

RECEIVED: 27/03/2023

Appendix C



Project No: P1591-0
Site: Old Leighlin Quarry, Co. Carlow
Client: Milford Quarries Ltd

Trial Pit Log

Date started: 15/08/2022
Date finished: 15/08/2022

Trial Pit No: TP1
Easting: 666038.57
Northing: 664095.92
Elevation: 93mOD

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SUBSURFACE PROFILE

Depth	Symbol	Depth/Elev.	Description	Water Strikes	Sample Type	Comments
0.00		93.00	Ground Surface			
		0.00	Stiff brown slightly sandy CLAY (Topsoil) with grass rootlets			
		92.75	Very Stiff, dry, brown gravelly Silty CLAY (Boulder Clay) with occasional grey mottling, and with angular and subangular gravels and cobbles of siltstone and mudstone (~20% gravels and cobbles in very stiff CLAY matrix).			
		0.25				
1.00						
2.00						
3.00		90.10 2.90				



Remarks:
 No water inflows.
 Vertical sidewalls stable.
 Very hard digging at depth.
 No bedrock encountered.

Contractor:
Excavator type:
Logged by: MG

Scale as shown
Sheet: 1 of 1



Project No: P1591-0
Site: Old Leighlin Quarry, Co. Carlow
Client: Milford Quarries Ltd

Trial Pit Log

Date started: 15/08/2022
Date finished: 15/08/2022

Trial Pit No: TP2
Easting: 665888.22
Northing: 664072.30
Elevation: 111.29mOD

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SUBSURFACE PROFILE

Depth	Symbol	Depth/Elev.	Description	Water Strikes	Sample Type	Comments
0.00		111.29	Ground Surface			
	---	0.00	Stiff brown slightly sandy CLAY (Topsoil) with grass rootlets.			
	---	110.99				
	---	0.30	Very Stiff, dry, brown gravelly Silty CLAY (Boulder Clay), with angular and subangular gravels and cobbles of siltstone and mudstone.			
1.00	⊗					
2.00	⊗					
3.00	⊗					
4.00	⊗					
	---	107.09				
	---	4.20				



Remarks: No water inflows/no mottling noted.
 Slightly damp at 2.5mbgl.
 Vertical sidewalls stable.
 No bedrock encountered.

Contractor:
Excavator type:
Logged by: MG

Scale as shown
Sheet: 1 of 1



Project No: P1591-0
Site: Old Leighlin Quarry, Co. Carlow
Client: Milford Quarries Ltd

Trial Pit Log

Date started: 15/08/2022
Date finished: 15/08/2022

Trial Pit No: TP3
Easting: 665984.16
Northing: 664045.81
Elevation: 102mOD

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SUBSURFACE PROFILE

Depth	Symbol	Depth/Elev.	Description	Water Strikes	Sample Type	Comments
0.00		102.00	Ground Surface			
		0.00	Stiff brown slightly sandy CLAY (Topsoil) with grass rootlets			
		101.70				
		0.30	Very Stiff, dry, brown gravelly Silty CLAY (Boulder Clay) with angular and subangular gravels and cobbles of siltstone and mudstone.			
1.00						
2.00						
3.00		99.30				
		2.70	Loose, grey/brown very sandy, very gravelly SILT/CLAY.			
4.00						
		97.70				
		4.30				



Remarks: No water inflows/no mottling noted.
 Vertical sidewalls stable.
 No bedrock encountered.

Contractor:
Excavator type:
Logged by: MG

Scale as shown
Sheet: 1 of 1



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH1

Project No: P1591-0

Date started: 17/08/2022

Easting: 665914.03

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664072.34

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 103.7mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
0		Ground Surface	103.7			
		Firm, brown, slightly sandy silty CLAY topsoil with rootlets	0.0		mbgl/TCR%/SCR%	
		Firm, brown, gravelly silty CLAY with cobbles and boulders. Gravels and cobbles are subrounded to angular. Polymict clast composition of sandstone, mudstone and some limestone.	99.5			
		Large boulders with fragmented angular returns.	4.2			
		Very firm, brown, slightly silty gravelly CLAY. Gradational colour change with depth from orange brown to dark brown at 14m.	90.5			
		Upper section is very gravelly and decreases with depth.	13.2		15.67-16.2/100/82	
			88.0			
			15.7			
		Very strong, dark blue fine grained laminated limestone. Sharp horizontal contact with overlying boulder clay. Occasional fractures. Gradational colour change near base to light blue.			16.2-19.2/100/82	
		Very strong, creamy grey coarse grained sparry dolomite limestone.			19.2-22.2/100/85	

Remarks:

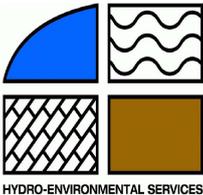
Depth to Bedrock (m): 15.7

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH1

Project No: P1591-0

Date started: 17/08/2022

Easting: 665914.03

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664072.34

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 103.7mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
					22.2-25.2/100/87	
			79.2 24.5			
		Very strong, blue fine grained laminated dolomite limestone. Heavily fractured. Gradational colour change near top from light blue to dark blue.	76.3 27.5		25.2-28.2/100/80	
		Strong, pale grey, medium to coarse grained dolomitised limestone.			28.2-31.2/100/80	
30					31.2-34.2/100/72	
					34.2-37.2/100/80	
					37.2-40.2/100/85	
40			63.5 40.2			

Remarks:

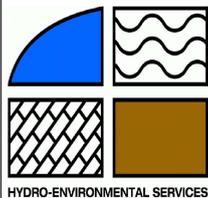
Depth to Bedrock (m): 15.7

Scale as shown

Drilling type: RC

Sheet: 2 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH2

Project No: P1591-0

Date started: 17/08/2022

Easting: 666003.53

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664015.54

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 93.778mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
0		Ground Surface	93.8			
		Firm, orange brown gravelly silty CLAY with cobbles. Gravels and cobbles are angular to subrounded. Polymict clasts of siltstone and mudstone.	0.0		mbgl/TCR%/SCR%	
		Loose, gravelly silty CLAY with cobbles. Gravels and cobbles are angular to subangular. Polymict clasts of siltstone, mudstone and some limestones.	91.0 2.8			
		Firm, grey silty gravelly CLAY with cobbles. Gravels and cobbles are angular to subangular. Polymict clast composition. Very gravelly near base.	89.5 4.3			
		Firm, very dense, orange brown slightly gravelly CLAY. Black organic interval at 7.6m. Very gravelly interval at 7.8m	86.9 6.9			
10		Fragmented dolomite limestone core returns. Some good returns of moderately strong, pale grey, coarse-grained dolomite. Other intervals of poor returns with limestone/dolomite gravels and cobbles and some occasional brown gravelly clays.	84.8 9.0		9.02-10.3/45/25	
					10.3-13.3/53/18	
					13.3-16.3/65/13	
		Firm, dense, dark brown, gravelly CLAY. Laminated interval at 18.5m. Laminations at 45°. (probable Palaeokarst infill of a cavity within the bedrock)	76.5 17.3		16.3-19.3/95/40	
20		Fragmented dolomite Limestone core returns.	73.5 20.3		19.3-22.3/100/87	

Remarks:

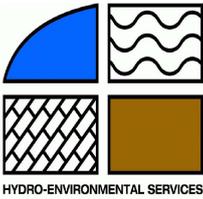
Depth to Bedrock (m): 9.0

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH2

Project No: P1591-0

Date started: 17/08/2022

Easting: 666003.53

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664015.54

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 93.778mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
30		Strong, pale grey, coarse grained dolomite. Frequent fractures.			22.3-25.3/100/85 25.3-28.3/100/90 28.3-31.3/100/92 31.3-34.3/100/85	<p>Arising</p> <p>2" Screen Pipe 31.3-40.3mbgl</p> <p>31.3mbgl</p> <p>40.3mbgl</p>
40		Strong, blue, coarse grained sparry limestones. Sharp 45° contact with overlying pale limestones.	59.1 34.7		34.3-37.3/100/87 37.3-40.3/100/95	
			53.5 40.3			

Remarks:

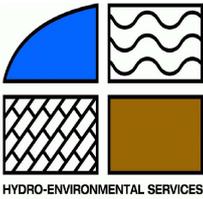
Depth to Bedrock (m): 9.0

Scale as shown

Drilling type: RC

Sheet: 2 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH3

Project No: P1591-0

Date started: 17/08/2022

Easting: 666092.20

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664114.54

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 88.313mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
0		Ground Surface	88.3 0.0		mbgl/TCR%/SCR%	<p>Top of Casing: 88.605mOD G/L: 88.313mOD Concrete Arising 2" Plain Pipe 0-31.3mbgl</p>
		Firm brown slightly sandy, gravelly CLAY with rootlets				
		Firm, dense, orange brown gravelly silty CLAY with occasional cobbles. Gravels are angular to subrounded (poorly sorted). Polymict clast (gravel and cobble) composition of sandstone, siltstone and mudstone.	84.2 4.1		5.56-7.3/95/47	
		Weak, heavily weathered, pale pink, loose coarse grained calcarenite.				
		Moderately strong, pale pink to cream, coarse grained dolomite. Regular fracturing.	80.4 7.9		7.3-10.3/92/75	
10		Very strong, dark blue, fine to coarse grained, massive limestone. Sharp horizontal contact with overlying pale pink dolomite. Bioclastic limestone containing shells and some corals. Rare fractures.			10.3-13.3/98/95	
					13.3-16.3/100/95	
					16.3-19.3/100/95	
20		Weak, black, fine grained	68.3 20.0			

Remarks:

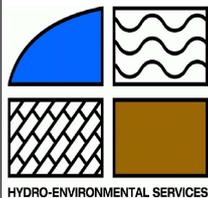
Depth to Bedrock (m): 4.1

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH3

Project No: P1591-0

Date started: 17/08/2022

Easting: 666092.20

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664114.54

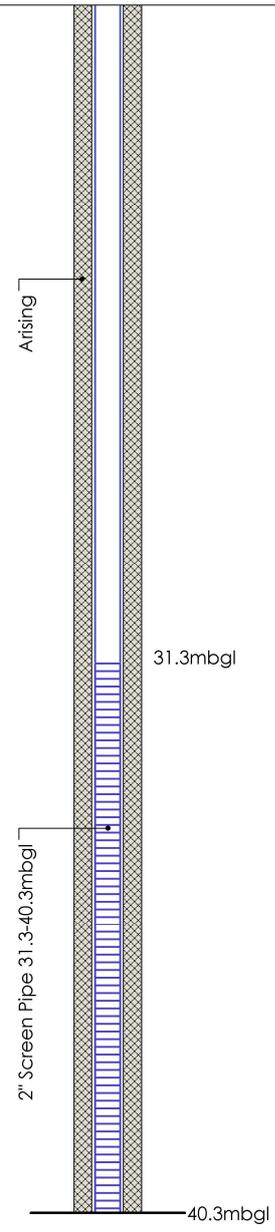
Site: Old Leighlin Quarry, Co. Carlow

Elevation: 88.313mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
			67.2		19.3-22.3/100/95	
			21.2			
		Strong, dark blue to black fine grained laminated bioclastic limestone Gradational change on colour towards base (black to dark blue)			22.3-25.3/100/95	
		Very strong, dark blue, fine to coarse grained, massive sparry limestone. Sharp horizontal contact with overlying pale pink limestones. Bioclastic limestone containing shells and some corals. Rare fractures.			25.3-28.3/100/95	
30					28.3-31.3/100/95	
					31.3-34.3/100/95	
					34.3-37.3/100/95	
					37.3-40.3/100/95	
40			48.0			
			40.3			



Remarks:

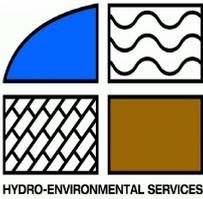
Depth to Bedrock (m): 4.1

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH4

Project No: P1591-0

Date started: 17/08/2022

Easting: 666059.71

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664216.69

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 93.266mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
0		Ground Surface	93.3 0.0		mbgl/TCR%/SCR%	<p>Top of Casing: 93.531mOD G/L: 93.266mOD Concrete Arising 2" Plain Pipe 0-31.3mbgl</p>
		Loose, brown, gravelly silty CLAY with abundant cobbles. Gravels and cobbles are angular to subangular				
		Returns as loose cobbles of grey coarse grained weathered dolomite with some gravelly CLAY	88.9 4.3		5.94-7.3/33/30	
		Strong, pale grey, medium to coarse grained dolomite. Frequent fracturing and veining			7.3-10.3/95/70	
10					10.3-13.3/75/68	
		Firm, dark brown gravelly silty CLAY with cobbles. Gravels and cobbles are angular to subangular. Polymict clast composition comprising of blue and brown siltstones and mudstones.	80.8 12.5		13.3-16.3/85/60	
		Strong, pale grey, medium to coarse grained dolomite. Frequent fracturing and veining. Interbedded with blueish limestone between 16.15m and 17.2m (gradational changes)			16.3-19.3/85/64	
20						

Remarks:

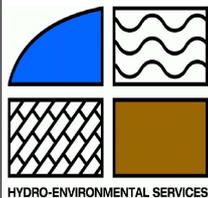
Depth to Bedrock (m): 4.9

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH4

Project No: P1591-0

Date started: 17/08/2022

Easting: 666059.71

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 664216.69

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 93.266mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
					19.3-22.3/95/70	
					22.3-25.3/80/55	
			67.6 25.7			
		Firm, dense, grey gravelly CLAY				
		Strong, pale grey, medium to coarse grained dolomite. Frequent fracturing and veining.			25.3-28.3/70/52	
30					28.3-31.3/95/74	
			61.8 31.5			
		Strong, blue fine to medium grained bioclastic sparry limestone. Upper boundary is an abrupt change. Gradual change to pale blue at 34.2m. Darker more bioclastic rich layer from 38.5 to 38.8m			31.3-34.3/100/82	
					34.3-37.3/100/95	
					37.3-40.3/100/93	
40			53.9 39.4 53.0 40.3			
		White, coarse grained limestone (cherty texture in places)				

Remarks:

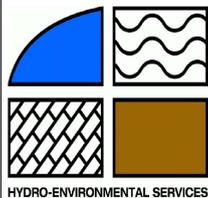
Depth to Bedrock (m): 4.9

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH5

Project No: P1591-0

Date started: 17/08/2022

Easting: 665931.37

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 663945.57

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 97.383mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
0		Ground Surface	97.4 0.0		mbgl/TCR%/SCR%	
10		Firm, dense brown CLAY with occasional gravels and cobbles and rootlets. Gravels and cobbles are angular to subrounded (poorly sorted).				
12.3		Moderately strong, pale grey, coarse grained dolomite. Core returns improve with depth (less fragmented/weathered). Frequent fracturing and veining.	85.1 12.3		12.3-16.3/90/62	
16.3					16.3-19.3/92/49	
19.3					19.3-22.3/95/65	
22.3					22.3-25.3/95/49	
25.3					25.3-28.3/100/85	

Remarks:

Depth to Bedrock (m): 12.3

Scale as shown

Drilling type: RC

Sheet: 1 of 2

Logged by: CMcG/MG



HYDRO-ENVIRONMENTAL SERVICES

Borehole Log

Well No.: BH5

Project No: P1591-0

Date started: 17/08/2022

Easting: 665931.37

Client: Milford Quarries Ltd

Date finished: 17/08/2022

Northing: 663945.57

Site: Old Leighlin Quarry, Co. Carlow

Elevation: 97.383mOD

RECEIVED: 27/03/2023

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments	Well Completion Details
30	[Symbol]				28.3-31.3/100/82	
	[Symbol]				31.3-34.3/100/77	
	[Symbol]				34.3-37.3/85/64	
	[Symbol]				37.3-40.3/95/85	
40	[Symbol]		56.9 40.5		40.3-43.3/98/85	
	[Symbol]	Strong pale blue limestone with some intervals of grey dolomite			43.3-46.3/95/92	
	[Symbol]				46.3-49.3/98/95	
50	[Symbol]		46.9 50.5		49.3-52.3/98/95	
	[Symbol]	Strong, dark blue fine to medium grained limestones with occasional bioclastic intervals. Upper boundary is an abrupt change. Gradual change to pale blue at 34.2m. Darker more bioclastic rich layer from 38.5 to 38.8m	45.1 52.3			

Remarks:

Depth to Bedrock (m): 12.3

Scale as shown

Drilling type: RC

Sheet: 2 of 2

Logged by: CMcG/MG