Galway Port – Trial Pit Photographs

TP1-09

TP1-09

Galway Port – Trial Pit Photographs

TP1-10

TP1-10

Galway Port – Trial Pit Photographs

TP1-10

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

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Galway Port – Trial Pit Photographs

TP1-15

TP1-15

APPENDIX 3 – Cable Percussion & Rotary Borehole Records

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-01

Machine : Dando 2000 + Comacchio 450 Method : Cable Percussion with Rotary Core Follow On	Casing Diameter: 200mm cased to 1.60m, 96mm cased to 13.00m	Ground Level (mOD): 4.40	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530245.4 E 724898.4 N	Dates: 11/07/2024-19/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	TCR	SCR	RQD	FI	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
									4.30	0.10	CONCRETE.		
0.50	B1									(1.50)	MADE GROUND: Light grey slightly sandy angular fine to coarse Gravel fill with low cobble and boulder content.		
1.00-1.36	SPT(C) 50/210							10,8/13,14,23 25/50					
1.50-1.56	SPT(C) 25*/50							50/10					
1.60		47							2.80	1.60	Recovery consists of MADE GROUND: Cobbles and Boulders of Limestone with a little gravel. Drillers notes MADE GROUND: Rock Armour.		
3.00-3.45	SPT(C) N=43							7,10/10,13,10,10					
3.00		60								(4.40)			
4.50-4.95	SPT(C) N=1							1,1/0,0,1,0					
4.50		40											
6.00-6.45	SPT(C) N=15							3,4/4,3,3,5	-1.60	6.00	Rcovery consists of MADE GROUND: Cobbles of Limestone and Granite. Driller notes MADE GROUND: Rock Armour onto SILT.		
6.00		23								(2.20)			
7.50-7.95	SPT(C) N=48							7,9/11,11,13,13					
7.50													
8.20		53	7	0					-3.80	8.20	Medium strong to strong massive pink fine to coarse grained GRANITE. Slightly to moderately weathered with brown and grey surface staining and rare clay infilling of fractures. 8.20m to 10.00m BGL - Mostly non-intact.		
9.00-9.07	SPT(C) 25*/50				NI			25/50 50/20		(1.80)			
9.00		93	33	33									
10.00													

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrill from GL to 1.60m BGL.
Rotary drilling carried out to 13.00m BGL.
Borehole backfilled upon completion.
Chiselling from 1.60m to 1.60m for 1.00 hour.

Scale (approx)	Logged By	Figure No.
1:50	LM + JK	13885-06-24.BH01

Ground Investigations Ireland Ltd www.gii.ie	Site Galway Port, Co. Galway	Borehole Number BH1-01

Machine : Dando 2000 + Comacchio 450 Flush : water Core Dia: 63.5 mm Method : Cable Percussion with Rotary Core Follow On	Casing Diameter 200mm cased to 1.60m 96mm cased to 13.00m	Ground Level (mOD) 4.40	Client The Land Development Agency Ireland	Job Number 13885-06-24
	Location 530245.4 E 724898.4 N	Dates 11/07/2024-19/08/2024	Engineer	Sheet 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						-5.60	10.00	Strong massive pink fine to coarse grained GRANITE. Fresh to slightly weathered with grey surface staining. 10.00m to 13.00m BGL - Two fracture sets - F1: 0 to 20 degrees, medium spaced, undulating, rough; F2: 50 to 60 degrees, medium spaced, undulating, rough.		
10.50	100	100	63	5			(3.00)			
13.00						-8.60	13.00	Terminated at 13.00m		

Remarks	Scale (approx) 1:50	Logged By LM + JK
	Figure No. 13885-06-24.BH01	

Ground Investigations Ireland Ltd
www.gii.ie

Site: Galway Port, Co. Galway				**Borehole Number**: BH1-02
Machine: Dando 2000 & Comacchio 450 **Method**: Cable Percussion with Rotary Core Follow-on	**Casing Diameter**: 200mm cased to 1.70m 96mm cased to 11.30m	**Ground Level (mOD)**: 4.27	**Client**: The Land Development Agency Ireland	**Job Number**: 13885-06-24
	Location: 530226.9 E 724941.9 N	**Dates**: 09/07/2024-19/08/2024	**Engineer**:	**Sheet**: 1/2

Depth (m)	Sample / Tests	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
							4.07	(0.20) 0.20	CONCRETE.
0.20	B1								MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel with low cobble and boulder content and rare fragments of plastic.
1.00	B2							(1.50)	
1.00-1.45	SPT(C) N=27					7,13/7,4,4,12			
1.70		100					2.57	1.70	Recovery consists of MADE GROUND: Cobbles and Boulders of Limestone and Gneiss with a little gravel. Drillers notes MADE GROUND: Rock Armour.
2.30-2.46						25/50 SPT(C) 50/10			
2.30		17							
3.80-4.03						14,25/50 SPT(C) 50/75			
3.80		43						(5.10)	
5.30-5.46						25/50 SPT(C) 50/10			
5.30		50							
6.80		100	93	93	5		-2.53	6.80 (1.50)	Strong massive pink fine to coarse grained GRANITE with rare quartz viens. Slightly weathered with grey surface staining. 6.80m - 8.30m BGL - 2 Fracture Sets - F1: 0 - 20 degrees, medium to widely spaced, rough undulating. F2: 50 - 70 degrees, closely to medium spaced, rough undulating to stepped.
8.30		100	100	33			-4.03	8.30	Strong massive pink to red fine to coarse grained GRANITE. Slightly to moderately weathered with grey surface staining and slight clay infilling of fractures. 8.30m - 11.30m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 50 - 60 degrees, widely spaced, rough undulating. F3: 70 - 90 degrees, medium to widely spaced, rough undulating to stepped.
9.80					9			(3.00)	

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrill from GL to 1.70m BGL.
Rotary drilling carried out to 11.30m BGL.
Standpipe installed in borehole upon completion. Slotted standpipe installed from 11.30m to 5.30m BGL with pea gravel surround.
Plain standpipe installed from 5.30m BGL to GL with bentonite seal and a flush cover.
Chiselling from 0.50m to 1.00m for 0.50 hours. Chiselling from 1.70m to 1.70m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH02

Ground Investigations Ireland Ltd www.gii.ie	Site Galway Port, Co. Galway	Borehole Number **BH1-02**

Machine : Dando 2000 & Comacchio 450 Flush : water Core Dia : 63.5 mm Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter 200mm cased to 1.70m 96mm cased to 11.30m	Ground Level (mOD) 4.27	Client The Land Development Agency Ireland	Job Number 13885-06-24
	Location 530226.9 E 724941.9 N	Dates 09/07/2024- 19/08/2024	Engineer	Sheet 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
	100	100	87								
11.30						-7.03	11.30	Terminated at 11.30m			

Remarks	Scale (approx) 1:50	Logged By LM + JK
	Figure No. 13885-06-24.BH02	

Ground Investigations Ireland Ltd www.gii.ie			Site: Galway Port, Co. Galway	Borehole Number: BH1-03
Machine : Dando 2000 & Comacchio 450 Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 6.90m 96mm cased to 12.00m	Ground Level (mOD): 4.85	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530180.5 E 724981.9 N	Dates: 10/07/2024-20/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					4.70	(0.15) 0.15	CONCRETE			
						(0.55)	MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel fill			
					4.15	0.70	MADE GROUND: Dark brownish grey sandy gravelly silty Clay with low cobble content and rare fragments of red brick, concrete and tarmacadam			
0.70	B1									
1.00-1.45	SPT(C) N=14			3,5/5,4,3,2						
1.70	B2									
2.00-2.45	SPT(C) N=15			2,2/3,2,6,4		(2.70)				
2.70	B3									
3.00-3.45	SPT(C) N=13			1,1/3,3,4,3						
3.40	B4				1.45	3.40	Possible MADE GROUND: Firm to stiff light brown slightly sandy slightly gravelly silt CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse			
						(0.60)				
4.00-4.45	SPT(C) N=25			4,3/3,6,8,8	0.85	4.00	Possible MADE GROUND: Stiff light brown slightly sandy very gravelly CLAY with low cobble content. Gravel is angular to subangular fine to coarse			
4.50	B5					(1.00)				
5.00 5.00-5.45	B6 SPT(C) N=36			2,7/9,10,8,9	-0.15	5.00	Possible MADE GROUND: Very stiff light brown very sandy very gravelly CLAY with low cobble content. Gravel is angular to subangular fine to coarse			
						(1.80)				
6.00 6.00-6.35	B7 SPT(C) 50/200			10,11/12,10,28						
				25/50 SPT(C) 25*/0						
6.80-6.81 6.80	TCR / SCR / RQD / FI			50/10	-1.95	6.80	Recovery consists of POSSIBLE MADE GROUND: Grey to dark grey angular to subrounded fine to coarse Gravel and Cobbles of Limestone and Granite. Driller notes fill.			
	TCR 40, SCR 23, RQD 23					(1.20)				
8.00 8.30-8.46 8.30				25/50 SPT(C) 50/10	-3.15	8.00	Strong foliated grey speckled white and green fine to coarsely grained granoblastic METAGABBRO. Fresh to slightly weathered with brown and red surface staining. 8.00m - 12.00m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 50 - 60 degrees, medium to widely spaced, rough undulating. F3: 70 - 80 degrees, widely spaced, rough undulating.			
	TCR 100, SCR 100, RQD 100									
9.80										

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled from GL to 6.90m BGL.
Rotary coring carried out to 12.00m BGL.
Standpipe installed in borehole upon ocmpletion. Slotted standpipe installed from 12.00m to 3.00m BGL with pea gravel surround.
Plain standpipe installed from 3.00m BGL to GL with bentonite seal and a flush cover.
Chiselling from 6.50m to 6.80m for 0.50 hours. Chiselling from 6.80m to 6.90m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-03

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-03
Machine: Dando 2000 & Comacchio 450 Flush: water Core Dia: 63.5 mm Method: Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 6.90m, 96mm cased to 12.00m Ground Level (mOD): 4.85 Location: 530180.5 E 724981.9 N Dates: 10/07/2024-20/08/2024	Client: The Land Development Agency Ireland Job Number: 13885-06-24 Engineer: Sheet: 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
	100	100	70	4			(4.00)				
11.30	100	100	100								
12.00						-7.15	12.00	Terminated at 12.00m			

Remarks	Scale (approx)	Logged By
	1:50	LM + JK
	Figure No. 13885-06-24.BH1-03	

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: **BH1-04**

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter: 200mm cased to 2.70m 96mm cased to 11.30m	Ground Level (mOD): 4.85	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530292.9 E 724960.6 N	Dates: 10/07/2024- 20/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					4.55	(0.30) 0.30	CONCRETE.		
					4.15	(0.40) 0.70	MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel fill with low cobble content.		
0.70	B1						MADE GROUND: Dark grey slightly clayey slightly sandy angular fine to coarse Gravel fill with low cobble content.		
1.00-1.41	SPT(C) 50/255			6,10/7,9,14,20					
1.70	B2					(2.00)			
2.00-2.43	SPT(C) 50/275			4,16/10,8,12,20	2.15	2.70			

Depth (m)	TCR	SCR	RQD	FI	Level (mOD)	Depth (m) (Thickness)	Description
2.70	90					(3.10)	Recovery consists of MADE GROUND: Grey to dark grey subangular to subrounded Cobbles of Granite and Meta-Gabbro with some subangular to subrounded medium to coarse gravel. Driller notes MADE GROUND: Rock Armour.
3.80	30						
5.30	77				-0.95	5.80	
5.70				NI		(1.00)	Medium strong foliated dark greenish grey fine to medium grained METAGABBRO. Slightly weathered and recovered as non-intact. 5.70m - 6.80m BGL - Mostly Non-Intact.
6.80	90	90	73	5	-1.95	6.80	Strong foliated dark greenish grey fine to medium grained METAGABBRO. Fresh to slightly weathered. 6.80m - 11.00m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 50 - 60 degrees, medium to widely spaced, rough undulating. F3: 70 - 80 degrees, widely spaced, rough undulating.
8.30	100	100	87			(2.70)	
9.50					-4.65	9.50	Strong foliated dark greenish grey finely to coarse grained METAGABBRO with rare intrusions of green amphibole. Fresh to slightly weathered with green surface staining.
9.80							

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled form GL to 2.70m BGL.
Rotary coring carried out to 11.30m BGL.
Borehole backfilled upon completion
Chiselling from 1.50m to 2.00m for 0.50 hours. Chiselling from 2.50m to 2.70m for 0.50 hours. Chiselling from 2.70m to 2.70m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-04

Ground Investigations Ireland Ltd www.gii.ie		Site: Galway Port, Co. Galway	Borehole Number: BH1-04
Machine : Dando 2000 Flush : water Core Dia : 63.5 mm Method : Cable Percussion	Casing Diameter: 200mm cased to 2.70m 96mm cased to 11.30m	Ground Level (mOD): 4.85	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530292.9 E 724960.6 N	Dates: 10/07/2024-20/08/2024	Engineer:	Sheet: 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				7			(1.50)			
	87	87	60							
11.00						-6.15	11.00	Terminated at 11.30m		
11.30										

Remarks

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-04

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-05

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Dando 2000 & Comacchio 450	200mm cased to 6.60m 96mm cased to 11.30m	5.06	The Land Development Agency Ireland	13885-06-24
Method: Cable Percussion with Rotary Core Follow-on	**Location**: 530217.3 E 725013.1 N	**Dates**: 09/07/2024-21/08/2024	**Engineer**:	**Sheet**: 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
					4.86	(0.20) 0.20	CONCRETE
					4.46	(0.40) 0.60	MADE GROUND: Dark grey angular fine to coarse Gravel with low cobble content
0.60	B1						MADE GROUND: Black sandy gravelly Clay with low cobble content and rare fragments of red brick, concrete and metal
1.00-1.45	SPT(C) N=17			2,3/2,3,4,8			
1.60	B2					(2.00)	
2.00-2.45	SPT(C) N=11			5,2/2,2,3,4			
2.60	B3				2.46	2.60	MADE GROUND: Black sandy gravelly silty Clay with low cobble content and rare fragments of red brick, concrete and metal
3.00-3.45	SPT(C) N=6			1,1/2,2,1,1		(1.40)	
3.60	B4						
4.00 4.00-4.45	B5 SPT(C) N=6			1,0/0,1,3,2	1.06	4.00	Possible MADE GROUND: light brown sandy slightly gravelly silty CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse
						(1.00)	
5.00 5.00-5.45	B6 SPT(C) N=22			2,8/4,3,7,8	0.06	5.00	Possible MADE GROUND: light greyish brown slightly sandy slightly gravelly silty CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse
						(1.60)	
6.00	B7			25/50 SPT(C) 25*/75 Water strike(1) at 6.30m, rose to 6.00m in 20 mins. 50/0			

Depth (m)	TCR	SCR	RQD	FI	Level (mOD)	Depth (m) (Thickness)	Description
6.50-6.58							
6.60	100				-1.54	6.60	Recovery consists of grey to dark grey Cobbles and Boulders of Limestone and Meta Gabbro with a little gravel. Driller notes possible Made Ground.
6.80	87	43	27			(1.00)	
7.60					-2.54	7.60	Strong foliated dark greenish grey speckled white fine to coarse grained METAGABBRO with occasional quartz veining. Fresh to slightly weathered. 7.60m - 11.30m BGL - 1 Fracture Set - F1: 0 - 20 degrees, closely to medium spaced, rough undulating.
8.30	93	93	73	2		(2.85)	
9.80							

Remarks
Groundwater encountered at 6.30m BGL.
Refusal at 6.60m BGL due to obstruction; presumed bedrock or boulders
Borehole backfilled upon completion
Chiselling from 6.30m to 6.60m for 0.50 hours. Chiselling from 6.60m to 6.60m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-05

Ground Investigations Ireland Ltd www.gii.ie		Site: Galway Port, Co. Galway	Borehole Number: BH1-05
Machine: Dando 2000 & Comacchio 450 Flush: water Core Dia: 63.5 mm Method: Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 6.60m 96mm cased to 11.30m Location: 530217.3 E 725013.1 N	Ground Level (mOD): 5.06 Dates: 09/07/2024-21/08/2024	Client: The Land Development Agency Ireland Engineer:	Job Number: 13885-06-24 Sheet: 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.45	97	97	70	7		-5.39	10.45 (0.85)	Strong foliated dark grey fine to medium grained METAGABBRO. Slightly weathered.		
11.30						-6.24	11.30	Terminated at 11.30m		

Remarks	Scale (approx)	Logged By
	1:50	LM + JK
	Figure No. 13885-06-24.BH1-05	

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-06

Machine : Dando 2000 & Comacchio 450 Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 4.50m, 96mm cased to 12.00m	Ground Level (mOD): 5.18	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530291 E 725028.6 N	Dates: 11/07/2024-21/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					5.08	0.10	CONCRETE.		
						(0.40)	MADE GROUND: Light grey slightly sandy angular fine to coarse Gravel fill.		
0.50	B				4.68	0.50	MADE GROUND: Dark brown mottled grey slightly sandy Clay with rare fragments of glass, red brick and concrete.		
1.00-1.45	SPT(C) N=41			4,8/7,8,12,14		(1.00)			
1.50	B				3.68	1.50	Pushing obstruction - No recovery. Driller notes Possible Rock Armour, chiselling on and off for 90 minutes.		
2.00-2.28	SPT(C) 50/125			10,15/28,22					
3.00-3.30	SPT(C) 50/145			2,2/20,30		(3.00)			
4.00-4.31	SPT(C) 50/158			3,12/36,14					

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
4.50						0.68	4.50	Recovery consists of MADE GROUND: Cobbles and Boulders of Granite and Metagabbro. Driller notes MADE GROUND: Rock Armour.
4.50-5.30	100							
5.30-6.80	50						(3.50)	
6.80-6.96					25/50 SPT(C) 50/10			
6.80-8.30	53	17	13					
8.00						-2.82	8.00	Strong foliated dark grey fine to coarse grained METAGABBRO with occasional quartz and possible gypsum veins.
8.30-9.80	100	90	83					8.00m - 12.00m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 50 - 70 degrees, closely to medium spaced, rough undulating to stepped. F3: 80 - 90 degrees, widely spaced, rough undulating.
9.80								

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled from GL to 4.50m BGL.
Rotary coring carried out to 12.00m BGL.
Borehole backfilled upon completion
Chiselling from 1.50m to 4.50m for 1.50 hours.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-06

Ground Investigations Ireland Ltd www.gii.ie			Site: Galway Port, Co. Galway	Borehole Number: BH1-06
Machine : Dando 2000 & Comacchio 450 Flush : water Core Dia : 63.5 mm Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 4.50m, 96mm cased to 12.00m	Ground Level (mOD): 5.18	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530291 E 725028.6 N	Dates: 11/07/2024-21/08/2024	Engineer:	Sheet: 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				6			(4.00)			
	100	80	53							
11.30	100	71	29							
12.00						-6.82	12.00	Terminated at 12.00m		

Remarks	Scale (approx): 1:50	Logged By: LM + JK
	Figure No.: 13885-06-24.BH1-06	

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-07

Machine : Dando 2000 & Comacchio 450 Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 3.30m, 96mm cased to 11.30m	Ground Level (mOD): 5.41	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530309.4 E 725095.1 N	Dates: 15/07/2024-22/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
					5.36	0.05	TARMACADAM.
						(0.35)	MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel fill.
0.40	B1				5.01	0.40	MADE GROUND: Dark brown slightly clayey slightly sandy slightly gravelly Cobbles and Boulders with occasional fragments of concrete.
1.00-1.25	SPT(C) 50/100			10,11/36,14			
1.40	B2						
						(2.90)	
2.00-2.45	SPT(C) N=40			3,8/9,4,12,15			
2.40	B3						
3.00-3.20	SPT(C) 50/50			23,20/50			

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
3.30						2.11	3.30	Recovery consists of MADE GROUND: Cobbles and Boulders of Metagabbro and Limestone with a little gravel. Driller notes MADE GROUND: Rock Armour.
3.80-3.96 / 3.80	100				25/50 SPT(C) 50/10			
5.30-5.60 / 5.30	57				9,9/11,39 SPT(C) 50/150			
							(4.50)	
6.80-6.96 / 6.80	47				25/50 SPT(C) 50/10			
7.80	47	27	20			-2.39	7.80	Strong massive pink fine to coarse grained GRANITE. Slightly to moderately weathered with brown surface staining.
8.30				2				7.80m - 8.30m BGL - 2 Fracture Sets - F1: 0 - 20 degrees, medium to widely spaced, rough undulating. F2: 50 - 70 degrees, closely to medium spaced, rough undulating.
8.50				NI				8.30m - 8.50m BGL - Mostly Non-Intact.
8.90				13				8.50m - 8.90m BGL -- 2 Fracture Sets - F1: 50 - 60 degrees, closely spaced, rough undulating. F2: 80 - 90 degrees, closely spaced, rough undulating.
9.40				NI			(3.20)	8.90m - 9.40m BGL - Mostly Non-Intact.
9.80	100	33	13					

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled from GL to 3.30m BGL.
Rotary coring carried out to 11.30m BGL.
Borehole backfilled upon completion
Chiselling from 1.40m to 1.60m for 0.50 hours. Chiselling from 2.60m to 3.00m for 0.50 hours. Chiselling from 3.30m to 3.30m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM & JK

Figure No. 13885-06-24.BH1-07

Ground Investigations Ireland Ltd www.gii.ie			Site Galway Port, Co. Galway	Borehole Number **BH1-07**
Machine : Dando 2000 & Comacchio 450 **Flush :** water **Core Dia :** 63.5 mm **Method :** Cable Percussion with Rotary Core Follow-on	**Casing Diameter** 200mm cased to 3.30m 96mm cased to 11.30m	**Ground Level (mOD)** 5.41	**Client** The Land Development Agency Ireland	**Job Number** 13885-06-24
	Location 530309.4 E 725095.1 N	**Dates** 15/07/2024-22/08/2024	**Engineer**	**Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
	97	73	43	5		-5.59	11.00	9.40m - 11.00m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 50 - 70 degrees, medium spaced, rough undulating. F3: 70 - 80 degrees, medium spaced, rough undulating.		
11.00 11.30								Terminated at 11.30m		

Remarks	Scale (approx)	Logged By
	1:50	LM & JK
	Figure No. 13885-06-24.BH1-07	

Ground Investigations Ireland Ltd www.gii.ie			Site: Galway Port, Co. Galway	Borehole Number: **BH1-08**
Machine : Dando 2000 & Comacchio 450 Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 1.30m, 96mm cased to 11.30m	Ground Level (mOD): 5.40	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530320.8 E 725106.4 N	Dates: 15/07/2024-23/08/2024	Engineer:	Sheet: 1/2

Depth (m)	Sample / Tests	TCR	SCR	Casing Depth (m) / RQD	Water Depth (m) / FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							5.35	0.05 (0.25)	TARMACADAM.		
0.30	B1						5.10	0.30	MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel fill.		
								(1.00)	MADE GROUND: Dark grey slightly clayey slightly sandy very gravelly COBBLES and BOULDERS. Driller notes MADE GROUND: Rock Armour.		
1.00-1.26	SPT(C) 50/105					15,17/25,25					
1.30		60					4.10	1.30	Recovery consists of MADE GROUND: Grey to dark grey subangular to subrounded medium to coarse Gravel of mixed lithologies with low subangular cobble content. Driller notes MADE GROUND: Rock Armour.		
2.30-2.75 2.30		10				4,7/7,9,11,13 SPT(C) N=40		(4.00)			
3.80-4.25 3.80		17				1,1/0,1,1,25 SPT(C) N=27					
5.30-5.75 5.30		23				1,0/1,1,1,2 SPT(C) N=5	0.10	5.30	Recovery consists of Possible MADE GROUND: Light grey slightly sandy gravelly Clay. Gravel is angular to subrounded fine to coarse.		
6.80-7.25 6.80		60	40	27		4,5/8,9,11,11 SPT(C) N=39		(2.40)			
7.70							-2.30	7.70	Strong massive brownish red speckled green and pink fine to coarse grained GRANITE. Fresh to slightly weathered. 7.70m - 11.30m BGL - 3 Fracture Sets - F1: 0 - 20 degrees, closely to medium spaced, rough undulating. F2: 40 - 60 degrees, widely spaced, rough undlating. F3: 70 - 80 degrees, medium to widely spaced, rough undulating to stepped.		
8.30		87	80	80	5			(3.60)			
9.80											

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled from GL to 1.30m BGL.
Rotary coring carrie dout to 11.30m BGL.
Borehole backfilled upon completion
Chiselling from 0.30m to 1.00m for 1.00 hour. Chiselling from 1.00m to 1.30m for 0.50 hours. Chiselling from 1.30m to 1.30m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-08

Ground Investigations Ireland Ltd www.gii.ie			Site: Galway Port, Co. Galway	Borehole Number: BH1-08
Machine: Dando 2000 & Comacchio 450 Flush: water Core Dia: 63.5 mm Method: Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 1.30m 96mm cased to 11.30m	Ground Level (mOD): 5.40	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530320.8 E 725106.4 N	Dates: 15/07/2024-23/08/2024	Engineer:	Sheet: 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
	87	73	60							
11.30						-5.90	11.30	Complete at 11.30m		

Remarks	Scale (approx)	Logged By
	1:50	LM + JK
	Figure No. 13885-06-24.BH1-08	

Ground Investigations Ireland Ltd
www.gii.ie

Site	Galway Port, Co. Galway
Borehole Number	BH1-09
Machine	Dando 2000 & Comacchio 450
Method	Cable Percussion with Rotary Core Follow-on
Casing Diameter	200mm cased to 0.90m; 96mm cased to 14.00m
Ground Level (mOD)	5.00
Client	The Land Development Agency Ireland
Job Number	13885-06-24
Location	530343.3 E 725149.4 N
Dates	11/07/2024-26/07/2024
Engineer	
Sheet	1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
						4.95	0.05	MADE GROUND: Grey sandy angular fine to coarse Gravel.
						4.90	0.10	TARMACADAM.
						4.50	(0.40) 0.50	MADE GROUND: Dark brown Cobbles and Boulders. Driller notes MADE GROUND: Rock Armour.
						4.10	(0.40) 0.90	MADE GROUND: Dark grey slightly sandy angular fine to coarse Gravel fill with low cobble content.
0.90 - 2.30	43							Recovery consists of MADE GROUND: Grey to dark grey angular to subrounded medium to coarse Gravel and Cobbles of predominantly Limestone. Driller notes MADE GROUND: Rock Armour.
2.30 - 3.80	27						(4.40)	
3.80 - 5.30	13					-0.30	5.30	
5.30 - 6.80	13							Recovery consists of Possible MADE GROUND: Light grey to grey slightly sandy gravelly Clay with low subangular cobble content. Gravel is subangular to subrounded fine to coarse.
6.80 - 8.30	37						(4.15)	
8.30 - 9.80	77	23	23			-4.45	9.45	
9.45 - 9.80				4				Very strong foliated dark grey fine grained METAGABBRO. Fresh to slightly weathered with rare clay smearing on fracture surfaces. 9.45m - 10.20m BGL - 2 Fracture Sets - F1: 0

Remarks
No groundwater encountered during cable percussion drilling.
Rotary redrilled from GL to 0.90m BGL.
Rotary coring carried out to 14.00m BGL.
Standpipe installed in borehole upon completion. Slotted standpipe installed from 14.00m to 4.00m BGL with pea gravel surround.
Plain standpipe installed from 4.00m BGL to GL with bentonite seal and a flush cover.
Chiselling from 0.40m to 0.40m for 1.00 hour.

Scale (approx)	Logged By
1:50	LM + JK

Figure No. 13885-06-24.BH1-09

Ground Investigations Ireland Ltd www.gii.ie	Site: Galway Port, Co. Galway	Borehole Number: BH1-09

Machine : Dando 2000 & Comacchio 450 Flush : water Core Dia: 63.5 mm Method : Cable Percussion with Rotary Core Follow-on	Casing Diameter: 200mm cased to 0.90m 96mm cased to 14.00m	Ground Level (mOD): 5.00	Client: The Land Development Agency Ireland	Job Number: 13885-06-24
	Location: 530343.3 E 725149.4 N	Dates: 11/07/2024-26/07/2024	Engineer:	Sheet: 2/2

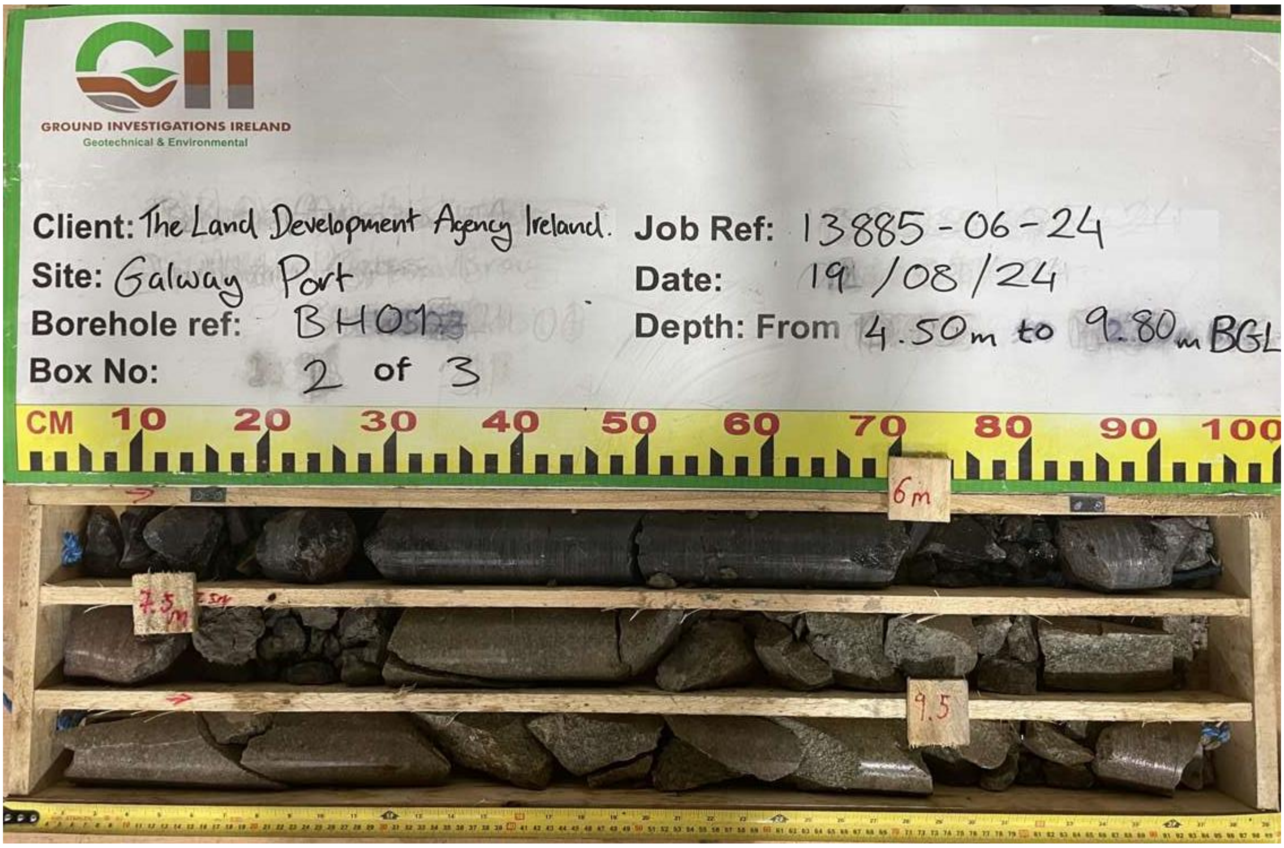
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
								- 20 degrees, medium spaced, rough undulating. F2: 40 - 50 degrees, medium to widely spaced, rough undulating.			
10.20	100	73	33	NI				10.20m - 10.80m BGL - Mostly Non-Intact.			
10.80											
11.30	100	97	83	3			(4.55)	10.80m - 14.00m BGL - 2 Fracture Sets - F1: 0 - 20 degrees, medium spaced, roug undulating. F2: 50 - 70 degrees, medium to widely spaced, rough undulating.			
12.80	92	92	75								
14.00						-9.00	14.00	Terminated at 14.00m			

Remarks	Scale (approx): 1:50	Logged By: LM + JK
	Figure No. 13885-06-24.BH1-09	

Galway Port – Rotary Core Photographs

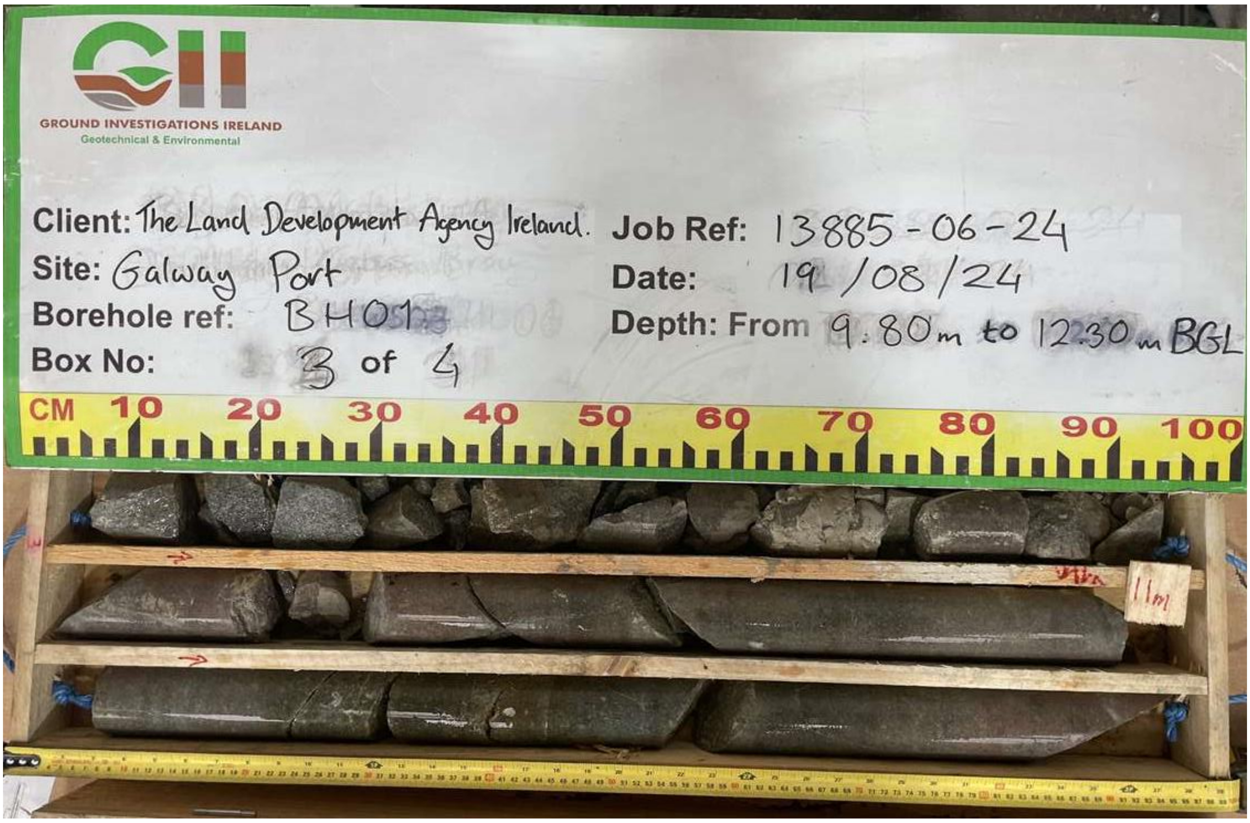
BH1-01

BH1-01



Galway Port – Rotary Core Photographs

BH1-01



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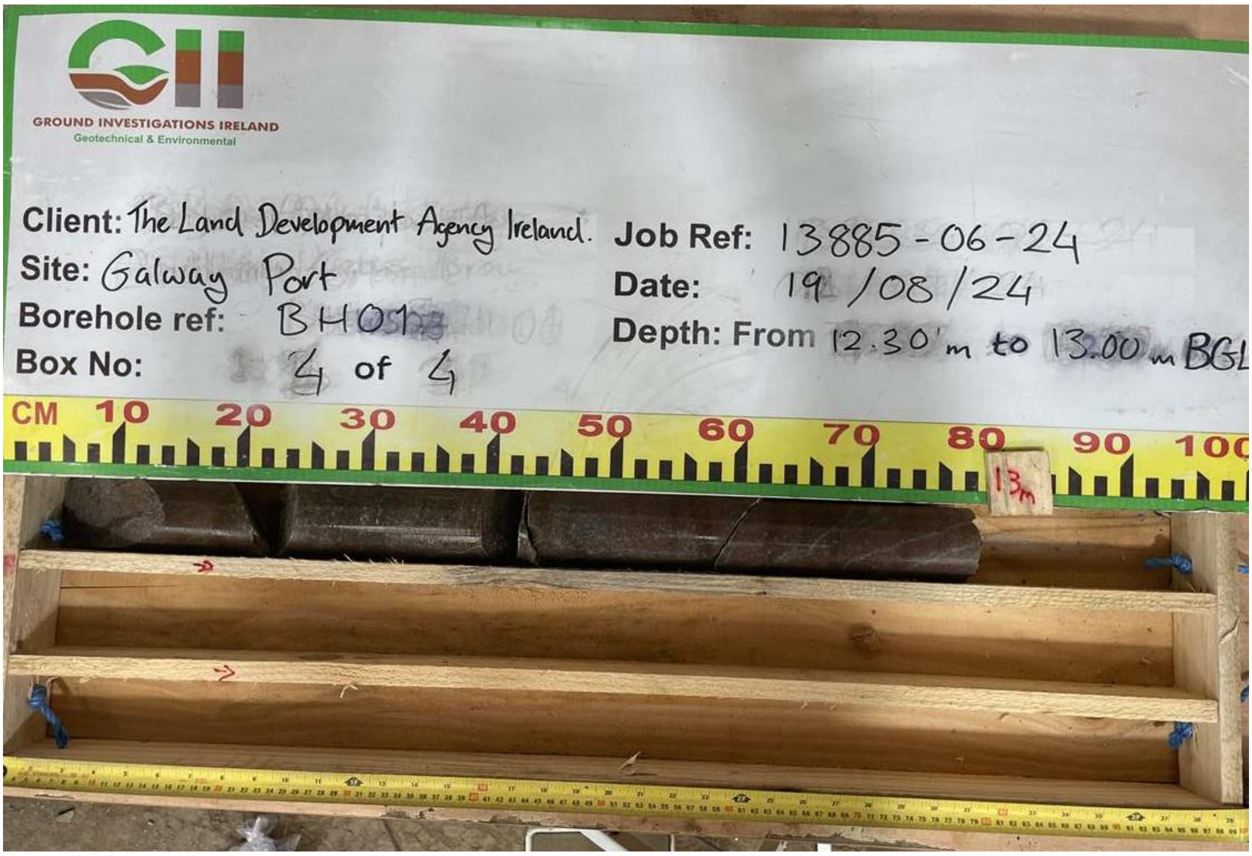


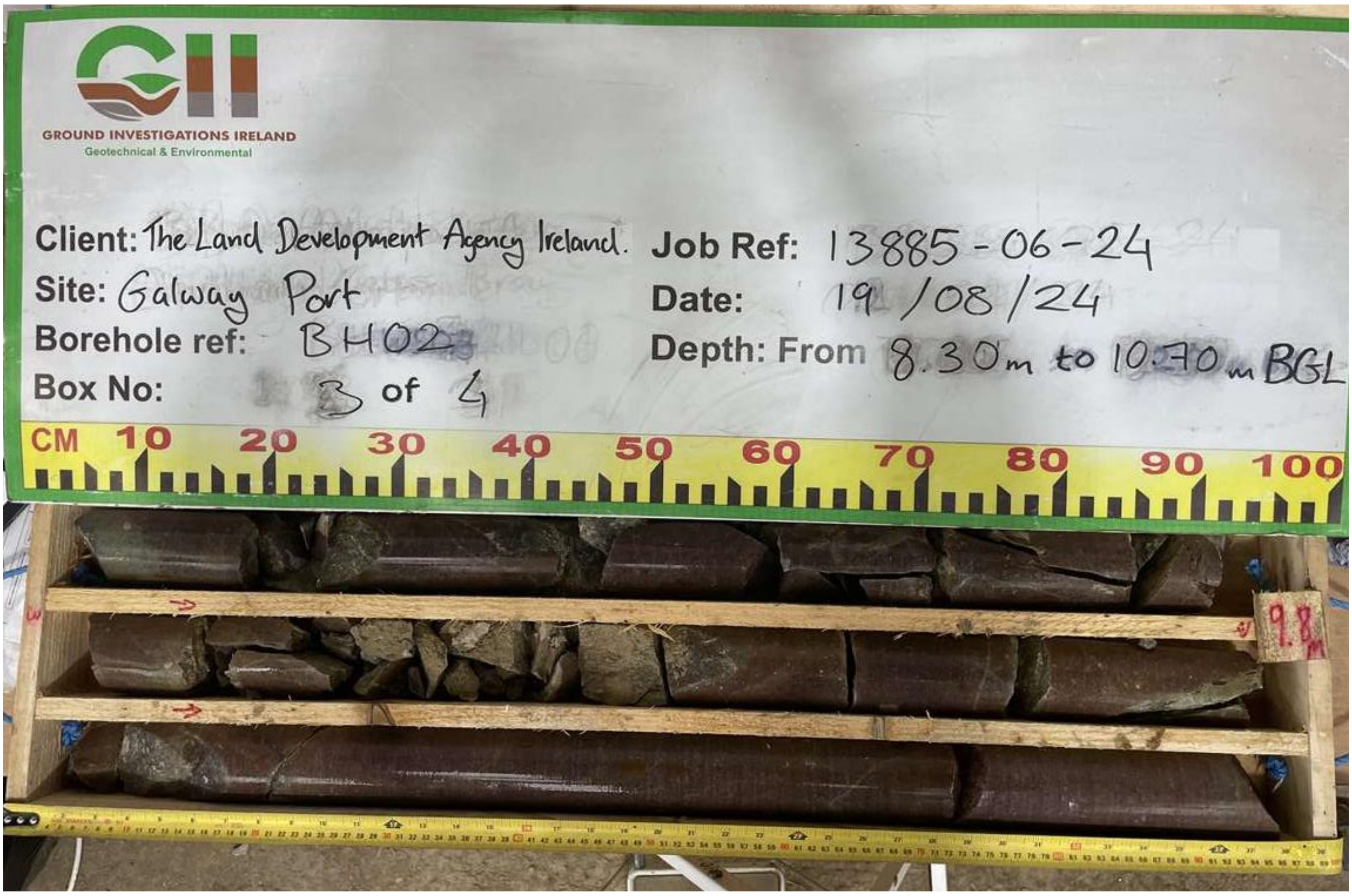
Galway Port – Rotary Core Photographs

BH1-02

BH1-02

Galway Port – Rotary Core Photographs

BH1-02



BH1-02

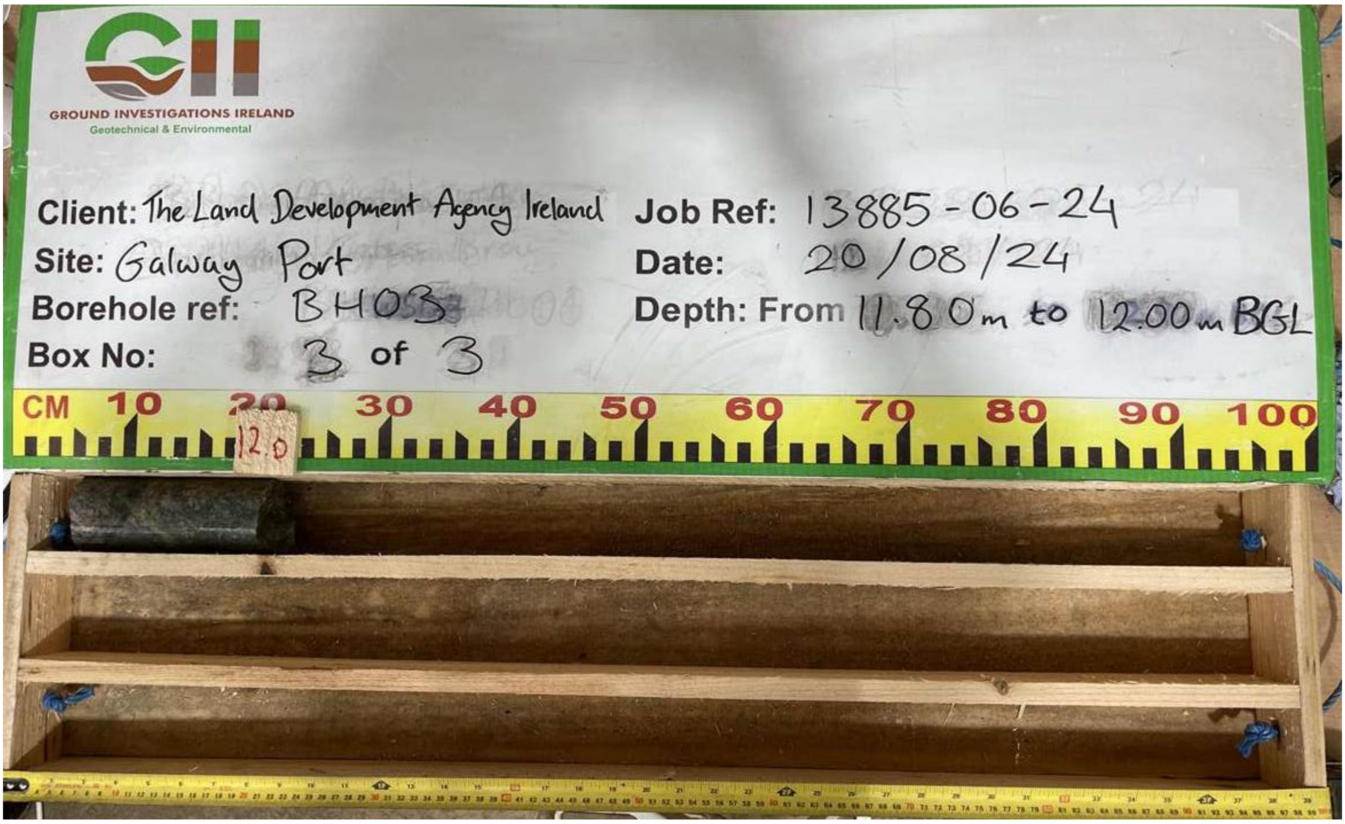
Galway Port – Rotary Core Photographs

BH1-03

BH1-03

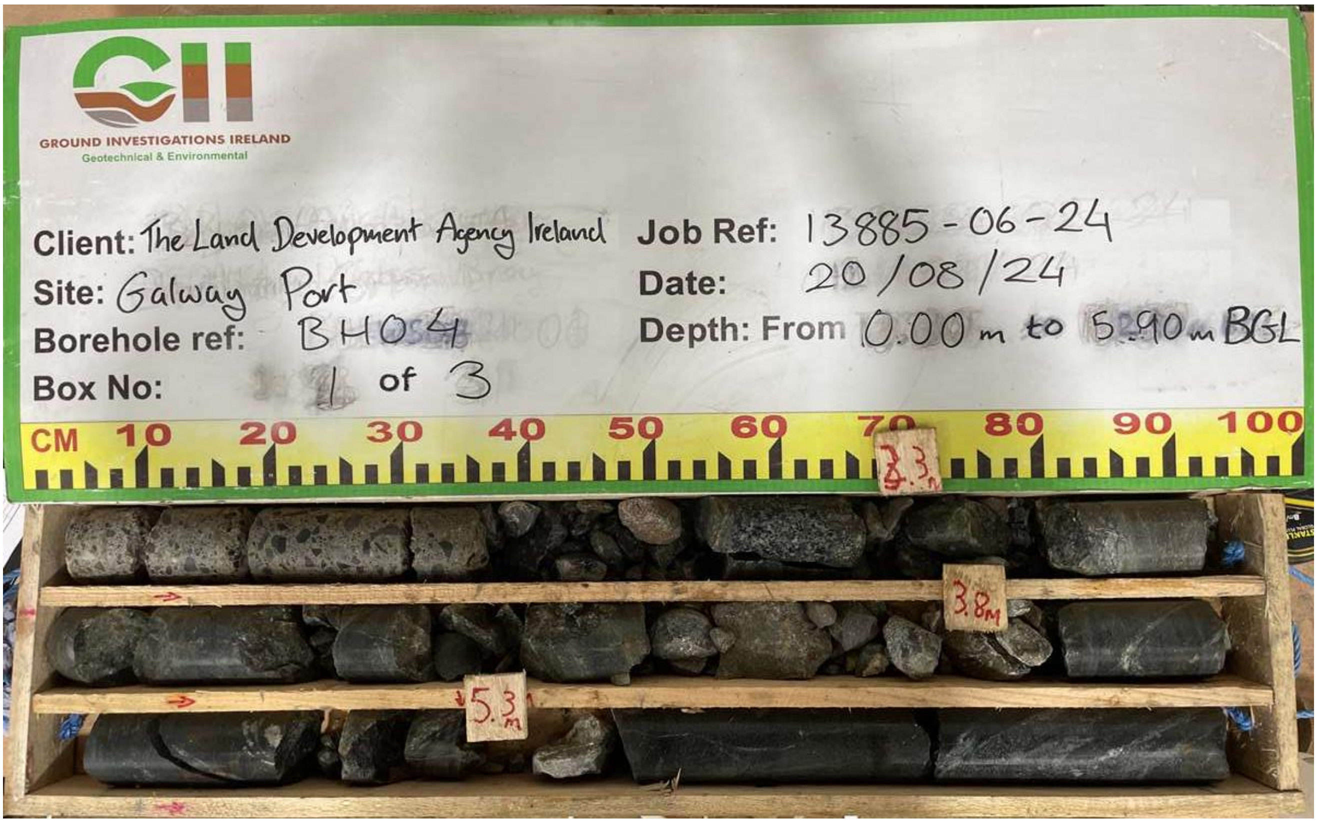
Galway Port – Rotary Core Photographs

BH1-03



Galway Port – Rotary Core Photographs

BH1-04



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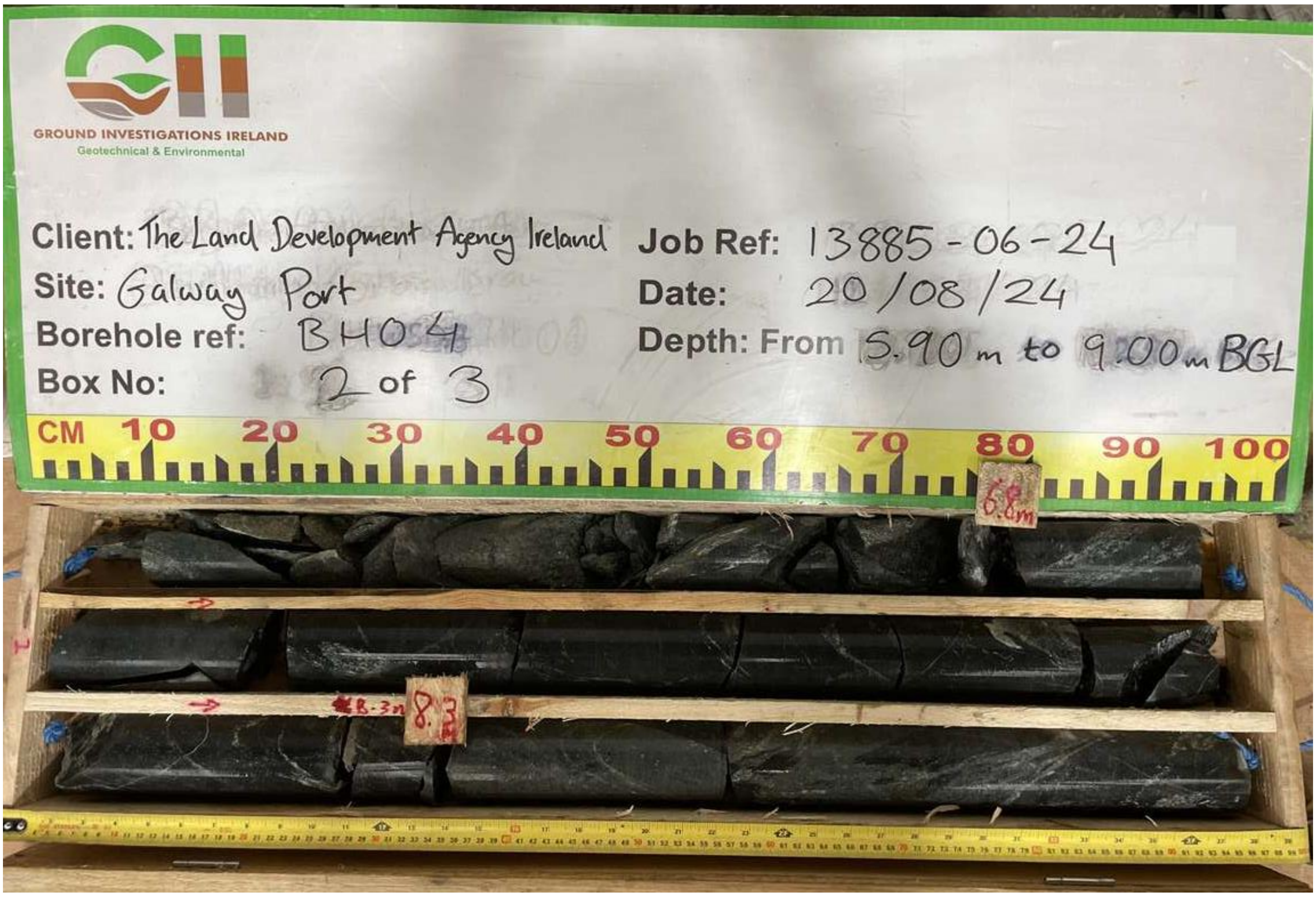
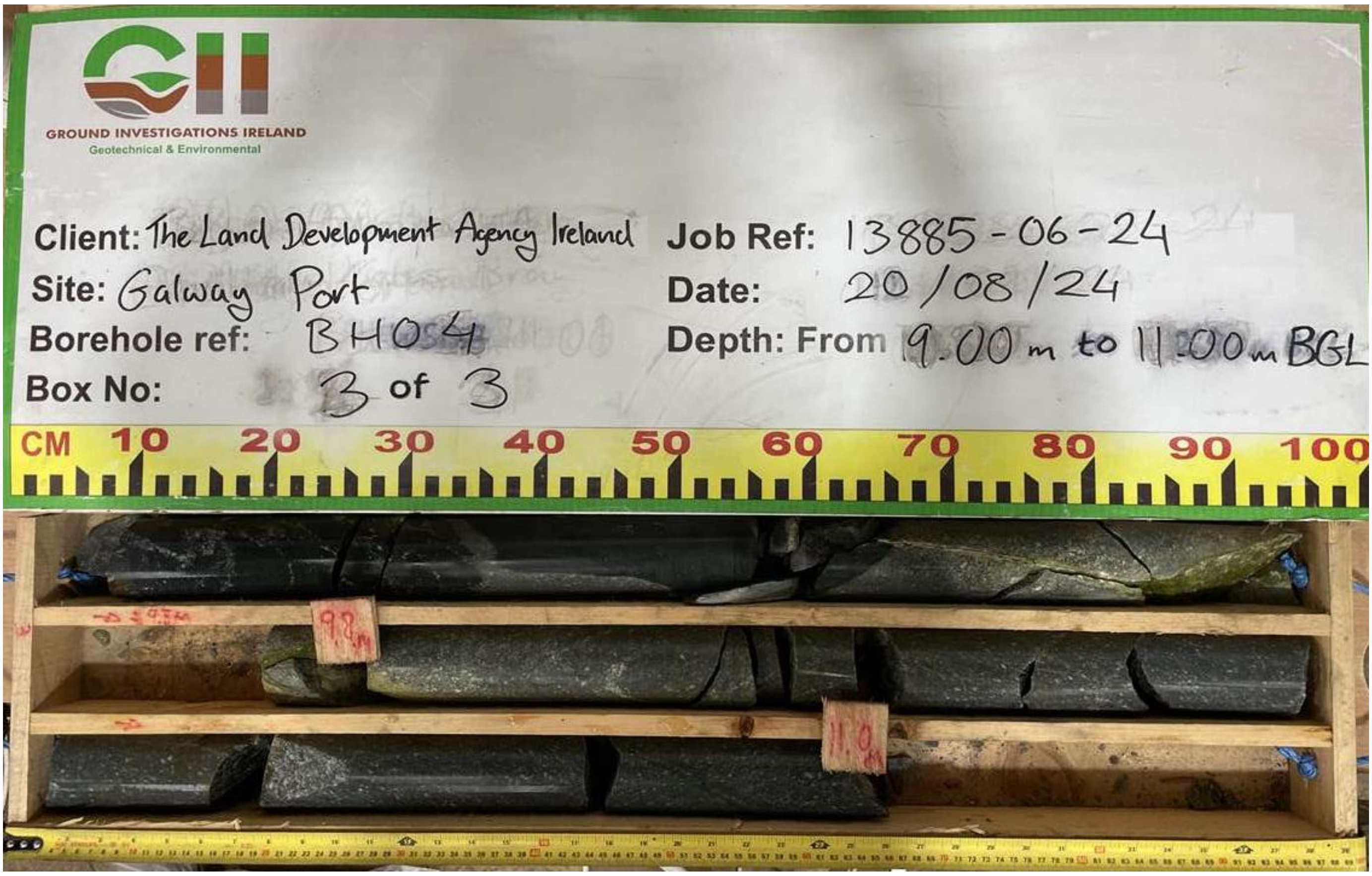


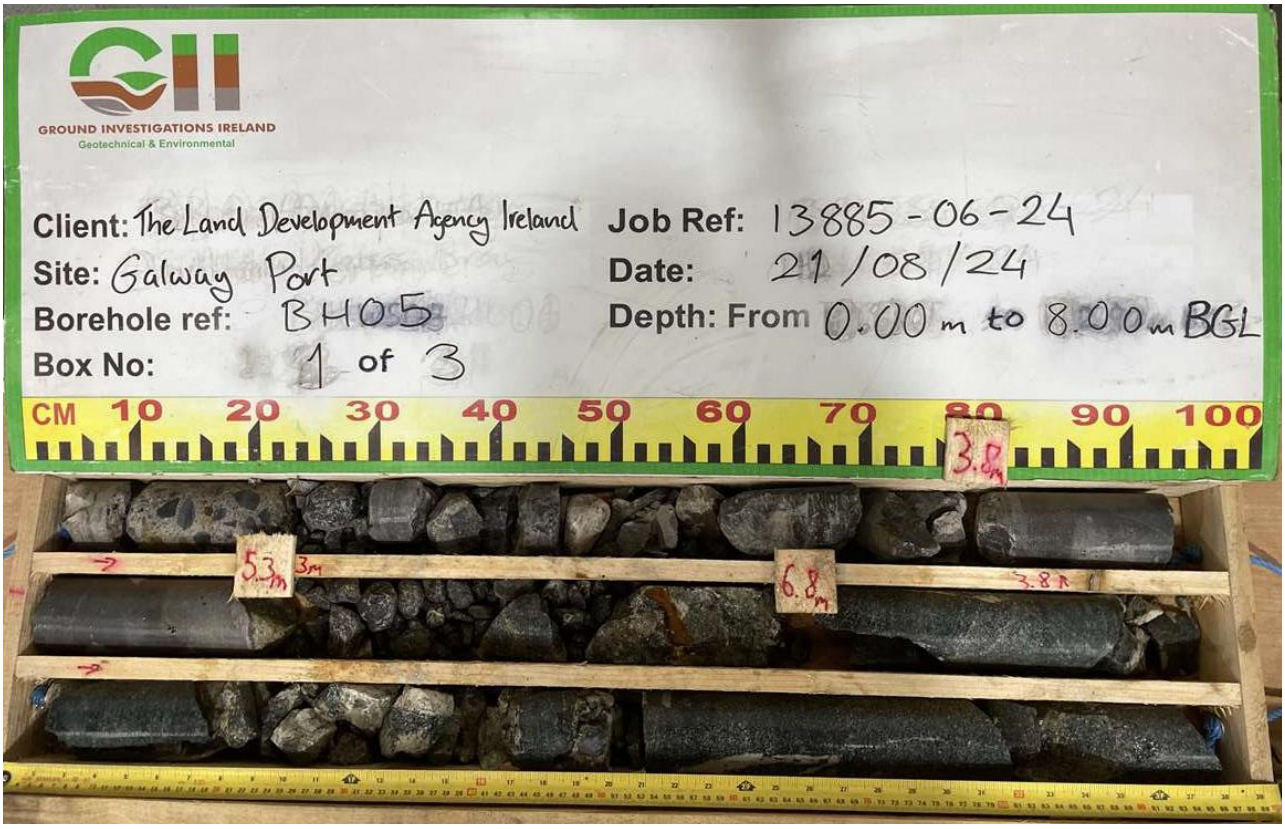
Galway Port – Rotary Core Photographs

BH1-04



Galway Port – Rotary Core Photographs

BH1-05



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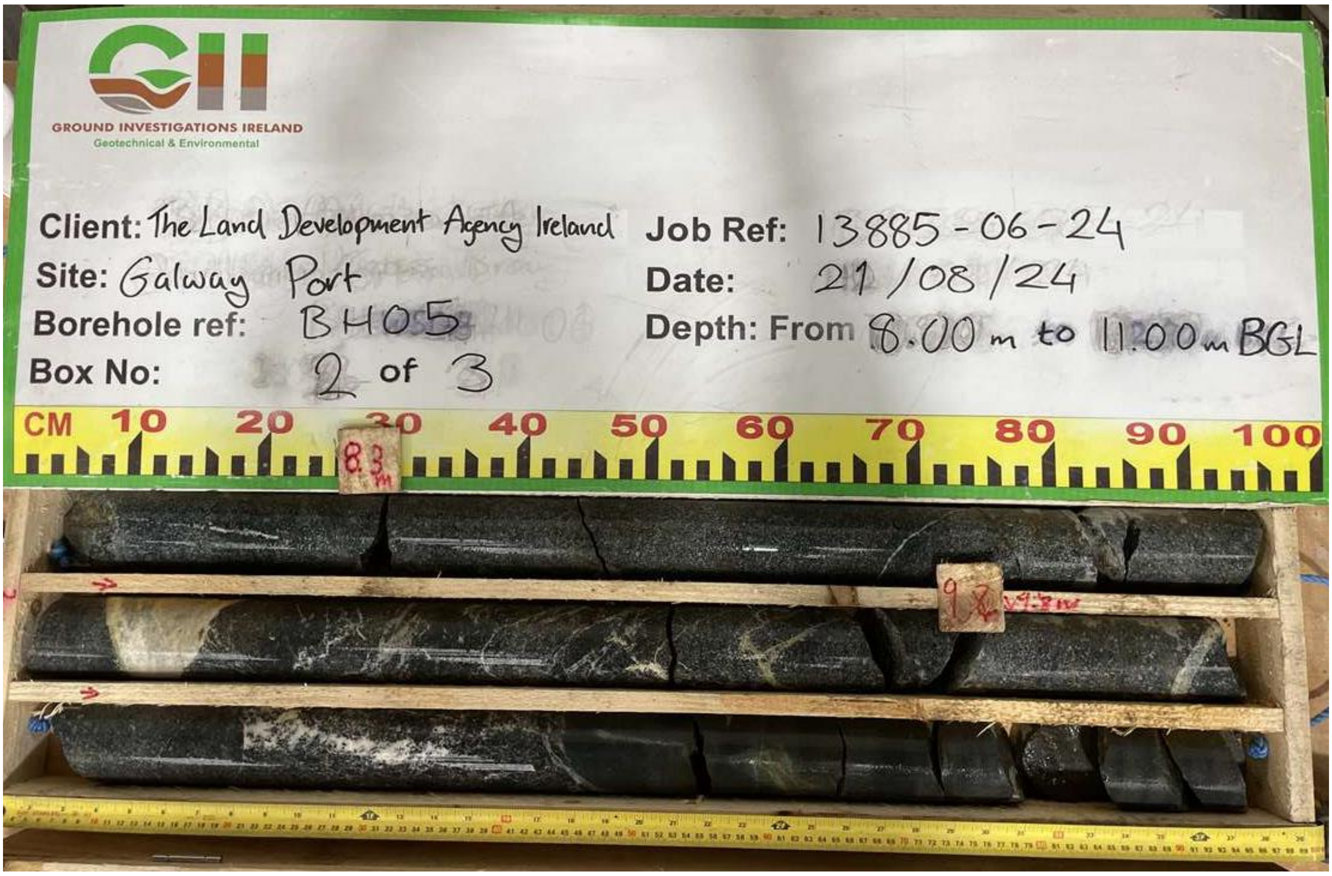
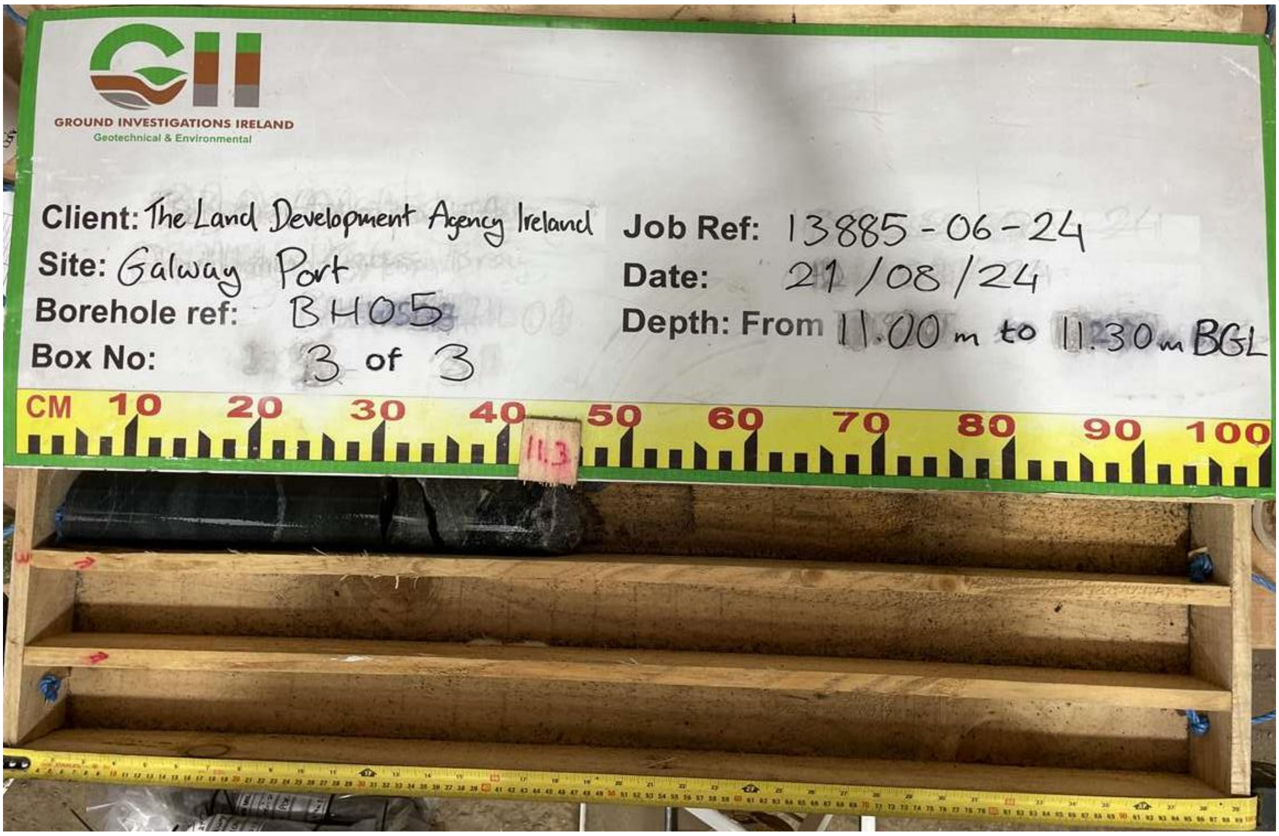


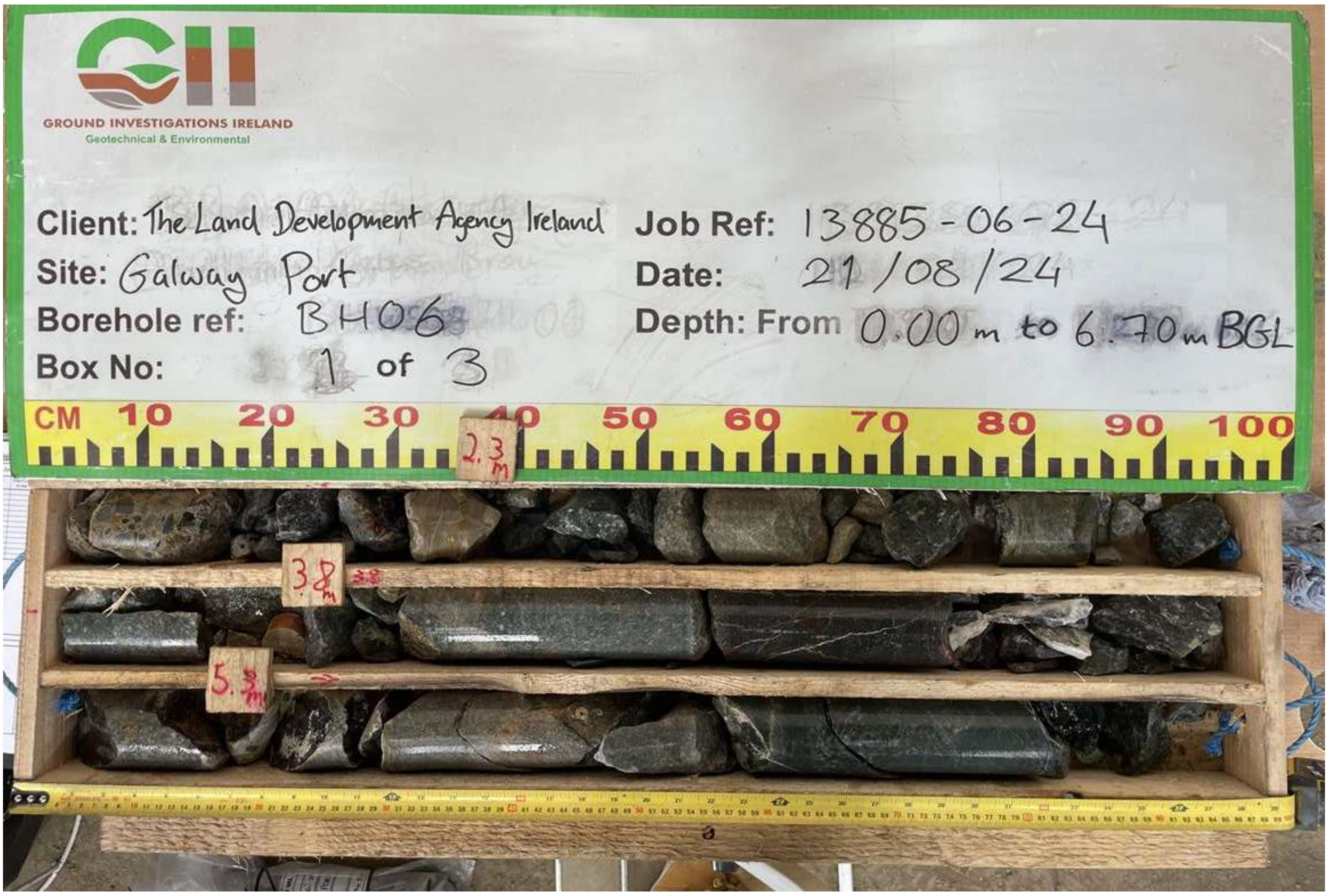
Galway Port – Rotary Core Photographs

BH1-05



Galway Port – Rotary Core Photographs

BH1-06



BH1-06

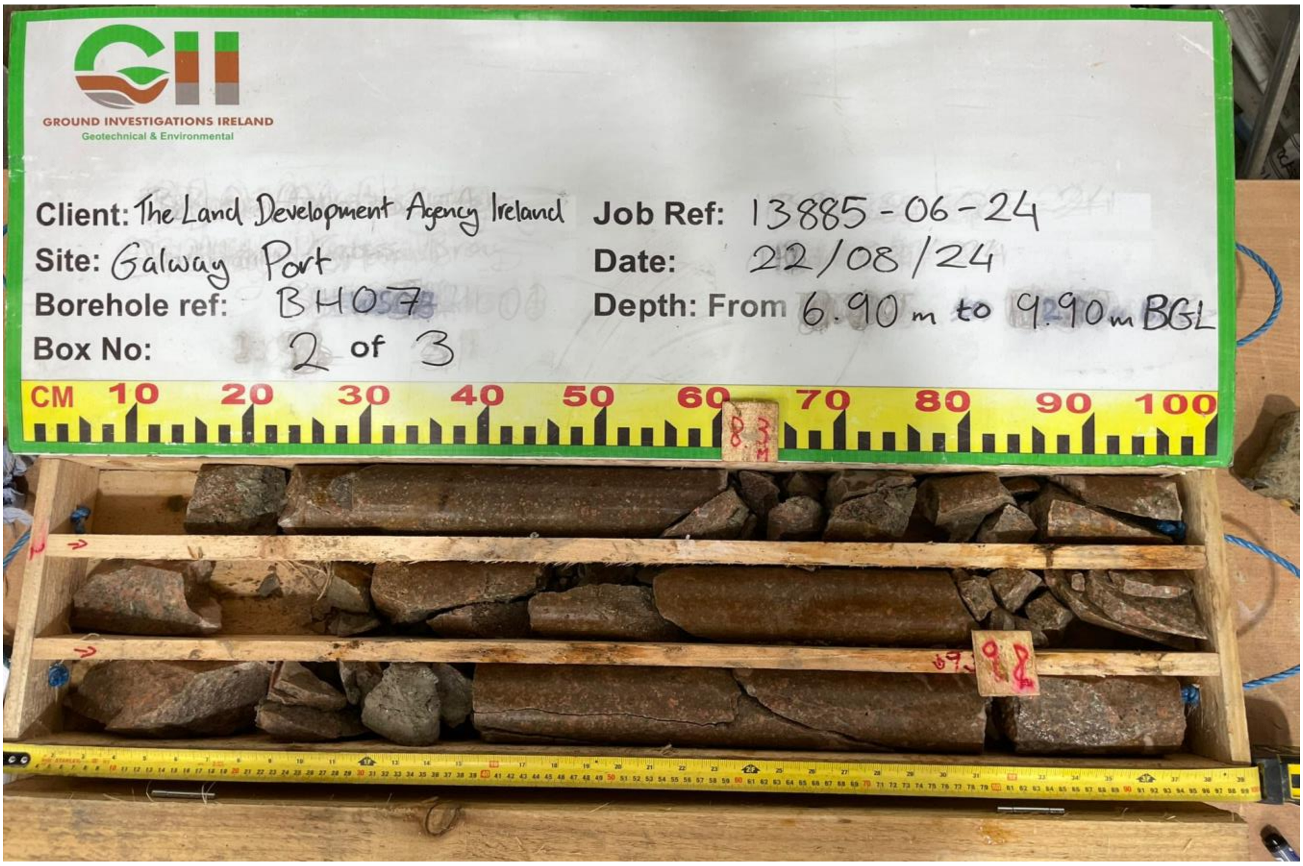
Galway Port – Rotary Core Photographs

BH1-06

Galway Port – Rotary Core Photographs

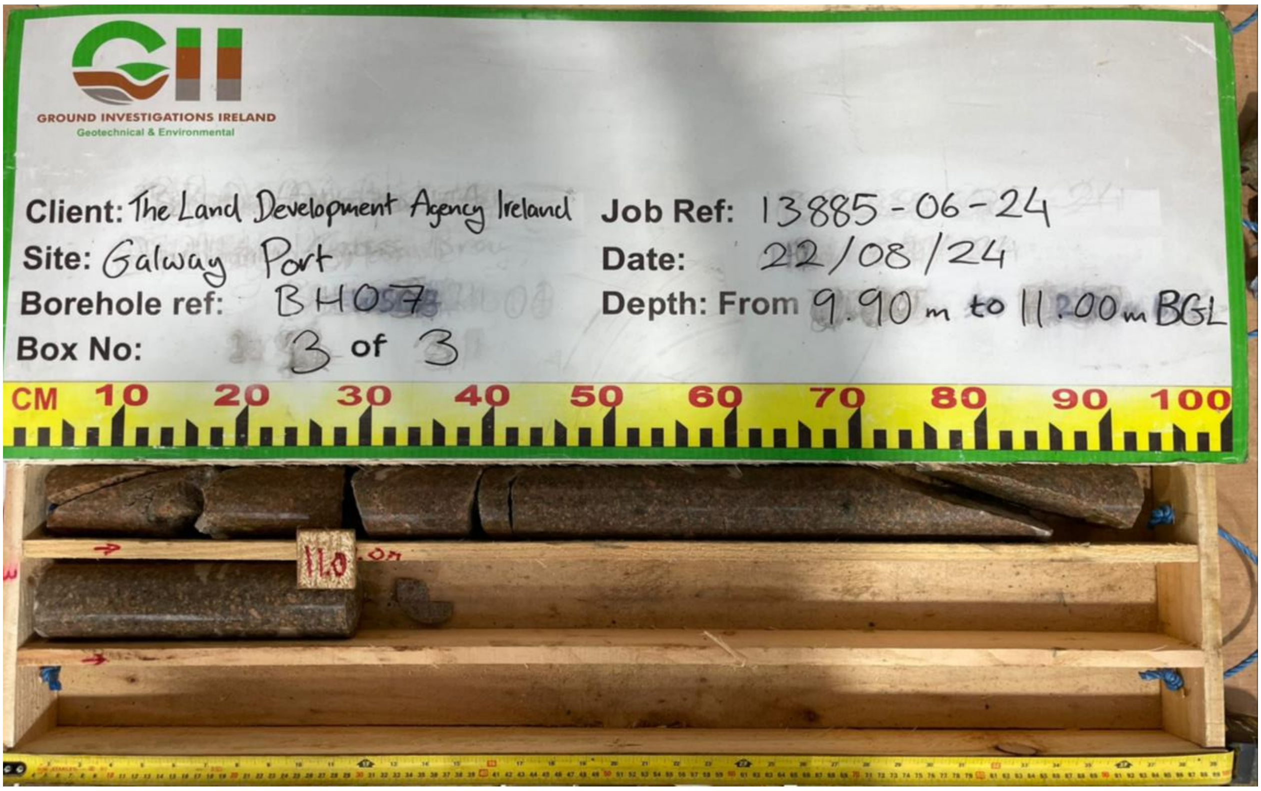
BH1-07

BH1-07



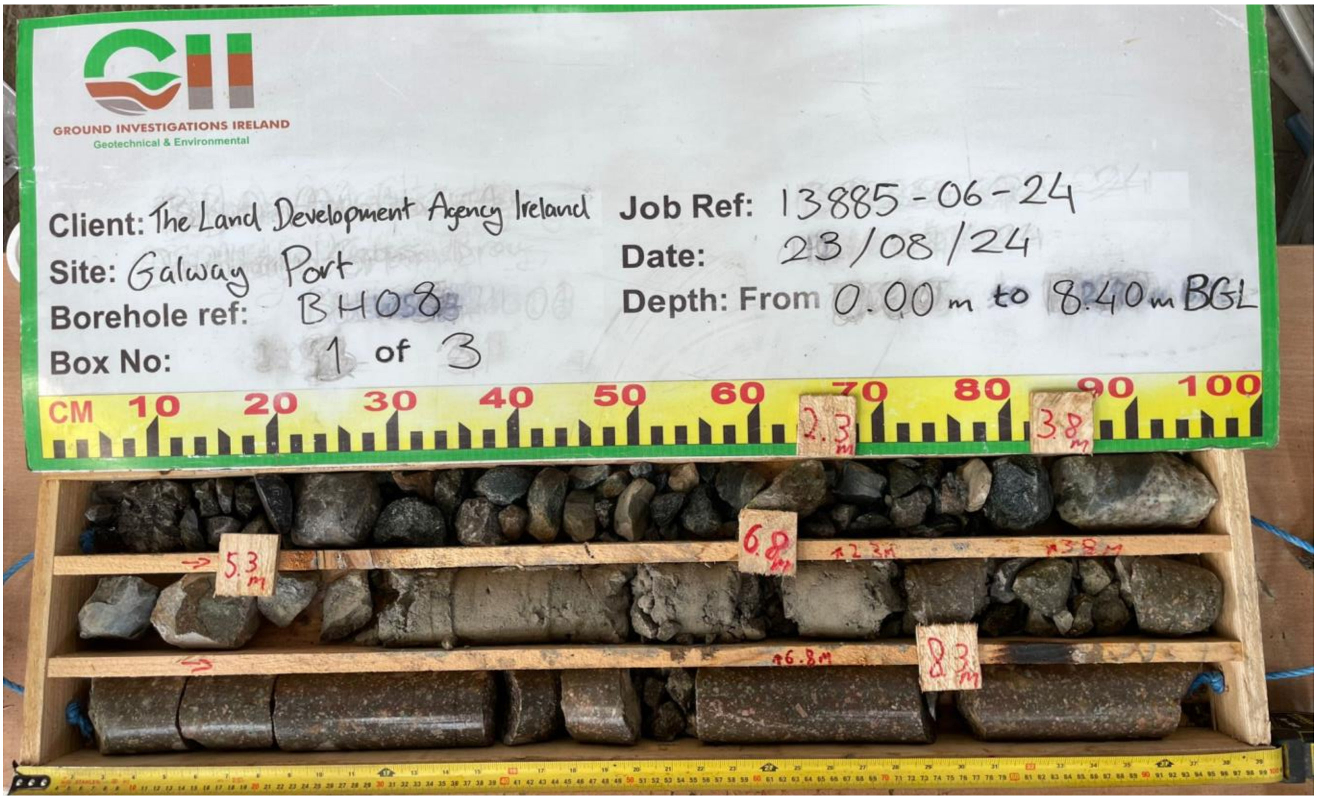
Galway Port – Rotary Core Photographs

BH1-07



Galway Port – Rotary Core Photographs

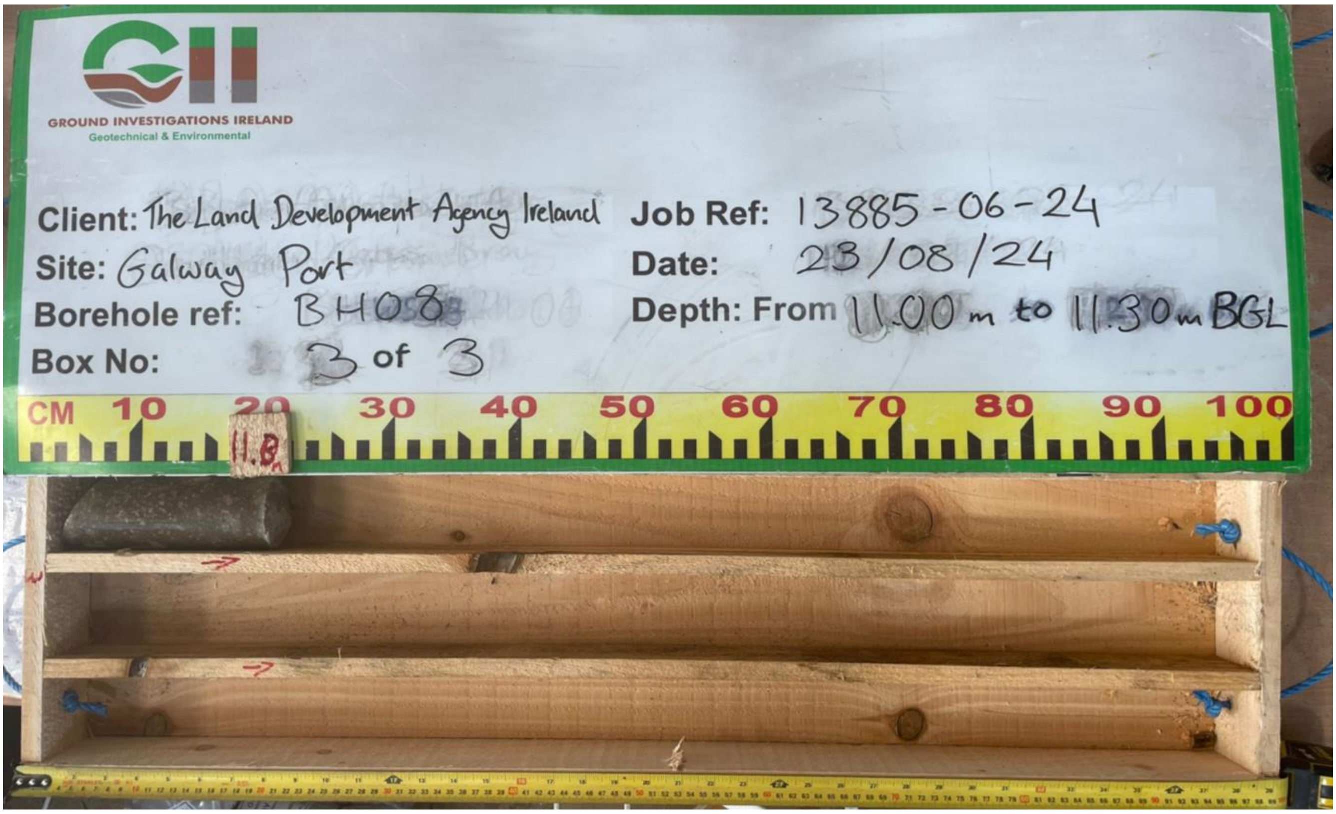
BH1-08



BH1-08

Galway Port – Rotary Core Photographs

BH1-08



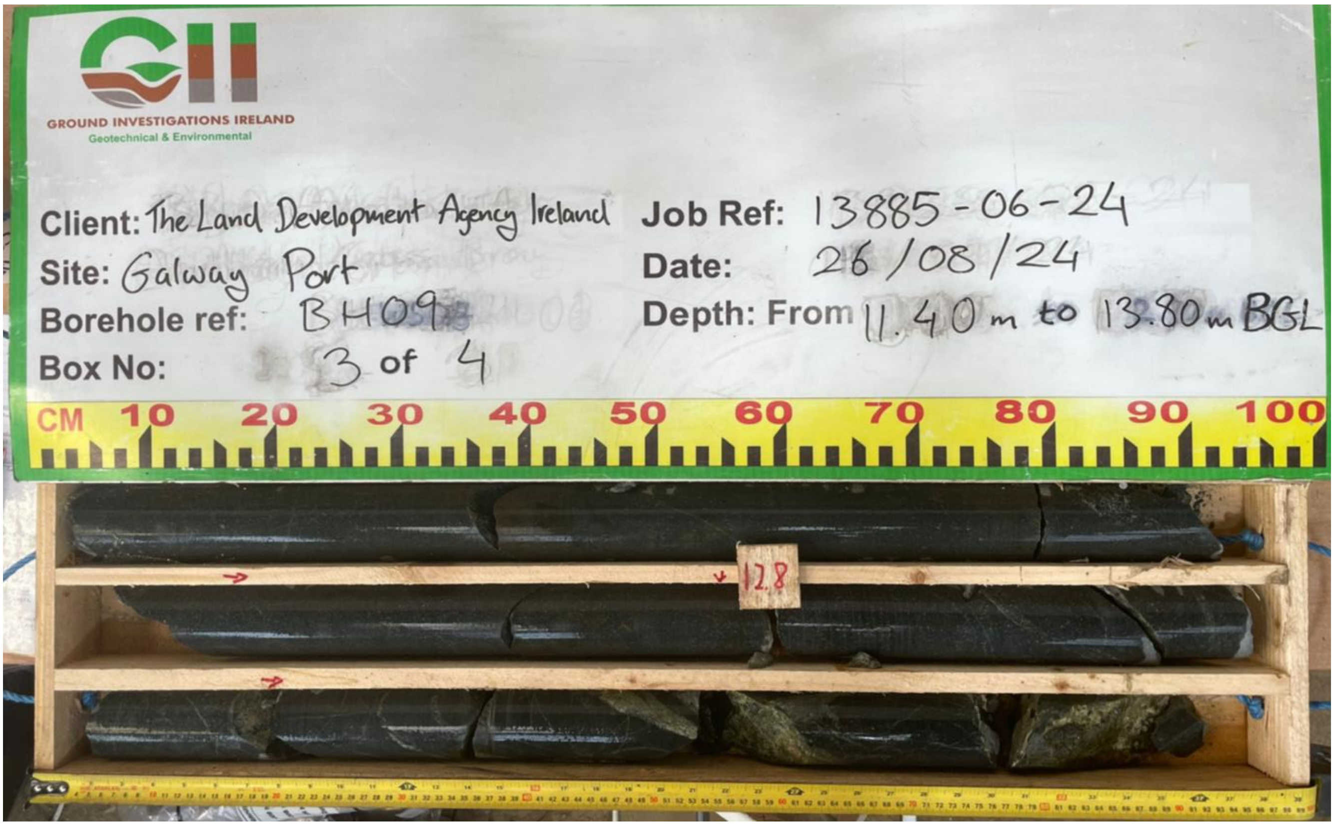
Galway Port – Rotary Core Photographs

BH1-09

BH1-09

Galway Port – Rotary Core Photographs

BH1-09



BH1-09

APPENDIX 4 - Laboratory Testing

Element Materials Technology
Unit 3 Deeside Point
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Deeside
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Catherinestown House
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UKAS TESTING 4225

Attention :	Adam Browne
Date :	21st August, 2024
Your reference :	13885-06-24
Our reference :	Test Report 24/12401 Batch 1
Location :	Galway Port
Date samples received :	18th July, 2024
Status :	Final Report
Issue :	202408211250

Forty eight samples were received for analysis on 18th July, 2024 of which forty eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 226.902 kg of CO2

Scope 1&2&3 emissions - 536.227 kg of CO2

Authorised By:

Phil Sommerton BSc
Senior Project Manager

Client Name:	Ground Investigations Ireland	**Report :**	**Solid**
Reference:	13885-06-24		
Location:	Galway Port	**Solids:**	V=60g VOC jar, J=250g glass jar, T=plastic tub
Contact:	Adam Browne		
EMT Job No:	24/12401		

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40			
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04			
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Antimony	<1	<1	<1	<1	<1	<1	<1	115$_{AA}$	19	1	<1	mg/kg	TM30/PM15
Arsenic #	2.6	1.4	3.1	4.1	2.5	1.6	4.4	191.0	37.9	5.3	<0.5	mg/kg	TM30/PM15
Barium #	59	13	13	29	13	8	20	1155	1317	33	<1	mg/kg	TM30/PM15
Cadmium #	0.4	0.3	0.5	0.7	0.6	0.2	0.5	50.1$_{AA}$	9.9	1.2	<0.1	mg/kg	TM30/PM15
Chromium #	19.6	15.0	15.7	16.5	15.8	14.8	17.5	74.9	79.3	16.6	<0.5	mg/kg	TM30/PM15
Copper #	12	5	8	15	7	4	10	787$_{AA}$	157	17	<1	mg/kg	TM30/PM15
Lead #	24	8	11	42	8	<5	15	9593$_{AA}$	1609	105	<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	4.0	0.9	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	1.9	1.4	2.8	2.2	2.3	1.6	3.1	4.6	4.9	1.5	<0.1	mg/kg	TM30/PM15
Nickel #	7.2	4.4	7.3	10.8	8.5	3.9	13.6	26.0	12.9	9.6	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	1	2	2	<1	3	1	<1	<1	<1	mg/kg	TM30/PM15
Zinc #	293	57	28	35	13	9	18	7757$_{AA}$	1484	125	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.17	0.08	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.18	0.06	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.09	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.73	0.25	0.07	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.38	0.14	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	<0.03	1.72	0.62	0.13	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.39	0.54	0.11	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	1.09	0.41	0.09	<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.13	0.41	0.08	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	2.01	0.69	0.13	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	1.21	0.39	0.08	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.69	0.25	0.06	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.20	0.06	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.65	0.25	0.06	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.14	0.05	<0.04	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	6.28	2.20	0.46	<0.22	mg/kg	TM4/PM8
PAH 17 Total	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	11.78	4.20	0.81	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.45	0.50	0.09	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.56	0.19	0.04	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	98	99	95	101	101	97	100	99	97	96	<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	<30	<30	<30	<30	<30	<30	31	226	<30	<30	<30	mg/kg	TM5/PM8/PM16

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name:	Ground Investigations Ireland	**Report :**	**Solid**
Reference:	13885-06-24		
Location:	Galway Port	**Solids:**	V=60g VOC jar, J=250g glass jar, T=plastic tub
Contact:	Adam Browne		
EMT Job No:	24/12401		

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40			
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04			
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	40	<7	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	31	177	<7	<7	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	<7	<7	<7	<7	9	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	<26	<26	<26	<26	<26	<26	31	226	<26	<26	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	<10	87	<10	<10	<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	31	129	<10	<10	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	16	<7	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	55	31	<7	<7	<7	<7	103	116	53	65	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	16	15	<7	<7	<7	<7	44	21	13	21	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	71	46	<26	<26	<26	<26	147	153	66	86	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	71	<52	<52	<52	<52	<52	178	379	66	86	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1[SV]	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	<10	<10	<10	<10	<10	<10	<10	40	<10	<10	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	55	31	<10	<10	<10	<10	103	91	53	65	<10	mg/kg	TM5/PM8/PM16
MTBE#	<5	<5	<5	<5	<5	<5[SV]	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Benzene#	<5	<5	<5	<5	<5	<5[SV]	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Toluene#	<5	12	8	6	11	8[SV]	8	8	6	6	<5	ug/kg	TM36/PM12
Ethylbenzene#	<5	<5	<5	<5	<5	<5[SV]	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
m/p-Xylene#	22	<5	<5	<5	7	<5[SV]	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
o-Xylene#	13	<5	<5	<5	<5	<5[SV]	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
PCB 28#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40			
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04			
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Natural Moisture Content	7.1	2.6	4.8	5.6	2.7	1.2	5.5	30.3	8.0	3.8	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	6.6	2.5	4.6	5.3	2.6	1.2	5.2	23.3	7.4	3.7	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Chromium III	19.6	15.0	15.7	16.5	15.8	14.8	17.5	74.9	79.3	16.6	<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.27	0.13	0.16	0.20	0.14	0.92	0.25	1.29	0.85	0.51	<0.02	%	TM21/PM24
Alkali Reserve	-	-	-	-	-	-	-	-	-	-	<0.000	gNaOH/100g	TM160/PM110
pH #	9.13	8.99	9.13	8.29	8.40	8.40	8.33	8.02	8.04	10.12	<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		None	Subcontracted

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All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80			
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07			
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Antimony	23	19	<1	3	<1	2	1	1	<1	<1	<1	mg/kg	TM30/PM15
Arsenic #	48.3	39.8	3.9	5.1	7.6	5.6	5.1	1.1	2.5	2.7	<0.5	mg/kg	TM30/PM15
Barium #	426	415	50	89	56	98	89	26	45	115	<1	mg/kg	TM30/PM15
Cadmium #	9.3	6.0	0.3	0.8	0.6	0.8	1.5	0.1	0.4	1.0	<0.1	mg/kg	TM30/PM15
Chromium #	91.9	82.0	12.3	84.5	54.1	83.6	39.8	75.0	59.8	29.8	<0.5	mg/kg	TM30/PM15
Copper #	198	191	15	34	21	35	31	11	16	13	<1	mg/kg	TM30/PM15
Lead #	2396	1696	28	106	94	168	149	11	52	32	<5	mg/kg	TM30/PM15
Mercury #	0.9	1.1	<0.1	0.3	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	4.7	5.2	1.6	5.1	3.5	5.8	2.5	4.6	3.7	2.2	<0.1	mg/kg	TM30/PM15
Nickel #	32.0	21.5	8.2	13.5	10.2	10.3	8.2	6.4	6.6	9.8	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	2	1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Zinc #	1353	1002	31	150	117	164	182	42	81	2049	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.26	0.35	2.06	0.13	0.45	0.09	0.10	<0.04	0.09	0.51	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.19	0.41	<0.03	0.14	0.18	0.07	0.10	<0.03	0.20	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	0.12	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	0.10	0.18	0.33	0.05	<0.04	<0.04	0.05	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	1.09	2.11	2.02	0.45	0.77	0.38	0.41	0.03	0.56	0.23	<0.03	mg/kg	TM4/PM8
Anthracene #	0.42	0.87	0.36	0.25	0.24	0.19	0.24	<0.04	0.34	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	2.26	5.33	0.63	1.12	1.41	0.83	1.26	0.14	2.25	0.37	<0.03	mg/kg	TM4/PM8
Pyrene #	1.94	4.68	0.61	0.98	1.23	0.67	1.13	0.12	1.98	0.32	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.23	3.74	0.44	0.73	0.88	0.47	0.81	0.11	1.12	0.12	<0.06	mg/kg	TM4/PM8
Chrysene #	1.27	3.76	0.40	0.75	0.92	0.47	0.83	0.10	1.18	0.18	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	2.30	8.15	0.46	1.38	1.61	0.69	1.52	0.14	1.72	0.26	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.39	5.29	0.20	0.81	0.89	0.39	0.92	0.07	0.97	0.14	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.87	3.93	0.13	0.56	0.57	0.19	0.57	0.04	0.54	0.10	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.22	1.01	<0.04	0.12	0.17	0.05	0.15	<0.04	0.14	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.88	3.57	0.27	0.61	0.60	0.20	0.56	0.04	0.57	0.14	<0.04	mg/kg	TM4/PM8
Coronene	0.15	0.77	0.07	0.16	0.11	<0.04	0.12	<0.04	0.12	<0.04	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	7.70	26.27	1.69	4.48	5.08	2.30	4.83	0.43	6.05	1.01	<0.22	mg/kg	TM4/PM8
PAH 17 Total	14.57	44.27	8.10	8.24	10.03	4.69	8.77	0.79	11.78	2.37	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.66	5.87	0.33	0.99	1.16	0.50	1.09	0.10	1.24	0.19	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.64	2.28	0.13	0.39	0.45	0.19	0.43	0.04	0.48	0.07	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	97	99	95	99	98	99	98	101	101	111	<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	196	83	400	102	56	<30	209	<30	<30	590	<30	mg/kg	TM5/PM8/PM16

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80			
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07			
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	<0.1^{SV}	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	<0.1^{SV}	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	0.2^{SV}	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	7.2	<0.2	<0.2	<0.2	6.5	<0.2	<0.2	8.3	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	25	<4	<4	<4	17	<4	<4	31	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	16	11	51	17	11	<7	34	<7	<7	133	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	172	72	281	77	45	<7	140	<7	<7	368	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	8	<7	36	8	<7	<7	11	<7	<7	50	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	196	83	400	102	56	<26	209	<26	<26	591	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	0.2^{SV}	<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	54	32	139	39	18	<10	64	<10	<10	287	<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	112	51	225	55	40	<10	105	<10	<10	250	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	<0.1^{SV}	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	<0.1^{SV}	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	0.2^{SV}	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	9.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	15.3	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	46	<4	7	<4	11	<4	<4	13	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	43	55	143	28	38	<7	27	<7	36	90	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	226	333	577	193	144	<7	131	<7	111	764	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	15	41	97	36	12	<7	12	<7	<7	207	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	284	429	872	257	201	<26	181	<26	147	1090	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	480	512	1272	359	257	<52	390	<52	147	1681	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1^{SV}	<0.1^{SV}	<0.1^{SV}	<0.1	<0.1	<0.1	<0.1	0.2^{SV}	<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	129	147	330	73	85	<10	65	<10	71	162	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	168	241	446	148	103	<10	104	<10	77	720	<10	mg/kg	TM5/PM8/PM16
MTBE#	<5	<5	<5^{SV}	<5^{SV}	<5^{SV}	<5	<5	<5	<5	<5^{SV}	<5	ug/kg	TM36/PM12
Benzene#	<5	<5	<5^{SV}	<5^{SV}	<5^{SV}	<5	<5	<5	<5	<5^{SV}	<5	ug/kg	TM36/PM12
Toluene#	11	7	<5^{SV}	<5^{SV}	<5^{SV}	7	12	<5	<5	<5^{SV}	<5	ug/kg	TM36/PM12
Ethylbenzene#	<5	<5	<5^{SV}	<5^{SV}	<5^{SV}	<5	<5	<5	<5	12^{SV}	<5	ug/kg	TM36/PM12
m/p-Xylene#	<5	6	<5^{SV}	<5^{SV}	<5^{SV}	<5	<5	<5	<5	75^{SV}	<5	ug/kg	TM36/PM12
o-Xylene#	<5	<5	<5^{SV}	<5^{SV}	<5^{SV}	<5	<5	<5	<5	69^{SV}	<5	ug/kg	TM36/PM12
PCB 28#	10	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<50$_{AB}$	<5	<5	<5	<5	<5	<5	<50$_{AB}$	<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<350$_{AB}$	<35	<35	<35	<35	<35	<35	<350$_{AB}$	<35	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80			
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07			
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Natural Moisture Content	7.7	13.2	5.5	8.6	5.2	4.6	8.4	6.2	4.8	3.3	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	7.1	11.6	5.2	7.9	5.0	4.4	7.7	5.8	4.5	3.2	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Chromium III	91.9	82.0	12.3	84.5	54.1	83.6	39.8	75.0	59.8	29.8	<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	1.53	2.33	34.06	0.90	0.47	0.32	0.74	0.11	0.11	0.93	<0.02	%	TM21/PM24
Alkali Reserve	-	-	-	-	-	-	0.039	-	-	-	<0.000	gNaOH/100g	TM160/PM110
pH #	8.01	8.21	8.45	8.85	8.59	9.26	11.77	9.24	10.47	10.21	<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		None	Subcontracted

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **Solid**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120			
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10			
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Antimony	<1	<1	<1	<1	<1	<1	3	2	2	14	<1	mg/kg	TM30/PM15
Arsenic #	2.8	2.9	2.6	1.7	2.7	2.1	11.7	17.7	2.9	35.0	<0.5	mg/kg	TM30/PM15
Barium #	13	19	20	42	23	56	113	77	41	933	<1	mg/kg	TM30/PM15
Cadmium #	0.3	2.8	0.3	<0.1	<0.1	<0.1	2.7	0.7	0.3	13.4	<0.1	mg/kg	TM30/PM15
Chromium #	14.2	18.6	73.7	202.8	103.1	128.0	46.0	123.8	105.7	61.0	<0.5	mg/kg	TM30/PM15
Copper #	6	11	14	19	19	30	63	43	30	307 AA	<1	mg/kg	TM30/PM15
Lead #	5	29	19	24	35	33	440	173	57	2205	<5	mg/kg	TM30/PM15
Mercury #	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	0.3	0.4	0.1	0.9	<0.1	mg/kg	TM30/PM15
Molybdenum #	2.5	2.7	3.2	5.8	6.6	3.5	2.7	3.3	3.9	3.1	<0.1	mg/kg	TM30/PM15
Nickel #	8.5	9.9	13.3	44.9	13.0	38.6	8.2	25.9	20.3	15.3	<0.7	mg/kg	TM30/PM15
Selenium #	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Zinc #	156	55	41	87	50	72	465	203	107	1627	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	0.09	0.17	<0.04	0.48	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	0.24	<0.03	0.21	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.08	<0.04	0.15	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	0.04	0.07	0.10	0.10	0.04	0.21	0.94	0.13	1.21	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.08	0.65	0.05	0.33	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.07	0.08	0.19	0.17	0.21	0.12	0.50	2.93	0.27	1.90	<0.03	mg/kg	TM4/PM8
Pyrene #	0.06	0.07	0.17	0.15	0.17	0.15	0.47	2.51	0.24	1.69	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	0.15	0.11	0.13	0.10	0.35	1.65	0.17	1.14	<0.06	mg/kg	TM4/PM8
Chrysene #	0.04	0.05	0.14	0.10	0.12	0.08	0.35	1.64	0.17	1.25	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	0.07	0.24	0.15	0.16	0.13	0.64	2.83	0.27	2.41	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	0.14	0.08	<0.04	<0.04	0.38	1.67	0.16	1.36	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	<0.04	0.08	0.05	0.05	0.04	0.26	0.97	0.11	1.02	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	0.25	<0.04	0.19	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	0.08	0.05	0.06	0.05	0.27	1.00	0.12	1.02	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	0.19	<0.04	0.23	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	<0.22	<0.22	0.73	0.50	0.48	0.34	2.05	9.40	0.93	7.71	<0.22	mg/kg	TM4/PM8
PAH 17 Total	<0.64	<0.64	1.26	0.96	1.00	0.71	3.79	17.72	1.69	14.66	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.05	0.17	0.11	0.12	0.09	0.46	2.04	0.19	1.74	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	0.07	0.04	0.04	0.04	0.18	0.79	0.08	0.67	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	100	95	111	94	101	100	99	104	101	104	<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	37	<30	<30	<30	<30	<30	86	70	<30	523	<30	mg/kg	TM5/PM8/PM16

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120			
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10			
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4	<4	<4	<4	5	<4	11	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	15	<7	99	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	19	<7	<7	<7	<7	<7	86	50	<7	392	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	18	<7	<7	<7	<7	<7	<7	<7	<7	21	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	37	<26	<26	<26	<26	<26	86	70	<26	523	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	20	38	<10	258	<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	19	<10	<10	<10	<10	<10	69	34	<10	255	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	14.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.0	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	10	<4	<4	<4	<4	<4	<4	13	<4	19	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	23	79	<7	140	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	150	55	<7	<7	<7	<7	178	297	<7	607	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	45	23	<7	<7	<7	<7	22	24	<7	50	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	220	78	<26	<26	<26	<26	223	413	<26	817	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	257	78	<52	<52	<52	<52	309	483	<52	1340	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	$<0.1^{SV}$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	$<0.1^{SV}$	<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	32	<10	<10	<10	<10	<10	61	193	<10	347	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	150	55	<10	<10	<10	<10	142	203	<10	434	<10	mg/kg	TM5/PM8/PM16
MTBE#	$<5^{SV}$	<5	<5	<5	<5	<5	<5	<5	<5	$<5^{SV}$	<5	ug/kg	TM36/PM12
Benzene#	$<5^{SV}$	<5	<5	<5	<5	<5	<5	<5	<5	$<5^{SV}$	<5	ug/kg	TM36/PM12
Toluene#	5^{SV}	<5	<5	<5	<5	<5	<5	8	<5	7^{SV}	<5	ug/kg	TM36/PM12
Ethylbenzene#	5^{SV}	<5	<5	<5	<5	<5	<5	<5	<5	$<5^{SV}$	<5	ug/kg	TM36/PM12
m/p-Xylene#	28^{SV}	<5	<5	<5	<5	<5	<5	5	<5	$<5^{SV}$	<5	ug/kg	TM36/PM12
o-Xylene#	28^{SV}	<5	<5	<5	<5	<5	<5	<5	<5	$<5^{SV}$	<5	ug/kg	TM36/PM12
PCB 28#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<5	<5	<5	<5	<5	<5	<5	$<50_{AB}$	<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<35	<35	<35	<35	<35	<35	<35	$<350_{AB}$	<35	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **Solid**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120			
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10			
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Natural Moisture Content	2.3	3.9	4.4	2.7	1.2	5.8	9.7	5.9	5.1	21.8	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	2.2	3.8	4.2	2.6	1.2	5.4	8.9	5.6	4.8	17.9	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Chromium III	14.2	18.6	73.7	202.8	103.1	128.0	46.0	123.8	105.7	61.0	<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.14	0.25	0.26	0.12	1.05	0.33	0.84	0.78	0.26	9.58	<0.02	%	TM21/PM24
Alkali Reserve	-	-	-	-	-	-	-	-	-	-	<0.000	gNaOH/100g	TM160/PM110
pH #	10.25	8.69	8.58	8.92	8.60	9.07	8.15	9.15	8.73	7.38	<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		None	Subcontracted

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160			
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13			
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Antimony	2	6	2	<1	<1	<1	3	2	2	1	<1	mg/kg	TM30/PM15
Arsenic #	11.4	28.9	9.2	2.7	4.0	5.4	6.6	8.9	10.1	4.8	<0.5	mg/kg	TM30/PM15
Barium #	253	85	111	14	50	137	193	275	311	52	<1	mg/kg	TM30/PM15
Cadmium #	0.9	1.1	0.5	0.4	0.2	0.3	0.5	0.5	0.6	0.4	<0.1	mg/kg	TM30/PM15
Chromium #	43.4	41.5	63.3	15.2	97.4	101.4	127.8	89.8	76.9	107.4	<0.5	mg/kg	TM30/PM15
Copper #	84	81	100	7	36	50	89	98	117	28	<1	mg/kg	TM30/PM15
Lead #	429	253	192	6	53	128	217	293	308	60	<5	mg/kg	TM30/PM15
Mercury #	0.3	0.4	0.1	<0.1	<0.1	0.4	1.1	1.2	1.7	0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	2.8	3.0	4.4	2.0	4.0	4.5	3.7	5.2	5.0	2.8	<0.1	mg/kg	TM30/PM15
Nickel #	10.9	13.6	43.7	9.6	23.0	22.0	33.3	18.5	19.8	32.0	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Zinc #	259	218	157	11	96	136	183	223	243	68	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.37	0.54	0.58	<0.04	0.05	0.24	0.26	0.32	0.39	0.07	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.35	0.51	2.15	<0.03	0.04	0.45	0.51	0.97	0.76	0.06	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	0.29	0.26	<0.05	<0.05	<0.05	0.07	0.10	0.09	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	0.12	0.33	1.10	<0.04	<0.04	0.10	0.16	0.42	0.29	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	1.58	3.34	11.18	<0.03	0.19	1.45	1.67	3.97	2.51	0.18	<0.03	mg/kg	TM4/PM8
Anthracene #	0.44	1.78	3.74	<0.04	0.06	0.94	1.18	3.51	1.93	0.09	<0.04	mg/kg	TM4/PM8
Fluoranthene #	3.31	7.97	20.26	<0.03	0.44	5.45	5.90	14.10	8.63	0.52	<0.03	mg/kg	TM4/PM8
Pyrene #	2.82	6.75	16.47	0.04	0.40	4.43	4.90	11.32	6.99	0.51	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.80	4.70	9.78	<0.06	0.29	3.21	3.78	7.81	5.17	0.38	<0.06	mg/kg	TM4/PM8
Chrysene #	2.01	4.43	8.54	<0.02	0.29	3.18	3.77	7.48	4.96	0.41	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	3.81	7.84	15.62	<0.07	0.52	5.21	6.28	11.21	8.32	0.76	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	2.22	4.94	9.81	<0.04	0.30	2.96	3.66	6.51	4.97	0.46	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.49	2.93	6.70	<0.04	0.20	1.85	2.23	3.61	2.97	0.31	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.43	0.81	1.59	<0.04	0.05	0.45	0.62	1.17	0.76	0.08	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	1.55	3.19	6.82	0.06	0.19	1.79	1.98	3.32	2.63	0.32	<0.04	mg/kg	TM4/PM8
Coronene	0.35	0.73	1.31	<0.04	0.04	0.35	0.48	0.82	0.65	0.09	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	12.38	26.87	59.21	<0.22	1.65	17.26	20.05	38.75	27.52	2.37	<0.22	mg/kg	TM4/PM8
PAH 17 Total	22.65	51.08	115.91	<0.64	3.06	32.06	37.45	76.64	52.02	4.24	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	2.74	5.64	11.25	<0.05	0.37	3.75	4.52	8.07	5.99	0.55	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	1.07	2.20	4.37	<0.02	0.15	1.46	1.76	3.14	2.33	0.21	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	5	<1	<1	2	2	4	3	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	96	96	100	98	98	93	96	99	96	96	<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	135	137	136	246	40	98	75	217	287	<30	<30	mg/kg	TM5/PM8/PM16

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160			
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13			
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.6	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	8	<4	7	<4	<4	<4	6	7	14	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	25	21	23	<7	<7	15	13	38	53	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	102	116	106	192	28	83	56	164	204	28	<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	54	12	<7	<7	8	13	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	135	137	136	246	40	98	75	217	287	28	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	63	51	65	16	<10	36	32	61	162	<10	<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	73	87	74	177	28	64	69	107	159	28	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	0.7	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	0.2	0.4	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	18	11	16	<4	<4	8	9	14	19	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	116	59	140	17	<7	77	97	183	154	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	397	308	543	444	116	279	348	633	511	111	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	41	32	40	144	20	22	29	47	43	17	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	573	410	740	605	136	386	483	877	727	128	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	708	547	876	851	176	484	558	1094	1014	156	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1 SV	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	254	153	327	42	26	146	191	343	281	37	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	285	232	385	417	95	178	229	397	316	99	<10	mg/kg	TM5/PM8/PM16
MTBE#	<5 SV	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Benzene#	<5 SV	11 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
Toluene#	17 SV	15 SV	11 SV	6 SV	<5	<5	8	<5	8	7	<5	ug/kg	TM36/PM12
Ethylbenzene#	<5 SV	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
m/p-Xylene#	<5 SV	<5 SV	<5 SV	<5 SV	<5	<5	7	<5	<5	<5	<5	ug/kg	TM36/PM12
o-Xylene#	<5 SV	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM36/PM12
PCB 28#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180#	<50 AB	<5	<50 AB	<50 AB	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs#	<350 AB	<35	<350 AB	<350 AB	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160			
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13			
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Natural Moisture Content	18.2	14.4	16.8	4.8	7.3	10.4	15.0	20.3	25.3	11.4	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	15.4	12.6	14.4	4.6	6.8	9.4	13.1	16.9	20.2	10.2	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Chromium III	43.4	41.5	63.3	15.2	97.4	101.4	127.8	89.8	76.9	107.4	<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.60	6.81	3.43	0.43	0.53	1.59	2.18	2.53	2.57	0.64	<0.02	%	TM21/PM24
Alkali Reserve	-	-	-	-	-	-	-	-	-	-	<0.000	gNaOH/100g	TM160/PM110
pH #	7.54	8.15	8.21	8.90	9.06	8.59	8.29	8.34	8.20	8.97	<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		None	Subcontracted

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **Solid**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196					
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15					
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60					
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024					
Antimony	<1	2	1	<1	<1	2	<1	<1			<1	mg/kg	TM30/PM15
Arsenic #	5.0	4.6	2.6	2.7	6.8	5.0	3.2	2.9			<0.5	mg/kg	TM30/PM15
Barium #	49	40	55	72	53	67	25	29			<1	mg/kg	TM30/PM15
Cadmium #	0.5	0.3	0.1	0.1	0.8	1.2	0.2	0.2			<0.1	mg/kg	TM30/PM15
Chromium #	94.8	143.8	70.9	78.9	86.1	39.9	54.2	86.2			<0.5	mg/kg	TM30/PM15
Copper #	27	31	33	50	34	28	18	23			<1	mg/kg	TM30/PM15
Lead #	111	49	42	53	94	161	66	52			<5	mg/kg	TM30/PM15
Mercury #	0.2	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM30/PM15
Molybdenum #	3.6	2.5	4.4	4.4	3.5	2.7	3.5	3.8			<0.1	mg/kg	TM30/PM15
Nickel #	25.1	52.5	12.3	14.4	14.4	9.7	8.7	13.9			<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	1	<1	<1	<1	1	<1			<1	mg/kg	TM30/PM15
Zinc #	75	62	80	100	129	149	47	54			<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.08	<0.04	0.12	0.08	0.15	0.08	0.07	<0.04			<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.09	<0.03	0.12	0.09	0.17	0.12	0.05	0.06			<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05	mg/kg	TM4/PM8
Fluorene #	0.06	<0.04	<0.04	<0.04	0.14	<0.04	0.05	<0.04			<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.66	<0.03	0.36	0.23	0.69	0.45	0.29	0.23			<0.03	mg/kg	TM4/PM8
Anthracene #	0.20	<0.04	0.21	0.16	0.47	0.18	0.42	0.23			<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.22	<0.03	1.23	0.99	2.17	1.15	0.56	1.40			<0.03	mg/kg	TM4/PM8
Pyrene #	1.09	0.03	1.04	0.76	1.92	1.08	0.45	1.33			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.67	<0.06	0.78	0.65	1.12	0.69	0.38	0.59			<0.06	mg/kg	TM4/PM8
Chrysene #	0.74	<0.02	0.77	0.63	1.12	0.70	0.40	0.61			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.21	<0.07	1.31	0.98	1.89	1.28	0.54	1.03			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.64	<0.04	0.75	0.58	1.17	0.76	0.31	0.62			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.40	<0.04	0.45	0.33	0.71	0.52	0.18	0.36			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	<0.04	0.13	0.11	0.21	0.13	0.06	0.08			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.43	<0.04	0.44	0.33	0.68	0.51	0.16	0.37			<0.04	mg/kg	TM4/PM8
Coronene	0.06	<0.04	0.10	0.06	0.19	0.11	0.05	0.08			<0.04	mg/kg	TM4/PM8
PAH 6 Total #	3.90	<0.22	4.18	3.21	6.62	4.22	1.75	3.78			<0.22	mg/kg	TM4/PM8
PAH 17 Total	7.63	<0.64	7.81	5.98	12.80	7.76	3.97	6.99			<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.87	<0.05	0.94	0.71	1.36	0.92	0.39	0.74			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.34	<0.02	0.37	0.27	0.53	0.36	0.15	0.29			<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1			<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	104	97	100	95	95	98	104	97			<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	<30	<30	<30	<30	<30	<30	<30	<30			<30	mg/kg	TM5/PM8/PM16

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196			LOD/LOR	Units	Method No.
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15					
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60					
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024					
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4	<4	<4	<4	<4			<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	<7			<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	11	<7	<7	<7	<7	<7	<7	<7			<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	<7	<7	<7	<7	<7			<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	<26	<26	<26	<26	<26	<26	<26	<26			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C10-C25 (EH_CU_1D_AL)	<10	<10	<10	<10	<10	<10	<10	<10			<10	mg/kg	TM5/PM8/PM16
>C25-C35 (EH_CU_1D_AL)	12	<10	<10	<10	<10	<10	<10	<10			<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	<4	<4	<4	<4	<4			<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	10	20	25	8	<7	<7			<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	67	<7	75	103	125	89	<7	<7			<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	10	<7	<7	9	11	11	<7	<7			<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	77	<26	85	132	161	108	<26	<26			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	77	<52	85	132	161	108	<52	<52			<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC10-EC25 (EH_CU_1D_AR)	43	<10	37	29	47	32	<10	<10			<10	mg/kg	TM5/PM8/PM16
>EC25-EC35 (EH_CU_1D_AR)	87	<10	59	57	79	69	<10	<10			<10	mg/kg	TM5/PM8/PM16
MTBE#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM36/PM12
Benzene#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM36/PM12
Toluene#	<5	<5	7	<5	<5	7	<5	<5			<5	ug/kg	TM36/PM12
Ethylbenzene#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM36/PM12
m/p-Xylene#	<5	<5	5	<5	<5	<5	<5	<5			<5	ug/kg	TM36/PM12
o-Xylene#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM36/PM12
PCB 28#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 52#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 101#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 118#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 138#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 153#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
PCB 180#	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM17/PM8
Total 7 PCBs#	<35	<35	<35	<35	<35	<35	<35	<35			<35	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **Solid**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196					
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15					
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60					
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024					
Natural Moisture Content	12.1	10.5	3.2	5.2	8.9	5.8	6.2	11.5			<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	10.8	9.5	3.1	4.9	8.2	5.4	5.9	10.3			<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3			<0.3	mg/kg	TM38/PM20
Chromium III	94.8	143.8	70.9	78.9	86.1	39.9	54.2	86.2			<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.81	0.50	0.44	0.63	0.80	0.51	0.28	0.37			<0.02	%	TM21/PM24
Alkali Reserve	-	-	-	-	-	-	-	-			<0.000	gNaOH/100g	TM160/PM110
pH #	8.98	8.93	8.44	8.47	8.53	8.42	8.62	8.52			<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD				None	Subcontracted

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name:	Ground Investigations Ireland	**Report :**	**CEN 10:1 1 Batch**
Reference:	13885-06-24		
Location:	Galway Port	**Solids:**	V=60g VOC jar, J=250g glass jar, T=plastic tub
Contact:	Adam Browne		
EMT Job No:	24/12401		

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40			
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04			
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Dissolved Antimony #	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	0.012	0.022	0.004	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	0.22	0.04	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0031	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.031	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	<0.003	<0.003	0.018	0.006	0.005	0.010	0.152	0.128	0.019	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	<0.03	<0.03	0.18	0.06	0.05	0.10	1.52	1.28	0.19	<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	0.0018	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	0.018	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.069	0.038	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.69	0.38	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	<0.002	0.005	0.004	0.008	0.012	0.008	0.007	0.007	0.004	0.004	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	<0.02	0.05	0.04	0.08	0.12	0.08	0.07	0.07	0.04	0.04	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	0.009	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.021	0.007	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.21	0.07	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	0.4	<0.3	0.3	0.3	<0.3	0.5	0.6	<0.3	0.4	<0.3	mg/l	TM173/PM0
Fluoride	<3	4	<3	3	<3	<3	5	6	<3	4	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	12.6	4.8	3.2	375.9	189.1	163.7	344.0	38.0	45.6	28.3	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	126	48	32	3759	1891	1637	3441	380	456	283	<5	mg/kg	TM38/PM0
Mass of raw test portion	0.0906	0.0965	0.0908	0.0922	0.0911	0.0913	0.0922	0.1022	0.0948	0.0921		kg	NONE/PM17
Chloride #	1.4	0.9	1.0	0.6	1.9	6.0	0.4	2.1	2.1	2.3	<0.3	mg/l	TM38/PM0
Chloride #	14	9	10	6	19	60	4	21	21	23	<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	mg/kg	TM60/PM0
pH	9.55	9.02	8.46	7.61	8.79	7.86	7.57	7.80	8.00	7.76	<0.01	pH units	TM73/PM0

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40			
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04			
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Total Dissolved Solids #	67	57	47	611	338	321	555	95	109	77	<35	mg/l	TM20/PM0
Total Dissolved Solids #	670	570	470	6110	3380	3209	5551	950	1090	770	<350	mg/kg	TM20/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name:	Ground Investigations Ireland	**Report :**	**CEN 10:1 1 Batch**
Reference:	13885-06-24		
Location:	Galway Port	**Solids:**	V=60g VOC jar, J=250g glass jar, T=plastic tub
Contact:	Adam Browne		
EMT Job No:	24/12401		

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80			
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07			
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Dissolved Antimony #	0.015	0.013	<0.002	0.005	0.005	0.003	0.014	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.15	0.13	<0.02	0.05	0.05	0.03	0.14	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0035	<0.0025	0.0036	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.035	<0.025	0.036	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.053	0.042	0.015	0.027	0.055	0.012	0.015	0.009	0.010	0.016	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.53	0.42	0.15	0.27	0.55	0.12	0.15	0.09	0.10	0.16	<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0054	<0.0015	<0.0015	0.0029	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.054	<0.015	<0.015	0.029	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.073	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.73	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	0.028	0.342	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	0.28	3.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.010	0.003	<0.002	0.004	0.011	<0.002	0.022	0.002	0.005	0.003	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.10	0.03	<0.02	0.04	0.11	<0.02	0.22	<0.02	0.05	0.03	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.007	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.015	0.023	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.15	0.23	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	217.2	280.4	24.9	9.5	12.2	5.2	60.6	7.9	29.5	26.1	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	2172	2804	249	95	122	52	606	79	295	261	<5	mg/kg	TM38/PM0
Mass of raw test portion	0.0966	0.0985	0.0911	0.0994	0.098	0.0912	0.0972	0.0904	0.0924	0.0906		kg	NONE/PM17
Chloride #	2.0	5.1	0.9	0.8	1.0	6.8	14.7	0.6	1.7	1.4	<0.3	mg/l	TM38/PM0
Chloride #	20	51	9	8	10	68	147	6	17	14	<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	<2	<2	<2	<2	8	<2	<2	2	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	80	<20	<20	<20	<20	mg/kg	TM60/PM0
pH	7.93	7.94	7.76	7.77	7.90	9.02	11.20	9.66	9.95	9.86	<0.01	pH units	TM73/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80			
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07			
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Total Dissolved Solids #	418	516	67	55	57	62	261	48	95	111	<35	mg/l	TM20/PM0
Total Dissolved Solids #	4180	5159	670	550	570	620	2609	480	950	1110	<350	mg/kg	TM20/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120			
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10			
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Dissolved Antimony #	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.008	0.002	0.002	0.074	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.74	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0065	0.0045	0.0028	0.0038	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.065	0.045	0.028	0.038	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.015	0.004	0.004	0.009	0.016	0.014	0.016	0.012	0.010	0.042	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.15	0.04	0.04	0.09	0.16	0.14	0.16	0.12	0.10	0.42	<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	0.0024	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	0.024	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.009	0.015	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.09	0.15	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.008	0.010	0.004	0.017	0.009	0.003	0.008	0.006	<0.002	0.017	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.08	0.10	0.04	0.17	0.09	0.03	0.08	0.06	<0.02	0.17	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.085	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.85	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	0.4	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	<0.3	mg/l	TM173/PM0
Fluoride	<3	4	3	<3	<3	<3	<3	<3	<3	5	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	162.5	29.1	15.7	10.1	4.1	2.1	98.1	91.8	14.8	84.3	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	1625	291	157	101	41	21	981	918	148	843	<5	mg/kg	TM38/PM0
Mass of raw test portion	0.0908	0.091	0.0923	0.0911	0.0915	0.0907	0.0973	0.0972	0.0916	0.1048		kg	NONE/PM17
Chloride #	1.1	2.2	<0.3	<0.3	<0.3	<0.3	1.1	1.5	2.7	1.0	<0.3	mg/l	TM38/PM0
Chloride #	11	22	<3	<3	<3	<3	11	15	27	10	<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	<2	<2	<2	<2	<2	<2	<2	3	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	30	<20	mg/kg	TM60/PM0
pH	9.52	8.18	7.31	8.01	8.20	8.35	8.06	10.23	8.44	8.22	<0.01	pH units	TM73/PM0

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120			
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10			
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Total Dissolved Solids #	317	81	65	45	40	<35	238	221	60	231	<35	mg/l	TM20/PM0
Total Dissolved Solids #	3171	810	650	450	400	<350	2381	2209	600	2310	<350	mg/kg	TM20/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160			
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13			
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Dissolved Antimony #	0.007	0.003	0.008	<0.002	0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.07	0.03	0.08	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0117	<0.0025	0.0080	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.117	<0.025	0.080	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.019	0.007	0.006	<0.003	0.008	0.027	0.036	0.039	0.040	0.007	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.19	0.07	0.06	<0.03	0.08	0.27	0.36	0.39	0.40	0.07	<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	0.0026	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	0.026	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	0.013	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	0.13	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	<0.002	0.003	0.003	0.006	0.007	0.011	0.009	0.010	0.007	0.005	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	<0.02	0.03	0.03	0.06	0.07	0.11	0.09	0.10	0.07	0.05	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.005	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	0.004	0.006	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.05	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	0.04	0.06	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	<0.0001	<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	0.5	<0.3	0.4	0.5	0.3	0.4	<0.3	<0.3	<0.3	0.3	<0.3	mg/l	TM173/PM0
Fluoride	5	<3	4	5	<3	4	<3	<3	<3	3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	29.6	22.1	28.2	3.4	15.4	27.2	251.6	345.7	11.4	14.3	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	296	221	282	34	154	272	2515	3457	114	143	<5	mg/kg	TM38/PM0
Mass of raw test portion	0.1065	0.1007	0.1044	0.0917	0.0921	0.0986	0.0973	0.0936	0.102	0.0981		kg	NONE/PM17
Chloride #	1.0	1.2	12.7	0.3	0.8	1.2	1.9	8.4	0.7	<0.3	<0.3	mg/l	TM38/PM0
Chloride #	10	12	127	3	8	12	19	84	7	<3	<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	mg/kg	TM60/PM0
pH	8.27	8.15	8.28	8.19	8.98	8.18	7.81	7.85	8.17	8.26	<0.01	pH units	TM73/PM0

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Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160			
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13			
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024			
Total Dissolved Solids #	134	105	132	<35	53	91	476	652	65	71	<35	mg/l	TM20/PM0
Total Dissolved Solids #	1339	1050	1320	<350	530	910	4759	6520	650	710	<350	mg/kg	TM20/PM0

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196					
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15					
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60					
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024					
Dissolved Antimony #	<0.002	<0.002	<0.002	<0.002	0.004	0.003	0.004	0.005			<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	<0.02	<0.02	0.04	0.03	0.04	0.05			<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0040	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.040	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025			<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.006	0.006	0.045	0.053	0.006	0.021	0.005	<0.003			<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.06	0.06	0.45	0.53	0.06	0.21	0.05	<0.03			<0.03	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015			<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015			<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007			<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07			<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.004	0.003	0.003	0.007	0.007	0.008	0.008	0.011			<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.04	0.03	0.03	0.07	0.07	0.08	0.08	0.11			<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02			<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	0.003	0.004	<0.003	<0.003	<0.003			<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	0.03	0.04	<0.03	<0.03	<0.03			<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001			<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	mg/kg	TM61/PM0
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	<0.3	0.4	0.5	<0.3	0.3			<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	4	5	<3	3			<3	mg/kg	TM173/PM0
Sulphate as SO4 #	11.0	11.6	76.7	78.9	18.6	80.2	30.8	28.4			<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	110	116	767	789	186	802	308	284			<5	mg/kg	TM38/PM0
Mass of raw test portion	0.0984	0.0948	0.0936	0.0917	0.0946	0.0927	0.0951	0.0964				kg	NONE/PM17
Chloride #	<0.3	<0.3	1.3	1.4	1.4	<0.3	0.4	1.6			<0.3	mg/l	TM38/PM0
Chloride #	<3	<3	13	14	14	<3	4	16			<3	mg/kg	TM38/PM0
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09				kg	NONE/PM17
Dissolved Organic Carbon	<2	<2	<2	<2	<2	<2	<2	<2			<2	mg/l	TM60/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20			<20	mg/kg	TM60/PM0
pH	8.63	8.44	7.86	7.71	8.07	7.94	8.22	8.14			<0.01	pH units	TM73/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **CEN 10:1 1 Batch**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196					
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15					
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60					
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024					
Total Dissolved Solids #	60	57	140	153	71	162	99	103			<35	mg/l	TM20/PM0
Total Dissolved Solids #	600	570	1400	1530	710	1621	990	1031			<350	mg/kg	TM20/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **EN12457_2**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Sample ID	TP1-01	TP1-01	TP1-01	TP1-02	TP1-02	TP1-02	TP1-03	TP1-03	TP1-03	TP1-04						
Depth	0.00-1.00	1.00-2.00	2.00-2.50	0.80-1.00	1.00-2.00	2.00-2.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00						
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1	1	1						
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024						
Solid Waste Analysis																
Total Organic Carbon #	0.27	0.13	0.16	0.20	0.14	0.92	0.25	1.29	0.85	0.51	3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	0.035	<0.025	<0.025	<0.025	<0.025	<0.025 SV	<0.025	<0.025	<0.025	<0.025	6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30	<30	<30	<30	<30	<30	31	226	<30	<30	500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	6.28	2.20	0.46	-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	11.78	4.20	0.81	100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.031	0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	<0.03	<0.03	<0.03	0.18	0.06	0.05	0.10	1.52	1.28	0.19	20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	0.018	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	<0.02	0.05	0.04	0.08	0.12	0.08	0.07	0.07	0.04	0.04	0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.69	0.38	<0.05	0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	0.22	0.04	0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.21	0.07	<0.03	4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	670	570	470	6110	3380	3209	5551	950	1090	770	4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.0906	0.0965	0.0908	0.0922	0.0911	0.0913	0.0922	0.1022	0.0948	0.0921	-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	99.3	93.6	99.7	97.7	99.1	99.1	97.7	88.2	94.5	97.8	-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.899	0.894	0.9	0.898	0.899	0.899	0.898	0.888	0.895	0.898	-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	0.7	6.9	0.4	2.3	1.0	0.9	2.4	13.4	5.8	2.3	-	-	-	<0.1	%	PM4/PM0
pH #	9.13	8.99	9.13	8.29	8.40	8.40	8.33	8.02	8.04	10.12	-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	4	<3	3	<3	<3	5	6	<3	4	10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	126	48	32	3759	1891	1637	3441	380	456	283	1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	14	9	10	6	19	60	4	21	21	23	800	15000	25000	<3	mg/kg	TM38/PM0

Element Materials Technology

Client Name:	Ground Investigations Ireland	**Report :**	**EN12457_2**
Reference:	13885-06-24		
Location:	Galway Port	**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub	
Contact:	Adam Browne		
EMT Job No:	24/12401		

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77-80						
Sample ID	TP1-04	TP1-04	TP1-05	TP1-05	TP1-05	TP1-05	TP1-06	TP1-06	TP1-06	TP1-07						
Depth	1.00-2.00	2.00-2.90	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.70	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00						
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1	1	1	Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024						
Solid Waste Analysis																
Total Organic Carbon #	1.53	2.33	34.06	0.90	0.47	0.32	0.74	0.11	0.11	0.93	3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025	<0.025	<0.025^{SV}	<0.025^{SV}	<0.025^{SV}	<0.025	<0.025	<0.025	<0.025	0.156^{SV}	6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.350$_{BA}$	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.350$_{BA}$	1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	196	83	400	102	56	<30	209	<30	<30	590	500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	7.70	26.27	1.69	4.48	5.08	2.30	4.83	0.43	6.05	1.01	-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	14.57	44.27	8.10	8.24	10.03	4.69	8.77	0.79	11.78	2.37	100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.035	<0.025	0.036	<0.025	0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	0.53	0.42	0.15	0.27	0.55	0.12	0.15	0.09	0.10	0.16	20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.054	<0.015	<0.015	0.029	0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.73	<0.07	<0.07	<0.07	2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	0.10	0.03	<0.02	0.04	0.11	<0.02	0.22	<0.02	0.05	0.03	0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	0.28	3.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	0.15	0.13	<0.02	0.05	0.05	0.03	0.14	<0.02	<0.02	<0.02	0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	0.15	0.23	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	4180	5159	670	550	570	620	2609	480	950	1110	4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	80	<20	<20	<20	500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.0966	0.0985	0.0911	0.0994	0.098	0.0912	0.0972	0.0904	0.0924	0.0906	-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	93.7	91.0	99.3	90.5	91.9	98.2	93.1	99.0	97.0	99.2	-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.894	0.891	0.899	0.891	0.892	0.898	0.893	0.899	0.897	0.899	-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	6.7	9.9	0.7	10.5	8.8	1.8	7.4	1.0	3.1	0.8	-	-	-	<0.1	%	PM4/PM0
pH #	8.01	8.21	8.45	8.85	8.59	9.26	11.77	9.24	10.47	10.21	-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	2172	2804	249	95	122	52	606	79	295	261	1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	20	51	9	8	10	68	147	6	17	14	800	15000	25000	<3	mg/kg	TM38/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	81-84	85-88	89-92	93-96	97-100	101-104	105-108	109-112	113-116	117-120						
Sample ID	TP1-07	TP1-07	TP1-08	TP1-08	TP1-08	TP1-08	TP1-09	TP1-09	TP1-09	TP1-10						
Depth	1.00-2.00	2.00-2.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00	1.00-2.00	2.00-3.00	0.00-1.00						
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1	1	1	Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024						
Solid Waste Analysis																
Total Organic Carbon #	0.14	0.25	0.26	0.12	1.05	0.33	0.84	0.78	0.26	9.58	3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	0.066[SV]	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025[SV]	6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.350[BA]	1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	37	<30	<30	<30	<30	<30	86	70	<30	523	500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	<0.22	<0.22	0.73	0.50	0.48	0.34	2.05	9.40	0.93	7.71	-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	<0.64	<0.64	1.26	0.96	1.00	0.71	3.79	17.72	1.69	14.66	100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.065	0.045	0.028	0.038	0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	0.15	0.04	0.04	0.09	0.16	0.14	0.16	0.12	0.10	0.42	20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	0.024	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.09	0.15	<0.07	<0.07	2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	0.08	0.10	0.04	0.17	0.09	0.03	0.08	0.06	<0.02	0.17	0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.74	0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.85	4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	3171	810	650	450	400	<350	2381	2209	600	2310	4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	30	500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.0908	0.091	0.0923	0.0911	0.0915	0.0907	0.0973	0.0972	0.0916	0.1048	-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	99.7	98.6	97.4	99.3	97.8	99.1	92.6	92.2	98.0	85.9	-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.9	0.899	0.898	0.899	0.898	0.899	0.893	0.892	0.898	0.885	-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	0.3	1.4	2.7	0.7	2.3	0.9	8.0	8.4	2.1	16.5	-	-	-	<0.1	%	PM4/PM0
pH #	10.25	8.69	8.58	8.92	8.60	9.07	8.15	9.15	8.73	7.38	-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	4	3	<3	<3	<3	<3	<3	<3	5	10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	1625	291	157	101	41	21	981	918	148	843	1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	11	22	<3	<3	<3	<3	11	15	27	10	800	15000	25000	<3	mg/kg	TM38/PM0

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	121-124	125-128	129-132	133-136	137-140	141-144	145-148	149-152	153-156	157-160	Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Sample ID	TP1-10	TP1-10	TP1-10	TP1-11	TP1-11	TP1-12	TP1-12	TP1-12	TP1-12	TP1-13						
Depth	1.00-2.00	2.00-3.00	3.00-4.00	0.00-1.00	1.00-1.70	0.00-1.00	1.00-2.00	2.00-3.00	3.00-3.60	0.00-1.00						
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1	1	1						
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024						
Solid Waste Analysis																
Total Organic Carbon #	0.60	6.81	3.43	0.43	0.53	1.59	2.18	2.53	2.57	0.64	3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025[SV]	0.026[SV]	<0.025[SV]	<0.025[SV]	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.350$_{BA}$	<0.035	<0.350$_{BA}$	<0.350$_{BA}$	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	135	137	136	246	40	98	75	217	287	<30	500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	12.38	26.87	59.21	<0.22	1.65	17.26	20.05	38.75	27.52	2.37	-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	22.65	51.08	115.91	<0.64	3.06	32.06	37.45	76.64	52.02	4.24	100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	0.117	<0.025	0.080	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	0.19	0.07	0.06	<0.03	0.08	0.27	0.36	0.39	0.40	0.07	20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	0.026	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	0.13	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	<0.0001	0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	<0.02	0.03	0.03	0.06	0.07	0.11	0.09	0.10	0.07	0.05	0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	0.07	0.03	0.08	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	0.05	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	0.04	0.06	<0.03	4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	1339	1050	1320	<350	530	910	4759	6520	650	710	4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.1065	0.1007	0.1044	0.0917	0.0921	0.0986	0.0973	0.0936	0.102	0.0981	-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	84.5	88.9	86.3	98.4	98.3	91.6	93.0	96.7	87.9	91.6	-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.883	0.889	0.886	0.899	0.898	0.892	0.893	0.897	0.888	0.892	-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	18.4	12.5	15.9	1.6	1.7	9.1	7.5	3.4	13.8	9.1	-	-	-	<0.1	%	PM4/PM0
pH #	7.54	8.15	8.21	8.90	9.06	8.59	8.29	8.34	8.20	8.97	-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	5	<3	4	5	<3	4	<3	<3	<3	3	10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	296	221	282	34	154	272	2515	3457	114	143	1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	10	12	127	3	8	12	19	84	7	<3	800	15000	25000	<3	mg/kg	TM38/PM0

Element Materials Technology

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne
EMT Job No: 24/12401

Report : **EN12457_2**

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	161-164	165-168	173-176	177-180	181-184	185-188	189-192	193-196								
Sample ID	TP1-13	TP1-13	TP1-14	TP1-14	TP1-14	TP1-15	TP1-15	TP1-15								
Depth	1.00-2.00	2.00-2.80	1.00-2.00	2.00-3.00	0.00-1.00	0.00-1.00	1.00-2.00	2.00-2.60								
COC No / misc																
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T								
Sample Date	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024								
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1	1	1	1			Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Date of Receipt	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024								
Solid Waste Analysis																
Total Organic Carbon #	0.81	0.50	0.44	0.63	0.80	0.51	0.28	0.37			3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025			6	-	-	<0.025	mg/kg	TM36/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035			1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30	<30	<30	<30	<30	<30	<30	<30			500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	3.90	<0.22	4.18	3.21	6.62	4.22	1.75	3.78			-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	7.63	<0.64	7.81	5.98	12.80	7.76	3.97	6.99			100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																
Arsenic #	0.040	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025			0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	0.06	0.06	0.45	0.53	0.06	0.21	0.05	<0.03			20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015			0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07			2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	0.04	0.03	0.03	0.07	0.07	0.08	0.08	0.11			0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02			0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	<0.02	<0.02	<0.02	0.04	0.03	0.04	0.05			0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	0.03	0.04	<0.03	<0.03	<0.03			4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	600	570	1400	1530	710	1621	990	1031			4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	<20	<20	<20	<20	<20	<20	<20	<20			500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.0984	0.0948	0.0936	0.0917	0.0946	0.0927	0.0951	0.0964			-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	91.3	94.4	96.6	98.7	94.8	97.4	94.2	93.3			-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.891	0.895	0.897	0.899	0.895	0.898	0.894	0.894			-	-	-		l	NONE/PM17
Moisture Content 105C (% Dry Weight)	9.5	6.0	3.5	1.3	5.5	2.6	6.2	7.2			-	-	-	<0.1	%	PM4/PM0
pH #	8.98	8.93	8.44	8.47	8.53	8.42	8.62	8.52			-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	<3	<3	<3	4	5	<3	3			10	150	500	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	110	116	767	789	186	802	308	284			1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	<3	<3	13	14	14	<3	4	16			800	15000	25000	<3	mg/kg	TM38/PM0

Client Name: Ground Investigations Ireland

Reference: 13885-06-24

Location: Galway Port

Contact: Adam Browne

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
24/12401	1	TP1-01	0.00-1.00	1-4	Naturally occurring compounds
24/12401	1	TP1-01	1.00-2.00	5-8	Naturally occurring compounds
24/12401	1	TP1-01	2.00-2.50	9-12	No interpretation possible
24/12401	1	TP1-02	0.80-1.00	13-16	No interpretation possible
24/12401	1	TP1-02	1.00-2.00	17-20	No interpretation possible
24/12401	1	TP1-02	2.00-2.60	21-24	No interpretation possible
24/12401	1	TP1-03	0.00-1.00	25-28	Naturally occurring compounds
24/12401	1	TP1-03	1.00-2.00	29-32	PAHs, Lubricating oil & Trace of possible degraded diesel
24/12401	1	TP1-03	2.00-3.00	33-36	Trace of PAHs
24/12401	1	TP1-04	0.00-1.00	37-40	Naturally occurring compounds
24/12401	1	TP1-04	1.00-2.00	41-44	PAHs & Lubricating oil
24/12401	1	TP1-04	2.00-2.90	45-48	PAHs & Trace of lubricating oil
24/12401	1	TP1-05	0.00-1.00	49-52	Possible PAHs, Lubricating oil, Possible trace of degraded diesel & Possible tarmac/bitumen
24/12401	1	TP1-05	1.00-2.00	53-56	PAHs, Trace of lubricating oil & Possible tarmac/bitumen
24/12401	1	TP1-05	2.00-3.00	57-60	PAHs & Trace of possible lubricating oil
24/12401	1	TP1-05	3.00-3.70	61-64	No interpretation possible
24/12401	1	TP1-06	0.00-1.00	65-68	PAHs & Trace of lubricating oil
24/12401	1	TP1-06	1.00-2.00	69-72	No interpretation possible
24/12401	1	TP1-06	2.00-3.00	73-76	PAHs & Naturally occurring compounds
24/12401	1	TP1-07	0.00-1.00	77-80	Trace of degraded kerosene, Possible degraded diesel, Possible tarmac/bitumen & Naturally occurring compounds
24/12401	1	TP1-07	1.00-2.00	81-84	Possible gasoline residues and Possible tarmac/bitumen
24/12401	1	TP1-07	2.00-2.70	85-88	Naturally occurring compounds
24/12401	1	TP1-08	0.00-1.00	89-92	No interpretation possible
24/12401	1	TP1-08	1.00-2.00	93-96	No interpretation possible
24/12401	1	TP1-08	2.00-3.00	97-100	No interpretation possible
24/12401	1	TP1-08	3.00-3.60	101-104	No interpretation possible
24/12401	1	TP1-09	0.00-1.00	105-108	PAHs, Trace of possible lubricating oil & Naturally occurring compounds
24/12401	1	TP1-09	1.00-2.00	109-112	PAHs, Possible trace of degraded diesel & Naturally occurring compounds
24/12401	1	TP1-09	2.00-3.00	113-116	No interpretation possible
24/12401	1	TP1-10	0.00-1.00	117-120	PAHs, Lubricating oil, Possible degraded diesel & Naturally occurring compounds
24/12401	1	TP1-10	1.00-2.00	121-124	PAHs, Trace of lubricating oil & Naturally occurring compounds
24/12401	1	TP1-10	2.00-3.00	125-128	PAHs, Trace of lubricating oil & Naturally occurring compounds

Client Name: Ground Investigations Ireland

Reference: 13885-06-24

Location: Galway Port

Contact: Adam Browne

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
24/12401	1	TP1-10	3.00-4.00	129-132	PAHs, Trace of lubricating oil & Trace of possible degraded diesel
24/12401	1	TP1-11	0.00-1.00	133-136	Possible gasoline residues, Trace of lubricating oil & possible tarmac/bitumen
24/12401	1	TP1-11	1.00-1.70	137-140	Possible gasoline residues & Naturally occurring compounds
24/12401	1	TP1-12	0.00-1.00	141-144	PAHs & Trace of lubricating oil
24/12401	1	TP1-12	1.00-2.00	145-148	PAHs & Trace of lubricating oil
24/12401	1	TP1-12	2.00-3.00	149-152	PAHs, Trace of lubricating oil & Possible trace of degraded diesel
24/12401	1	TP1-12	3.00-3.60	153-156	PAHs, Trace of lubricating oil & Trace of possible degraded diesel
24/12401	1	TP1-13	0.00-1.00	157-160	PAHs & Trace of lubricating oil
24/12401	1	TP1-13	1.00-2.00	161-164	PAHs
24/12401	1	TP1-13	2.00-2.80	165-168	No interpretation possible
24/12401	1	TP1-14	1.00-2.00	173-176	PAHs
24/12401	1	TP1-14	2.00-3.00	177-180	PAHs
24/12401	1	TP1-14	0.00-1.00	181-184	PAHs
24/12401	1	TP1-15	0.00-1.00	185-188	PAHs
24/12401	1	TP1-15	1.00-2.00	189-192	No interpretation possible
24/12401	1	TP1-15	2.00-2.60	193-196	No interpretation possible

Element Materials Technology

Notification of Deviating Samples

Client Name: Ground Investigations Ireland
Reference: 13885-06-24
Location: Galway Port
Contact: Adam Browne

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
24/12401	1	TP1-04	2.00-2.90	45-48	EPH	Sample holding time exceeded
24/12401	1	TP1-05	0.00-1.00	49-52	EPH	Sample holding time exceeded
24/12401	1	TP1-05	1.00-2.00	53-56	EPH	Sample holding time exceeded
24/12401	1	TP1-15	1.00-2.00	189-192	PAH	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.
It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

EMT Job No.: 24/12401

SOILS and ASH

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

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

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

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 35°C ±5°C.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

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

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

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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

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

WATERS

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

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

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

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

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

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).
Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

Tentatively Identified Compounds (TICs)

Where Tentatively Identified Compounds (TICs) are reported, up to 10 Tentatively Identified Compounds will be listed where there is found to be a greater than 80% match with the NIST library. The reported concentration is determined semi-quantitively, with a matrix specific limit of detection. Note, other compounds may be present but are not reported.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
BA	x10 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 24/12401

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO_2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes

EMT Job No: 24/12401

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM61	Determination of Mercury by Cold Vapour Atomic Fluorescence - WATERS: Modified USEPA Method 245.7, Rev 2, Feb 2005. SOILS: Modified USEPA Method 7471B, Rev.2, Feb 2007	PM0	No preparation is required.	Yes		AR	Yes

EMT Job No: 24/12401

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM160	Titrimetric determination of acid reserve to pH 4.0 or alkali reserve to pH 10.0 based on method C14.2 Canadian Government (2013).	PM110	Preparation of a 10% (w/w) aqueous solution of soil in distilled water			AR	No
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Old School Building
Ughtyneill
Moynalty
Co.Meath

Geotechnical and Soil Testing Services Ltd

CONTRACT Galway Port
CLIENT NO. C028
CLIENT Ground Investigations Ireland
ADDRESS Catherinestown House
Hazelhatch Road
Newcastle D22 YD52

REPORT NO: SA 2340 PLI
JOB NO: GII 332

DATE: 18/10/2024

TEST REPORT FOR DETERMINATION OF POINT LOAD INDEX

Single Diametrical Determination in accordance with ISRM 1985

Sample Number	SA2340 to SA 2374
Sampled By	Client
Sampled Date	03/10/2024
Received Date	03/10/2024
Sample Source/Location *	Galway Port
Depth /Location *	Galway Port
Sample Description	Rock core
Rock Type tested	Core
Sample Ref / Identification	See table of Results
Date Start Test	26/09/24
Date Tested	26/09/24
Deviations from Standard	None

Test Results

Sample No.	BH No.	Average Diameter	Height/ Length	Distance between contact point and free end	Load at Failure (kN)	IS(50) Mpa	Density (Mg/M3)
2340	BH01 @10.40-10.66m	63.20	60.00	>0.5	10.95	**2.53**	2.60
2342	BH01 @11.05-11.19m	63.20	150.00	>0.5	16.01	**3.69**	2.61
2344	BH02 @6.87-6.94m	63.20	75.00	>0.5	18.33	**4.23**	2.63
2346	BH02 @9.40-9.57m	63.20	90.00	>0.5	21.60	**4.98**	2.62
2349	BH03 @9.50-9.65m	63.20	165.00	>0.5	19.53	**4.51**	2.62
2351	BH03 @10.85-10.95m	63.20	130.00	>0.5	21.11	**4.87**	2.61
2352	BH04 @7.40-7.55m	63.20	160.00	>0.5	16.18	**3.73**	2.91
2353	BH04 @8.30-8.40m	63.20	215.00	>0.5	35.91	**8.28**	2.73
2357	BH05 @8.32-8.45m	63.20	125.00	>0.5	30.16	**6.96**	2.94
2359	BH05 @9.46-9.60m	63.20	140.00	>0.5	22.41	**5.17**	2.81
2360	BH06 @8.57-8.65m	63.20	70.00	>0.5	9.63	**2.22**	2.63
2363	BH06 @9.65-9.71m	63.20	60.00	>0.5	13.18	**3.04**	2.84
2364	BH07 @8.08-8.20m	63.20	120.00	>0.5	33.81	**7.80**	2.55
2365	BH07 @10.18-10.25m	63.20	75.00	>0.6	23.14	**5.34**	2.54
2368	BH08 @8.10-8.26m	63.20	160.00	>0.7	34.15	**7.88**	2.56
2370	BH08 @9.62-9.80m	63.20	280.00	>0.8	32.46	**7.49**	2.56
2373	BH09 @9.85-9.98m	63.20	160.00	>0.9	18.39	**4.24**	2.90
2374	BH09 @11.32-11.41m	63.20	95.00	>0.10	24.25	**5.59**	2.87

Notes: *Specimens prepared and tested in accordance with suggested method from
International Society for Rock Mechanics (ISRM), 1985
This test report shall not be reproduced except in full,without the prior written approval of the laboratory.
Results relate only to the sample tested and apply to sample as receieved.
(*)Denotes sample information above has been provided by the client.

Signed: G. Reilly

Date: 18/10/2024

for Geotechnical and Soil Testing Services Ltd
Authorised signatories : G. Reilly

End of Report

Old School Building
Ughtyneill
Moynalty
Co.Meath

Geotechnical and Soil Testing Services Ltd

CONTRACT	Galway Port	**REPORT NO:**	**SA 2341 UCS**
CLIENT NO.	C028	**JOB NO:**	**GII 332**
CLIENT	Ground Investigations Ireland		
ADDRESS	Catherinestown House Hazelhatch Road Newcastle D22 YD52	**DATE:**	**18/10/2024**

TEST REPORT FOR DETERMINATION OF UNCONFINED COMPRESSIVE STRENGTH of Rock cores in accordance with ISRM 1985

Sample Number		SA2341 SA 2375
Sampled By		Client
Sampled Date		03/10/2024
Received Date		03/10/2024
Sample Source/Location	*	Galway Port
Depth /Location		See table of Results
Sample Description		Rock core
Rock Type tested		Core
Sample Ref / Identification		See table of Results
Date Start Test		26/09/24
Date Tested		26/09/24
Deviations from Standard		None

Test Results

Sample No.	BH No. / Depth	Average Diameter	Height/ Length	Length / Dia Ratio	Load at Failure (kN)	Unconfined Compressive Strength **(Mpa)**	Density (Mg/M3)
2341	BH01 @10.80-11.00m	63.50	166.80	2.63	184.90	**58.30**	**2.60**
2343	BH01 @11.65-11.87m	63.20	158.80	2.51	93.90	**29.90**	**2.61**
2345	BH02 @7.88-8.10m	63.20	150.00	2.37	405.70	**129.30**	**2.63**
2347	BH02 @10.00-10.30m	63.10	145.90	2.31	168.30	**53.50**	**2.63**
2348	BH03 @8.60-8.93m	63.20	150.80	2.39	63.20	**20.20**	**2.61**
2350	BH03 @9.80-10.02m	63.50	163.00	2.57	156.90	**49.90**	**2.62**
2354	BH04 @8.50-8.86m	63.20	146.00	2.31	181.40	**57.62**	**2.86**
2355	BH04 @9.85-10.05m	63.20	157.80	2.50	143.60	**45.81**	**2.62**
2356	BH05 @7.75-8.00m	63.20	150.00	2.37	176.40	**56.23**	**2.92**
2358	BH05 @9.20-9.43m	63.50	94.50	1.49	199.80	**63.10**	**2.81**
2361	BH06 @8.70-8.90m	63.50	150.70	2.37	112.30	**35.50**	**2.67**
2362	BH06 @9.30-9.60m	63.20	164.20	2.60	98.80	**31.52**	**2.60**
2366	BH07 @10.31-10.55m	63.20	160.80	2.54	200.10	**63.80**	**2.55**
2367	BH07 @10.75-11.00m	63.50	166.90	2.63	139.30	**43.90**	**2.55**
2369	BH08 @9.15-9.40m	63.20	159.80	2.53	157.10	**50.00**	**2.57**
2371	BH08 @10.75-10.97m	63.20	150.00	2.37	143.90	**45.90**	**2.56**
2372	BH09 @9.48-9.78m	63.50	151.00	2.38	122.50	**38.60**	**2.89**
2375	BH09 @11.70-11.95m	63.20	158.00	2.50	253.40	**80.60**	**2.89**

Notes:
*Specimens prepared and tested in accordance with suggested method from
International Society for Rock Mechanics (ISRM), 1985
This test report shall not be reproduced except in full,without the prior written approval of the laboratory.
Results relate only to the sample tested and apply to sample as receieved.
(*)Denotes sample information above has been provided by the client.

Signed: G. Reilly

Date: 18/10/2024

for Geotechnical and Soil Testing Services Ltd
Authorised signatories : G. Reilly

End of Report

APPENDIX 5 – Groundwater Monitoring

GROUND INVESTIGATIONS IRELAND
Geotechnical & Environmental

Catherinestown House,
Hazelhatch Road,
Newcastle,
Co. Dublin.
D22 YD52

Tel: 01 601 5175 / 5176
Email: info@gii.ie
Web: www.gii.ie

GROUNDWATER MONITORING

Galway Port

BOREHOLE	DATE	TIME	GROUNDWATER (m BGL)	Comments
ST1-01 (RC1-03)	02/09/2024	08:10:00	4.16	
ST1-02 (RC1-02)	02/09/2024	08:15:00	3.56	
ST1-03 (RC1-09)	02/09/2024	08:20:00	3.92	

GROUND INVESTIGATIONS IRELAND
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DOCUMENT CONTROL SHEET

Project Title	Galway Port
Engineer	Tobin
Client	The Land Development Agency
Project No	13885-06-24 & 14663-04-25
Document Title	Waste Classification Report

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
A	Final	B Sexton	J Cashen	B Sexton	Dublin	20 August 2024
B	Final	B Sexton	J Cashen	B Sexton	Dublin	21 August 2024
C	Final	B Sexton	J Cashen	B Sexton	Dublin	18 July 2025

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CONTENTS

GROUND INVESTIGATIONS IRELAND
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LIST OF TABLES

APPENDICES

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Appendix 3	**Window Sample Records**
Appendix 4	**Laboratory Testing**
Appendix 5	**HazWasteOnLine^{TM} Report**
Appendix 6	**Waste Acceptance Criteria Summary Table**
Appendix 7	**Soil Recovery Sites Screening Report**

1.0 Preamble

Ground Investigations Ireland (GII) was appointed by Tobin Consulting Engineers on behalf of The Land Development Agency (LDA) to carry out a Waste Classification Assessment for a proposed development in Galway Port, Galway City. All site investigation works were carried out under the supervision of a GII Geo-Environmental Engineer. The site investigation works were completed in three phases between August 2019 and July 2024.

2.0 Purpose & Scope

It is understood that as part of the proposed development there may be an excavation to accommodate foundations, services, pavements and carparking and as such the material which may be excavated and removed from site needs to be assessed in terms of waste disposal outlets. The waste classification was carried out in parallel with a wider geotechnical site investigation.

The purpose of the waste classification exercise was as follows.

- Assess the site in terms of historical use;
- Classification, in terms of waste management and final disposal outlets, of material that may require disposal following excavation during the construction phase; and
- Assessment of material against Soil Recovery Facility (SRF) criteria.

The scope of the work undertaken to facilitate the waste classification exercise included the following:

- Site walkover;
- Historical desk study;
- Excavation of fifteen (15 No.) trial pits;
- Boring of thirty-nine (39 No.) window sample boreholes;
- Collection of subsoil samples for chemical analysis;
- Environmental laboratory testing;
- Waste classification; and
- SRF suitability.

The additional scope of the geotechnical investigation included the following:

- Boring of nine (9 No.) cable percussion boreholes;
- Coring of nine (9 No.) follow on rotary core boreholes;
- Installation of three (3 No.) groundwater monitoring wells; and
- Geotechnical laboratory testing.

The geotechnical site investigation is discussed in the GII Ground Investigation Report Dated September 2024.[1]

3.0 Limitations

This report is based on the waste classification regulatory requirements at the time of writing this report and the conclusions and recommendations may not be applicable where there have been amendments to these requirements subsequent to writing the report.

In all cases the reader of this report shall confirm that the waste categories are acceptable to the various waste facilities to which the material may be sent. The quantification of disposal costs shall not be completed prior to confirmation with the relevant waste facilities of the waste categories. It should be noted that the environmental regulator (in this case the EPA) and the waste acceptor (in this case a landfill operator) shall decide whether a waste is hazardous or non-hazardous and or suitable for disposal at their facility.

GII has prepared this report for the sole use of the Land Development Agency. No other warranty, express or implied, is made as to the professional advice included in this report or other services provided by GII.

The conclusions and recommendations contained in this report are based upon information provided by others and the assumption that all relevant information has been provided by those bodies from whom it has been requested. Information obtained from third parties has not been independently verified by GII, unless otherwise stated in this report.

This report has been prepared in line with best industry standards and within the project's budgetary and time constraints. The methodology adopted and the sources of information used by GII in providing its services are outlined in this report.

The work described was undertaken between August 2019 and July 2024, this report is based on the conditions encountered and the information available during that period. The scope of this Report and the services are accordingly factually limited by these circumstances.

Site investigation locations were selected by the consultant engineer.

GII disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to GII's attention after the date of the Report.

The conclusions presented in this report represent GII's best professional judgement based on review of site conditions observed during any site visit and the relevant information available at the time of writing. The opinions and conclusions presented are valid only to the extent that the information provided was accurate and complete.

The investigation was focused on a broad assessment of the subsoil quality across the site. The assessment did not extend to the identification of asbestos containing materials associated with any on-site structures, ground gases or groundwater.

[1] Ground Investigations Ireland, Galway Port, Ground Investigation Report, September 2024.

The waste classification exercise is reflective of and applicable to the ground conditions on site at the time of the site investigation and sampling. Alterations to the ground conditions or any further excavations carried out on site following the investigation are not reflected in this report.

4.0 Site Location and Layout

The site is located at Galway Port, Galway City (Figure 1 Appendix 1). At the time of the assessment the site was largely vacant open paved areas. The central section was occupied by the City Direct Bus offices and maintenance area. The northern section of the site was in use a contractor's compound for an adjacent construction site. The majority of the site was paved with concrete at the time of the assessment. The site is bounded to the west by the Lough Atalia Road and to the north and east by Lough Atalia. The southern site boundary is demarcated by the main roadway int the port.

5.0 Site History

GII reviewed the aerial photographs and historical maps maintained by the Tailte Éireann and the google imagery records. These included the 6-inch maps that were produced between 1829 and 1842, the 25-inch maps that were produced between 1888 and 1913 and the 6-inch Cassini Maps that were produced between the 1830's and 1930's. The site is undeveloped on the 6-Inch map and is part of Lough Atalia. The western portion of the site has been reclaimed from Lough Atalia on the 25-Inch and Cassini maps.
Based on a review of the Tailte Éireann and Google Imagery aerial photograph records the southern and eastern section of the site had been occupied by above ground fuel storage tanks. The tanks were decommissioned and removed from site in the mid 2010's.

6.0 Subsurface Exploration

6.1. General

During the ground investigation a programme of intrusive investigation specified by the Consulting Engineer was undertaken to determine the sub surface conditions at the proposed site. Regular sampling and in-situ testing was undertaken in the exploratory holes to facilitate the geotechnical descriptions and to enable laboratory testing to be carried out on the soil samples recovered during excavation and drilling.
The procedures used in this site investigation are in accordance with Eurocode 7 Part 2: Ground Investigation and testing (ISEN 1997 – 2:2007) and B.S. 5930:2015.

6.2. Trial Pits

The trial pits were excavated using a 13T tracked excavator at the locations shown in Figure 7. The locations were checked using a CAT scan to minimise the potential for encountering services during the excavation. The trial pits were sampled, logged and photographed by a Geotechnical Engineer/Engineering Geologist prior to backfilling with arisings. Notes were made of any services, inclusions, pit stability, groundwater encountered and the characteristics of the strata encountered and are presented on the trial pit logs which are provided in Appendix 2 of this Report.

6.3. Window Sampling

The window sampling was carried out at the locations shown in Figure 7 using a Tecop Tec 10 percussion drilling rig. The window sampling consists of a 1m long steel tube with a cutting edge and an internal plastic liner which is mechanically driven into the ground utilising a 50kg weight falling a height of 500mm. Upon completion of the 1m sample, the tube is withdrawn and the plastic liner removed and sealed for logging and sub sampling by a Geotechnical Engineer/Engineering Geologist. The tube is replaced in the borehole and a subsequent 1m sample can be recovered. Occasionally outer casing or a reduced diameter tube is utilised to enable the window sample to progress in difficult drilling conditions. Geotechnical or environmental soil samples can be recovered from each of the liners following logging. The window sample records are provided in Appendix 3 of this Report.

6.4. Surveying

The exploratory hole locations have been recorded using a KQGeo M8 GNSS System which records the coordinates and elevation of the locations to ITM as required by the project specification. The coordinates and elevations are provided on the exploratory hole logs in the appendices of this Report.

7.0 Ground Conditions

7.1. General

The ground conditions encountered during the investigation are summarised below with reference to insitu and laboratory test results. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs included in the appendices of this report. For full geotechnical descriptions of the ground conditions refer to the geotechnical site investigation report referenced in Section 2.0.

The sequence of strata encountered was consistent across the site and generally comprised;

- Surfacing
- Made Ground
- Granular Deposits
- Cohesive Deposits

SURCING: Concrete was encountered in the majority of the exploratory holes and was present to a maximum depth of 0.20m BGL.

MADE GROUND: Made Ground deposits were encountered beneath the Surfacing or from surface and were present to a maximum proven depth of 4.00m BGL. These deposits ranged from *clayey sandy subangular to subrounded fine to coarse Gravel with medium cobble content and rare fragments of metal, brick, ceramic, timber, concrete, plastic* to *grey angular Cobbles and Boulders with a lot of slightly clayey sandy angular Gravel.*

8.0 Laboratory Analysis

8.1. Analysis Suite

In order to assess materials, which may be excavated and removed from site, in terms of waste classification, a selection of samples collected were analysed for a suite of parameters which allows for the assessment of the soils in terms of total pollutant content for classification of materials as *hazardous* or *non-hazardous* (RILTA Suite). The suite also allows for the assessment of the soils in terms of suitability for placement at various categories of landfill. The parameter list for the RILTA suite includes analysis of the solid samples for arsenic, barium, cadmium, chromium, copper, cyanide, lead, nickel, mercury, zinc, speciated aliphatic and aromatic petroleum hydrocarbons, pH, sulphate, sulphide, moisture content, soil organic matter and an asbestos screen.

The RILTA suite also includes those parameters specified in the EU Council Decision establishing criteria for the acceptance of waste at Landfills (Council Decision 2003/33/EC), which for the solid samples are pH, total organic carbon (TOC), speciated aliphatic and aromatic petroleum hydrocarbons, BTEX, phenol, polychlorinated biphenyls (PCB) and PAH.

In line with the requirement of Council Decision 2003/33/EC a leachate was generated from the solid samples which was in turn analysed for antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, chloride, fluoride, soluble sulphate, sulphide, phenols, dissolved organic carbon (DOC) and total dissolved solids (TDS).

The laboratory testing was completed by Element Materials Technology (EMT) in the UK; EMT is a UKAS accredited laboratory. The full laboratory reports are included in Appendix 3.

8.2. Asbestos

Asbestos fibres were detected in the samples WS-10 at 1.00m to 2.00m BGL, WS-18 at 0.00m to 1.00m BGL and WS-18 at 1.00m to 2.00m BGL. The laboratory identified bitumen products in sample WS-18 1.00m to 2.00m BGL. The level detected in all cases was below the hazardous level of 0.1%[2].

The levels which are reported by the laboratory have been reported as dry weight. In order to most accurately assess the level of asbestos in the waste in its natural form and not in the dried state created for laboratory testing the level corrected using a moisture correction factor for each sample is reported and assessed against the hazardous threshold.

[2] Environment Agency (2018). Technical Guidance WM3 - Guidance on the classification and assessment of waste (1st Edition V1.1 May 2018) Technical Guidance WM3 – page 19.

Table 1 Asbestos Detections

Sample ID	Depth (m)	Asbestos (Dry Weight) %	Asbestos (Moisture Corrected Weight) %	ACM Detected
WS-18	1.00 – 2.00	0.051	0.0438	Bitumen products

9.0 Waste Classification

GII understands that any materials which may be excavated and removed from site would meet the definition of waste under the Waste Framework Directive. Due to the varying levels of anthropogenic materials encountered in the made ground there are potentially two sets of List of Waste (LoW)[3] codes with "mirror" entries which may be applied to excavated materials to be removed from site.

1. 17-05-03* (soil and stone containing dangerous substances, classified as hazardous) or 17-05-04 (soil and stone other than those mentioned in 17-05-03, not hazardous); or

2. 17-09-03* (other construction and demolition wastes (including mixed wastes) containing hazardous substances) or 17-09-04 (mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03).

Where waste is a mirror entry in the LoW, it can be classified via a process of analysis against standard criteria set out in the Waste Framework Directive. The assessment process is described in detail in guidance published by the Irish (EPA Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, June 2015) and UK regulatory authorities (Guidance on the Classification and Assessment of Waste: Technical Guidance WM3, 2015). The assessment involves comparison of the concentration of various parameters against defined threshold values.

The specific LoW code which should be applied to the material at each sample location is summarised in Appendices 5 and 6. These codes are only applicable where the material is being removed from a site as a waste.

GII use HazWasteOnline™, a web-based commercial waste classification software tool which assists in the classification of potentially hazardous materials. This tool was used to determine whether the materials sampled are classified as hazardous or non-hazardous. The use of the online tool is accepted by the EPA (EPA 2014).

The conclusions presented in the report are based on GII's professional opinion. **It should be noted that the environmental regulator (in this case the EPA) and the waste acceptor (in this case a landfill operator) shall decide whether a waste is hazardous or non-hazardous and suitable for disposal at their facility.**

[3] Formerly European Waste Catalogue Codes (EWC Codes)

9.1. HazWasteOnLineTM Results

In total, ninety-four (94 No.) samples were assessed using the HazWasteOnLine™ Tool. Fifteen (15 No.) samples were classified as hazardous due to elevated levels of hydrocarbons, and metals including lead and zinc. The complete HazWasteOnLine™ report for all samples is included in Appendix 5. All samples were classified as being non-hazardous. The complete HazWasteOnLine™ report for all samples is included in Appendix 5.

Initially the sample TP1-06 between 0.00m and 1.00m was classified as hazardous based on the hazardous properties HP4[4] (Irritant) and HP8[5] (Corrosive) due to elevated levels of pH. The elevated pH was likely due to the presence of concrete in made ground as noted throughout the material logged. Although the pH above 11.5 indicates that the material may be corrosive where pH is being used as the basis of the classification, the acid/alkali reserve[6] can be taken into consideration. The acid/alkali reserve provides a measure of the capability of an acid or alkali to maintain its pH, combined with pH it provides a good indication of corrosivity. The acid/alkali reserve is determined by titration and is expressed as the grams of sodium hydroxide (equivalent) per 100 g of substance required to adjust the pH to the appropriate value. A waste should be considered as corrosive if:

- pH + 1/12 alkali reserve ≥ 14.5; or
- pH - 1/12 acid reserve ≤ -0.5.

If a waste is not classified as corrosive on this basis, it may be classified as irritant if:

- pH + 1/6 alkali reserve ≥ 13; or
- pH - 1/6 acid reserve ≤ 1.

Further analysis of the samples indicates that the alkali reserves demonstrate that the material is neither corrosive and or irritant. The sample is therefore not considered hazardous.

Table 2 Alkali Reserve Calculation

Parameter	**TP1-06 0.00m and 1.00m**		
Alkali Reserve	0.039		
pH	11.77	**Corrosive**	
		Lower Limit	Upper Limit
pH + 1/12 alkali reserve	11.773	-0.5	14.5
		Irritant	
		Lower Limit	Upper Limit
pH + 1/6 alkali reserve	11.777	1	13

4 Waste which on application can cause skin irritation or damage to the eye.
5 Waste which on application can cause skin corrosion.
6 Young, J.R., How, M.J., Walker, A.P. and Worth, W.H.M. 1988. "Classification as corrosive or irritant to skin of preparations containing acidic or alkaline substances, without testing on animals", Toxic In Vitro 2(1): 19-26.

The specific LoW code which should be applied to the material at each SI location is summarised in Table 3 below. The assigning of the LoW code is based on observations recorded in the trial pits, an estimation of the % of anthropogenic material present and the results of the HazWasteOnline™ output. The final LoW codes applied at the time of disposal may vary due to variations in % of anthropogenic material observed in the excavation phase. Where there is in excess of 2%[7] anthropogenic material observed the LoW code 17 09 04 may be applied.

9.2. Landfill Waste Acceptance Criteria

Waste Acceptance Criteria (WAC) have been agreed by the EU (Council Decision 2003/33/EC) and are only applicable to material if it is to be disposed of as a waste at a landfill facility. Each individual member state and licensed operators of landfills may apply more stringent WAC. WAC limits and the associated laboratory analysis are not suitable for use in the determination of whether a waste is hazardous or non-hazardous. The data have been compared to the WAC limits set out in Council Decision 2003/33/EC as well as the specific increased WAC which the EPA have applied to a selection of EPA licenced landfills. These landfills have higher limits for a range of parameters while still operating under an inert landfill licence. The WAC data considered in combination with the waste classification outlined in Section 9.1 allows the most suitable waste category to be applied to the material tested. The potentially applicable waste categories where the material is to be disposed are summarised in Table 2. A summary of the WAC data is presented in Appendix 5. The waste categories assigned in Appendix 5 are only applicable to where the material is being removed from site to landfill and not to an SRF.

Table 3 Potential Waste Categories for Disposal/Recovery

Waste Category	Classification Criteria
Category A Unlined Facilities	Soil and Stone only which are free from[8] anthropogenic materials such as concrete, brick, timber. Soil must be free from “contamination” e.g. PAHs, Hydrocarbons[9].
Category B1 Inert Landfill	Reported concentrations within inert waste limits, which are set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). Results also found to be non-hazardous using the HWOL[10] application.
Category B2 Inert Landfill	Reported concentrations greater than Category B1 criteria but less than IMS Hollywood Landfill acceptance criteria, as set out in their Waste Licence W0129-02.

[7] EPA (2020) - Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.
[8] Free from equates to less than 2%.
[9] Total BTEX 0.05mg/kg, Mineral Oil 50mg/kg, Total PAHs 1mg/kg, Total PCBs 0.05mg/kg and Asbestos No Asbestos Detected – EPA Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities, 2020.
[10] HazWasteOnLine™ Tool.

Waste Category	Classification Criteria
	Results also found to be non-hazardous using the HWOL application.
Category C Non-Haz Landfill	Reported concentrations greater than Category B2 criteria but within non-haz landfill waste acceptance limits set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). Results also found to be non-hazardous using the HWOL application.
Category C 1 Non-Haz Landfill	As Category C but containing < 0.001% w/w asbestos fibres.
Category C 2 Non-Haz Landfill	As Category C but containing >0.001% and <0.01% w/w asbestos fibres
Category C 3 Non-Haz Landfill	As Category C but containing >0.01% and <0.1% w/w asbestos fibres.
Category D Hazardous Treatment	Results found to be hazardous using HWOL Application.
Category D 1 Hazardous Disposal	Results found to be hazardous due to the presence of asbestos (>0.1%).

9.3. Final Waste Categorisation

All samples were assessed in terms of waste classification using the HazWasteOnLine™ tool and also the WAC set out in Council Decision 2003/33/EC and the EPA's increased WAC to give a final waste categorisation to determine the most appropriate disposal route for any waste generated. The final and most applicable waste category for each sample where it is being disposed of to landfill are summarised in is summarised in Appendix 6.

The waste categories for material to be excavated are presented in a preliminary excavation/dig plan in Figures 8 to 11. Based on the number and dispersion of the analytical data points available it is not possible to create a comprehensive colour coded excavation plan for the site. The preliminary excavation plan summarises the various waste categories across the site. The excavation plan does not consider compliance with SRF trigger levels.

10.0 Soil Recovery Facility Suitability

GII assessed the suitability of the material sampled in line with the EPA 2020 Guidance on waste acceptance criteria at authorised soil recovery facilities[11].

The guidance outlines a summary of Maximum Concentrations and/or Trigger Levels in Soil & Stone for SRFs based on the location of the facility or site in the country (Geochemical Domains).

[11] Guidance on waste acceptance criteria at authorised soil recovery facilities 2020 - ENVIRONMENTAL PROTECTION AGENCY

The material sampled has been assessed against all seven Geochemical Domains in terms of its suitability to be accepted at an SRF in each domain. The suitability or otherwise of the material to be accepted at an SRF in each of the seven geochemical domains is presented in the Soil Recovery Sites Screening Report in Appendix 7. Each sample is assigned either a Pass or Fail for each domain. Fail indicates the sample is not suitable for acceptance in an SRF in the specific Domain while Pass indicates the sample is suitable for acceptance in an SRF in the specific Domain.

Where material has been deemed to be acceptable within a specific domain this is based on the chemical priorities of the material tested. During bulk excavation of the material a visual assessment of the percentage of anthropogenic material contained within it is required. If there is less than 2% anthropogenic material present then it may be accepted by an SRF. **This assessment is at the discretion of the SRF.**

11.0 Conclusions & Recommendations

The conclusions and recommendations given and opinions expressed in this report are based on the findings of the site investigation works and laboratory testing undertaken. Where any opinion is expressed on the classification of material between site investigation locations, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for conditions which have not been revealed by the findings at the site investigation locations.

11.1. Conclusions

11.1.1. Waste Classification

Based on the results of the HazWasteOnLine™ tool seven of the samples analysed if being considered a waste can be classified as hazardous. The full summary of the HazWasteOnLine™ assessment is summarised in Appendix 4.

11.1.2. Asbestos

Asbestos fibres were detected in the samples WS-10 at 1.00m to 2.00m BGL, WS-18 at 0.00m to 1.00m BGL and WS-18 at 1.00m to 2.00m BGL. The laboratory identified bitumen products in sample WS-19 1.00m to 2.00m BGL. The level detected in all cases was below the hazardous level of 0.1%[12].

[12] Environment Agency (2018). Technical Guidance WM3 - Guidance on the classification and assessment of waste (1st Edition V1.1 May 2018) Technical Guidance WM3 – page 19.

11.1.3. Waste Categories

The most applicable waste category for each of the samples if being considered a waste to be disposed of at **Landfill** have been presented in Appendix 6.

The suitability of the samples to be accepted at an **SRF** in terms of the various trigger levels for the seven geochemical domains has been presented in Appendix 7.

11.2. Recommendations

11.2.1. Waste Transfer

In the event that material is excavated for removal from site, any firm engaged to transport waste material from site and the operator of any waste facility that will accept subsoils excavated from this site should be furnished with, at a minimum, copies of the **full unabridged** laboratory reports and HazWasteOnLine™ report for all samples presented in this report.

The non-hazardous material across the site if excavated should be removed from site to an appropriate facility under either the LoW codes 17 05 04 or 17 09 04. Where during excavation there is noted to be in excess of 2% anthropogenic material the appropriate LoW code which should be applied is 17 09 04.

The hazardous material across the site if excavated should be removed from site to an appropriate facility under either the LoW codes 17 05 03 or 17 09 03. Where during excavation there is noted to be in excess of 2% anthropogenic material the appropriate LoW code which should be applied is 17 09 03.

12.0 References

Environment Agency (2013). *Waste Sampling and Testing for Disposal to Landfill.*

Environment Agency (2015). *Technical Guidance WM3 - Guidance on the classification and assessment of waste (1st edition 2015) Technical Guidance WM3*.

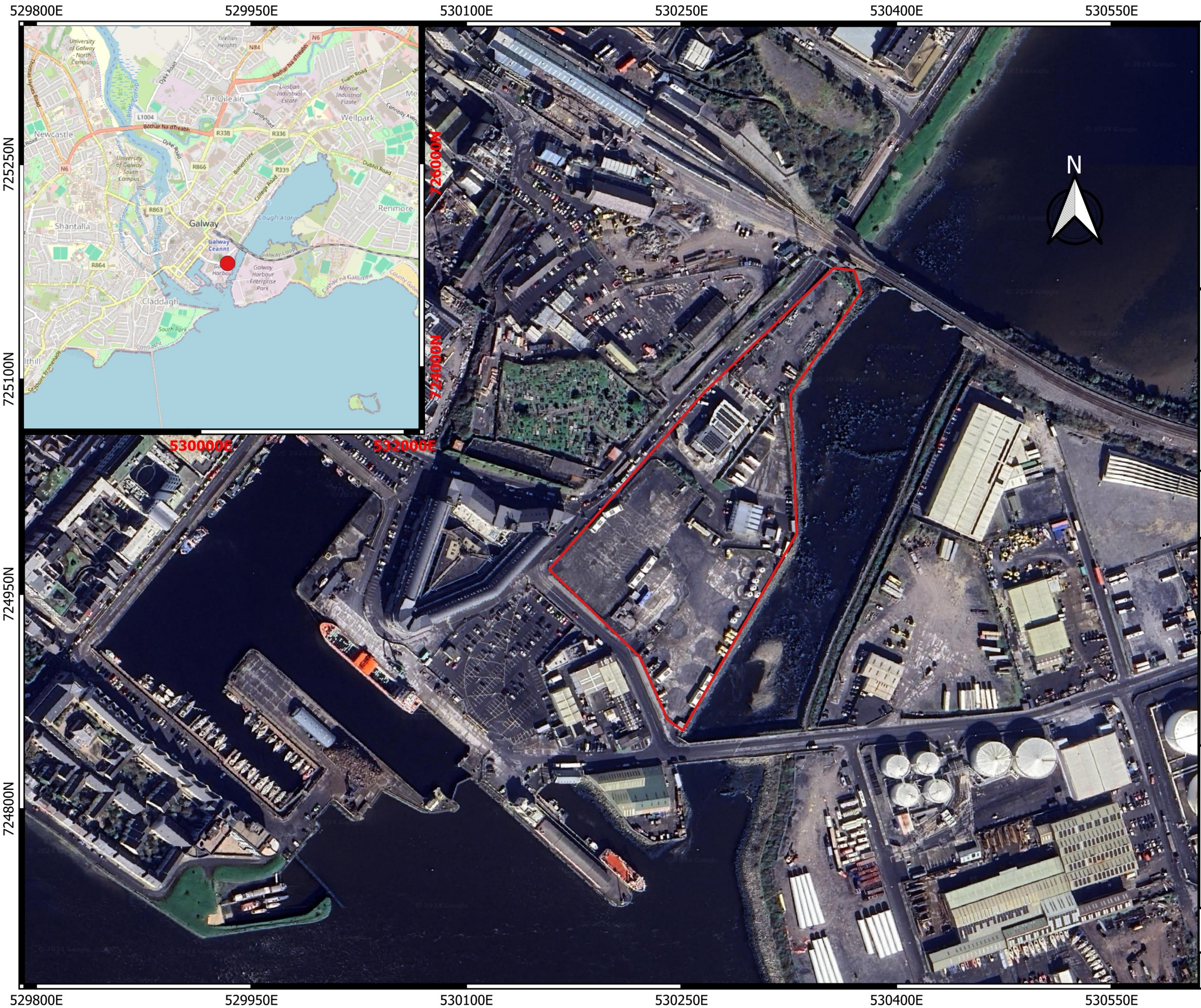
Environmental Protection Agency (EPA) (2014). Letter to Licences *Re: Waste Classification & Haz Waste On-Line™*.

Environmental Protection Agency (EPA) (2015). *Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous.*

Environmental Protection Agency (EPA) (2020). *Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities*.

Association of Geotechnical and Geoenvironmental Specialists (2019). *Waste Classification for Soils – A Practitioners Guide.*

APPENDIX 1 - Figures



Site Location

Indicative Site Boundary

Client:

LDA

Project Code:

13885-06-24

Project Title:

Galway Port

Drawing Title:

Figure 1 Site Location

GROUND INVESTIGATIONS IRELAND
Geotechnical & Environmental

Ground Investigations Ireland Ltd.
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www.gii.ie 01-6015175/5176

0 50 100 150 m

Drawn By:	Date:
BS	02-08-2024

GROUND INVESTIGATIONS IRELAND
Geotechnical & Environmental

Ground Investigations Ireland Ltd. Catherinstown House, Hazelhatch Road, Newcastle, Co. Dublin
www.gii.ie 01-6015175/5176

Client:

LDA

0 20 40 60 m

Project Title:
Galway Port

Drawing Title:
Figure 2 Borehole Locations

GII Project Reference:
13885-06-24

Drawn By: BS

Date: 15-08-2024

Indicative Site Boundary

Borehole