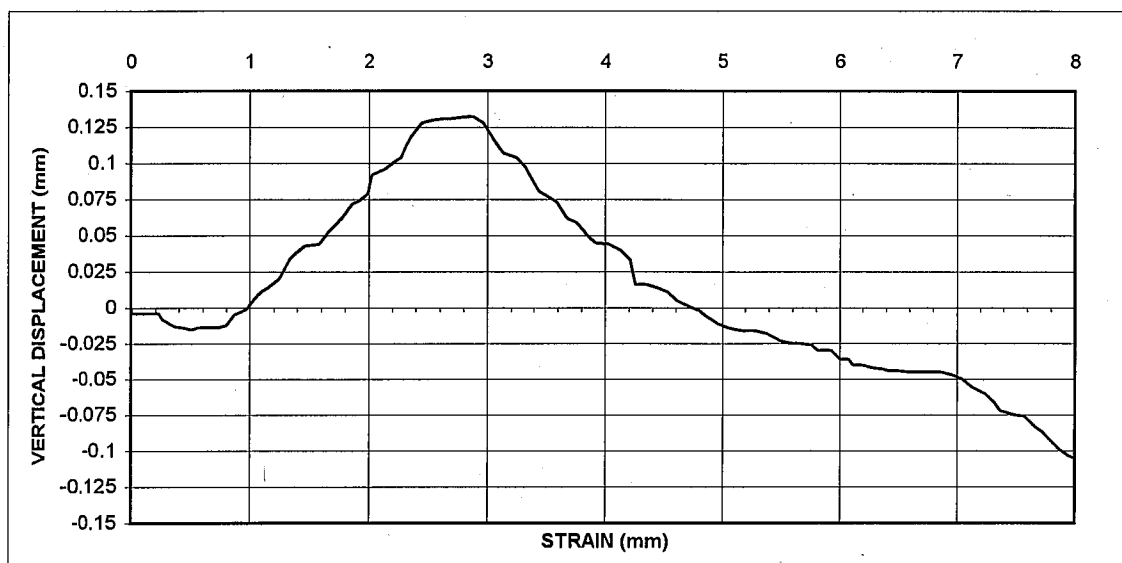
Borehole: TPC-22

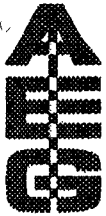
Sample: B

Depth: 3.00 m.

Stage Number 2

Pressure 60 kPa



**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co. Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No.: SLS1015

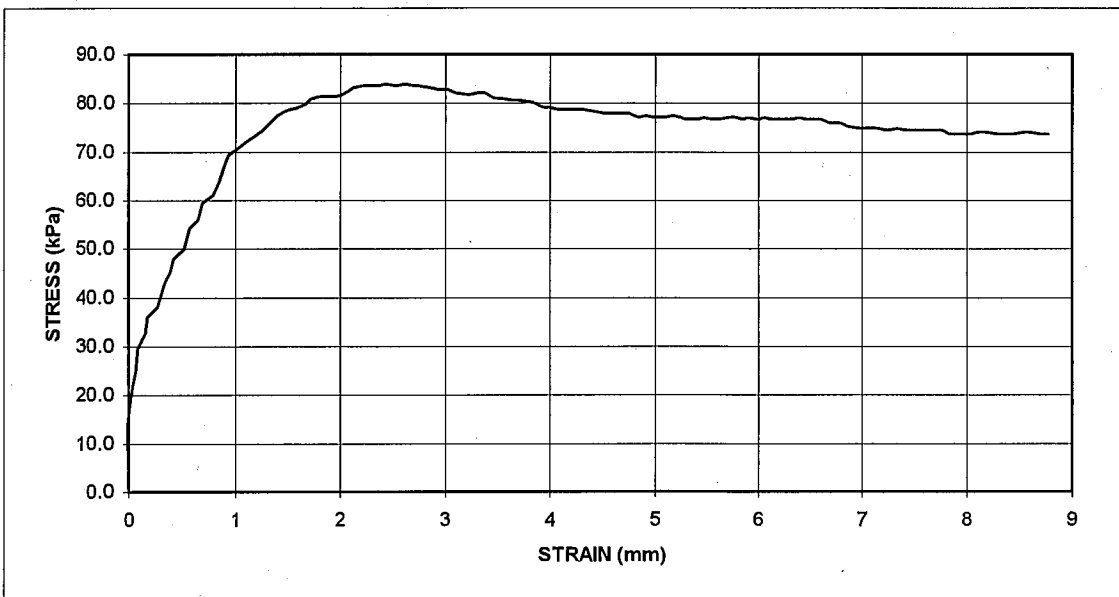
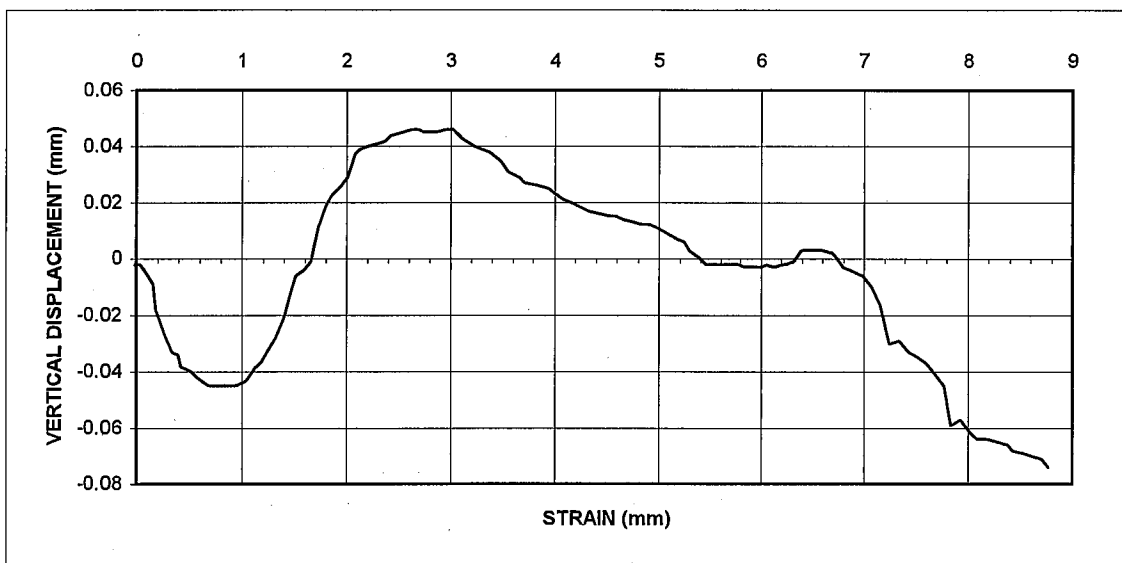
Borehole: TPC-22

Sample: B

Depth: 3.00 m.

Stage Number 3

Pressure 120 kPa





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPD-23

Sample: B

Depth: 0.90 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	24.6	25.2	25.2
Initial Moisture Content	%	18.4	18.4	18.4
Initial Wet density	mg/m ³	1.67	1.65	1.62
Initial Dry density	mg/m ³	1.41	1.40	1.37

CONSOLIDATION

Normal Stress	kPa	15	30	60
Height at end of Stage	mm	24.5	25.0	24.4
Duration	Day(s)	0.5	0.5	0.5

SHEARING

Rate of Strain	mm/min	0.076	0.072	0.070
Peak Shear Stress	kPa	8.1	17.3	30.8
Displacement at Peak Stress	mm	5.27	6.90	7.50
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	26.4	25.9	25.9
Final Wet Density	mg/m ³	1.80	1.77	1.77
Final Dry Density	mg/m ³	1.42	1.41	1.41

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi 'r	Deg	29°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 01/08/2017
DATE OF ISSUE 10/08/2017

NAME
APPROVED BY

Nick Vater
msono



ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co. Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

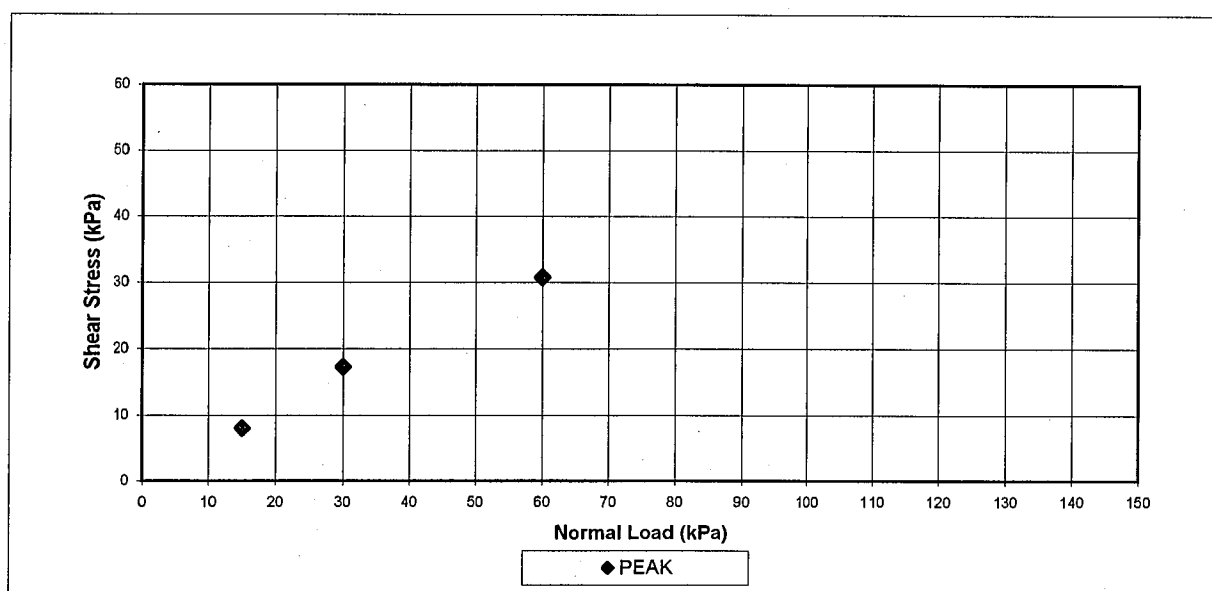
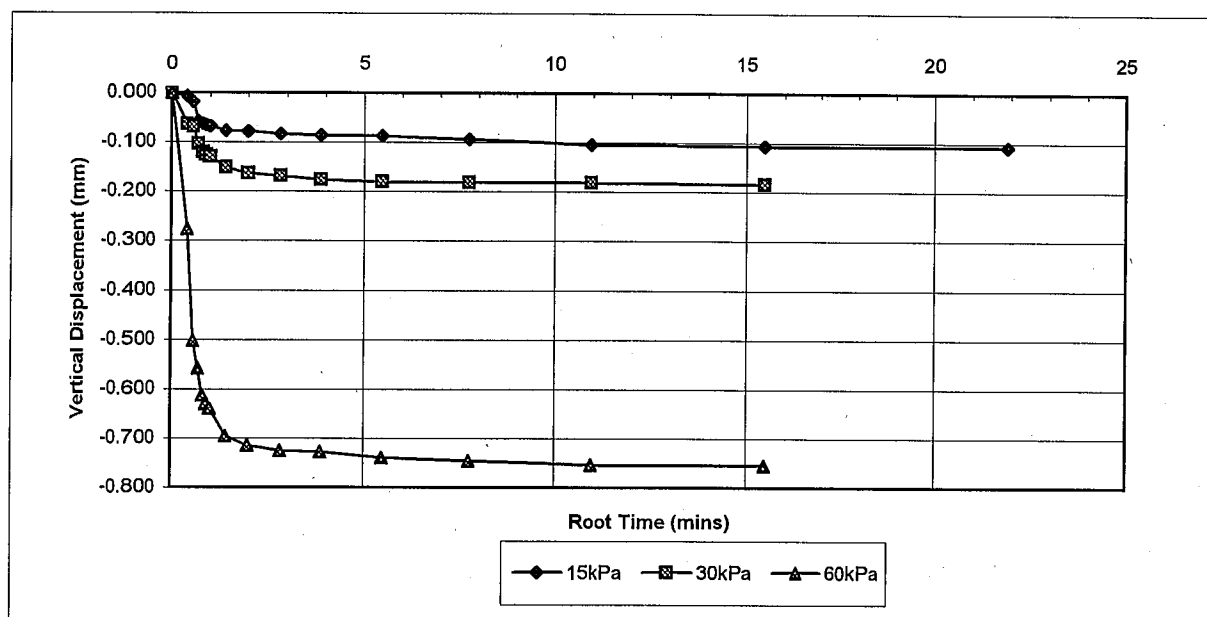
Client: CH2M

Job No. SLS1015

Borehole: TPD-23

Sample: B

Depth: 0.90 m.



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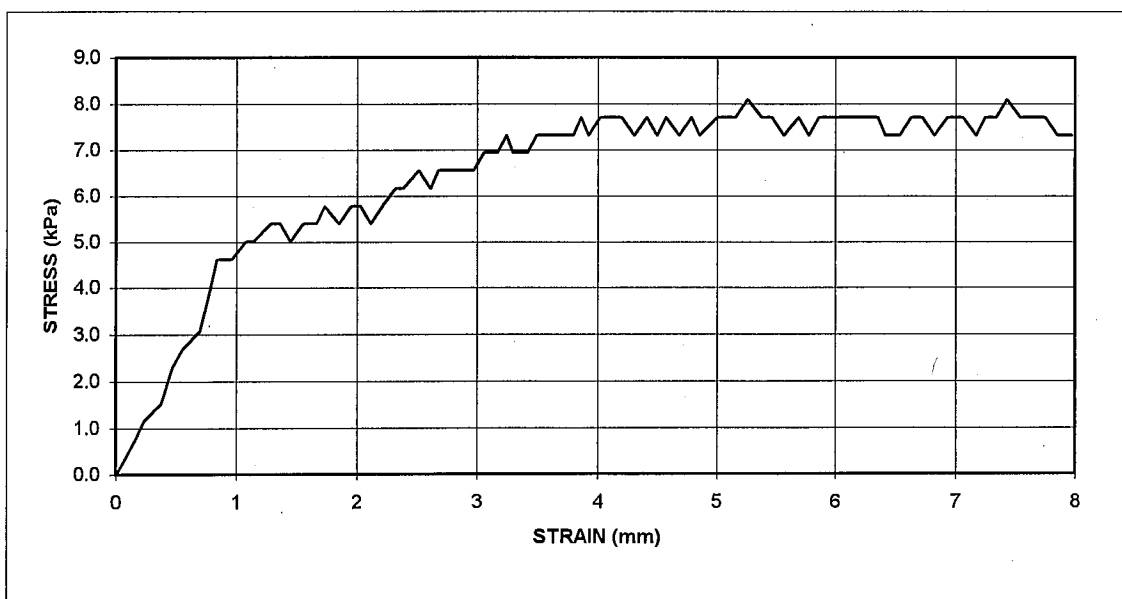
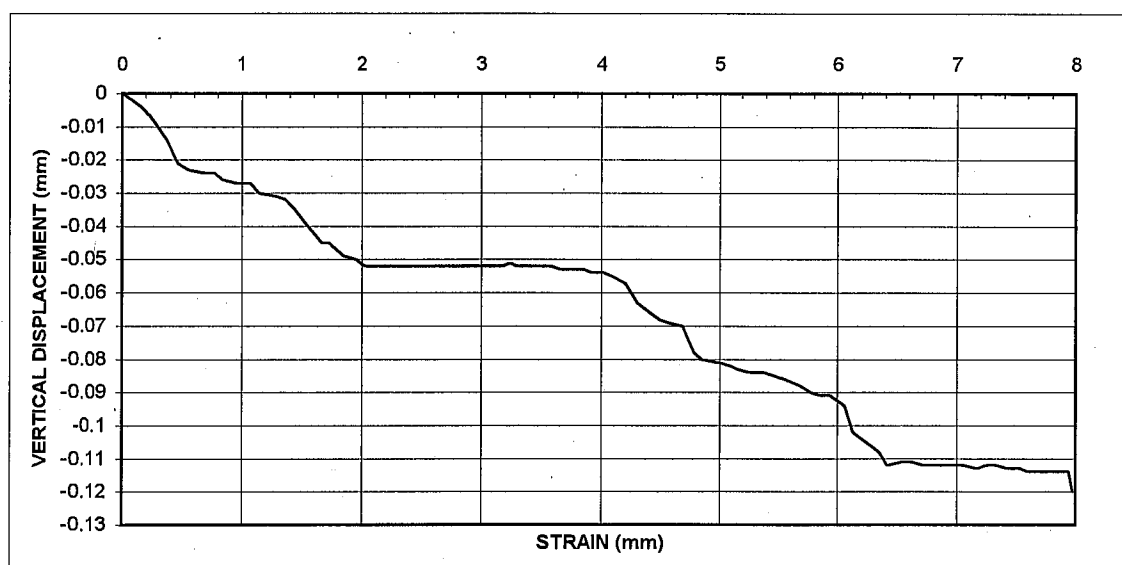
Unit 25 Stella Gill Industrial Estate, Pelton Fell

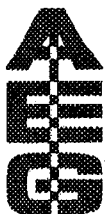
Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

**Site:** Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPD-23**Sample:** B**Depth:** 0.90 m.**Stage Number** 1**Pressure** 15 kPa

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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No.: SLS1015

Borehole: TPD-23

Sample: B

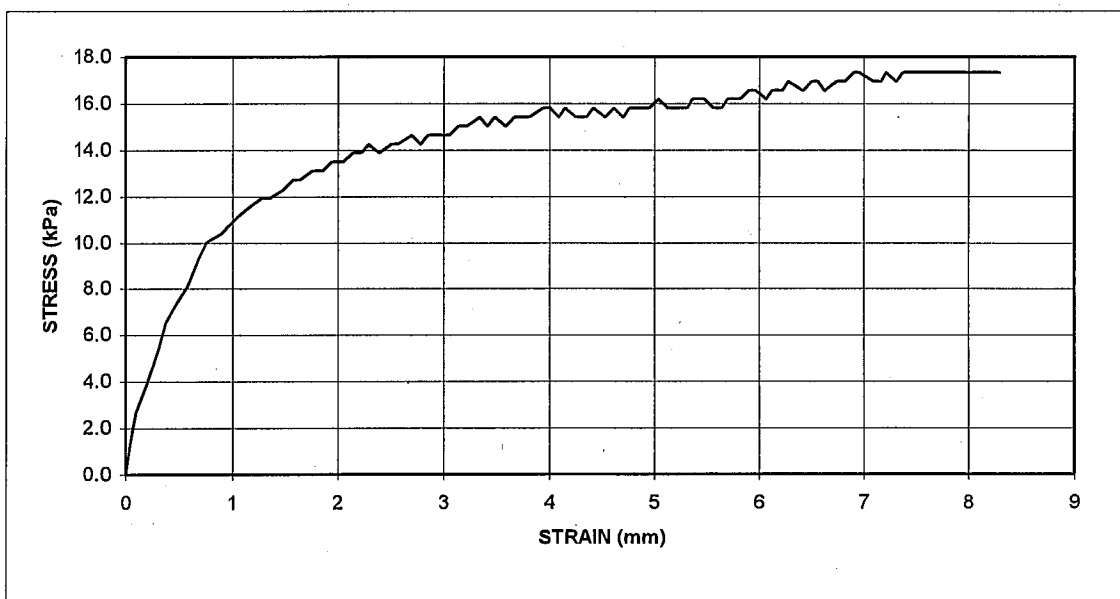
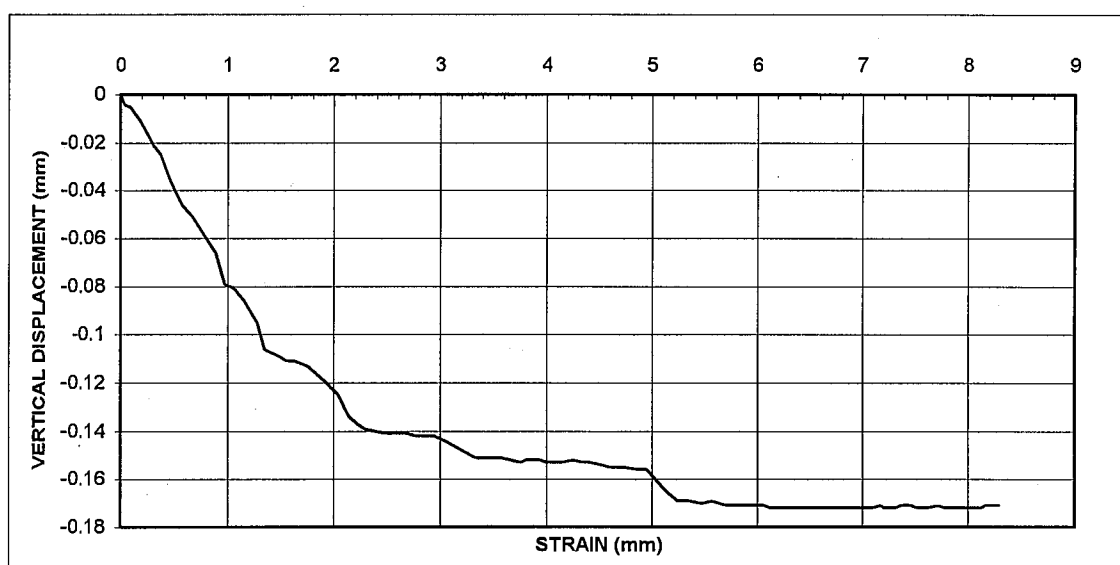
Depth: 0.90 m.

Stage Number

2

Pressure

30 kPa



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Unit 25 Stella Gill Industrial Estate, Pelton Fell

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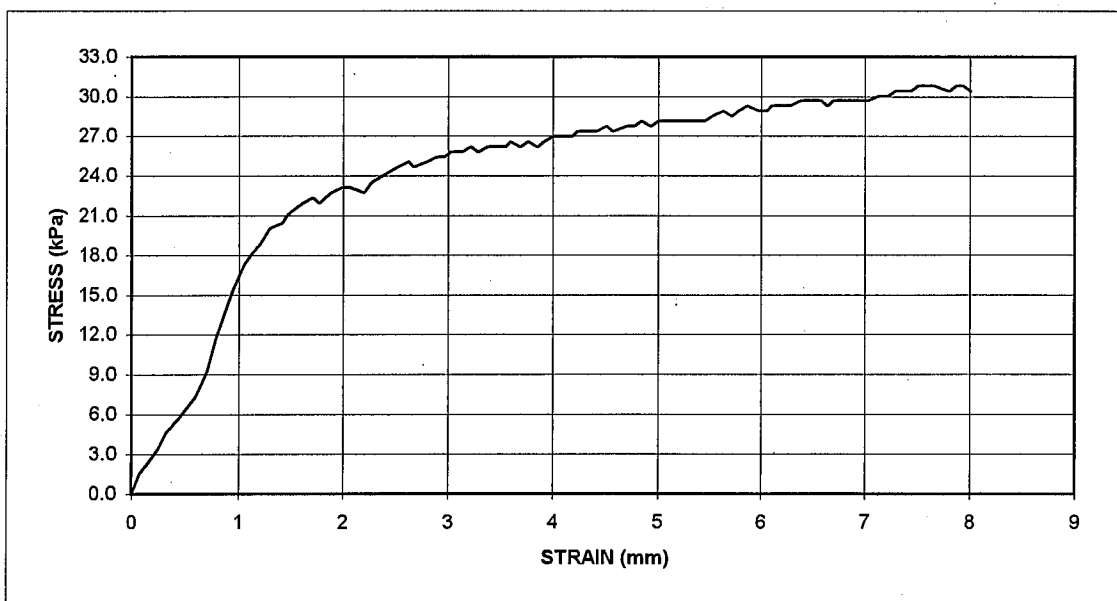
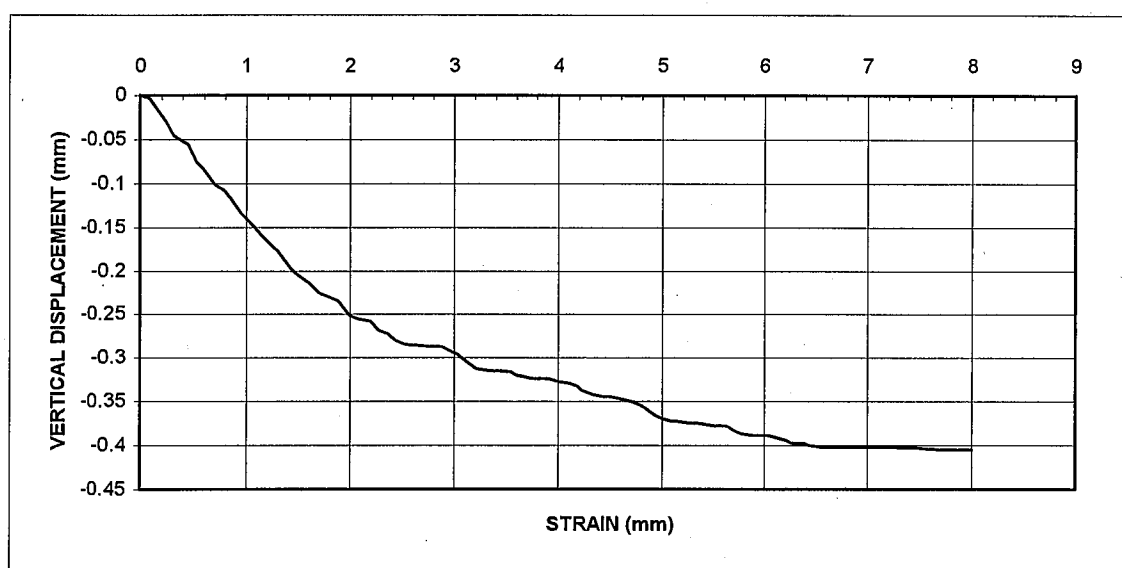
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPD-23**Sample:** B**Depth:** 0.90 m.**Stage Number** 3**Pressure** 60 kPa



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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPE-12

Sample: B

Depth: 1.00 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	25.5	25.1	25.2
Initial Moisture Content	%	5.7	5.7	5.7
Initial Wet density	mg/m ³	1.59	1.56	1.53
Initial Dry density	mg/m ³	1.50	1.48	1.45

CONSOLIDATION

Normal Stress	kPa	20	40	80
Height at end of Stage	mm	25.4	24.8	24.8
Duration	Day(s)	0.5	0.5	0.5

SHEARING

Rate of Strain	mm/min	0.306	0.310	0.312
Peak Shear Stress	kPa	8.1	21.1	45.7
Displacement at Peak Stress	mm	4.75	7.86	8.61
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	22.3	21.2	21.8
Final Wet Density	mg/m ³	1.85	1.81	1.79
Final Dry Density	mg/m ³	1.51	1.50	1.47

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi 'r	Deg	28.5°

RESIDUAL PARAMETERS

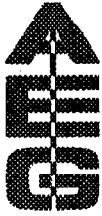
Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 09/08/2017
DATE OF ISSUE 16/08/2017

NAME
APPROVED BY

PP Nick Vater
msone

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Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co. Durham. DH2 2RG

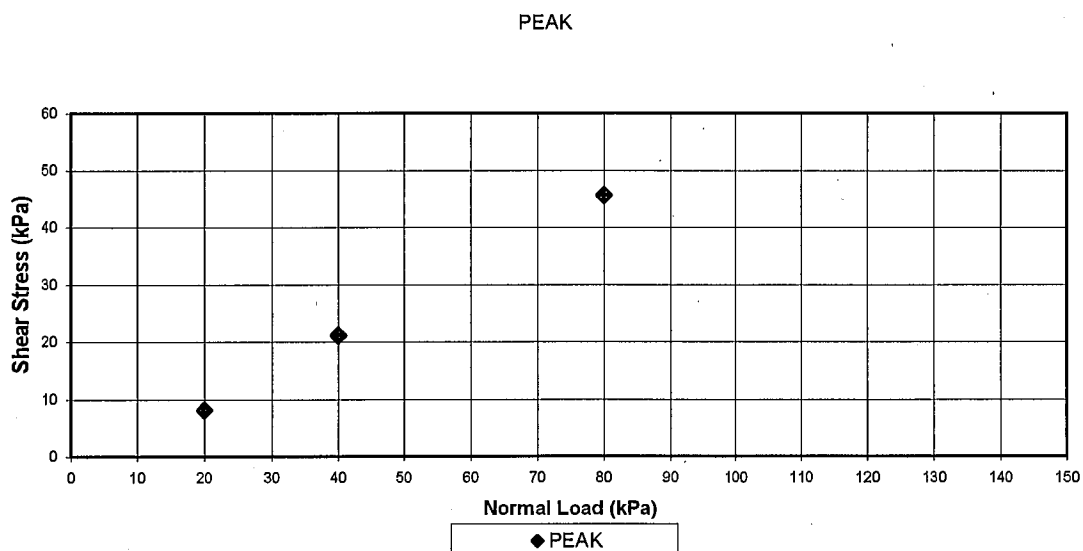
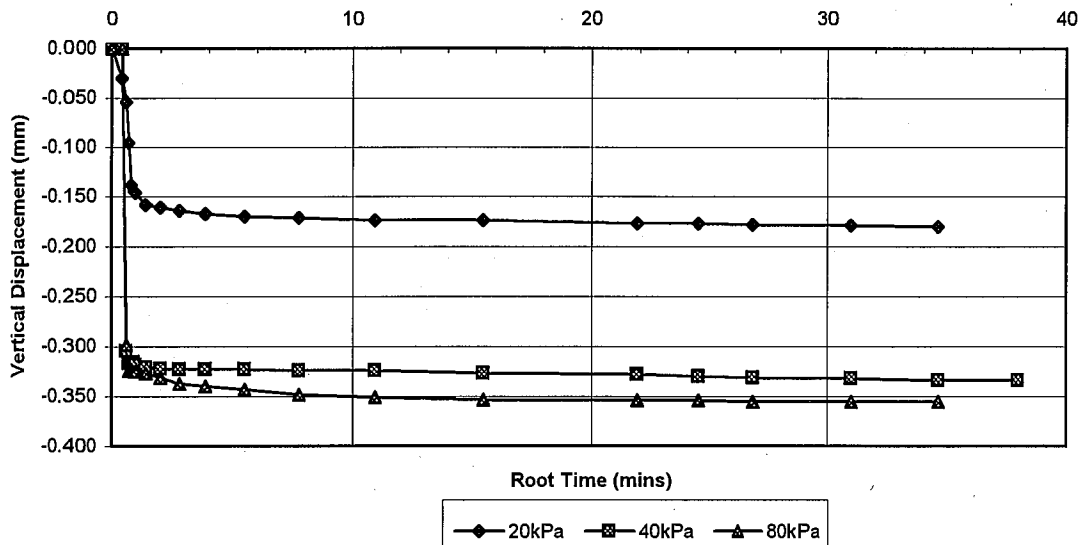
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.** SLS1015**Borehole:** TPE-12**Sample:** B**Depth:** 1.00 m.

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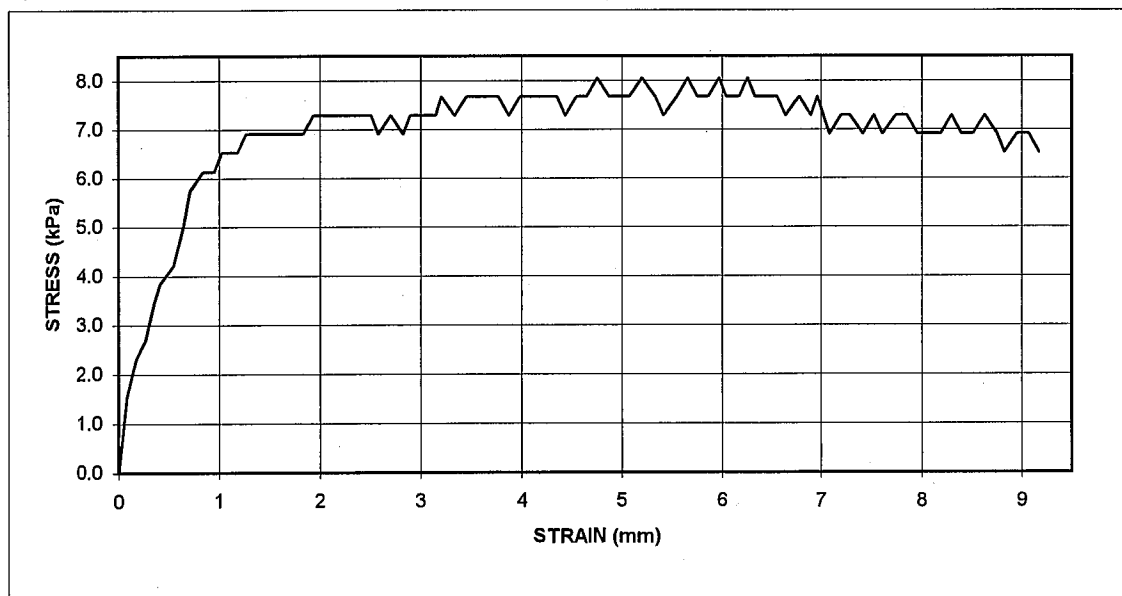
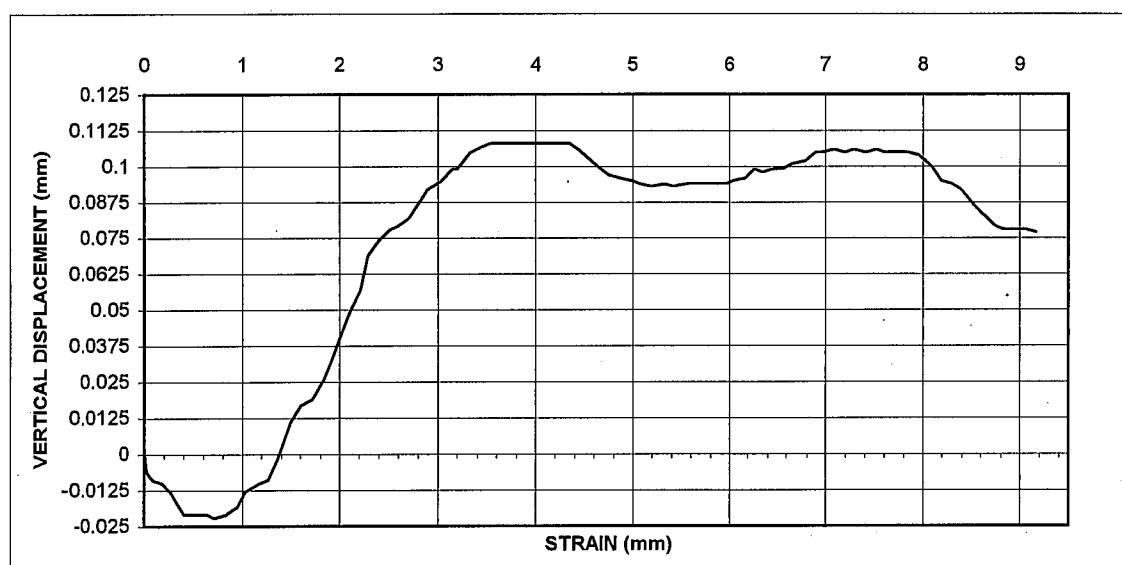
Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

**Site:** Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPE-12**Sample:** B**Depth:** 1.00 m.**Stage Number** 1**Pressure** 20 kPa

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Chester-le-Street, Co. Durham. DH2 2RG

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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No.: SLS1015

Borehole: TPE-12

Sample: B

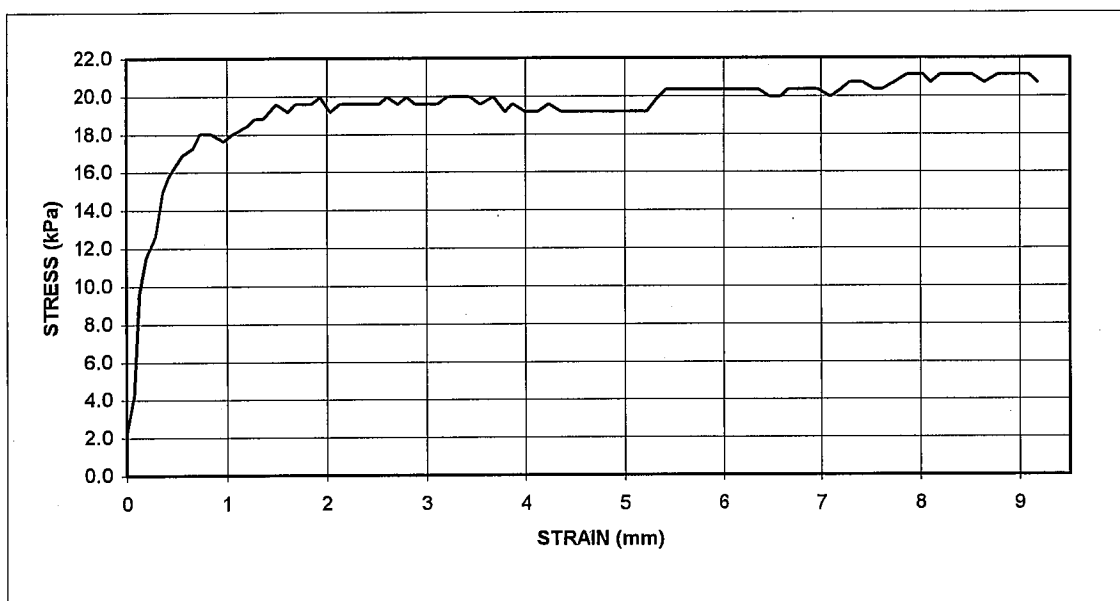
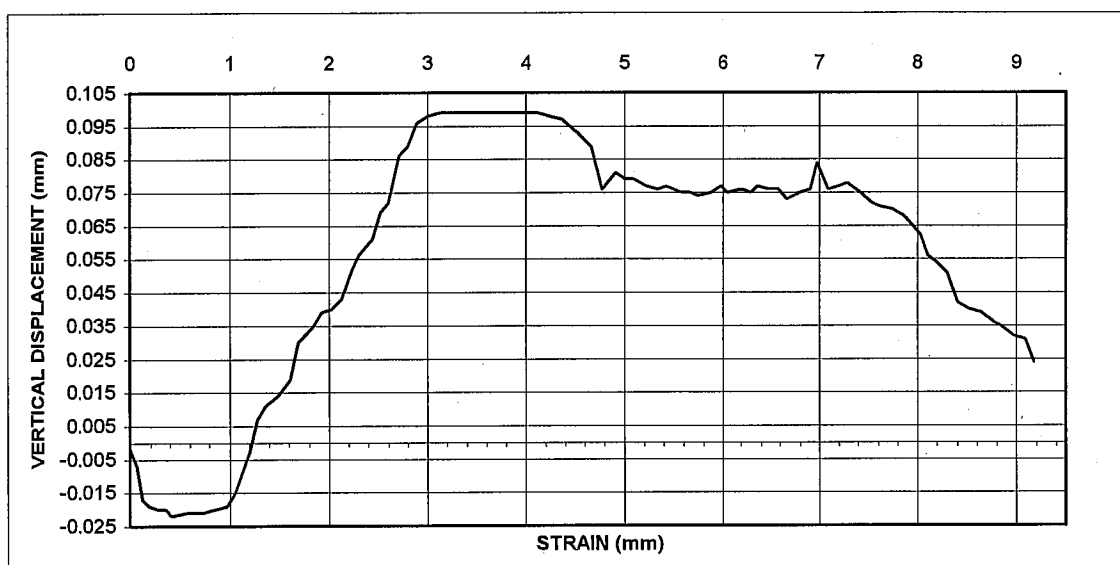
Depth: 1.00 m.

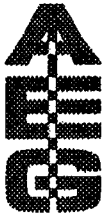
Stage Number

2

Pressure

40 kPa



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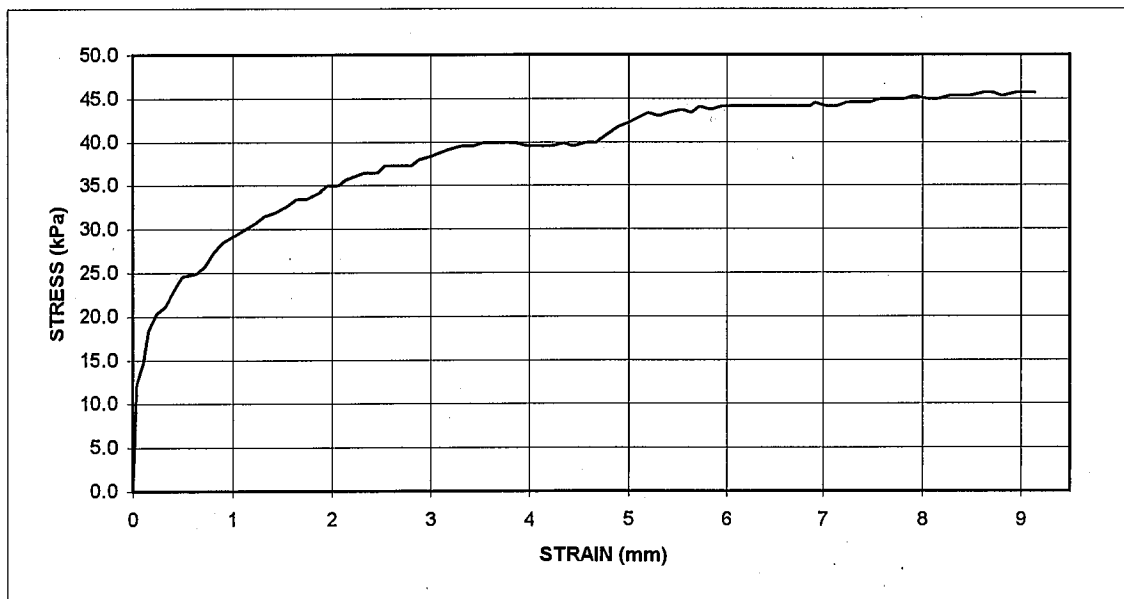
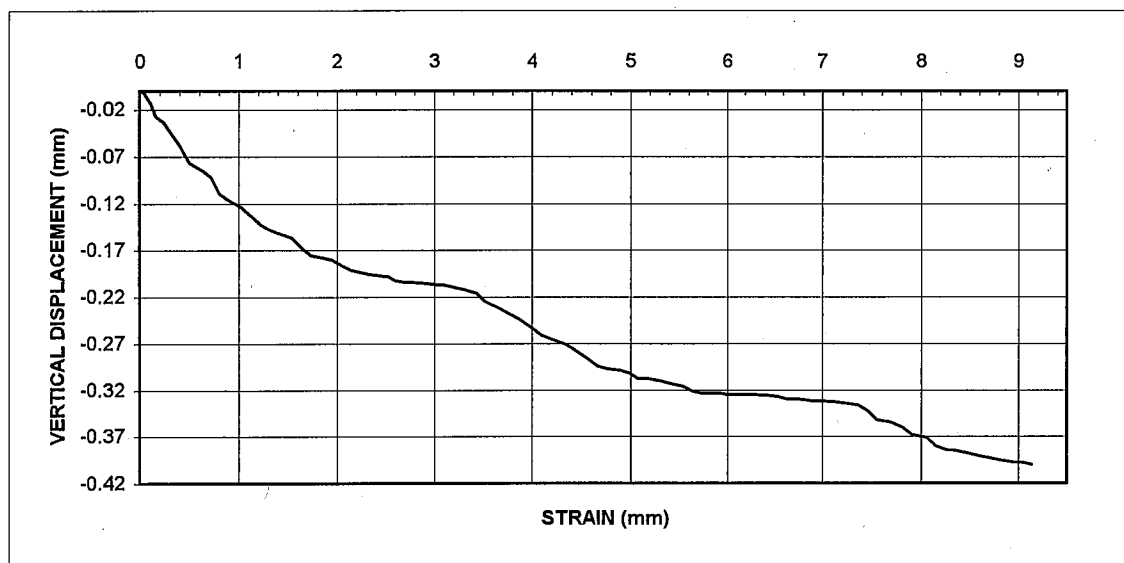
a UKAS LABORATORY Testing No. 1367

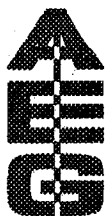
Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPE-12**Sample:** B**Depth:** 1.00 m.**Stage Number** 3**Pressure** 80 kPa



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Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPF-11

Sample: B

Depth: 2.00 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	24.6	23.6	24.7
Initial Moisture Content	%	7.4	7.4	7.4
Initial Wet density	mg/m ³	1.54	1.54	1.47
Initial Dry density	mg/m ³	1.43	1.44	1.37

CONSOLIDATION

Normal Stress	kPa	20	40	80
Height at end of Stage	mm	24.2	23.3	24.2
Duration	Day(s)	0.5	0.5	0.5

SHEARING

Rate of Strain	mm/min	0.264	0.275	0.291
Peak Shear Stress	kPa	11.9	12.7	41.2
Displacement at Peak Stress	mm	1.35	1.49	8.80
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	26.0	24.6	24.8
Final Wet Density	mg/m ³	1.84	1.81	1.74
Final Dry Density	mg/m ³	1.46	1.45	1.39

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi '	Deg	27°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 04/08/2017
DATE OF ISSUE 11/08/2017

NAME
APPROVED BY

PP Nick Vater
msone

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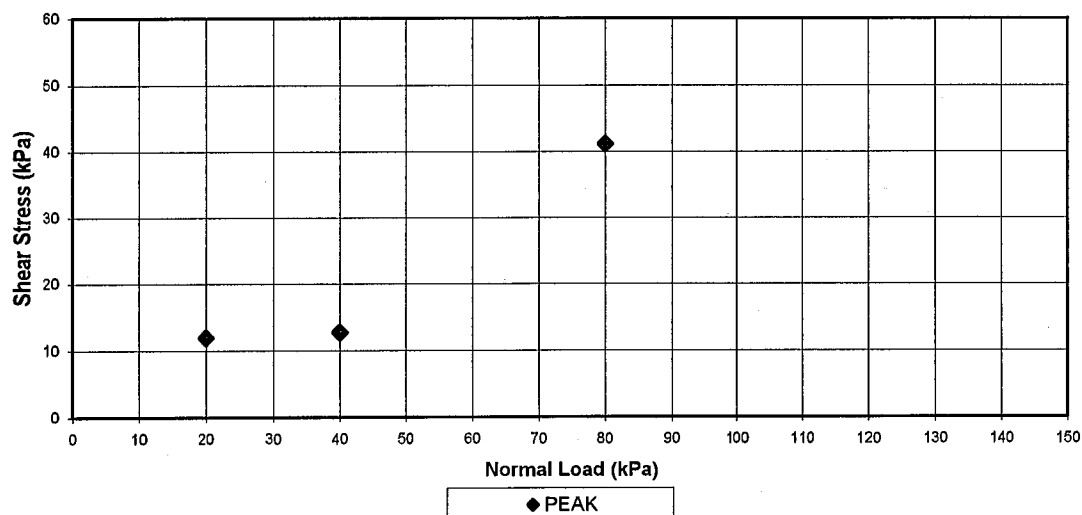
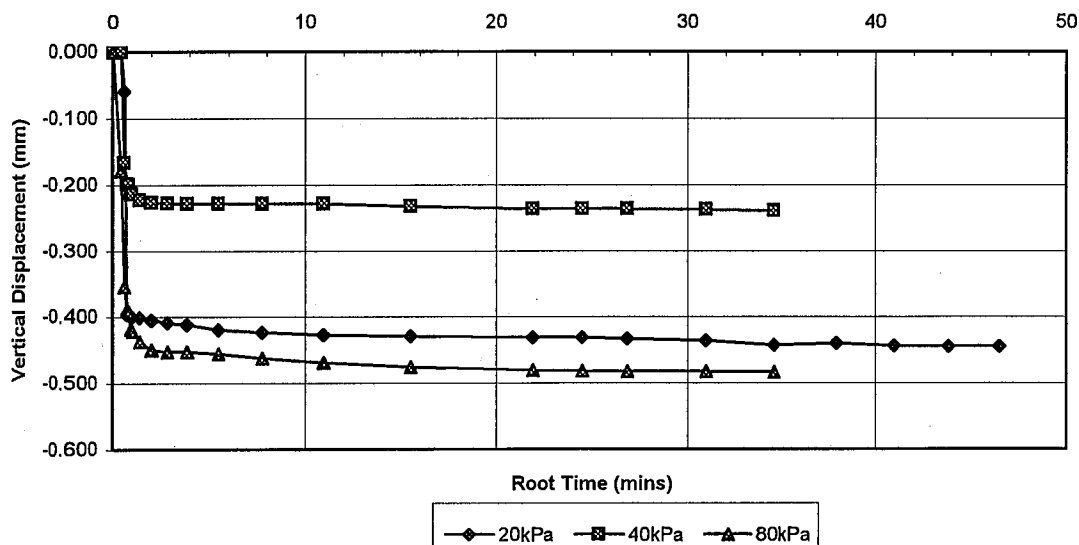
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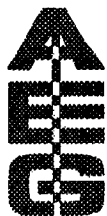
Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

**Site:** Redcar Site**Client:** CH2M**Job No.** SLS1015**Borehole:** TPF-11**Sample:** B**Depth:** 2.00 m.

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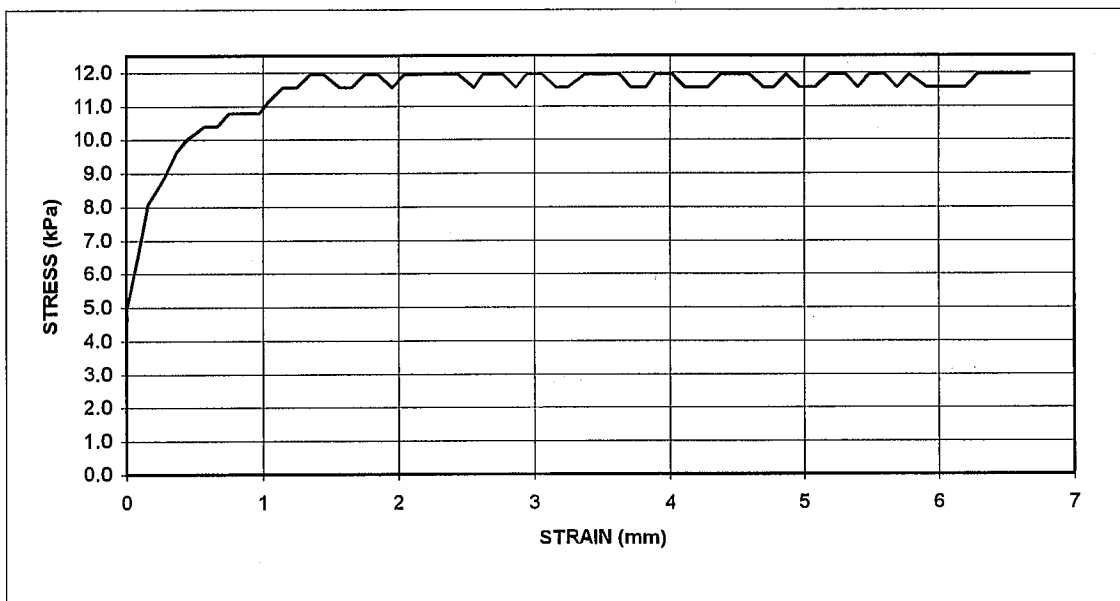
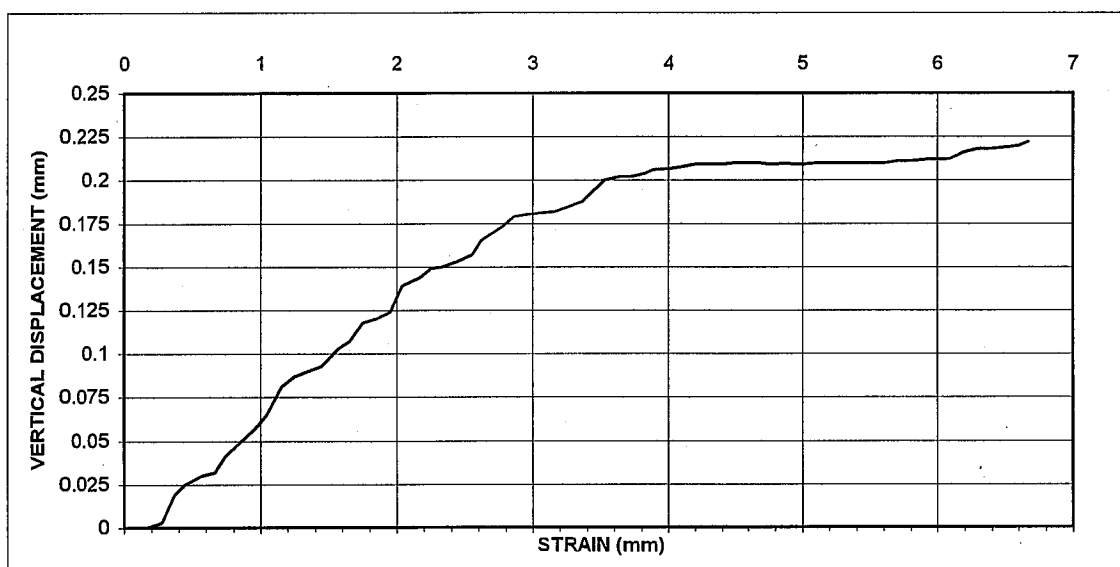
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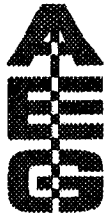
Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPF-11**Sample:** B**Depth:** 2.00 m.**Stage Number** 1**Pressure** 20 kPa

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Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

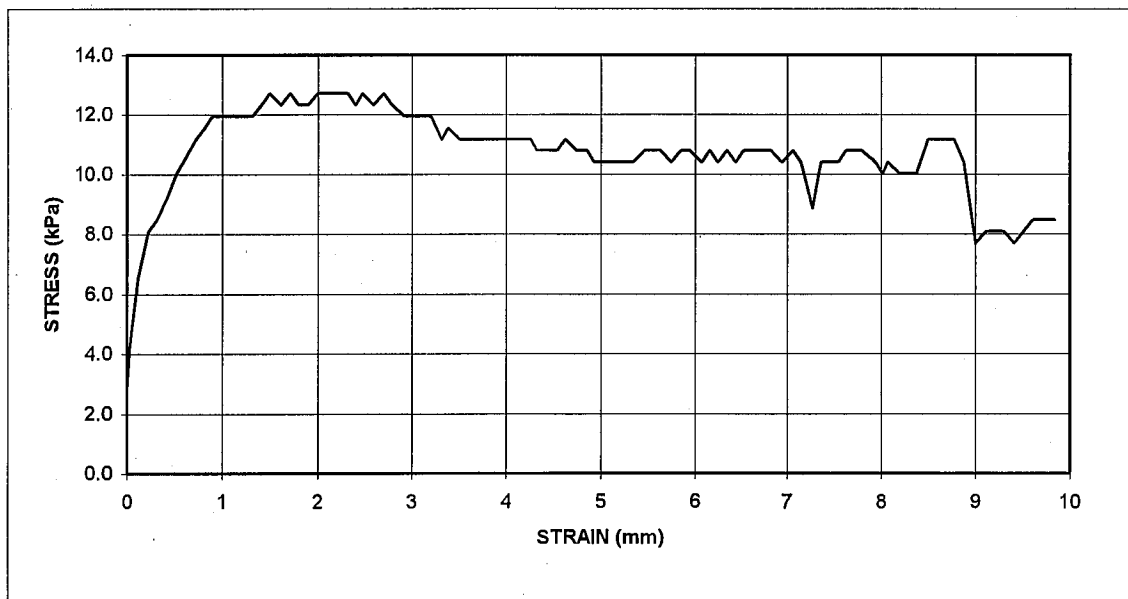
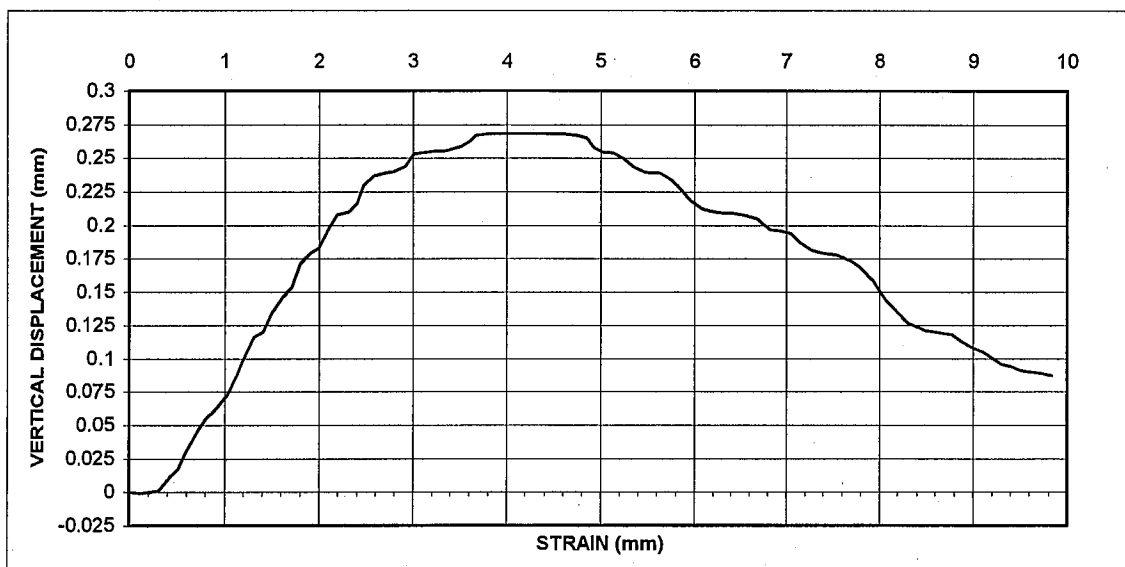
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPF-11**Sample:** B**Depth:** 2.00 m.**Stage Number** 2**Pressure** 40 kPa

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Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

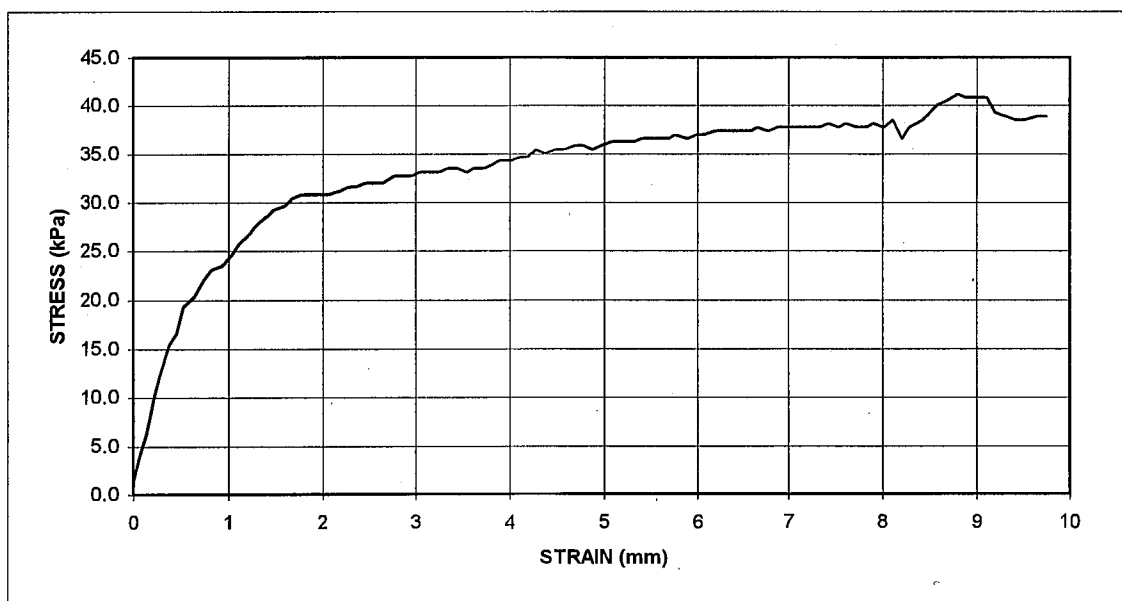
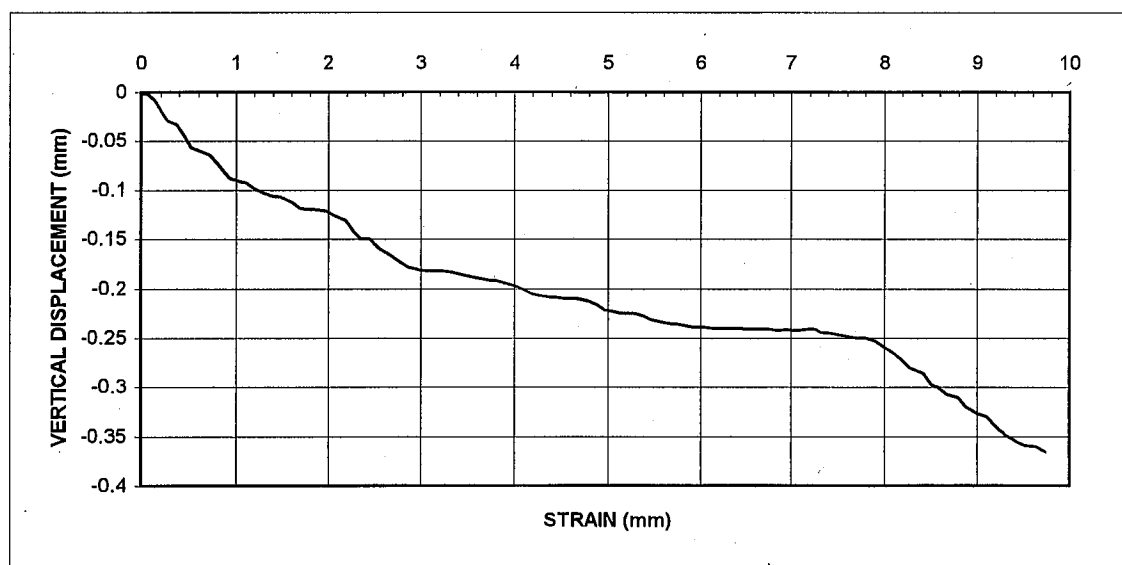
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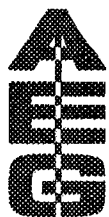
Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPF-11**Sample:** B**Depth:** 2.00 m.**Stage Number** 3**Pressure** 80 kPa



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Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No. SLS1015

Borehole: TPH-10

Sample: B

Depth: 1.70 m

For sample description please refer to sample description sheet

Stage Number		1	2	3
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	25.2	24.2	23.8
Initial Moisture Content	%	16.2	16.2	16.2
Initial Wet density	mg/m ³	1.73	1.73	1.75
Initial Dry density	mg/m ³	1.49	1.49	1.50

CONSOLIDATION

Normal Stress	kPa	20	40	80
Height at end of Stage	mm	25.0	23.8	23.3
Duration	Day(s)	0.5	0.5	0.5

SHEARING

Rate of Strain	mm/min	0.143	0.143	0.141
Peak Shear Stress	kPa	10.4	21.9	42.2
Displacement at Peak Stress	mm	4.14	4.83	5.19
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	22.6	23.3	22.2
Final Wet Density	mg/m ³	1.84	1.86	1.88
Final Dry Density	mg/m ³	1.50	1.51	1.54

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi 'r	Deg	28°

RESIDUAL PARAMETERS

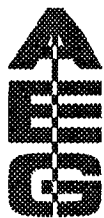
Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 01/08/2017
DATE OF ISSUE 11/08/2017

NAME
APPROVED BY

Nick Vater
[Signature]

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

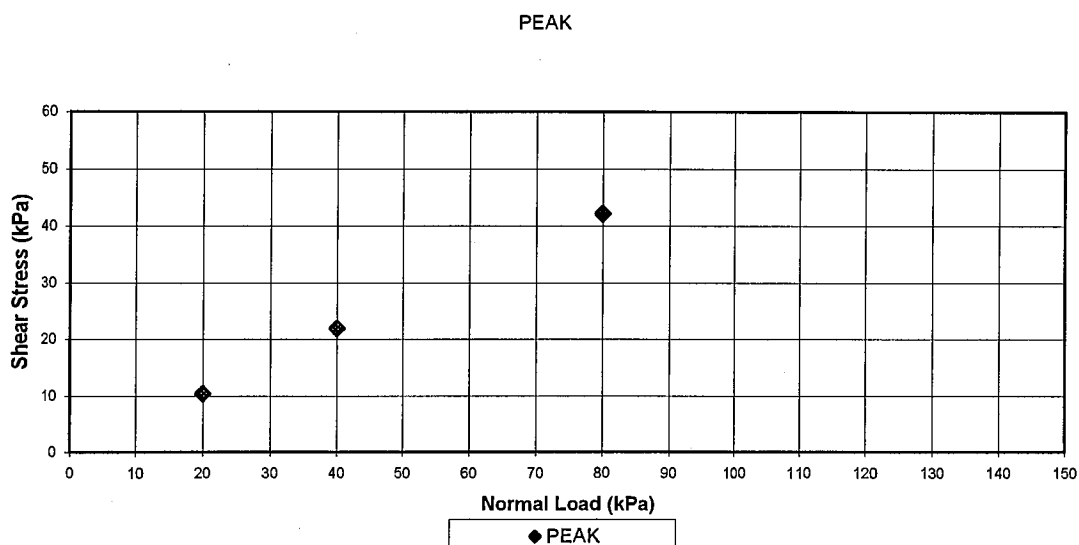
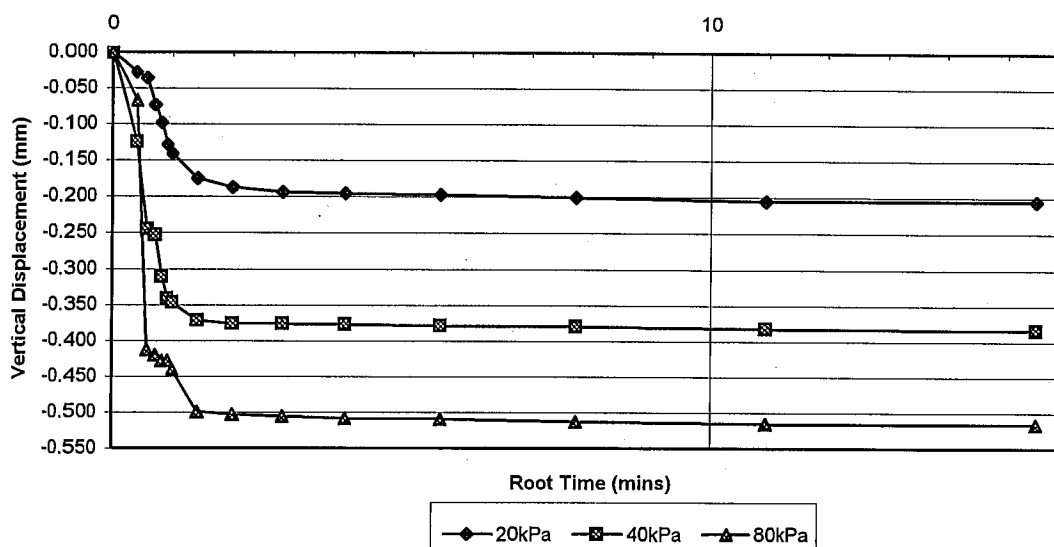
Unit 25 Stella Gill Industrial Estate, Pelton Fell

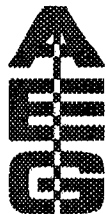
Chester-le-Street, Co. Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

**Site:** Redcar Site**Client:** CH2M**Job No.** SLS1015**Borehole:** TPH-10**Sample:** B**Depth:** 1.70 m.

**ALLIED EXPLORATION AND GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

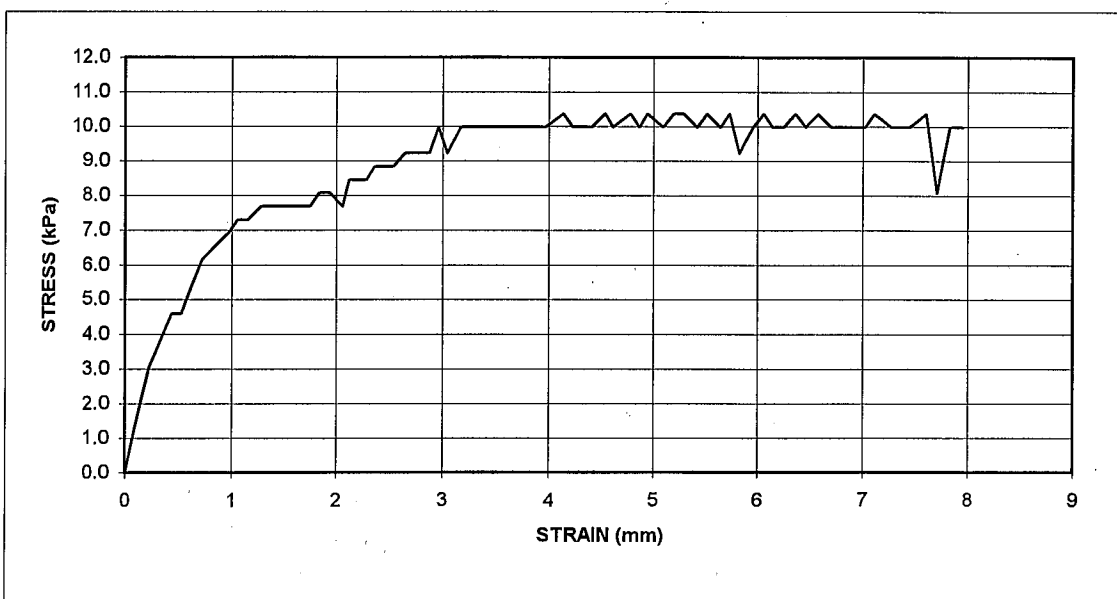
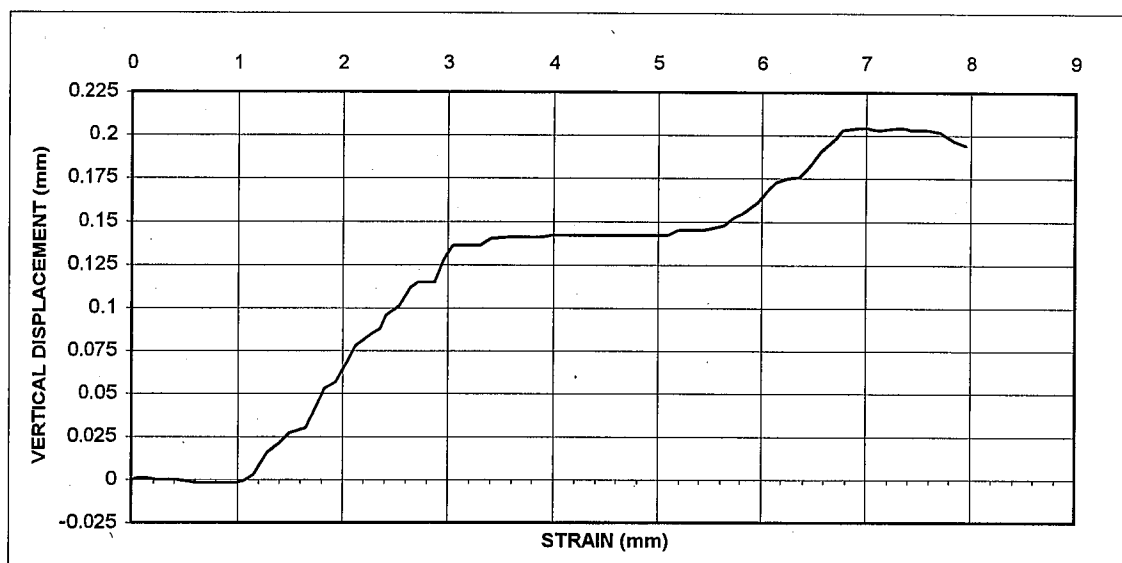
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPH-10**Sample:** B**Depth:** 1.70 m.**Stage Number** 1**Pressure** 20 kPa

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Unit 25 Stella Gill Industrial Estate, Pelton Fell
Chester-le-Street, Co.Durham. DH2 2RG
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site

Client: CH2M

Job No.: SLS1015

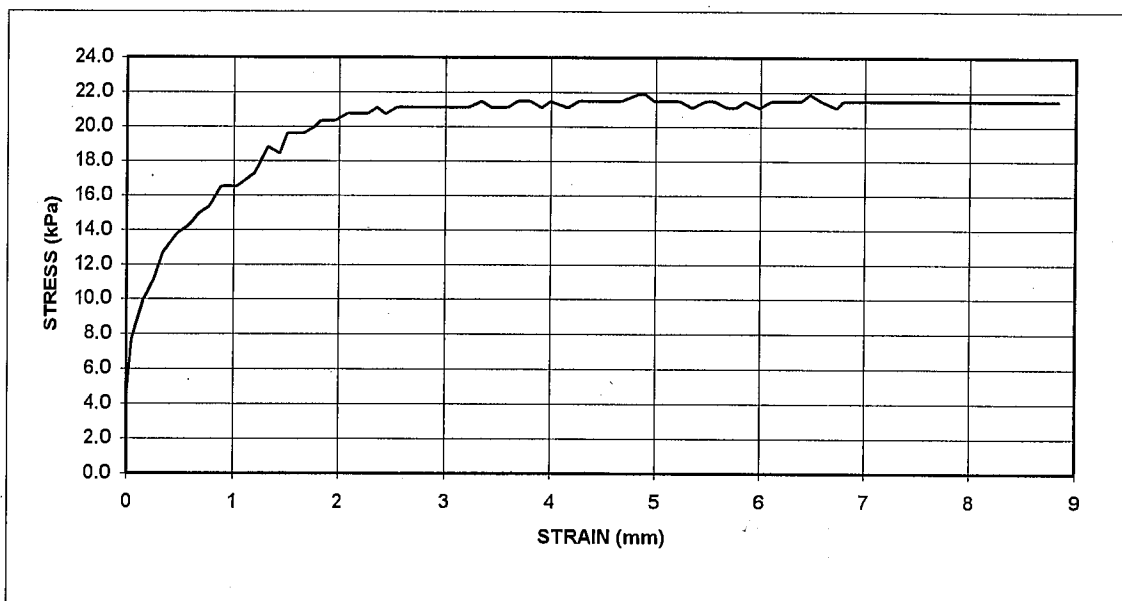
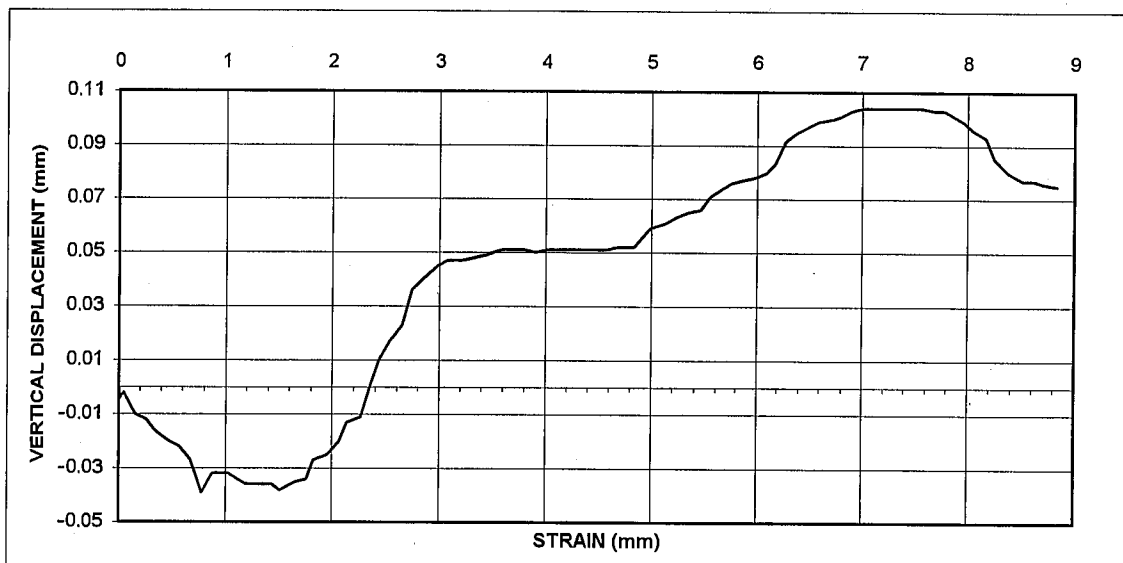
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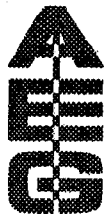
Sample: B

Depth: 1.70 m.

Stage Number 2

Pressure 40 kPa



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Chester-le-Street, Co.Durham. DH2 2RG

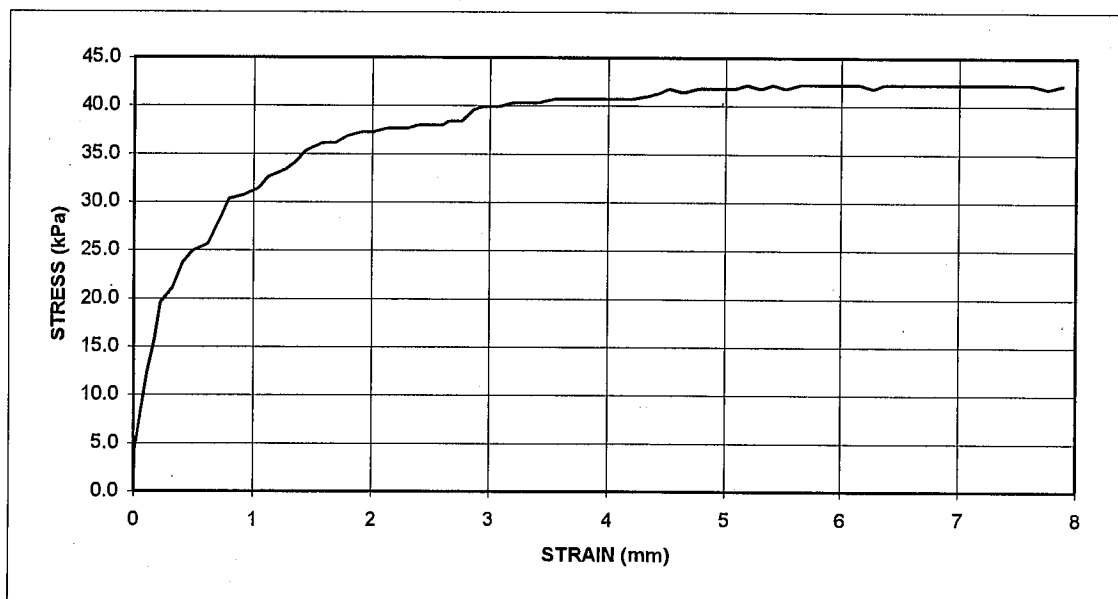
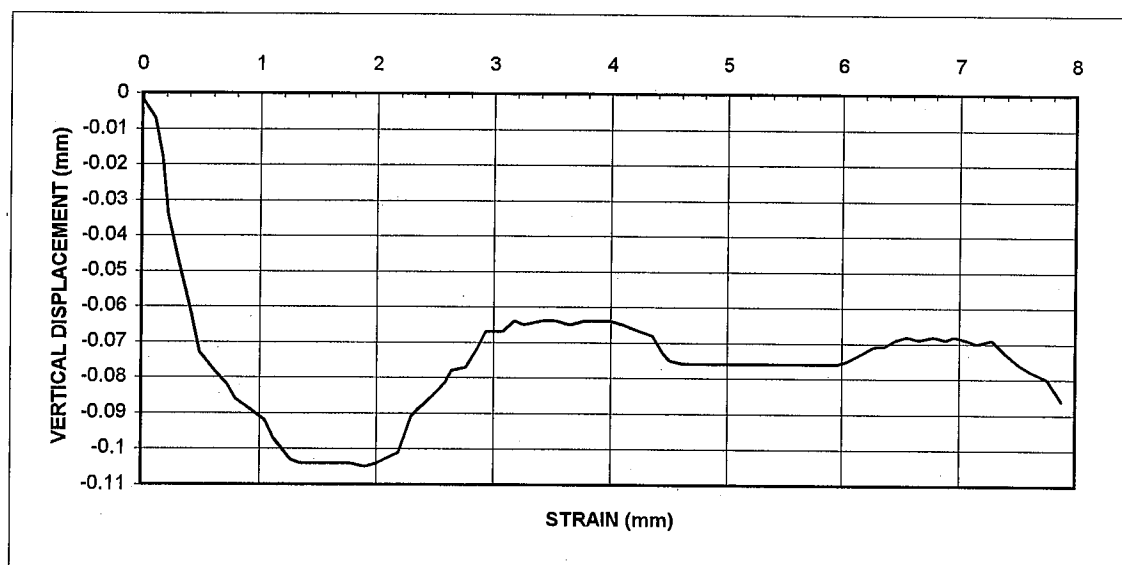
a UKAS LABORATORY Testing No. 1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4



1367

Site: Redcar Site**Client:** CH2M**Job No.:** SLS1015**Borehole:** TPH-10**Sample:** B**Depth:** 1.70 m.**Stage Number** 3**Pressure** 80 kPa



Certificate of Analysis

Certificate Number 17-05082

17-Jul-17

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 17-05082

Client Reference SLS1015

Order No LA1866

Contract Title Redcar Site

Description 9 Soil samples.

Date Received 12-Jul-17

Date Started 12-Jul-17

Date Completed 17-Jul-17

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 10725 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. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



2139



Summary of Asbestos Analysis

Soil Samples

Our Ref 17-05082

Client Ref SLS1015

Contract Title Redcar Site

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1203060	TP42 0.50	SOIL	NAD	none	A Christodoulou
1203061	TP42 1.70	SOIL	NAD	none	A Christodoulou
1203062	TP42 3.40	SOIL	NAD	none	A Christodoulou
1203063	TP22 0.70	SOIL	NAD	none	A Christodoulou
1203064	TPI03 0.40	SOIL	NAD	none	A Christodoulou
1203065	TPE05 0.50	SOIL	NAD	none	A Christodoulou
1203066	TPC19 0.80	SOIL	NAD	none	A Christodoulou
1203067	TPD41 1.40	SOIL	NAD	none	A Christodoulou
1203068	TPD25 1.70	SOIL	NAD	none	A Christodoulou

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 17-05082
 Client Ref SLS1015
 Contract Redcar Site

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1203060	TP42 0.50 SOIL	11/07/17	PG		
1203061	TP42 1.70 SOIL	11/07/17	PG		
1203062	TP42 3.40 SOIL	11/07/17	PG		
1203063	TP22 0.70 SOIL	11/07/17	PG		
1203064	TPI03 0.40 SOIL	11/07/17	PG		
1203065	TPE05 0.50 SOIL	11/07/17	PG		
1203066	TPC19 0.80 SOIL	11/07/17	PG		
1203067	TPD41 1.40 SOIL	11/07/17	PU		
1203068	TPD25 1.70 SOIL	11/07/17	PU		

Key: P-Plastic G-Bag U-Tube

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, inappropriate containers etc 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.

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