	10									Borehole N	lo.
						Bor	eho	ole L	_og	WS2	
	ROWNFIELD								•	Sheet 2 of	2
Projec	t Name:	WESTGAT	Έ		Project No. C3788		Co-ords:	-		Hole Type WS	œ.
_ocati	on:	SKELMER	SDAL	E			Level:			Sca <b>l</b> e 1:25	
C <b>l</b> ient:	,	ALD <b>I</b>					Dates:	22/03/2	2018 - 22/03/2018	Logged B JM	у
We <b>ll</b>	Water		and l	In Situ Testing	Depth	Level	Legend		Stratum Description	•	
	Strikes	Depth (m) 5.00	Туре	Results N=17 (2,3/3,4,5,5	(m)	(m)					_
											-
					5.45				End of borehole at 5.45 m		-
									End of porenoie at 5.45 m		-
											-
											6 -
											- -
											- - -
											-
											-
											7 —
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											-
											8 -
											-
											-
											-
											-
											9 -
											-
											-
											-
											10 -

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Groundwater not encountered.
  3. Install: 1.00m plain, slotted to 4.00m bgl.



	10								Borehole N	lo.
						Bo	reho	ole Log	WS3	
	ROWNFIELD						. •	3.0 <b>–</b> 09	Sheet 1 of	1
Proje	ct Name:	WESTGAT	ΓΕ		Project No. C3788		Co-ords:	-	Hole Type WS	Э
Locat	ion:	SKELMER	RSDAL	E			Level:		Sca <b>l</b> e 1:25	
Client	:	ALD <b>I</b>					Dates:	22/03/2018 - 22/03/2018	Logged B	у
Well	Water Strikes			n Situ Testing	Depth	Level	Legend	Stratum Description		
জা ক	Strikes	Depth (m)	Туре	Results	(m)	(m)		MADE GROUND: Asphalt.		
		0.20	ES		0.10			MADE GROUND: Aspiralt.  MADE GROUND: Black sandy grav fine to coarse of ash. Gravel is suba medium to coarse of brick and bitun material.  MADE GROUND: Soft brown sandy high brick cobble content.	ingular ninous	
		0.70	ES		0.70			Dark brown clayey slightly gravelly f SAND with rootlets. Gravel is suban angular fine to medium brick and sa	gular to	1 —
		1.20 1.20	D	N=6 (1,0/1,1,2,2)	1.15			Loose light brown mottled grey clay- fine to coarse SAND. Gravel is sub- subrounded fine to coarse of sandst mudstone.	ingular to	
		2.00 2.00	D	N=4 (1,1/1,1,1,1)	2.25			Loose brown clayey fine to coarse S	SAND,	2 —
		3.00	D							3 —
		3.00		N=11 (1,2/2,3,3,3	3.05			Firm brown mottled grey slightly sar CLAY. Sand is fine to coarse. Grave subangular to subrounded fine to m sandstone and mudstone.	l is	)
		3.50	D							-
		4.00 4.00	D	N=12 (1,2/2,3,3,4	)					4 —
					5.00			End of borehole at 5.00 m		5 —

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Groundwater encountered at 2.00m bgl.
  3. Install: 1.40m plain, slotted to 3.4m bgl.



	10								Borehole No.
	2					Bo	reho	ole Log	WS4
5	BROWNFIELD								Sheet 1 of 1
Projec	ct Name:	WESTGA	TE		Project No. C3788		Co-ords:	-	Hole Type WS
Locat	ocation: SKELMERSDALE					Level:		Sca <b>l</b> e 1:25	
Client	:	ALDI					Dates:	22/03/2018 - 22/03/2018	Logged By JM
Well	Water	Sample	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	
vveii	Strikes Depth (m) Type Results		(m)	(m)	Legend	Stratum Description	1		
								MADE GROUND: Asphalt.	

Jilent.		ALDI					Dates:	22/03/2016 - 22/03/2016	JM
Well	Water	Sample	s and l	n Situ Testing	Depth	Level	Legend	Stratum Description	
//01//	Strikes	Depth (m)	Туре	Results	(m)	(m)	Logoria		
		0.50	ES		0.10 0.18 0.40			MADE GROUND: Asphalt.  MADE GROUND: Grey gravel with I cobble content. Gravel is subangula fine to coarse of sandstone and lime MADE GROUND: Sandstone and m cobbles.  Black clayey slightly gravelly fine to SAND. Gravel is subrounded fine to mudstone.	r to angular estone. udstone coarse
		1.00	ES		1.05			Firm brown mottled grey slightly san	dy gravelly
		1.20 1.20	D	N=7 (1,1/1,2,2,2)				CLAY, Sand is fine to coarse. Grave subrounded fine to coarse of mudste sandstone.	l is one and
		2.00 2.00	D	N=15 (2,2/3,3,4,5)				Becoming Stiff from 2.00m bgl.	2
		3.00 3.00	D	N=11 (2,2/2,3,3,3)	3.45			Becoming Firm from 3.00m bgl.  End of borehole at 3.45 m	
									4
									5

- Hand dug pit to 1.2m bgl to check for services.
   Groundwater not encountered.
   Hole backfilled with arisings upon completion.



	10								Borehole N	lo.
i						Boı	reho	ole Log	WS5	
	ROWNFIELD								Sheet 1 of	
Projed	ct Name:	WESTGAT	ГΕ		Project No. C3788		Co-ords	; <del>-</del>	Hole Type WS	€
Locat	ion:	SKELMER	SDAL		00700		Level:		Scale	
									1:25 Logged By	v
Client	:	ALDI					Dates:	22/03/2018 - 22/03/2018	JM	,
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description		
	Ourkes	Depth (m)	Туре	Results		(111)		MADE GROUND: Asphalt.		
					0.10			MADE GROUND: Brown gravel with cobble content. Gravel is subangula coarse of limestone.  MADE GROUND: Mudstone cobble	r fine to	-
		0.50	ES		0.45			Brown mottled grey clayey slightly g SAND. Sand is fine to coarse. Grave subangular to subrounded fine to co sandstone and mudstone.	el is	
		1.20 1.20	D	N=21 (3,4/5,5,5,6	0.95			Medium dense brown clayey gravell Sand is fine to coarse. Gravel is sub to coarse of sandstone and mudstor	angular fine	1
		2.00 2.00	D	N=8 (2,2/2,2,2,2)				Becoming loose from 2.00m bgl.		2 —
		3.00 3.00	D	N=10 (1,2/2,2,3,3	2.60			Firm grey/brown very sandy CLAY.		3 -
					3.45			End of borehole at 3.45 m		4 —
										5 -

- Hand dug pit to 1.2m bgl to check for services.
   Groundwater not encountered.
   Install: 1.00m plain, slotted to 3.00m bgl.



8	ROWNFIELD DLUTIONS LTD					Во	reho	ole Log	Borehole N WS6 Sheet 1 of	
Projec	t Name:	WESTGA	TE		Project No. C3788		Co-ords:	-	Hole Type WS	Э
Locati	on:	SKELMER	RSDAL				Level:		Scale 1:25	
Client	:	ALDI					Dates:	22/03/2018 - 22/03/2018	Logged B	у
Well	Water	Sample	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	'	
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend			
					0.10			MADE GROUND: Asphalt.  MADE GROUND: Brick cobbles.		 - - -
		0.50	ES		0.35 0.45			MADE GROUND: Sandy gravel of angular fine to coarse of limestone. to coarse.	Sand is fine	
								Firm brown very sandy gravelly CL/ fine to coarse.	AY. Sand is	1 —
		1.20 1.20	D	N=4 (2,1/1,1,1,1)	1.20			No recovery. Probably loose SAND	•	-
		2.00		N=9 (3,3/3,2,2,2)	2.45			End of borehole at 2.45 m		2 —
										3
										4 —

- Hand dug pit to 1.2m bgl to check for services.
   Groundwater not encountered.
   Hole backfilled with arisings upon completion.



			Rοι	reho	ole Log	Borehole No.
BROWNFIELD SOLUTIONS LTD				Onc	no Log	Sheet 1 of 1
Project Name:	WESTGATE	Project No. C3788		Co-ords:	-	Hole Type WS
Location:	SKELMERSDALE			Level:		Sca <b>l</b> e 1:25
Client:	ALDI			Dates:	22/03/2018 - 22/03/2018	Logged By JM
Water	Samples and In Situ Testing	Depth	Level			

Client:		ALD <b>I</b>					Dates:	22/03/2018 - 22/03/2018	Logged By JM
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	·
VVCII	Strikes	Depth (m)	Туре	Results	(m)	(m)	Logona	·	
		0.20	ES		0.10 0.32 0.50			MADE GROUND: Asphalt.  MADE GROUND: Grey/brown sand low limestone cobble content. Rare Sand is fine to coarse. Gravel is sut angular fine to coarse of limestone. MADE GROUND: Red gravel with h cobble content. Gravel is subangular	ash and tar. pangular to
		0.70	ES		0.70			medium to coarse of brick.  MADE GROUND: Black clayey grave coarse sand with medium mudstone content. Gravel is subangular to subto coarse of mudstone and sandstone.	e cobble prounded fine ne.
		1.20 1.20	D	N=18 (2,3/4,4,5,5)	1.30			Medium dense grey/brown gravelly coarse SAND. Gravel is subangular subrounded fine to coarse of mudst Medium dense slightly clayey fine to SAND.	one.
		2.00 2.00	D	N=8 (2,3/3,2,2,1)				SAND.  Loose from 2.00m bgl.	2 -
		3.00 3.00	D	N=9 (1,1/2,2,2,3)	2.60			Firm brown sandy CLAY. Sand is fin	3 -
					3.45			End of borehole at 3.45 m	4 -
Remar									5 -

- Hand dug pit to 1.2m bgl to check for services.
   Groundwater not encountered.
   Hole backfilled with arisings upon completion.



	10								Borehole No.
						Boi	reho	ole Log	RO01
8	ROWNFIELD							9	Sheet 1 of 2
Projec	t Name:	WESTGA	TE		Project No. C3788		Co-ords:	346922.00 - 405815.00	Hole Type RO
Locati	ion.	SKELMEF	DOD AL		C3766		Level:	65.90	Scale
Locali	OH.	SKELIVIER	NODAL				Level.	05.90	1:75
Client	:	ALDI					Dates:	20/03/2018 - 20/03/2018	Logged By JM
Well	Water Strikes			n Situ Testing	Depth	Level	Legend	Stratum Description	
্ত ১৯১১	Strikes	Depth (m)	Туре	Results	(m)	(m)	**********	MADE CROUND: Apphalt	
					0.10	65.80		MADE GROUND: Asphalt. Light brown CLAY.	
									1 =
									]
									2 =
									4
							EE		3 -
									=
									4 =
									4
									=
									5 =
									6 =
									=
									7 =
									3
									8 =
									=
									9 =
					9.20	56.70		Grey MUDSTONE.	<sup>9</sup>
								, <u>.</u> .	=
									10 =
									11 =
									]
									=
									12 =
									=
									13
									=
									14
									'" =
									=
								Continued on next sheet	15 =
Rema	rks		1			<u> </u>		Continued on next sheet	

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	ROWNFIELD SLUTIONS LTD	1				Bo	reho	ole Log	RO01 Sheet 2 of	
Projec	t Name:	WESTGA	ΓΕ		Project No. C3788		Co-ords:	346922.00 - 405815.00	Hole Type RO	е
Locati	on:	SKELMEF	RSDAL	E			Level:	65.90	Scale 1:75	
C <b>l</b> ient:		ALDI					Dates:	20/03/2018 - 20/03/2018	Logged B JM	y
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description	•	
	Strikes	Depth (m)	Туре	Results	(m)	(m)		·		
										16
					17.60	48.30		Grey MUDSTONE with sandstone	bands.	17 <u> </u> 
								·		18 -
										19 -
										20 =
										21 =
										22 -
										23 -
										24
					24.70 25.40	41.20 40.50		COAL.  Grey MUDSTONE.		25
					26.20	39.70		COAL.		26 –
										27 –
										28
					28.70	37.20		Grey MUDSTONE.		29 –
Rema	rks				30.00	35.90		End of borehole at 30.00 n	n	30 -

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole N	۱o.
1						Bo	reho	ole Log	RO02	<u> </u>
8	ROWNFIELD								Sheet 1 of	
Projec	t Name:	WESTGA	ΓΕ		Project No. C3788		Co-ords:	346894.00 - 405859.00	Hole Type RO	е
Locati	on:	SKELMER	RSDALI	E			Level:	66.90	Sca <b>l</b> e 1:75	
C <b>l</b> ient:	:	ALDI					Dates:	20/03/2018 - 20/03/2018	Logged B JM	у
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description	•	
- 17 S & S	Strikes	Depth (m)	Туре	Results	(m)	(m)		·		
					8.30	66.80 58.60		MADE GROUND: Asphalt. Light brown CLAY.  Grey MUDSTONE.		1 2 3 4 5 6 7 8 9 10 11 12 13 13 13 14 15 16 7 10 11 12 13 13 15 16 17 18 17 18 18 19 10 11 12 13 13 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
Rema	rks				14.30	52.60		Grey MUDSTONE with sandstone I	bands.	14 -

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



(	ROWNFIELD					Bo	reho	ole Log	Borehole N	2
sc	t Name:	WESTGAT	ГЕ		Project No. C3788		Co-ords:	346894.00 - 405859.00	Sheet 2 of Hole Typ RO	
Location	on:	SKELMER	RSDAL	 E	100.00		Level:	66.90	Scale 1:75	
Client:		ALDI					Dates:	20/03/2018 - 20/03/2018	Logged B JM	у
Well	Water Strikes	Samples Depth (m)	Type	n Situ Testing Results	Depth (m)	Leve <b>l</b> (m)	Legend	Stratum Description	ı	
			71							
										16
										17 =
										18
										19 -
										20
										21 -
					22.00	44.90		COAL.		22 -
					23.00	43.90		Grey MUDSTONE.		23 -
					24.00 24.50	42.90 42.40		COAL.		24 -
						.2		Grey MUDSTONE.		25
					26.00 26.40	40.90 40.50		COAL.  Grey MUDSTONE.		26 -
								S.Oy MODOTONE.		27
										28
										29
Remai	·ks				30.00	36.90		End of borehole at 30.00 m		30

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole N	lo.
·						Boı	reho	ole Log	RO03	,
8 R 5 O	OWNFIELD							O	Sheet 1 of	
Project	Name:	WESTGA	TE		Project No. C3788		Co-ords:	346932.00 <b>-</b> 405850.00	Hole Type RO	Э
Locatio	n:	SKELMEF	RSDAL	 E			Level:	66.60	Scale 1:75	
Client:		ALDI					Dates:	20/03/2018 - 20/03/2018	Logged B	у
	101.1		s and I	n Situ Testing			Date.	20,00,2010 20,00,2010	JM	
Well	Water Strikes	Depth (m)	Туре	Results	Depth (m)	Level (m)	Legend	Stratum Description	1	
					0.10	66.50		MADE GROUND: Asphalt. Light brown CLAY.	/	
										=
										1 =
										=
										2 =
										-
										=
										3 =
										=
										4 =
										=
										5 =
										=
										[ ]
							<u> </u>			6
										=
										7 =
										=
										8 -
										=
							E			9 -
					9.50	57.10		Croy MUDCTONE		]
								Grey MUDSTONE.		10
										10 =
										11 -
										=
										10
										12
										=
										13
										=
										14 =
										=
								Continued on next sheet		15 -
Remar	ks					1		Continued on Heat Sheet		

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole N	No.
1						Bo	reho	ole Log	RO03	3
	ROWNFIELD								Sheet 2 of	
Projec	t Name:	: WESTGA	ΓΕ		Project No. C3788		Co-ords:	346932.00 - 405850.00	Hole Typ RO	е
Locati	on:	SKELMER	RSDALE	=			Level:	66.60	Sca <b>l</b> e 1:75	
C <b>l</b> ient:		ALDI					Dates:	20/03/2018 - 20/03/2018	Logged B JM	Ву
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description		
V//XV//	Strikes	Depth (m)	Туре	Results	(m)	(m)		· 		
					15.50	51.10		O. MUDOTONE . 'the conductors to		]
								Grey MUDSTONE with sandstone b	ands.	16
										16
										17 =
										1 =
										18 -
										1 3
										10
										19 =
										20 =
										21 =
										1 =
										22
										22
					23.00	43,60		COAL.		23 =
										=
					24.00	42.60		Grey MUDSTONE.		24
								orey Modorone.		=
					25.00	41.60				25
					25.00	41.00		COAL.		25 <u> </u>
					25.80	40.80				] ]
						10100		Grey MUDSTONE.		26
										=
					27.00	39.60		COAL.		27
					27.40	39.20		Grey MUDSTONE.		1 1
								,		
										28
										29
					30.00	36.60		End of borehole at 30.00 m		30
Rema	rks							End of boreflote at 30.00 fff	<b>—</b>	

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



00	10								Borehole No.
						Boi	reho	ole Log	RO04
8 5	ROWNFIELD							J	Sheet 1 of 2
Projec	ct Name:	WESTGA	TE		Project No. C3788		Co-ords:	346973.00 - 405837.00	Hole Type RO
Locati	on:	SKELMEF	RSDAL	 E	100.00		Level:	65.60	Scale
									1:75
Client	:	ALDI					Dates:	20/03/2018 - 20/03/2018	Logged By JM
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description	ı
19 N.S.Y.	Cuntoo	Depth (m)	Туре	Results			**********	MADE GROUND: Asphalt	
					0.10	65.50		MADE GROUND: Asphalt. Light brown CLAY.	
									1 = 1
									]
									2 =
									- ]
							EE		3 -
									4 =
									=
									5 =
									]
									6 -
									]
									7 =
									]
									8 =
									4
					8.70	56.90		Grey MUDSTONE.	
									9 -
									10 =
									10 -
									=
									11 =
									]
									12 =
									]
									13 🚽
									]
									1
									14 =
									4
Dari	rko							Continued on next sheet	15
Rema	IKS								<del></del>

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	1					Ro	raha	ole Log	Borehole N	
	ROWNFIELD					וטטו	Cit	ole Log	Sheet 2 of	
	t Name:	WESTGAT	ΓΕ		Project No.		Co-ords:	346973.00 - 405837.00	Hole Typ RO	
Locati	on:	SKELMER	RSDAL	E			Level:	65.60	Sca <b>l</b> e 1:75	
C <b>l</b> ient:		ALDI					Dates:	20/03/2018 - 20/03/2018	Logged E JM	Ву
Well	Water Strikes	Samples Depth (m)	Type	n Situ Testing Results	Depth (m)	Leve <b>l</b> (m)	Legend	Stratum Description	1	
		Deput (III)	Турс	results	, ,					
					15.70	49.90		Grey MUDSTONE with sandstone b	oands.	16
										17
										18 -
										19 -
										20 =
										21 -
										22 -
										23 -
					24.30	41.30		COAL.		25 —
					25.20	40.40		Grey MUDSTONE.		26
					26.50	39.10		COAL.		
					27.00	38.60		Grey MUDSTONE.		27
					27.70	37.90		COAL.		28
					28.20	37.40		Grey MUDSTONE.		29
						05.00				
Rema		:	1 1.	ck for services	30.00	35.60		End of borehole at 30.00 m		30 —

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



00	10								Borehole No.
Í						Boı	reho	ole Log	RO05
	ROWNFIELD							J	Sheet 1 of 2
Projec	t Name:	WESTGA <sup>-</sup>	TE		Project No. C3788		Co-ords:	346971.00 - 405859.00	Hole Type RO
Locati	on:	SKELMEF	RSDAL	 E	100.00		Level:	66.50	Scale
Client		ALDI					Dates:	20/03/2018 - 21/03/2018	1:75 Logged By
Olicin			I	n Situ Testing			Dates.	20/00/2010 21/00/2010	JM
Well	Water Strikes		Type	Results	Depth (m)	Level (m)	Legend	Stratum Description	ı
			31.		0.10	66.40		MADE GROUND: Asphalt. Light brown CLAY.	
								Light brown CLAT.	=
									1 - 1
									1
									2 =
									]
									3 =
									4 =
									]
									]
							<u> </u>		5 -
									=
									6 =
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									]
									7 -
									1
					7.70	58.80		Grey MUDSTONE.	8 =
									l° $\frac{1}{2}$
									]
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									10 =
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									12 =
									=
									13
									=
									14 =
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D • ·	rko							Continued on next sheet	15
Rema	IKS								

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole N	۱o.
Í						Bo	reho	ole Log	RO05	;
8.	ROWNFIELD							<u> </u>	Sheet 2 of	
Projec	t Name:	: WESTGA	ГЕ		Project No. C3788		Co-ords:	346971.00 - 405859.00	Hole Type RO	е
Locati	on:	SKELMER	RSDALE				Level:	66.50	Sca <b>l</b> e 1:75	
Client:		ALDI					Dates:	20/03/2018 - 21/03/2018	Logged B JM	у
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description		
X//XX///	Strikes	Depth (m)	Туре	Results	(m)	(m)		·		
					15.30	51.20		Grey MUDSTONE with sandstone b	oands.	1 ]
										16
										17 =
										18 =
										-
										19
										20 =
										21 =
										22
										=
					23.10	43.40		COAL.		23 -
					24.10	42.40		Grey MUDSTONE.		24
								Grey MODOTONE.		
					24.80	41.70		COAL.		25
					25.30	41.20		Grey MUDSTONE.		
										26
					26.50	40.00				
					26.80	39.70		COAL. Grey MUDSTONE.		-
								0.0y020 . C.\ <u>2.</u>		27 -
										28
										29 =
										=
					30.00	36.50		End of borehole at 30.00 m		30 =
Rema		St to 4 Out to 1	to all	ck for services				End of solutions at 50.00 III		

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



65	10								Borehole No.
						Boi	reho	ole Log	RO06
8	ROWNFIELD							J	Sheet 1 of 2
Projec	t Name:	WESTGA	ΤΕ		Project No. C3788		Co-ords:	346944.00 - 405872.00	Hole Type RO
Locati	on:	SKELMEF	RSDALI	 E	100700		Level:	68.20	Scale
Client		ALDI					Dates:	21/03/2018 - 21/03/2018	1:75 Logged By
Client			1	- Cit. Tti			Dates:	21/03/2016 - 21/03/2016	JM
Well	Water Strikes	Depth (m)	Type	n Situ Testing Results	Depth (m)	Level (m)	Legend	Stratum Description	ı
					0.10	68.10		MADE GROUND: Asphalt. Light brown CLAY.	
								Light brothin o'Li til	=
									1 =
									]
									2 =
									4
									3 -
									E, l
									4 -
									=
									5 =
									6 =
									]
									7 =
									]
									8 =
					8.50	59.70		Grey MUDSTONE.	
								Grey MODSTONE.	
									9 —
									4
									10
									=
									11 =
									]
									]
									12
									]
									13 📑
									]
									]
									14 —
Dore	rko							Continued on next sheet	15 —
Rema	142								

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole N	No.
Í						Bo	reho	ole Log	RO06	6
	ROWNFIELD								Sheet 2 of	
Projec	t Name:	WESTGAT	ΓΕ		Project No. C3788		Co-ords:	346944.00 - 405872.00	Hole Type RO	е
Locati	on:	SKELMER	RSDAL	E			Level:	68.20	Sca <b>l</b> e 1:75	
Client:		ALDI					Dates:	21/03/2018 - 21/03/2018	Logged B	Ву
Well	Water	Samples	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
VVEII	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
										40
					16.20	52.00		Grey MUDSTONE with sandstone b	oands.	16
										-
										17
										18
										=
										19
										20 =
										=
										21
										=
										22
					22.50	45.70				=
					22.50	45.70		COAL.		] ]
										23
					23.50	44.70		Grey MUDSTONE.		=
										24
					0.4.70	40.50				=
					24.70	43.50		COAL.		25
					25.40	42.80		Grey MUDSTONE.		]
								Grey MODSTONE.		
										26
					27.00	41.20		COAL.		27
					27.30	40.90		Grey MUDSTONE.		1 =
										28
										29
					30.00	38.20		End of borehole at 30.00 m		30 -
Rema		it to 1.2m bal	to che	ck for services						

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole No.
						Boi	reho	ole Log	RO07
8 5	ROWNFIELD							9	Sheet 1 of 2
Projec	t Name:	WESTGAT	ΓΕ		Project No. C3788		Co-ords:	346945.00 - 405894.00	Hole Type RO
Locati	on:	SKELMER	RSDALI	 E	03700		Level:	68.60	Scale
									1:75 Logged By
Client	: 	ALDI					Dates:	21/03/2018 - 21/03/2018	JM
Well	Water Strikes	Samples Depth (m)	Type	n Situ Testing Results	Depth (m)	Leve <b>l</b> (m)	Legend	Stratum Description	
			71		0.10	68.50		MADE GROUND: Asphalt. Light brown CLAY.	
								Light brown GLAT.	=
									1 =
									]
									2 =
									]
									3 =
									]
									3
									4 =
									=
									5 —
									-
									6 -
									=
									7 -
									=
									8 -
					8.70	59.90			
					01.0	00,00		Grey MUDSTONE.	9 =
									10 =
									11 =
									]
									12 -
									]
									]
									13
									4
									,,
									14 —
					14.50	54.10		Grey MUDSTONE with sandstone b	pands.
									15
Rema	rks							Continued on next sheet	10 -

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole I	No.
1						Bo	reho	ole Log	RO07	7
	ROWNFIELD								Sheet 2 o	
Projec	t Name	: WESTGAT	ΓΕ		Project No. C3788		Co-ords:	346945.00 - 405894.00	Hole Typ RO	е
Locati	on:	SKELMER	RSDAL	E			Level:	68.60	Sca <b>l</b> e 1:75	
Client		ALDI					Dates:	21/03/2018 - 21/03/2018	Logged E JM	Зу
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description	•	
X//XX///	Strikes	Depth (m)	Туре	Results	(m)	(m)		·		
										=
										16
										=
										17 =
										]
										18 -
										]
										19
										20 =
										1 =
										21
					21.60	47.00		COAL.		1 =
										22
					00.00	40.00				]
					22.60	46.00		Grey MUDSTONE.		]_
										23
					23.50	45.10		COAL.		1 =
					24.10	44.50				24
					24.10	44.50		Grey MUDSTONE.		]
										25
										=
										26
					26.20	42.40		COAL.		
					26.60	42.00		Grey MUDSTONE.		1 3
										27
										1 =
										28
										20
										=
										29 =
										=
					20.00	20.00				
Domo	rke				30.00	38.60		End of borehole at 30.00 m	1	30 —
Rema		it to 1.2m hal	to cho	ck for services						<b>n</b>

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



00	10								Borehole No.
						Boi	reho	ole Log	RO08
8 5	ROWNFIELD							9	Sheet 1 of 3
Projec	ct Name:	WESTGA <sup>-</sup>	TE		Project No.		Co-ords:	346928.00 - 405896.00	Hole Type
					C3788				RO Sca <b>l</b> e
Locati	on:	SKELMEF	RSDAL	E			Level:	68.80	1:75
Client	:	ALDI					Dates:	21/03/2018 - 21/03/2018	Logged By JM
Well	Water			n Situ Testing	Depth	Level	Legend	Stratum Description	
	Strikes	Depth (m)	Туре	Results	(m)	(m)	**********	·	
					0.10	68.70		MADE GROUND: Asphalt. Light brown CLAY.	
									1 =
									]
									2 =
									4
									3 =
									4 =
									" =
									1
									5 =
									1
									6 =
									7 =
									]
									8 =
					8.50	60.30		Grey MUDSTONE.	
								ere, meserenzi	e e
									" =
									10 =
									=
									11 =
									12 =
									4
									13
									=
					13.80	55.00		Grey MUDSTONE with sandstone b	pands.
									'*
									=
								Openhanced and activity to	15 =
Rema	rks					l		Continued on next sheet	

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	ROWNFIELD DUTIONS LTD					Bo	reho	ole Log	RO08	3
Projec	t Name:	WESTGAT	ΓΕ		Project No. C3788		Co-ords:	346928.00 - 405896.00	Hole Typ RO	
Locati	on:	SKELMER	RSDAL	E	1		Level:	68.80	Scale 1:75	
Client		ALDI					Dates:	21/03/2018 - 21/03/2018	Logged E JM	Зу
Well	Water Strikes	Samples Depth (m)	Type	n Situ Testing Results	Depth (m)	Leve <b>l</b> (m)	Legend	Stratum Description	1	
		Deptil (III)	Туре	results	21.50 22.50 23.40 24.00 25.50 25.90	47.30 46.30 45.40 44.80		COAL.  Grey MUDSTONE.  COAL.  Grey MUDSTONE.	bands.	16   17   18   19   19   20   21   22   23   25   26   27   28   28   28   28   28   28   28
Rema				ck for services				Continued on next sheet		29 -

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.



	10								Borehole No.
						Boi	reho	ole Log	RO08
8	ROWNFIELD							O	Sheet 3 of 3
Projec	t Name:	WESTGAT	ΓΕ		Project No. C3788		Co-ords:	346928.00 - 405896.00	Hole Type RO
Locati	on:	SKELMER	RSDAL	E			Level:	68.80	Scale 1:75
Client		ALDI					Dates:	21/03/2018 - 21/03/2018	Logged By JM
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description	
	Olines	Depth (m)	Туре	Results	(111)	(111)			=
									31 =
									32
									33 —
									34
									34   
									35
									36 -
									37
									38
									39 —
					40.00	28.80		End of borehole at 40.00 m	
									41 -
									42
									42 —
									43
									44
									45
Rema	rks	11. 40. b.l				<u> </u>			

- 1. Hand dug pit to 1.2m bgl to check for services.
  2. Hole backfilled with arisings upon completion.
  3. Water flush remained throughout drilling.





# APPENDIX B Chemical Testing Results





### **Jack Mather**

Brownfield Solutions Ltd William Smith House 173 - 183 Witton Street Northwich Cheshire CW9 5LP

e: j.mather@brownfield-solutions.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404 **f:** 01923 237404

e: reception@i2analytical.com

# **Analytical Report Number: 18-81275**

Project / Site name: Westgate, Skelmersdale Samples received on: 05/04/2018

Your job number: C3788 Samples instructed on: 05/04/2018

Your order number: C3788-5559-JM Analysis completed by: 12/04/2018

**Report Issue Number:** 1 **Report issued on:** 12/04/2018

Samples Analysed: 1 soil sample

Signed:

soils

Jordan Hi**ll** Reporting Manager

For & on behalf of i2 Analytical Ltd.

- 4 weeks from reporting

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :





Analytical Report Number: 18-81275 Project / Site name: Westgate, Skelmersdale

Sample Reference								
Sample Reference	Lab Sample Number				937850			
Specific (Prime Tables   Specific (Prime Tables (	Sample Reference							
Part	Sample Number				None Supplied			
None Supplied   None Supplie	Depth (m)				0.50			
Analytical Parameter    Soil Analysis)	Date Sampled				22/03/2018			
Store Content	Time Taken				None Supplied			
Store Content				Ac				
Store Content	Analytical Parameter	_	et in	St				
Store Content	-	nits	럞	dita atu				
Store Content	(Soll randly sis)	•	의 역	atio s				
Mode				-				
Selection   Soil   Type   N/A   150 17005   Not-detected	Stone Content							
Seneral Inorganics								
## Automated ## pH Units N/A NCERTS 8.4	Total mass of sample received	kg	0.001	NONE	1.0		<u> </u>	
## Automated ## pH Units N/A NCERTS 8.4	Advantage to Get		N1/A	****	Mat data dad		1	
All Automated	Aspestos in Soil	Туре	N/A	ISO 1/025	Not-detected		<u>.</u>	<u> </u>
All Automated	Concept Increasing							
		nH Unite	NI/A	MCEDTC	Я 4		1	
Prepared by HPLC   Prepared by								
Property   Property	Organic Matter						1	
		,,,					•	
	Phenols by HPLC					 		
Resortion    mg/kg   0,1   150 17025   < 0,10	Catechol	mg/kg	0.1	ISO 17025	< 0.10			
	Resorcinol							
	Cresols (o-, m-, p-)		0.3	ISO 17025	< 0.30	 		
Phenol	Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	ISO 17025	< 0.20			
	2-Isopropylphenol	mg/kg	0.1	ISO 17025	< 0.10			
Total Phenois   Total Phenoi	Phenol	mg/kg	0.1	ISO 17025				
Total Phenols   Total Phenols (HPLC)   mg/kg   1.3   ISO 17025   < 1.3								
Total Phenols (HPLC)   mg/kg   1.3   ISO 17025   < 1.3	Total Xylenols and Ethylphenols	mg/kg	0 <b>.</b> 3	ISO 17025	< 0.30			
Total Phenols (HPLC)   mg/kg   1.3   ISO 17025   < 1.3								
Speciated PAHs   Supplication   Su		<del></del>		1			1	
Naphthalene	Total Phenois (HPLC)	mg/kg	1.3	ISO 17025	< 1.3			
Naphthalene	Speciated PAHs							
Maceaphthylene		ma/ka	0.05	MCEDTS	0.20			
Marchaphthene   Mag/kg   0.05   MCERTS   < 0.0								
Planathrene								
Penanthrene	Fluorene							
Fluoranthene	Phenanthrene							
Degree   mg/kg   0.05   MCERTS   1.3	Anthracene	mg/kg	0.05	MCERTS	0,25			
Senzo(a)anthracene	Fluoranthene	mg/kg	0.05	MCERTS	1.6			
Chrysene	Pyrene	mg/kg	0.05	MCERTS	1.3			
Benzo(b)fluoranthene	Benzo(a)anthracene							
Benzo(k)fluoranthene	Chrysene							
Benzo(a)pyrene								
Indeno(1,2,3-cd)pyrene							<b>.</b>	
Dibenz(a,h)anthracene							<del>                                     </del>	
Senzo(ghi)perylene		mg/ng					-	
Comparison   Com							<del> </del>	
Marce   Metallo   Metall	рендо(дип)регуюте	під/ку	0.05	MICERIS	0.42		<u> </u>	
Marce   Metallo   Metall	Total PAH							
Heavy Metals / Metalloids   Mg/kg   1   MCERTS   20   MC	Speciated Total EPA-16 PAHs	ma/ka	0.8	MCFRTS	8.61			
Arsenic (aqua regia extractable) mg/kg 0.2 MCERTS 20					0.01		•	
Arsenic (aqua regia extractable) mg/kg 0.2 MCERTS 20	Heavy Metals / Metalloids							
Cadmium (aqua regia extractable)  mg/kg 1.2 MCERTS < 0.2  Chromium (hexavalent)  mg/kg 1.2 MCERTS < 1.2  Chromium (III)  mg/kg 1 NONE 15  Chromium (aqua regia extractable)  mg/kg 1 MCERTS 15  Copper (aqua regia extractable)  mg/kg 1 MCERTS 64  Lead (aqua regia extractable)  mg/kg 1 MCERTS 95  Mercury (aqua regia extractable)  mg/kg 1 MCERTS 95  Mercury (aqua regia extractable)  mg/kg 1 MCERTS 95  Mercury (aqua regia extractable)  mg/kg 1 MCERTS 24  Selenium (aqua regia extractable)  mg/kg 1 MCERTS 24  Selenium (aqua regia extractable)  mg/kg 1 MCERTS 24	Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20			
Chromium (hexavalent)   mg/kg   1.2   MCERTS   < 1.2	Cadmium (aqua regia extractable)							
Chromium (aqua regia extractable) mg/kg 1 MCERTS 15  Copper (aqua regia extractable) mg/kg 1 MCERTS 64  Lead (aqua regia extractable) mg/kg 1 MCERTS 95  Mercury (aqua regia extractable) mg/kg 0.3 MCERTS < 0.3  Nickel (aqua regia extractable) mg/kg 1 MCERTS 24  Selenium (aqua regia extractable) mg/kg 1 MCERTS < 1.0	Chromium (hexavalent)		1.2		< 1.2	 		
Copper (aqua regia extractable) mg/kg 1 MCERTS 64 Lead (aqua regia extractable) mg/kg 1 MCERTS 95 Mercury (aqua regia extractable) mg/kg 0.3 MCERTS < 0.3 Nickel (aqua regia extractable) mg/kg 1 MCERTS 24 Selenium (aqua regia extractable) mg/kg 1 MCERTS < 1.0	Chromium (III)	mg/kg	1	NONE	15			
Lead (aqua regia extractable) mg/kg 1 MCERTS 95 SMCERTS < 0.3  Mercury (aqua regia extractable) mg/kg 0.3 MCERTS < 0.3  Nickel (aqua regia extractable) mg/kg 1 MCERTS 24  Selenium (aqua regia extractable) mg/kg 1 MCERTS < 1.0	Chromium (aqua regia extractable)	mg/kg						
Mercury (aqua regia extractable) $mg/kg$ 0.3 MCERTS < 0.3 Nickel (aqua regia extractable) $mg/kg$ 1 MCERTS 24 Selenium (aqua regia extractable) $mg/kg$ 1 MCERTS < 1.0	Copper (aqua regia extractable)	mg/kg					ļ	
Nickel (aqua regia extractable) $mg/kg$ 1 MCERTS 24 Selenium (aqua regia extractable) $mg/kg$ 1 MCERTS < 1.0							ļ	
Selenium (aqua regia extractable) mg/kg 1 MCERTS < 1.0	Mercury (aqua regia extractable)							
							<b>.</b>	
LINC (aqua regia extractable) mg/kg 1 MCERTS 55							<del>                                     </del>	
	Zinc (aqua regia extractable)	mg/kg	1	MCERTS	55		<u> </u>	<u> </u>





Analytical Report Number : 18-81275 Project / Site name: Westgate, Skelmersdale

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, day and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve, Results are not corrected for stone content,

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
937850	WS1	None Supplied	0.50	Brown clay and sand with rubble.





**Analytical Report Number: 18-81275** Project / Site name: Westgate, Skelmersdale

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton(Skalar)	L080-PL	W	MCERTS
Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	ISO 17025
Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
	light microscopy in conjunction with disperion staining techniques.  In-house method by calculation from total Cr and Cr VI.  Determination of free cyanide by distillation followed by colorimetry.  Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.  Determination of metals in soil by aqua-regia digestion followed by ICP-OES.  Moisture content, determined gravimetrically.  Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.  Determination of pH in soil by addition of water followed by automated electrometric measurement.  Determination of speciated phenols by HPLC.  Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.  Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	light microscopy in conjunction with disperion staining techniques.  In-house method by calculation from total Cr and Cr VI.  In-house method by calculation from total Cr and Cr VI.  Determination of free cyanide by distillation followed by colorimetry.  Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.  Determination of metals in soil by aqua-regia digestion followed by ICP-OES.  Moisture content, determined gravimetrically.  Moisture content, determined gravimetrically.  Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.  Determination of pH in soil by addition of water followed by automated electrometric measurement.  Determination of speciated phenols by HPLC.  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Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.  In-house method based on Blue Book Method.  Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.  In-house method based on Blue Book Method.  Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.  In-house method based on British Standard Methods and MCERTS requirements.

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Sample ID Ot	ther_ID	Sample Type	Job S	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS1		S	18-81275	937850	0	Free cyanide in soil	L080-PL	0

Sample Deviation Report





### **Jack Mather**

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## **Analytical Report Number: 18-80423**

Replaces Analytical Report Number: 18-80423, issue no. 1

Project / Site name: Westgate, Skelmersdale Samples received on: 26/03/2018

Your job number: C3788 Samples instructed on: 26/03/2018

Your order number: C3788-5559-JM Analysis completed by: 18/04/2018

**Report Issue Number:** 2 **Report issued on:** 23/04/2018

Samples Analysed: 8 soil samples

Signed:

Jordan Hill Reporting Manager

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are: soils - 4 weeks from reporting

leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.





Analytical Report Number: 18-80423 Project / Site name: Westgate, Skelmersdale

							1	
Lab Sample Number				933496	933497	933498	933499	933500
Sample Reference Sample Number				BH1 None Supplied	HP1 None Supplied	HP2 None Supplied	HP4 None Supplied	WS2 None Supplied
Depth (m)				00 <b>.</b> 50	0.20	0.30	0.20	0.70
Date Sampled				22/03/2018	22/03/2018	22/03/2018	22/03/2018	22/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
			<b>&gt;</b>					
		de Li	Accreditation Status					
Analytical Parameter	Units	Limit of detection	ed ii					
(Soil Analysis)	ស	er of	us					
		_	읔					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	22	17	21	13
Total mass of sample received	kg	0.001	NONE	1.2	1.1	1.1	1.0	1.6
			1		1		T	
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	Chrysotile	Chrysotile	-	Chrysotile	-
Asbestos in Soil		NI/A	ISO 17025	Detected	Detected	Not detected	Detected	Not detected
Asbestos (III Soli Asbestos Quantification (Stage 2)	Type %	N/A 0.001	ISO 17025	Detected < 0.001	Detected < 0.001	Not-detected	Detected < 0.001	Not-detected
Asbestos Quantification (Stage 2) Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001		< 0.001	-
	//	0.001	100 1/023	- 0.001	. 0.001		, 0,001	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.7	8.1	8.2	7.8	7.9
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Organic Matter	%	0.1	MCERTS	2.8	2.9	1.1	4.1	1.4
ni i i unic								
Phenois by HPLC		0.1		0.10		. 0.10	6.40	
Catechol	mg/kg	0.1	ISO 17025 ISO 17025	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
Resorcinol Cresols (o-, m-, p-)	mg/kg mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.30	< 0.20
2-Isopropylphenol	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenol	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Trimethylphenol (2,3,5-)	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Xylenols and Ethylphenols	mg/kg	0.3	ISO 17025	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
Total Phenols					1			1
Total Phenols (HPLC)	mg/kg	1.3	ISO 17025	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.19	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.14	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.4	0.59	< 0.05	0.26	0.44
Anthracene	mg/kg	0.05	MCERTS	0.51	< 0.05	< 0.05	< 0.05	0.16
Fluoranthene	mg/kg	0.05	MCERTS	2.9	1.4	< 0.05	0.72	1.5
Pyrene	mg/kg	0.05	MCERTS	2.4	1.3	< 0.05	0.67	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1 1.1	0.64	< 0.05	0.35	0.53
Chrysene Benzo(b)fluoranthene	mg/kg mg/kg	0.05 0.05	MCERTS MCERTS	1.4	0.66 1.2	< 0.05 < 0.05	0 <b>.</b> 42 0 <b>.</b> 57	0 <b>.</b> 54 0 <b>.</b> 89
Benzo(k)fluoranthene	mg/kg mg/kg	0.05	MCERTS	0.70	0.50	< 0.05	0.34	0.45
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.3	1.0	< 0.05	0.53	0.83
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.54	0.53	< 0.05	0.27	0.36
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.60	0.72	< 0.05	0.36	0.44
Total PAH	1	0 -	1	4.6-	l		I	
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	14.2	8.51	< 0.80	4 <b>.</b> 49	7.32
Hospin Motals / Motalleide								
Heavy Metals / Metalloids Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	12	6.3	13	8.5
Cadmium (agua regia extractable)	mg/kg mg/kg	0.2	MCERTS	< 0.2	3.0	< 0.2	0.4	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	18	19	19	21	27
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	20	20	21	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	51	16	42	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35	250	20	170	32
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	0.4	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	17	17	18	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0





Analytical Report Number: 18-80423

Project / Site name: Westgate, Skelmersdale

Lab Sample Number				933496	933497	933498	933499	933500
Sample Reference		BH1	HP1	HP2	HP4	WS2		
Sample Number		None Supplied	None Supplied	None Supplied	None Supplied	None Supplied		
Depth (m)				00.50	0.20	0.30	0.20	0.70
Date Sampled				22/03/2018	22/03/2018	22/03/2018	22/03/2018	22/03/2018
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	290	33	160	39





Analytical Report Number: 18-80423 Project / Site name: Westgate, Skelmersdale

Lab Sample Number				933501	933502	933503		
Sample Reference				WS3	WS4	WS6		
Sample Number Depth (m)				None Supplied 0.20	None Supplied 1.00	None Supplied 0.50		
Date Sampled				22/03/2018	22/03/2018	22/03/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Time raken			<b>b</b>	топе заррпса	Hone Supplied	Hone Supplied		
		de ⊑	Accreditation Status					
Analytical Parameter	Units	Limit of detection	edir					
(Soil Analysis)	ផ	tion	tati					
		_	9					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	16	12	15		
Total mass of sample received	kg	0.001	NONE	1.0	1.1	1.3		
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	Amosite	-	-		
Asbestos in Soil	Time	N/A	ISO 17025	Detected	Not-detected	Not-detected		
Asbestos III Soli Asbestos Quantification (Stage 2)	Type %	0.001	ISO 17025	< 0.001	Not-detected	Not-detected		
Asbestos Quantification (Stage 2) Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	_	-	<del>                                     </del>	
	. ,,							
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.2	7 <b>.</b> 5	7.9		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Organic Matter	%	0.1	MCERTS	2.7	0.8	2.2		
Phonolo by HPLC								
Phenols by HPLC Catechol	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	I	
Resorcinol	mg/кg mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10		
Cresols (o-, m-, p-)	mg/kg	0.3	ISO 17025	< 0.30	< 0.30	< 0.30		
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	ISO 17025	< 0.20	< 0.20	< 0.20		
2-Isopropylphenol	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10		
Phenol	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10		
Trimethylphenol (2,3,5-)	mg/kg	0.1	ISO 17025	< 0.10	< 0.10	< 0.10		
Total Xylenols and Ethylphenols	mg/kg	0.3	ISO 17025	< 0.30	< 0.30	< 0.30		
Total Phenois Total Phenois (HPLC)		1.3	ISO 17025	< 1.3	< 1.3	< 1.3		
Total Pileliois (HPLC)	mg/kg	1.3	150 17025	< 1.5	< 1.5	< 1.5	<u> </u>	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
<u>Phenanthrene</u>	mg/kg	0.05	MCERTS	0.54	< 0.05	1.1		
Anthracene	mg/kg	0.05	MCERTS	0.15	< 0.05	< 0.05		
Fluoranthene Pyrene	mg/kg mg/kg	0.05 0.05	MCERTS MCERTS	0.72 0.63	< 0.05 < 0.05	1.4 1.0		
Benzo(a)anthracene	mg/кg mg/kg	0.05	MCERTS	0.83	< 0.05	0.52		
Chrysene	mg/kg	0.05	MCERTS	0.32	< 0.05	0.45		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.32	< 0.05	0.58		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.25	< 0.05	0.26		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.37	< 0.05	0.45		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.20	< 0.05	0.19		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.27	< 0.05	0.21	<u> </u>	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	4.14	< 0.80	6.18		
	mg/kg	0.0	INCLINIO	1121	. 0.00	0.10	<u> </u>	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	49	6.0	13		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (III)	mg/kg	1	NONE	22	20	11		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	20	11		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	72	15 7.3	33 54	<del>                                     </del>	
Lead (aqua regia extractable) Mercury (aqua regia extractable)	mg/kg mg/kg	0.3	MCERTS MCERTS	100 1.4	< 0.3	0.3	<del>                                     </del>	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	49	20	17	<del>                                     </del>	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.3	< 1.0	< 1.0		
	9/15			-19		. 110	<u> </u>	





Analytical Report Number: 18-80423

Project / Site name: Westgate, Skelmersdale

Lab Sample Number				933501	933502	933503	
Sample Reference		WS3	WS4	WS6			
Sample Number				None Supplied	None Supplied	None Supplied	
Depth (m)				0.20	1.00	0.50	
Date Sampled		22/03/2018	22/03/2018	22/03/2018			
Time Taken		None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	30	100	





Analytical Report Number: 18-80423

Project / Site name: Westgate, Skelmersdale

Your Order No: C3788-5559-JM

# **Certificate of Analysis - Asbestos Quantification**

### Methods:

## **Qualitative Analysis**

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

## **Quantitative Analysis**

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
933496	BH1	00.50	175	Loose Fibres	Chrysotile	< 0.001	< 0.001
933497	HP1	0.20	166	Loose Fibres	Chrysotile	< 0.001	< 0.001
933499	HP4	0.20	150	Loose Fibres	Chrysotile	< 0.001	< 0.001
933501	WS3	0.20	160	Loose Fibres	Amosite	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.





Analytical Report Number : 18-80423 Project / Site name: Westgate, Skelmersdale

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, day and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve, Results are not corrected for stone content,

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
933496	BH1	None Supplied	00.50	Brown clay and loam with gravel.
933497	HP1	None Supplied	0.20	Brown clay and loam with brick.
933498	HP2	None Supplied	0.30	Brown clay and sand.
933499	HP4	None Supplied	0.20	Brown clay.
933500	WS2	None Supplied	0.70	Brown clay and sand.
933501	WS3	None Supplied	0.20	Brown clay and sand.
933502	WS4	None Supplied	1.00	Brown clay and sand with gravel.
933503	WS6	None Supplied	0.50	Brown clay and loam.





**Analytical Report Number: 18-80423** Project / Site name: Westgate, Skelmersdale

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton(Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



# APPENDIX C Geotechnical Testing Results





#### **Jack Mather**

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WD18 8YS

**t:** 01923 225404 **f:** 01923 237404

e: reception@i2analytical.com

e: j.mather@brownfield-solutions.co.uk

# **Analytical Report Number: 18-80422**

Project / Site name: Westgate, Skelmersdale Samples received on: 26/03/2018

Your job number: C3788 Samples instructed on: 26/03/2018

Your order number: C3788-5558-JM Analysis completed by: 04/04/2018

Report Issue Number: 1 Report issued on: 04/04/2018

Samples Analysed: 4 soil samples

Signed:

Jordan Hill Reporting Manager

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are: soils - 4 weeks from reporting

leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting

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Analytical Report Number: 18-80422

Project / Site name: Westgate, Skelmersdale

Your Order No: C3788-5558-JM

Magnesium (water soluble) Magnesium (leachate equivalent)

Lab Sample Number				933492	933493	933494	933495	
Sample Reference				BH1	BH2	WS1	WS3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.70	0.70	2.00	2.00	
Date Sampled				22/03/2018	22/03/2018	22/03/2018	22/03/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	11	12	11	12	
Total mass of sample received	kg	0.001	NONE	0.90	0.78	0.78	0.75	
General Inorganics pH - Automated Total Sulphate as SO <sub>4</sub>	pH Units %	N/A 0.005	MCERTS MCERTS	8.0	7.8 -	8.2 0,029	8.5 0,012	
Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1) Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/kg g/l	2.5 0.00125	MCERTS MCERTS	80 0 <b>.</b> 040	370 0 <b>.</b> 19	40	17 0 <b>.</b> 0084	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	40.2	187	19.8	8.4	
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	26	3.2	
Total Sulphur	%	0.005	MCERTS	-	-	0.010	0.006	
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	< 2.0	< 2.0	
Heavy Metals / Metalloids								

NONE

NONE

mg/kg mg/l





Analytical Report Number : 18-80422 Project / Site name: Westgate, Skelmersdale

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, day and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve, Results are not corrected for stone content,

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
933492	BH1	None Supplied	0.70	Brown clay.
933493	BH2	None Supplied	0.70	Brown clay.
933494	WS1	None Supplied	2.00	Brown clay.
933495	WS3	None Supplied	2.00	Brown sand.





Analytical Report Number : 18-80422 Project / Site name: Westgate, Skelmersdale

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L038	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038	W	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Site Name: Westgate, Skelmersdale

Site Address: Not Given

Client Reference: C3788

Job Number: 18-80349

Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

Laboratory Reference: 933072

Sample Reference: Not Given

Description: Brown slightly gravelly very sandy CLAY

BH1

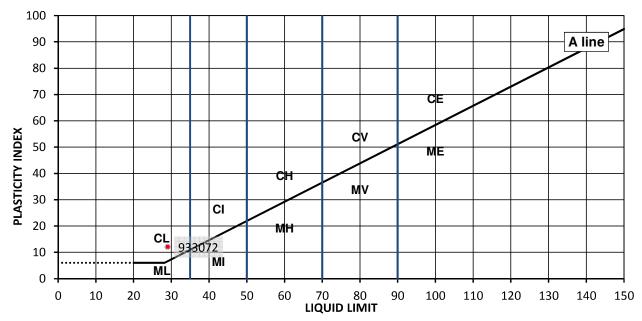
Location: BH Sample Preparation:

Tested after washing to remove >425um

Sample Type: D

Depth Top [m]: 2.50 Depth Base [m]: Not Given

As Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425μm
Content [%]	[%]	[%]	[%]	BS Test Sieve
15	29	17	12	92



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Signed:

Dariusz Piotrowski PL Laboratory

Amy

Darren Berrill

Manager Geotechnical

Geotechnical General

Manager

Section

Date Reported:

10/04/2018

for and on behalf of i2 Analytical Ltd

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### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

**Brownfield Solutions Ltd** Client: Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Westgate, Skelmersdale Site Name:

Not Given Site Address:

Client Reference: C3788

Job Number: 18-80349 Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

933073 Laboratory Reference:

Sample Reference: Not Given

Brown slightly gravelly sandy CLAY Description:

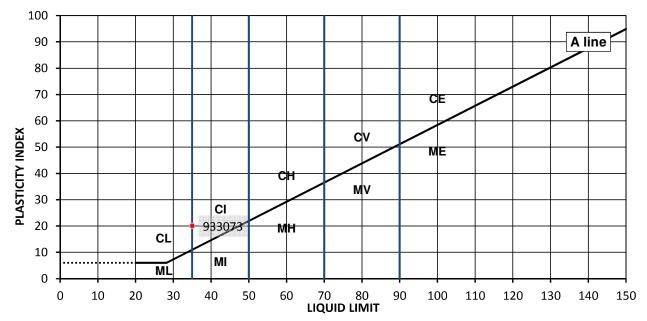
Location: BH2 Sample Preparation:

Tested after >425um removed by hand

Sample Type: D

Depth Top [m]: 2.00 Depth Base [m]: Not Given

As Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425μm
Content [%]	[%]	[%]	[%]	BS Test Sieve
18	35	15	20	92



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic 0 append to classification for organic material ( eg CHO )

Remarks

Approved:

PL Laboratory

Dariusz Piotrowski

Signed:

Darren Berrill Geotechnical General

Manager

Manager Geotechnical Section

Date Reported:

10/04/2018

for and on behalf of i2 Analytical Ltd

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#### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



1041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Site Name: Westgate, Skelmersdale

Site Address: Not Given

Client Reference: C3788

Job Number: 18-80349

Date Sampled: 20/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

Laboratory Reference: 933074

Sample Reference:

Not Given

Description:

Location:

Yellowish brown sandy CLAY

ot aiven

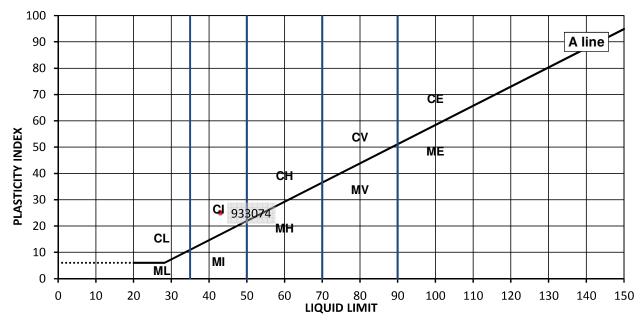
HP4

Sample Type: D
Depth Top [m]: 0.60

Sample Preparation: Tested in natural condition

Depth Base [m]: Not Given

A	s Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425μm
	Content [%]	[%]	[%]	[%]	BS Test Sieve
	21	43	18	25	100



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Signed:

Dariusz Piotrowski PL Laboratory Darren Berrill

Manager Geotechnical

Geotechnical General

Section

Manager

Date Reported: 10/04/2018

for and on behalf of i2 Analytical Ltd

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### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Site Name: Westgate, Skelmersdale

Site Address: Not Given

Client Reference: C3788

Job Number: 18-80349

Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

Sample Preparation:

Description:

Laboratory Reference: 933075

Sample Reference: Not Given

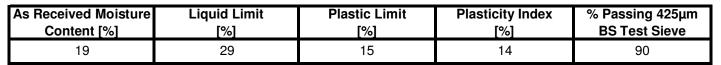
Yellowish brown slightly gravelly very sandy CLAY

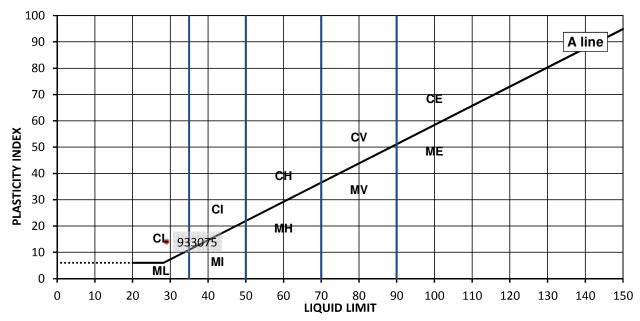
Location: WS1

Tested after >425um removed by hand

Sample Type: D
Depth Top [m]: 1.20

Depth Base [m]: Not Given





Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 M Silt Medium Н High 50 to 70 V Very high 70 to 90 Extremely high Е exceeding 90

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Dariusz Piotrowski

PL Laboratory

1. L.ta. P

Darren Berrill

Geotechnical General

Manager

Signed:

Manager Geotechnical Section

Section

Date Reported:

10/04/2018

for and on behalf of i2 Analytical Ltd

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i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Westgate, Skelmersdale

Site Address:

Site Name:

Not Given

Client Reference: C3788 Job Number: 18-80349

Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

Laboratory Reference: 933076

Sample Reference: Not Given

Description: Location:

Sample Preparation:

Brown slightly gravelly very sandy CLAY

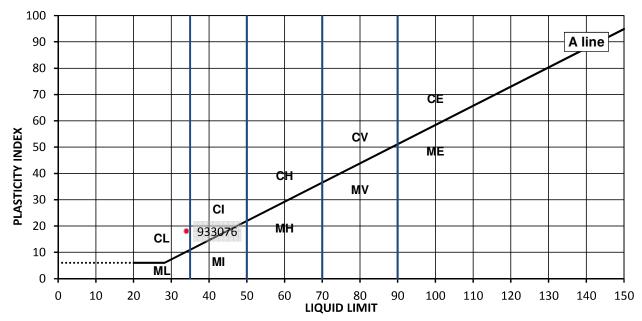
WS2

Tested after washing to remove >425um

Sample Type: D

Depth Top [m]: 2.00 Depth Base [m]: Not Given

As Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
Content [%]	[%]	[%]	[%]	<b>BS Test Sieve</b>
15	34	16	18	93



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Signed:

Dariusz Piotrowski PL Laboratory Darren Berrill Geotechnical General

Manager Geotechnical

Monogor

Manager

Section

Date Reported:

10/04/2018

for and on behalf of i2 Analytical Ltd

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### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Site Name: Westgate, Skelmersdale

Site Address: Not Given

Client Reference: C3788

Job Number: 18-80349 Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** Laboratory Reference: 933077

Sample Reference: Not Given

Description: Brown slightly gravelly very sandy CLAY

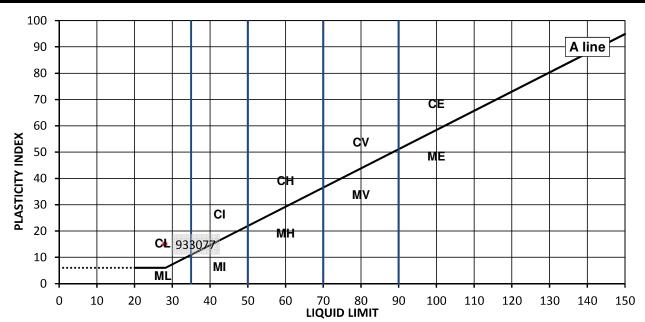
Location: WS3
Sample Preparation: Tested offers 405 yrs removed by ben

Tested after >425um removed by hand

Sample Type: D
Depth Top [m]: 2.00

Depth Base [m]: Not Given

As Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425μm
Content [%]	[%]	[%]	[%]	BS Test Sieve
17	28	13	15	93



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory

Manager Geotechnical Section

Date Reported: 10/04/2018

Signed:

Darren Berrill Geotechnical General

Manager

for and on behalf of i2 Analytical Ltd

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i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS

Client Reference: C3788



Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

**Brownfield Solutions Ltd** Client: Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact:

Jack Mather

Site Name: Site Address: Westgate, Skelmersdale Not Given

Job Number: 18-80349

Date Sampled: 22/03/2018 Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

933078 Laboratory Reference:

Sample Reference: Not Given

Description: Location:

Brown slightly gravelly very sandy CLAY

WS4

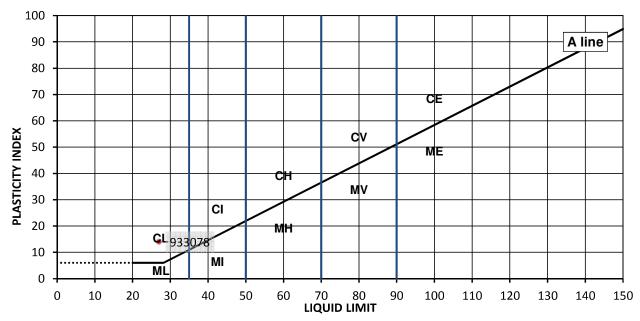
Sample Preparation:

Tested after washing to remove >425um

Sample Type: D

Depth Top [m]: 1.20 Depth Base [m]: Not Given

As Received Moisture	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425μm
Content [%]	[%]	[%]	[%]	BS Test Sieve
12	27	13	14	86



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic 0 append to classification for organic material ( eg CHO )

Remarks

Approved:

Signed:

Dariusz Piotrowski PL Laboratory

Darren Berrill Geotechnical General

Manager Geotechnical

Manager

Section

10/04/2018 Date Reported:

for and on behalf of i2 Analytical Ltd

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#### **Determination of Liquid and Plastic Limits**

i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

Client: Brownfield Solutions Ltd
Client Address: William Smith House

173 - 183 Witton Street

Northwich

Cheshire, CW9 5LP

Contact: Jack Mather

Site Name: Westgate, Skelmersdale

Site Address: Not Given

Client Reference: C3788

Job Number: 18-80349

Date Sampled: 22/03/2018

Date Received: 26/03/2018

Date Tested: 03/04/2018

Sampled By: JM

**TEST RESULTS** 

Laboratory Reference: 933079

Sample Reference: Not Given

Description: Brown slightly gravelly very sandy CLAY

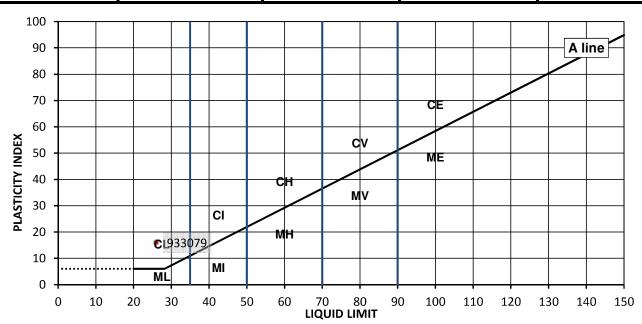
Location: WS5

Sample Preparation: Tested after >425um removed by hand

Sample Type: D

Depth Top [m]: 1.20 Depth Base [m]: Not Given

As Received Moisture		Plastic Limit	Plasticity Index	% Passing 425μm
Content [%]	[%]	[%]	[%]	BS Test Sieve
19	26	10	16	93



Legend, based on BS 5930:2015 Code of practice for site investigations

Plasticity Liquid Limit С Clay below 35 35 to 50 М Silt Medium Н High 50 to 70 V Very high 70 to 90 Е exceeding 90 Extremely high

Organic O append to classification for organic material ( eg CHO )

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory

Manager Geotechnical Section

Date Reported: 10/04/2018

Signed:

Darren Berrill Geotechnical General

Manager

for and on behalf of i2 Analytical Ltd

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