APPENDIX B Investigation Records

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Borehole

MH01-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746411.44	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947435.34	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 42.22 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.45 m BGL	Date	: 10/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring	SWL			1.0	41.0	Residual		*Clayey SILT, dark brown with mottled orange, moist, low to medium plasticity,* TOPSOIL.	F		EW 0 VW 0 W 0 MS 0 S 0 VS 0 ES 0	30 100 300 1000 3000	
										Clayey SILT, light brown with orange, moist, medium plasticity,	VSt				
										Silty CLAY, light brown with light orange, moist, high plasticity,	VSt				
100	0		SWL	0-1-0-1-1-1 N = 3	100.8/22.4	2.0	40.0			As above, but: *light brown with light orange and mottled grey,*	VSt				
100	0									*Clayey SILT, light brown black orange and mottled grey, moist to wet, medium plasticity,*	F				
100	0			1-1-1-3-3-4 N = 11	92.4/16.8	3.0	39.0			As above, but: *clayey SILT, trace of sand; grey with mottled orange, low plasticity .*	F				
100	0					4.0	38.0	Hukerenui transitional soil		*Clayey SILT, trace of sand; grey with mottled light brown, Firm, moist, low to medium plasticity .*	F				
										Sandy SILT, trace of clay; grey with mottled orange, Stiff, moist, low plasticity, relic sheared fabric.	St				
100	0			2-2-2-3-2-3 N = 10		5.0	37.0								
100	0														
100	0			2-3-3-3-4-4 N = 14		6.0	36.0			As above, but: *grey .*	St				
100	0					7.0	35.0			As above, but: Relic sheared fabric, clast of CW Siltstone, EW to VW.	St				
100	0			5-4-7-8-8-9 N = 32		8.0	34.0								
100	0														
100	0			3-3-4-4-5-5 N = 18		9.0	33.0								
100	0									As above, but: *Firm, moist to wet .*	F				

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Geotechnical Log - Borehole

MH01-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746411.44	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947435.34	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 42.22 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.45 m BGL	Date	: 10/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring					32.0			As above, but: *Firm, moist to wet* .	F				
100	0			3-3-3-4-5-6 N = 18						As above, but: *trace of clay; moist,* Relic sheared fabric.					
100	0					11.0	31.0				F				
100	0			3-4-5-5-6-6 N = 22		12.0	30.0								
100	0									Highly weathered, grey, SILTSTONE; very weak; moist, (Highly sheared fabric, slickensided defect surfaces).					SZ, PL, SL, CL
100	0			6-8-12-13-1 N = 46		13.0	29.0	Hukerrui Rockmass			VW	HW			
100	0					14.0	28.0								
100	0			2-3-4-4-4-6 N = 18		15.0	27.0			As above, but: grey with mottled red, extremely weak; (Recovered as Sandy SILT.).	EW	HW			
										MH01-26 Terminated at 15.45 m					



Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale





Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale



GIBB RITCHIE GEOTECHNICAL ENGINEERS	**Photo...**		
	Client	Fulton Hogan Land Development Ltd	
	Location	522 Wainui Road, Wainui 0992, New Zealand	
	Project name	Milldale North	
	Project No.	AK26-027	**Scale** Not to scale

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Borehole

MH02-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746838.49	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947863.68	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 39 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 19.88 m BGL	Date	: 11/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring				1.0	38.0	Alluvial		clayey SILT, dark brown, moist, low plasticity, TOPSOIL.					
										clayey SILT, dark brown with mottled orange, moist, medium plasticity,	St				
										silty CLAY, pale orange with mottled orange, moist, high plasticity,					
100	0			0-0-1-1-1-1 N = 4	70/16.8	2.0	37.0				St				
100	0														
100	0			0-0-0-0-1-1 N = 2	44.8/11.2	3.0	36.0			clayey SILT, light grey with mottled light brown, moist, high plasticity, Minor trace of organics.					
100	0		SWL SWL			4.0	35.0								
100	0			0-0-0-0-0-1 N = 1		5.0	34.0								
100	0										F				
100	0			0-0-0-0-0-0	42/16.8	6.0	33.0								
100	0					7.0	32.0								
100	0			0-0-0-0-0-2 N = 2	16.8/	8.0	31.0			As above, but: *light grey* .					
100	0										S				
100	0			0-0-0-0-0-0	56/16.8	9.0	30.0			clayey SILT, trace of sand; light grey, moist, low to medium plasticity, minor trace of organic.					
											St				
100	0														

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Borehole

MH02-26

Coordinate System	: EPSG:2193	**Drill Rig**	: Hanjin 8D	**Job Number**	: AK26-027
Easting (m)	: 1746838.49	**Driller Supplier**	: Topdrill Geotech	**Client**	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947863.68	**Logged By**	: Ilhan Serif	**Project**	: Milldale North
Ground Elevation	: 39 (m)	**Reviewed By**	: Chris Ritchie	**Location**	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 19.88 m BGL	**Date**	: 11/03/2026	**Loc Comment**	:

TCR %	RQD	Drilling Method	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Defect Description
100	0	HQ Coring							*clayey SILT, trace of sand; light grey, moist, low to medium plasticity,* minor trace of organic.	St		
100	0		0-1-1-1-2-2 N = 6	44.8/8.4					*sandy SILT, trace of clay; grey, moist, low plasticity,* medium grained sand, Minor trace of organics.	St		
100	0				11.0	28.0			*gravelly to sandy SILT, trace of clay; grey, moist, low plasticity,* medium grained sand, Minor trace of organics.	St		
100	0		1-1-1-2-2-2 N = 7	47.6/16.8	12.0	27.0						
100	0				13.0	26.0						
100	0		1-0-1-0-0-1 N = 2						As above, but: *moist to wet,* fine to medium grained sand.	F-St		
100	0				14.0	25.0						
100	0						Hukerenui transitional soil		*Clayey SILT, trace of sand; dark grey with mottled brown, Stiff to Very Stiff, moist, low plasticity .*	St-VSt		
100	0		3-3-5-6-7-9 N = 27	196/	15.0	24.0			*Sandy SILT, trace of clay; brown with mottled grey, Very Stiff, moist, low plasticity,* fine grained sand.	VSt		
	0				16.0	23.0			*Clayey SILT, trace of sand; grey with mottled brown, Very Stiff, moist, low plasticity .*	VSt		
100	0		6-8-10-10-1 N = 38						Completely weathered, grey with blue, SILTSTONE; very weak; moist, (Highly sheared fabric, slickensided defect surfaces, recovered as Clayey SILT.).			SZ, PL, SL, CL
100	0				17.0	22.0						
100	0		4-4-5-6-6-10 N = 27		18.0	21.0	Hukerenui Rockmass			VW	CW	
100	0				19.0	20.0						
100	0		6-7-12-18-20 N = 50									

Estimated Strength: EW 0, VW 0, W 0, MS 0, S 0, VS 0, ES 0

Defect Spacing (mm): 30, 100, 300, 1000, 3000

MH02-26 Terminated at 19.88 m





GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale





Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale

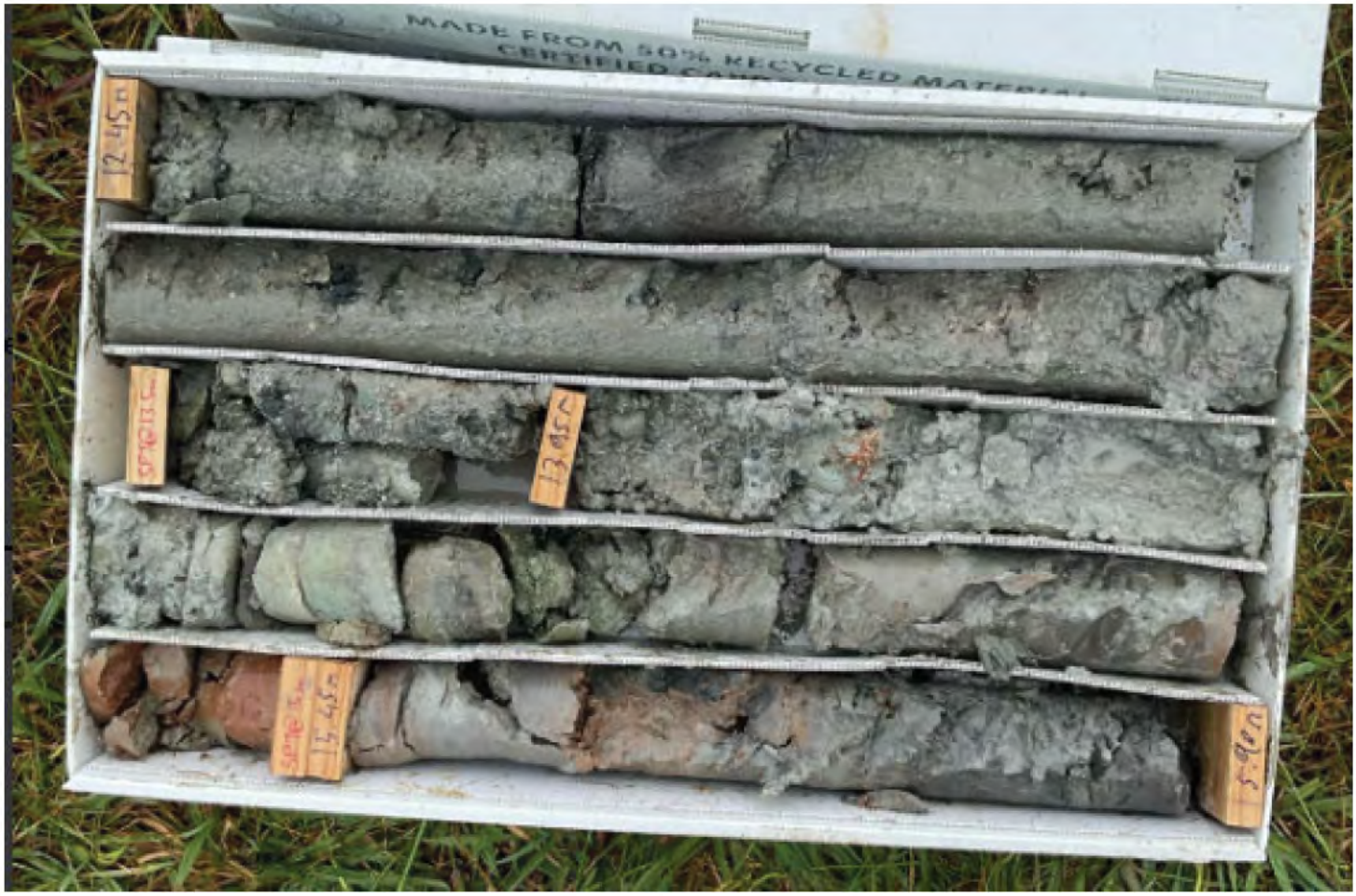




Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale

Gibb Ritchie
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Geotechnical Log - Borehole

MH03-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746727.91	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948021.37	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 29.17 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.45 m BGL	Date	: 12/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring				0.0	29.0	Residual		*clayey SILT, dark brown, moist, low plasticity,* TOPSOIL.	S				
										clayey SILT, brown, moist, low to medium plasticity, Minor trace of organics.	F				
										silty CLAY, light brown with mottled orange, moist, high plasticity,	VSt				
						1.0	28.0			As above, but: *silty CLAY, light brown with mottled orange, high plasticity .*	St				
100	0			0-0-0-0-1-1 N = 2											
100	0					2.0	27.0	Alluvial		*clayey SILT, light grey with mottled light brown, moist, medium to high plasticity,* Minor trace of organics.	St				
100	0			0-0-0-0-0-0		3.0	26.0								
100	0					4.0	25.0			*silty CLAY, light grey slightly blue, moist, medium to high plasticity,*	St-VSt				
100	0			0-0-0-0-0-1 N = 1	70/14					As above, but: *light grey, medium plasticity .*	VSt				
100	0					5.0	24.0								
100	0			0-0-0-0-0-0	19.6/	6.0	23.0			As above, but: Minor trace of organics.	F				
100	0					7.0	22.0			As above, but: *clayey SILT, medium to high plasticity .*	F				
100	0			0-0-1-1-1-1 N = 4	44.8/14										
100	0					8.0	21.0	Hukerenui transitional soil		*Clayey SILT, trace of sand; light grey slightly blue, Stiff, moist, medium plasticity .*	St				
100	0			2-1-1-2-2-3 N = 8		9.0	20.0			*Sandy SILT, trace of clay; light grey slightly blue, Stiff, moist, low to medium plasticity,* fine grained sand, relic sheared fabric.	St				
100	0														

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
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Geotechnical Log - Borehole

MH03-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746727.91	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948021.37	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 29.17 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.45 m BGL	Date	: 12/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0						19.0			*Sandy SILT, trace of clay; light grey slightly blue, Stiff, moist, low to medium plasticity,* fine grained sand, relic sheared fabric.	St				SZ, PL, SL, CL
100	0			6-7-9-8-7-10 N = 34		11.0	18.0	Hukernui Rockmass		Completely to highly weathered, light grey slightly blue, SILTSTONE; very weak; moist, (Highly sheared fabric, slickensided defect surfaces, recovered as Sandy SILT).	VW	HW-CW			
100	0					12.0	17.0			As above, but: Residual soil to completely weathered, light grey slightly blue, SILTSTONE; extremely weak; moist, (Highly sheared fabric, slickensided defect surfaces, recovered as Sandy SILT).	EW	RS-CW			
100	0			6-8-10-8-1 N = 36						As above, but: Highly weathered, very weak to weak.	VW-W	HW			
100	0	HQ Coring				13.0	16.0			As above, but: Highly weathered, dark red with mottled grey, very weak.	VW	HW			
100	0			5-8-8-10-1 N = 44		14.0	15.0			As above, but: Residual soil to completely weathered, extremely weak to very weak; (Highly sheared fabric, slickensided defect surfaces. recovered as sandy silt.).	EW-VW	RS-CW			
100	0			9-13-14-16 N = 25/75		15.0	14.0								
										MH03-26 Terminated at 15.45 m					

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
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Geotechnical Log - Borehole

MH04-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746208.64	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947298.03	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 51.56 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 16.6 m BGL	Date	: 09/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring				1.0	51.0	Residual		*Clayey SILT, dark grey with mottled brown, moist, medium plasticity,* TOPSOIL.	St		EW 0 VW 0 W 0 MS 0 S 0 VS 0 ES 0	30 100 300 1000 3000	
										clayey SILT, light brown with mottled red, moist, medium plasticity .	St				
										Silty CLAY, light brown with grey, medium to high plasticity,	F-St				
100	0			0-0-0-0-0-0	39.2/12.6	2.0	50.0			*Gravelly to Silty CLAY, light brown with mottled grey, moist, medium plasticity,*	F				
100	0					3.0	49.0			*Silty CLAY, light brown with orange, moist, high plasticity,*	F				
										As above, but: *grey with light mottled orange,*	F				
100	0			0-0-0-1-2-2 N = 5	196/					*clayey SILT, light grey, moist, low plasticity .*	VSt				
100	0					4.0	48.0	Hukerenui transitional soil		*Silty CLAY, grey with light brown, Very Stiff, moist, low plasticity,* Relic sheared fabric.	VSt				
100	0			1-1-2-1-3-3 N = 9	196/	5.0	47.0			As above, but: *light blue with light grey, low to medium plasticity .*	VSt				
100	0					6.0	46.0			*Sandy SILT, dark grey with mottled light blue, Stiff, moist, low plasticity .*	St				
100	0			2-4-4-5-5-4 N = 18	196/	7.0	45.0			*Clayey SILT, light blue with light grey, Stiff, moist, low plasticity,* relic sheared fabric.	St				
100	0			2-2-4-4-3-4 N = 15		8.0	44.0								
100	0					9.0	43.0								SZ, PL, SL, CL
100	0			4-4-5-5-6-7 N = 23				Hukernui Rockmass		Moderately weathered, light grey with light blue and mottled dark red, SILTSTONE; extremely weak to very weak; moist, (Highly sheared fabric, slickensided defect surfaces. Recovered as Clayey SILT.).	EW-VW	MW			
100	0						42.0								

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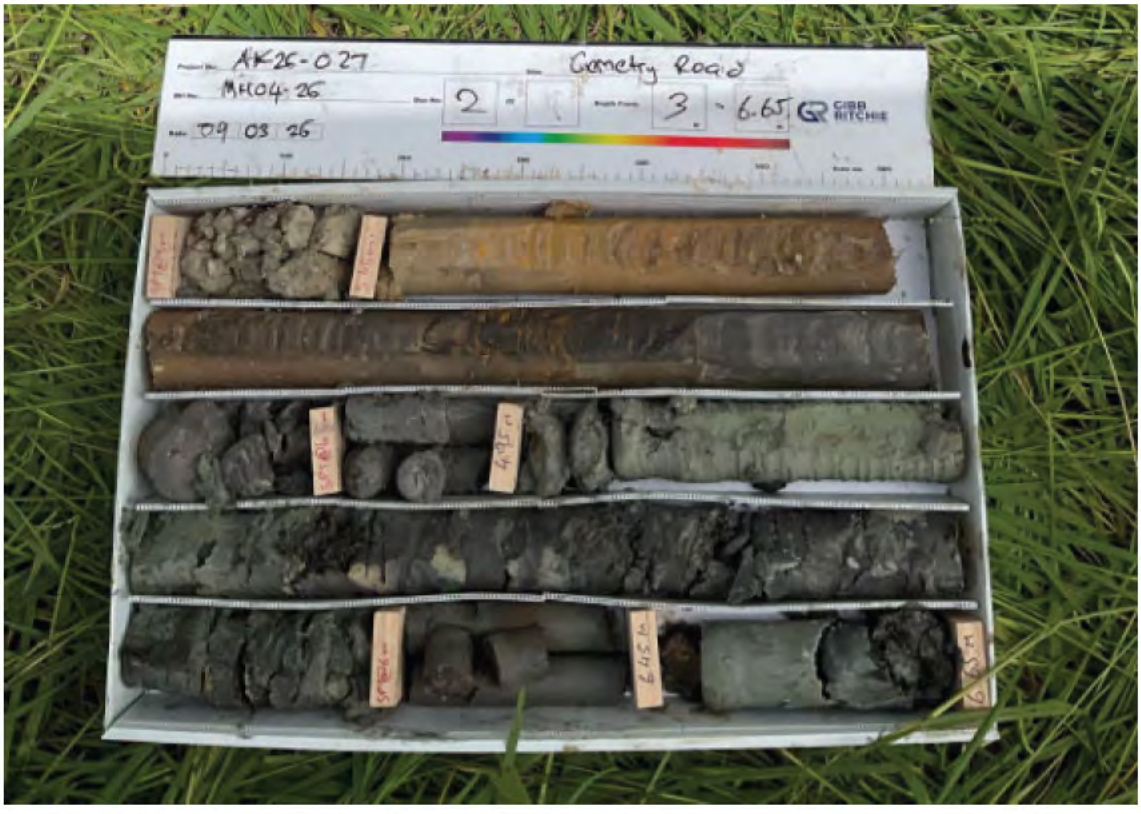
Geotechnical Log - Borehole

MH04-26

Coordinate System	: EPSG:2193	Drill Rig	: Hanjin 8D	Job Number	: AK26-027
Easting (m)	: 1746208.64	Driller Supplier	: Topdrill Geotech	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947298.03	Logged By	: Ilhan Serif	Project	: Milldale North
Ground Elevation	: 51.56 (m)	Reviewed By	: Chris Ritchie	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 16.6 m BGL	Date	: 09/03/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
100	0	HQ Coring								Moderately weathered, light grey with light blue and mottled dark red, SILTSTONE; extremely weak to very weak; moist, (Highly sheared fabric, slickensided defect surfaces. Recovered as Clayey SILT.).					
100	0			4-4-6-8-13 N = 31		11.0	41.0	Hukerui Rockmass			EW-VW	MW			
100	0						40.0			As above, but: Moderately weathered, light grey with light blue and mottled dark red, SILTSTONE; extremely weak; moist, (Highly sheared fabric, slickensided defect surfaces. Recovered as Clayey SILT with trace of sand).	EW	MW			
100	0			7-7-9-11-1 N = 38		12.0				Moderately weathered, grey mottled red, SILTSTONE; very weak to weak; moist.	VW-W	MW			
100	0						39.0			As above, but: Highly weathered, brown, (Recovered as Gravelly to Sandy SILT).	EW	HW			
100	0			3-7-11-11-1 N = 40		13.0	38.0			As above, but: grey, very weak; (Highly sheared fabric, slickensided defect surfaces, recovered as Sandy SILT.).	VW	MW			
100	0					14.0				As above, but: Moderately to slightly weathered, grey with mottled red, very weak; (Highly sheared fabric, slickensided defect surfaces, recovered as Sandy SILT.).					
100	0			6-5-4-6-6-8 N = 24		15.0	37.0				VW	MW-SW			
100	0					16.0	36.0								
				6-7-7-6-10 N = 30			35.0			MH04-26 Terminated at 16.6 m					





GIBB RITCHIE GEOTECHNICAL ENGINEERS	**Photo...**		
	Client	Fulton Hogan Land Development Ltd	
	Location	522 Wainui Road, Wainui 0992, New Zealand	
	Project name	Milldale North	
	Project No.	AK26-027	**Scale** Not to scale





Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale



GIBB RITCHIE GEOTECHNICAL ENGINEERS	**Photo...**		
	Client	Fulton Hogan Land Development Ltd	
	Location	522 Wainui Road, Wainui 0992, New Zealand	
	Project name	Milldale North	
	Project No.	AK26-027	**Scale** Not to scale

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Borehole

MH05-26

Coordinate System	: EPSG:2193	Drill Rig	: Tractor Mounted	Job Number	: AK26-027
Easting (m)	: 1748049.11	Driller Supplier	: Drillforce NZ Limited	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947575.57	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.375 m BGL	Date	: 24/02/2026	Loc Comment	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
													EW 0 VW 0 W 0 MS 0 S 0 VS 0 ES 0	30 100 300 1000 3000	
40	0	HQ Coring				0.0	20.0	Residual		*clayey SILT, brown, moist, medium plasticity,* TOPSOIL.					
										clayey SILT, light brown, moist, medium plasticity .	St				
						1.0	19.0			As above, but: *light grey mottled orange,*					
100	0			0-0-0-1-2-1 N = 4							St				
71	0					2.0	18.0								
										As above, but: *light grey mottled light brown,*					
100	0			0-1-1-2-2-2 N = 7		3.0	17.0				St				
56	0					4.0	16.0	Hukerenui transitional soil		*Clayey SILT, pale grey & dark brown, Very Stiff, moist to wet, low plasticity,* relic sheared fabric.	VSt				
44	0			0-2-3-2-3-3 N = 11											
33	0					5.0	15.0			*Clayey SILT, dark grey mottled pale brown & bluish grey, Hard, dry, low plasticity,* clasts of EW siltstone in silt matrix, relic sheared fabric.	H				
69	0			1-2-4-4-4-6 N = 18		6.0	14.0								
	0					7.0	13.0	Hukernui Rockmass		Completely weathered, dark grey mottled brown and bluish grey, SILTSTONE; extremely weak; dry, (recovered as clayey silt some VW siltstone in sheared matrix).	EW	CW			
67	0			1-2-3-3-4-4 N = 14											
-5	0					8.0	12.0								
100	0			2-3-4-3-6-6 N = 19		9.0	11.0								
86	0														

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Borehole

MH05-26

Coordinate System	: EPSG:2193	**Drill Rig**	: Tractor Mounted	**Job Number**	: AK26-027
Easting (m)	: 1748049.11	**Driller Supplier**	: Drillforce NZ Limited	**Client**	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947575.57	**Logged By**	: Chris Ritchie	**Project**	: Milldale North
Ground Elevation	: 20 (m)	**Reviewed By**	: Sam Gibb	**Location**	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 15.375 m BGL	**Date**	: 24/02/2026	**Loc Comment**	:

TCR %	RQD	Drilling Method	Water	Testing: SPT	Testing: SV>Peak/Residual	Depth (m)	Elevation (m)	Soil Origin	Graphic Log	Material Description	Consistency	Weathering	Estimated Strength	Defect Spacing (mm)	Defect Description
86	0	HQ Coring						Hukernui Rockmass		Completely weathered, dark grey mottled brown and bluish grey, SILTSTONE; extremely weak; dry, (recovered as clayey silt some VW siltstone in sheared matrix).	EW	CW	EW 0 VW 0 W 0 MS 0 S 0 VS 0 ES 0	30 100 300 1000 3000	
100	0			-3-5-6-10-1 N = 34											
76	0					11.0	9.0								
										Slightly weathered, light grey & black, SILTSTONE; very weak; dry, (some polished slickensided surfaces).	VW	SW			
100	0			2-4-6-7-8-9 N = 30		12.0	8.0			As above, but: light grey & black and mottled brown.					
81	0					13.0	7.0								
100	0			7-9-12-16-1 N = 50							VW	SW			
100	0					14.0	6.0								
				-9-13-18-1 N = 50		15.0	5.0								
										MH05-26 Terminated at 15.375 m					

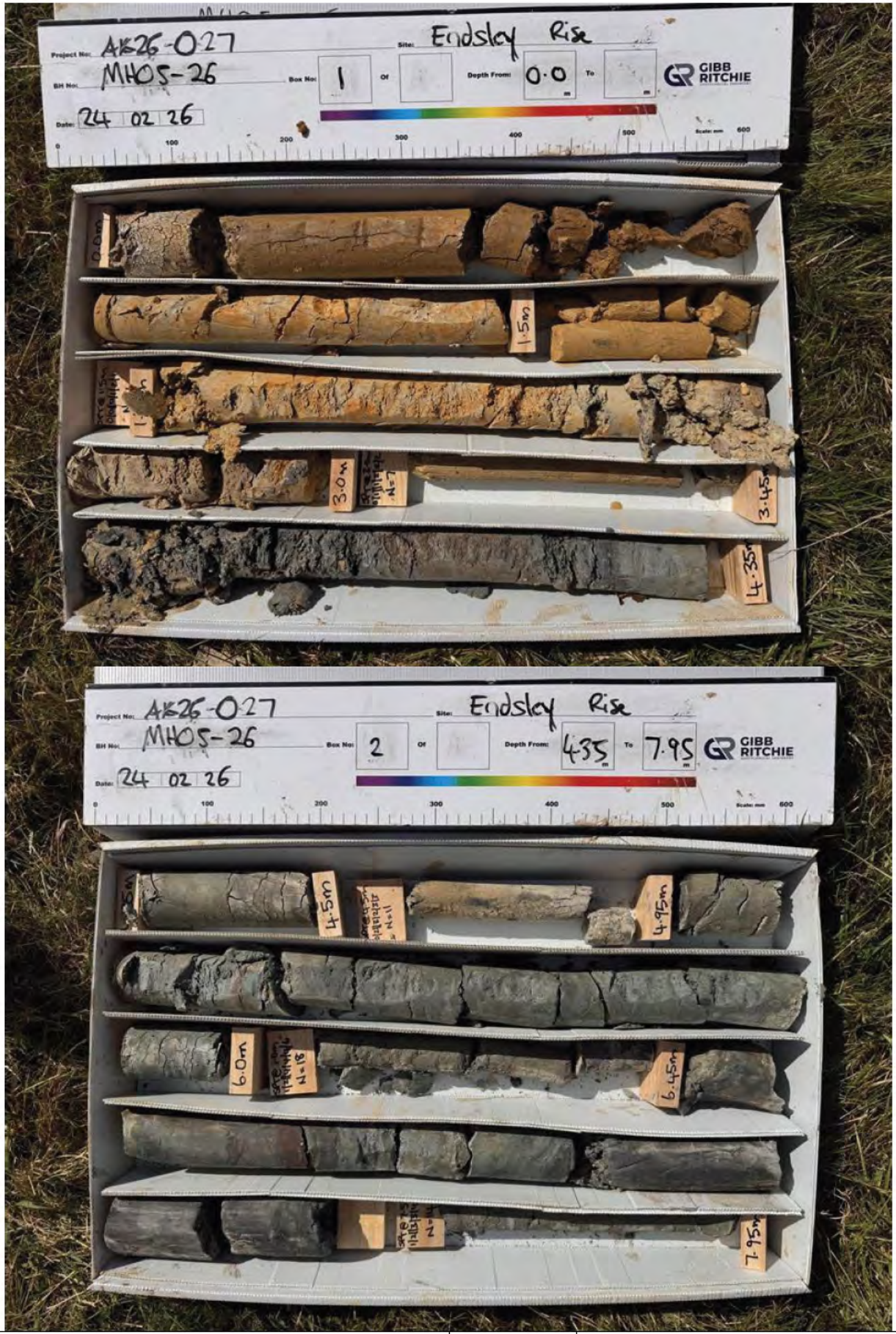


Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale





Photo...			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No.	AK26-027	**Scale**	Not to scale

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP01-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288591.49	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946109.90	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39.25 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.1 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		MH	Residual	*Clayey SILT, dark brown, moist, high plasticity,* topsoil.	M	F		39.25	
	0.2		ML	Residual	*Clayey SILT, light grey mottled light brown, moist, low plasticity,*	M	St	42, 84; 33.2, 93.2; 42, 70	39.15 39.0 38.0	
	1.4		ML	Residual	As above, but: *moist to wet,*	W-M	F-St		37.85	
	1.8		ML	Residual	*SILT, trace of clay; light grey, moist to wet, low plasticity,*	W-M	VSt	42, 142.8	37.55	
	2.2		SM	Hukerenui transitional soil	*silty* fine grained, *SAND* light grey mottled light brown, *medium dense to dense; moist to wet, well-graded .*	W-M	MD-D	58.8, 140	37.05 37.0	
	2.6		SST	Hukerenui Rockmass	Completely weathered, blocky, light grey with dark orange bands, SANDSTONE; extremely weak; fine grained, moist, (recovered as sandy GRAVEL, gravel are blocks of sandstone).	M	EW		36.65	
	3.2		SST	Hukerenui Rockmass	As above, but: Completely to highly weathered, blocky, grey with black staining, SANDSTONE; extremely weak; fine grained, moist, (recovered as sandy GRAVEL, gravel are blocks of sandstone).	M	EW		36.05 36.0	
N/A	4.0		SLT	Hukerenui Rockmass	Moderately to slightly weathered, blocky, dark grey and pale grey, distinctly bedded SILTSTONE; very weak; very fine grained, wet to moist, (clasts VW to W siltstone with soft clay infill between clasts).	W-M	VW		35.25	
Not Encountered					TP01-26 Terminated at 4.1 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP01-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP01-26	**TP Depth**	









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP01-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP01-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP02-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288580.88	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946170.37	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 38.08 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.3 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*clayey SILT, dark brown, dry to moist, low plasticity,* (topsoil).	M-D			38.08 38.0 37.879999999999995	
	0.4 0.6 0.8		ML	Residual	*Clayey SILT, dark brown mottled light grey, moist, medium plasticity,*	M	St	30 60 48 80	37.28	
	1.0 1.2 1.4		ML	Residual	As above, but: *moist to wet,*	W-M	St	30 80	37.0 36.58	
	1.6 1.8 2.0 2.2 2.4 2.6 2.8		ML	Residual	As above, but: *light grey mottled light brown,*	W-M	St	28 70 42 78	36.0	
	3.0		ML	Hukerenui transitional soil	*clayey SILT, pale grey & black & light blue, wet, medium plasticity,* CW.	W	St-VSt	30 102 30 60 20 110	35.08 35.0	
	3.2 3.4 3.6 3.8 4.0								34.08	
	4.2		ML	Hukerenui transitional soil	As above, but: *pale grey & black & light blue, moist,* becoming EW siltstone.	M	St-VSt		34.0	
					TP02-26 Terminated at 4.3 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP02-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP02-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP03-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288576.20	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946000.28	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 46.79 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
N/A	0.0		OL	Residual	*clayey SILT, brown, moist, low plasticity,* topsoil.	M	St		46.79	
Not Encountered	0.2		ML	Residual	*Clayey SILT, light brown grey with orange mottled, moist, low plasticity,*	M	St	39.2 84 47 109.2	46.0	
	1.2		ML	Residual	As above, but: *light grey mottled orange, low to medium plasticity,*	M	St	47.6 142.8 44.8 98 39.2 112	45.49 / 45.0	0.2 2.8 Pit collapse within residual soil on uphill (southern face)
	2.6		ML	Hukerenui transitional soil	*clayey SILT, dark grey mottled pale red and light blue, low plasticity .*		St	33.2 126 42 126	44.19 / 44.0	
	3.2		ML	Hukerenui transitional soil	*clayey SILT, dark grey with light grey bands, moist to wet, low plasticity,* CW siltstone, polished surfaces.	W-M	VSt		43.0	
	4.0				TP03-26 Terminated at 4 m					







GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP03-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP03-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP04-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288464.98	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946078.92	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39.7 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.3 m BGL	Date	: 19/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		39.7	
	0.2		MH	Residual	*Clayey SILT, light grey mottled orange, moist to wet, high plasticity,*	W-M	F-St	28 42 30 58	39.5	
	1.4		ML	Residual	As above, but: *wet, low plasticity,*	W	F-St	44 20 48 20	38.2	
	2.2		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey with orange and black mottled, wet, low plasticity,* sheared fabric, gravels of CW siltstone.	W	VSt-H	40 100 140	37.5	
	2.8		ML	Mangakahia transition	As above, but: *pale bluish grey with orange and black mottled,* becoming EW siltstone, recovered as gravels in clay matrix.	W	VSt-H	140	37.0	
	3.3		SLT	Hukerenui Rockmass	Moderately weathered, pale bluish grey, SILTSTONE; extremely weak to very weak; fine grained, moist, (recovered as siltstone gravels, highly sheared, slickensided defect surfaces).	M	EW-VW		36.4	
	4.3				TP04-26 Terminated at 4.3 m				36.0	









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP04-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP04-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP05-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288452.14	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946156.65	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 35.38 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.2 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		35.38	
	0.4		ML	Residual	*Clayey SILT, light brown grey mottled orange, moist to wet, low to medium plasticity,*	W-M	St	42 86.8 42 105.6 44.8 134 21 134.8 0 196	35.0 34.0	
Inflow	2.3		ML	Hukerenui transitional soil	*clayey SILT, light bluish grey mottled orange, wet, low plasticity,* CW siltstone clasts.	W	St		33.0 32.0	
	4.0		SLT	Hukerenui Rockmass	Highly to moderately weathered, pale grey with black mottled, SILTSTONE; extremely weak to very weak; very fine grained, moist, (recovered as siltstone gravels, slickensided surfaces on defects).	M	EW-VW		31.38	
					TP05-26 Terminated at 4.2 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP05-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP05-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP06-26

UTM	: 60H	**Excavator**	: 13T Long Reach	**Job Number**	: AK26-027
Easting (m)	: 288506.05	**Excavator Supplier**	: Murray Flood	**Client**	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946243.13	**Logged By**	: Chris Ritchie	**Project**	: Milldale North
Ground Elevation	: 29.67 (m)	**Reviewed By**	: Sam Gibb	**Location**	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.2 m BGL	**Date**	: 18/02/2026	**Loc Comment**	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*clayey SILT, brown, moist, low plasticity,* topsoil.	M	F		29.67	
	0.2		ML	Residual	*Clayey SILT, light brown, moist to wet, low plasticity,*	W-M	St	42 67.2	29.47000000000002	
	0.4									
	0.6								29.0	
	0.8								28.87	
	1.0		ML	Residual	As above, but: *light brown grey, wet* .	W	St	39.2 67.2		
Inflow	1.4							30.8 141		
	1.6								28.0	
	1.8									
	2.0		ML	Hukerenui transitional soil	*clayey SILT, light grey with orange mottled, moist, low plasticity* .	M	St	30.4 106.8	27.67	
	2.2									
	2.4							0 196		
	2.6								27.0	
	2.8									
	3.0		ML	Hukerenui transitional soil	*clayey SILT, light bluish grey, moist to wet, low plasticity,* EW siltstone recovered as gravels in clay matrix.	W-M	VSt-H		26.67	
	3.2									
	3.4									
	3.6								26.0	
	3.8									
	4.0		SLT	Hukerenui Rockmass	Highly to moderately weathered, blocky, light bluish grey mottled brown, distinctly bedded SILTSTONE; very weak; moist, (recovered as gravels, slickensided surfaces on defects).	M	VW		25.67	
					TP06-26 Terminated at 4.2 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP06-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP06-26	**TP Depth**	

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP07-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746082.19	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947364.33	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.4 m BGL	Date	: 19/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		39 38.9	
	0.4		ML	Alluvial	*Clayey SILT, light brown, moist, low plasticity,*	M	St			
	0.6		CH	Alluvial	*Silty CLAY, light grey mottled orange, wet, high plasticity,*	W	F	28 42	38.5 38.0	0 2.5 collapse of test pit on both long edges
	1.0							28 28.0		
	1.2							28 100.5		
	1.4									
	1.6									
Inflow	1.8								37.2	
	2.0		ML	Hukerenui transitional soil	*clayey SILT, pale grey mottled orange, wet, low plasticity ,*	W	VSt		37.0	
	2.2							28 84		
	2.4								36.5	
	2.6		ML	Hukerenui transitional soil	As above, but: *clayey SILT, pale grey mottled orange, low plasticity,* some clasts of EW siltstone.	W	VSt	28 134		
	2.8									
	3.0								36.0	
	3.2		ML	Hukerenui transitional soil	As above, but: *dark grey,* some clasts of EW siltstone.	W	VSt	28 107.8	36	
	3.4									
	3.6		SLT	Hukerenui Rockmass	Moderately to slightly weathered, dark bluish grey with brown staining, SILTSTONE; extremely weak to very weak; moist, (recovered as gravels of siltstone, slickensided surfaces on defects).	M	EW-VW	56 196	35.5 35.0	
	4.0									
	4.2									
					TP07-26 Terminated at 4.4 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP07-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP07-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP08-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288324.11	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946121.63	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 34.76 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 19/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*Clayey SILT, dark brown, low plasticity,* topsoil.		F		34.76	
	0.2		CL	Residual	*Silty CLAY, pale grey mottled orange, moist, low to high plasticity,*	M	St		34.0	
Inflow	1.4								33.0	
	2.6		ML	Residual	*Clayey SILT, light grey, wet, low plasticity,*	W	VSt		32.26	
	2.8		ML	Residual	As above, but: *light grey mottled brown & orange, medium plasticity,*	W	VSt		32.0	
	3.2		ML	Residual	As above, but: *wet to saturated,*	W-	VSt		31.56	
	3.6		SLT	Hukerenui Rockmass	Highly weathered, dark grey with orange bands, SILTSTONE; extremely weak to very weak; very fine grained, moist, (recovered as EW to VW siltstone gravels, slickensided surfaces on defects).	M	EW-VW		31.0	
	4.8				TP08-26 Terminated at 4.8 m				30.0	









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP08-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP08-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP09-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288302.27	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946241.55	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 27.18 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.4 m BGL	Date	: 19/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		27.18	
	0.2		ML	Residual	*Clayey SILT, light grey mottled orange, moist to wet, medium plasticity,*	W-M	St	30 58 28 68 30 20 28 58 58 20	27.06.98 26.0 25.0	
	2.6		CH	Residual	*CLAY, light grey mottled orange, wet, high plasticity .*	W	St		24.68	
	2.8		ML	Residual	*Clayey SILT, pale grey mottled orange, wet, low plasticity,* some clasts of EW siltstone.	W	St		24.38	
	3.0		ML	Hukerenui transitional soil	*clayey SILT, pale brown & light brown, moist to wet, low plasticity,* clasts of EW siltstone.	W-M	VSt	30 48 140	24.18 24.0	
	3.6		ML	Hukerenui transitional soil	*clayey SILT, light grey mottled orange, moist to wet, low plasticity,* becoming EW siltstone recovered as gravels.	W-M	VSt		23.58	
N/A	4.2								23.0	
Not Encountered					TP09-26 Terminated at 4.4 m					







Photo description	TP09-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP09-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP10-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746160.82	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947663.16	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 25.43 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.9 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		25.43	
	0.4		CH	Alluvial	*Silty CLAY, light grey mottled brown orange, moist to wet, high plasticity,*	W-M	St	39.2 112	25.13 25.0	
	0.6									
	0.8							30.4 98		
	1.0									
	1.2							44.8 70		
	1.4								24.0	
	1.6		CH	Alluvial	As above, but: *wet,*	W	St	67.6 64.8	23.93	
	1.8									
	2.0		OH	Alluvial	As above, but: some organics, peat fragments and wood.	W	St	28 56	23.43	
	2.2				As above, but: *pale grey with black flecks* ,			39.2 14	23.23	
	2.4									
	2.6								23.0	
	2.8							47.6 30.8		
Inflow	3.0		OH	Alluvial		W	St			
	3.2							39.2 72.8		
	3.4								22.0	
	3.6									
	3.8							30.8 53.2		
	4.0							195	21.43	
	4.2		ML	Hukerenui transitional soil	*clayey SILT, pale greenish grey & black, moist to wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W-M	VSt			
	4.4								21.0	
	4.6									
	4.8									
					TP10-26 Terminated at 4.9 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP10-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP10-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP11-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288653.21	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946224.66	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.3 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		39 38.8	
	0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0		CH	Alluvial	*Silty CLAY, light grey mottled light brown with black flecks, moist to wet, high plasticity,*	W-M	St	33.2 77 42 81.2 28 53.2	38.0 37.0	
	2.2 2.4 2.6 2.8		CH	Alluvial	*Silty CLAY, light grey with black flecks, wet, high plasticity,* with minor organics.	W	St	28 58.8 30.8 64.4	36.9 36.2	
	3.0 3.2		ML	Residual	*Clayey SILT, light grey mottled black, moist to wet, low plasticity,*	W-M	St	30.8 70	36.0 35.8	
	3.4 3.6 3.8		ML	Hukerenui transitional soil	*clayey SILT, light grey mottled pale brown, low plasticity .*		VSt	70 105	35.2	
	4.0 4.2		SLT	Hukerenui Rockmass	Completely to highly weathered, dark grey mottled red pale, SILTSTONE; extremely weak to very weak; very fine grained, moist, (recovered as gravels of EW siltstone).	M	EW-VW	0 0	35.0	
					TP11-26 Refusal at 4.3 m (hard to dig)					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP11-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP11-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP12-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746370.20	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947716.97	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 28.18 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		28.18 28.0	
	0.4		OH	Alluvial	*Silty CLAY, light brown mottled orange, moist to wet, high plasticity,* some organics, branches and wood fragments.	W-M	F	39.2 98 32.4 53.2 41 80.8 28 64.4	27.88 27.0	
Inflow	1.2									
	2.0		OL	Alluvial	*Clayey SILT, trace of sand; light grey mottled orange, wet, medium plasticity,* minor organics, roots and branches.	W	St	28 86.8	26.18 26.0	
	2.4		ML	Residual	*Clayey SILT, pale grey mottled black, moist to wet, low plasticity,*	W-M	St	30.8 112 33.6 84	25.78	
	3.2		ML	Hukerenui transitional soil	*clayey SILT, pale greenish grey mottled black, wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W	VSt-H	196	24.98	
	4.0		ML	Hukerenui transitional soil	As above, but: *pale greenish grey mottled black and pale brown, wet,* clasts of EW siltstone, relic sheared fabric.	W	VSt-H		24.18 24.0	
					TP12-26 Terminated at 5 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP12-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP12-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP13-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746417.13	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947667.01	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 33.7 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 03/03/2026	Loc Comment	:

Depth (m)	Classification Code	Soil Origin	Material Description	Moisture	Consistency
0.2	OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F
0.4	CL	Alluvial	*Silty CLAY, pale brown mottled orange, dry to moist, low plasticity,*	M-D	St-VSt
0.8	OH	Alluvial	*silty CLAY, light grey mottled orange & brown, moist to wet, high plasticity,* some organics, branches, wood fragments.	W-M	F-St
2.2	ML	Alluvial	*Clayey SILT, trace of sand; light brown mottled orange, wet, low plasticity,*	W	St
2.8	ML	Alluvial	As above, but: *light bluish grey,* some clasts of EW siltstone.	W	St
3.6	OH	Alluvial	*Silty CLAY, pale grey mottled black; wet, high plasticity,*	W	St
4.6	ML	Alluvial	*Clayey SILT, pale bluish grey, moist, low plasticity,*	M	St
5.0			TP13-26 Terminated at 5 m		

SV (Peak) ●
SV (Residual) ▽
0 50 100 150 200

Elevation (m): 33.7, 33.0, 32.0, 31.0, 30.0, 29.0









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP13-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP13-26	**TP Depth**	

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP14-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746600.68	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947675.20	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		39 38.7	
	0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8		ML	Alluvial	*Clayey SILT, pale brown & grey mottled orange, wet, low plasticity,*	W	St	35.4 140 42 91.2 30.8 89.6 28 72.8 39.2 86.8 30.8 89.6 42 196	38.0 37.0	
	2.9 3.0 3.2 3.4 3.6 3.8 4.0 4.2 4.4 4.6		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey with black streaks, moist to wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W-M	St-VSt	70 182 56 154	36.1 36.0 35.0 34.4	
	4.8		ML	Hukerenui transitional soil	As above, but: *pale bluish grey with black streaks, moist,* clasts of EW to W siltstone, relic sheared fabric.	M	St-VSt			

TP14-26 Terminated at 5 m









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP14-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP14-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP15-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746765.91	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947726.42	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 40 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		40	
	0.4		ML	Alluvial	*SILT, light grey, dry, low plasticity,*	D	H	196	39.7	
	0.6		CH	Alluvial	*Silty CLAY, pale grey & brown, wet, high plasticity,*	W	St	39.2 114.8	39.4	
	0.8									
	1.0								39.0	
	1.2							30 123.2		
	1.4									
	1.6							33.2 112		
	1.8									
	2.0							30 126	38.0	38
	2.2		OH	Alluvial	As above, but: *pale grey & brown with black flecks,* some organics, branches rootlets.	W	St			
	2.4							70 117.6		
	2.6									
	2.8							84 140		
	3.0								37.0	37
	3.2		OH	Alluvial	As above, but: *pale bluish with black flecks,*	W	St	30 95.2		
	3.4									
	3.6							72.8 57.2	36.4	
	3.8				As above, but: *pale bluish grey ,*					
	4.0							45.6 28	36.0	
	4.2		CH	Alluvial		W	St			
	4.4									
N/A	4.6							28 64.4		
Not Encountered					TP15-26 Terminated at 4.7 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP15-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP15-26	**TP Depth**	

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP16-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746845.23	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947922.82	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 37.69 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		37.69	
	0.2		ML	Alluvial	*Clayey SILT, light grey mottled orange, moist, low to medium plasticity,*	M	St-VSt		37.49999999999999	
	3.0		ML	Hukerenui transitional soil	*clayey SILT, dark grey mottled orange, wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W	VSt		34.69	
	4.2		ML	Hukerenui transitional soil	As above, but: *pale bluish grey mottled brown, low plasticity,* clasts of EW-VW siltstone, relic sheared fabric.	M	VSt		33.49999999999999	
	4.8		SLT	Hukerenui Rockmass	Moderately weathered, dark grey mottled black, SILTSTONE; extremely weak to very weak; dry, (recovered as EW siltstone gravels, sheared fabric, slickensided polished defect surfaces). TP16-26 Terminated at 5 m	D	EW-VW		32.89	









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP16-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP16-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP17-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746679.86	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947853.29	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 34 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		34	
	0.4		ML	Alluvial	*Clayey SILT, orange & brown, moist, medium plasticity,*	M	VSt	42 ▽ 128 ●	33.7	
	0.6									
	0.8		ML	Alluvial	As above, but: *pale grey mottled orange, moist to wet,*	W-M	VSt	44.8 ▽ 98 ●	33.2	
	1.0								33.0	33
	1.2		CH	Alluvial	*Silty CLAY, light grey mottled orange & brown, wet, high plasticity,*	W	St	42 ▽ 78.4 ●		
	1.4									
	1.6							42 ▽ 84 ●		
	1.8									
	2.0							44.8 ▽ 78.4 ●	32.0	32
	2.2		CH	Alluvial	As above, but: some organics black flecks.	W	St			
	2.4							30.8 ▽ 64.4 ●		
	2.6									
	2.8							56 ▽ 95.2 ●		
	3.0								31.0	31
	3.2		CH	Alluvial	As above, but: *pale bluish grey ,*	W	St	81.2 ▽ 128.8 ●		
	3.4									
	3.6									
	3.8							30.4 ▽ 100.8 ●		
	4.0								30.0	30
	4.2				*Sandy CLAY, dark grey with black streaks, wet, medium to high plasticity,* fine grained sand, minor organics are peat fragments and wood.			56 ▽ 84 ●		
	4.4		OH	Alluvial		W	St			
	4.6									
	4.8								29.2	
			OH	Alluvial	As above, but: *trace of gravel; wet to saturated,* some organics are large wood fragments, gravels are EW siltstone.	W-	St			

TP17-26 Terminated at 5 m









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP17-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP17-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP18-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746737.81	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947941.77	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 32.98 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		32.98	
	0.2		ML	Alluvial	*Clayey SILT, light grey, dry, low plasticity,*	D	VSt-H			
	1.0		ML	Alluvial	As above, but: *moist to wet,* wood fragments, log.	W-M	VSt-H		32.0	
	2.0		ML	Alluvial	As above, but: *Sandy trace of sand;*	W-M	VSt-H		31.0	
	2.6		ML	Alluvial	As above, but: *light grey with black mottled,* wood fragments, log, peat fragments.	W-M	VSt-H			
	3.0		OH	Alluvial	*Silty CLAY, trace of sand; pale grey with black mottled, wet, high plasticity,* some organics, peat, wood fragments.	W	St		30.0	
	3.6		ML	Hukerenui transitional soil	*clayey SILT, pale greenish grey, moist, low plasticity .*	M	VSt		29.0	
N/A	4.6		ML	Hukerenui transitional soil	As above, but: *clayey SILT, pale greenish grey, moist, low plasticity,* clasts of EW siltstone, relic sheared fabric.	M	VSt			
Not Encountered					TP18-26 Terminated at 4.7 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP18-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP18-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP19-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746940.71	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947881.68	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 38.66 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		38.66	
	0.2		CL	Alluvial	*Silty CLAY, light brown & grey mottled orange, dry to moist, low plasticity,*	M-D	St	33.2 140	38.46999999999994	
	0.4									
	0.6		CH	Alluvial	*Silty CLAY, light grey mottled orange, moist to wet, high plasticity,*	W-M	St	38 112	38.05999999999995	
	0.8									
	1.0							36 124.6	38.0	
	1.2									
	1.4							38.8 114.8		
	1.6								37.0	
	1.8									
	2.0							38.8 86.8	36.66	
	2.2		OH	Alluvial	As above, but: some organics, wood fragments and roots.	W-M	St	67.2 137.1		
	2.4									
	2.6								36.0	
	2.8							77 112		
	3.0									
	3.2							47.6 95.2		
	3.4									
	3.6		OH	Alluvial	As above, but: *pale grey, wet,*	W	St	67.2 98	35.16	
	3.8								35.0	
	4.0		OH	Alluvial	As above, but: *pale bluish grey,*	W	St	22.4 70	34.66	
	4.2									
	4.4							30.8 67.2		
	4.6								34.0	
	4.8									
					TP19-26 Terminated at 5 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP19-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP19-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP20-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288460.15	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946006.19	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 45 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.4 m BGL	Date	: 18/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		ML	Residual	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		45 44.8	
	0.4 0.6 0.8 1.0 1.2 1.4		ML	Residual	*Clayey SILT, light grey orange mottled, moist, low plasticity,*	M	St	42, 84 39.2, 77 42, 112	44.0 43.5	
	1.6 1.8 2.0		ML	Residual	As above, but: *wet,*	W	St	42, 98	43.0	
	2.2 2.4		SM	Hukerenui transitional soil	*silty* medium grained, *SAND medium dense to dense; wet, well-graded .*	W	MD-D	140	42.8 42.6	
	2.6 2.8 3.0		SST	Hukerenui Rockmass	Highly to moderately weathered, dark brown, SANDSTONE; extremely weak to very weak; fine to medium grained, moist, (recovered as sandstone gravels).	M	EW-VW		42.0	
	3.2 3.4 3.6 3.8		SLT	Hukerenui Rockmass	Completely to highly weathered, light bluish grey banded black and pale red, SILTSTONE; extremely weak; fine grained, wet to moist, (recovered as EW siltstone gravel clasts in clay matrix, slickensided surfaces on clasts).	W-M	EW		41.8 41.2	
	4.0		SLT	Hukerenui Rockmass	As above, but: Completely to highly weathered, dark grey, SILTSTONE; fine grained, (recovered as EW siltstone gravel clasts in clay matrix, slickensided surfaces on clasts).	M	EW-VW		41.0	
SWL	4.2		SLT	Mangakahia Rock Mass	Moderately to slightly weathered, pale bluish grey banded black, SILTSTONE; very weak to weak; moist, (recovered as clasts of VW to W siltstone).	M	VW-W		40.8	
					TP20-26 Terminated at 4.4 m					









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Photo description	TP20-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP20-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP21-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746871.36	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947797.31	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 40 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 03/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F	40	
	0.4		ML	Alluvial	*Clayey SILT, light brown, dry, low plasticity,*	D	VSt	39.7	
	0.6				*Silty CLAY, light grey mottled brown orange, wet, high plasticity,*			39.4	
	1.0		CH	Alluvial		W	St	39.0	
	2.0							38.0	
	3.0				As above, but: *pale bluish grey,*			37.0	
	4.0		CH	Alluvial		W	St	36.0	
N/A	4.6		OH	Alluvial	As above, but: *pale bluish grey and black,* some organics, peat fragments and wood, organic smell.	W	St		
Not Encountered					TP21-26 Terminated at 4.7 m				

SV (Peak) ●
SV (Residual) ▽
0 50 100 150 200









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP21-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP21-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP22-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746956.56	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947796.93	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 39 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.6 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		39	
	0.2		ML	Alluvial	*Clayey SILT, light grey & brown mottled orange, moist, medium plasticity,*	M	St	42, 152.4, 42, 89.6	38.8	
	1.2		CH	Alluvial	*Silty CLAY, light grey mottled orange, moist to wet, high plasticity,*	W-M	St	70, 126, 42, 72.8	38.0	
	2.0		CH	Alluvial	As above, but: *wet,*	W	St	56, 84, 70, 112, 49, 84, 56, 84	37.8	
	3.6		CH	Alluvial	As above, but: *pale grey & black,*	W	St	42.56	37.0	
	3.8		OL	Alluvial	*clayey SILT, pale grey & dark grey, wet to saturated, medium plasticity,* abundant organics, wood fragments and peat throughout.	W-	St	30.8, 31.2, 12.4, 14.8	35.5	
N/A	4.4								35.2	
Not Encountered					TP22-26 Terminated at 4.6 m				35.0	









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP22-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP22-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP23-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747133.45	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947851.08	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 32 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		32 / 31.8	
	0.4 – 0.8		ML	Alluvial	*Clayey SILT, light brown & grey, moist, medium plasticity,*	M	St	36 134 70 126		
	1.0		ML	Alluvial	As above, but: *light grey, moist to wet,*	W-M	St	36 98 42 100.8 64.4 112	31.0 / 31 / 30.0 / 30	
	2.0 – 2.8		CH	Alluvial	*Silty CLAY, light grey, wet, high plasticity,*	W	St-VSt	70.8 42 72.8		
	3.0		CH	Alluvial	As above, but: *pale grey, wet to saturated,* some organics. rootlets.	W-	St-VSt	36.4 28 28 28 28 70	29.0 / 29 / 28.0	
N/A	4.6									
Not Encountered					TP23-26 Terminated at 4.8 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP23-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP23-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

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Phone:

Geotechnical Log - Test Pit

TP24-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747101.89	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947884.14	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 32.84 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		32.84	
	0.4		ML	Alluvial	*Clayey SILT, light brown & grey mottled orange, moist, low to medium plasticity,*	M	St		32.64	
	1.2		OH	Alluvial	*Silty CLAY, light grey & brown, wet, high plasticity,* some organics, wood fragments.	W	St		32.0	
	2.4		OH	Alluvial	As above, but: abundant organics, wood fragments.	W	St		31.0	
	2.6		OL	Alluvial	*Clayey SILT, light grey mottled brown, wet, low plasticity,* organics are wood fragments.	W	St		30.0	
	3.1		ML	Mangakahia transition	*Gravelly to Clayey SILT, pale bluish grey, wet, low plasticity,* gravels are clasts of EW to VW siltstone.	W	VSt-H		29.0	
	4.2		ML	Mangakahia transition	As above, but: *wet to saturated,* gravels are clasts of VW to W siltstone.	W-	VSt-H		28.64000000000004	
N/A	4.6									
Not Encountered					TP24-26 Terminated at 4.7 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP24-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP24-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP25-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747214.32	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947913.06	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 27.2 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.6 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		27.2	
	0.2		ML	Alluvial	*Clayey SILT, light grey mottled orange & brown, moist, low plasticity,*	M	VSt	42 98 / 39.2 92.4 / 44.8 98 / 42 86.8	27.0 / 26.0	
	1.8		ML	Alluvial	As above, but: *light grey, moist to wet, medium plasticity .*	W-M	VSt	42 106.4	25.4	
	2.2		CH	Alluvial	*silty CLAY, light grey slightly mottled orange, wet, high plasticity .*	W	St	36 98 / 50.2 98 / 36 95.2	25.0 / 24.0	
	3.6		CH	Alluvial	As above, but: *silty CLAY, light grey slightly mottled orange, wet, high plasticity,* minor organics, wood fragments including charcoal.	W	St	81.2	23.7	
	4.0		CH	Alluvial	As above, but: *pale grey .*	W	St	42	23.2 / 23.0	
N/A	4.4							39.2 70		
Not Encountered					TP25-26 Terminated at 4.6 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP25-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP25-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP26-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747118.55	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948062.52	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 28 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		28	
	0.2		ML	Residual	*Clayey SILT, light brown & grey mottled orange, dry to moist, low plasticity,*	M-D	St	42 ▽ 140 ●	27.8	
	0.4									
	0.6									
	0.8							30.4 ▽ 137.2 ●		
	1.0								27.0	
	1.2							56 ▽ 126 ●		
	1.4								26.5	
	1.6		ML	Residual	As above, but: *light grey mottled orange, moist, low to medium plasticity,*	M	St	58.8 ▽ 154 ●		
	1.8									
	2.0							56 ▽ 134.4 ●	26.0	26
	2.2				*Silty CLAY, light grey, moist to wet, high plasticity,*					
	2.4		CH	Residual		W-M	VSt	91 ▽ 140 ●		
	2.6									
	2.8							30.4 ▽ 96.6 ●	25.2	
	3.0		ML	Residual	*Clayey SILT, trace of sand; light grey mottled orange to brown, moist, low plasticity,*	M	VSt		25.0	25
	3.2		ML	Residual	As above, but: *light brown & orange,* some gravel sized clasts of mudstone and limestone.	M	VSt	42 ▽ 150.8 ●		
	3.4									
	3.6				*clayey SILT, pale grey mottled black, moist to wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.			44.8 ▽ 154 ●	24.5	
	3.8									
	4.0							196 ●	24.0	
	4.2		ML	Hukerenui transitional soil		W-M	VSt			
	4.4									
	4.6									
	4.8									

TP26-26 Terminated at 5 m









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP26-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP26-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP27-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746926.49	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948326.81	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		20	
	0.4									
	0.6									
Inflow	0.8		CH	Alluvial	*silty CLAY, light grey & brown, wet, high plasticity.*	W	St	14 98	19.2	
	1.0								19.0	
	1.2							21 70		
	1.4									
Inflow	1.6		OH	Alluvial	As above, but: *wet to saturated,* some organics rootlets and black flecks.	W-	F	47 84	18.4	0.8 3 collapse on both faces
	1.8									
	2.0							28 81.2	18.0	
	2.2		Pt	Alluvial	Clayey PEAT, loose, medium plasticity clay, brown & black, saturated, peat is fibrous wood fragments, compressible.		L	4.8 28	17.8	
	2.4									
	2.6								17.3	
	2.8		CH	Alluvial	*Silty CLAY, pale bluish grey, saturated, high plasticity.*		F	39.2 28		
	3.0								17.0	
	3.2									
	3.4									
	3.6									
	3.8		ML	Alluvial	*Clayey SILT, pale bluish grey, saturated, low plasticity,* clasts of weathered siltstone, EW.		St	28 70	16.2	
	4.0								16.0	
	4.2									
	4.4									
	4.6									
					TP27-26 Terminated at 4.7 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP27-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP27-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP28-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747203.23	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948325.62	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.5 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		20	
	0.4		ML	Alluvial	*Clayey SILT, light brown mottled orange, dry to moist, low plasticity,*	M-D	St	44.8 140 50 100.8	19.7	
	1.0		CH	Alluvial	*Silty CLAY, pale bluish grey, wet, high plasticity,*	W	St		19.0	19
	1.2		CH	Alluvial	*Silty CLAY, light grey, moist to wet, high plasticity,*	W-M	St	50 100.8 67.2 100.8 50 98 58.8 112 84 151.2 67.2 109.2	18.8	
	3.2		ML	Alluvial	*Clayey SILT, trace of sand; light grey, moist to wet, medium plasticity,*	W-M	St		17.0	
	4.0		CH	Alluvial	*Silty CLAY, pale grey, wet, high plasticity,*	W	St	70 120.4 50 126	16.8	
N/A	4.4								16.0	16
Not Encountered					TP28-26 Terminated at 4.5 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP28-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP28-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP29-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747305.39	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948525.45	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 14 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.6 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2, 0.4, 0.6		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		14	
Inflow	0.8								13.2	
	1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6		OH	Alluvial	*Silty CLAY, pale brown mottled black, moist to wet, high plasticity,* some organics wood fragments.	W-M	St	39.2 89.6; 39.2 92.4; 47 92.4; 42 72.8; 53.2 112	13.0; 12.0	0 3 collapse on both faces
Inflow	2.8				As above, but: *pale bluish grey, wet,* lack organics.			33.2 112	11.2	
	3.0, 3.2, 3.4, 3.6, 3.8, 4.0, 4.2, 4.4		CH	Alluvial		W	St	28 72.8; 38.8 14	11.0; 10.0	
					TP29-26 Terminated at 4.6 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP29-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP29-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP30-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747245.74	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948467.61	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 16 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		16	
	0.4									
	0.6									
	0.8								15.2	
	1.0		OL	Alluvial	*Clayey SILT, light grey mottled brown, wet, low plasticity,* minor organics wood fragments.	W	St		15.0	
Inflow	1.2									
	1.4									
	1.6									
	1.8								14.2	
	2.0		CH	Alluvial	*Silty CLAY, light brown grey, wet, high plasticity,*	W	St		14.0	
Inflow	2.2									
	2.4								13.5	
	2.6		CH	Alluvial	As above, but: *saturated,*		St			
	2.8									
	3.0								13.0	13
	3.2		OH	Alluvial	As above, but: *light bluish grey mottled brown,* some organics.		St			
	3.4									
	3.6									
	3.8									
	4.0								12.0	12
	4.2		OL	Alluvial	As above, but: *Sandy SILT,* organic odour.		St			
	4.4									
	4.6								11.5	
Inflow	4.8		CH	Alluvial	*Silty CLAY, pale bluish grey, wet to saturated, high plasticity,*	W-	St			
					TP30-26 Terminated at 5 m					







Drag photo here

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Photo description	TP30-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP30-26	**TP Depth**	

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Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP31-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747167.05	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948501.58	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 16 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		16	
	0.4		ML	Alluvial	*Clayey SILT, light brown, dry to moist, low plasticity,*	M-D	St	12.4, 98	15.6	
	0.6									
	0.8									
	1.0							42, 140	15.0	
	1.2		CH	Alluvial	*Silty CLAY, light grey & brown, moist, high plasticity,*	M	St	38.5, 100.8	14.8	
	1.4									
	1.6							42, 72.8		
	1.8									
	2.0		CH	Alluvial	As above, but: minor organics rootlets.	M	St	65.8, 67.2	14.0	14
	2.2									
	2.4							47.6, 112		
	2.6									
	2.8							42, 57.2		
	3.0								13.0	
	3.2		CH	Alluvial	As above, but: *light bluish grey ,*	M	St	42, 84	12.8	
	3.4									
	3.6									
	3.8							28, 84		
	4.0								12.0	
	4.2									
	4.4									
	4.6									
Inflow					TP31-26 Terminated at 4.8 m					









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Photo description	TP31-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP31-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
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Geotechnical Log - Test Pit

TP32-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746831.09	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948241.99	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 21 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5.2 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		21	
	0.2		CH	Alluvial	*Silty CLAY, light brown & grey mottled orange, moist to wet, high plasticity,*	W-M	St	14 67.2	20.8	
	0.4									
	0.6									
	0.8							28 58.8		
Inflow	1.0								20.0	
	1.2							22.4 56		
	1.4									
	1.6							28 56		
	1.8		CH	Alluvial	As above, but: *wet,* some rootlets, branches , organics.	W	St		19.2	
	2.0							42 70	19.0	
	2.2		OH	Alluvial	As above, but: *light brown & grey with black mottled,*	W	St		18.8	
	2.4							39.2 70		
	2.6									
	2.8							44.8 112		
	3.0		OH	Alluvial	As above, but: *pale grey mottled black, wet to saturated,* organics are some peat and plant fragments, odor.	W-	St		18.0	18
	3.2							67.2 100.8		
	3.4									
	3.6									
	3.8							21 56		
	4.0		Pt	Alluvial	Clayey PEAT, medium plasticity clay, pale grey & black, saturated, fibrous, low compressibility.				17.0	17
	4.2									
	4.4							39.2 14		
	4.6								16.3	
	4.8		CL	Alluvial	*Sandy CLAY, pale bluish grey, moist to wet, low plasticity,* fine grained sand.	W-M	St	22 84		

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Geotechnical Log - Test Pit

TP32-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746831.09	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948241.99	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 21 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5.2 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	–		CL	Alluvial	*Sandy CLAY, pale bluish grey, moist to wet, low plasticity,* fine grained sand.	W-M	St		16	
					TP32-26 Terminated at 5.2 m					









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GEOTECHNICAL ENGINEERS

Photo description	TP32-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP32-26	**TP Depth**	

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP33-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1746870.74	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948169.41	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 24.83 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 02/03/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2, 0.4, 0.6		OL	Alluvial	*Clayey SILT, dark brown, dry to moist, low plasticity,* topsoil.	M-D	F		24.83	
Inflow	0.8								24.029999999999998	
	1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4		OH	Alluvial	*silty CLAY, light grey & brown mottled black, wet to saturated, high plasticity,* organics are wood fragments, branches, roots.	W-	F	56 14; 42 14; 30.8 61.6; 28 61.6; 28 70	24.0, 23.0	0.4 collapse
	2.6								22.83	
Inflow	2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4.0, 4.2, 4.4, 4.6, 4.8		OH	Alluvial	As above, but: *pale bluish grey,* organics are wood fragments, branches roots.	W-	St	30.8 70; 39.2 78.4; 39.2 78.4; 28 61.6; 28 61.6	22.0, 21.0, 20.0	

TP33-26 Terminated at 5 m









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP33-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP33-26	**TP Depth**	

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Phone:

Geotechnical Log - Test Pit

TP34-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747847.60	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947735.18	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 16.75 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, wet, low plasticity,* topsoil.	W	F		16.75	
	0.4		CH	Alluvial	*Silty CLAY, light brown & grey mottled orange, wet, high plasticity,*	W	St	42 84 72.4 81.2 36 34 27.6 28	16.45 16.0 15.0	
	2.0				As above, but: *pale bluish grey,* some organics, tree roots.			39.2 16.8 39.2 23.2	14.75	
Inflow	2.6		CH	Alluvial		W	F	33.2 34	14.0	
	3.4				As above, but: *dark grey,*				13.35	
	3.6		CH	Alluvial		W	St	30.4 30.9		
	3.8		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey, wet, medium plasticity,* relic fabric.	W	St	28 30.4 28 98	13.0 12.95	4 4 collapse
					TP34-26 Terminated at 4 m (collapse)					







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Photo description	TP34-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP34-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

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Phone:

Geotechnical Log - Test Pit

TP35-26

Coordinate System	: EPSG:2193	**Excavator**	: 13T Long Reach	**Job Number**	: AK26-027
Easting (m)	: 1747899.13	**Excavator Supplier**	: Murray Flood	**Client**	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947698.33	**Logged By**	: Chris Ritchie	**Project**	: Milldale North
Ground Elevation	: 18 (m)	**Reviewed By**	: Sam Gibb	**Location**	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.4 m BGL	**Date**	: 23/02/2026	**Loc Comment**	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity .*	M	F		18	
	0.2		CH	Alluvial	*Silty CLAY, pale brown, wet, high plasticity,*	W	St	33.2 98 / 33.2 86.8	17.8	
Inflow	0.4									
	0.6									
	0.8									
	1.0								17.0	
	1.2		OH	Alluvial	As above, but: some organics, tree roots, odor.	W	St	78.8 33.2 / 35 84 / 25.2 86.8 / 42 14	16.8	
	1.4									
	1.6									
	1.8									
	2.0								16.0	
	2.2									
	2.4									
	2.6		ML	Hukerenui transitional soil	*clayey SILT, dark grey mottled pale bluish grey, moist to wet, low plasticity .*	W-M	VSt-H	33.5 151.2 / 42 154	15.4	
	2.8									
	3.0								15.0	
	3.2		ML	Hukerenui transitional soil	As above, but: *clayey SILT, dark grey mottled pale bluish grey, moist to wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W-M	VSt-H		14.8	
Inflow	3.4									
	3.6		ML	Hukerenui transitional soil	As above, but: some light grey soft clay.	W-M	VSt-H		14.4	
	3.8								14.1	
	4.0		ML	Hukerenui transitional soil	*SILT, dark, dry to moist, low plasticity,* EW siltstone, some polished slickensided surfaces.	M-D	H		14.0	
	4.2									
	4.3		SLT	Hukerenui Rockmass	Moderately to slightly weathered, dark grey, SILTSTONE; extremely weak to very weak; dry, (recovered as EW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW		13.7	

TP35-26 Terminated at 4.4 m









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Photo description			
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Z...		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP35-26	**TP Depth**	

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Geotechnical Log - Test Pit

TP37-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1748030.55	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947630.15	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.6 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		20	
	0.4		CH	Residual	*Silty CLAY, light grey mottled orange, moist to wet, high plasticity,* some tree roots.	W-M	St	14, 70; 42, 84; 39.2, 70	19.8	
	1.6		CH	Residual	As above, but: *wet,*	W	St	47, 95.2; 38.8, 112	19.0	
	2.4		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey with brown & orange mottled, moist to wet, low plasticity .*	W-M	VSt	28, 142.8; 67.2, 126; 70, 140	18.4	
	3.2		ML	Hukerenui transitional soil	As above, but: *clayey SILT, pale bluish grey & black, moist, low plasticity,* clasts of EW siltstone, relic sheared fabric.	M	VSt	190	17.6	
N/A	4.4		ML	Hukerenui transitional soil	As above, but: some clasts of white VW to W siltstone.		VSt		17.0	
Not Encountered					TP37-26 Terminated at 4.6 m				16.8	
									16.0	
									15.7	









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP37-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP37-26	**TP Depth**	

GIBB RITCHIE
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Geotechnical Log - Test Pit

TP38-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747981.86	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947665.84	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		20	
	0.4		ML	Residual	*Clayey SILT, light brown , grey & orange, moist, medium plasticity,*	M-D	St	28, 84, 44.8, 112	19.7	
	0.6									
	0.8									
	1.0								19.0	
	1.2							36.4, 98	18.8	
	1.4		ML	Residual	As above, but: *light grey, moist to wet,*	W-M	St	28, 140, 56, 193.2		
	1.6									
	1.8									
	2.0		ML	Hukerenui transitional soil	*SILT, trace of clay; dark brown mottled orange, moist to wet, low plasticity,* clasts of EW, HW siltstone, relic sheared fabric.	W-M	H		18.0	18
Inflow	2.2							196		
	2.4		ML	Hukerenui transitional soil	As above, but: *low plasticity,* clasts of EW to VW, HW siltstone, relic sheared fabric, brown staining on relic defects with water.				17.7	
	2.6									
	2.8									
	3.0		ML	Hukerenui transitional soil	As above, but: dry to moist.				17.0	17
	3.2									
	3.4									
	3.5		SLT	Hukerenui Rockmass	Highly to moderately weathered, dark grey, SILTSTONE; extremely weak; moist to dry, (recovered as EW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	M-D	EW		16.5	
	3.6									
	3.8									
	4.0		SLT	Hukerenui Rockmass	As above, but: extremely weak to very weak; (recovered as EW to VW siltstone gravels, sheared fabric, slickensided polished defect surfaces.).		EW-VW		16.0	16
	4.2									
	4.4									
	4.6									
					TP38-26 Terminated at 4.7 m					









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GEOTECHNICAL ENGINEERS

Photo description	TP38-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP38-26	**TP Depth**	

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Phone:

Geotechnical Log - Test Pit

TP39-26

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 290600.56	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946209.41	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 17 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 24/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* tree branches and roots, topsoil.	M	F		17	
	0.4		OH	Alluvial	*silty CLAY, pale brown to pale grey mottled orange, moist to wet, high plasticity,* some organics branches.	W-M	St	20, 80, 36.4, 121.1, 42, 98	16.7	
	1.6		CH	Alluvial	As above, but: *pale grey mottled orange,*	W-M	St	33.6, 98, 28, 98	16.0	
Inflow	2.2		ML	Mangakahia transition	*Clayey SILT, light grey, wet, low plasticity,* relic sheared fabric	W	H	196, 196	15.4	
	2.6		ML	Mangakahia transition	As above, but: clasts of EW siltstone.	W	H		15.0	
	3.0		CH	Residual	*Silty CLAY, light brown and light grey, wet, high plasticity,*	W	St	70, 140	14.8	
	3.8		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey, wet to saturated, low plasticity .*	W-	St	56, 112	14.4	
	4.8		ML	Hukerenui transitional soil	As above, but: *clayey SILT, dry to moist, low plasticity,* clasts of EW siltstone, relic sheared fabric.	M-D		39.2, 84	14.0	
					TP39-26 Terminated at 5 m				13.2	
									13.0	
									12.8	









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP39-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP39-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
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Phone:

Geotechnical Log - Test Pit

TP40-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1748188.22	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947556.35	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4 m BGL	Date	: 24/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,* tree branches and roots.	M	F		20	
	0.4		ML	Residual	*Clayey SILT, light brown grey, moist, medium plasticity,*	M	St	42 70 28 70 28 98 28 112	19.7	
	2.0		ML	Hukerenui transitional soil	*clayey SILT, dark black with light grey streaks mottled orange, moist to wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W-M	VSt-H	198.2	18.0	
	2.2		ML	Hukerenui transitional soil	As above, but: *low plasticity,* EW siltstone, some polished slickensided surfaces.		VSt-H		17.8	
	2.7		SLT	Hukerenui Rockmass	Slightly weathered, pale grey streaked black, SILTSTONE; extremely weak to very weak; dry, (recovered as EW to VW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW		17.3	
	4.0				TP40-26 Terminated at 4 m				17.0	









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP40-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP40-26	**TP Depth**	

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505 Lake Road, Takapuna, Auckland 0622
Phone:

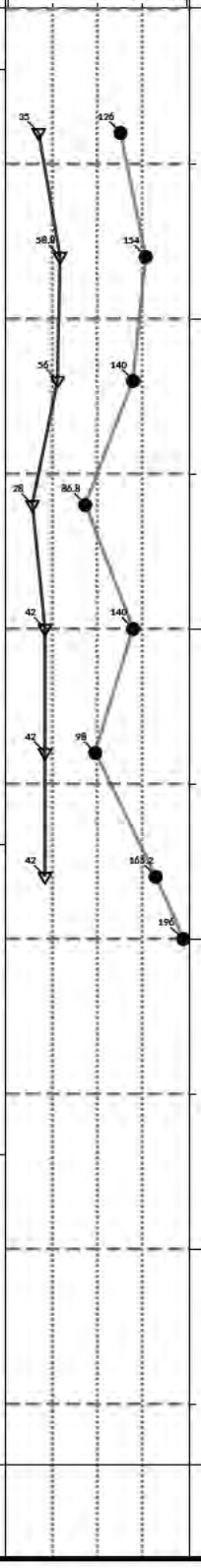
Geotechnical Log - Test Pit

TP41-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1748144.15	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947578.39	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 24/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	Elevation (m)	Remarks
	0.0		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* tree branches and roots, topsoil.	M	F	20	
	0.2		ML	Residual	*Clayey SILT, pale grey mottled orange, moist, low plasticity,*	M	St-VSt	19.8	
	1.8		ML	Residual	As above, but: lack silt.	M	St-VSt	19.0	
	2.7		ML	Hukerenui transitional soil	*clayey SILT, pale bluish grey with brown streaks, moist, low plasticity,* clasts of EW siltstone, relic sheared fabric.	M	H	18.2	
	3.7		SLT	Hukerenui Rockmass	Moderately to slightly weathered, pale bluish grey & light grey, SILTSTONE; extremely weak to very weak; dry, (recovered as EW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW	17.3	
N/A	4.4		SLT	Hukerenui Rockmass	As above, but: (some brown stained VW to W siltstone clasts).			16.3	
Not Encountered					TP41-26 Terminated at 4.7 m			15.7	

SV (Peak) ●
SV (Residual) ▽
0 50 100 150 200











GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP41-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP41-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP42-26

Coordinate System	: EPSG:2193	**Excavator**	: 13T Long Reach	**Job Number**	: AK26-027
Easting (m)	: 1748112.11	**Excavator Supplier**	: Murray Flood	**Client**	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947487.81	**Logged By**	: Chris Ritchie	**Project**	: Milldale North
Ground Elevation	: 20 (m)	**Reviewed By**	: Sam Gibb	**Location**	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	**Date**	: 23/02/2026	**Loc Comment**	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* tree branches and roots (topsoil).	M	F		20	
	0.4		ML	Residual	*Clayey SILT, light grey mottled orange, moist to wet, low plasticity,*	W-M	VSt	56 95.2 56 109.2 28 119 16.8 84 195	19.7	
	1.0								19.0	
	1.2									
	1.4									
	1.6									
	1.8									
	2.0								18.0	
	2.2		ML	Residual	As above, but: *pale brown & grey, moist,*	M	H		17.8	
	2.4		ML	Hukerenui transitional soil	*SILT, trace of clay; light grey & brown, dry to moist, low plasticity,* clasts of EW siltstone, relic sheared fabric.	M-D	H			
	2.7								17.3	
	2.8		SLT	Hukerenui Rockmass	Moderately to slightly weathered, pale bluish grey, SILTSTONE; extremely weak to very weak; dry, (recovered as siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW			
	3.0								17.0	
	3.2									
	3.4									
	3.6									
	3.8								16.2	
	4.0		SLT	Hukerenui Rockmass	As above, but: (some weak greenish grey siltstone clasts).				16.0	
	4.2									
	4.4									
	4.6									
					TP42-26 Terminated at 4.8 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP42-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP42-26	**TP Depth**	

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP43-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1748332.34	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947428.30	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 17.47 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 24/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* tree branches and roots.	M	F		17.47	
	0.4		CI-CH	Alluvial	*Silty CLAY, pale grey mottled black, moist to wet, medium to high plasticity;* minor organics, tree roots.	W-M	St-VSt	42, 84, 44.8, 109.2, 44.8, 106.4	17.27 17.0	
	1.6		ML	Alluvial	*clayey SILT, light grey, moist, low plasticity .*	M	VSt-H	140, 196	16.0 15.87	
	2.0		ML	Alluvial	*clayey SILT, pale bluish grey, moist, low plasticity,* clasts of EW siltstone.	M	H		15.0	
	4.0		CH	Alluvial	*Silty CLAY, some organics, black flecks roots, wet, high plasticity.*	W	St	42, 70	14.0	
N/A	4.6		SLT	N.A Mangakahia rock	Moderately weathered, pale grey, SILTSTONE; extremely weak to very weak; dry, (recovered as siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW		13.0 12.67	
Not Encountered					TP43-26 Terminated at 4.8 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP43-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP43-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

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Geotechnical Log - Test Pit

TP44-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1748025.53	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947562.21	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	St		20 19.7	
	0.4		ML	Residual	*Clayey SILT, light brown mottled orange, moist, medium plasticity,*	M	St-VSt	50 134 49 84 42 77 42 98	19.0	
	1.8		CH	Residual	*Silty CLAY, light grey mottled orange, moist to wet, high plasticity,*	W-M	St	42 95.2	18.1 18.0	
	2.0		ML	Residual	*SILT, trace of clay; light brown and grey, wet, low plasticity,*	W	St		18	
	2.4		ML	Hukerenui transitional soil	*clayey SILT, pale grey & brown & orange, moist to wet, low plasticity .*	W-M	St	39.2 98 28 182	17.6 17.0	
	3.2		ML	Hukerenui transitional soil	*SILT, light bluish grey, dry to moist, low plasticity,* some clasts of EW siltstone.	M-D	VSt-H		16.9	
	3.6		ML	Hukerenui transitional soil	As above, but: *light bluish grey & dark brown,* some clasts of EW siltstone, relic sheared fabric.				16.5	
	3.8		ML	Hukerenui transitional soil	As above, but: becoming EW siltstone, sheared fabric,slickensided surfaces.				16.2 16.0	
	4.2								15.7	
	4.3		SLT	Hukerenui Rockmass	Moderately to slightly weathered, bluish grey, SILTSTONE; extremely weak to very weak; very fine grained, moist, (recovered as siltstone gravels, sheared fabric, slickensided polished defect surfaces).	M	EW-VW			
N/A	4.6									
Not Encountered					TP44-26 Terminated at 4.8 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP44-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP44-26	**TP Depth**	

GIBB RITCHIE GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP45-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747947.88	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947593.96	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		20	
	0.2		ML	Residual	*Clayey SILT, light grey mottled orange, moist to wet, medium plasticity,*	W-M	St	28 ▽ 91 ● / 39.2 ▽ 95.2 ●	19.8	
	1.2		ML	Residual	As above, but: *wet,*	W	St	53.2 ▽ 84 ●	19.0	
	1.4								18.8	
	1.6		ML	Residual	*SILT, trace of clay; light grey mottled orange, wet, low plasticity,*	W	St	33.2 ▽ 84 ● / 42 ▽ 112 ● / 39.2 ▽ 95.2 ● / 196 ●	18.4	
	2.8		ML	Hukerenui transitional soil	*SILT, pale bluish grey mottled orange, moist, low plasticity .*	M	VSt-H		17.2	
	3.0		ML	Hukerenui transitional soil	As above, but: *pale bluish grey and dark grey,* clasts of EW siltstone, relic sheared fabric.		VSt-H		17.0	
	3.8		ML	Hukerenui transitional soil	As above, but: EW siltstone, some polished slickensided surfaces.		VSt-H		16.2	
	4.3		SLT	Hukerenui Rockmass	Moderately weathered, pale bluish grey, SILTSTONE; extremely weak to very weak; very fine grained, moist, (recovered as siltstone gravels, sheared fabric, slickensided polished defect surfaces).	M	EW-VW		15.7	
	4.8		SLT	Hukerenui Rockmass	As above, but: SILTSTONE; extremely weak to very weak.		EW-VW		15.2	
					TP45-26 Terminated at 5 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP45-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP45-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP46-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747872.49	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947648.19	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 18.5 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4 m BGL	Date	: 23/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,*	M	F		18.5	
	0.4		ML	Residual	*Clayey SILT, light brown grey, moist to wet, medium plasticity,*	W-M	St	42 70 / 33.5 64.4	18.2	
	0.6								16.0	
	0.8									
	1.0									
	1.2		ML	Residual	As above, but: *wet,*	W	St	33.6 125	17.3	
	1.4									
	1.6		OL	Residual	As above, but: *dark brown, moist, low plasticity,* tree roots.	M	F		17.0	17
	1.8		ML	Hukerenui transitional soil	*clayey SILT, pale grey mottled bluish grey & brown, wet, low plasticity .*	W	St-VSt	33.2 140 / 39.2 126	16.9	
	2.0									
	2.2		ML	Hukerenui transitional soil	As above, but: *pale grey & bluish grey, wet,* clasts of EW siltstone, relic sheared fabric.	W	St-VSt	196	16.4	
	2.4									
	2.6								16.0	
	2.8		SLT	Hukerenui Rockmass	Moderately to slightly weathered, pale bluish grey & dark grey, SILTSTONE; extremely weak to very weak; moist to dry, (recovered as siltstone gravels, sheared fabric, slickensided polished defect surfaces).	M-D	EW-VW		15.9	
	3.0									
	3.1								15.4	
	3.2		SLT	Mangakahia Rock Mass	Slightly weathered, light grey, SILTSTONE; very weak; dry, (recovered as siltstone gravels, sheared fabric, slickensided defect surfaces).	D	VW			
	3.4								15.0	
	3.6									
	3.8								14.7	
N/A			SLT	Mangakahia Rock Mass	As above, but: (some clasts of weathered hukerenui mudstone, EW, dark brown).					
Not Encountered					TP46-26 Refusal at 4 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP46-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP46-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP47-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747621.78	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948084.52	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		20	
	0.2		ML	Alluvial	*Clayey SILT, light brown & orange, moist, low plasticity,*	M	St	30.8 81.2	19.8	
	0.4									
	0.6		CH	Alluvial	*Silty CLAY, light grey mottled orange, wet, high plasticity,*	W	St	39.2 81.2	19.4	
	0.8									
	1.0							58.8 106.4	19.0	
	1.2									
	1.4							36 112		
	1.6									
	1.8							64.4 98	18.0	
	2.0									
	2.2							44.8 78.4		
	2.4									
	2.6							44.8 84	17.2	
	2.8				As above, but: *light brown & grey,*					
	3.0		CH	Alluvial		W	St	44.8 78.4	17.0	
	3.2									
	3.4								16.4	
	3.6				As above, but: *pale grey streaked orange,*					
	3.8		CH	Alluvial		W	St	44.8 72.8		
	4.0				*Clayey SILT, pale grey, wet, medium plasticity,*				16.0	16
	4.2							28 58.8		
	4.4		ML	Alluvial		W	St			
	4.6							34.8 42		
	4.8				As above, but: some hard silt clasts.				15.2	
			ML	Alluvial		W	St			
					TP47-26 Terminated at 5 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP47-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP47-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP48-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747682.91	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948012.78	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 19 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Residual	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		19	
	0.2		ML	Residual	*Clayey SILT, light grey orange, moist to wet, medium plasticity,*	W-M	St	30 140 44.8 98 30 114.8 30 126 70 154	18.8	
	2.0		ML	Residual	As above, but: *light grey, moist, low plasticity,*	M	St	75.6 145.6 30 112	17.0	17
	3.0		CH	Residual	*Silty CLAY, light grey, moist to wet, high plasticity,*	W-M	St	47.6 81.2 53.2 66.8	16.0	16
	3.6		ML	Residual	*sandy SILT, light grey & brown, wet, low plasticity,* fine grained sand.	W	St		15.4	
	4.6		ML	Residual	As above, but: *sandy SILT, dark grey, saturated, low plasticity,* fine grained sand.				14.4	
					TP48-26 Terminated at 4.8 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP48-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP48-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

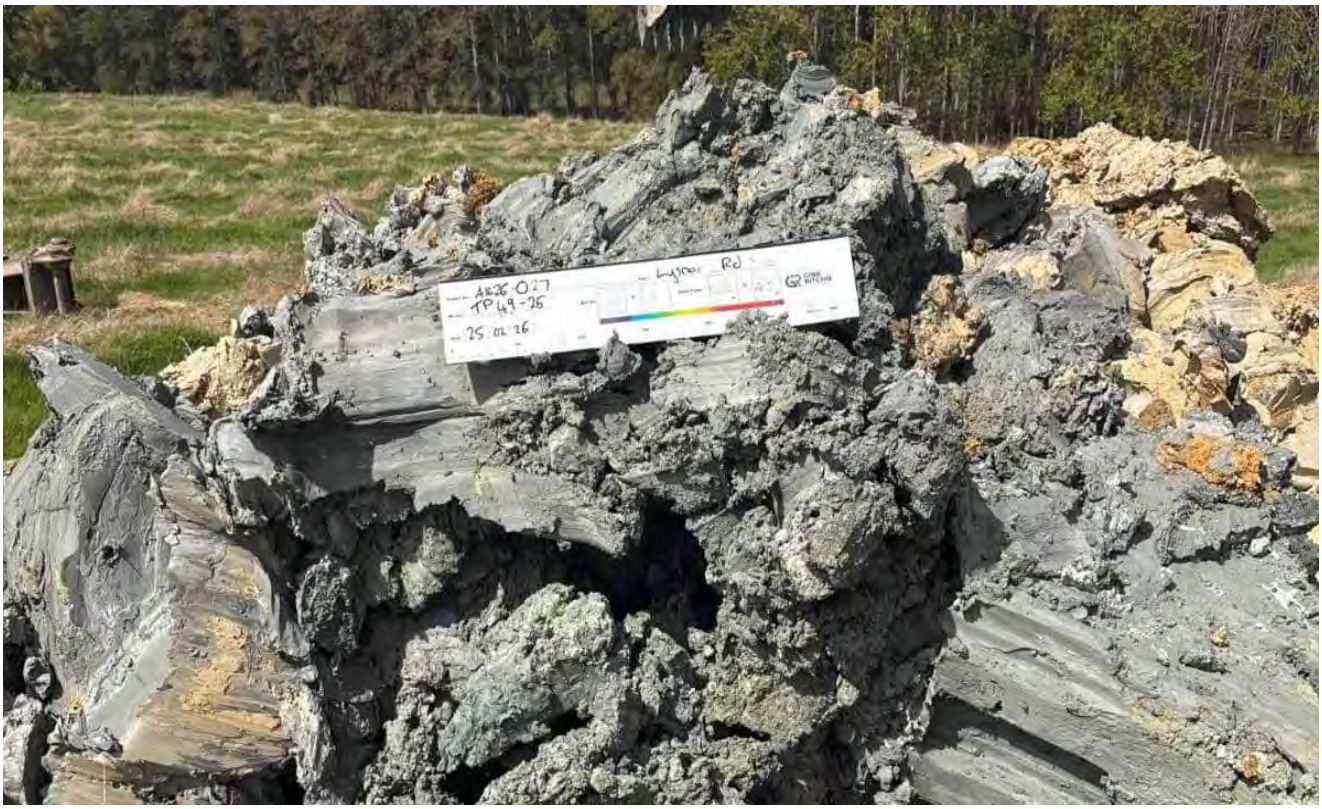
TP49-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747604.37	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947998.26	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		20	
	0.2		ML	Alluvial	*Clayey SILT, light grey & brown, moist, low plasticity,*	M	St	39.2 98	19.8	
	0.8		CH	Alluvial	*Silty CLAY, light grey & light brown, wet, high plasticity,* some organic fragments, wood	W	St	42 70	19.2	
								53.2 84	19.0	0 2.5 collapse on eastern face
								39.2	18.0	
								53.2 39.2		
	2.6		CH	Alluvial	As above, but: *pale brown,*	W	St	28 67.2	17.3	
Inflow	3.2				As above, but: *pale bluish grey, wet to saturated,* abundant organic fragments, wood.			67.2 123.2	17.0 16.8	
	4.0		CH	Alluvial		W-	St	28 86.8	16.0	
	4.8		ML	Hukerenui transitional soil	*clayey SILT, pale greenish grey, low plasticity,* some relic fabric.		St	28 70 70 98	15.2	
					TP49-26 Terminated at 5 m					







GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP49-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP49-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP50-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747535.20	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948039.95	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 21 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.6 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		21	
	0.4		ML	Alluvial	*Clayey SILT, brown mottled orange, moist, low plasticity,*	M	F-St	39.2 81.2	20.8	
	0.6								20.4	
	0.8				*Silty CLAY, light grey mottled orange, wet, high plasticity,*			30.8 70		
	1.0								20.0	
	1.2		CH	Alluvial		W	St	28 53.2		
	1.4									
	1.6							28 50		
Inflow	1.8									
	2.0				As above, but: *wet to saturated,*			39.2 84	19.0	19
	2.2									
	2.4									0 4.6 pit walls collapsed
	2.6		CH	Alluvial		W-	St	42 57.2		
	2.8									
	3.0				As above, but: some wood fragments.			39.2 55	18.0	18
	3.2		CH	Alluvial		W-	St			
Inflow	3.4							40 72		
	3.6				As above, but: *pale grey & brown,*				17.5	
	3.8		CH	Alluvial		W-	St	33.2 70	17.2	
	4.0				*SILT, trace of clay; light grey & brown, wet to saturated, high plasticity,* organics are wood fragments difficult to compress, peat, odour.				17.0	
	4.2		OL	Alluvial		W-	St			
	4.4									
					TP50-26 Terminated at 4.6 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP50-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP50-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP51-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747684.67	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947938.06	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 18 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	***Clayey SILT, dark brown, moist, low plasticity,*** topsoil.	M	F		18	
	0.2		OL	Alluvial		M	F		17.8	
	0.4		ML	Alluvial	*Clayey SILT, light pale orange, moist to wet, medium plasticity,*	W-M	St	42, 84, 61.6, 98, 30.4, 112, 47.6, 106.4	17.0	
	1.8		CH	Alluvial	*Silty CLAY, light grey mottled orange, wet, high plasticity,*	W	St	42, 112, 33.6, 72.8	16.2	
Inflow	2.8		ML	ECBF	*Clayey SILT, light grey & orange, wet to saturated, low plasticity,*	W-	VSt	49, 131.6	15.2	
	3.4		ML	ECBF	*Clayey SILT, dark grey, moist to wet, low plasticity,* clasts of EW siltstone.	W-M	VSt	56, 134	14.6	
	4.3		SST	ECBF Rock	Moderately to Slightly weathered, massive, dark grey, SANDSTONE; extremely weak; medium grained, moist to dry, (EW recovered as clasts of sandstone and siltstone).	M-D	EW		13.7	
	5.0				TP51-26 Terminated at 5 m				13.0	









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP51-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP51-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP52-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747479.49	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948000.07	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 21.97 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
			OL	Alluvial	***clayey SILT, dark brown, moist, low plasticity, tree branches and roots.***	M	F		21.97	
			OL	Alluvial		M	F		21.77	
	0.2				*Clayey SILT, light brown pale orange, moist, medium plasticity,*					
	0.4							44.8 112		
	0.6									
	0.8							42 100.8		
	1.0		ML	Alluvial		M	St		21.0	
	1.2							44.8 100.8		
	1.4									
	1.6							39.2 84		
	1.8				*Silty CLAY, light grey mottled orange, wet, high plasticity,*				20.159999999999998	
	2.0							30.4 72.8	20.0	
	2.2									
	2.4							30 71.2		
	2.6									
	2.8		CH	Alluvial		W	St	42 64.4		
	3.0								19.0	
	3.2							47.6 91		
	3.4									
	3.6							30.8 72.8		
	3.8								18.159999999999998	
					As above, but: *pale grey,*					
	4.0							39.2 16.8	18.0	
	4.2		CH	Alluvial		W	St			
	4.4							44.8 16.8		
	4.6									
	4.8								17.159999999999998	
			OH	Alluvial	As above, but: abundant organics large log fragments.	W	St			
					TP52-26 Terminated at 5 m				17.0	









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP52-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP52-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP53-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747406.54	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947956.94	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 23 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		ML	Residual	*Clayey SILT, light grey mottled orange, moist, medium plasticity,*	M	VSt	56 126 61.6 98	23 22.0	
	1.8		ML	Residual	As above, but: *moist to wet,*	W-M	VSt	61.6 84 30.4 84	21.9 21.2	
	2.8		CI	Alluvial	*Silty CLAY, light grey mottled orange, moist to wet, medium plasticity,* some minor black flecks of organics, rootlets.	W-M	VSt	56 114.8 64.4 112	21.0	
	4.0		CH	Alluvial	As above, but: *wet, high plasticity,*	W	VSt	42 57.2 33.6 70 42 57.2	20.2 20.0	
	4.6		CH	Alluvial	As above, but: *pale grey .*	W	F-St	42 57.2 42 78.4	19.0 18.4	
	5		OH	Alluvial	As above, but: some large fragments of wood fragments up to 200mm.	W	VSt	23.24		

TP53-26 Terminated at 5 m









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP53-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP53-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP54-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747563.79	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947938.03	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 20 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.5 m BGL	Date	: 25/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	Elevation (m)	Remarks
	0.0		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F	20	
	0.2		CH	Alluvial	*Silty CLAY, light grey mottled orange, moist to wet, high plasticity,*	W-M	St	19.8	
Inflow	1.4							19.0	0 3 collapse on both walls
	2.0		ML	Alluvial	*Clayey SILT, pale brownish grey, wet, medium plasticity,*	W	St	18.0	18
	2.2		ML	Hukerenui transitional soil	*clayey SILT, bluish grey, wet, medium plasticity .*	W	St	17.8	
	3.0		ML	Hukerenui transitional soil	As above, but: *moist,* clasts of EW siltstone, relic sheared fabric.	M		17.0	17
	4.1		SLT	Hukerenui Rockmass	Moderately weathered, pale bluish grey, SILTSTONE; extremely weak to very weak; dry, (recovered as EW TO VW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW-VW	15.9	
	4.5				TP54-26 Terminated at 4.5 m				

SV (Peak) ●
SV (Residual) ▽
0 50 100 150 200









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP54-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP54-26	**TP Depth**	

GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Gibb Ritchie

505 Lake Road, Takapuna, Auckland 0622

Phone:

Geotechnical Log - Test Pit

TP55-26

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747579.60	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5947837.66	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 18.65 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.8 m BGL	Date	: 24/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Residual	*Clayey SILT, dark brown, moist, low plasticity,* tree branches and roots.	M	F		18.65 18.45	
	0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4		ML	Residual	*Clayey SILT, pale grey mottled orange, moist, medium plasticity,*	M	VSt	56 156.8 42 134.4 47.6 140 42 126 42 176.4 61.6 154	18.0 17.0	
	2.3 2.6 2.8 3.0 3.2		ML	Hukerenui transitional soil	*clayey SILT, dark grey & pale blue, wet, low plasticity,* clasts of EW siltstone, relic sheared fabric.	W	H	196	16.15 16.0 15.45	
	3.4 3.6 3.8 4.0		SLT	Hukerenui Rockmass	Slightly weathered, dark bluish grey, SILTSTONE; extremely weak; dry, (recovered as EW siltstone gravels, sheared fabric, slickensided polished defect surfaces).	D	EW		15.0	
	4.2 4.4 4.6		SLT	Hukerenui Rockmass	As above, but: (clasts are becoming EW to VW).			14.5999999999999	14.0	
N/A										
Not Encountered					TP55-26 Terminated at 4.8 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP55-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP55-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP56-55

UTM	: 60H	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 288327.66	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5946068.65	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 37 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.2 m BGL	Date	: 19/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.0		OL	Alluvial	*clayey SILT, dark brown, moist, low plasticity .*	M	F		37	
	0.2		ML	Alluvial	*SILT, trace of clay; light grey mottled orange, moist, low plasticity,*	M	St		36.8	
	0.4		ML	Alluvial	As above, but: *trace of clay; light grey mottled orange,* tree roots.	M	St	45 ▽ 20 ●	36.7	
	0.6									
	0.8								36.2	
	1.0		ML	Alluvial	As above, but: *Clayey* tree roots.	M	St	55 ▽ 20 ●	36.0	
	1.2									
	1.4							25 ▽ 70 ●		
	1.6									
	1.8								35.2	
	2.0		ML	Alluvial	As above, but: *Clayey* organic odour minor. brown staining.	M	St	40 ▽ 20 ●	35.0	
	2.2									
	2.4							22 ▽ 60 ●		
	2.6								34.4	
Inflow	2.8		ML	Hukerenui transitional soil	*clayey SILT, dark grey mottled orange, wet, low plasticity,* relic sheared rock fabric.	W	VSt	30 ▽ 100 ●		
	3.0								34.0	
	3.2				As above, but: *dark grey mottled pale blue .*			30 ▽ 90 ●	33.8	
	3.4									
	3.6		ML	Hukerenui transitional soil		M	VSt	29 ▽ 90 ●		
	3.8									
	4.0							30 ▽ 90 ●	33.0	33
			ML	Hukerenui transitional soil	As above, but: relic sheared rock fabric,some clasts of extremely weak siltstone with slickensided surfaces.					
					TP56-55 Terminated at 4.2 m					









GIBB RITCHIE
GEOTECHNICAL ENGINEERS

Photo description	TP56-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP56-26	**TP Depth**	

Gibb Ritchie
505 Lake Road, Takapuna, Auckland 0622
Phone:

Geotechnical Log - Test Pit

TP57 66

Coordinate System	: EPSG:2193	Excavator	: 13T Long Reach	Job Number	: AK26-027
Easting (m)	: 1747309.48	Excavator Supplier	: Murray Flood	Client	: Fulton Hogan Land Development Ltd
Northing (m)	: 5948634.83	Logged By	: Chris Ritchie	Project	: Milldale North
Ground Elevation	: 13 (m)	Reviewed By	: Sam Gibb	Location	: 522 Wainui Road, Wainui 0992, New Zealand
Total Depth	: 4.7 m BGL	Date	: 26/02/2026	Loc Comment	:

Water	Depth (m)	Graphic Log	Classification Code	Soil Origin	Material Description	Moisture	Consistency	SV (Peak) ● SV (Residual) ▽ 0 50 100 150 200	Elevation (m)	Remarks
	0.2		OL	Alluvial	*Clayey SILT, dark brown, moist, low plasticity,* topsoil.	M	F		13 / 12.8	
	0.4 / 0.6 / 0.8 / 1.0		ML	Alluvial	*Clayey SILT, light brownish grey mottled orange, moist, medium plasticity,*	M	St-VSt	61.6 142.8 64.4 152.4	12.0	
	1.2 / 1.4 / 1.6 / 1.8 / 2.0		ML	Alluvial	As above, but: *light grey mottled orange, low plasticity,*	M	VSt	42 137.2 61.2 140	12 / 11.0	
	2.2		ML	Alluvial	As above, but: *trace of sand; wet,*	W	VSt	30.8 84 61.6 112	11 / 10.5	
	2.4 / 2.6 / 2.8		ML	Alluvial	*Sandy SILT, light grey & orange, moist, low plasticity,* fine grained sand.	M	VSt	81.2 128	10	
	3.0		ML	Alluvial	As above, but: some trace organics.	M	VSt	25.2 56	10.0 / 9.8	
	3.2 / 3.4 / 3.6 / 3.8 / 4.0		CH	Alluvial	*Silty CLAY, trace of sand; pale grey, moist to wet, high plasticity,*	W-M	St	42 57.2	9.0	
Inflow	4.2 / 4.4 / 4.6		CL	Alluvial	*Sandy CLAY, pale grey, wet, low plasticity,* some organics wood fragments,strong organic odour.	W	F	29.2 14	8.6	
					TP57 66 Terminated at 4.7 m					









GIBB RITCHIE GEOTECHNICAL ENGINEERS

Photo description	TP57-26		
Client	Fulton Hogan Land Development Ltd		
Location	522 Wainui Road, Wainui 0992, New Zealand		
Project name	Milldale North		
Project No	AK26-027	**Scale**	Not to Scale
TP No	TP57 66	**TP Depth**	

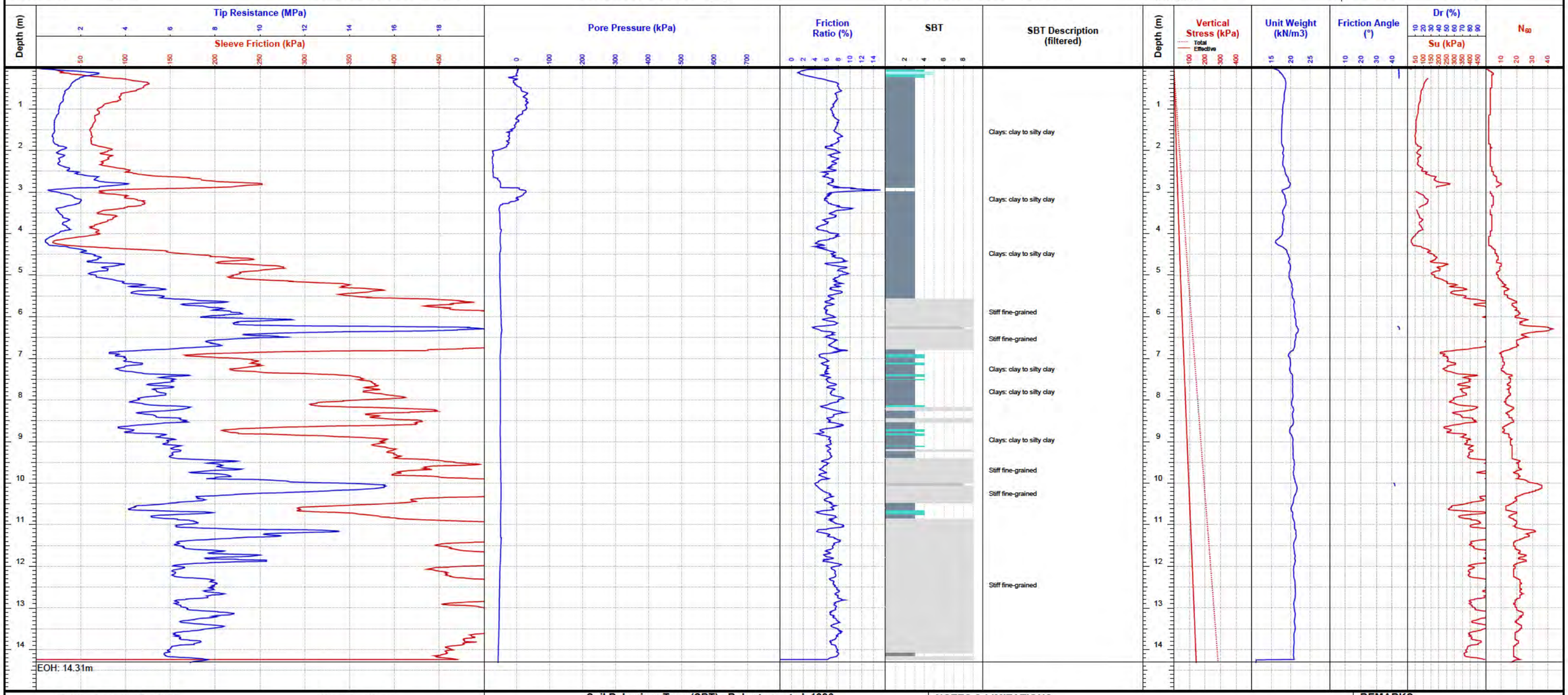
CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT01-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747031.66mE, 5947936.81mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	1:44 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 3.10m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2595 kPa
Local Friction Final:	0.2594 kPa
Pore Pressure Initial:	3.1497 kPa
Pore Pressure Final:	3.1490 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

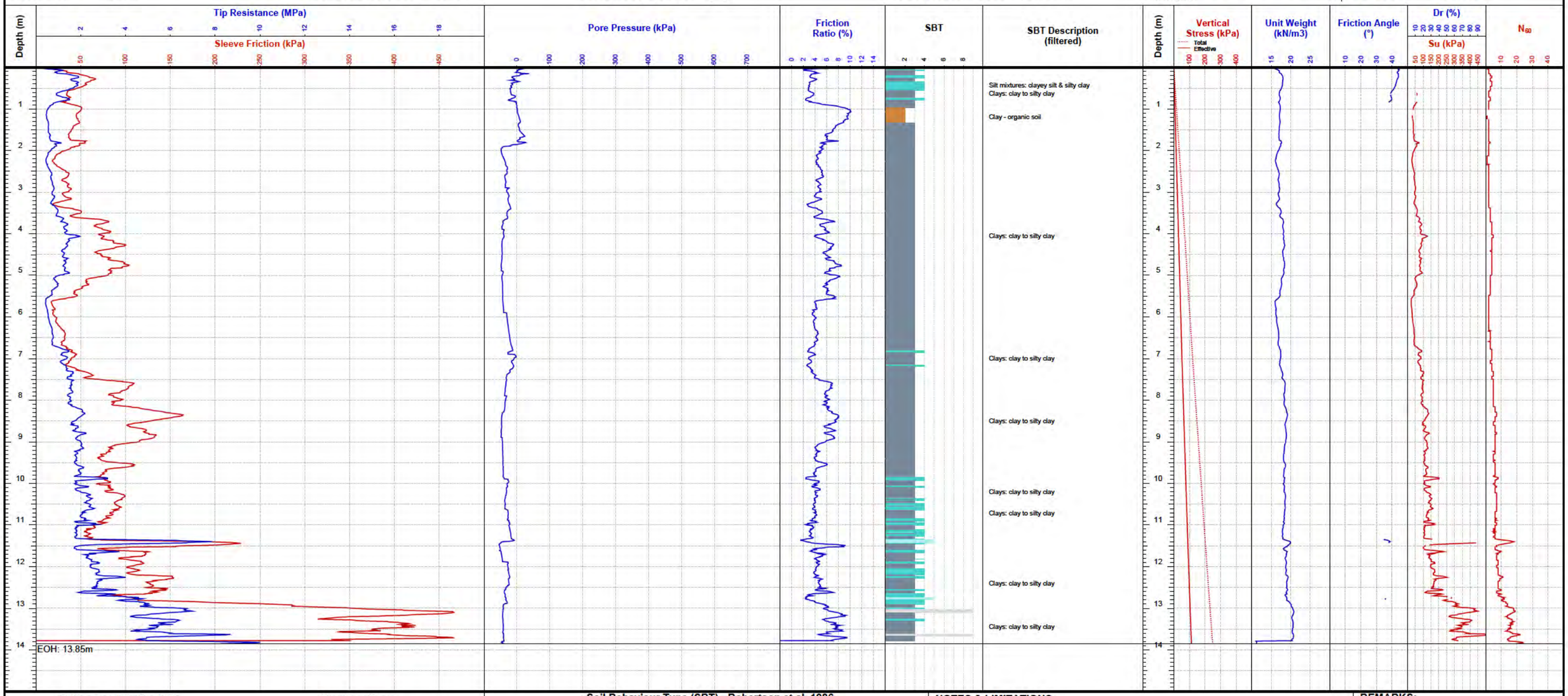
Topdrill Ref:	TD4729
CPT NO.:	CPT02-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746132.50mE, 5947562.25mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	03/03/2026				
Start Time:	6:56 pm				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill	
Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.83m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings	
Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0207 MPa
Local Friction Initial:	0.2567 kPa
Local Friction Final:	0.2567 kPa
Pore Pressure Initial:	3.1496 kPa
Pore Pressure Final:	3.1506 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0 Undefined	5 Sand mixtures: silty sand to sandy silt
1 Sensitive fine-grained	6 Sands: clean sands to silty sands
2 Clay - organic soil	7 Dense sand to gravelly sand
3 Clays: clay to silty clay	8 Stiff sand to clayey sand
4 Silt mixtures: clayey silt & silty clay	9 Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

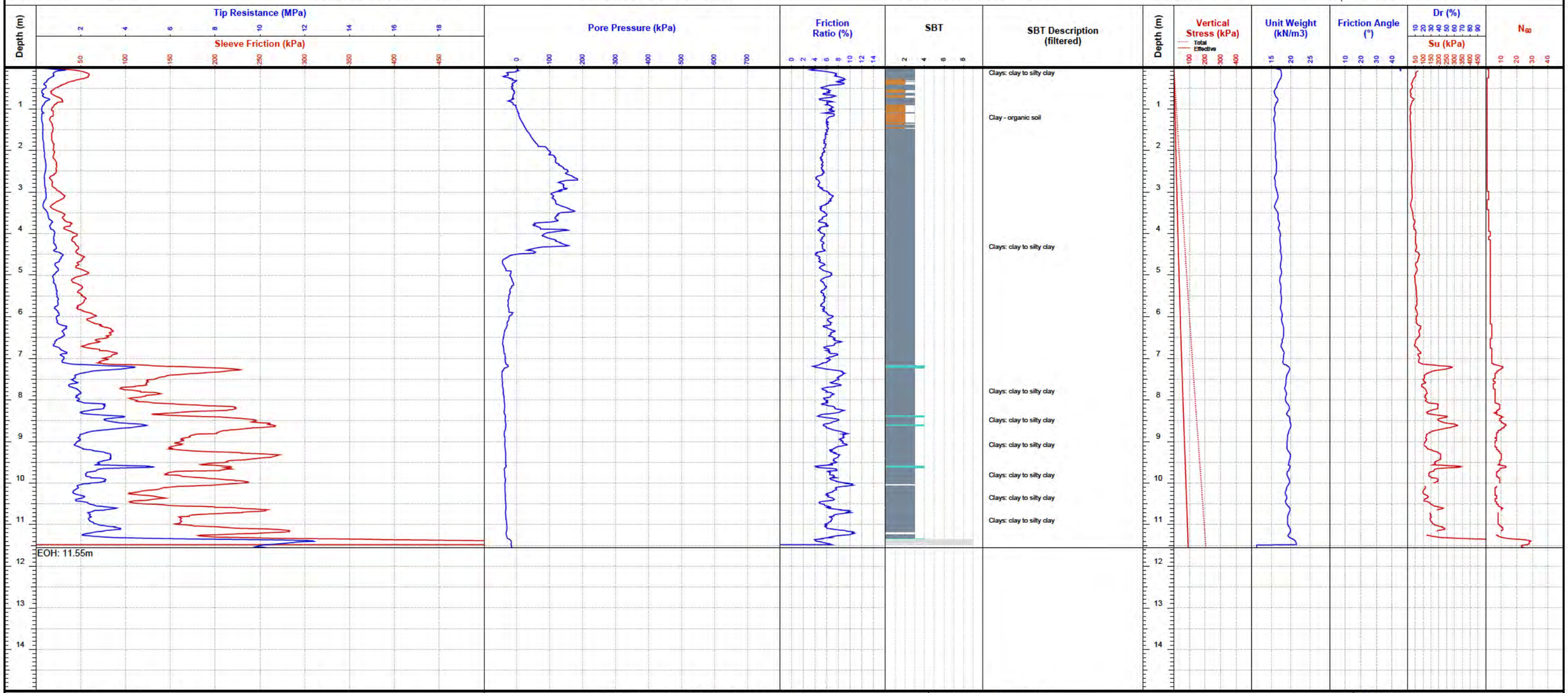
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT03-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746893.71mE, 5948014.11mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	5:22 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2590 kPa
Local Friction Final:	0.2585 kPa
Pore Pressure Initial:	3.1499 kPa
Pore Pressure Final:	3.1490 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

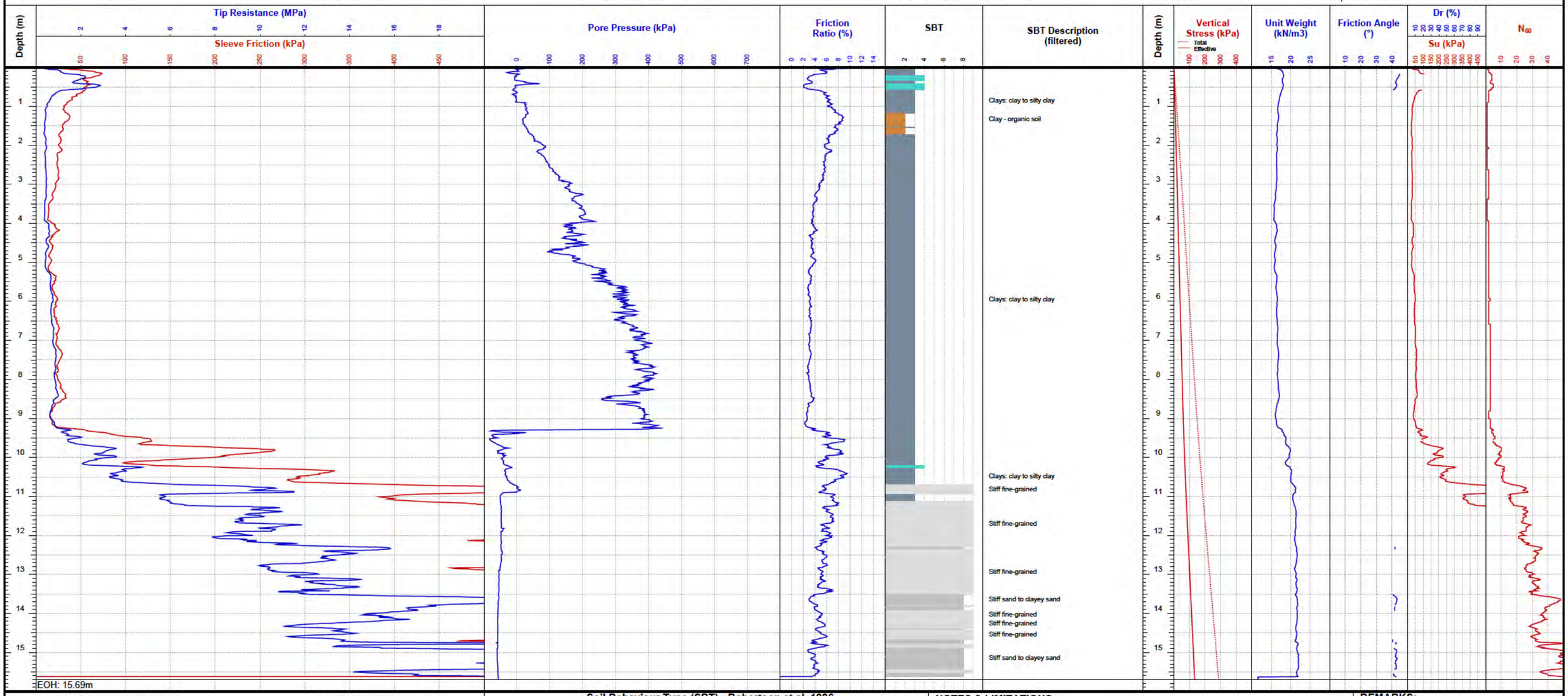
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CPT NO.:	CPT04-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747054.51mE, 5948147.38mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	02/03/2026				
Start Time:	9:38 am				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.58m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2573 kPa
Local Friction Final:	0.2577 kPa
Pore Pressure Initial:	3.1486 kPa
Pore Pressure Final:	3.1472 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

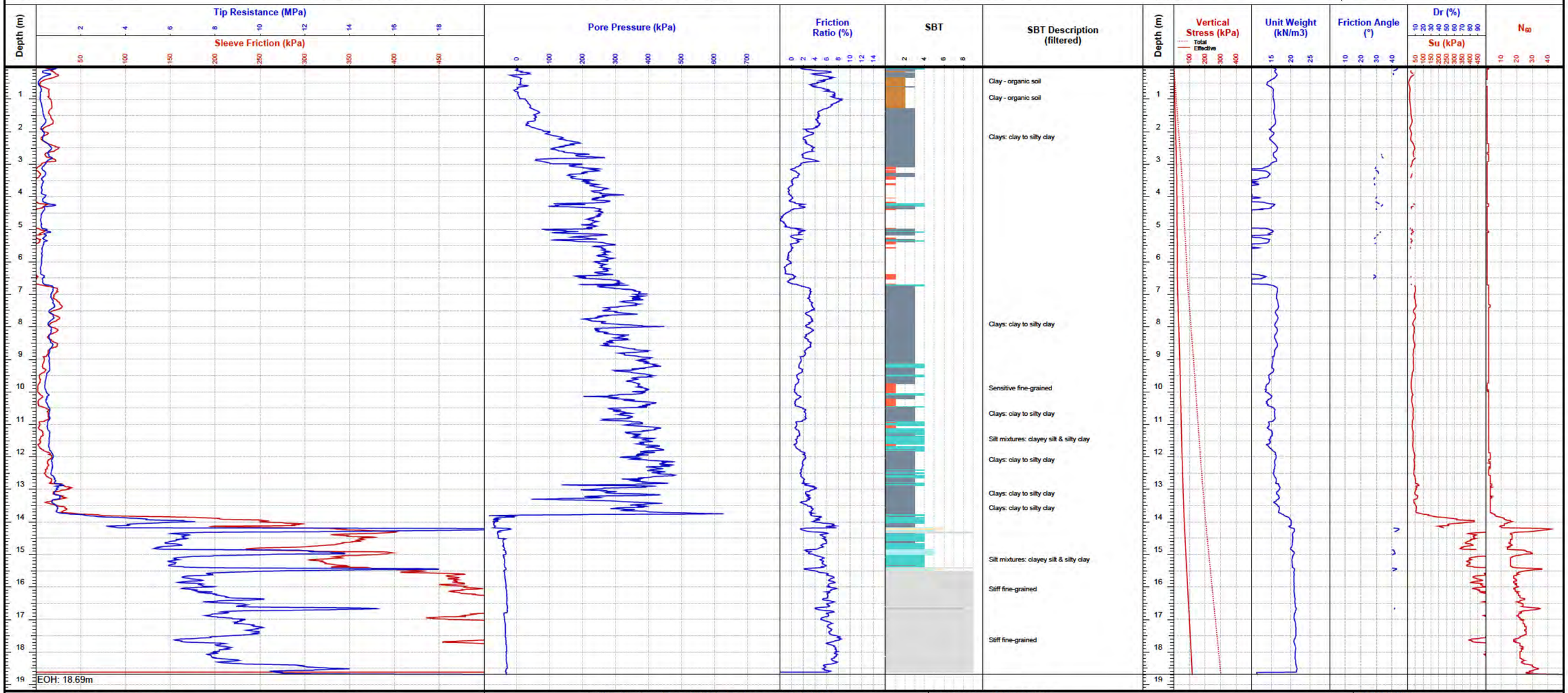
Topdrill Ref:	TD4729
CPT NO.:	CPT05-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747002.47mE, 5948199.64mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	26/02/2026				
Start Time:	11:39 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill	
Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.67m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings	
Tip Resistance Initial:	0.0214 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2686 kPa
Local Friction Final:	0.2581 kPa
Pore Pressure Initial:	3.1500 kPa
Pore Pressure Final:	3.1502 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

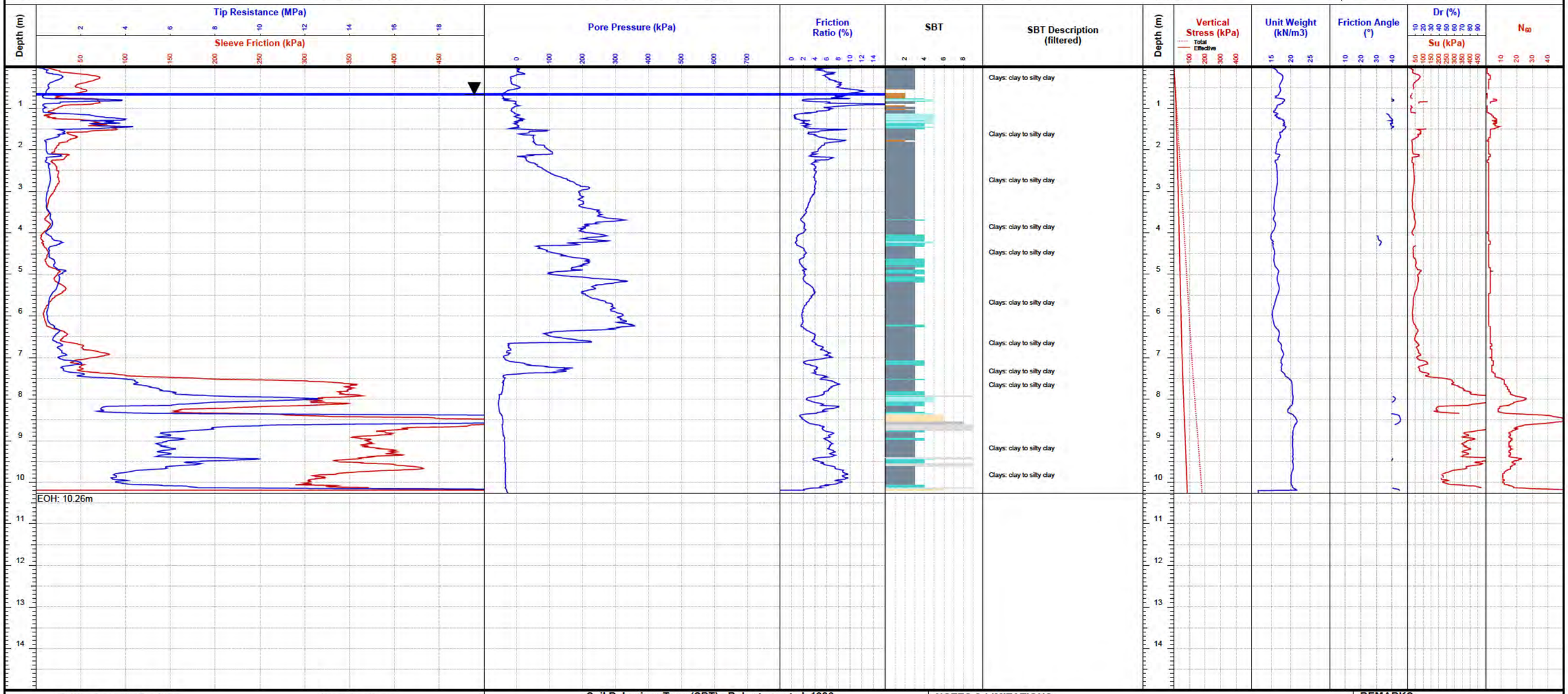
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT06-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747302.55mE, 5948344.61mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	7:21 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	0.67m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2572 kPa
Local Friction Final:	0.2578 kPa
Pore Pressure Initial:	3.1501 kPa
Pore Pressure Final:	3.1503 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

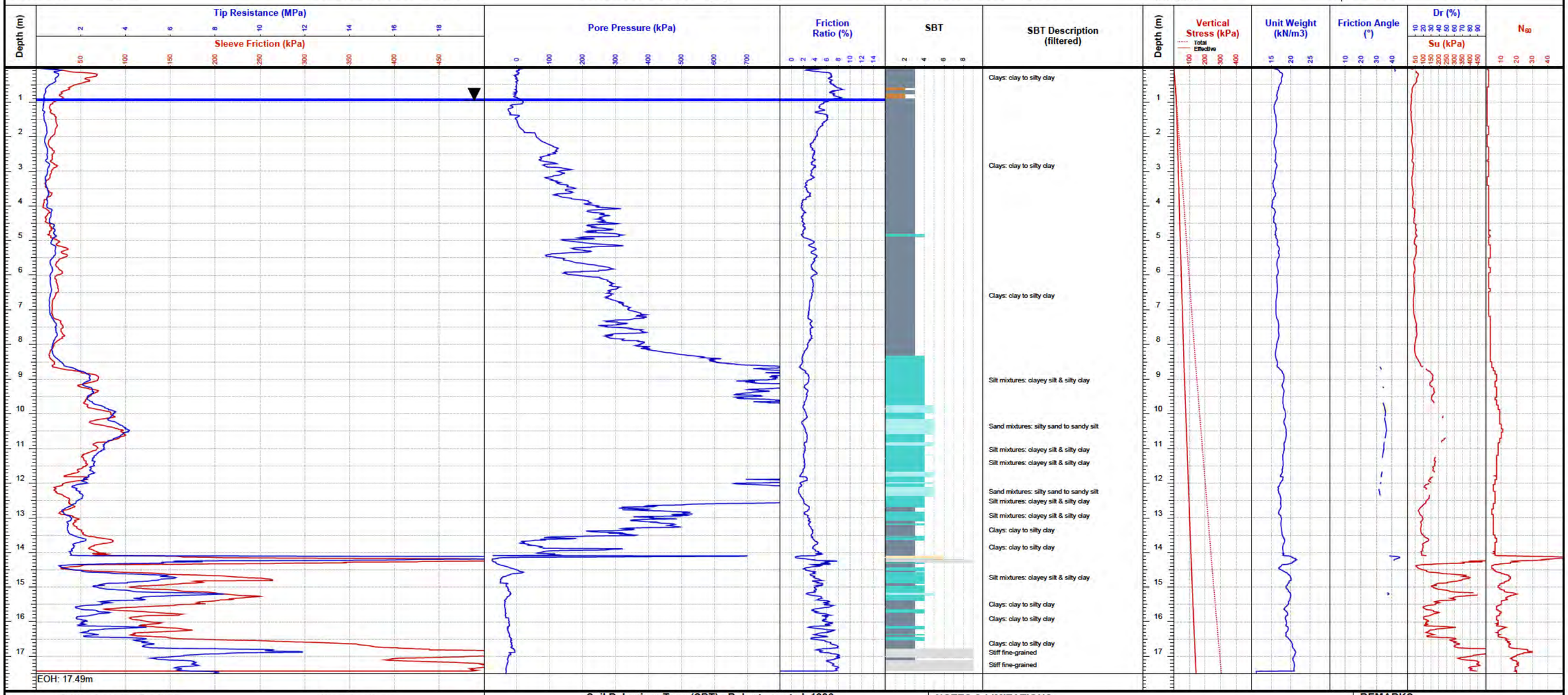
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT07-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747317.65mE, 5948429.21mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	8:14 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	0.94m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2573 kPa
Local Friction Final:	0.2579 kPa
Pore Pressure Initial:	3.1503 kPa
Pore Pressure Final:	3.1503 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

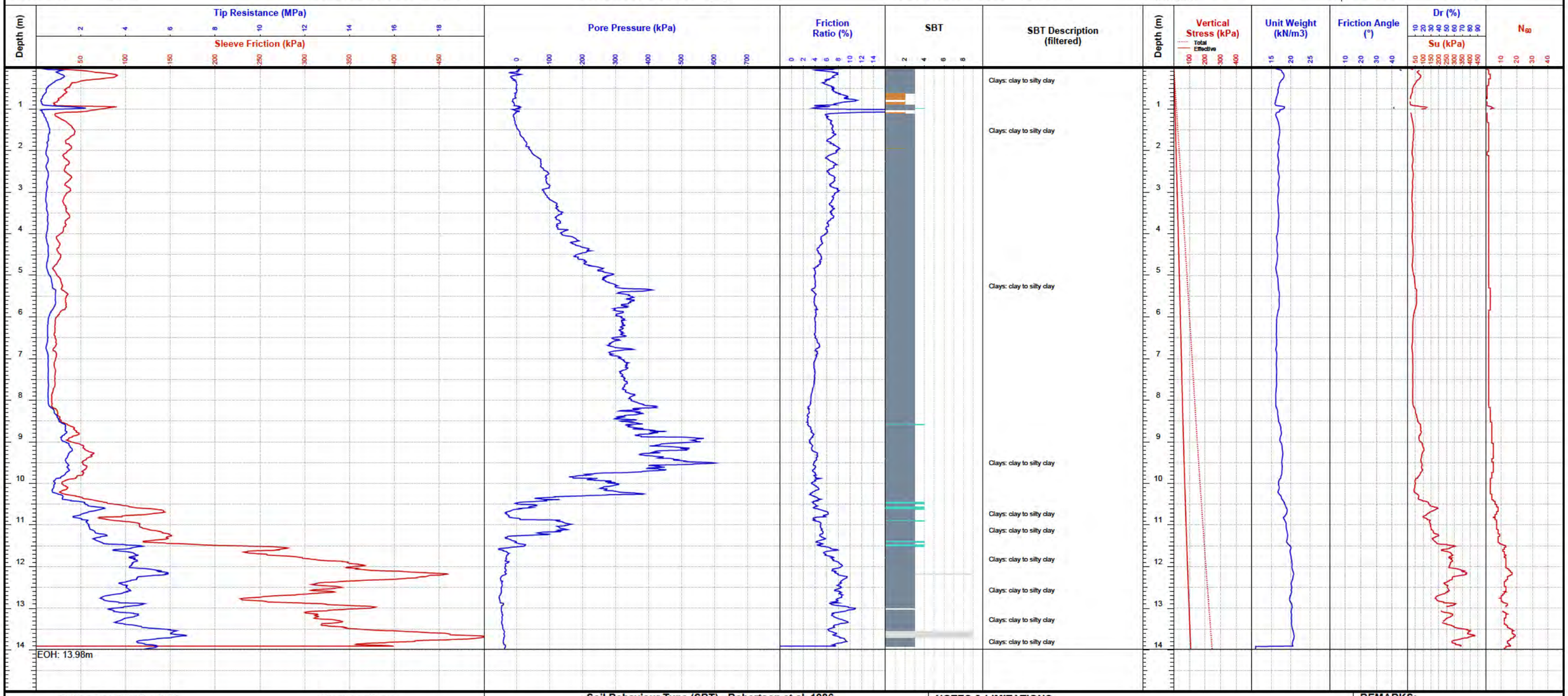
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CPT NO.:	CPT08-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747275.18mE, 5948394.82mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	26/02/2026				
Start Time:	9:19 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2580 kPa
Local Friction Final:	0.2581 kPa
Pore Pressure Initial:	3.1502 kPa
Pore Pressure Final:	3.1502 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

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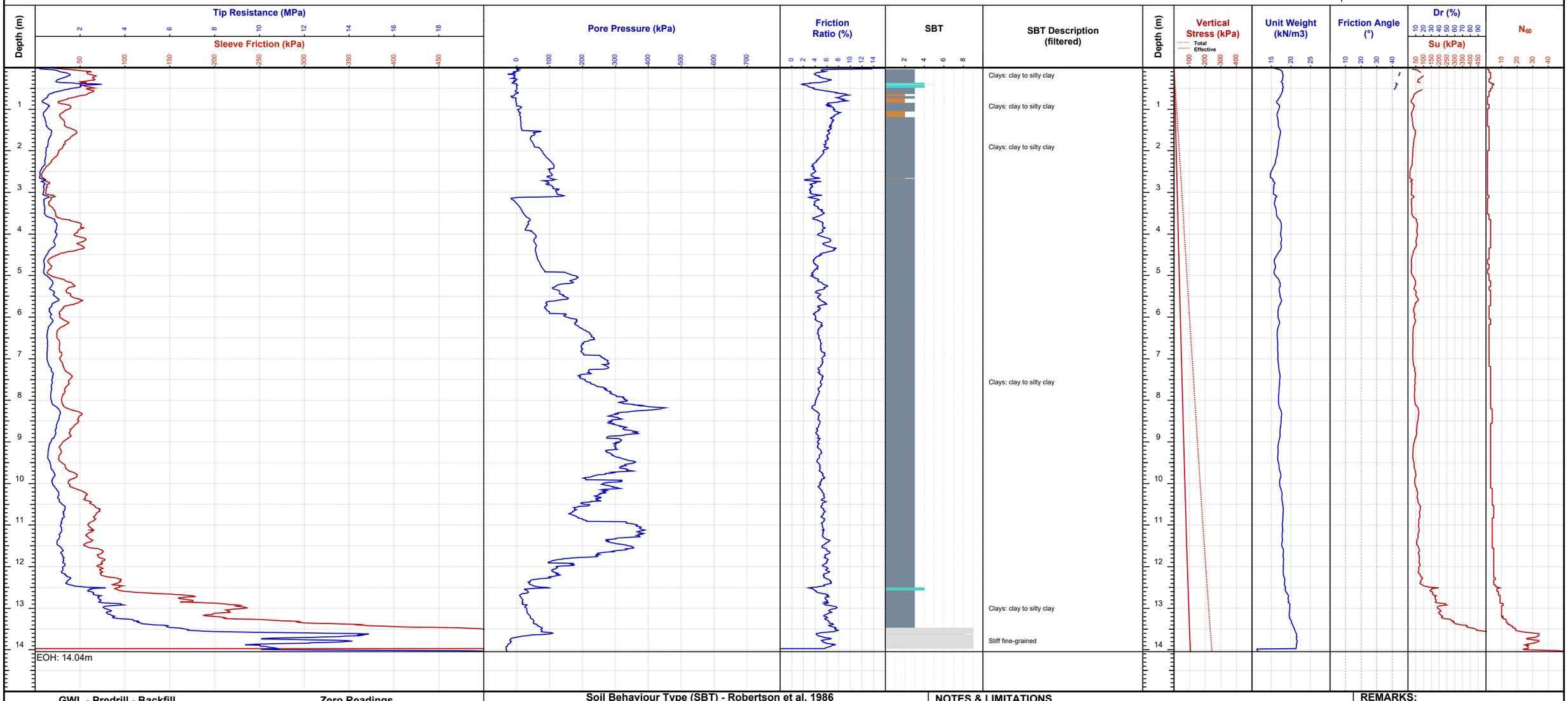
CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT09-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747155.06mE, 5948425.83mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	10:21 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	☑	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (Dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2585 kPa
Local Friction Final:	0.2580 kPa
Pore Pressure Initial:	3.1501 kPa
Pore Pressure Final:	3.1501 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

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REMARKS:

TERMINATION:
High Total Load

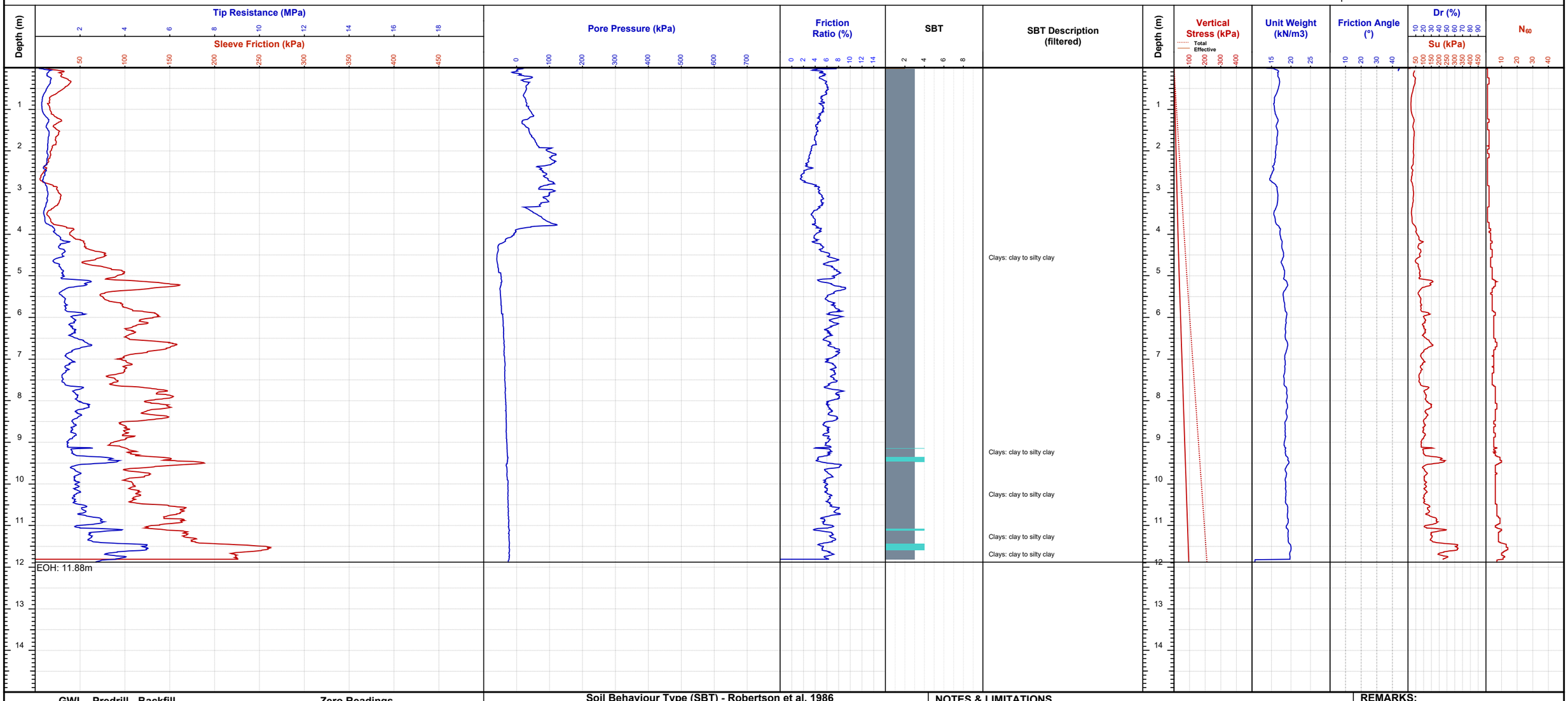
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CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT10-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746128.04mE, 5947462.91mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	5:47 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	☑	**Filter Saturation:**	FUNNEL		
FSO qc:	50 MPa								
FSO fs:	1.5 MPa								
FSO u2:	5 MPa								



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.20m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2570 kPa
Local Friction Final:	0.2570 kPa
Pore Pressure Initial:	3.1497 kPa
Pore Pressure Final:	3.1497 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

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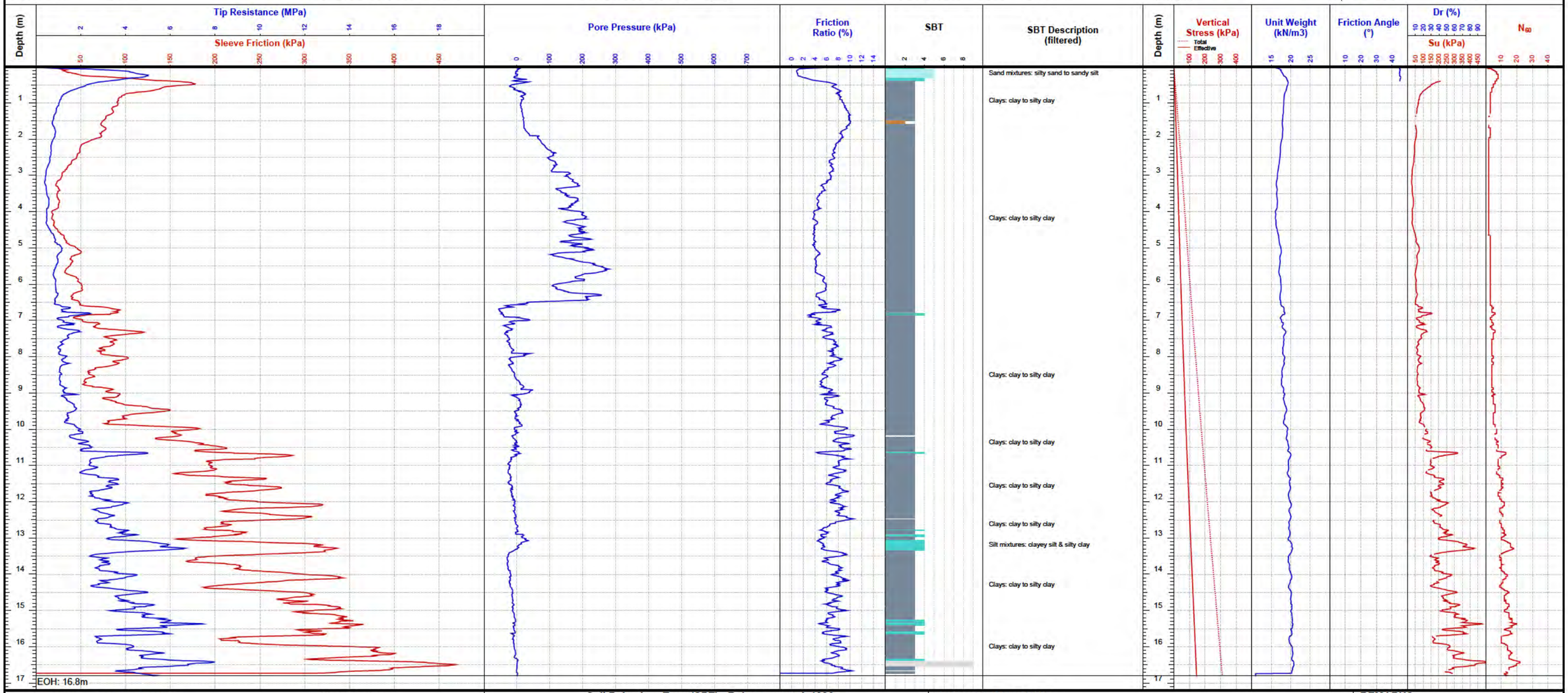
CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT12-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746175.40mE, 5947719.85mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	10:32 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill		Zero Readings	
Measured Water Level:		**Tip Resistance Initial:**	0.0213 MPa
Groundwater Method:	Dipmeter (dry 2.10m)	**Tip Resistance Final:**	0.0207 MPa
Pore Pressure Response:	Good	**Local Friction Initial:**	0.2576 kPa
Pre-drill Depth:	N/A	**Local Friction Final:**	0.2576 kPa
Pre-drill Reason:	N/A	**Pore Pressure Initial:**	3.1496 kPa
Pre-drill Backfill:	N/A	**Pore Pressure Final:**	3.1498 kPa
Backfill Method:	N/A		

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

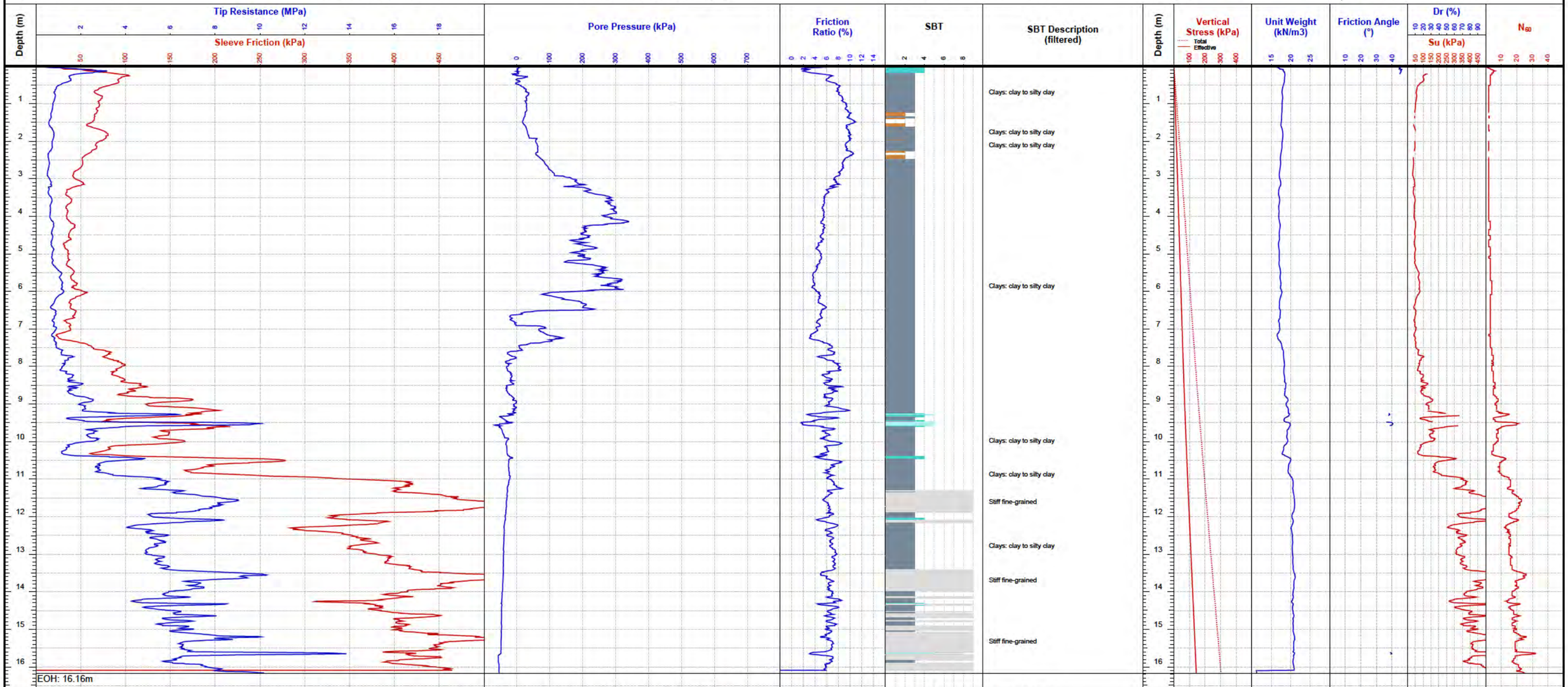
TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT13-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747046.77mE, 5948002.54mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	2:53 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	
								FSO qc:	50 MPa
								FSO fs:	1.5 MPa
								FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.76m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2597 kPa
Local Friction Final:	0.2590 kPa
Pore Pressure Initial:	3.1495 kPa
Pore Pressure Final:	3.1498 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

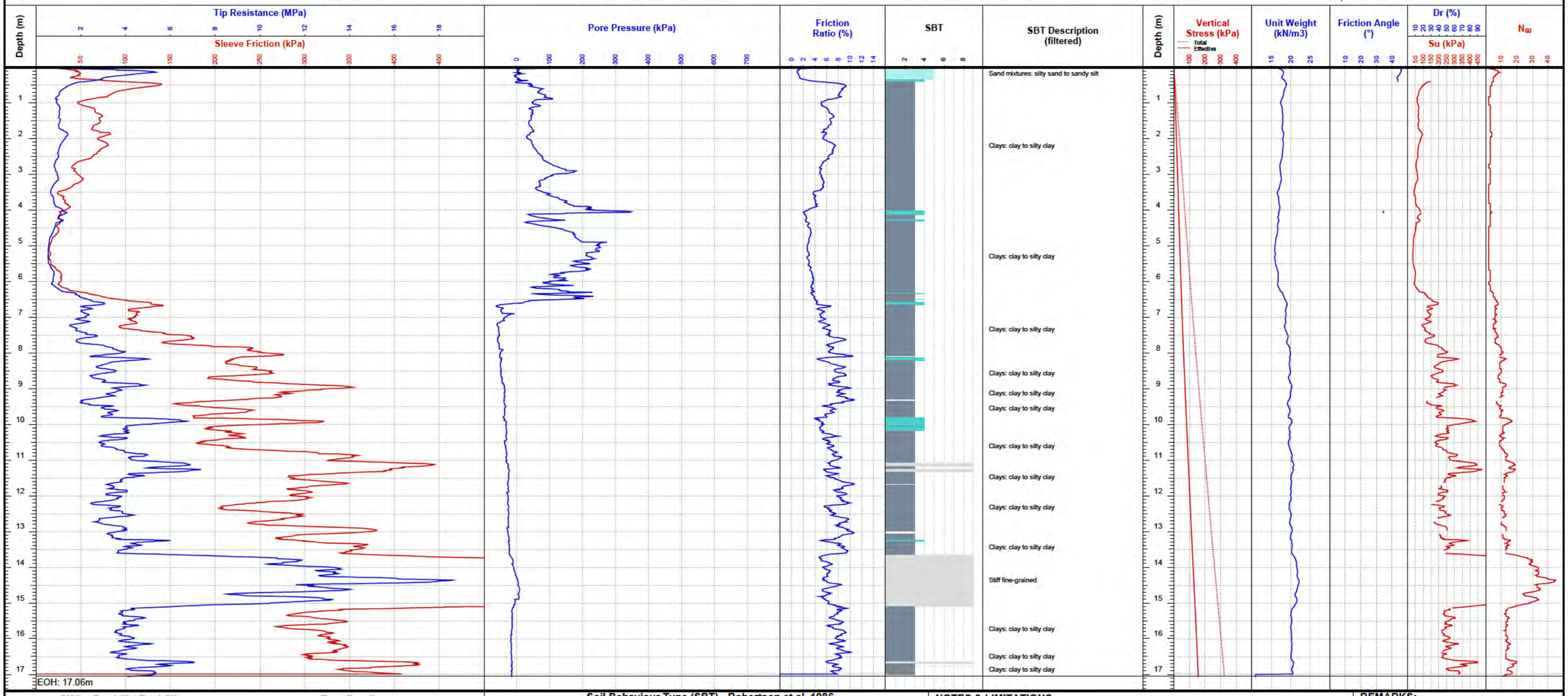
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT14-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746402.23mE, 5947801.71mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	7:22 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.90m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0211 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2553 kPa
Local Friction Final:	0.2577 kPa
Pore Pressure Initial:	3.1502 kPa
Pore Pressure Final:	3.1495 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

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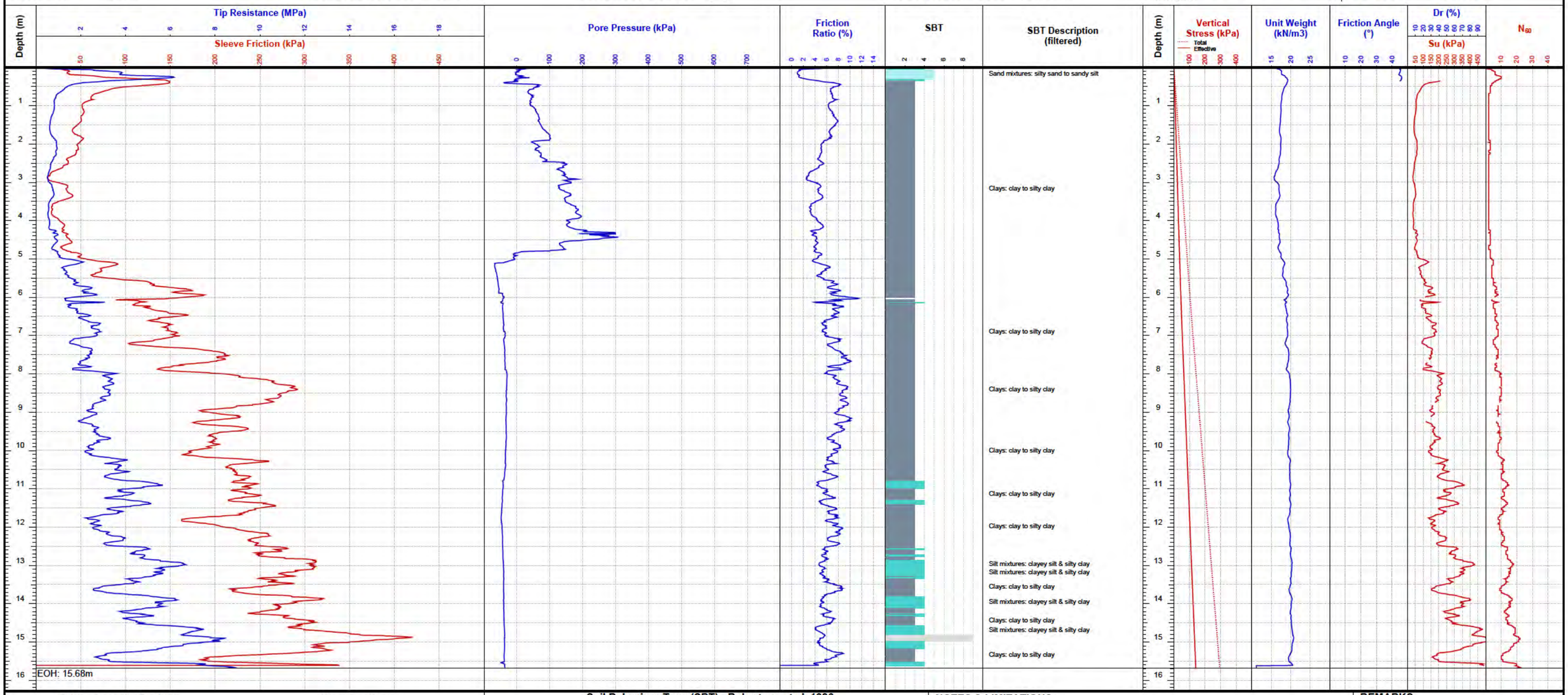
CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT15-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746302.96mE, 5947749.95mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	8:55 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.86m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0000 MPa
Local Friction Initial:	0.2567 kPa
Local Friction Final:	0.0000 kPa
Pore Pressure Initial:	3.1494 kPa
Pore Pressure Final:	0.0000 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0 Undefined	5 Sand mixtures: silty sand to sandy silt
1 Sensitive fine-grained	6 Sands: clean sands to silty sands
2 Clay - organic soil	7 Dense sand to gravelly sand
3 Clays: clay to silty clay	8 Stiff sand to clayey sand
4 Silt mixtures: clayey silt & silty clay	9 Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

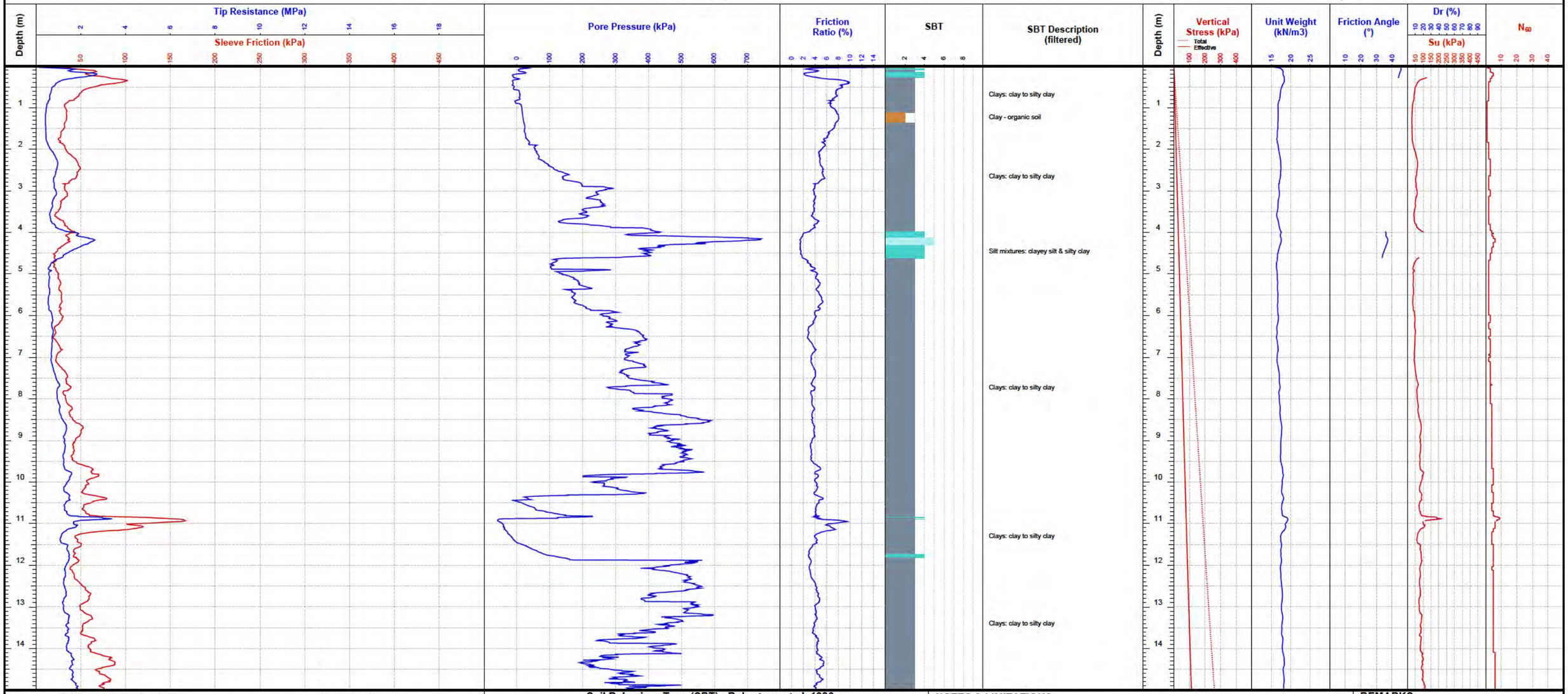
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT16-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746554.65mE, 5947843.71mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	2:12 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2580 kPa
Local Friction Final:	0.2573 kPa
Pore Pressure Initial:	3.1497 kPa
Pore Pressure Final:	3.1499 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

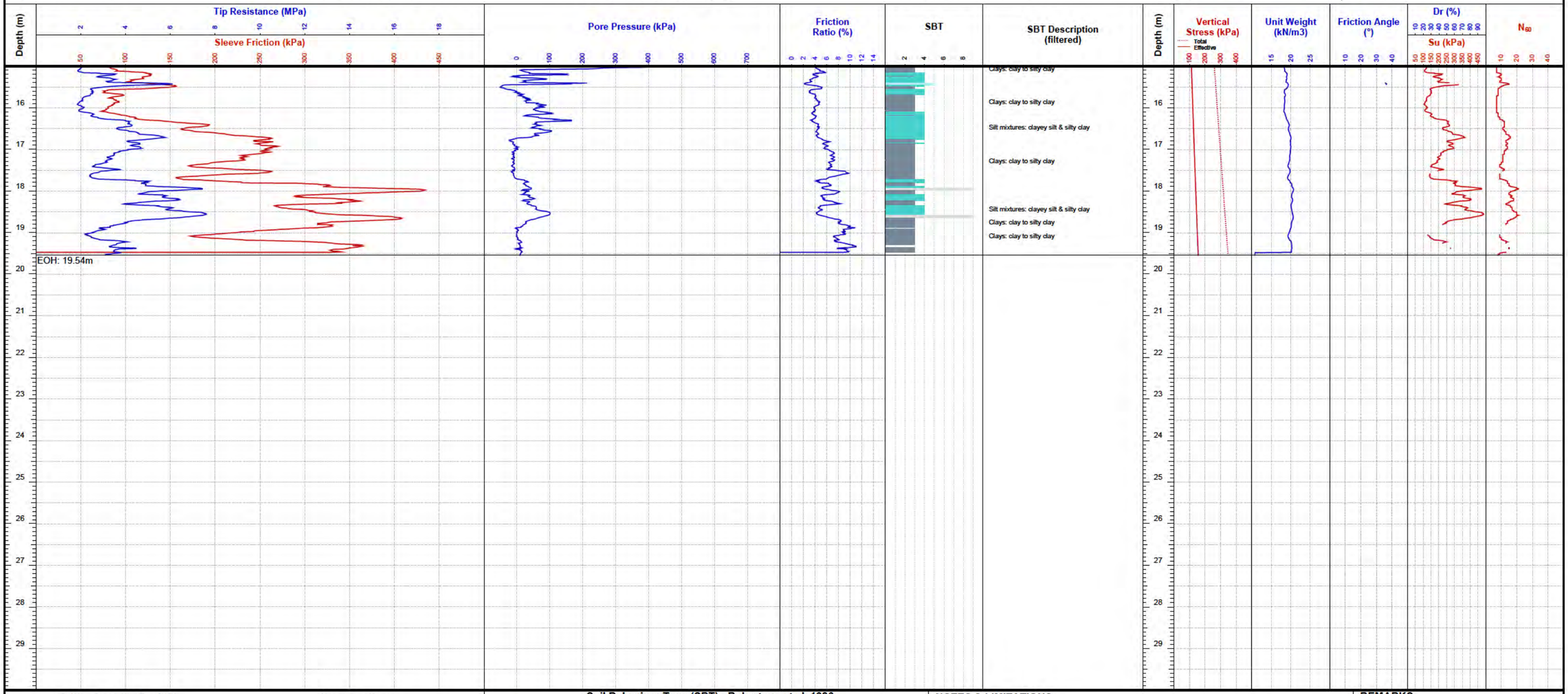
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Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT16-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746554.65mE, 5947843.71mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	2:12 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	
FSO qc:	50 MPa								
FSO fs:	1.5 MPa								
FSO u2:	5 MPa								



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2580 kPa
Local Friction Final:	0.2573 kPa
Pore Pressure Initial:	3.1497 kPa
Pore Pressure Final:	3.1499 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

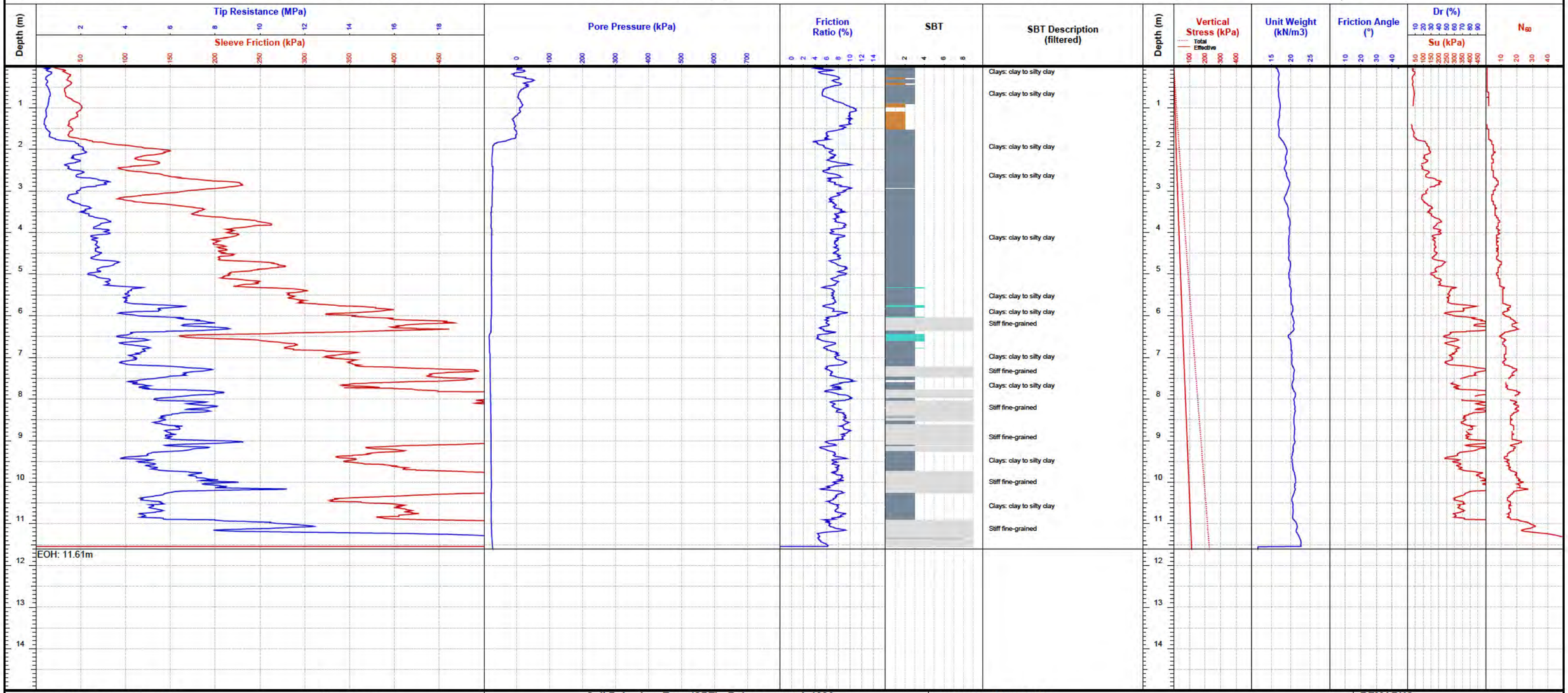
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT17-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747818.54mE, 5947713.68mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	24/02/2026				
Start Time:	4:05 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (Dry 0.29m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2603 kPa
Local Friction Final:	0.2597 kPa
Pore Pressure Initial:	3.1507 kPa
Pore Pressure Final:	3.1506 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Sleeve Friction

Topdrill Geotech

CONE PENETRATION TEST LOG

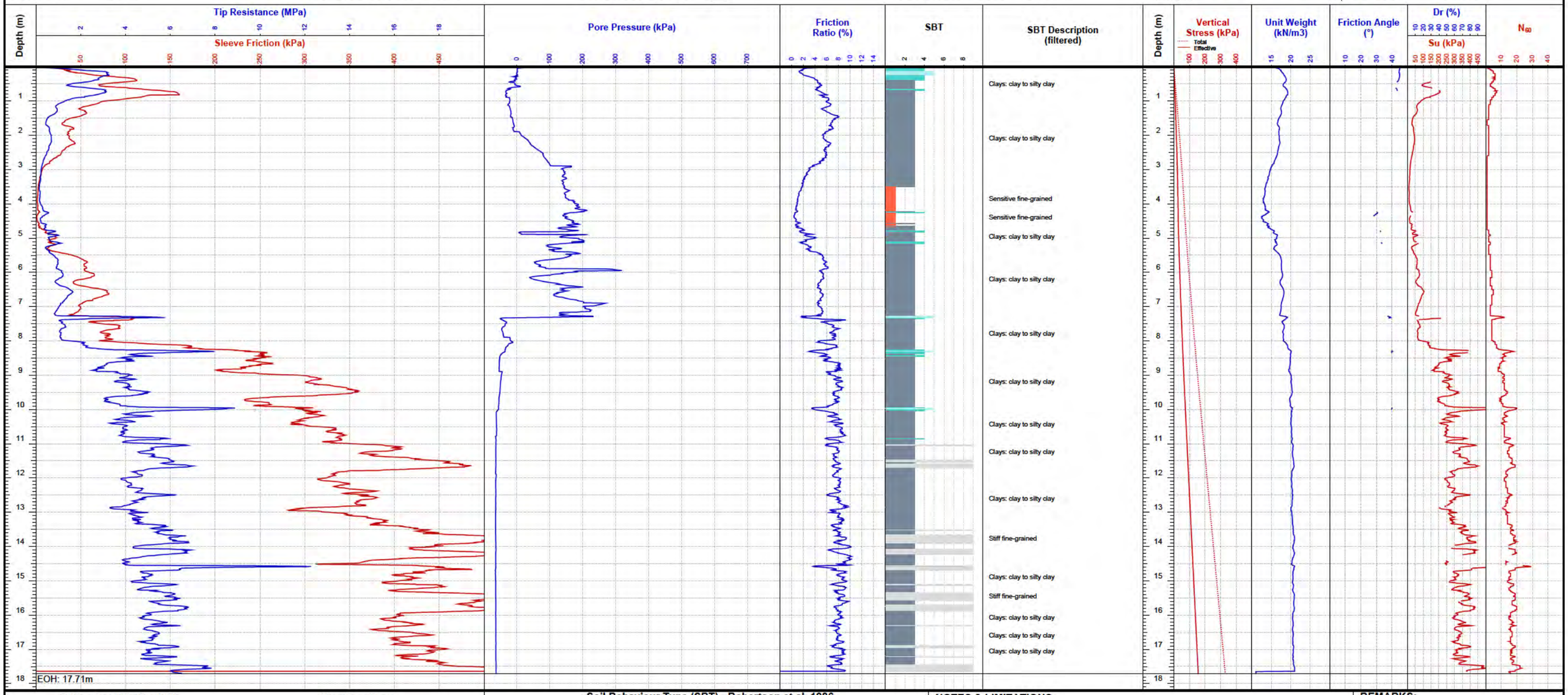
Topdrill Ref:	TD4729
CPT NO.:	CPT18-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746503.70mE, 5947920.75mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	02/03/2026				
Start Time:	3:05 pm				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill	
Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.59m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings	
Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2588 kPa
Local Friction Final:	0.2579 kPa
Pore Pressure Initial:	3.1483 kPa
Pore Pressure Final:	3.1463 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

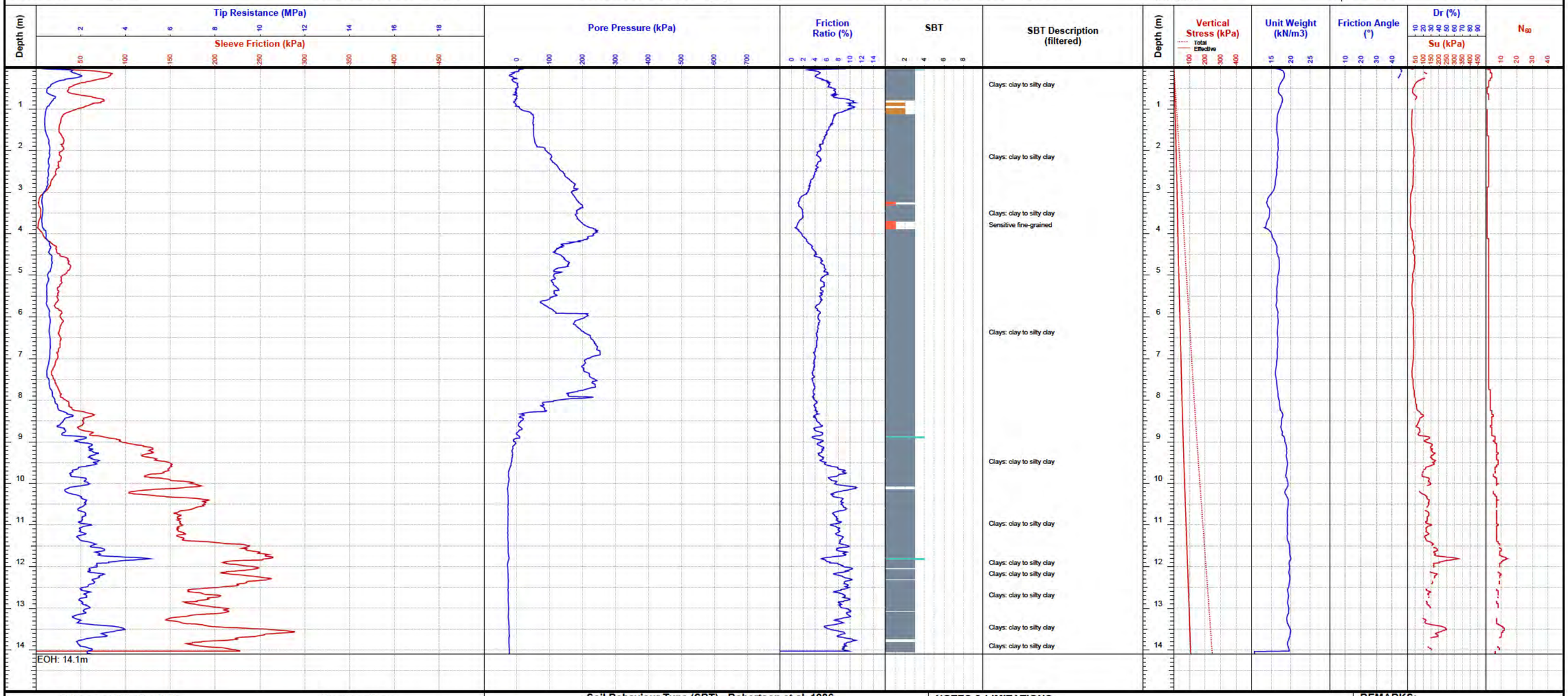
Topdrill Ref:	TD4729
CPT NO.:	CPT19-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746604.19mE, 5947920.08mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	02/03/2026				
Start Time:	1:15 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.43m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2583 kPa
Local Friction Final:	0.2577 kPa
Pore Pressure Initial:	3.1481 kPa
Pore Pressure Final:	3.1487 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

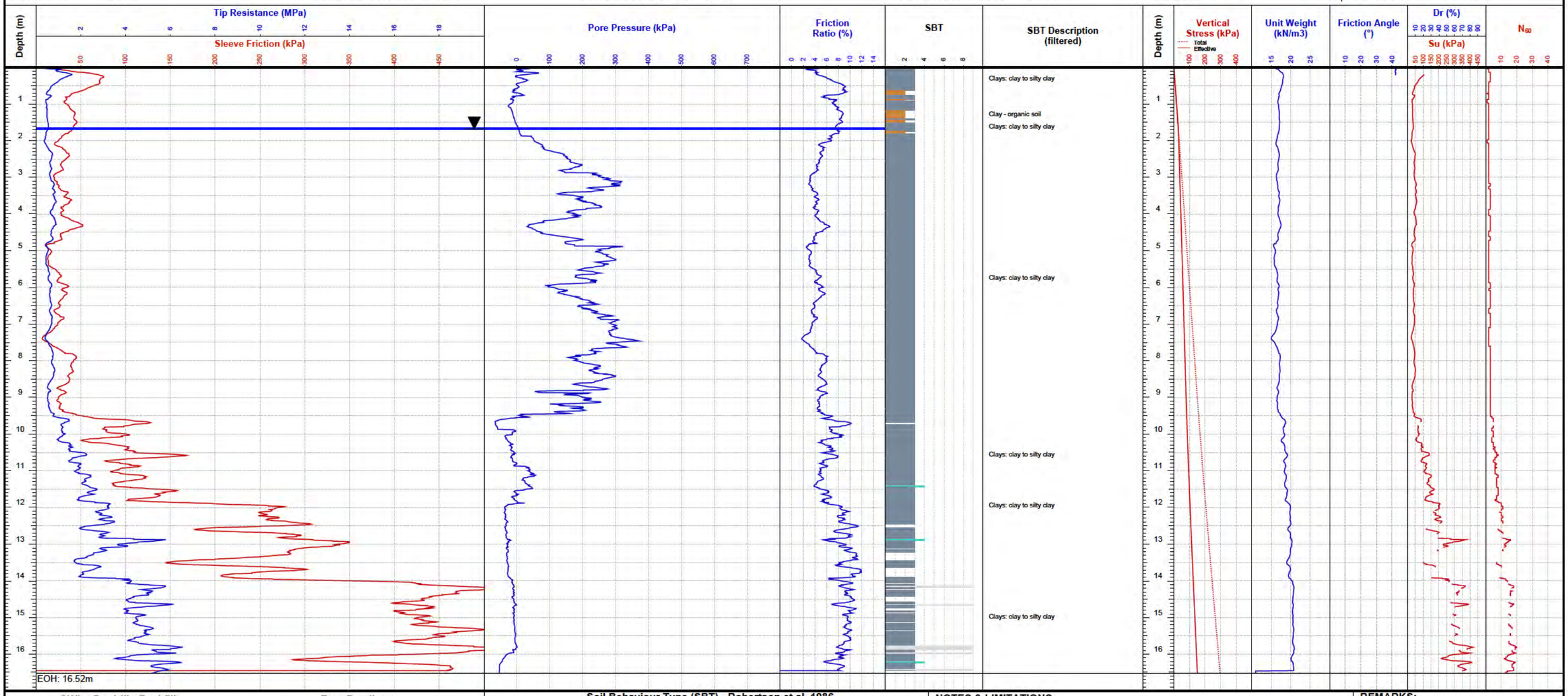
Topdrill Ref:	TD4729
CPT NO.:	CPT20-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746698.63mE, 5948020.64mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	02/03/2026				
Start Time:	11:22 am				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	1.68m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2584 kPa
Local Friction Final:	0.2579 kPa
Pore Pressure Initial:	3.1486 kPa
Pore Pressure Final:	3.1489 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

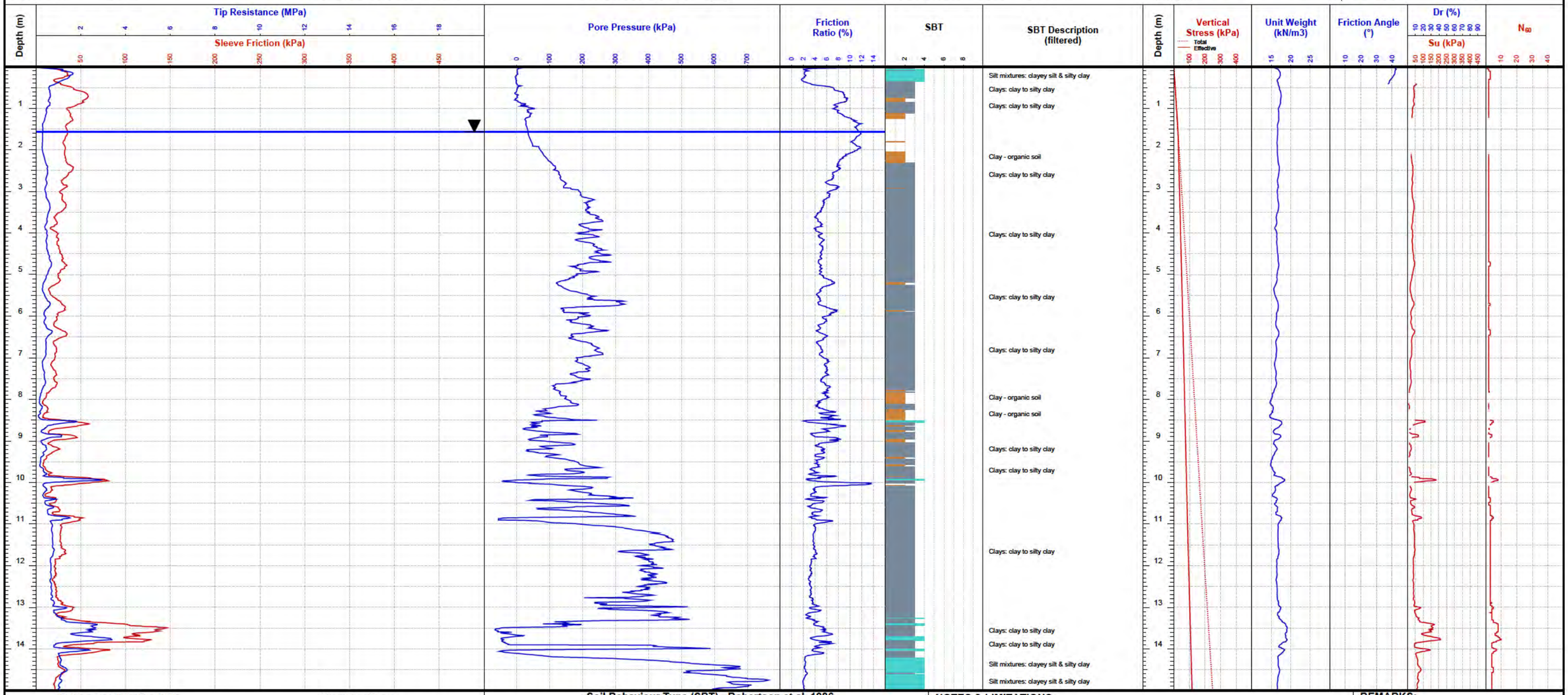
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT21-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746681.91mE, 5948114.95mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	27/02/2026				
Start Time:	10:33 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill		Zero Readings	
Measured Water Level:	1.57m	**Tip Resistance Initial:**	0.0213 MPa
Groundwater Method:	Dipmeter	**Tip Resistance Final:**	0.0212 MPa
Pore Pressure Response:	Good	**Local Friction Initial:**	0.2598 kPa
Pre-drill Depth:	N/A	**Local Friction Final:**	0.2578 kPa
Pre-drill Reason:	N/A	**Pore Pressure Initial:**	3.1495 kPa
Pre-drill Backfill:	N/A	**Pore Pressure Final:**	3.1499 kPa
Backfill Method:	N/A		

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
Target Depth Reached

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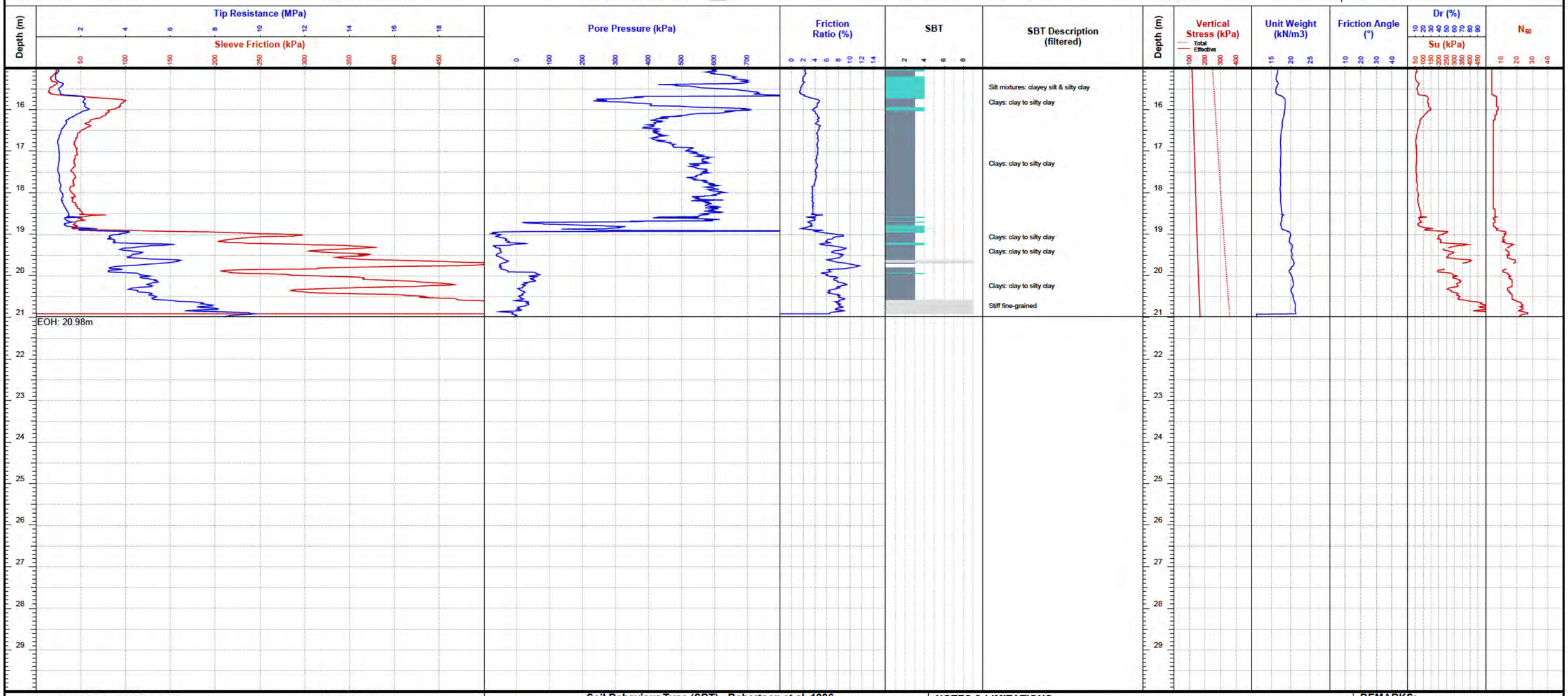
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT21-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746681.91mE, 5948114.95mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	27/02/2026				
Start Time:	10:33 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	1.57m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2598 kPa
Local Friction Final:	0.2578 kPa
Pore Pressure Initial:	3.1495 kPa
Pore Pressure Final:	3.1499 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
Target Depth Reached

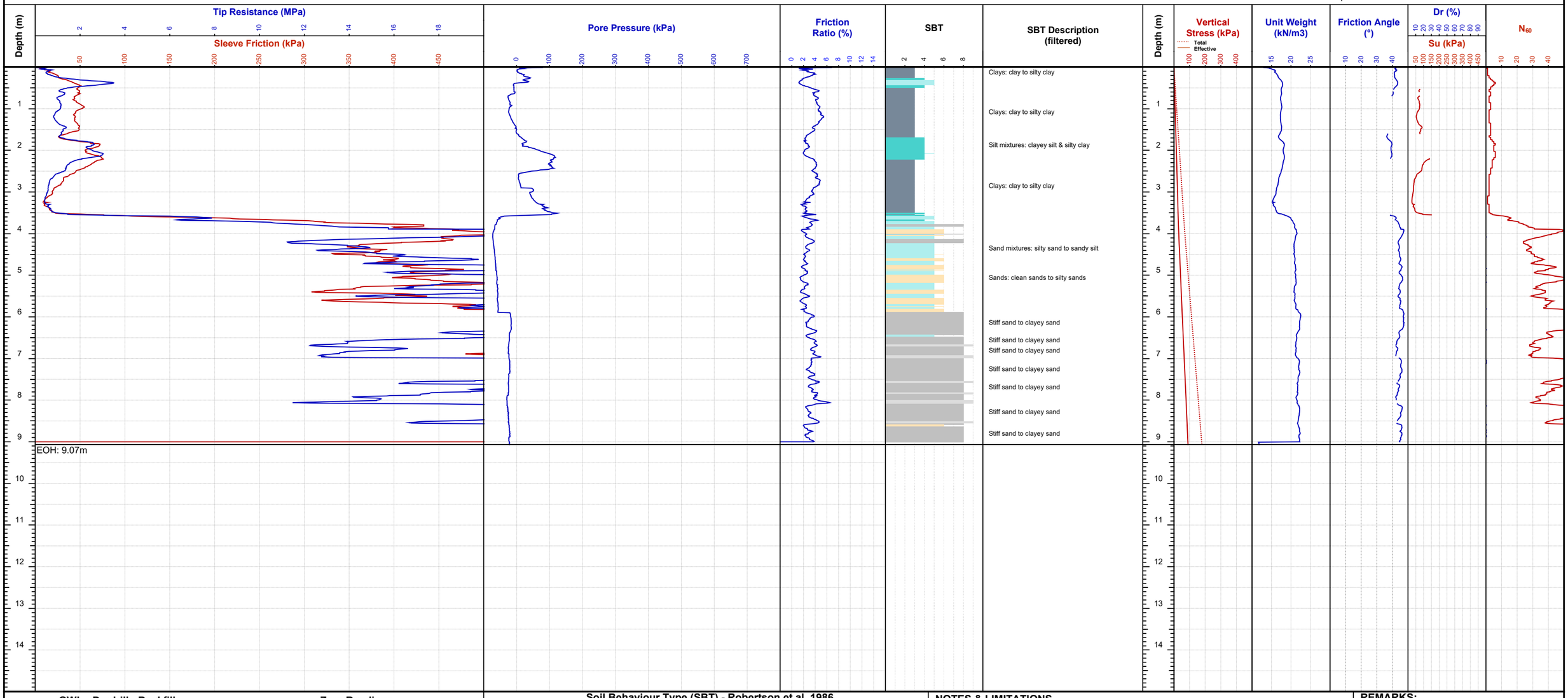
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CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT22-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1748336.78mE, 5947429.82mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	8:38 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	☑	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	
								FSO qc:	50 MPa
								FSO fs:	1.5 MPa
								FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.36m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2580 kPa
Local Friction Final:	0.2595 kPa
Pore Pressure Initial:	3.1511 kPa
Pore Pressure Final:	3.1513 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

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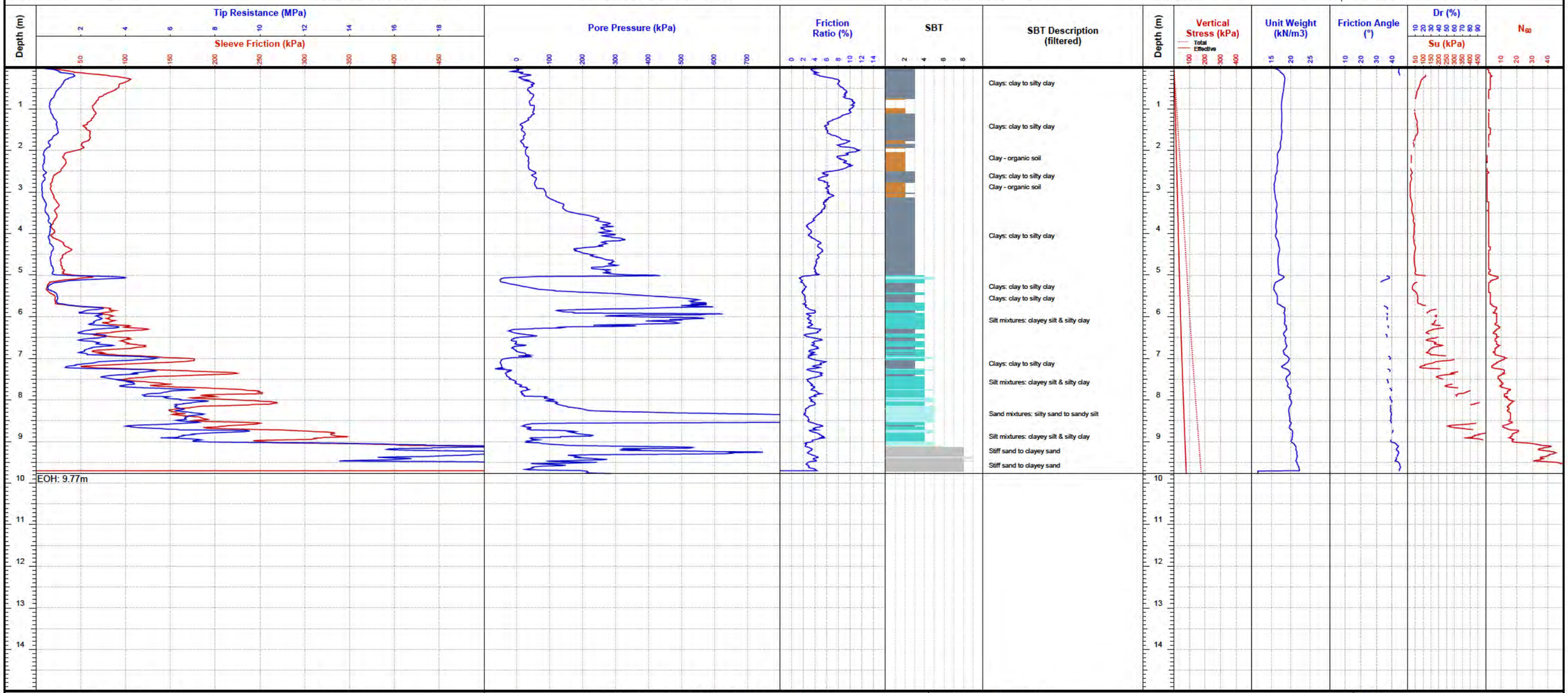
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT23-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747677.21mE, 5947779.64mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	1:57 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.32m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2602 kPa
Local Friction Final:	0.2585 kPa
Pore Pressure Initial:	3.1510 kPa
Pore Pressure Final:	3.1506 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

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Topdrill Geotech

CONE PENETRATION TEST LOG

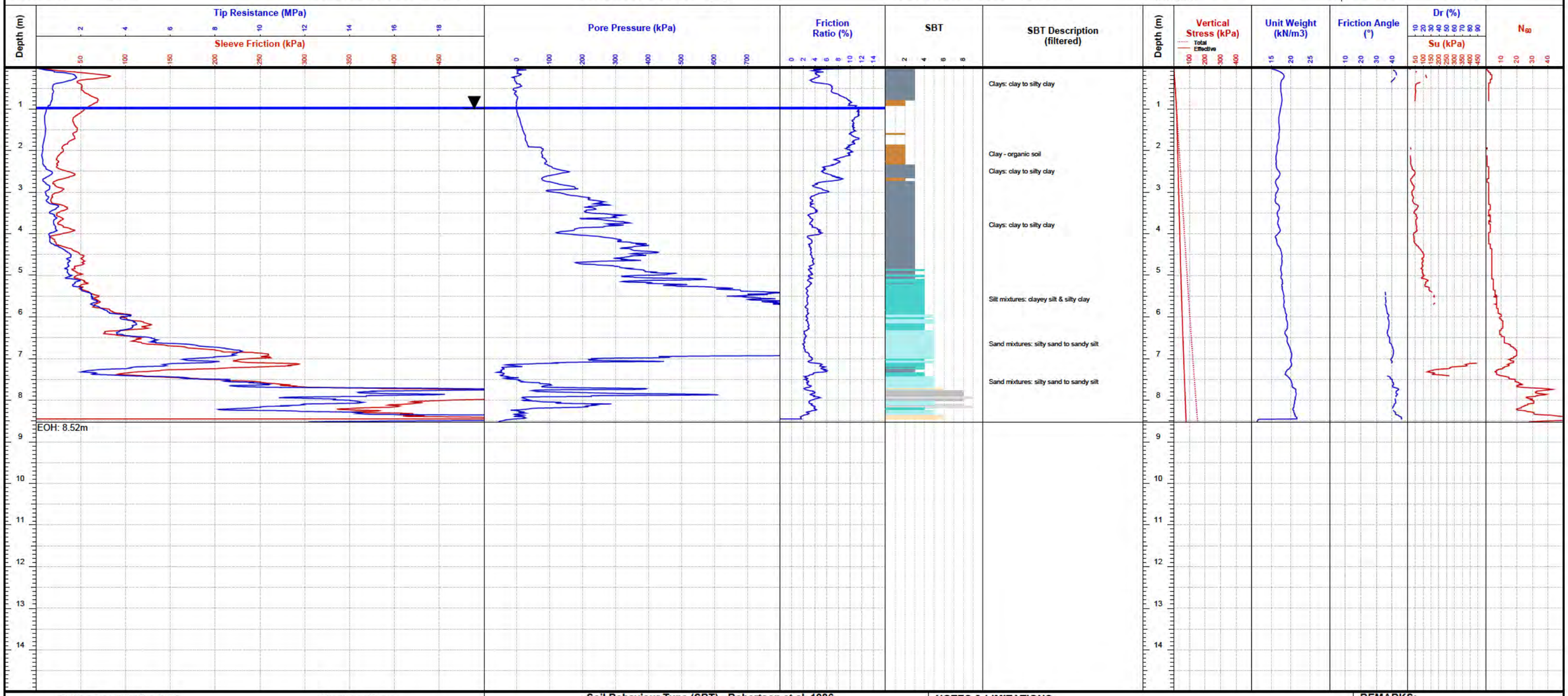
Topdrill Ref:	TD4729
CPT NO.:	CPT24-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747688.55mE, 5947871.20mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	25/02/2026				
Start Time:	1:08 pm				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill	
Measured Water Level:	0.98m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings	
Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2603 kPa
Local Friction Final:	0.2584 kPa
Pore Pressure Initial:	3.1506 kPa
Pore Pressure Final:	3.1510 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

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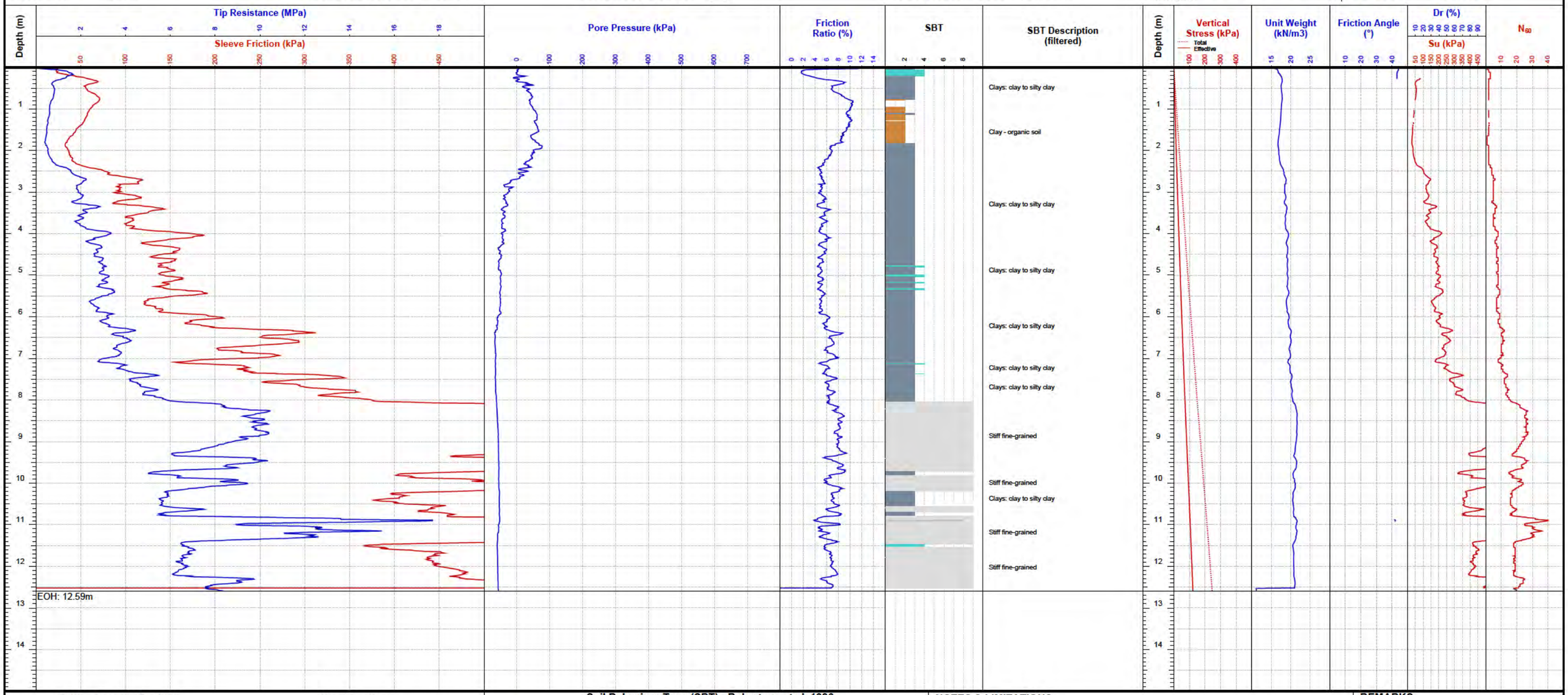
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT25-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747507.97mE, 5947946.35mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	4:13 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.79m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2592 kPa
Local Friction Final:	0.2590 kPa
Pore Pressure Initial:	3.1507 kPa
Pore Pressure Final:	3.1490 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

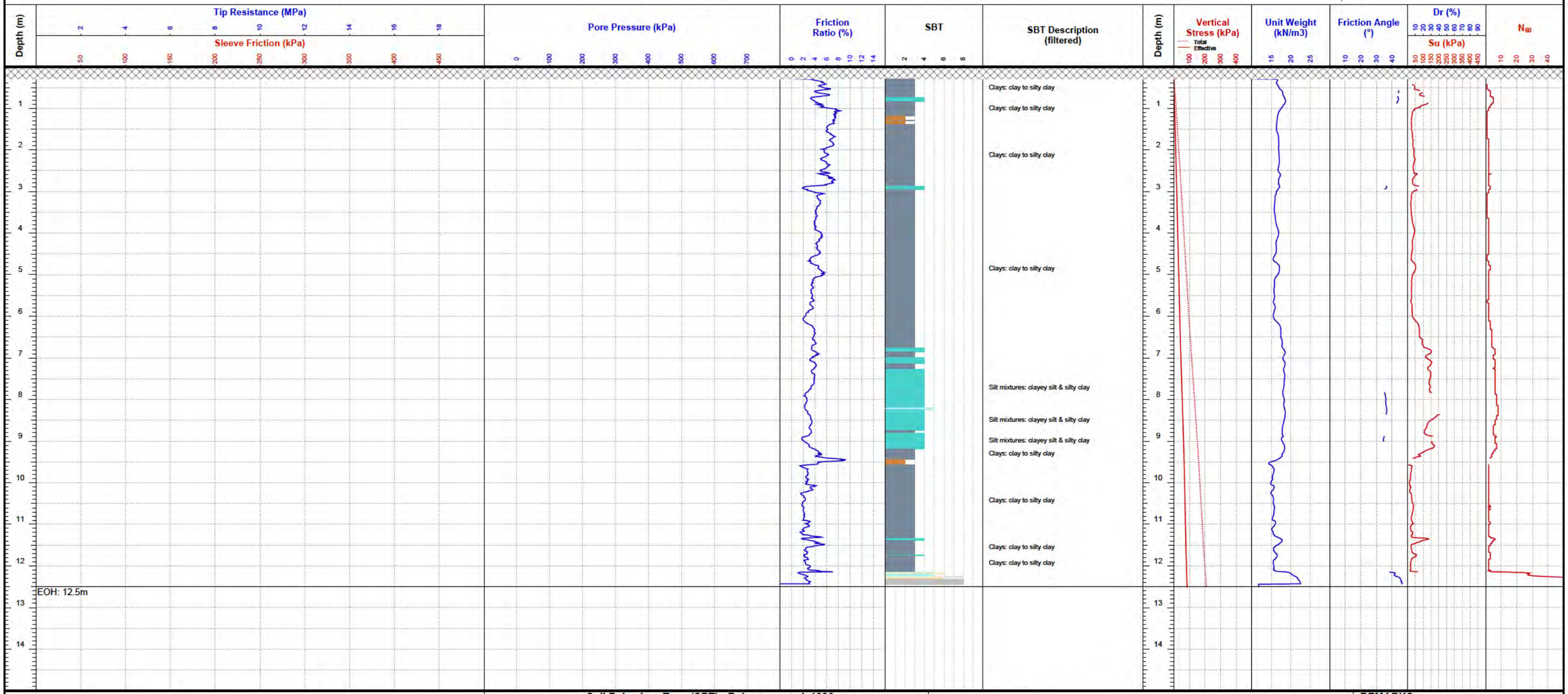
CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT26-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747744.95mE, 5947816.02mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	11:43 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 0.35m)
Pore Pressure Response:	Good
Pre-drill Depth:	0.30m
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2602 kPa
Local Friction Final:	0.2583 kPa
Pore Pressure Initial:	3.1508 kPa
Pore Pressure Final:	3.1505 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Pore Pressure

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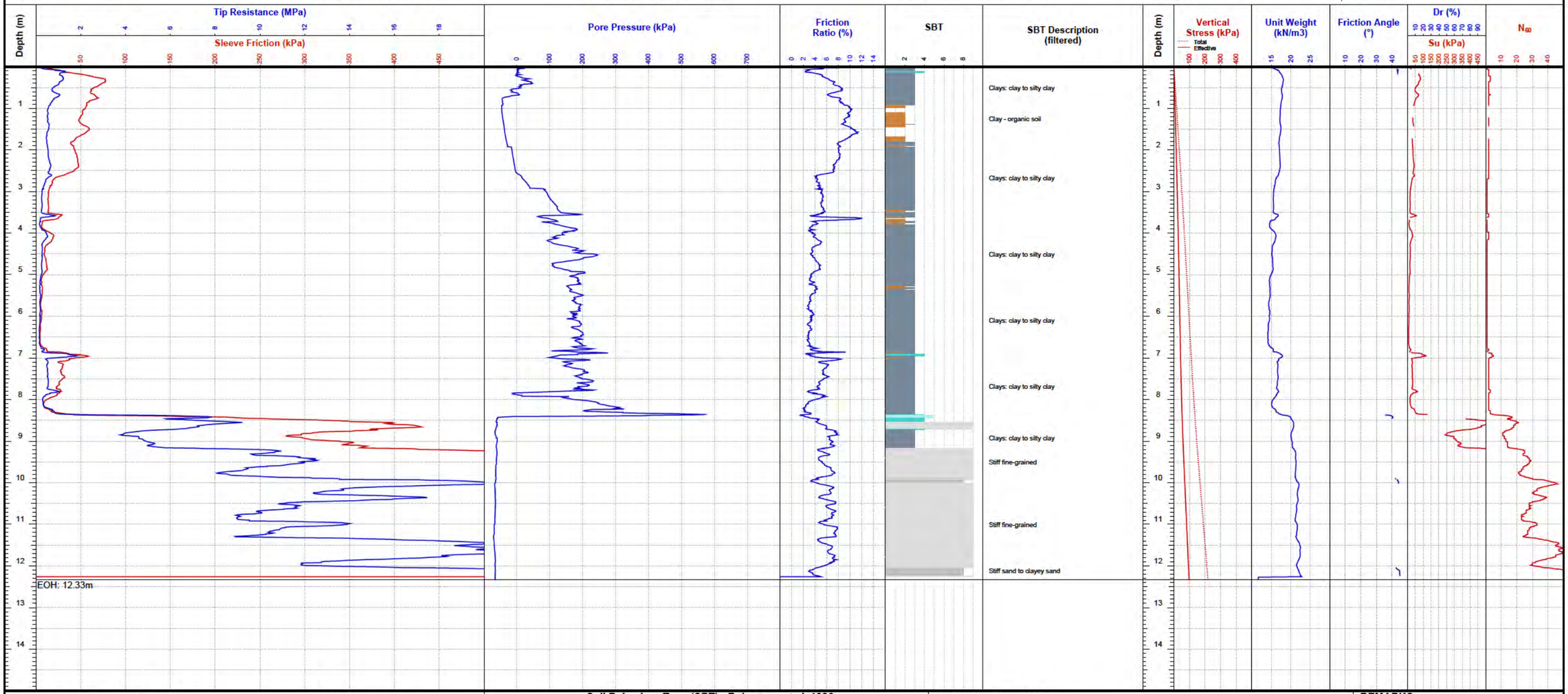
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT27-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747789.15mE, 5947921.28mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	3:07 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.25m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0211 MPa
Local Friction Initial:	0.2601 kPa
Local Friction Final:	0.2587 kPa
Pore Pressure Initial:	3.1510 kPa
Pore Pressure Final:	3.1512 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Sleeve Friction

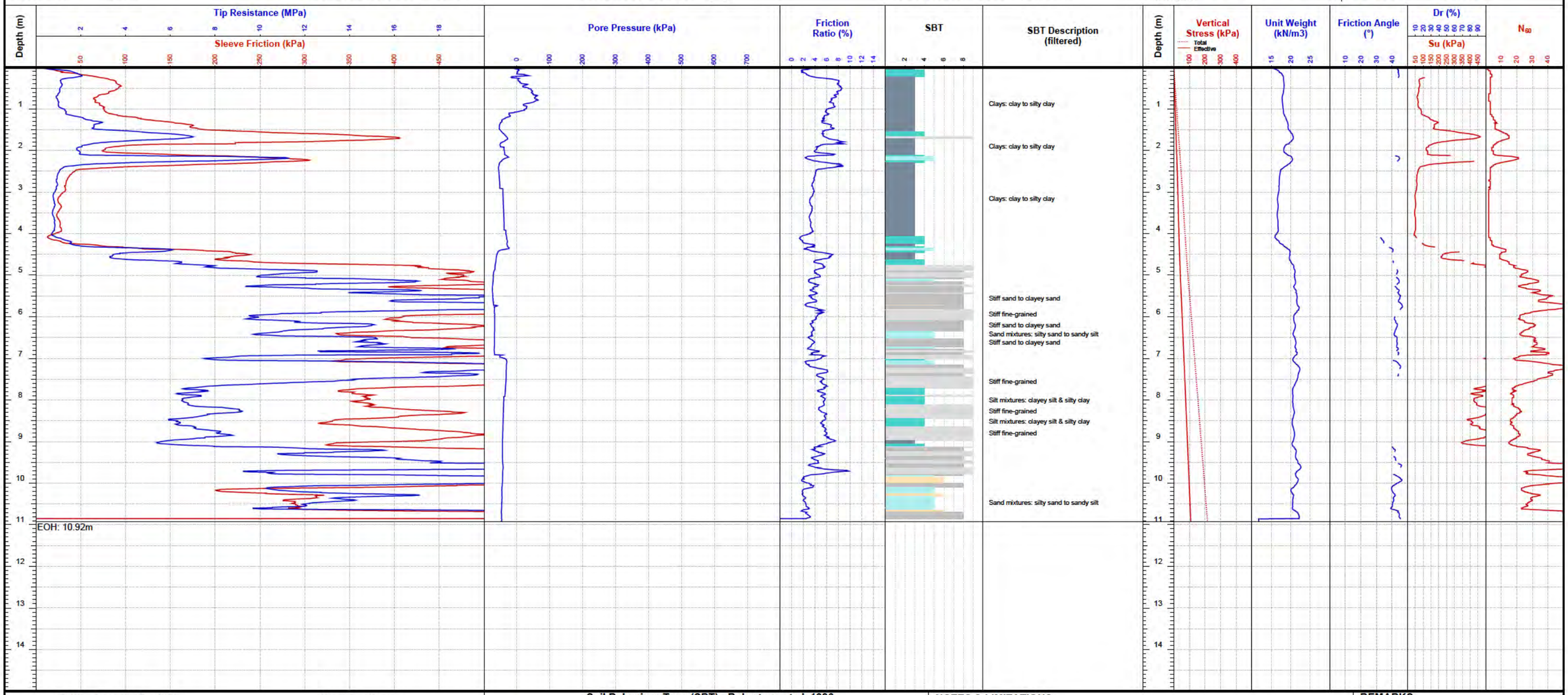
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT29-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1748355.01mE, 5947477.34mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	25/02/2026				
Start Time:	9:30 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2588 kPa
Local Friction Final:	0.2592 kPa
Pore Pressure Initial:	3.1513 kPa
Pore Pressure Final:	3.1515 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

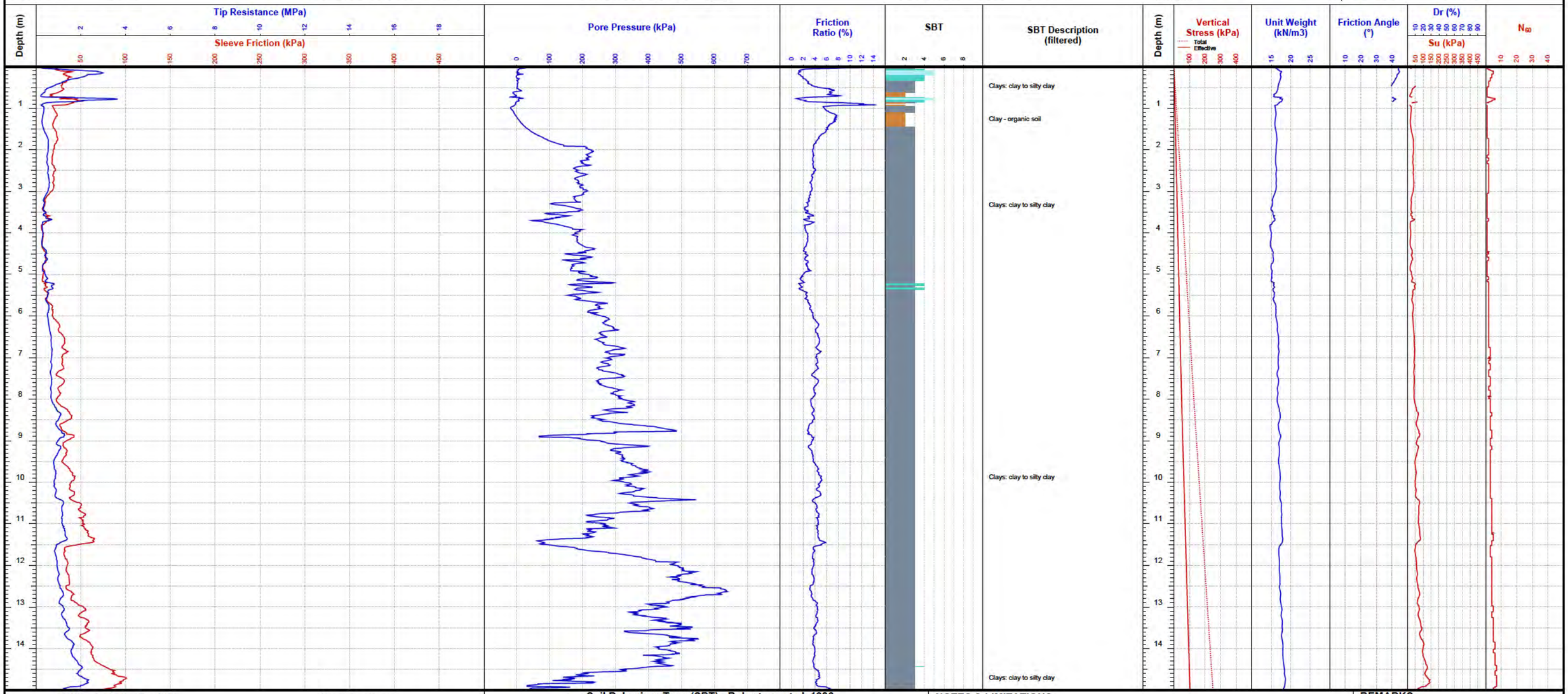
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT30-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746962.35mE, 5948081.82mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	27/02/2026				
Start Time:	7:42 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2574 kPa
Local Friction Final:	0.2574 kPa
Pore Pressure Initial:	3.1499 kPa
Pore Pressure Final:	3.1517 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
Target Depth Reached

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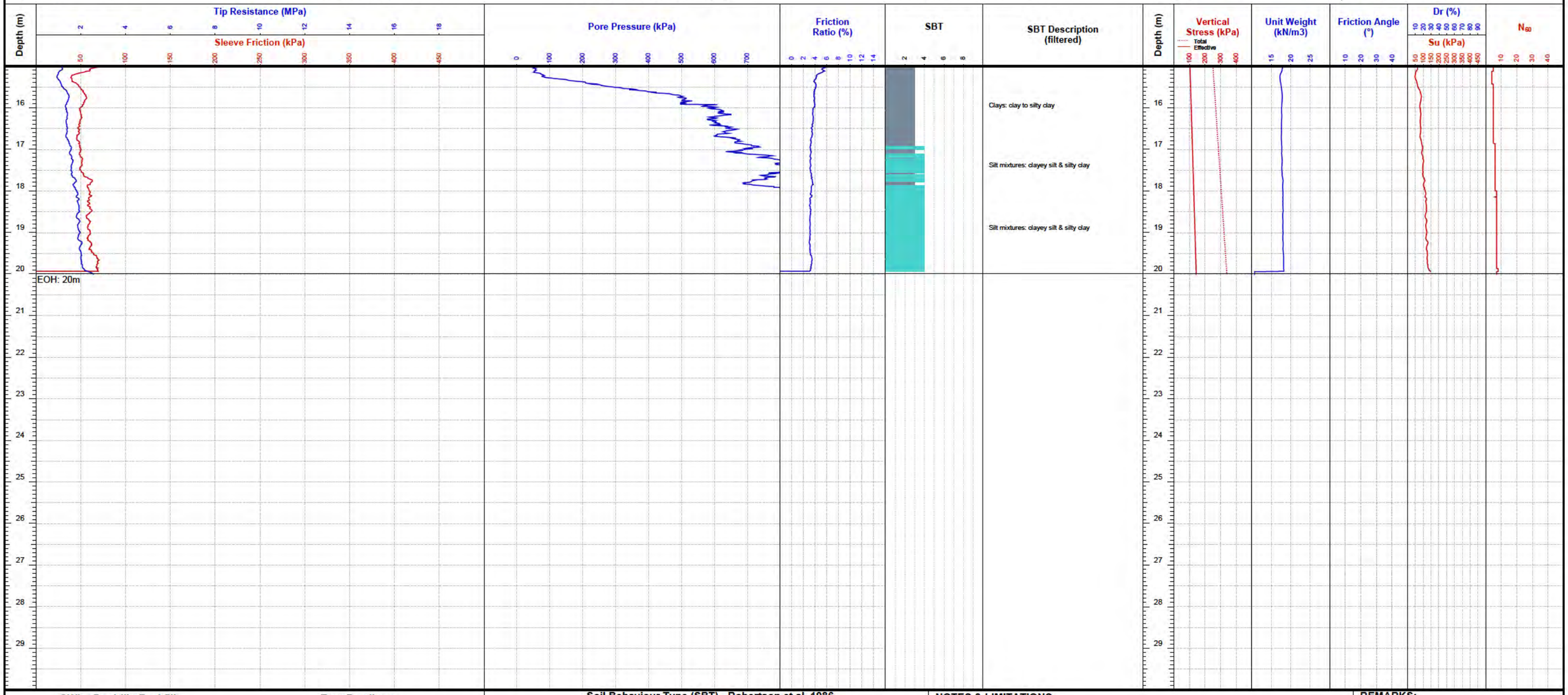
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT30-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746962.35mE, 5948081.82mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	27/02/2026				
Start Time:	7:42 am				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.00m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0212 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2574 kPa
Local Friction Final:	0.2574 kPa
Pore Pressure Initial:	3.1499 kPa
Pore Pressure Final:	3.1517 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
Target Depth Reached

Topdrill Geotech

CONE PENETRATION TEST LOG

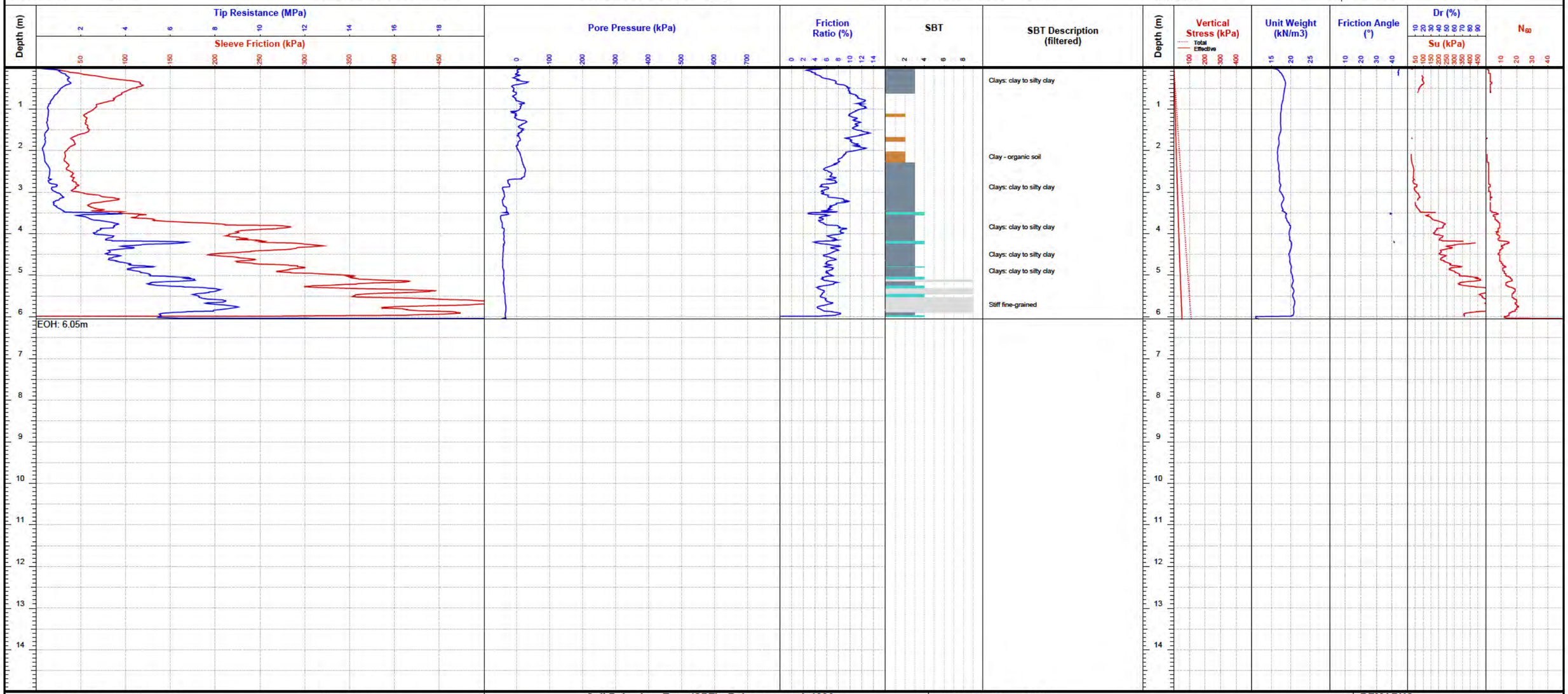
Topdrill Ref:	TD4729
CPT NO.:	CPT31-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747861.45mE, 5947765.29mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	24/02/2026				
Start Time:	3:15 pm				
Start Depth:	0.00 m				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None				
Ballasted or Anchored:	Anchored								
Maximum Push Capacity:	150kN								
Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (Dry 1.13m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2604 kPa
Local Friction Final:	0.2593 kPa
Pore Pressure Initial:	3.1509 kPa
Pore Pressure Final:	3.1494 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:

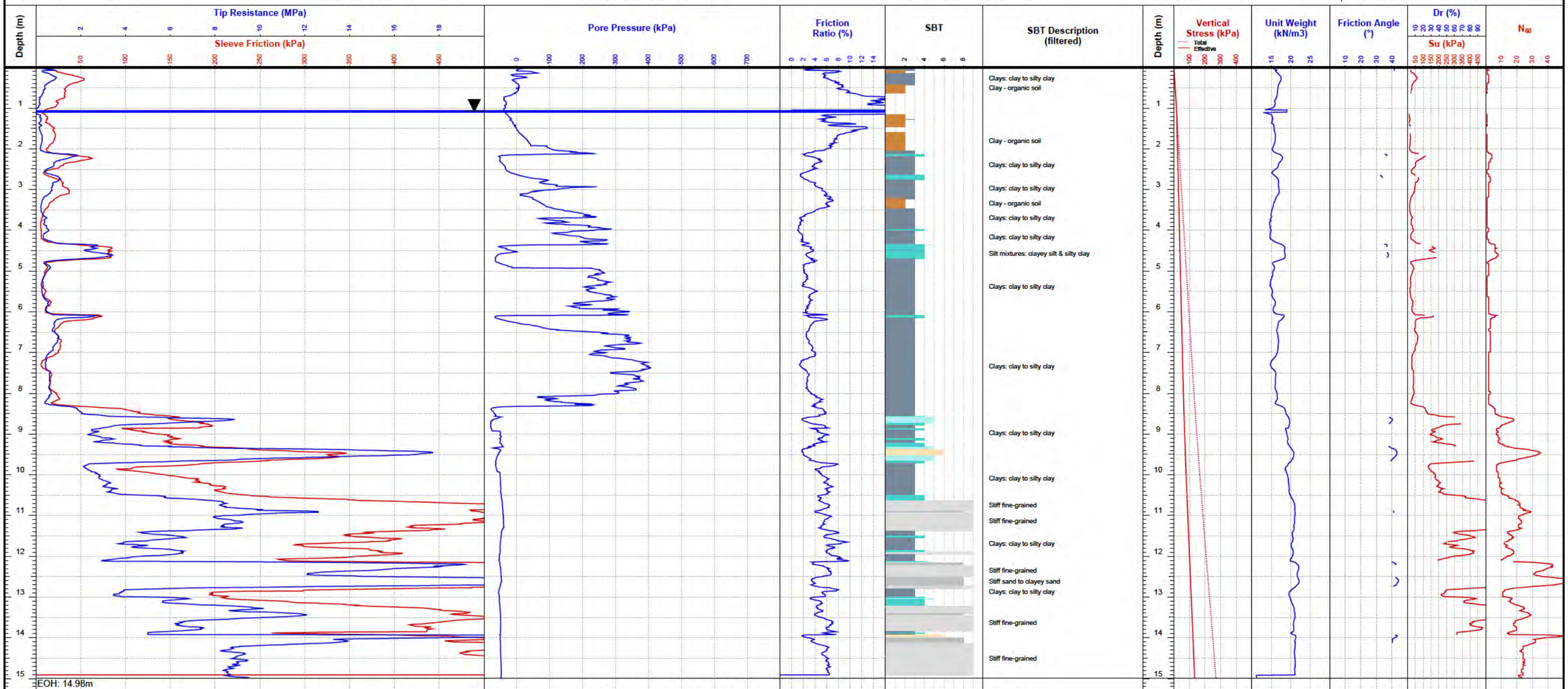
High Cone Resistance

CONE PENETRATION TEST LOG

Topdrill Geotech

Topdrill Ref:	TD4729				
CPT NO.:	CPT32-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747035.05mE, 5948087.44mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	26/02/2026				
Start Time:	4:14 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	
FSO qc:	50 MPa								
FSO fs:	1.5 MPa								
FSO u2:	5 MPa								



GWL - Predrill - Backfill

Measured Water Level:	1.08m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0214 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2596 kPa
Local Friction Final:	0.2583 kPa
Pore Pressure Initial:	3.1498 kPa
Pore Pressure Final:	3.1501 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

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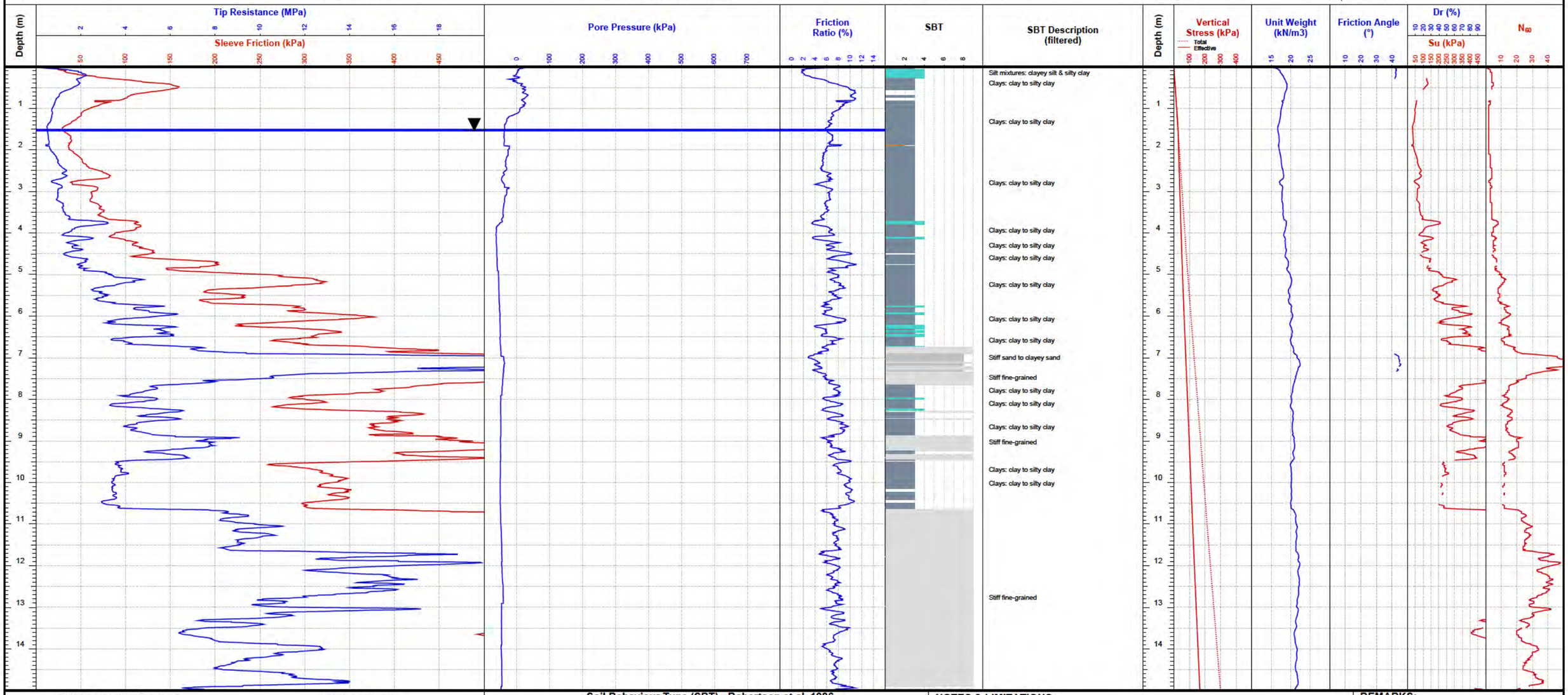
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT34-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746627.67mE, 5947801.27mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	3:45 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	1.53m
Groundwater Method:	Dipmeter
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2573 kPa
Local Friction Final:	0.2576 kPa
Pore Pressure Initial:	3.1498 kPa
Pore Pressure Final:	3.1499 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

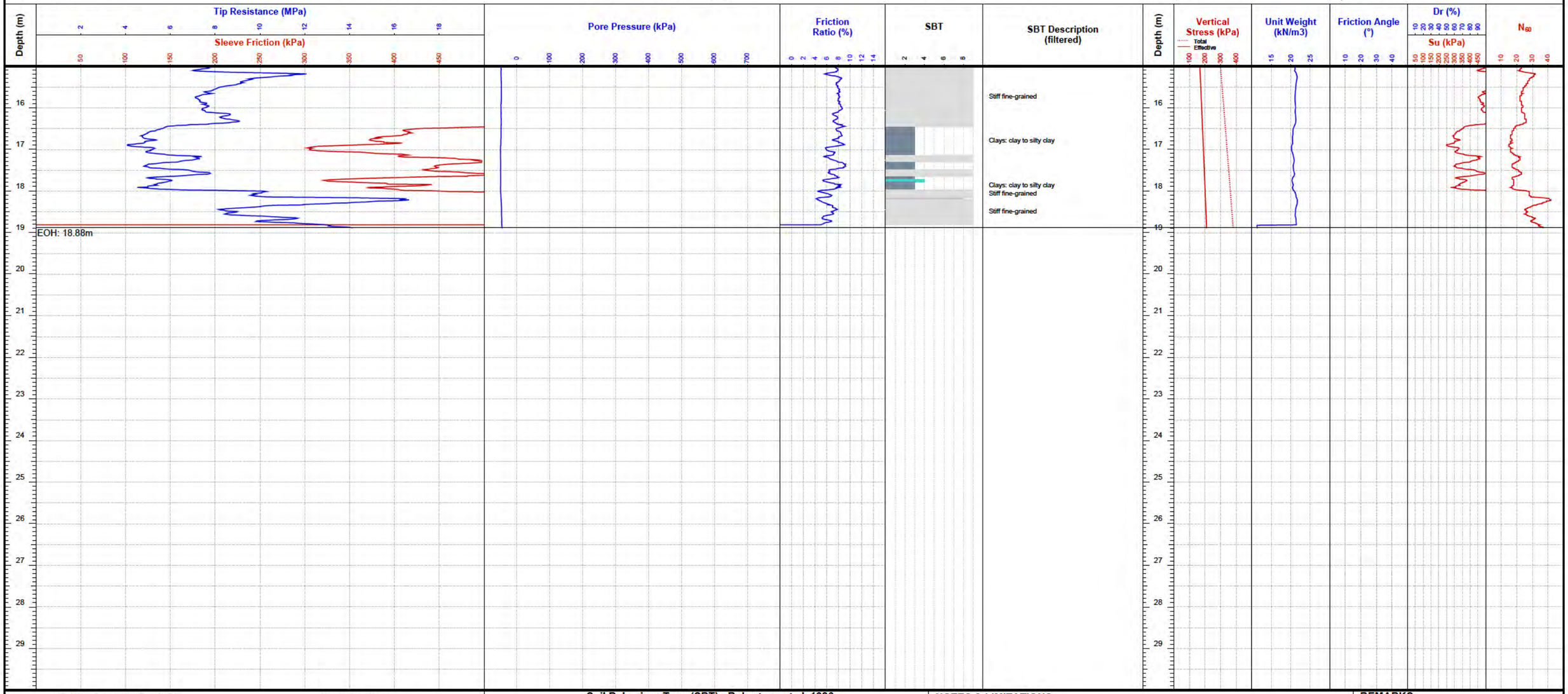
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT34-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746627.67mE, 5947801.27mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	3:45 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill		Zero Readings	
Measured Water Level:	1.53m	**Tip Resistance Initial:**	0.0213 MPa
Groundwater Method:	Dipmeter	**Tip Resistance Final:**	0.0212 MPa
Pore Pressure Response:	Good	**Local Friction Initial:**	0.2573 kPa
Pre-drill Depth:	N/A	**Local Friction Final:**	0.2576 kPa
Pre-drill Reason:	N/A	**Pore Pressure Initial:**	3.1498 kPa
Pre-drill Backfill:	N/A	**Pore Pressure Final:**	3.1499 kPa
Backfill Method:	N/A		

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:
High Total Load

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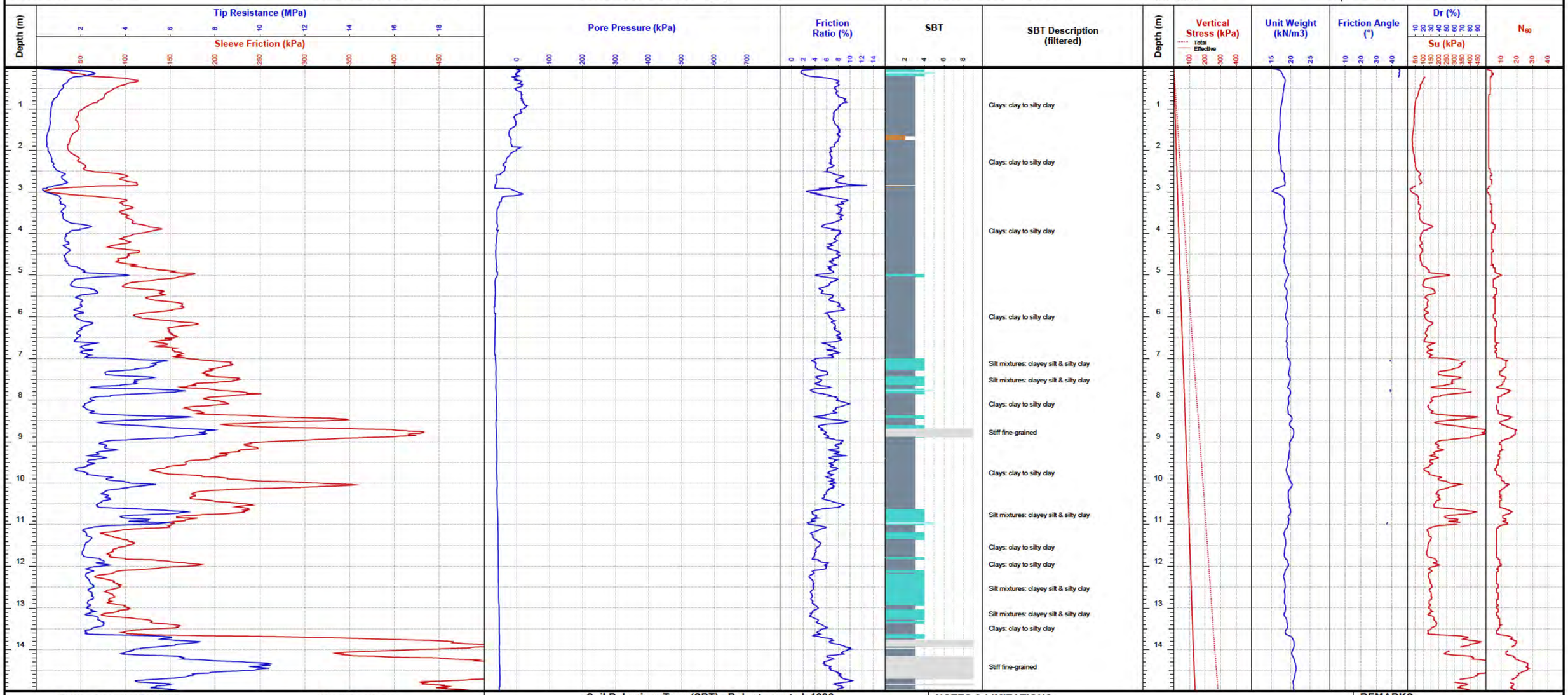
Topdrill Geotech

CONE PENETRATION TEST LOG

Topdrill Ref:	TD4729				
CPT NO.:	CPT35-26				
TEST NO.:	1				
PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746551.83mE, 5947716.22mN (NZTM)	**ELEVATION:**	Ground		
Start Date:	03/03/2026				
Start Time:	12:27 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL	No conditioning - already close to ground temperature	

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.83m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2575 kPa
Local Friction Final:	0.2578 kPa
Pore Pressure Initial:	3.1496 kPa
Pore Pressure Final:	3.1496 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

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REMARKS:

TERMINATION:

High Total Load

Topdrill Geotech

CONE PENETRATION TEST LOG

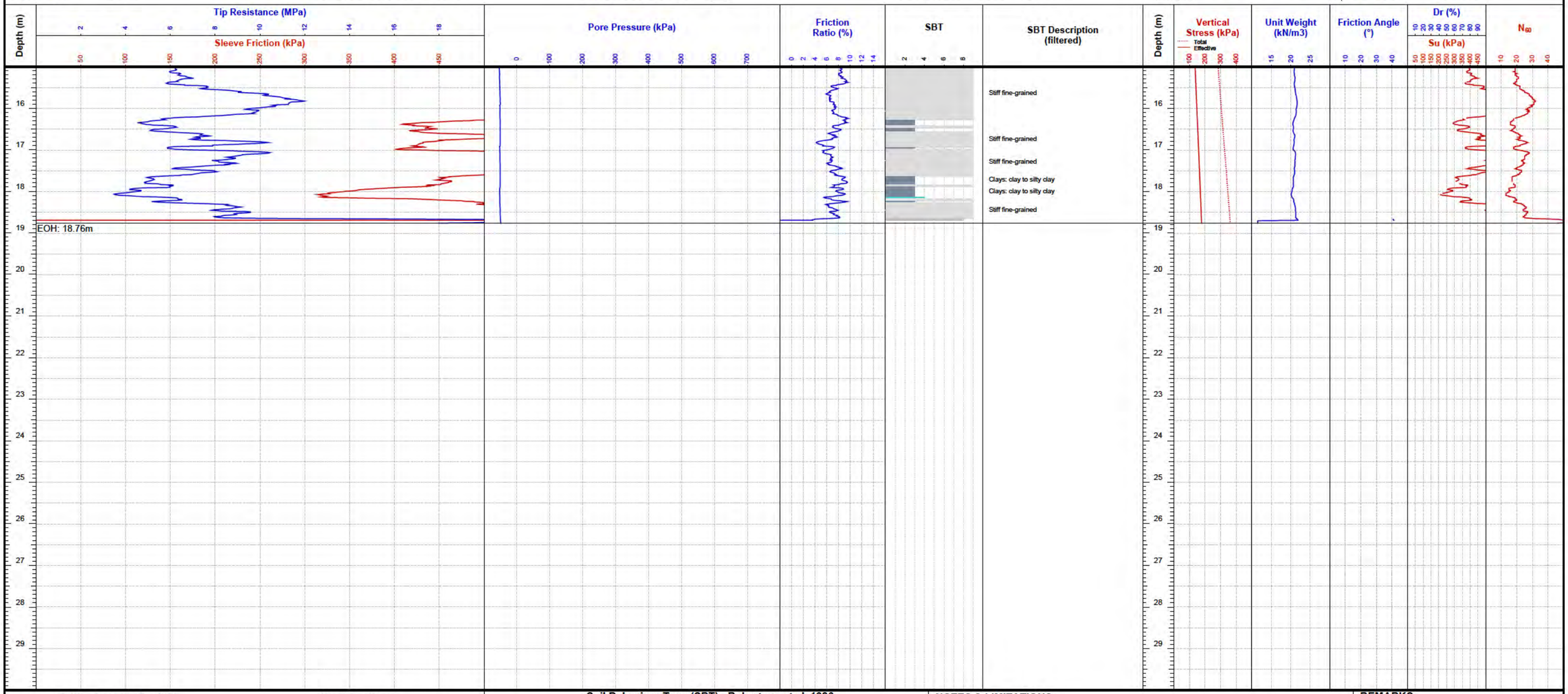
Topdrill Ref:	TD4729
CPT NO.:	CPT35-26
TEST NO.:	1

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1746551.83mE, 5947716.22mN (NZTM)	**ELEVATION:**	Ground		

Start Date:	03/03/2026				
Start Time:	12:27 pm				
Start Depth:	0.00 m				
Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				
Target Depth:	20 m				
Target Application Class:	2				
Acheived Application Class:	2				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (dry 1.83m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0212 MPa
Local Friction Initial:	0.2575 kPa
Local Friction Final:	0.2578 kPa
Pore Pressure Initial:	3.1496 kPa
Pore Pressure Final:	3.1496 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
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REMARKS:

TERMINATION:
High Total Load

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CONE PENETRATION TEST LOG

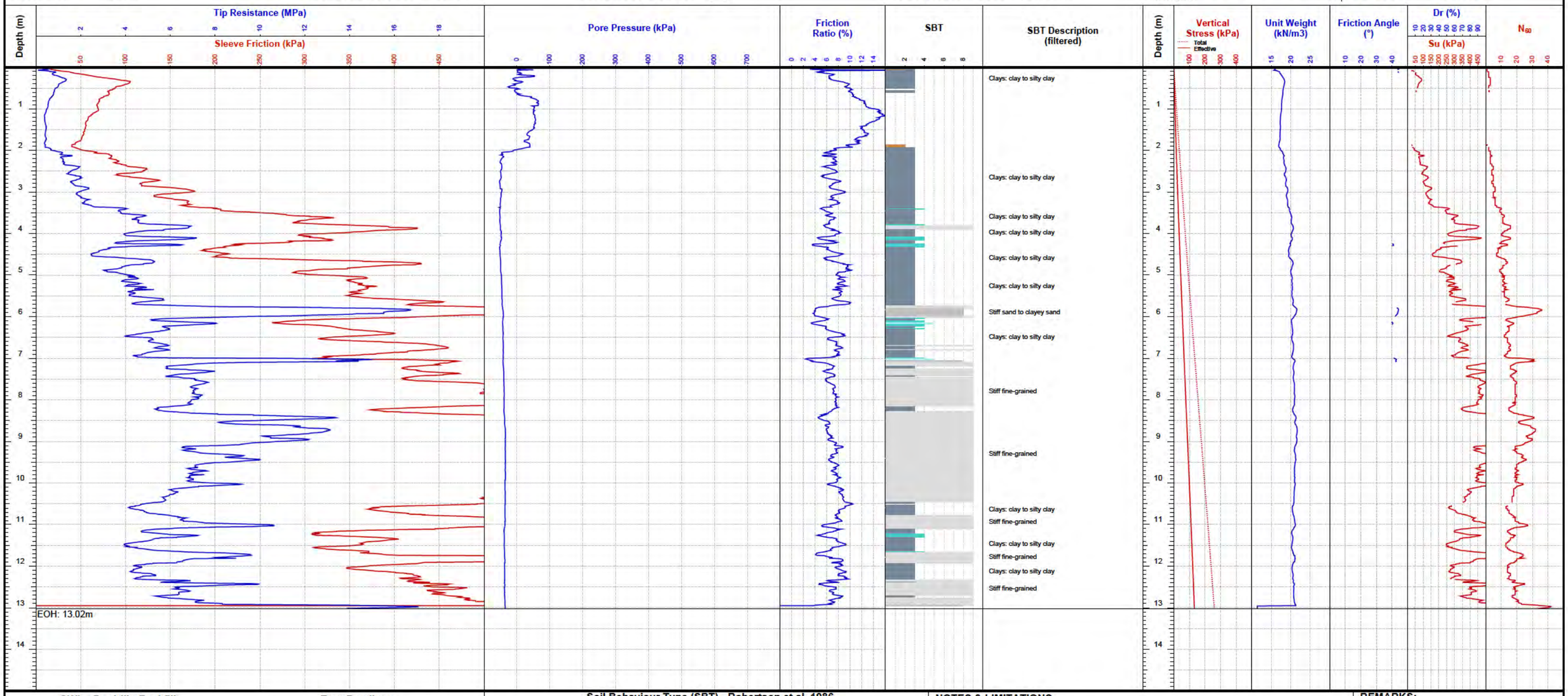
Topdrill Geotech

PROJECT:	Geotechnical Assessment	**CLIENT:**	Gibb Ritchie Geotechnical Engineers	**CONTRACTOR:**	TOPDRILL LTD
SITE LOCATION:	Milldale North	**CLIENT REF:**	AK26-027	**OPERATOR:**	Jon Ellis
		ENGINEER:	Chris Ritchie	**FIELD MANAGER:**	Greg K
CO-ORDINATES:	1747816.88mE, 5947696.66mN (NZTM)	**ELEVATION:**	Ground		

Machine:	Pagani, TG 63-150	**Setup Deviations:**	None	**ISO & TG6 Deviations:**	None
Ballasted or Anchored:	Anchored				
Maximum Push Capacity:	150kN				

Cone Type:	TE2	**Cone Class:**	2	**Compression or Subtraction:**	Subtraction	**Filter Location:**	u2	**Temperature:**	-
Manufacturer:	Pagani	**Nominal Size:**	10cm²	**Net Area Ratio:**	0.8cm²	**Filter Type:**	POROUS	**Temperature Conditioning:**	No conditioning - already close to ground temperature
Serial No:	29002	**Calibration Ref:**	000632	**Friction Reducer:**	✓	**Filter Saturation:**	FUNNEL		

Topdrill Ref:	TD4729
CPT NO.:	CPT36-26
TEST NO.:	1
Start Date:	24/02/2026
Start Time:	5:14 pm
Start Depth:	0.00 m
Target Depth:	20 m
Target Application Class:	2
Acheived Application Class:	2
FSO qc:	50 MPa
FSO fs:	1.5 MPa
FSO u2:	5 MPa



GWL - Predrill - Backfill

Measured Water Level:	
Groundwater Method:	Dipmeter (0.36m)
Pore Pressure Response:	Good
Pre-drill Depth:	N/A
Pre-drill Reason:	N/A
Pre-drill Backfill:	N/A
Backfill Method:	N/A

Zero Readings

Tip Resistance Initial:	0.0213 MPa
Tip Resistance Final:	0.0209 MPa
Local Friction Initial:	0.2597 kPa
Local Friction Final:	0.2593 kPa
Pore Pressure Initial:	3.1511 kPa
Pore Pressure Final:	3.1491 kPa

Soil Behaviour Type (SBT) - Robertson et al. 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

NOTES & LIMITATIONS

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P. K. Robertson and K.L. Cabal (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use, and should be carefully reviewed by the user. Geroc Solutions Ltd do not warranty the correctness or the applicability of any of the geotechnical soil and design parameters shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

REMARKS:

TERMINATION:
High Total Load

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APPENDIX C Existing Investigations

HAND AUGER BOREHOLE LOG - HA01-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 29/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 1 of 1

Position: 1746438.8mE; 5947518.8mN Projection: NZTM
Elevation: 45.82m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			45.8			OL: Organic SILT: Dark brown with some rootlets			
			45.7			(Topsoil)			
						CH: Silty CLAY: Brown/Orange. High plasticity with trace rootlets. (Northland Allochthon)			
	0.4	Peak = 198+ kPa							
	0.8	Peak = 124kPa Residual = 62kPa		1					
			44.7			ML: Clayey SILT: white/grey with orange streaks. Low plasticity. Friable. (Northland Allochthon)			
	1.2	Peak = 144kPa Residual = 56kPa							
			44.3			CH: Silty CLAY: Orange/grey. High plasticity. (Northland Allochthon)			
	1.6	Peak = 133kPa Residual = 65kPa							
						... at 1.80m, becoming streaked with red			
	2.0	Peak = 147kPa Residual = 56kPa		2				VSt	
	2.4	Peak = 124kPa Residual = 56kPa					M		
						... at 2.70m, becoming pink/brown streaked with white and orange			
	2.8	Peak = 133kPa Residual = 59kPa							
				3					
	3.2	Peak = 141kPa Residual = 68kPa							
	3.6	Peak = 150kPa Residual = 65kPa							
	4.0	Peak = 198+ kPa		4					
						... at 4.10m, becoming dark grey and hardened			
	4.4	Peak = UTP						H	
	4.8	Peak = UTP							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA02-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 29/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1746637.6mE; 5947766.9mN Projection: NZTM
Elevation: 29.90m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			29.9			OL: Organic SILT: Dark brown. Low Plasticity. (Topsoil)			
			29.7			CH: Silty CLAY: Grey mottled orange. High Plasticity. (Northland Allochthon)			
	0.4	Peak = 148kPa Residual = 75kPa					M		
	0.8	Peak = 116kPa Residual = 61kPa		1					
	1.2	Peak = 110kPa Residual = 61kPa						VSt	
	1.6	Peak = 107kPa Residual = 67kPa							
			28.1			ML: Clayey SILT: Light brown mottled orange. Low Plasticity. (Northland Allochthon)			
	2.0	Peak = 116kPa Residual = 73kPa		2					
	2.4	Peak = 174kPa Residual = 75kPa				*... at 2.40m, becoming greyish brown mottled orange.*			
						... at 2.60m, becoming dark bluish grey streaked orange and brown.			
	2.8	Peak = >203kPa					W		
				3					
	3.2	Peak = UTP							
						... at 3.40m, becoming light blue			
	3.6	Peak = UTP	26.3			ML: SILT with some clay: Dark bluish grey. Low Plasticity. Blocky fabric and friable. (Northland Allochthon)			
	4.0	Peak = UTP		4				VSt to H	
	4.4	Peak = UTP							
	4.8	Peak = UTP							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA02-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 29/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 2 of 2

Position: 1746637.6mE; 5947766.9mN Projection: NZTM
Elevation: 29.90m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					9 10 10 11 11 12 10 11 11
				7					
				8					
				9					
				10					

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA03-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1746800.5mE; 5947912.1mN Projection: NZTM
Elevation: 29.30m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			29.3			OL: Organic SILT: Dark brown with some rootlets (Topsoil)			
			29.0			CH: Silty CLAY: Light grey with orange/brown streaks. High Plasticity with orange/red organics. (Colluvium)			
	0.4	Peak = 113kPa Residual = 54kPa							
	0.8	Peak = 107kPa Residual = 54kPa		1					
	1.2	Peak = 155kPa Residual = 45kPa				... at 1.20m, becoming dark grey with black organic inclusions			
	1.6	Peak = 99kPa Residual = 51kPa				... at 1.80m, becoming friable with white clay inclusions		VSt	
	2.0	Peak = 104kPa Residual = 40kPa	27.3	2		ML: Clayey SILT: Grey. Low plasticity with hard green clay inclusions. Friable. (Northland Allochthon)			
						... at 2.20m, becoming green/grey			
	2.4	Peak = 130kPa Residual = 48kPa					M		
	2.8	Peak = 138kPa Residual = 59kPa							
				3		... at 3.00m, becoming dark grey			
	3.2	Peak = 198+ kPa							
	3.6	Peak = 198+ kPa							
	4.0	Peak = 198+ kPa		4				H	
	4.4	Peak = UTP				... at 4.40m, becoming dark grey/black and no longer friable			
	4.8	Peak = UTP					D		
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No: 04
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA03-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25

Position: 1746800.5mE; 5947912.1mN Projection: NZTM
Elevation: 29.30m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					11 12 12 12 15 14 14 8 8 8 10
				7					
				8					
				9					
				10					

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No: 04
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA04-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 1 of 1

Position: 1746981.5mE; 5947977.8mN Projection: NZTM
Elevation: 23.91m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			23.9			OL: Organic SILT: Dark brown. Low Plasticity. (Topsoil)			
			23.8			ML: SILT with some clay: Light brownish grey. Low Plasticity. (Alluvium)			
	0.4	Peak = 119kPa Residual = 29kPa							
			23.3			CH: Silty CLAY: Grey mottled orange. High Plasticity. (Alluvium)			
	0.8	Peak = 104kPa Residual = 38kPa		1					
	1.2	Peak = 131kPa Residual = 78kPa						VSt	
	1.6	Peak = 136kPa Residual = 93kPa				*... at 1.60m, becoming light brown streaked black. Wood fragments present.*			
	2.0	Peak = 125kPa Residual = 73kPa		2			W		
	2.4	Peak = 87kPa Residual = 58kPa							
	2.8	Peak = 99kPa Residual = 73kPa	21.1			ML: SILT with some fine sand: Light blue. Blocky fabric and friable. Low Plasticity. (Northland Allochthon)		St	
	3.2	Peak = >203kPa		3					
	3.6	Peak = >203kPa						VSt to H	
	4.0	Peak = UTP		4					
						Borehole terminated at 4.2 m			20
				5					

Termination Reason: Refusal on hard ground
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA05-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1747127.9mE; 5948155.7mN Projection: NZTM
Elevation: 23.00m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			23.0			OL: Organic SILT: Dark brown. Low Plasticity. (Topsoil)			
			22.8			ML: SILT with minor fine sand: Grey mottled orange. Low Plasticity. (Fill)			
	0.4	Peak = UTP						H	
	0.8	Peak = UTP							
			22.1			CH: Silty CLAY: Orange grey mottled orange. High Plasticity. (Alluvium)			
				1			M		
	1.2	Peak = 110kPa Residual = 61kPa				... at 1.30m, becoming grey with minor orange mottles.			
	1.6	Peak = 128kPa Residual = 81kPa							
	2.0	Peak = 131kPa Residual = 90kPa		2				VSt	
	2.4	Peak = 125kPa Residual = 35kPa				... at 2.40m, becoming bluish grey mottled orange.			
	2.8	Peak = 125kPa Residual = 87kPa							
				3		... at 3.00m, becoming Silty CLAY with some fine sand			
	3.2	Peak = 44kPa Residual = 32kPa							
						... at 3.40m, becoming Sandy CLAY. Sand is fine to medium grained,		F	
	3.6	Peak = 131kPa Residual = 90kPa					W		
	4.0	Peak = 87kPa Residual = 61kPa		4					
						... at 4.20m, becoming purplish grey.		St	
	4.4	Peak = 87kPa Residual = 73kPa				... at 4.40m, becoming black Organic CLAY and minor rootlets.			
	4.8	Peak = 78kPa Residual = 67kPa							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA05-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 2 of 2

Position: 1747127.9mE; 5948155.7mN Projection: NZTM
Elevation: 23.00m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					4 4 4 5 5 6 7 7 7
				7					
				8					
				9					
				10					

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA06-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 1 of 1

Position: 1747176.9mE; 5948005.7mN Projection: NZTM
Elevation: 28.78m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			28.8			OL: Organic SILT: Dark brown with some rootlets (Topsoil)			
			28.6			MH: Clayey SILT: Light grey. High plasticity with limonite staining. (Northland Allochthon)			
	0.4	Peak = 104kPa Residual = 56kPa							
	0.8	Peak = 102kPa Residual = 56kPa							
			27.9	1		CH: CLAY: Light brown/grey. High plasticity. (Northland Allochthon)			
	1.2	Peak = 90kPa Residual = 51kPa							
	1.6	Peak = 113kPa Residual = 68kPa						VSt	
	2.0	Peak = 119kPa Residual = 62kPa		2					
	2.4	Peak = 119kPa Residual = 73kPa					M		
	2.8	Peak = 113kPa Residual = 71kPa							
				3					
	3.2	Peak = 90kPa Residual = 59kPa	25.6			CH: Silty CLAY: Blue/grey. High plasticity. (Northland Allochthon)			
	3.6	Peak = 99kPa Residual = 71kPa							
	4.0	Peak = 93kPa Residual = 65kPa		4				St	
	4.4	Peak = 96kPa Residual = 71kPa							
▼							W		
	4.8	Peak = 102kPa Residual = 62kPa					S		
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No:
Remarks: Groundwater encountered at 4.7m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA07-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1747625.3mE; 5947881.9mN Projection: NZTM
Elevation: 17.88m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			17.9			OL: Organic SILT: Dark brown. Low Plasticity. (Topsoil)			
			17.7			ML: SILT with some clay: Brownish grey. Low Plasticity. (Northland Allochthon)			
			17.6			CH: Silty CLAY: Orange. High Plasticity. (Northland Allochthon)			
	0.4	Peak = 151kPa Residual = 70kPa							
	0.8	Peak = 102kPa Residual = 55kPa						VSt	
				1		... at 1.00m, becoming dark grey mottled orange.			
	1.2	Peak = 107kPa Residual = 64kPa					W		
						... at 1.40m, becoming Sandy CLAY. Grey mottled orange. Sand is fine grained.			
	1.6	Peak = 73kPa Residual = 38kPa							
	2.0	Peak = 87kPa Residual = 44kPa		2				St	
▼	2.4	Peak = 38kPa Residual = 23kPa				... from 2.40m to 3.00m, core loss, recovered as slurry.			
								F	
	2.8	Peak = 64kPa Residual = 32kPa							
			14.9	3		CL: Silty CLAY: Orange brown. Low Plasticity. (Northland Allochthon)		St	
	3.2	Peak = 131kPa Residual = 44kPa	14.7			ML: SILT with some sand: Bluish grey. Low Plasticity. Blocky fabric. (Northland Allochthon)			
	3.6	Peak = 168kPa Residual = 102kPa					S		
	4.0	Peak = 160kPa Residual = 67kPa		4				VSt	
	4.4	Peak = 174kPa Residual = 81kPa							
	4.8	Peak = 162kPa Residual = 75kPa							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater encountered at 2.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA07-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 2 of 2

Position: 1747625.3mE; 5947881.9mN Projection: NZTM
Elevation: 17.88m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					4 7 7 9 9 8 17 18 20
				7					
				8					
				9					
				10					

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater encountered at 2.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA08-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 1 of 1

Position: 1747469.8mE; 5947940.6mN Projection: NZTM
Elevation: 29.94m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			29.9			OL: Organic SILT: Dark brown with some rootlets			
			29.8			(Topsoil)			
						CH: Silty CLAY: Light grey/brown streaked orange and dark brown. High plasticity. (Colluvium)			
	0.4	Peak = 127kPa Residual = 56kPa							
	0.8	Peak = 99kPa Residual = 51kPa		1					
	1.2	Peak = 104kPa Residual = 59kPa						VSt	
	1.6	Peak = 102kPa Residual = 48kPa				*... at 1.60m, becoming with some black/orange wood fragments*			
	2.0	Peak = 102kPa Residual = 54kPa		2			M		
	2.4	Peak = 198+ kPa	27.5			MH: Clayey SILT: Dark brown/grey. High plasticity. Friable. (Northland Allochthon)			
	2.8	Peak = 198+ kPa							
				3					
	3.2	Peak = 198+ kPa							
	3.6	Peak = 198+ kPa						H	
						... at 3.90m, becoming no longer friable			
▼	4.0	Peak = UTP		4			W		
	4.4	Peak = UTP					S		
	4.8	Peak = UTP							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No:
Remarks: Groundwater encountered at 4.1m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA09-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1746816.3mE; 5947831.7mN Projection: NZTM
Elevation: 39.20m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			39.2			OL: Organic SILT: Dark brown. Low Plasticity. (Topsoil)			
			39.0			CH: Silty CLAY: Orange grey. High Plasticity. (Northland Allochthon)			
	0.4	Peak = 122kPa Residual = 29kPa						VSt	
						... at 0.60m, becoming brownish grey mottled orange.			
	0.8	Peak = 90kPa Residual = 58kPa		1					
	1.2	Peak = 78kPa Residual = 46kPa							
	1.6	Peak = 75kPa Residual = 58kPa							
	2.0	Peak = 73kPa Residual = 58kPa		2					
	2.4	Peak = 90kPa Residual = 73kPa				... at 2.40m, becoming whitish grey mottled orange.	M	St	
	2.8	Peak = 90kPa Residual = 61kPa							
				3		... at 3.00m, becoming light bluish grey mottled orange.			
	3.2	Peak = 75kPa Residual = 49kPa							
	3.6	Peak = 87kPa Residual = 64kPa							
	4.0	Peak = 102kPa Residual = 64kPa		4					
	4.4	Peak = 107kPa Residual = 70kPa						VSt	
	4.8	Peak = 107kPa Residual = 52kPa							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA09-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: NK Checked by: MJC Scale: 1:25 Sheet 2 of 2

Position: 1746816.3mE; 5947831.7mN Projection: NZTM
Elevation: 39.20m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					6
				7					10
				8					9
				9					10
				10					10
									11
									15
									11

Termination Reason: Target Depth Reached
Shear Vane No: 1195 DCP No: 05
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA10-22

Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 1 of 2

Position: 1746991.8mE; 5947856.4mN Projection: NZTM
Elevation: 34.36m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
			34.4			OL: Organic SILT: Dark brown with some rootlets (Topsoil)			
			34.2			CH: Silty CLAY: Orange/brown with grey streaks. High plasticity. (Northland Allochthon)			
	0.4	Peak = 144kPa Residual = 82kPa							
	0.8	Peak = 127kPa Residual = 71kPa		1					
	1.2	Peak = 133kPa Residual = 65kPa					M	VSt	
						... at 1.40m, becoming limonite stained			
						... at 1.50m, becoming grey streaked orange			
	1.6	Peak = 130kPa Residual = 59kPa							
	2.0	Peak = 141kPa Residual = 76kPa		2					
			32.1			ML: Clayey SILT: Brown/grey with orange streaks. Low plasticity. Friable. (Northland Allochthon)			
	2.4	Peak = 198+ kPa							
	2.8	Peak = 198+ kPa					D		
				3					
	3.2	Peak = 198+ kPa				*... at 3.20m, becoming dark brown streaked dark grey*			
▼									
	3.6	Peak = 198+ kPa						H	
						... at 3.80m, No longer friable			
	4.0	Peak = 198+ kPa		4			M		
						... at 4.20m, becoming dark grey/black and hardened			
	4.4	Peak = UTP							
	4.8	Peak = UTP							
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No: 04
Remarks: Groundwater encountered at 3.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA10-22

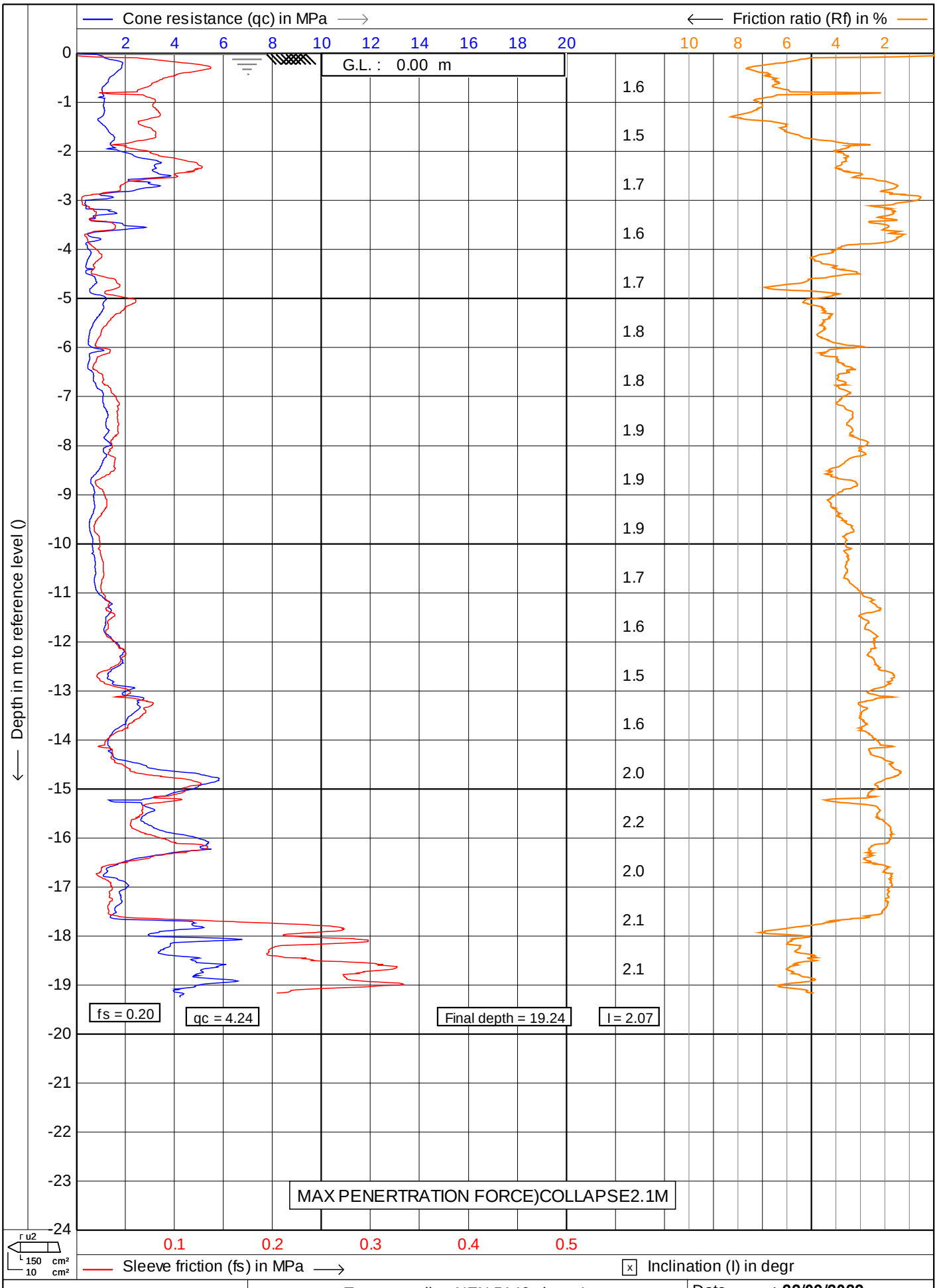
Client: Fulton Hogan Land Development Ltd
Project: Milldale North
Site Location: Milldale
Project No.: AKL2022-0087
Date: 23/09/2022
Borehole Location: Refer to site plan Logged by: CL Checked by: MJC Scale: 1:25 Sheet 2 of 2

Position: 1746991.8mE; 5947856.4mN Projection: NZTM
Elevation: 34.36m Datum: AUCKHT1946 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				6					12
									13
									16
									15
									10
									9
									8
									12
									12
									14
				7					
				8					
				9					
				10					

Termination Reason: Target Depth Reached
Shear Vane No: 1620 DCP No: 04
Remarks: Groundwater encountered at 3.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

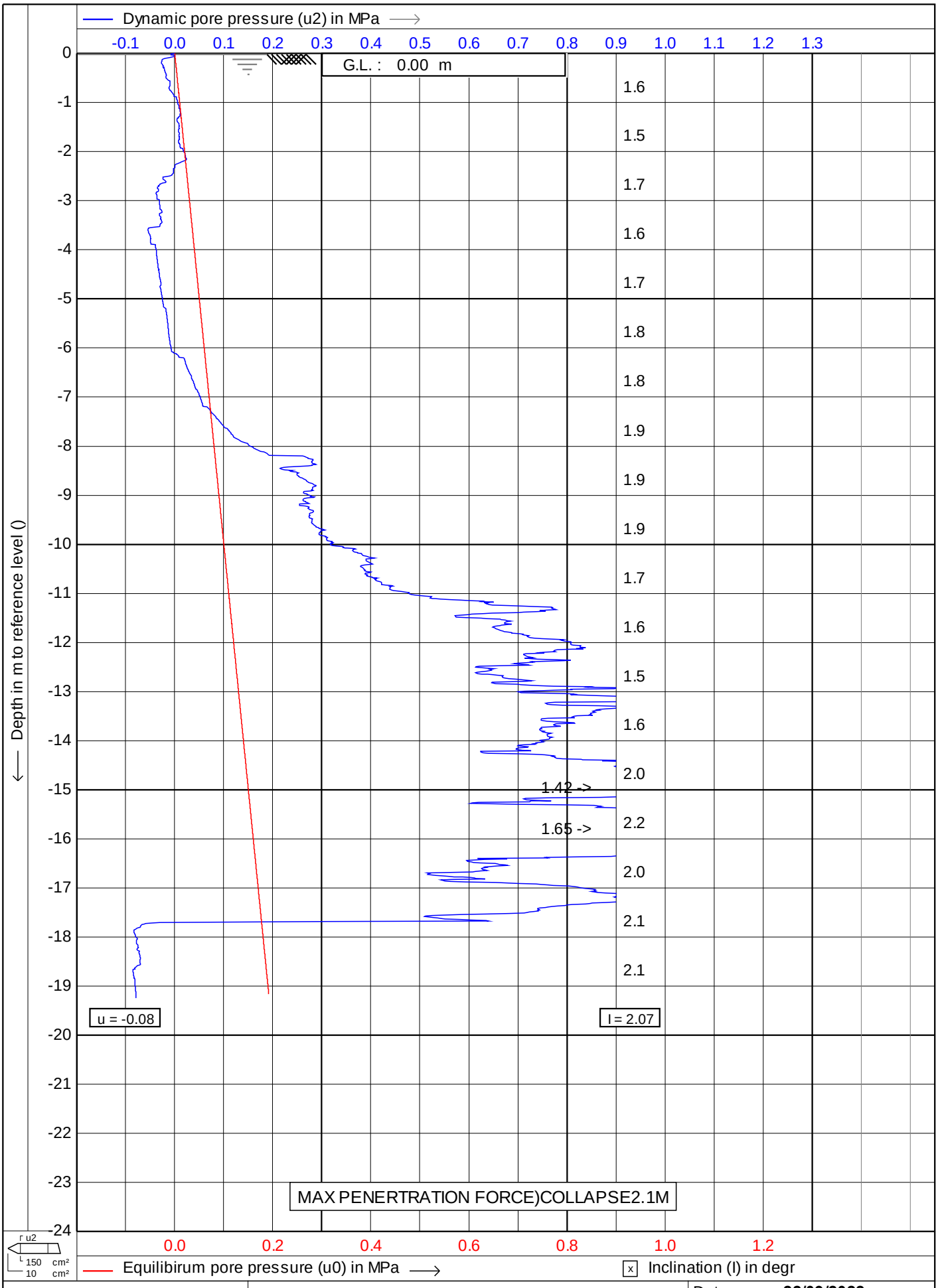
Position: **174.64389, 36.59751 RD**

Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT1** **1/15**



Test according NEN 5140 class 1

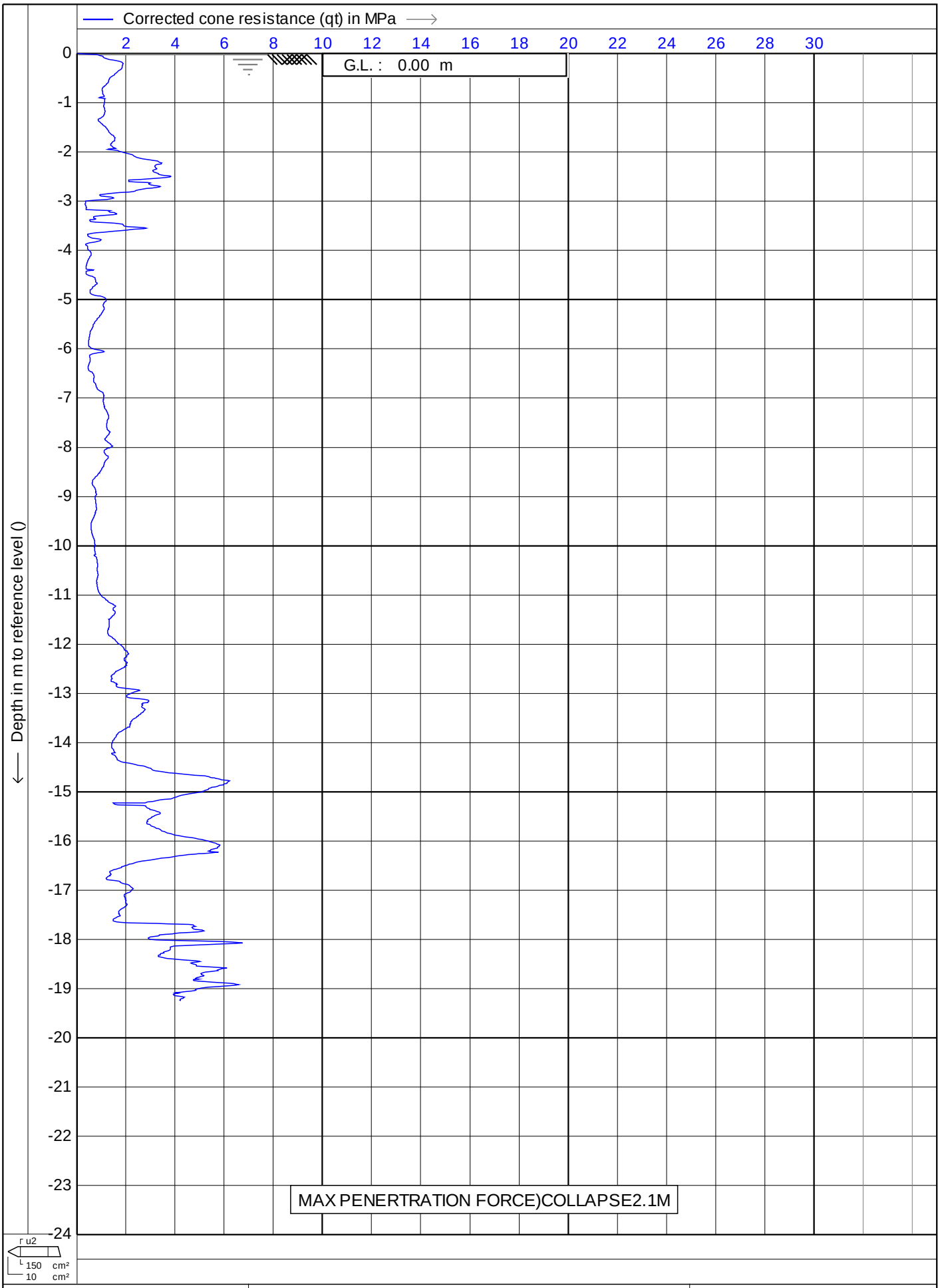
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

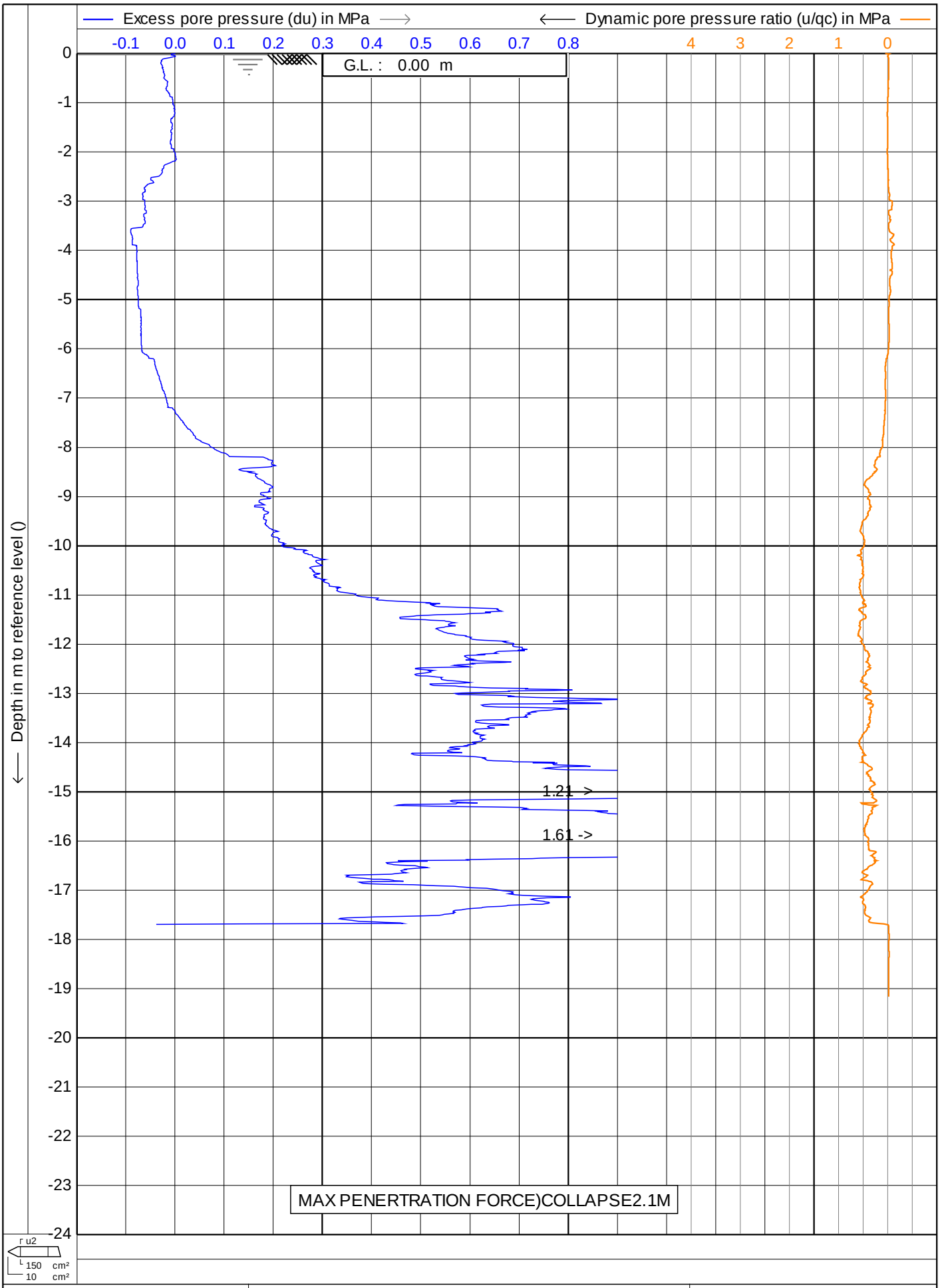
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

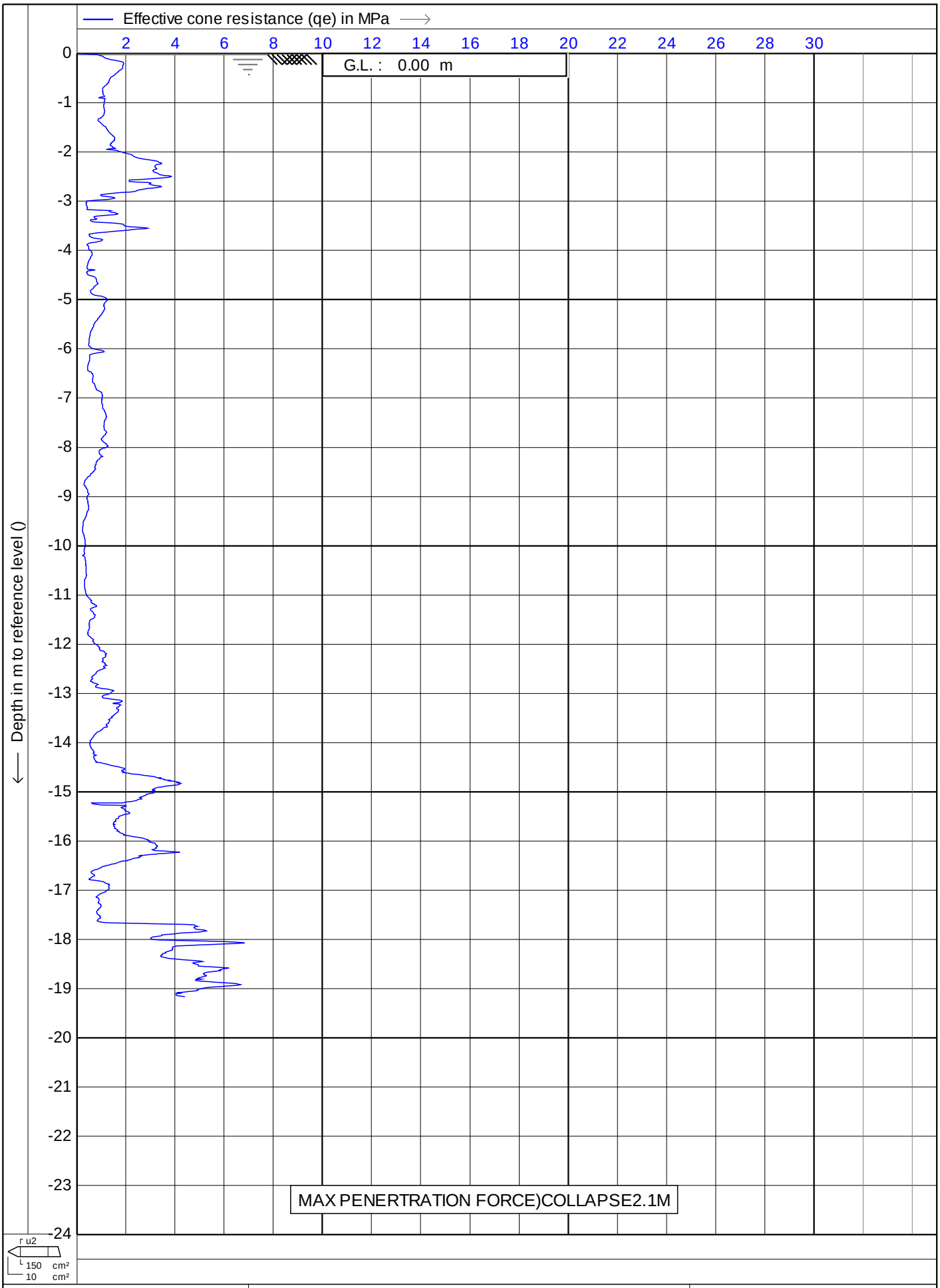
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

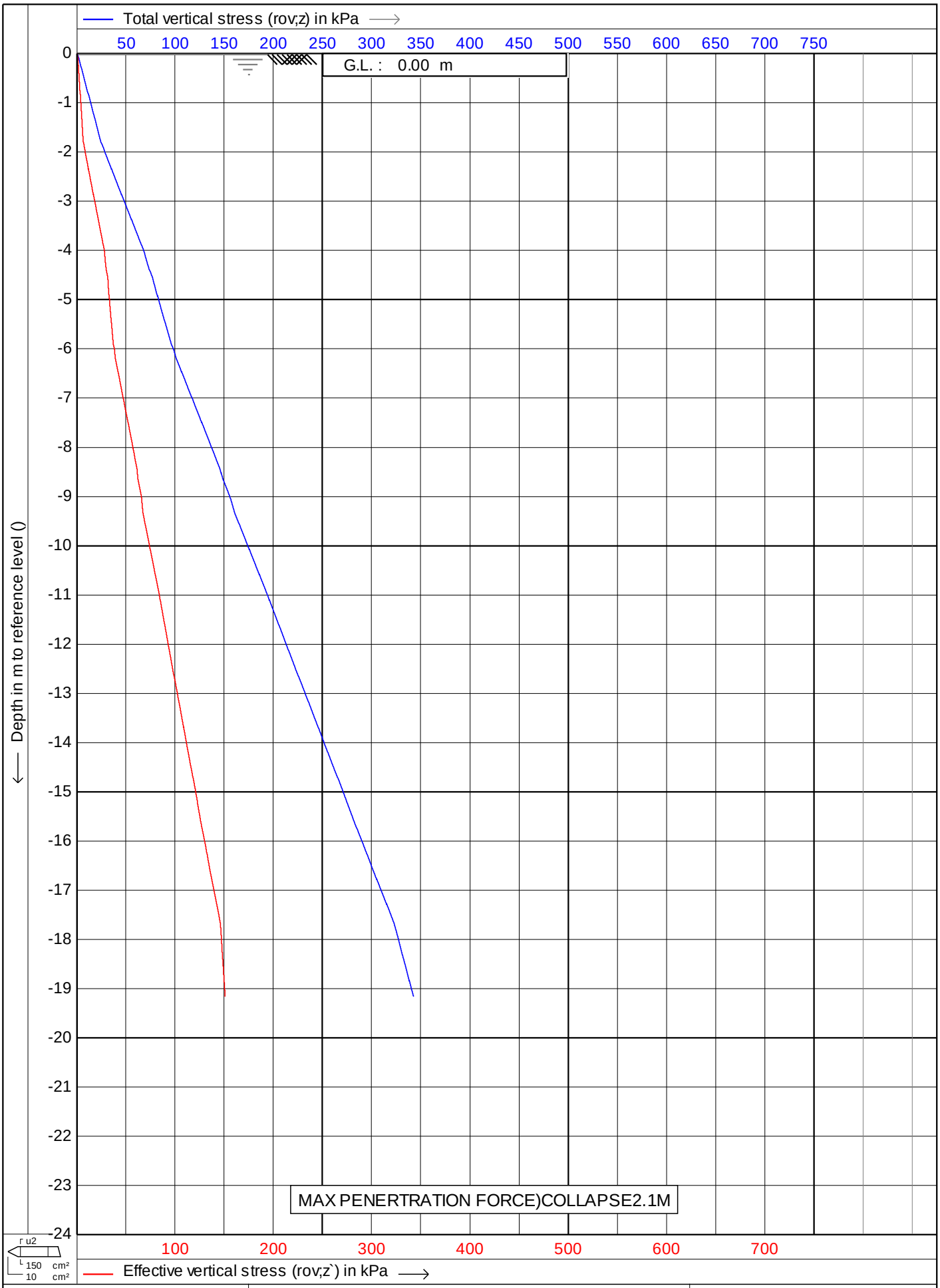
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

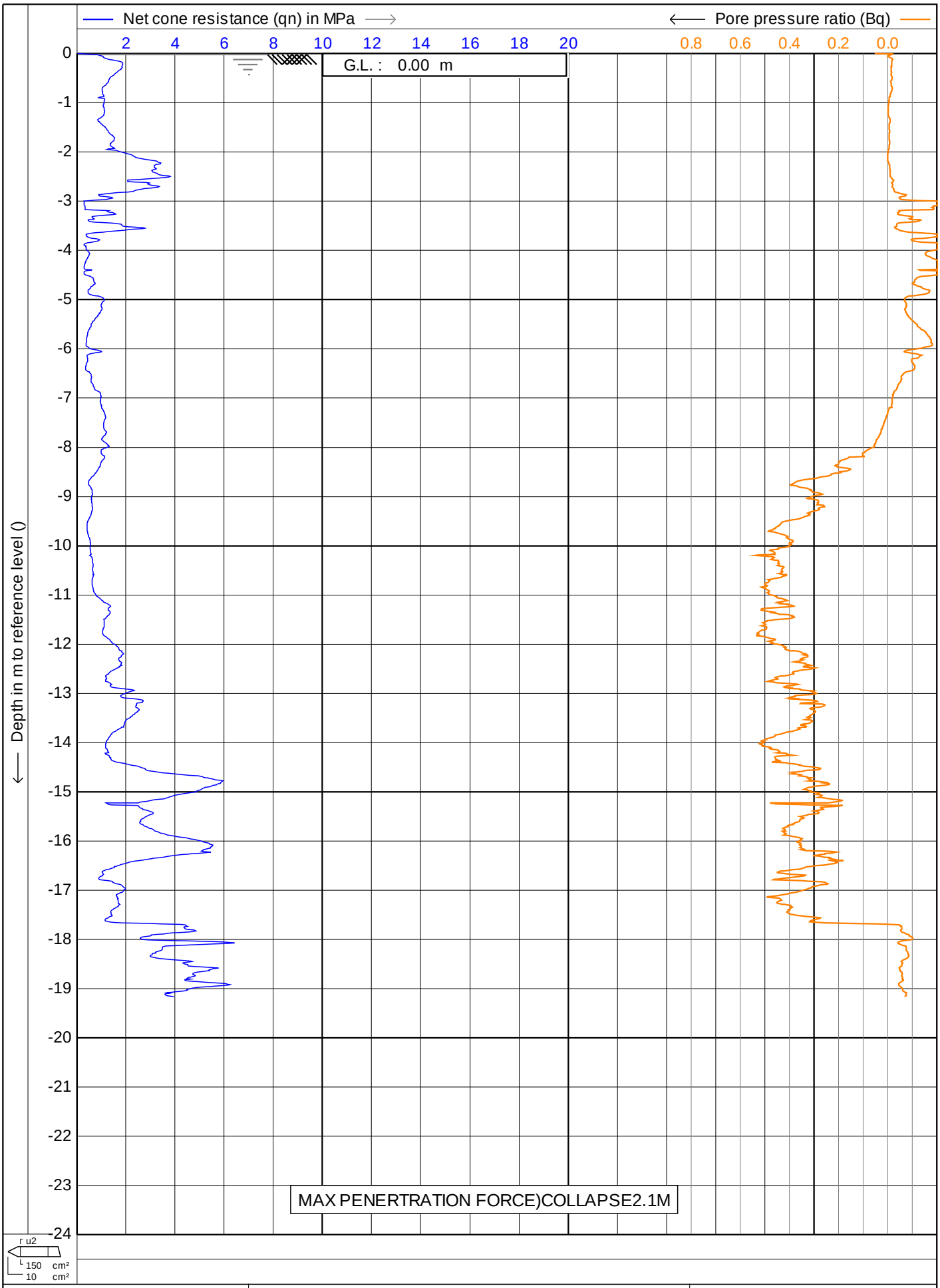
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

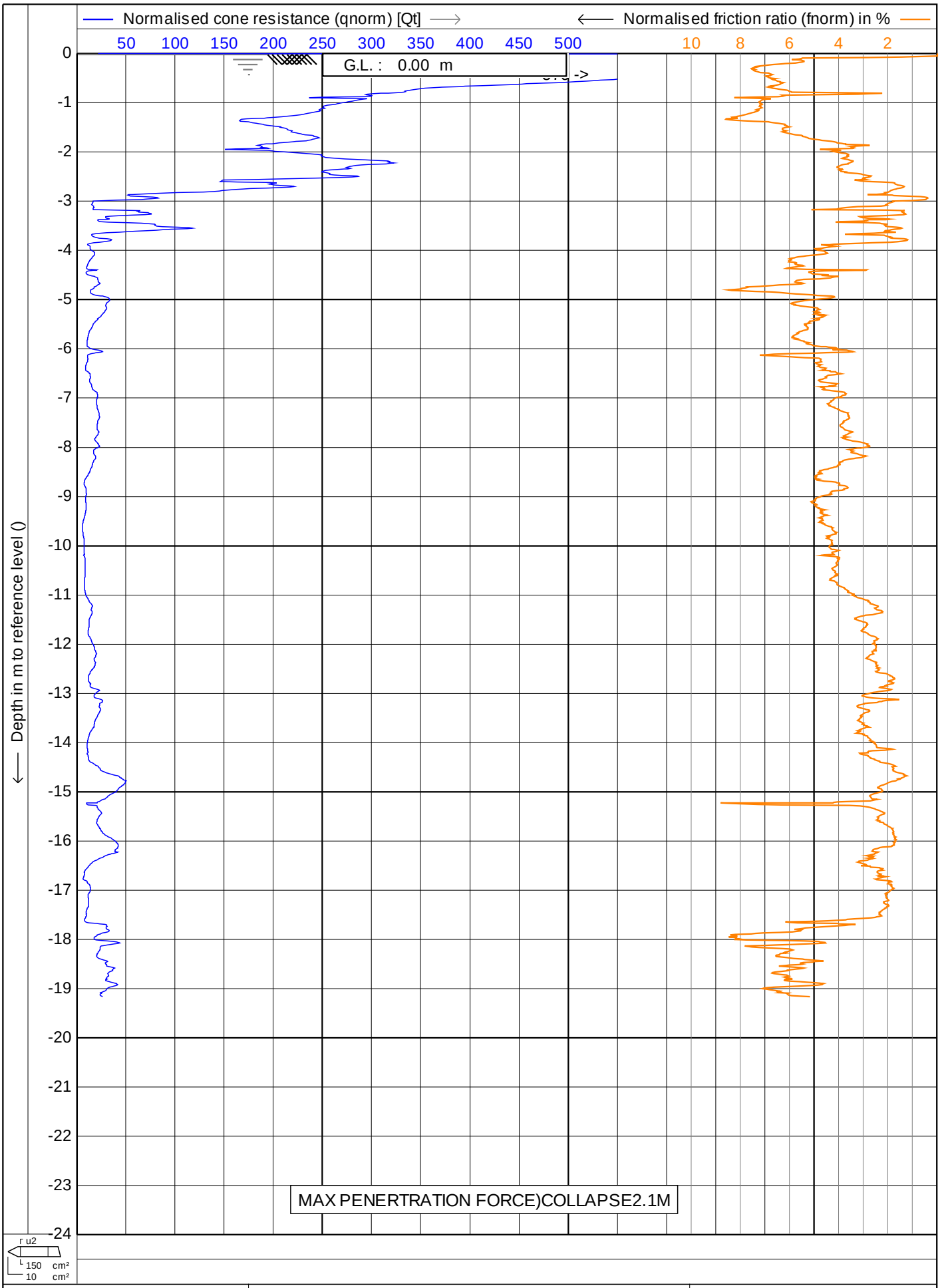
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

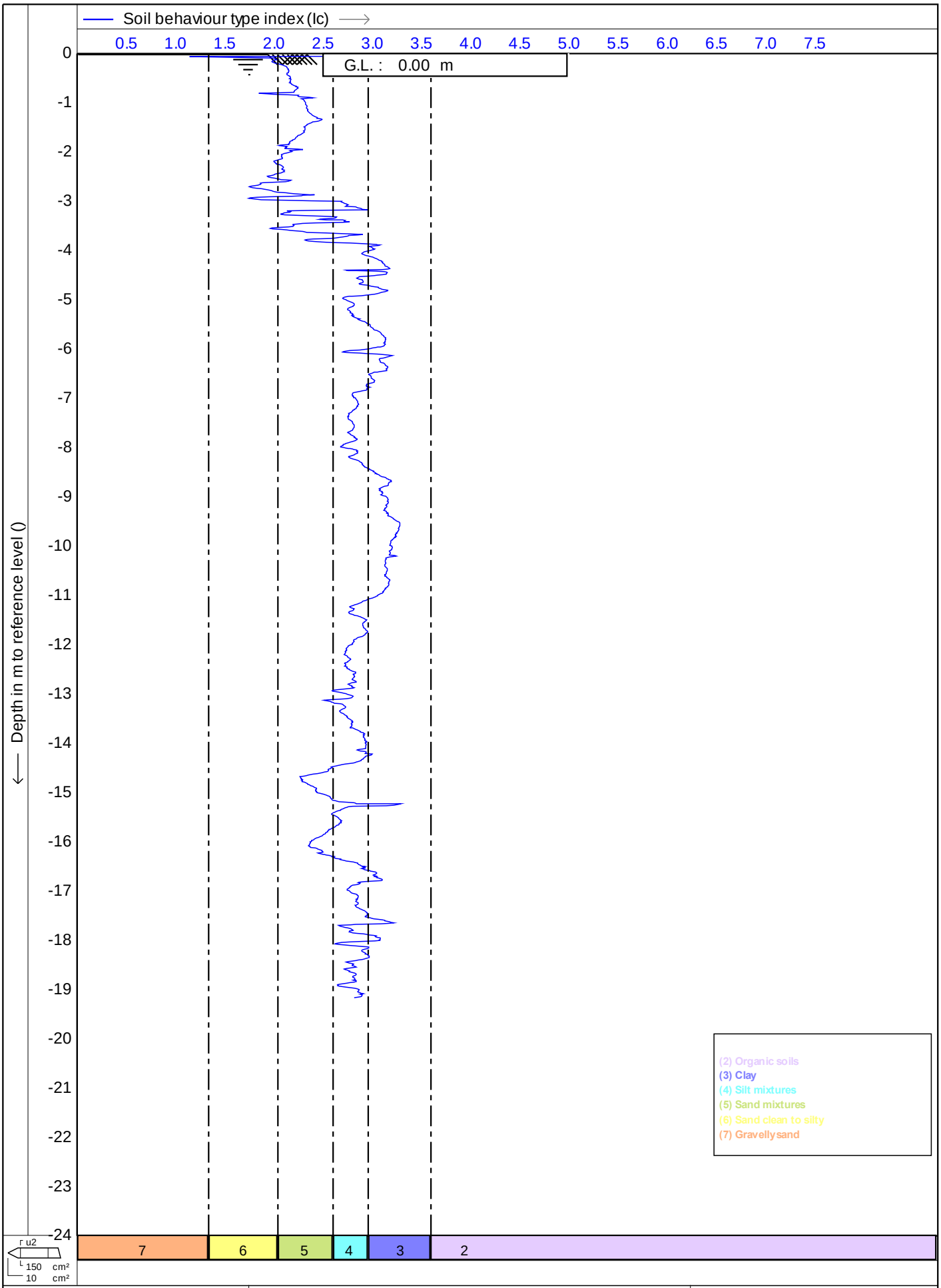
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

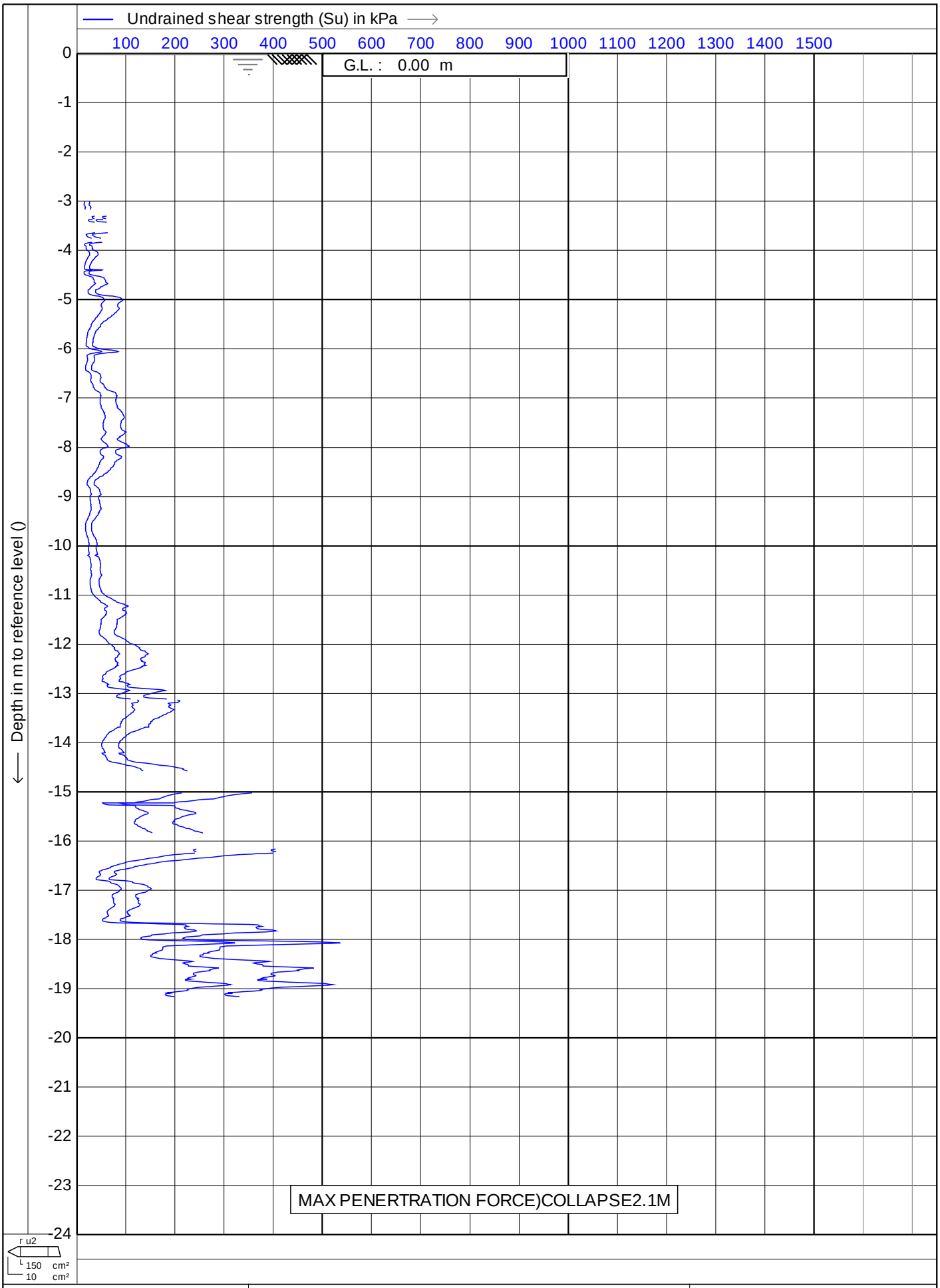
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

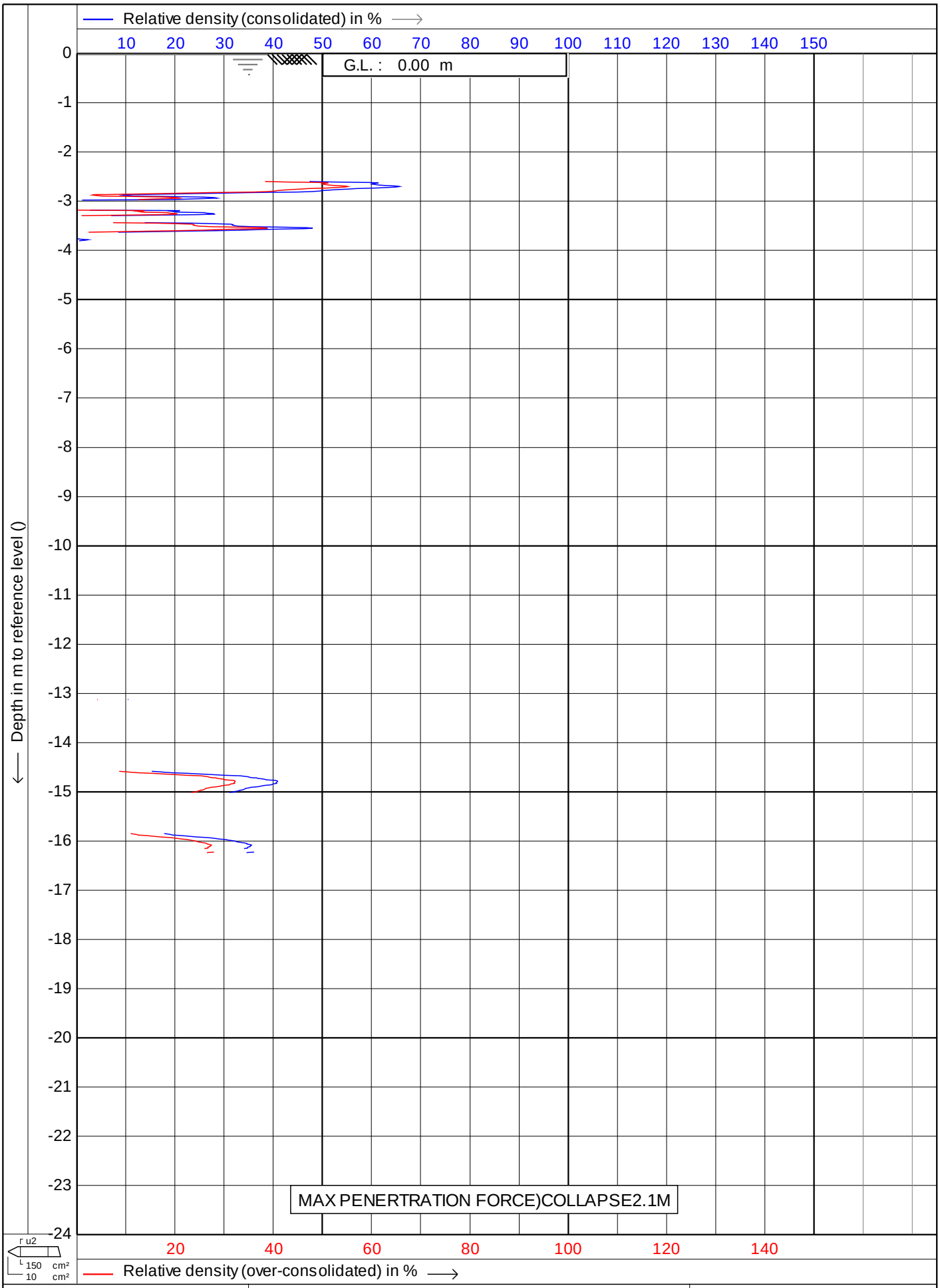
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

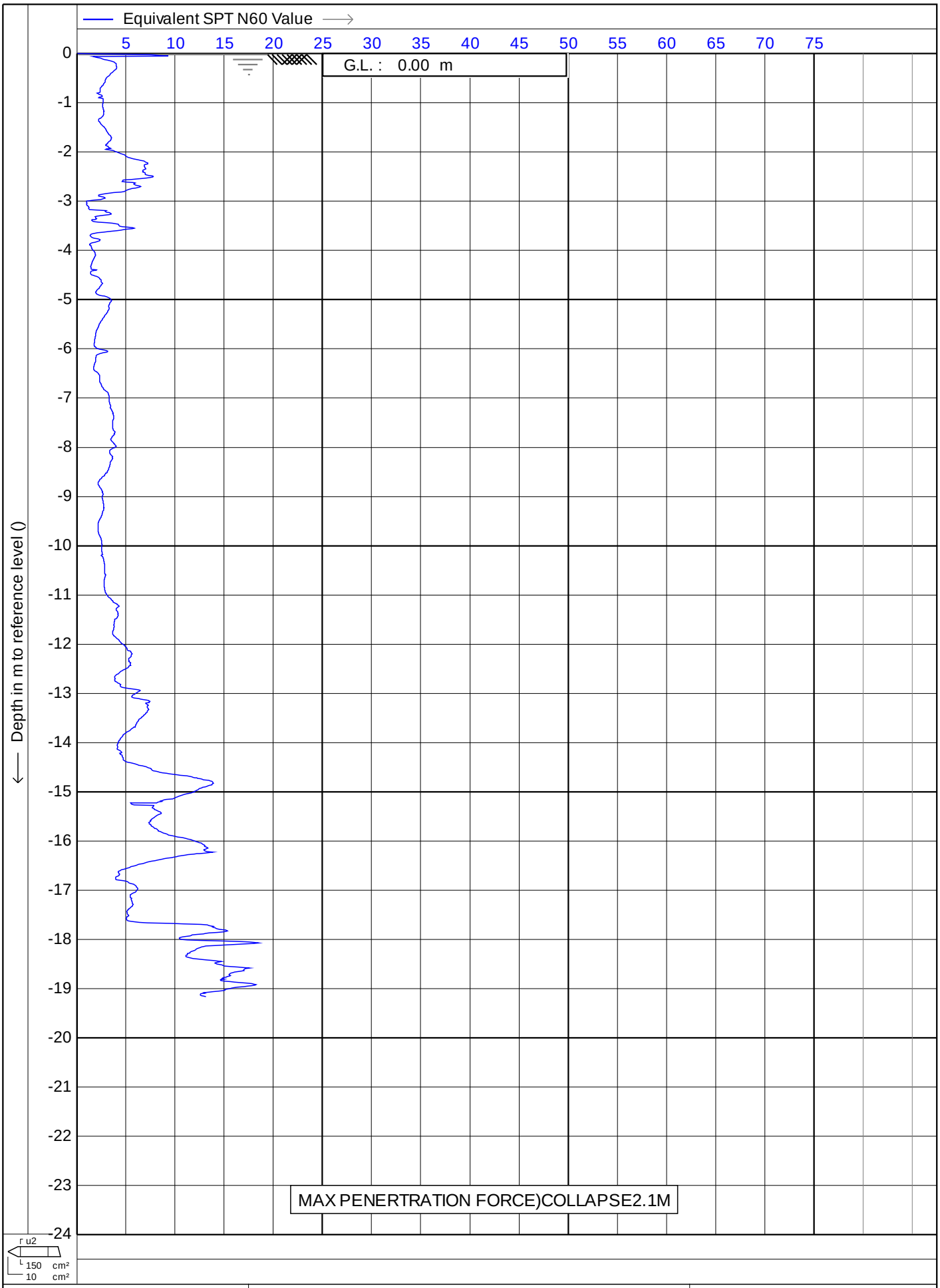
Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



	Test according NEN 5140 class 1	Date : **22/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154**
	Position: **174.64389, 36.59751 RD**	CPT no. : **CPT1** 11/15

1.49



Test according NEN 5140 class 1

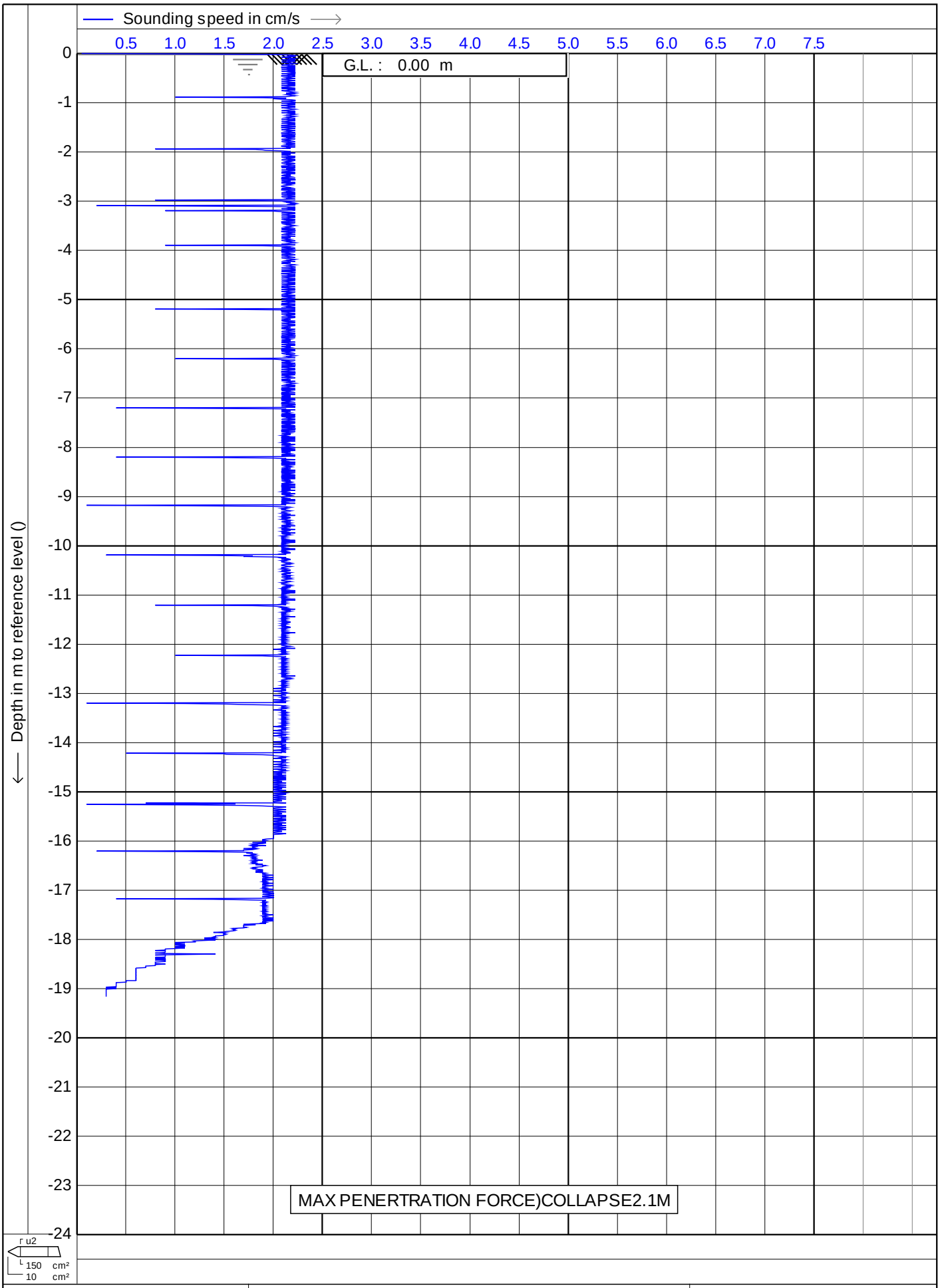
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

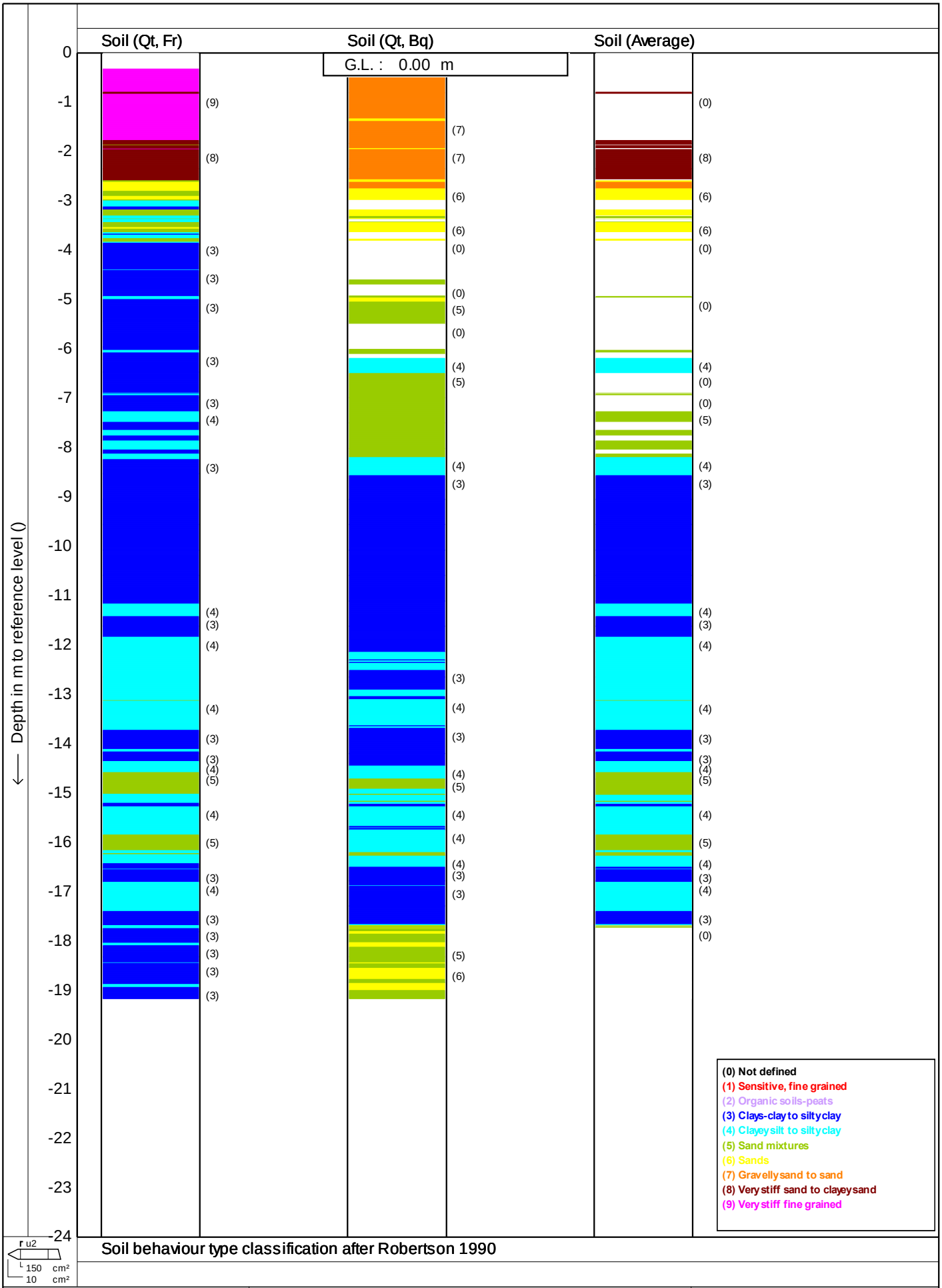
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Soil behaviour type classification after Robertson 1990

r u2
150 cm²
10 cm²

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

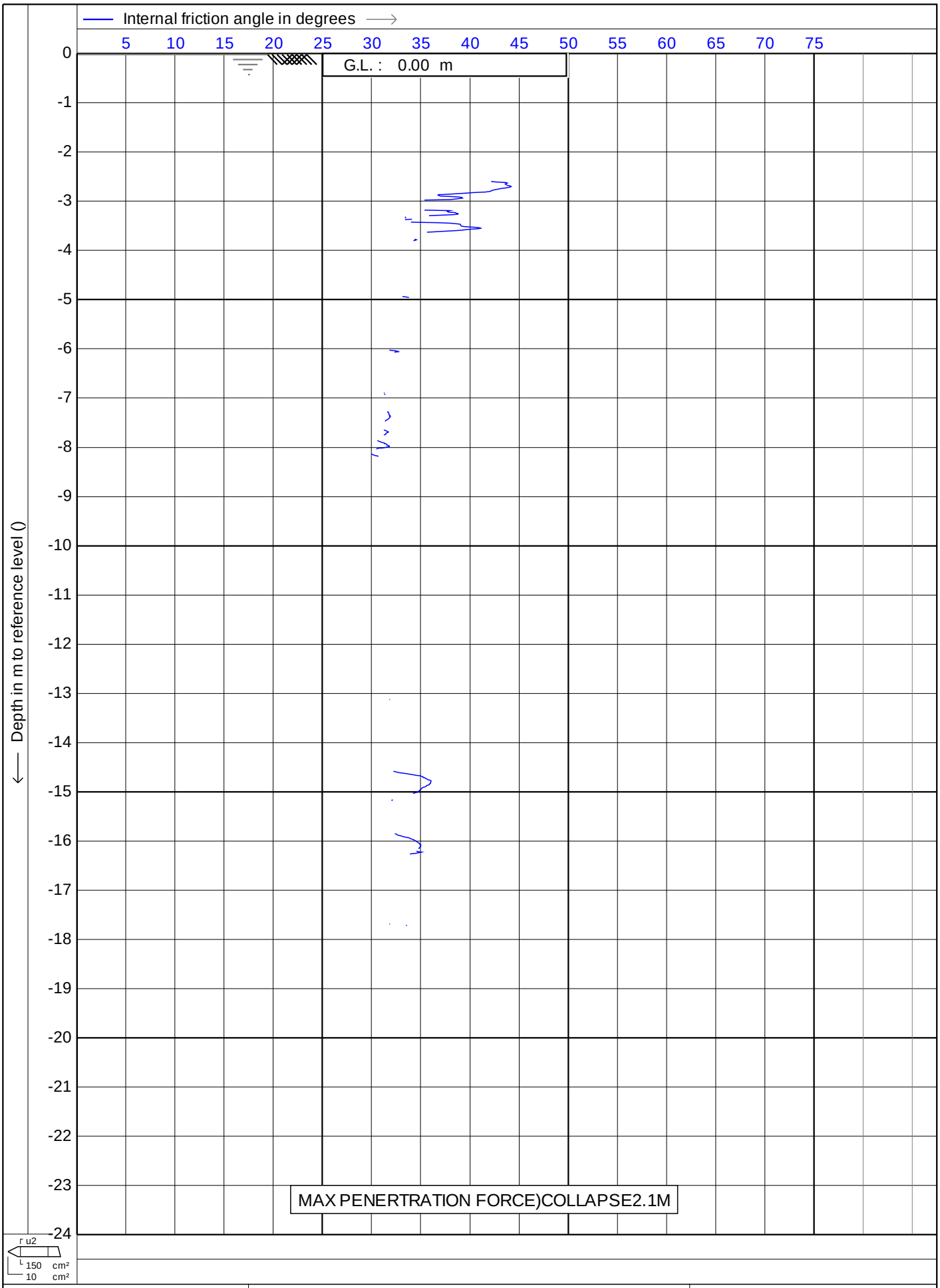
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT1**

1.49



Test according NEN 5140 class 1

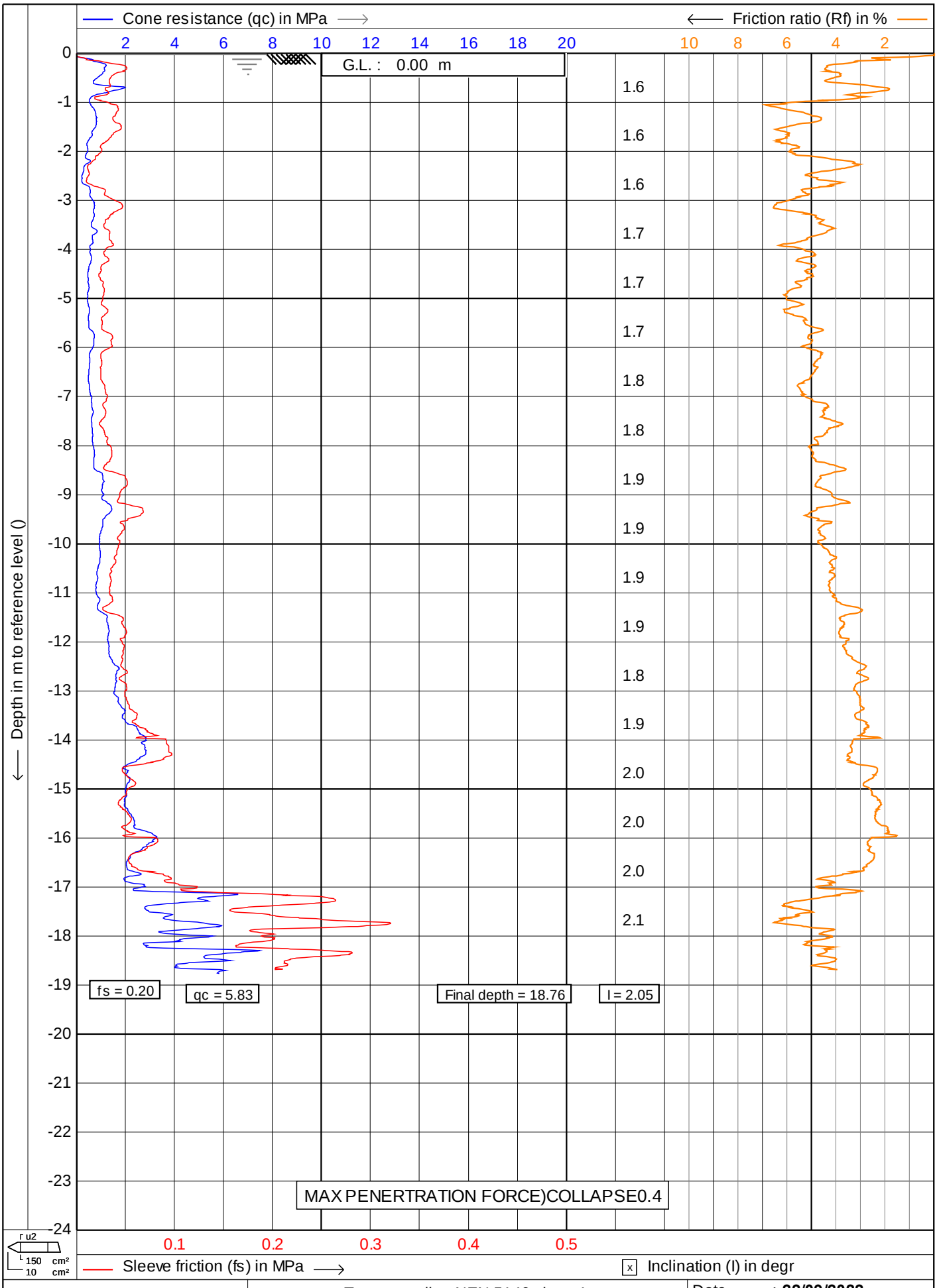
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64389, 36.59751 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT1**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

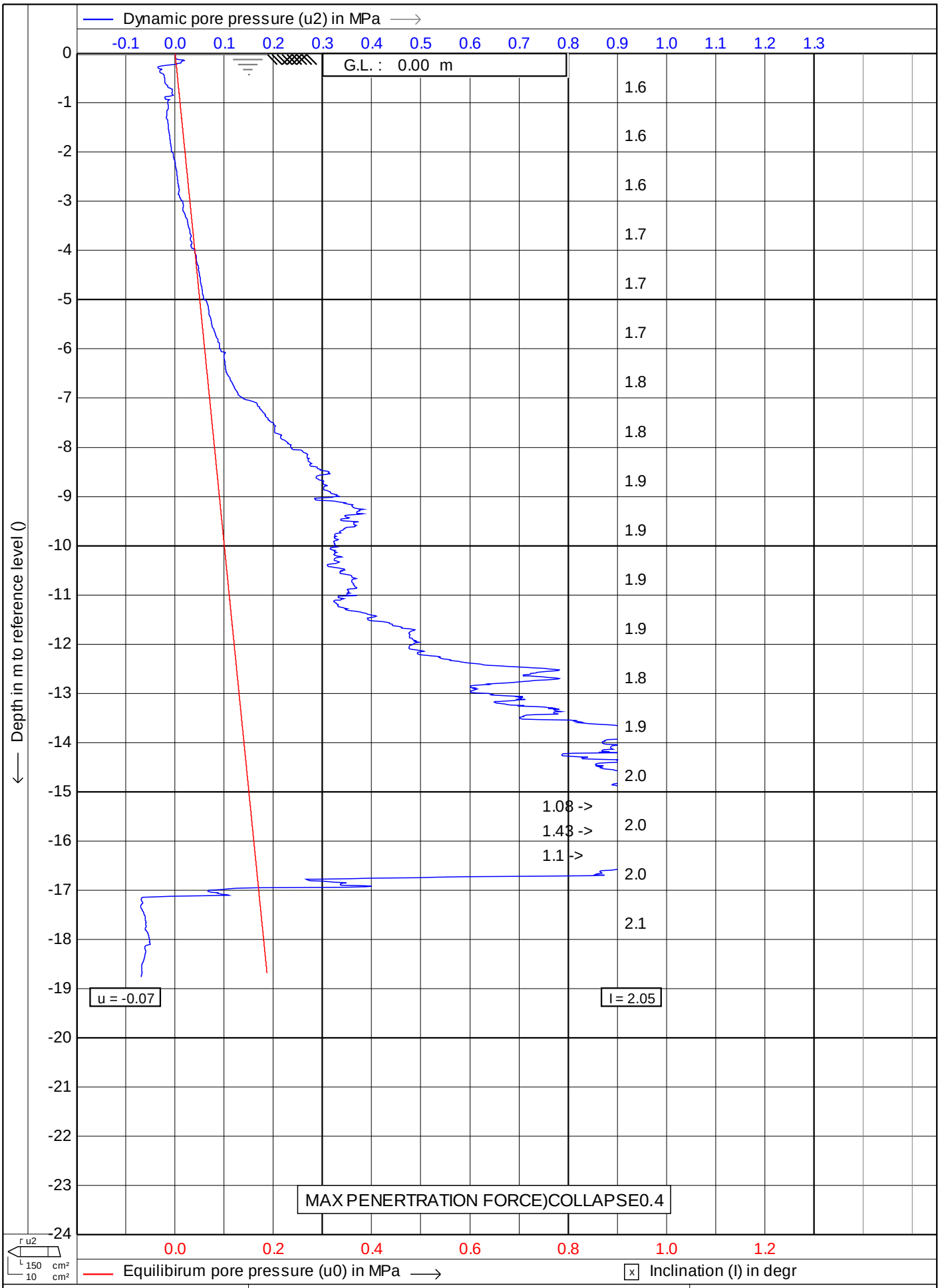
Position: **174.64417, 36.5984 RD**

Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT2** **1/15**



Test according NEN 5140 class 1

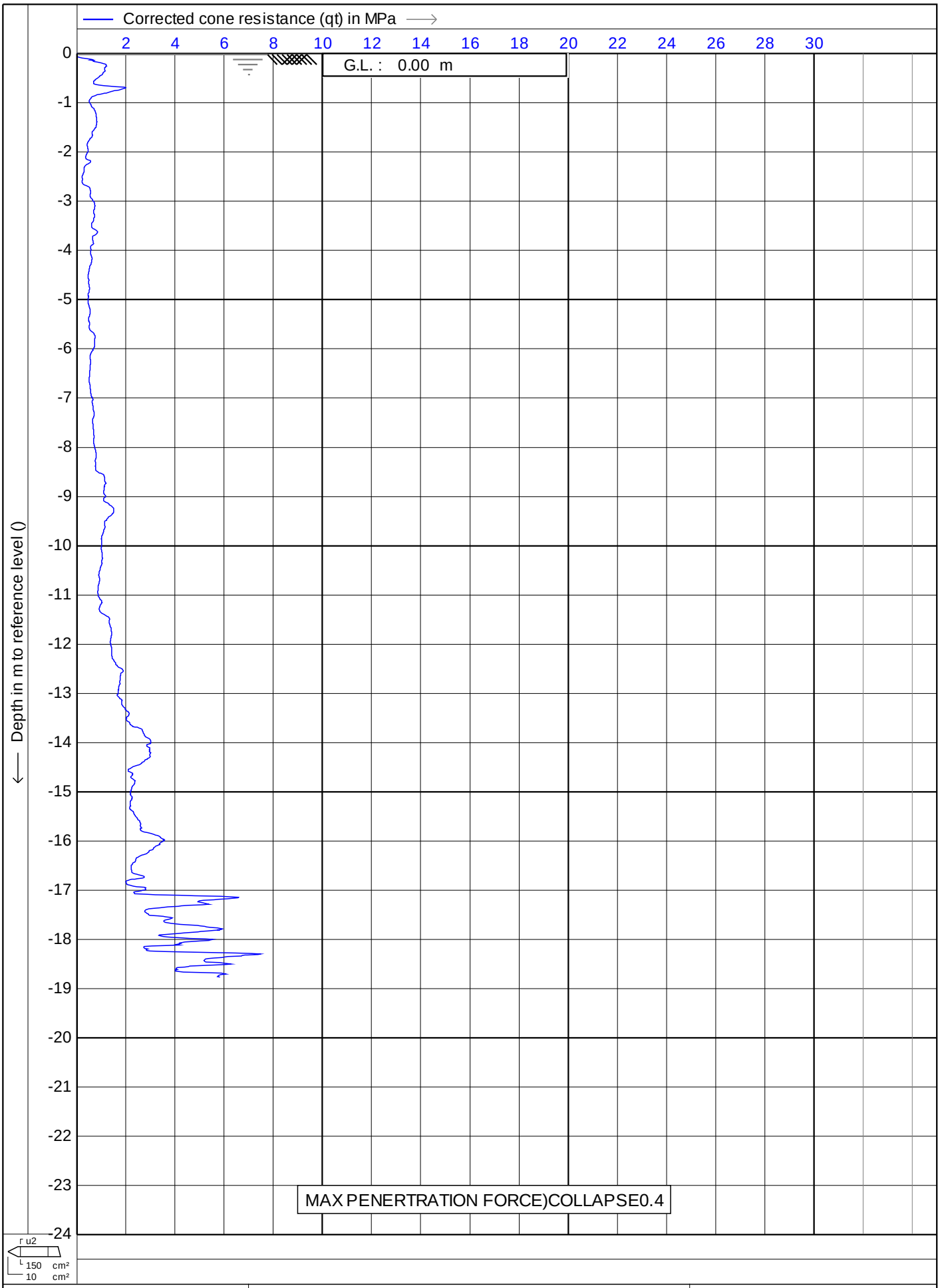
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

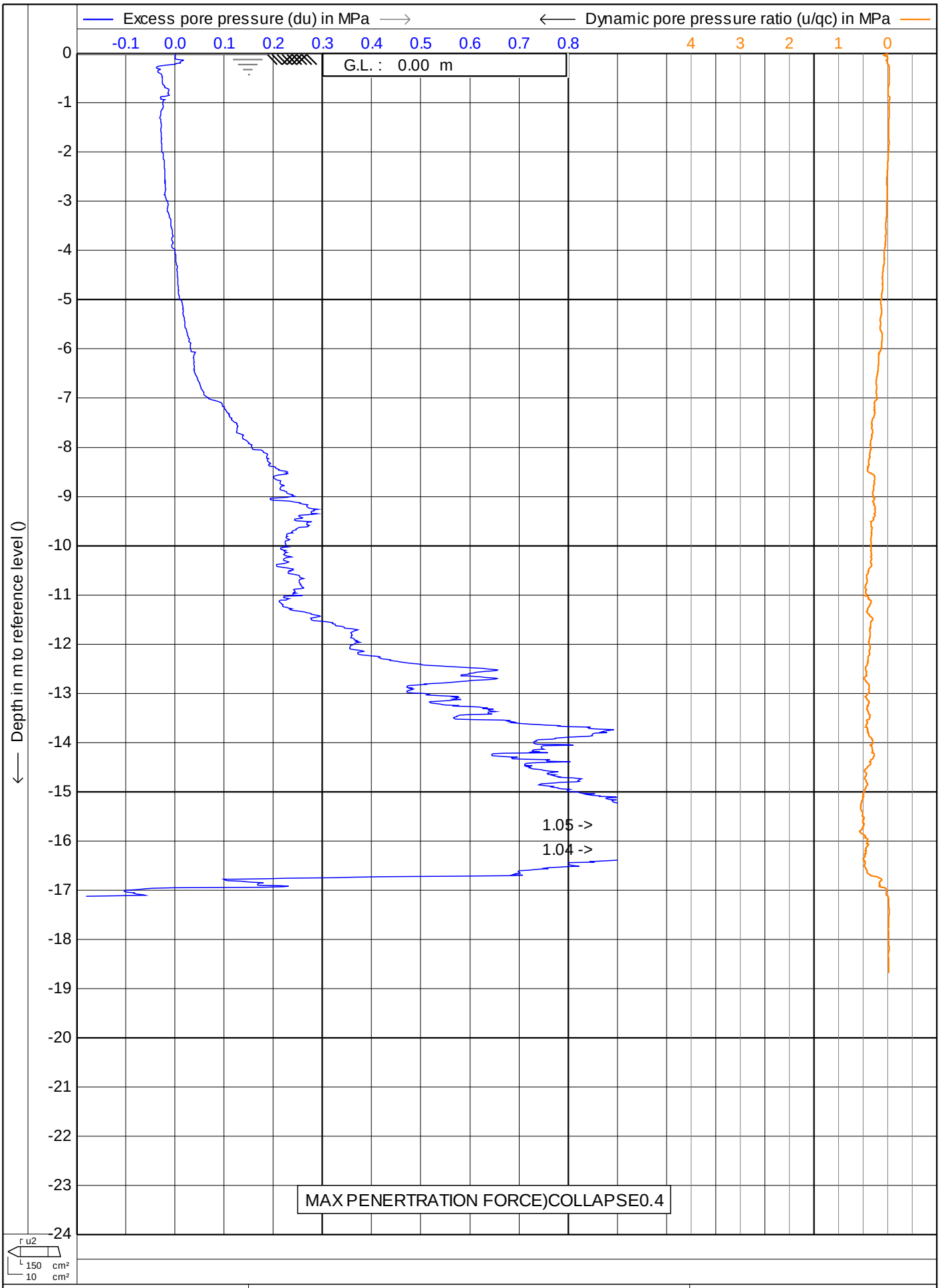
Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64417, 36.5984 RD**	CPT no.	: **CPT2** 3/15

1.49



Test according NEN 5140 class 1

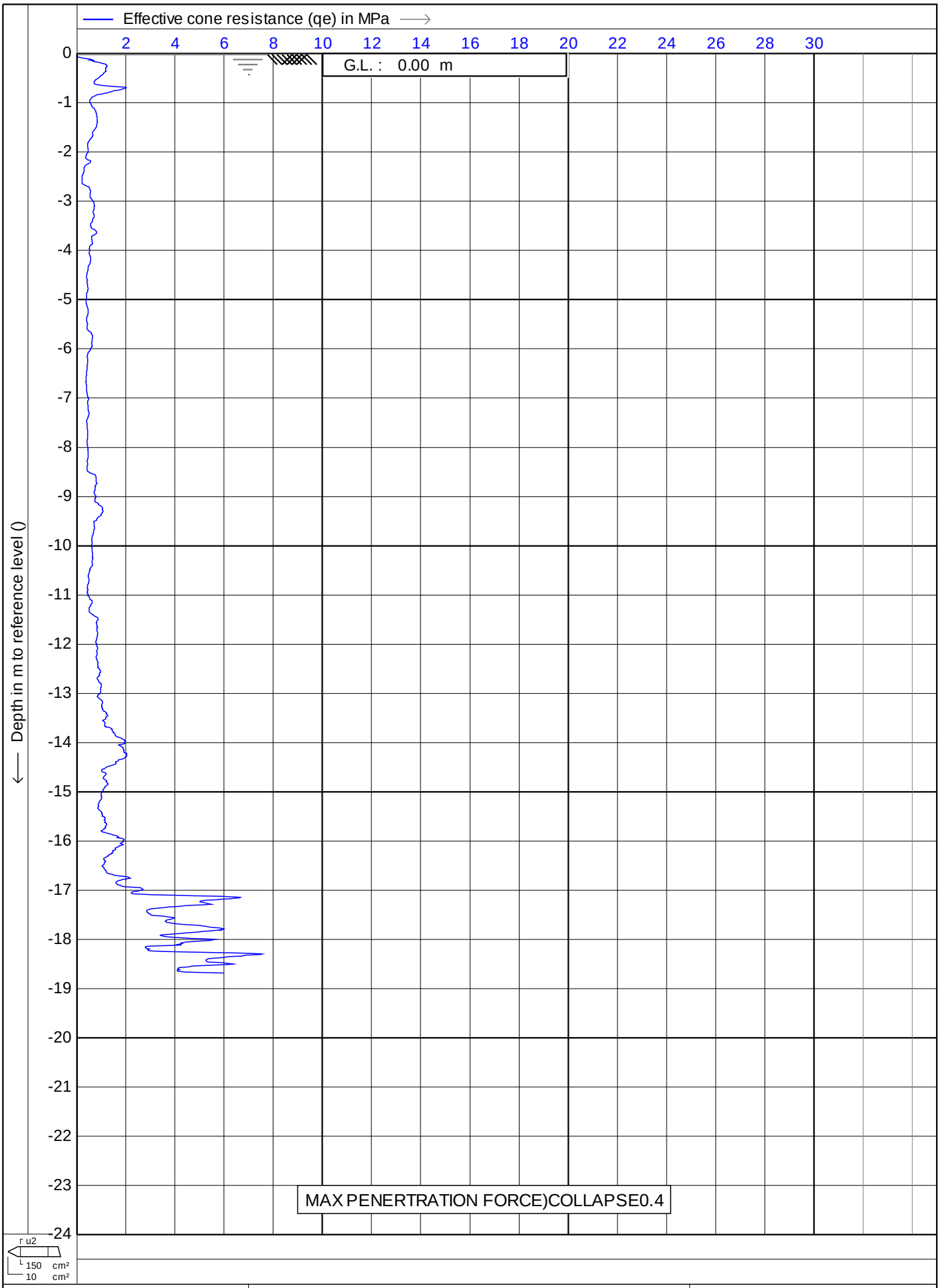
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2** **4/15**

1.49



Test according NEN 5140 class 1

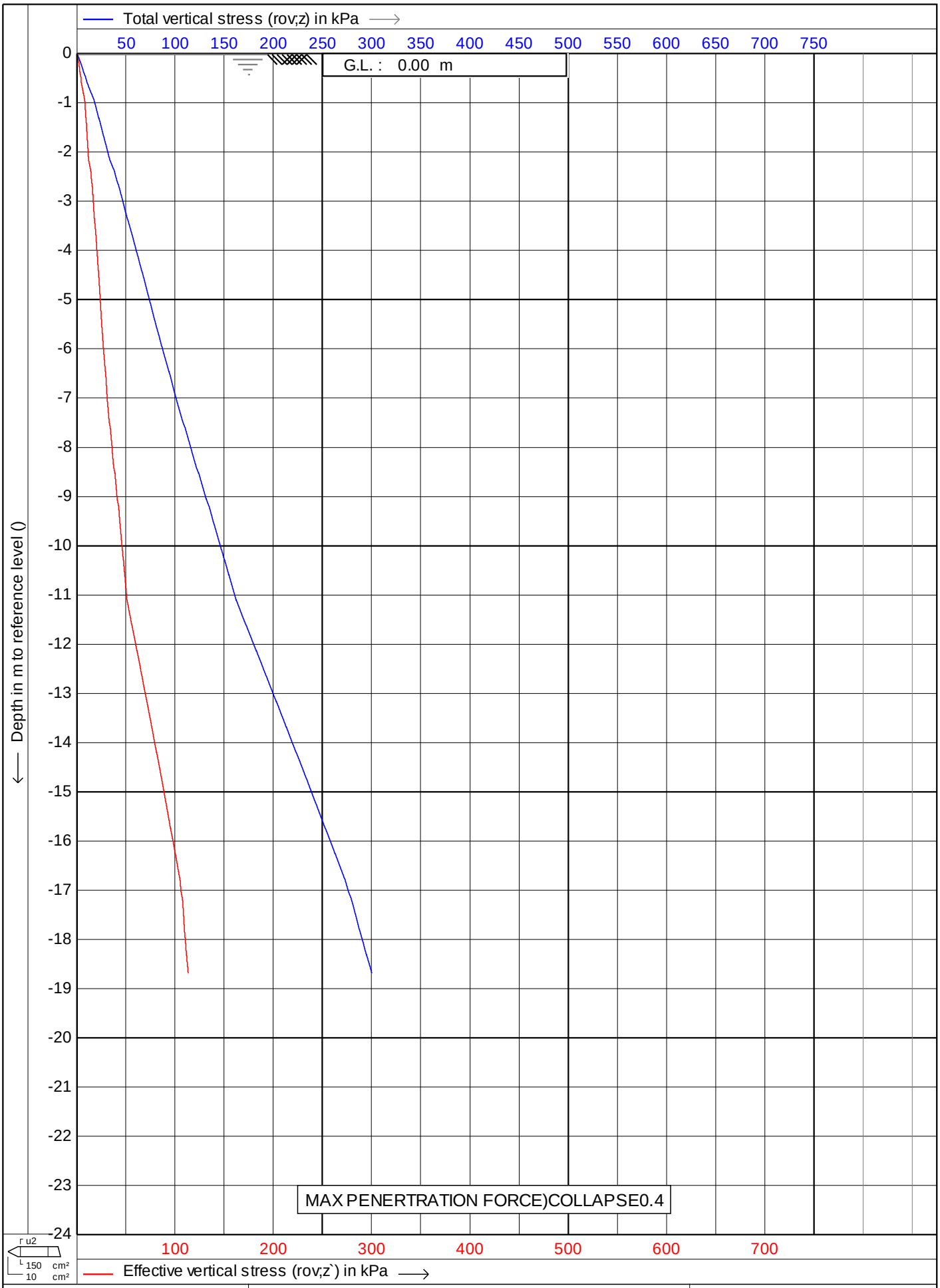
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2** **5/15**

1.49



Test according NEN 5140 class 1

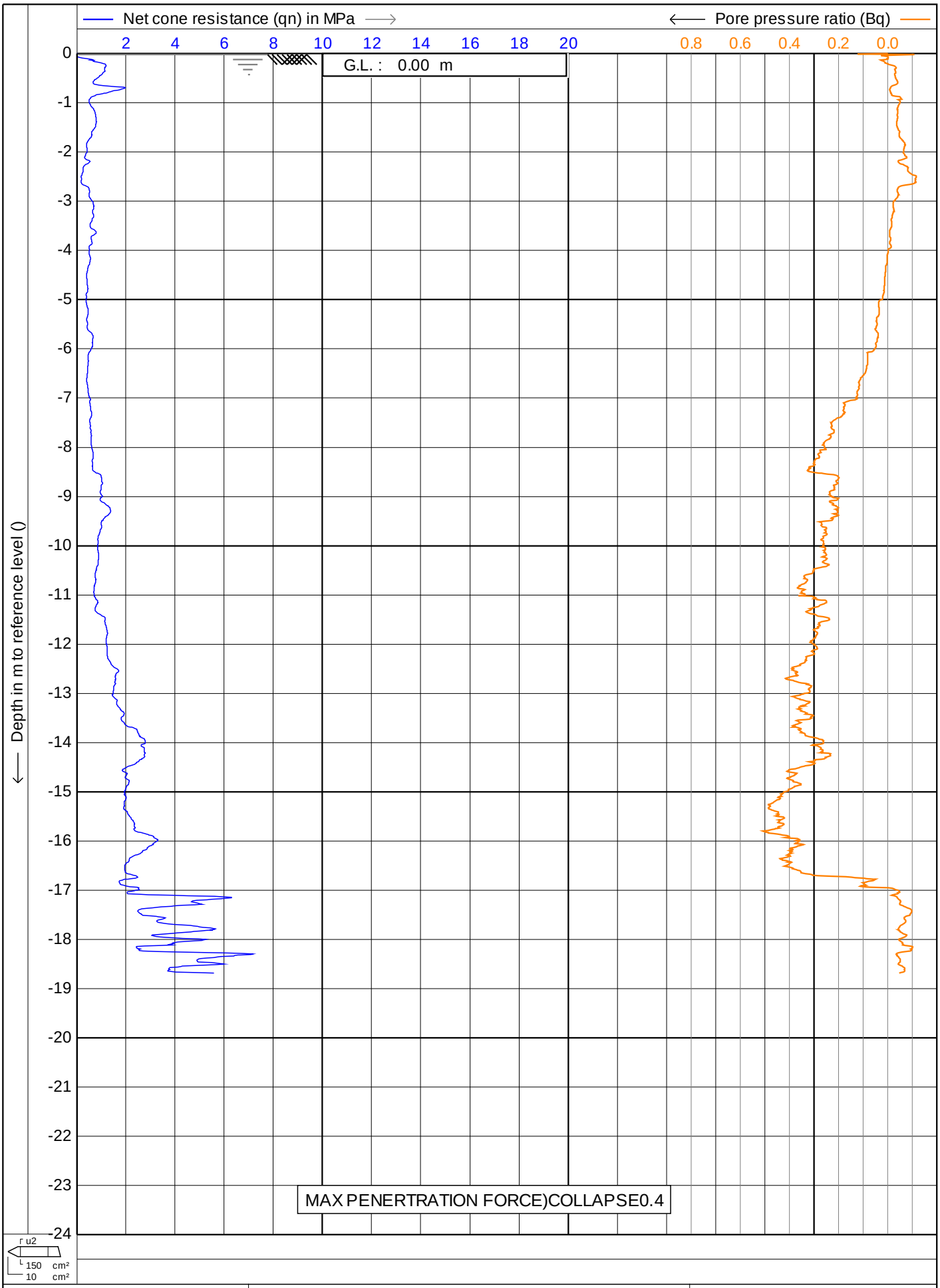
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

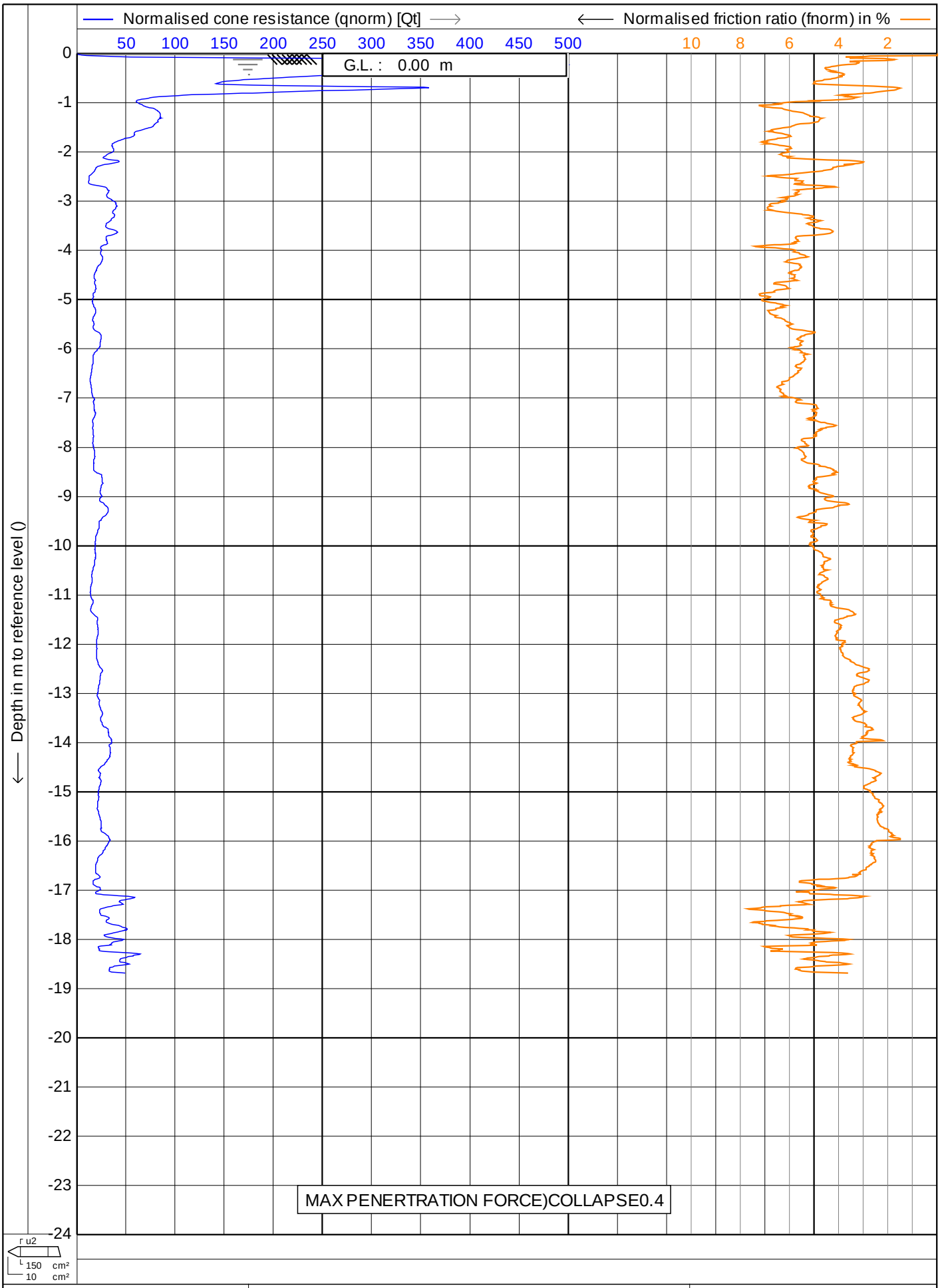
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2** **7/15**

1.49



Test according NEN 5140 class 1

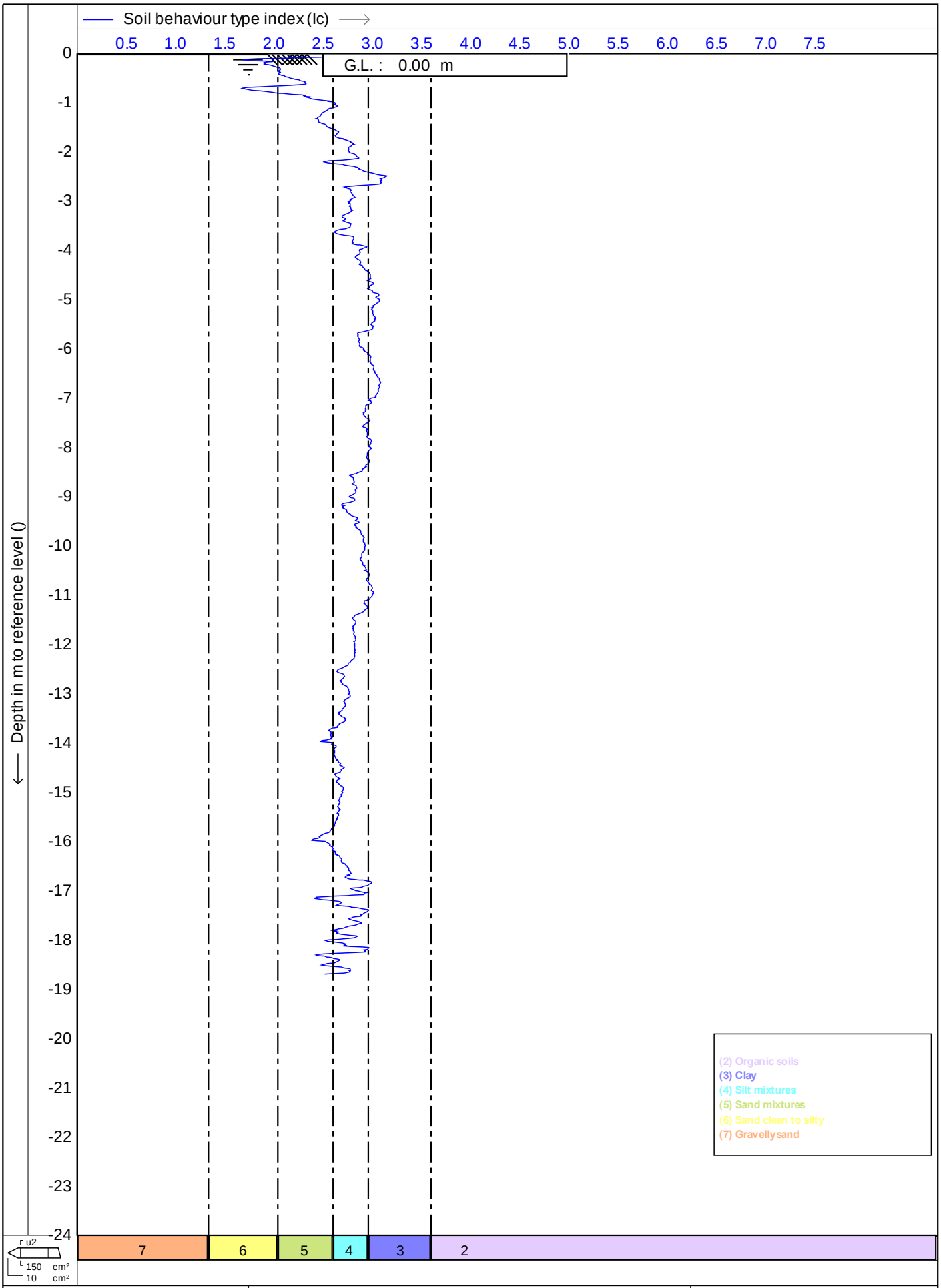
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

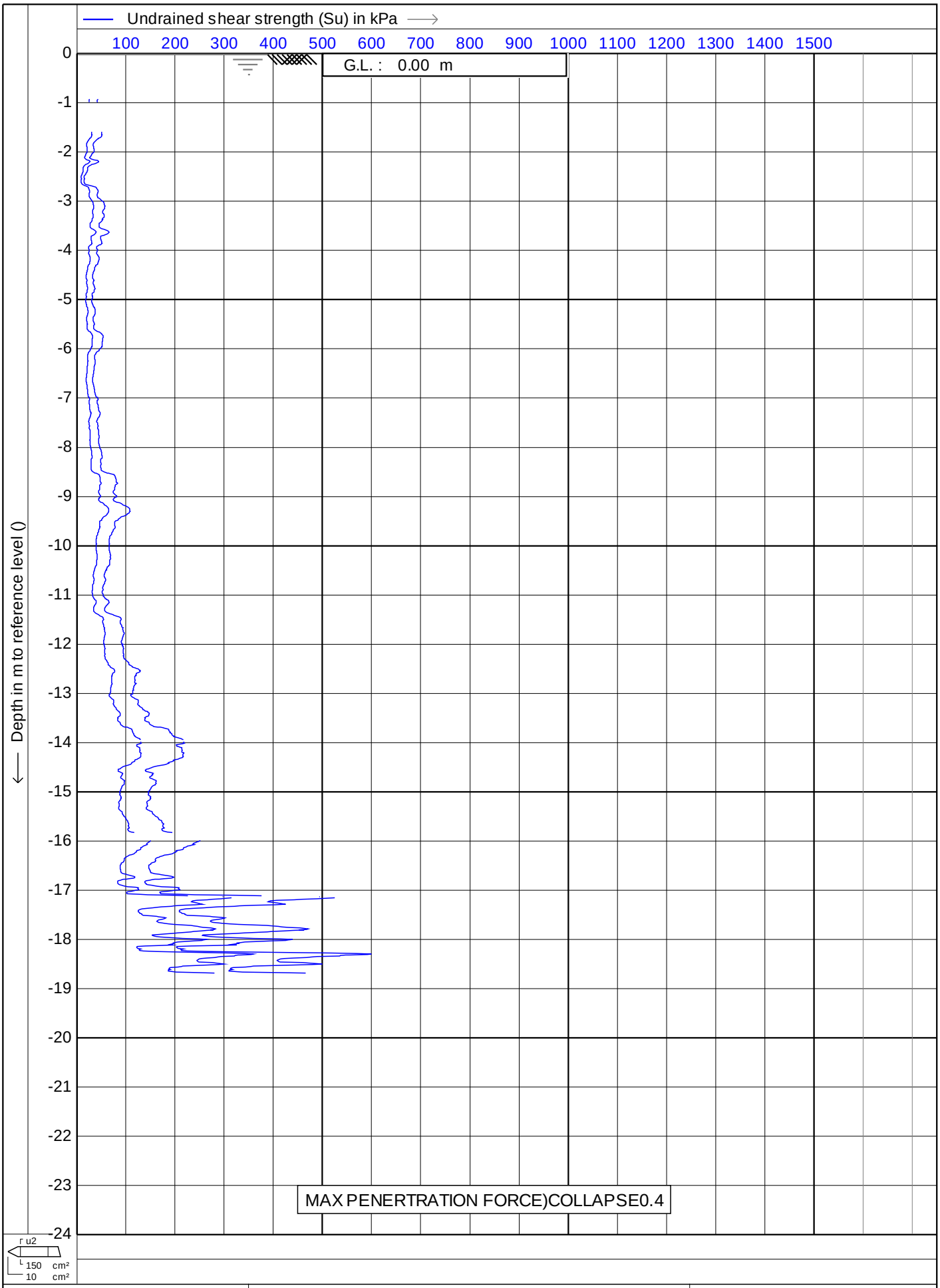
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT2** **9/15**

1.49



Test according NEN 5140 class 1

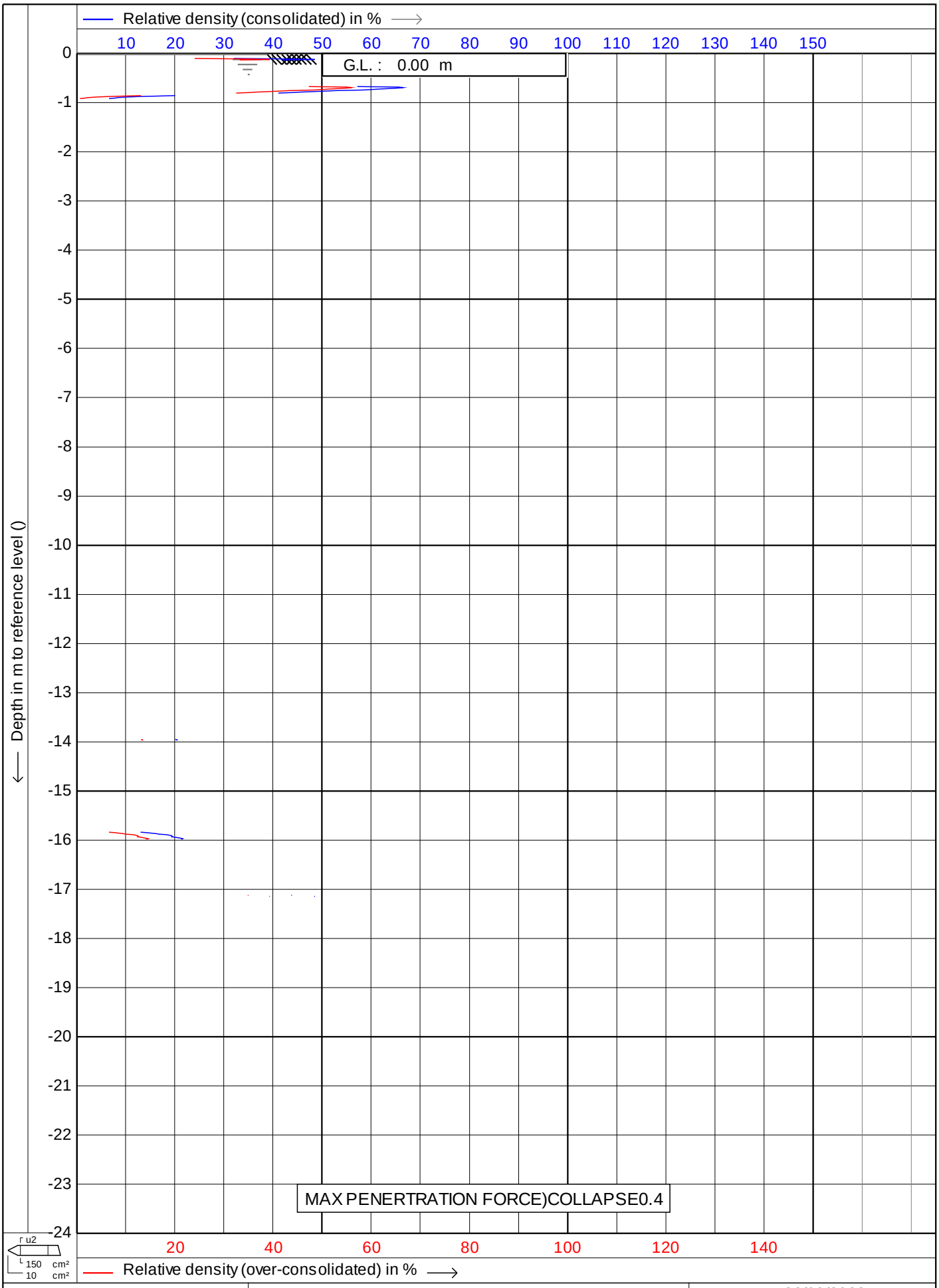
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

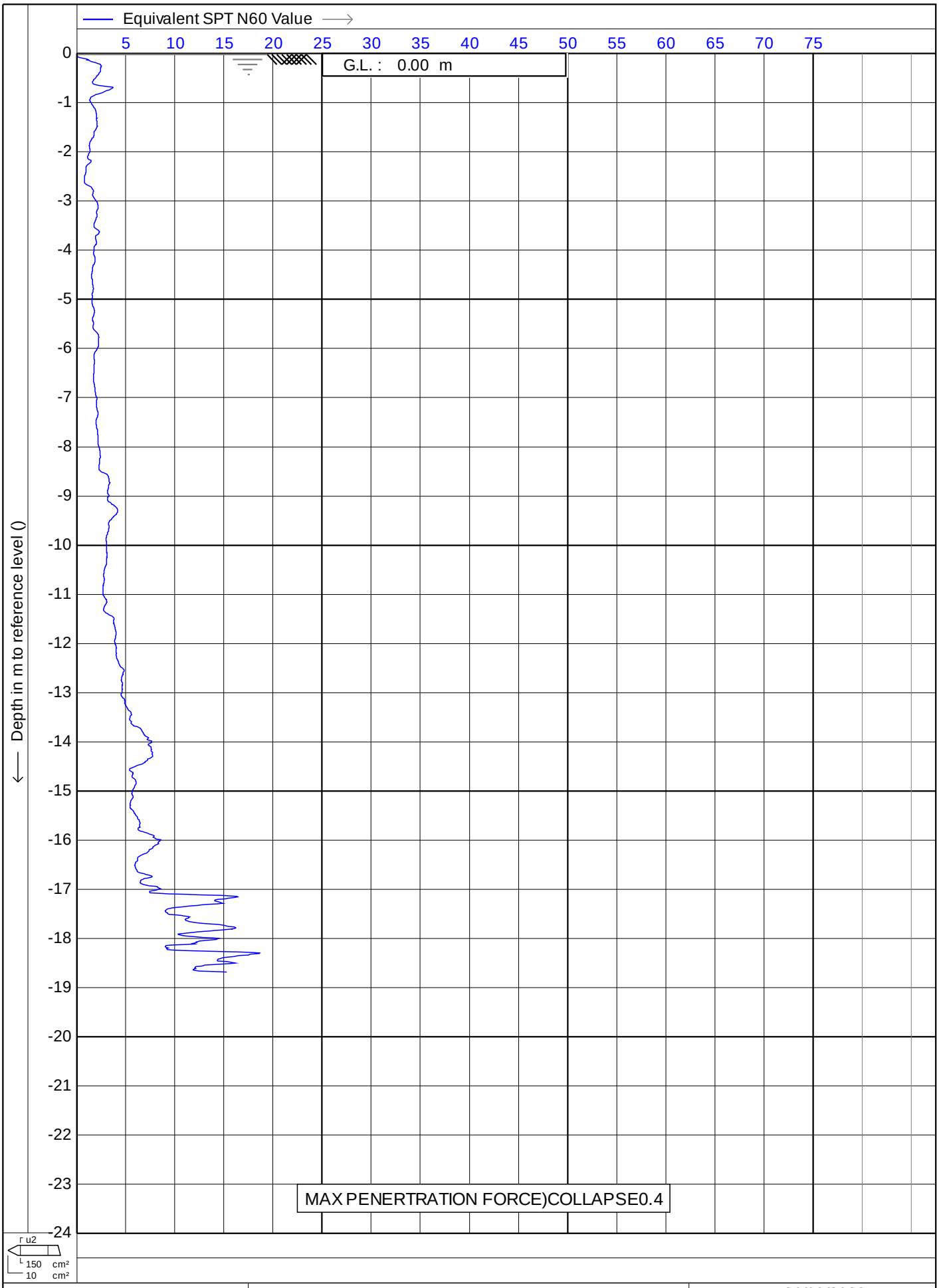
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

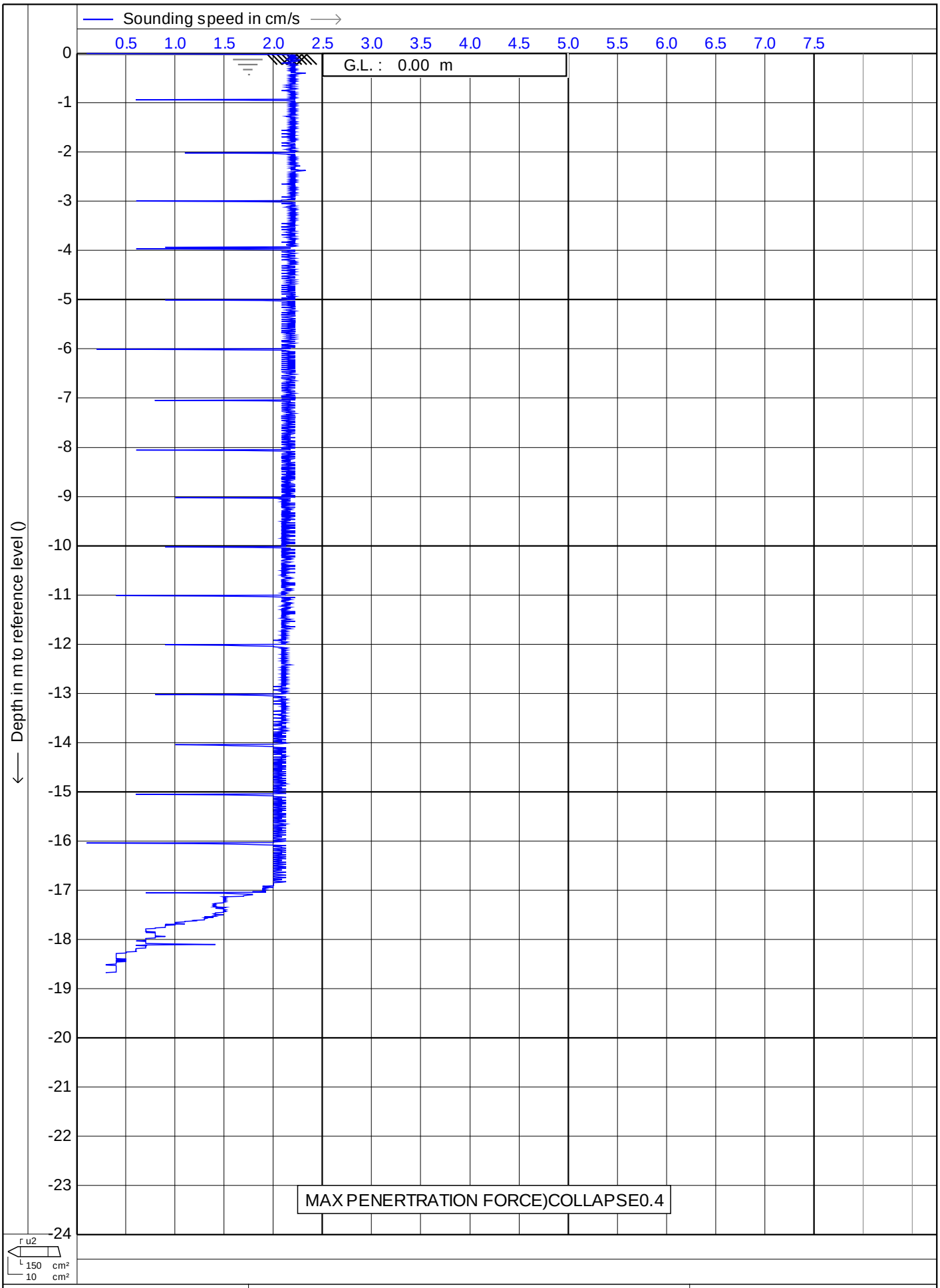
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

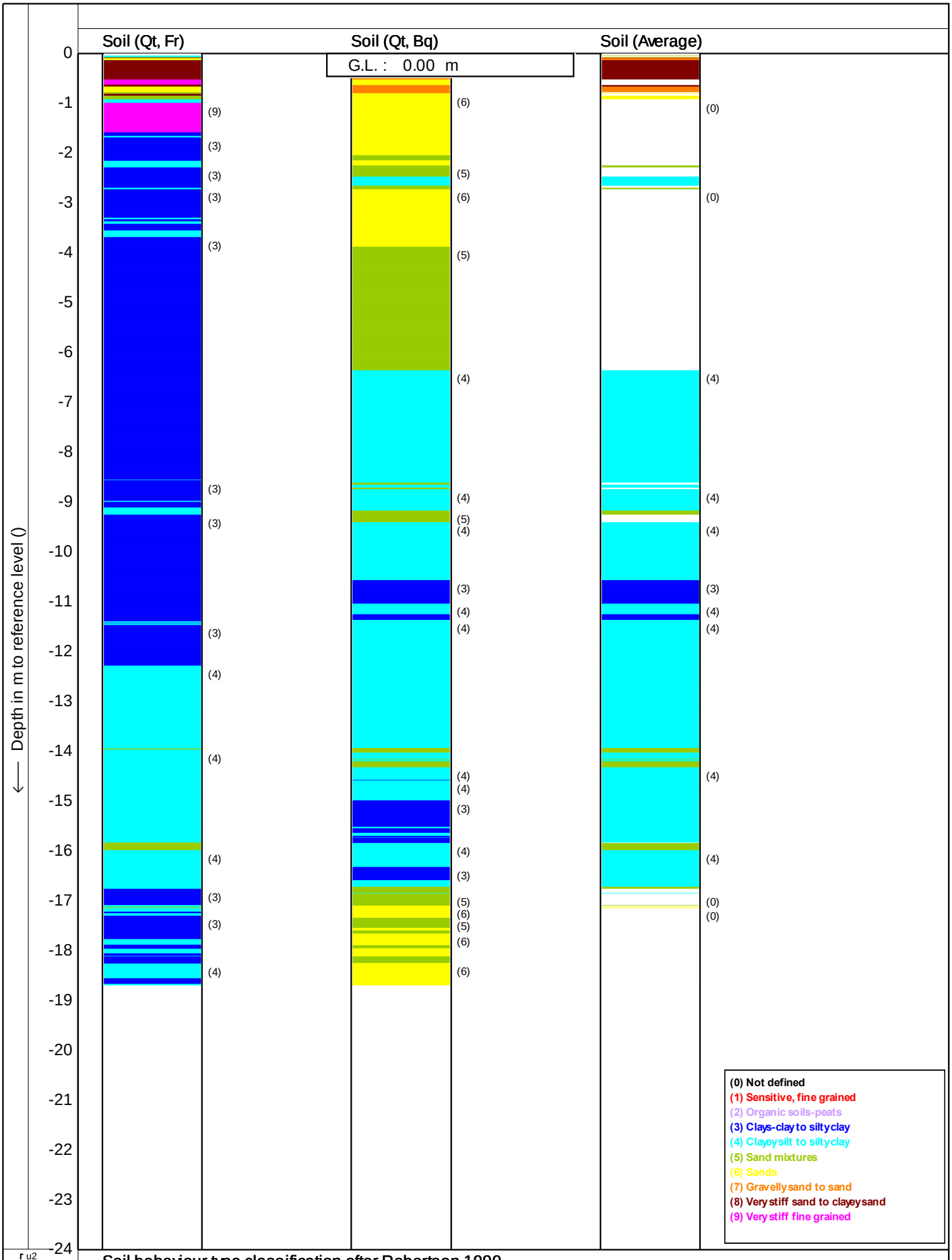
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

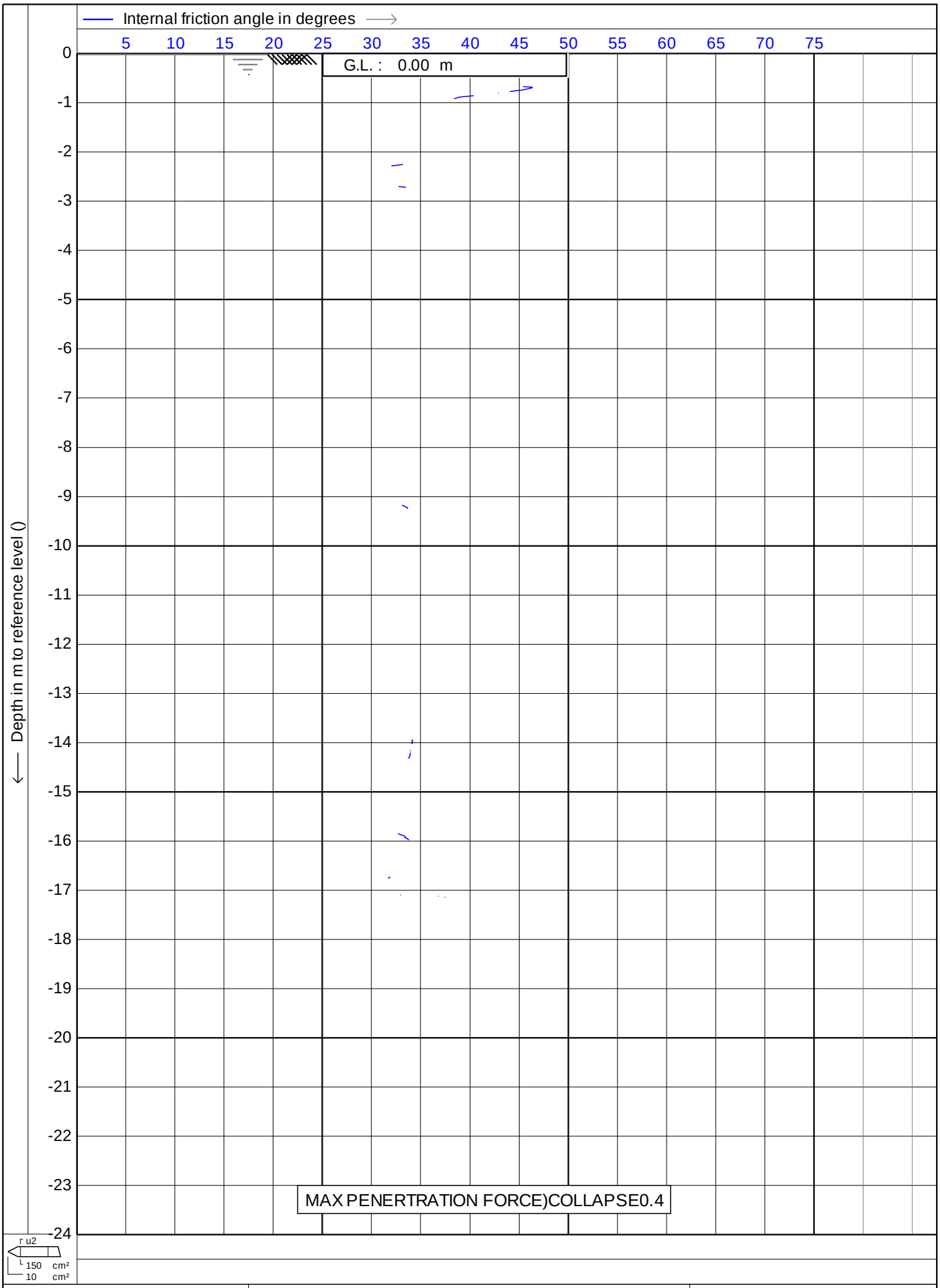
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1

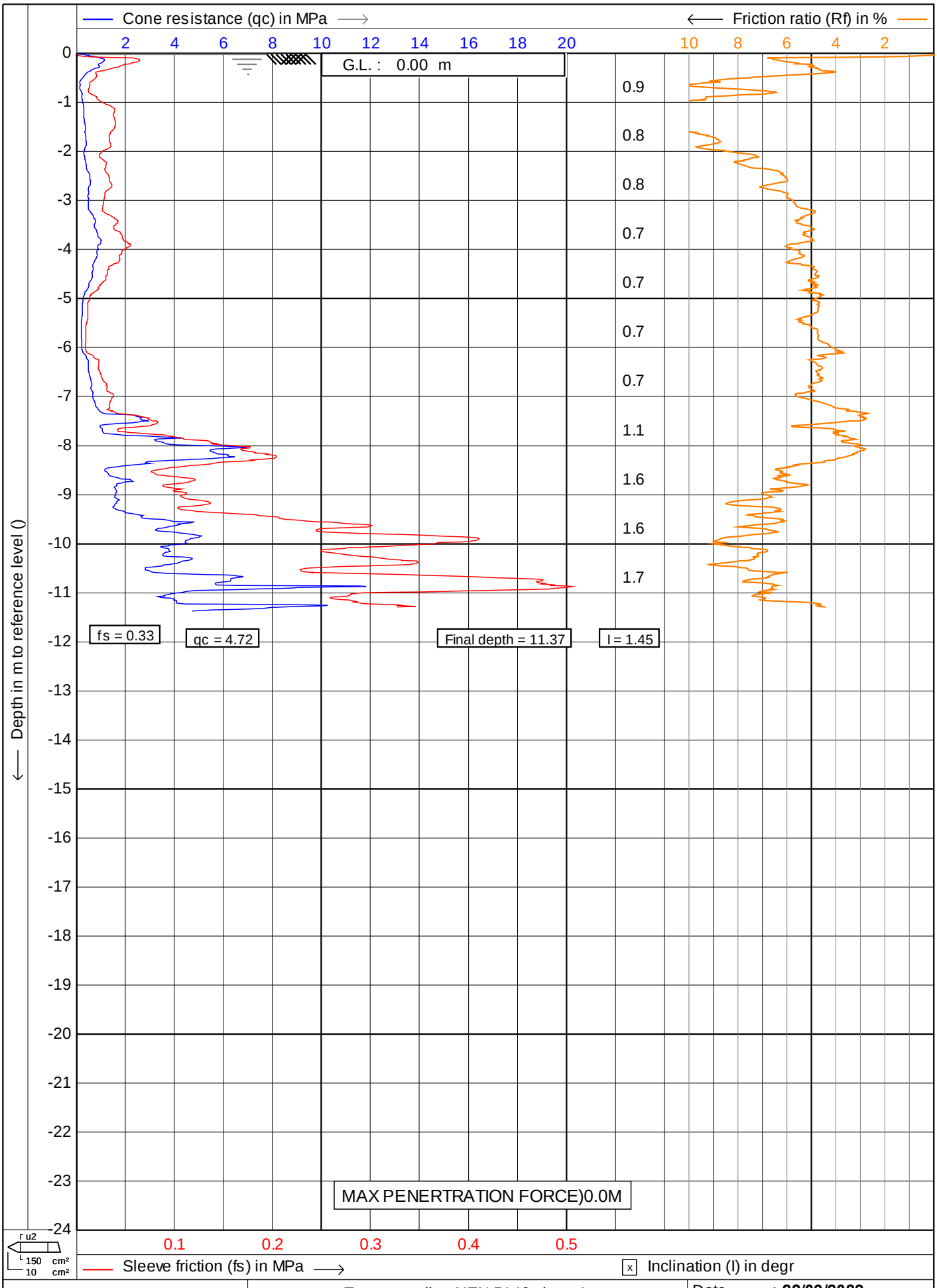
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64417, 36.5984 RD**

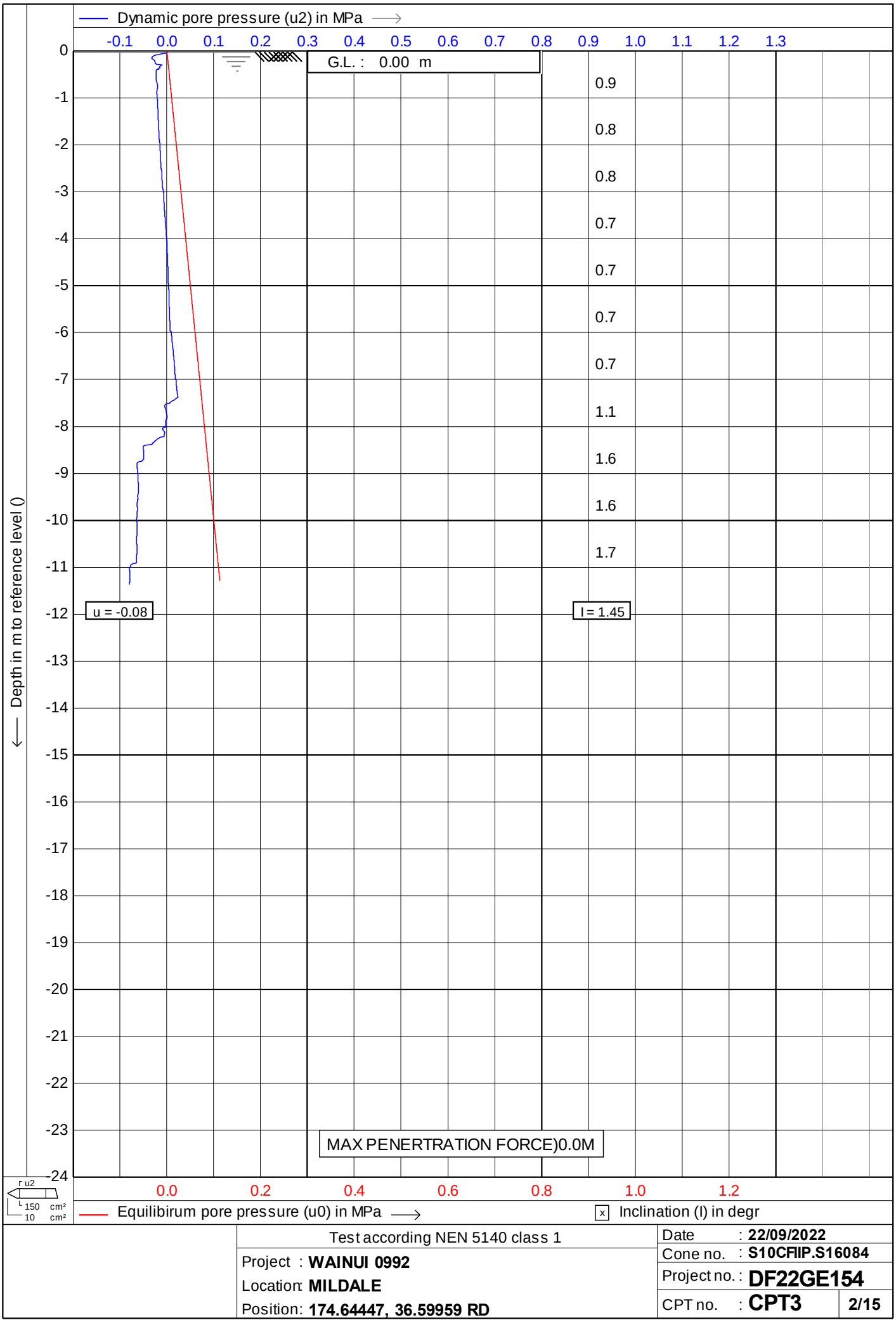
Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT2**

1.49



Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64447, 36.59959 RD**	CPT no.	: **CPT3** 1/15

1.49



Test according NEN 5140 class 1

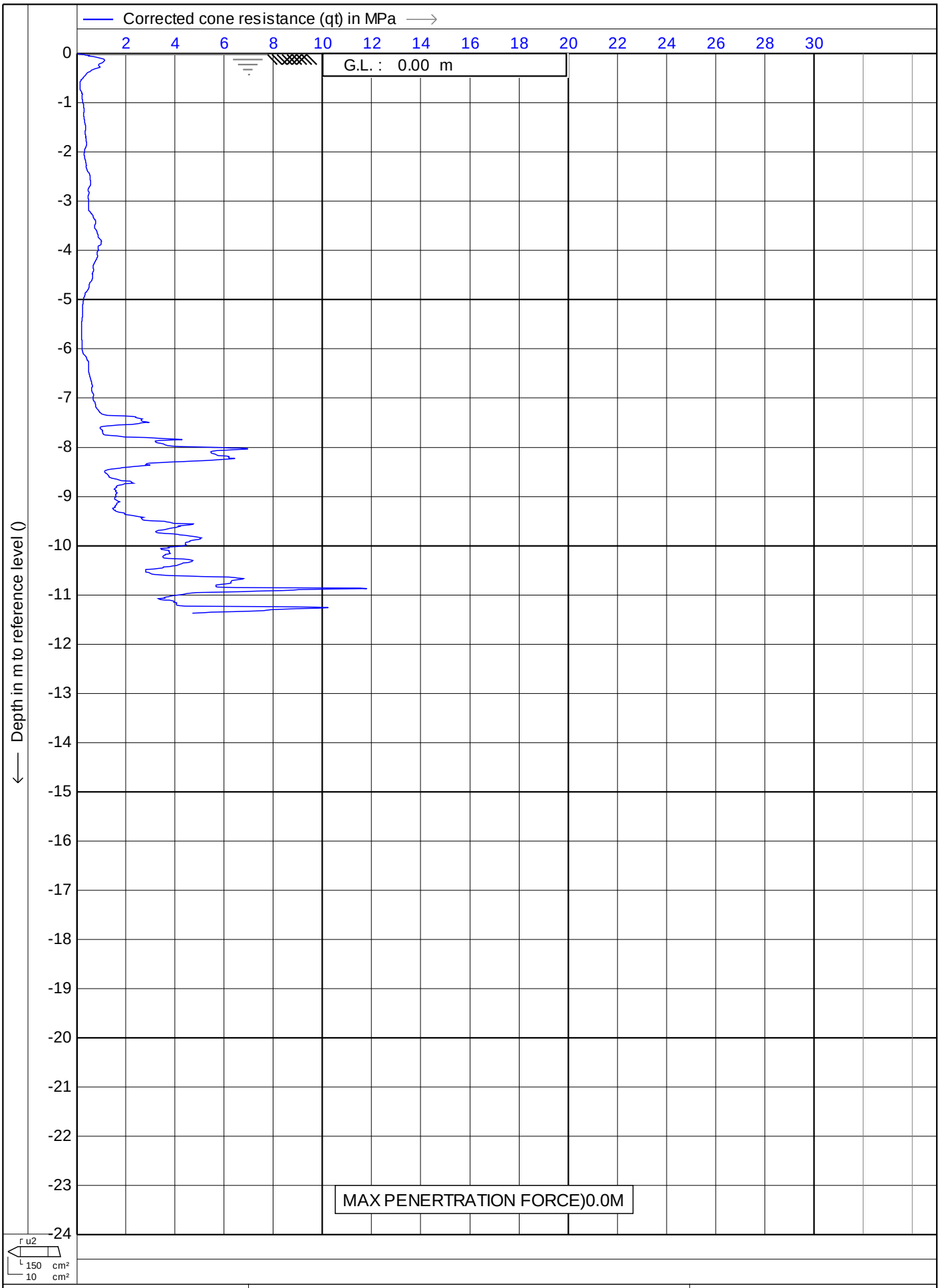
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Test according NEN 5140 class 1

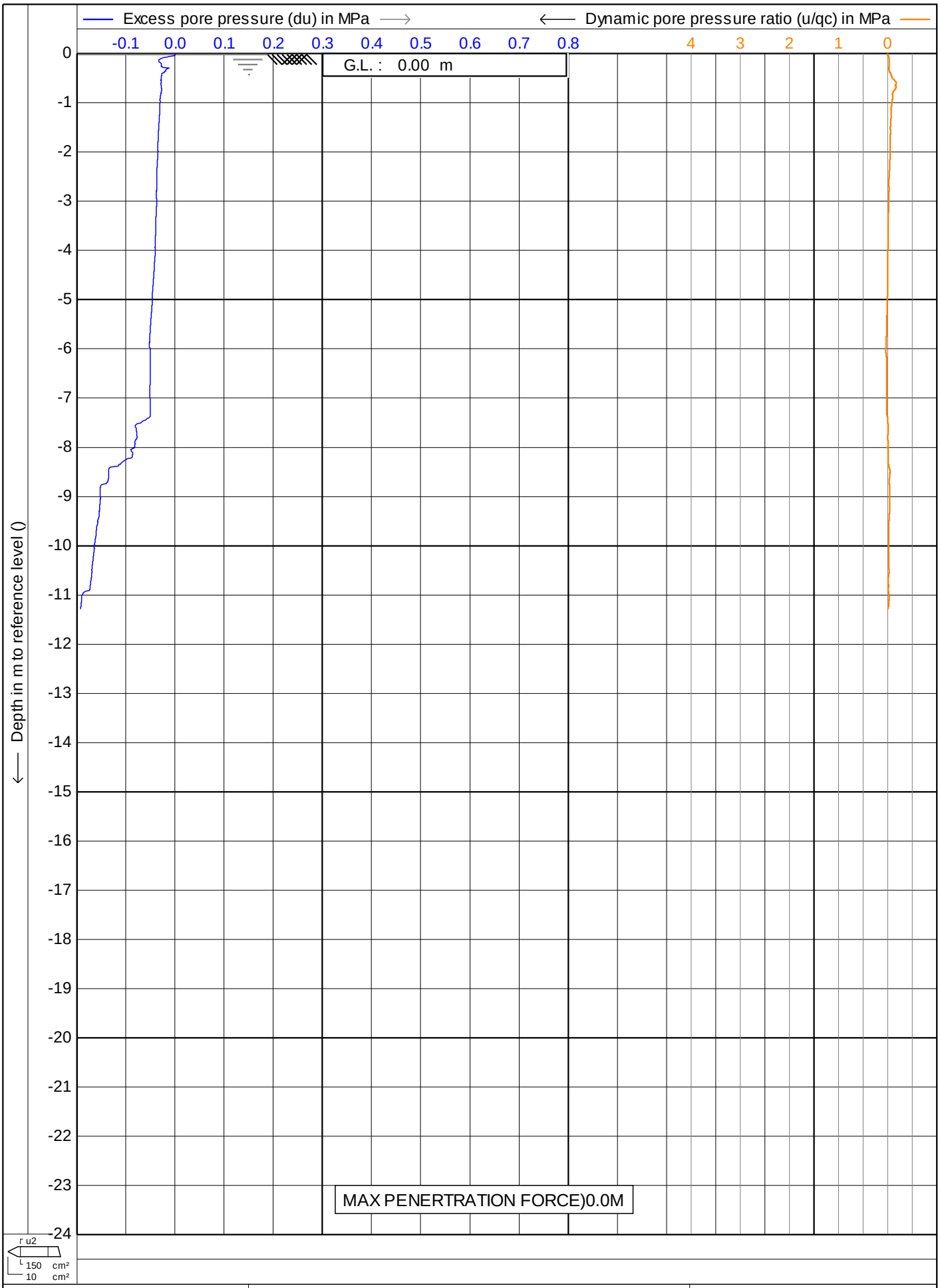
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

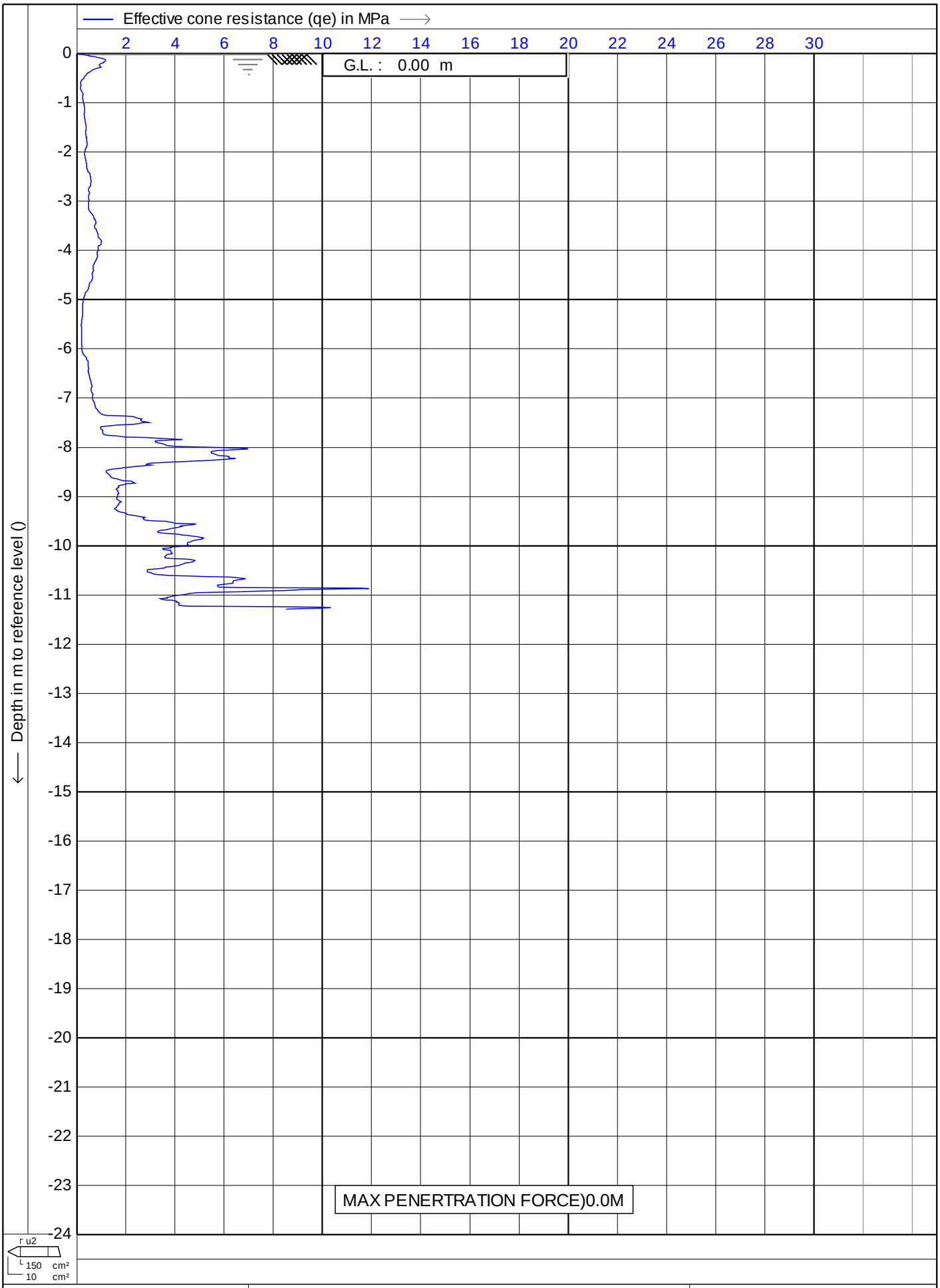
Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64447, 36.59959 RD**	CPT no.	: **CPT3** **4/15**

1.49



Test according NEN 5140 class 1

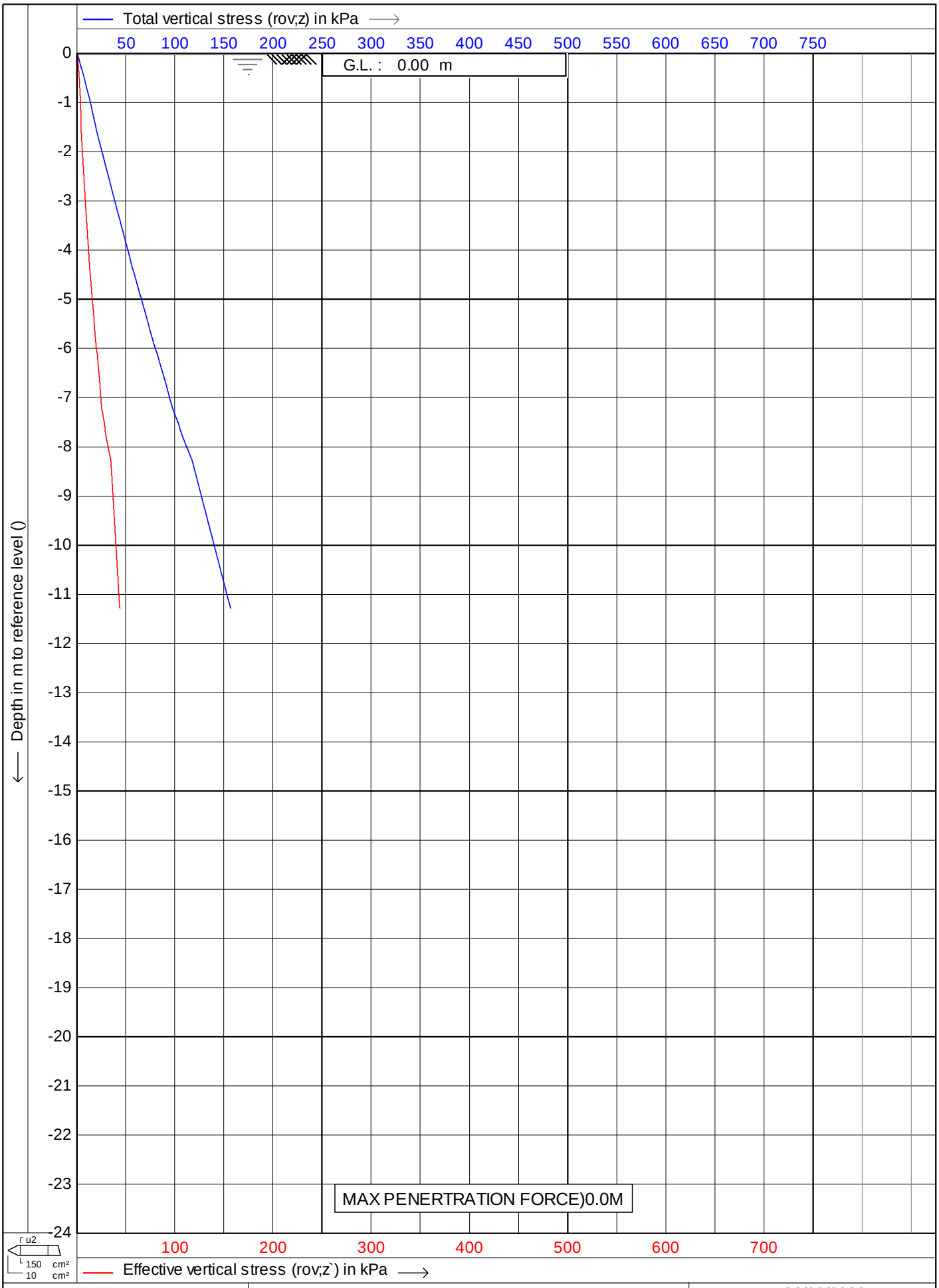
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3** **5/15**

1.49



Test according NEN 5140 class 1

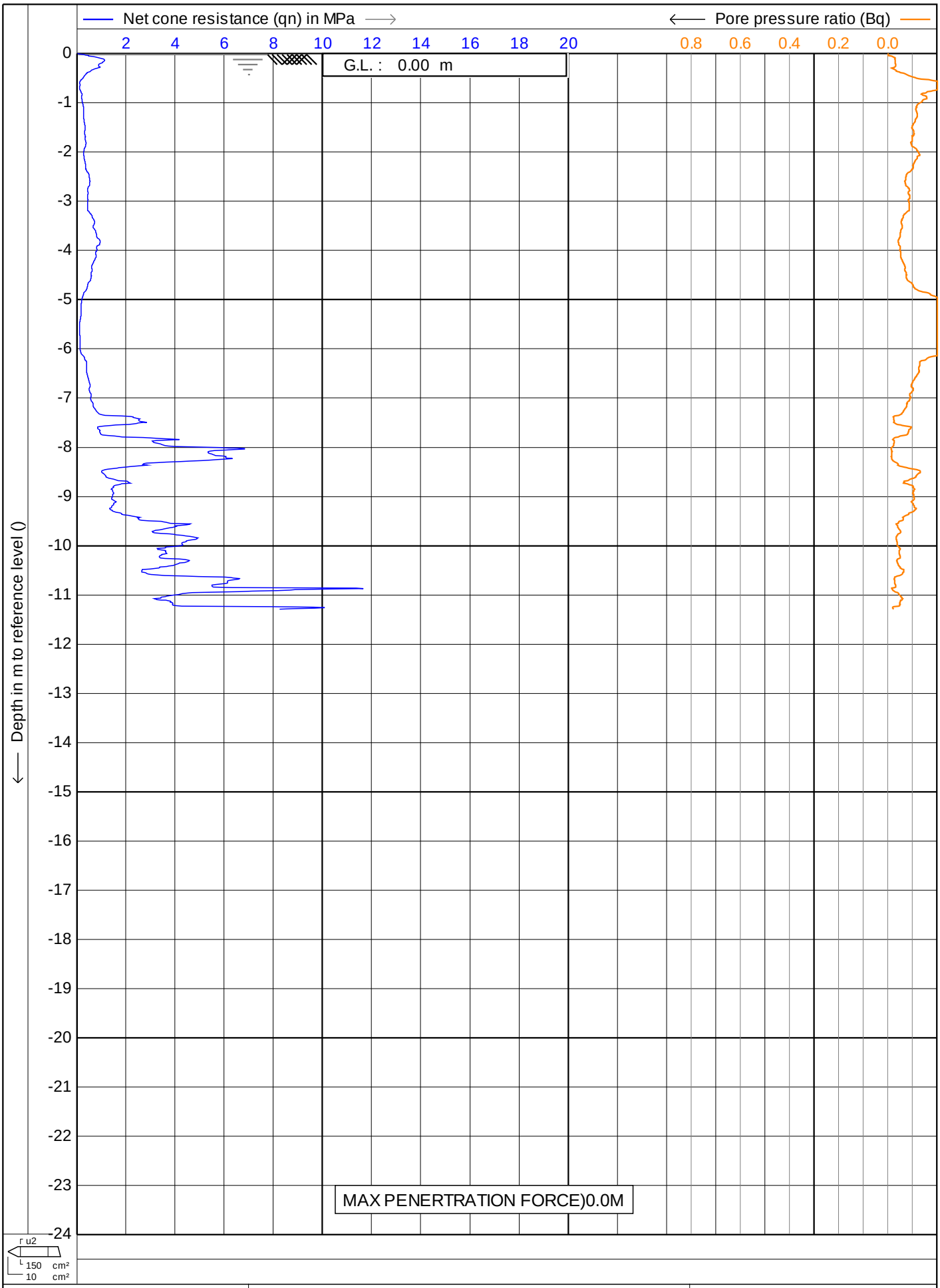
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

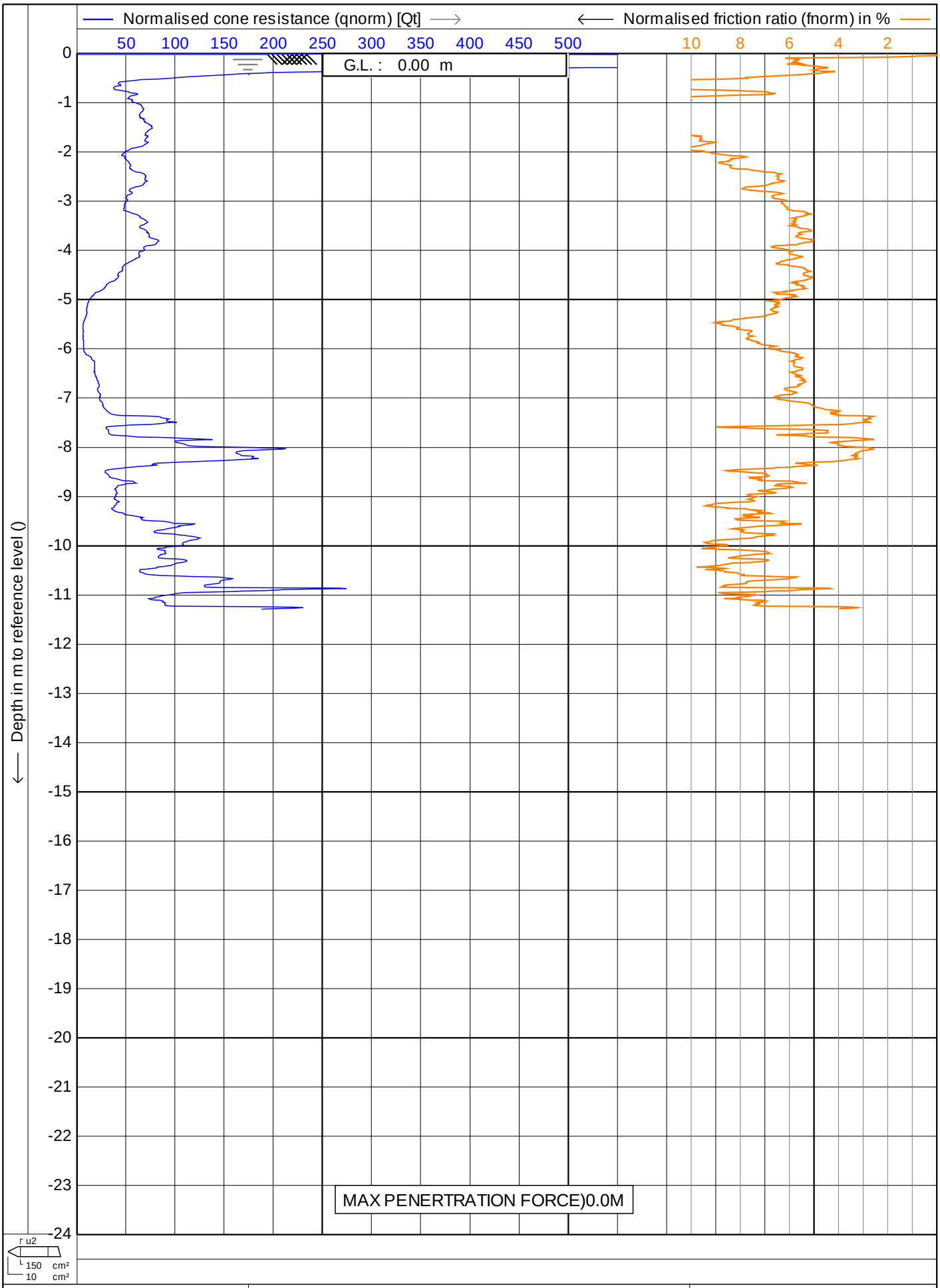
Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



	Test according NEN 5140 class 1	Date : **22/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154**
	Position: **174.64447, 36.59959 RD**	CPT no. : **CPT3** 7/15

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

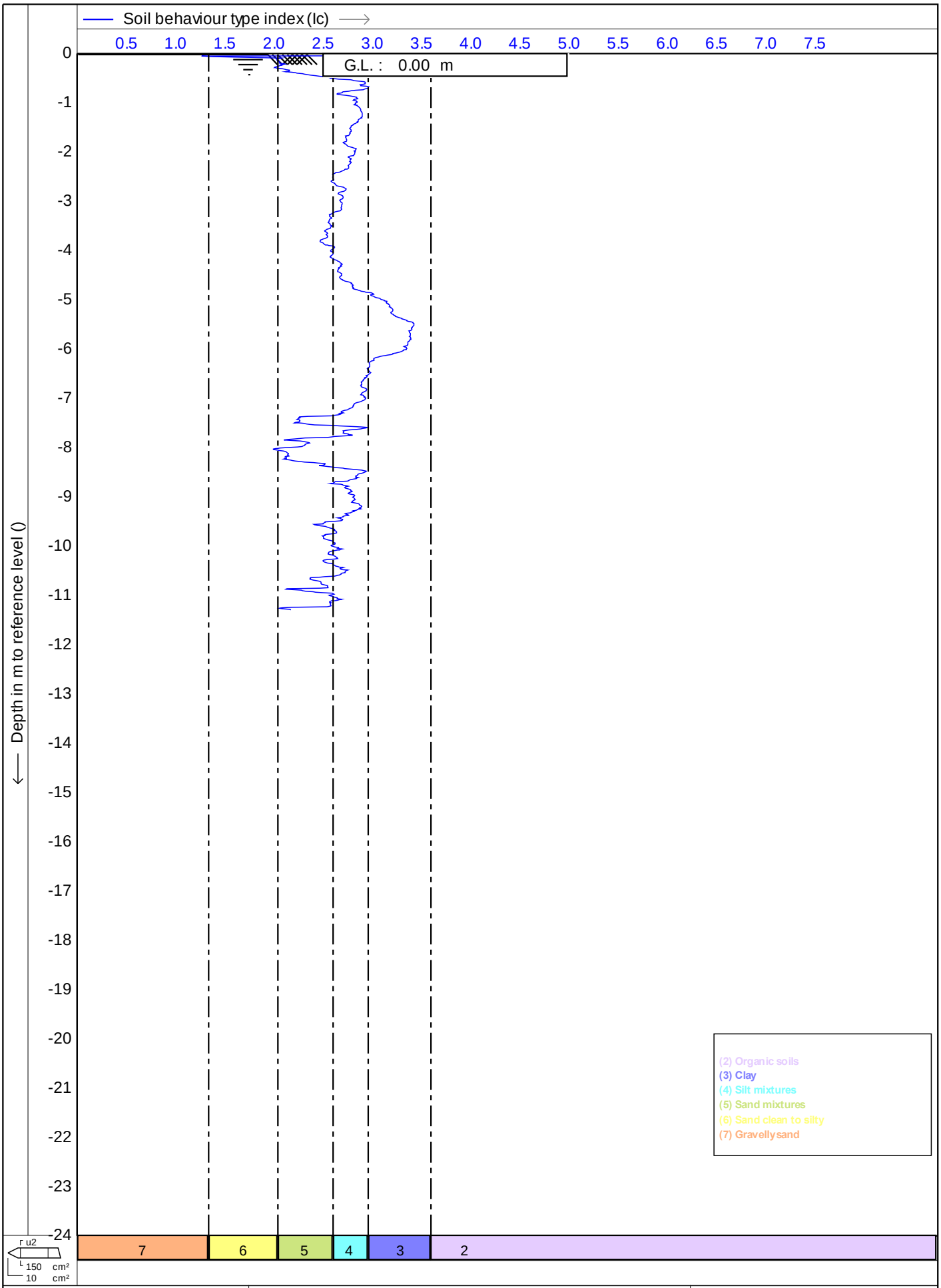
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT3** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

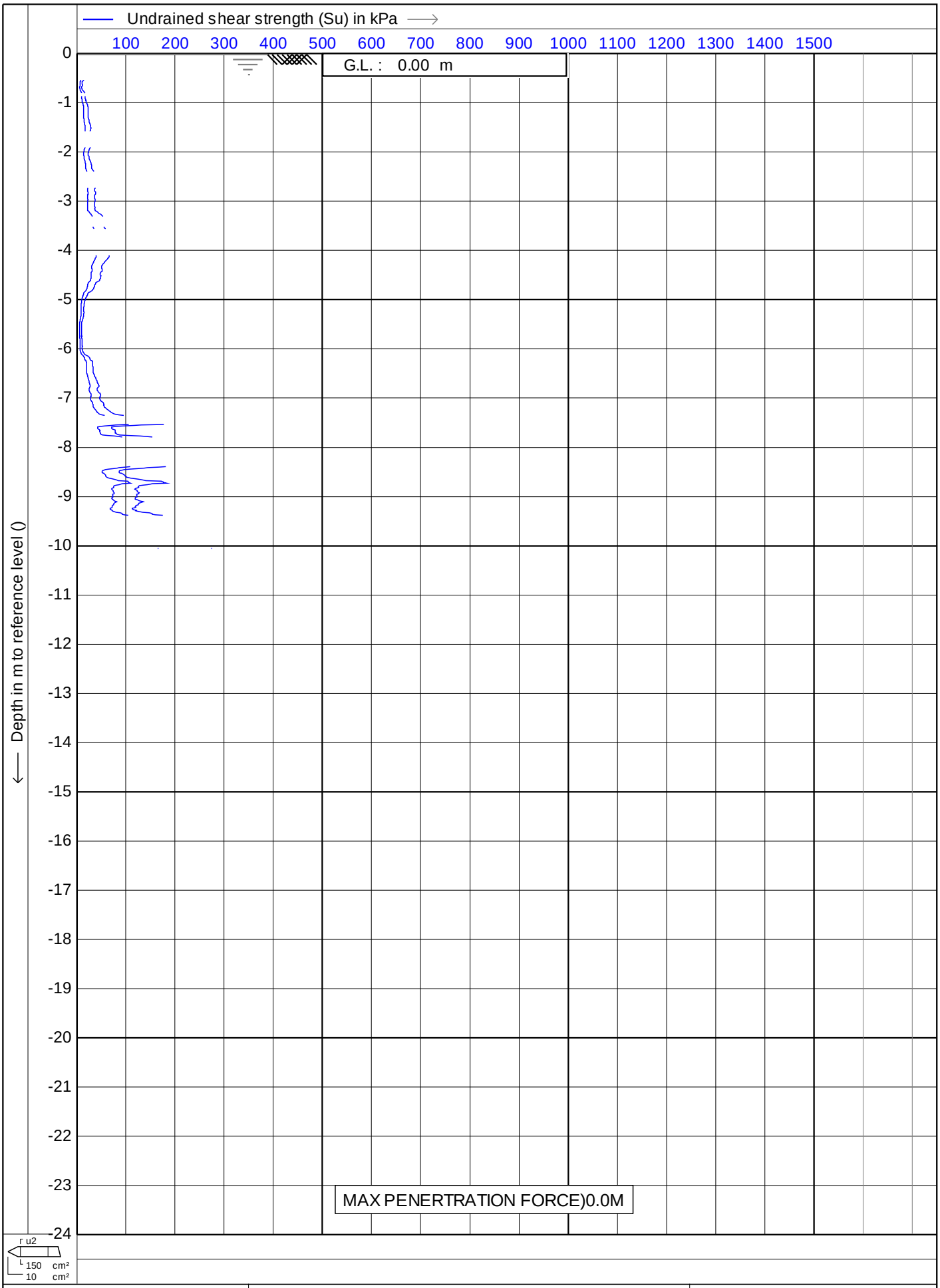
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT3** **9/15**

1.49



Test according NEN 5140 class 1

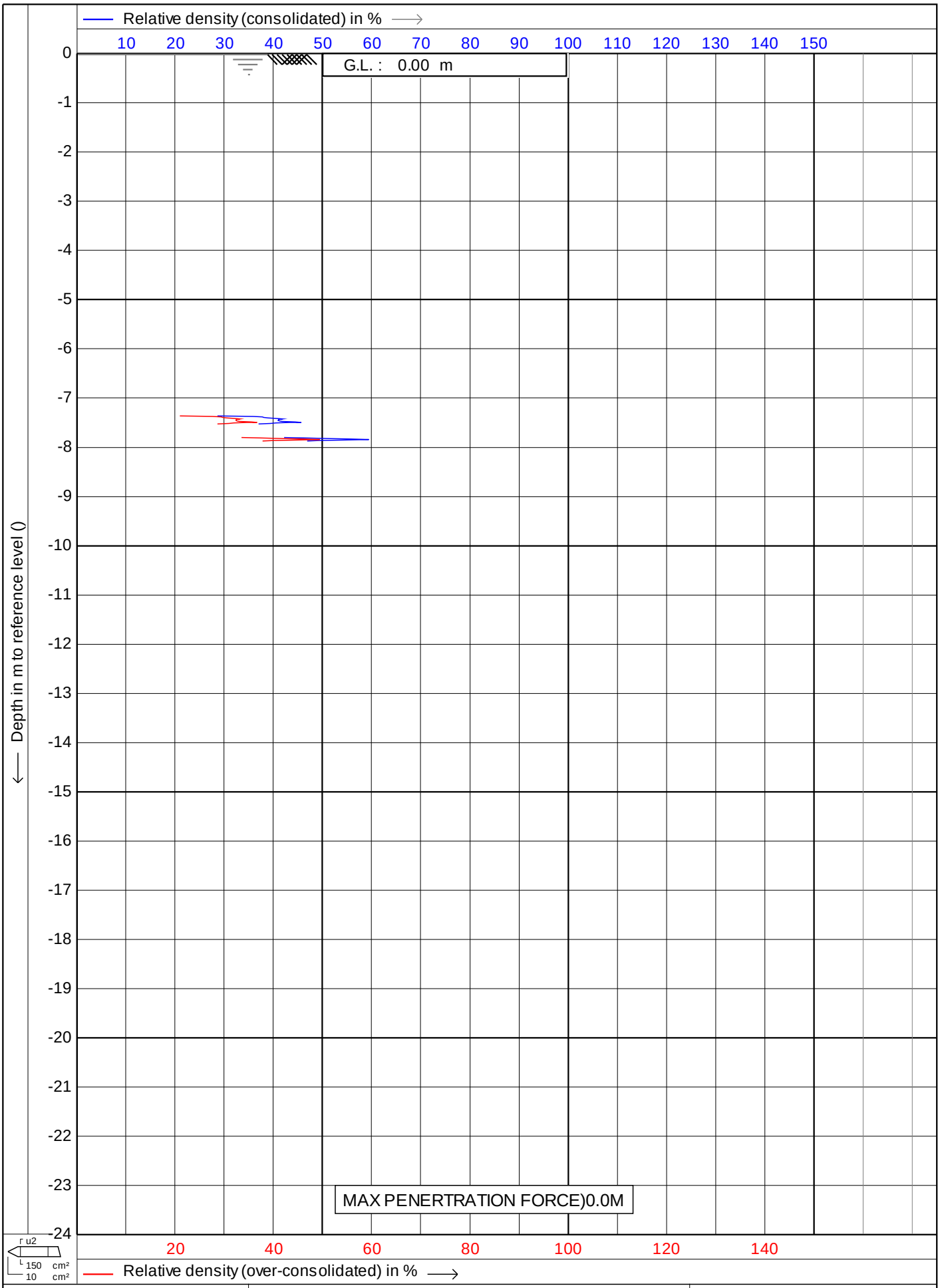
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

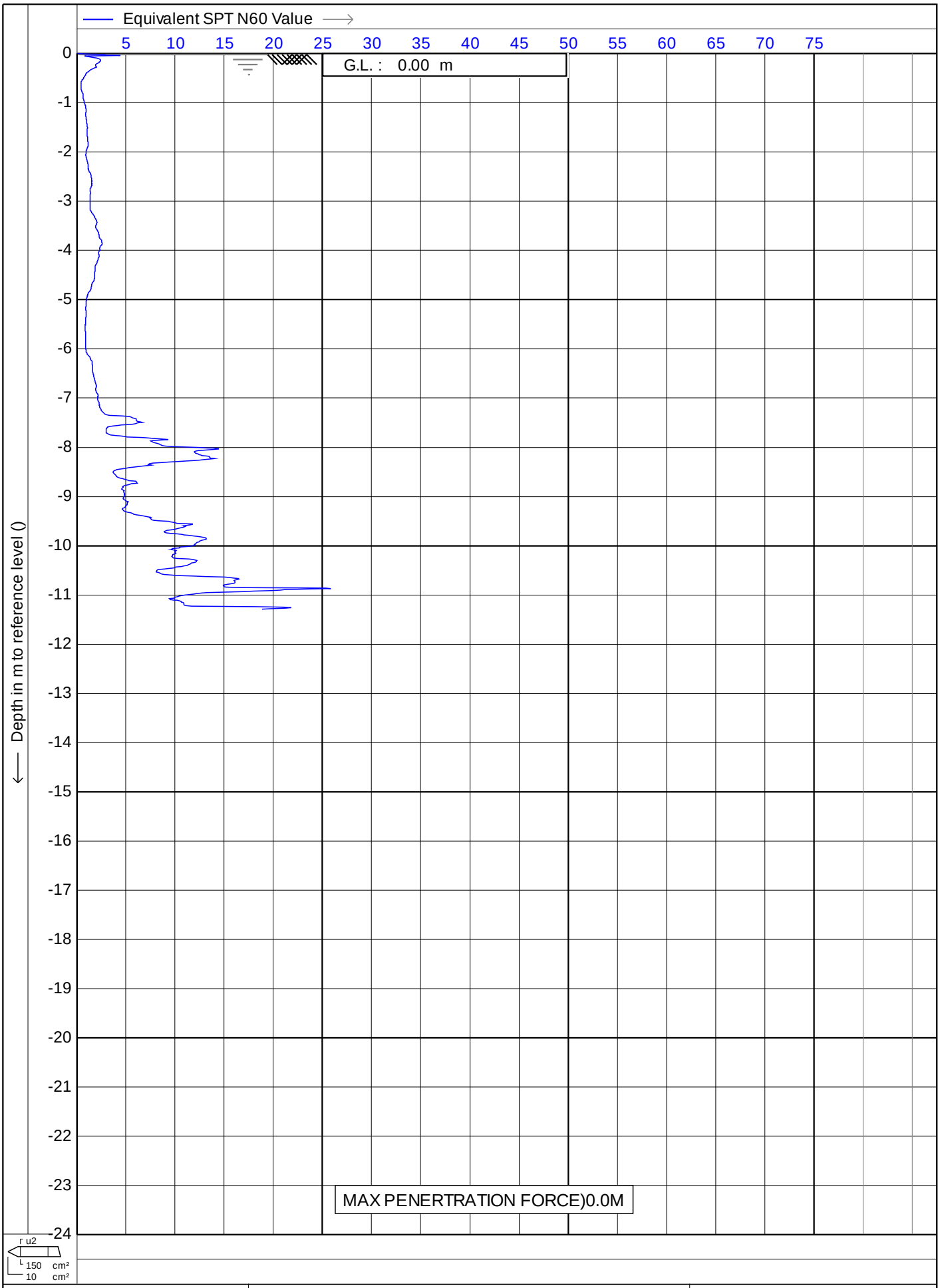
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT3** **11/15**

1.49



Test according NEN 5140 class 1

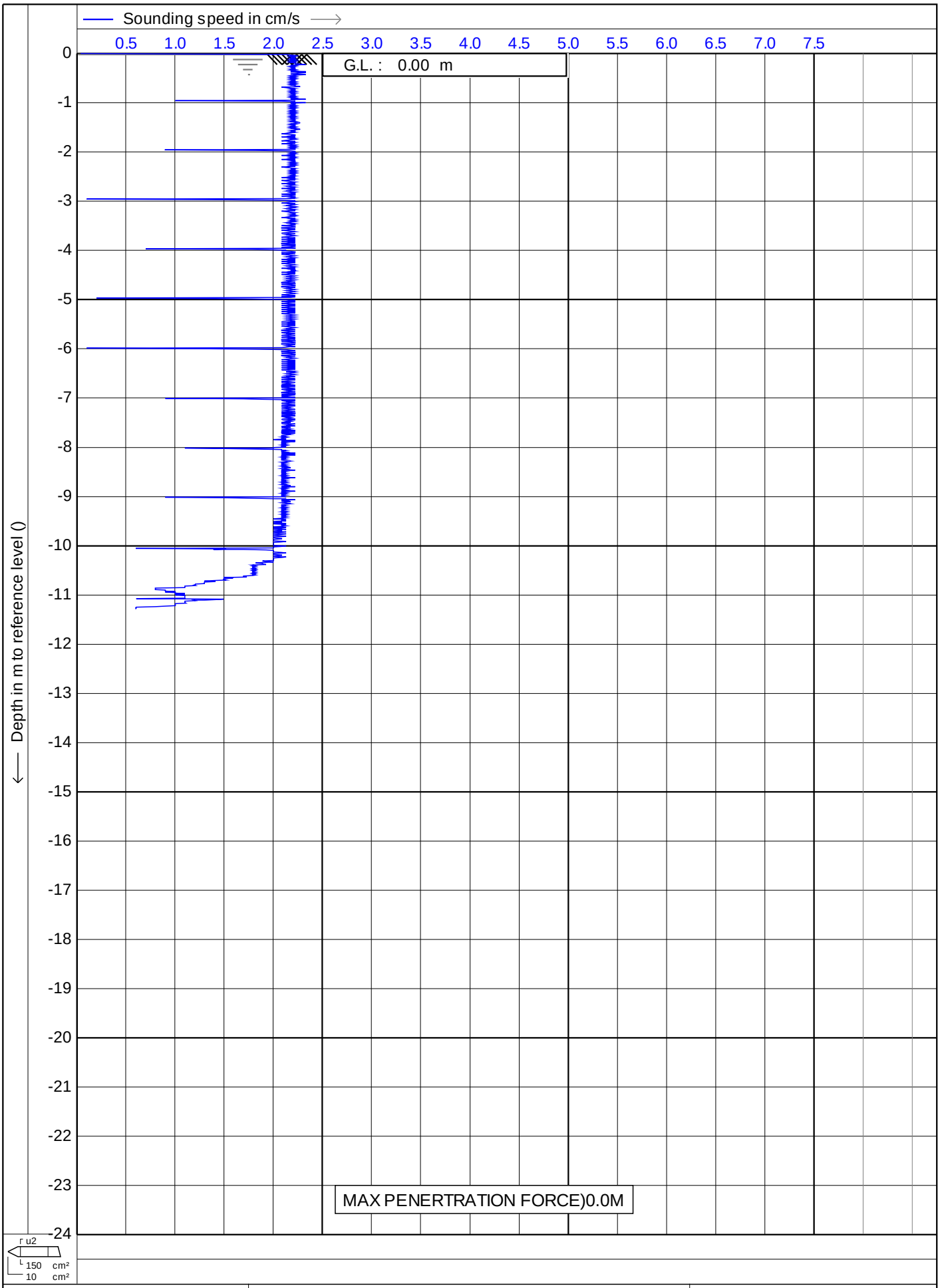
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Test according NEN 5140 class 1

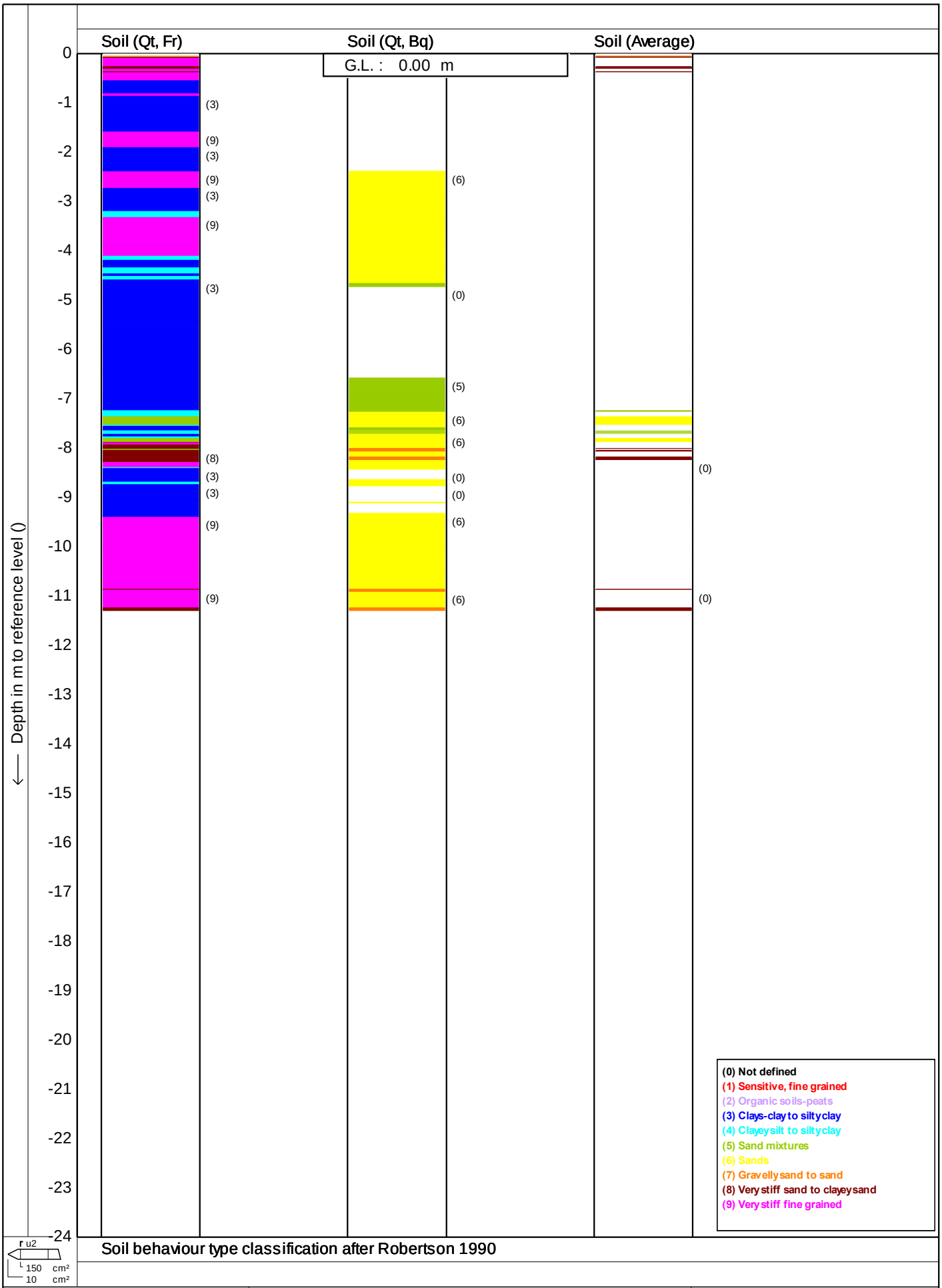
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64447, 36.59959 RD**

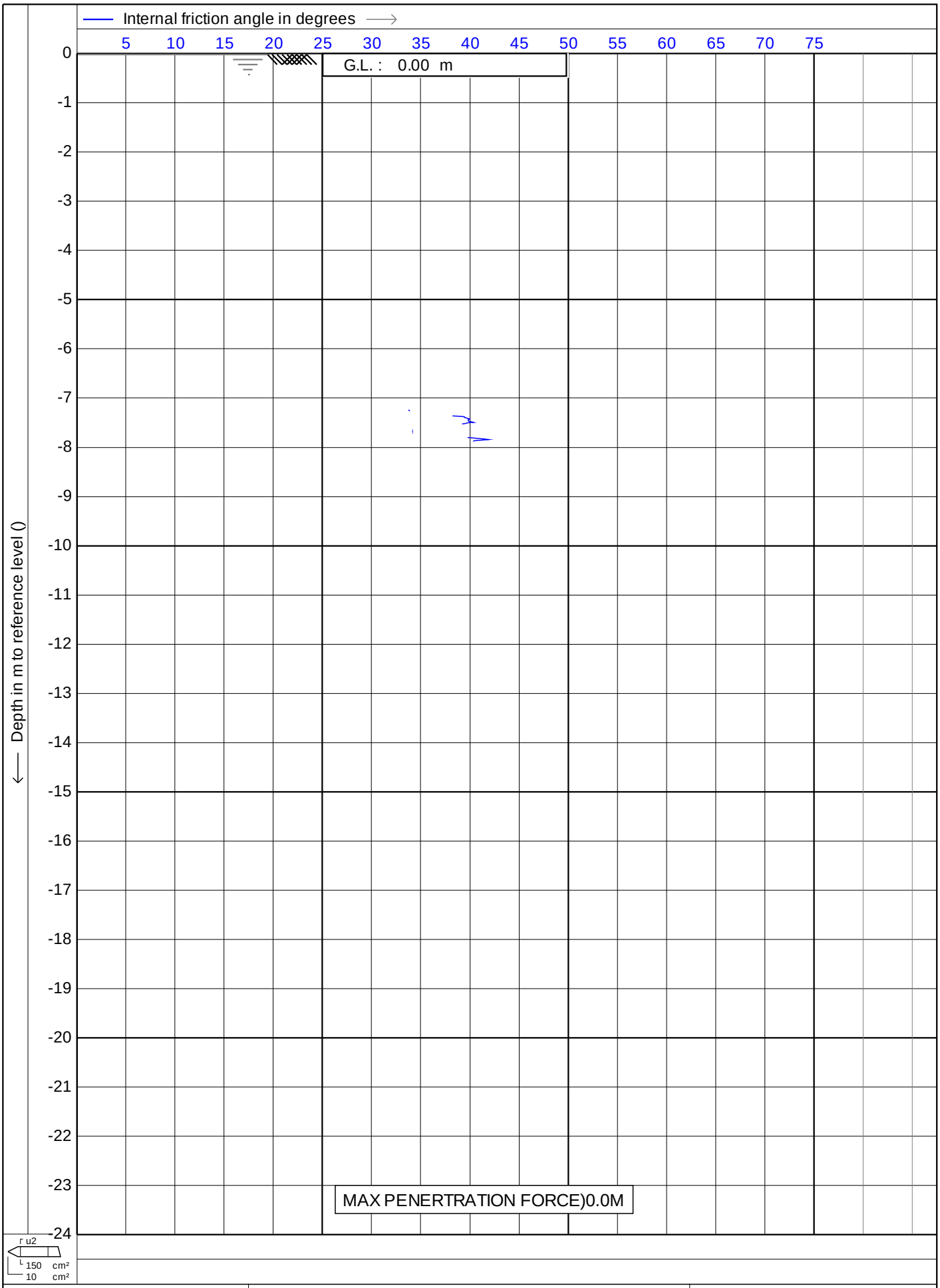
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT3** **14/15**

1.49



Test according NEN 5140 class 1

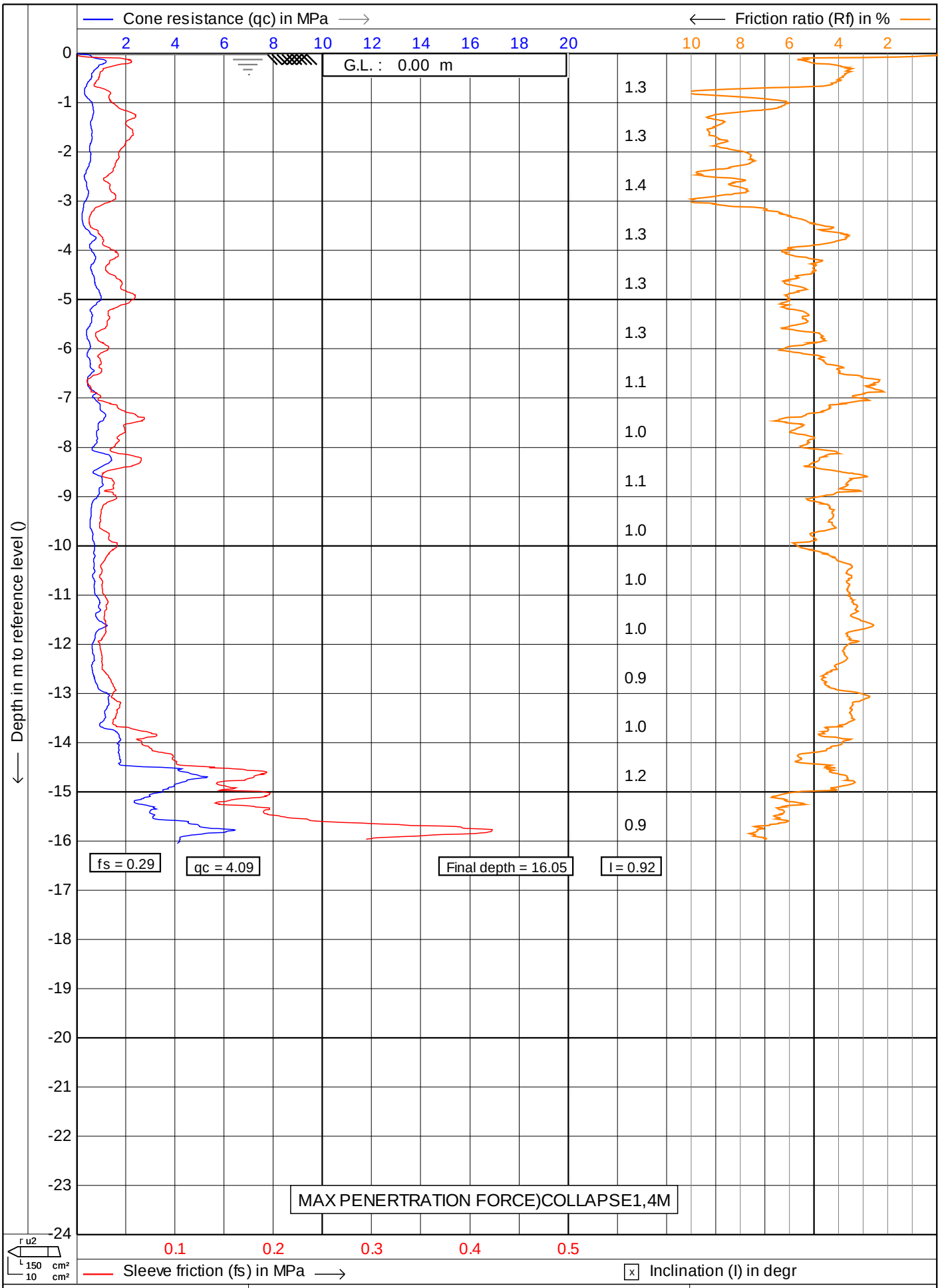
Project : **WAINUI 0992**

Location: **MILDALE**

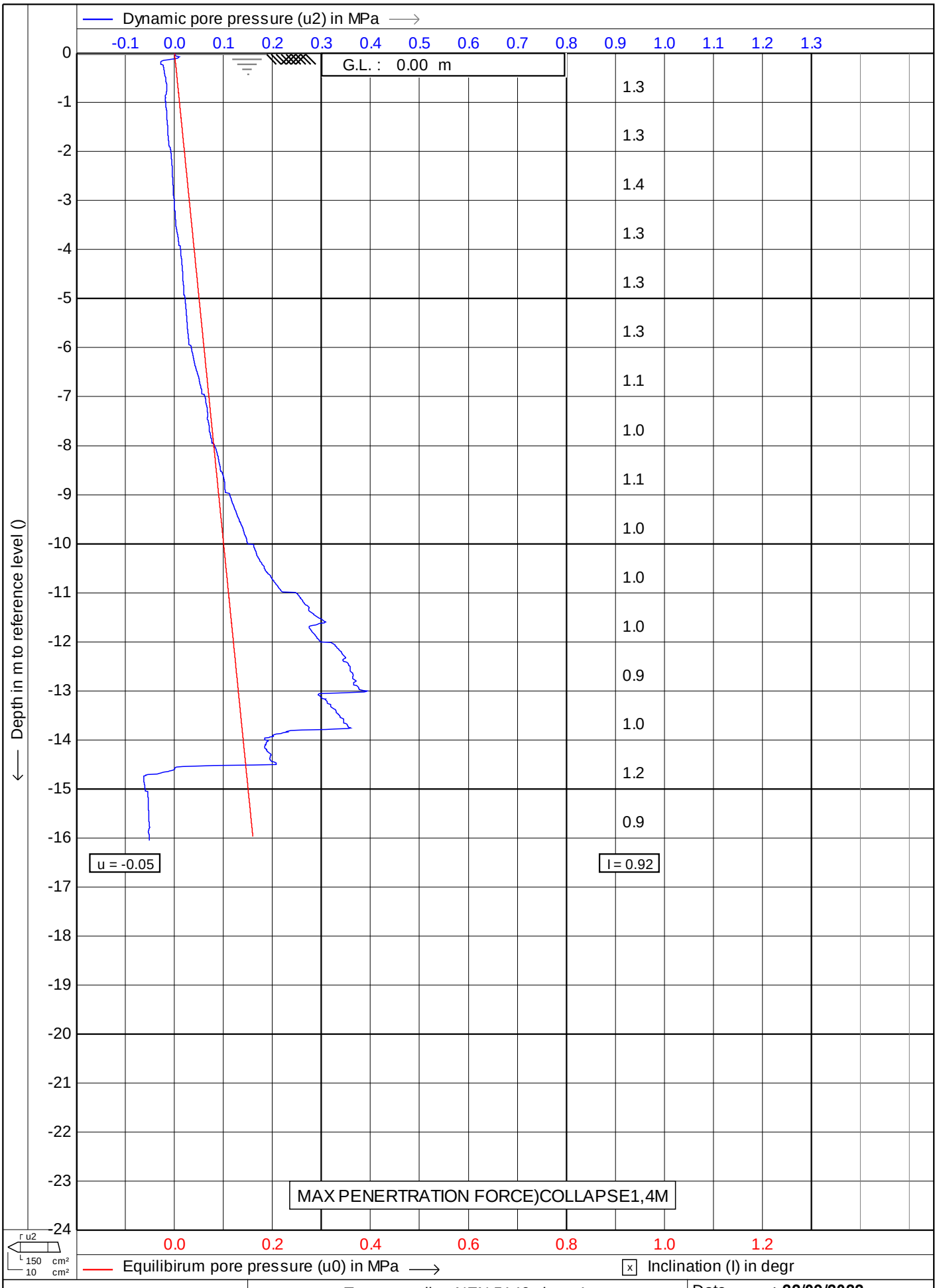
Position: **174.64447, 36.59959 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT3**

1.49



Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64249, 36.59929 RD**	CPT no.	: **CPT4** 1/15



Test according NEN 5140 class 1

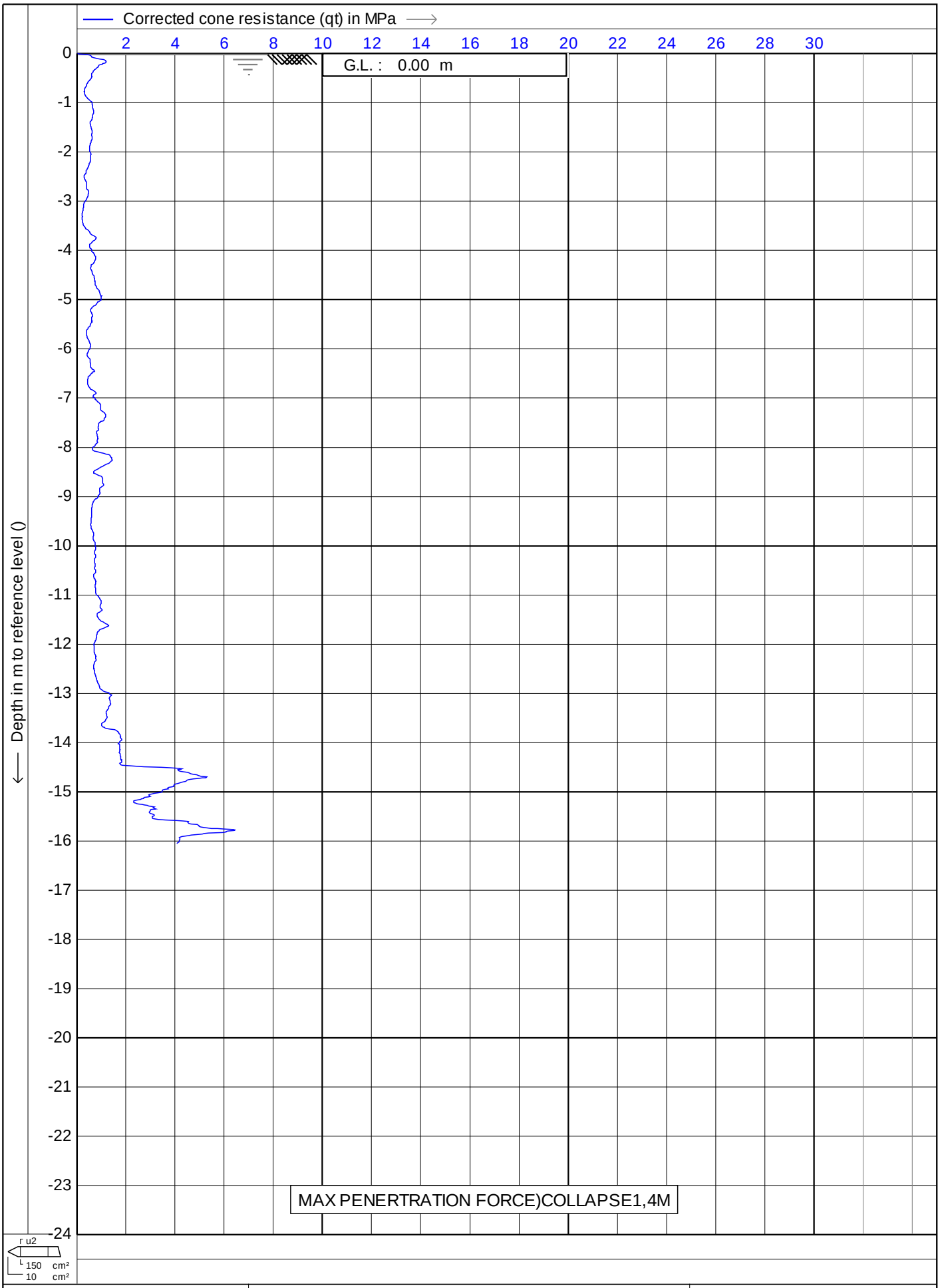
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

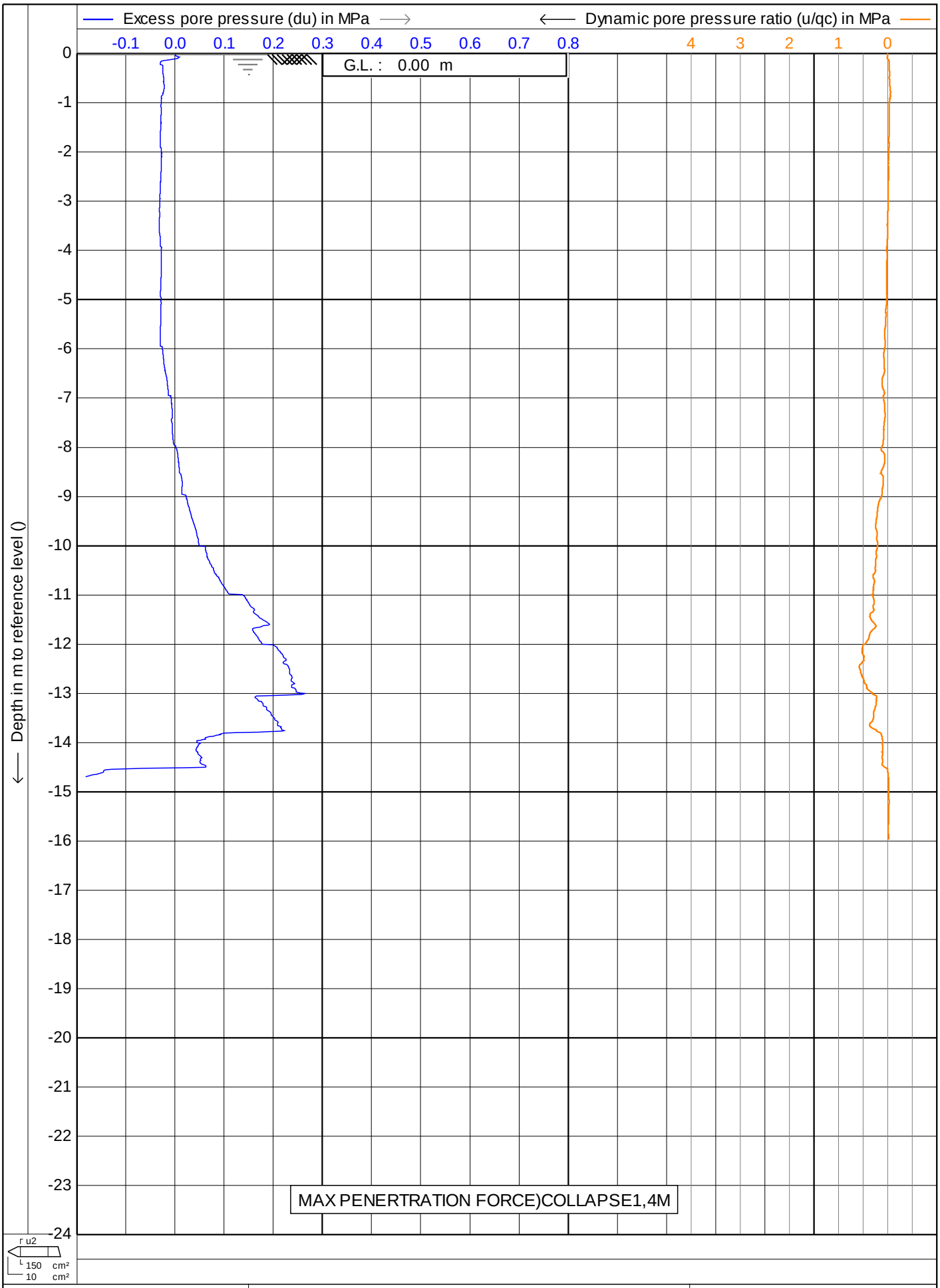
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4** **3/15**

1.49



Test according NEN 5140 class 1

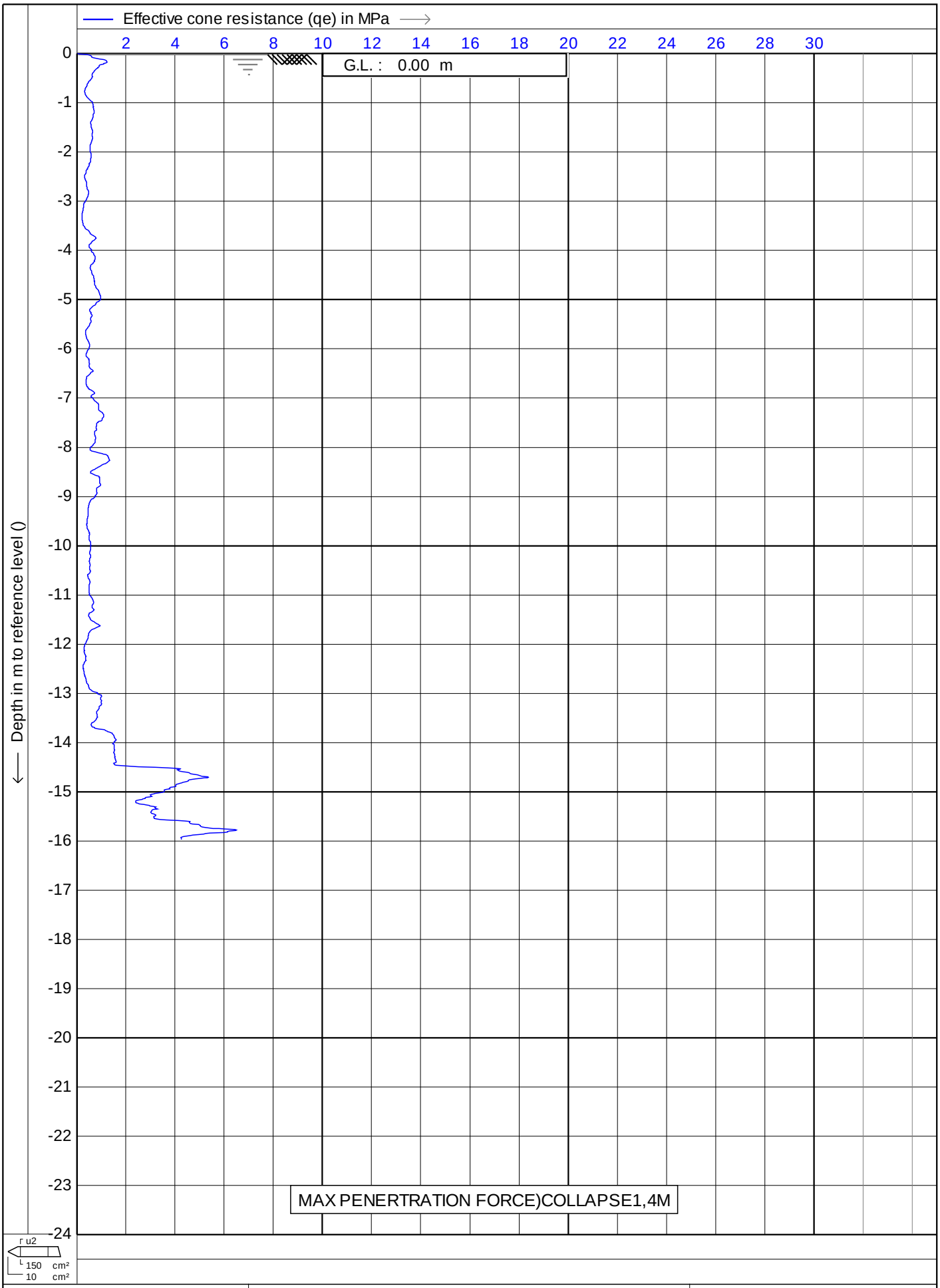
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4** **4/15**

1.49



Test according NEN 5140 class 1

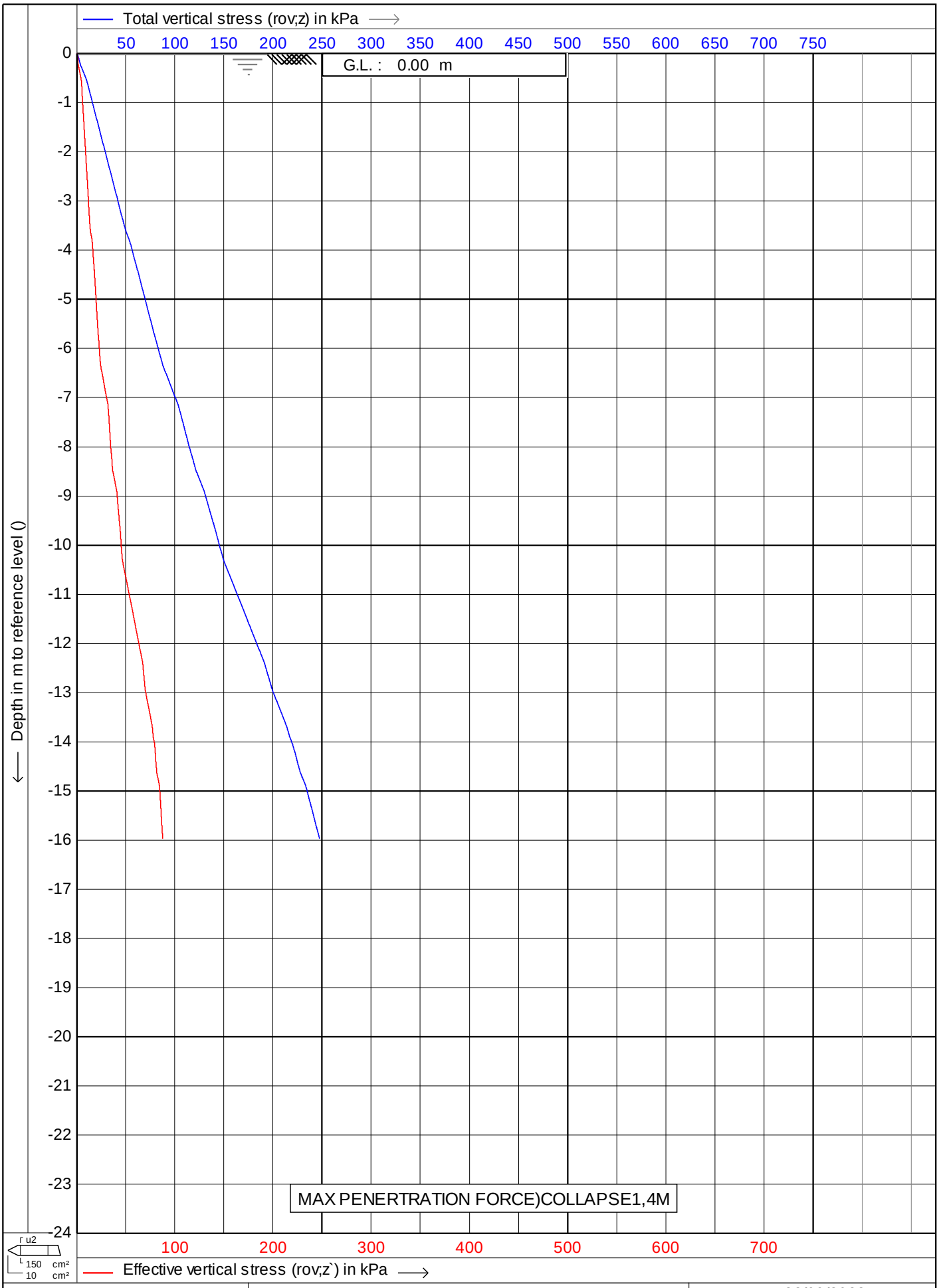
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4** **5/15**

1.49



Test according NEN 5140 class 1

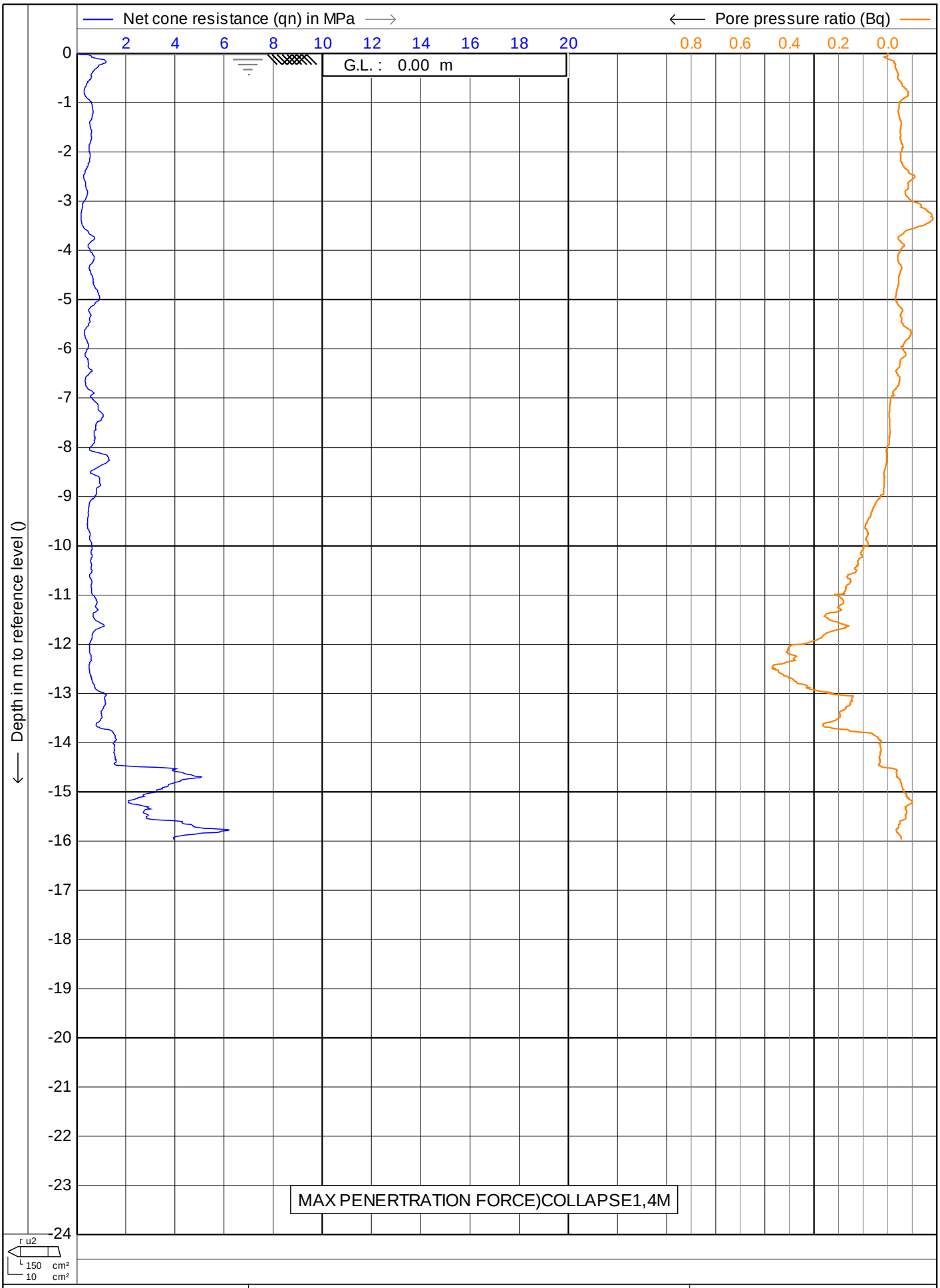
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4**

1.49



Test according NEN 5140 class 1

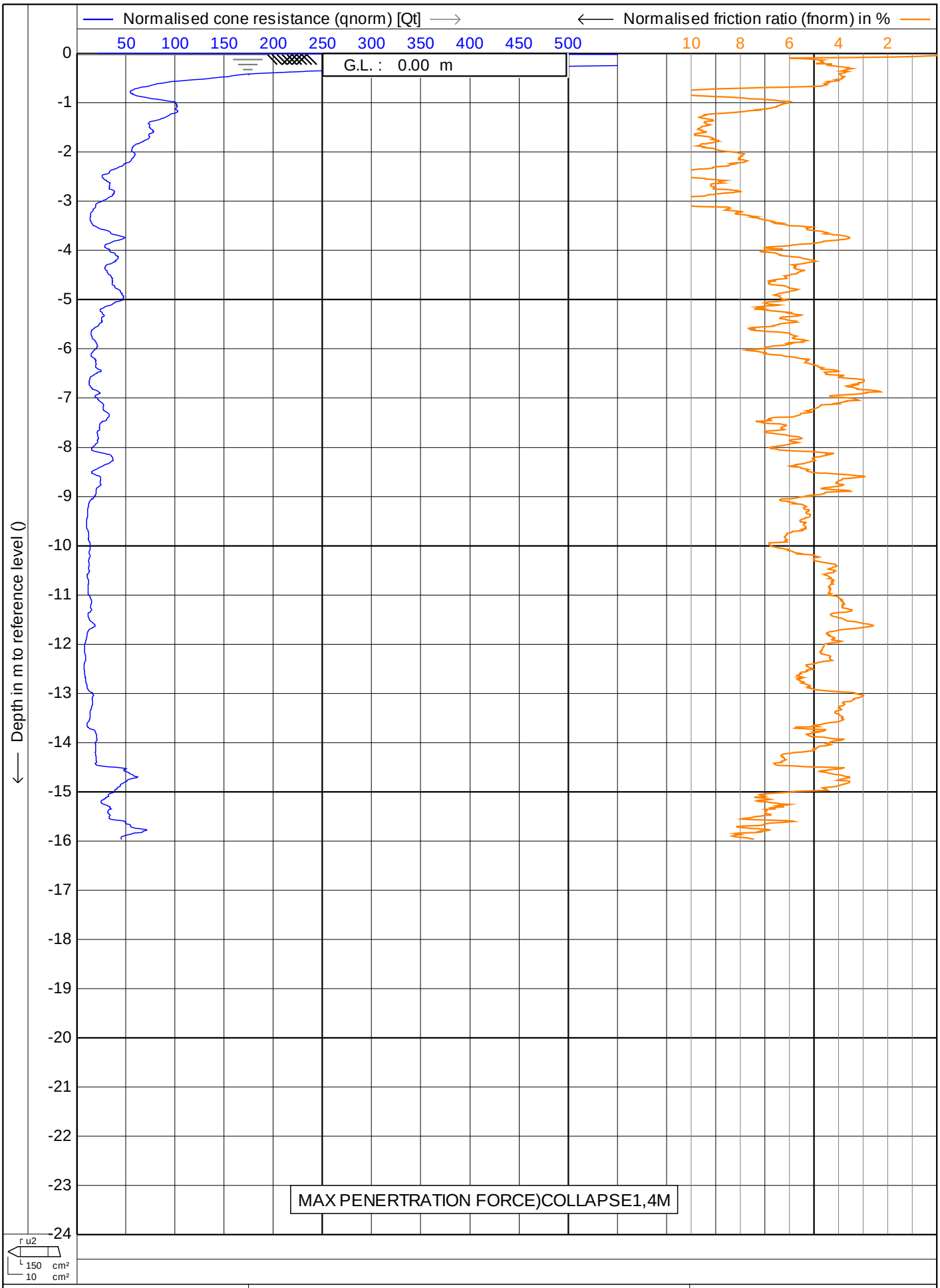
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4** **7/15**

1.49



Test according NEN 5140 class 1

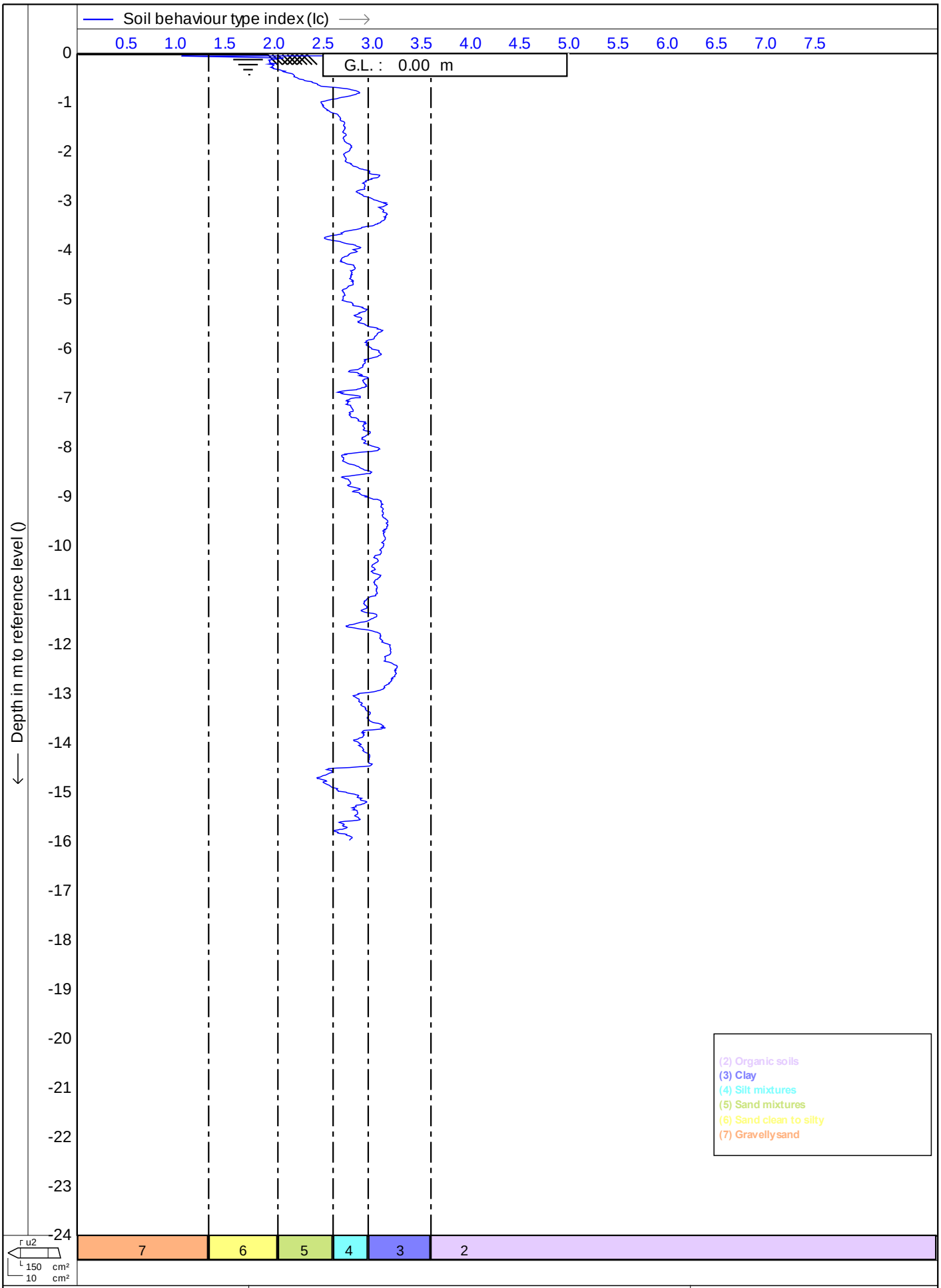
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

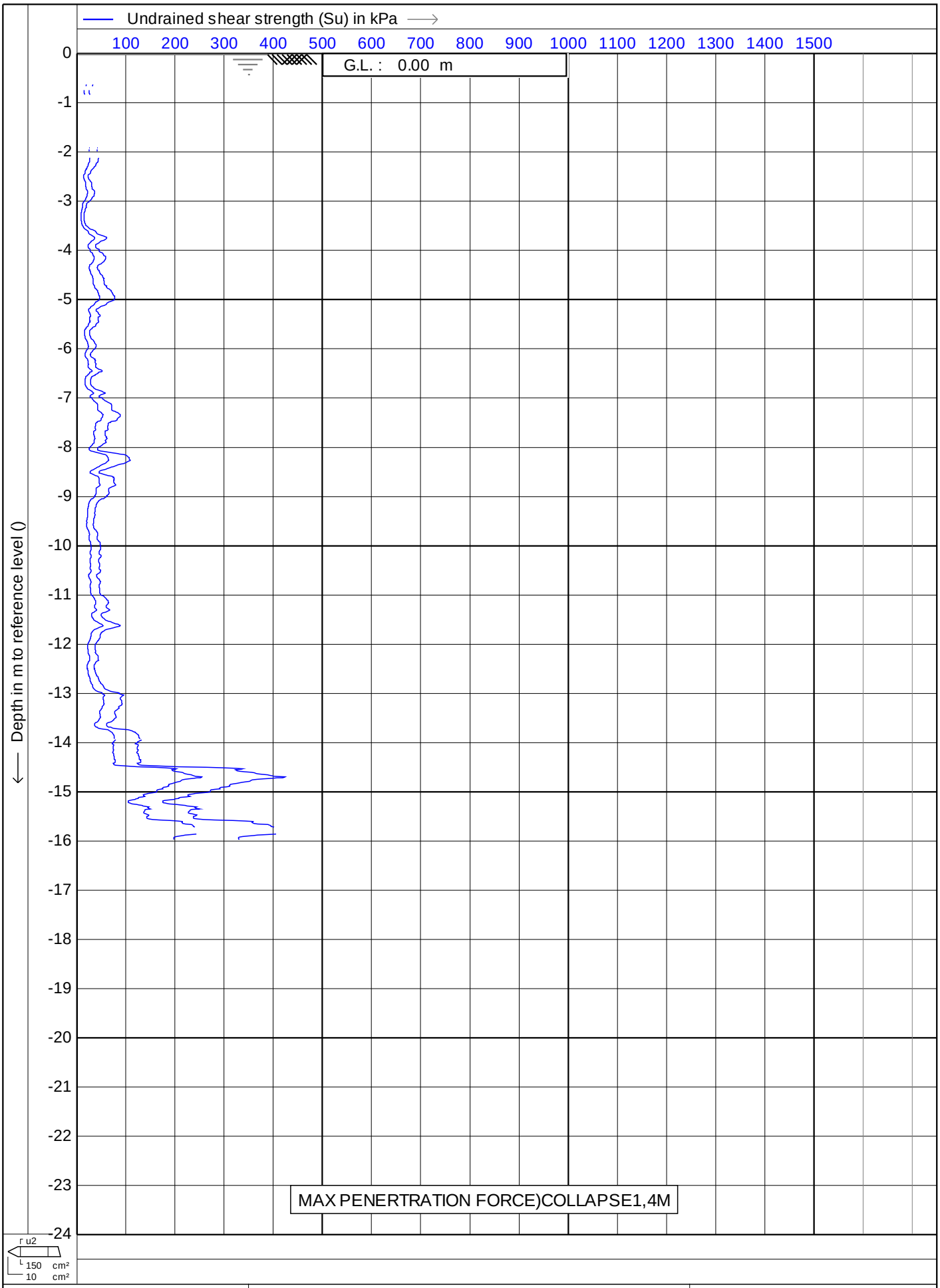
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4** **9/15**

1.49



Test according NEN 5140 class 1

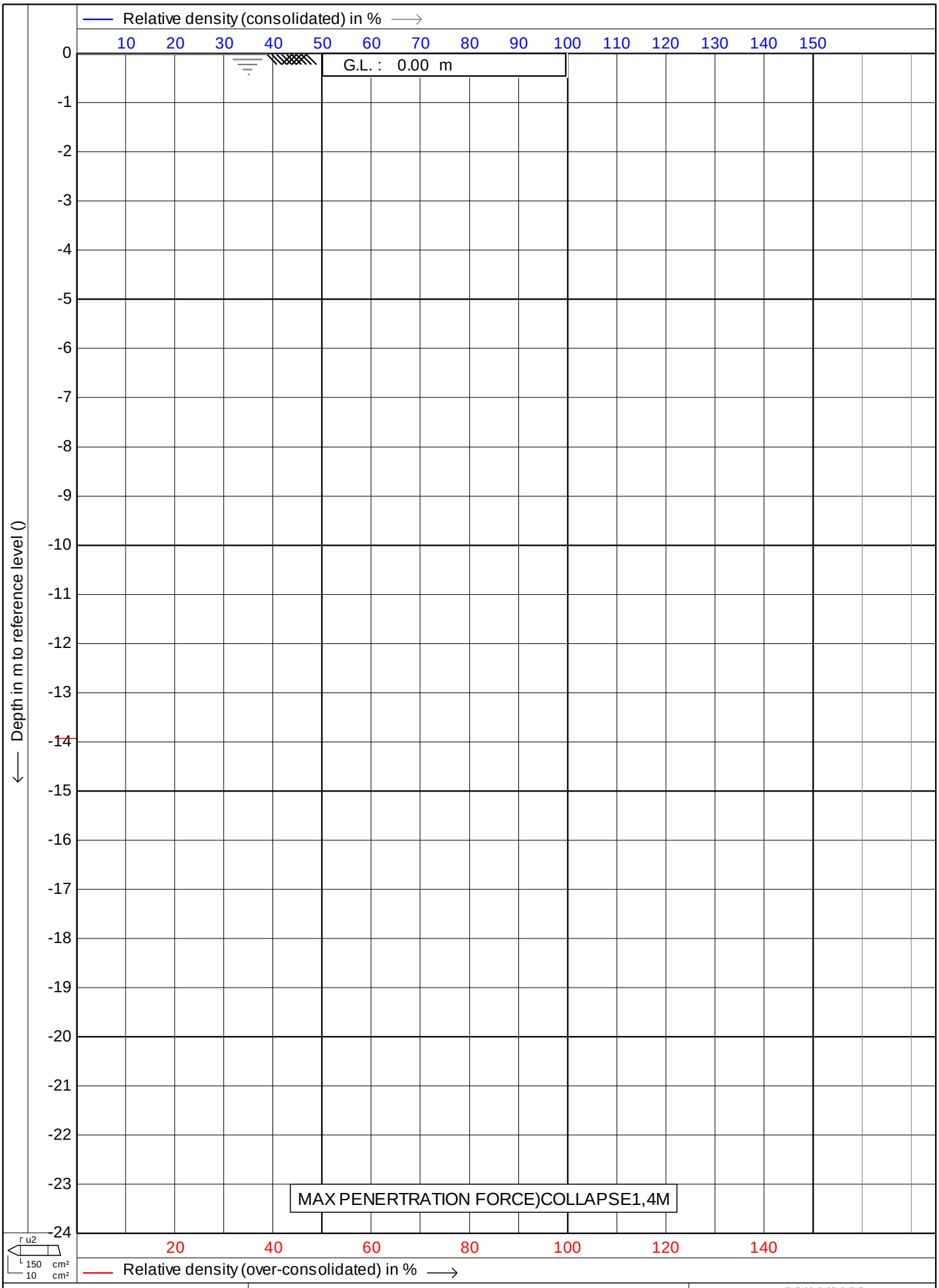
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT4** **10/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

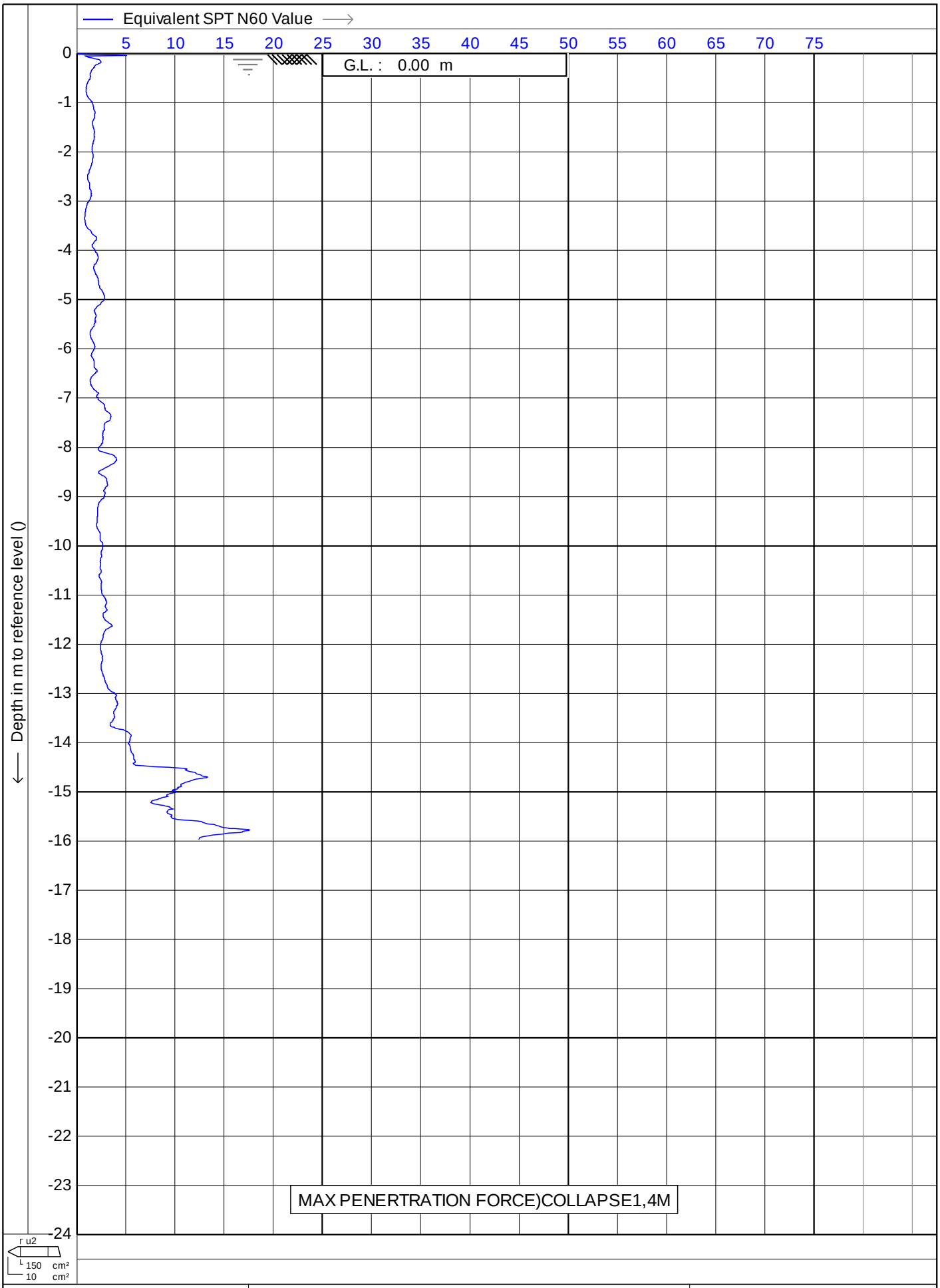
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

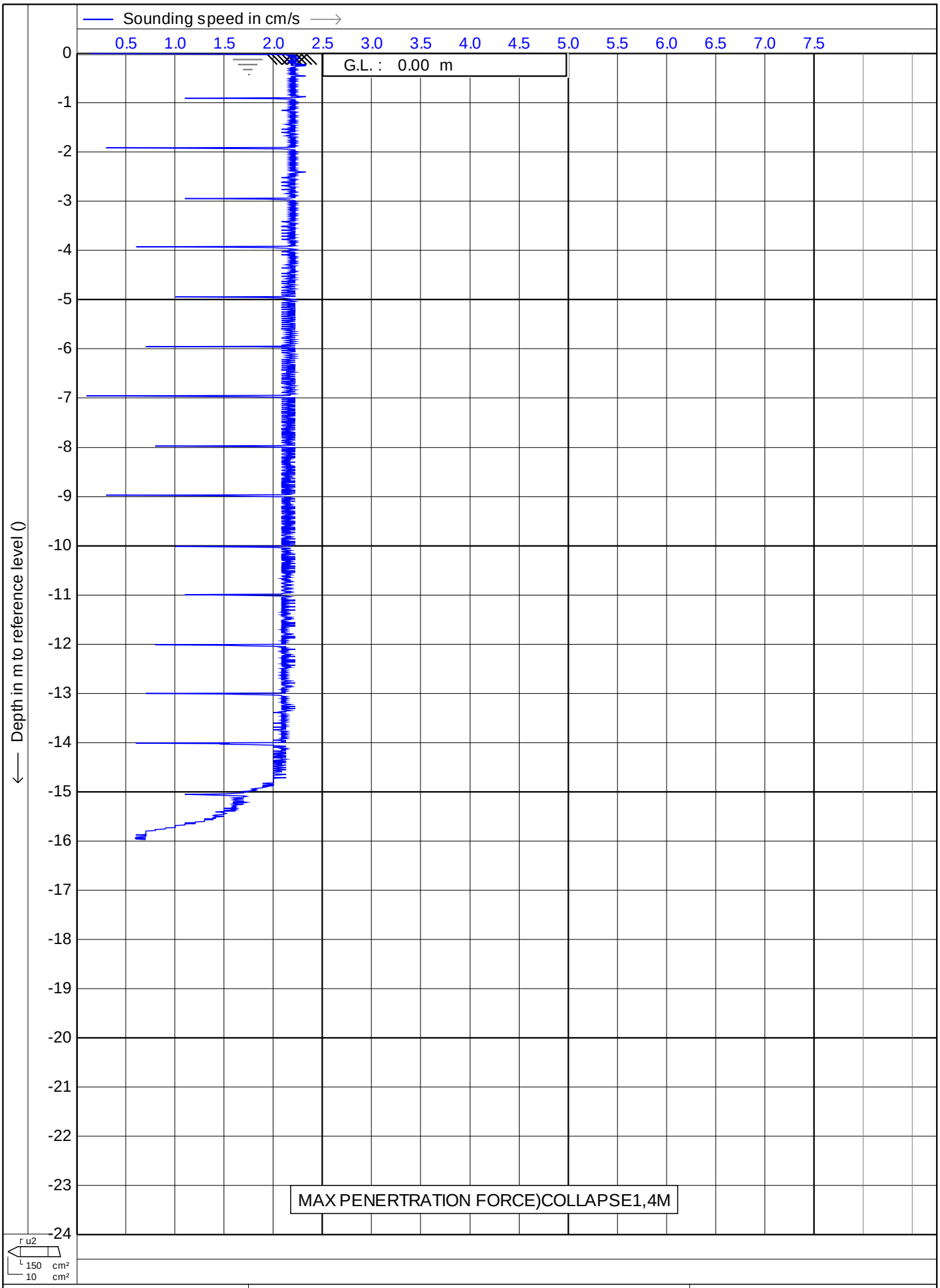
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4** **12/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

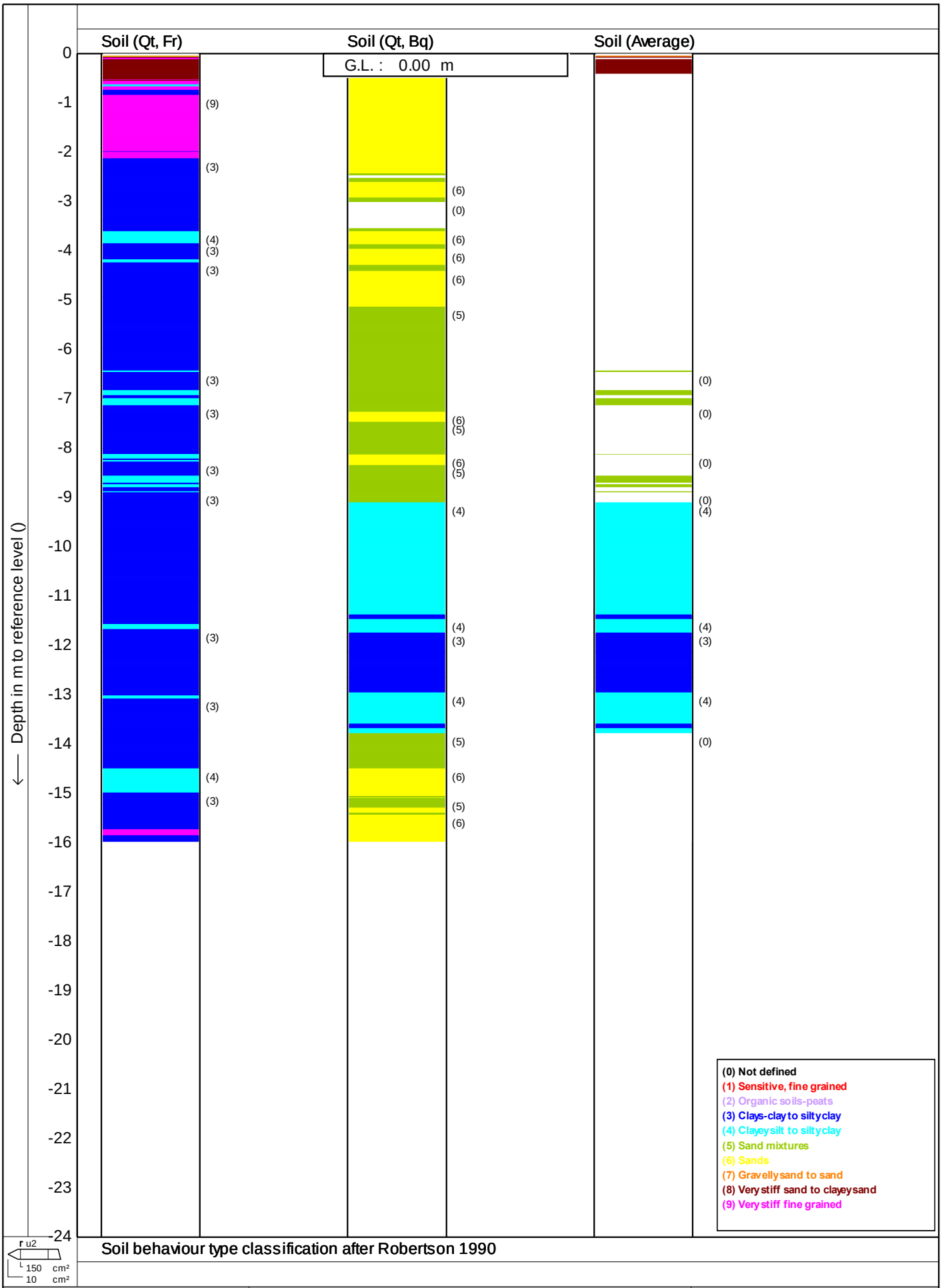
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

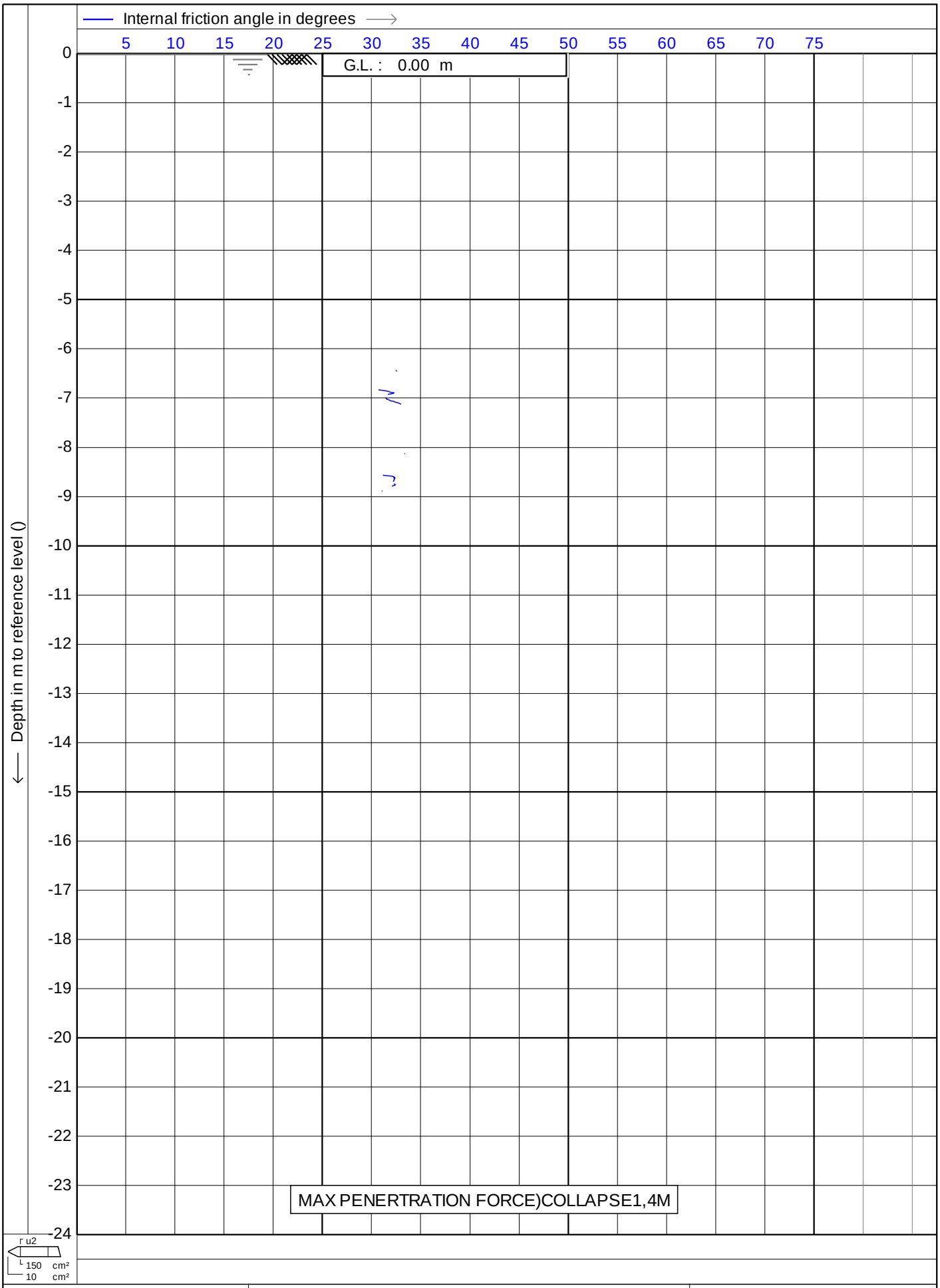
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT4** **14/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64249, 36.59929 RD**

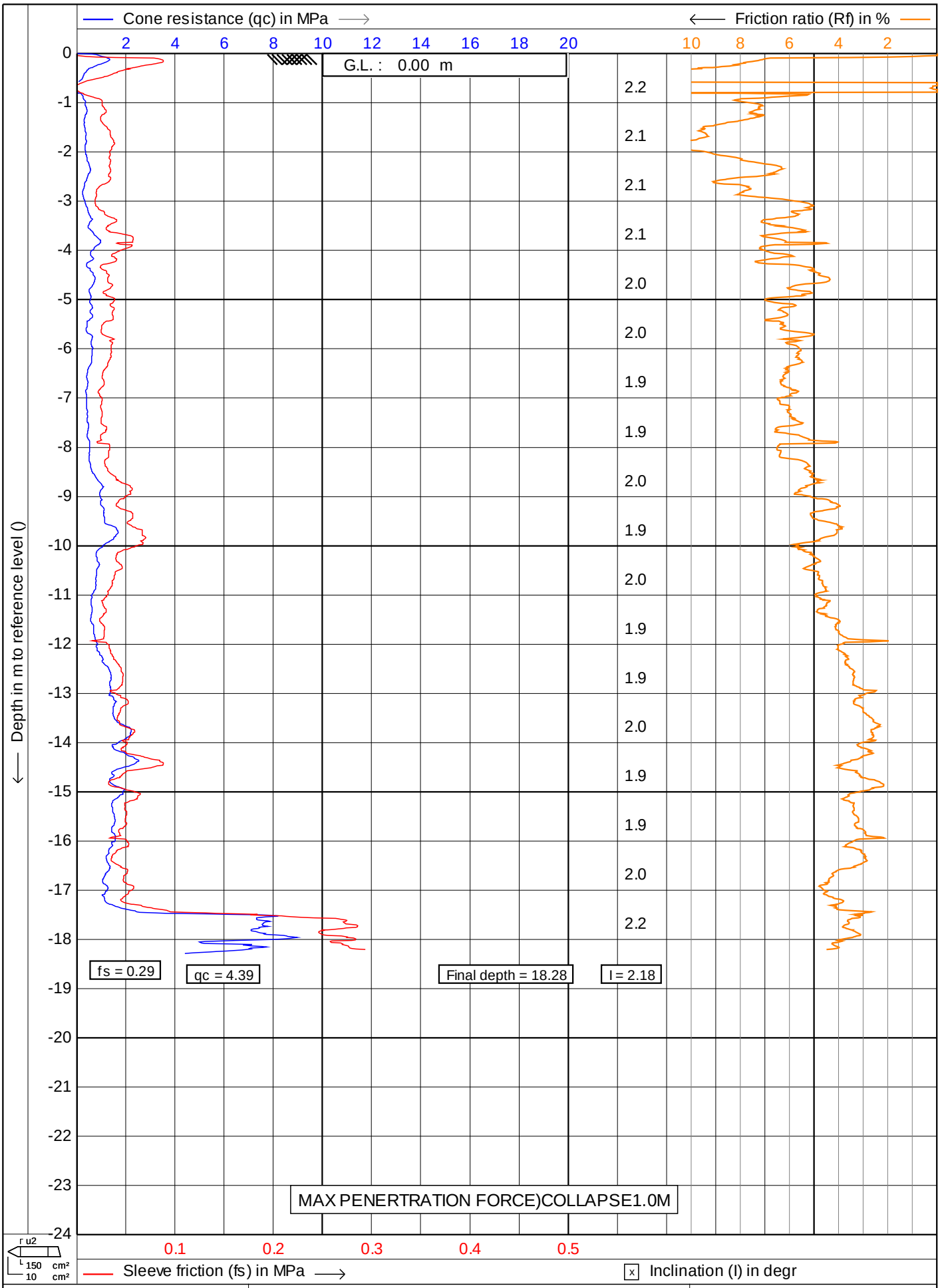
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

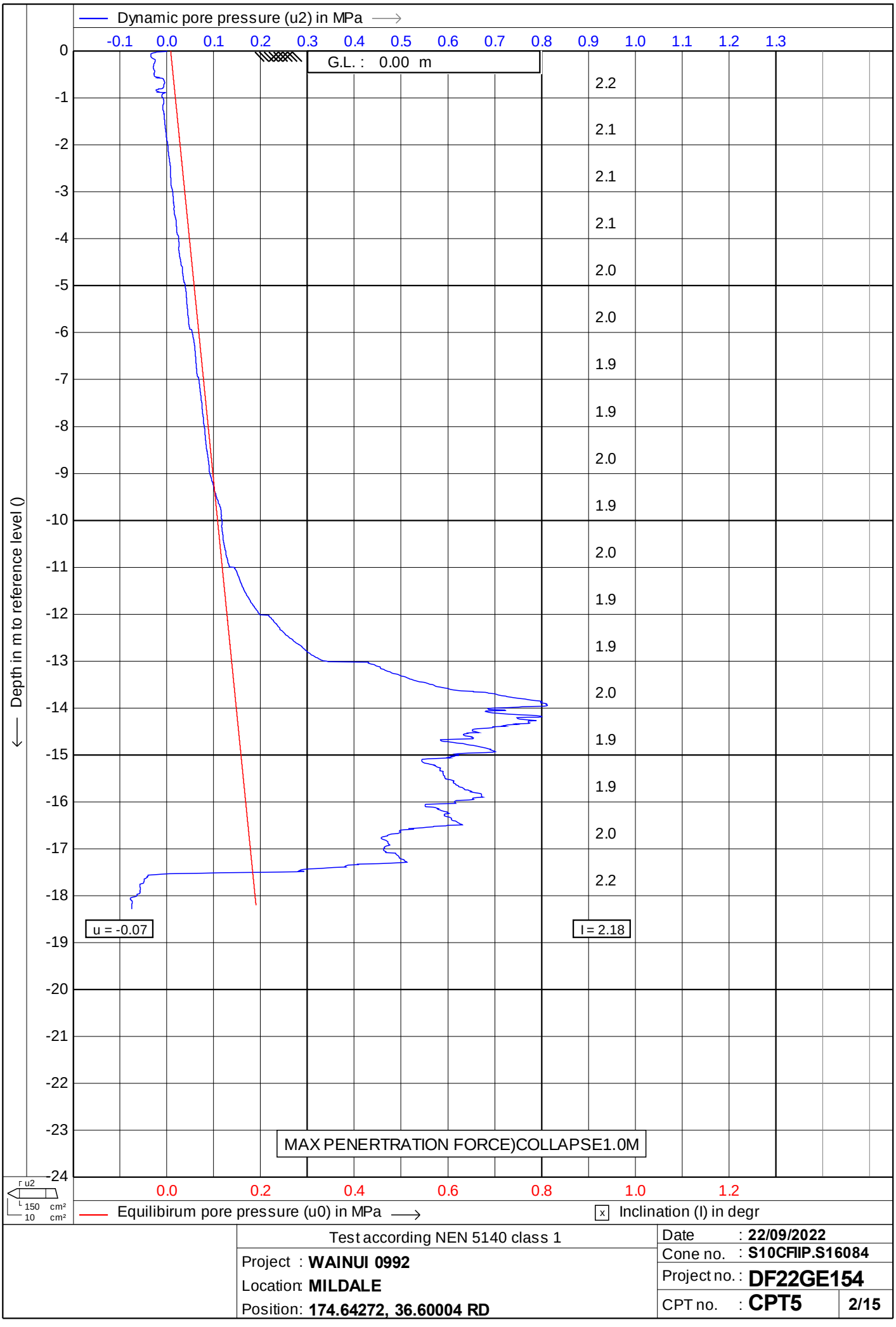
Project no. : **DF22GE154**

CPT no. : **CPT4** **15/15**

1.49



Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64272, 36.60004 RD**	CPT no.	: **CPT5** 1/15



Test according NEN 5140 class 1

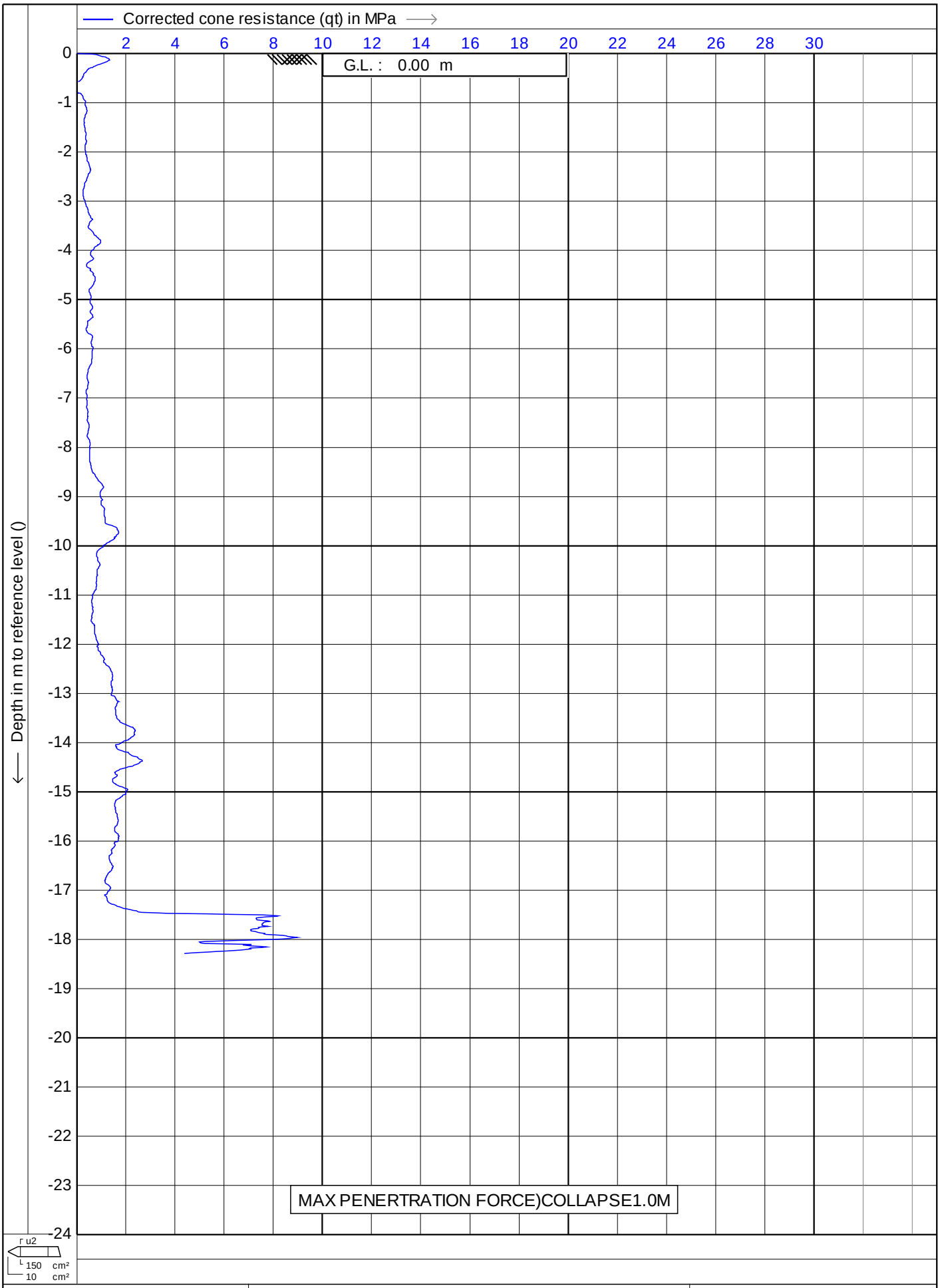
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

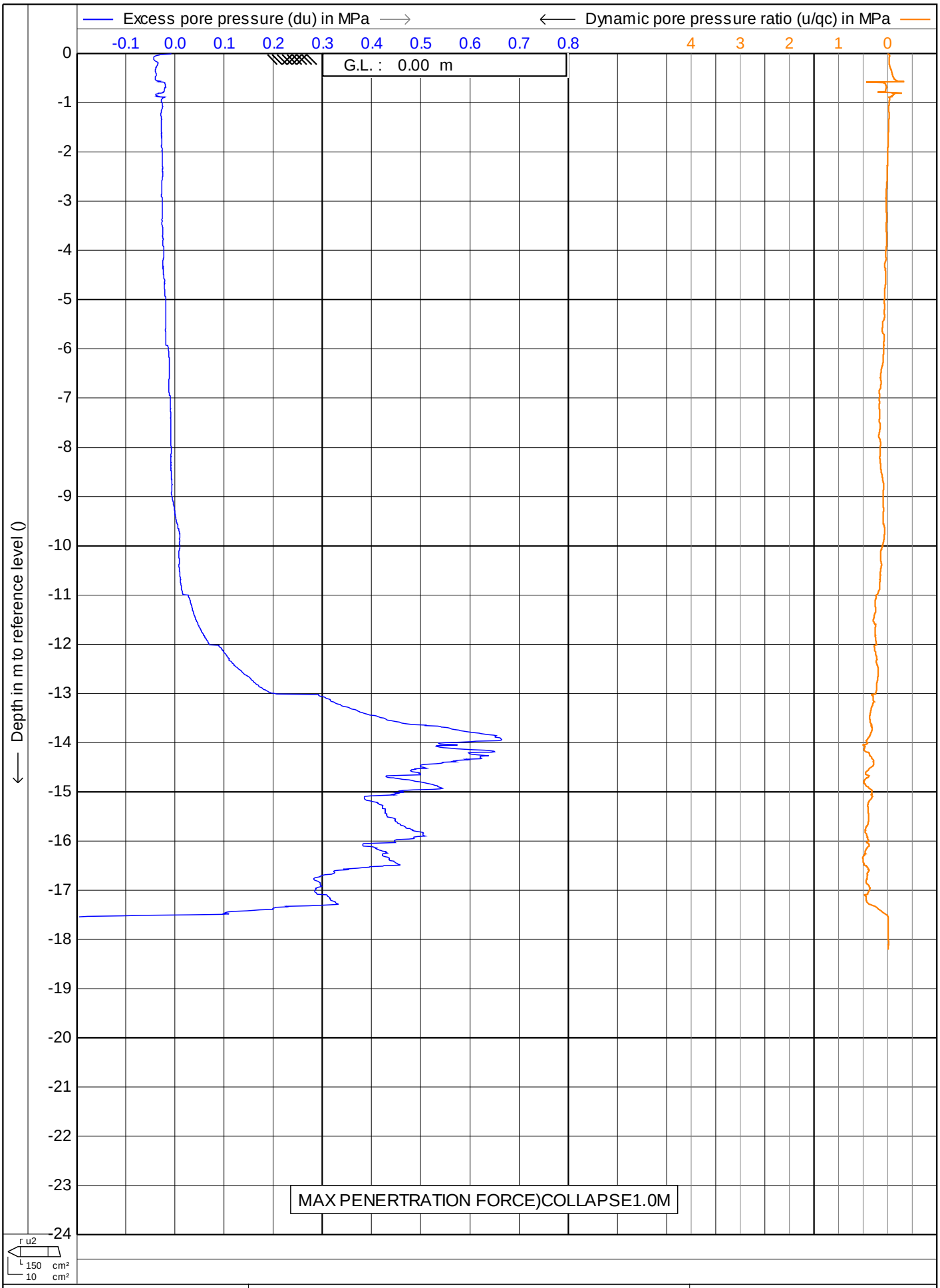
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT5**

1.49



Test according NEN 5140 class 1

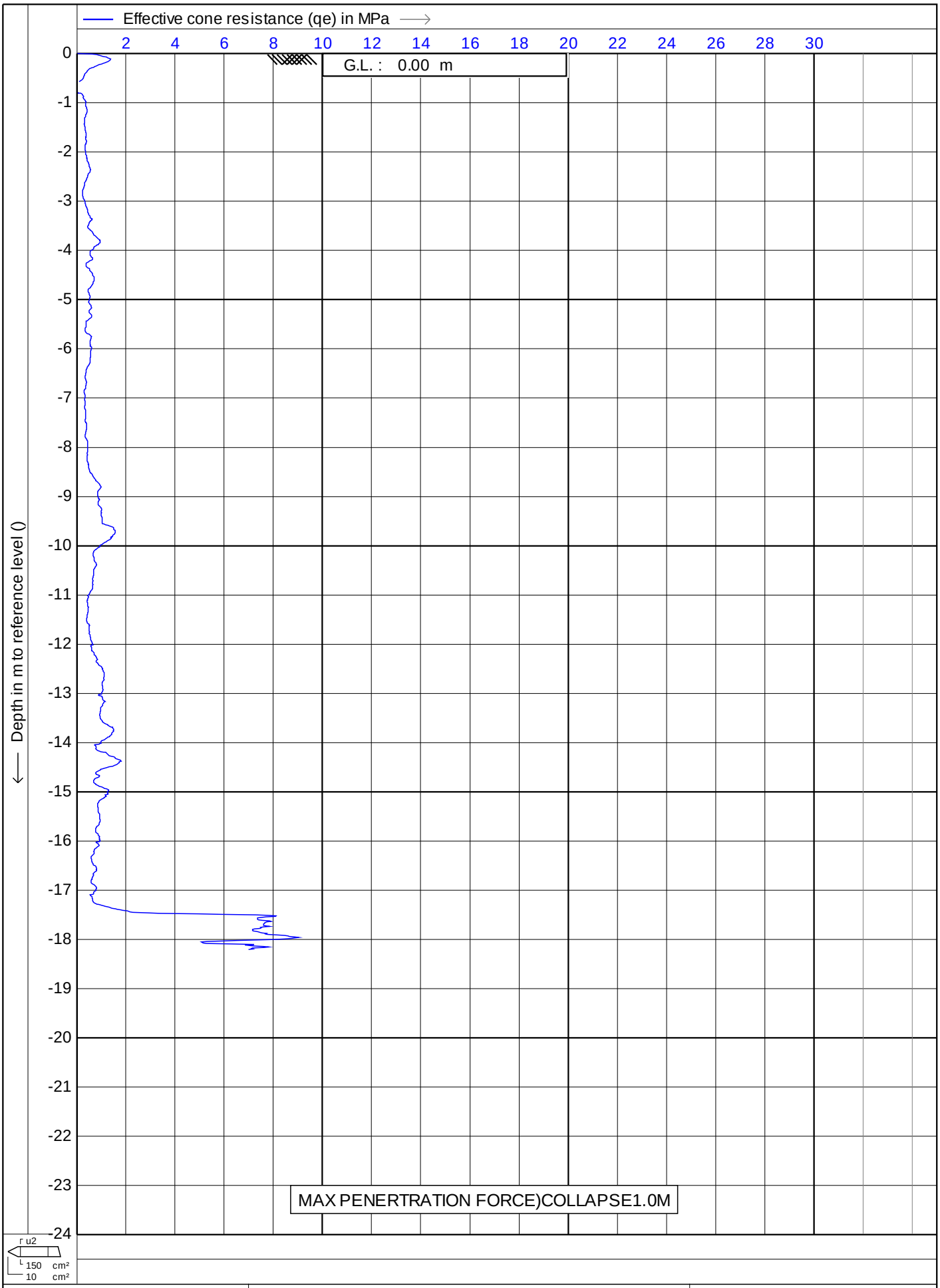
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

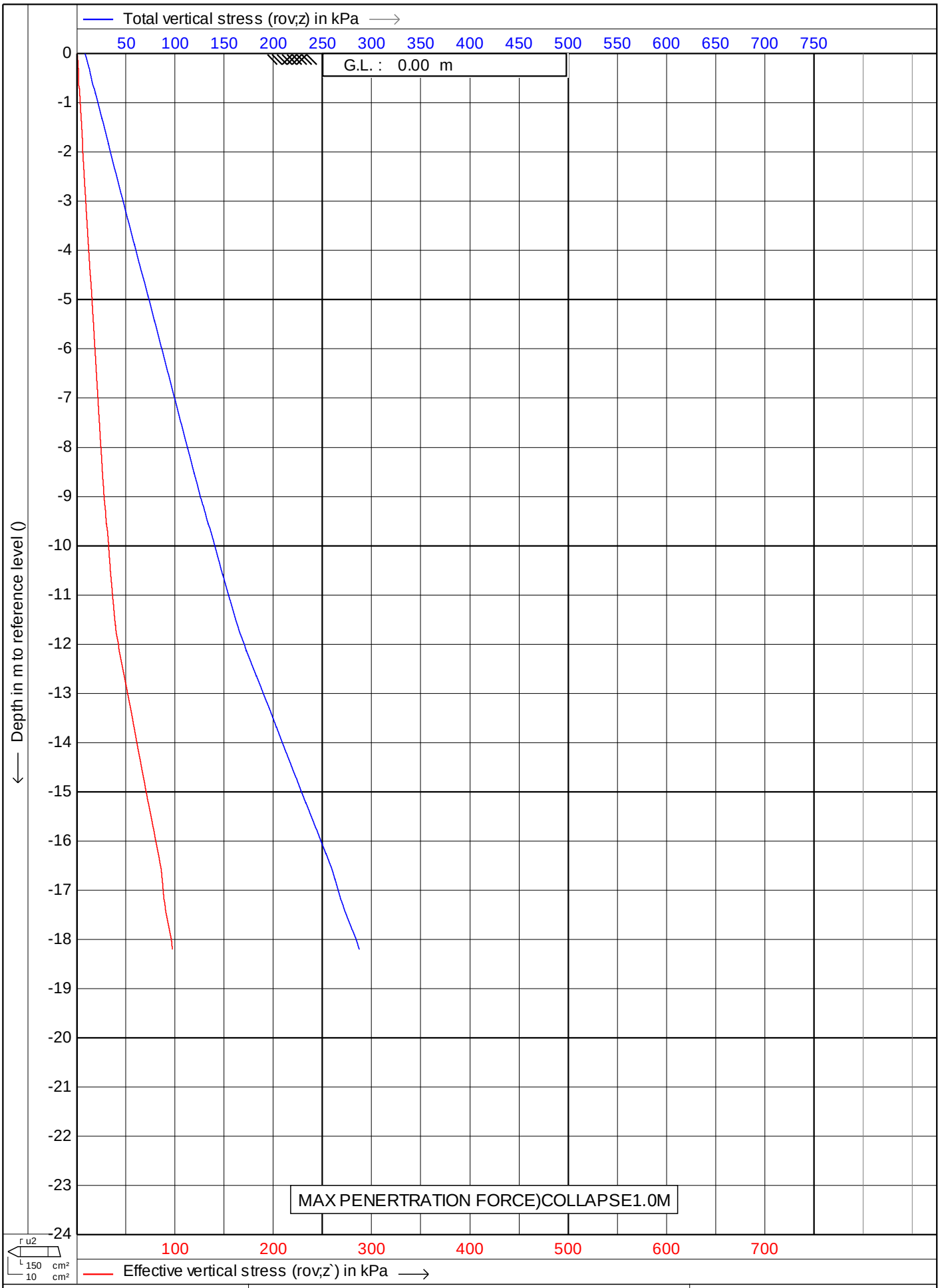
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

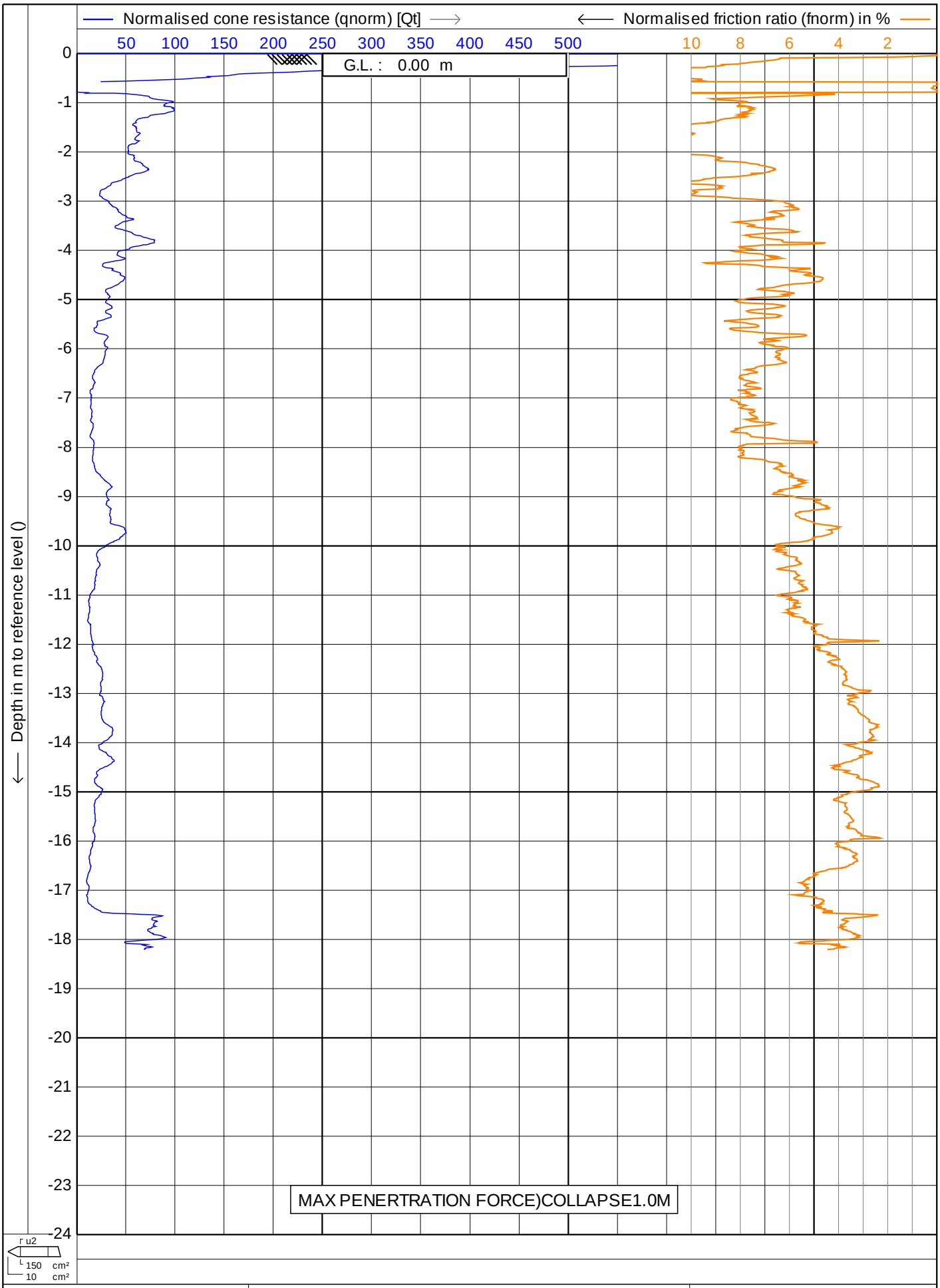
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

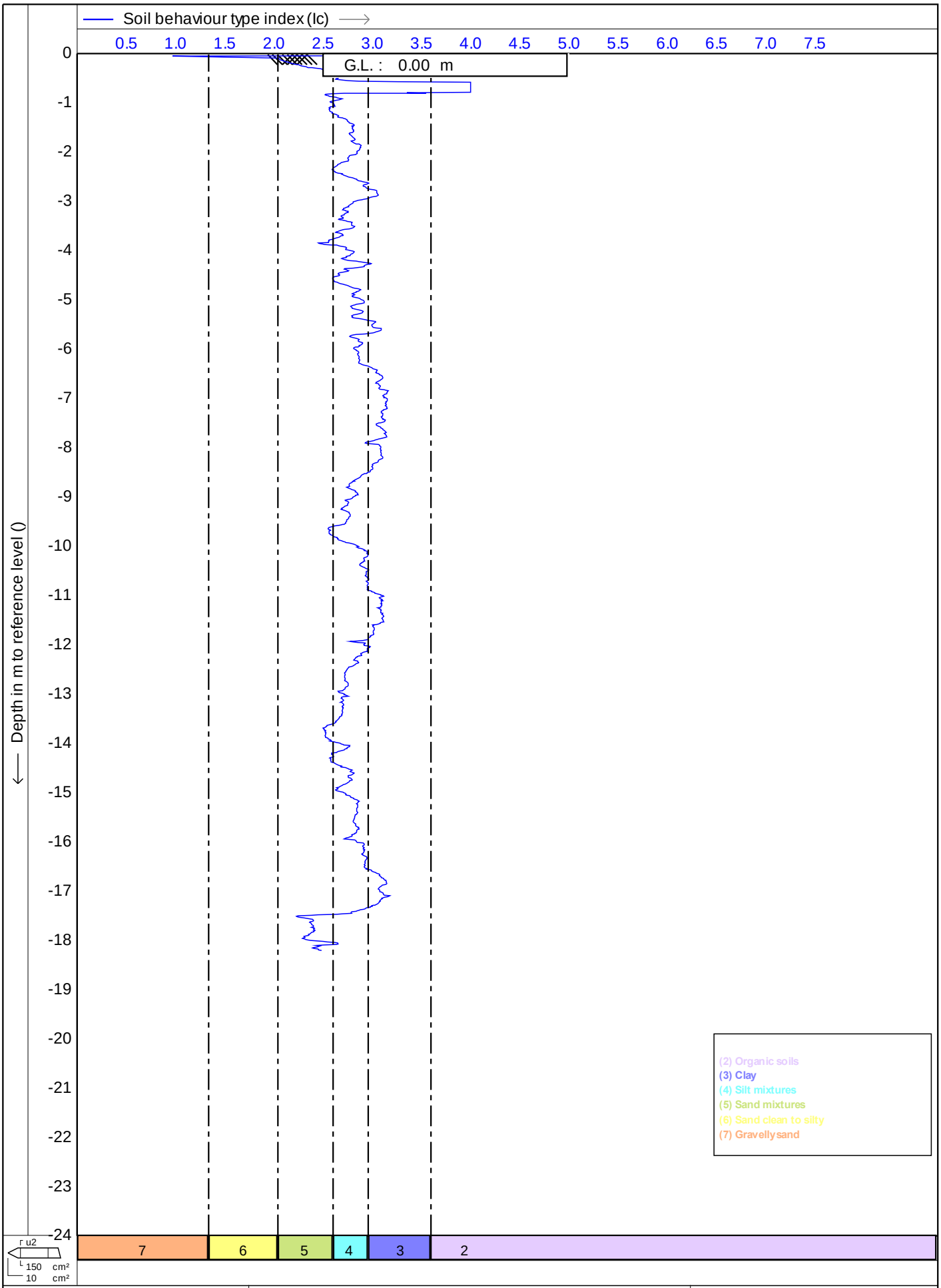
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

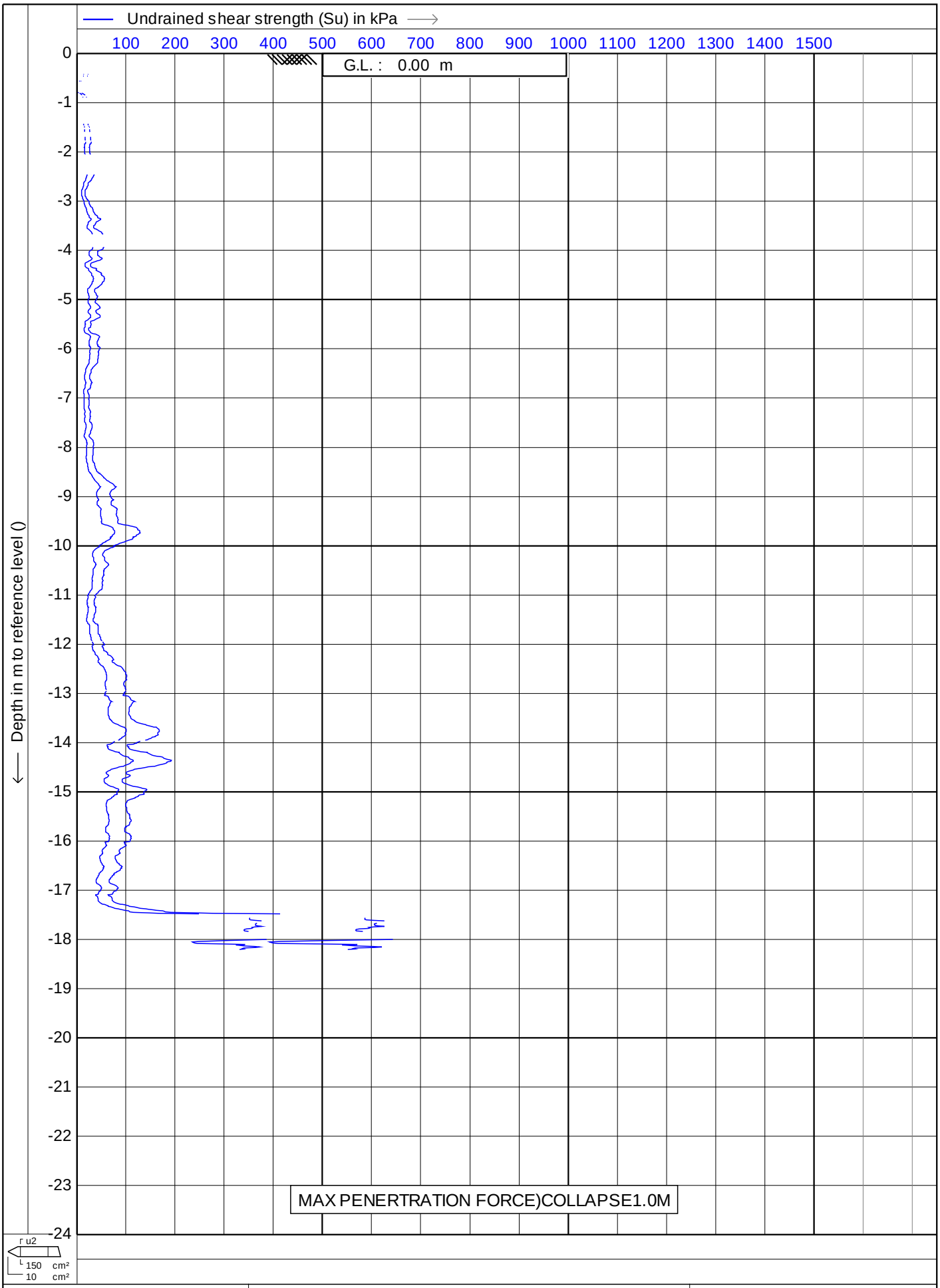
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT5** **9/15**

1.49



Test according NEN 5140 class 1

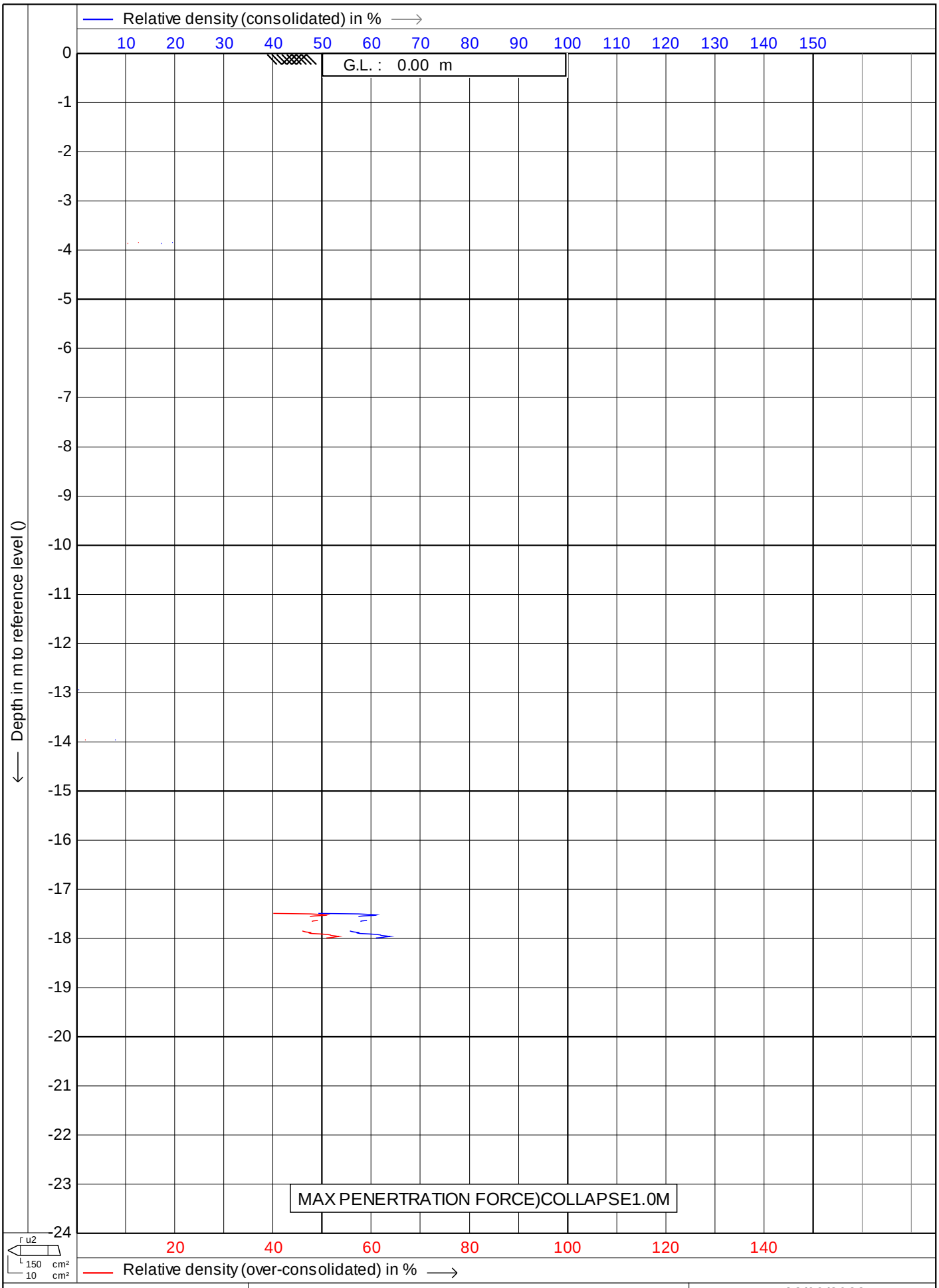
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

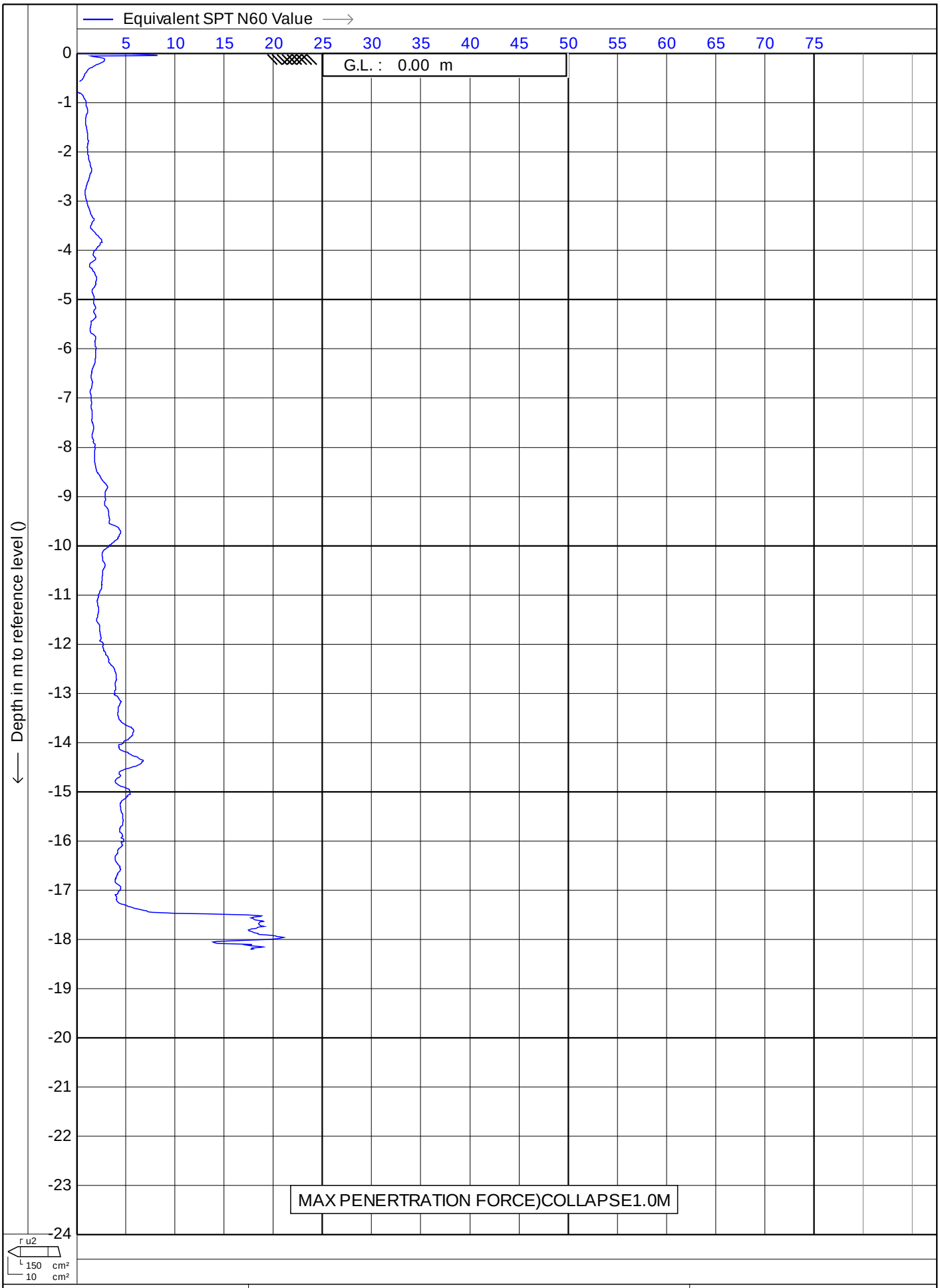
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

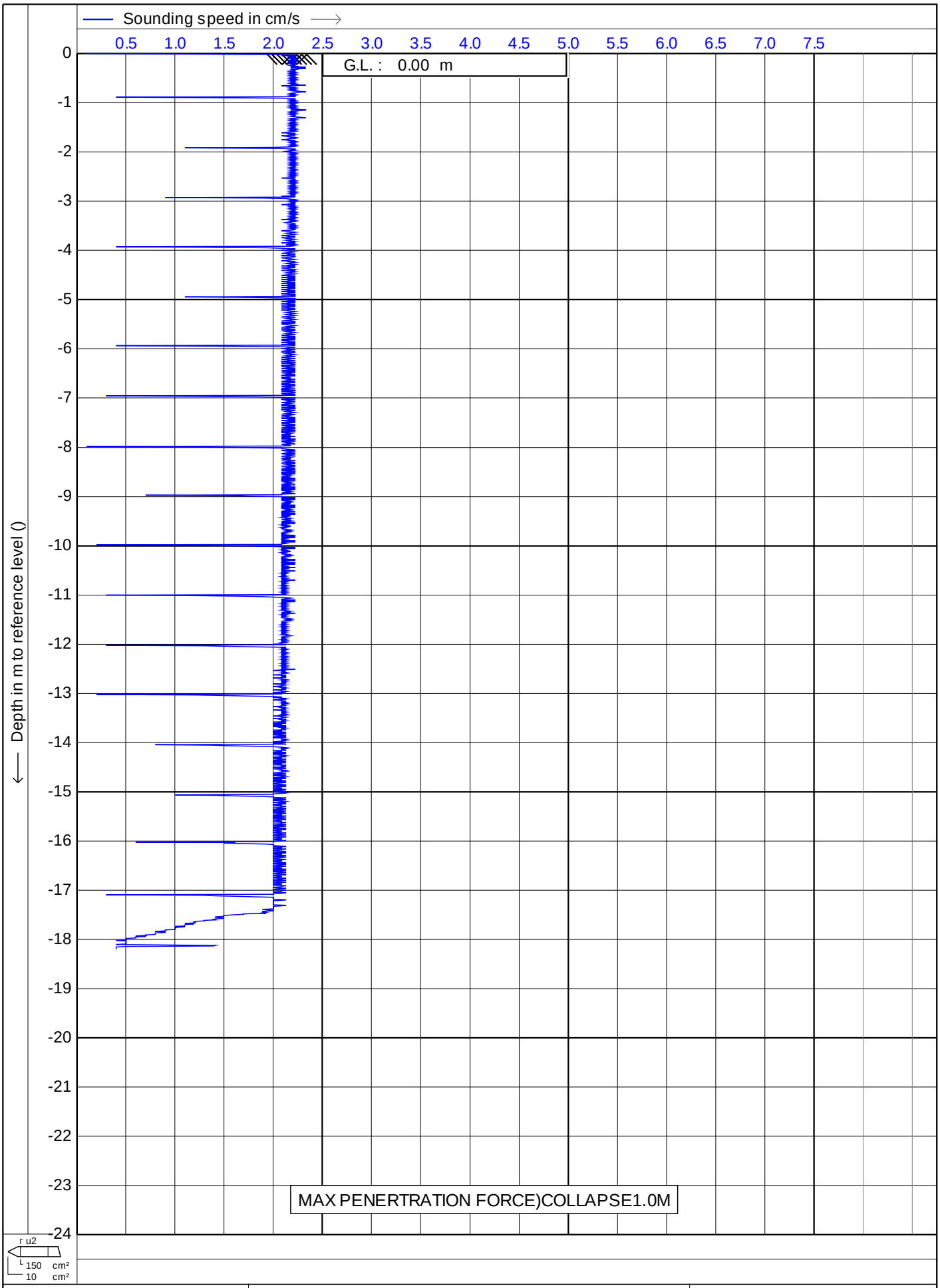
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Test according NEN 5140 class 1

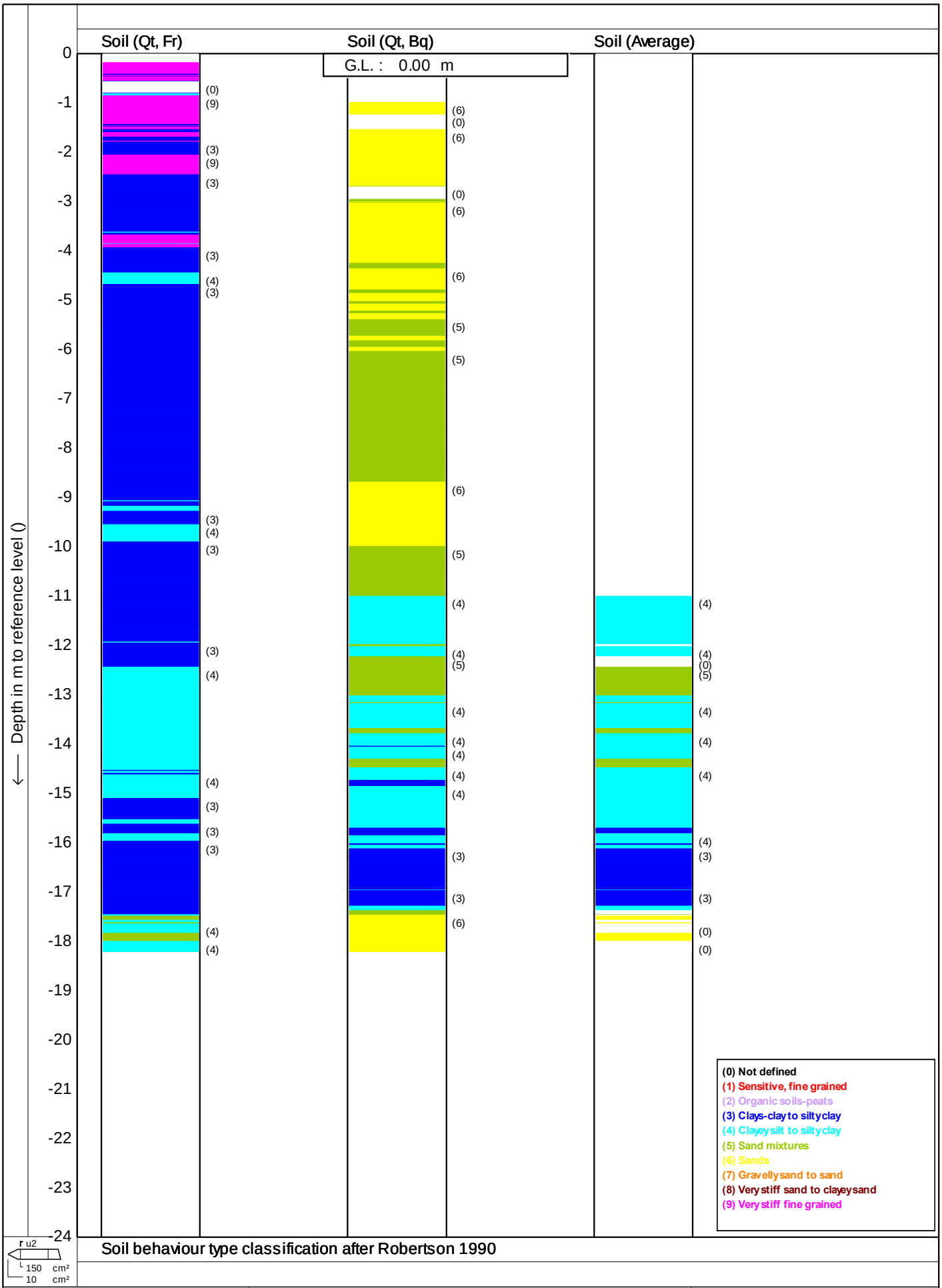
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64272, 36.60004 RD**

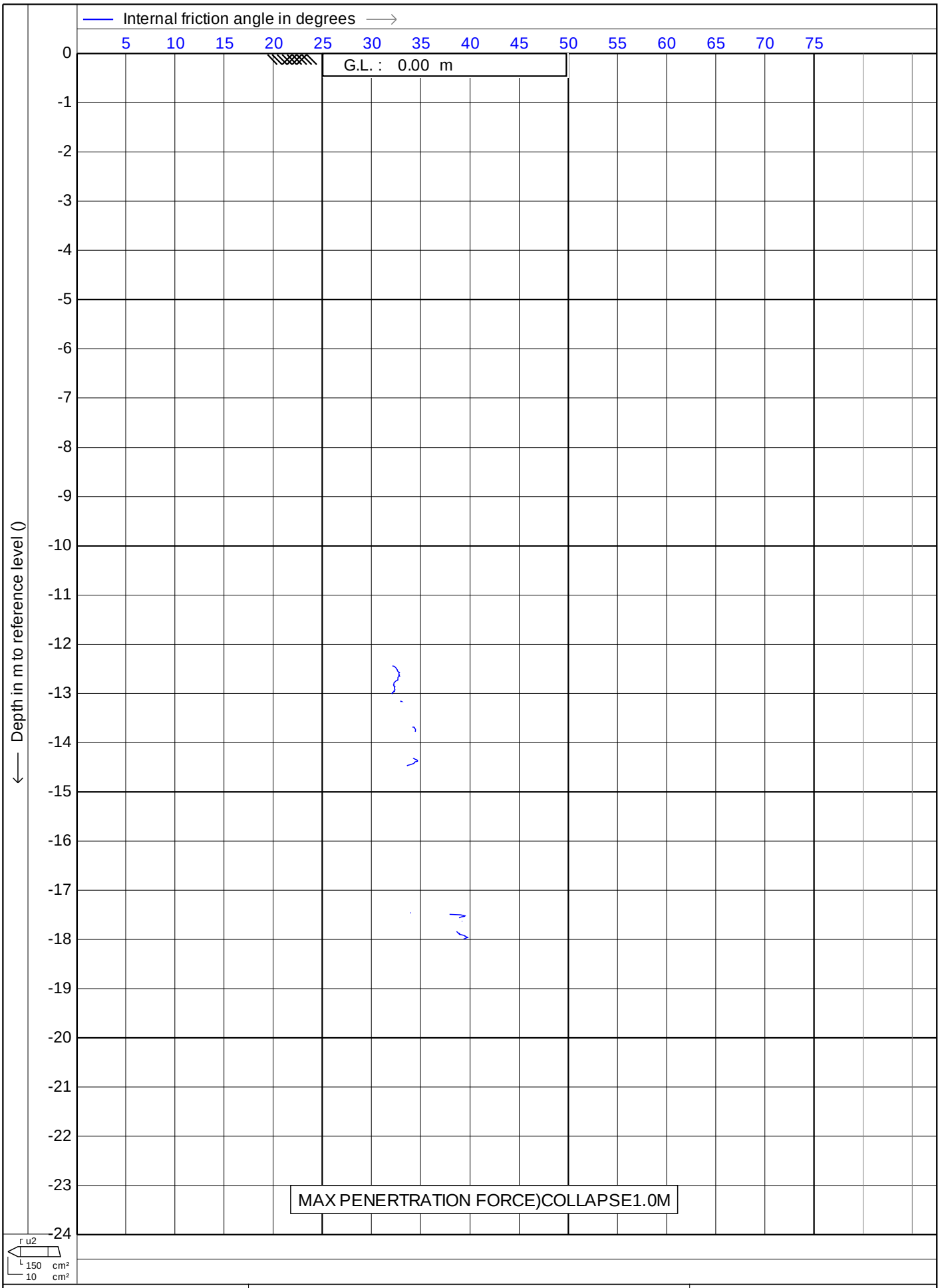
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT5**

1.49



Test according NEN 5140 class 1

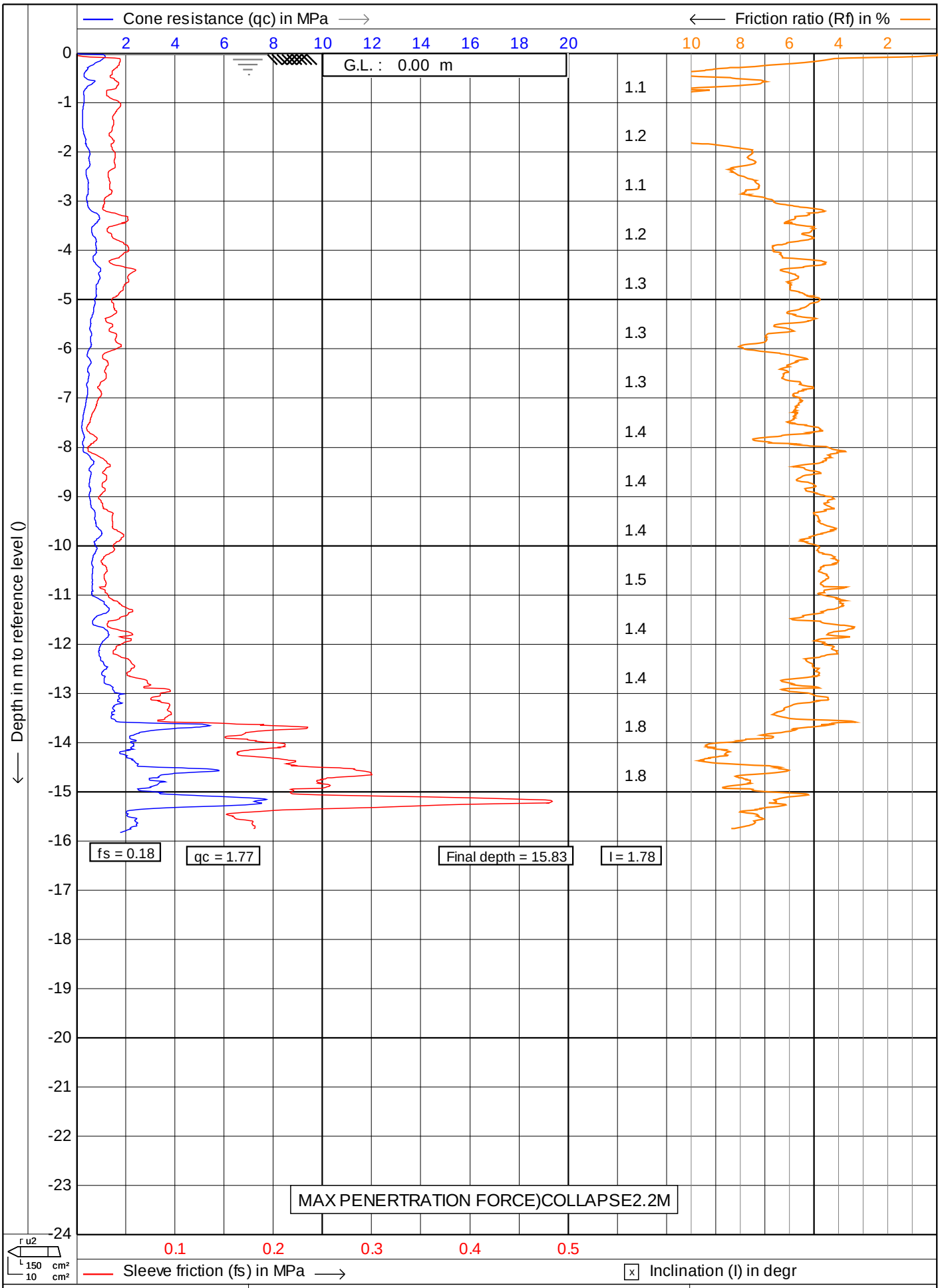
Project : **WAINUI 0992**

Location: **MILDALE**

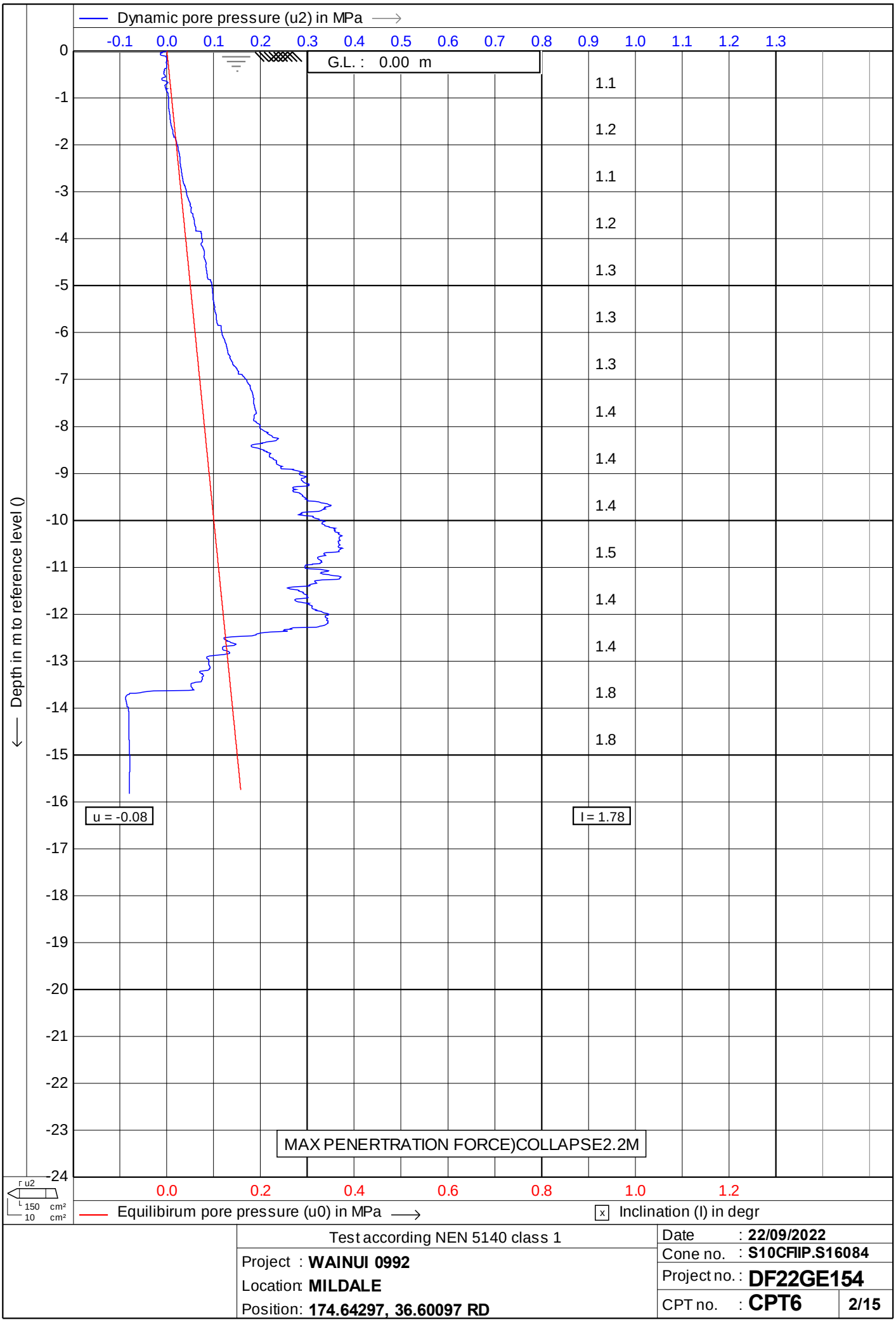
Position: **174.64272, 36.60004 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT5** **15/15**

1.49

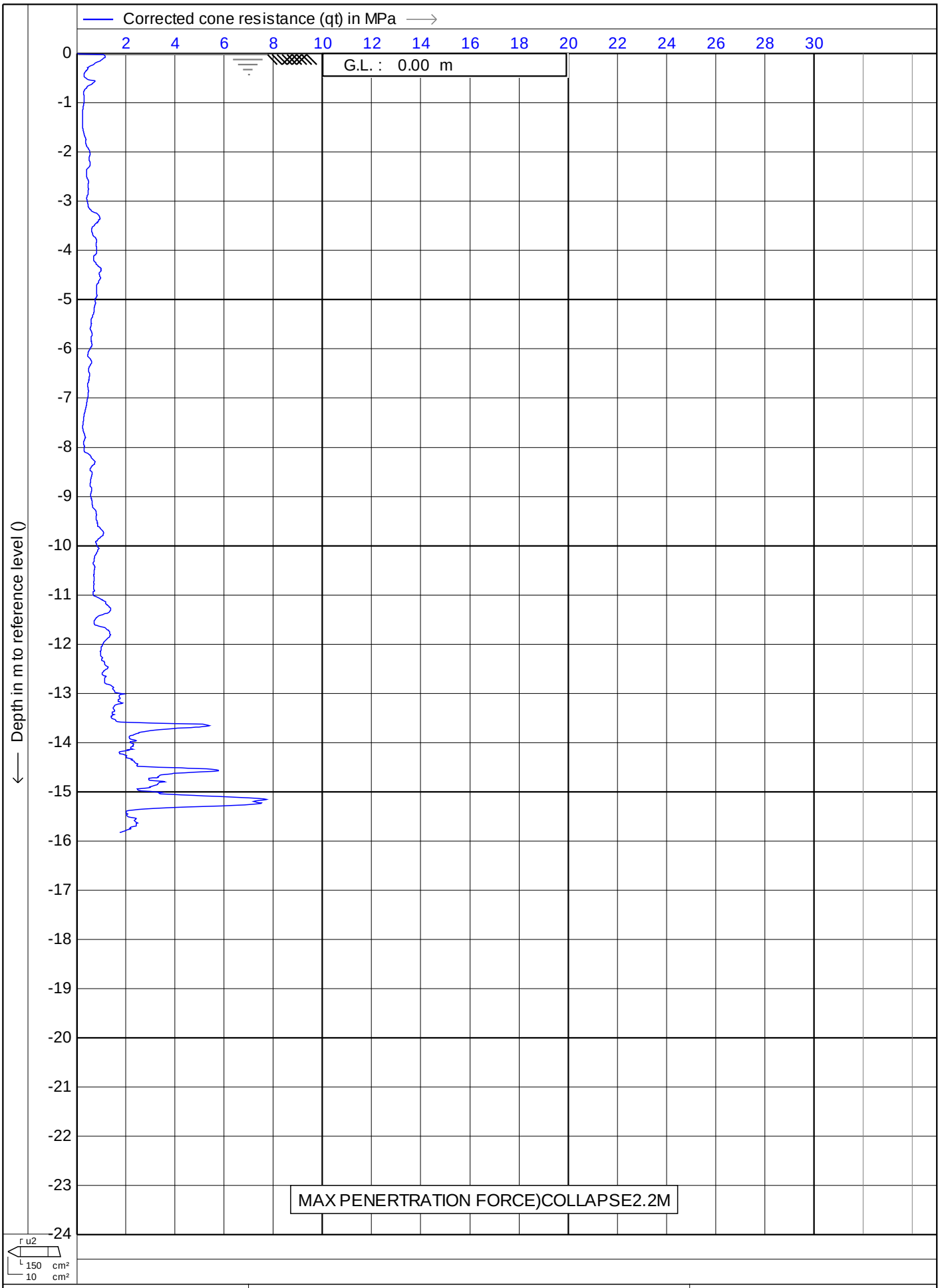


Test according NEN 5140 class 1	Date	: **22/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154**
Position: **174.64297, 36.60097 RD**	CPT no.	: **CPT6** 1/15



	Test according NEN 5140 class 1	Date : **22/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154**
	Position: **174.64297, 36.60097 RD**	CPT no. : **CPT6** **2/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

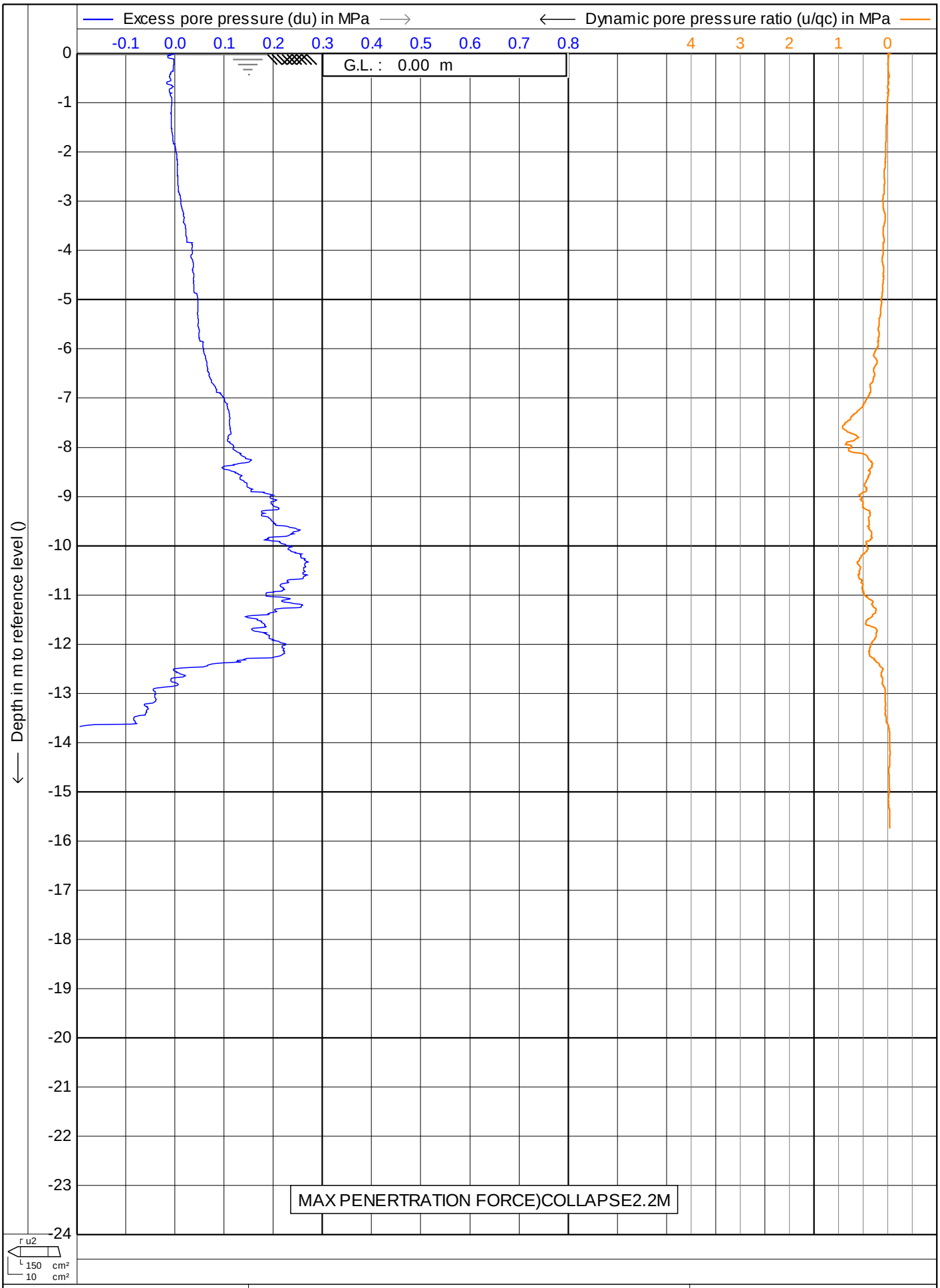
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT6** **3/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

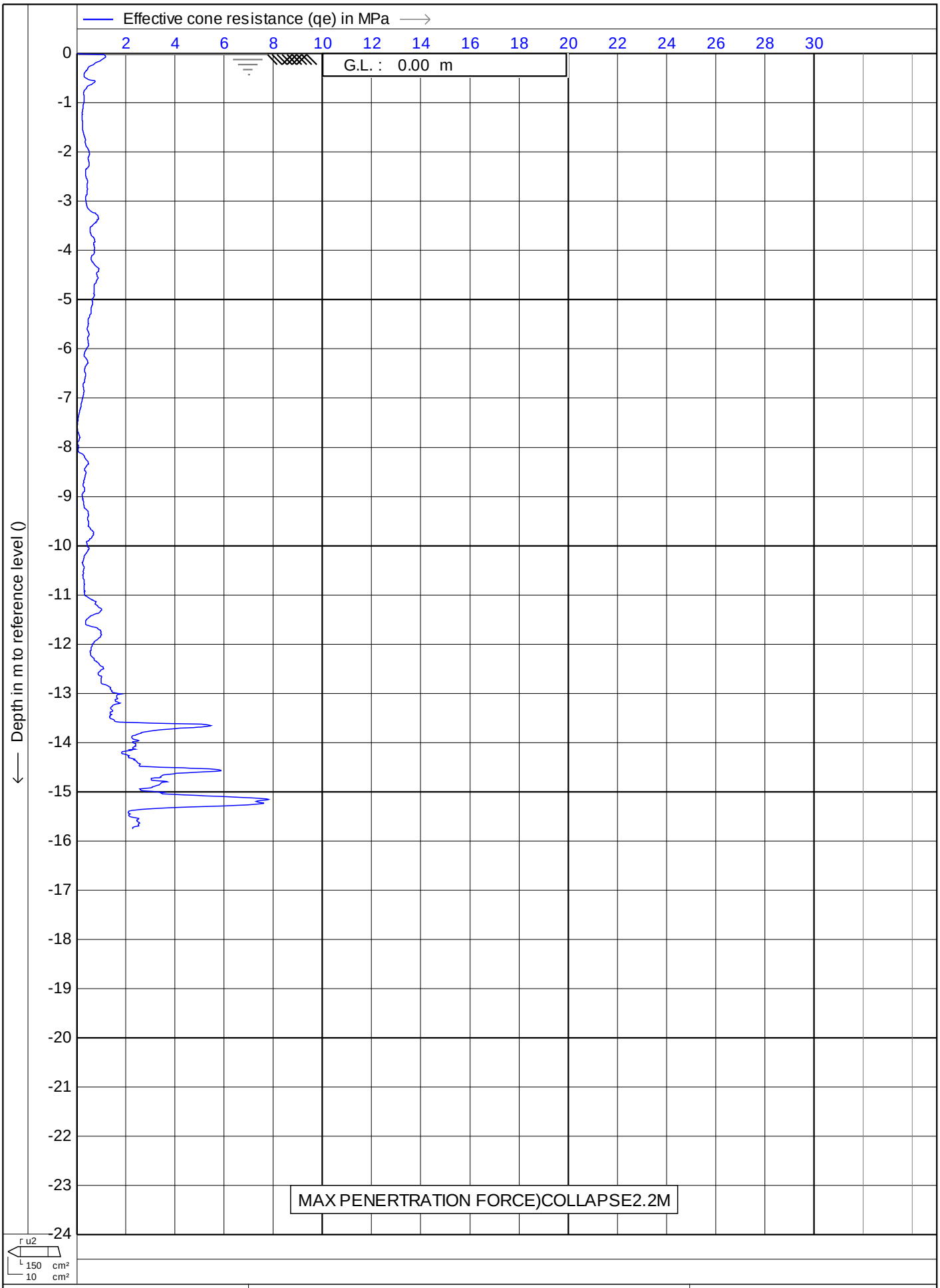
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT6** **4/15**

1.49



Test according NEN 5140 class 1

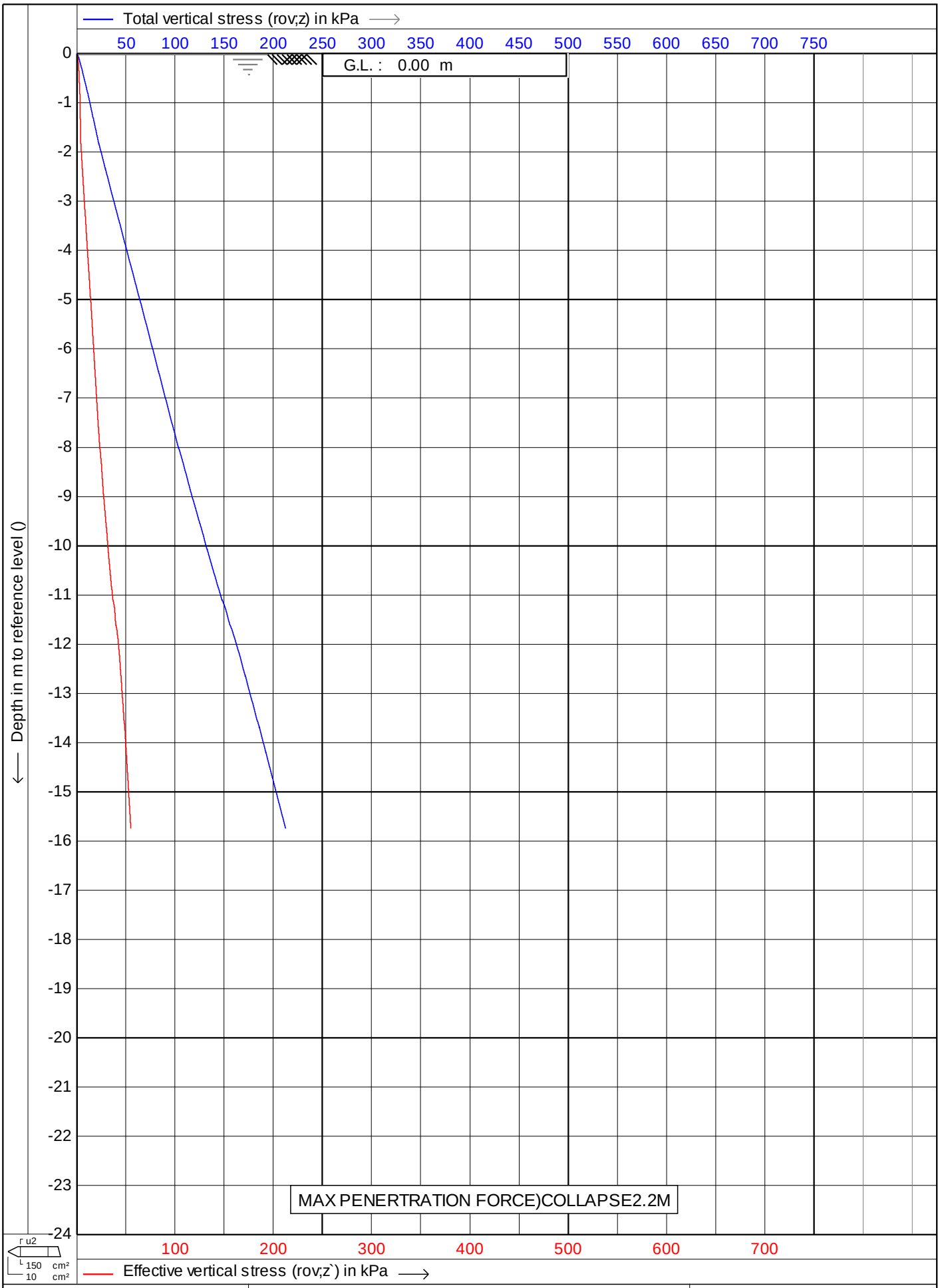
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

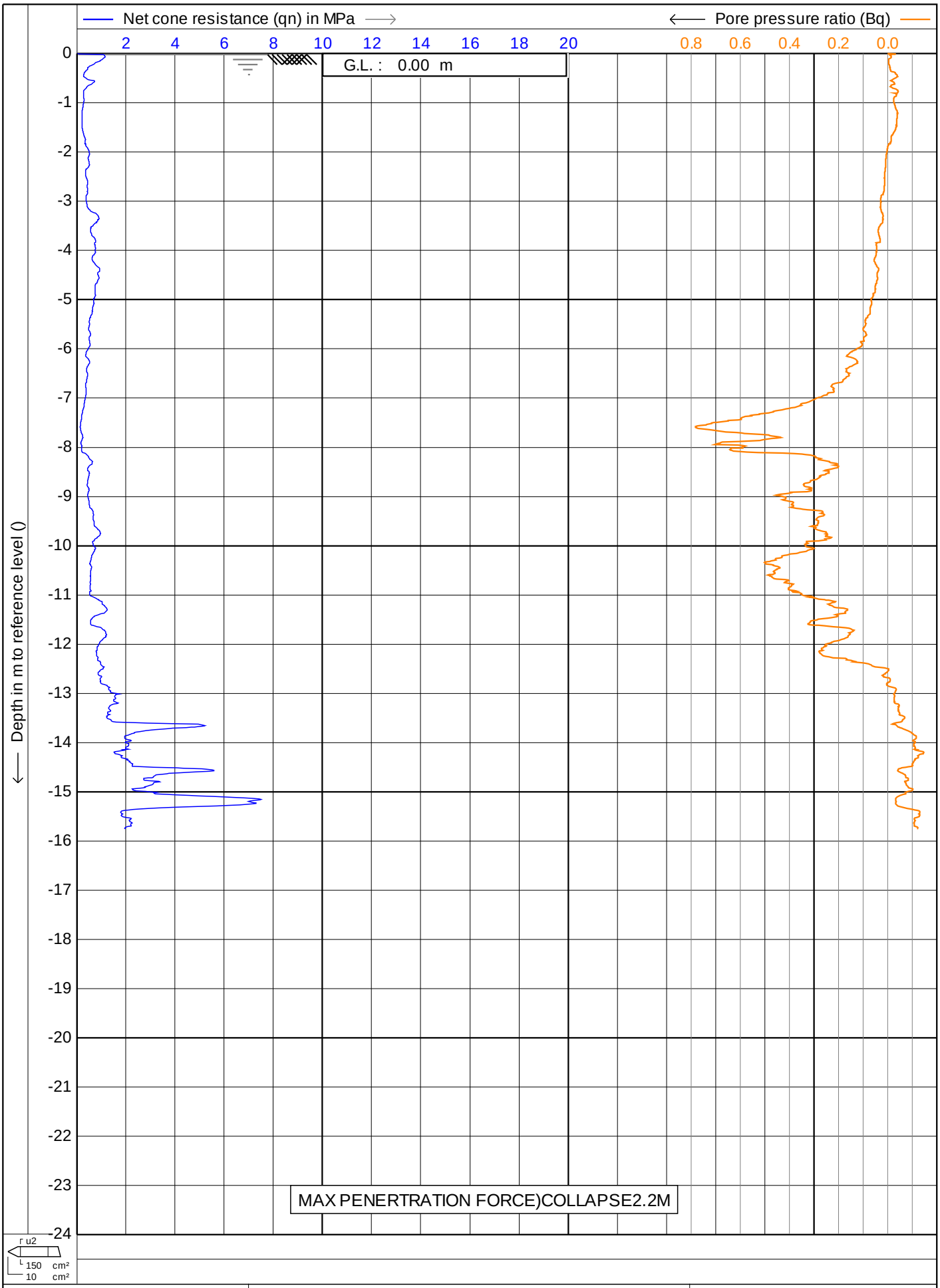
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

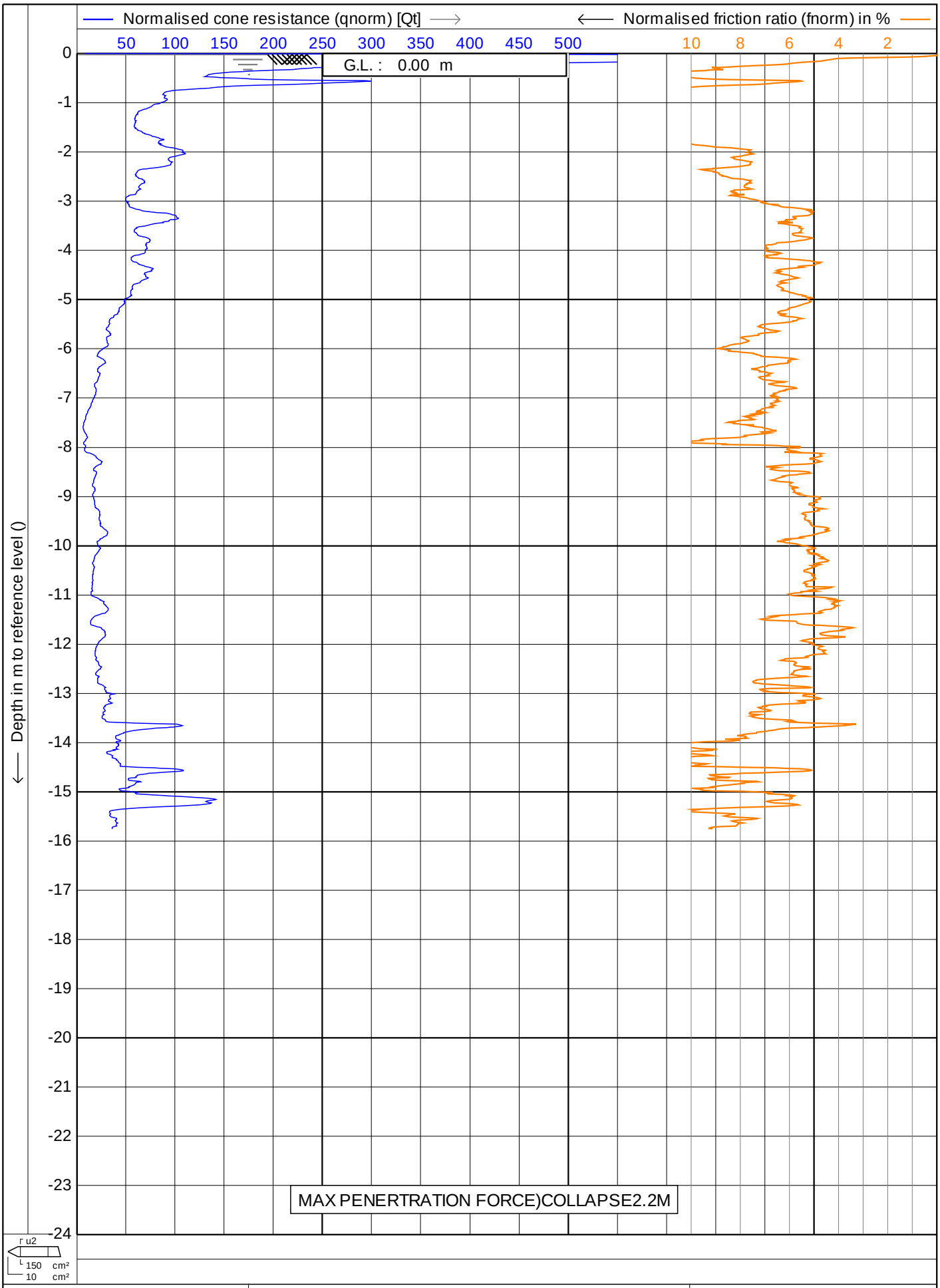
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6** **7/15**

1.49



Test according NEN 5140 class 1

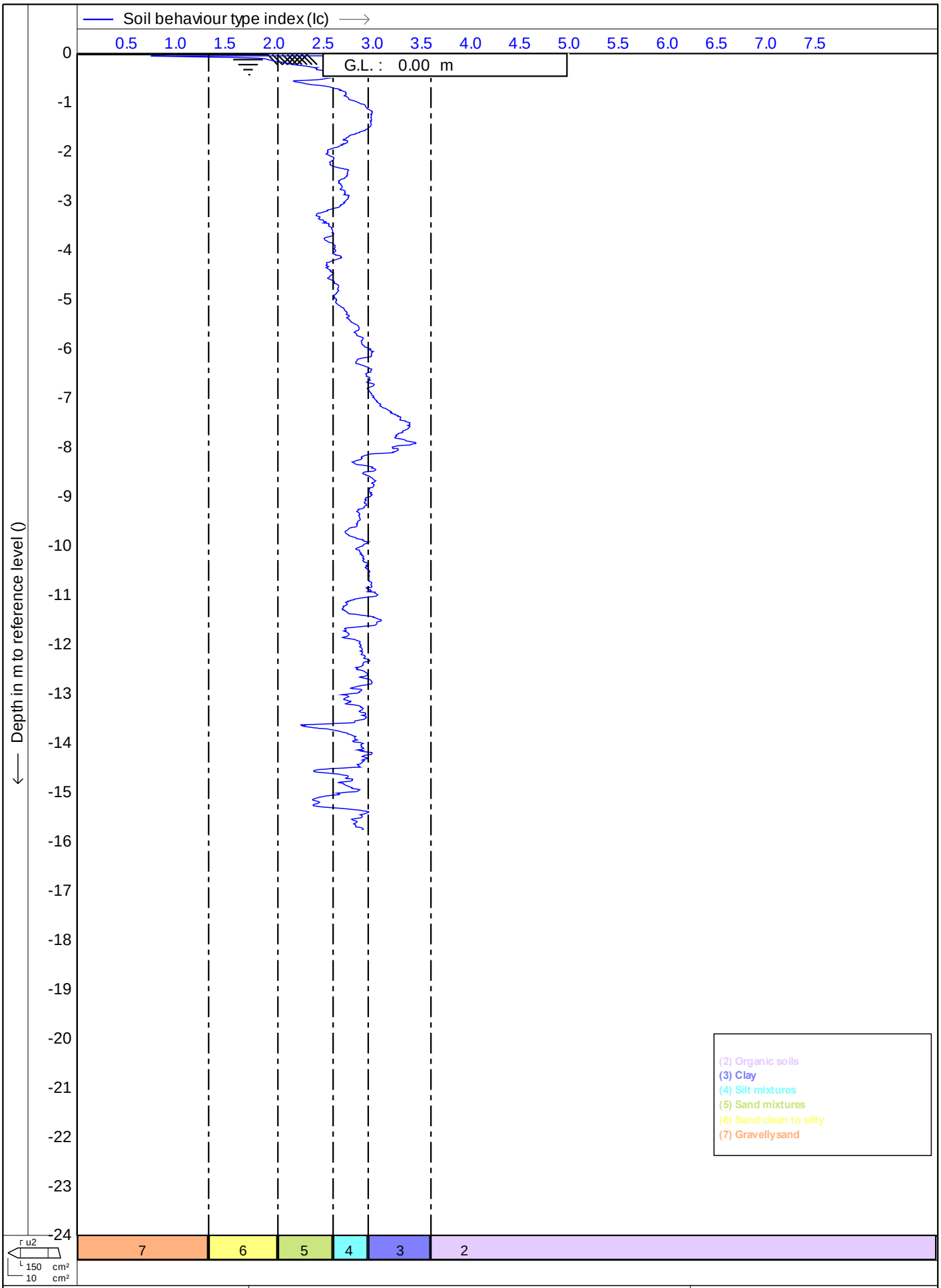
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

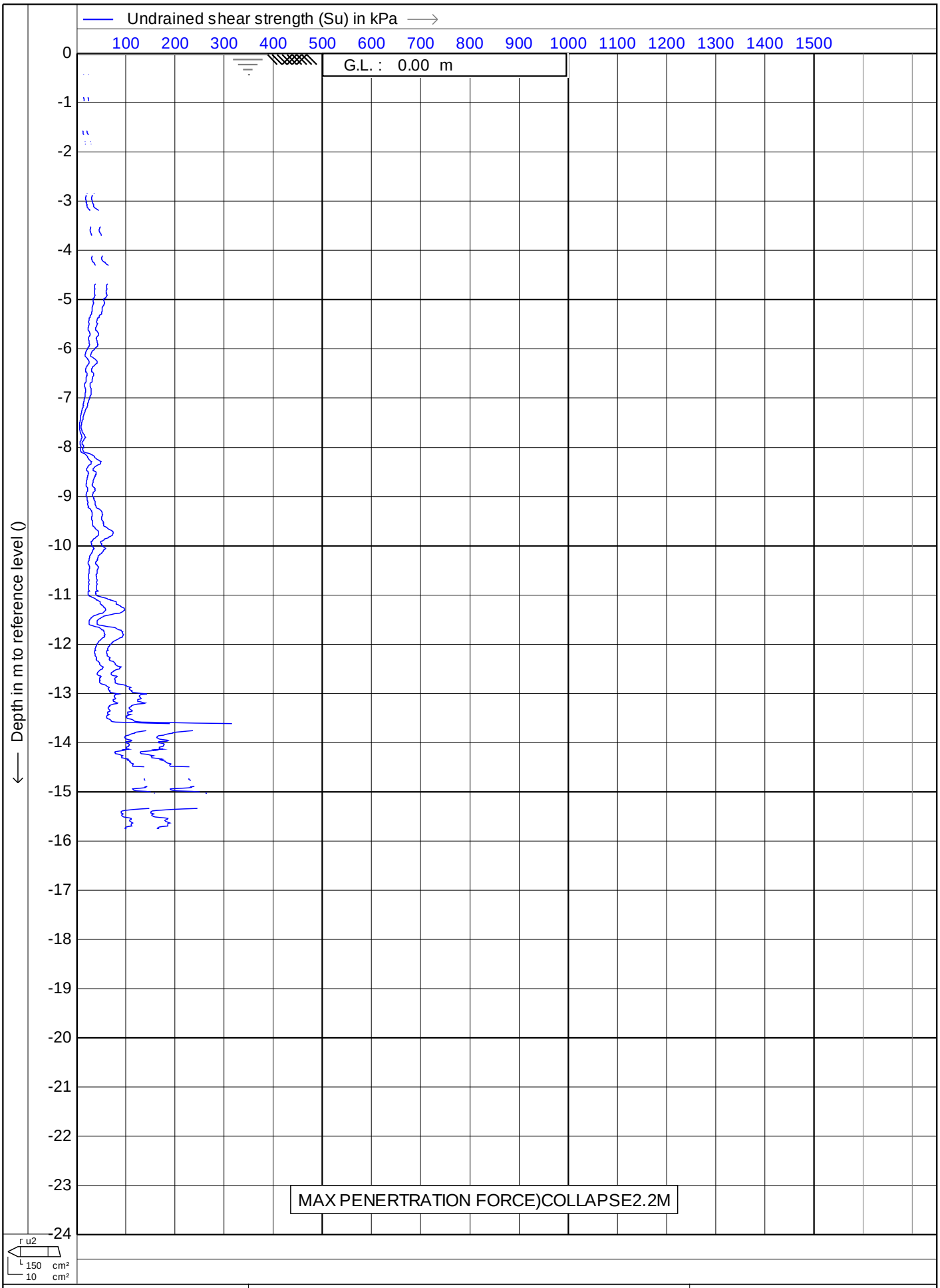
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6** **9/15**

1.49



Test according NEN 5140 class 1

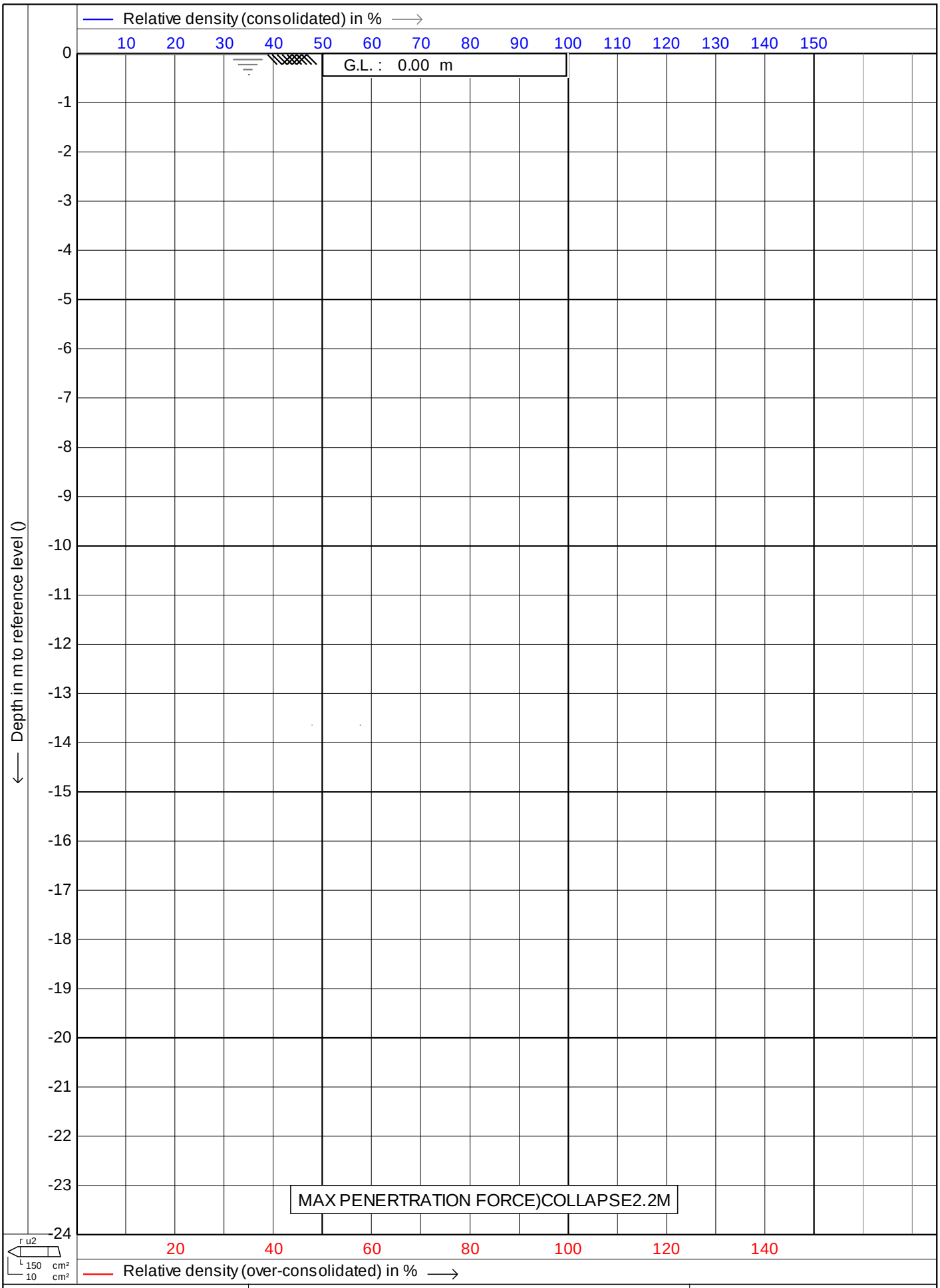
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

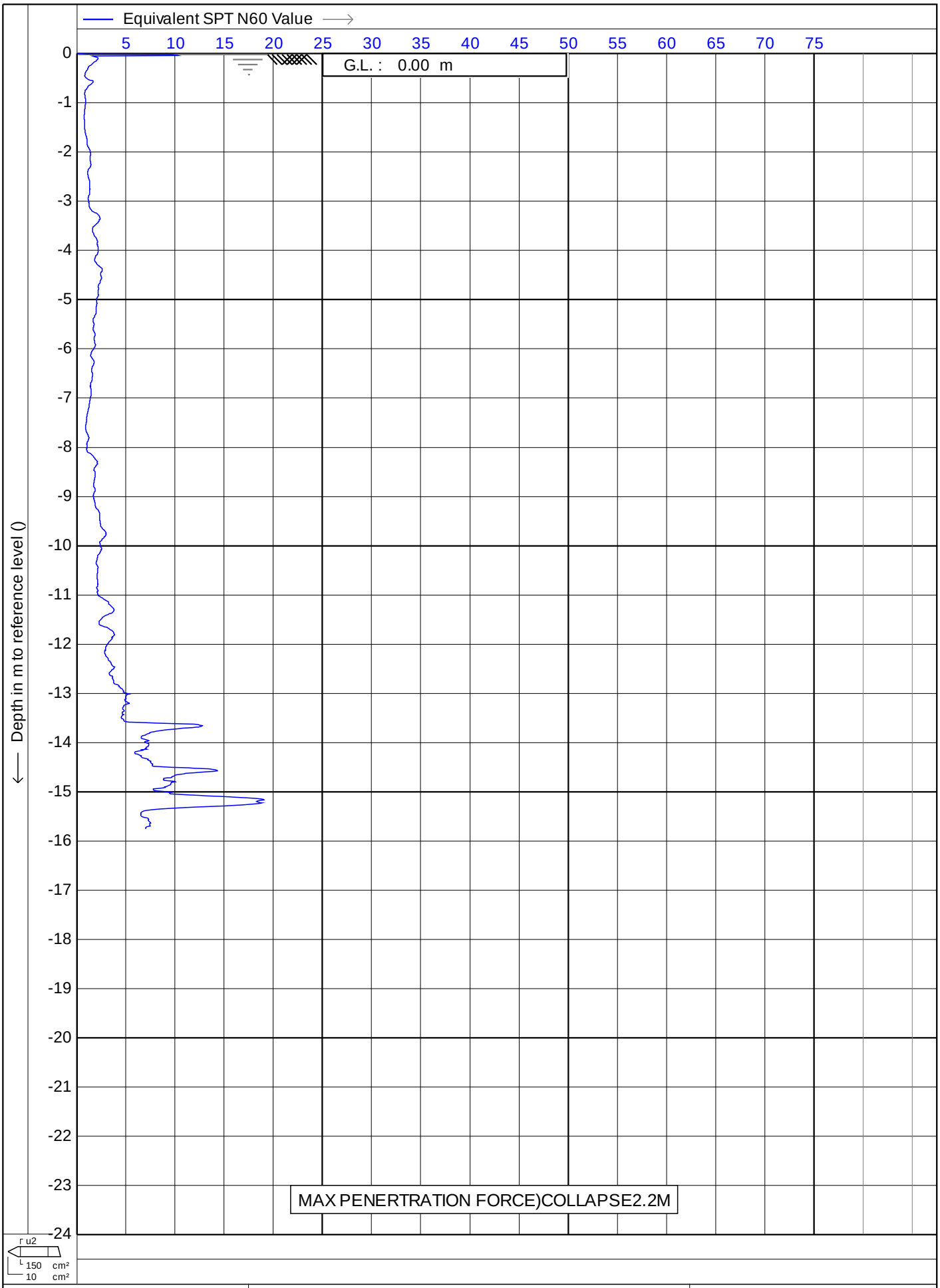
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT6** **11/15**

1.49



Test according NEN 5140 class 1

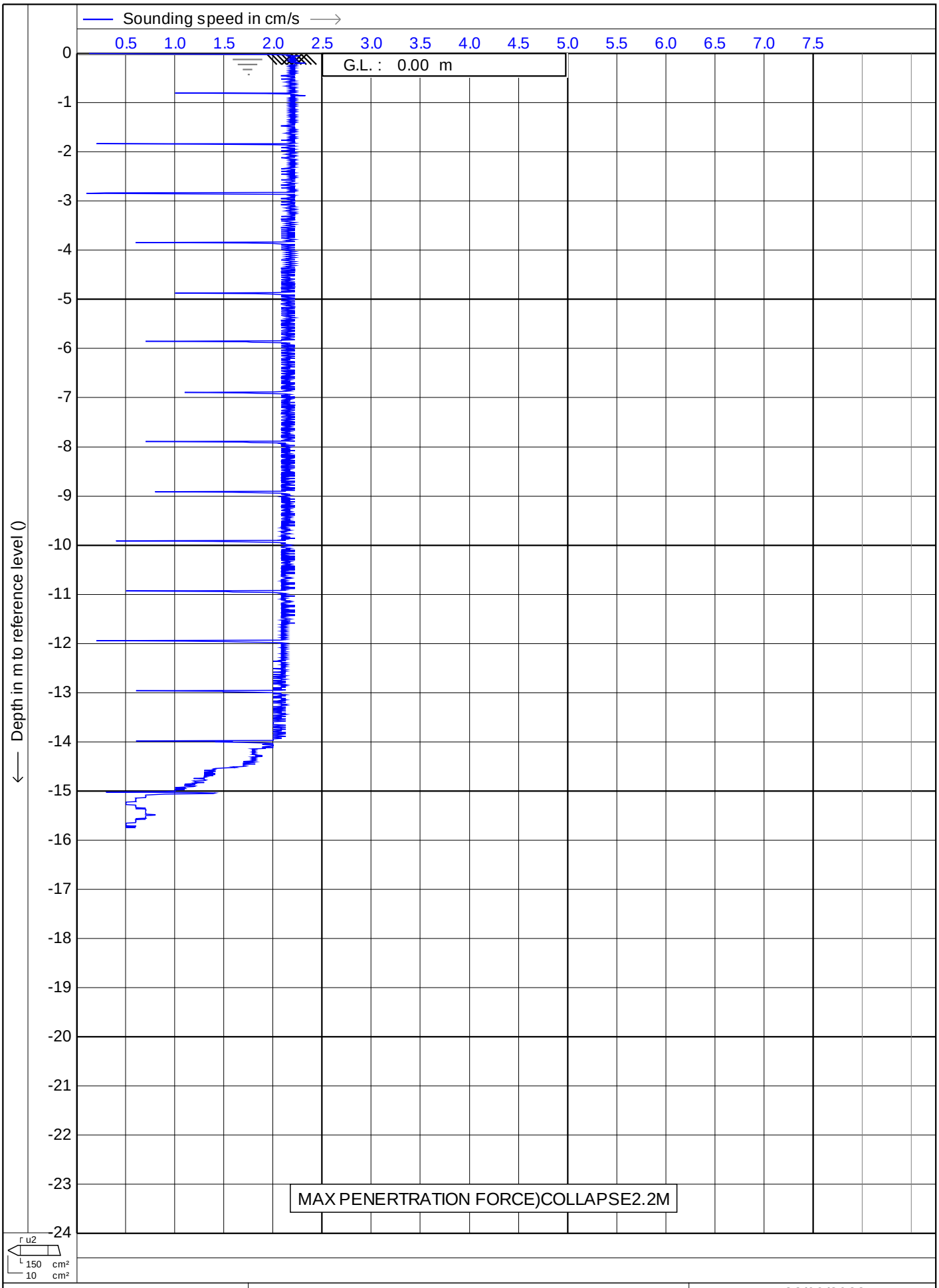
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

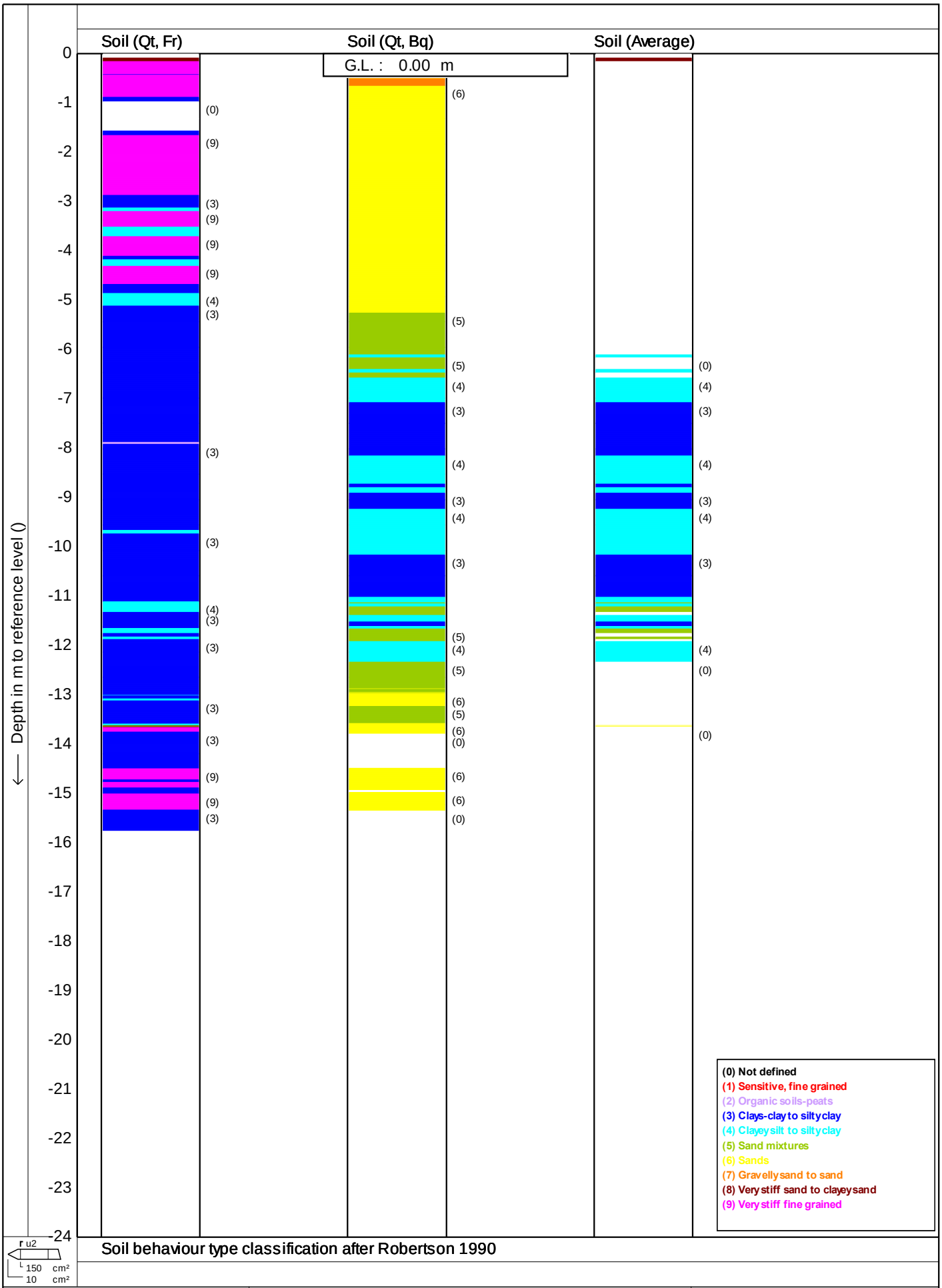
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

Date	: **22/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154**
CPT no.	: **CPT6**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

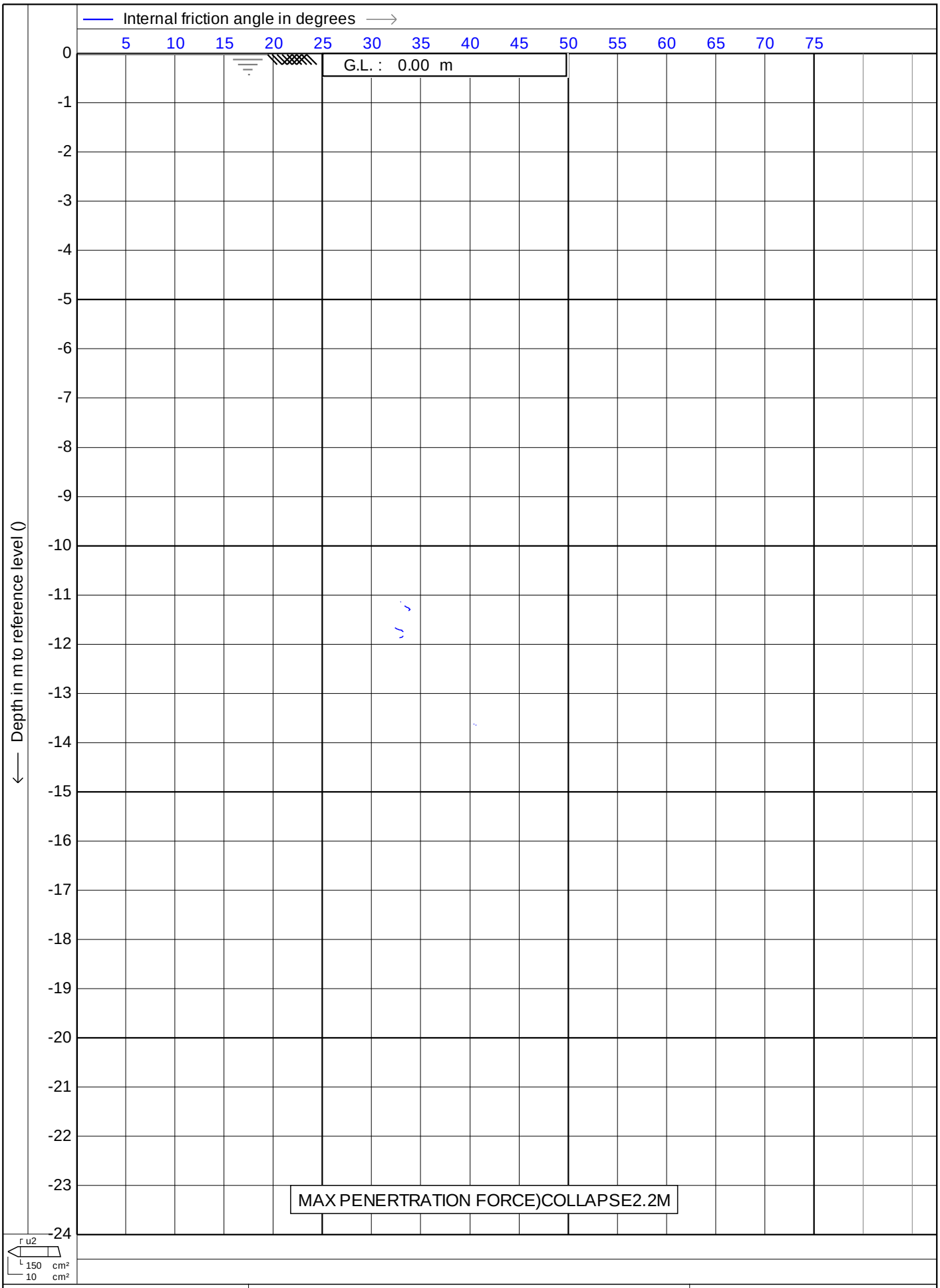
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154**

CPT no. : **CPT6**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64297, 36.60097 RD**

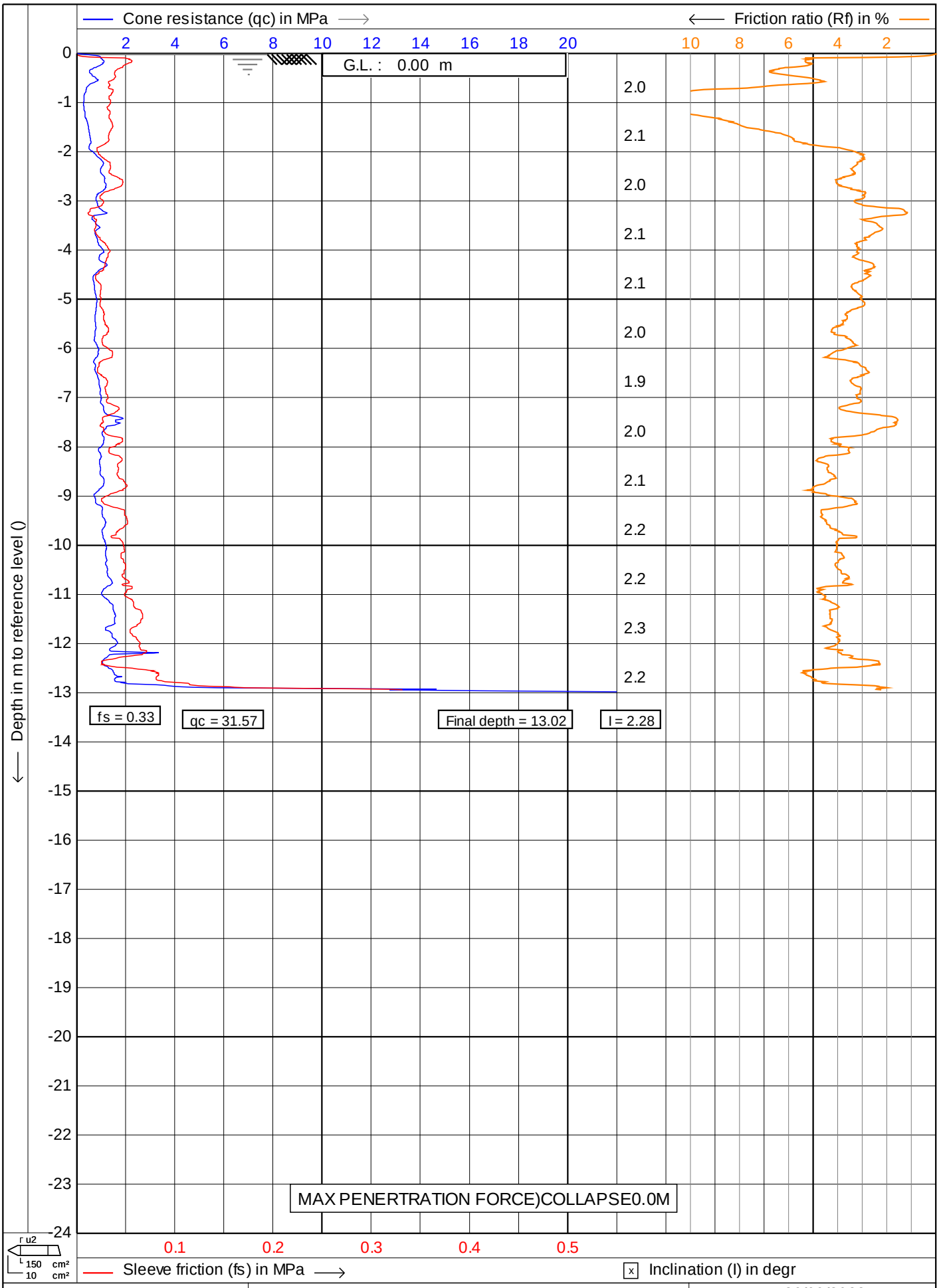
Date : **22/09/2022**

Cone no. : **S10CFIIP.S16084**

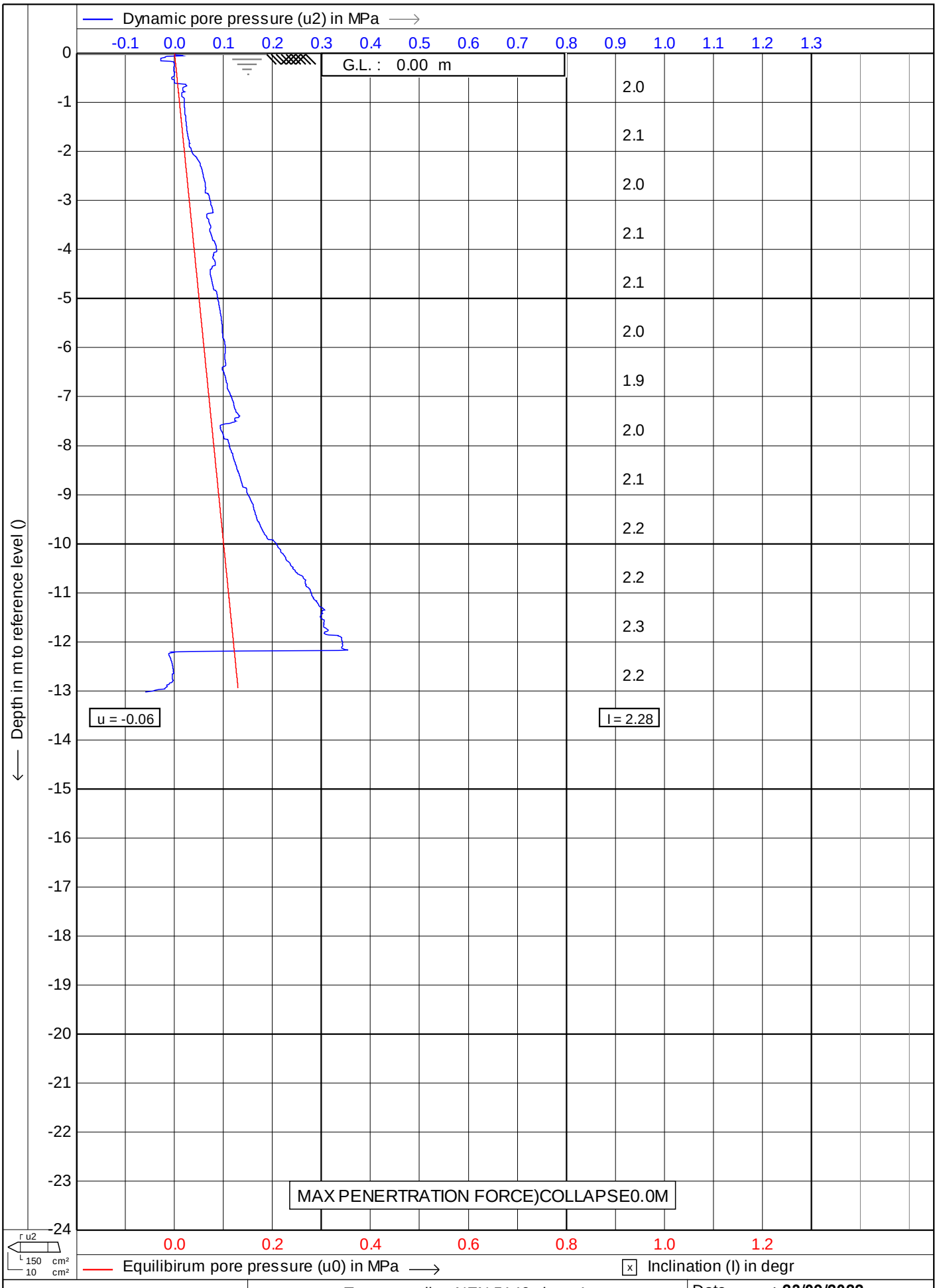
Project no. : **DF22GE154**

CPT no. : **CPT6** **15/15**

1.49

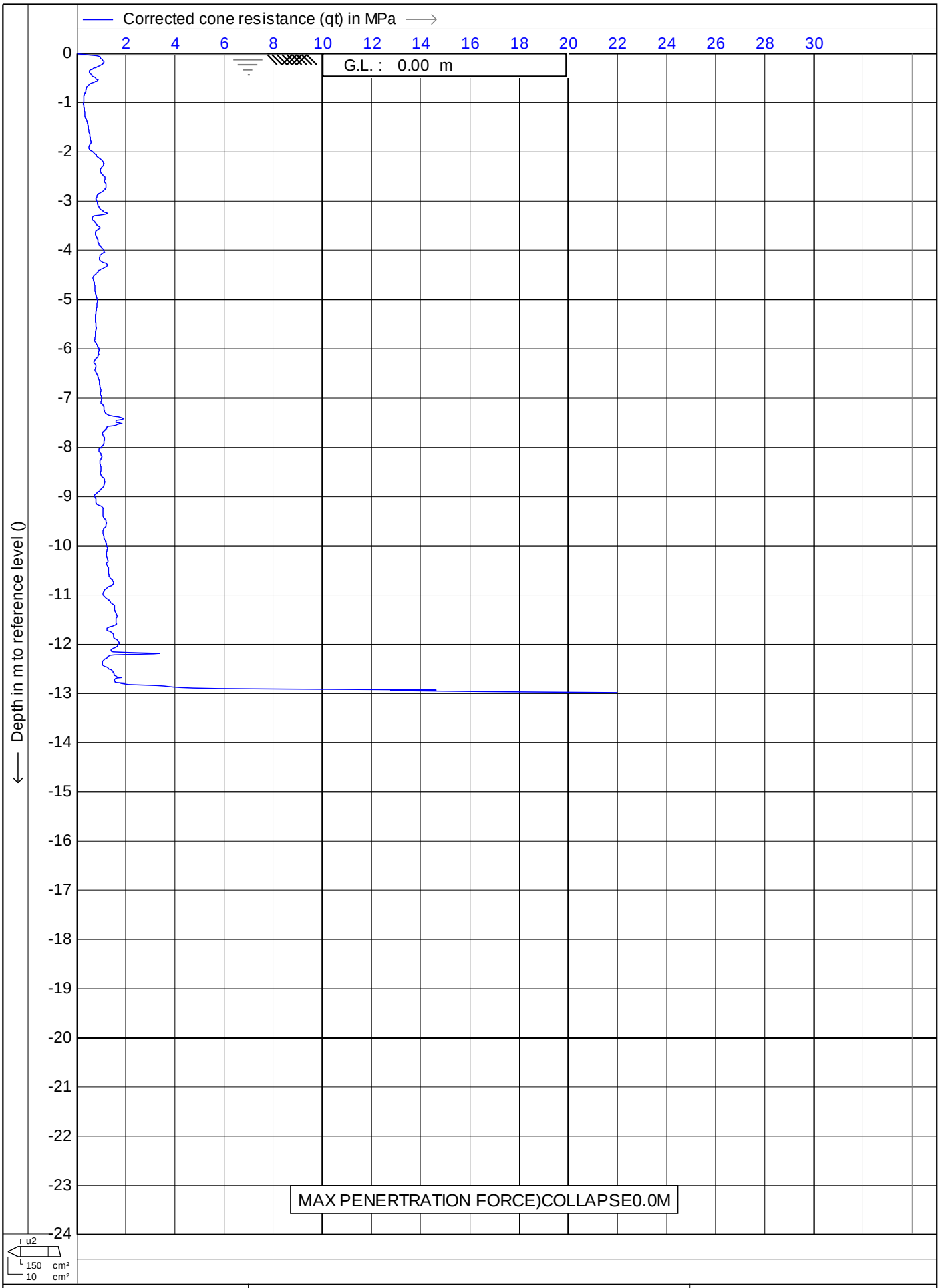


Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64319, 36.60173 RD**	CPT no.	: **CPT7** 1/15



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.64319, 36.60173 RD**	CPT no. : **CPT7** **2/15**

1.49



Test according NEN 5140 class 1

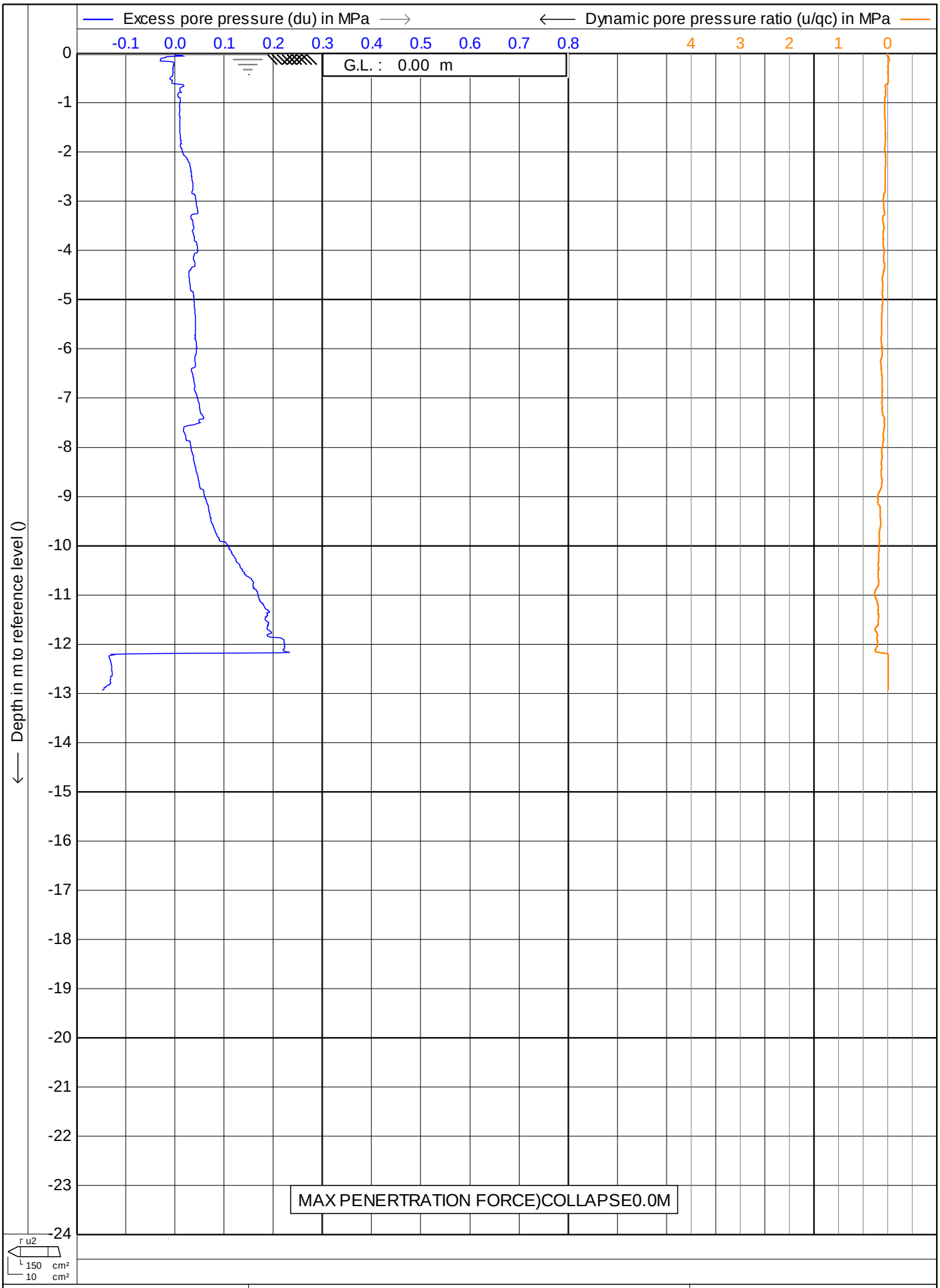
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

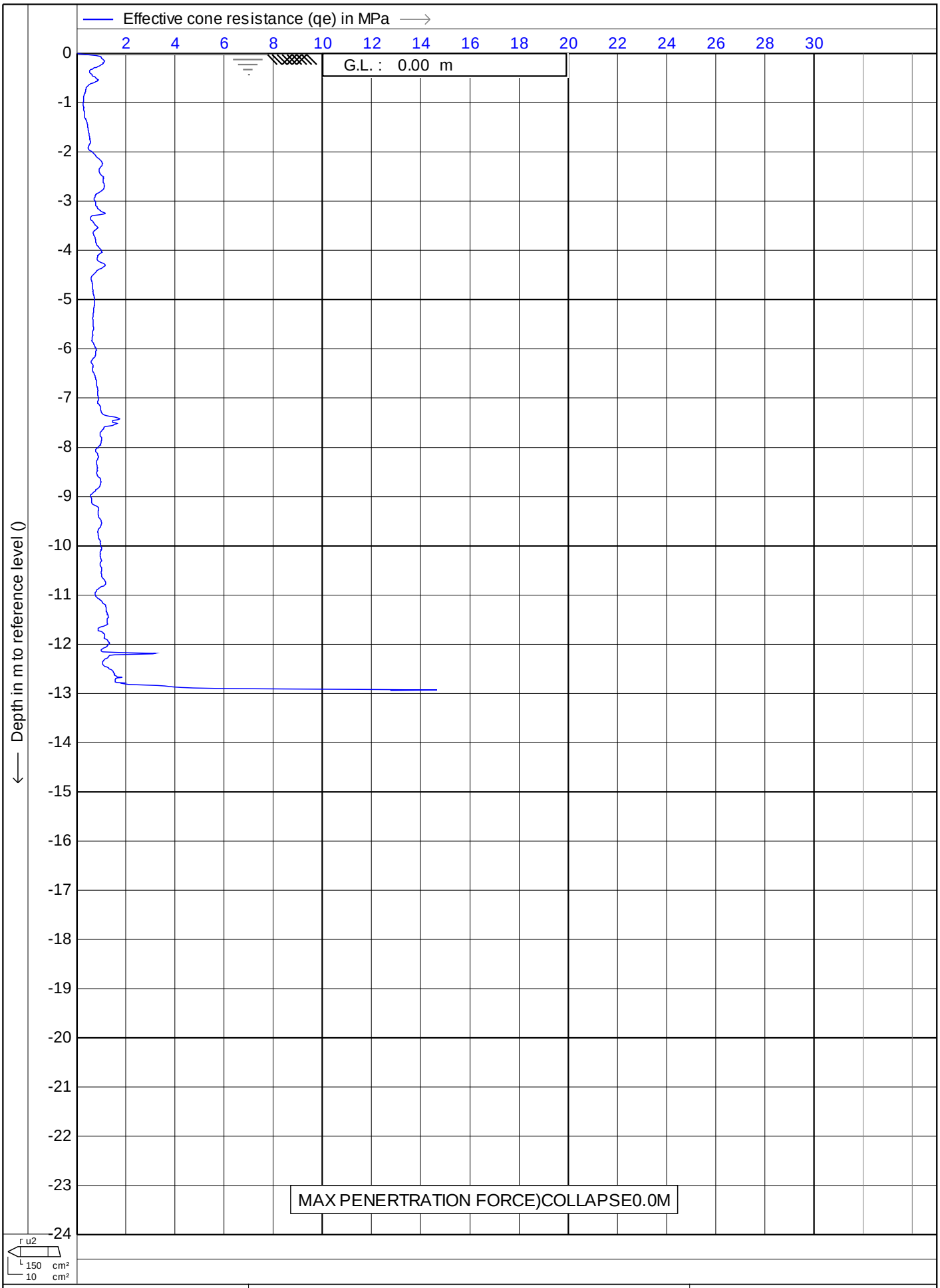
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **3/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64319, 36.60173 RD**	CPT no.	: **CPT7** **4/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

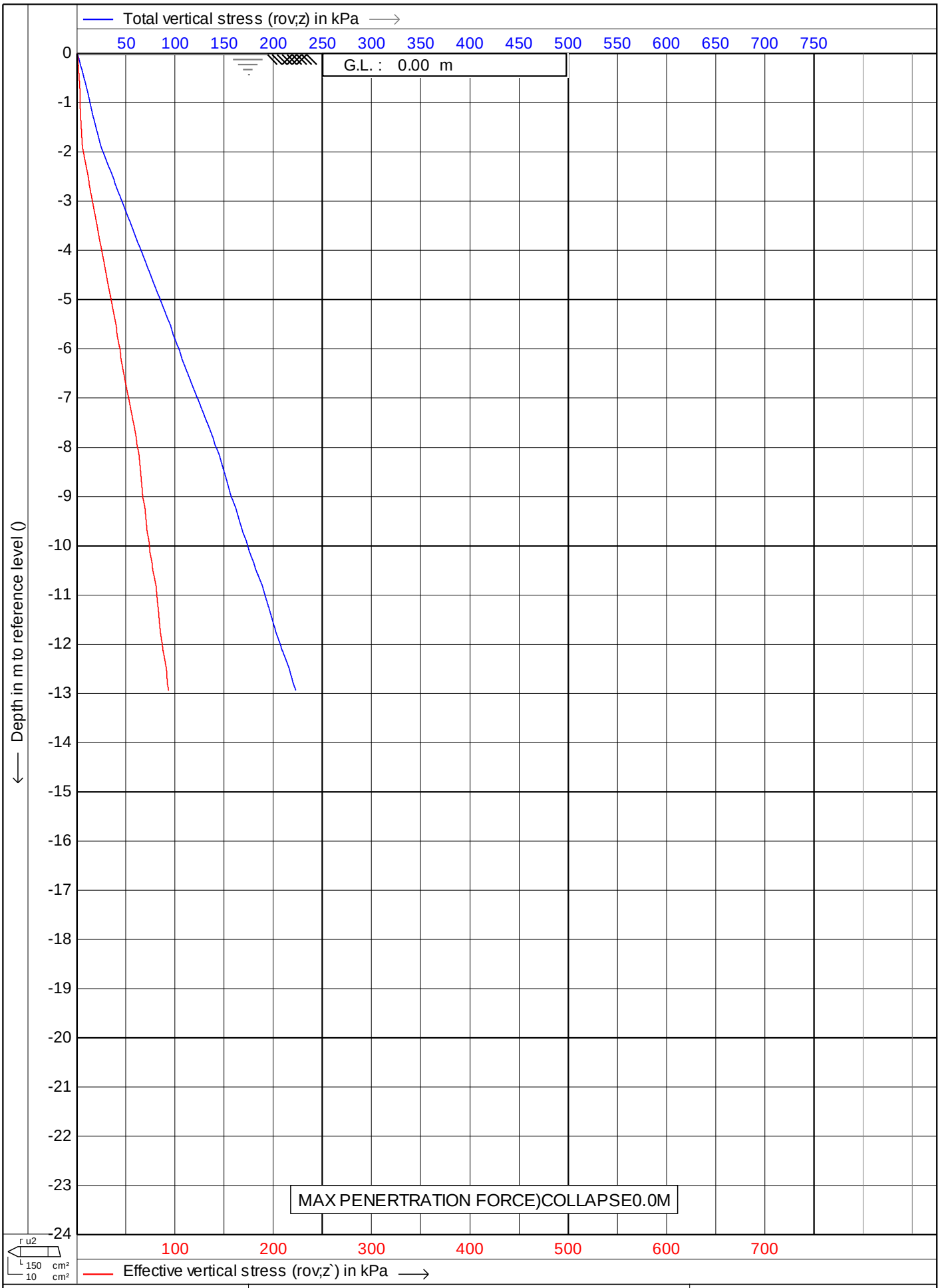
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT7** **5/15**

1.49



Test according NEN 5140 class 1

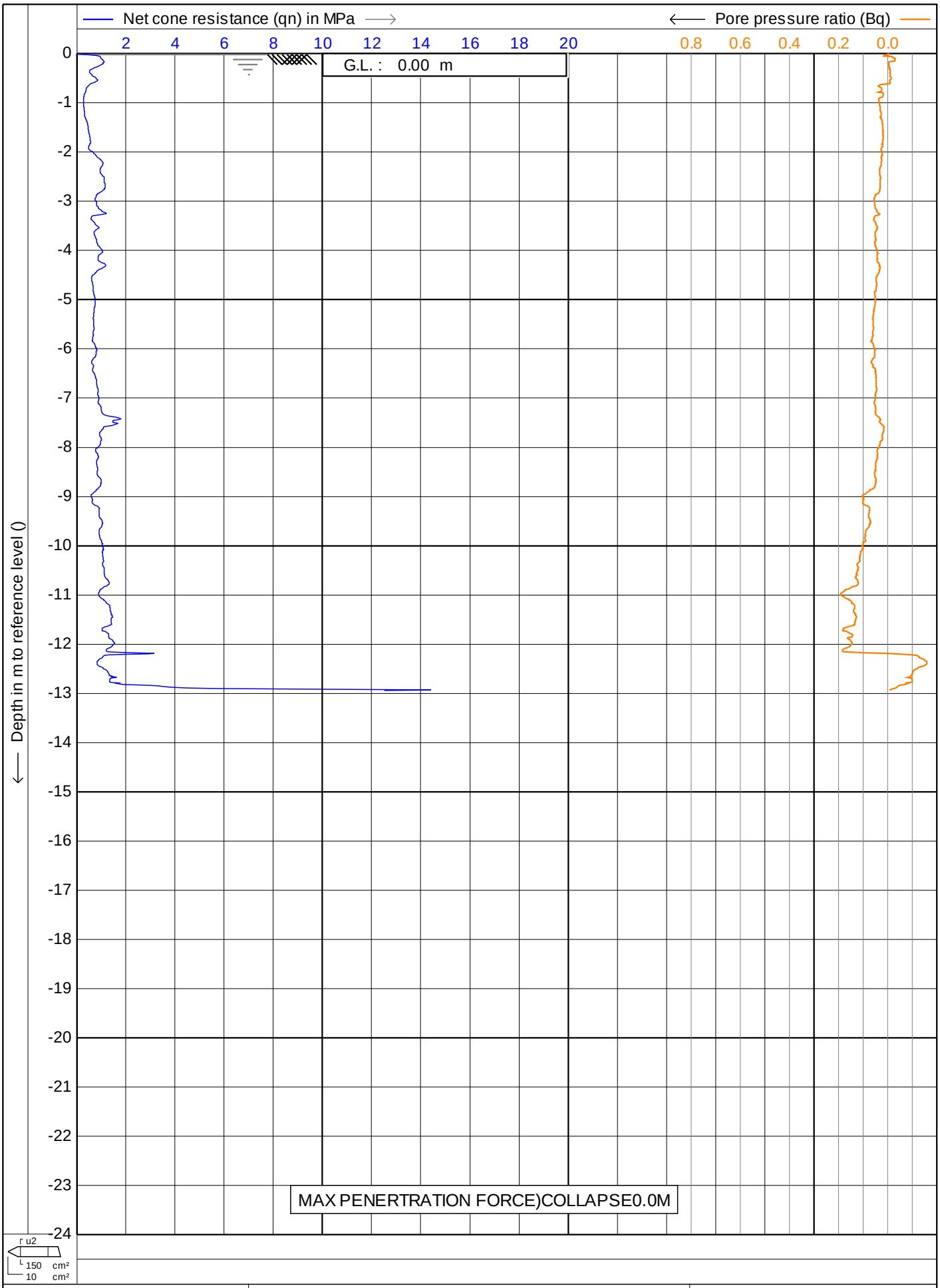
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **6/15**

1.49



Test according NEN 5140 class 1

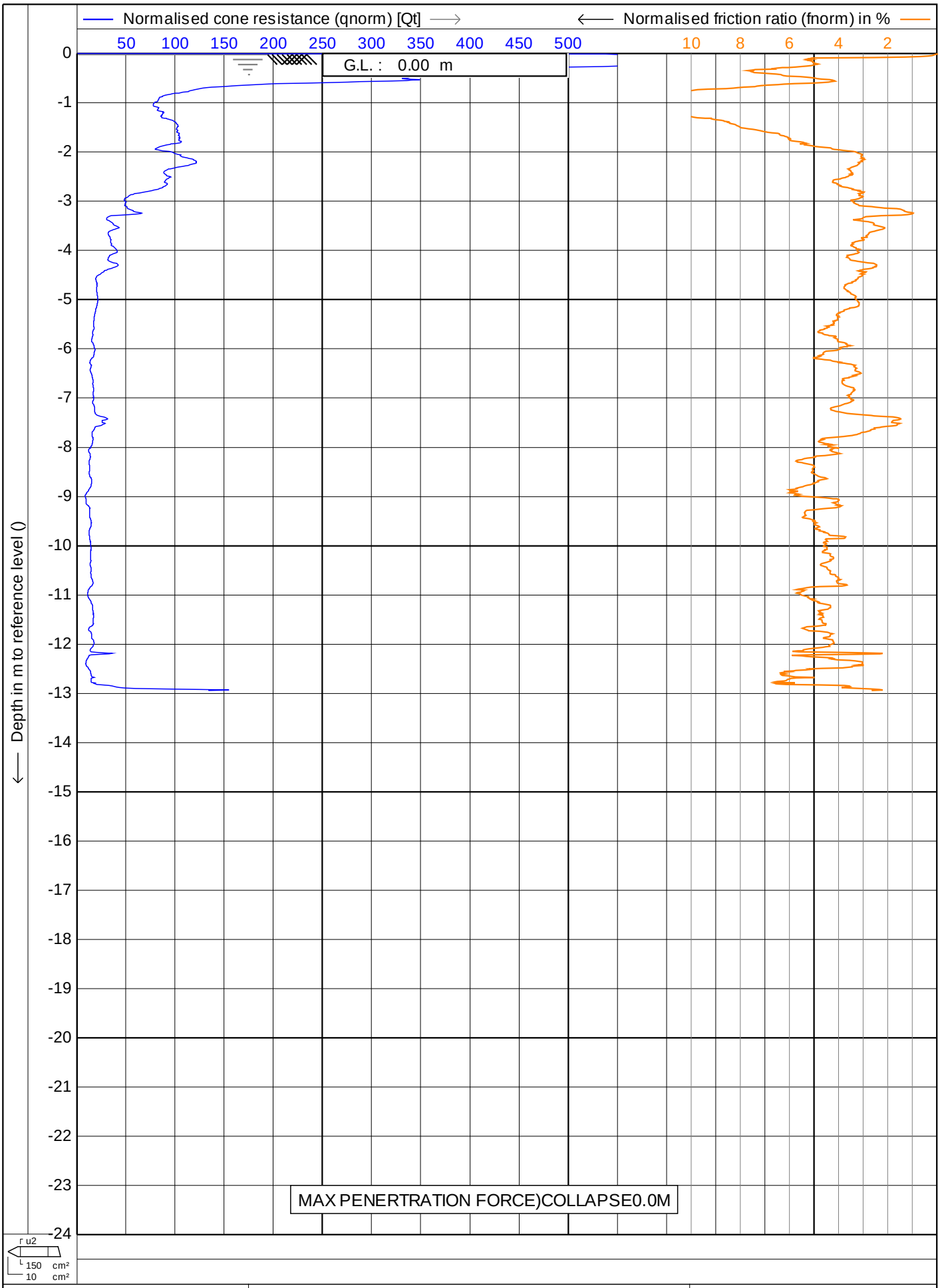
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

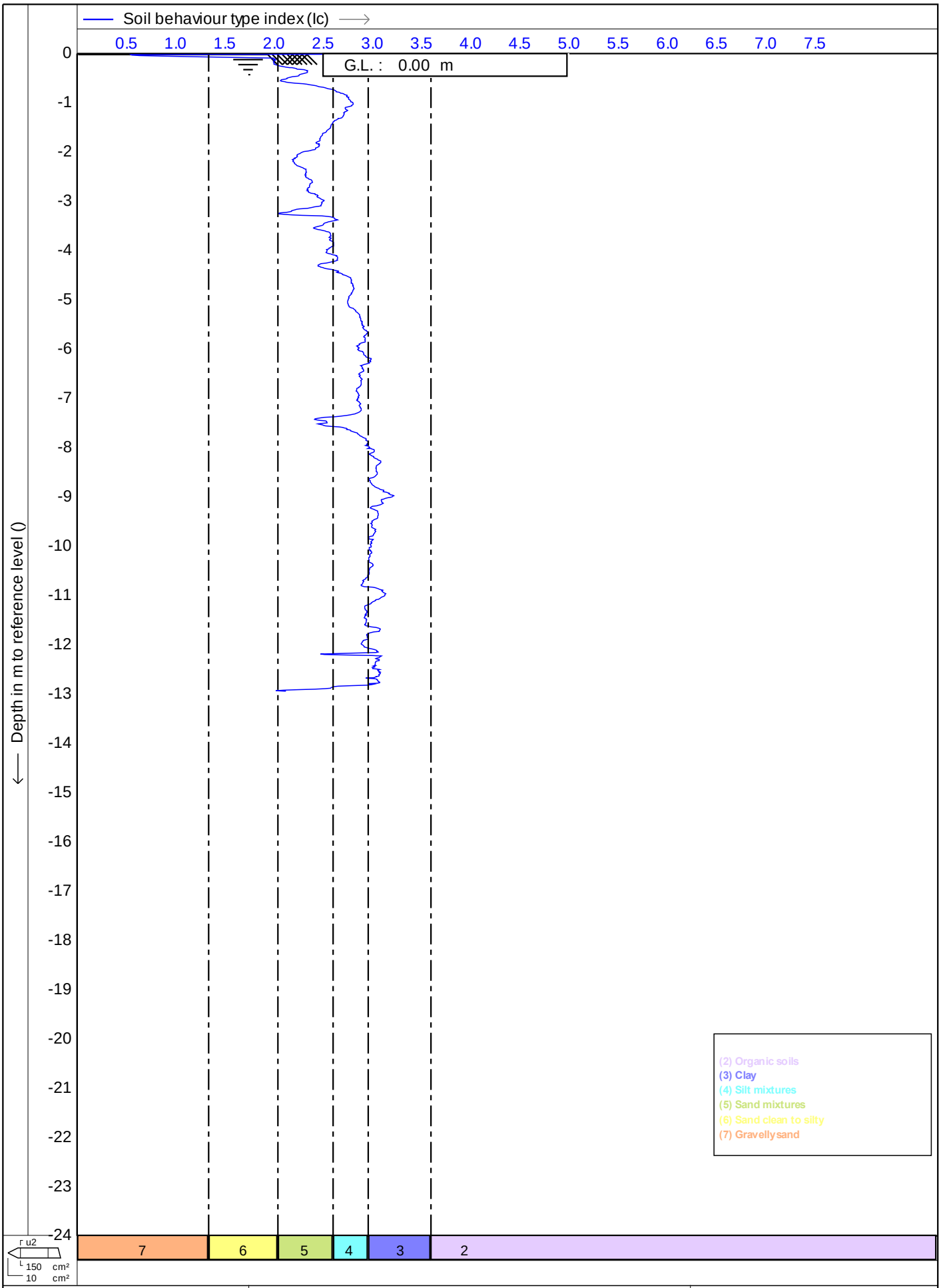
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **7/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64319, 36.60173 RD**	CPT no.	: **CPT7** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

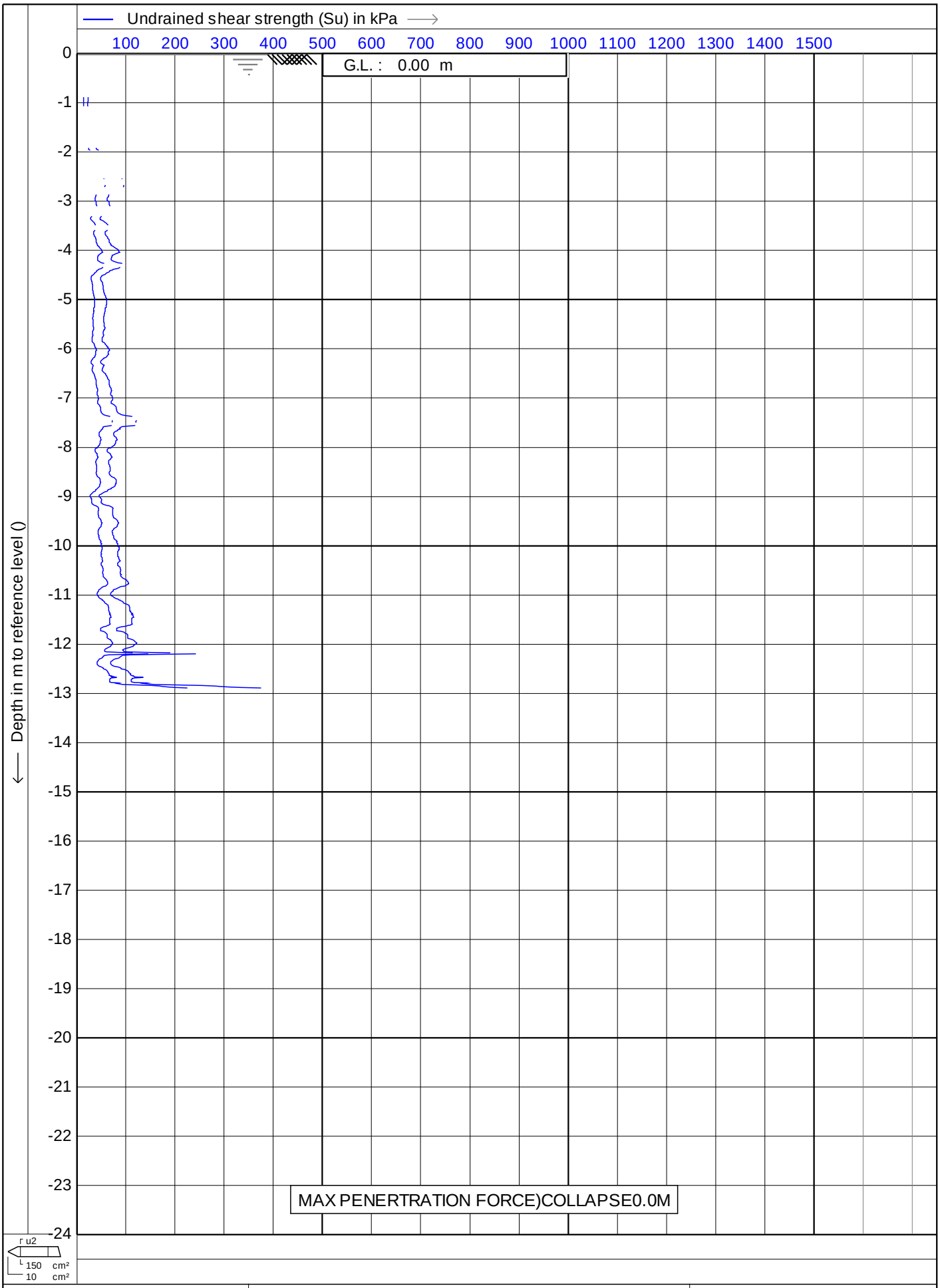
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT7** **9/15**

1.49



Test according NEN 5140 class 1

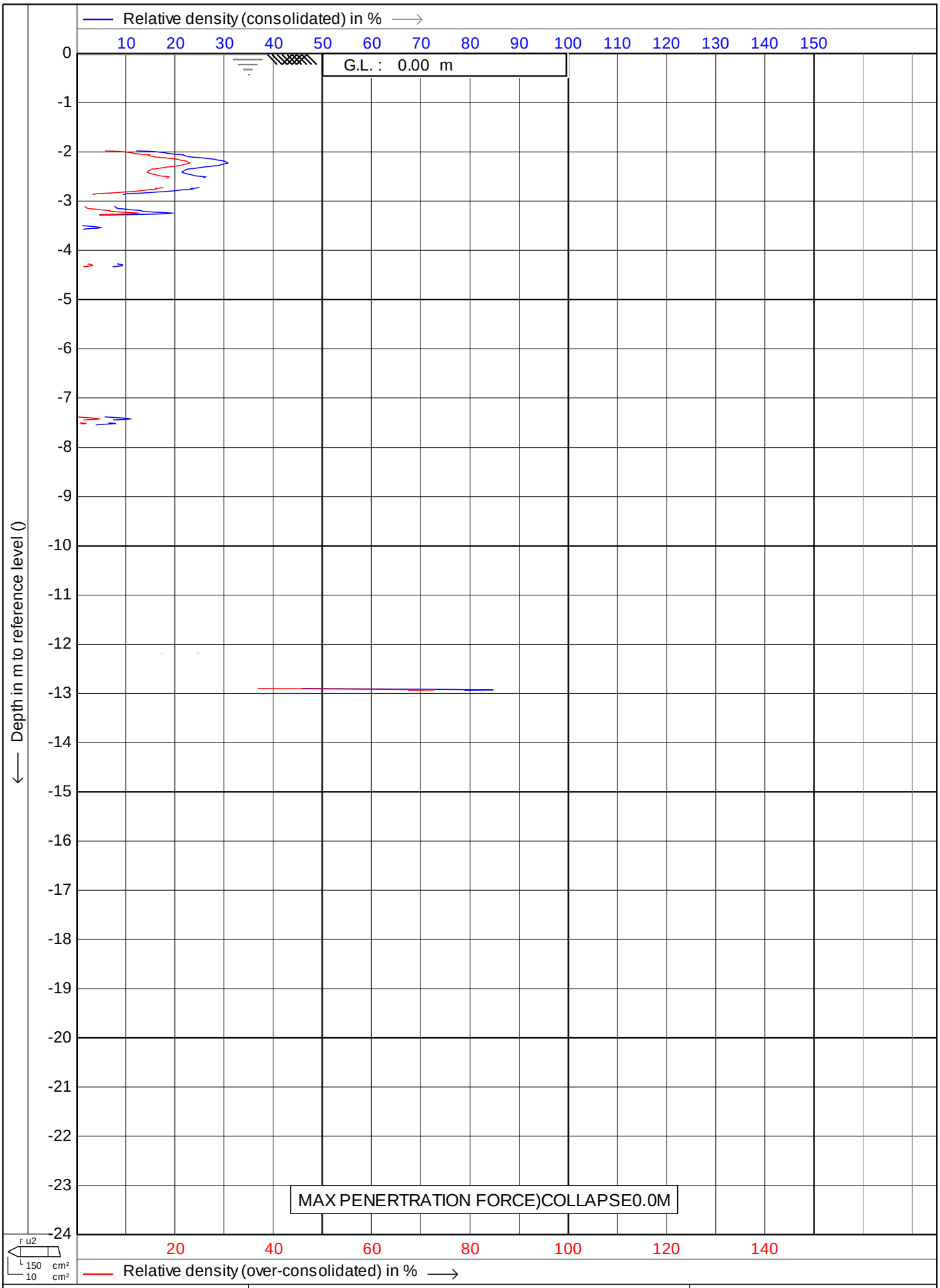
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **10/15**

1.49



Test according NEN 5140 class 1

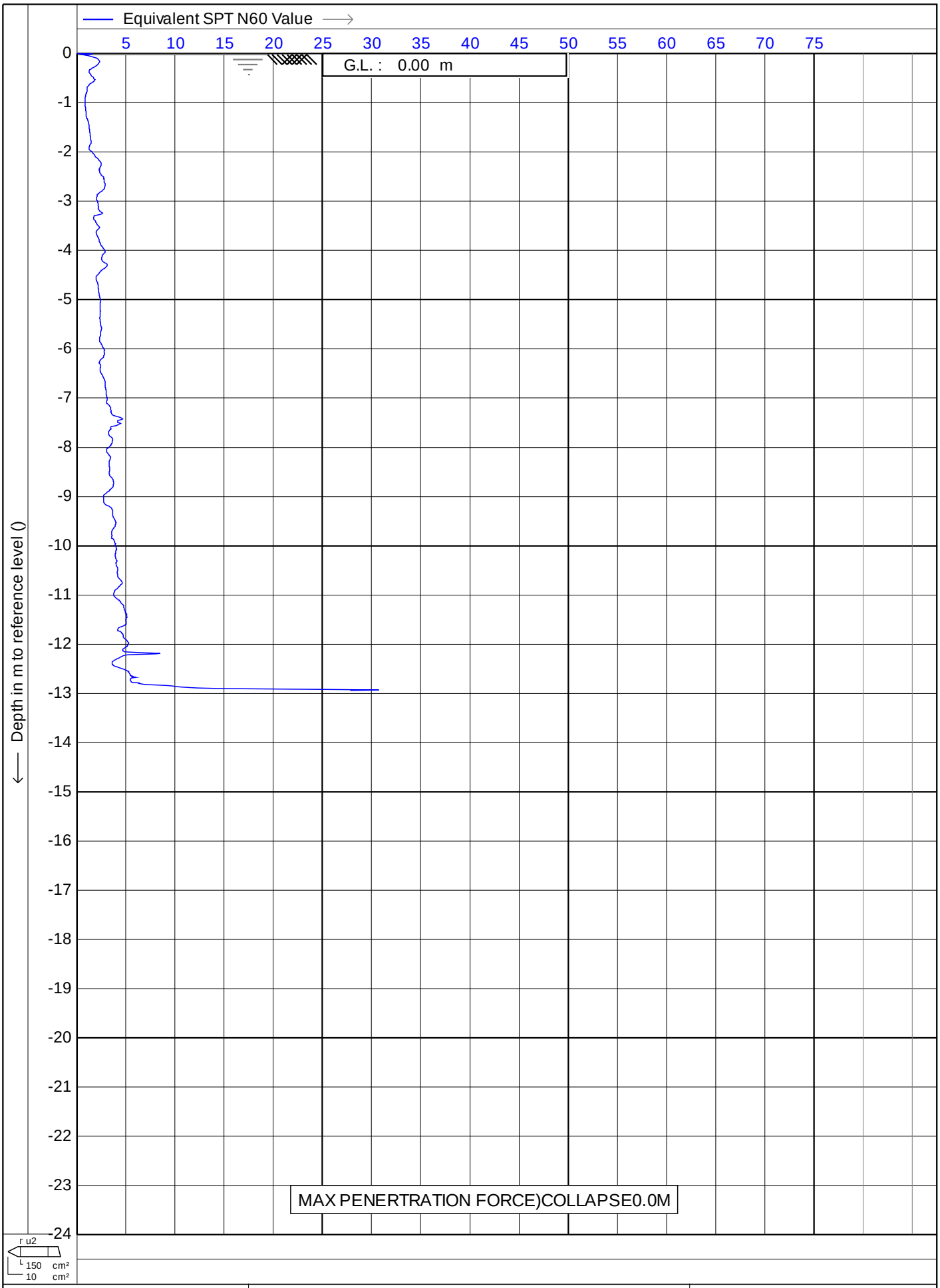
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

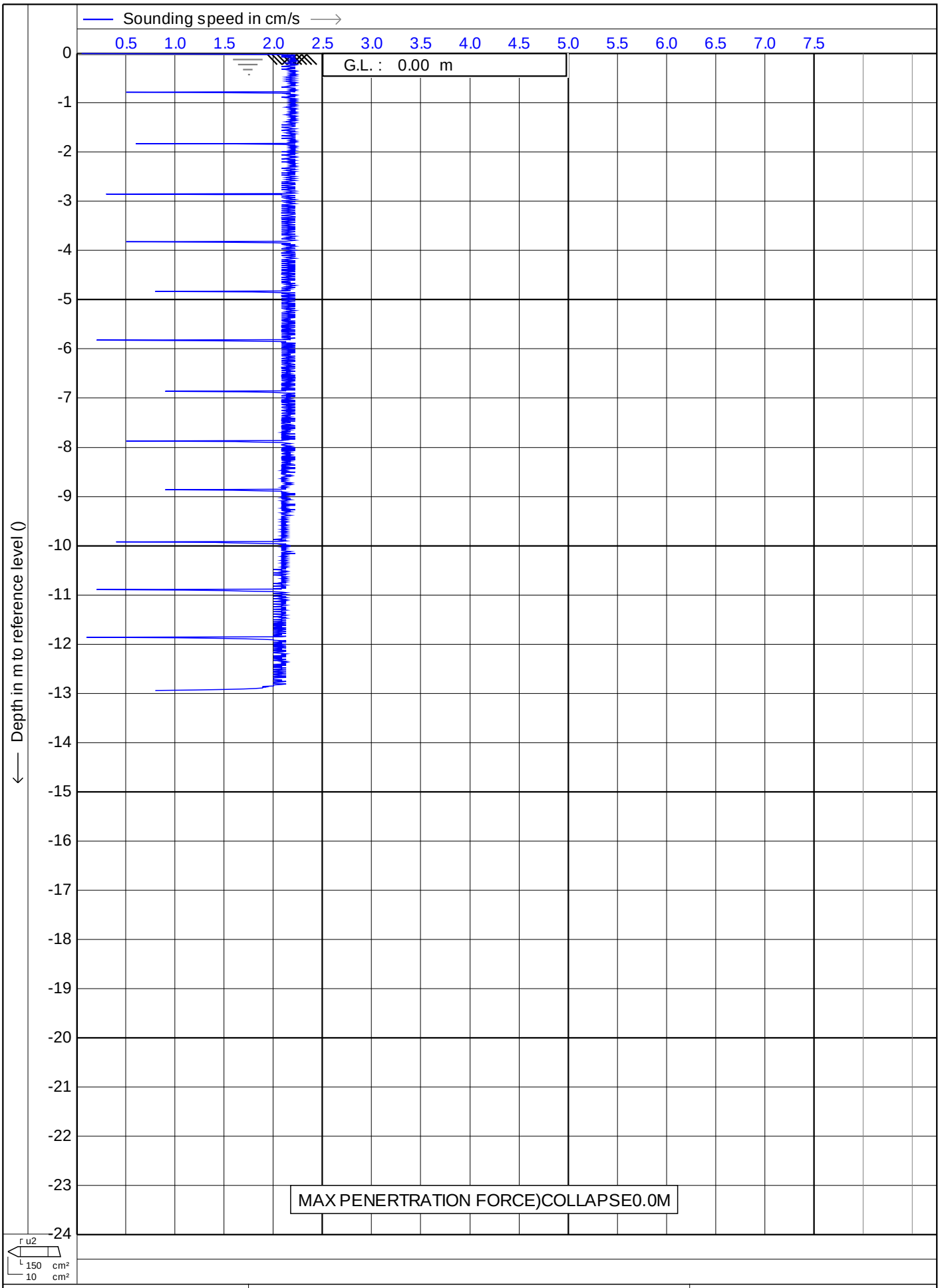
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT7** **12/15**

1.49



Test according NEN 5140 class 1

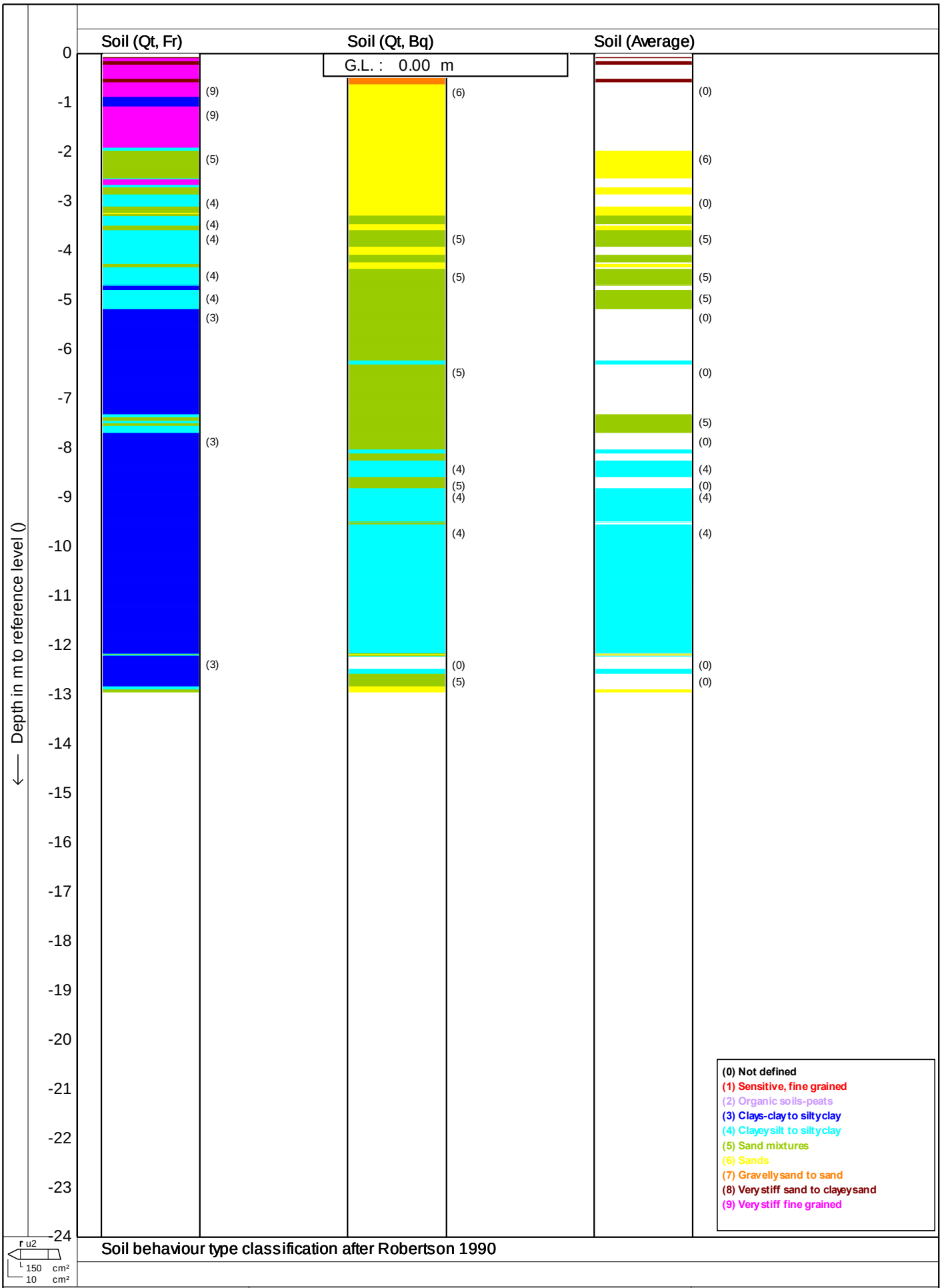
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

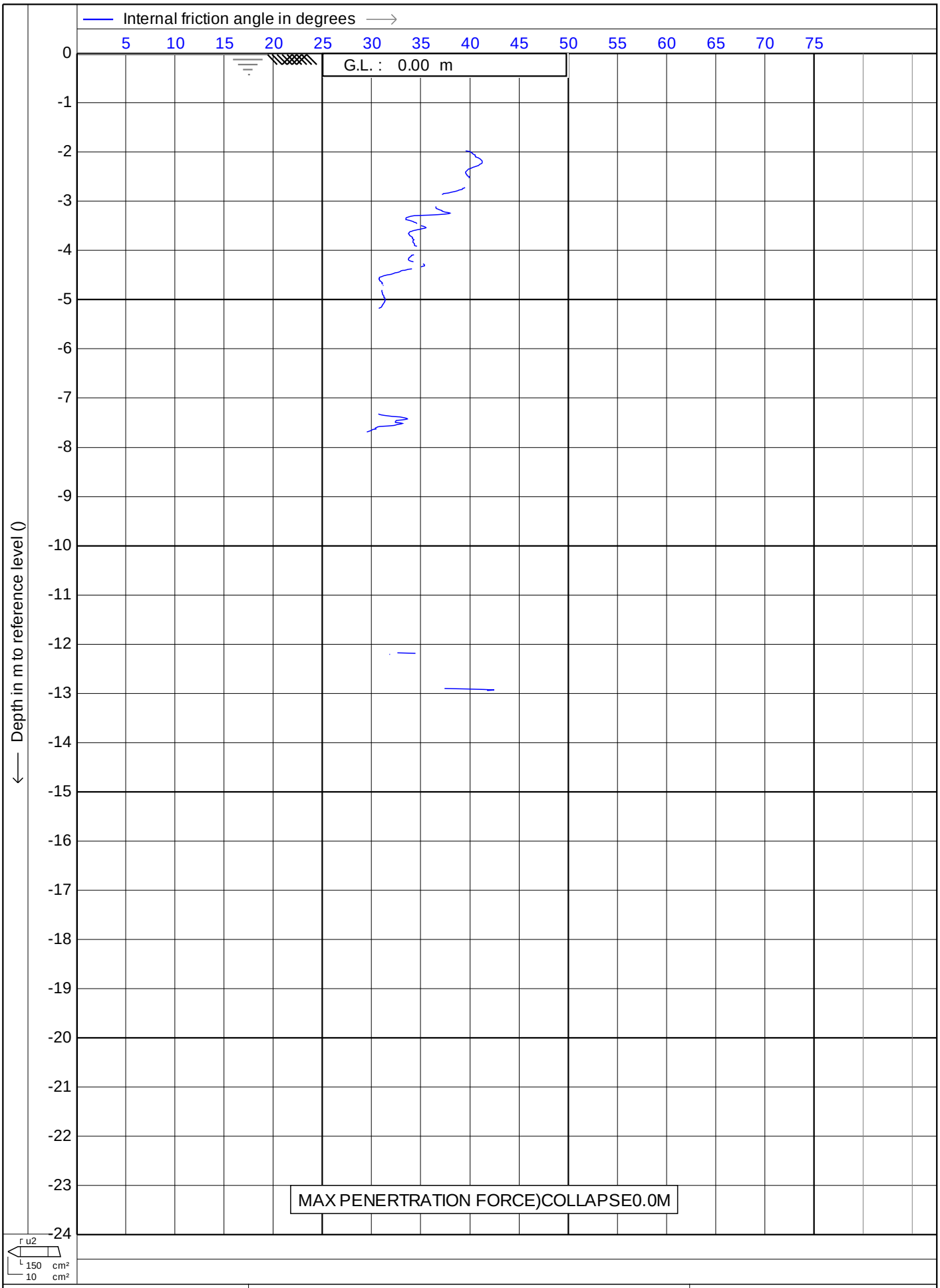
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT7** **14/15**

1.49



Test according NEN 5140 class 1

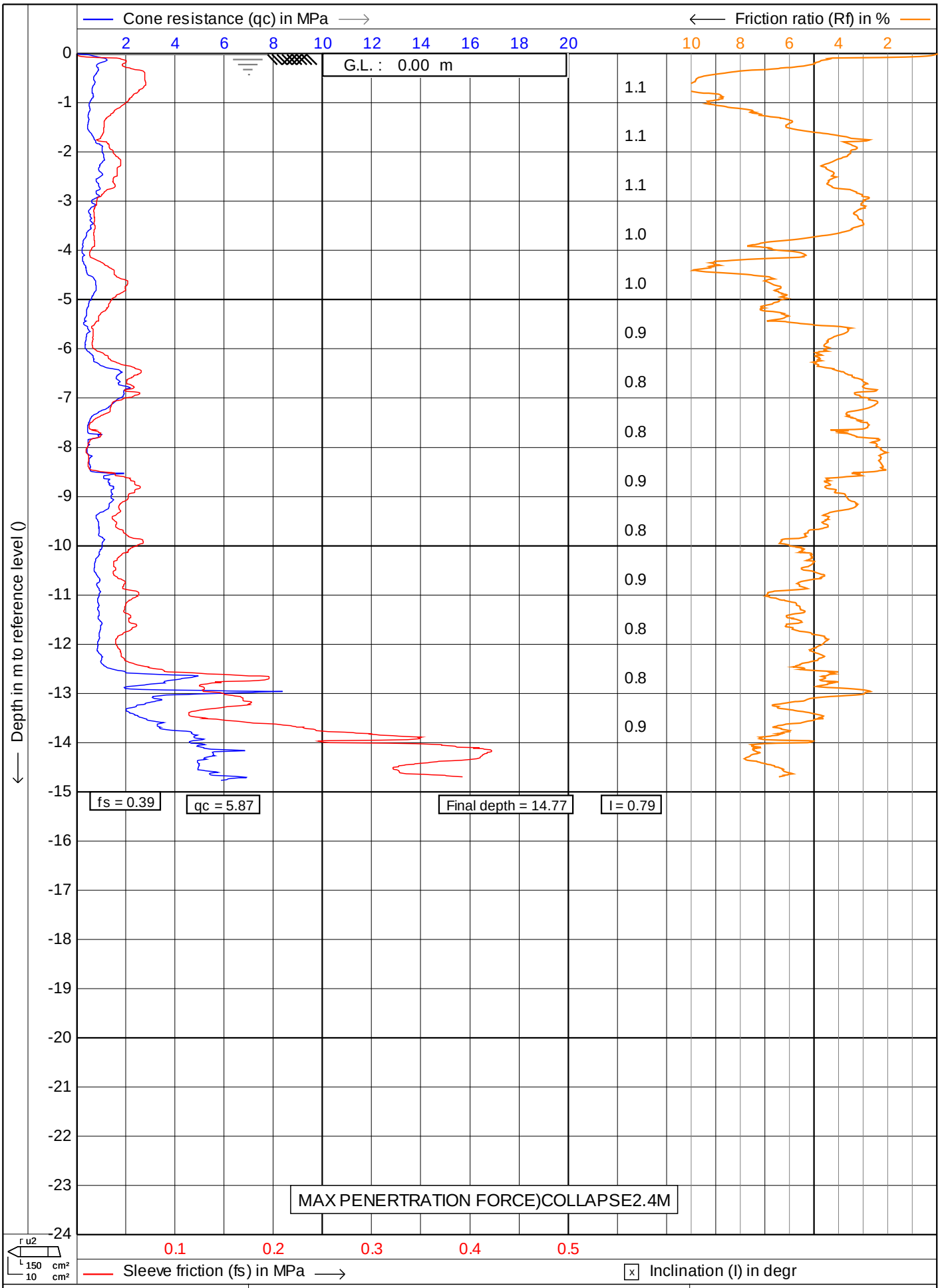
Project : **WAINUI 0992**

Location: **MILDALE**

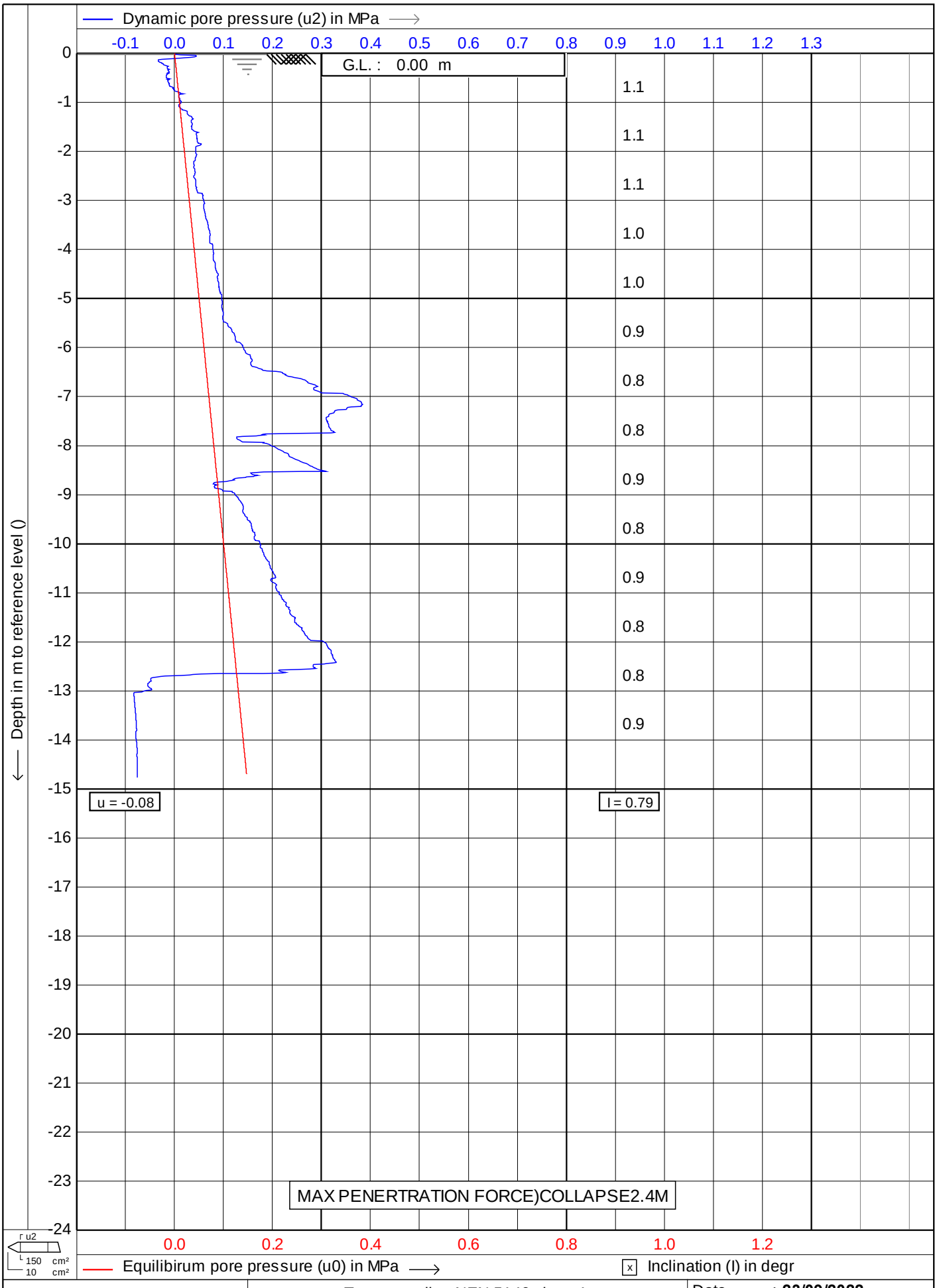
Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT7** **15/15**

1.49

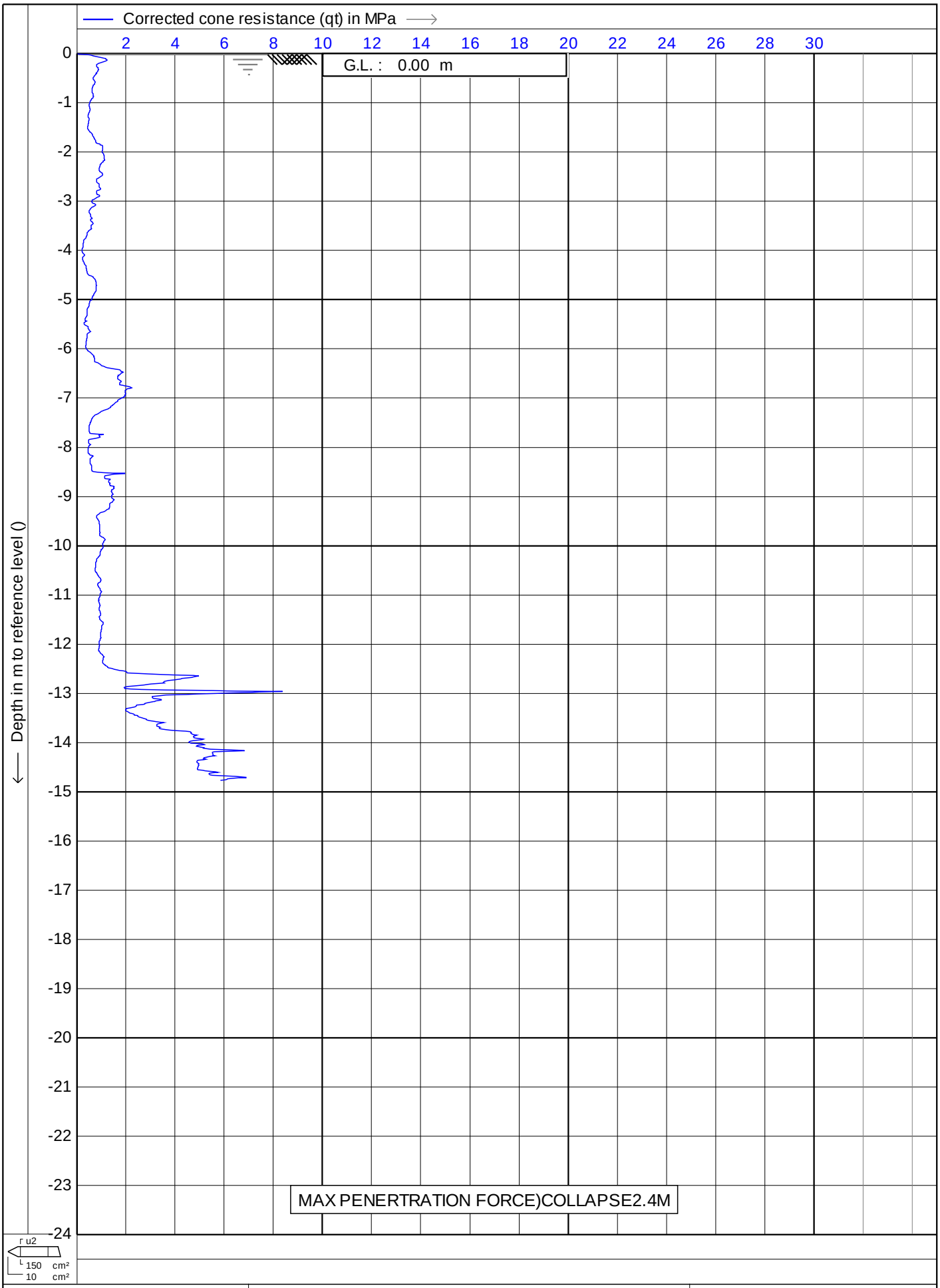


Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64319, 36.60173 RD**	CPT no.	: **CPT8** **1/15**



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.64319, 36.60173 RD**	CPT no. : **CPT8** **2/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

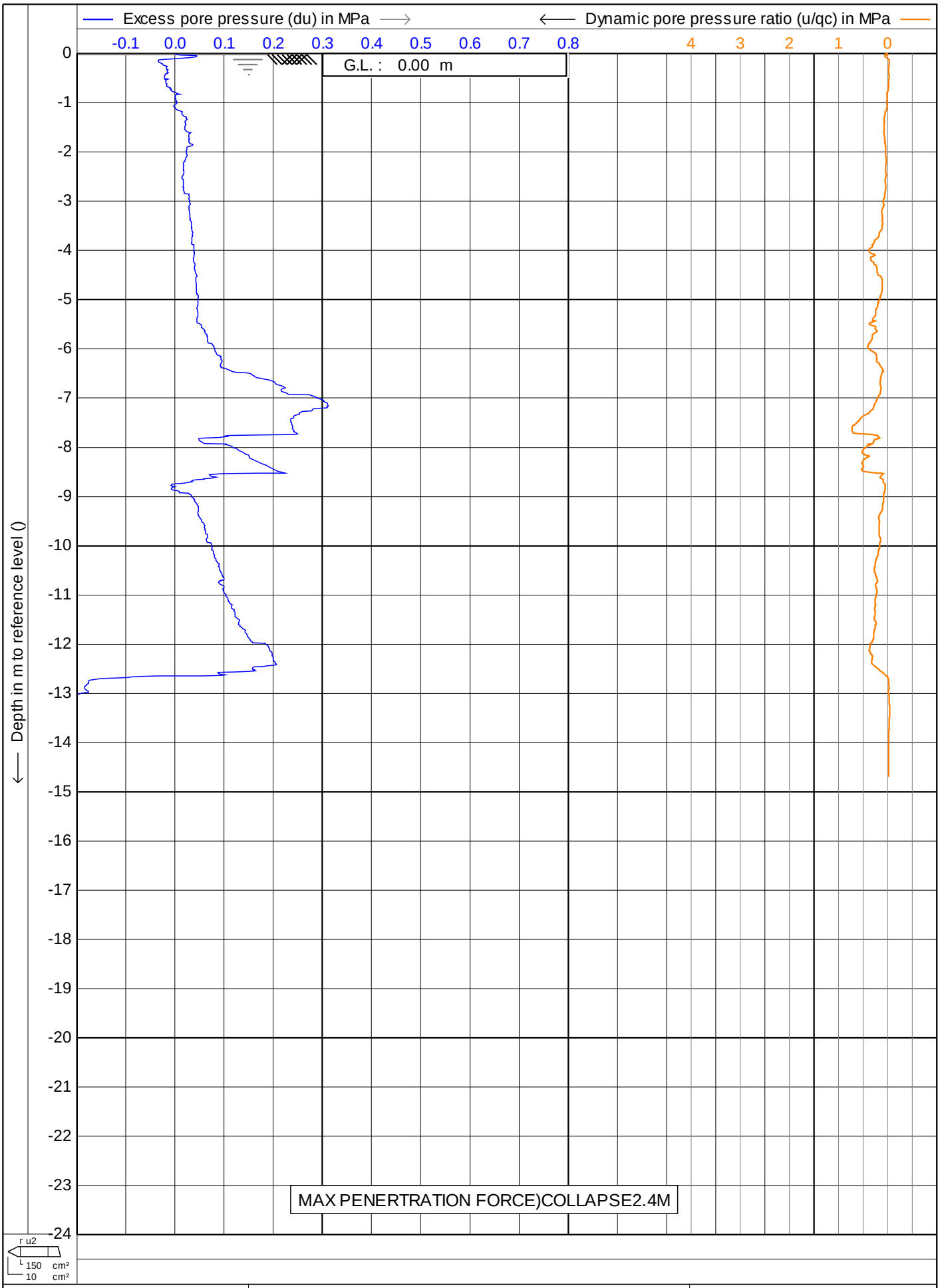
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **3/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

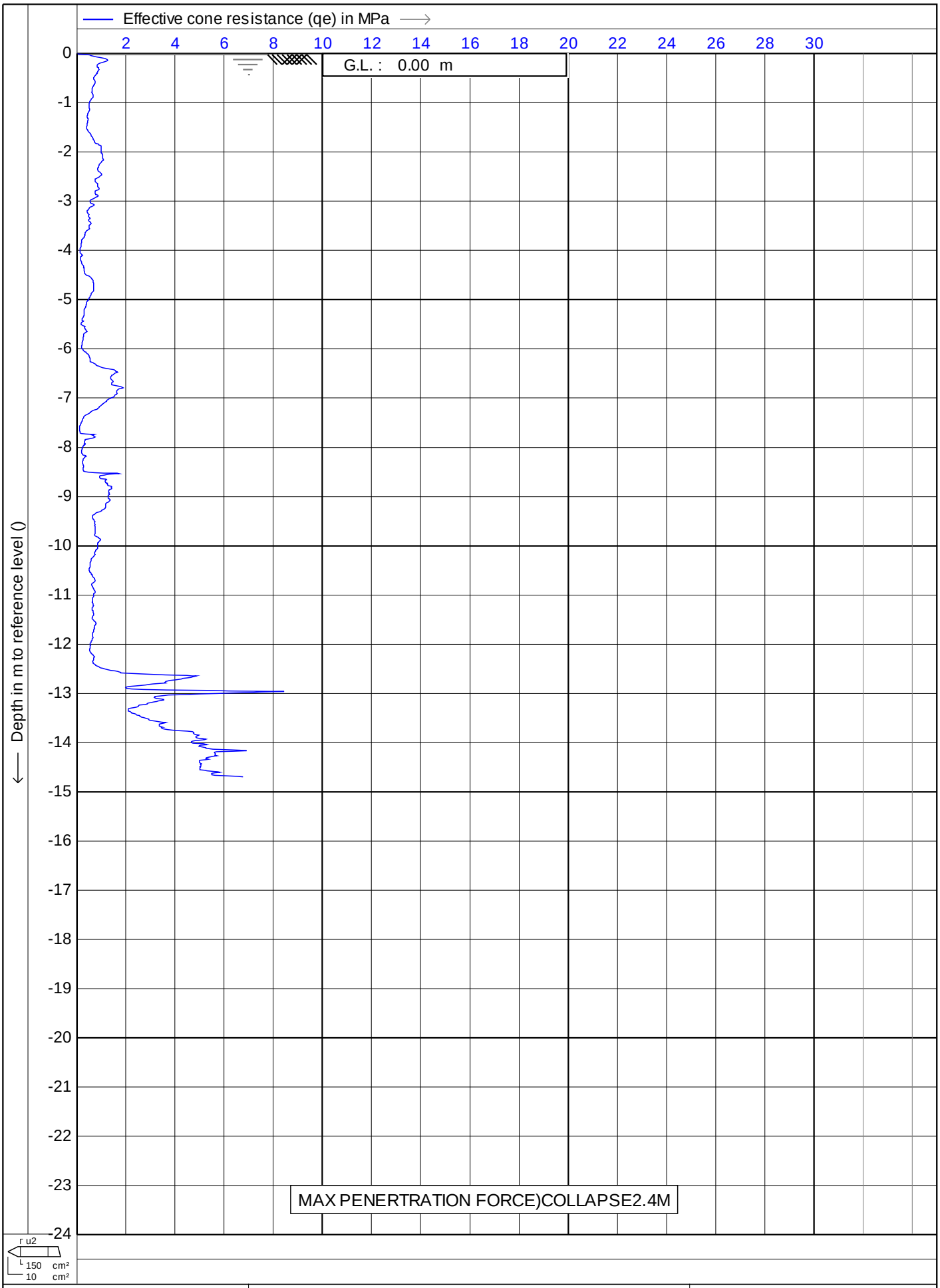
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **4/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

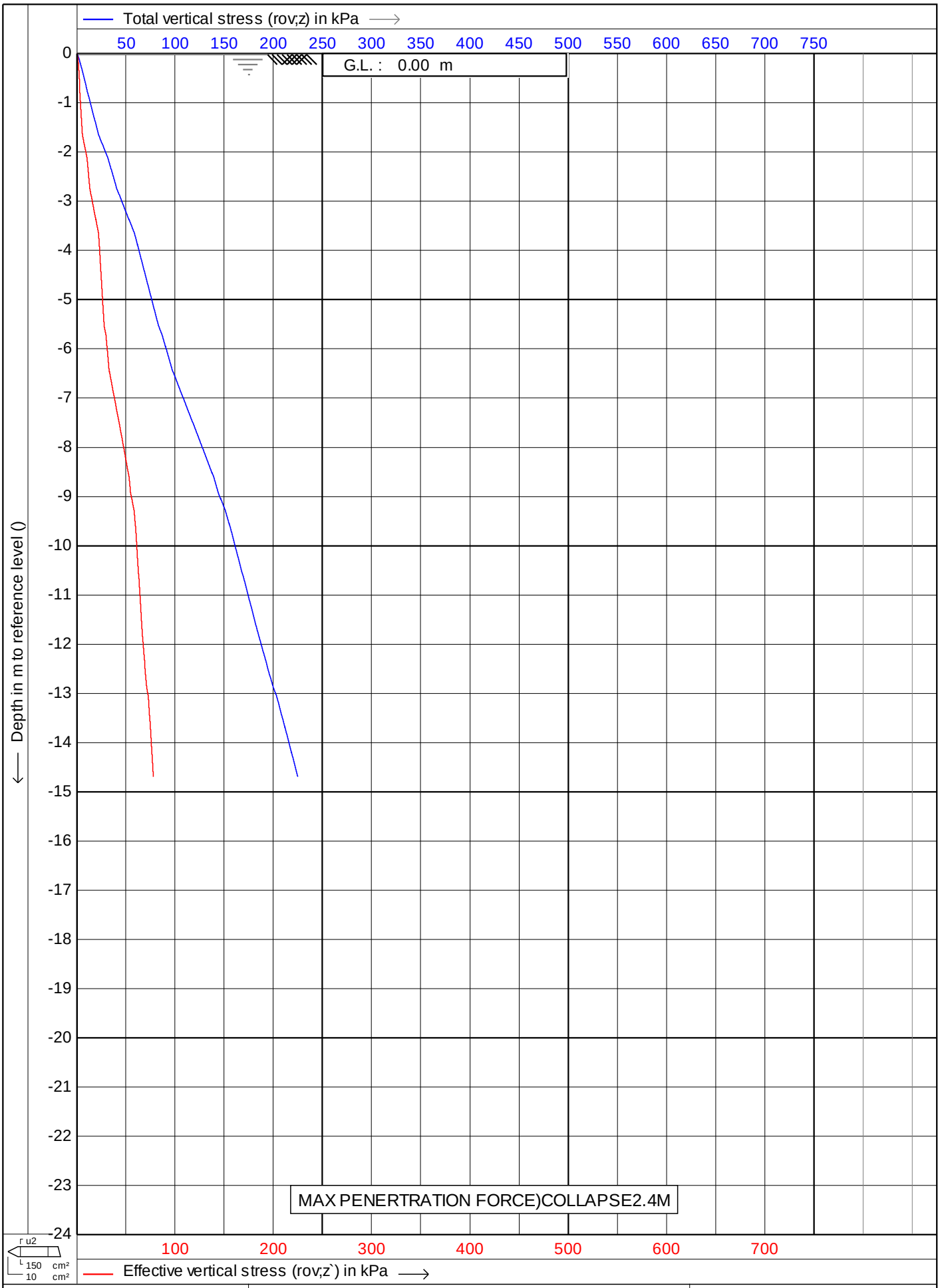
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **5/15**

1.49



Test according NEN 5140 class 1

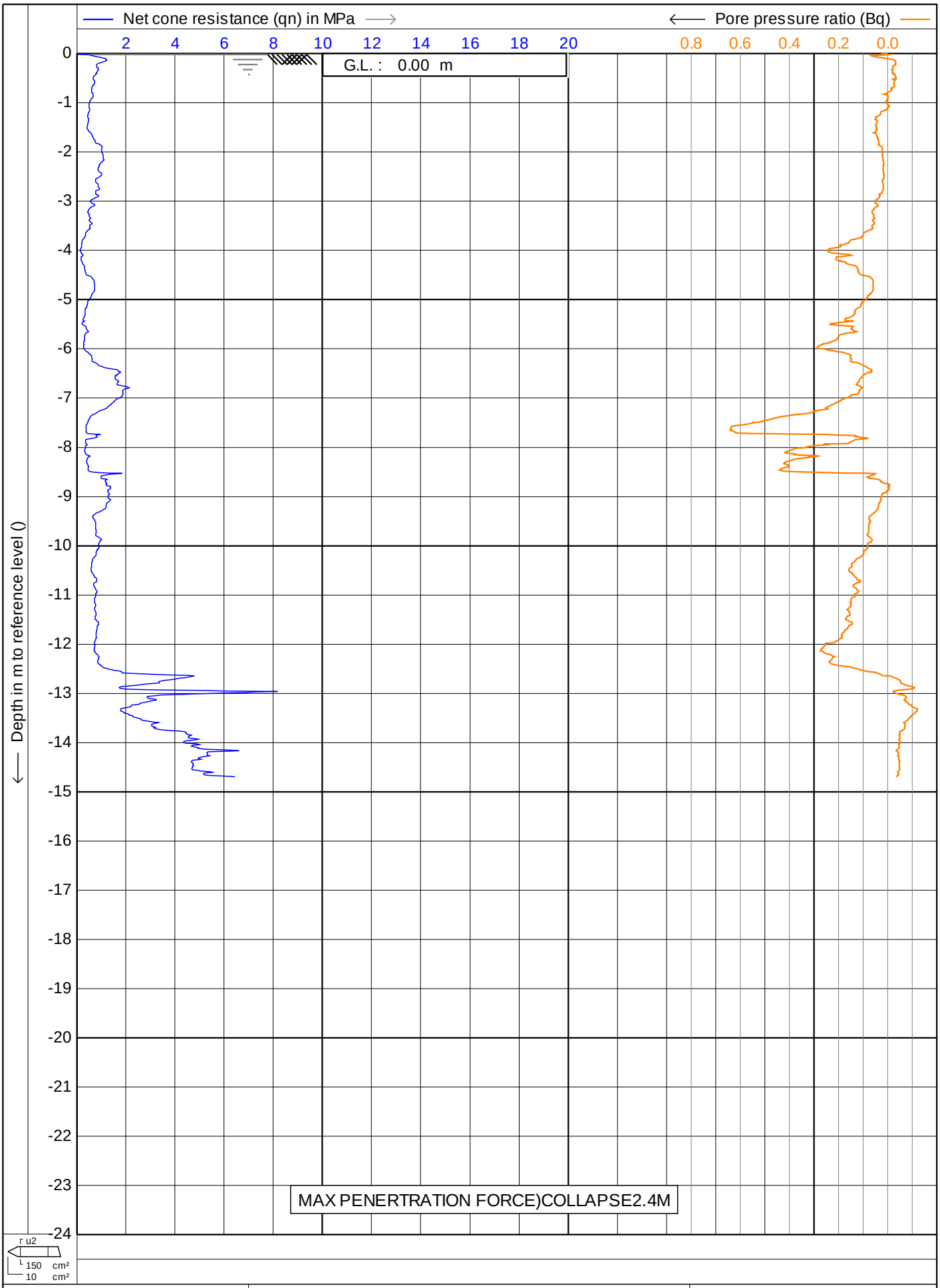
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8** **6/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

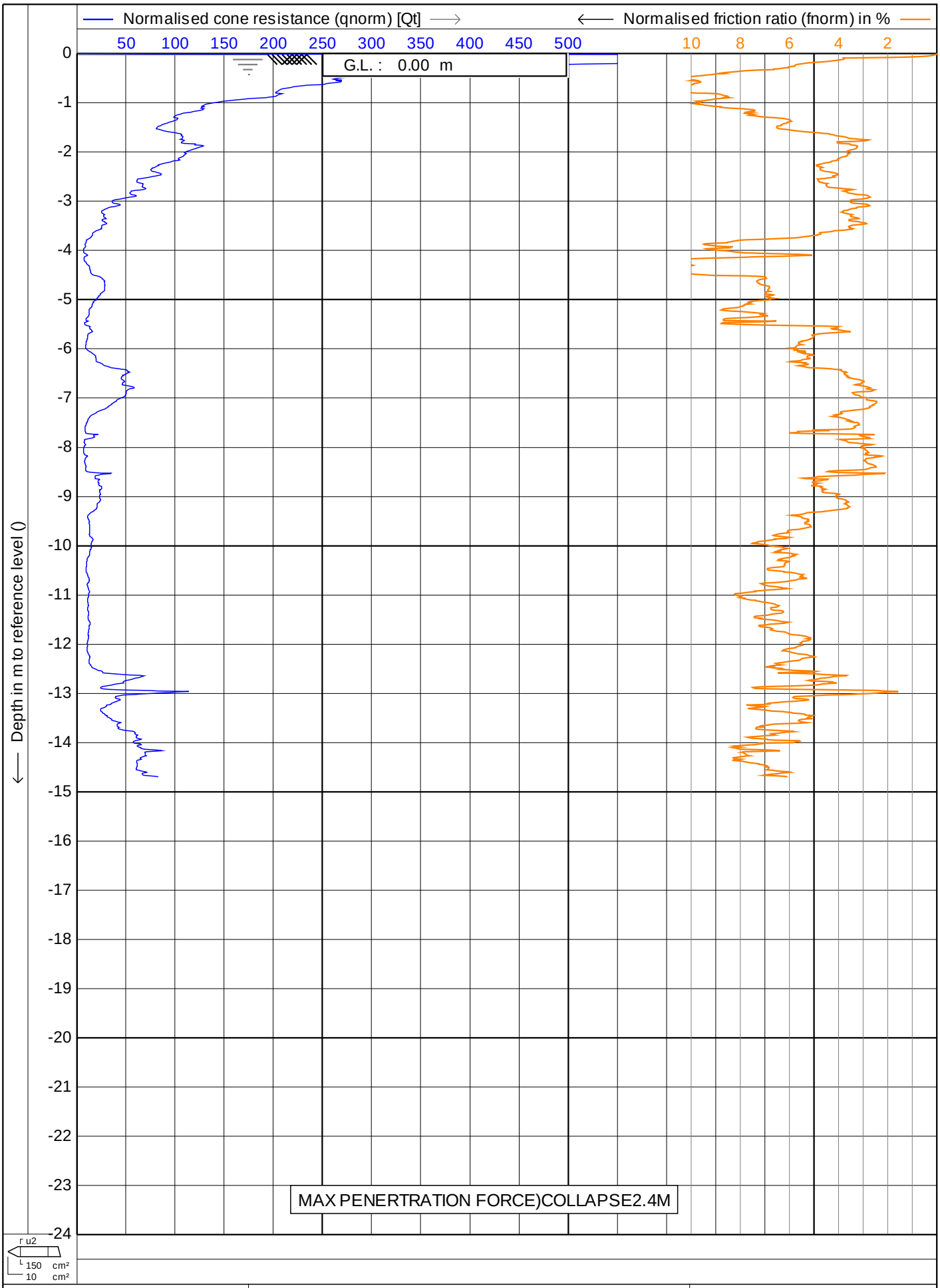
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **7/15**

1.49



Test according NEN 5140 class 1

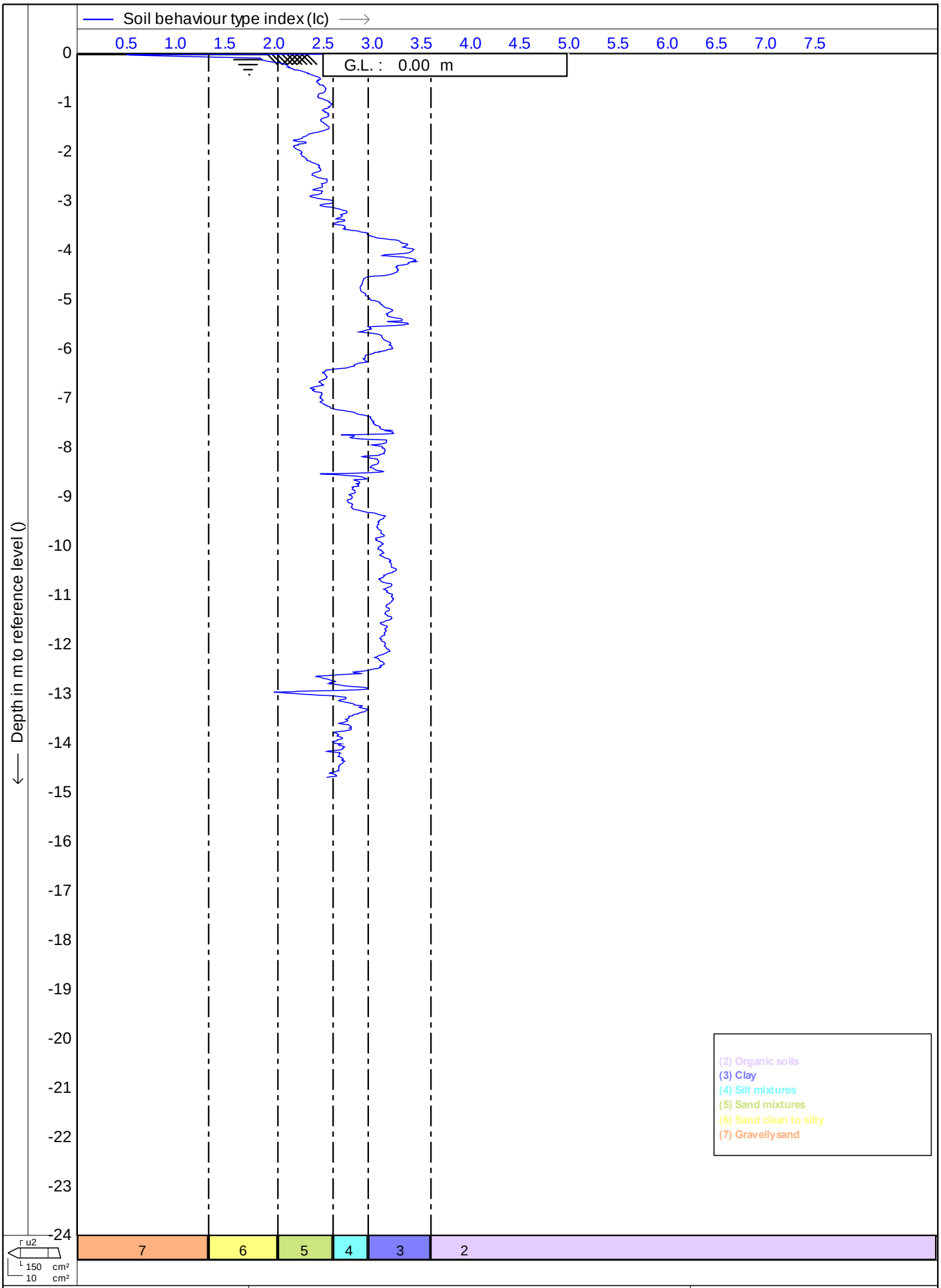
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

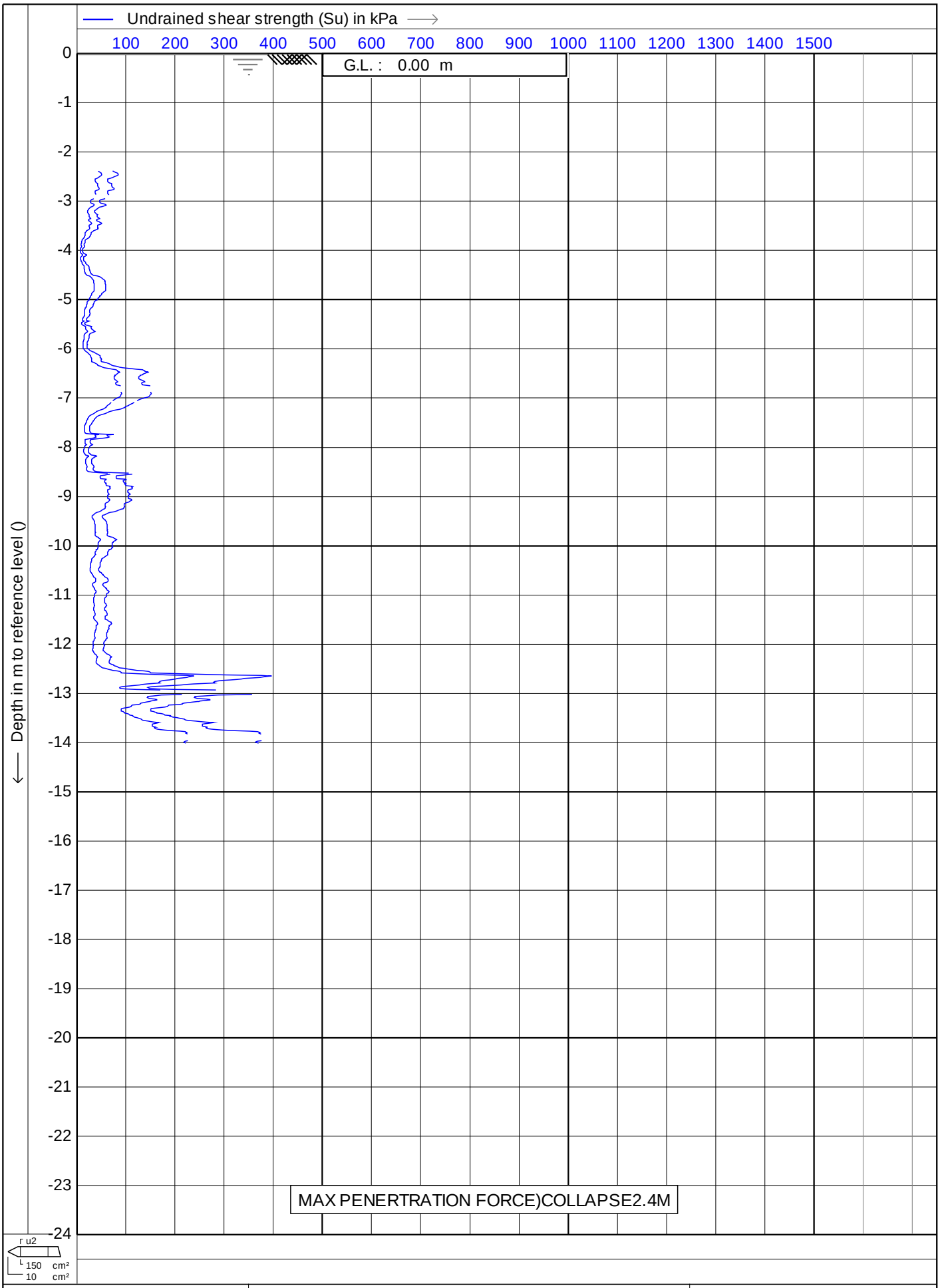
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **9/15**

1.49



Test according NEN 5140 class 1

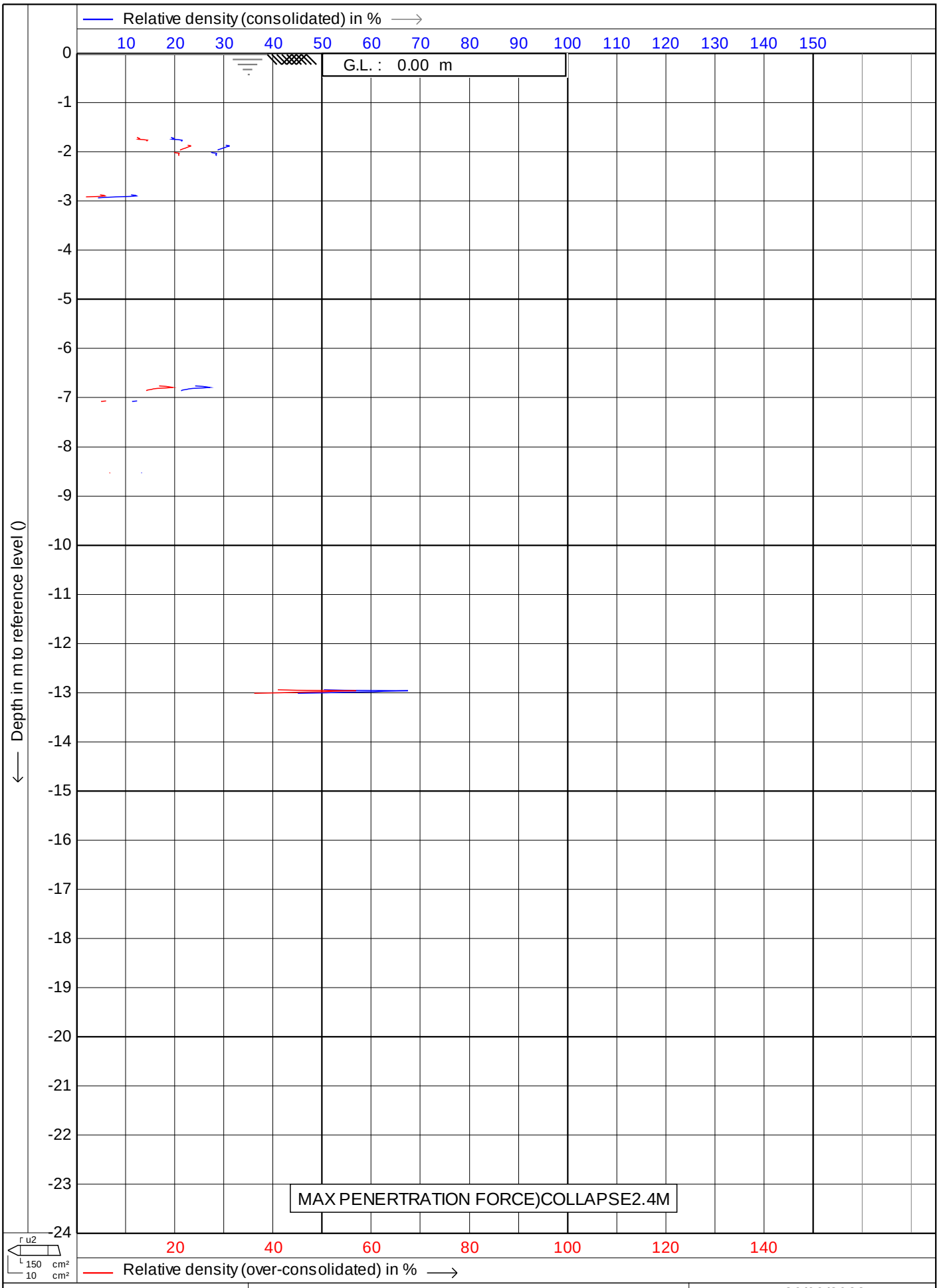
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8** **10/15**

1.49



Test according NEN 5140 class 1

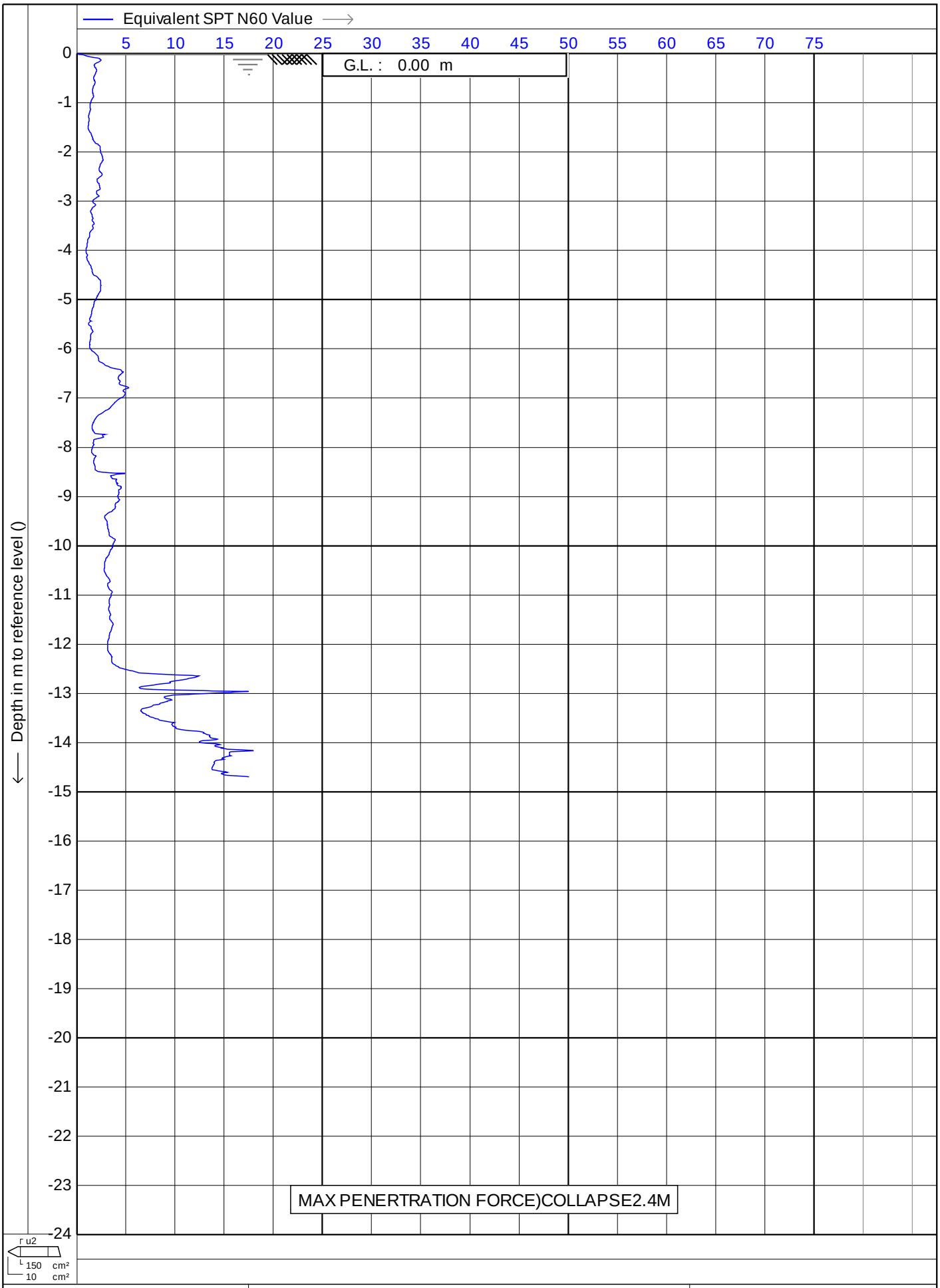
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

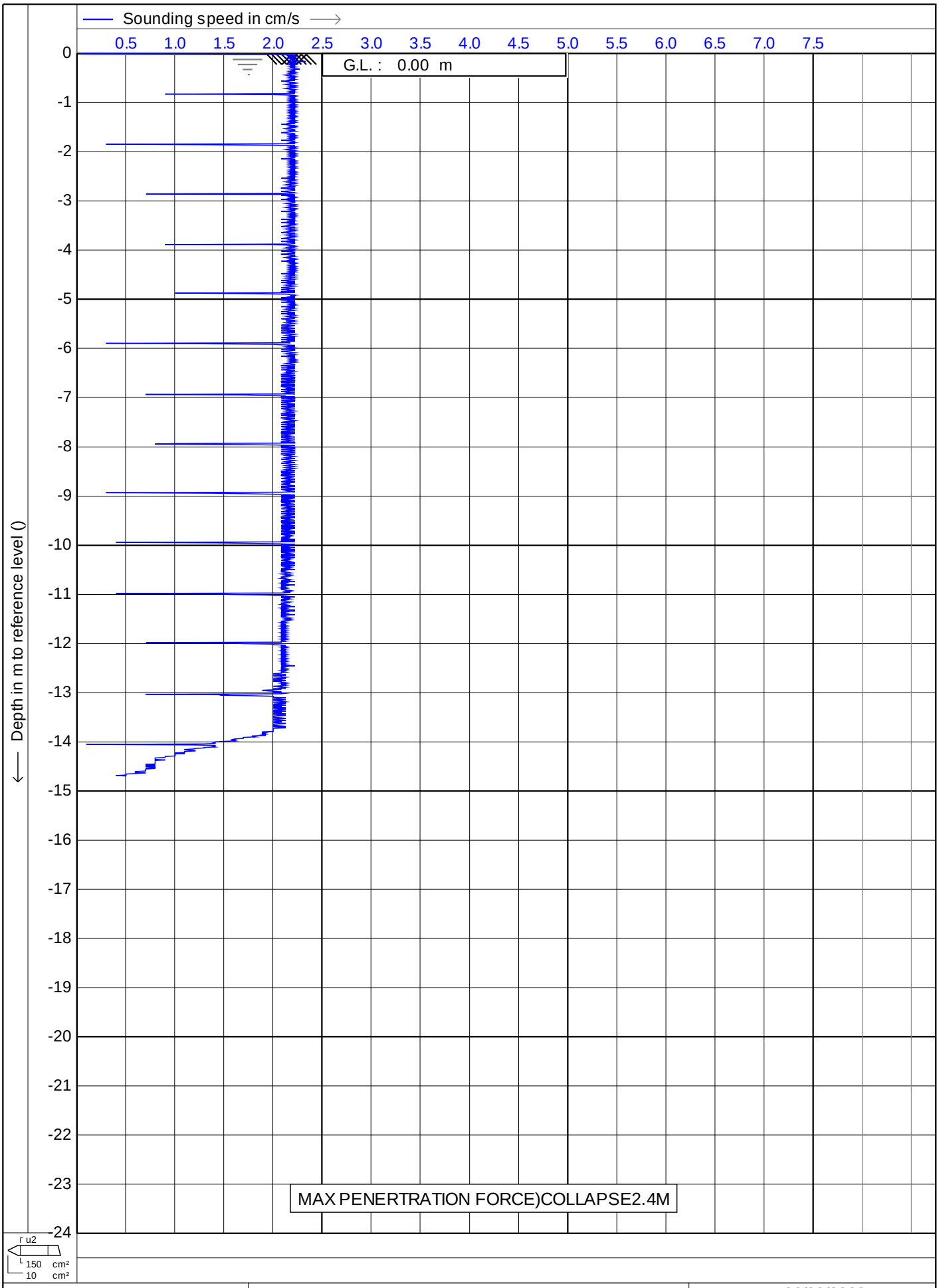
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **12/15**

1.49



Test according NEN 5140 class 1

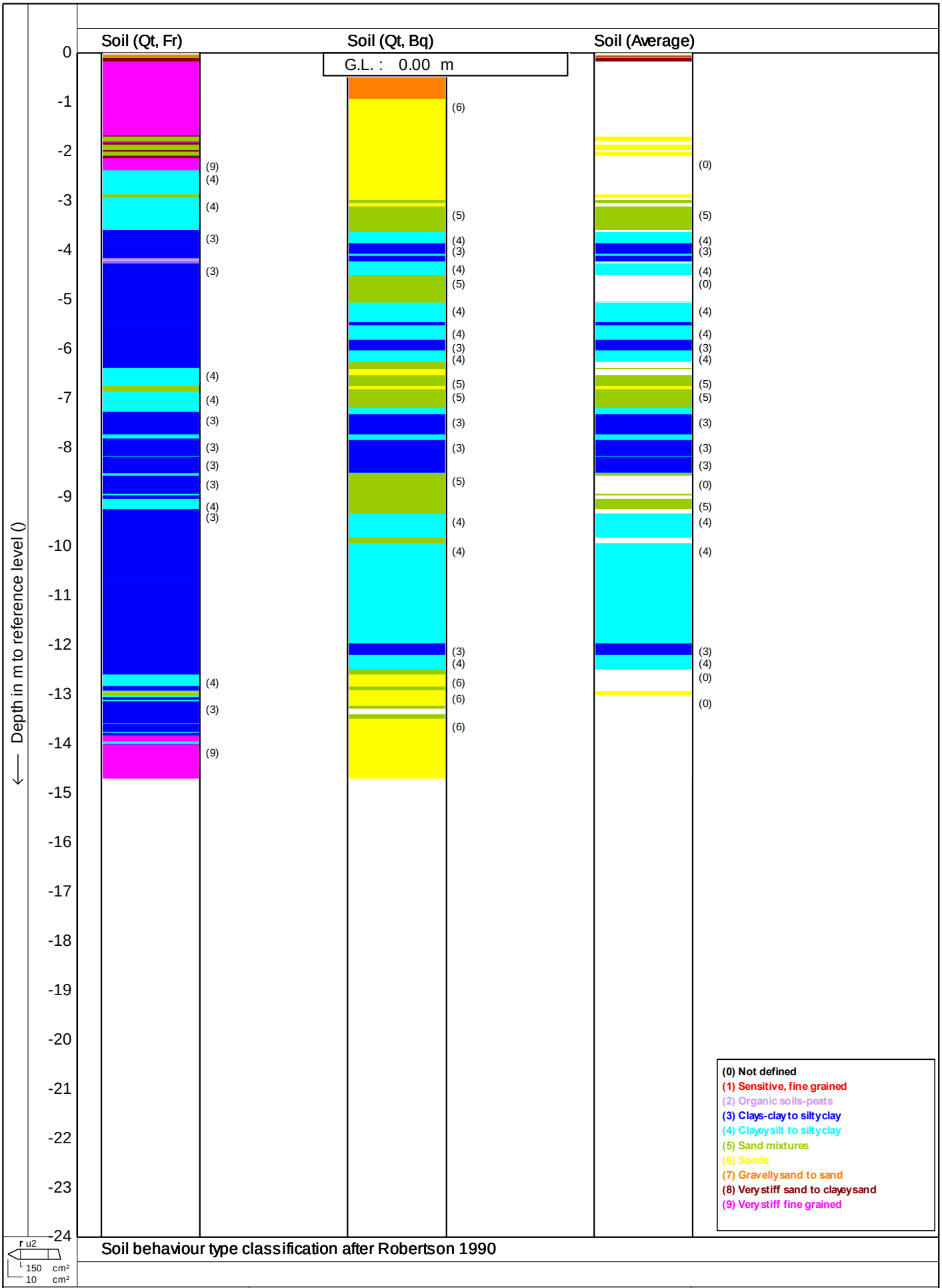
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

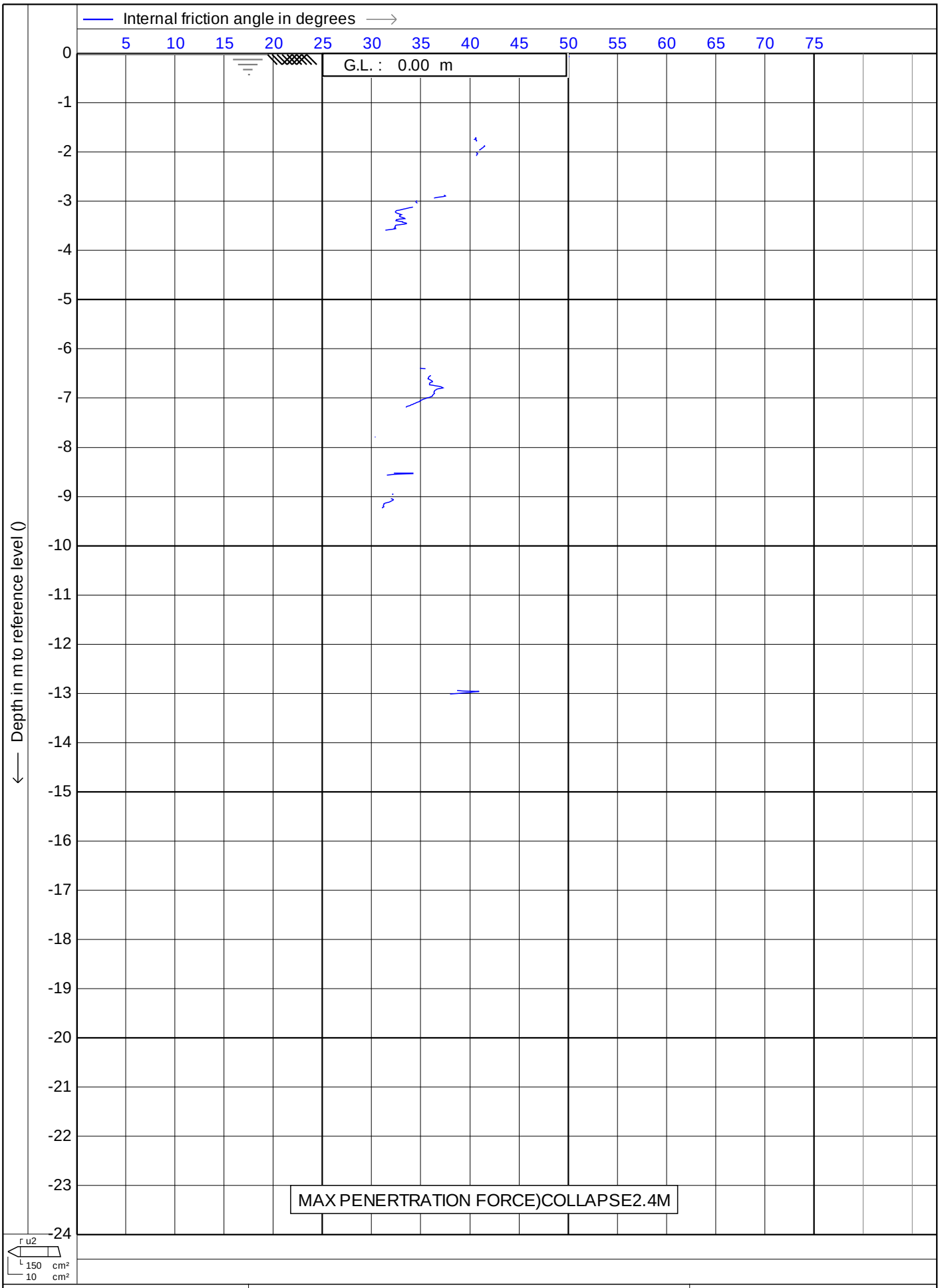
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT8** **14/15**

1.49



Test according NEN 5140 class 1

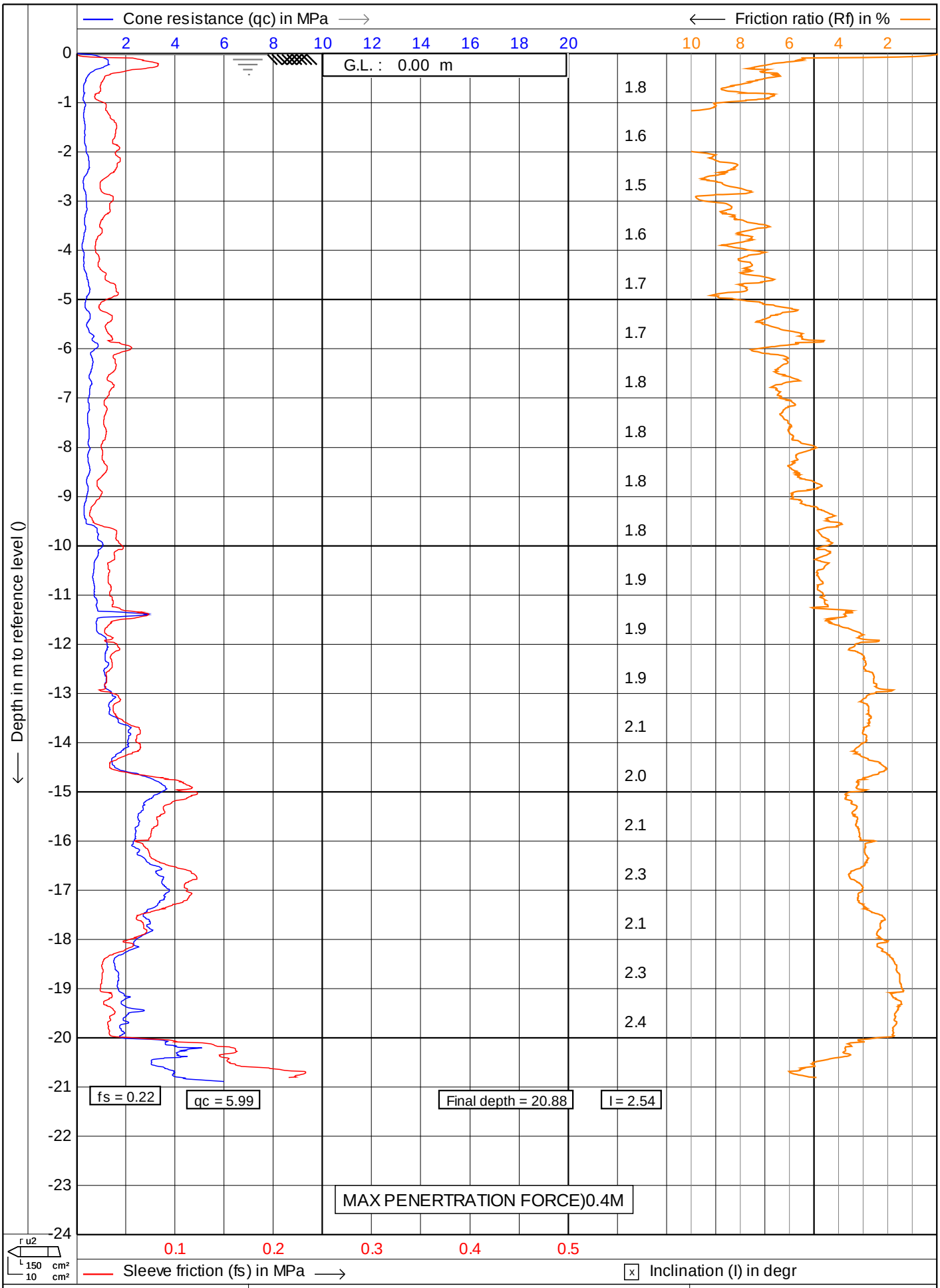
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64319, 36.60173 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT8** **15/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

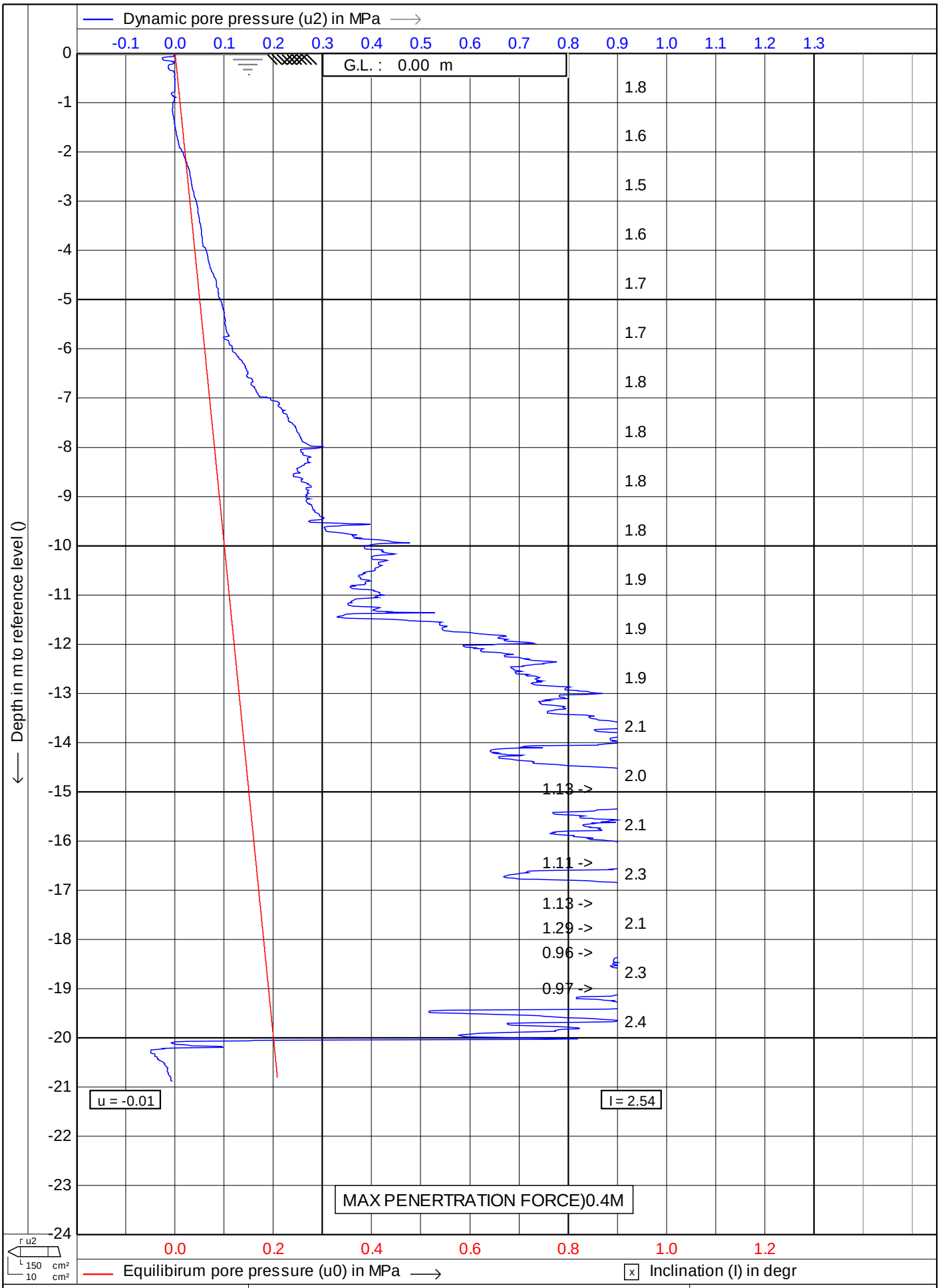
Position: **174.64081, 36.60082 RD**

Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

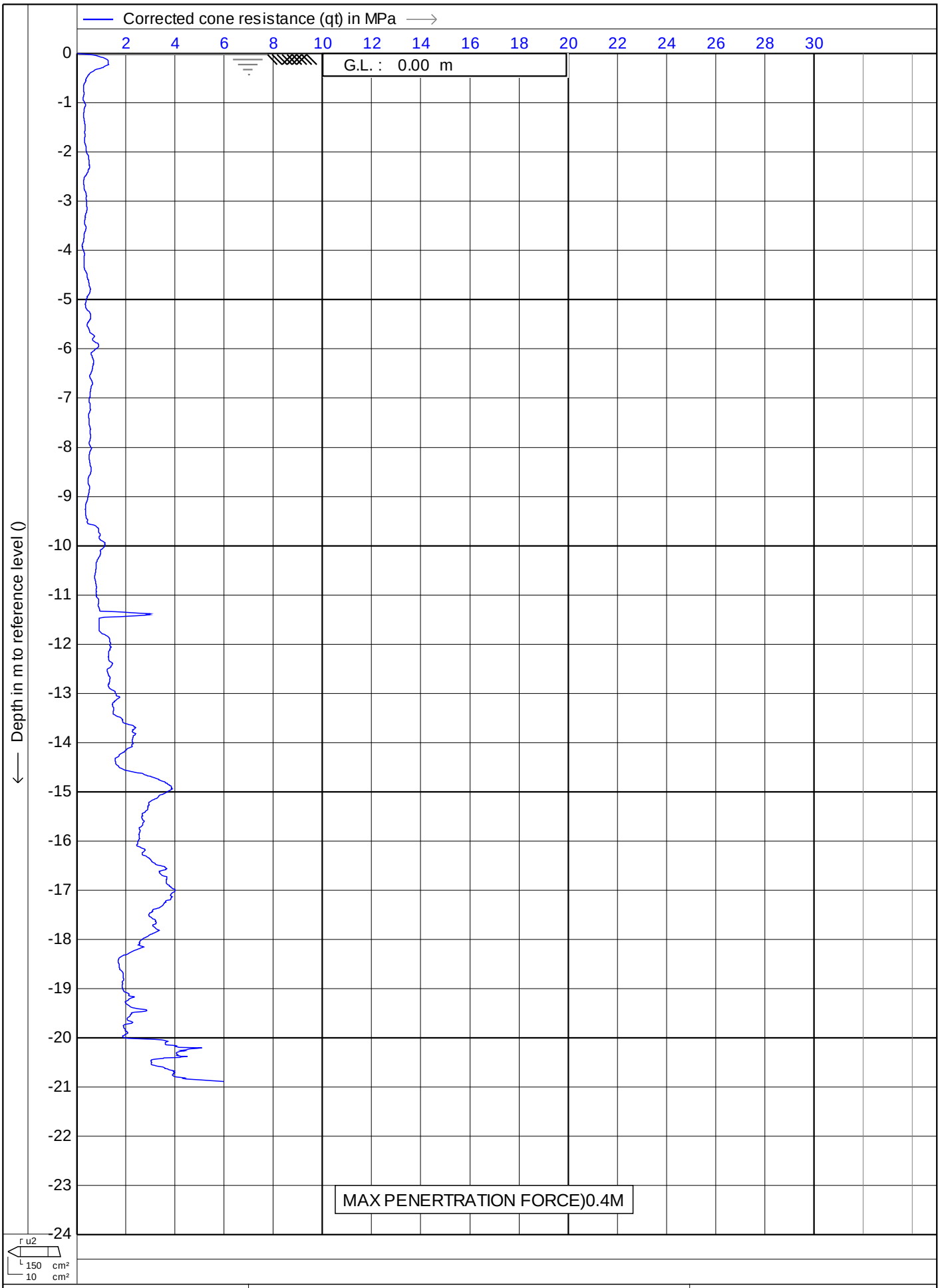
Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT9** **1/15**



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.64081, 36.60082 RD**	CPT no. : **CPT9** **2/15**

1.49



Test according NEN 5140 class 1

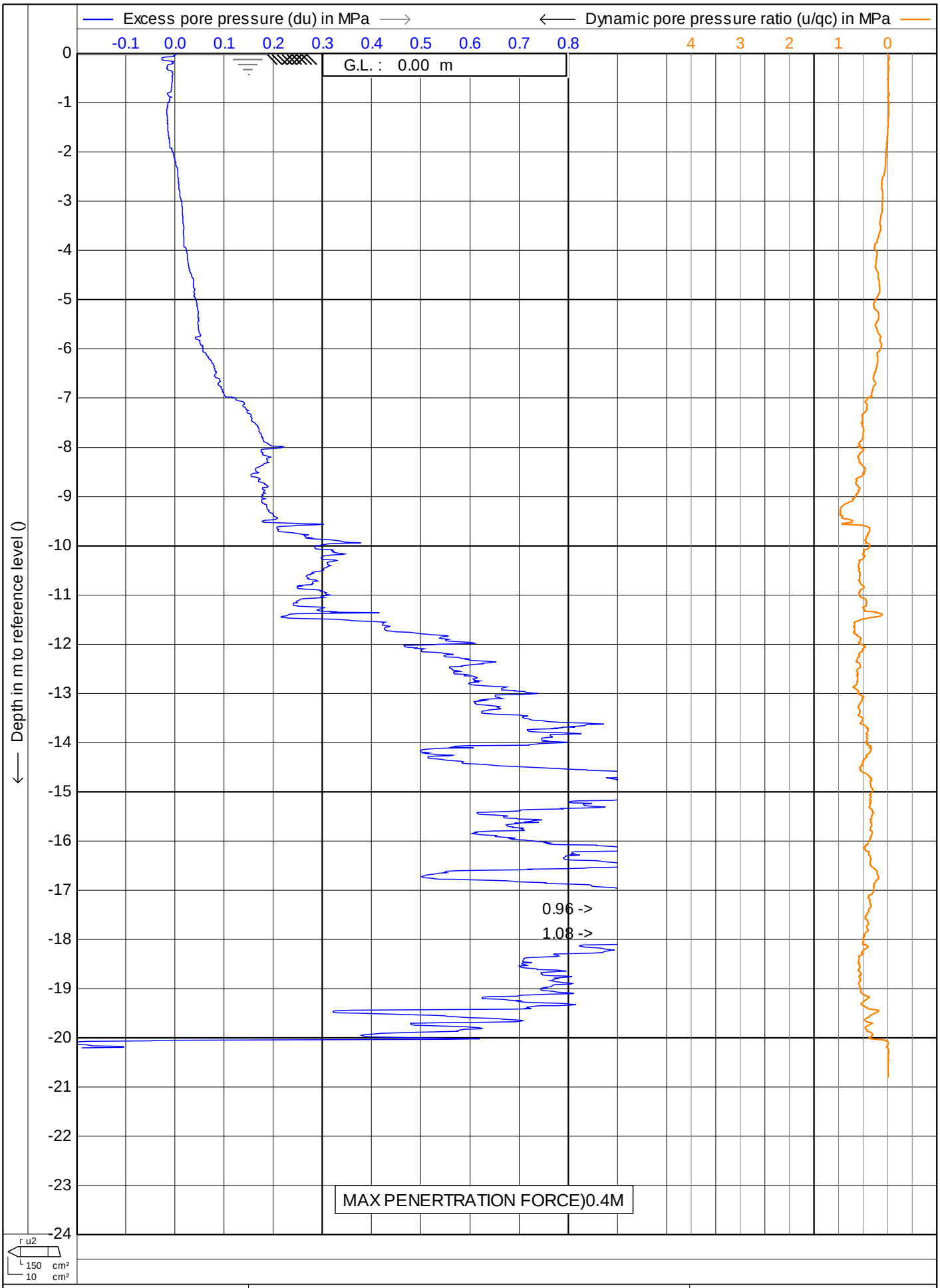
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

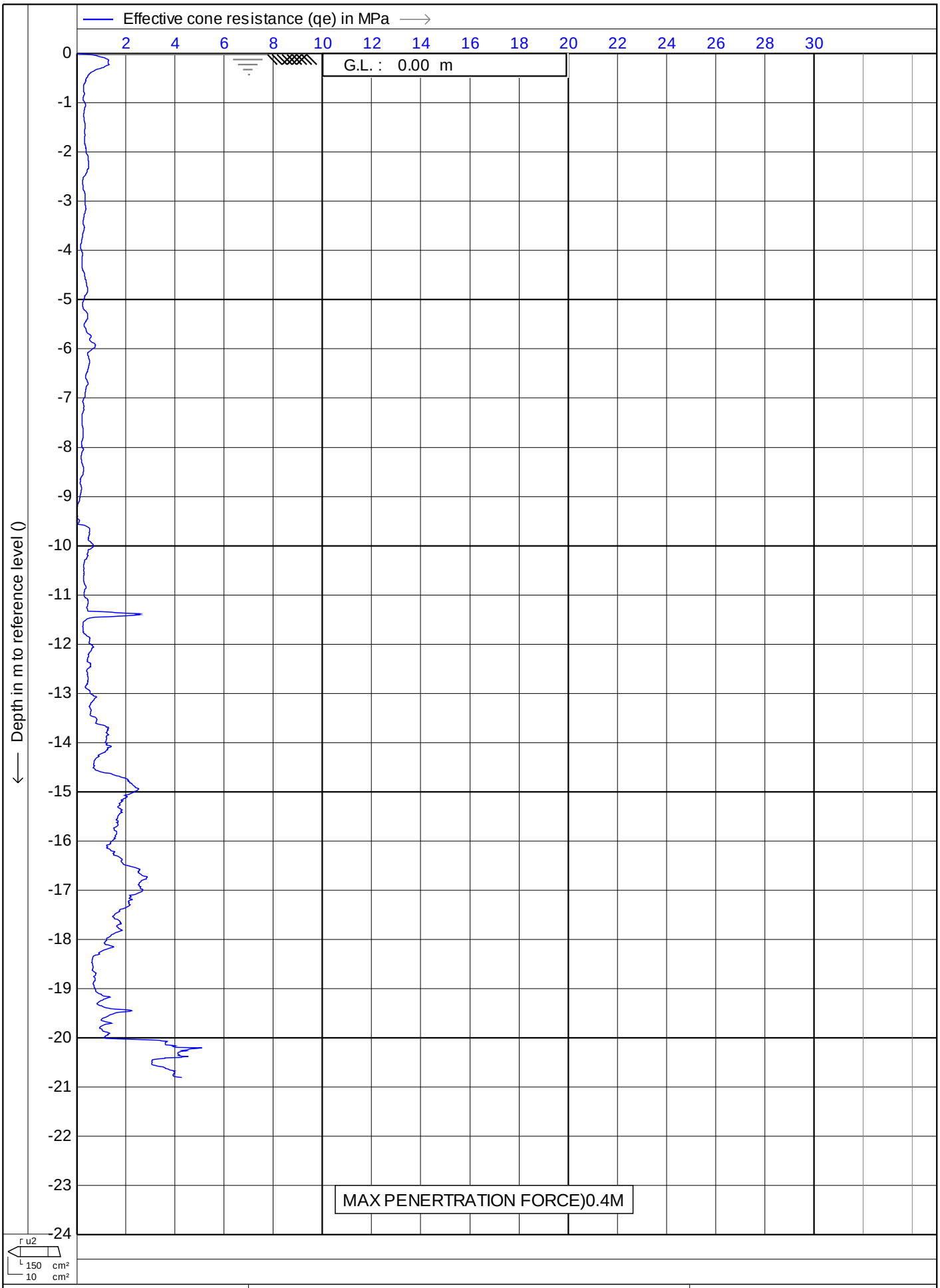
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64081, 36.60082 RD**	CPT no.	: **CPT9** **4/15**

1.49



Test according NEN 5140 class 1

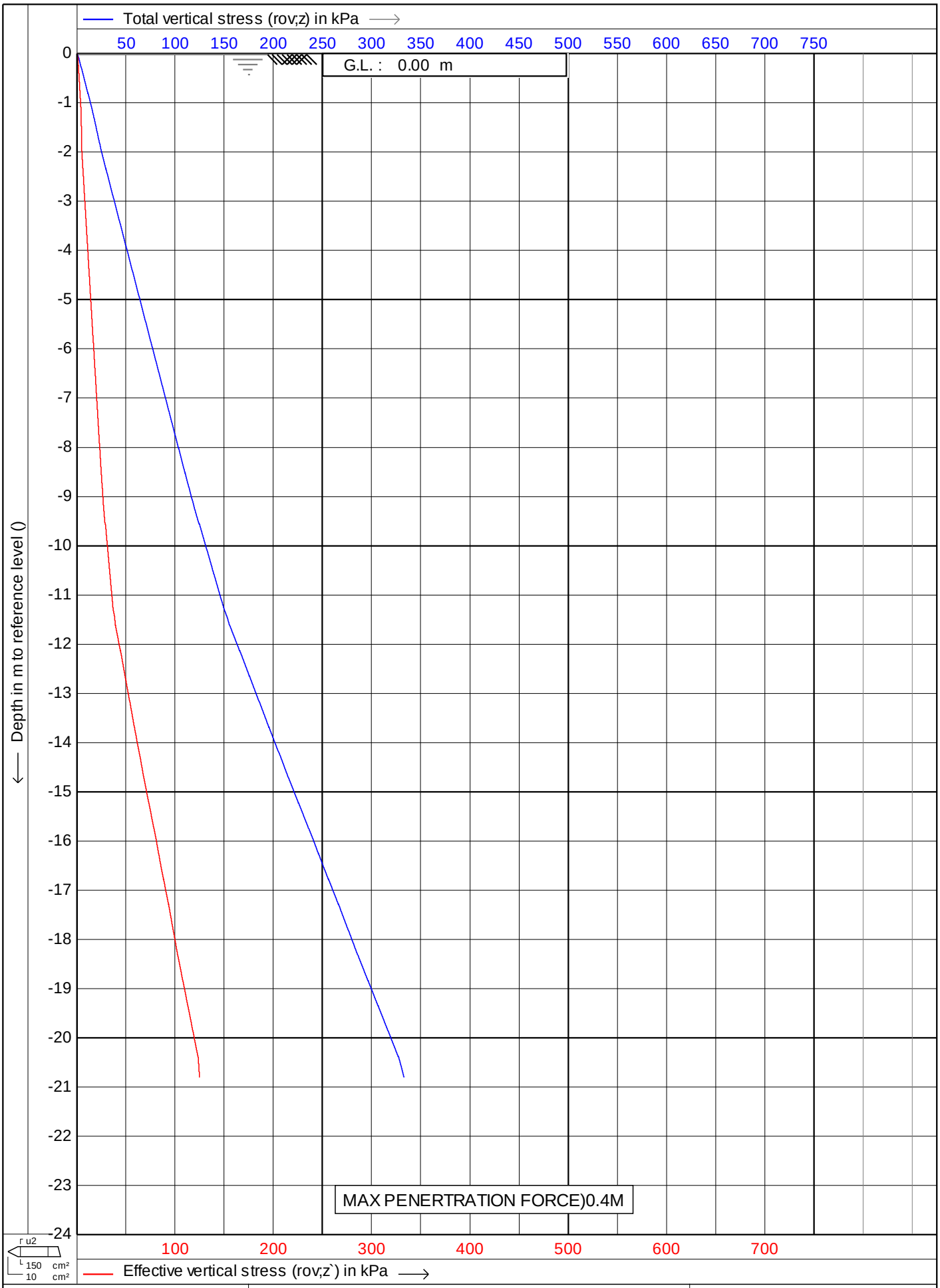
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9** **5/15**

1.49



Test according NEN 5140 class 1

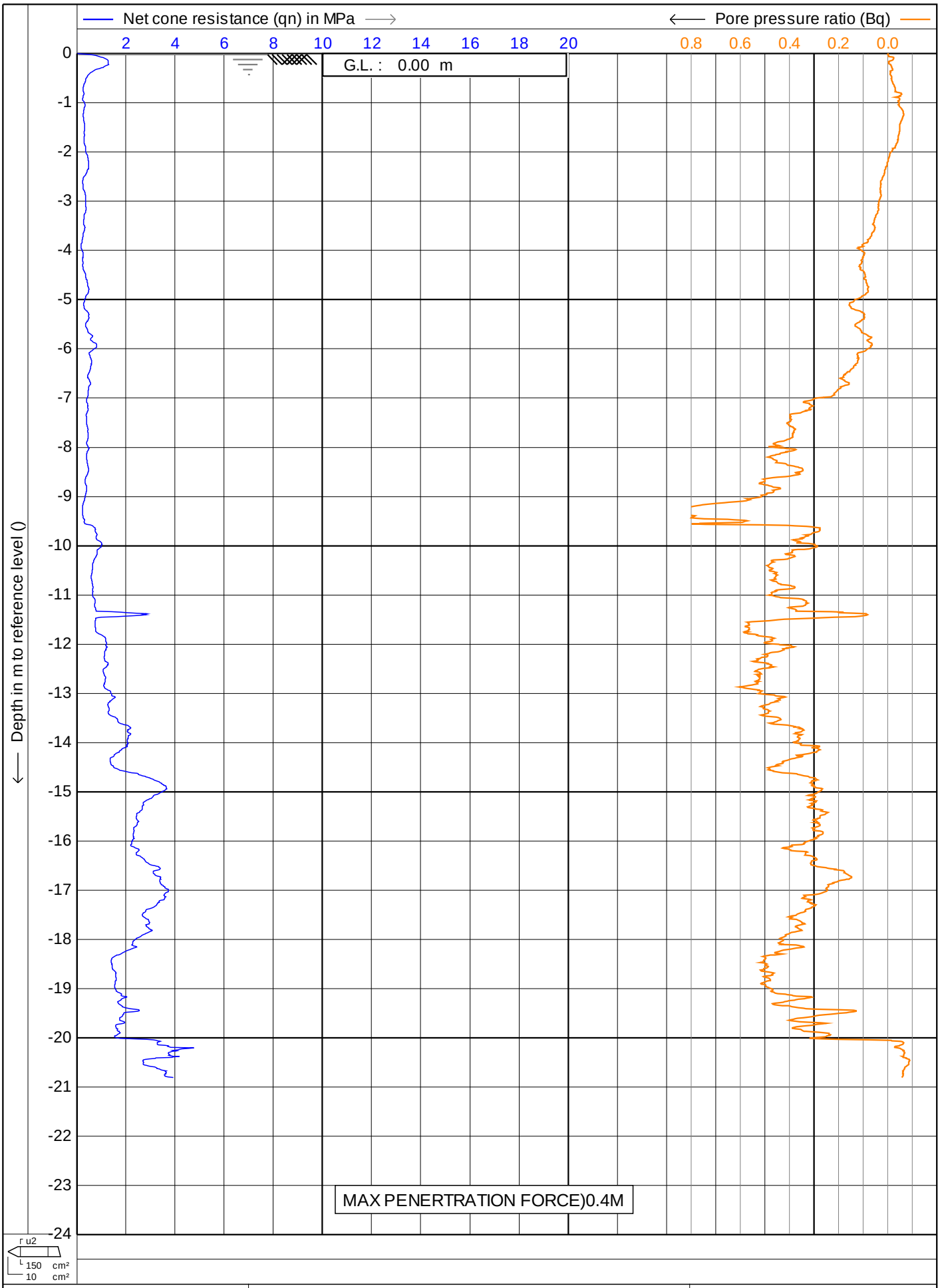
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9** **6/15**

1.49



Test according NEN 5140 class 1

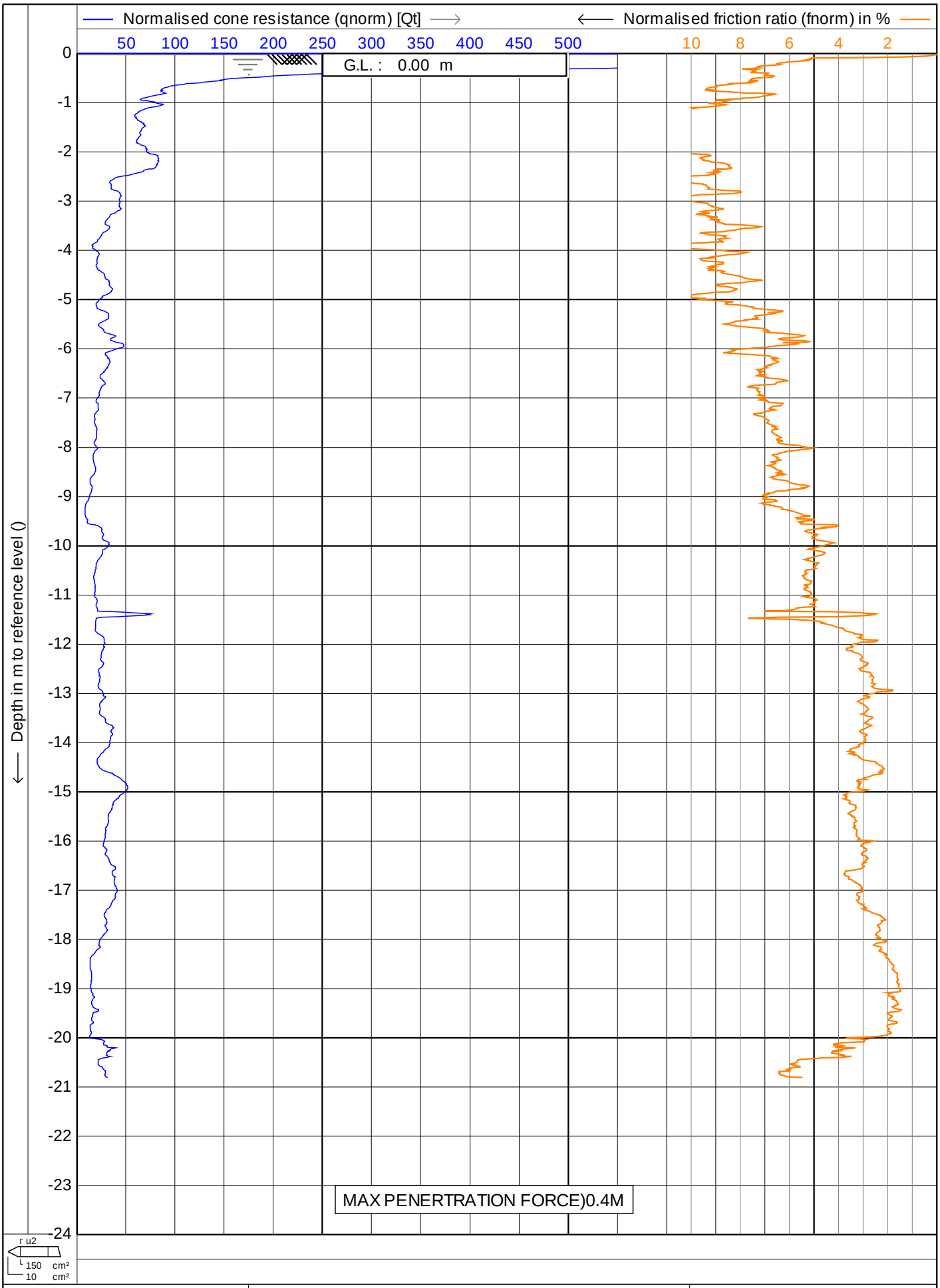
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

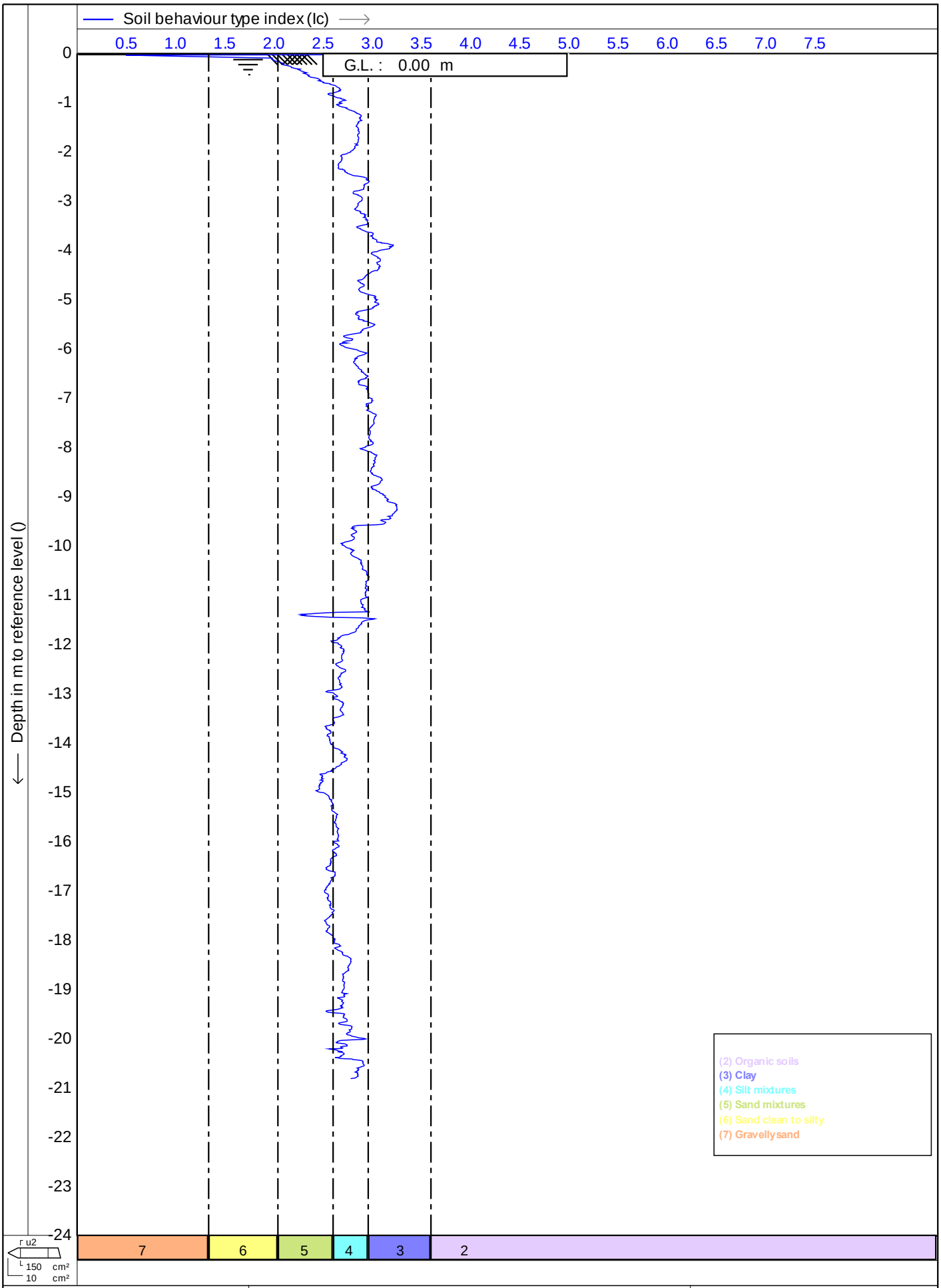
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9** **7/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.64081, 36.60082 RD**	CPT no. : **CPT9** 8/15

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

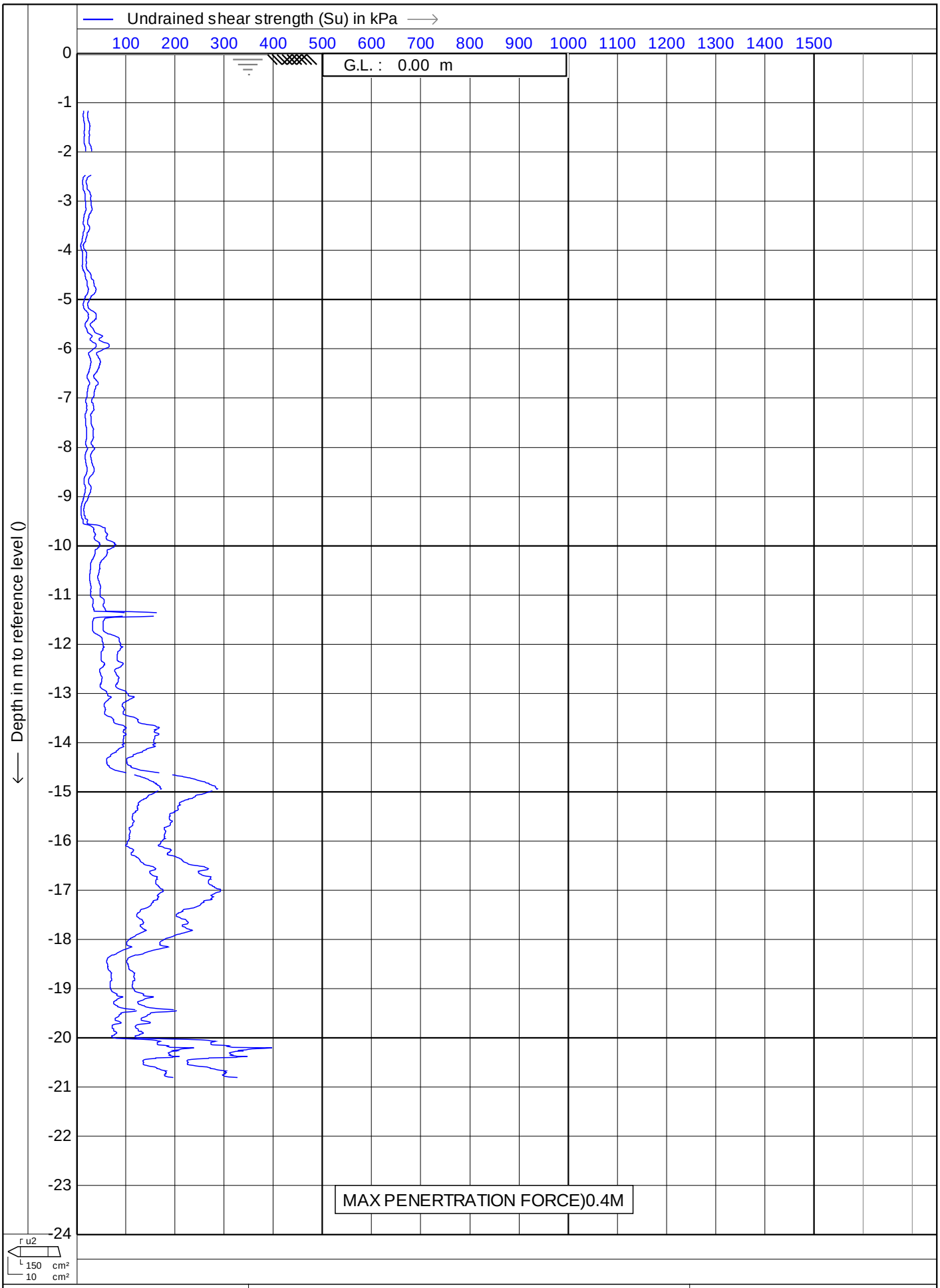
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT9** **9/15**

1.49



Test according NEN 5140 class 1

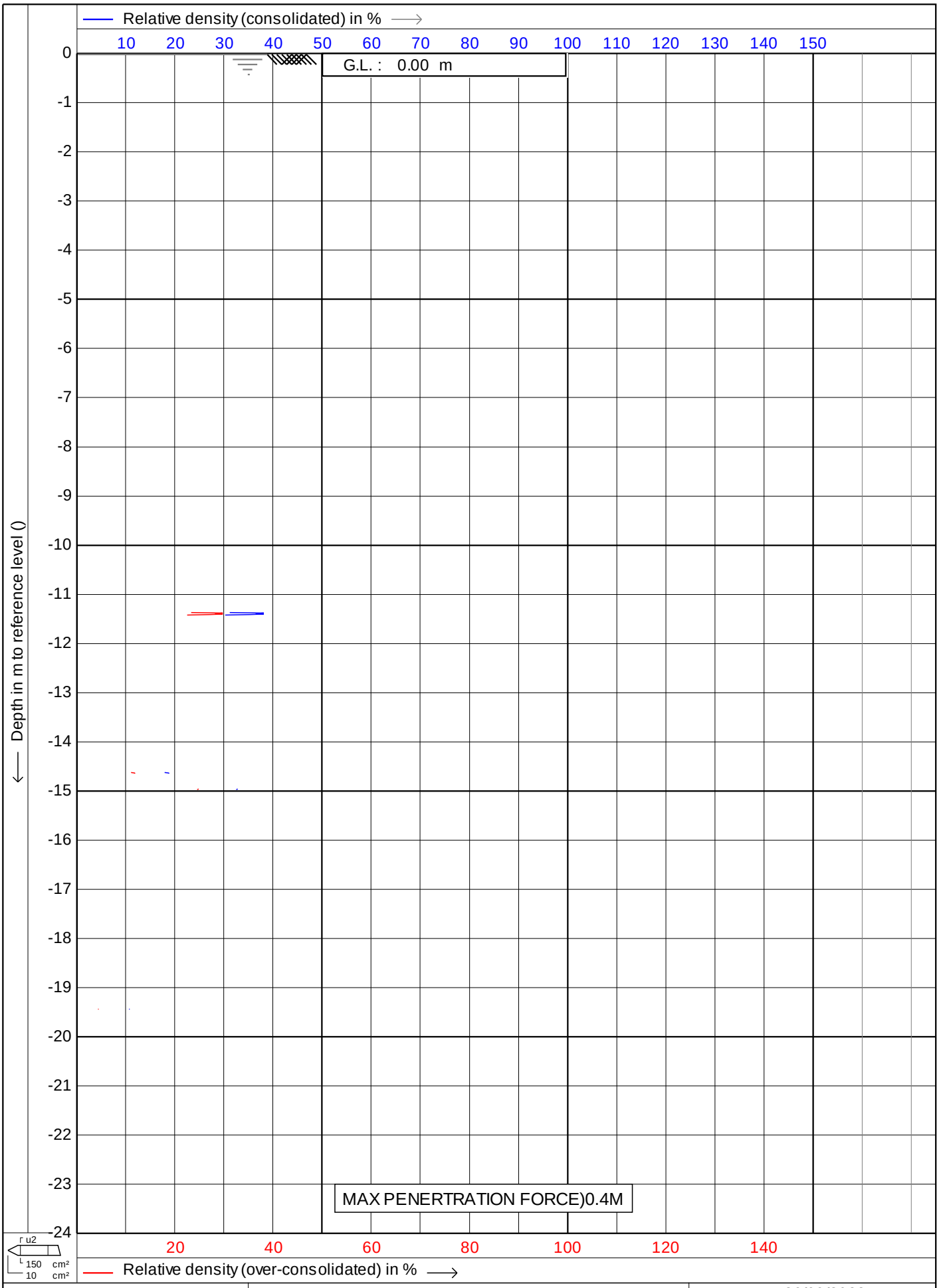
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

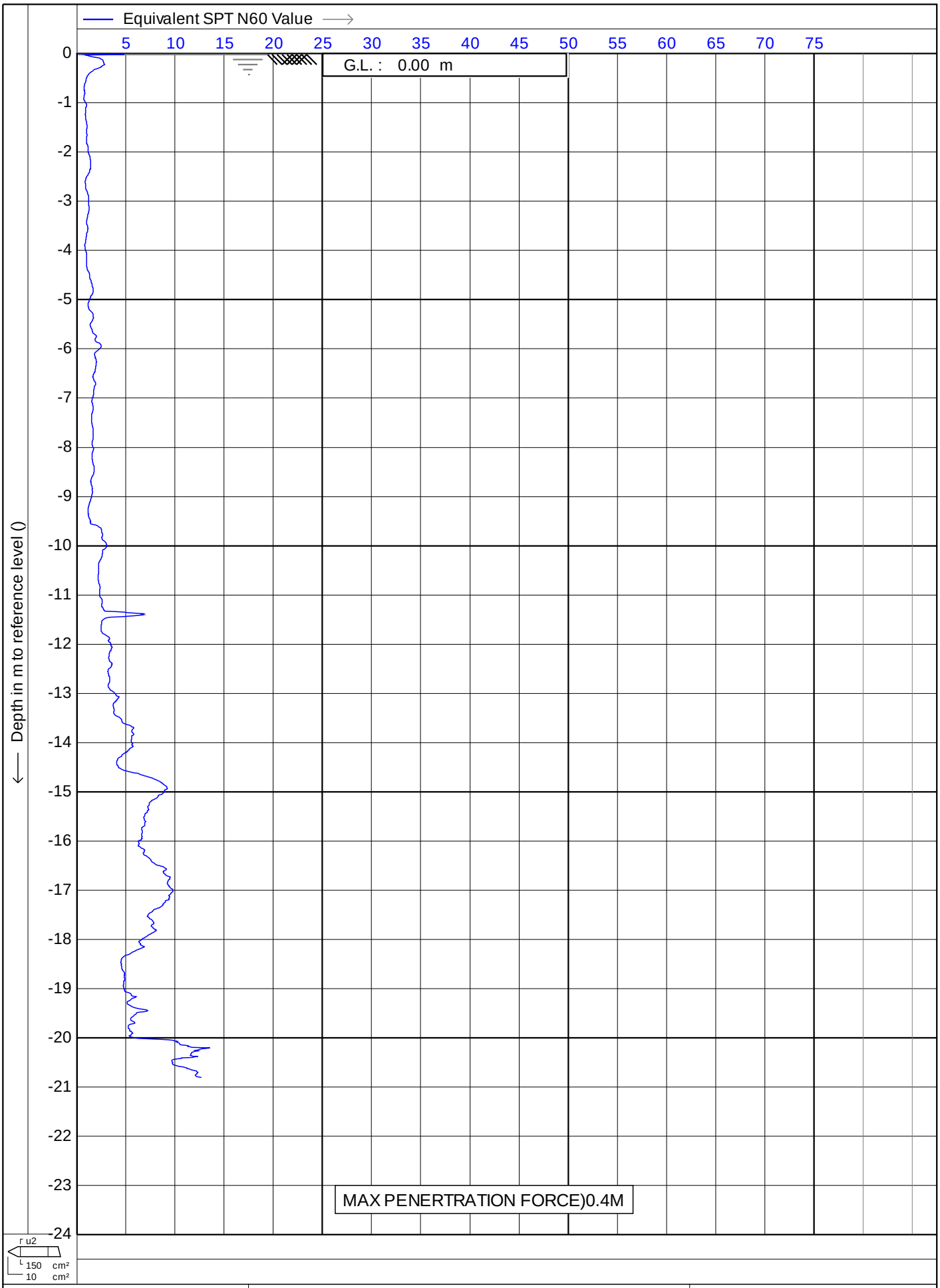
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT9** **11/15**

1.49



Test according NEN 5140 class 1

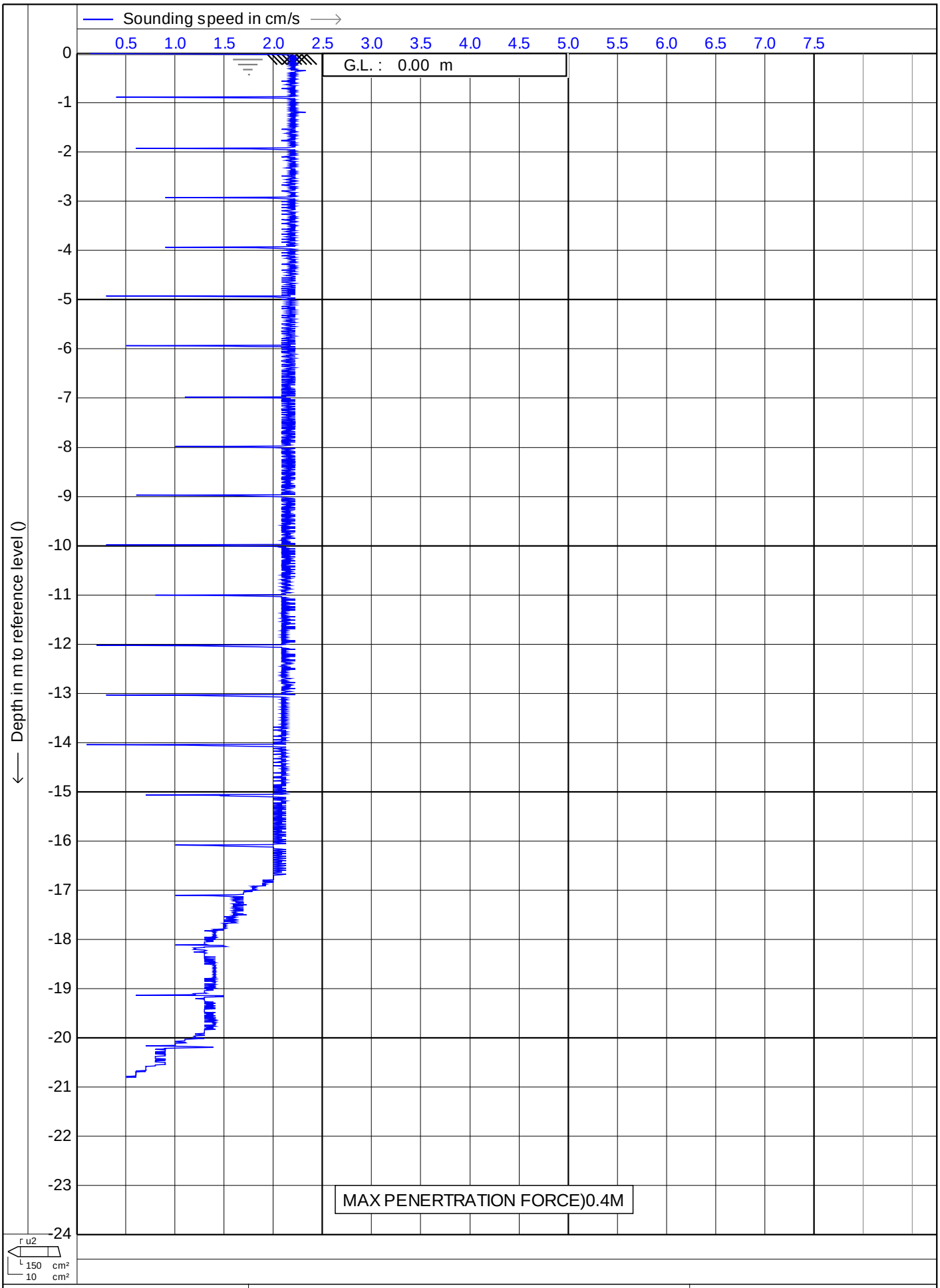
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9**

1.49



Test according NEN 5140 class 1

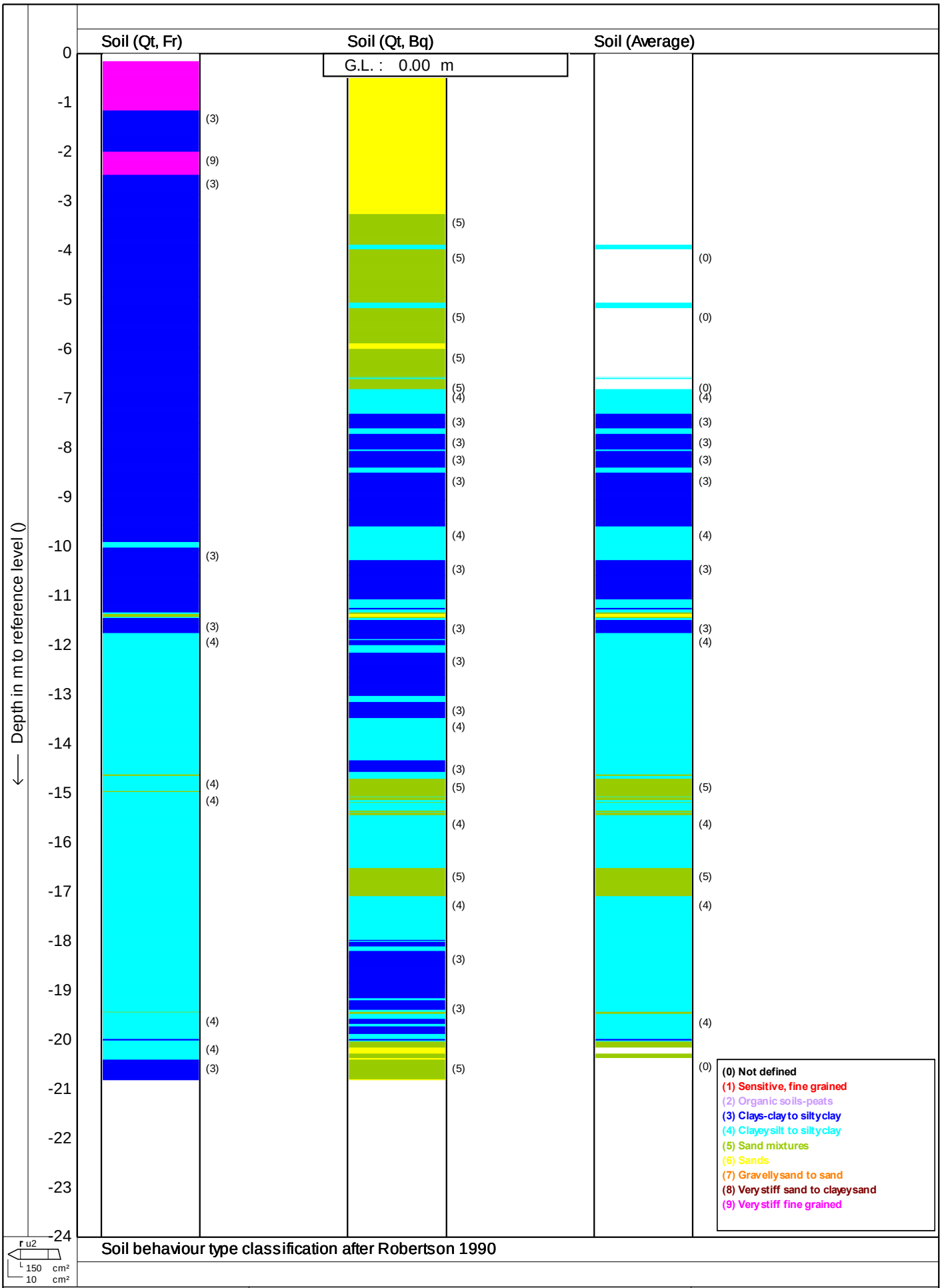
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

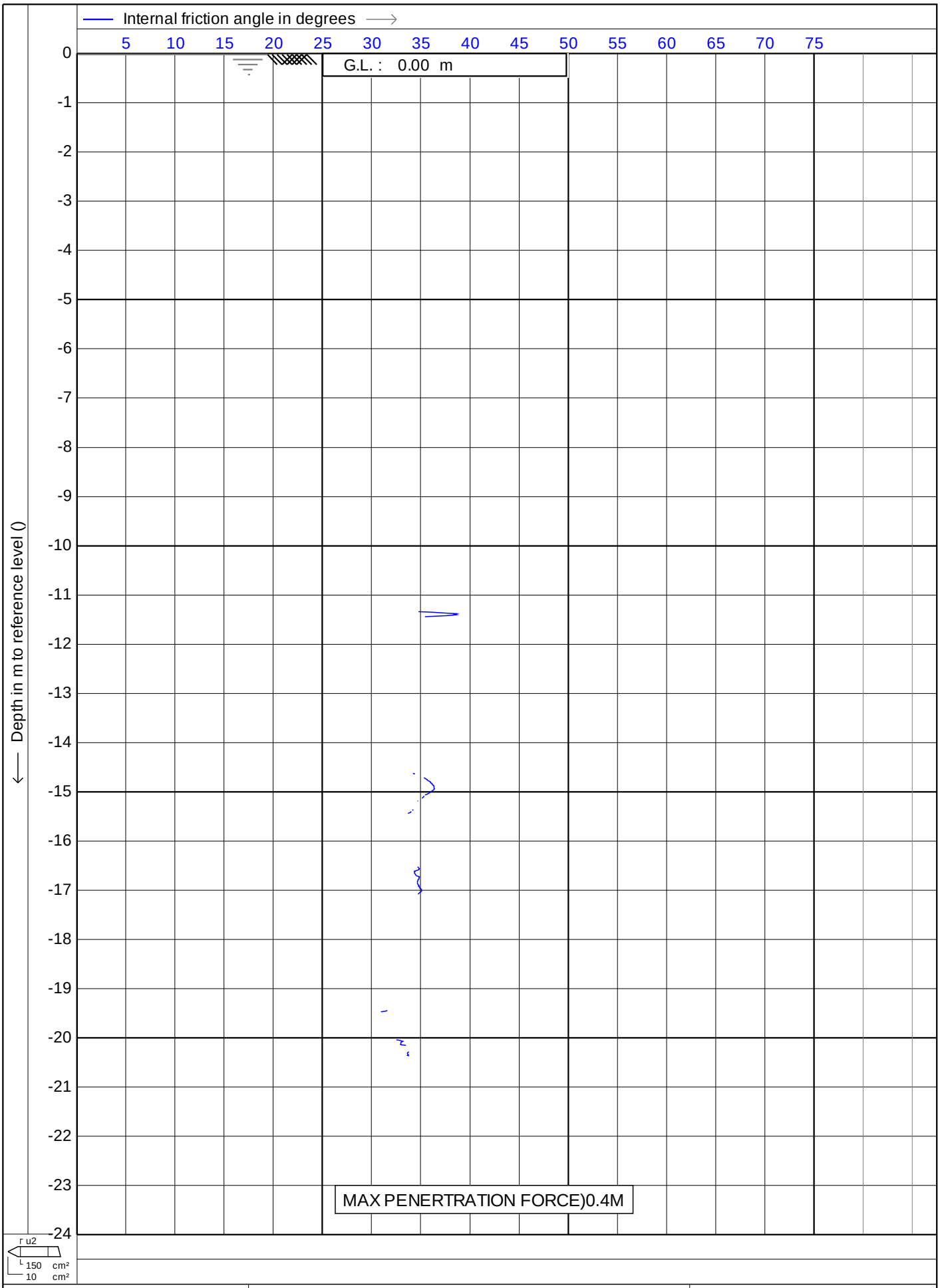
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT9** **14/15**

1.49



Test according NEN 5140 class 1

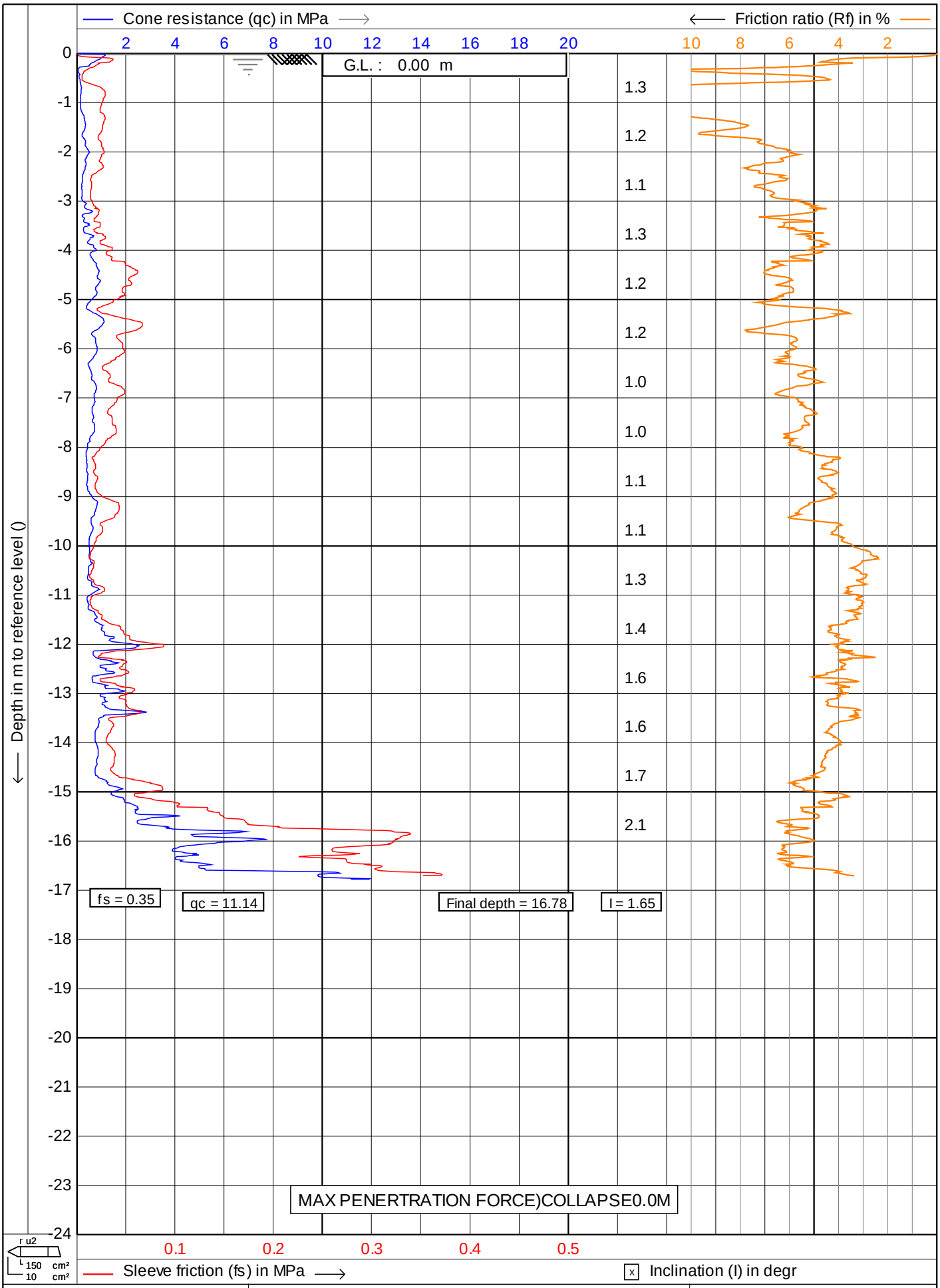
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64081, 36.60082 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT9** **15/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

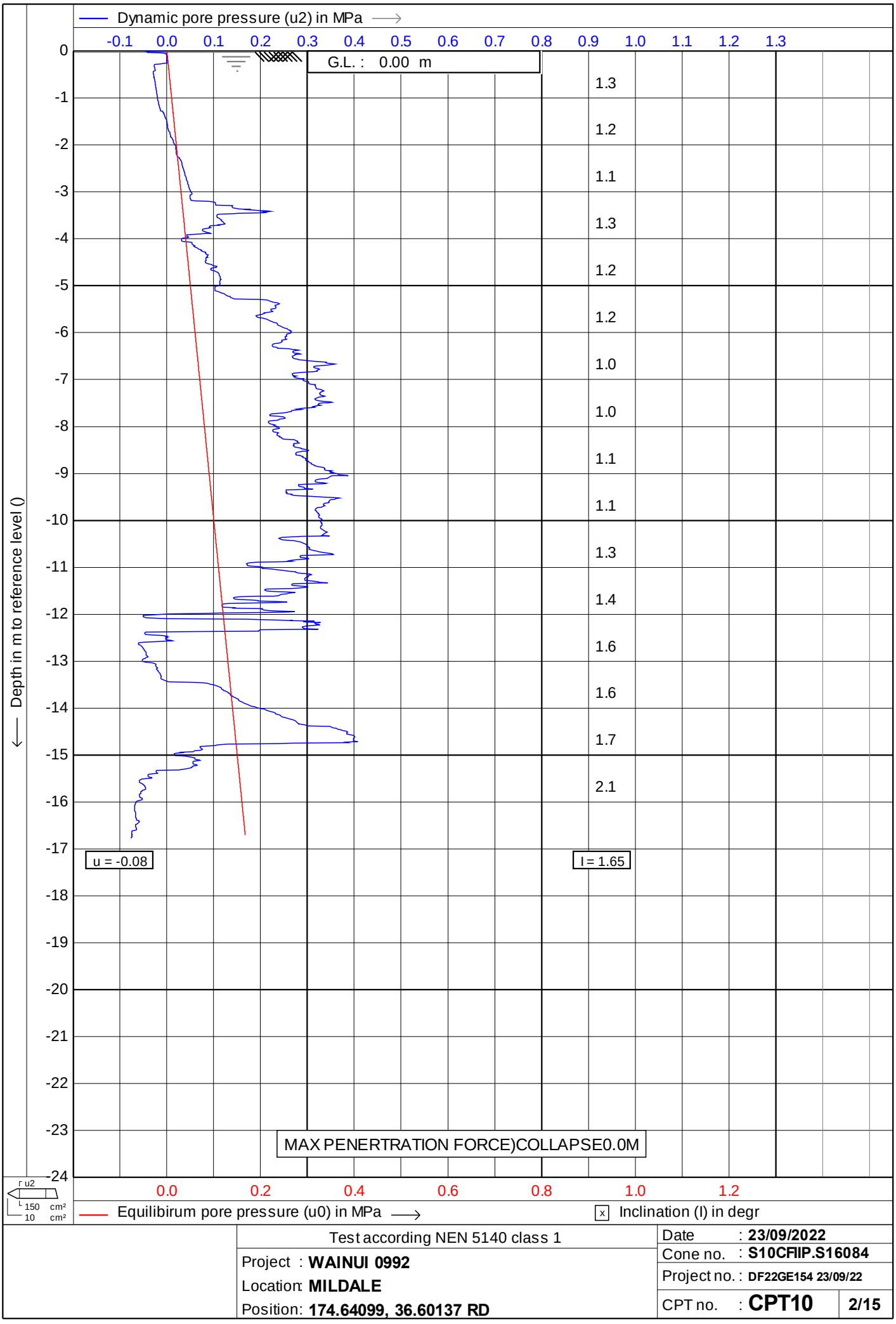
Position: **174.64099, 36.60137 RD**

Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT10** **1/15**



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

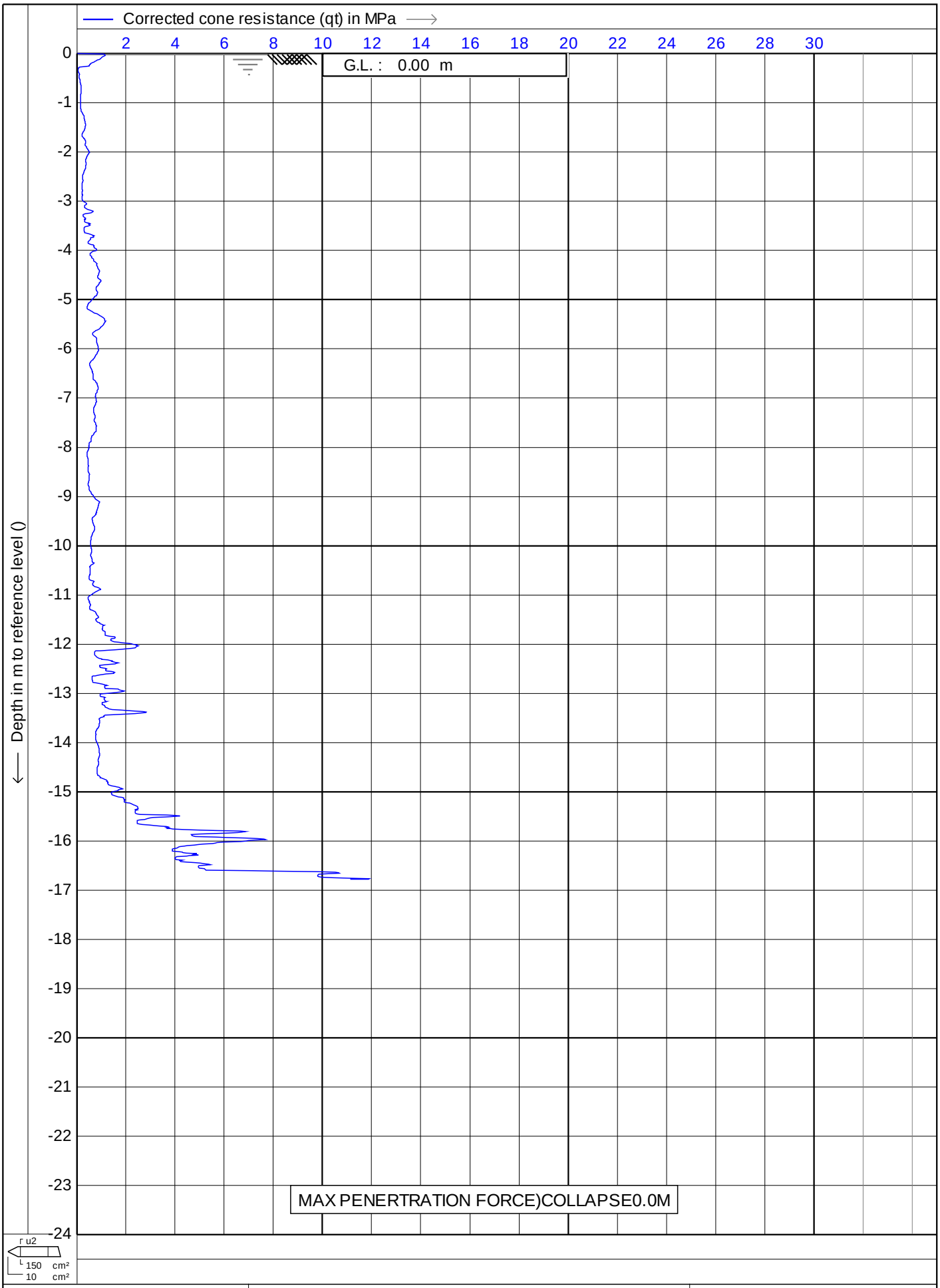
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT10** **2/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

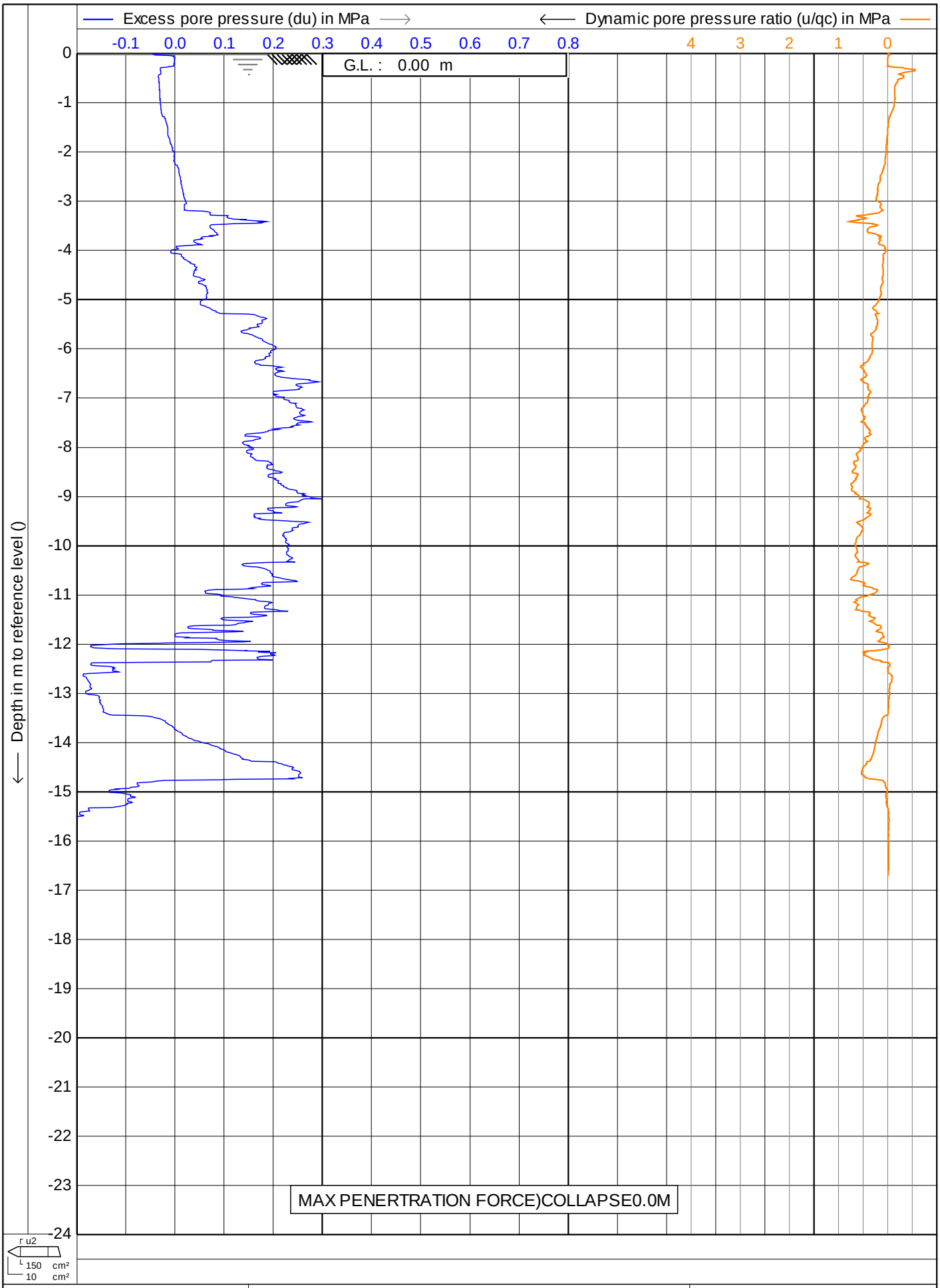
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT10** **3/15**

1.49



Test according NEN 5140 class 1

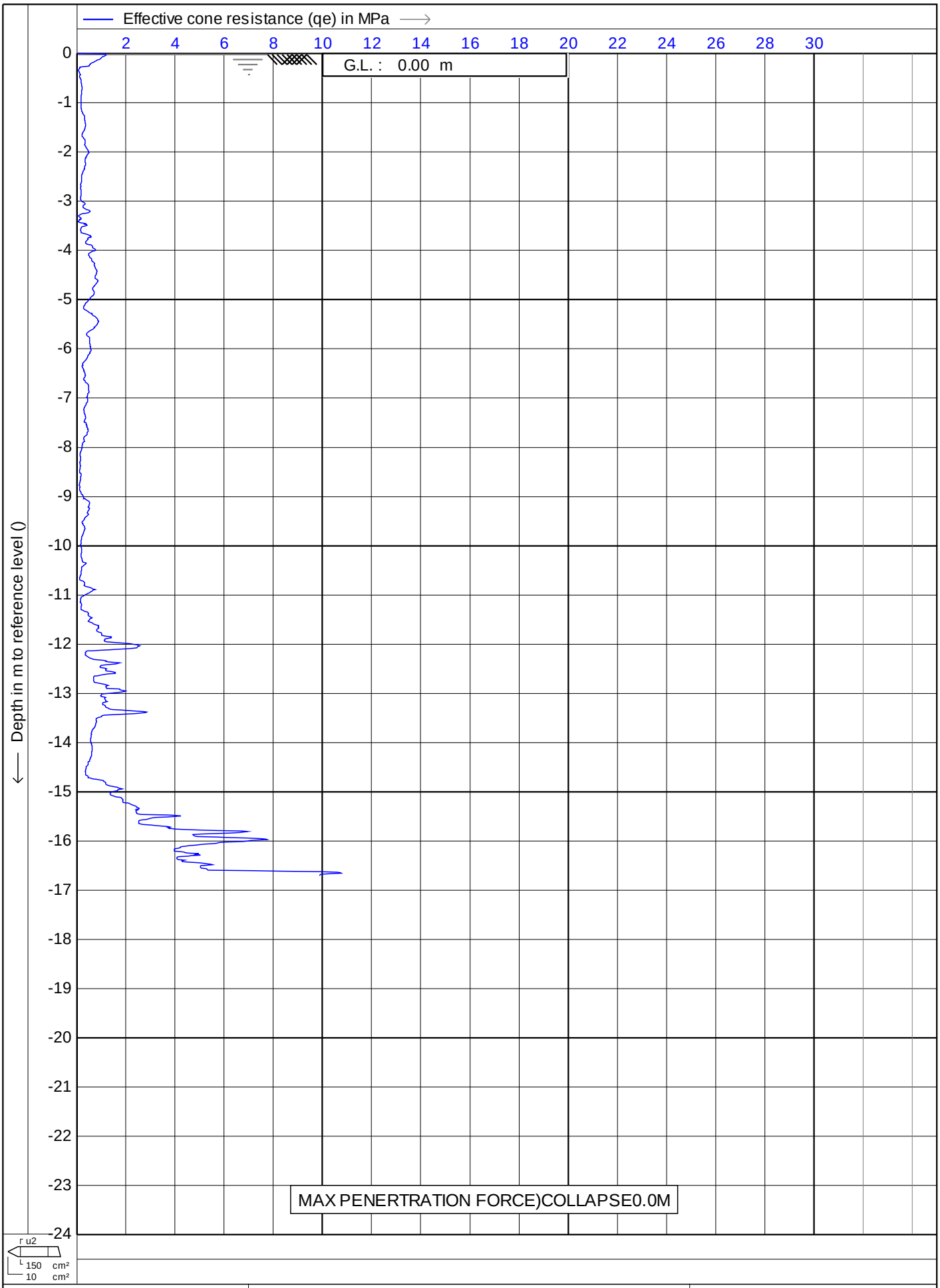
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

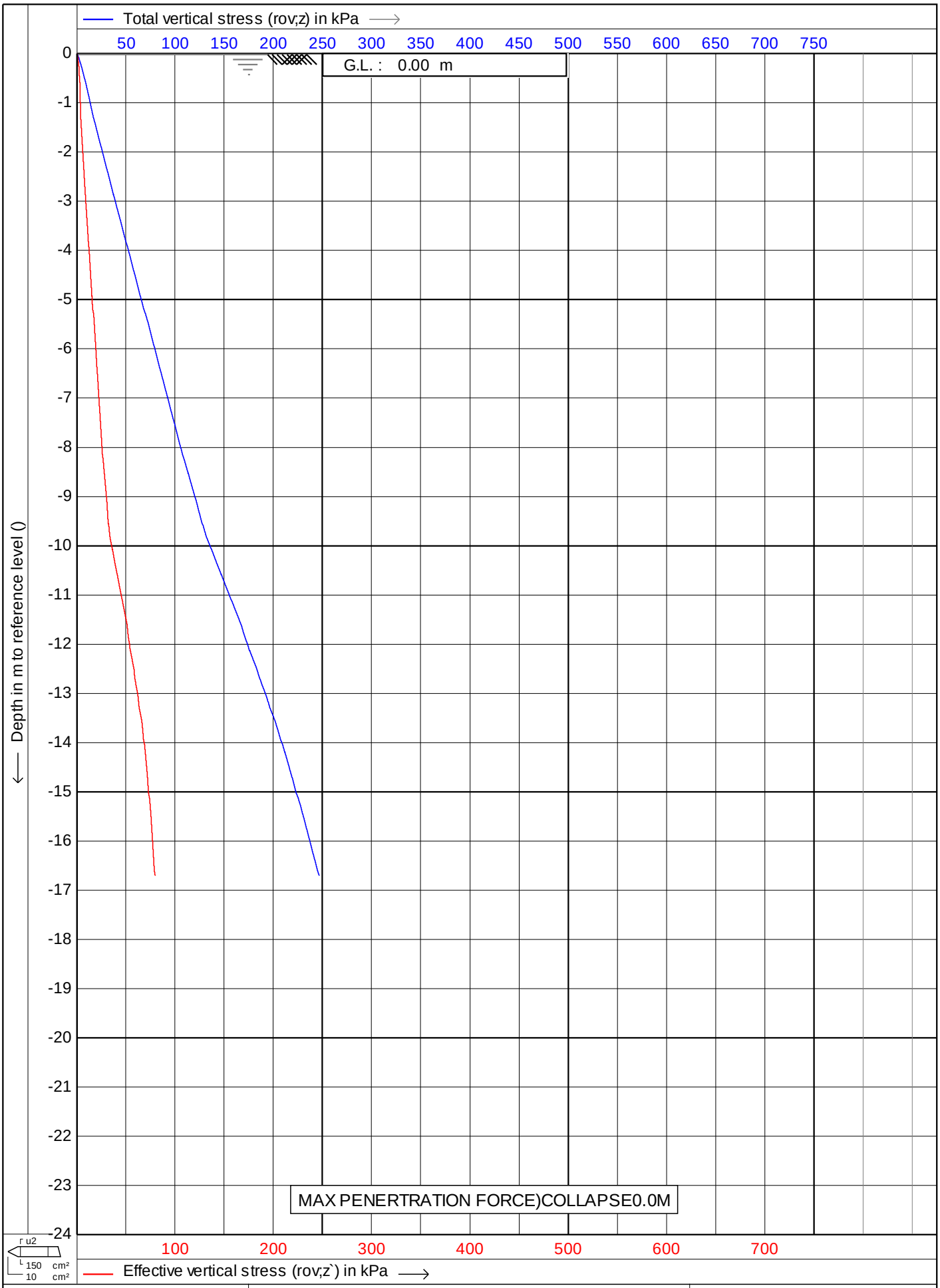
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **4/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64099, 36.60137 RD**	CPT no.	: **CPT10** **5/15**

1.49



Test according NEN 5140 class 1

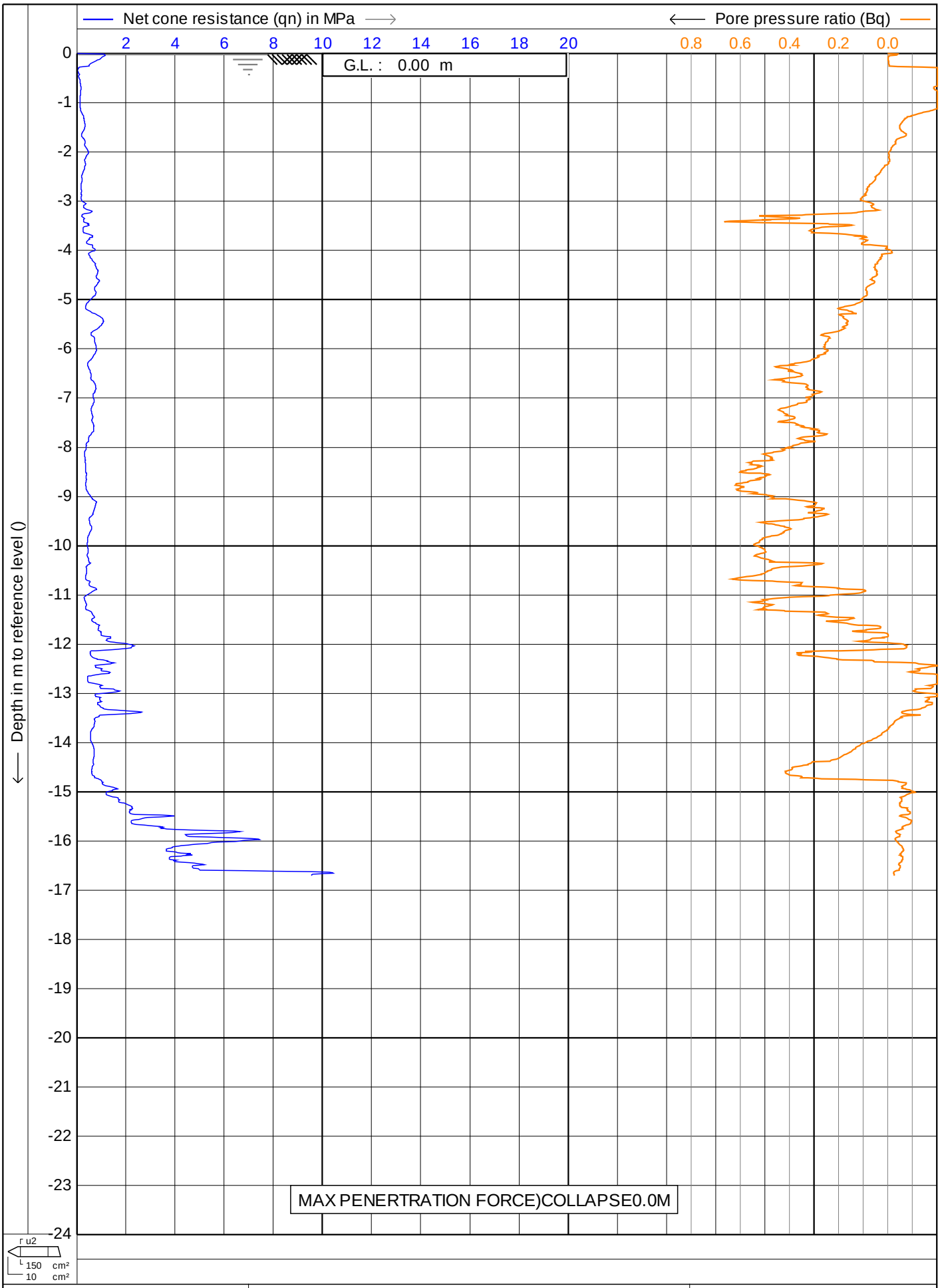
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **6/15**

1.49



Test according NEN 5140 class 1

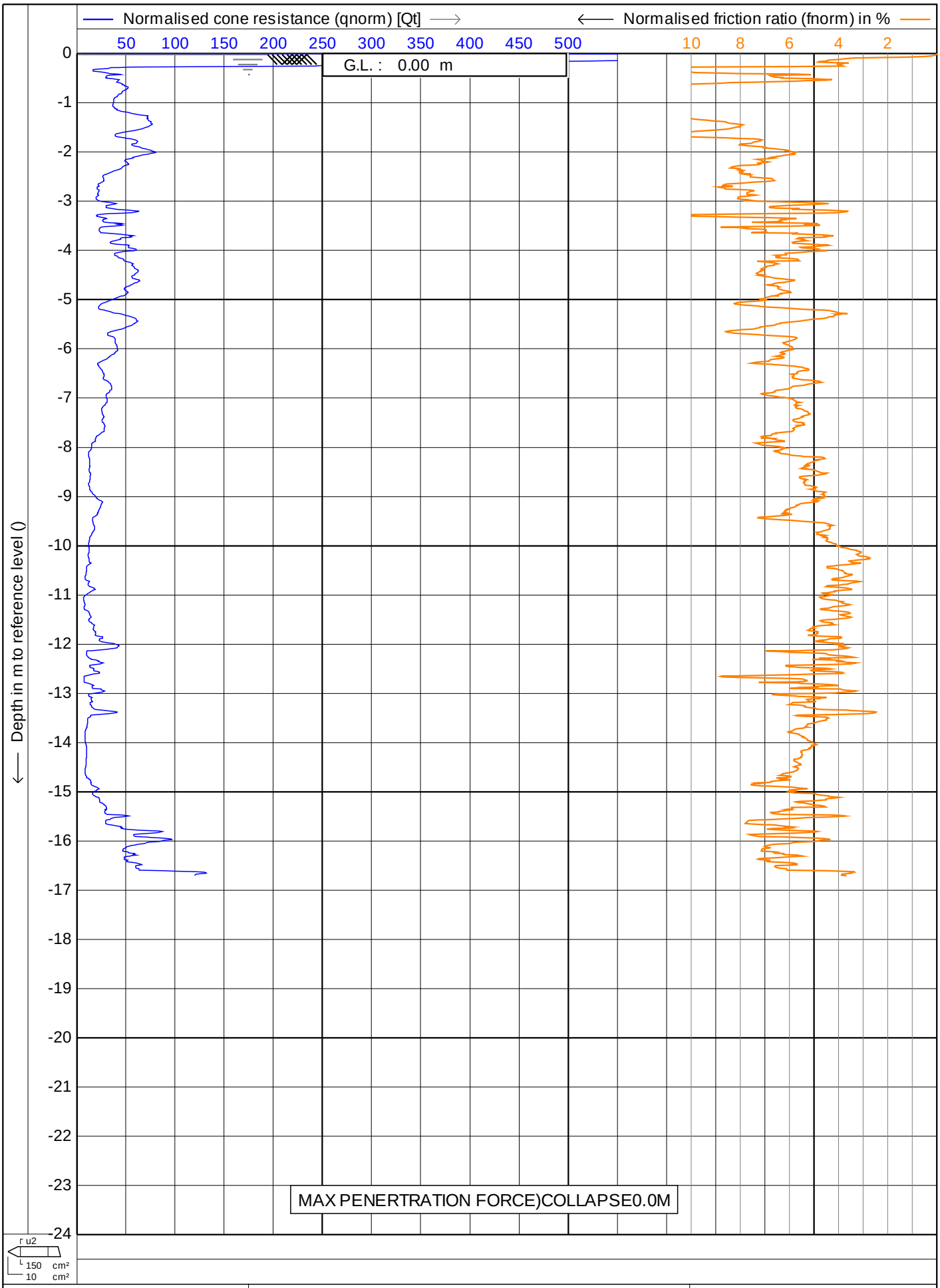
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

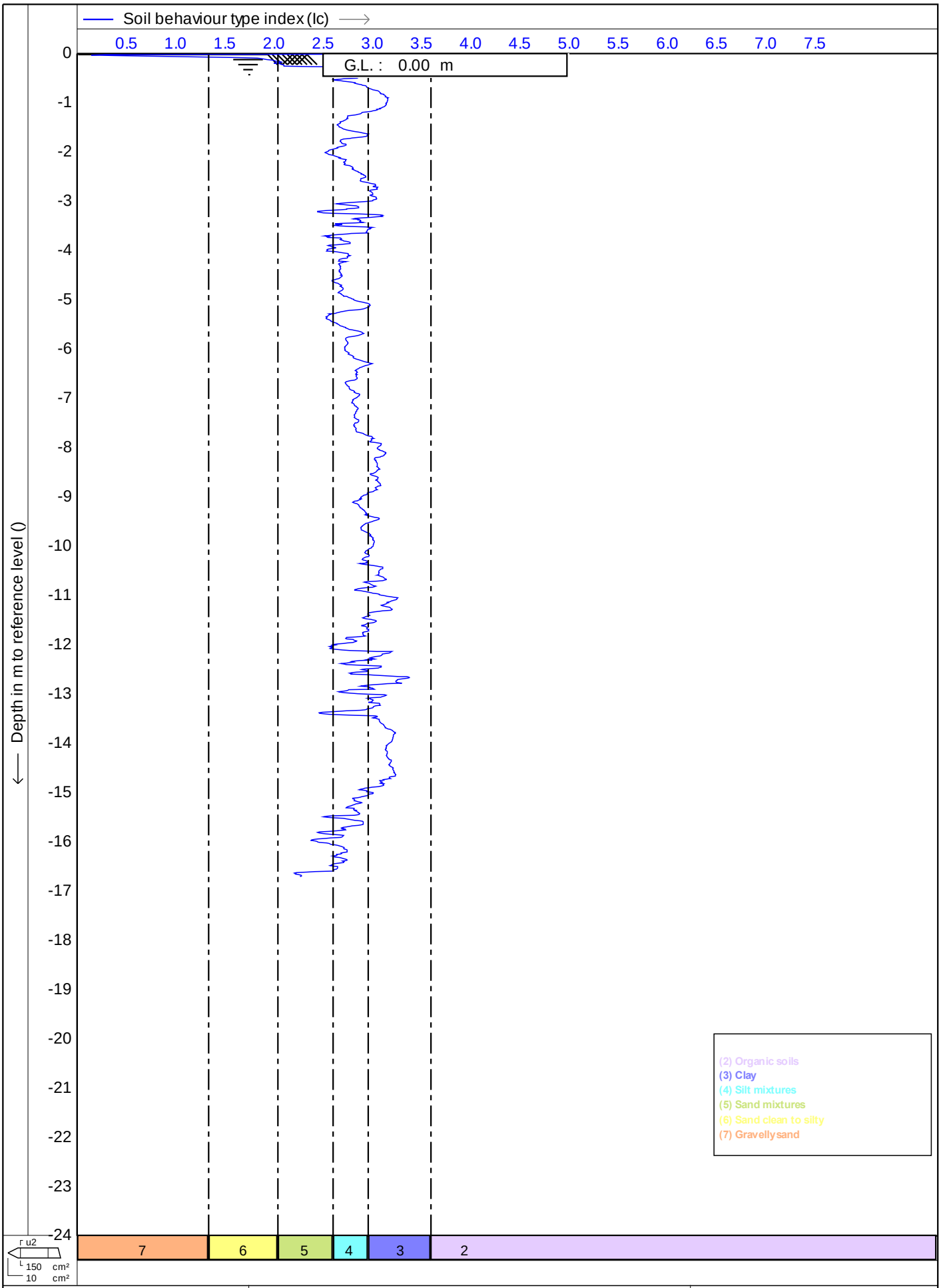
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **7/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64099, 36.60137 RD**	CPT no.	: **CPT10** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

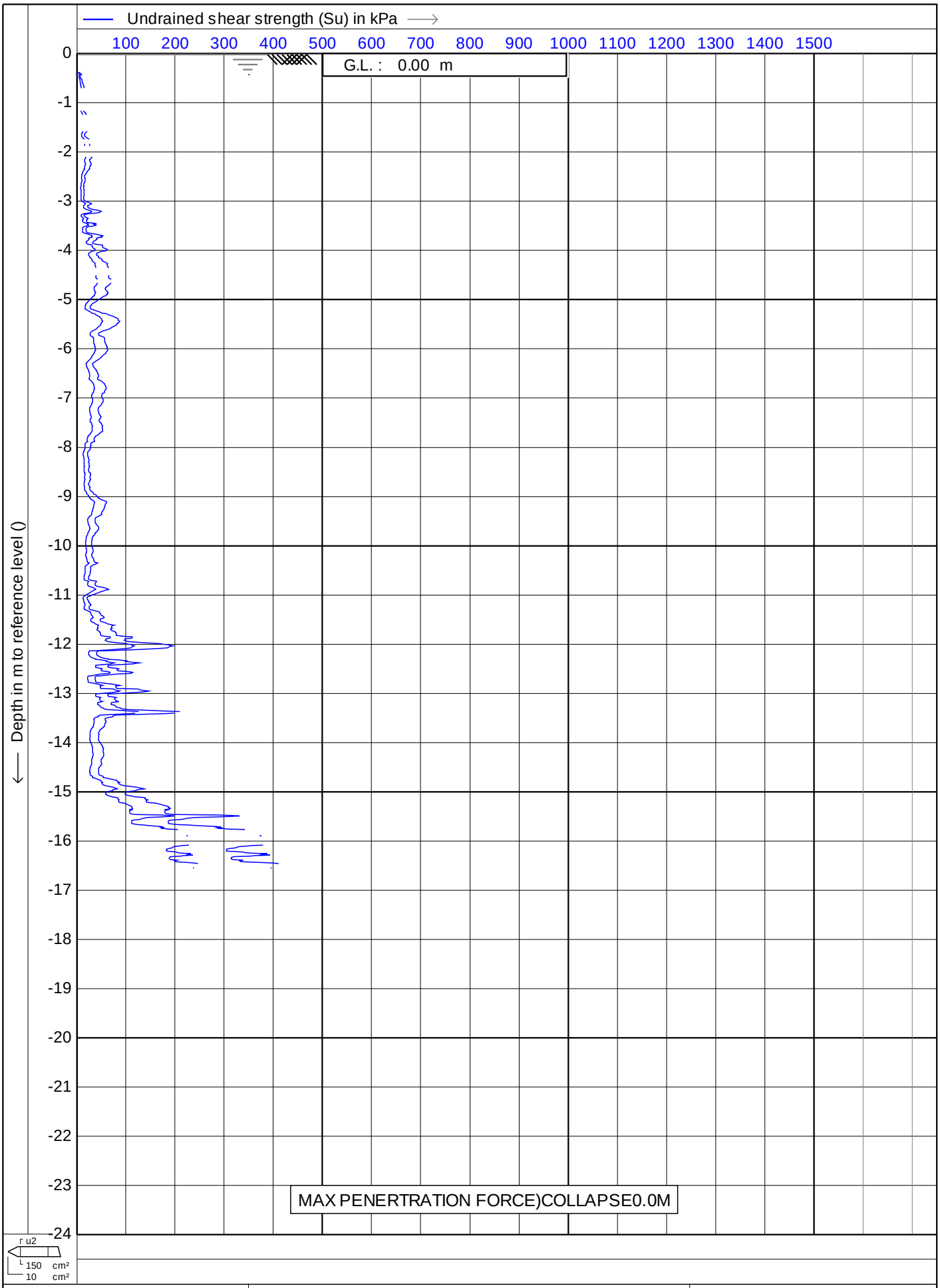
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT10** **9/15**

1.49



Test according NEN 5140 class 1

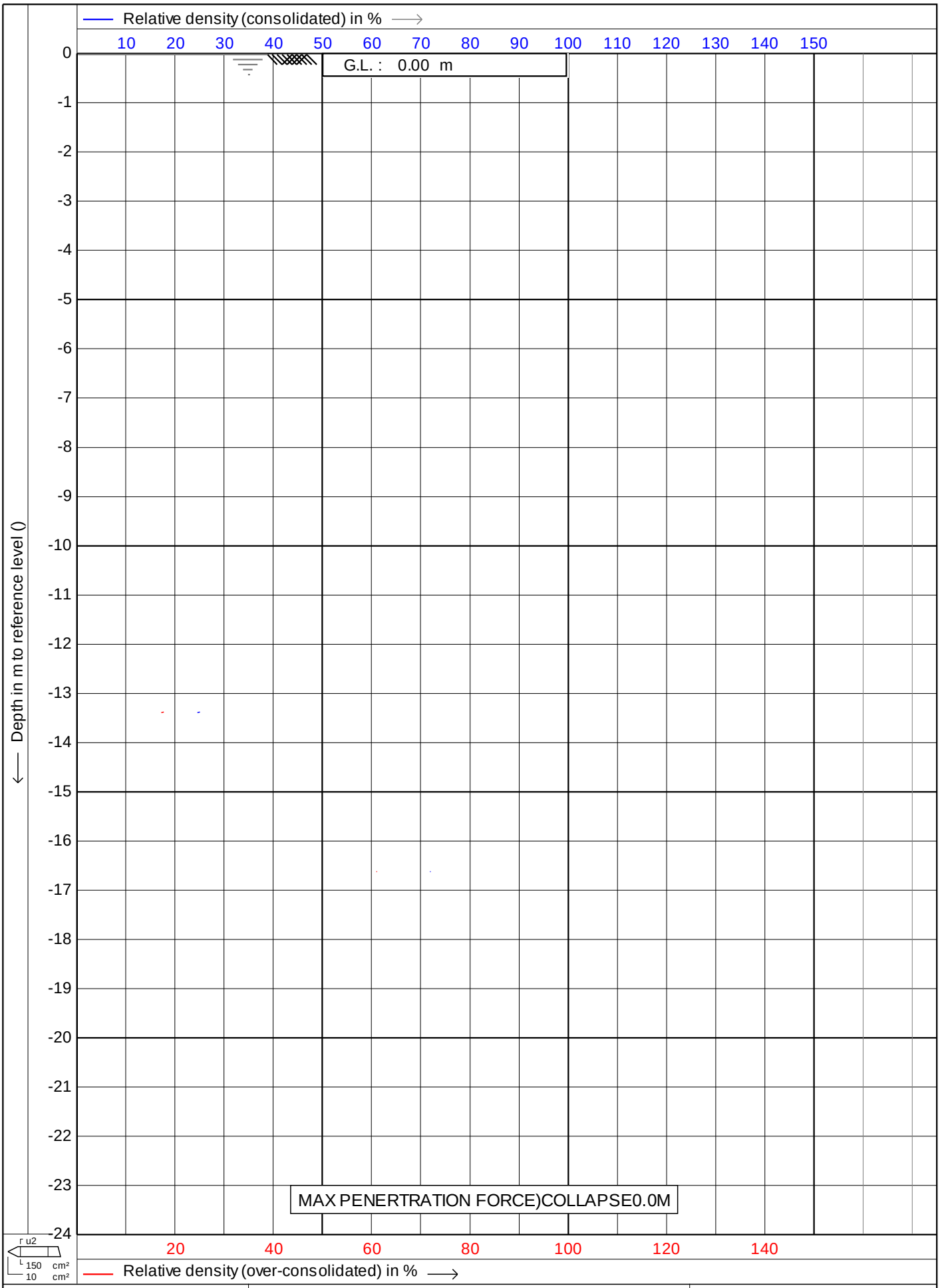
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **10/15**

1.49



Test according NEN 5140 class 1

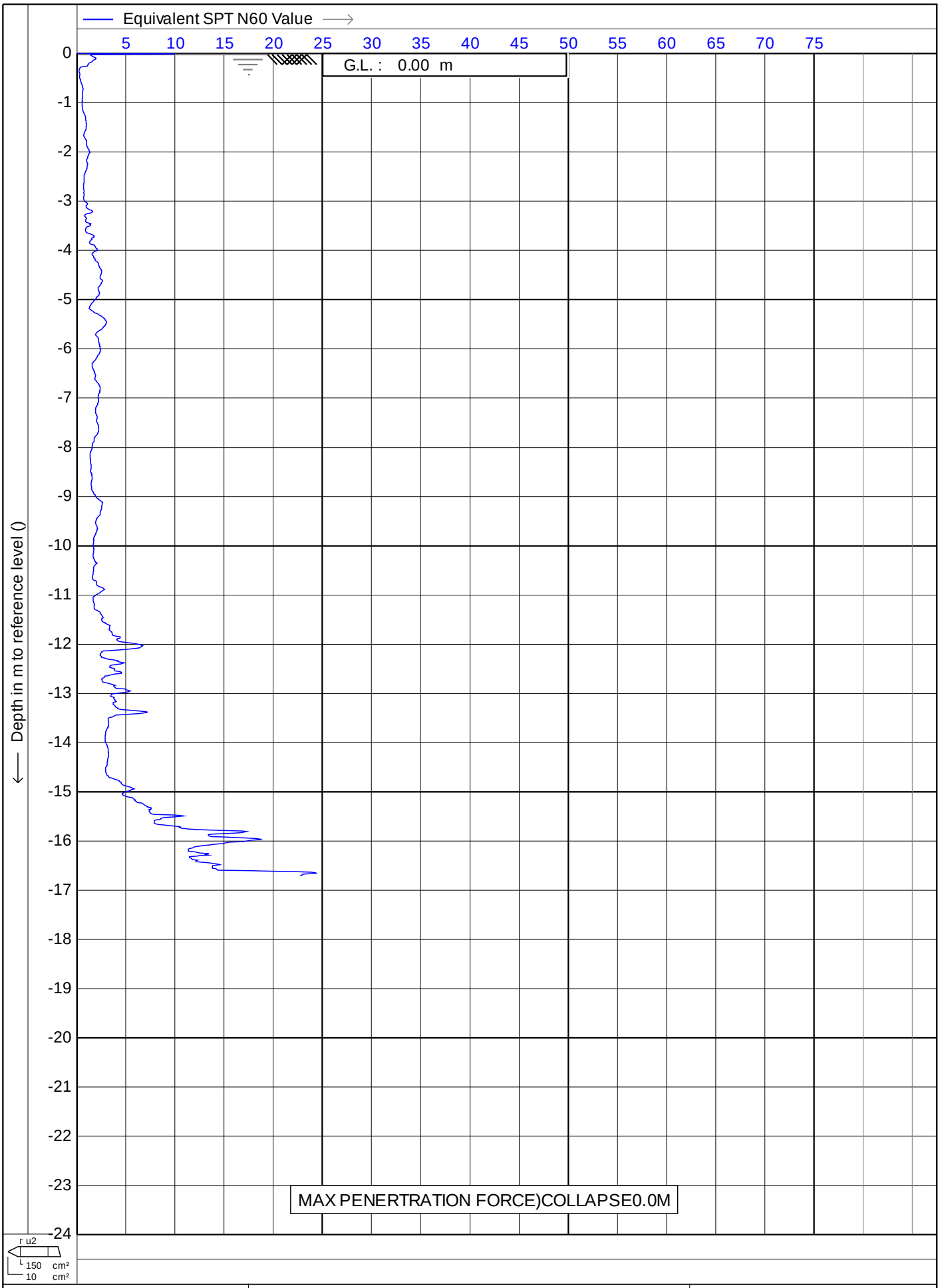
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **11/15**

1.49



Test according NEN 5140 class 1

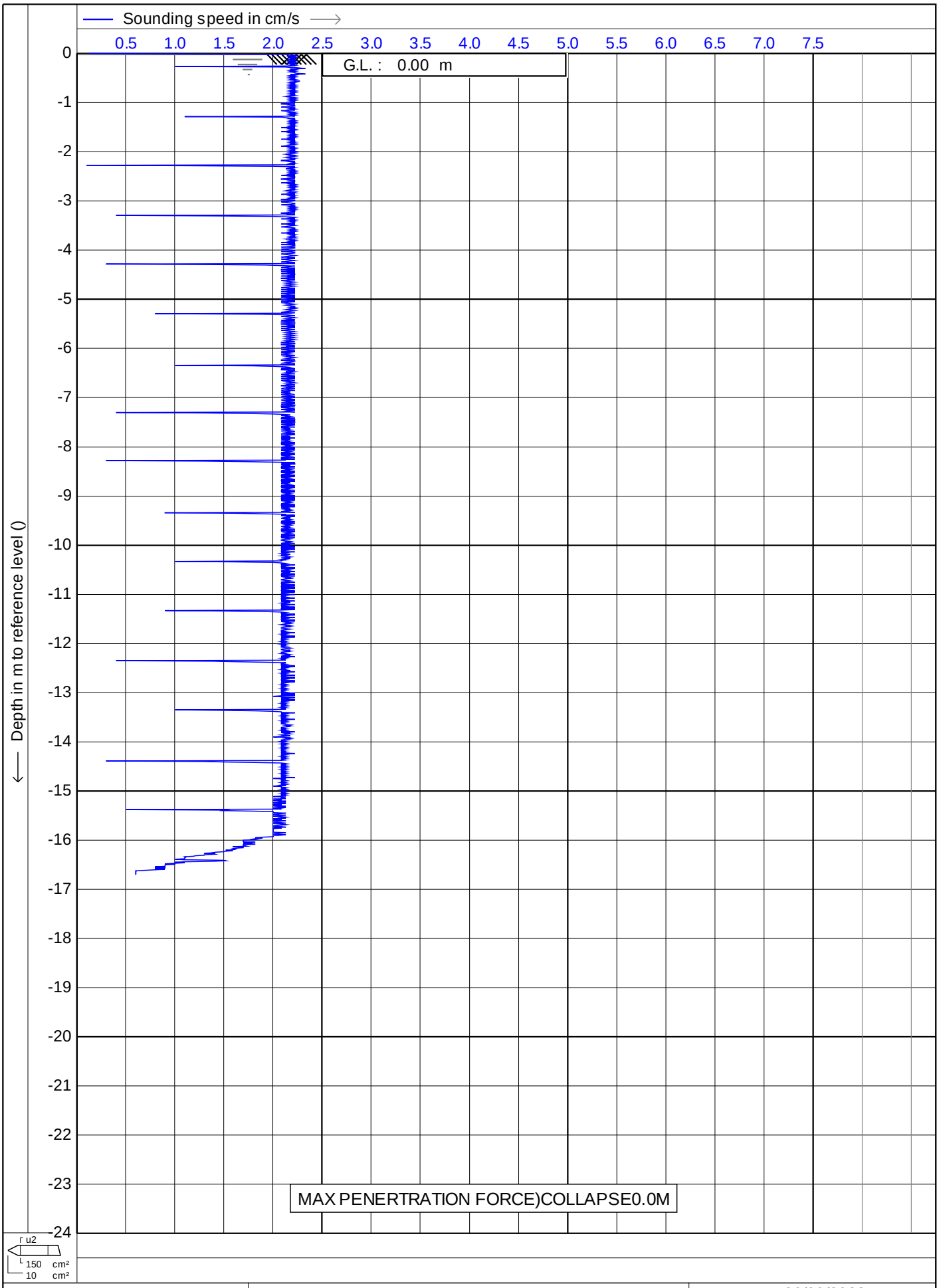
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **12/15**

1.49



Test according NEN 5140 class 1

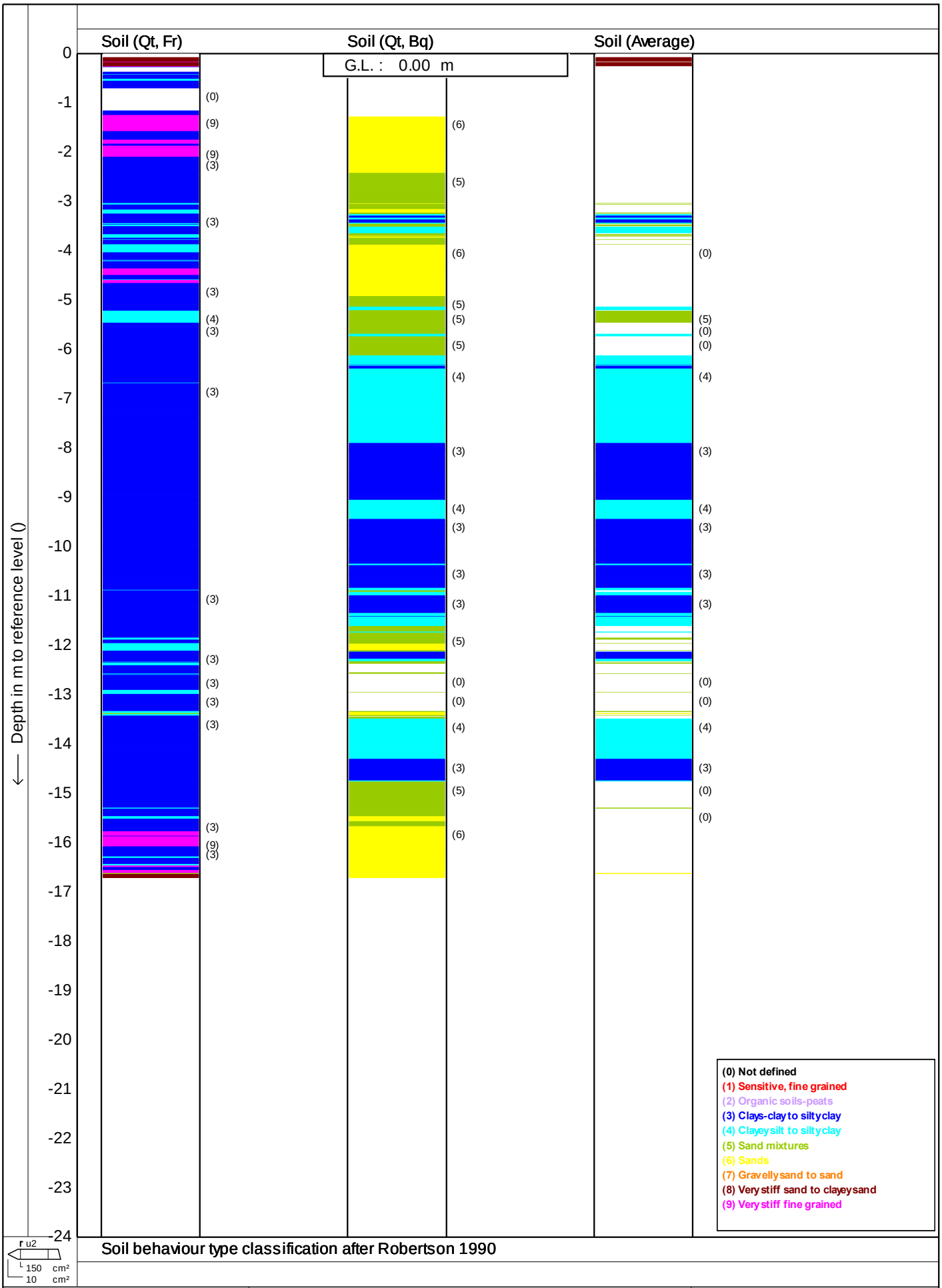
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **13/15**

1.49



Soil behaviour type classification after Robertson 1990

r u2
150 cm²
10 cm²

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

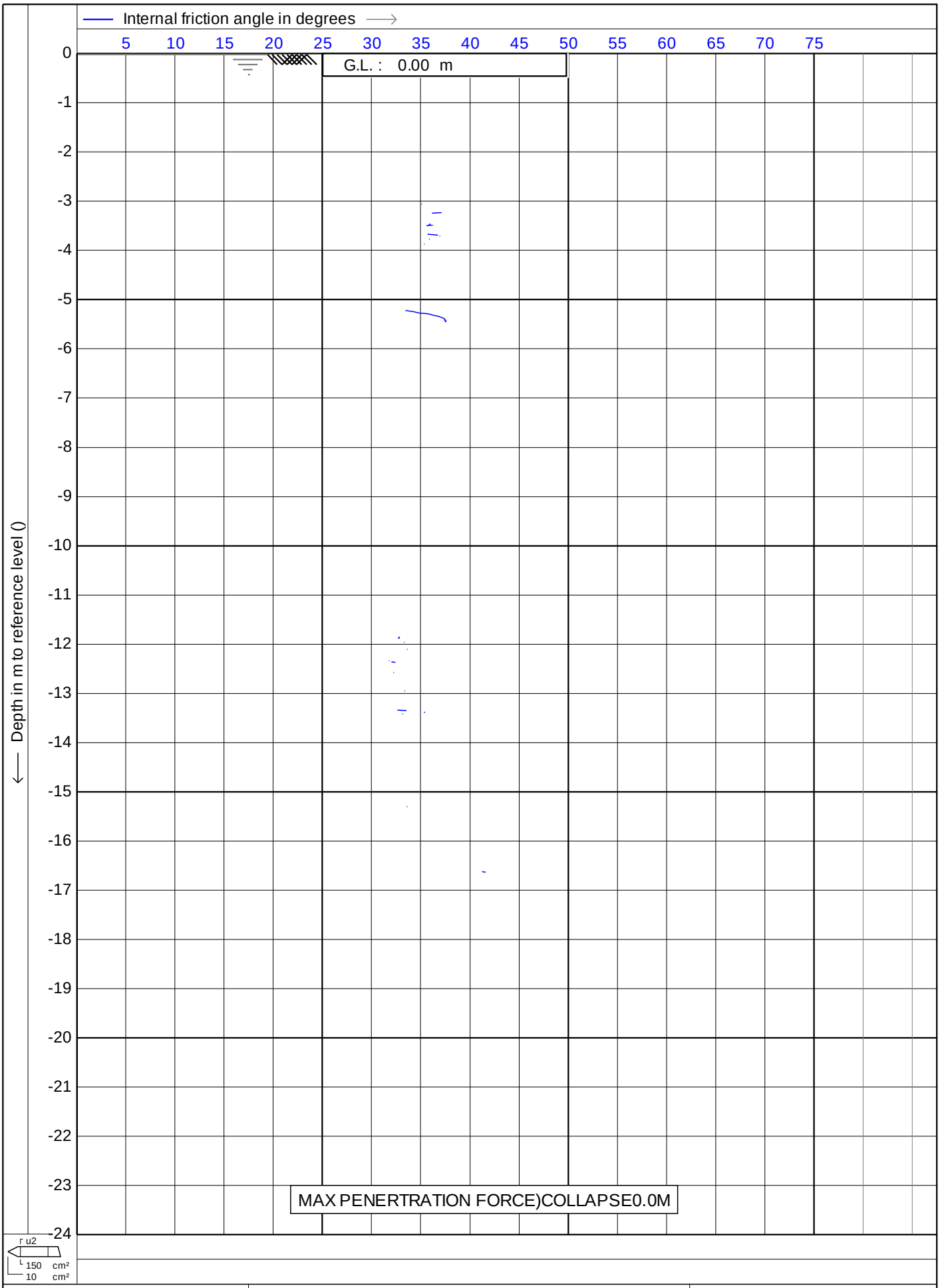
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT10** **14/15**

1.49



Test according NEN 5140 class 1

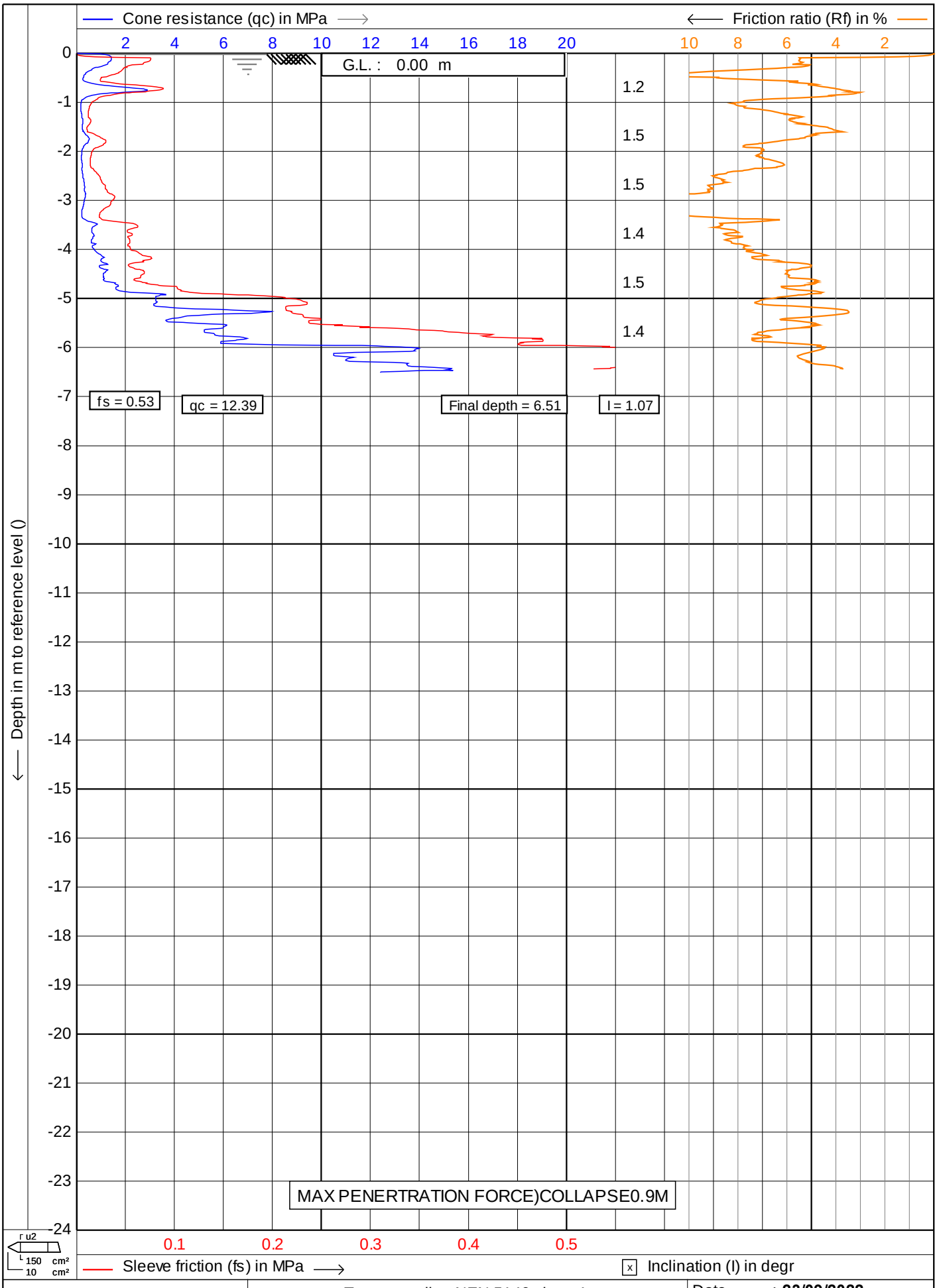
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64099, 36.60137 RD**

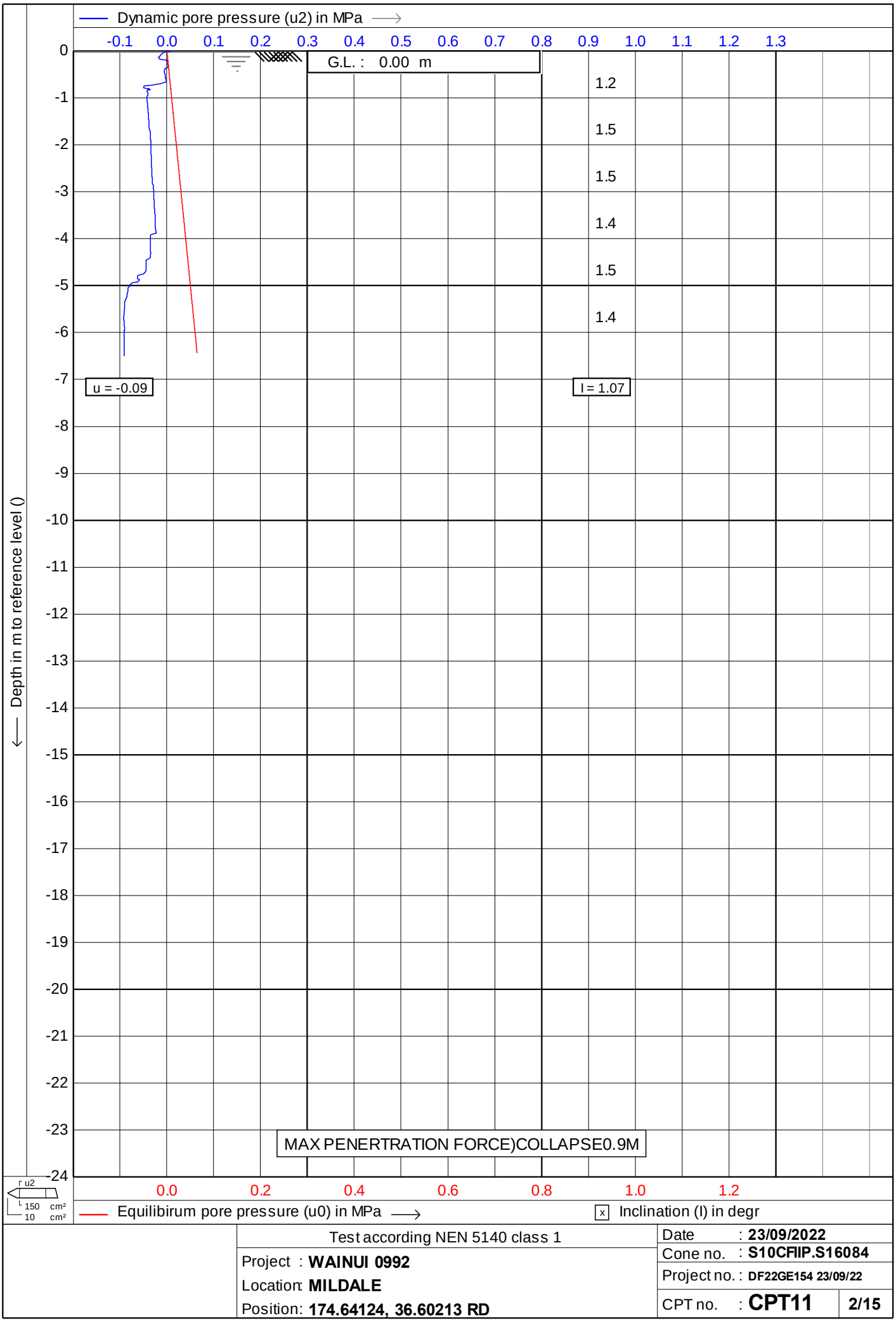
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT10** **15/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.64124, 36.60213 RD**	CPT no.	: **CPT11** 1/15

1.49



Test according NEN 5140 class 1

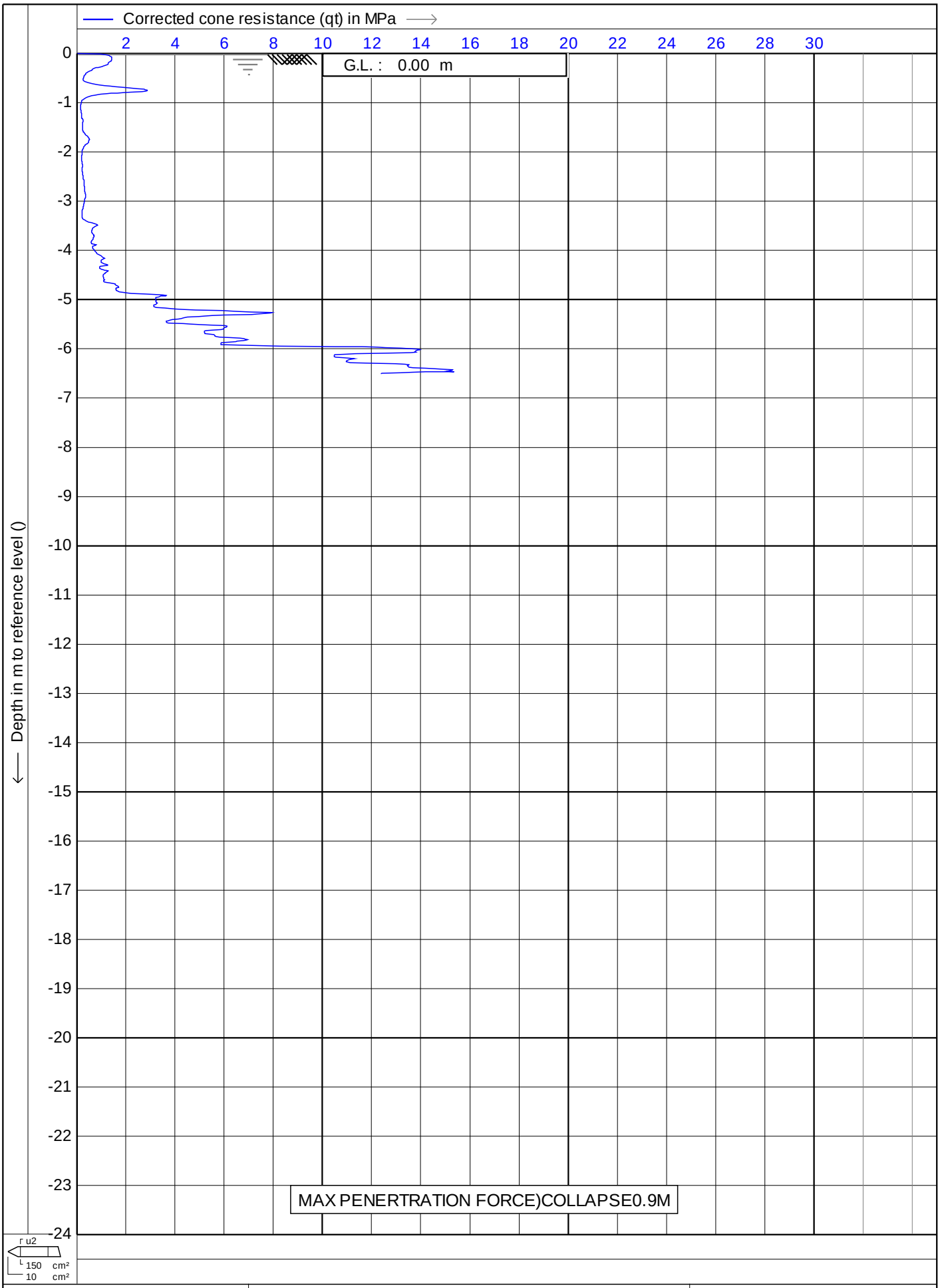
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

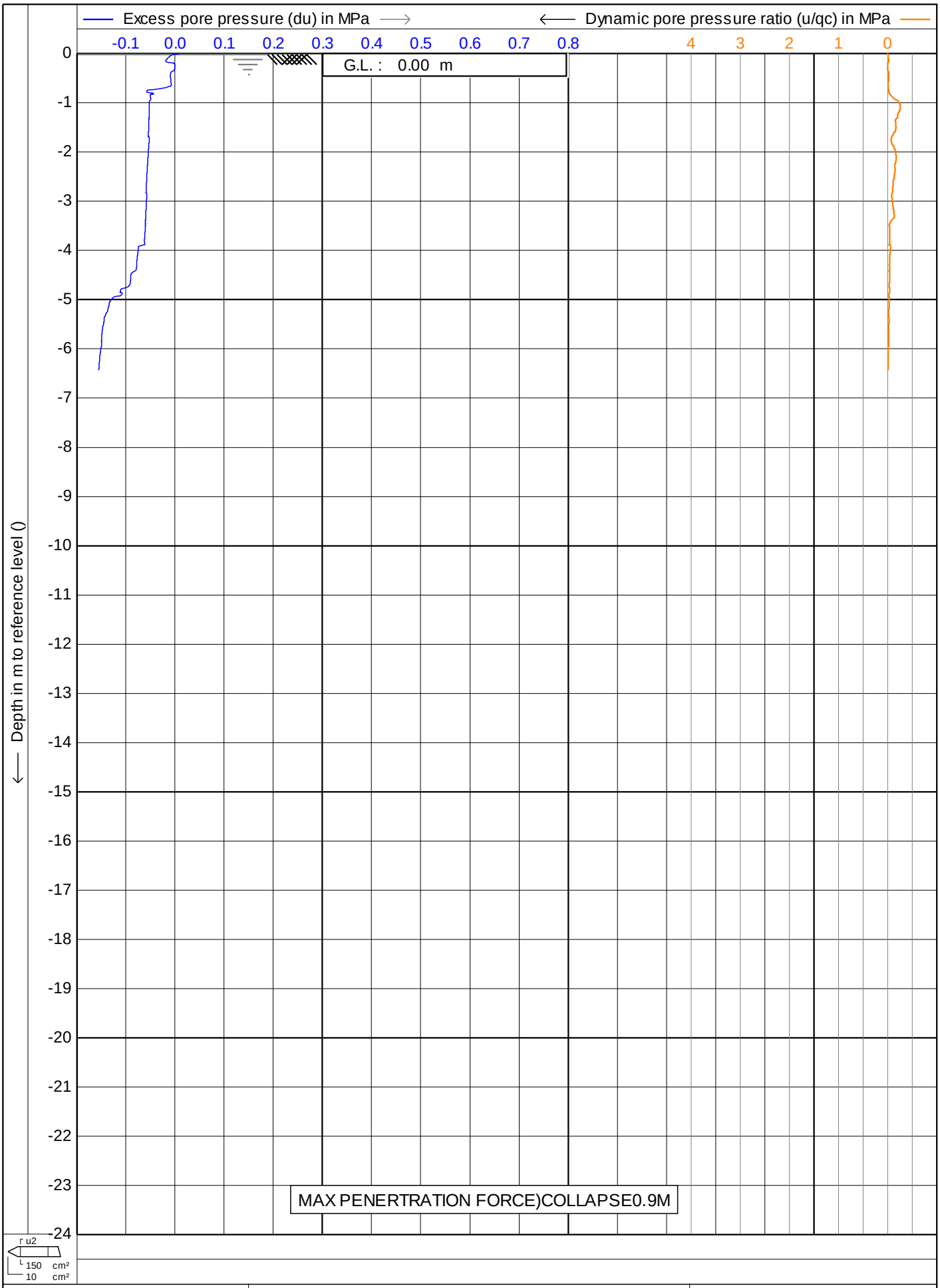
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT11** **3/15**

1.49



Test according NEN 5140 class 1

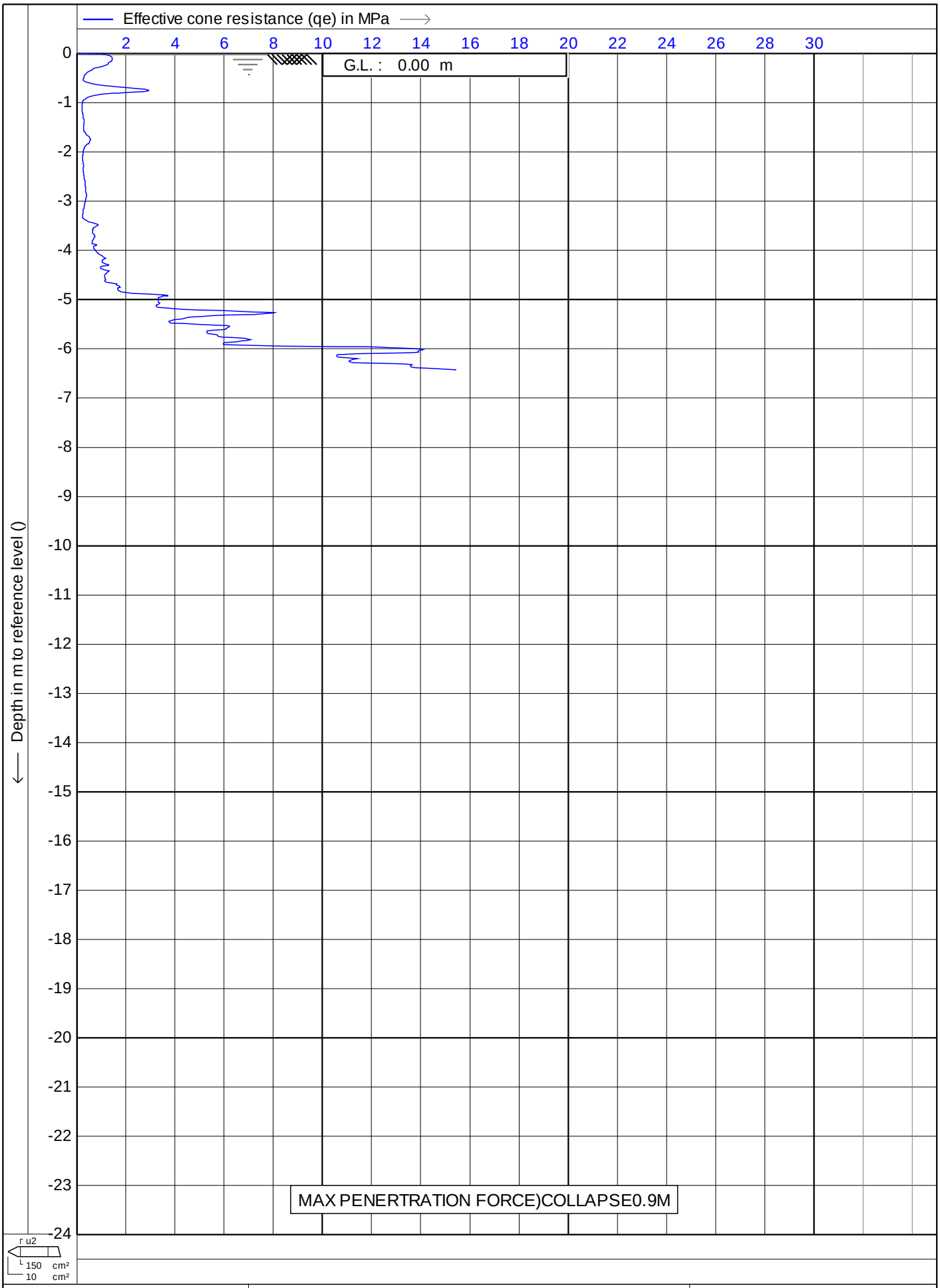
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **4/15**

1.49



Test according NEN 5140 class 1

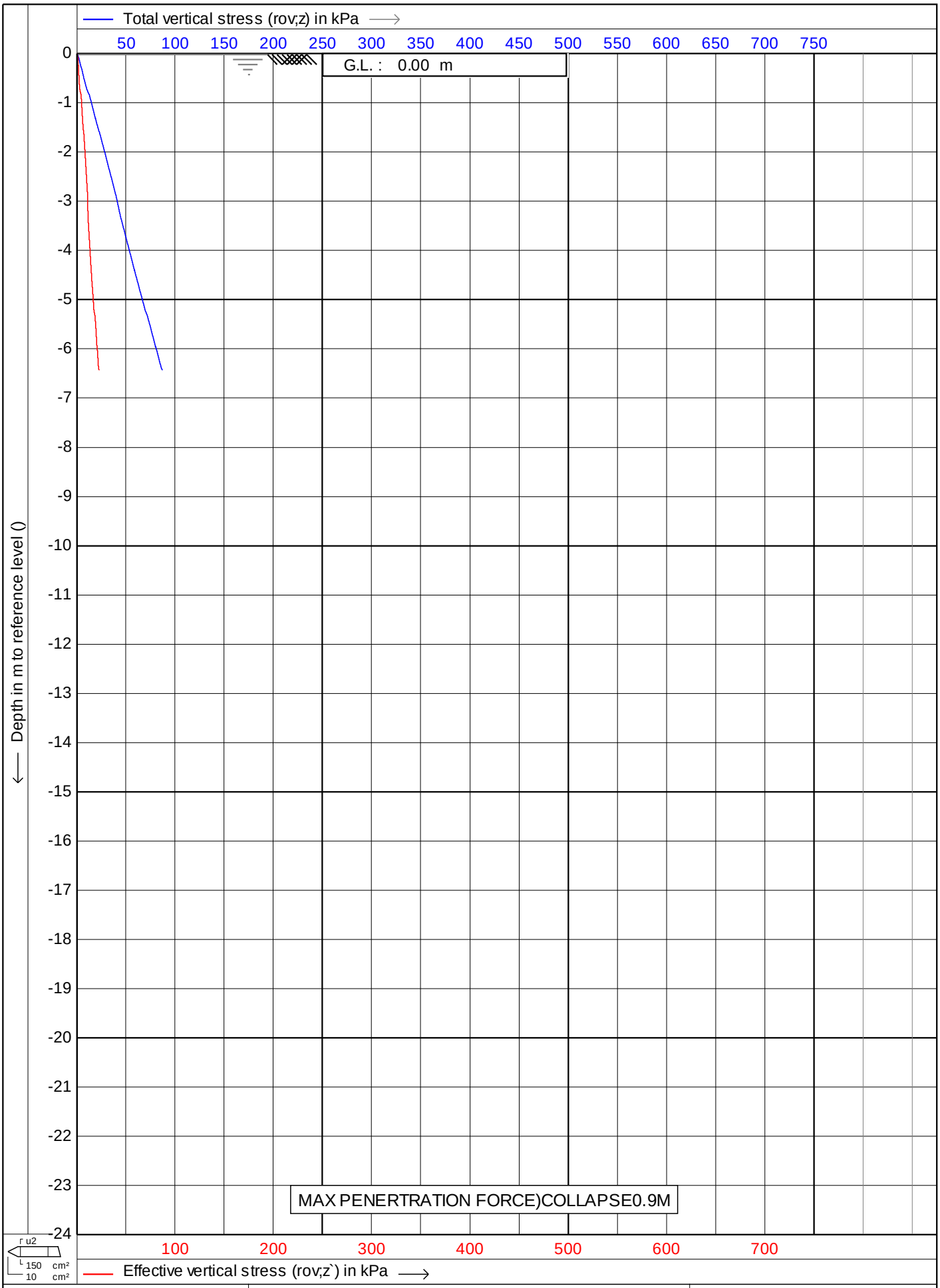
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **5/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **6/15**

1.49



Test according NEN 5140 class 1

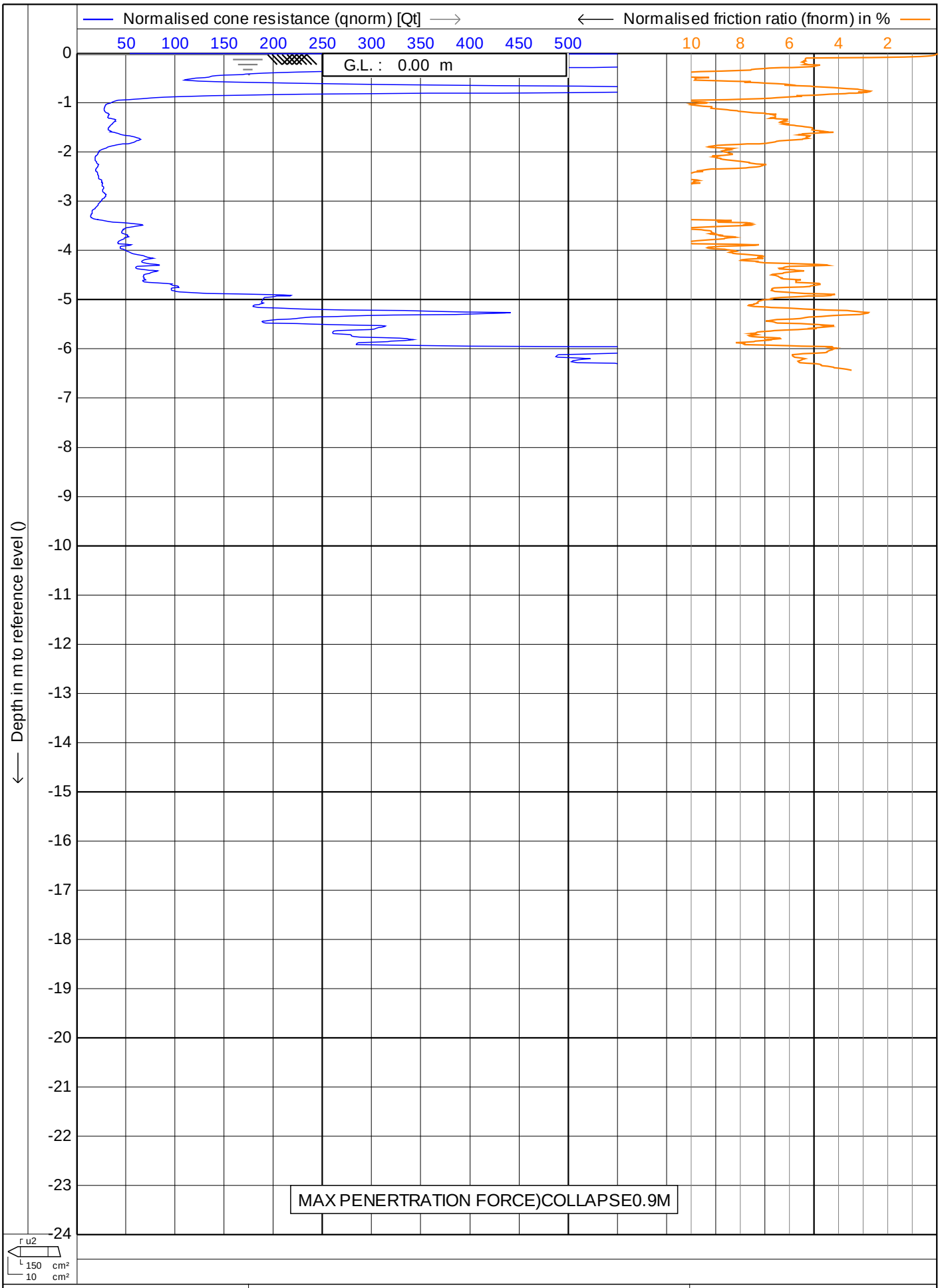
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

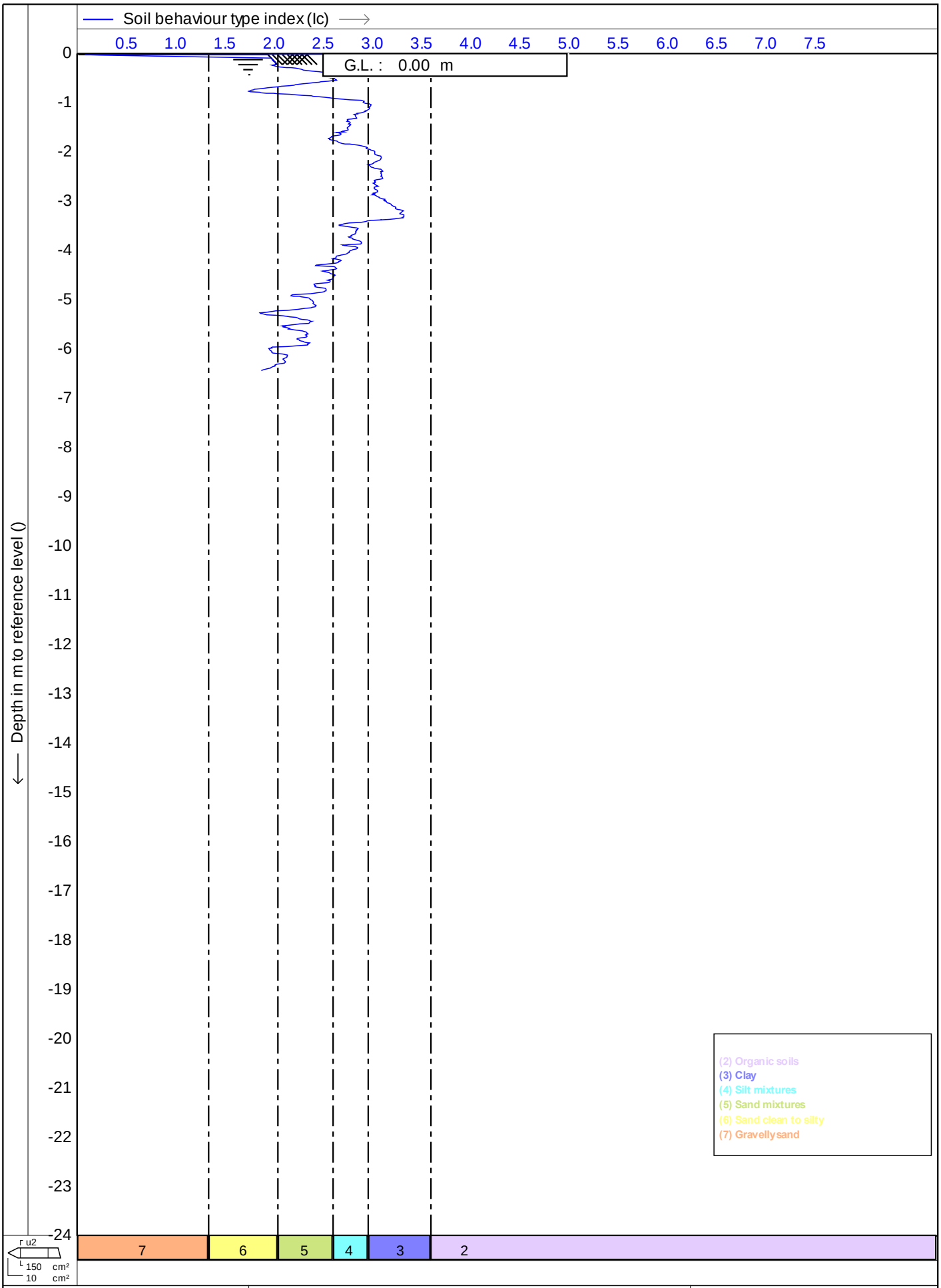
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **7/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.64124, 36.60213 RD**	CPT no. : **CPT11** 8/15

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

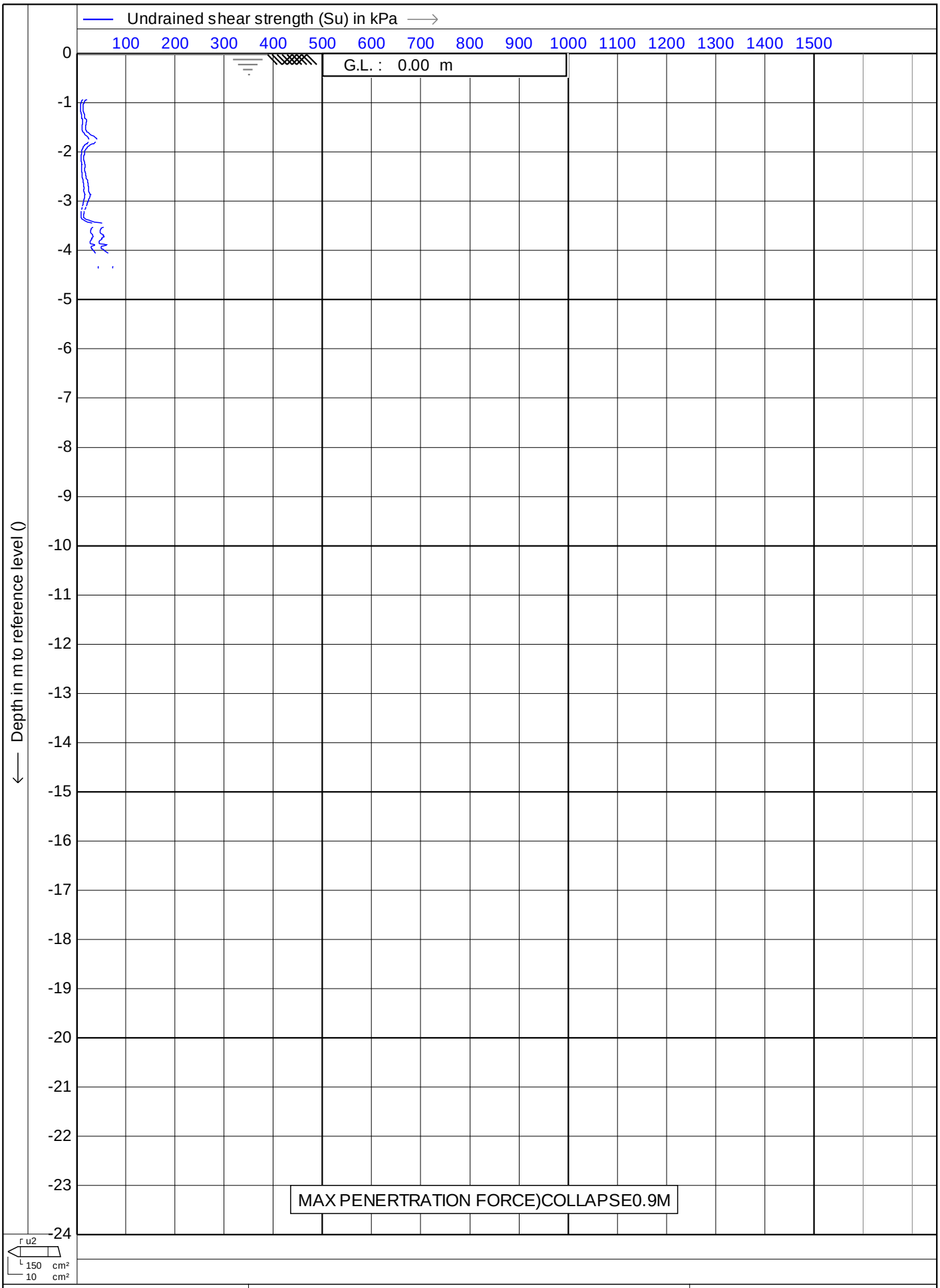
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT11** **9/15**

1.49



Test according NEN 5140 class 1

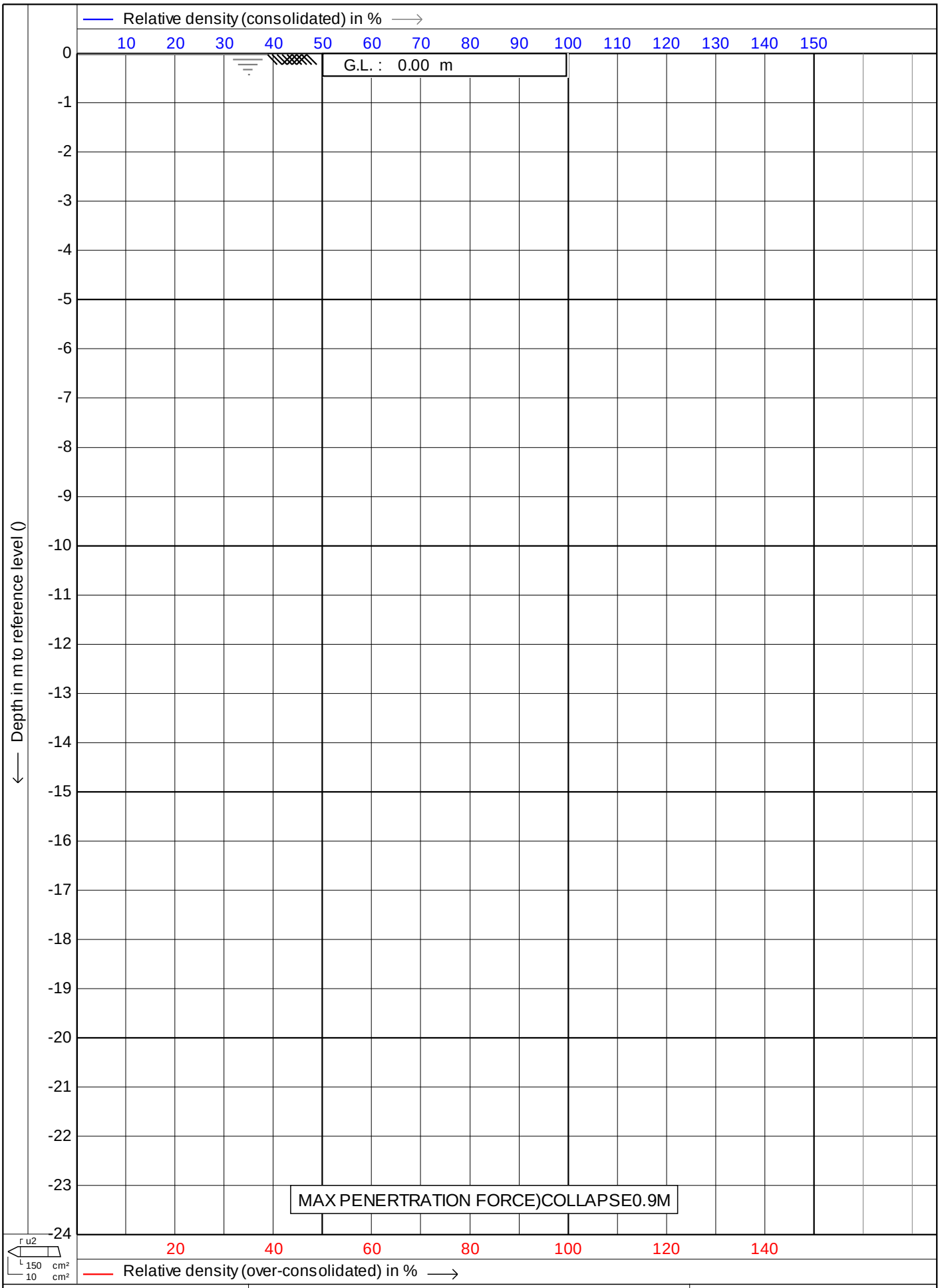
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **10/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

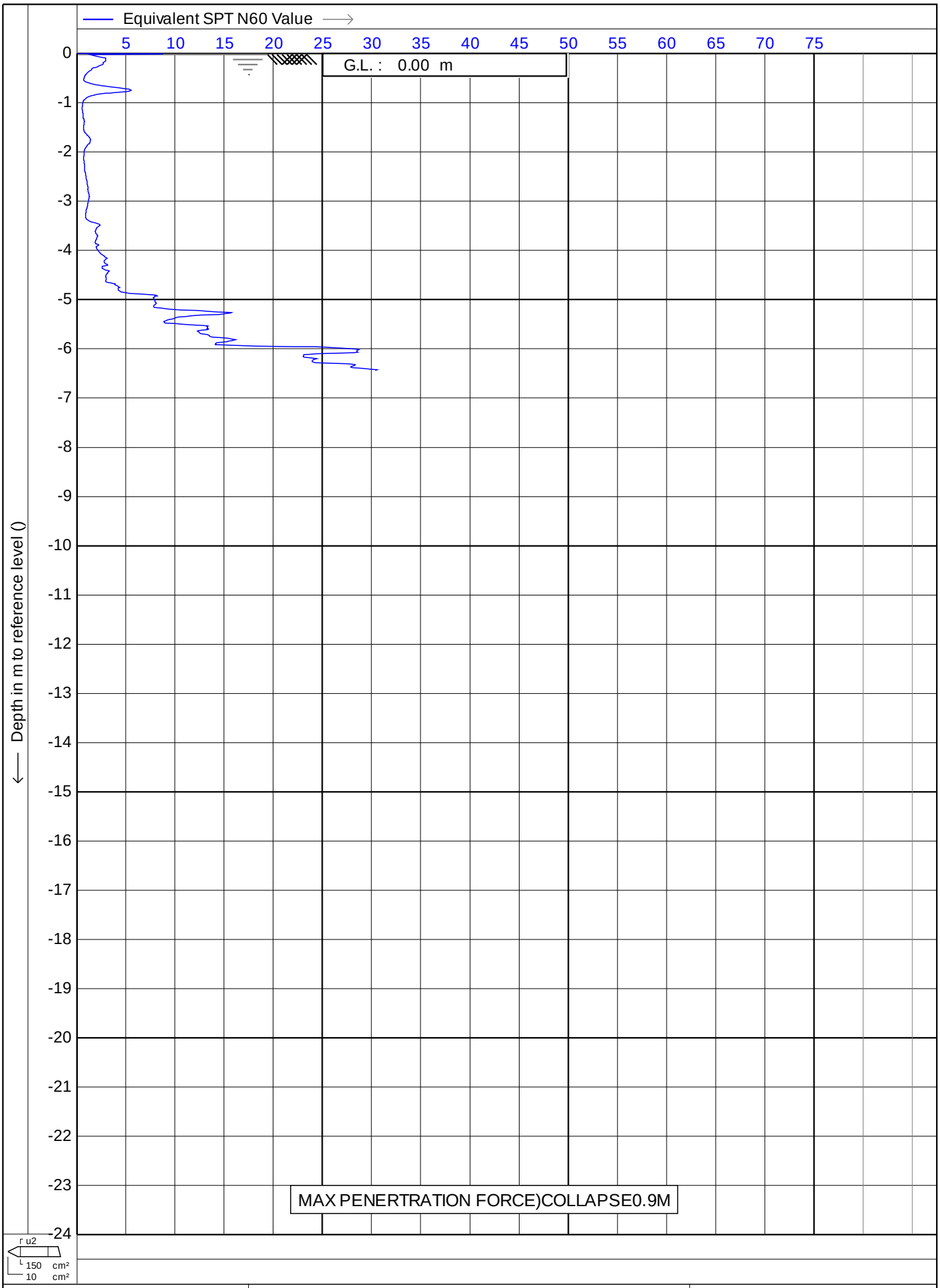
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT11** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

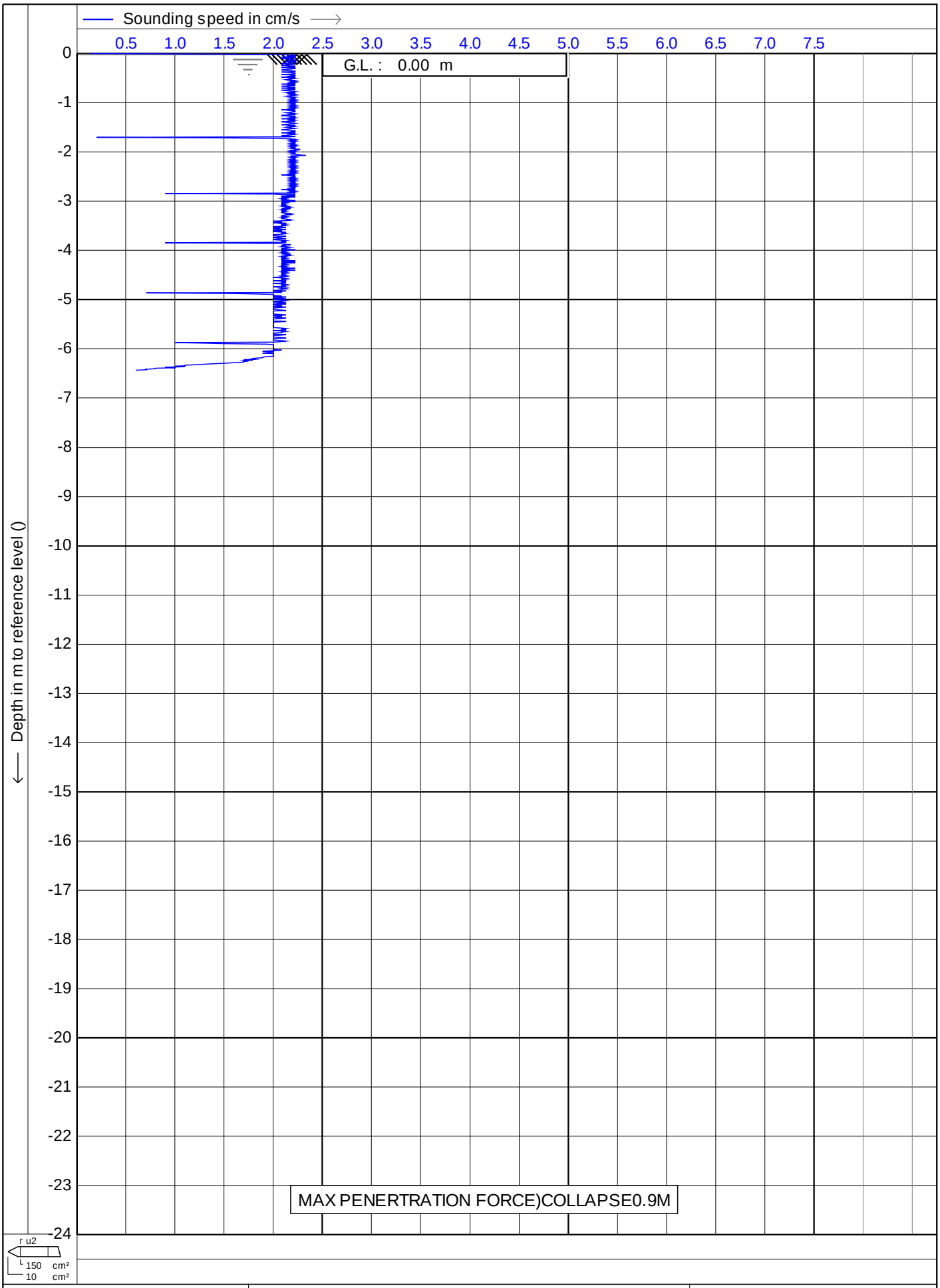
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT11** **12/15**

1.49



Test according NEN 5140 class 1

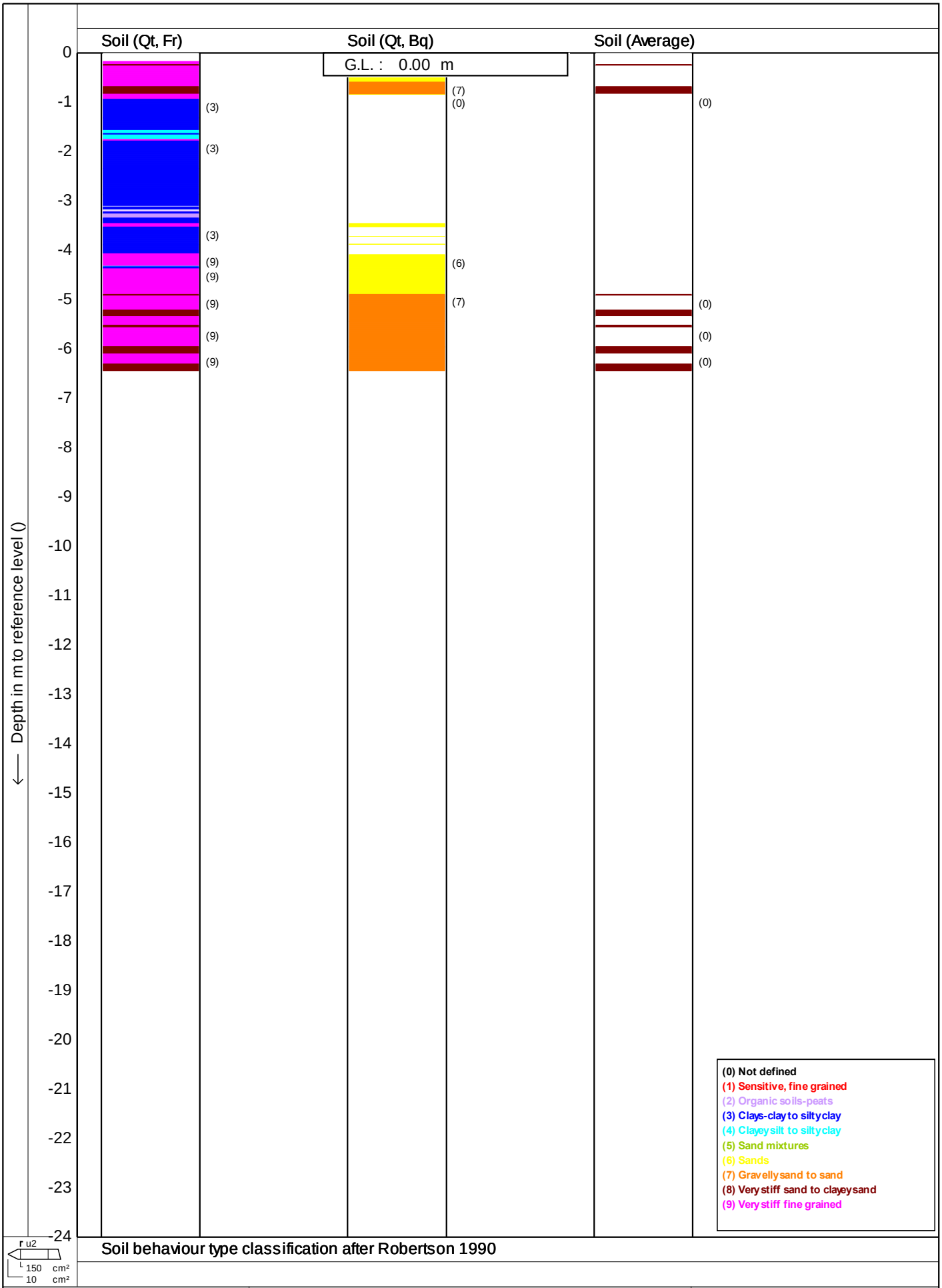
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

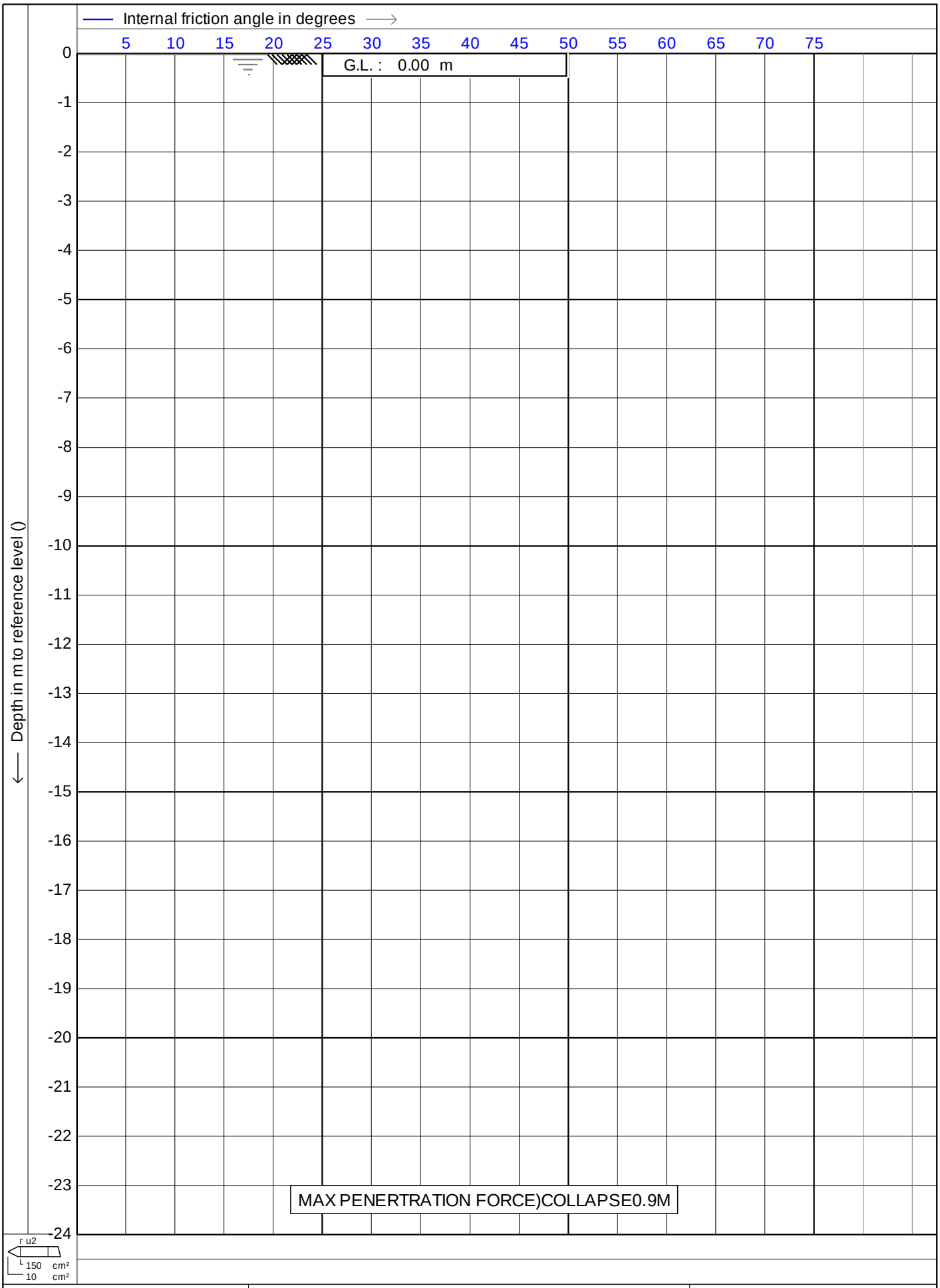
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT11** **14/15**

1.49



Test according NEN 5140 class 1

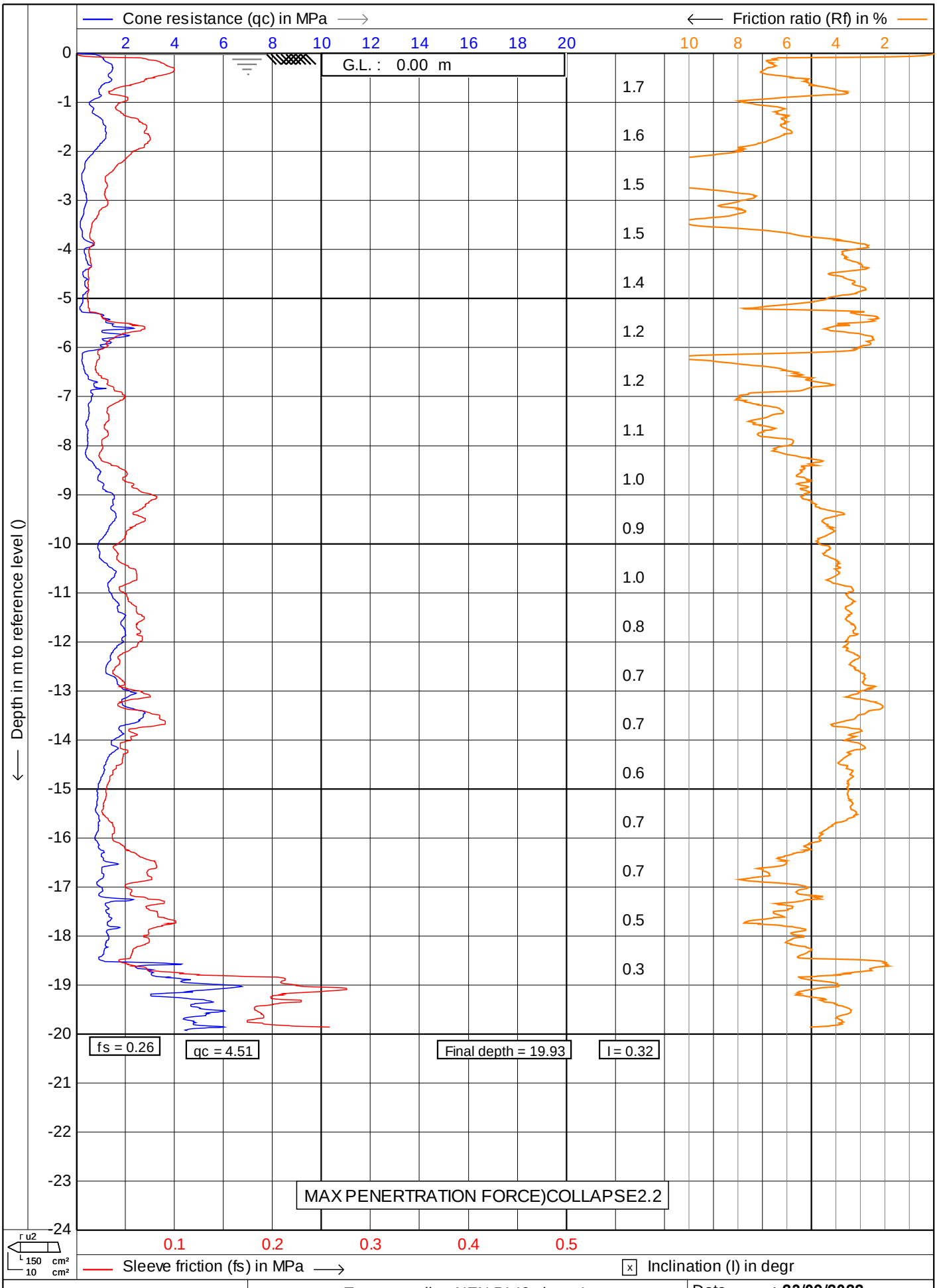
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.64124, 36.60213 RD**

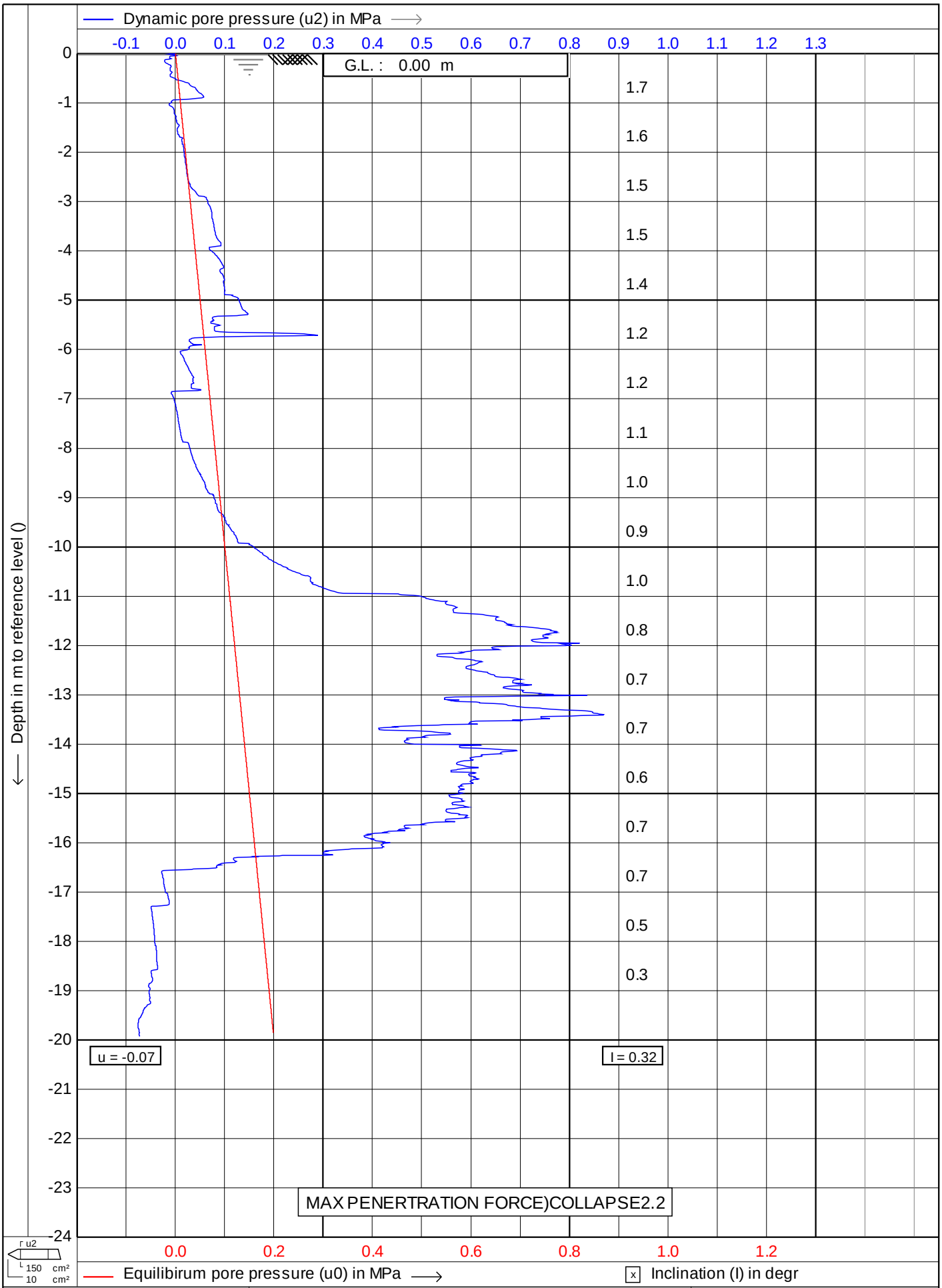
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT11** **15/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.63872, 36.60135 RD**	CPT no. : **CPT12** 1/15

1.49



Test according NEN 5140 class 1

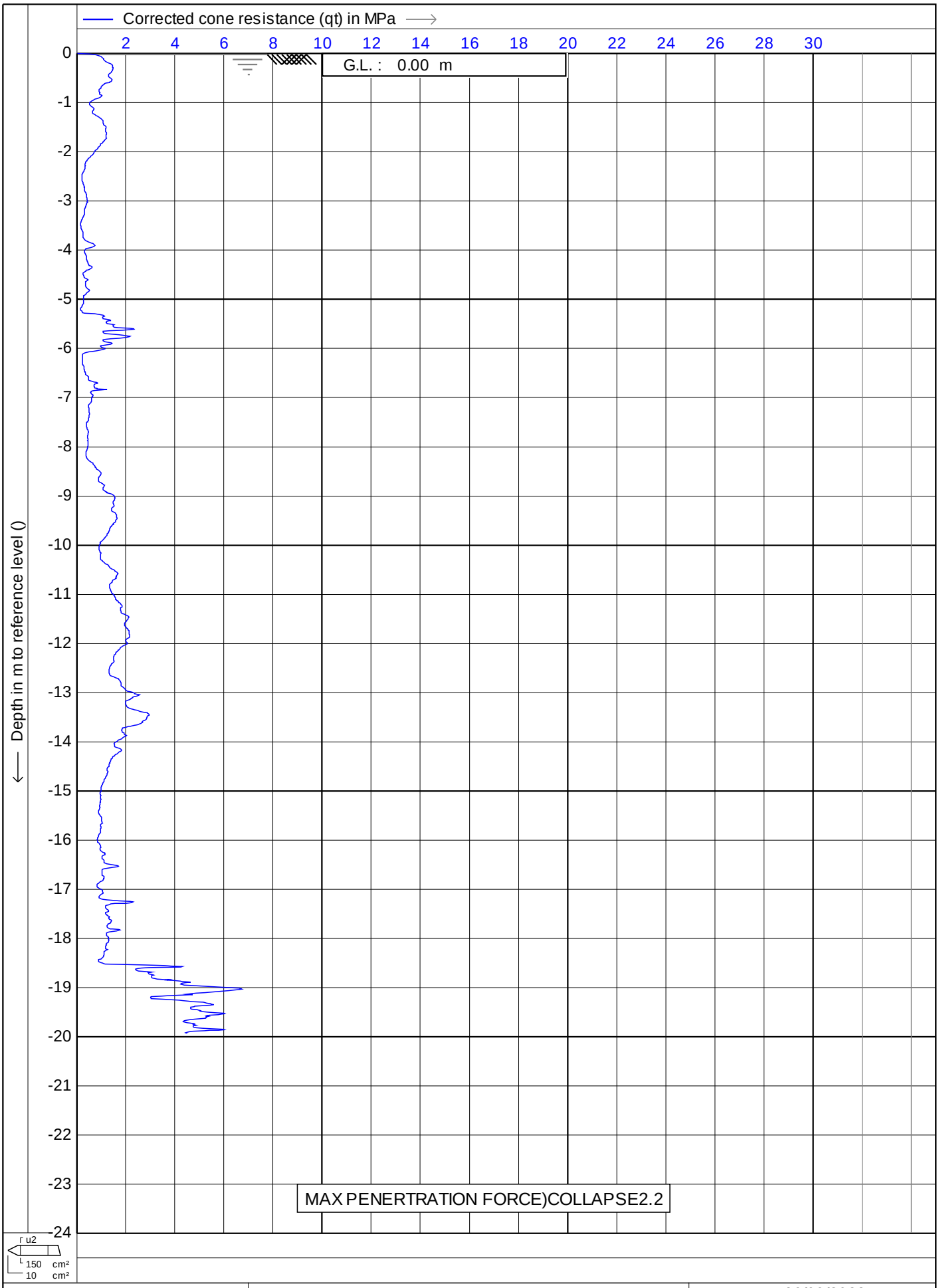
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

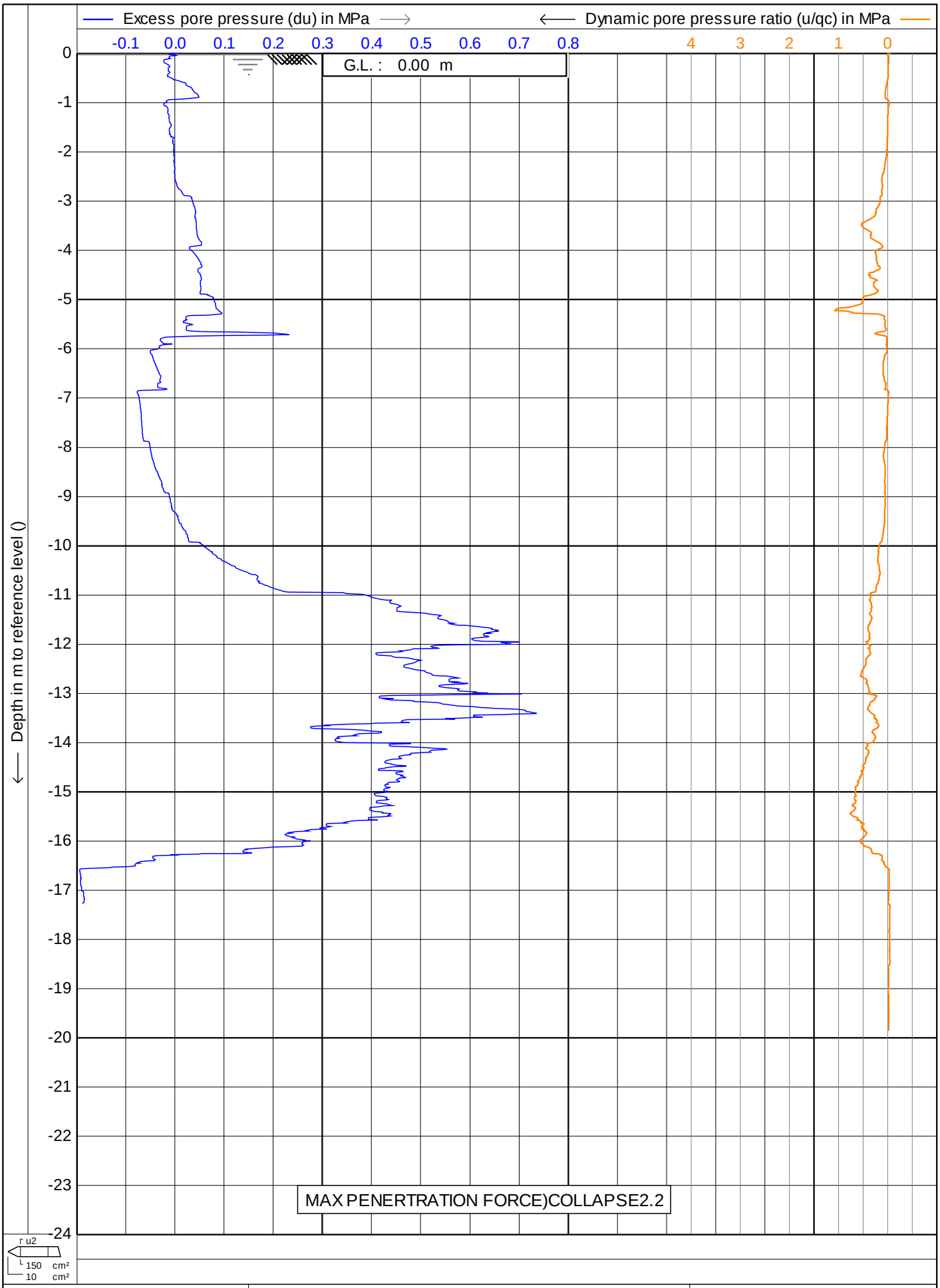
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **2/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.63872, 36.60135 RD**	CPT no. : **CPT12** **3/15**

1.49



Test according NEN 5140 class 1

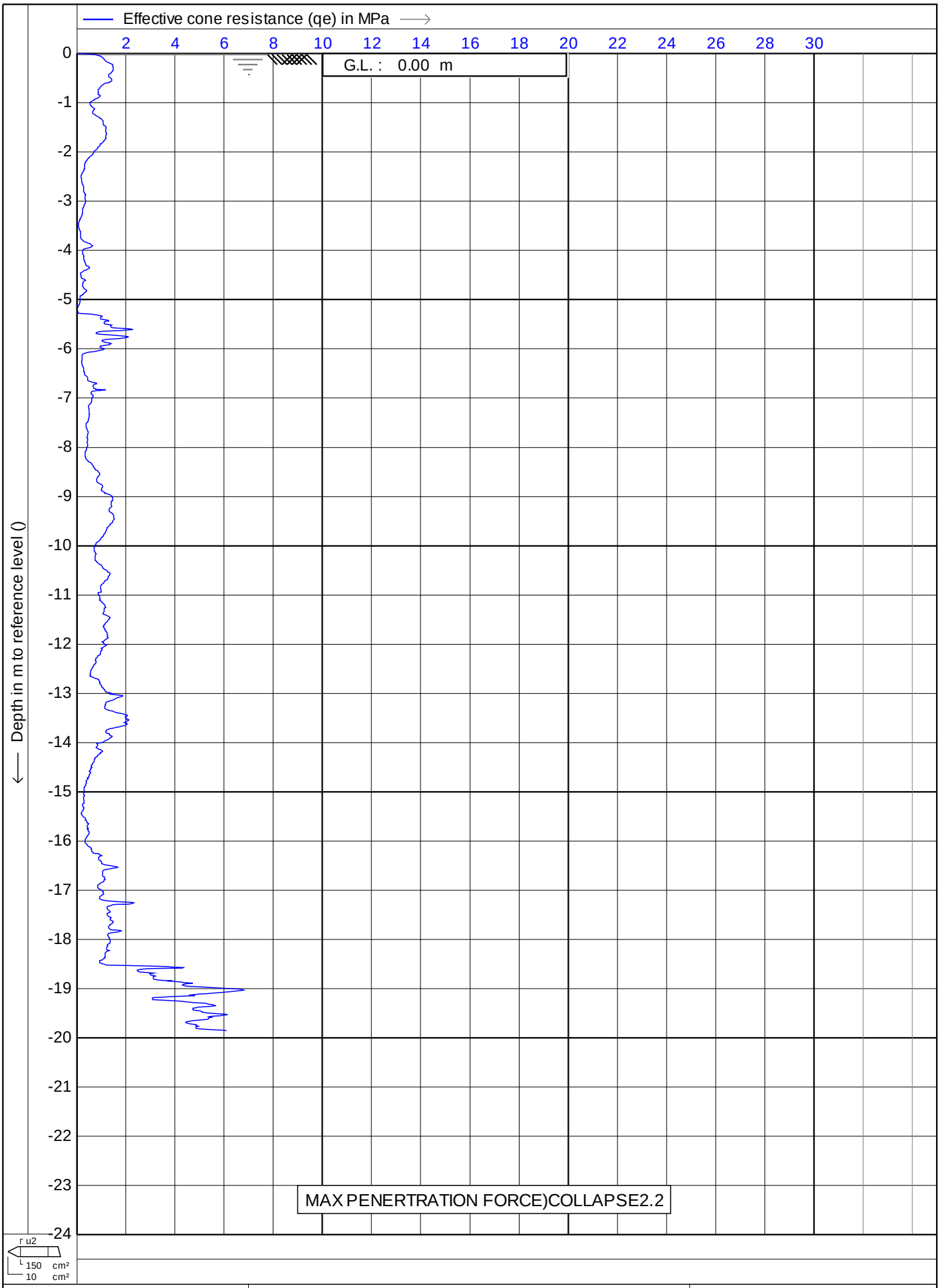
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **4/15**

1.49



Test according NEN 5140 class 1

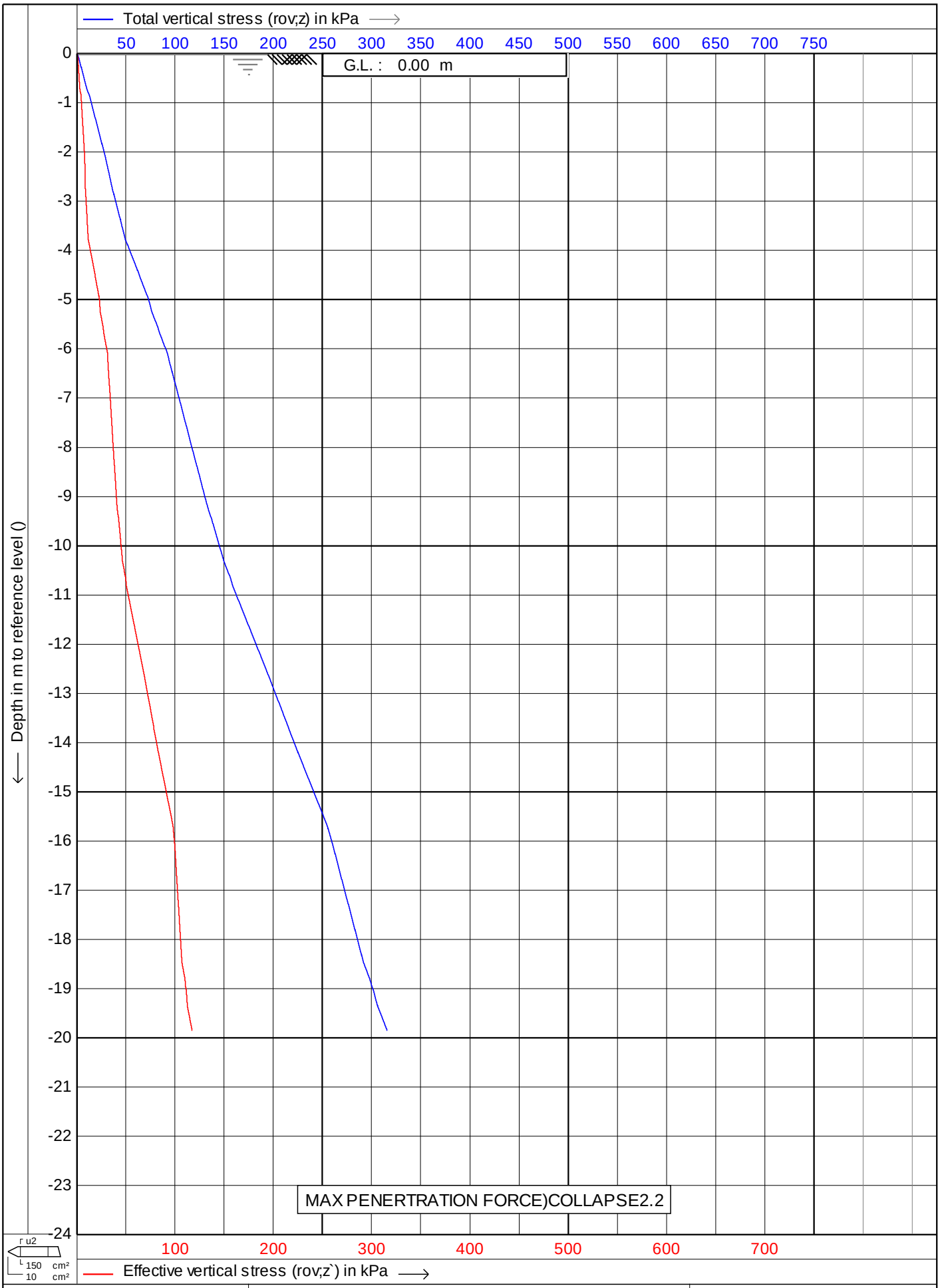
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **5/15**

1.49



Test according NEN 5140 class 1

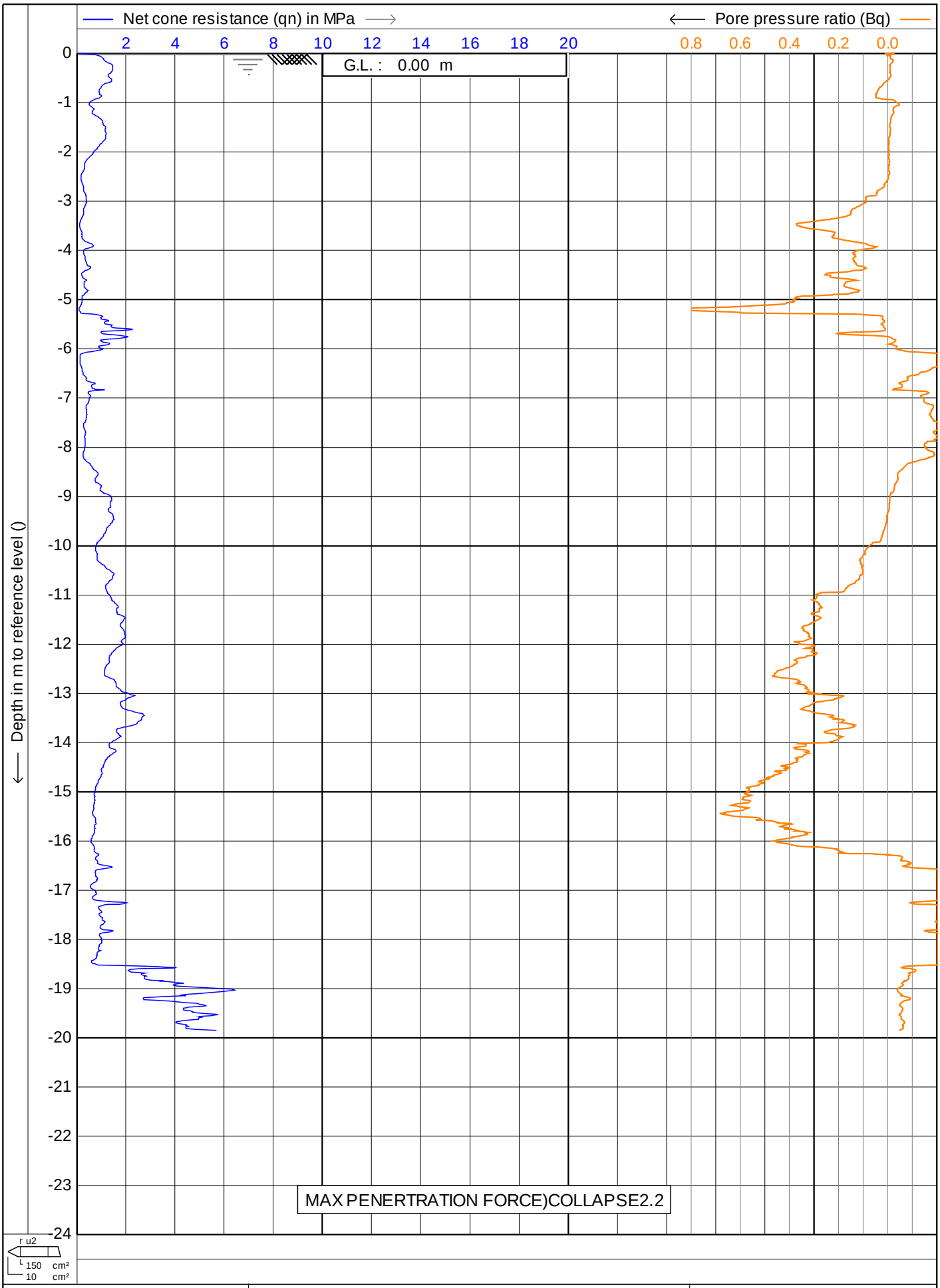
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **6/15**

1.49



Test according NEN 5140 class 1

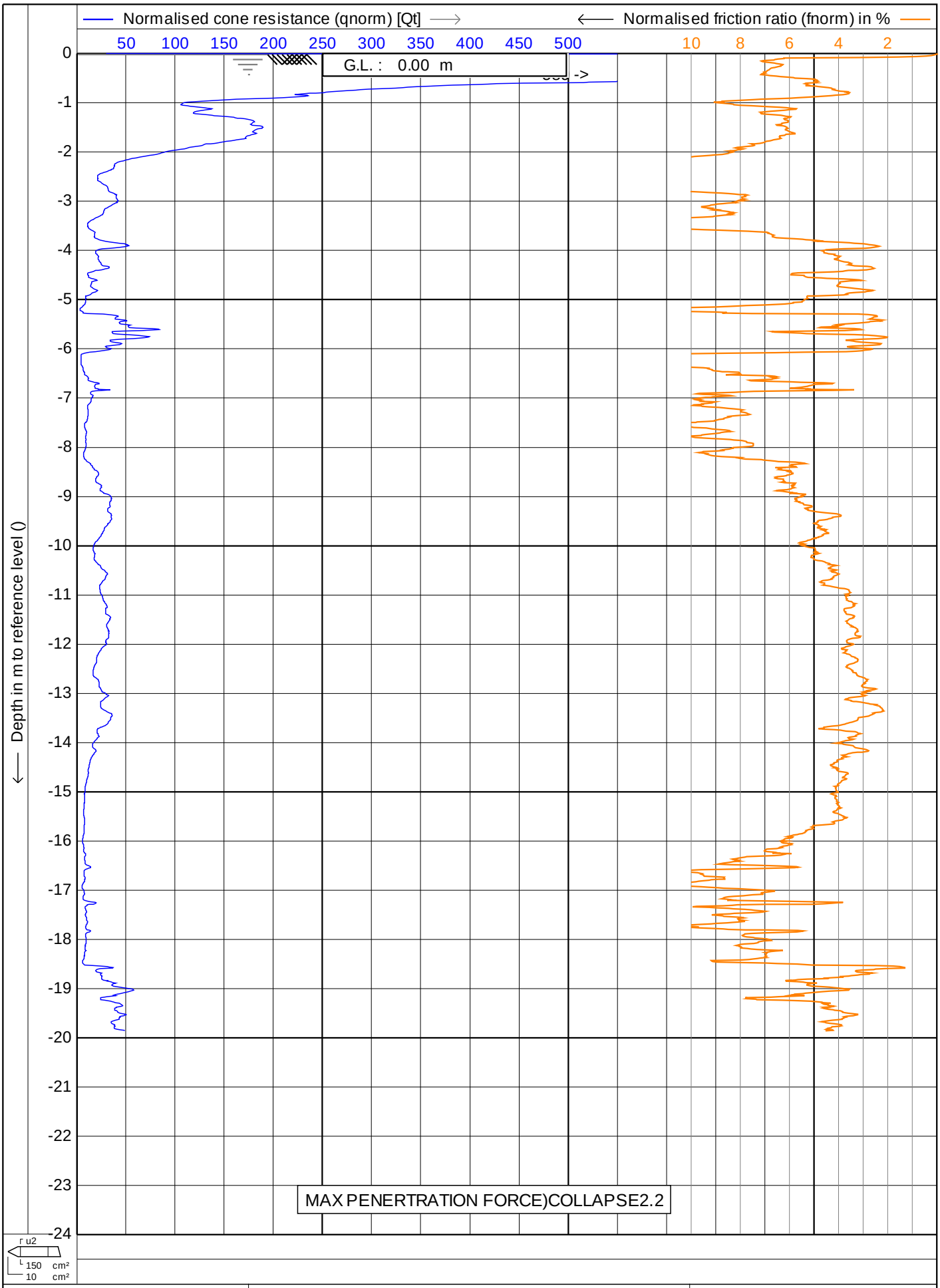
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **7/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

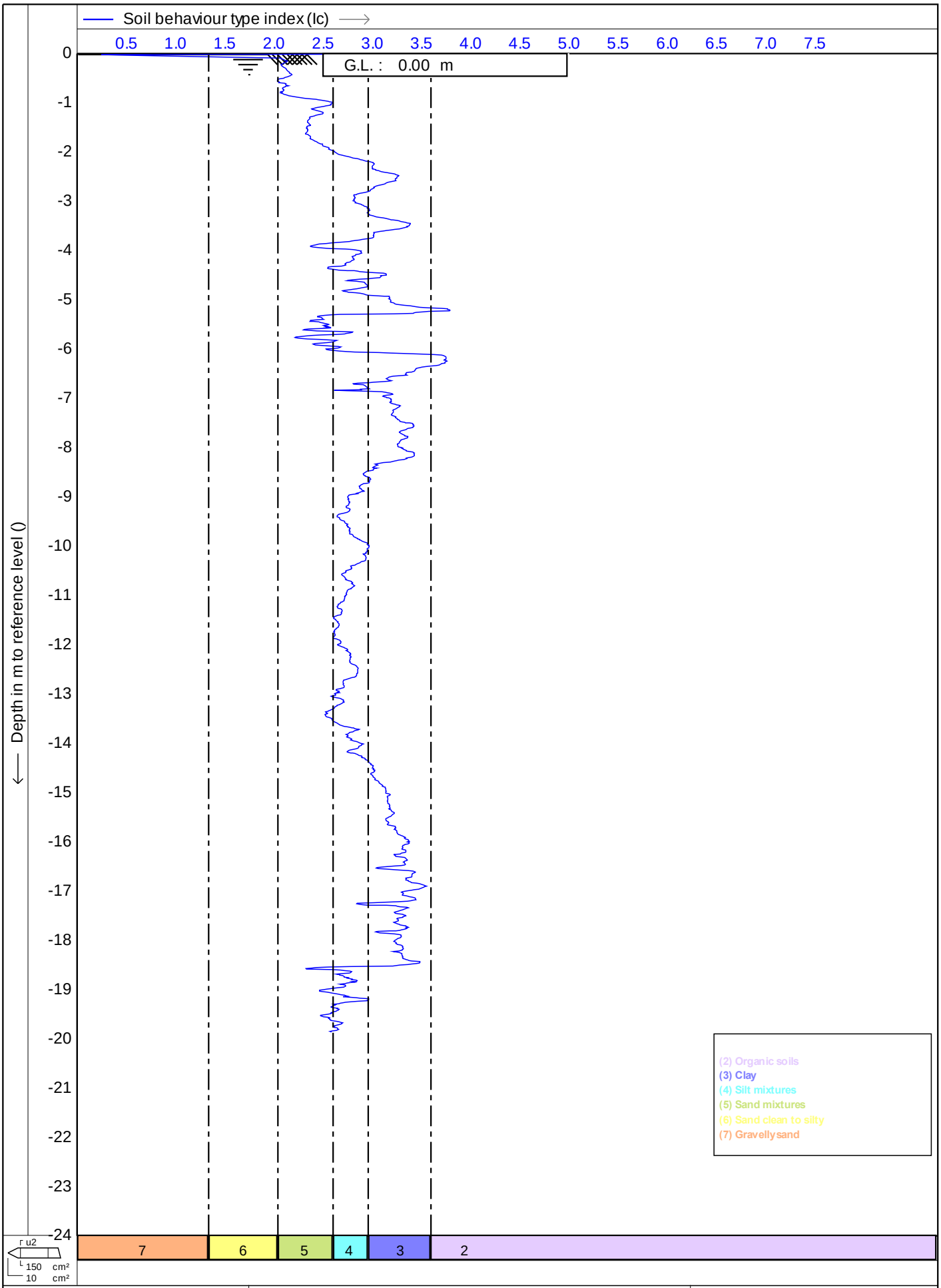
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT12** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

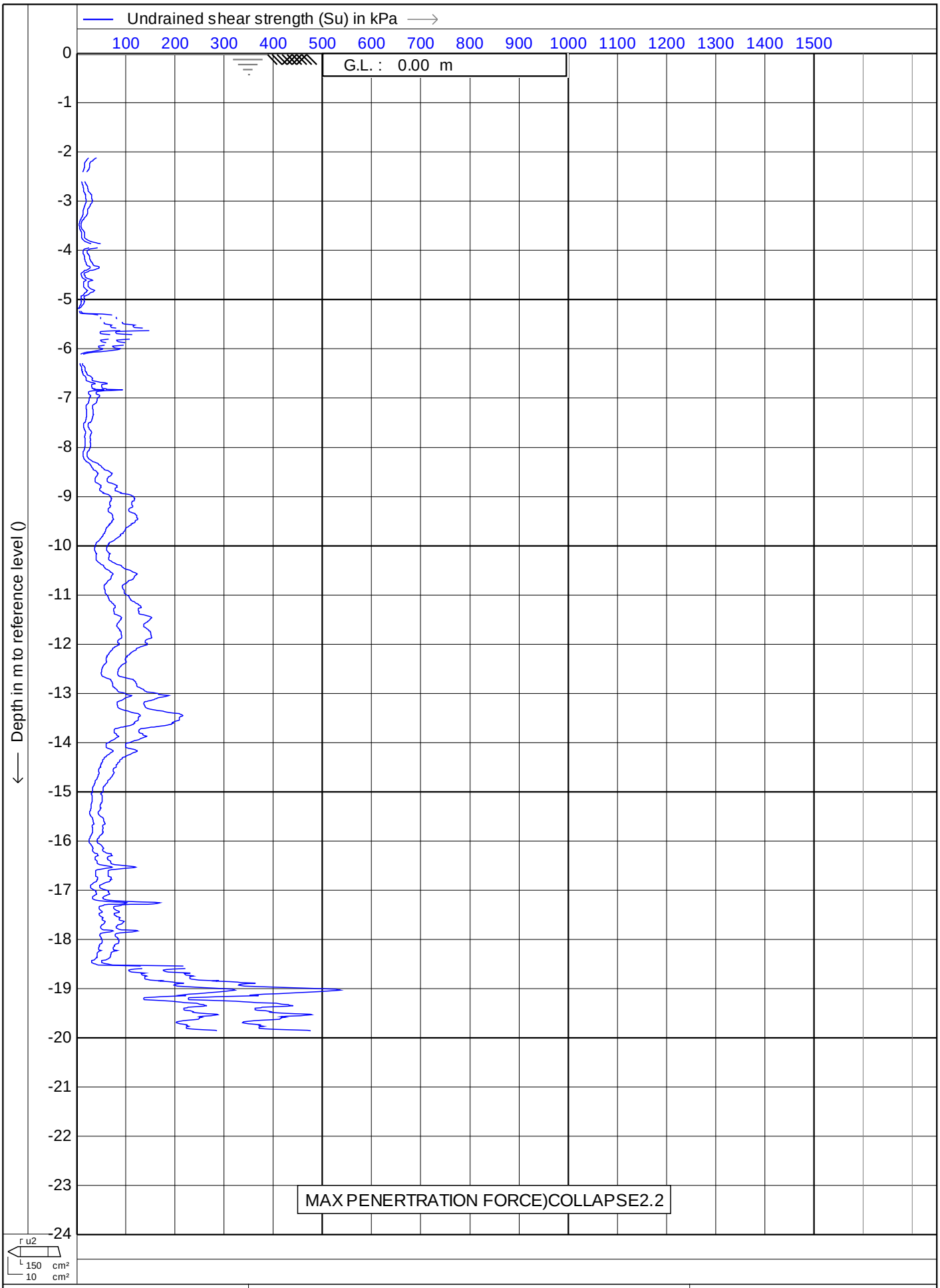
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT12** **9/15**

1.49



Test according NEN 5140 class 1

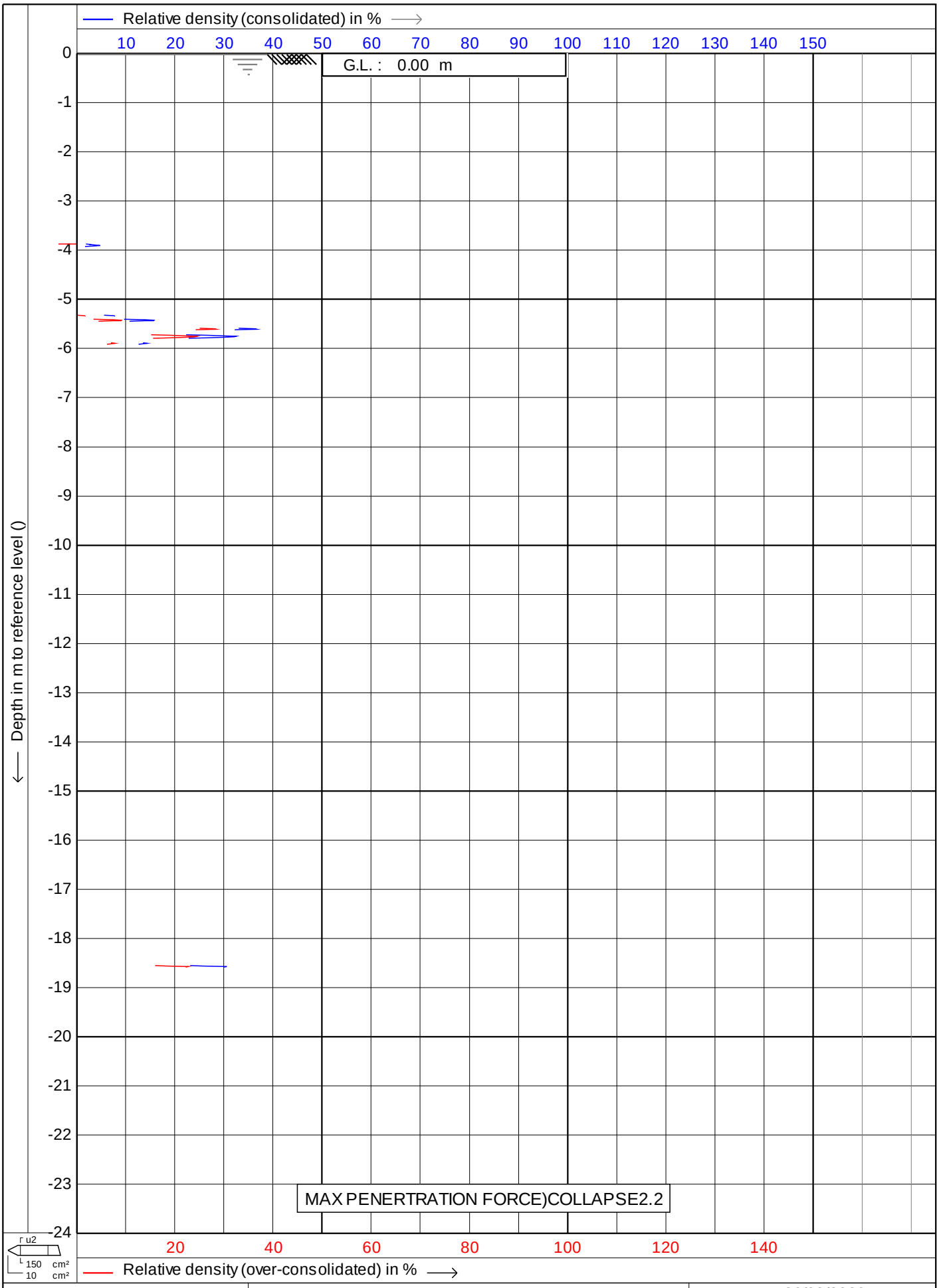
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **10/15**

1.49



Test according NEN 5140 class 1

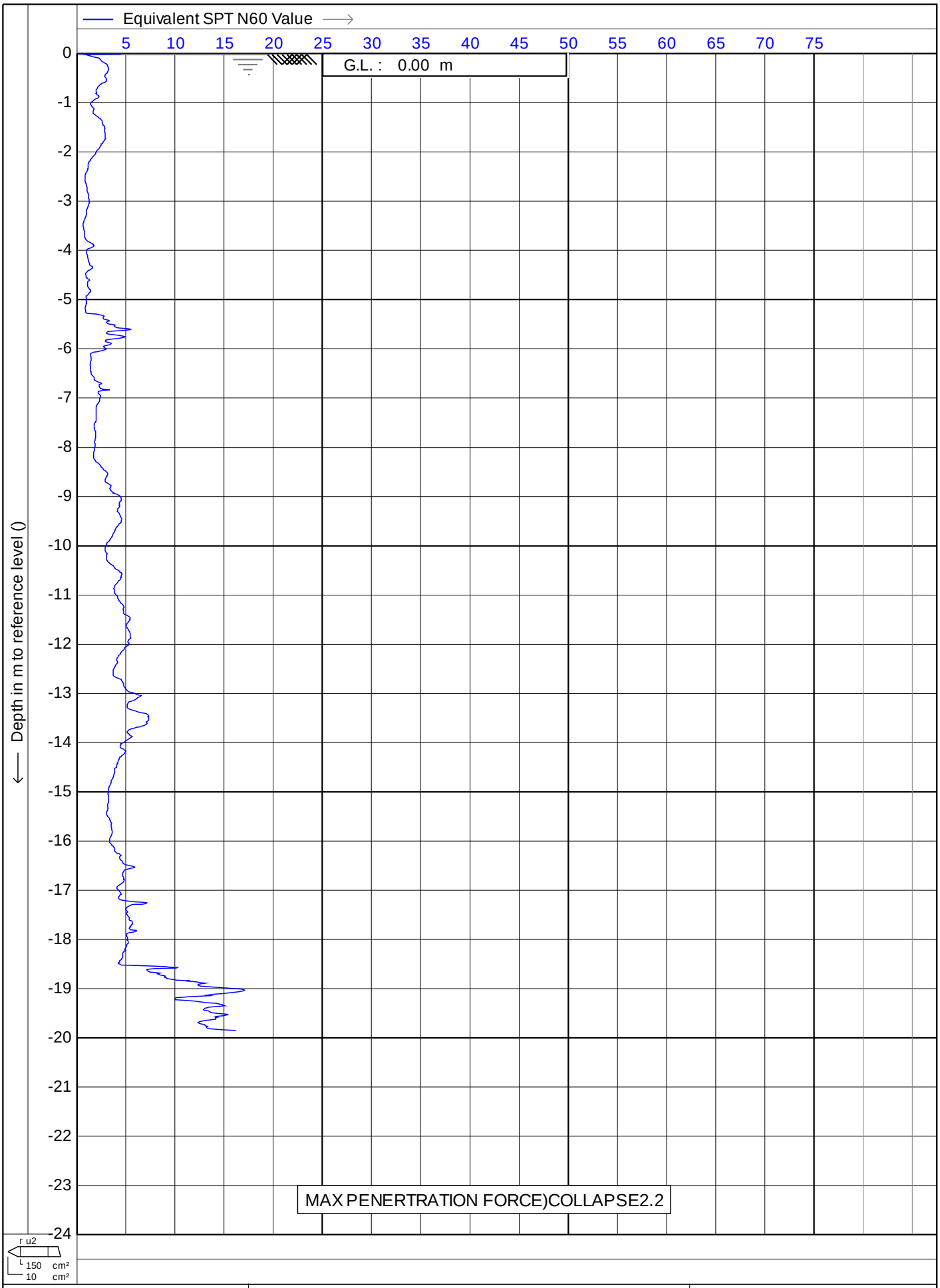
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

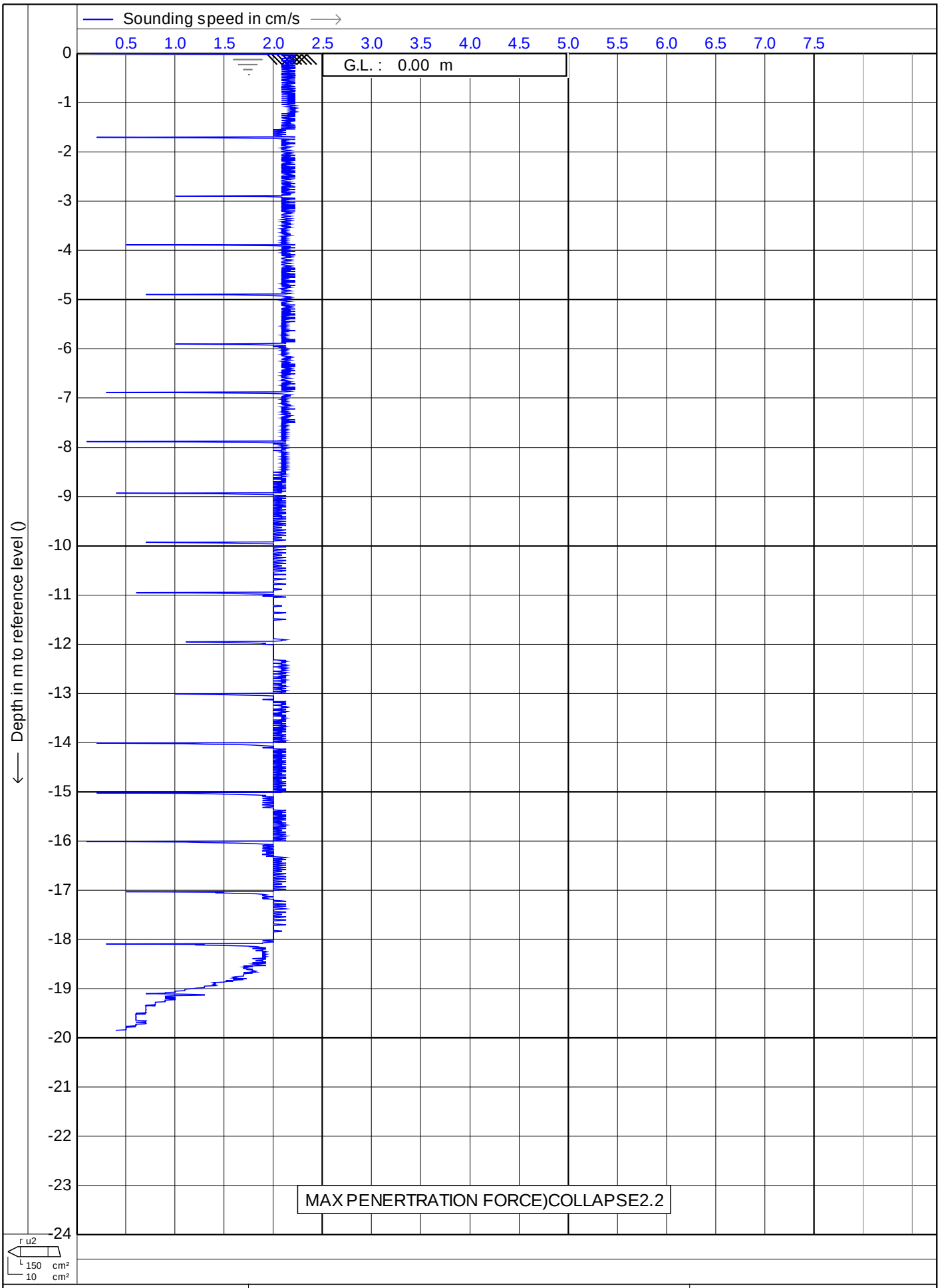
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT12** **12/15**

1.49



Test according NEN 5140 class 1

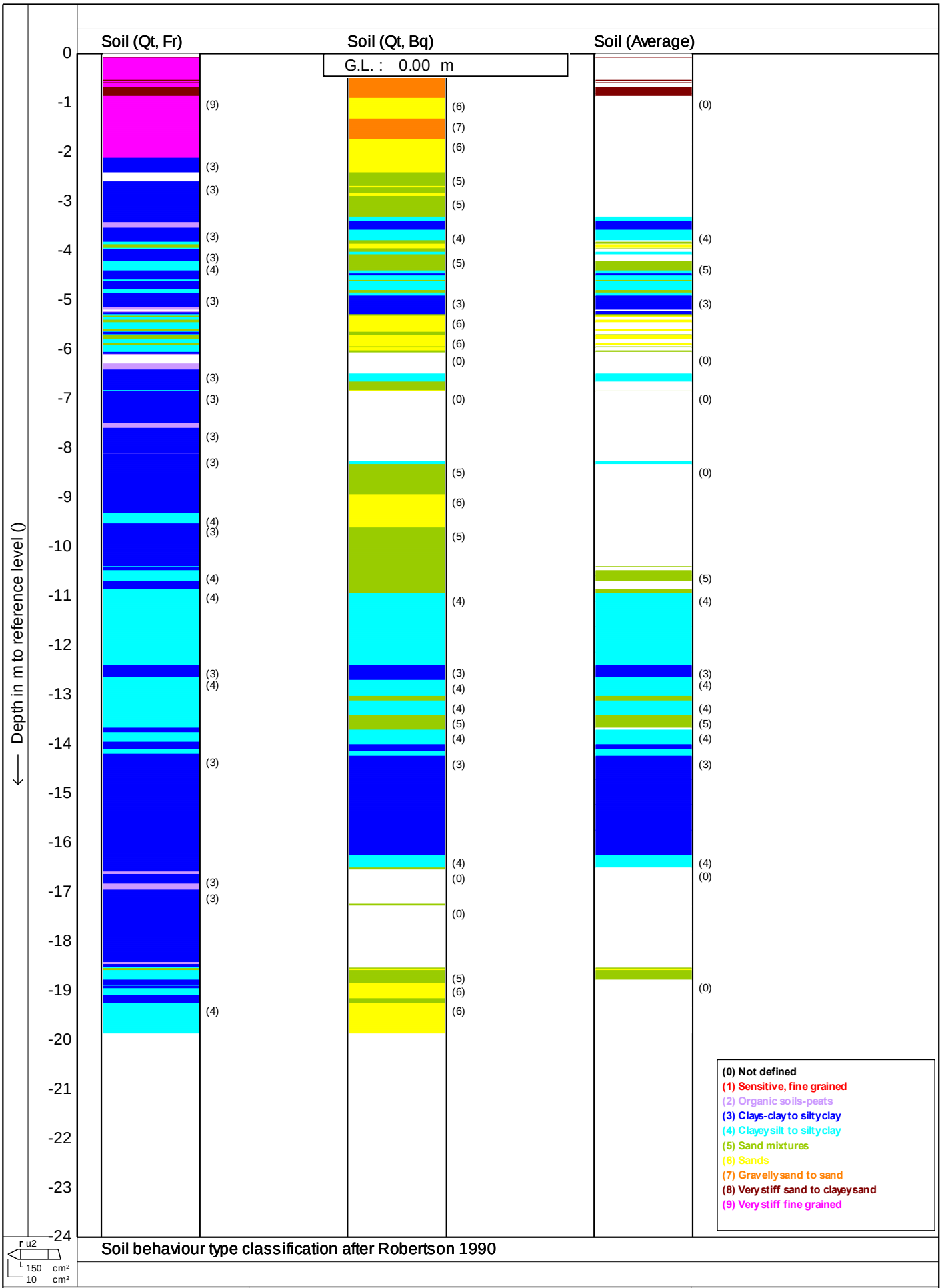
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

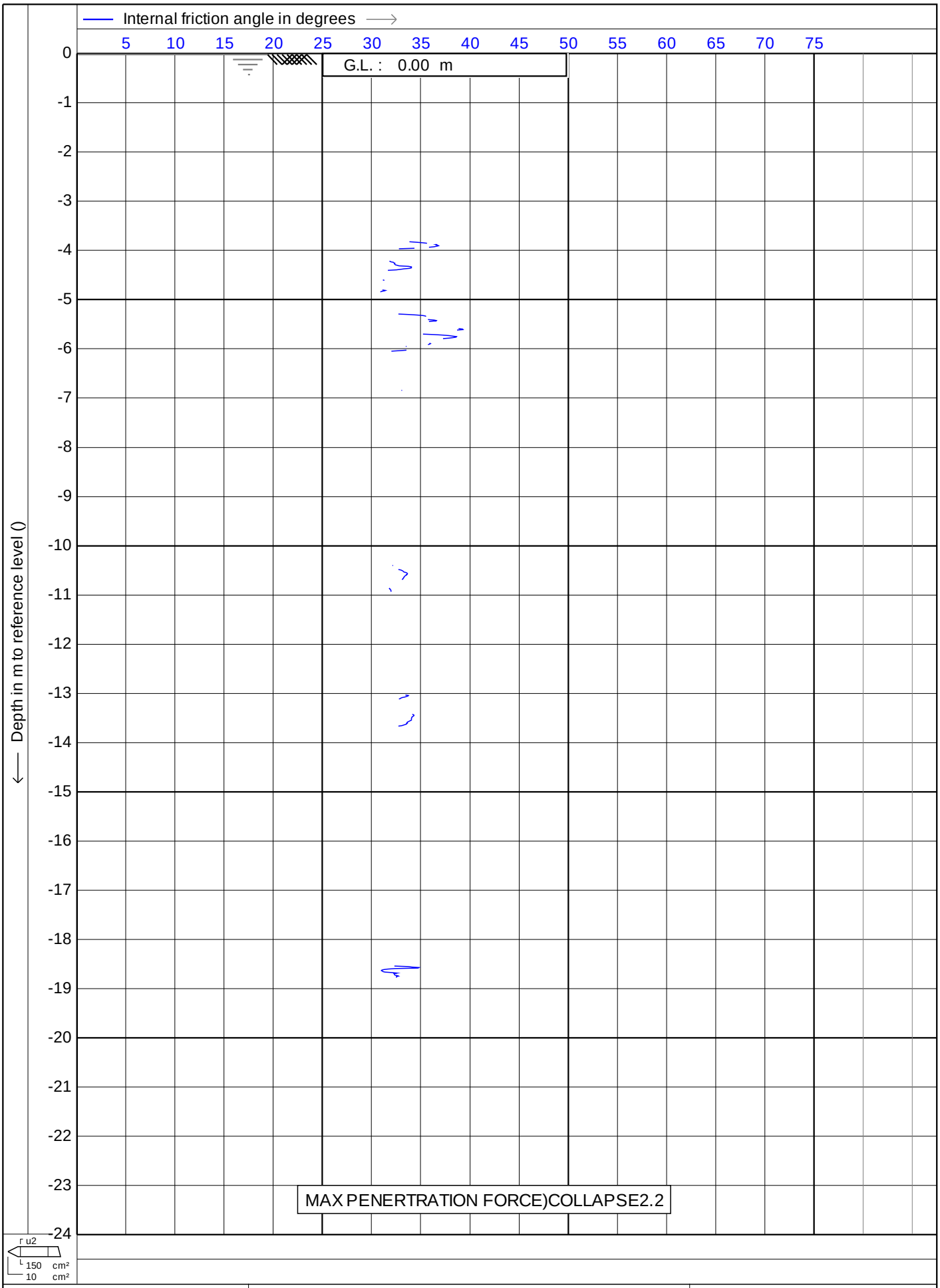
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT12** **14/15**

1.49



Test according NEN 5140 class 1

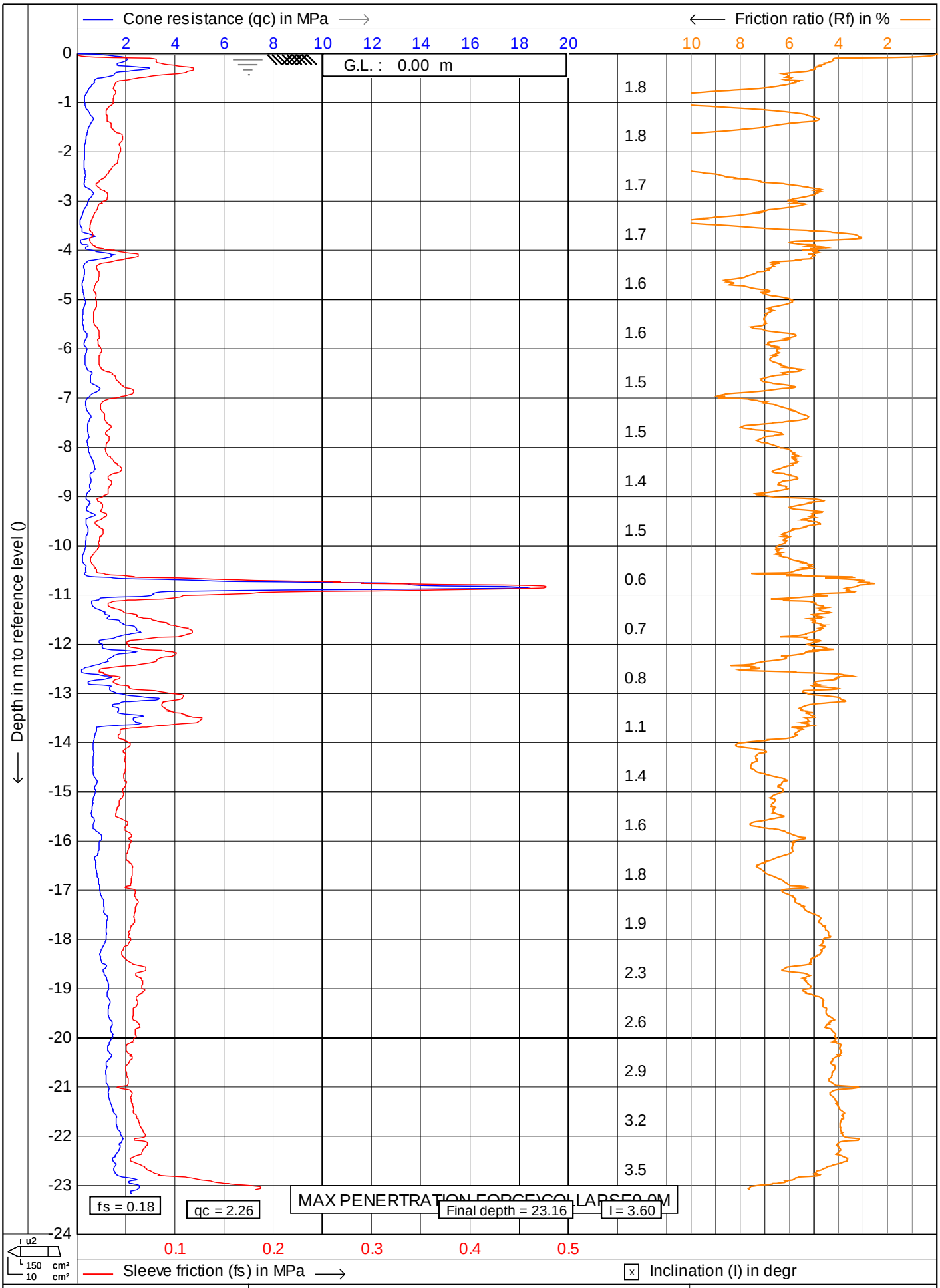
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63872, 36.60135 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT12** **15/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

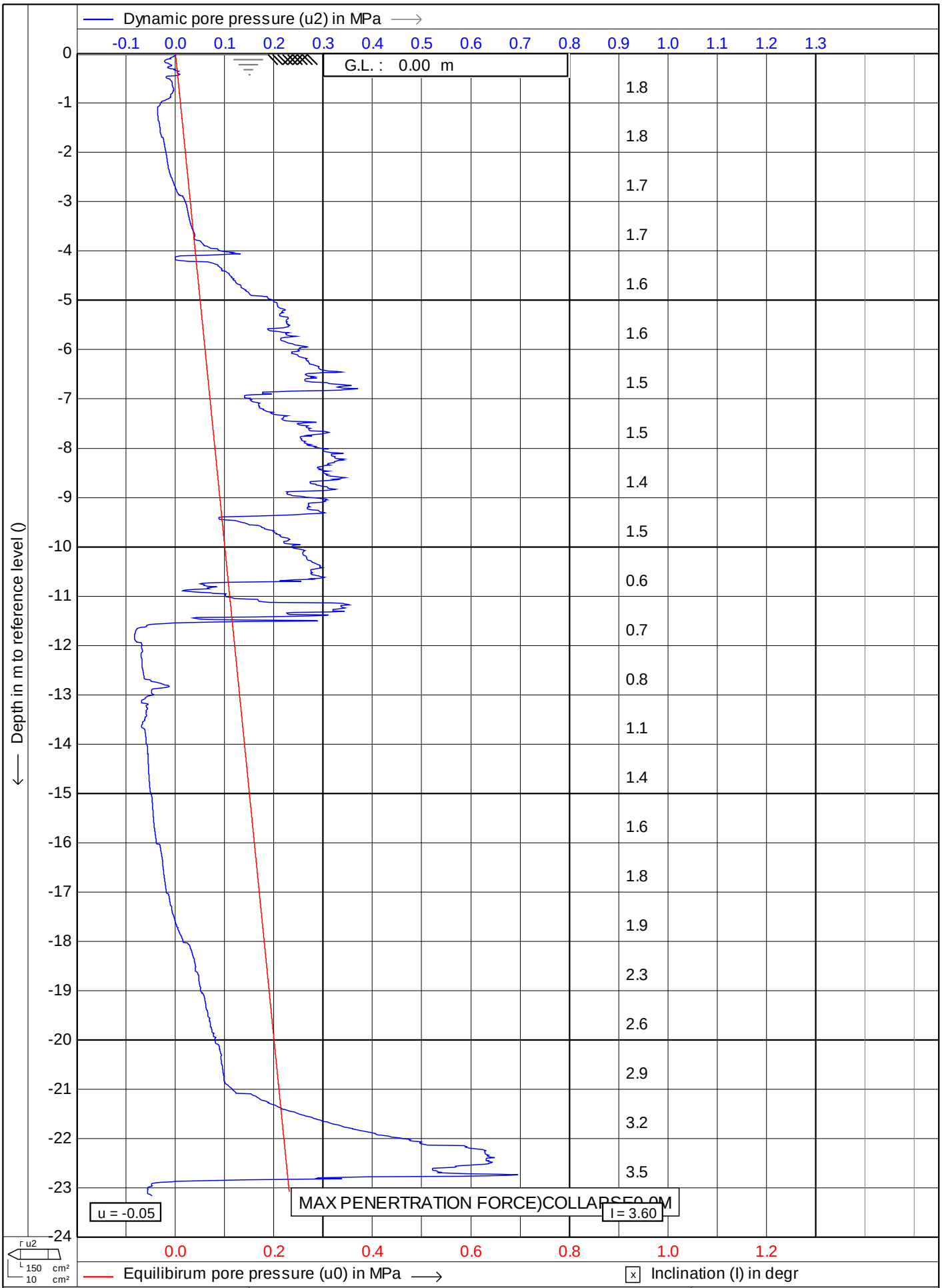
Position: **174.63885, 36.60186 RD**

Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT13** **1/15**



Test according NEN 5140 class 1

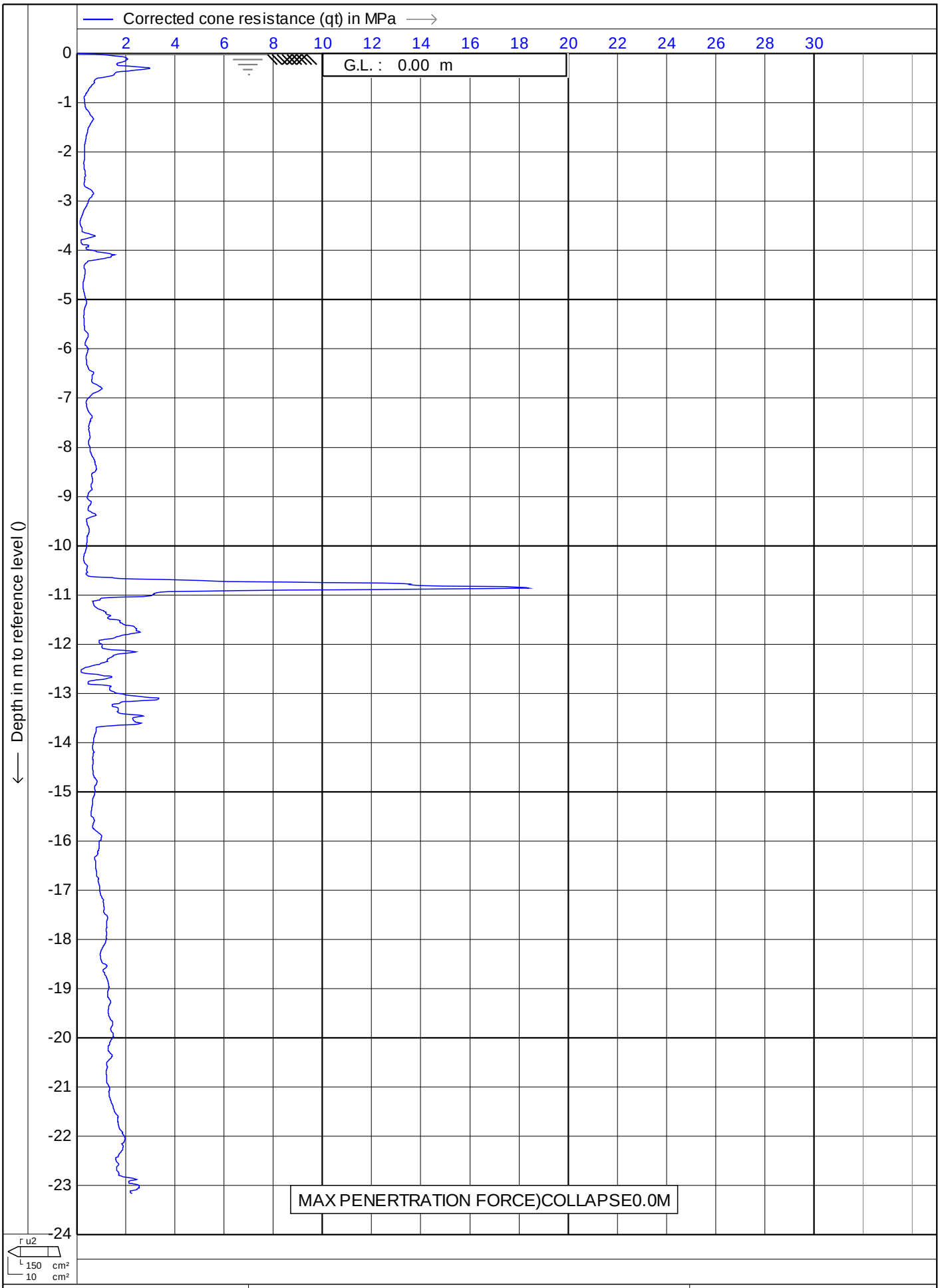
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13**

1.49



Test according NEN 5140 class 1

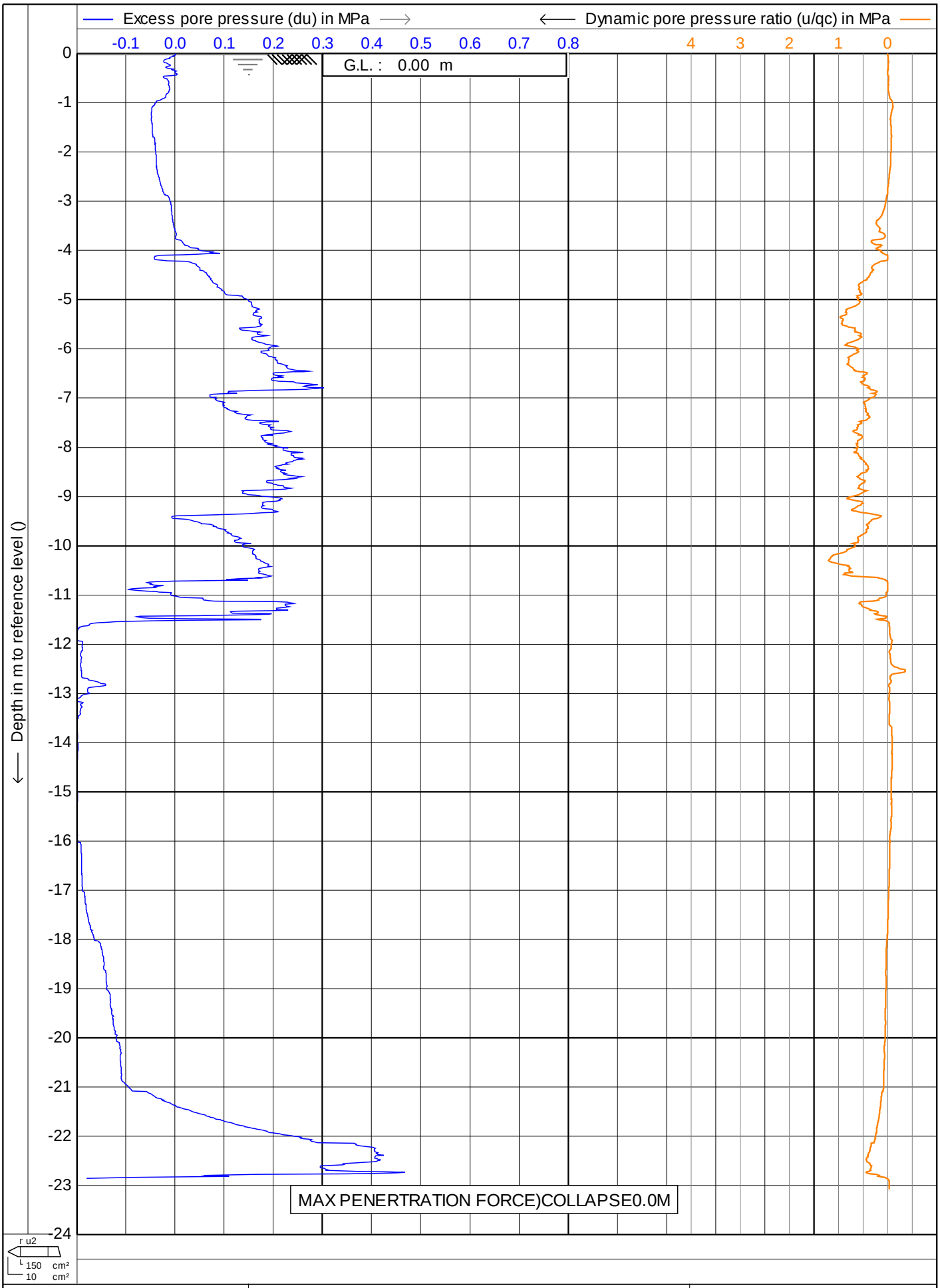
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **3/15**

1.49



Test according NEN 5140 class 1

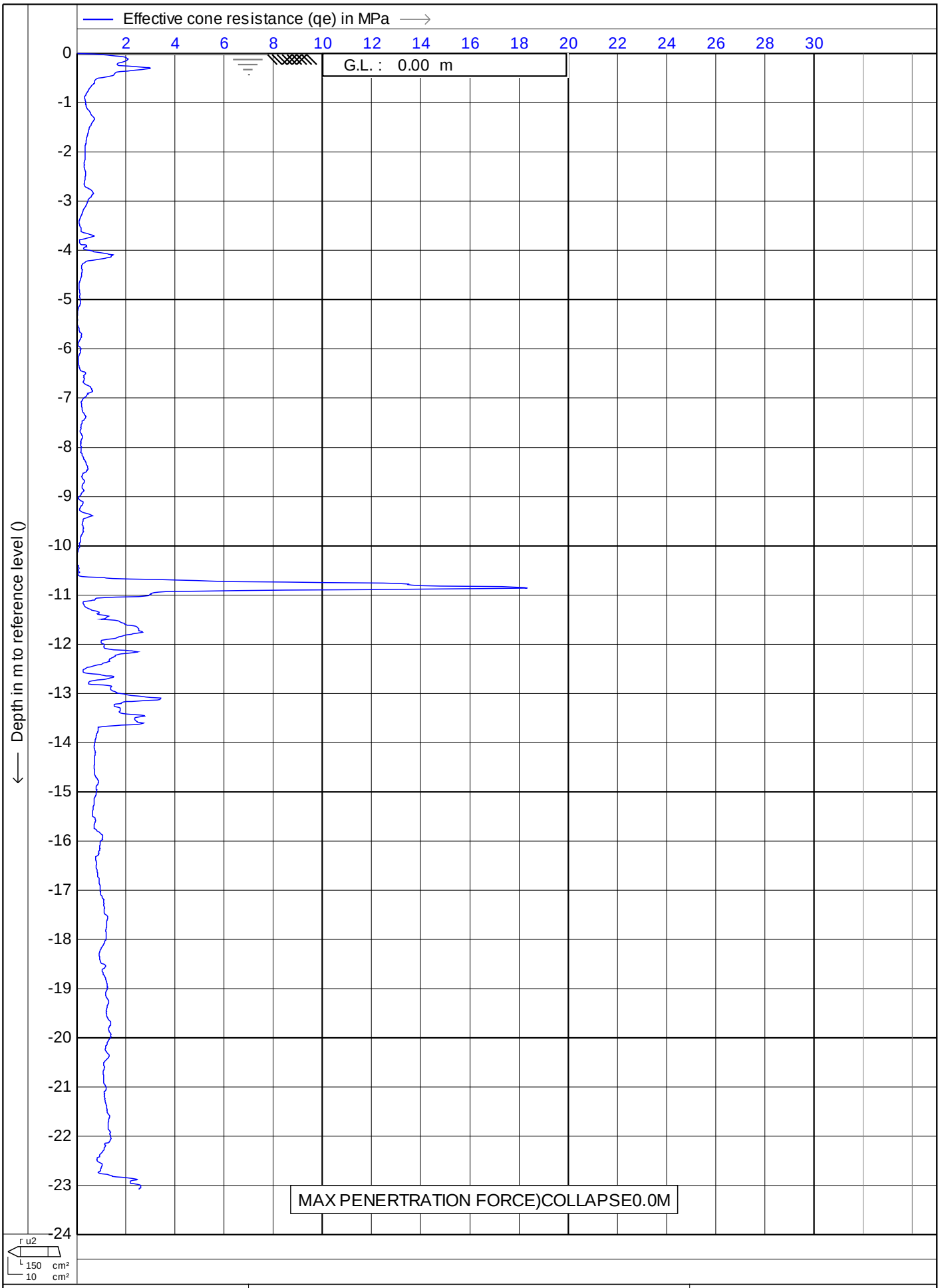
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **4/15**

1.49



Test according NEN 5140 class 1

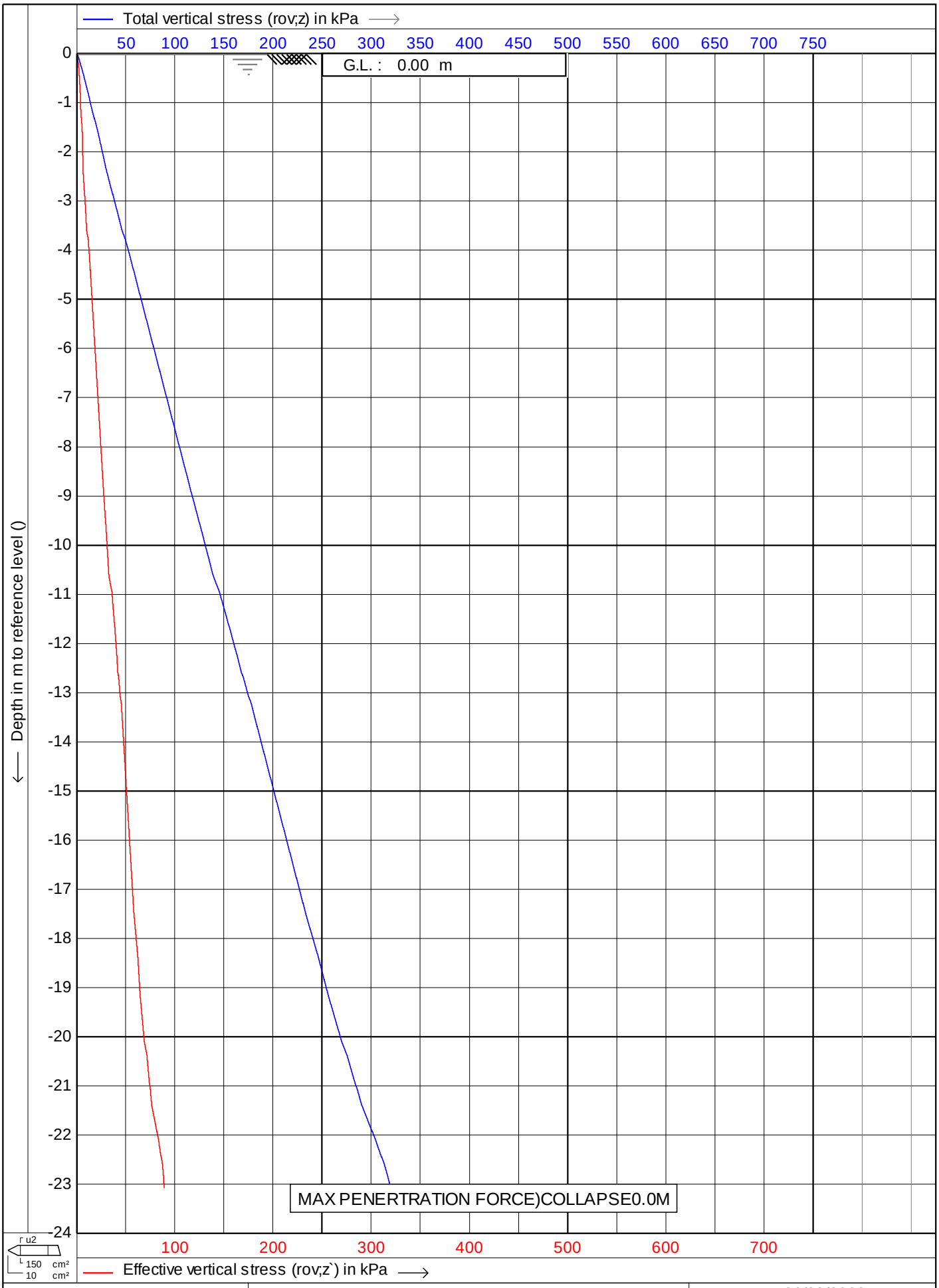
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **5/15**

1.49



Test according NEN 5140 class 1

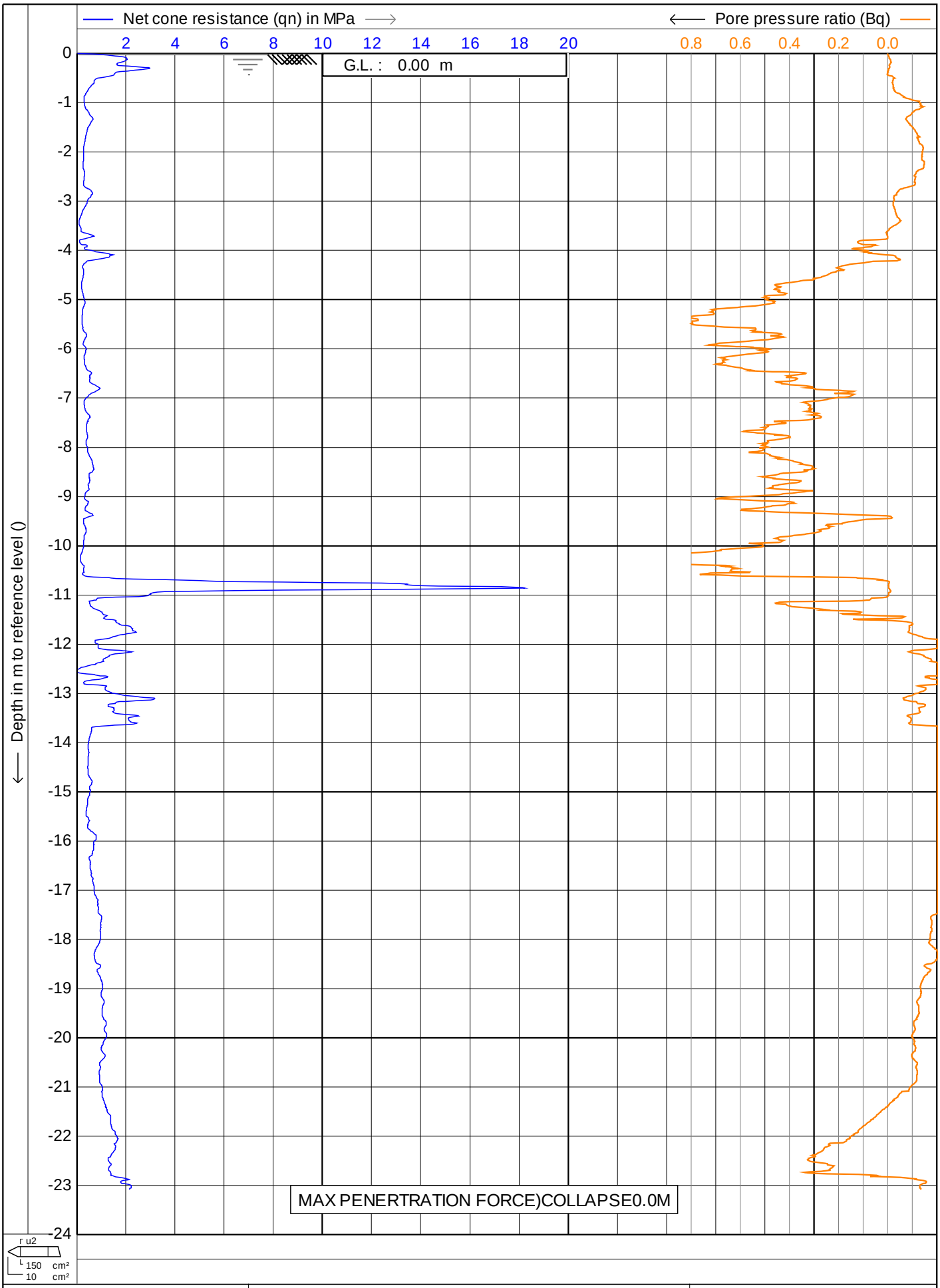
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **6/15**

1.49



Test according NEN 5140 class 1

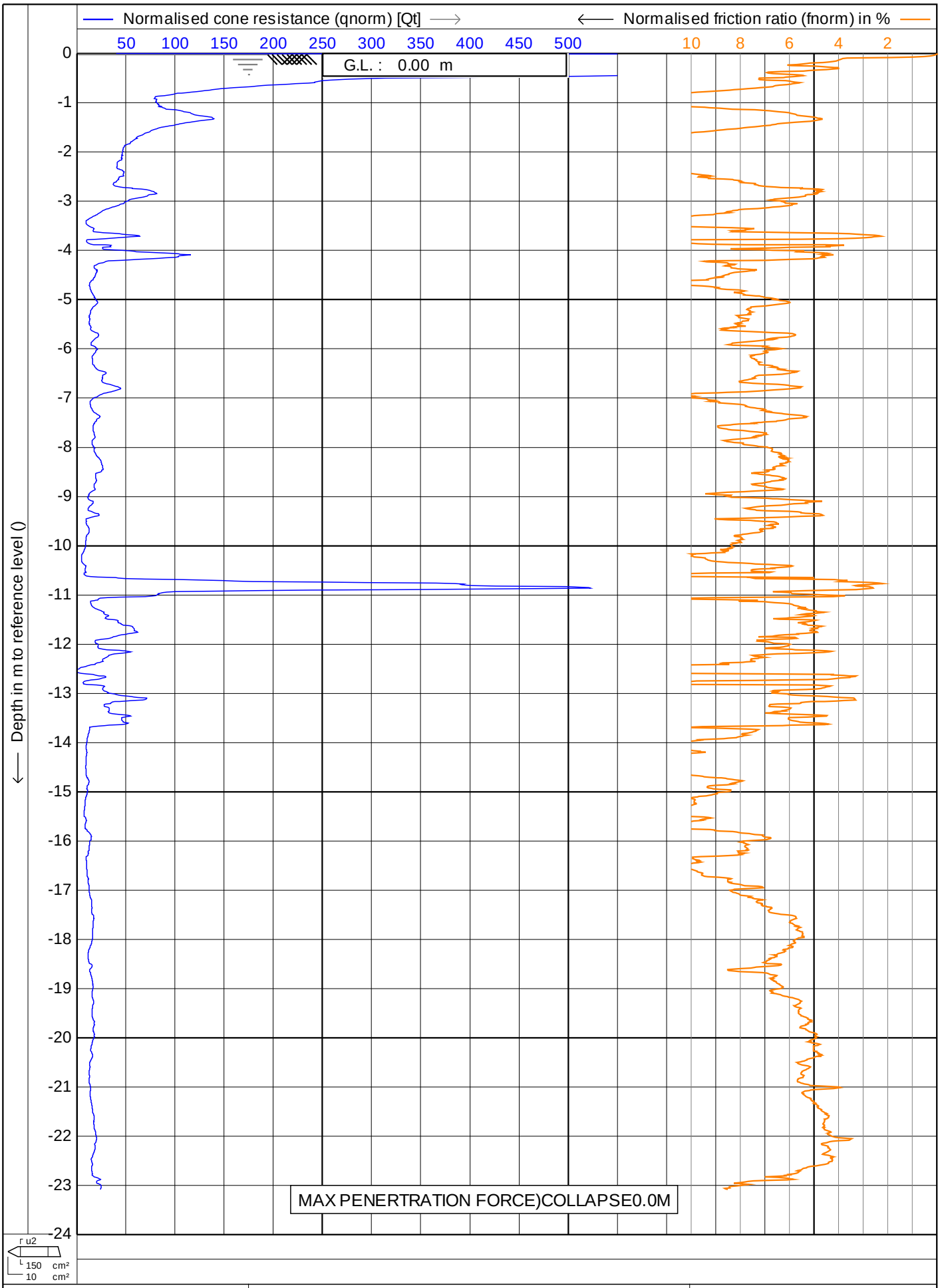
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **7/15**

1.49



Test according NEN 5140 class 1

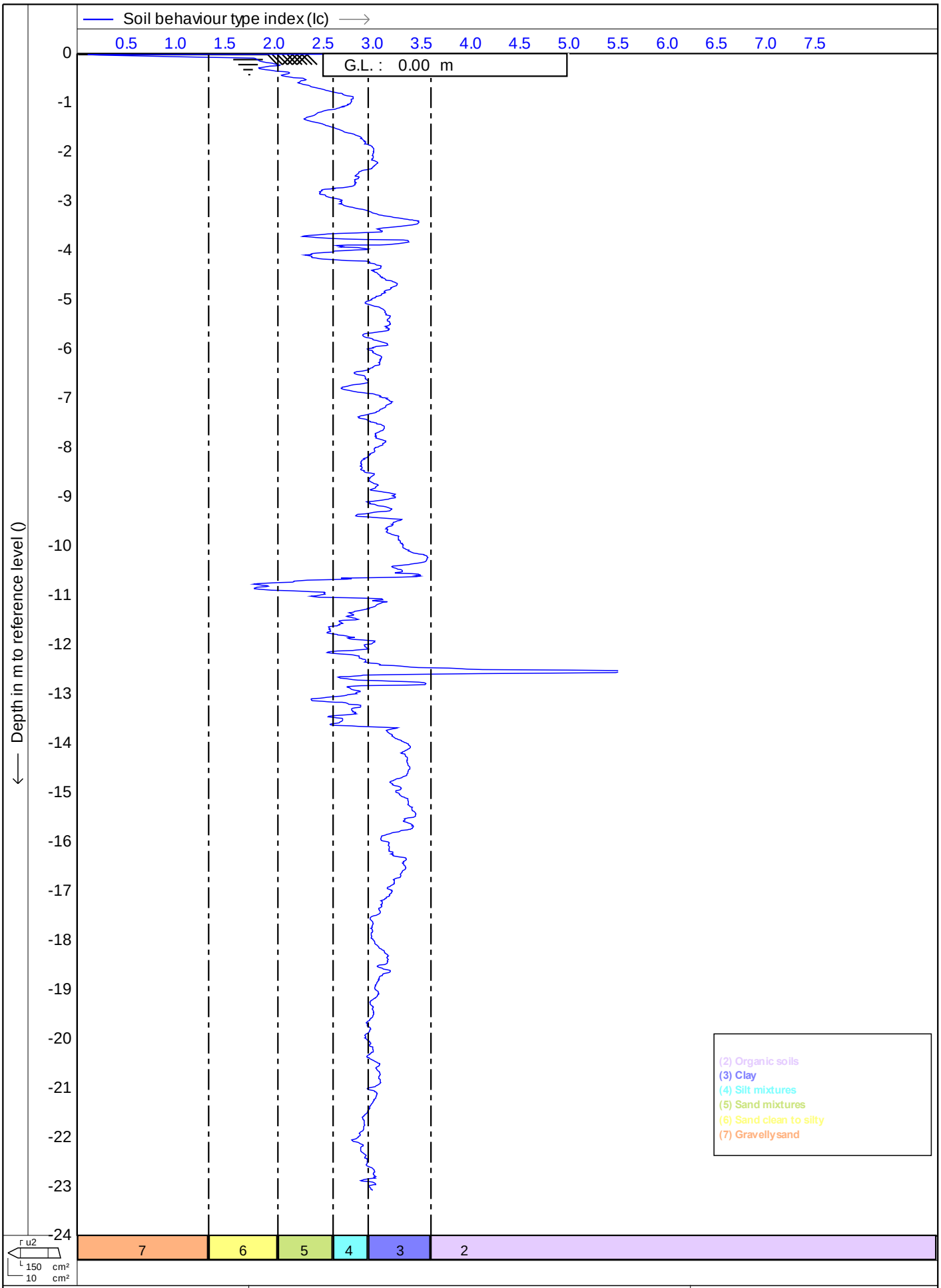
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **8/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

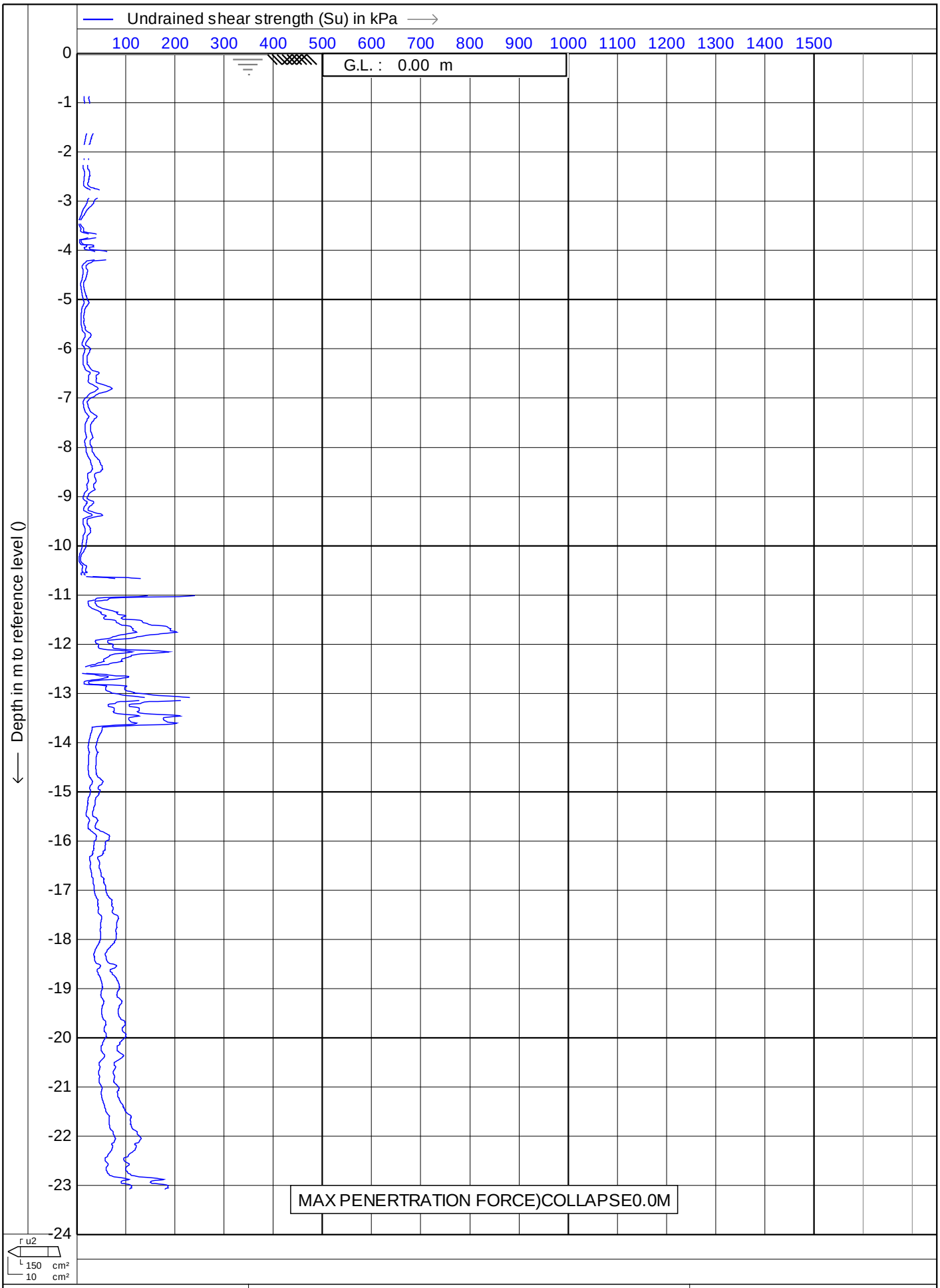
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT13** **9/15**

1.49



Test according NEN 5140 class 1

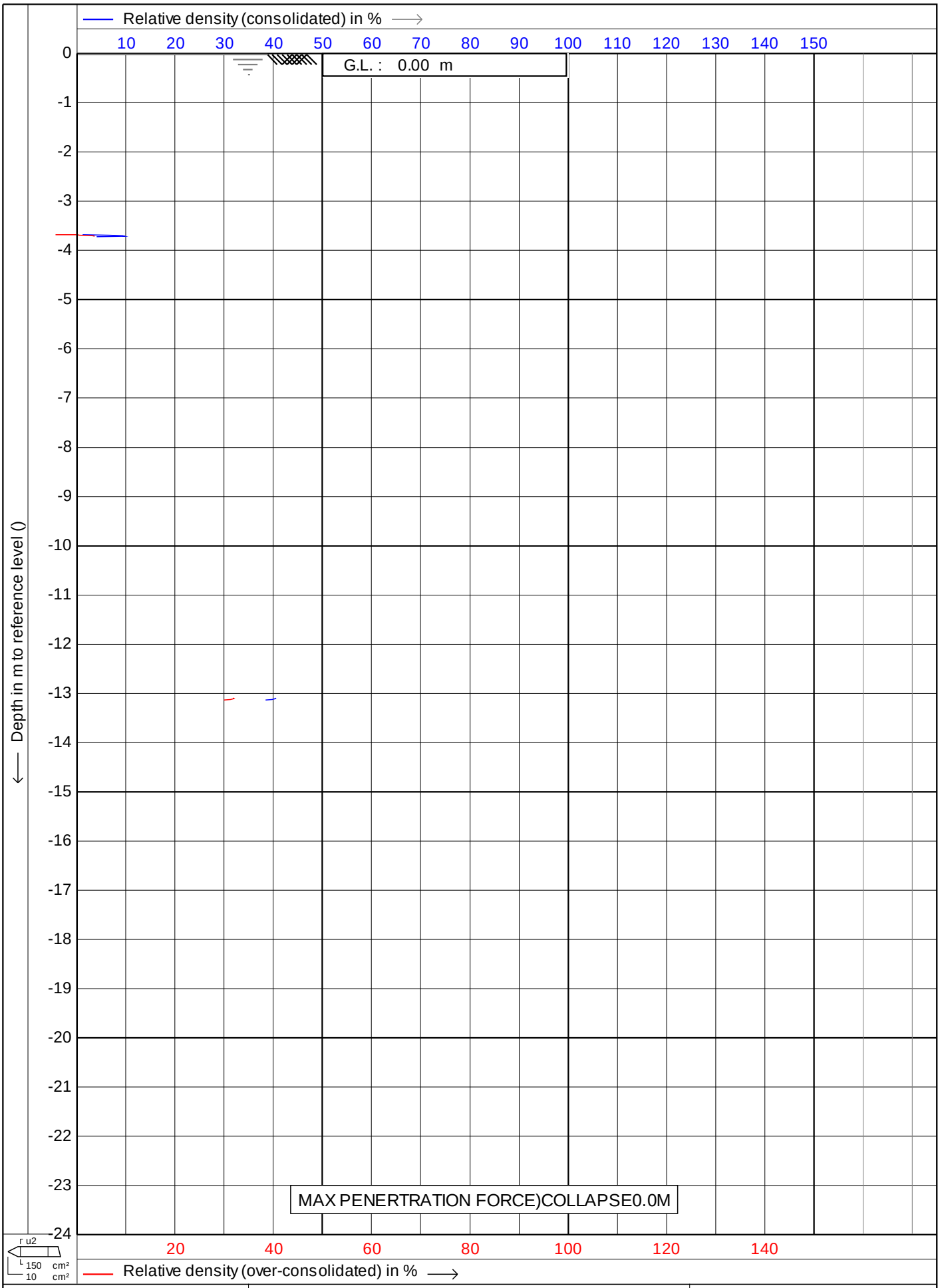
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **10/15**

1.49



Test according NEN 5140 class 1

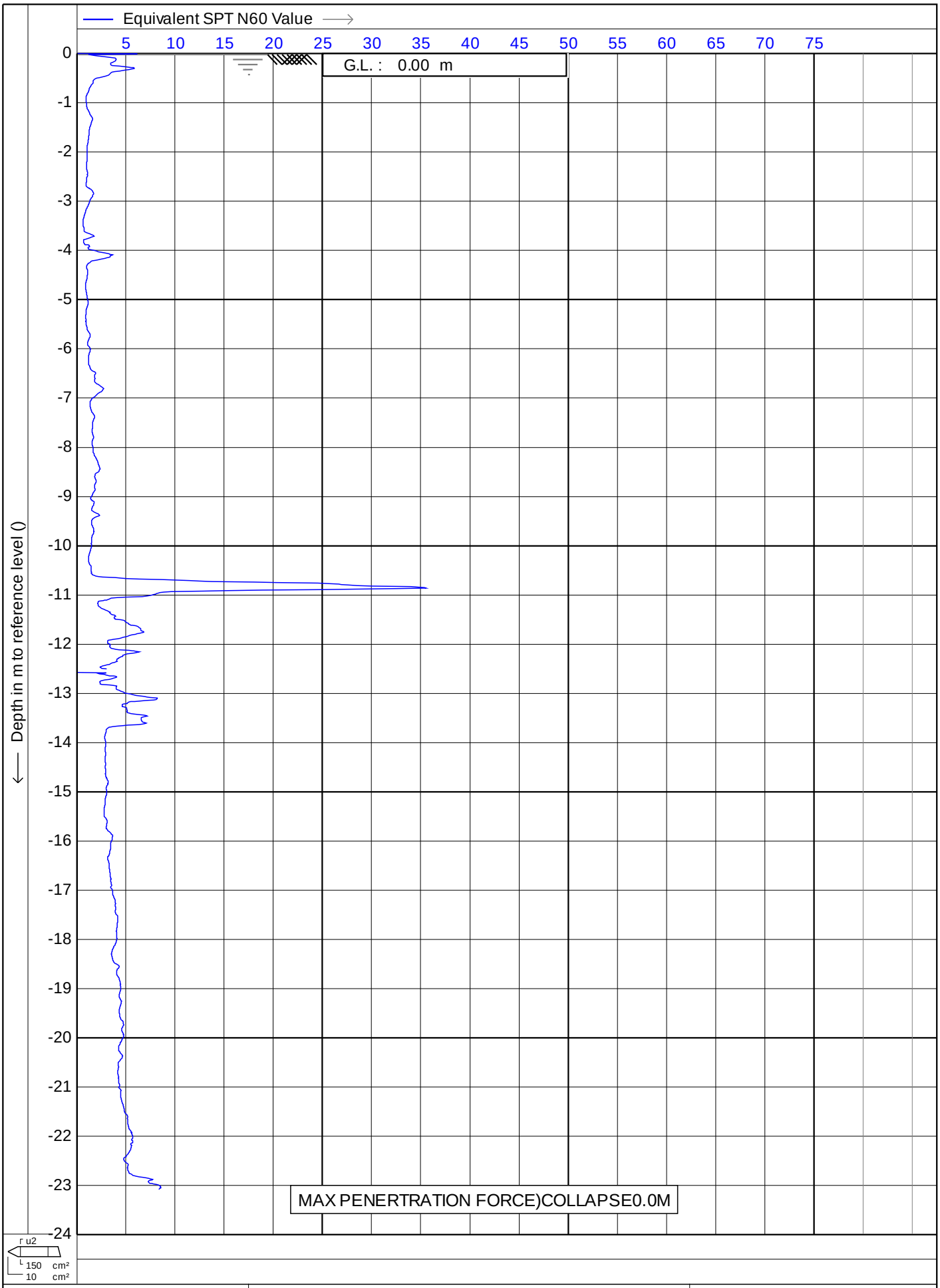
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

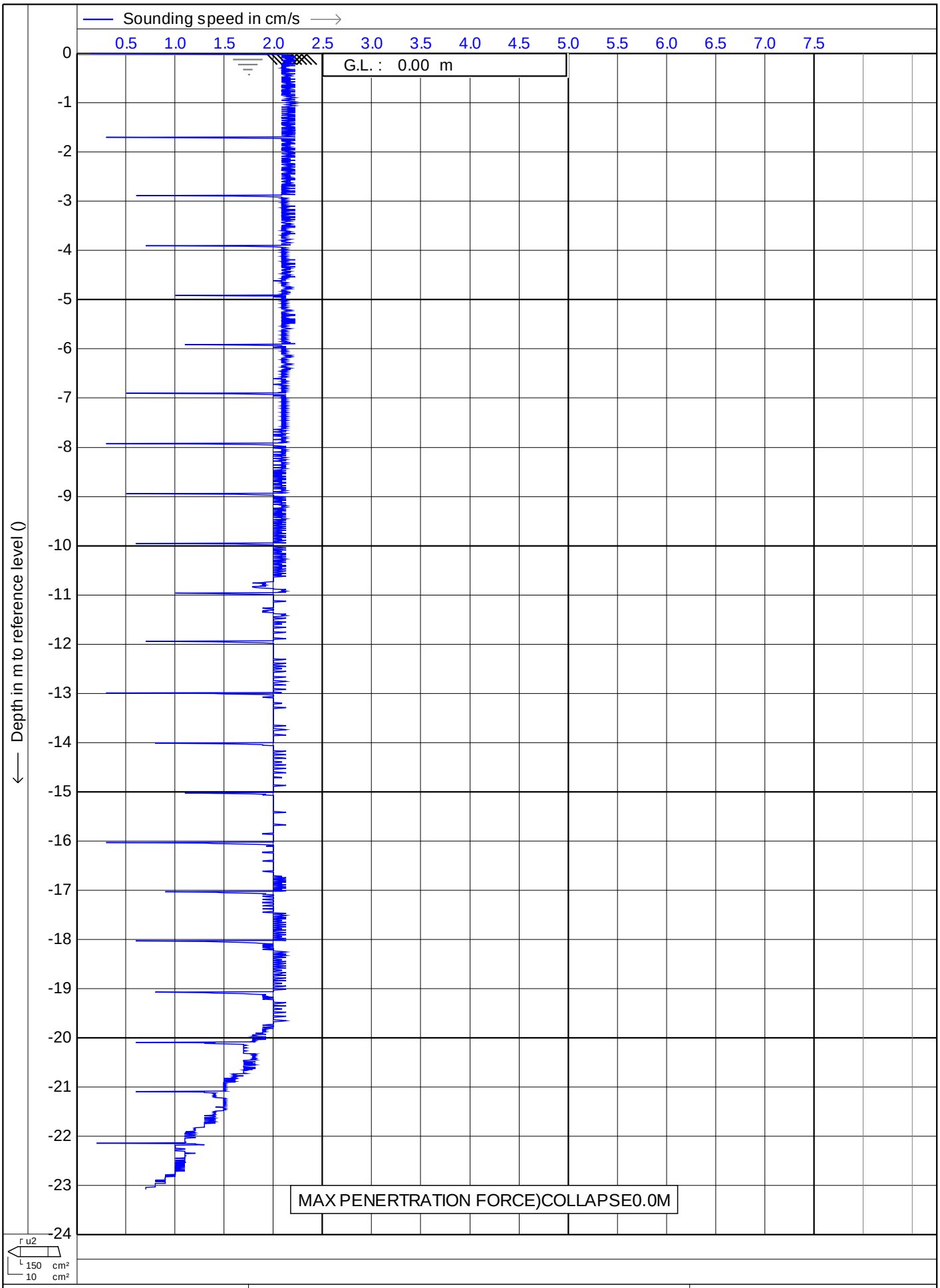
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT13** **12/15**

1.49



Test according NEN 5140 class 1

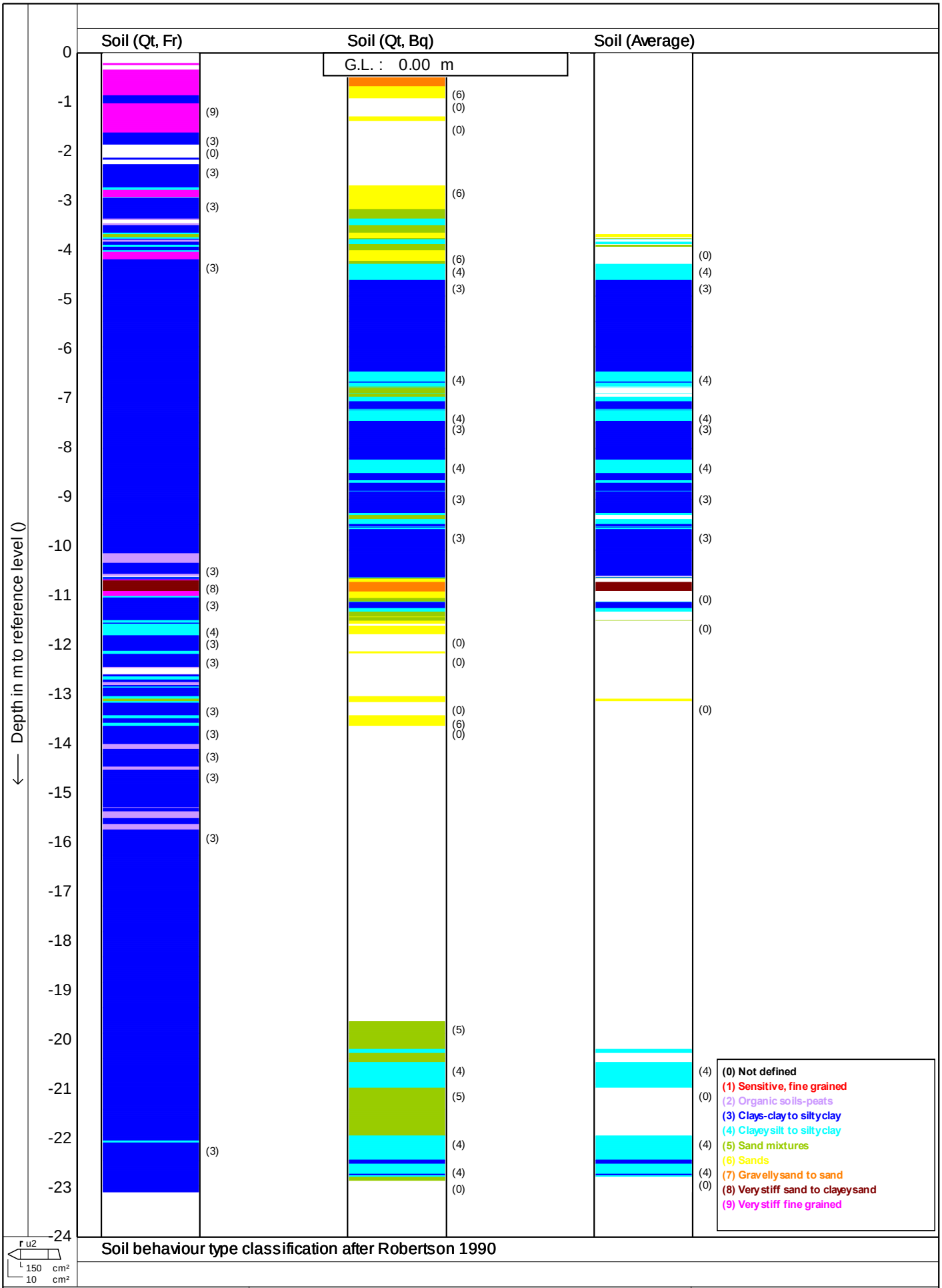
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **13/15**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

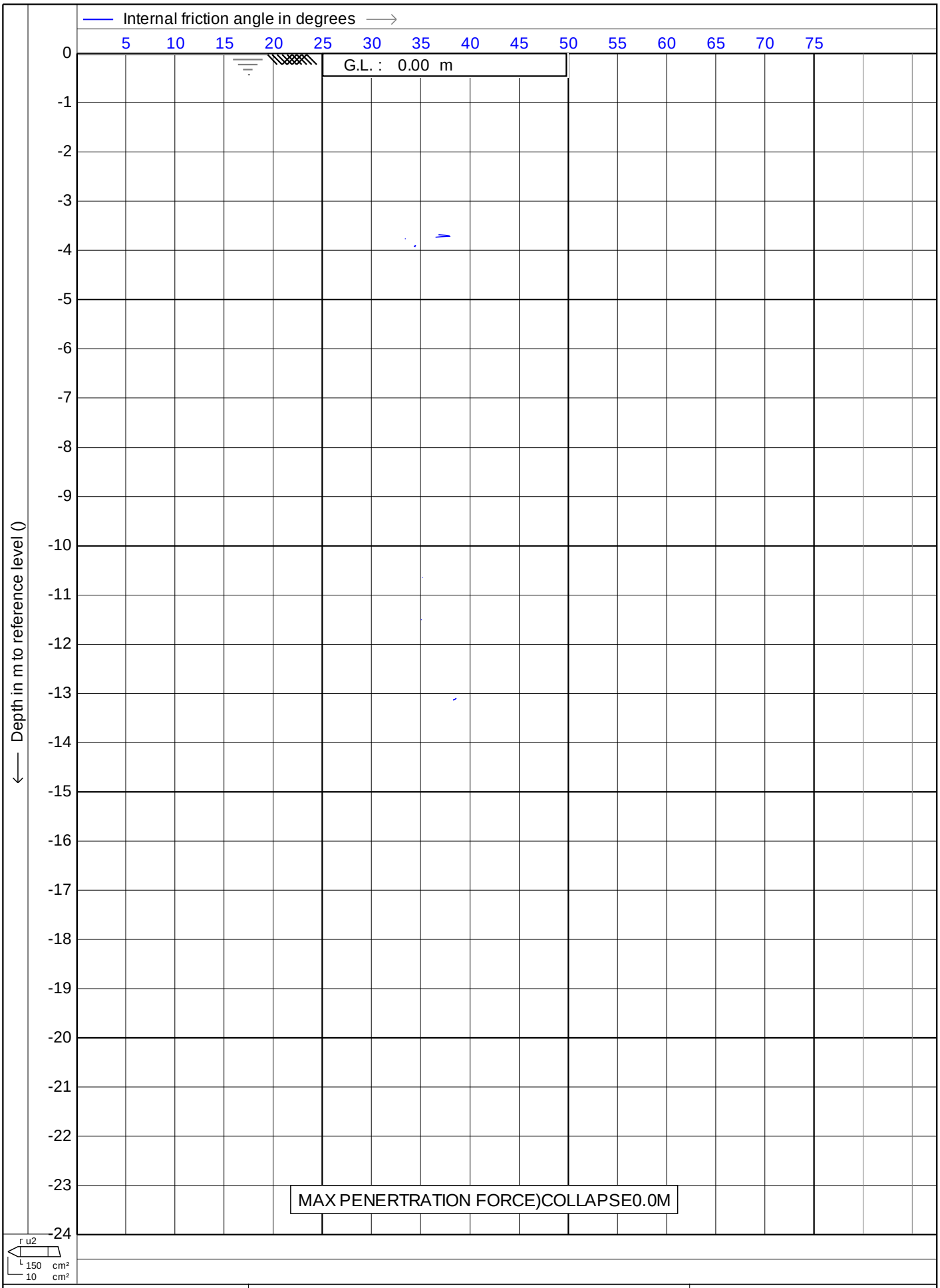
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT13** **14/15**

1.49



Test according NEN 5140 class 1

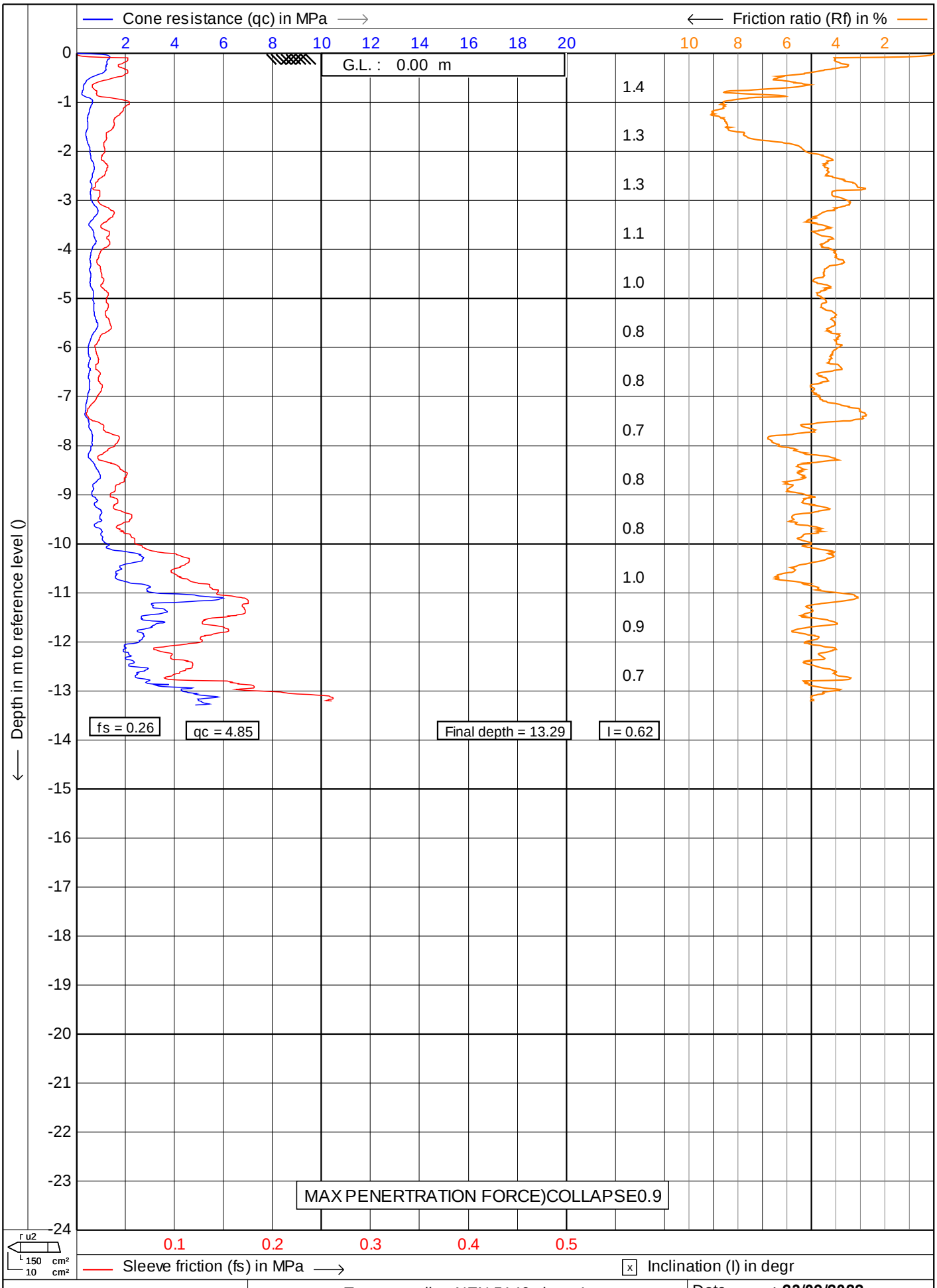
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63885, 36.60186 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT13** **15/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.63902, 36.60237 RD**	CPT no.	: **CPT14** 1/15



Test according NEN 5140 class 1

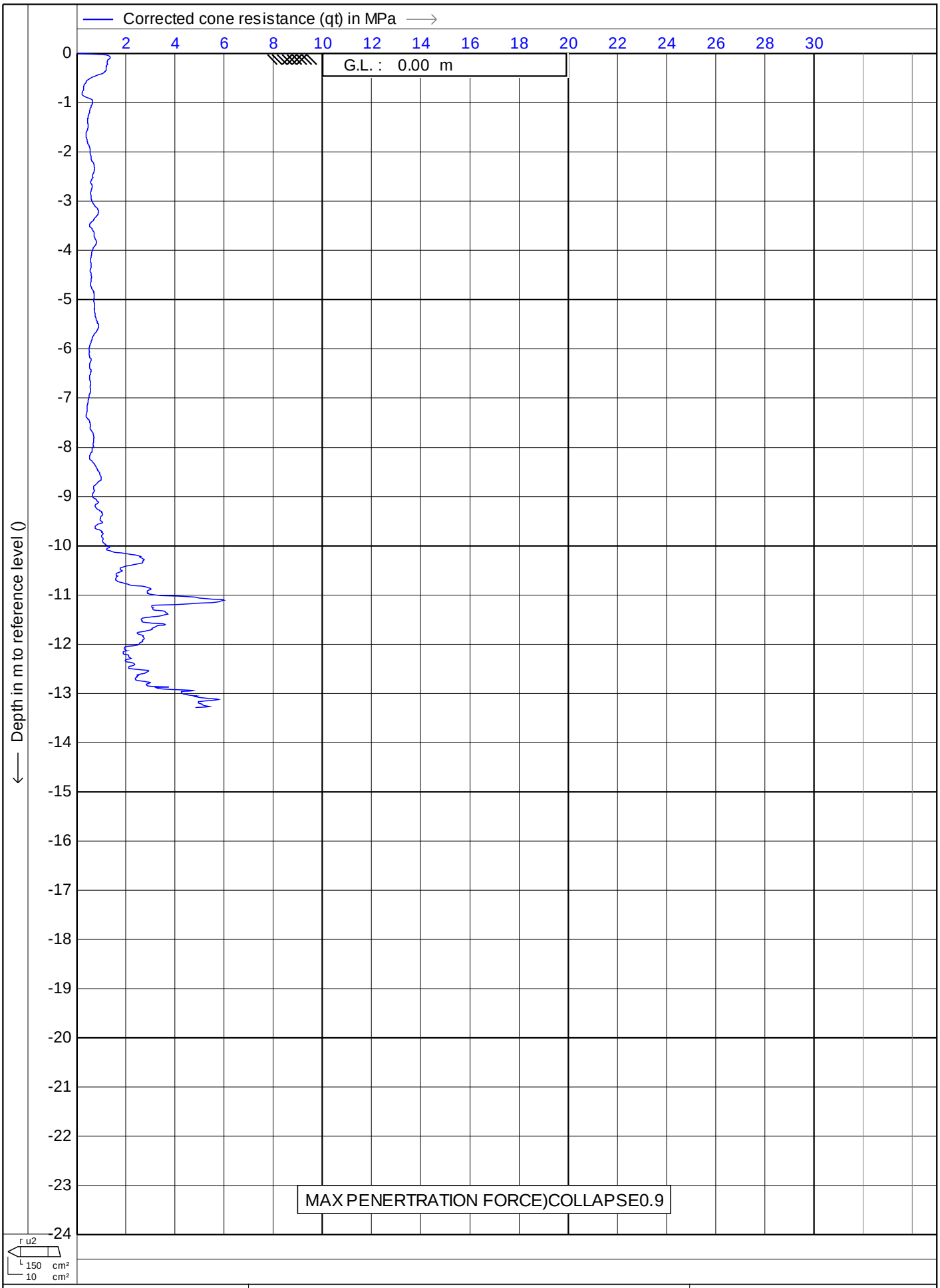
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

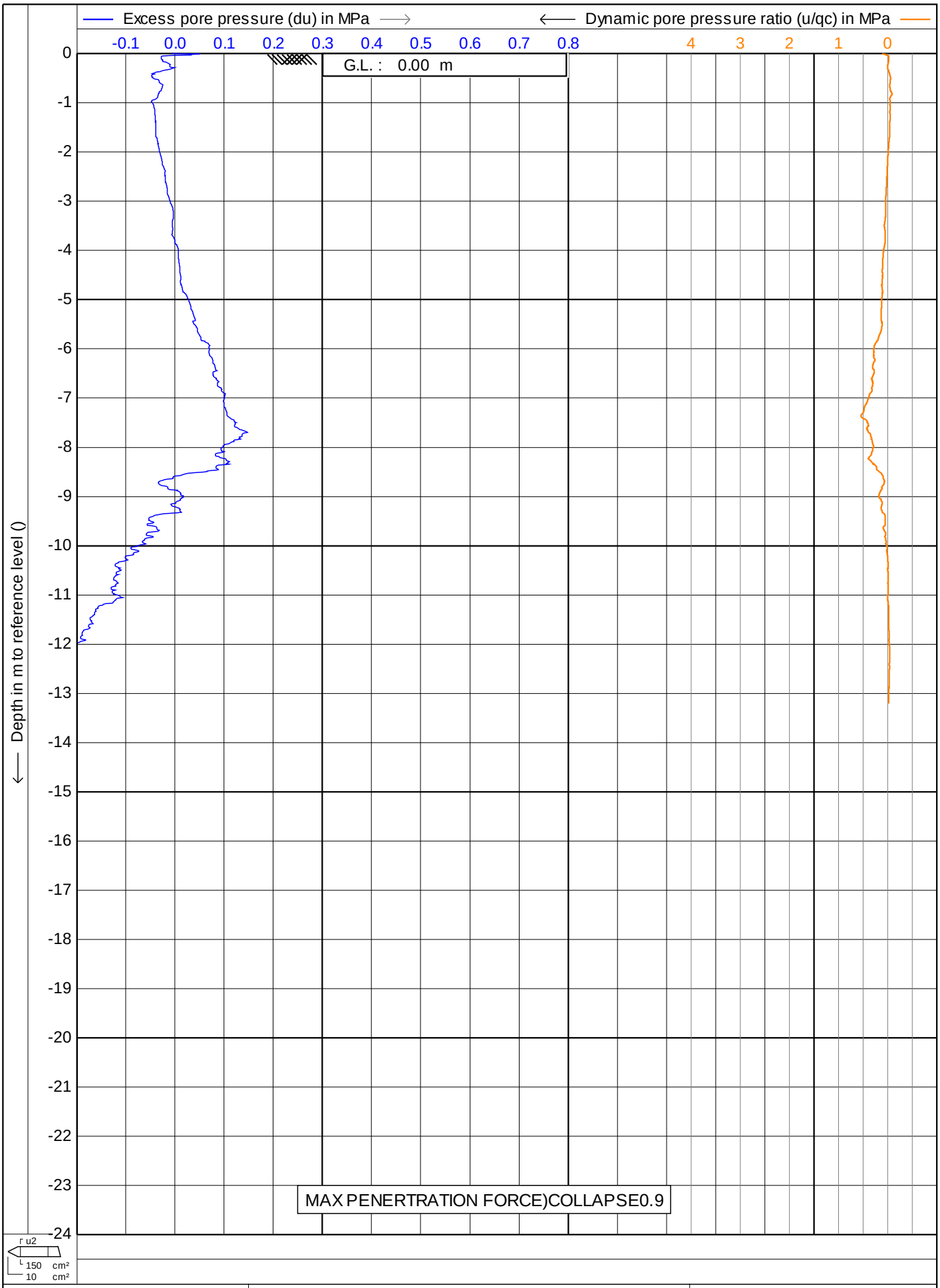
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

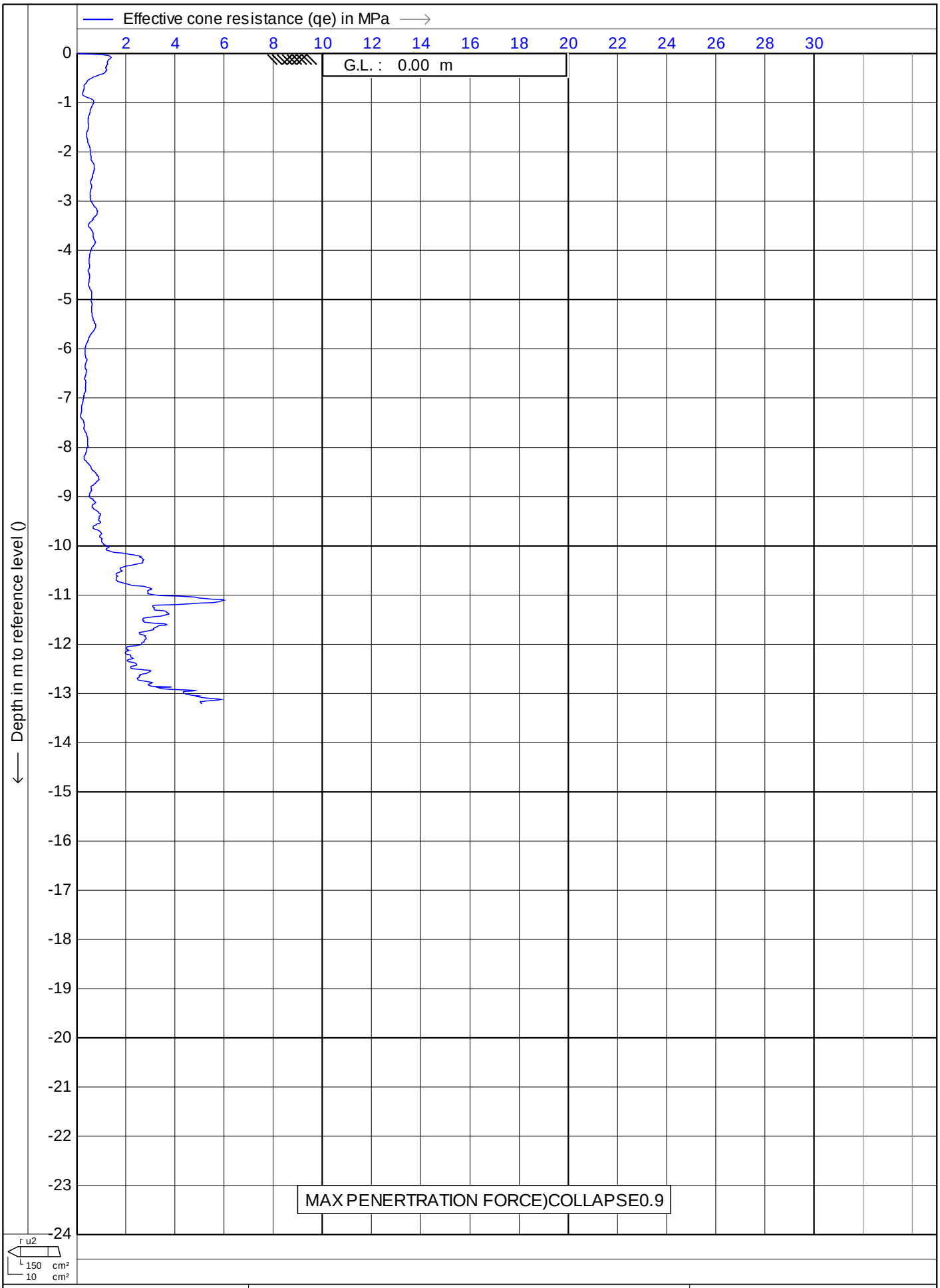
CPT no. : **CPT14** **3/15**

1.49



Test according NEN 5140 class 1	Date	: **23/09/2022**
Project : **WAINUI 0992**	Cone no.	: **S10CFIIP.S16084**
Location: **MILDALE**	Project no.	: **DF22GE154 23/09/22**
Position: **174.63902, 36.60237 RD**	CPT no.	: **CPT14** **4/15**

1.49



Test according NEN 5140 class 1

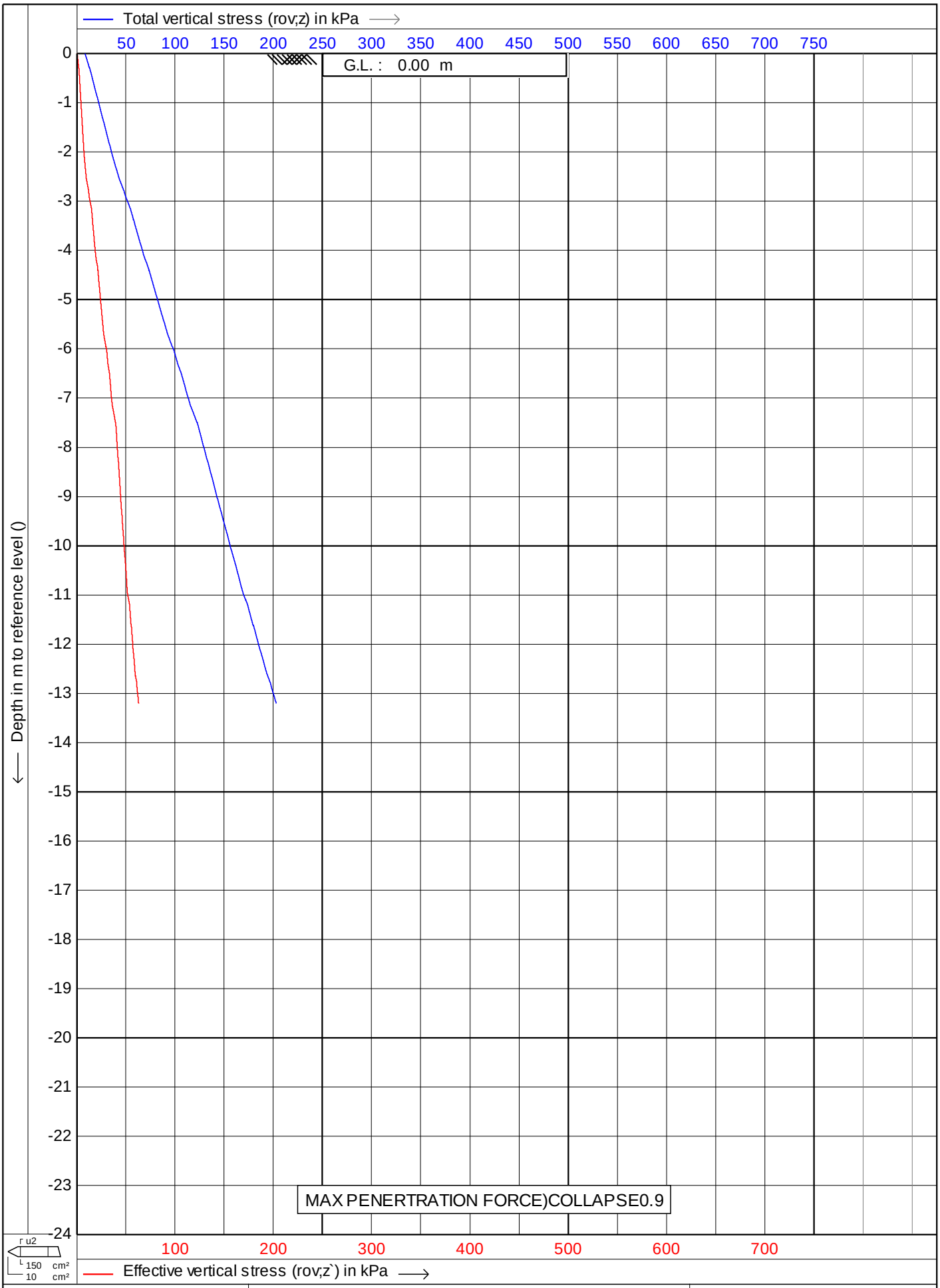
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **5/15**

1.49



Test according NEN 5140 class 1

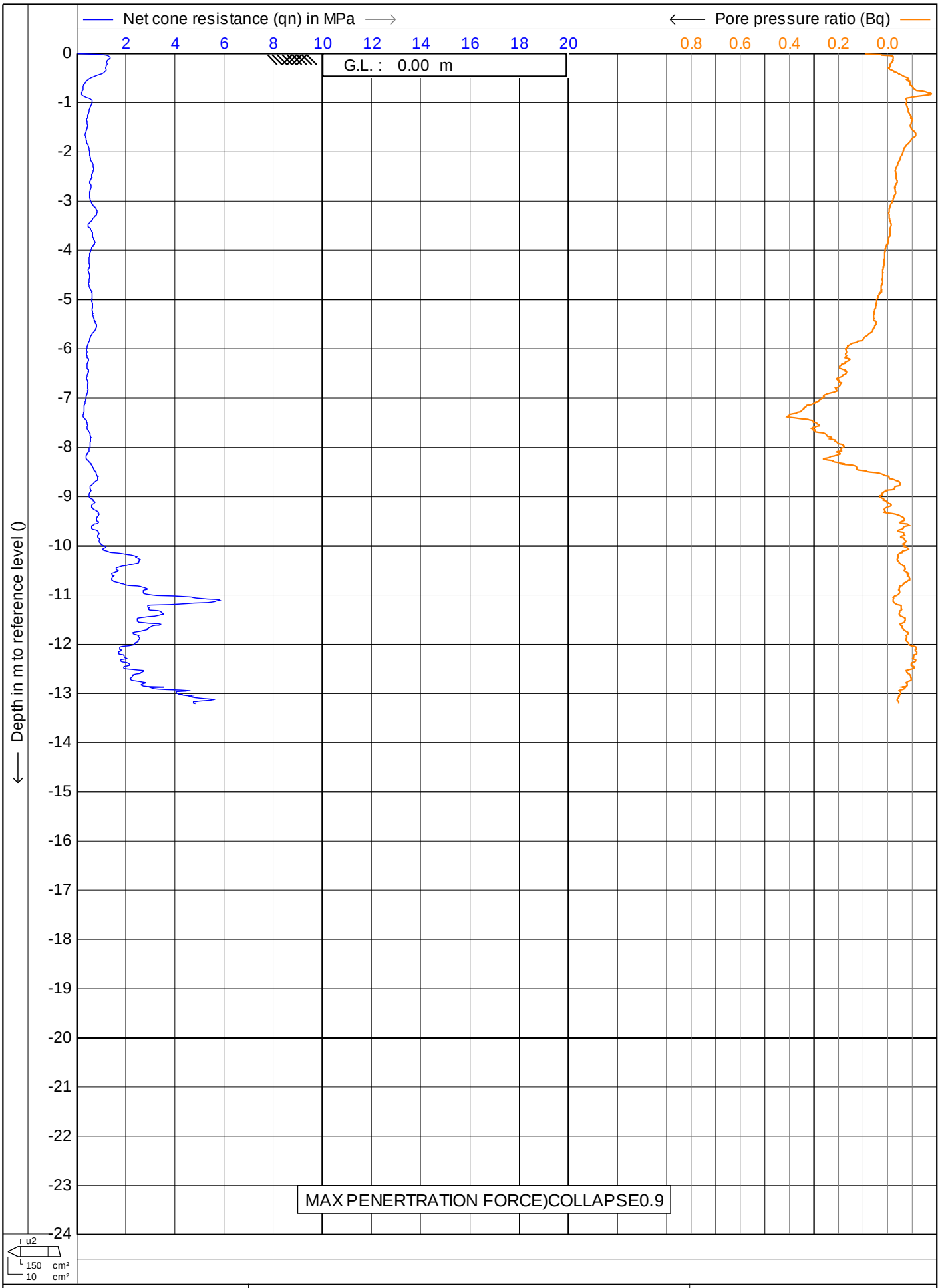
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **6/15**

1.49



Test according NEN 5140 class 1

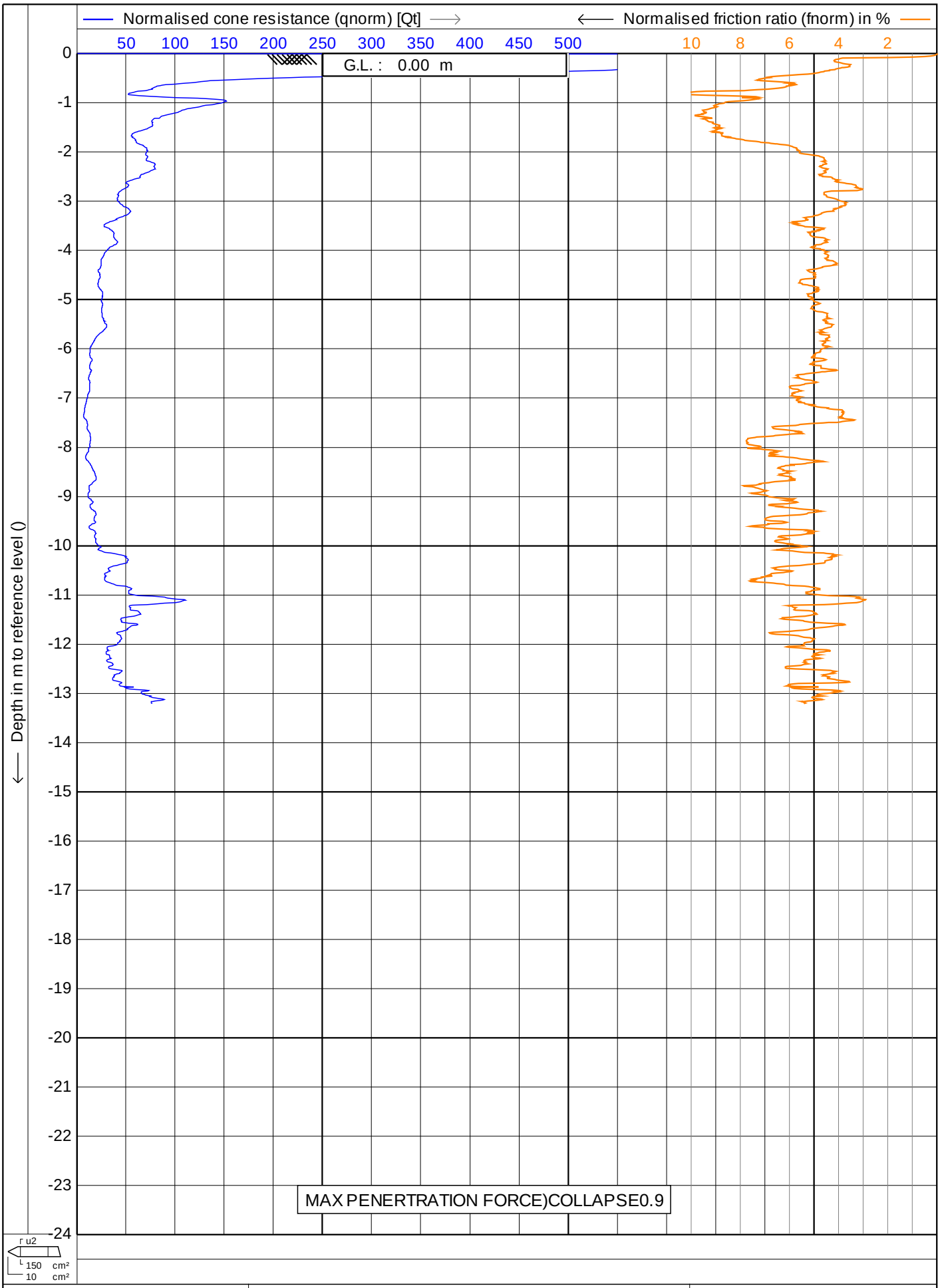
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **7/15**

1.49



Test according NEN 5140 class 1

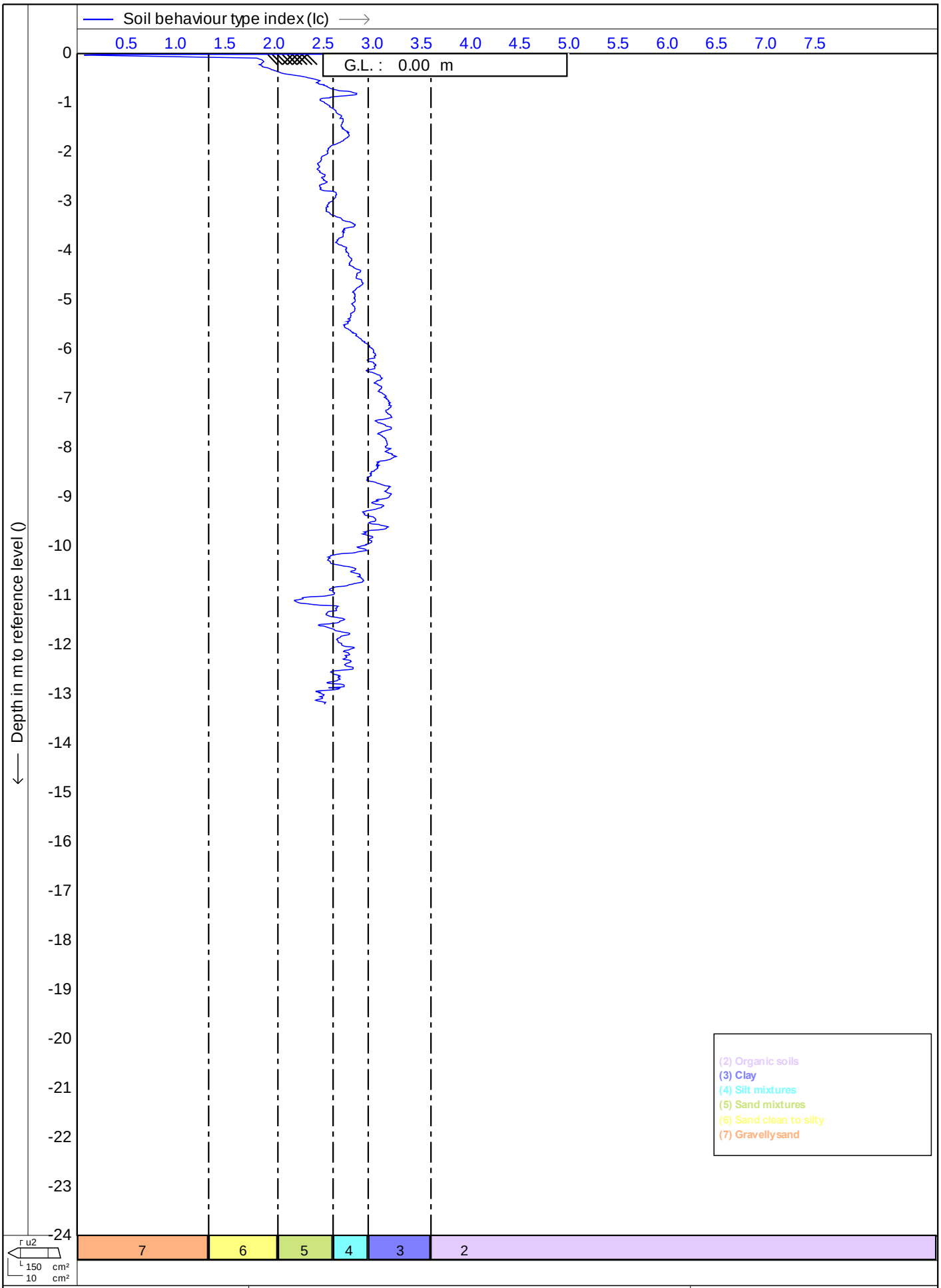
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

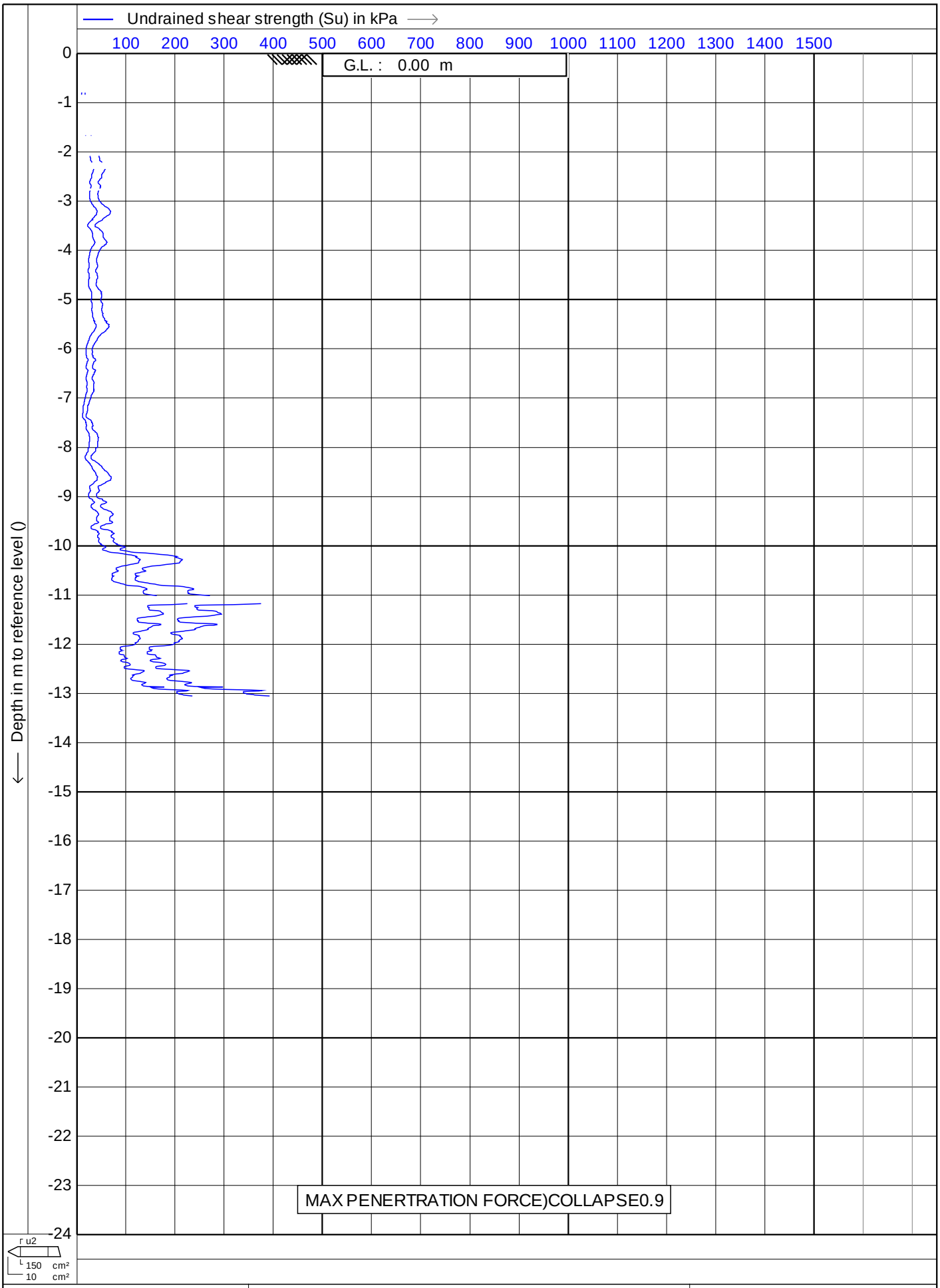
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **8/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.63902, 36.60237 RD**	CPT no. : **CPT14** **9/15**

1.49



Test according NEN 5140 class 1

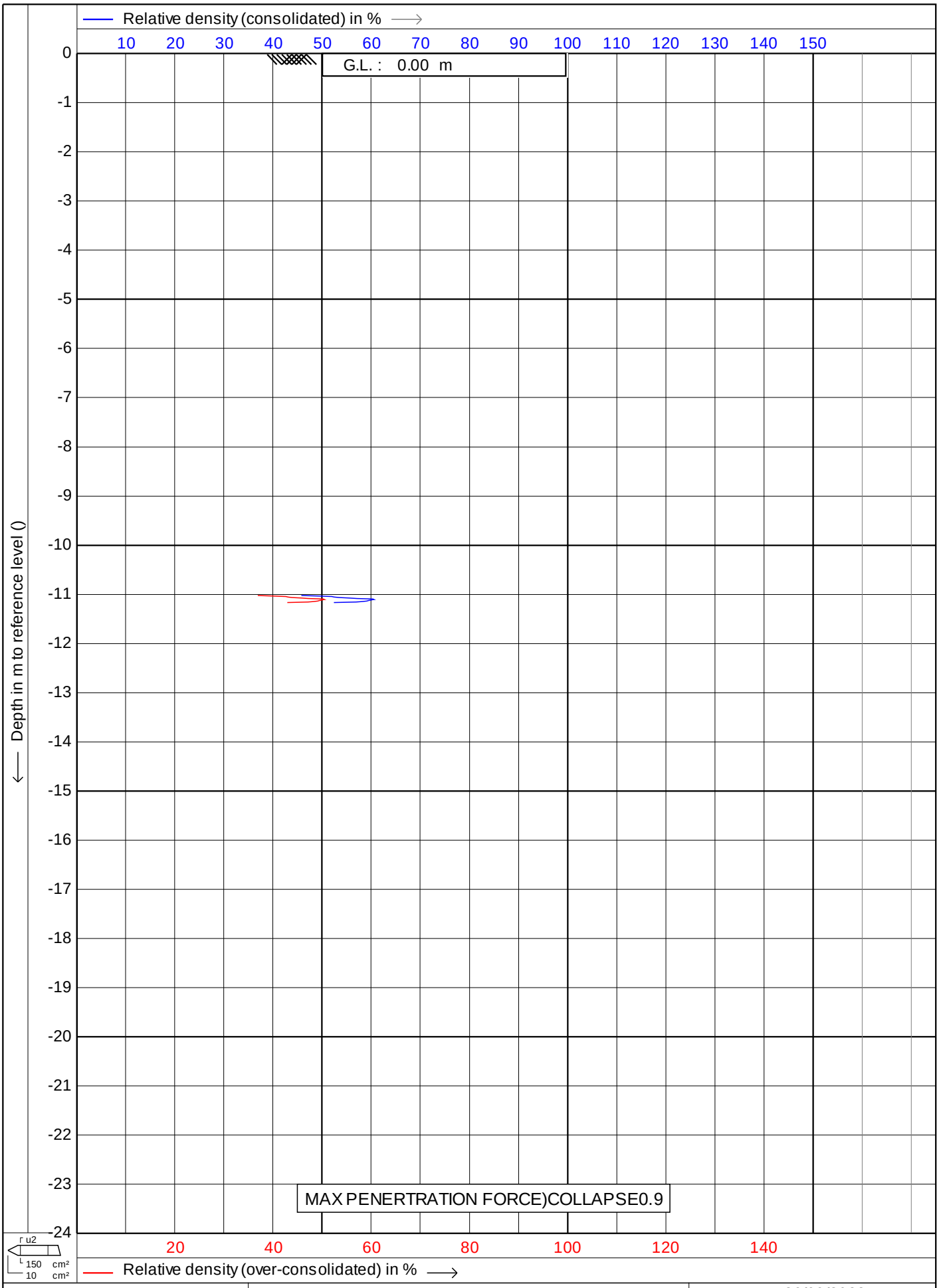
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **10/15**

1.49



Test according NEN 5140 class 1

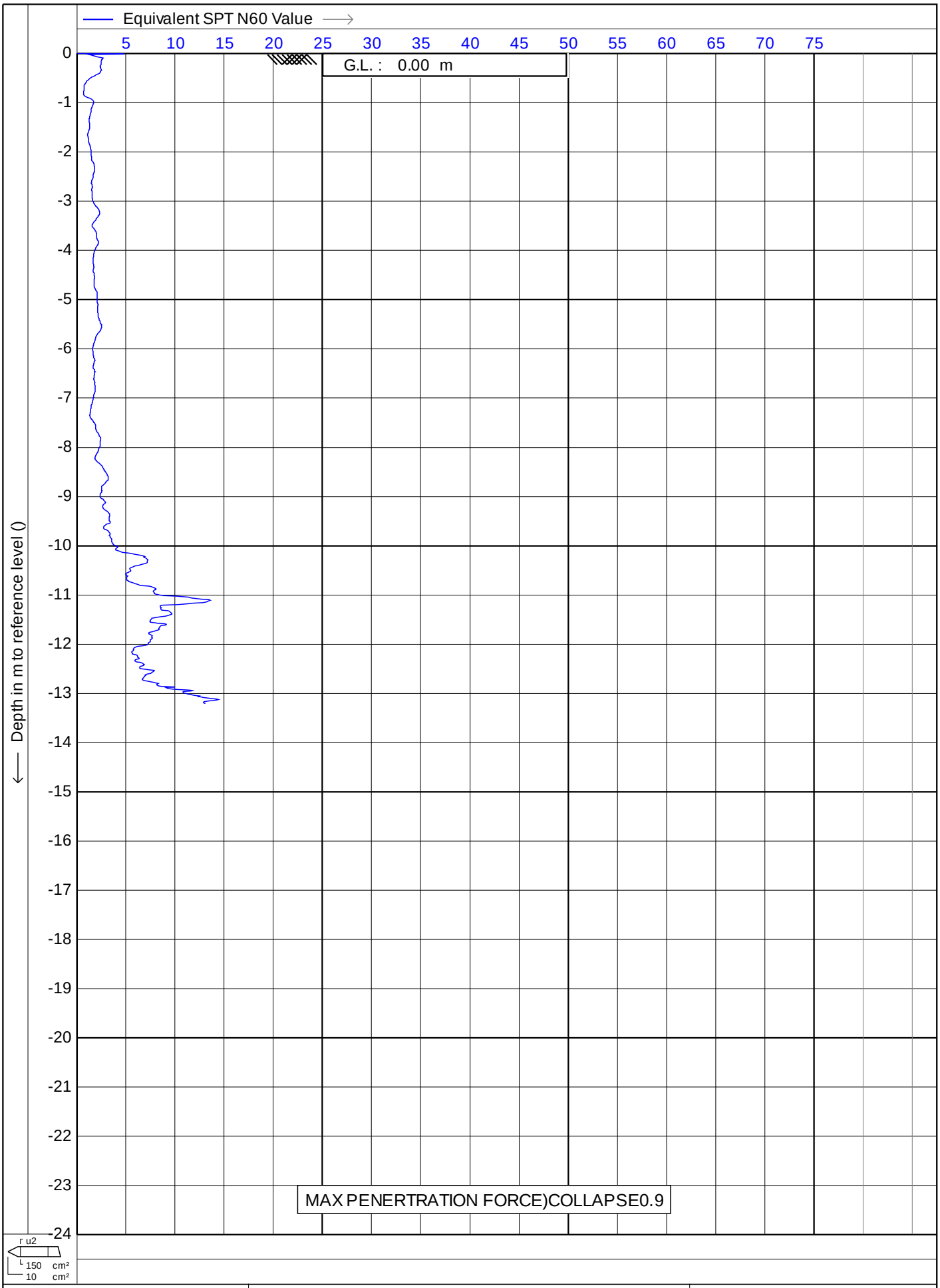
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

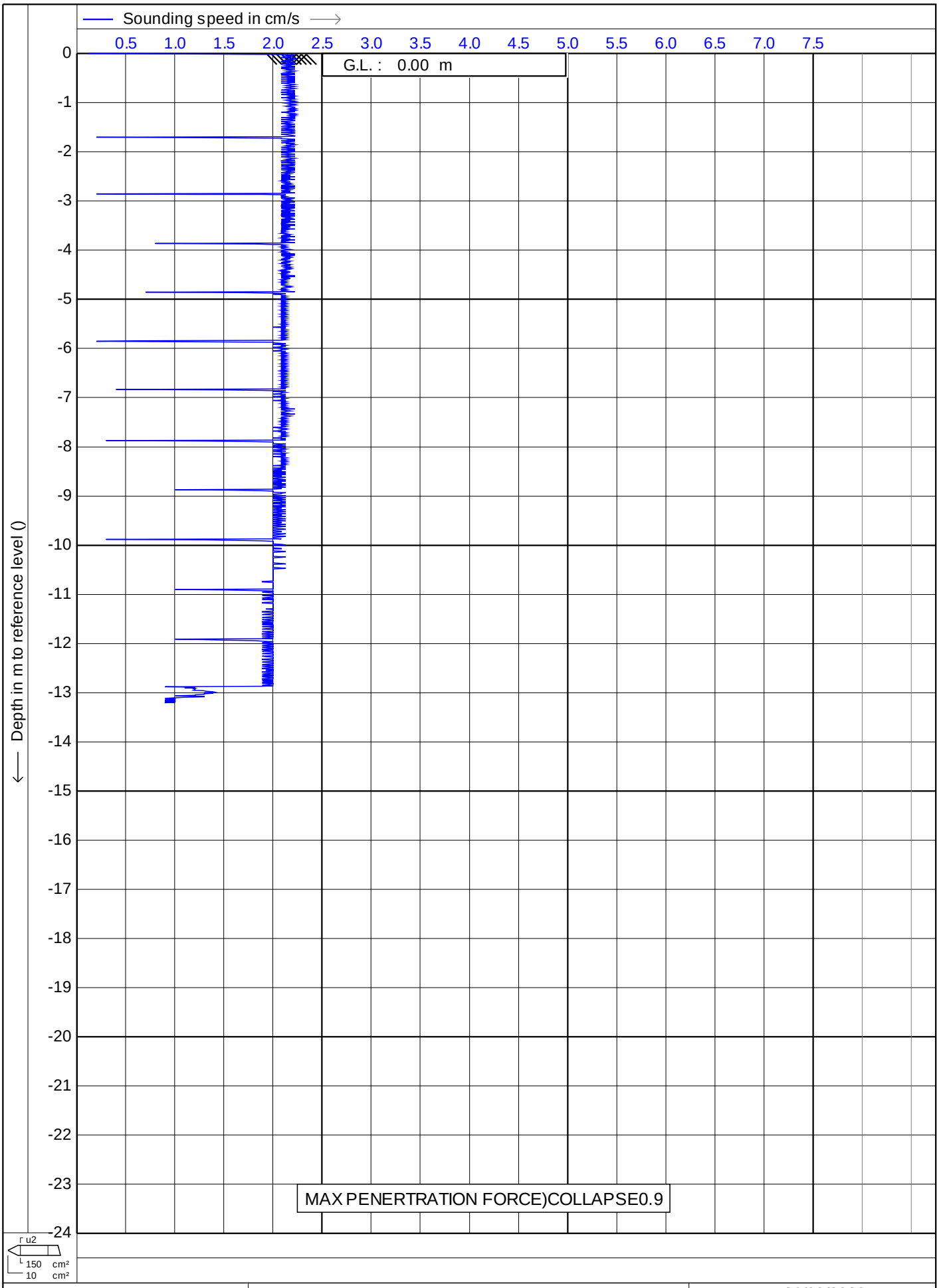
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT14** **12/15**

1.49



Test according NEN 5140 class 1

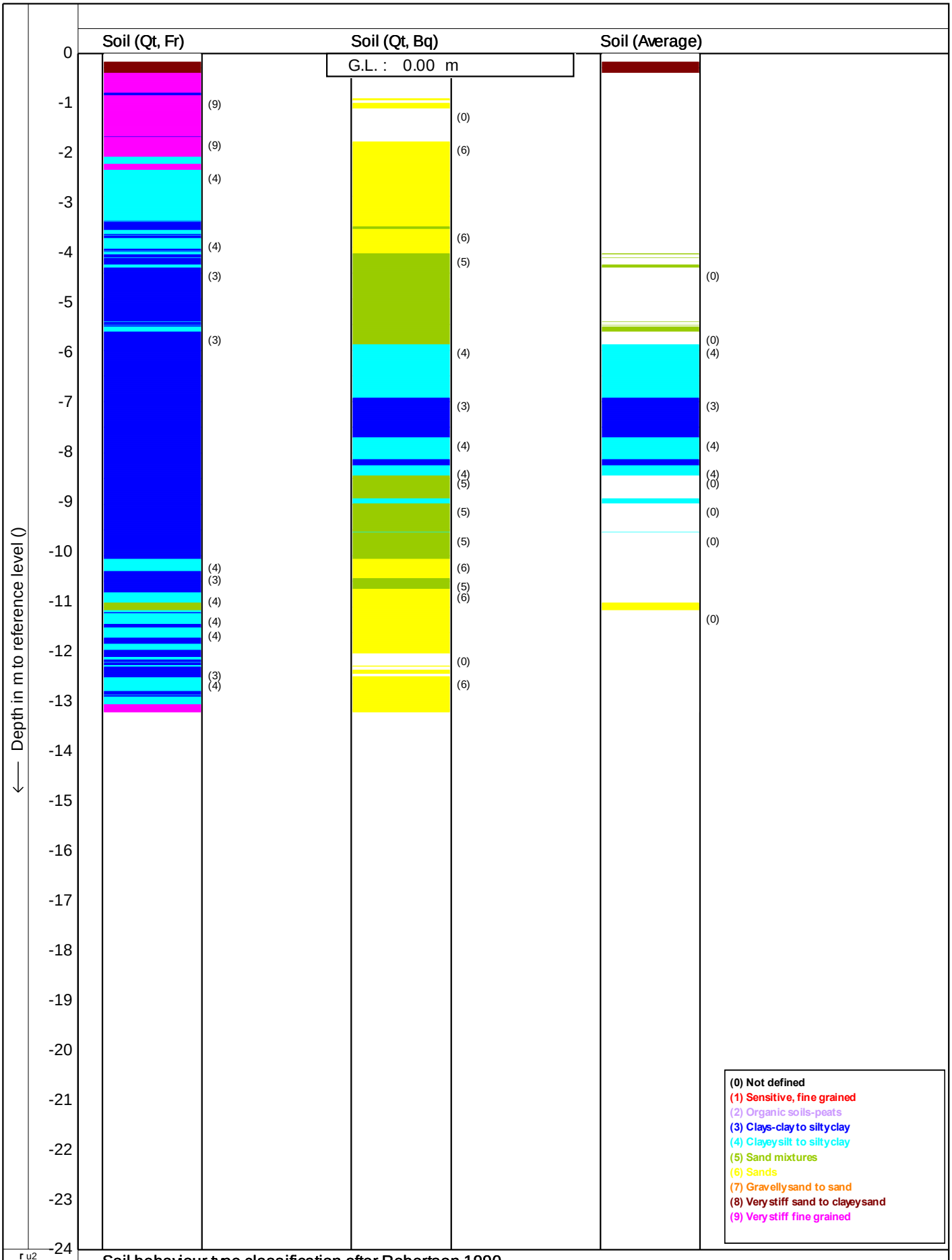
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** 13/15

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

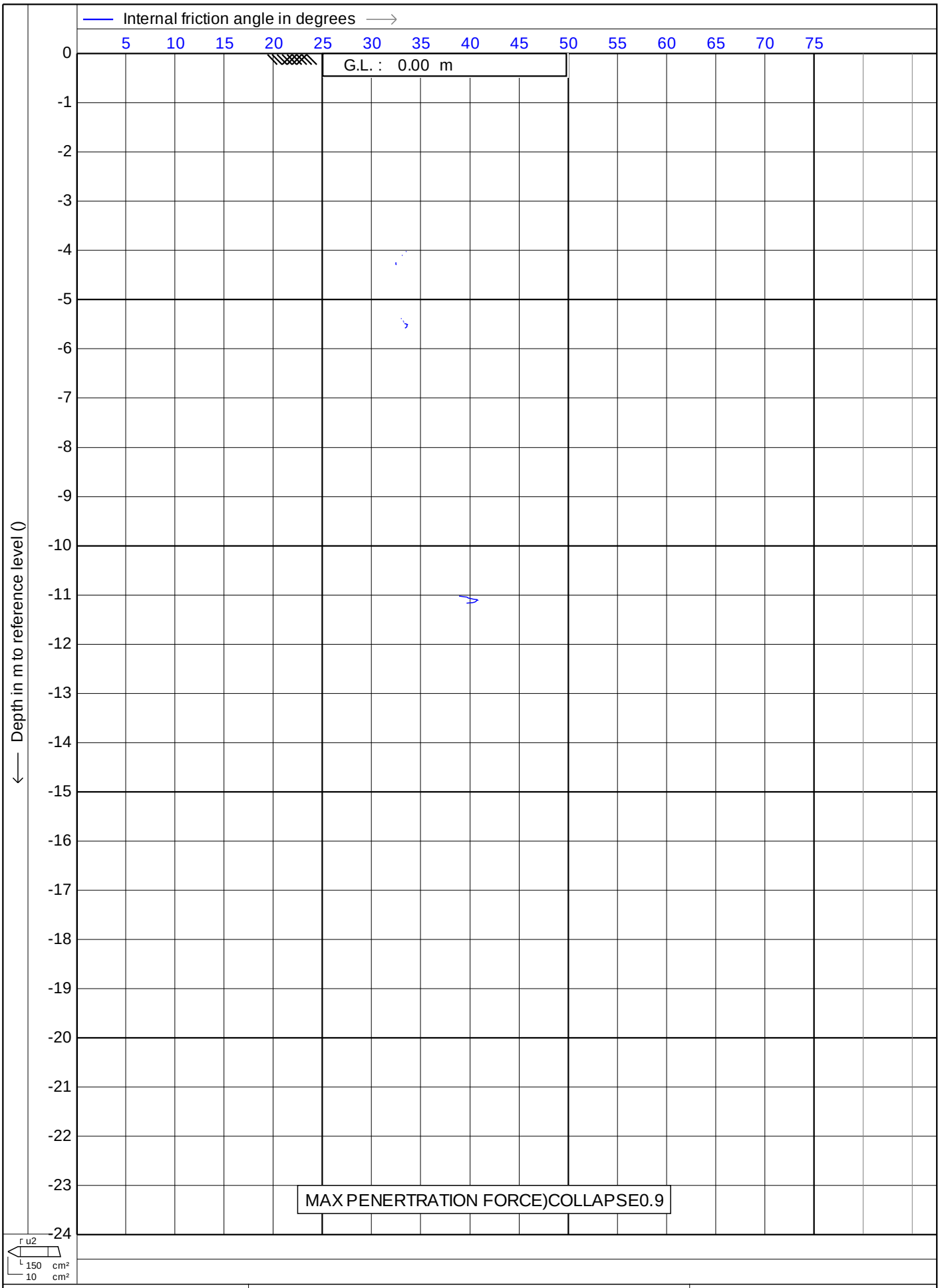
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT14** **14/15**

1.49



Test according NEN 5140 class 1

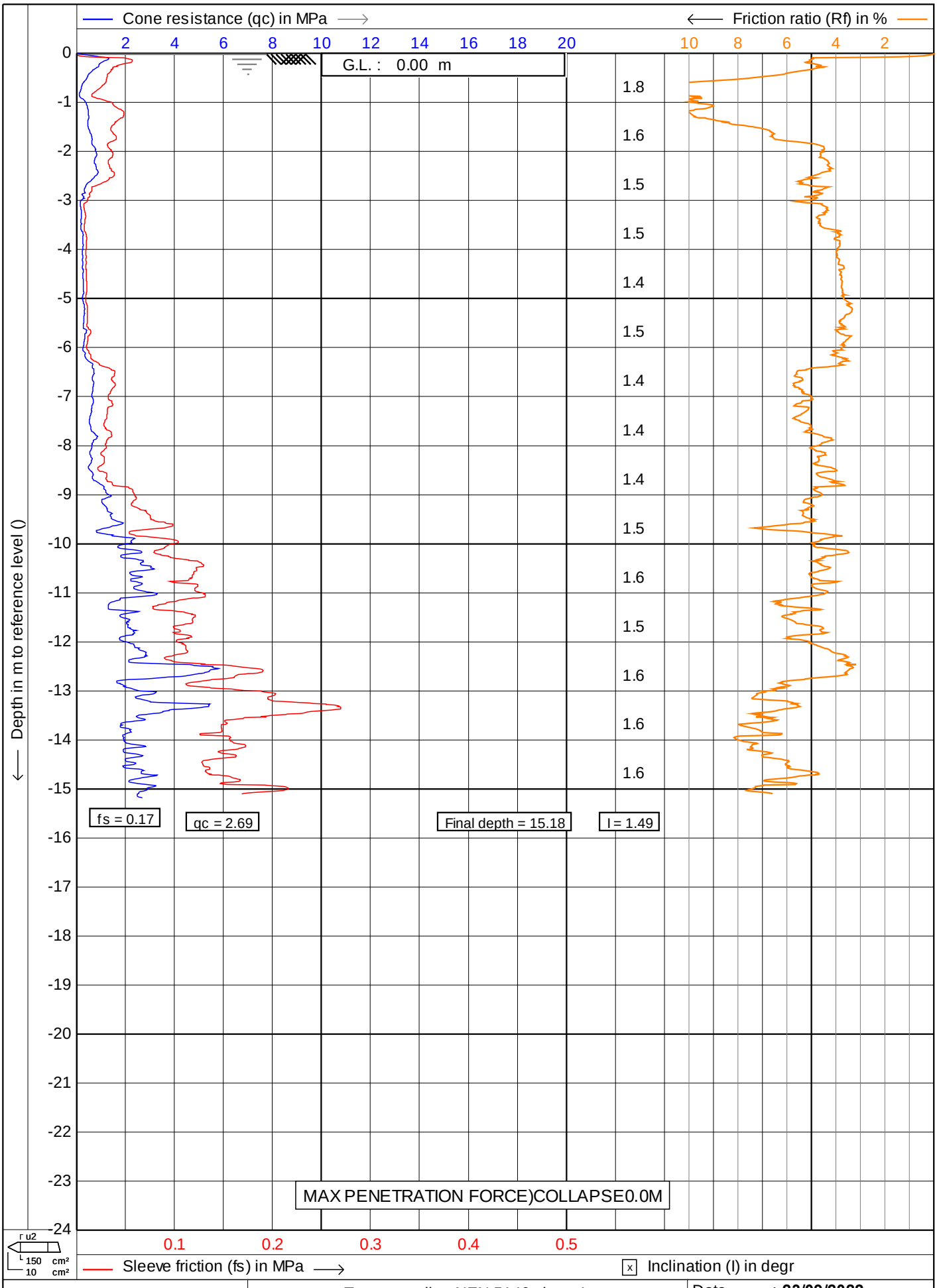
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63902, 36.60237 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT14** **15/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** 1/15

1.49



Test according NEN 5140 class 1

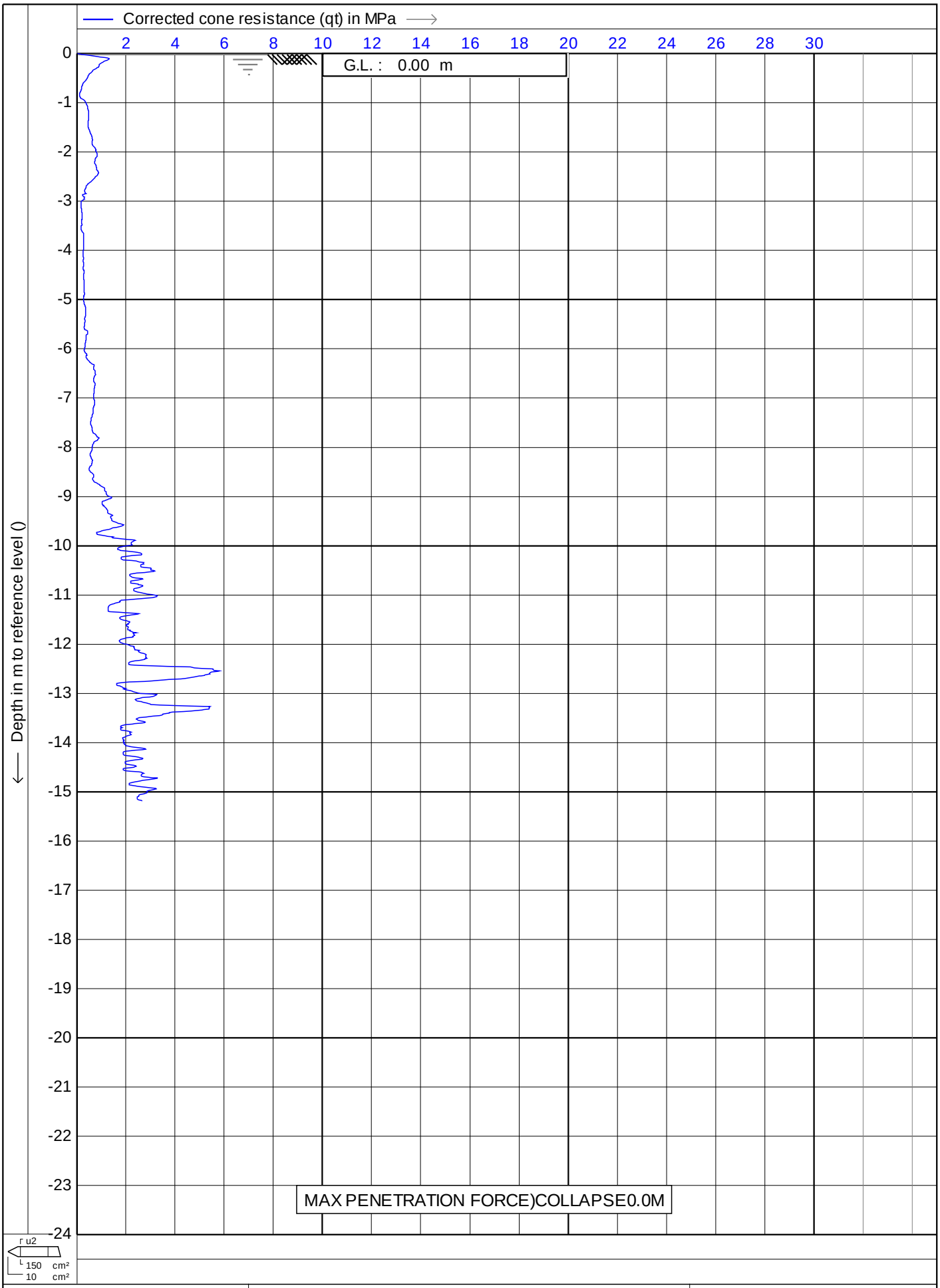
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **2/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** 3/15

1.49



Test according NEN 5140 class 1

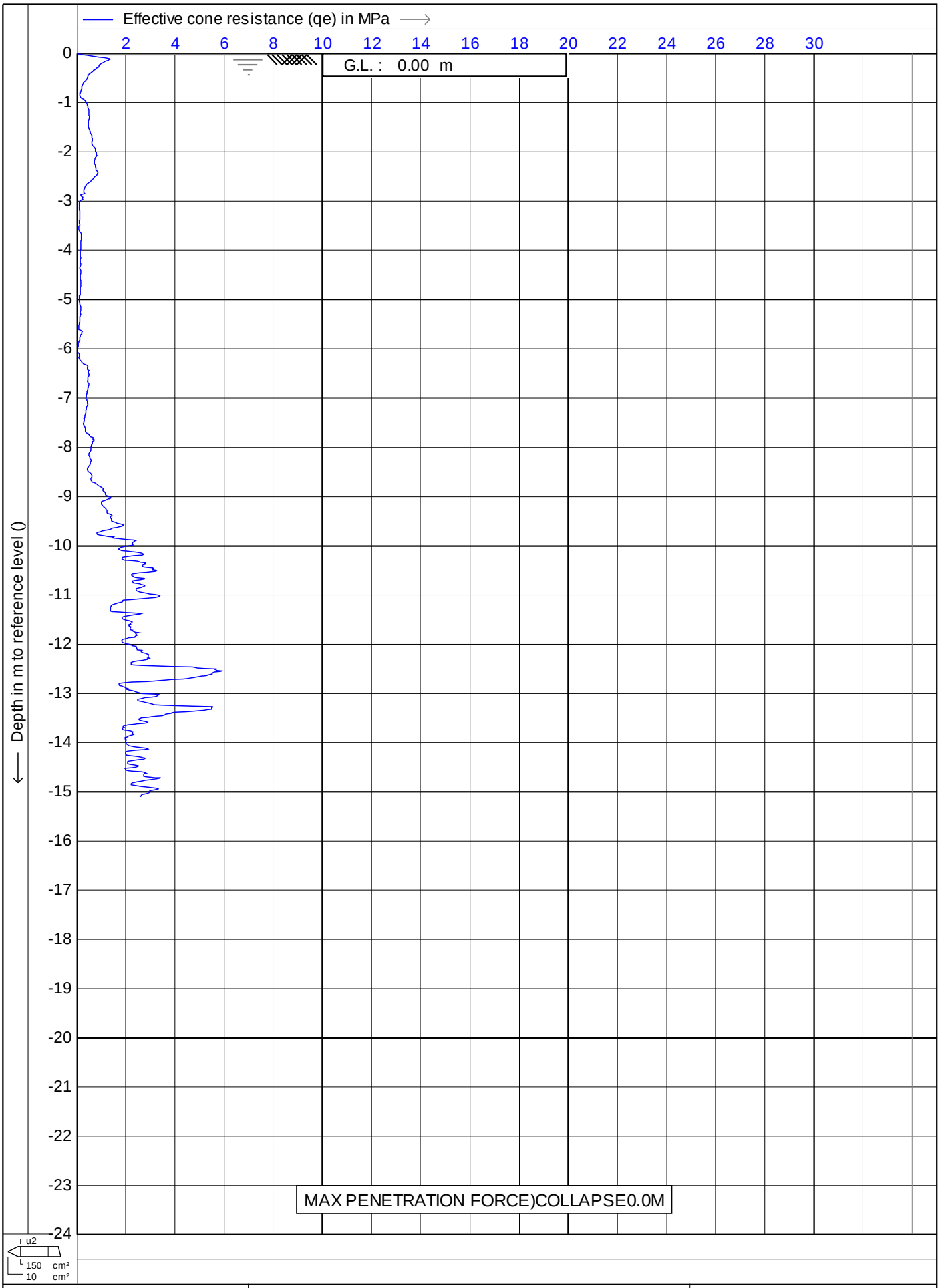
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **4/15**

1.49



Test according NEN 5140 class 1

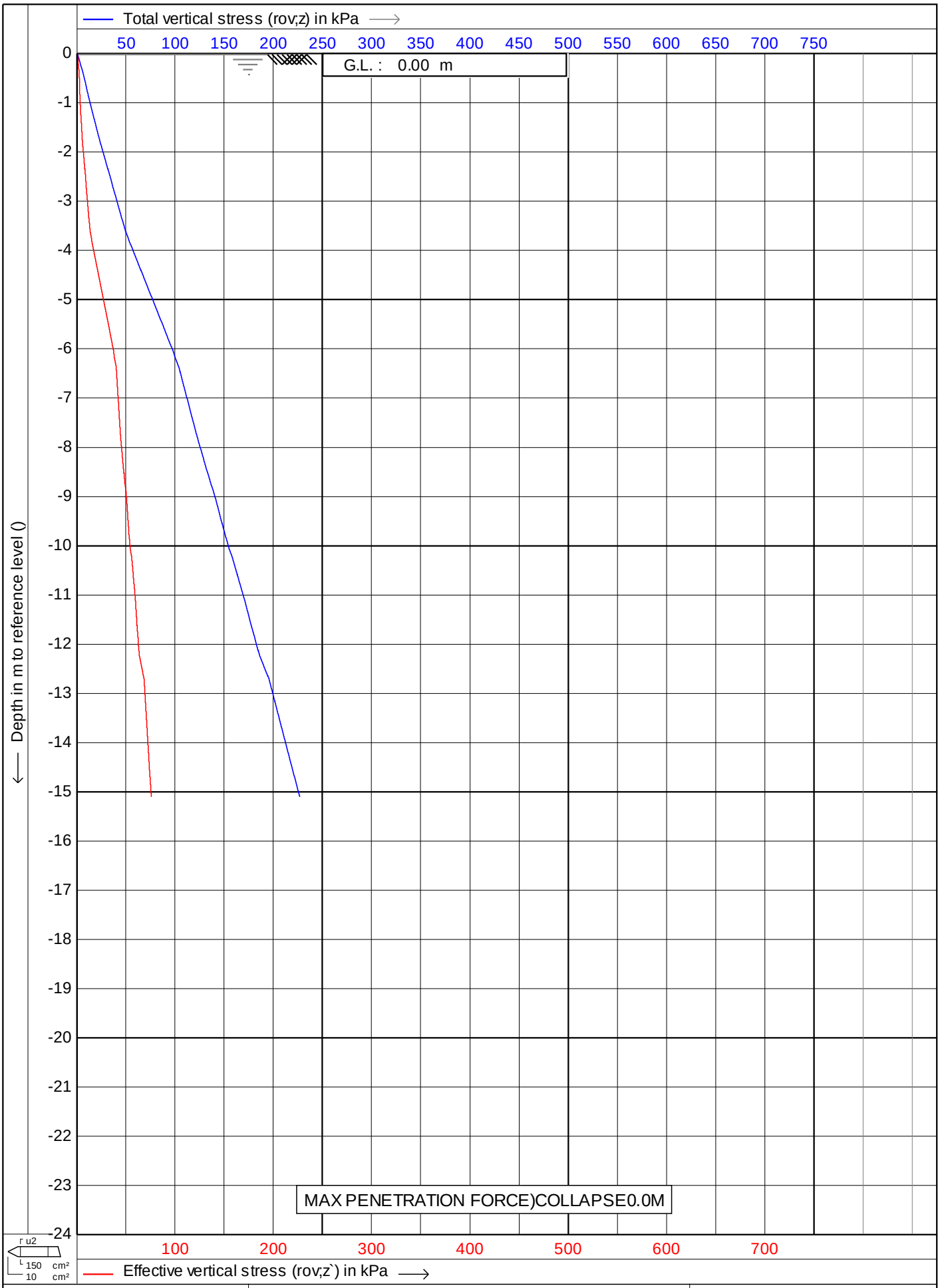
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **5/15**

1.49



Test according NEN 5140 class 1

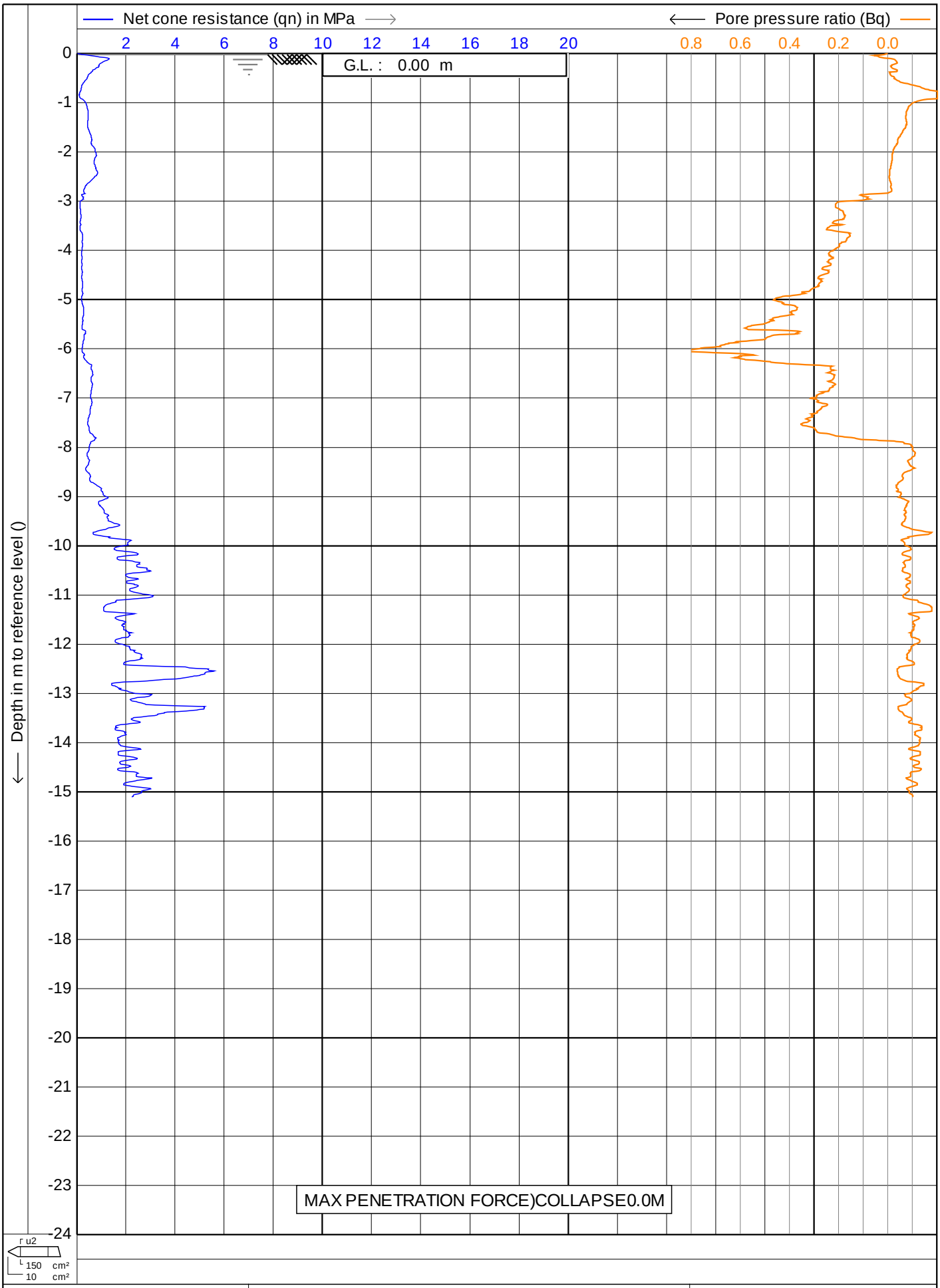
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **6/15**

1.49



Test according NEN 5140 class 1

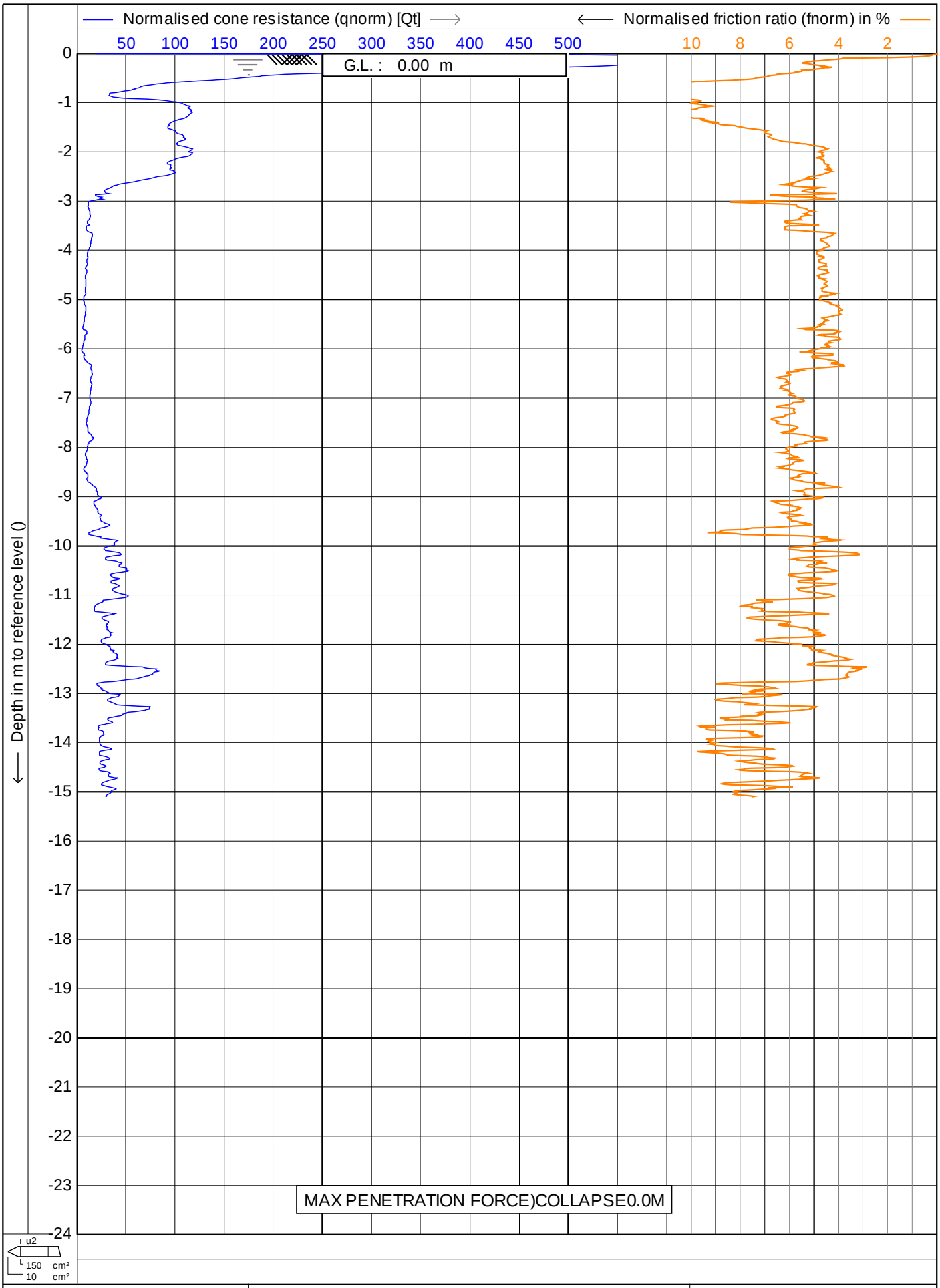
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

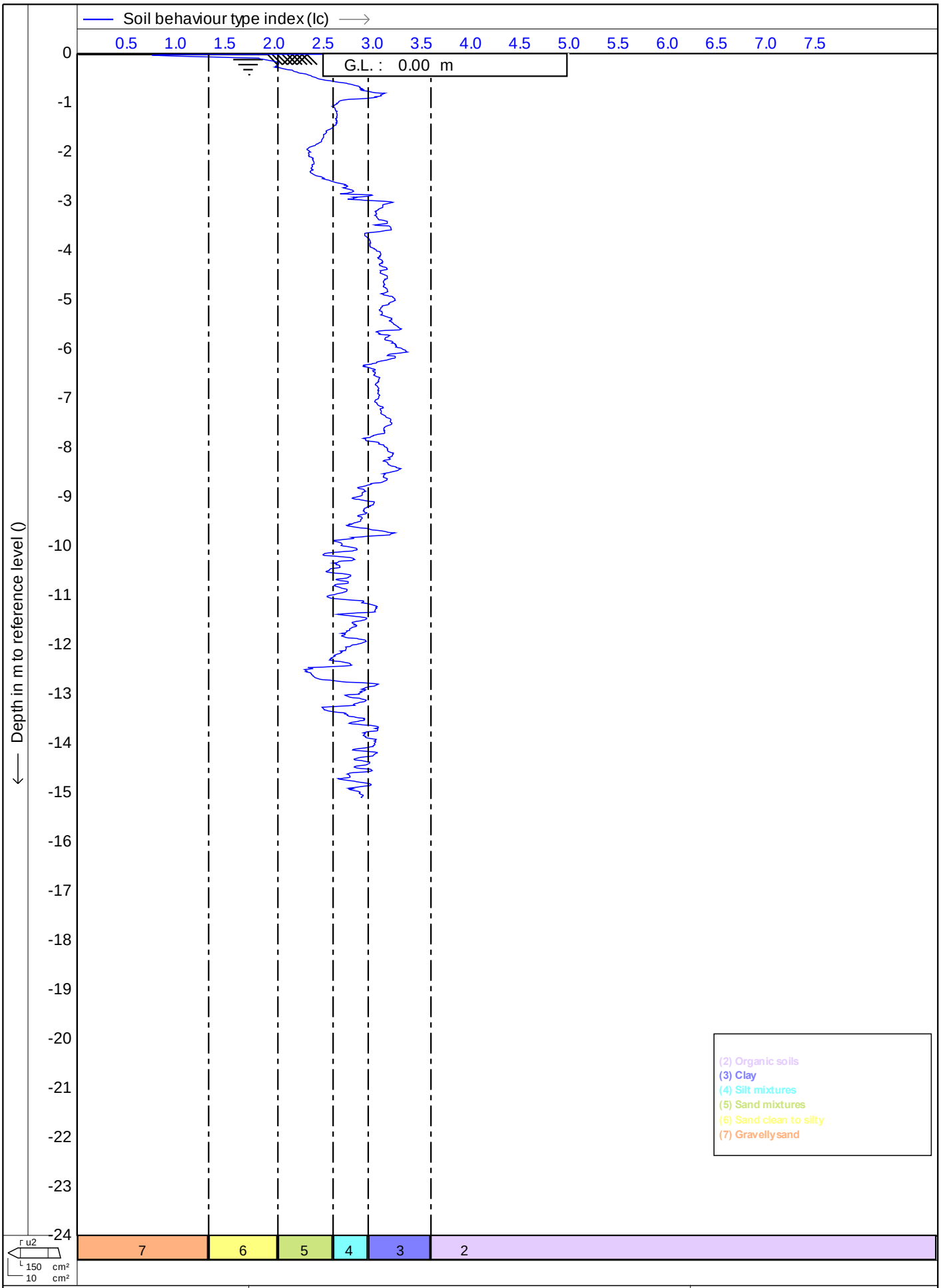
Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **7/15**

1.49



	Test according NEN 5140 class 1	Date : **23/09/2022**
	Project : **WAINUI 0992**	Cone no. : **S10CFIIP.S16084**
	Location: **MILDALE**	Project no. : **DF22GE154 23/09/22**
	Position: **174.63913, 36.60207 RD**	CPT no. : **CPT15** 8/15

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

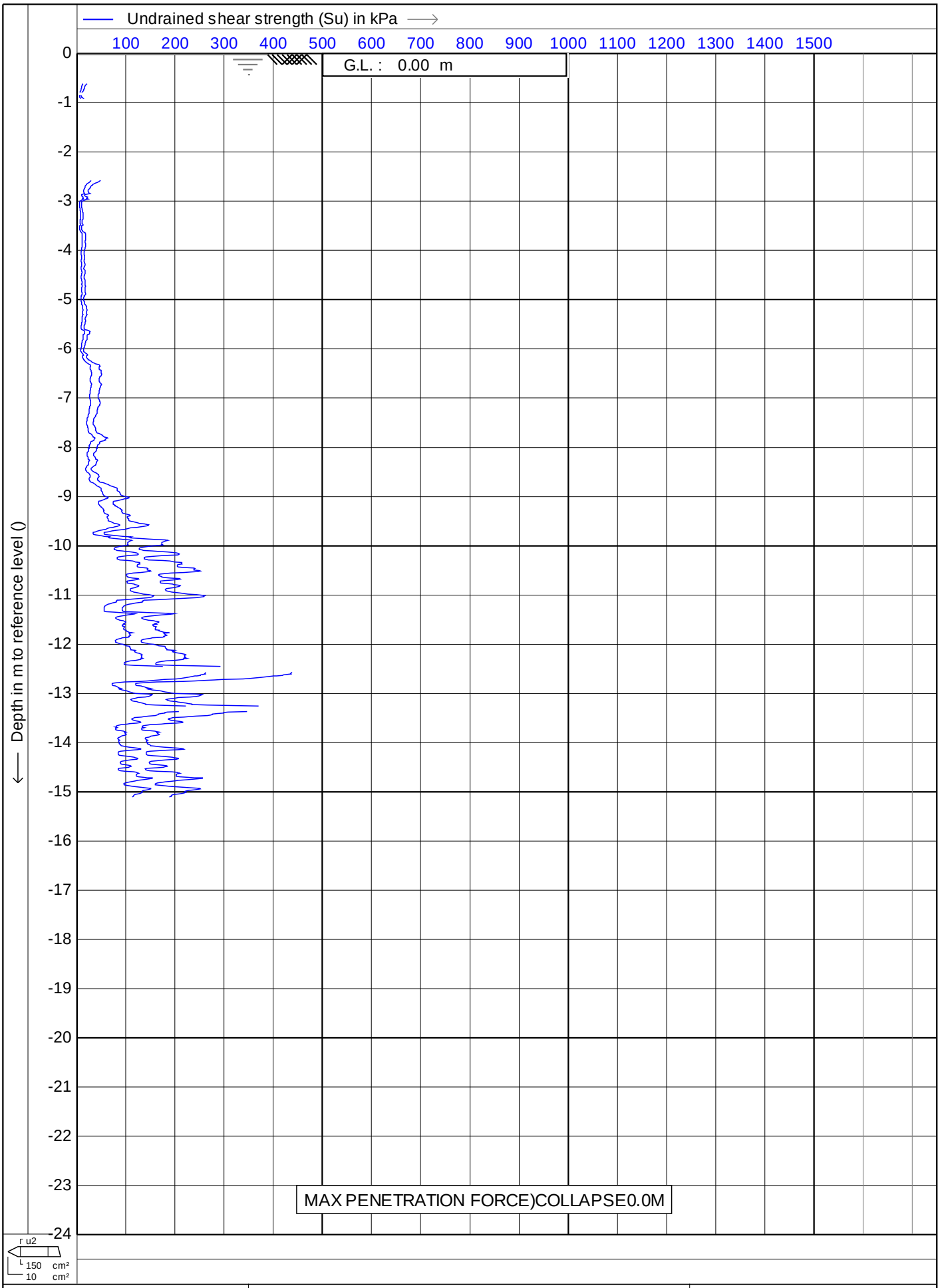
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** **9/15**

1.49



Test according NEN 5140 class 1

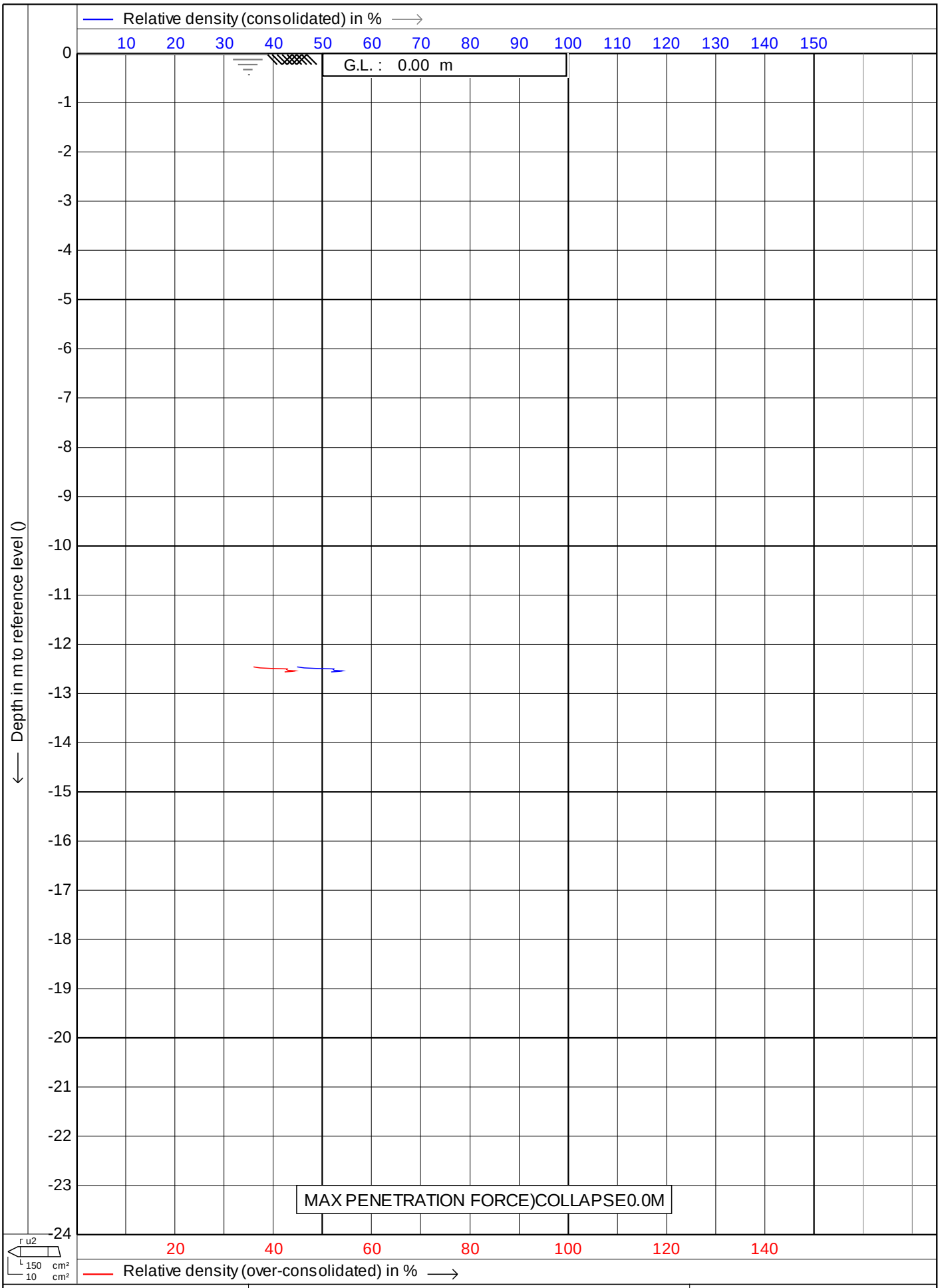
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15** **10/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

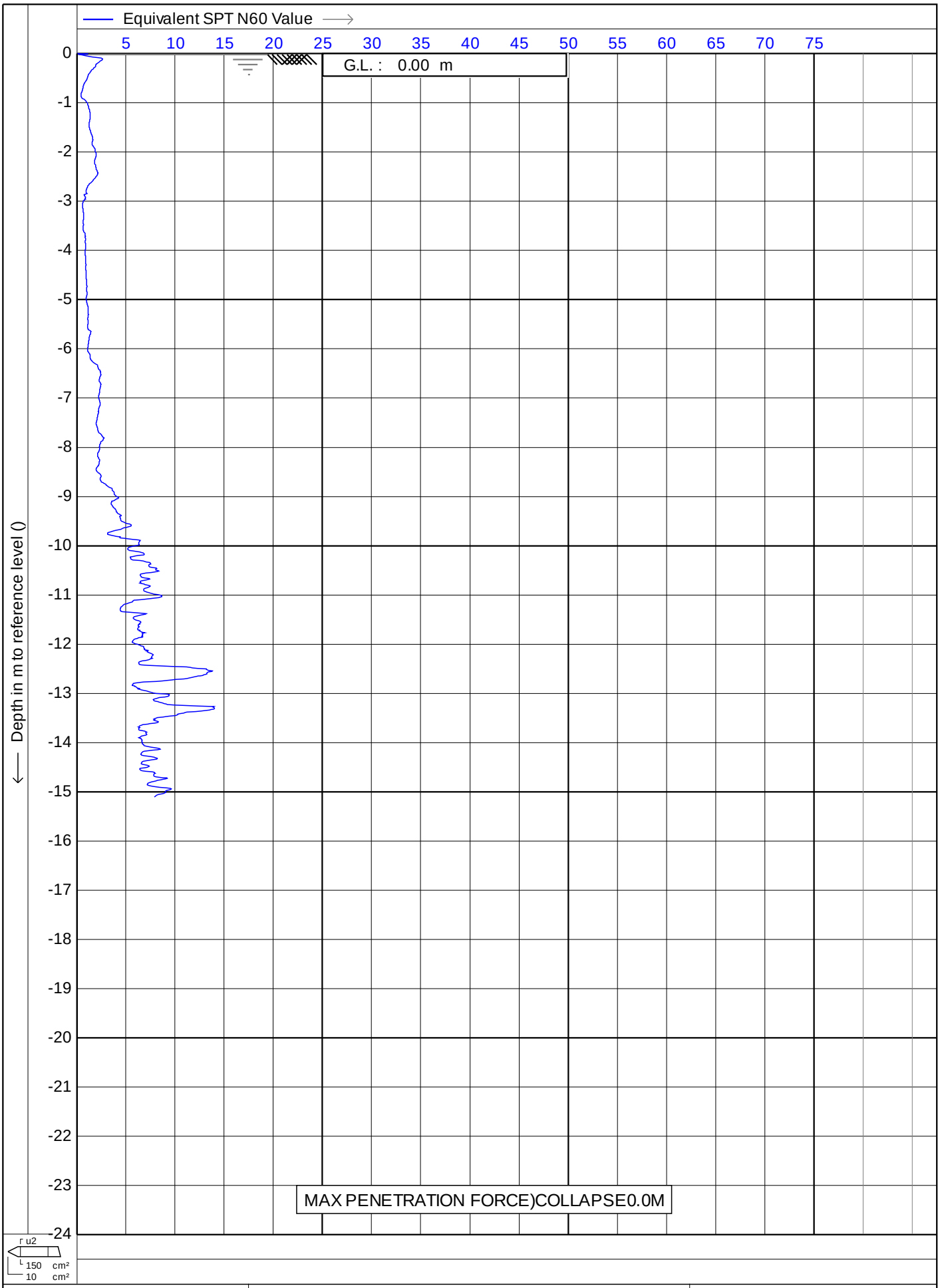
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** **11/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

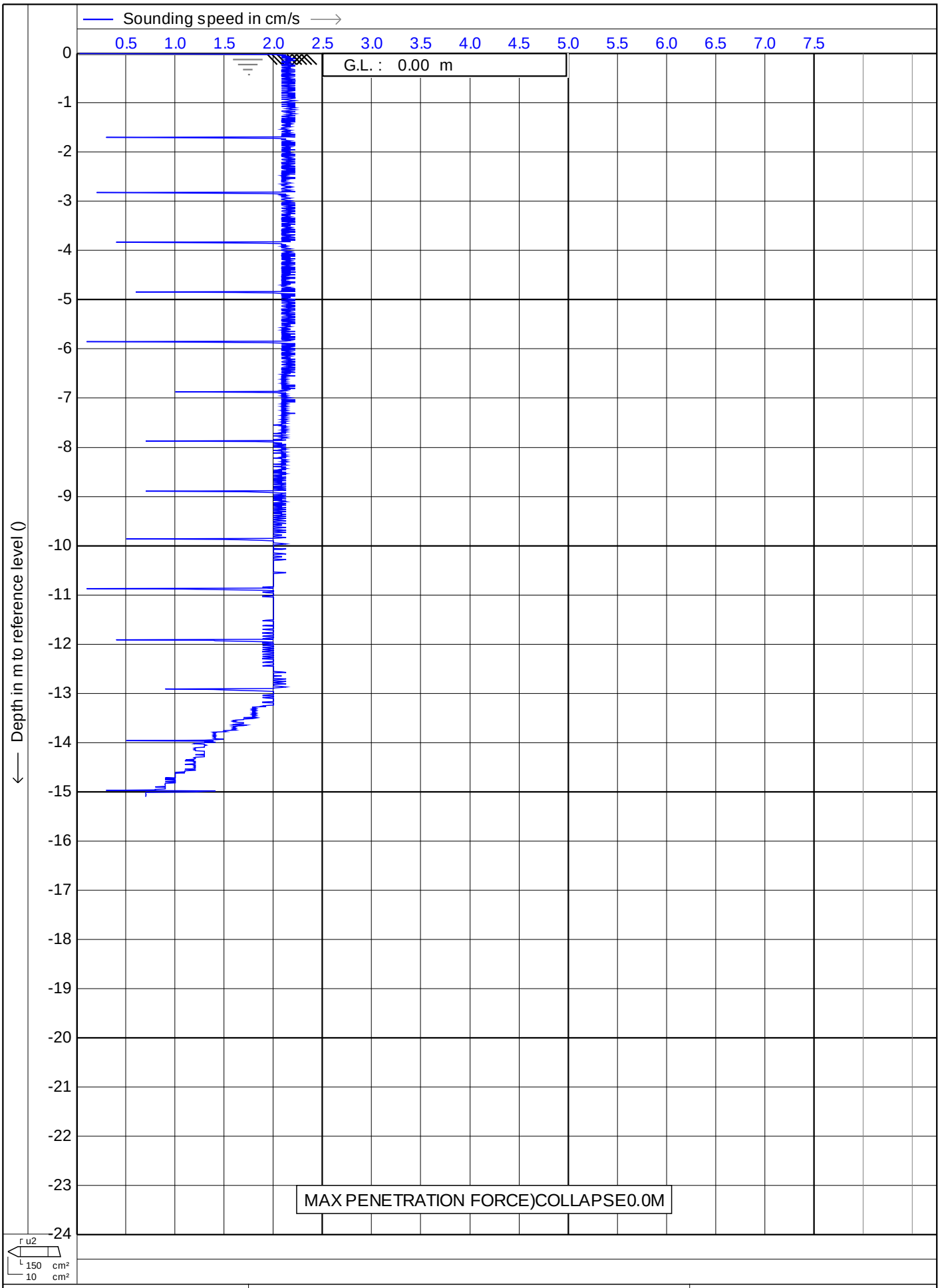
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** **12/15**

1.49



Test according NEN 5140 class 1

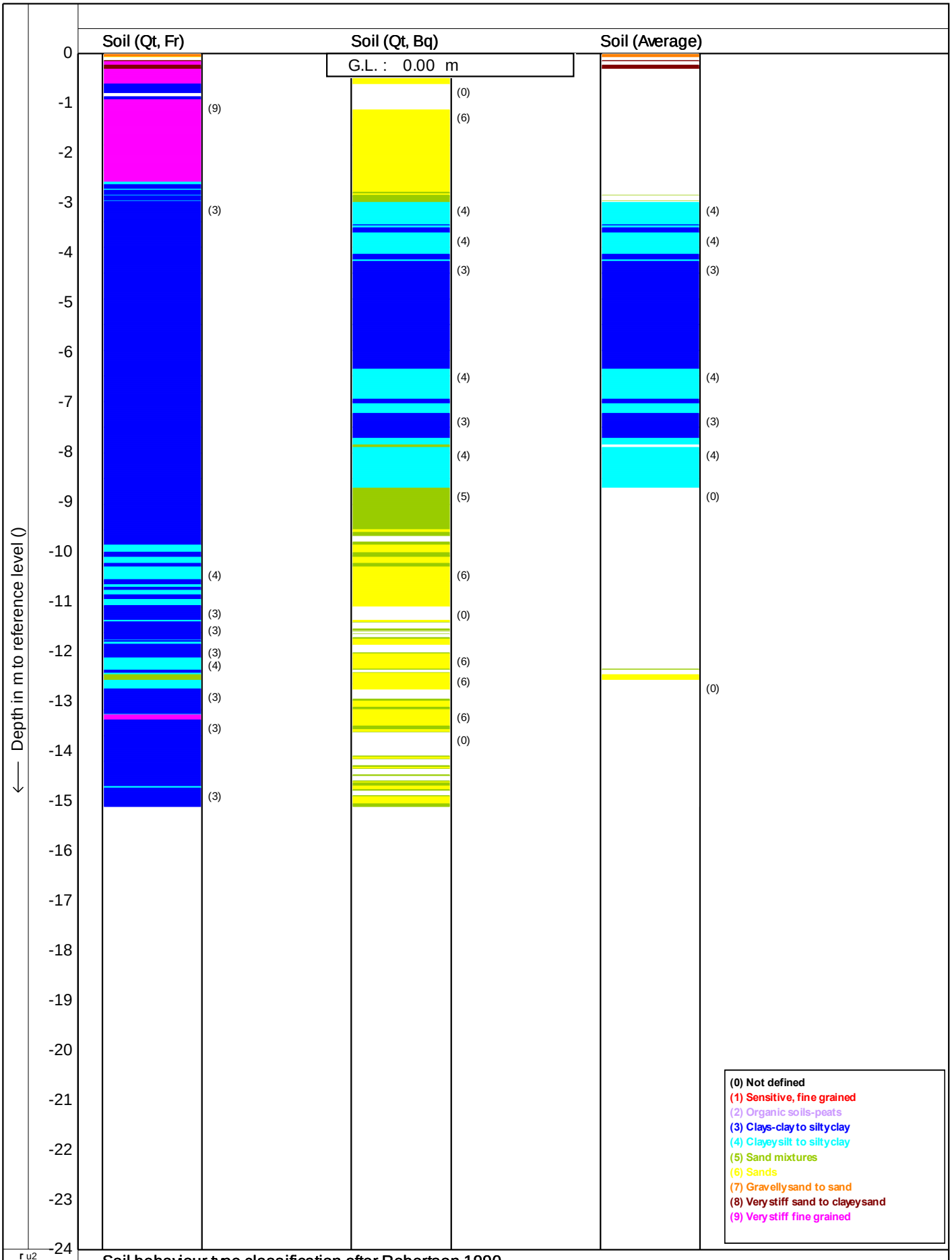
Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date	: **23/09/2022**
Cone no.	: **S10CFIIP.S16084**
Project no.	: **DF22GE154 23/09/22**
CPT no.	: **CPT15**

1.49



Soil behaviour type classification after Robertson 1990

Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

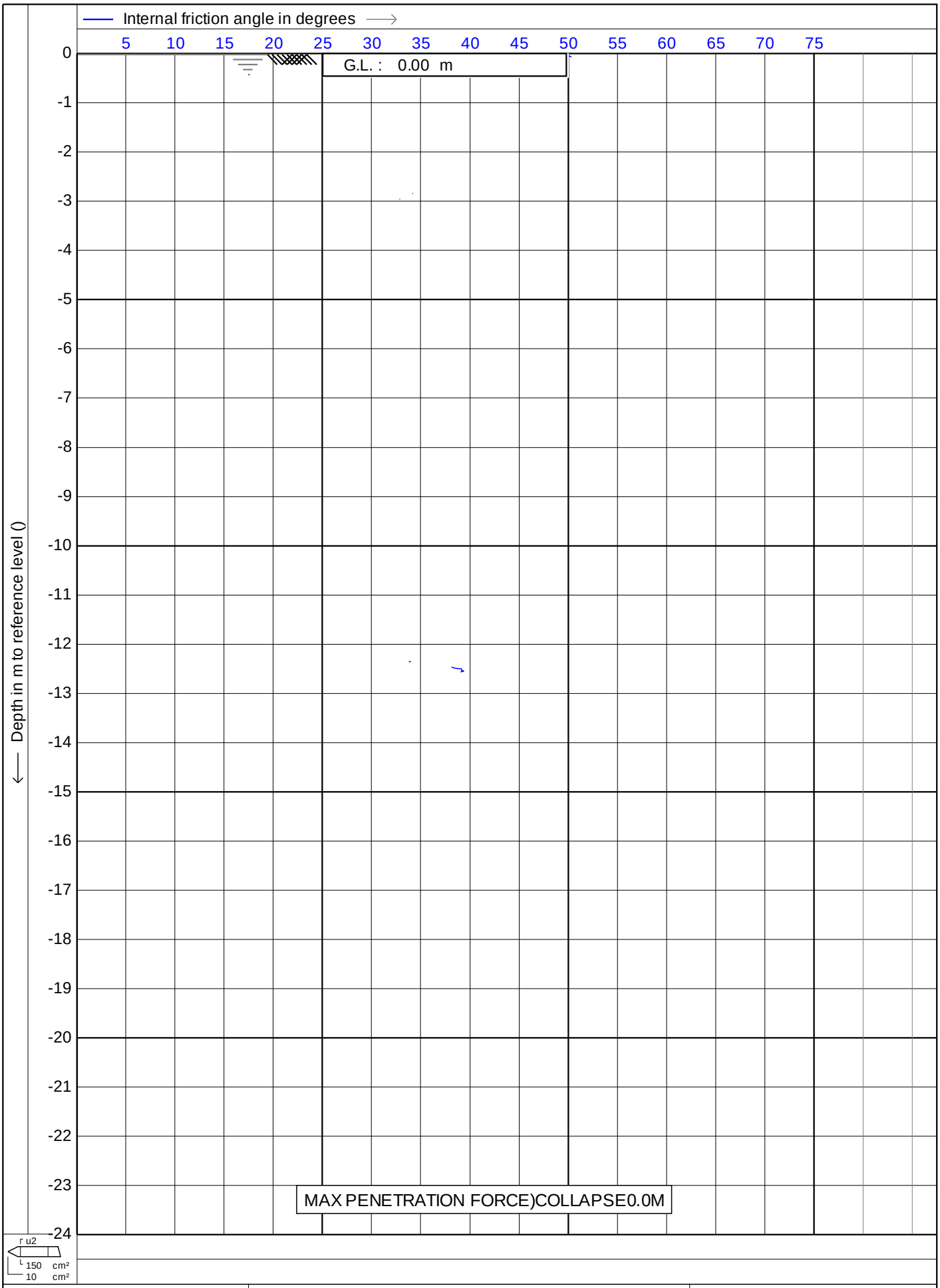
Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** **14/15**

1.49



Test according NEN 5140 class 1

Project : **WAINUI 0992**

Location: **MILDALE**

Position: **174.63913, 36.60207 RD**

Date : **23/09/2022**

Cone no. : **S10CFIIP.S16084**

Project no. : **DF22GE154 23/09/22**

CPT no. : **CPT15** **15/15**

1.49

APPENDIX D Laboratory Testing

Babbage Geotechnical Laboratory
Level 4
68 Beach Road
Auckland 1010
Telephone
E-mail

P O Box 2027
New Zealand
[redacted]

Please reply to: J. Franklin

Gibb Ritchie Geotechnical Engineers
505 Lake Road
Takapuna
Auckland 0622

Attention: **CHRIS RITCHIE**

Job Number: 69130#L
BGL Registration Number: 3195
Checked by: JF

9th April 2026

ONE DIMENSIONAL CONSOLIDATION TESTING

Dear Sir,

Re: MILLDALE NORTH
Your Reference: AK26-027
Report Number: 69130#L/CONSOL Milldale North MH03-26 2.50m

Borehole No: MH03-26 **Sample No: PT01** **Depth: 2.50m**

The following report presents the results of one dimensional consolidation testing at BGL of a 63.5mm (ID) diameter undisturbed push-tube soil sample delivered to this laboratory on the 24th of March 2026. Our instructions were to carry out a one dimensional consolidation test using cycle times that would give both the $\sqrt{T_{90}}$ and T_{50} values, and using a standard pressure sequence. The push-tube sample was tested in accordance with the following standards:

Water Content:	NZS4402: 1986: Test 2.1
One Dimensional Consolidation:	NZS4402: 1986: Test 7.1

Please note that consolidation cycles were of a variable time duration, and hence is a departure from the test standard which states that the cycle time period for the consolidation loads after the initial cycle should be of approximately the same length. Subsequent load cycles were taken to at least the time of the previous cycle.

The sample was extruded from the push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. A wire was then used to cut the sample from the soil remaining in the tube, and a scalpel and a straight-edge were used to trim the sample flat in the ring.

Sample Description (*not part of BGL IANZ Accreditation*)

MH03-26 / PT01 / 2.50m:

CLAY, firm to stiff, highly plastic, light bluish grey with black speckles, moist, organics and roots inclusions.

These test results only relate to the sample tested. The values of m_v shown on the table have been calculated for each pressure increment, using void ratio difference for that increment. Note that a solid density value of 2.65t/m^3 was assumed for this test, and is not part of the IANZ endorsement for this report. This test was carried out in a laboratory in which the temperature is controlled to be kept within the specification of the test standard.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. As per the reporting requirements of NZS4402: 1986: Test 7.1: one dimensional consolidation, the coefficients of consolidation (c_v's), and coefficients of volume compressibility (m_v's) are reported to two significant figures.

The "Void Ratio vs. Applied Pressure – Linear Scale" plot presented on page 4 is included for your information, and is based on the paper "Soil stiffness measured in oedometer tests" by L. Wesley & M. Pender, Proc. 18th NZGS Geotechnical Symposium on Soil-Structure Interaction, 2008. Please note that the presentation of the data on a linear scale is not part of the test standard, hence page 4 does not form part of the IANZ endorsement for this report.

Note that the Coefficient of Secondary Compression (C_{sec}) and the Coefficient of Permeability (k) values reported on page 5 have been calculated based on the methods described in "Manual of Soil Laboratory Testing Volume 2: Permeability, Shear Strength & Compressibility Tests" by K.H. Head & R.J. Epps, 3rd Edition, 2011. The Coefficient of Permeability values were calculated using the c_v(log) values determined in the test. The reporting of these figures is not part of NZS4402: 1986: Test 7.1, therefore these figures are not part of the IANZ endorsement for this report.

It should be noted that the C_{sec} values given in this report are based on strain per log-cycle of time. These values are commonly denoted as C'_α. This is distinctly different to C_α values, which are based on the change in void ratio per log-cycle of time.

These two parameters are related by $C'_\alpha = C_\alpha / (1 + e_p)$ (*from Principles of Geotechnical Engineering, 7th Edition, 2010, Braja M. Das*) where ;

C'_α is the coefficient of secondary compression (consolidation) determined by strain (also called the secondary compression (consolidation) index).

C_α is the coefficient of secondary compression (consolidation) determined by void ratio (also called the secondary compression (consolidation) index).

e_p is the void ratio at the end of primary consolidation.

Each test result is data obtained at a specific test location. The nature and continuity of subsoil conditions away from the test area could vary from the data recovered during this testing, therefore the test results relate only to the sample as-received, and relate only to the sample under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Key Technical Person
Laboratory Manager
Babbage Geotechnical Laboratory

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TESTING LABORATORY
№ 126

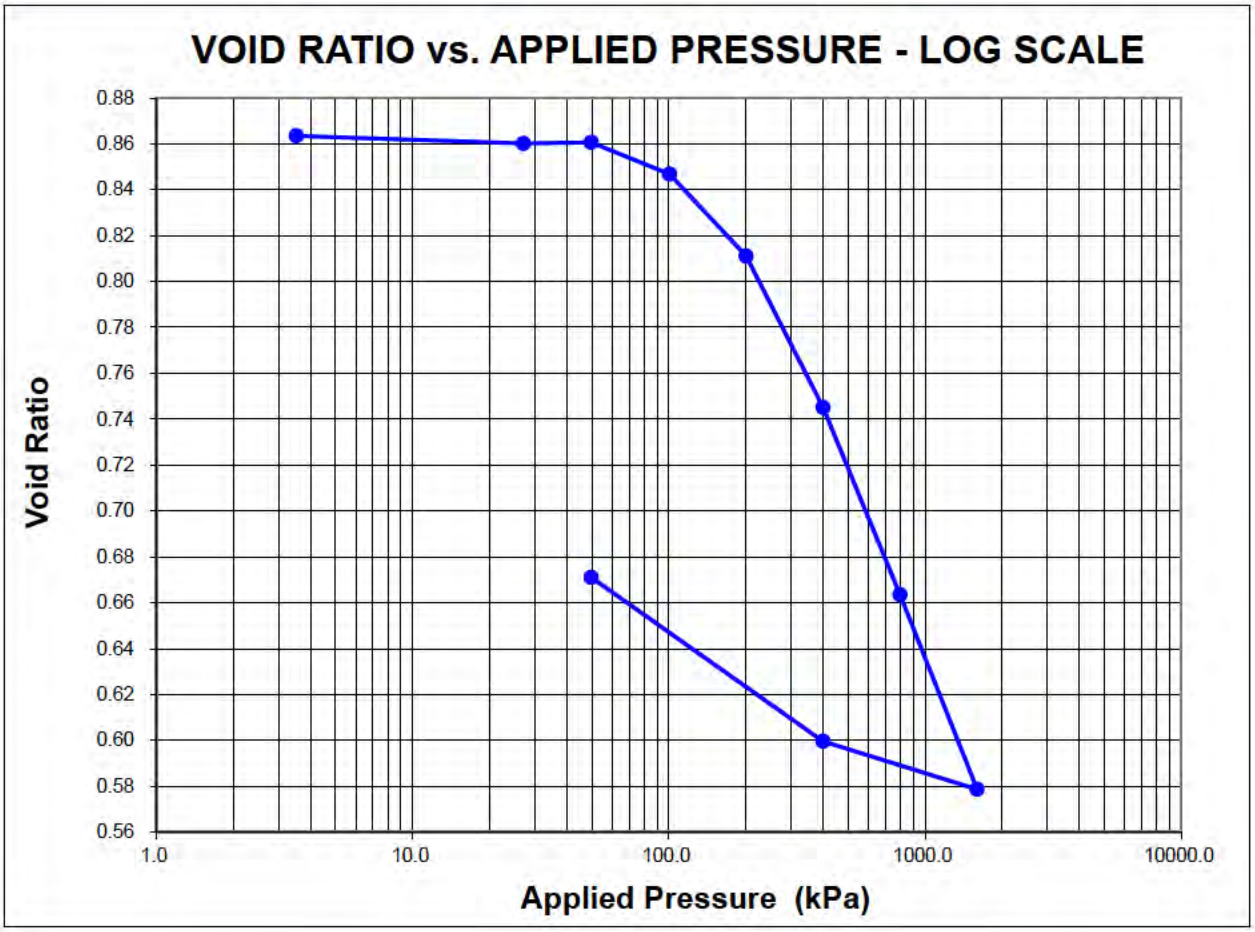
All tests reported herein have been performed in accordance with the laboratory's scope of accreditation. This report may not be reproduced except in full & with written approval from BGL.

BGL Babbage Geotechnical Laboratory	Job Number:	Registration Number:	Page 3 of 5	Version No:	13
	69130#L	3195		Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 2.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Compiled By:	JL	8-Apr-26
	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT01	Depth:	2.50m



SAMPLE HISTORY & PREPARATION

undisturbed / ~~disturbed~~
Sample obtained from a 63.5mm diameter push-tube.

The sample was extruded from the 63.5mm diameter push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. Both sides of the ring were then trimmed flat using a scalpel & a straight-edge.

TEST DETAILS

Consol machine number:	2		Surface area of sample top:	2828	mm^2
Consol ring number:	60a		Sample mass:	109.584	g
Sample diameter:	60.01	mm	Initial bulk density:	1.89	t/m^3
Sample height:	20.52	mm	Assumed solid density of soil particles:	2.65	t/m^3

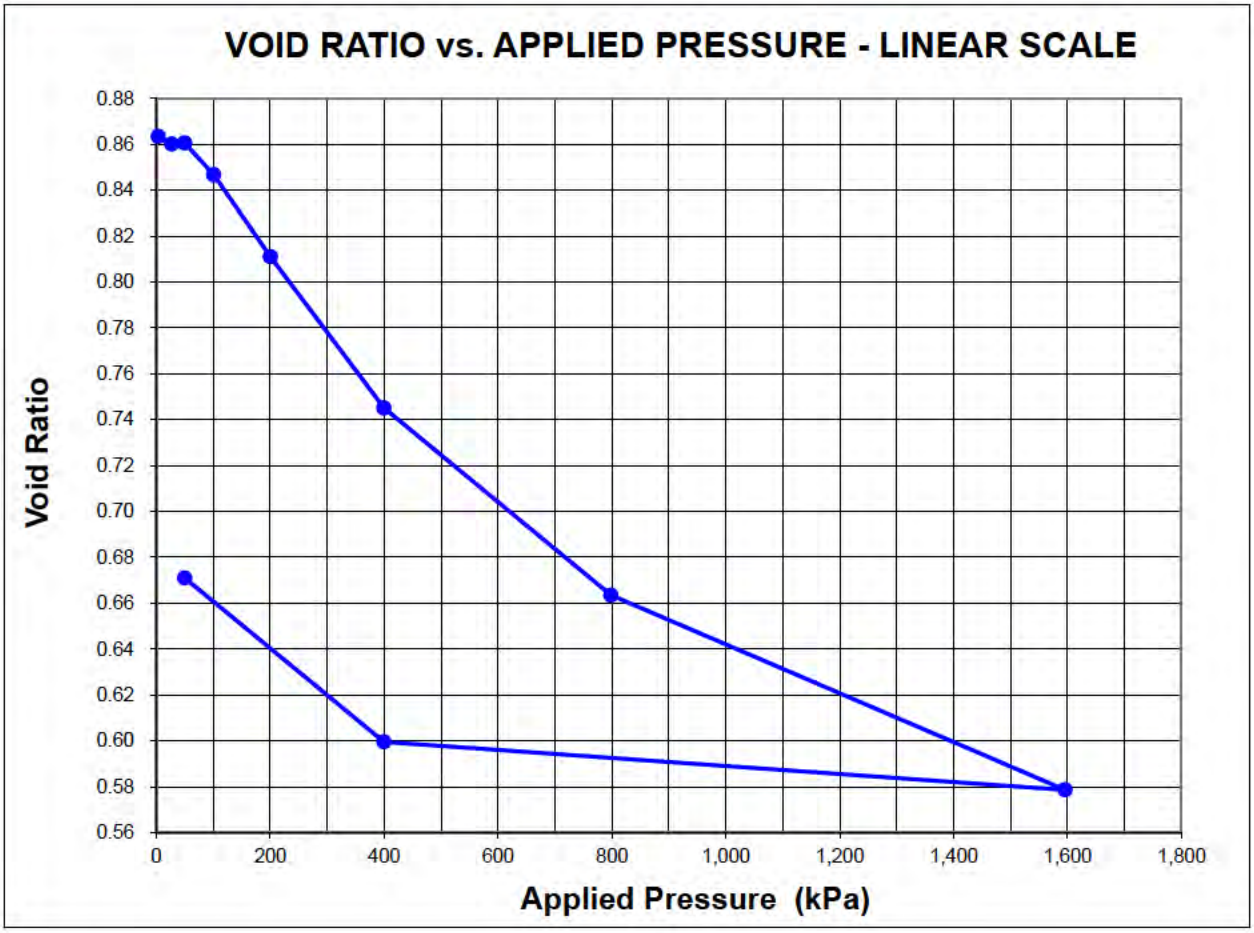
BGL Babbage Geotechnical Laboratory	Job Number: 69130#L	Registration Number: 3195	Page 4 of 5	Version No:	13
				Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 2.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Compiled By:	JL	8-Apr-26
	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT01	Depth:	2.50m

VOID RATIO vs. APPLIED PRESSURE - LINEAR SCALE



PHOTOGRAPH OF THE SAMPLE PRIOR TO TESTING



Babbage Geotechnical Laboratory	Job Number:	Registration Number:	Page 5 of 5	Version No:	13
	69130#L	3195		Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 2.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Compiled By:	JL	8-Apr-26
	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT01	Depth:	2.50m

Applied Pressure	Incremental Deflection	Sample Height	Compression Ratio	Height of Voids	Void Ratio	Coefficient of Volume Compressibility m_v	Coefficient of Consolidation - c_v (log time)	Coefficient of Consolidation - c_v (sqrt time)
kPa	mm	mm		mm	e	m^2/MN	m^2/year	m^2/year
3.5	0.000	20.520	1.000	9.508	0.863			
27.1	0.037	20.483	0.998	9.472	0.860	sample swelled after initial consolidation		
49.8	-0.005	20.488	0.998	9.477	0.861	sample swelled		
100.8	0.152	20.336	0.991	9.324	0.847	0.15	2.4	11
200.4	0.394	19.943	0.972	8.931	0.811	0.19	1.3	2.0
399.8	0.726	19.217	0.936	8.205	0.745	0.18	0.94	1.1
798.5	0.899	18.318	0.893	7.306	0.663	0.12	0.96	1.1
1596.0	0.934	17.384	0.847	6.372	0.579	0.064	0.97	1.7
399.8	-0.231	17.615	0.858	6.603	0.600	BACKLOAD 1		
49.8	-0.786	18.400	0.897	7.389	0.671	BACKLOAD 2		

Coefficient of Secondary Compression - C_{sec}	
Applied Pressure	C_{sec}
27.1	*
49.8	*
100.8	**0.00054**
200.4	**0.0015**
399.8	**0.0019**
798.5	**0.0019**
1596.0	**0.0019**

*The logarithm of time graphs did not allow determination of the Coefficient of Secondary Compression (Csec) values for these cycles.

Coefficient of Permeability - k	
Applied Pressure	k (m/s)
27.1	-
49.8	-
100.8	**1.1E-10**
200.4	**7.6E-11**
399.8	**5.3E-11**
798.5	**3.5E-11**
1596.0	**1.9E-11**

	INITIAL	FINAL
Mass of dry sample (g)	82.53	82.53
Height of sample (mm)	20.520	17.384 (after consolidation) 18.400 (after rebound)
Water Content (%)	32.8	26.2
Dry Density (t/m^3)	1.42	1.68
Height of soil particles (mm)	11.012	11.012
Void Ratio	0.863	0.579 (after consolidation) 0.671 (after rebound)
Degree of saturation (%)	-	-

Babbage Geotechnical Laboratory
Level 4
68 Beach Road
Auckland 1010
Telephone
E-mail

P O Box 2027
New Zealand
[redacted]

Please reply to: J. Franklin

Gibb Ritchie Geotechnical Engineers
505 Lake Road
Takapuna
Auckland 0622

Attention: **CHRIS RITCHIE**

Job Number: 69130#L
BGL Registration Number: 3195
Checked by: JF

9th April 2026

ONE DIMENSIONAL CONSOLIDATION TESTING

Dear Sir,

Re: MILLDALE NORTH
Your Reference: AK26-027
Report Number: 69130#L/CONSOL Milldale North MH03-26 5.50m

Borehole No: MH03-26 **Sample No: PT02** **Depth: 5.50m**

The following report presents the results of one dimensional consolidation testing at BGL of a 63.5mm (ID) diameter undisturbed push-tube soil sample delivered to this laboratory on the 24th of March 2026. Our instructions were to carry out a one dimensional consolidation test using cycle times that would give both the $\sqrt{T_{90}}$ and T_{50} values, and using a standard pressure sequence. The push-tube sample was tested in accordance with the following standards:

Water Content:	NZS4402: 1986: Test 2.1
One Dimensional Consolidation:	NZS4402: 1986: Test 7.1

Please note that consolidation cycles were of a variable time duration, and hence is a departure from the test standard which states that the cycle time period for the consolidation loads after the initial cycle should be of approximately the same length. Subsequent load cycles were taken to at least the time of the previous cycle.

The sample was extruded from the push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. A wire was then used to cut the sample from the soil remaining in the tube, and a scalpel and a straight-edge were used to trim the sample flat in the ring.

Sample Description (*not part of BGL IANZ Accreditation*)

MH03-26 / PT02 / 5.50m:

CLAY, firm, highly plastic, light greenish grey with black speckles, very moist, organic inclusions.

These test results only relate to the sample tested. The values of m_v shown on the table have been calculated for each pressure increment, using void ratio difference for that increment. Note that a solid density value of 2.65t/m^3 was assumed for this test, and is not part of the IANZ endorsement for this report. This test was carried out in a laboratory in which the temperature is controlled to be kept within the specification of the test standard.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. As per the reporting requirements of NZS4402: 1986: Test 7.1: one dimensional consolidation, the coefficients of consolidation (c_v's), and coefficients of volume compressibility (m_v's) are reported to two significant figures.

The "Void Ratio vs. Applied Pressure – Linear Scale" plot presented on page 4 is included for your information, and is based on the paper "Soil stiffness measured in oedometer tests" by L. Wesley & M. Pender, Proc. 18th NZGS Geotechnical Symposium on Soil-Structure Interaction, 2008. Please note that the presentation of the data on a linear scale is not part of the test standard, hence page 4 does not form part of the IANZ endorsement for this report.

Note that the Coefficient of Secondary Compression (C_{sec}) and the Coefficient of Permeability (k) values reported on page 5 have been calculated based on the methods described in "Manual of Soil Laboratory Testing Volume 2: Permeability, Shear Strength & Compressibility Tests" by K.H. Head & R.J. Epps, 3rd Edition, 2011. The Coefficient of Permeability values were calculated using the c_v(log) values determined in the test. The reporting of these figures is not part of NZS4402: 1986: Test 7.1, therefore these figures are not part of the IANZ endorsement for this report. Note that the c_v(log) value for the 49.6kPa cycle reported on page 5 has also been calculated based on the methods described in this manual (*as the logarithm of time graph did not allow graphical determination of the c_v(log) value, hence the Coefficient of Secondary Compression (C_{sec}) value has not been determined for this cycle*).

It should be noted that the C_{sec} values given in this report are based on <u>strain per log-cycle of time</u>. These values are commonly denoted as C'_α. This is distinctly different to C_α values, which are based on the change in <u>void ratio per log-cycle of time</u>.

These two parameters are related by $C'_\alpha = C_\alpha / (1 + e_p)$ (*from Principles of Geotechnical Engineering, 7th Edition, 2010, Braja M. Das*) where ;

C'_α is the coefficient of secondary compression (consolidation) determined by strain (also called the secondary compression (consolidation) index).

C_α is the coefficient of secondary compression (consolidation) determined by void ratio (also called the secondary compression (consolidation) index).

e_p is the void ratio at the end of primary consolidation.

Each test result is data obtained at a specific test location. The nature and continuity of subsoil conditions away from the test area could vary from the data recovered during this testing, therefore the test results relate only to the sample as-received, and relate only to the sample under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Key Technical Person
Laboratory Manager
Babbage Geotechnical Laboratory

ACCREDITED
IANZ
TESTING LABORATORY
№ 126

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation. This report may not be reproduced except in full & with written approval from BGL.

BGL Babbage Geotechnical Laboratory	Job Number: 69130#L	Registration Number: 3195	Page 3 of 5	Version No:	13
				Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 5.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

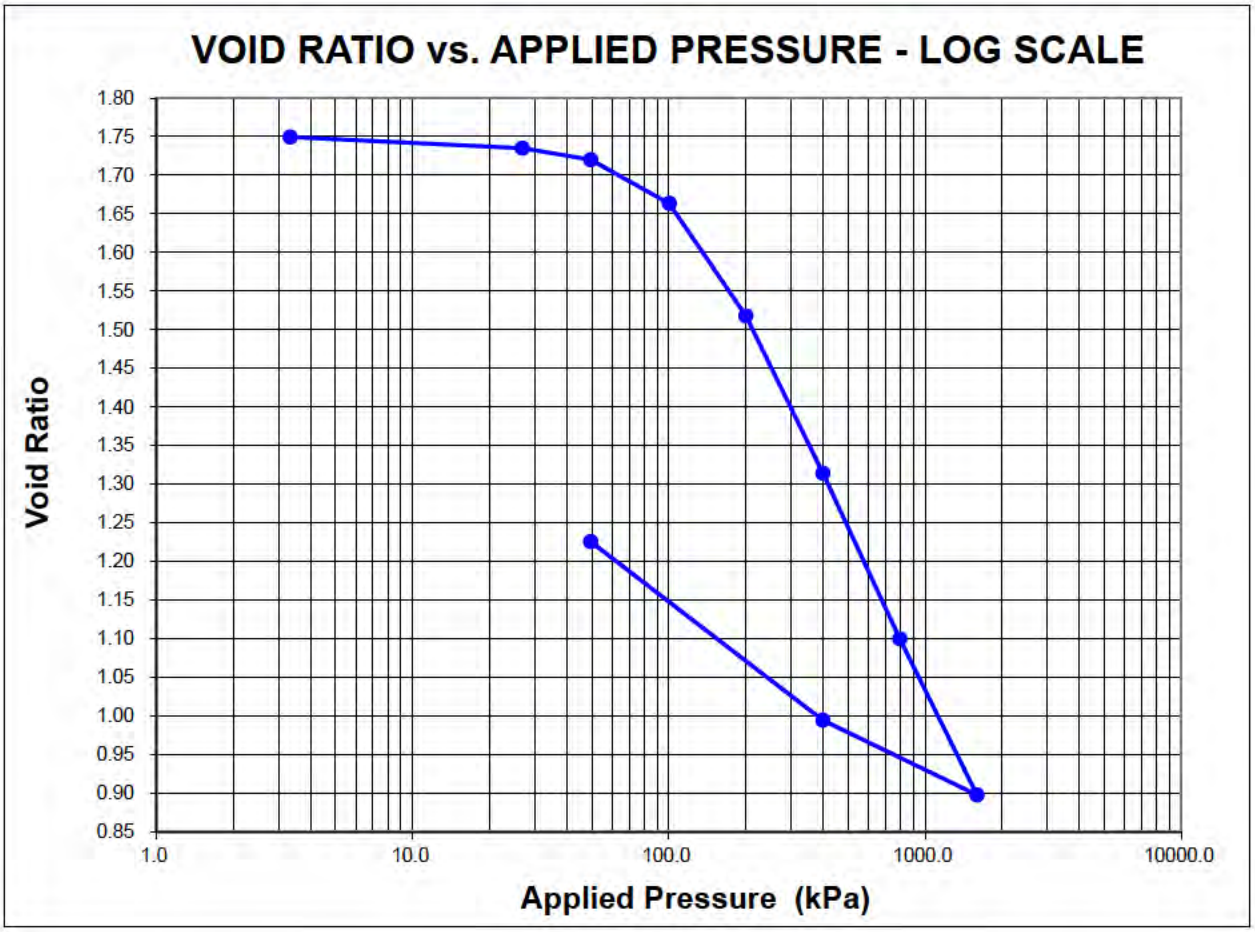
ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content

Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation

Tested By:	JL	March / April 2026
Compiled By:	JL	8-Apr-26
Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT02	Depth:	5.50m



SAMPLE HISTORY & PREPARATION

undisturbed / ~~disturbed~~

Sample obtained from a 63.5mm diameter push-tube.

The sample was extruded from the 63.5mm diameter push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. Both sides of the ring were then trimmed flat using a scalpel & a straight-edge.

TEST DETAILS

Consol machine number:	1		Surface area of sample top:	2831	mm^2
Consol ring number:	SB		Sample mass:	114.840	g
Sample diameter:	60.04	mm	Initial bulk density:	1.62	t/m^3
Sample height:	24.99	mm	Assumed solid density of soil particles:	2.65	t/m^3

BGL Babbage Geotechnical Laboratory	Job Number: 69130#L	Registration Number: 3195	Page 4 of 5	Version No:	13
				Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 5.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

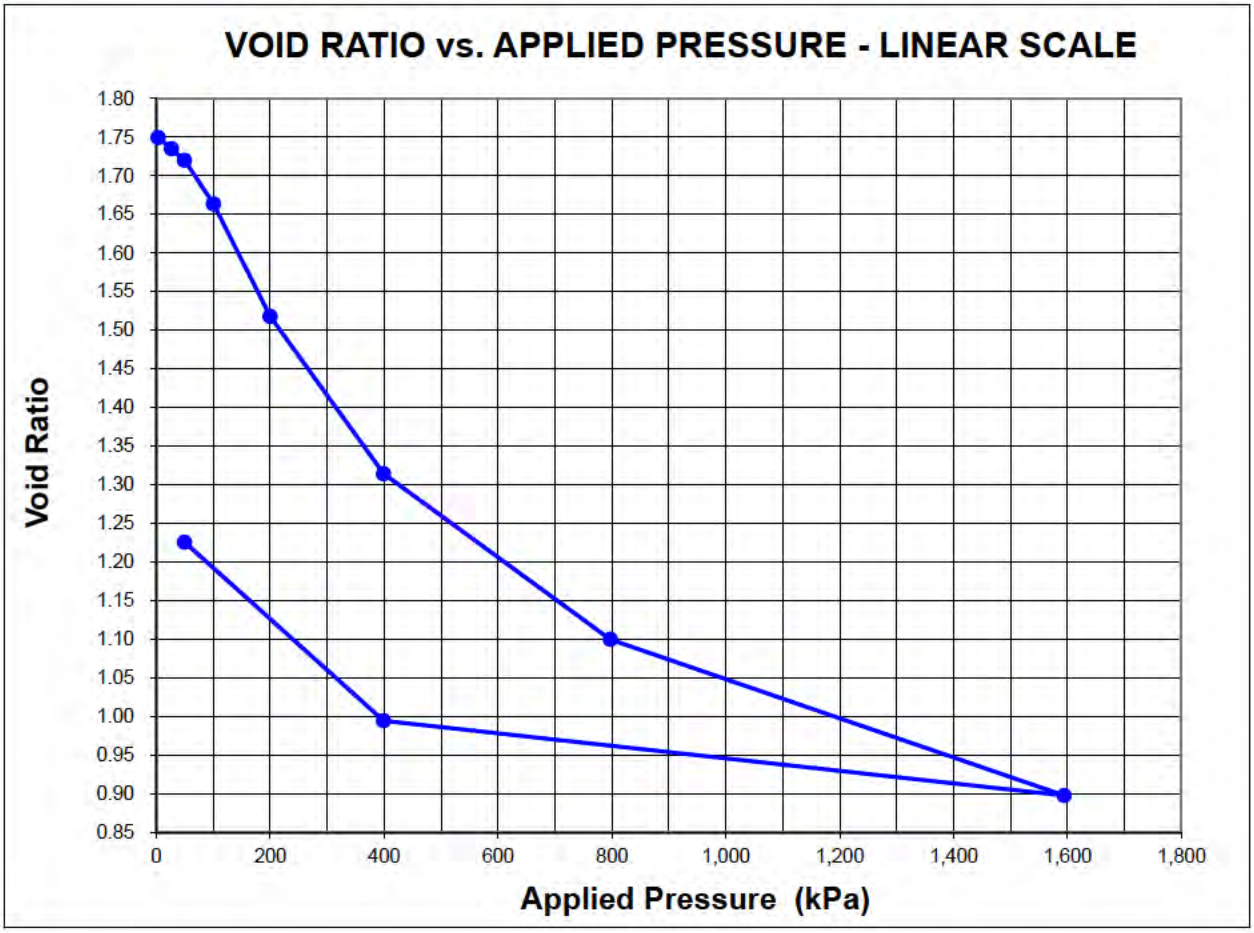
ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content

Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation

Tested By:	JL	March / April 2026
Compiled By:	JL	8-Apr-26
Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT02	Depth:	5.50m



PHOTOGRAPH OF THE SAMPLE PRIOR TO TESTING



Job Number:	Registration Number:	Page 5 of 5	Version No:	13
69130#L	3195		Version Date:	July 2022
Report No:	69130#L/CONSOL Milldale North MH03-26 5.50m		Authorised By:	Wayne Campton
PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Compiled By:	JL	8-Apr-26
	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT02	Depth:	5.50m

Applied Pressure	Incremental Deflection	Sample Height	Compression Ratio	Height of Voids	Void Ratio	Coefficient of Volume Compressibility m_v	Coefficient of Consolidation - c_v (log time)	Coefficient of Consolidation - c_v (sqrt time)
kPa	mm	mm		mm	e	m^2/MN	m^2/year	m^2/year
3.3	0.000	24.990	1.000	15.901	1.749			
26.9	0.132	24.858	0.995	15.769	1.735	sample swelled after initial consolidation		
49.6	0.136	24.722	0.989	15.633	1.720	0.24	33	30
100.5	0.514	24.208	0.969	15.119	1.663	0.41	1.2	2.9
200.1	1.322	22.886	0.916	13.796	1.518	0.55	0.61	0.80
399.2	1.850	21.036	0.842	11.947	1.314	0.41	0.49	0.67
797.6	1.947	19.089	0.764	9.999	1.100	0.23	0.46	0.54
1594.2	1.836	17.252	0.690	8.163	0.898	0.12	0.34	0.43
399.2	-0.879	18.131	0.726	9.042	0.995		BACKLOAD 1	
49.6	-2.099	20.230	0.810	11.141	1.226		BACKLOAD 2	

Coefficient of Secondary Compression - C_{sec}	
Applied Pressure	C_{sec}
26.9	*
49.6	*
100.5	**0.0019**
200.1	**0.0046**
399.2	**0.0076**
797.6	**0.010**
1594.2	**0.0064**

*The logarithm of time graphs did not allow determination of the Coefficient of Secondary Compression (Csec) values for these cycles.

Coefficient of Permeability - k	
Applied Pressure	k (m/s)
26.9	-
49.6	**2.4E-09**
100.5	**1.6E-10**
200.1	**1.0E-10**
399.2	**6.1E-11**
797.6	**3.3E-11**
1594.2	**1.3E-11**

	INITIAL	FINAL
Mass of dry sample (g)	68.19	68.19
Height of sample (mm)	24.990	17.252 (after consolidation) 20.230 (after rebound)
Water Content (%)	68.4	48.2
Dry Density (t/m^3)	0.96	1.40
Height of soil particles (mm)	9.089	9.089
Void Ratio	1.749	0.898 (after consolidation) 1.226 (after rebound)
Degree of saturation (%)	-	-

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[redacted]

Please reply to: J. Franklin

Gibb Ritchie Geotechnical Engineers
505 Lake Road
Takapuna
Auckland 0622

Attention: **CHRIS RITCHIE**

Job Number: 69130#L
BGL Registration Number: 3195
Checked by: JF

9th April 2026

ONE DIMENSIONAL CONSOLIDATION TESTING

Dear Sir,

Re: MILLDALE NORTH
Your Reference: AK26-027
Report Number: 69130#L/CONSOL Milldale North MH03-26 8.50m

Borehole No: MH03-26 **Sample No: PT03** **Depth: 8.50m**

The following report presents the results of one dimensional consolidation testing at BGL of a 63.5mm (ID) diameter undisturbed push-tube soil sample delivered to this laboratory on the 24th of March 2026. Our instructions were to carry out a one dimensional consolidation test using cycle times that would give both the $\sqrt{T_{90}}$ and T_{50} values, and using a standard pressure sequence. The push-tube sample was tested in accordance with the following standards:

Water Content:	NZS4402: 1986: Test 2.1
One Dimensional Consolidation:	NZS4402: 1986: Test 7.1

Please note that consolidation cycles were of a variable time duration, and hence is a departure from the test standard which states that the cycle time period for the consolidation loads after the initial cycle should be of approximately the same length. Subsequent load cycles were taken to at least the time of the previous cycle.

The sample was extruded from the push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. A wire was then used to cut the sample from the soil remaining in the tube, and a scalpel and a straight-edge were used to trim the sample flat in the ring.

Sample Description (*not part of BGL IANZ Accreditation*)

MH03-26 / PT03 / 8.50m:

CLAY, firm to stiff, highly plastic, light greenish grey with black speckles, moist, organic inclusions.

These test results only relate to the sample tested. The values of m_v shown on the table have been calculated for each pressure increment, using void ratio difference for that increment. Note that a solid density value of 2.65t/m^3 was assumed for this test, and is not part of the IANZ endorsement for this report. This test was carried out in a laboratory in which the temperature is controlled to be kept within the specification of the test standard.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. As per the reporting requirements of NZS4402: 1986: Test 7.1: one dimensional consolidation, the coefficients of consolidation (c_v's), and coefficients of volume compressibility (m_v's) are reported to two significant figures.

The "Void Ratio vs. Applied Pressure – Linear Scale" plot presented on page 4 is included for your information, and is based on the paper "Soil stiffness measured in oedometer tests" by L. Wesley & M. Pender, Proc. 18th NZGS Geotechnical Symposium on Soil-Structure Interaction, 2008. Please note that the presentation of the data on a linear scale is not part of the test standard, hence page 4 does not form part of the IANZ endorsement for this report.

Note that the Coefficient of Secondary Compression (C_{sec}) and the Coefficient of Permeability (k) values reported on page 5 have been calculated based on the methods described in "Manual of Soil Laboratory Testing Volume 2: Permeability, Shear Strength & Compressibility Tests" by K.H. Head & R.J. Epps, 3rd Edition, 2011. The Coefficient of Permeability values were calculated using the c_v(log) values determined in the test. The reporting of these figures is not part of NZS4402: 1986: Test 7.1, therefore these figures are not part of the IANZ endorsement for this report. Note that the c_v(log) value for the 98.4kPa and 196.3kPa cycles reported on page 5 have also been calculated based on the methods described in this manual (*as the logarithm of time graphs did not allow graphical determination of the c_v(log) values, hence the Coefficient of Secondary Compression (C_{sec}) values have not been determined for these cycles*).

It should be noted that the C_{sec} values given in this report are based on strain per log-cycle of time. These values are commonly denoted as C'_α. This is distinctly different to C_α values, which are based on the change in void ratio per log-cycle of time.

These two parameters are related by $C'_\alpha = C_\alpha / (1 + e_p)$ (*from Principles of Geotechnical Engineering, 7th Edition, 2010, Braja M. Das*) where ;

C'_α is the coefficient of secondary compression (consolidation) determined by strain (also called the secondary compression (consolidation) index).

C_α is the coefficient of secondary compression (consolidation) determined by void ratio (also called the secondary compression (consolidation) index).

e_p is the void ratio at the end of primary consolidation.

Each test result is data obtained at a specific test location. The nature and continuity of subsoil conditions away from the test area could vary from the data recovered during this testing, therefore the test results relate only to the sample as-received, and relate only to the sample under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Key Technical Person
Laboratory Manager
Babbage Geotechnical Laboratory

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TESTING LABORATORY
№ 126

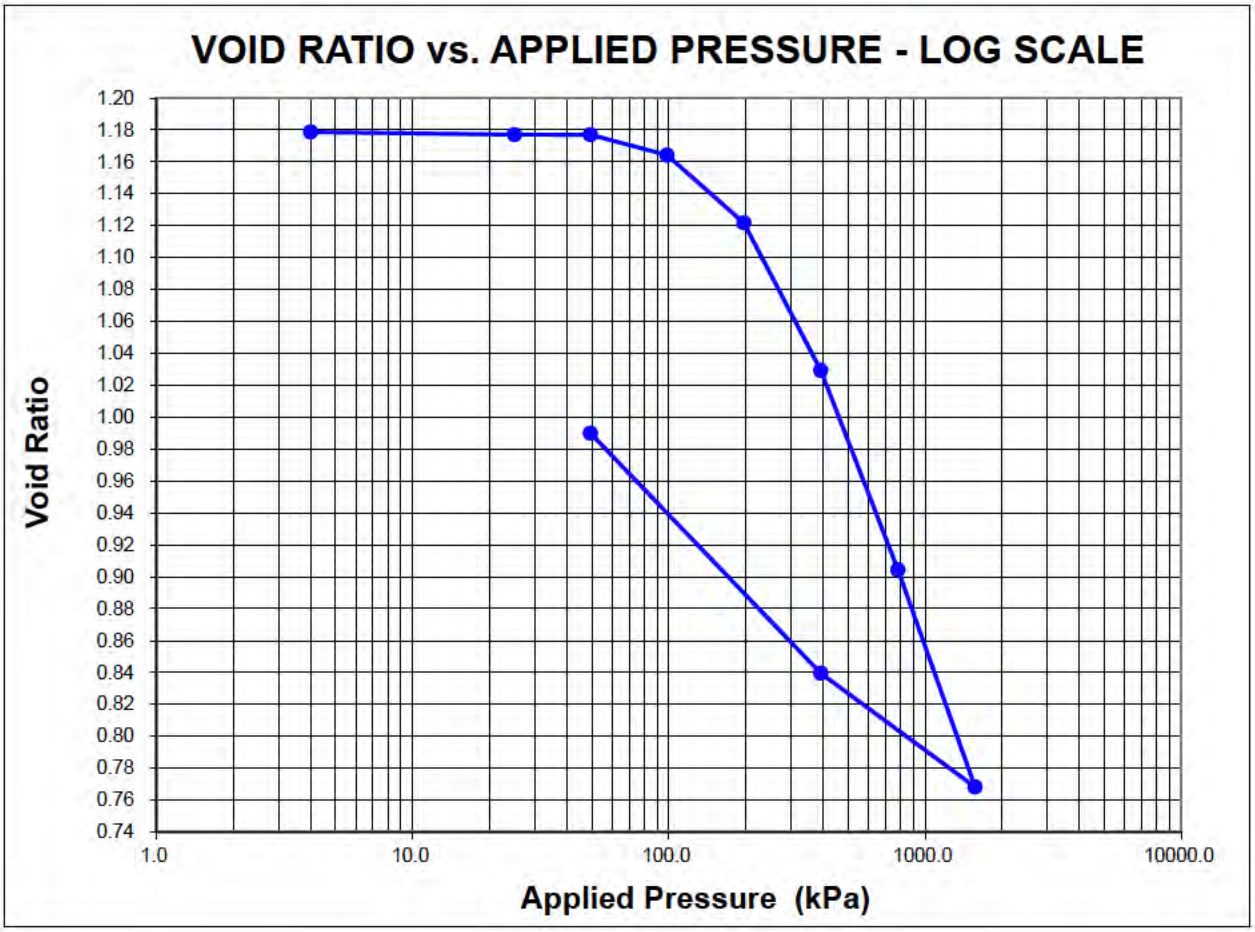
All tests reported herein have been performed in accordance with the laboratory's scope of accreditation. This report may not be reproduced except in full & with written approval from BGL.

BGL Babbage Geotechnical Laboratory	Job Number:	Registration Number:	Page 3 of 5	Version No:	13
	69130#L	3195		Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 8.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
	Compiled By:	JL	8-Apr-26
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT03	Depth:	8.50m



SAMPLE HISTORY & PREPARATION

undisturbed / ~~disturbed~~
Sample obtained from a 63.5mm diameter push-tube.

The sample was extruded from the 63.5mm diameter push-tube in small increments & trimmed into the consolidation ring, until the sample protruded from both sides of the ring. Both sides of the ring were then trimmed flat using a scalpel & a straight-edge.

TEST DETAILS

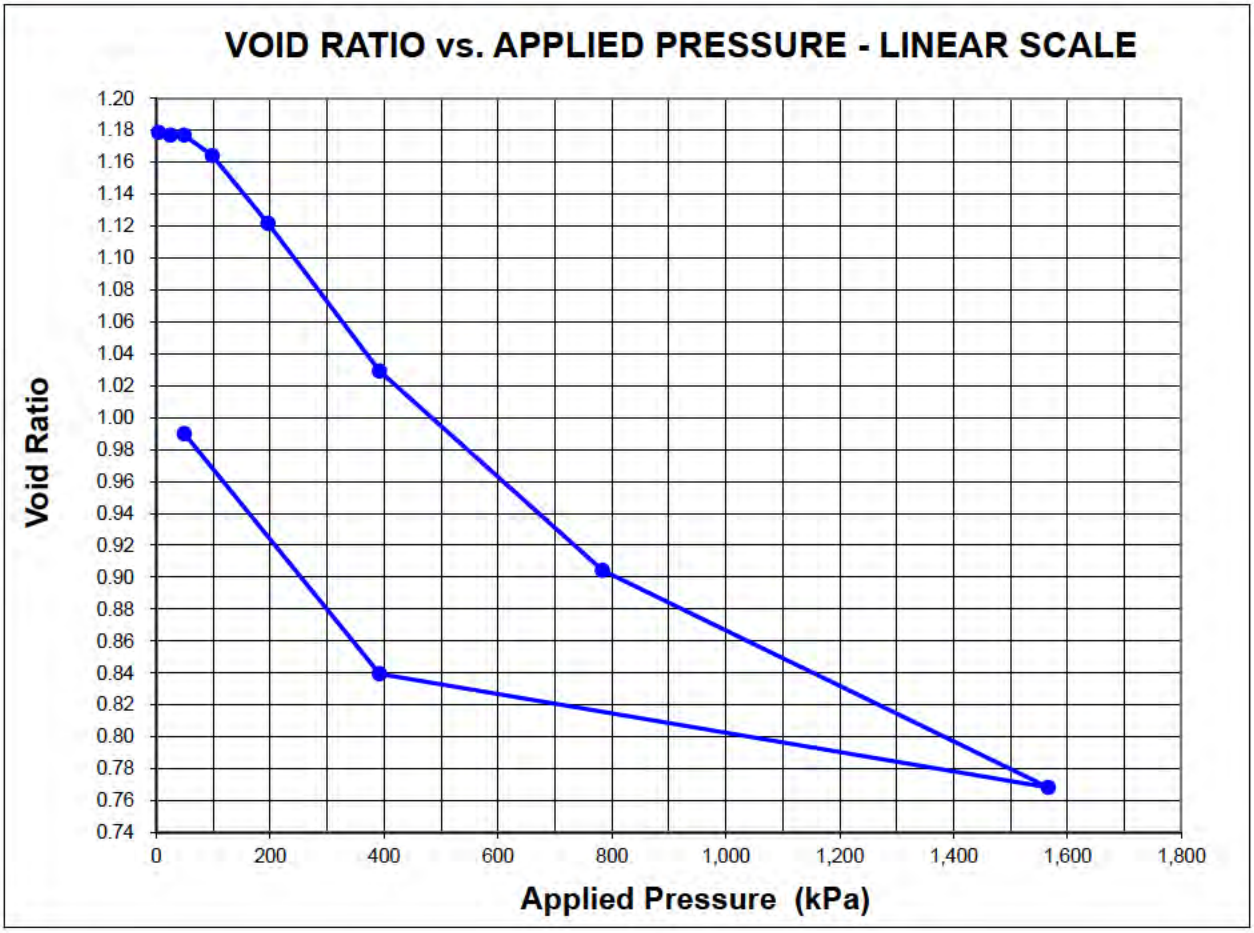
Consol machine number:	3		Surface area of sample top:	2004	mm^2
Consol ring number:	3a		Sample mass:	70.572	g
Sample diameter:	50.51	mm	Initial bulk density:	1.77	t/m^3
Sample height:	19.93	mm	Assumed solid density of soil particles:	2.65	t/m^3

BGL Babbage Geotechnical Laboratory	Job Number:	Registration Number:	Page 4 of 5	Version No:	13
	69130#L	3195		Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 8.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Compiled By:	JL	8-Apr-26
	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT03	Depth:	8.50m



PHOTOGRAPH OF THE SAMPLE PRIOR TO TESTING



Babbage Geotechnical Laboratory	Job Number:	Registration Number:	Page 5 of 5	Version No:	13
	69130#L	3195		Version Date:	July 2022
	Report No:	69130#L/CONSOL Milldale North MH03-26 8.50m		Authorised By:	Wayne Campton
	PROJECT:	MILLDALE NORTH			

ONE DIMENSIONAL CONSOLIDATION

Test Method: NZS4402: 1986: Test 2.1 - Water Content	Tested By:	JL	March / April 2026
	Compiled By:	JL	8-Apr-26
Test Method: NZS4402: 1986: Test 7.1 - One Dimensional Consolidation	Checked By:	JF	9-Apr-26

Borehole Number:	MH03-26	Sample Number:	PT03	Depth:	8.50m

Applied Pressure	Incremental Deflection	Sample Height	Compression Ratio	Height of Voids	Void Ratio	Coefficient of Volume Compressibility m_v	Coefficient of Consolidation - c_v (log time)	Coefficient of Consolidation - c_v (sqrt time)
kPa	mm	mm		mm	e	m^2/MN	m^2/year	m^2/year
4.0	0.000	19.930	1.000	10.782	1.179			
25.0	0.015	19.915	0.999	10.767	1.177	sample swelled after initial consolidation		
49.5	0.0001	19.914	0.999	10.767	1.177	minimal consolidation occurred		
98.4	0.117	19.797	0.993	10.650	1.164	0.12	16	15
196.3	0.389	19.409	0.974	10.261	1.122	0.20	7.7	8.2
392.1	0.846	18.563	0.931	9.415	1.029	0.22	0.39	0.47
783.6	1.142	17.421	0.874	8.273	0.904	0.16	0.30	0.35
1566.7	1.244	16.176	0.812	7.028	0.768	0.091	0.24	0.31
392.1	-0.651	16.828	0.844	7.680	0.840		BACKLOAD 1	
49.5	-1.375	18.203	0.913	9.055	0.990		BACKLOAD 2	

Coefficient of Secondary Compression - C_{sec}	
Applied Pressure	C_{sec}
25.0	*
49.5	*
98.4	*
196.3	*
392.1	**0.0033**
783.6	**0.0038**
1566.7	**0.0045**

*The logarithm of time graphs did not allow determination of the Coefficient of Secondary Compression (Csec) values for these cycles.

Coefficient of Permeability - k	
Applied Pressure	k (m/s)
25.0	-
49.5	-
98.4	**6.0E-10**
196.3	**4.8E-10**
392.1	**2.7E-11**
783.6	**1.5E-11**
1566.7	**6.8E-12**

	INITIAL	FINAL
Mass of dry sample (g)	48.57	48.57
Height of sample (mm)	19.930	16.176 (after consolidation) 18.203 (after rebound)
Water Content (%)	45.3	39.3
Dry Density (t/m^3)	1.22	1.50
Height of soil particles (mm)	9.148	9.148
Void Ratio	1.179	0.768 (after consolidation) 0.990 (after rebound)
Degree of saturation (%)	-	-

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Please reply to: J. Franklin

Gibb Ritchie Geotechnical Engineers
505 Lake Road
Takapuna
Auckland 0622

Attention: **CHRIS RITCHIE**

Job Number: 69130#L
BGL Registration Number: 3195
Checked by: JF

2nd April 2026

ATTERBERG LIMITS TESTING

Dear Sir,

Re: MILLDALE NORTH
Your Reference: AK26-027
Report Number: 69130#L/AL Milldale North

The following report presents the results of Atterberg Limits testing at BGL of soil samples delivered to this laboratory on the 24th of March 2026. Test results are summarised below, with page 3 showing where the samples plot on the Unified Soil Classification System (Casagrande) Chart.

Test standards used were:

Water Content:	NZS4402: 1986: Test 2.1
Liquid Limit:	NZS4402: 1986: Test 2.2
Plastic Limit:	NZS4402: 1986: Test 2.3
Plasticity Index:	NZS4402: 1986: Test 2.4

Borehole Number	Sample Number	Depth (m)	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
MH03-26	PT01	2.50	35.7	53	21	32
MH03-26	PT02	5.50	63.2	89	30	60
MH03-26	PT03	8.50	46.1	92	30	62

The whole soils were used for the water content tests (the soils were in a natural state), and for the liquid limit and plastic limit tests. The soils were wet up and dried where required for the liquid limit and plastic limit tests.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. Test 2.2: liquid limit and test 2.3: plastic limit are reported to the nearest whole number.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Key Technical Person
Laboratory Manager
Babbage Geotechnical Laboratory

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№ 126

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BGL Babbage Geotechnical Laboratory	Job Number:	69130#L	Sheet 1 of 1	Page 3 of 3
	Registration Number:	3195		
	Report Number:	69130#L/AL Milldale North		
	Project:	MILLDALE NORTH		

DETERMINATION OF THE LIQUID LIMIT, PLASTIC LIMIT & THE PLASTICITY INDEX

Test Methods: NZS4402: 1986: Test 2.2, Test 2.3 and Test 2.4

Tested By:	DT / JG	March 2026	
Compiled By:	JF	2/04/2026	
Checked By:	JF	2/04/2026	
Version Number:	8	Version Date:	August 2025
Authorised By:	Wayne Campton		

SUMMARY OF TESTING

Borehole Number	Sample Number	Depth (m)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification Based on USCS Chart Below
MH03-26	PT01	2.50	53	21	32	CH
MH03-26	PT02	5.50	89	30	60	CH
MH03-26	PT03	8.50	92	30	62	CH

The chart below & soil classification terminology is taken from ASTM D2487-17 (Reapproved 2025) "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)", February 2025, & is based on the classification scheme developed by A. Casagrande in the 1940's (Casagrande, A., 1948: Classification and identification of soil. Transactions of the American Society of Civil Engineers, v. 113, p. 901-930). The chart below & the soil classification given in the table above are included for your information only, and are not included in the IANZ endorsement for this report.

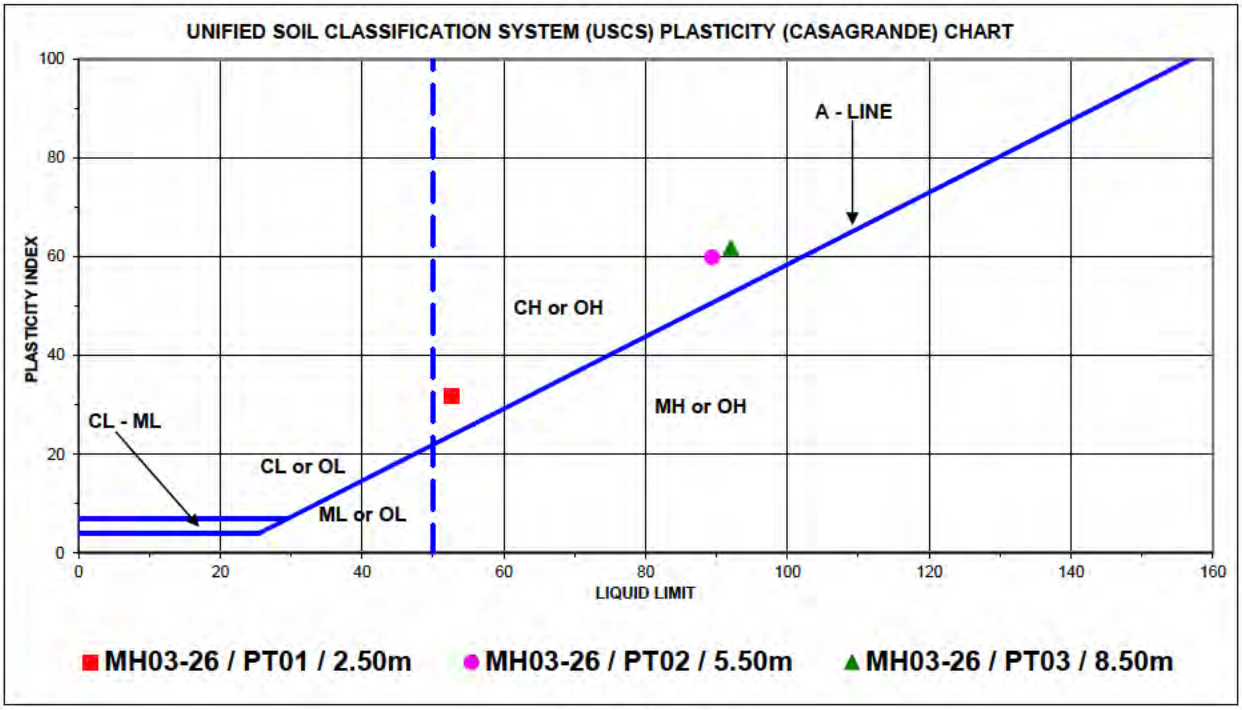


CHART LEGEND

CL = CLAY, low plasticity ('lean' clay)
OL = ORGANIC CLAY or ORGANIC SILT, low liquid limit
ML = SILT, low liquid limit
CL - ML = SILTY CLAY
CH = CLAY, high plasticity ('fat' clay)
OH = ORGANIC CLAY or ORGANIC SILT, high liquid limit
MH = SILT, high liquid limit ('elastic silt')