

## Vibro (H.K.) Limited

### SITE INVESTIGATION DEPARTMENT

	FINAL FIELDWORK REPORT			
CONTRACT NO.	GE/2015/29			
TASK ORDER NO.	GE/2015/29.8			
PROJECT	Ground Investigation - New Territories West  Agreement No. CE 32/2014 (HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC			
CLIENT	Civil Engineering and Development Department 31 March 2017			
DATE				
CHECKED BY	Y. M. Leung Geotechnical Engineer	3(-3-(		
CERTIFIED BY	This Louis Geolegistical Engineer	31-3-1		
	M. C. Leung Contractor's Representative	Date		

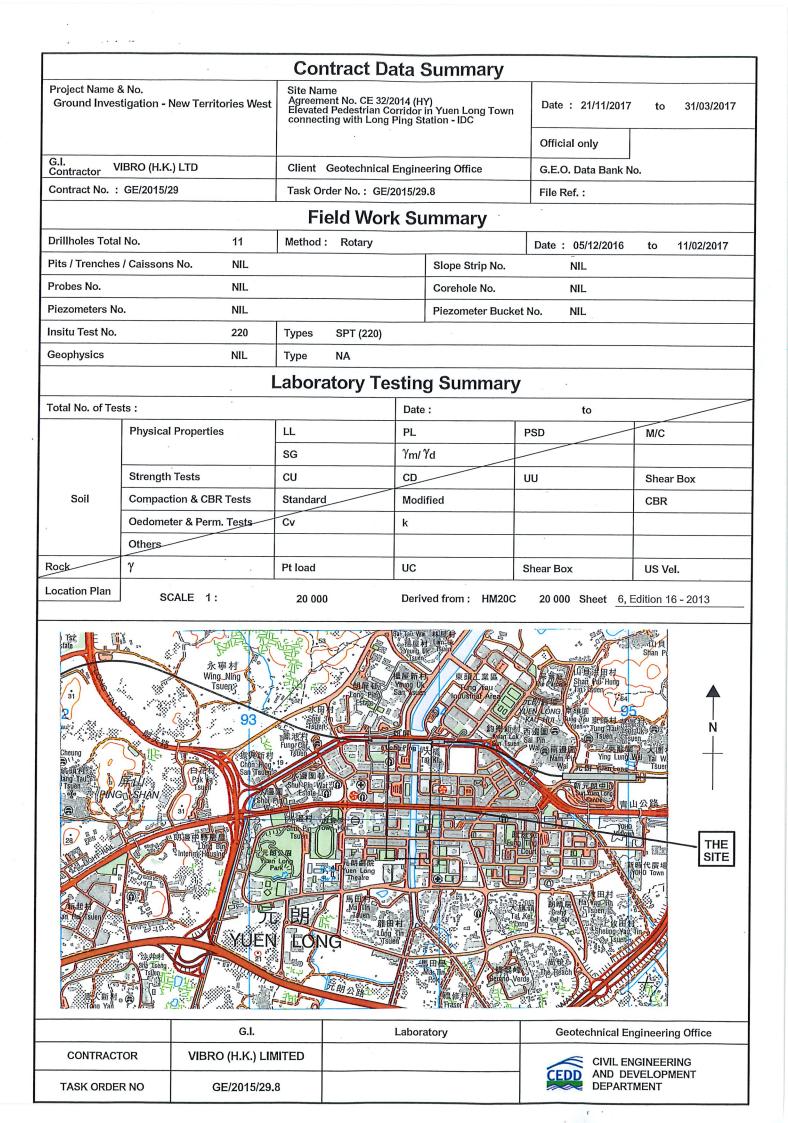






#### **CONTRACTOR**

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# CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT GEOTECHNICAL ENGINEERING OFFICE CONTRACT NO. GE/2015/29

#### **GROUND INVESTIGATION – NEW TERRITORIES WEST**

Task Order No. GE/2015/29.8

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## Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station – IDC

## **Ground Investigation Final Fieldwork Report**

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March 2017 GE/2015/29.8



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Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station – IDC

Ground Investigation Final Fieldwork Report

#### 1. <u>INTRODUCTION</u>

The Civil Engineering and Development Department (CEDD) awarded Contract No. GE/2015/29 – New Territories West, to Vibro (H. K.) Limited in June 2016. This contract lasts for two years.

This report presents the results of the ground investigation works for Agreement No. CE 32/2014 (HY), Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station – IDC. The fieldworks were carried out under Task Order No. GE/2015/29.8.

The fieldworks comprise drilling, logging of ground materials, sampling, field testing and surveying, were carried out in the period between 5<sup>th</sup> December 2016 and 11<sup>th</sup> February 2017 under the supervision of Ove Arup and Partners Hong Kong Limited.

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#### 2. THE SITE

Investigation works were carried out at Yuen Long Town, New Territories. The exploratory stations are bounded within the following co-ordinates at Hong Kong Metric Grid (1980).

	Easting(m)	Northing(m)
(1)	820705	833695
(2)	820705	834150
(3)	820735	833695
(4)	820735	834150

All exploratory stations are indicated on the Ground Investigation Plan as shown in Figure 1. Co-ordinates and ground levels of all exploratory stations are presented in Table 1.

#### 3. **GEOLOGY**

The 1:20 000 Solid and Superficial Geology Map 'Yuen Long' published by the GCO (HGM20 Sheet 6 Edition I, 1988) indicates that the site is expected to be underlain by Fill (natural earth and waste), Alluvium (clay/silt, sand and gravel, well-sorted to semi-sorted) from Holocene epoch of the Quaternary Period and Fill (natural earth and waste), undivided, mainly dark grey marine mud from Hang Hau Formation, Holocene epoch of the Quaternary Period.

#### 4. FIELDWORK

The fieldworks comprised eleven (11) vertical drillholes (i.e. Nos. ADH01 to ADH11). The works at these investigation stations were carried out to depths and at locations as specified in the Task Order or as instructed by the *Service Manager*.

#### 4.1 Drilling

An inspection pit was hand excavated at each drillhole location to the maximum depth of 1.30m, prior to the commencement of drilling works. Small disturbed samples were progressively collected during excavation at 0.5m intervals.

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Eleven (11) vertical drillholes (i.e. Nos. ADH01 to ADH11) were terminated at depths between 55.33m (at ADH01) and 90.00m (at ADH04). Rotary drilling techniques, using six hydraulic-feed type drilling rigs, were adopted for this Task Order. SW (168mmØ), PW (140mmØ), HW (115mmØ) and NW (89mmØ) casings, equipped with tungsten carbide cutting shoes, were used to advance the drillholes and prevent holes collapses. Arisings from the drilling process were removed from the drillholes using air foam and water as the flushing medium as instructed by the *Service Manager*.

#### 4.1.1 Mazier (Triple Tube Retractable Core Barrel) Samples

Undisturbed Retractable Triple Tube Core (Mazier) samples were taken at all drillholes using a triple tube retractable core barrel fitted with a removable 74mm diameter, 1000mm long transparent rigid ABS plastic liner. A retractable cutting shoe projecting from the tungsten carbide drill bit of the "Mazier" sampler was used to penetrate the material being sampled and thus isolate it from the detrimental effects of the flushing medium.

#### 4.1.2 Undisturbed U76 Sample

Undisturbed U76 samples were taken at all drillholes except drillhole No. ADH11, using 77mm internal diameter open sample tubes. The tube was made from galvanized mild steel not less than 450mm in length fitted with a cutting shoe tapered at an angle not exceeding 20°.

Small disturbed samples were taken in drillholes from the cutting shoe of the sampler.

#### 4.1.3 Double Tube Rock Coring

Double Tube, T2-101, TNW or triple tube, HMLC swivel-type rotary core barrel with diamond impregnated core bits was used to recover rock core with nominal size of 84mm, 61mm or 64mm where competent strata were encountered in common ground or bedrock.

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After completion, all drillhole were backfilled with cement bentonite grout in accordance with CI. 7.50 of General Specifications for Civil Engineering Works, 2006 Edition, The Government of the HKSAR.

Photographs were taken for all materials recovered from the drillholes. The jar lids were removed prior to taking photographs in order to display their contents. The drillhole records and the relevant corebox photographs are presented in Appendix C and D respectively.

#### 4.2 Field Testing

#### 4.2.1 Standard Penetration Test

Standard Penetration Tests with liner samples were undertaken in all drillholes (i.e. Nos. ADH01 to ADH11). The tests were conducted according to BS1377: 1990 Part 9, Test 3.3 and Cl. 7.68 of General Specification for Civil Engineering Works, 2006 Edition.

The numbers of blows to drive a standard split-spoon sampler for the first 150mm penetration (seating drive) in 75mm increments and those for each 75mm penetration for the subsequent 300mm were recorded. The 'N' value was taken as the sum of the blows for the last 300mm penetration. Disturbed samples were retrieved from the cutting shoes and stored as jar samples.

The depth of tests and the 'N' values were recorded and are presented in the drillhole records.

#### 4.3 Surveying Investigation Location

Following the completion of fieldworks, the as-built co-ordinates and reduced levels were taken for each Investigation Station with reference to the nearest Government Benchmark. The as-built co-ordinates are presented in Hong Kong Metric Grid (1980) and reduced levels are related to the Hong Kong Principal Datum (PD). The co-ordinates and levels of each investigation station are presented in the Summary Table of Survey Data, Table 1.

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#### 5. SOIL AND ROCK DESCRIPTIONS

The soils and rocks encountered in the investigation have generally been described according to Geoguide 3, Guide to Rock and Soil Descriptions. The classification and definitions of the descriptive terms are presented in Appendix A.

The delineation of various strata was primarily based on the examination of the samples recovered from the drillholes. The results given in the form of drillhole are presented in Appendix C. The legends used in the records are summarized in Appendix B.

#### 6. **GROUND CONDITIONS**

#### 6.1 Introduction

The vertical drillholes encountered a combination of the following strata:

CONCRETE SURFACE
FILL
MARINE DEPOSIT
ALLUVIUM
SAPROLITIC SOIL
KARST SURFACE DEPOSIT
MARBLE WITH CAVITY / CAVITY INFILL DEPOSIT
BEDROCK

A summary of the strata encountered is presented in Table 2.

A brief description of the materials encountered is given in the following sections. In summary, the strata have been grouped together under the headings of Concrete Surface, Fill, Marine Deposit, Alluvium, Saprolitic Soil, Karst Surface Deposit, Marble with Cavity / Cavity Infill Deposit and Bedrock.

Full descriptions of the strata encountered can be found in the Drillhole Records presented in Appendix C of this report.



#### 6.2 Concrete Surface

Concrete Surface was encountered at the ground surface of all drillholes.

The encountered thickness of the stratum ranged from 0.10m (at ADH01 to ADH05, ADH07 to ADH09 and ADH11) to 0.20m (at ADH06 and ADH10) with its base elevations vary between +0.45mPD and +1.09mPD at drillhole No. ADH01 and ADH09 respectively.

#### 6.3 Fill

Fill was encountered beneath Concrete Surface at drillhole Nos. ADH01, ADH05 to ADH07 and ADH09 to ADH11. Fill comprises clayey sandy SILT and clayey silty fine to coarse SAND with much angular to subangular fine to coarse gravel sized rock and shell fragments and subangular cobble sized moderately decomposed and slightly decomposed Granite, sandy subangular fine to medium GRAVEL sized rock fragments.

The encountered thickness of the stratum ranged from 0.40m (at ADH01) to 3.00m (at ADH11) with its base elevations vary between -2.43mPD and +0.05mPD at drillhole No. ADH11 and ADH01 respectively.

#### 6.4 Marine Deposit

Marine Deposit was encountered beneath Fill at drillhole No. ADH01. Marine Deposit comprises clayey sandy SILT with occasional shell fragments.

The encountered thickness of the stratum was 1.50m with its base elevation at -1.45mPD.

#### 6.5 Alluvium

Alluvium was encountered beneath Marine Deposit at drillhole No. ADH01, beneath Concrete Surface at drillhole Nos. ADH02 to ADH04 and ADH08 and beneath Fill at drillhole Nos. ADH05 to ADH07 and ADH09 to ADH11. Alluvium comprises clayey silty fine to coarse SAND and clayey sandy SILT with occasional decayed wood

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pieces with much angular to subangular and subangular to subrounded fine to coarse gravel sized rock fragments and slightly clayey sandy subangular to subrounded fine to coarse GRAVEL sized rock fragments.

The encountered thickness of the stratum ranged from 9.30m (at ADH06) to 16.20m (at ADH10) with its base elevations vary between -17.41mPD and -11.35mPD at drillhole No. ADH10 and ADH06 respectively.

#### 6.6 Saprolitic Soil

Soils derived from the in-situ weathering of Metasiltstone and Metasandstone were encountered beneath Karst Surface Deposit at drillhole No. ADH04 and beneath Alluvium at drillhole Nos. ADH5 to ADH8 and ADH11. Saprolitic Soil comprises sandy SILT with much angular to subangular fine to coarse gravel, silty fine SAND with occasional subangular fine to medium gravel and silty sandy angular to subangular fine to coarse GRAVEL.

The encountered thickness of the stratum ranged from 0.50m (at ADH04) to 46.20m (at ADH07) with its base elevations vary between -58.51mPD and -18.83mPD at drillhole Nos. ADH07 and ADH11 respectively.

#### 6.7 Karst Surface Deposit

Karst Surface Deposit was encountered beneath Alluvium at drillhole Nos. ADH01 to ADH04, ADH09 and ADH10 and beneath Saprolitic Soil at drillhole Nos. ADH05 to ADH08 and ADH11. Karst Surface Deposit comprises slightly clayey silty fine to coarse SAND and clayey sandy SILT with much angular to subrounded and angular to subangular fine to coarse gravel sized rock and marble fragments, clayey silty sandy angular to subrounded fine to coarse GRAVEL sized rock fragments and subangular COBBLE sized slightly decomposed impure Marble, Monzonite and subangular COBBLE sized slightly decomposed impure Marble, Monzonite and moderately decomposed Metasiltstone with much clayey silty angular to subangular medium to coarse gravel sized rock fragments.



The encountered thickness of the stratum ranged from 3.10m (at ADH11) to 30.65m (at ADH06) with its base elevations vary between -65.31mPD and -20.01mPD at drillhole No. ADH07 and ADH09 respectively.

#### 6.8 Marble with Cavity / Cavity Infill Deposit

Marble with Cavity / Cavity Infill Deposit was encountered beneath Karst Surface Deposit at drillhole Nos. ADH02, ADH03, ADH07, ADH09 and ADH11 and beneath Saprolitic Soil at drillhole No. ADH04. Marble with Cavity is the cavity encountered within slightly decomposed Marble. Cavity Infill Deposit comprises clayey silty fine to coarse SAND and clayey sandy SILT with much angular to subangular fine to coarse gravel sized rock fragments, clayey silty slightly sandy angular to subangular fine to coarse GRAVEL sized rock fragments, angular to subangular COBBLE sized moderately decomposed and slightly decomposed impure Marble with much slightly clayey slightly slity sandy angular to subangular fine to coarse gravel sized quartz and rock fragments and subangular BOULDER sized slightly decomposed impure Marble.

The encountered thickness of the stratum ranged from 4.86m (at ADH02) to 67.00m (at ADH04) with its base elevations vary between -89.26mPD and -26.44mPD at drillhole No. ADH04 and ADH02 respectively.

#### 6.9 Bedrock

Bedrock of Marble was encountered at drillhole Nos. ADH01, ADH02, ADH06 and ADH08 to ADH11 and Marble and Basalt were encountered at drillhole Nos. ADH03 and ADH05 with the bedrock levels vary between -60.00mPD and -22.20mPD at drillhole Nos. ADH06 and ADH01 respectively.

#### 7. DIGITAL DATA

The investigation log of each exploratory station was produced from gINT® which is a geotechnical and geoenvironmental software product. Details of the drillhole records are stored in ASCII digital format.

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The data have been prepared in accordance with Appendix 1 of the third edition of the Association of Geotechnical and Geoenvironmental Specialists (AGS) publication "Electronic Transfer of Geotechnical and Geoenvironmental Data (AGS 1999)". The data dictionary used for the data field headings is in accordance with that recommended by the AGS with local variations as instructed by the Geotechnical Engineering Office.

All photographs taken for this report were taken with a digital camera, which conform to the JPEG Exchangeable Image File (EXIF) Version 2.2 standard.

The AGS digital data and the digital image of this final fieldwork report, individual station records and photographs are stored on a CD-ROM as attached in Appendix E.

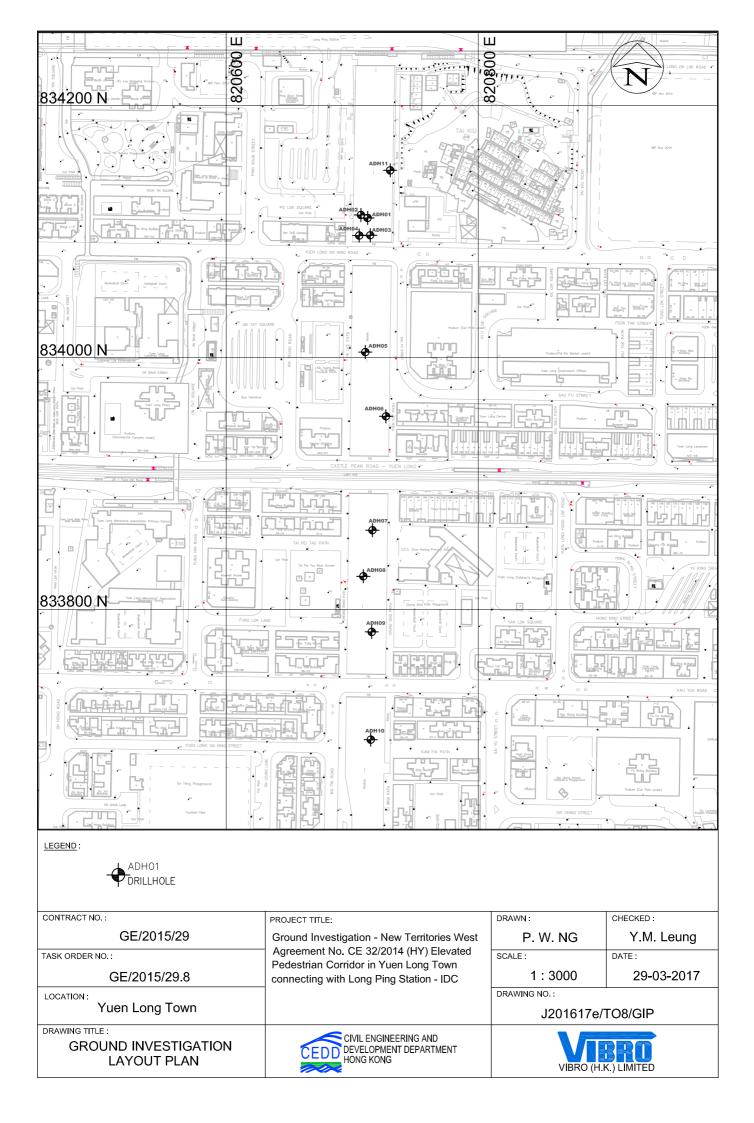
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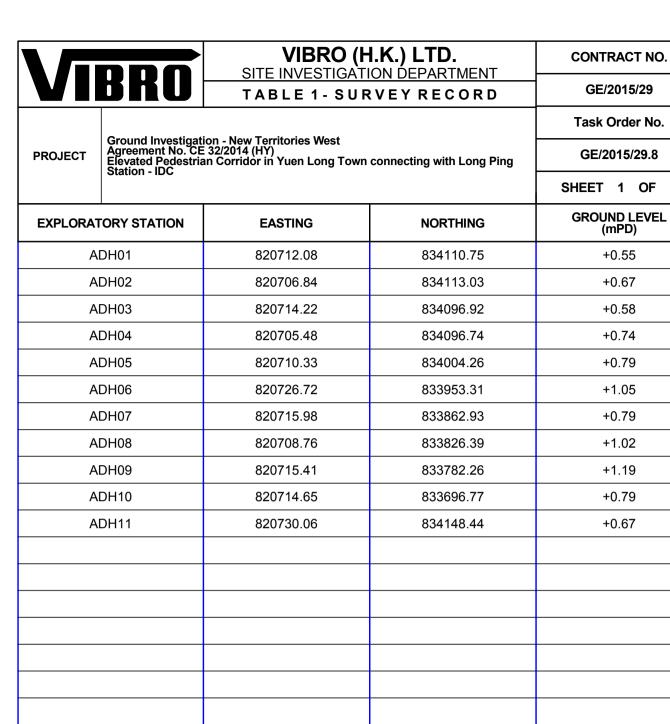
## FIGURE 1

GROUND INVESTIGATION PLAN



## TABLE 1

SUMMARY TABLE OF SURVEY DATA



## TABLE 2

SUMMARY TABLE OF DRILLHOLE RESULTS



#### **VIBRO (H.K.) LIMITED** SITE INVESTIGATION DEPARTMENT

**CONTRACT NO. GE/2015/29 TASK ORDER NO. GE/2015/29.8** 

PROJECT: Ground Investigation - New Territories West

LOCATION: Agreement No. CE 32/2014 (HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station – IDC

#### Table 2 - Summary of Drillhole Result

Sheet 1 of 1

Stratum	HOLE NO.										
<b></b>	ADH01	ADH02	ADH03	ADH04	ADH05	ADH06	ADH07	ADH08	ADH09	ADH10	ADH11
Ground Level (mPD)	+0.55	+0.67	+0.58	+0.74	+0.79	+1.05	+0.79	+1.02	+1.19	+0.79	+0.67
Concrete Surface Bottom Level (mPD)	+0.45	+0.57	+0.48	+0.64	+0.69	+0.85	+0.69	+0.92	+1.09	+0.59	+0.57
Bottom Depth (m below Ground Level)	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.10	0.20	0.10
Thickness (m)	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.10	0.20	0.10
Fill Bottom Level (mPD)	+0.05	-	-	-	-1.21	-2.05	-1.21	-	-0.81	-1.21	-2.43
Bottom Depth (m below Ground Level)	0.50	-	-	-	2.00	3.10	2.00	-	2.00	2.00	3.10
Thickness (m)	0.40	-	-	-	1.90	2.90	1.90	-	1.90	1.80	3.00
Marine Deposit Bottom Level (mPD)	-1.45	-	-	-	-	-	-	-	-	-	-
Bottom Depth (m below Ground Level)	2.00	-	-	-	-	-	-	-	-	-	-
Thickness (m)	1.50	-	-	-	-	-	-	-	-	-	-
Alluvium Bottom Level (mPD)	-14.95	-14.43	-12.52	-14.36	-12.51	-11.35	-12.31	-12.28	-12.11	-17.41	-13.73
Bottom Depth (m below Ground Level)	15.50	15.10	13.10	15.10	13.30	12.40	13.10	13.30	13.30	18.20	14.40
Thickness (m)	13.50	15.00	13.00	15.00	11.30	9.30	11.10	13.20	11.30	16.20	11.30
Saprolitic Soil Bottom Level (mPD)	-	-	-	-	-30.51	-29.35	-58.51	-32.28	-	-	-18.83
Bottom Depth (m below Ground Level)	-	-	-	-	31.30	30.40	59.30	33.30	-	-	19.50
Thickness (m)	-	-	-	-	18.00	18.00	46.20	20.00	-	-	5.10
Karst Surface Deposit Bottom Level (mPD)	-22.20	-21.58	-30.44	-21.76	-54.21	-60.00	-65.31	-49.33	-20.01	-35.89	-21.93
Bottom Depth (m below Ground Level)	22.75	22.25	31.02	22.50	55.00	61.05	66.10	50.35	21.20	36.68	22.60
Thickness (m)	7.25	7.15	17.92	7.40	23.70	30.65	6.80	17.05	7.90	18.48	3.10
Saprolitic Soil Bottom Level (mPD)	-	-	-	-22.26	-	-	-	-	-	-	-
Bottom Depth (m below Ground Level)	-	-	-	23.00	-	-	-	-	-	-	-
Thickness (m)	-	-	-	0.50	-	-	-	-	-	-	-
Marble with Cavity/Cavity Infill Deposit	-	-26.44	-55.11	-89.26	-	-	-86.03	-	-53.74	-	-46.53
Bottom Level (mPD) Bottom Depth (m below Ground Level)	-	27.11	55.69	90.00	-	-	86.82	-	54.93	-	47.20
Thickness (m)		4.86	24.67	67.00			20.72	-	33.73		24.60
Bedrock Bottom Level (mPD)	-54.78	-55.14	-75.82	-	-74.48	-81.04	-	-69.78	-79.04	-56.50	-80.57
Bottom Depth (m below Ground Level)	55.33	55.81	76.40	-	75.27	82.09	-	70.80	80.23	57.29	81.24
Thickness (m)	32.58	28.70	20.71	-	20.27	21.04	-	20.45	25.30	20.61	34.04
End of Hole Level (mPD)	-54.78	-55.14	-75.82	-89.26	-74.48	-81.04	-86.03	-69.78	-79.04	-56.50	-80.57
End of Hole Depth (m below Ground Level)	55.33	55.81	76.40	90.00	75.27	82.09	86.82	70.80	80.23	57.29	81.24
Rock Type	MARBLE	MARBLE	BASALT/ MARBLE	-	BASALT/ MARBLE	MARBLE	-	MARBLE	MARBLE	MARBLE	MARBLE
Bedrock Level (mPD)	-22.20	-26.44	-55.11	-	-54.21	-60.00	-	-49.33	-53.74	-35.89	-46.53

Note: -: Not encountered in the investigation

## <u>APPENDIX A</u>

CHECKLISTS FOR SOIL AND ROCK DESCRIPTIONS

#### CHECKLIST FOR SOIL DESCRIPTION

#### GEOTECHNICAL ENGINEERING OFFICE, HKSAR

#### 1. STRENGTH (Compactness & Consistency)

Soil Type	Term	<u>Identification</u>
Very Coarse	Loose	
(COBBLES &	4	By inspection of voids and particle packing in the field.
BOULDERS)	Dense	
	Very loose	SPT 'N' value 0-4.
Coarse	Loose	SPT 4-10; can be excavated with spade; 50 mm peg easily driven.
(SANDS &	Medium dense	SPT 10-30.
GRAVELS)	Dense	SPT 30-50; requires pick for excavation; 50 mm peg hard to drive.
	Very dense	SPT > 50.
	Very soft	Undrained shear strength (USS) < 20 kPa; exudes between fingers when squeezed in hand.
Fine	Soft	USS 20-40 kPa; moulded by light finger pressure.
(CLAYS &	Firm	USS 40-75 kPa; can be moulded by strong finger pressure.
SILTS)	Stiff	USS 75-150 kPa; cannot be moulded by fingers; can be indented by thumb.
	Very stiff	USS > 150 kPa; can be indented by thumbnail.
	or hard	
Organic	Compact	Fibres already compressed together.
(ORGANIC CLAYS, SILTS	Spongy	Very compressible and open structure.
SANDS & PEAT	S) <sup>L</sup> Plastic	Can be moulded in hand and smears fingers.

Terms applicable only to transported soils. For soils derived from insitu rock weathering, record actual values of quantitative tests (e.g. SPT 'N' value) as part of the description, where appropriate.

#### 2. COLOUR

Parameter Terms

Light, Dark Value

Chroma Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.

For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light yellowish brown mottled with red).

State whether sample was wet or dry when described.

#### 3. PARTICLE SHAPE & COMPOSITION

Characteristic	<u>Terms</u>
Form	Equidimensional, Flat, Elongate, Flat & Elongate
Angularity	Angular, Subangular, Subrounded, Rounded
Surface Texture	Smooth Rough Glassy Honeycombed Pitted Striated

Describe composition of coarse particles where appropriate. Gravel and larger particles are usually rock fragments (e.g. granite, tuff); sand particles are usually individual minerals (e.g. quartz, feldspar)

#### 4. STRUCTURE

	Soil Type	Term	<u>Identification</u>
		Homogenous	Deposit consists essentially of one type.
	Coarse &	Interstratified	Alternating layers of varying types or with bands or lenses of oth
	Fine	(Interbedded or	materials.
		Interlaminated)	
	Coarse	Heterogenous	A mixture of types.
	Fine	Fissured	Breaks into polyhedral fragments along fissures.
FILLE	Ղ Intact	No fissures.	
Organic	∫ Fibrous	Plant remains recognizable & retain some strength.	
	Amorphous	No recognizable plant remains.	

Describe spacing of bedding planes, fissures, shell bands, etc using the spacing terms given in items 6 & 7 for rock description (see other side).

Above terms applicable only to transported soils. For soils derived from insitu rock weathering, describe relict structures in accordance with item 6 of rock description (see other side).

#### 5. WEATHERING

#### Soils Derived from Insitu Weathering of Rocks

There are two main types: saprolites (rock texture/structure retained) and residual soils (rock texture/structure completely destroyed). Describe state of weathering in accordance with items 4 & 8 for rock description (see other side).

#### Sedimentary (Transported) Soils

Coarse soils: Describe overall discolouration of soil and degree of decomposition of gravel and larger particles (see item 4, other side). Also note any signs of disintegration of large particles where

Fine Soils: Describe overall discolouration of soil where apparent.

#### 6. SOIL NAME

A. Basic Soil Types			
Soil Type	Particle S	Sizes (mm)	Identification
BOULDERS		> 200	Only seen complete in pits or exposures.
COBBLES		60 - 200	Often difficult to recover from boreholes.
			Easily visible to naked eye; particle shape and grading
	Coarse	20 - 60	can be described.
GRAVELS	Medium	6 - 20	Well-graded: wide range of grain sizes.
	← Fine	2 - 6	Poorly-graded: not well-graded (split further into uniform or gap-graded).
	r Coarse	0.6 - 2	Visible to naked eye; very little or no cohesion; grading
SANDS	Medium	0.2 - 0.6	can be described.
	Fine	0.06 - 0.2	May be well-graded or poorly-graded (uniform or gap-graded) as for gravel.
			Only coarse silt barely visible to naked eye; exhibits
	Coarse	0.02 - 0.06	little plasticity and marked dilatancy; slightly granular
SILTS	Medium	0.006 - 0.02	
	Fine	0.002 - 0.006	dry quickly; possesses cohesion but can be
			powdered easily between fingers.
			Dry lumps can be broken by hand but not powdered
			between the fingers. Disintegrates in water more
			slowly than silt; smooth to the touch; exhibits
CLAYS		< 0.002	plasticity but no dilatancy; sticks to the fingers and
			dries slowly; shrinks appreciably on drying, usually
			showing cracks. These properties more noticeable with increasing plasticity.
ORGANIC			with increasing plasticity.
CLAYS,			Contains much organic vegetable matter: often has a
SILTS OR		varies	Contains much organic vegetable matter; often has a noticeable smell and changes colour on oxidation.
SANDS			
			Predominantly plant remains; usually dark brown or
PEATS		varies	black in colour, often with distinctive smell; low bulk density.
			density.
B. Composite Soil Types (Mixtures of Basic Types)			

Principal	Terminology	Term for Secondary Constituent	% of Secondary Constituent
Soil Type Very coarse (BOULDERS & COBBLES)	<u>Sequence</u> Secondary	With a little	< 5
	constituents (finer material) ▲	With some	5 - 20
(> 50% of soil > 60 mm)	after principal	With much	20 - 50
		/ Slightly (silty, clayey	
		or silty/clayey) * - (silty, clayey	< 5
		or silty/clayey) *	5 - 15
Coarse	Secondary	Very (silty, clayey	
(GRAVELS &	constituents	or silty/clayey) *	15 - 35
SANDS)	before principal	AND/OR	
(> 65% gravel	(excluding cobbles	Slightly (gravelly	
& sand sizes)	& boulders) +	or sandy) * - (gravelly	< 5
		or sandy) *	5 - 20
		Very (gravelly	
		or sandy) *	20 - 50
Fir - (011 TO	Secondary	Slightly (gravelly	
Fine (SILTS & CLAYS)	constituents	or sandy or	
	before principal	both) *	< 35
(> 35% silt & clay sizes)	(excluding cobbles	- (gravelly	
ciay sizes)	& boulders) +	or sandy) *	35 - 65

- Full name of finer material should be given (see examples below).
- Secondary soil type as appropriate; use 'silty/clayey' when a distinction cannot be made between the two.
- If cobbles or boulders are also present in a coarse or fine soil, this can be indicated by using one of the following terms relating to the very coarse fraction after the principal: 'with occasional' (< 5), 'with some' (5-20), 'with many' (20-50), where figures in brackets are % very coarse material expressed as a fraction of the whole soil (see examples below).

Examples: Slightly silty/clayey, sandy GRAVEL. Slightly gravelly, sandy SILT. Very gravelly SAND. Sandy GRAVEL with occasional boulders. BOULDERS with much finer material (silty/clayey, very sandy gravel).

For fine soils, plasticity terms should also be described where possible, viz: 'non-plastic' (generally silts), 'intermediate plasticity' (lean clays), 'high plasticity' (fat clays).

#### 7. DISCONTINUITIES

Full description of discontinuities, where necessary, should be made using the methods and terms given in item 7 for rock description (see other side).

#### 8. ADDITIONAL GEOLOGICAL INFORMATION

Record geological name which indicates geological origin or soil type (e.g. Alluvium, Colluvium, Marine sand etc.). Refer to HKGS maps & memoirs for further information.

- Mass characteristics of soils (i.e. structure, weathering, discontinuities) can only be described satisfactorily in undisturbed field exposures or large undisturbed samples.
- For full descriptions of soils derived from insitu rock weathering:
  - (a) saprolites describe as rocks, supplemented by soil strength and soil name terms in
  - (b) residual soils describe as soils, supplemented by name of parent rock where apparent from field evidence.

#### CHECKLIST FOR ROCK DESCRIPTION

#### GEOTECHNICAL ENGINEERING OFFICE, HKSAR

#### 1. STRENGTH

Term Identification Extremely weak Easily crumbled by hand; indented deeply by thumbnail.

Crumbled with difficulty; scratched easily by thumbnail; peeled easily by pocket Very weak

Broken into pieces by hand; scratched by thumbnail; peeled by pocket knife; Weak deep indentations (to 5 mm) by point of geological pick; hand-held specimen

easily broken by single light hammer blow.

Broken with difficulty in two hands; scratched with difficulty by thumbnail; Moderately weak difficult to peel but easily scratched by pocket knife; shallow indentations

easily made by point of pick; hand-held specimen usually broken by single

light hammer blow

Moderately strong Scratched by pocket knife; shallow indentations made by firm blow with point of pick; hand-held specimen usually broken by single firm hammer blow. Point

load strength (PLS) 0.5 - 2 MPa.

Strona Firm blows with point of pick cause only superficial surface damage; hand-held specimen requires more than one firm hammer blow to break. PLS 2 - 4

Very strong Many hammer blows required to break specimen. PLS 4 - 8 MPa. Extremely strong Specimen only chipped by hammer blows. PLS > 8 MPa

2. COLOUR

Parameter Terms

Value Light, Dark

Chroma Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish,

Grevish

Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black Hue

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.

For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light pinkish grey spotted with black).

State whether sample was wet or dry when described

#### 3. TEXTURE/FABRIC

Texture Terms (Applicable Mainly to Igneous Rocks)

Equigranular, Inequigranular, Megacrystic, Porphyritic, Crystalline, Cryptocrystalline, Aphanitic

Fabric

Describe preferred orientation of grains/crystals where apparent.

Describe intensity, spacing, continuity and any preferred orientation of microfractures where apparent.

#### 4. MATERIAL WEATHERING/ALTERATION Grade

Decomposition	Grade	
<u>Term</u>	Symbol	Typical Characteristics
Residual	VI	Original rock texture completely destroyed; can be crumbled by
Soil		hand and finger pressure into constituent grains.
Completely	V	Original rock texture preserved; can be crumbled by hand and
Decomposed		finger pressure into constituent grains; easily indented by point of
		geological pick; slakes in water; completely discoloured compared with fresh rock.
Highly	IV	Can be broken by hand into smaller pieces; makes a dull sound
Decomposed		when struck by hammer; not easily indented by point of pick; does not slake in water; completely discoloured compared with fresh rock.
Moderately	III	Cannot usually be broken by hand; easily broken by hammer;
Decomposed		makes a dull or slight ringing sound when struck by hammer; completely stained throughout.
Slightly	II	Not broken easily by hammer; makes a ringing sound when struck
Decomposed		by hammer; fresh rock colours generally retained but stained near joint surfaces.
Fresh	1	Not broken easily by hammer; makes a ringing sound when struck
Rock		by hammer; no visible signs of decomposition (i.e. no

This classification is applicable to igneous and volcanic rocks and other rocks of equivalent strength in fresh state

discolouration).

Disintegration

Describe small-scale cracking and fracturing caused by mechanical weathering, where apparent

Alteration

Metamorphic

Describe state of alteration (e.g. mineralised, kaolinised) where apparent.

#### 5. ROCK NAME (Including Grain Size)

Igneous Coarse- (6-20 mm), Medium- (2-6 mm) & Fine- (0.06-2 mm) grained GRANITE; GRANODIORITE. Very Fine-grained (< 0.06 mm) RHYOLITE;

BASALT. (Common types only, see Geoguide 3 for others)

Pyroclastic PYROCLASTIC BRECCIA (> 60 mm), Lapilli TUFF (2-60 mm), Coarse ash TUFF (0.06-2 mm), Fine ash TUFF (< 0.06 mm).

Foliated - SCHIST (> 0.06 mm), PHYLLITE (< 0.06 mm).

MARBLE, QUARTZITE, FAULT BRECCIA.

Sedimentary CONGLOMERATE, BRECCIA (> 2 mm), SANDSTONE (0.06-2 mm)

MUDSTONE (< 0.06 mm) = SILTSTONE (0.002-0.06 mm) + CLAYSTONE (< 0.002 mm), (Common types only)

If rock name cannot be identified, describe grain size quantitatively, including textural term where appropriate

#### 6. STRUCTURE

Structural Term Rock Type Bedded, Laminated, Massive Sedimentary Igneous, Pyroclastic Massive, Flow-banded Foliated Banded Cleaved Metamorphic

Spacing of Planar Structures

Very thick (> 2 m), Thick (0.6-2 m), Medium (200-600 mm),

Thin (60-200 mm), Very thin (20-60 mm),

Thickly-laminated (Sedimentary) (6-20 mm) or Narrow (Igneous, Metamorphic) (6-20 mm), Thinly-laminated (Sedimentary) (< 6 mm) or Very narrow (Igneous, Metamorphic) (< 6 mm).

Examples: Thickly-bedded SANDSTONE. Narrowly flow-banded RHYOLITE.

#### 7. DISCONTINUITIES

Nature (Type of Discontinuity) Bedding Fault zone Fissure Cleavage

Fault Schistocity Tension crack Joint Shear plane Foliation

**Location and Orientation** 

Record location as co-ordinates or relative position along datum line, preferably on map or plan.

Record orientation as dip direction/dip in degrees (e.g. 032/55).

Spacing

Extremely widely-spaced (> 6 m), Very widely-spaced (2-6 m), Widely-spaced (0.6-2 m), Medium-spaced (200-600 mm), Closely-spaced (60-200 mm), Very closely-spaced (20-60 mm),

Extremely closely-spaced (< 20 mm).

In exposures, supplement spacing with description of rock block shape where possible. Descriptors: Blocky, Tabular, Columnar, Polyhedral.

Persistence (Areal extent or size of a discontinuity within a plane)

Measured maximum persistence dimension should be used where possible (e.g. the discontinuity trace length on the surfaces of rock exposures). For general descriptions of different discontinuity sets, relative terms should be used.

Roughness

Waviness (large-scale): Estimate/measure wavelength and amplitude in metres.

Unevenness (small-scale), use one term from the following:

Smooth stepped Slickensided stepped Rough stepped Smooth undulating Slickensided undulating Rough undulating Rough planar Smooth planar Slickensided planar

Aperture Size

Wide (> 200 mm), Moderately wide (60-200 mm), Moderately narrow (20-60 mm), Narrow (6-20 m), Very narrow (2-6 mm), Extremely narrow (> 0-2 mm), Tight (zero).

Infilling (Nature)

Clean Surface staining Decomposed/ Non-cohesive soil Cohesive soil disintegrated rock Manganese Quartz Other (Specify) Kaolin

Give full description of infill materials/minerals where appropriate

Seepage

Seepage present (estimate quantity in 1/sec or 1/min) Damp/wet Dry

Fracture State

In borehole cores, measure the following: Total Core Recovery (TCR), Solid Core Recovery (SCR), Rock Quality Designation (RQD), Fracture Index (FI). See Geoguide 3 for definitions.

#### 8. MASS WEATHERING

Term	Zone Symbol	Typical Characteristics
Residual	RS	Residual soil derived from insitu weathering; mass structure and
Soil		material texture/fabric completely destroyed: 100% soil
	/ PW	Less than 30% rock
	0/30	Soil retains original mass structure and material texture/fabric (i.e. saprolite)
		Rock content does not affect shear behaviour of mass, but relict discontinuities in soil may do so.
Partially	1	Rock content may be significant for investigation and construction.
Weathered	\ PW	30% to 50% rock
Rock	30/50	Both rock content and relict discontinuities may affect shear behaviour of mass.
	PW	50% to 90% rock
	50/90	Interlocked structure.
	PW	Greater than 90% rock
	90/100	Small amount of the material converted to soil along discontinuities.
Unweathered	UW	100% rock
Rock		May show slight discolouration along discontinuities.

#### 9. ADDITIONAL GEOLOGICAL INFORMATION

Record geological formation name if known. Avoid conjecture. Refer to HKGS maps & memoirs for further information.

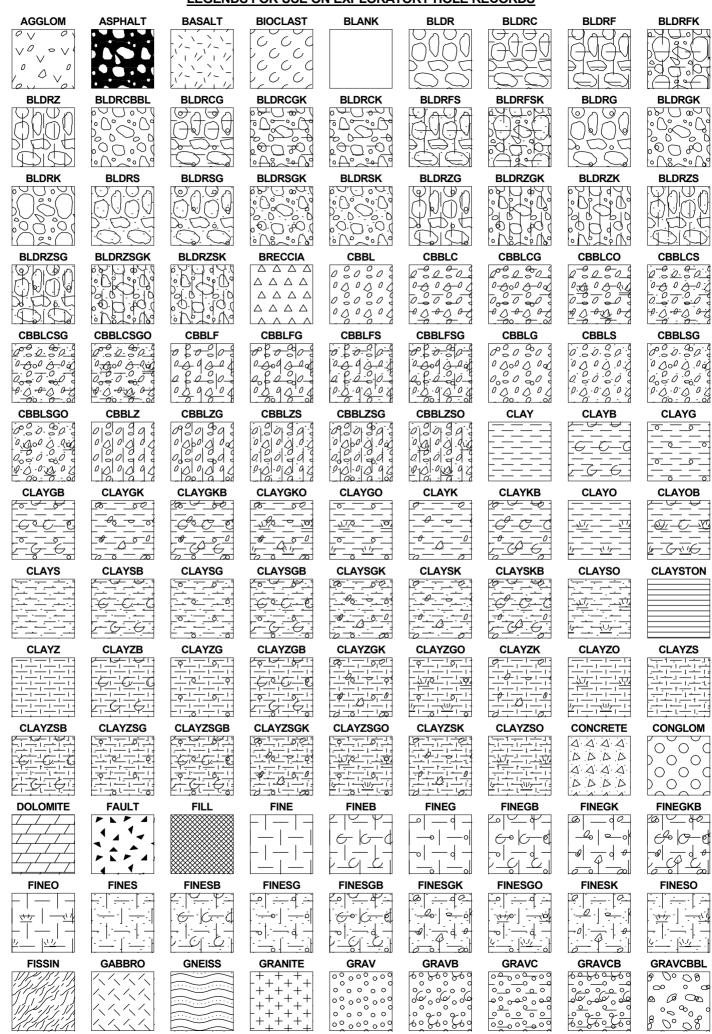
#### NOTES:

- Rock material description normally includes: strength, colour, texture/fabric, material weathering/alteration and ROCK NAME.
- Rock mass description normally includes: strength, colour, structure, mass weathering, ROCK NAME, discontinuities and additional geological information. Can be supplemented with more detailed information on texture/fabric and material weathering/alteration of different materials within the mass where necessary.

## **APPENDIX B**

LEGENDS FOR USE IN EXPLORATORY STATION RECORDS

#### LEGENDS FOR USE ON EXPLORATORY HOLE RECORDS



#### LEGENDS FOR USE ON EXPLORATORY HOLE RECORDS

		<u>LEGEND</u>	S FOR USE O	N EXPLORAT	ORY HOLE R	ECORDS		
GRAVCK	GRAVCO	GRAVCS	GRAVCSB	GRAVCSK	GRAVCSO	GRAVF	GRAVFB	GRAVFK
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		000000	60860860		000000		60 60 60	
GRAVFS	GRAVFSB	GRAVFSK	GRAVK	GRAVS	GRAVSB	GRAVSK	GRAVSO	GRAVZ
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000000	60 60 60	000 000 000		0 0 0 0 0	60 60 60		6000 <u>00</u> 00	
GRAVZK	GRAVZS	GRAVZSB	GRAVZSK	LST	LSTSLT	MARBLE	METACON	METAREG
	0000000	00000					***********	
	06990000	100 P 010 010						
		60 60 60						~~~~
MUDSTONE	ORGANICS	PEGMTITE	PHYLLITE	QUARTZIT	RHYOLITE	SAND	SANDB	SANDC
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	<u> </u>	+ + +	***************************************		+ + +		000	
		+ + +	***************************************		+ + +		1 C C	
SANDCB	SANDCG	SANDCGB	SANDCGK	SANDCGO	SANDCK	SANDCO	SANDF	SANDFB
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j <u>G G</u>		, <u> </u>	$a \rightarrow 0$	7	$a \rightarrow -a$	<u> 7.1/-</u>		100
SANDFG	SANDFGB	SANDFGK	SANDFGO	SANDFK	SANDFO	SANDG	SANDGB	SANDGK
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		0 0 0	1/2 11/1/ O	0	<u> </u>	0 0		0 0 00
SANDGKB	SANDGO	SANDK	SANDO	SANDSTON	SANDZ	SANDZB	SANDZG	SANDZGB
00 00	(11,0 (0)	0 0						
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SANDZGK	SANDZGKB	SANDZGO	SANDZK	SANDZKB	SANDZO	SCHIST	SHALE	SILT
	190 CF 80	9   P	ĭa la ĭ					
0 00	0 00			0 0				
a 0 0		1/1 1/1/1/10 O			<u> </u>			
SILTB	SILTC	SILTCB	SILTCG	SILTCGB	SILTCGK	SILTCGO	SILTCK	SILTCO
						-    -	- - - - - - - - - - - - - - - - - - -	
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SILTCS	SILTCSB	SILTCSG	SILTCSGB	SILTCSGK	SILTCSGO	SILTCSK	SILTCSO	SILTG
		1						
		11-6 1 1 1-61 1						
<u>                                     </u>	71747-171	[  [.   o-  e	71771	b-10-1-ba	4-10-1-1-	bi-i-bi	<u> </u>	
SILTGB	SILTGK	SILTGO	SILTK	SILTO	SILTOB PITTATTATT	SILTS	SILTSB	SILTSG [թերթերթերի
		4119144191	الطللللللطا					
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<b>TRACHYTE</b>	TUFF	TUFFFINE	VEIN	VOID	WASHING			
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#### Legend Code Pick List for field GEOL LEG (Groups \*\*GEOL and \*\*?LEGD)

Material Code	Description	Sheet	1	of	2
AGGLOM	Agglomerate, tuff breccia				
ASPHALT	Asphalt				
BASALT	Basalt				
BIOCLAST	Shell				
BLANK	Material not recovered				
BLDR	Boulder				
BLDRCBBL	Boulders and Cobbles				
BRECCIA	Breccia (sedimentary)				
CBBL	Cobbles				
CLAY	Clay				
CLAYSTON	Claystone				
CONCRETE	Concrete				
CONGLOM	Conglomerate				
DOLOMITE	Dolomite, dolomitic limestone	)			
FAULT	Fault rock (breccia, gouge, m	ylonite)			
FILL	Fill or made ground				
FINE	SILT/CLAY (Geoguide 3 p39	)			
FISSIN	Fissure infill				
GABBRO	Gabbro, lamprophyre				
GNEISS	Gneiss				
GRANITE	Granite				
GRAV	Gravel				
LST	Limestone				
LSTSLT	Interbedded limestone and si	litstone			
MARBLE	Marble (pure or impure)				
METACON	Contact metamorphic Rock				
METAREG	Regional metamorphic Rock				
MUDSTONE	Mudstone				
ORGANICS	Organic material, peat				
PEGMTITE	Pegmatite				
PHYLLITE	Phyllite				
QUARTZIT	Quartzite, quartz (vein)				
RHYOLITE	Rhyolite (feldsparphyric, quar	tzphyric	)		
SAND	Sand				
SANDSTON	Sandstone				
SCHIST	Schist				
SHALE	Shale				
SILT	Silt				
SILTSTON	Siltstone				
SURFACE	Artificial surface (masonry, sh		chu	ınam	etc)
SYENITE	Granodiorite, syenite, monzo				
TRACHYTE	Trachyte, dacite, latite, andes	site			
TUFF	Coarse ash tuff, lapilli tuff				
TUFFFINE	Fine ash tuff				
VOID	Void				
WASHING	Wash Boring (no sample rec	overy att	emp	ted)	

#### Note 1:

The code BLDRCBBL is reserved for very coarse soils where the sample size is too small to determine the actual proportion of boulders and cobbles (it is not likely to be required for excavations).

#### Note 2:

Common Ground (defined at GS 7.22) soil descriptions are based on Geoguide 3. Textual soil descriptions can become very complex (e.g., Geoguide 3, Tables 11, 15 & 16). Legend codes for soils shall be constructed according to the following rules:

- (a) Made ground of any type shall be represented by the code FILL.
- (b) Codes for natural soils shall start with the 4-character code for the basic soil type, taken from the list above (i.e., CLAY, SILT, FINE, SAND, GRAV, CBBL, BLDR).
- (c) Secondary and tertiary size fractions from the soil name are indicated using the following codes, appended to the basic soil code, in the order stated below:
  - (i) C clayey
  - (ii) Z silty
  - (iii) F silty/clayey
  - (iv) S sandy
  - (v) G gravelly, with ... gravel
  - (vi) K cobbly, with ... cobbles
  - (vii) V bouldery, with ... boulders
- (d) Selected additional information is indicated by appending relevant codes from the list (and in the order) below:
  - (i) O with organic material
  - (ii) B with shell

The following examples of soil descriptions, from Geoguide 3 Tables 15 and 16, illustrate the derivation of codes:

Slightly silty/clayey, sandy GRAVEL	GRAVFS
Slightly clayey, gravelly SAND	SANDCG
Very gravelly SAND [or SAND with much gravel]	SANDG
Sandy SILT	SILTS
Slighly gravelly, slightly sandy SILT/CLAY	FINESG

[or Slightly sandy SILT/CLAY with occasional gravel]

Sandy GRAVEL with occasional boulders GRAVSV
Cobbly BOULDERS with some finer material (slightly gravelly sand)
BOULDERS with much finer material (silty/clay, very sandy gravel)
BLDRSG

## APPENDIX C

DRILLHOLE RECORDS



HOLE NO.

ADH01

**CONTRACT NO.:** 

GE/2015/29

SHEET 1 OF 6

**PROJECT** 

METH	METHOD Rota MACHINE & NO. VBN			tary		<b>→</b>						TASK ORDER NO. GE/2015/29.8				
MACH	INE	& NO.			VB	M26	i		E 820712	.08		N 83	34110.	.75		DATE: 06/12/2016 to 24/12/2016
FLUSH	HING	MED	IUM	Air I	oar	n / V	Vat	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.55 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sampl No. Type			0.00 (m)	Legend	Grade	Description
- 06/12/2011 - 06/12/2011 - 07/12/2011 - 07/12/2011 - 07/12/2011 - 07/12/2011 - 08/12/2011 - 08/12/2011 - 08/12/2011 - 08/12/2011	5 SW 665	2.59m at 18:00 2.79m at 08:00	0 0	0				4.20 4.65	1.3. N=8	No. Type  A B C  1  2  3  4  5  10  11	0.50 1.00 1.30 2.00 3.00 3.10 4.10 4.20 4.30 4.65 5.10 6.10 6.20 7.20 7.73 7.40 7.77 7.75 8.20	+0.55 +0.45 +0.05 +0.05 -1.45 -2.55	0.00 0.10 0.50 - 2.00 - 3.10 - - - - - - - - - - - - -			Concrete surface. Firm, dark grey (N 3), locally black, spotted white, clayey sandy SILT with some angular fine to coarse gravel sized rock fragments. (FILL) Firm, dark grey (N 3), spotted white, clayey sandy SILT with occasional shell fragments. (MARINE DEPOSIT)  Yellowish brown (10YR 5/4), spotted white, slightly silty fine to coarse SAND. (ALLUVIUM)  Firm, yellowish brown (10YR 5/4), mottled light grey, clayey sandy SILT. (ALLUVIUM)  Firm, grey (N 5), mottled dark grey, clayey sandy SILT with occasional decayed wood pieces and pockets of silty fine to coarse sand. (ALLUVIUM)  Dense, grey (N 5), spotted white, slightly clayey silty fine to coarse SAND. (ALLUVIUM)
_ _ _ 			0	0		Standa	ard n	notratio	nn toot				_ _ _ _	- [ -	DIVO	
Pistor	rbed sa n samp	le			<u>v</u> <u>I</u> 1	In-situ Perme	vane abilit			LOGGED	_	S. C. L	.aw	2. Wate	spect r was	ion pit was excavated to 1.30m. used as flushing medium from 18.60m to 55.33m as instructed by
1 🕳		sample rbed sam	ple		Ī	Pressu Packe	ıreme r Tes	eter test t		DATE	_	24/12/2	016			Manager. Air foam was used from 1.30m to 18.60m.
U100 Mazie	U100 undisturbed sample Mazier sample			televiewer survey Piezometer tip Standpipe		urvey tip	ling Well	CHECKE	D _	Y. M. Le	eung					
▲ Wate	Water sample		Groundwater Sam  Vibrating wire piez Impression packet			re piezo	meter	DATE	_	04/01/2	017					
LII LIIVIII	Environmental Sample					iiihies	JOIUII	Packer (								J201617e



HOLE NO.

ADH01

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF 6

**PROJECT** 

METHOD	R	otary	CO-ORDINATES				TASK ORDER NO.	GE/2015/29.8
MACHINE & NO.	٧	BM26	E 820712	2.08	N 834110	.75	DATE: 06/12/2016	to 24/12/2016
FLUSHING MEDIU	MAir Fo	am / Wateı	ORIENTA	TION	Vertical		GROUND LEVEL	+ 0.55 mPD
Casin Casin Casin Casin Casin (m)	TCR%	RQD%	Tests	Samples No. Type Depth	Reduced Level Depth (m)	Legend	Descriptio	n
SW 2.65m at 18:00 1.07m at 08:12/2016 18:00 1.07m at 08:00			10.40 3.6, 9.6.8,10 N=33	12 10.30 10.40 13 10.80 14 10.85			See sheet 1 of 5	
12 3.50m at 18:00 08:00 60			79 bis 12.90   4,11, 9,8,8,12   N=37	16 12.30 17 12.40 18 12.85 19 13.00 20 13.35				
3.50m at 18:00 at 18:	75			21 • 14.00	-13.35 13.90 -13.45 14.00 -13.85 14.40		From 13.90m to 14.00m: Silty fin some subangular fine to medium  Light grey (N 7), spotted white, sil with occasional subangular fine to (ALLUVIUM)	gravel.  ty fine to medium SAND
16 	100		16.00 1.1. 3.2.8.14 18-27	23 15.40 24 15.50 25 16.00 26 16.40 27 16.44 28 17.00	-16.35		Firm, dark grey (N 3), striped grey much angular to subangular fine the fragments. (KARST SURFACE D	to coarse gravel sized rock EPOSIT)
18 60	0 0			17.50	-16.95 17.50 		some angular to subangular fine to subangular fine to subangular fine to some angular to subangular fine to sandy SILT with much angular to gravel sized rock fragments. (KAF	o medium gravel.  ottled dark grey, clayey subangular fine to coarse
12/12/2016 18:00 1.08m at 08:00	100		49 bls 19.10 15.5, 6,10.8,13 N=37	29 18.50 30 19.00 31 19.05 32 19.20 33 19.55	-19.35 19.90	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Firm, brown (7.5YR 5/4), mottled SILT with some angular to subangravel sized rock fragments. (KAf	gular fine to medium
Disturbed sample Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample	V I I I I I I I I I I I I I I I I I I I	Standard pen In-situ vane s Permeability t Pressuremete Packer Test Acoustic or op televiewer sur Piezometer tip	hear test est er test tical vey	LOGGED	S. C. Law 24/12/2016	REMARKS	<u> </u>	
Mazier sample SPT liner sample Water sample En Environmental Sample	1	Standpipe	Sampling Well piezometer	DATE _	Y. M. Leung 04/01/2017			J201617e



HOLE NO.

ADH01

6

**CONTRACT NO.:** 

GE/2015/29

SHEET 3 OF

**PROJECT** 

METH	METHOD Rotary MACHINE & NO. VBM26								CO-ORDINATES						TASK ORDER NO. GE/2015/29.8
MACH	IINE	& NO.			VB	M26	;	۱ 🗀	E 820712.	08	N 83	34110	.75		DATE: 06/12/2016 to 24/12/2016
FLUSH	HING	MED	IUM	Air I	oar	n / V	Vat	er (	ORIENTAT	ION	Verti	cal			GROUND LEVEL + 0.55 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced 19,45	(m) 20.00	Legend	Grade	Description
	PW		60	83						20.30 T2101 35 20.70			191-1 000 000	2	From 19.90m to 20.00m : Clayey silty fine to medium SANL with some subangular fine gravel.  Dark grey (N 3), spotted white, subangular COBBLE sized impure Marble with much subangular medium to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT
1			60	0				22.30	9,40,23,18	36 21,70 21,80 37 22,25 22,30 38 22,40					Firm, brown (7.5YR 5/4), mottled and dappled dark grey, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT
14/12/2011 15/12/2011	PW 22.75	0.60m at 18:00 0.00m	60	98	81	69	>20 9.5	22.90 23.11	N=90	22.76 22.75 T2101		- 22.75 			Strong, grey, striped light grey and dark grey, slightly decomposed impure MARBLE.  Joints are very widely to widely spaced, locally closely to medium spaced, rough planar, occasional smooth planar and rough stepped, tight to extremely narrow, clean and occasional calcite coated, dipping 0° to 10°, 20° to 30°, 40° to 50°, occasional 50° to 60° and 60° to 70°.  From 22.75m to 23.10m: With slightly solution features along joints, dipping 40° to 50°.
;		at 08:00	30	100	100	100				T2101					along joints, dipping 40 to 30 .
5			30	100	100	100	1.2			T2101		- - - - - - - - - - - - - - - - - - -			
			30	160	100	100				T2101		- - - - - - - - - - - -			
15/12/2010 17/12/2010	66	0.00m at 18:00 0.00m	30	95	81	42	14.6	28.17 28.58		T2101		- - - - -	HHHHH		From 28.25m to 28.58m : With slightly solution features along joints, dipping 20° to 30°.
9		at 08:00	10	100	100	96		29.07		T2101 29.61					
	rbed s							enetration		LOGGED	S. C. L	aw	REMA	RKS	<u> </u>
Splits U76 L U100 Mazie	Piston sample  Split spoon sample  U76 undisturbed sample  U100 undisturbed sample  Mazier sample  SPT liner sample  Permeability to Pressuremete Acoustic or op televiewer sun Piezometer Ties Standpipe Groundwater Standpipe Groundwater Standpipe				potical price   DATE		24/12/2 Y. M. Le	016	- -						
_	er samp	ole	le	_	Ĭ.,	Vibrati	ing w	er Sampling Well ire piezometer packer test DATE 04/01/2017					J20161		



HOLE NO.

ADH01

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 6

**PROJECT** 

$\vdash$	METHOD Rotary  MACHINE & NO. VBM26							CO-ORDINATES E 820712.08 N 834110.75							TASK ORDER NO. GE/2015/29.8	
_	IACH	INE	& NO.			VB	M26	;	۱ 🕇	E 820712.	08	N 83	84110.	.75		DATE: 06/12/2016 to 24/12/2016
F	LUSH	HING	MED	IUM/	Air F	oar	n / V	Vate	er (	ORIENTAT	ΓΙΟΝ	Verti	cal			GROUND LEVEL + 0.55 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type Dep	Pth -29.45	0.00 (m)	Legend	Grade	Description
						100		1.2			T2  O  30.	.31			II	See sheet 3 of 5 From 30.00m to 31.00m : Quartz vein.
32 -	<u>7/12/2016</u> 9/12/2016		0.00m at 18:00 0.00m at 08:00	10	189	93	93	7.1	31.60 32.02		T2101	.73				From 31.60m to 31.90m : With closely spaced calcite veins up to 5mm thick, dipping $10^\circ$ to $20^\circ$ and $50^\circ$ to $60^\circ$ .
33 - - - - - - - - - - - - - - - - - -				10	180	100	95	3.6	32.95 33.05 33.63 33.91		33. T2101	.16				From 32.95m to 33.05m: Moderately strong.
35				10	100	100	100		35.03		34. T2101	.55				
36 				10	100	100	100		36.26		35. T2101	.90				From 35.45m to 35.87m : Quartz vein.  From 36.30m to 36.46m : Quartz vein.
E	<u>19/12/2016</u> 20/12/2016		0.00m at 18:00 0.00m at 08:00	10	100	100	100	2.1			37. T2101	.32				From 36.70m to 36.75m : Quartz vein.
38 				10	180	100	94	1.8			38. T2101	69				
40 ● ■	Disturbed sample Piston sample Split spoon sample U76 undisturbed sample			Standard penetra  V In-situ vane sheat Permeability test Pressuremeter te Packer Test Acoustic or optice televiever survey			enetration shear to test eter test	etration test lear test set rest rest		S. C. L		REMA	RKS			
	Mazier sample  SPT liner sample				<ul><li>Piezometer tip</li><li>Standpipe</li></ul>				er Sampling Well ire piezometer DATE 04			eung 017			J201617e	



HOLE NO.

ADH01

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 5

**PROJECT** 

MET	IETHOD Rotary IACHINE & NO. VBM26							,		CO-ORDINATES						TASK ORDER NO. GE/2015/29.8
MAC	HIN	E 8	k NO.				M26		$\exists$	E 820712.	08	N 8	34110	.75		DATE : 06/12/2016 to 24/12/2016
FLU	SHIN	G	MED	IUM	Air I	Foar	n / V	Vate	er	ORIENTAT	TION	Vert	tical			GROUND LEVEL + 0.55 mPD
Drilling Progress	Casing	Jeptn/Siz	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type De		Depth (m)	Legend	Grade	Description
- - -								6.9	40.38		<u>T2101</u> 40	10	-		II	See sheet 4 of 5 From 40.05m to 40.13m : Quartz vein. From 40.19m to 40.25m : Quartz vein.
<u>-</u> - - <b>4</b> 1				10	100	100	100	3.2	41.00		T2101					
_ _ _ _								-			41	40	E E E	HHH		
				10	100	100	100				T2101		-	HHH		
	016 016		0.00m at 18:00 0.00m at 08:00					2.4			42	81		HHH		
			00.00	10	100	100	100				T2101					
44 - - - - - - -								10.0	44.40 44.50		44	21		HHHHH		
<u>-</u> <u>45</u> - -				10	100	98	93	7.1	44.95 45.23		T2101		<u>-</u> -	HHHHH		
								2.3	46.12		45	.59		HHHH		
- - - - -				10	100	100	100	9.1	46.23		T2101					
47 - - - -								1.2			46	95		HHHHH		
				10	100	100	100				T2101		-	HHHH		
				4.5		400	400	6.5	48.75 49.06			SI .		HHHH		
	016		0.00m at 18:00	10	100	100	100	1.2			T2101	.78		HHHHH		
50	o16 turbed	san	nnle		///					ion test	T2[101		<u>E</u>	REMA	RKS	
Pis Spl	ton sai it spoo	nple				Ī	Perme Pressi	abilit ureme	ter tes	st	LOGGED	S. C.	Law			
U7	6 undis	turb istur	ed sam			1	Packe Acoust televie	r Tes tic or wer s	t optical urvey		DATE	24/12/				
SP	SPT liner sample			er Sampling Well				-								
	Water sample Vibrating wire pin Environmental Sample Impression pack					DATE	04/01/	2017			J201617e					



HOLE NO.

ADH01

**CONTRACT NO.:** 

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SHEET 6 OF 6

**PROJECT** 

	METHOD Rotary MACHINE & NO. VBM26					CO-ORDINATES					TASK ORDER NO.	GE/2015	/29.8					
	MACH	INE	& NO			VB	M26			E 820712.	08	N 83	34110	.75		DATE : 06/12/2016	to 24	/12/2016
	FLUSH	IING	MED	IUM	lAir I	Foar	n / V	Vate	er	ORIENTAT	TION	Verti	cal			GROUND LEVEL	+ 0.55	mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests	Samples No. Type Deptl	Reduced Level	Depth (m)	Legend	Grade	Descripti		
<u>-</u> - - - - 51			0.00m at 08:00	0	100	96	85	3.9	50.03		T2101		- - - - - - - - - - -		=	From 49.93m to 50.03m : BASA dipping 40° to 50°.	ALI DIKE 100	mm thick.
52 -				0	180	100	100	1.2	51.58 52.45		T2101		- - - - - - - - - -					
_ _ _ _ 				0	100	100	95	1.4	.52.81		T2101		- - - - -					
54	<u>23/12/2016</u> 24/12/2016	1010	0.00m at 18:00 0.00m at 08:00					5.6	.53.54 .53.72		53.91		- - - - - - -	HHHHHH				
_ _ _ _ _ _ 	24/12/2016		0.00m at 18:00	0	100	100	100	1.2			T2101	-54.78	- - - - - - - - - - - - - - - - - - -					
557 							Standa	ard pa	55.33	nn test	55.33	34./6	- 93.33	REMA	BKS	End of Investigation Hole at 55.3	33m.	
	Piston sample Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample SPT liner sample  In-situ vane sh. Permeability tes Pressuremeter Packer Test Acoustic or optic televiewer surve Plezometer tip Standpipe Groundwater Si			e shear to y test eter test t optical curvey tip	test er test DATE 24 ptical rvey P CHECKED Y. I		S. C. L 24/12/2 Y. M. Le	2016	REMA	KKS								
4		Water sample Vibrating wire p Environmental Sample Impression page			ire piezo	ometer	neter <b>DATE 04/01/2017</b>							J201617e				



HOLE NO.

ADH02

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 6

**PROJECT** 

N	METHOD Rota						tary		T	CO-ORDII	DINATES					TASK ORDER NO. GE/2015/29.8
N	IACH	INE	& NO.			VB	M26	;	□       •	E 820706	.84	N 83	34113.	.03		DATE: 10/01/2017 to 21/01/2017
F	LUSH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.67 mPD
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type Dep		0.0 Depth (m)	Legend	Grade	Description
1   1   1   1   1   1   1	0/01/2017	sw									A O.5		0.10 - - - - - - - - - - - - - - - - - - -			Concrete surface.  Dark grey (N 4), spotted white, clayey silty fine to coarse SAND. (ALLUVIUM)
2 - - - - - - - - - - - - - - - - - - -				60	95				3.10	2,2,2,2 N=8	2 3.0 3.0 3.1 3 3.2 4 3.5	10 0 20				Firm, reddish brown (2.5YR 5/4), mottled brown and light grey, clayey sandy SILT. (ALLUVIUM)
<u>4</u>  -  -  -  -  -  -  -  -  -	<u>0/01/2017</u> 1/01/2017		0.91m at 18:00 0.55m at	60	95				5.10 5.55	11.3, 6,9,9,10 N=34	5 4.0 6 5.0 5.1 7 5.2 8 5.5	0 0 -4.43	4.00 			Light yellowish brown (2.5Y 6/3), spotted white, silty fine to coarse SAND. (ALLUVIUM)  Firm, light grey (N 7), spotted white, clayey sandy SILT. (ALLUVIUM)
<u> </u>			at 08:00	50	93				7.60 8.05	5,12,15,16 N=48	9 6.0 10 7.0 11 7.0 12 7.5 13 7.7 14 8.0 8.0	10 0 0 15 15 10 0 0	- 6.00			Medium dense to dense, dark grey (N 4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
9 - - - - 10 -		bed sa			93				enetratio		16 9.1 17 9.5 9.6 18 9.7 10.0	55 60 70	- - - - - - - - - - - - - - - - - - -	REMA		ion nit was excavated to 1.00m
	Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample					Permeability test Pressuremeter test Packer Test Acoustic or optical televiewer survey Piezometer tip Standpipe				DATE	23/01/2017  Y. M. Leung			ispect	ion pit was excavated to 1.00m.	
□ ▲ Ei	SPT liner sample  Water sample  En Environmental Sample					<b>1</b>	Groundwater Sampling Well			DATE 23/01/2017					J201617e	



HOLE NO.

ADH02

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**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF

**PROJECT** 

METHOD						CO-ORDINATES		N 834113.03			TASK ORDER NO. GE/2015/29.8		
MACHINE & NO.		VBI	VI26	i		E 820706.	84		N 83	34113	.03		DATE: 10/01/2017 to 21/01/2017
FLUSHING MEDIUN	1	Wa	ter			ORIENTA	LION		Verti	cal			GROUND LEVEL + 0.67 mPD
Drilling Progress Casing Casin	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type	Depth	ಹduced ಜ Level	(m) 10.00	Legend	Grade	Description
SW SW T1					10.05	54	20	10.60	-10.43				See sheet 1 of 6
50 	98				12.20 12.65	9 6.7. 4.4.6.8 N=22	21 22 23 24 25	12.10 12.20 12.30 12.60 12.65	-12.43				Medium dense, light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)
50	90				14.20 14.65	10,9,10,12 N=41	25 26 27 28	14.10 14.20 14.30 14.65	-14.43	15.10			Dense, light greenish grey (10GY 7/1), spotted white, silty fine to coarse SAND with some subangular to subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
150 16 	92				16.20 16.65	5,6,9,10 N=30	30 31 32 33 33 33 33 33 33 33 33 33 33 33 33	16.10 16.20 16.30 16.60 16.65					Firm to stiff, dark brown (7.5YR 3/4), mottled dark grey, slightly clayey sandy SILT with some subangular to subrounded fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)
18	96				18.20 18.65	5,8,10,12 N=35	34 35 36 37 37	18.10 18.20 18.30 18.60 18.65					
- 0.00m at 50 13/01/2017 0.78m			Stands	ard no	enetratio	on test	38 T2 IOI	19.50 19.60 19.90	-18.93	19.60 			Grey (N 5), striped white, locally brown, subangular COBBLE sized slightly decomposed impure Marble with
Disturbed sample Piston sample	•	<b>V</b> li ∐ P	n-situ Perme	vane ability	shear to test	est	LOGGED	_	S. C. L	.aw	REMA	CAN	
Mazier sample	U76 undisturbed sample U100 undisturbed sample		televiewer survey Piezometer tip		DATE CHECKEI	_	23/01/2 /. M. Le						
SPT liner sample  Water sample  En Environmental Sample	SPT liner sample  Water sample			Groundwater Sampling Well		DATE 23/01/2017					J201617e		



HOLE NO.

ADH02

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 3

**PROJECT** 

<b> </b>	IETHO	OD.			Ro	tary		<del></del>	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
	IACHI	INE	& NO.		VB	M26	;	۱ 🗆	E 820706	.84	N 83	84113.	.03		DATE: 10/01/2017 to 21/01/2017
F	LUSH	IING	MED	IUM	Wa	ater		1	ORIENTA'	TION	Verti	cal			GROUND LEVEL + 0.67 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns % T C R %	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced 19.33	(m) 20.00	Legend	Grade	Description
		HW	at 08:00	50 73				20.20 20.65	6,8,13,18 N=45	T2101 20.20 39 20.30 40 20.65	-19.53				some slightly silty angular medium to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Dense, dark brown (7.5YR 3/4), mottled dark grey, clayey silty sandy subangular fine to medium GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
_ _ _ _ _ _ _	3/01/2017 4/01/2017		0.38m at 18:00	64					42 bls	42 43 21.65 21.75 44 22.20 22.25	-21.08 -21.58	- - 21.75 - - - - - - 22.25	0 0 0		Dark grey (N 4), spotted brown, sandy angular to subangular fine to medium GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
	4/01/2017		0.53m at 08:00	50 86	57	57	>20	22.53 22.90 22.90	[[6,6,7,8	T2101 22.90 45 23.00	-22.23			II	Moderately strong, dark grey, striped white, slightly decomposed impure MARBLE. Joints are medium spaced, locally extremely closely spaced, rough planar and slickensided planar, rough undulating, very narrow, iron and manganese oxide stained, calcite coated, dipping 20° to 30° and 60° to 70°.
_ _ _ _ _ _ <b>24</b>				50 87	48	30	9.4 NR	23.35 23.88 24.03	N=27	46 23.30 23.35	-22.68 -23.21 -23.36	23.35 - - - - - 23.88 - 24.03		II	From 22.25m to 22.53m: With solution feature. From 22.86m to 22.90m: With solution feature. Firm, dark brown (7.5YR 3/4), mottled light grey, clayey sandy SILT. (CAVITY INFILL DEPOSIT) Moderately strong, dark grey, striped white, slightly decomposed impure MARBLE. Joints are medium spaced, locally extremely closely to very
_ _ _ _ _ _ _ _ _ _ _ _				50 50	23	18	2.0 >20 NR	24.53 24.73		24.50 T2101	-24.06		HHHH		closely spaced, occasional closely spaced, rough planar and undulating, occasional closely spaced, rough planar and undulating, occasional slickensided planar, very narrow, iron and manganese oxide stained, chlorite and calcite coated, dipping 0° to 10°, 20° to 30°, 40° to 50°, 50° to 60° and 60° to 70°.  From 23.35m to 23.88m: With solution feature.
_ _ _ _ _ _ _ _ _ _ _ _ _ _	<u>4/01/2017</u> 6/01/2017		0.68m at 18:00 0.42m at 08:00	50 77	38	20	3.7 >20 8.7 NR	25.23 25.50 25.73 25.96 26.10		T2101	-24.56 -25.29 -25.43	25.23 - - - - - - 25.96 - 26.10	HHHHH	II	From 23.88m to 24.03m: No recovery, inferred to be Cavity. From 24.53m to 24.73m: With solution feature. From 24.73m to 25.23m: No recovery, inferred to be Cavity. From 25.50m to 25.73m: With solution feature. From 25.96m to 26.10m: No recovery, inferred to be
				50 57	39	11	9.1 >20	26.10 26.10 26.30 26.41 26.65	5,7,  100/50mm (100/50mm)	47 26.10 48 26.25 26.30	-25.63 -25.98	26.30 - - 26.65 - - 27.11		II	Cavity. Firm, dark brown (7.5YR 3/4), mottled dark grey, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Moderately strong, dark grey, striped white, slightly decomposed impure MARBLE.
	16/01/2017 17/01/2017	HW 27.38	0.57m at 18:00	50 108	100	100	20.0	27.26		T2101				II	Joints are extremely closely to very closely spaced, locally closely spaced, rough planar and rough stepped, very narrow, iron and manganese oxide stained, dipping 10° to 20°, 40° to 50° and 50° to 60°.  From 26.40m to 26.60m: With solution feature. From 26.65m to 27.11m: No recovery, inferred to be Cavity.  Strong, dark grey (N 4), striped white, slightly decomposed impure MARBLE.  Joints are widely to very widely spaced, locally very closely
29 - - - - - - - - 30	17/0 <del>1</del> /2017		0.35m at 08:00	50 100	100	100	0.8			T2101		-			to closely spaced, rough planar and slickensided planar, occasional rough undulating, extremely narrow, calcite and occasional chlorite coated, dipping 0° to 10°, 10° to 20°, 20° to 30°, 50° to 60° and 60° to 70°.
30	U76 u	le sample rbed sam		¥ 1 1	In-situ Perme Pressu Packe	vane ability ureme	eter test		LOGGED _	S. C. L 23/01/2		REMAI	RKS		
	Maziei SPT lii Water	r samp ner sa r samp	mple			Piezor Stand <sub>l</sub> Groun Vibrati	neter pipe dwate ing wi	tip		CHECKED	Y. M. Le 23/01/2				J201617e



HOLE NO.

ADH02

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 6

**PROJECT** 

MET	НО	D				Ro	tary	,	7	CO-ORDII	NATES					TASK ORD	ER NO.	GE/20	15/29.8	3
MAC	HI	NE	& NO.			VB	M26	;	<b>□</b> •	E 820706	.84	N 83	34113	.03		DATE :	10/01/2017	to	21/01/2	2017
FLU	SHI	NG	MED	IUN	1	W	ater		- (	ORIENTA	TION	Verti	cal			GROUND L	EVEL	+ 0.67		mPD
Drilling Progress	20180-	Casing Depth/Size	Water Level (m) Shift start / end	Flush Refurns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples  No. Type Dep		30.00 (m)	Legend	Grade		Description	on		
- - - - - - - - - - - - - - - - - - -				50	100	100	100				T2101		- - - - - - - - - - - - - - - - - - -		=	See sheet 3 of 6	8			
- - - 32 - - - - - - - -				50	100	100	98	13.3	32.19 32.34		T2101	39	- - - - - - - - - - - - - - - - - - -							
33 - - - - - - - - 34 -				50	100	100	100				T2101									
	2017		0.51m at 18:00	50	100	100	100				T2101		- - - - - - - - - - - - - -							
18/01/2 36 18/01/2 	2017		0.35m at 08:00	20	100	100	100				T2101		- - - - - - - - - - - - - -							
38 - - - - - - - - - - - - - - - - - - -	2017		0.48m at 18:00	20	100	100	100				T2101	59								
	2017		0.36m at 08:00	20	100	100	100				T2101		- - - - - - - - - - - - - - - - - - -							
Display	☐ Piston sample ☐ Split spoon sample ☐ U76 undisturbed sample ☐ U100 undisturbed sample ☐ Mazier sample ☐ SPT liner sample ☐ SPT liner sample ☐ Groundwate							vane eability r Tes tic or wer s meter pipe	e shear t y test eter test t optical urvey tip	est	LOGGED  DATE  CHECKED	S. C. L 23/01/2 Y. M. Le	017	REMA	RKS					
▲ W:	ater s	samp	•	le		•	Vibrati	ing wi	er Samp re piezo packer t	meter	DATE	23/01/2	017							J201617e



HOLE NO.

ADH02

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 5

**PROJECT** 

Г	METH	OD				Ro	tary	,	<b>—</b> (	CO-ORDIN	IATES					TASK ORDER NO.	GE/2015/	29.8
	MACH	INE	& NO.	ı		VB	M26	<b>;</b>	<b>-</b>	E 820706.	84	N	83411	3.03		DATE: 10/01/201	7 to 21	/01/2017
	FLUSH	IING	MED	IUM		Wa	ater		- (	ORIENTA	TION	Ve	rtical			GROUND LEVEL	+ 0.67	mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De	છૂ.	Depth (m)		Grade	Descript	ion	
41 41 42 44 44 44 44 44 44 44 44 44 44 44 44	<u>19/01/2017</u> 20/01/2017		0.51m at 18:05m at 08:00	20 20 20	100	100 100 100	100	0.5			T2101  T2101  T2101  44  T2101  45  T2101	2.95 1.34				See sheet 4 of 6		
	Split s U76 u U100	samp poon s ndistu undist	le sample rbed sam urbed sa			V I I I I I I	In-situ Perme Pressu Packe Acoust televie	vane ability ureme r Test tic or wer s	eter test t optical urvey	test	LOGGED	23/0	. Law 1/2017	REM	ARKS			
	Maziei SPT lii Water Enviro	ner sa samp	mple ole	ole			Vibrati	pipe dwate ing wi			DATE		Leung 1/2017	_				J201617e



HOLE NO.

6

ADH02

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 6

**PROJECT** 

METH	OD				Ro	tary			CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
MACH	INE	& NO.			VB	M26		<b>-</b>	E 820706.	84	N 83	34113	.03		DATE: 10/01/2017 to 21/01/2017
FLUSI	HING	MED	IUM		W	ater			ORIENTAT	TION	Verti	cal			GROUND LEVEL + 0.67 mP
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests	Samples  No. Type Dep	bth -49.33	(m) 50.00	Legend	Grade	Description
51	77	0.53m at 18:00 0.36m at 08:00	30	100	100	92 63	1.6	52.58 52.68 52.78		T2101  T2101  T2101  T2101  T2101  53.4	05 46				From 52.58m to 52.78m : With some microfractures, randomly oriented.
	0.35m 0 100 100 100 1.1							55.81		T2101	<sub>81</sub> -55.14				End of Investigation Halo at 55 91m
56	21/01/2017 at 18:00  Disturbed sample Standard V In-situ var							LOGGED	S. C. L	aw	REMA	RKS	End of Investigation Hole at 55.81m.		
Pistol Split s U76 u U100 Mazie SPT I Wate	n samp spoon : undistu undist er samp liner sa er samp	sample rbed sam rurbed sam ple imple ble	mple			Perme Pressu Packer Acoust televier Piezon Stand Groun Vibrati	ability Iremore Testic or wer someter of the distribution Testic or someter of the distribution Testic or someter of the distribution Testic or someter Test	y test eter test t optical urvey tip er Samp	bling Well ometer	DATE CHECKED DATE	23/01/2 Y. M. Le	2017 eung			
En Envir	onmer	ital Samp	le		I	Impres	sion	packer	test	•					J2011



HOLE NO.

ADH03

**CONTRACT NO.:** 

GE/2015/29

SHEET 1 OF 8

**PROJECT** 

	METH	OD				Ro	tary		(	CO-ORDIN	NATES						TASK ORDER NO. GE/2015/29.8
r	MACH	INE	& NO.			VB	M36	;	T 6	E 820714	.22		N 83	34096.	.92		DATE : 06/12/2016 to 29/12/2016
r	FLUSH	IING	MED	IUM	Air F	oar	n / V	Vate	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.58 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type D		Reduced	0.0 <b>Depth</b> (m)	Legend	Grade	Description
3	06/12/2016 06/12/2016 07/12/2016	s sw	2.00m at 18:00 0.40m at 08:00		40				3.10	2,2, 2,2,2,3  N=9	A BC 1	2.00 3.00 3.10 3.20 3.55 4.00 5.10	-1.42 -2.52 -3.42	2.00 			Concrete surface. Brown (7.5YR 5/4), mottled grey, spotted white, slightly clayey silty fine to coarse SAND. (ALLUVIUM)  Brown (7.5YR 5/4), mottled light grey, clayey silty fine to medium SAND. (ALLUVIUM)  Loose, light grey (N 7), mottled brown, clayey fine to coarse SAND. (ALLUVIUM)  Brown (7.5YR 5/4), mottled greyish brown, silty fine to coarse SAND. (ALLUVIUM)  Light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)
<u> </u>	Distur Piston Split s				.95 .95	v	In-situ Perme	vane ability	8.20 8.65 8.65	3.4. 4.5.7.7 N=23	9 10 11 12 13 14 15	6.10 6.20 6.30 6.60 6.65 7.10 8.10 8.20 8.30 8.65	-5.62 -8.52 S. C. L		2. Wate	spect	Medium dense, grey (N 5), spotted white, silty fine to coarse SAND. (ALLUVIUM)  Medium dense, light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)  tion pit was excavated to 1.10m. To used as flushing medium from 32.00m to 76.40m as instructed by the Manager. Air foam was used from 1.10m to 32.00m.
	Split s U76 u U100 Mazie SPT li Water	mple			Packe Acoust elevie Piezor Stand Groun Vibrati	r Test tic or wer s neter pipe dwate ing wi	optical urvey tip		DATE CHECKED DATE	<u> </u>	29/12/2 /. M. Le 30/12/2	eung	the S	ervice	e Manager. Air foam was used from 1.10m to 32.00m.		



HOLE NO.

ADH03

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

ME	THC	D				Ro	tary			CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MA	CHII	NE	& NO.			VB	M36	i	'	E 820714	.22		N 8	34096	.92		DATE: 06/12/2016 to 29/12/2016
FLU			MED	IUM	Air I	oar	n / V	Vate	er (	ORIENTA	TION		Vert	ical			GROUND LEVEL + 0.58 mPD
Drilling		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %		SCR%	RQD%	Е	Depth of FI / Test	Tests	No. Ty	n <b>ples</b> pe Dep		Depth (m)	Legend	Grade	Description
111	<u>2/2016</u>	SW 12.20 PW	2.00m at 18:00 0.50m at 08:00	-	95				10.20 10.65 12.20	7.9.13,19 N=48 3.3. 5.5.5.7	17 18 19 20 21 22	11.1 12.1 12.2 12.3 12.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				See sheet 1 of 8
- - - - - - - - - - - - - - - - - - -					50						23	13.1 14.1 14.2	0	13.10			Firm, dark grey (N 3), spotted white, slightly clayey sandy SILT with occasional subangular fine gravel sized rock fragments. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -					90				15.30 15.75	3,7,7,8 N=25	26 27 28	15.2 15.3 15.4 15.7	0 0	-			Stiff, greyish brown (2.5Y 5/2), mottled dark grey, slightly clayey sandy SILT with much angular to subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -			200		40						30 31	16.2 17.2 17.3		-			
09/12           	<u>2/2016</u> 2/2016	-	2.00m at 18:00 0.40m at 08:00		0				18.40	11,16,16,21 N=64	32 33 34	18.3 18.4 18.5 18.8 19.3	60 60 55	-			
				1	I	v	In-situ	vane			LOGGE	∠⊿ ED	S. C. I	_aw	REMA	RKS	
	Disturbed sample Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample Water sample Environmental Sample In-situ van Permeabili Pressurem Acoustic or televiewer Piezomete Standpipe Groundwa Vibrating w Impressior							r Test tic or o wer si neter oipe dwate ng wi	eter test coptical urvey tip er Samp re piezo	ling Well meter	DATE CHECK	- KED _	29/12/2 Y. M. Lo 30/12/2	eung	-		
En :	_i i viFOľ	men	ıaı Samp	ne		Τ.	iiipres	Πυισσ	packer t	ıcsı							J201617e



HOLE NO.

ADH03

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 3

**PROJECT** 

METHO	D				Ro	tary		$\Box$	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
MACHIN	NE &	NO.			VB	M36		ı	E 820714	.22	N 83	34096	.92		DATE: 06/12/2016 to 29/12/2016
FLUSHII	NG N	IED	IUM	Air F	oar	n / V	Vate	er (	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.58 mPD
	Depth/Siz	later evel (m) Shift start end	Flush Returns %	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced 19.42	20.00 (m)	Legend	Grade	Description
21 				28.90.2 27.3£	5,6,11,12 N=34	36 22.40  36 22.40  T2101  T2101  39 25.30  40 26.85 24.40  41 26.85 26.90 42 27.00 43 27.38	-19.82 -20.92 -21.92 -23.52	21.50			Dark grey (N 3), mottled brown, clayey silty subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)  Dark grey (N 3), mottled greyish brown, clayey silty subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)  Firm, brown (7.5YR 5/4), mottled dark grey, occasional spotted white, slightly clayey sandy SILT with much subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Greyish brown (2.5Y 5/2), mottled dark greyish brown, slightly clayey sandy subangular fine to coarse GRAVEL sized rock fragments and occasional subangular cobble sized moderately decomposed Metasilitstone. (KARST SURFACE DEPOSIT)  Dense, greyish brown (2.5Y 5/2), mottled dark greyish brown, silty fine to coarse SAND with much subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Brown (7.5YR 5/4), mottled dark grey, sandy angular to subangular fine to medium GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)				
30 Disturbe		ole						enetration		45 29.60 LOGGED	S. C. L	aw	REMA		
Piston sa Split spo U76 und U100 un Mazier s SPT line	oon sam disturbe ndisturb sample	d sam ed sar				Perme Pressu Packer Acoust elevier Piezon Standr	rability reme r Test ic or o wer si neter oipe	y test eter test t optical urvey tip	ling Well	DATE _	29/12/2 Y. M. Le	016			
▲ Water sa En Environn	•	Sampl	le		<b>•</b> '	√ibrati	ng wi	re piezo packer t	meter	DATE _	30/12/2	016			J201617e



HOLE NO.

ADH03

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 8

**PROJECT** 

METHOD	)				Ro	tary			CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MACHIN	E & NO	).			VΒ	M36			E 820714	.22		N 83	4096.	92		DATE: 06/12/2016 to 29/12/2016
FLUSHIN	IG ME	DIU	ΙMΔ	ir F	oar	n / V	Vate	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.58 mPD
Drilling Progress Casing		Flush	Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type [		Reduced 29.42	30.00 (m)	Legend	Grade	Description
P 	6.10m at 18:00 0.30m at 08:00	1		0	26	26	>20 8.0	31.17 31.42	154 bls	46	30.60 30.70 30.92 30.97 31.02	-30.12 -30.44 -30.84	30.70			Light grey (N 7), locally grey, spotted white, subangular medium to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT) Moderately strong to strong, grey, striped white, slightly decomposed impure MARBLE. Joints are very closely to closely spaced, locally medium spaced, rough planar and undulating, extremely narrow,
- p 32 13/12/2016 32 14/12/2016 H	W at .00 18:00 W 0.40n at .08:00		50	84	65	49	>20	32.00 32.87 33.18		T2101	32.00	-31.42 -32.60	32.00		II	iron and manganese oxide stained, occasional chlorite coated, dipping 0° to 10°, 10° to 20°, 40° to 50°, 60° to 70° and 70° to 80°.  From 31.42m to 32.00m: No recovery, inferred to be Cavity.  From 32.14m to 32.75m: Subvertical joints.
34 - - - 15/12/2016	0.50n at 18:00 0.35n at 08:00	,		<b>90</b>	77	77	NR 16.7 2.2 5.4 >20	33.40 33.52 33.98 34.35 34.60		T2IOI	33.40 34.35	-32.82 -34.02	33.40		II	Cavity.
- - - - - - - - - - - - - -			60	20			NR	34.80	211 bls	49 50	34.80 35.80 35.90	-34.22	34.80 - - - - - - - - - - - - - - - - - - -	a - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		From 34.60m to 34.80m: No recovery, inferred to be Cavity.  Firm, brown (7.5YR 5/4), mottled dark grey and greyish brown, slightly clayey sandy SILT with some angular to subangular fine to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
						100		36.40 36.65	8,12,  32,68/25mm (100/100mm)	T2101	36.40 36.60 36.65 37.50	-36.07	- 36.65 - 36.65 		II	Moderately strong to strong, grey, striped white, slightly decomposed impure MARBLE.  Joints are widely spaced, locally medium spaced, occasional very closely to closely spaced, rough planar and undulating, slickensided and occasional smooth planar, extremely narrow to very narrow, iron and manganese oxide stained, chlorite coated, dipping 0° to 10°, 10° to 20°, 40° to 50°, 50° to 60° and 60° to 70°.
39 - - - - - - - - - - - - - - - - - - -	1.10m at 18:00 0.20m at 08:00	1	50	100	100	100	2.0			T2101	39.46					
Piston sa Split spot U76 undi U100 und Mazier sa SPT liner Water sa	Disturbed sample Piston sample Piston sample VI Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample  Disturbed sample VI In-situ vane Permeability Pressurement Acoustic or or televiewer su Plezometer t Standpipe Groundwater									LOGGED  DATE  CHECKED  DATE	<u> </u>	S. C. L 29/12/2 7. M. Le 30/12/2	016 eung	REMA	RKS	



HOLE NO.

ADH03

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**CONTRACT NO.:** 

GE/2015/29

SHEET 5 OF

**PROJECT** 

	IETHO	OD.				Ro	tary			CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
	IACHI	INE	& NO.				M36		7	E 820714.	22		N 83	4096.	92		DATE: 06/12/2016 to 29/12/2016
F	LUSH	IING	MED	IUM	Air I	Foar	n / V	Vate	er	ORIENTA	ΓΙΟΝ		Verti	cal			GROUND LEVEL + 0.58 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests	Samp No. Type		Reduced 39.42	(m) 40.00	Legend	Grade	Description
43 44 43 44 45 46 48 49 49 49	6/12/2016 7/12/2016	HW	start	50	100 100	95 100	100 100 88	16.7 5.7 3.4	10			Depth - 40.96 - 42.48 - 43.94 - 45.42	-39.42			15	From 43.90m to 45.30m: With quartz veins  From 45.95m to 46.42m: With quartz veins
- - - - - - - - - - - - - -				50	100	100	100		49.23		T210	49.86		-			From 49.00m to 54.40m : With quartz veins
50 ●	Distur			1	v / .	v	In-situ	vane	sheart	on test test	LOGGED		S. C. L	aw	REMA	RKS	
	Piston Split s	poons	sample			Ī	Perme Pressi	ability reme	test ter test		DATE	_					
			rbed sam urbed sar			Į í	Packe Acoust televie	r Test ic or c wer su	optical urvey		DATE	_	29/12/2	U16			
	Mazier sample ☐ Piezomet ☐ Standpipe							neter i pipe	tip	. K	CHECKE	D _	Y. M. Le	ung			
	▲ Water sample							ng wir	e piezo		DATE		30/12/2	016			
LE	1 Enviro	Water sample Vibrating w Environmental Sample Impression								test							J201617e



HOLE NO.

ADH03

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**CONTRACT NO.:** 

GE/2015/29

SHEET 6 OF

**PROJECT** 

METHO	D				Ro	tary			CO-ORDII	NATES					TASK ORDER NO. GE/2015/29.8
MACHI	NE	& NO.			VB	М36	1	י	E 820714	.22	N 83	34096	.92		DATE: 06/12/2016 to 29/12/2016
FLUSH			IUM	Air I	Foar	n/V	Vat	er	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.58 mPD
	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Fevel	Depth (m)	Legend	Grade	Description
1 17/12/2016 19/12/2016	HW	1.20m at 18:00 0.20m	50	100	85	80	2.3 >20 11.8	50.97 51.07 51.24		T2101		- - - - - - - - - - - - - - - - - - -		II	See sheet 5 of 8  From 50.97m to 51.07m: With solution feature.
3/12/2010		at 08:00	50	99	21	0	>20			T2101					From 51.34m to 53.30m : Solution feature with subvertical joints.  From 52.40m to 52.49m : Moderately weak.
19/12/2016 21/12/2016		1.30m at 18:00 0.20m at	50	100	93	21	10.0	_53.30 _53.50		T2101		- - - - - - -			
21/12/2016 23/12/2016	50	100	79	57	11.5	1	100/65mm	T2101  54.40 54.54	-53.82 -53.96				Very dense, grey (N 5), spotted white, angular to		
0.20m at 18:00 23/12/2016 0.30m at 08:00		80	42					(100/65mm)	T2101	-55.11	- - - - - - - - - - - - - - - - - - -	000 000 000 000 000 000		\subangular fine to medium GRAVEL sized rock fragments. \((CAVITY INFILL DEPOSIT)\) Grey (N 5), striped white, mottled light greenish grey, subangular COBBLE with much subangular fine to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)	
6	HW 56.26		80	100	100	100				T2101 56.26		- - - - - - - - -		II	Strong, grey, locally dark grey, striped white, slightly decomposed impure MARBLE Joints are very widely to widely spaced, locally closely to medium spaced, rough planar and slickensided planar, occasional smooth planar and rough stepped, extremely narrow, iron and manganese oxide stained, chlorite coated, dipping 10° to 20°, 20° to 30°, 40° to 50° and 60° to 70°.
7			80	100	100	100				T2101	-57.22	- - - - - - - - - - - - - - - - - - -			From 55.69m to 61.25m: FAULT BRECCIA with BASALT DYKES. From 56.75m to 56.91m: With solution feature.
3		422	80	100	100	100				T2101		- - - - - - - -			From 57.80m to 58.98m : BASALT.
9 23/12/2016 24/12/2016 24/12/2016		1.30m at 18:00 0.20m at 08:00	80	100	100	100	1.1			59.10 T2101	-58.40 -59.00	58.98 			From 59.58m to 61.03m : BASALT.
Piston: Split sp U76 un U100 u Mazier	Piston sample Piston sample U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample  V In-situ vane Permeability Pressureme Packer Test Acoustic or or televiewer st Piezometer Standpipe SPT liner sample  Groundwate							e shear t by test eter test optical survey tip	est	LOGGED DATE CHECKED	S. C. L 29/12/2 Y. M. Le	016	REMA	RKS	
							ng w	ire piezo	meter	DATE _	30/12/2	016			J201617



HOLE NO.

ADH03

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**CONTRACT NO.:** 

GE/2015/29

SHEET 7 OF

**PROJECT** 

	/IETH	OD.				Ro	tary		$\top$	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
	/IACH	INE	& NO.			VB	M36	;	$\dashv$	E 820714.	22		N 83	4096.	92		DATE: 06/12/2016 to 29/12/2016
F	LUSF	IING	MED	IUM	Air I	Foar	n / V	Vate	er	ORIENTA	ΓΙΟΝ		Verti	cal			GROUND LEVEL + 0.58 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Е	Depth of FI / Test	Tests	Samples No. Type De		Reduced -59.42	00.00 (m)	Legend	Grade	Description
											T2101	60.42		- - - - -		=	See sheet 6 of 8
<b>61</b>				80	100	100	100				T2101		-60.45	 			From 61.25m to 69.55m : Impure Marble.
<b>62</b>				80	100	100	100				T2101	61.93		- - - - - - - - -			From 62.10m to 63.30m: Light green with quartz veins.
<b>63</b>								16.0	63.54 63.79			53.44		- - - - - - - - - -			
<u>64</u>				80	100	97	93				T2101	64.92		- - - - - - - - -			
<u>65</u> 			1.10m at	80	100	100	94	3.9	66.10		T2101	7.32					
<u>-</u> <u>6</u> 7	<u>24/12/2016</u> 28/12/2016		18:00 0.30m at 08:00	80	100	100	100	1.6	67.94		T2101	66.45		-			
- - - - - - - - - - - - - - - - - - -			80			100	86		67.94		T2101	68.95		-			
70		80 Jurbed sample					<b>91</b>	5.3	anetrati	on test	T2101			-	REMA	DKe	From 69.00m to 69.55m: White MARBLE. From 69.38m to 71.58m: White MARBLE.
	Piston Split s	samp poon s	le sample	mle		ř I	In-situ Perme Pressı	vane ability ureme	shear test ter test	test	LOGGED DATE	_	S. C. L		IVEIVIA		
	U100 Mazie	undist r samp					Piezor Stand <sub>l</sub>	neter oipe		-E M-"	CHECKED	_	. M. Le				
🔺		samp	le	le		Ĭ .	Vibrati	ng wi	er Samp re piezo packer		DATE	3	0/12/2	016			J201617e



HOLE NO.

ADH03

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

METH	HOD				Ro	tary			CO-ORDIN	NATES					TASK ORD	ER NO.	GE/20	15/29.8	
MACH	IINE	& NO.	ı		VBI	M36			E 820714.	.22	N 83	34096	.92		DATE :	06/12/2016	to	29/12/2	2016
FLUS			IUMA	ir F	oan	n / V	Vate	er	ORIENTA	TION	Verti	cal			GROUND L	.EVEL	+ 0.58		mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samples No. Type Dep	th -69.42	70.00	Legend	= Grade	0	Description	on		
- - - - - - - - - - - - - - - - - - -	16	1.50m at 08:00	80	99	66	34		70.41		T2101 70.4 T2101					See sheet 7 of 8	3			
- - -	16	0.10m at 08:00	80 1	100	97	95	3.5	71.96 72.84		T2101	19								
73			80 1	100	100	95	1.4			T2101	8	- - - - - - - - - - - - - - - - - - -							
- - - - - - - - - 29/12/20	16	0.60m at 18:00	80 1	100	100	100		76.40		T2101	0 -75.82	- - - - - - - - - - - - - - - - - - -							
77															End of Investiga	ation Hole at 76.4	Om.		
District Pistor Split	Disturbed sample Piston sample Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample						shear to test eter test optical urvey	test	LOGGED _	S. C. L	:016	REMA	RKS						
Mazier sample  SPT liner sample  SPT liner sample  Water sample  ■ Water sample  En Environmental Sample  Piezometer ti Standpipe  Groundwater  Vibrating wire Impression po							oipe dwate ng wi	er Samp	ometer	DATE	Y. M. Le		-						J2016176



HOLE NO.

ADH04

9

**CONTRACT NO.:** 

GE/2015/29

SHEET 1 OF

**PROJECT** 

<b> </b>	/IETH	OD				Ro	tary		$\top$	CO-ORDIN	NATES						TASK ORDER NO. GE/2015/29.8
Ī	/IACH	INE	& NO.			VB	M36	<del></del>	-         -	E 820705.	.48		N 83	34096	.74		DATE: 10/01/2017 to 10/02/2017
F	LUSH	HING	MED	IUM		Wa	ater		7	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.74 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Е	Depth of FI / Test	Tests	Sampl No. Type			© Depth (m)	Legend	Grade	Description
1	10/01/2017										B NSPECTION PIT	0.50	+0.64				Concrete surface. Grey (N 5), spotted white, slightly silty fine to coarse SAND. (ALLUVIUM) Grey (N 5), spotted white, clayey silty fine to coarse SAND. (ALLUVIUM)  Firm, light reddish brown (2.5YR 7/3), mottled light grey, clayey sandy SILT. (ALLUVIUM)
2				60	95				3.10	1.1. 2.3.5.5 N=15	1 2 3 4	3.00 3.10 3.20 3.50 3.55					
<u>4</u> <u>5</u> 				60	95				5.10 5.55	2.2.  3.2.3.3  N=11	6 7 8	5.00 5.10 5.20 5.55	-3.26	4.00	1		Firm, light grey (N 7), spotted white, clayey sandy SILT. (ALLUVIUM)
<u>6                                    </u>				60	95				7.10 7.55	2.2. 6.6.8.8 N=28	9 10 11 12	7.00 7.10 7.20 7.55	-5.26 -6.36	7.10	0.00		Grey (N 5), spotted white, silty fine to coarse SAND.  (ALLUVIUM)  Medium dense to dense, light grey (N 7), spotted white, occasional mottled white, silty fine to coarse SAND with occasional subangular to subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
<u> </u>				60	95				9.10 9.55	2.3, 5.5.5,7 N=22	13 14 15 16 16 1	9.00 9.10 9.20 9.55					
10	Piston Split s U76 u	samp poon s indistui	le sample rbed sam			VIII	In-situ Perme Pressu Packe	vane abilit ureme r Tes	eter test		LOGGED	-	T. C. \	-	REMA 1. An in		tion pit was excavated to 1.00m.
	Mazie SPT li	r samp iner sa r samp	mple le				Piezor Standı Groun Vibrati	neter pipe dwate ing wi	tip		CHECKE	_	Y. M. Le				J201617e



HOLE NO.

ADH04

9

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF

**PROJECT** 

METH					ota	_		-	CO-ORDII							TASK ORDER NO. GE/2015/29.8
MACH						136		+	820705				4096.	74		DATE: 10/01/2017 to 10/02/2017
FLUSH		Water			Vat				ORIENTA	TION	_	Verti	cal			GROUND LEVEL + 0.74 mPD
Drilling Progress	Casing Depth/Size	Level (m) Shift start / end	Flush Returns %	ב   ב		RQD%	ш	Depth of FI / Test	Tests	Sample No. Type [		Reduced 6.5°	10.00	Legend	Grade	Description
	sw									17	10.00		-	9		See sheet 1 of 9
<u>10/01/2017</u> 11/01/2017		0.20m at 18:00 0.10m at 08:00	60 9	5				11.10 11.55	2.4, 7,7,9,10 N=33	19	11.00 11.10 11.20 11.50 11.55		- - - - - - - - - - - - - -	0 0 0		At 10.60m : Light greyish brown.
	SW 12.00 PW		60 (	<b>)</b>							12.00		- - - - - - - - - -	\$ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
			8	9				13.60	39 bls	24	13.00 13.10 13.55 13.60 13.70		- - - - - - - -	о О О		
								14.05		25 🚽	14.00 14.05			0 0		
			60 8	2				16.20	<b>  4,4</b> ,	27	15.10 16.10 16.20	-14.36	15.10 - - - - - - - - -	0 0 0		Medium dense, dark brown (7.5YR 3/4), mottled dark grey slightly clayey silty SAND with much angular to subangula fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
				<u>ব</u>				16.65	4,5,6,8 N=23	31	16.60 16.65	-16.36		0 0		Dark grey (N 3), mottled white, angular to subangular fine
			60 8	5				18.20	3,3,	1	18.10 18.20	-17.46				medium GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)  Medium dense, yellowish brown (10YR 5/4), mottled
								18.65	N=28	33 34 35	18.60 18.65	-18.36	- - - - - - - 19.10	00000		brownish grey, silty fine to coarse SAND. (KARST SURFACE DEPOSIT)  Dark grey (N 3), occasional spotted brown, slightly sandy
Distur	bod -	ame!a	60 5	5	Sta	anda	rd pe	netratio	n test				- - - - - - -	0 0 0 0 0 0 0 0 0 0 0 0		angular to subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
Piston Split s	samp	le		¥	In- Pe	situ r ermea	vane ability	shear to		LOGGED	_	T. C. Y	'ip			
U76 u U100 Maziei SPT lii	ndistu undist r samp ner sa	rbed sam urbed sam ble mple			Pa Ac tele Pie Sta Gr	ocker ousti eviev ezom andp	Test c or c ver su neter ipe lwate	optical irvey tip r Sampl	ling Well	DATE	_ _ <u>\</u>	13/02/2 /. M. Le	ung			
Water n Enviro			le	1				e piezo oacker t		DATE	_	15/02/2	017			



HOLE NO.

ADH04

9

**CONTRACT NO.:** 

GE/2015/29

SHEET 3 OF

**PROJECT** 

METH	IOD			R	otary	,	7	CO-ORDIN	ATES					TASK ORDER NO. GE/2015/29.8
MACI	IINE	& NO.		VI	3M36	3	ı	E 820705.4	18	N 83	34096.	.74		DATE: 10/01/2017 to 10/02/2017
FLUS	HING	3 MED	IUM	٧	/ater			ORIENTAT	ION	Verti	cal			GROUND LEVEL + 0.74 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	, S	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dept		20.00 (m)	Legend	Grade	Description
	17	0.10m at 18:00 0.20m at 08:00	60 5				21.3d 21.54	50/75mm,  52,37,11/15mm (100/165mm)	36 20.10 37 20.20 38 39 21.20 21.30 38 21.20 21.40 21.50 21.60	-20.86	20.20	00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		See sheet 2 of 9  Stiff, dark brown (7.5YR 3/4), mottled brown and dark grey, slightly clayey sandy SILT with some angular to subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Grey (N 5), locally brown, striped white, subangular COBBLE sized slightly decomposed impure Marble with some clayey sitly subangular medium to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT) From 21.85m to 21.91m: Firm to stiff, brown (7.5YR 5/4),
- - - - - - <b>2</b> 3	PW 22.50 HW		50 6	2 0	0	NA NR	22.81 23.00		T2101	-22.07	22.50 - 22.81 - 23.00	0000	IV V	dappled light grey, clayey slightly sandy SILT.  Moderately weak, dark grey (N 3), streaked brown, highly decomposed graphitic METASILTSTONE. (Slightly sandy angular fine to coarse GRAVEL)  From 22.81m to 23.00m: No recovery, inferred to be
_ _ _ _ _ _ _ _ _ <b><u>2</u>4 _ _</b>			50 8	65	56	11.5 >20 2.9	23.26 23.40 24.10		T2101	-23.36	24.10		=	Completely decomposed METASILTSTONE.  Moderately strong to strong, dark grey (N 3), striped white, slightly decomposed impure MARBLE.  Joints are widely spaced, locally closely to medium spaced, occasional extremely closely spaced, rough and smooth planar, occasional slickensided planar, very narrow, iron and manganese oxide stained, calcite coated, dipping 10° to 20°, 20° to 30°, 40° to 50° and 50° to 60°.
			50 3	4 26	26	4.2 NR	24.36 24.60 25.06		T2101 25.00	-23.86	- 24.36 - 24.60 		=	From 23.20m to 23.40m: With solution features. From 24.10m to 24.36m: No recovery, inferred to be Cavity. From 24.60m to 25.06m: No recovery, inferred to be Cavity.
	<u>17</u> 17	0.15m at 18:00 0.20m at 08:00	50 10	0 10	100	0.9			T2101	:	- - - - - - - - - -		=	
     <b></b>   			50 10	0 10	100		<sup>27.30</sup> 27.30	127 23	T2101	-26.56	- - - - - - - - - - - - - - - - - - -			↑From 27.25m to 27.30m : With solution features.
	<u>17</u> 17	0.20m at 18:00 0.30m at 08:00	60 (	1	1.0	3.8	27.75	11,15,12,12 N=50	41 42 27.96 27.96	-27.16			=	Dense, dark grey (N 3), locally dark greyish brown, spotted white, silty fine to coarse SAND with some subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)  Moderately strong to strong, dark grey (N 3), striped white,
			60 5		43	>20 NR	28.50 28.50 28.50 28.50	5,10,10,11 N=36	T2101	-28.26	28.37 28.50 29.00			slightly decomposed impure MARBLÉ. Joints are medium spaced, locally extremely closely to very closely spaced, rough planar and undulating, very narrow, iron and manganese oxide stained, calcite coated, dipping 30° to 40°, 50° to 60° and 60° to 70°. From 27.90m to 27.95m: With solution features. From 28.16m to 28.37m: With solution features. From 28.37m to 28.50m: No recovery, inferred to be Cavity. Dense, dark grey (N 3), spotted white, clayey silty fine to coarse SAND. (CAVITY INFILL DEPOSIT)
Pist	on sam	sample ple sample		V I	In-situ Perm	ı vane eabilit	enetration e shear t y test eter test	est	LOGGED _	T. C. `	•	REMAI	RKS	Greyish brown (2.5Y 5/2), spotted yellowish brown, clayey
U76 U10 Maz SPT War	undisto 0 undistrier sam liner sam er sam	urbed sam turbed sa uple ample	mple		Packet Acoustelevie Piezo Stand Grour Vibrat	er Tes ewer s meter pipe ndwate	t optical urvey tip	ling Well meter	DATE _ CHECKED _ DATE _	13/02/2 Y. M. Le 15/02/2	eung			J201617e



HOLE NO.

ADH04

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 9

**PROJECT** 

METHO	OD				Ro	tary	,		CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MACH	INE	& NO.			VB	M36	5		E 820705	.48	N	8340	96.	74		DATE: 10/01/2017 to 10/02/2017
FLUSH			IUM		W	ater			ORIENTA	TION	Ve	tical				GROUND LEVEL + 0.74 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	WADT	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type Dep		6 30.	00	Legend	Grade	Description
14/01/2017 16/01/2017	HW	0.50m at 18:00 0.20m at 08:00	- 50	91	91	91		31.05 31.05	5   1.2.	46 30. T2101					II	silty fine to coarse SAND. (CAVITY INFILL DEPOSIT) See sheet 3 of 9 Moderately strong to strong, dark grey (N 3), striped white, slightly decomposed impure MARBLE. Joints are medium spaced, rough undulating, extremely narrow, iron and manganese oxide stained, calcite coated, dipping 40° to 50°, 50° to 60° and 60° to 70°.  From 30.10m to 30.19m: With solution features.
18/01/2017 17/01/2017		0.20m at 18:00 0.20m at 08:00	50 50 50 50	0 0 52 755 55				31.54	N=7	47 31.  48 32.  32.  49 33.  T2101 34.  T2101 35.  T2101 37.  T2101 37.	.50 .60 .80 .90 -32.1	6 6 32	90			From 30.93m to 31.05m: With solution features. Loose, dark grey (N 3), spotted white, slightly clayey slity fine to coarse SAND. (CAVITY INFILL DEPOSIT) Grey (N 5), spotted and striped white, sandy subangular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)  Grey (N 5), striped white, locally brown, subangular COBBLE sized slightly decomposed impure Marble with much slightly silty slightly sandy subangular fine to coarse gravel sized rock fragments and subangular boulder sized slightly decomposed impure Marble up to 230mm. (CAVITY INFILL DEPOSIT)
17/01/2017 18/01/2017	,	0.30m at 18:00 0.20m at 08:00	60	50				38.3	13.3.4.6 N=16	50 • 38. 51 33. 52 39. 53 39.	.40	6 38.	40			Medium dense, dark grey (N 3), slightly sandy angular to subangular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)  Firm, brown (7.5YR 5/4), dappled greyish brown, silty claye fine to coarse SAND with much angular to subangular fine to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
Disturing Piston Split s	poon : ndistu undist	ole sample irbed sam turbed sai				In-situ Perme Pressi Packe Acous televie	vane eabilit ureme r Tes tic or wer s	eter test t optical urvey	test	LOGGED		. Yip 2/2017		REMAI	RKS	
<ul><li>Mazier</li><li>SPT lin</li><li>▲ Water</li><li>En Enviro</li></ul>	ner sa r samp	imple ole	le le			Vibrati	pipe dwate ing wi			CHECKED		Leunç 2/2017	_			



HOLE NO.

ADH04

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**CONTRACT NO.:** 

GE/2015/29

SHEET 5 OF

**PROJECT** 

ME	ETH	OD				Ro	tary		Τ,	CO-ORDIN	IATE	s						TASK ORDER NO. GE/2015/29.8
MA	ACH	INE	& NO.			VB	M36	i	ı [	E 820705.	48			N 83	34096.	.74		DATE: 10/01/2017 to 10/02/2017
FL	.USF	IING	MED	IUM		Wa	ater		1	ORIENTA	TION			Verti	cal			GROUND LEVEL + 0.74 mPD
20111111	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests		ample	Depth	Reduced 39.26	(m) 40.00	Legend	Grade	Description
		HW							40.00 40.45	4,4,7,21 N=36	54 55		40.00 40.10 40.40 40.45		- - - -	0 0		See sheet 4 of 9
- <b>41</b> - - - -				50	80	28	28	8.3	41.50 41.50	12 3	- 1	Γ210I	40.90 41.50	-40.16 -40.76	40.90 	THHH!	II	Moderately strong to strong, grey (N 5), streaked light grey, slightly decomposed impure MARBLE.  Joints are closely to medium spaced, locally extremely closely spaced, rough planar and undulating, very narrow,
- 42 18/ - 19/	<u>01/2017</u> 01/2017		0.10m at 18:00 0.20m at 08:00						41.95 42.10	3,3,4,6 N=16	56 57 _		41.60 41.90 41.95	-41.21	- - - 41.95 - - - -		II	\left  iron and manganese oxide stained, calcite coated, dipping \( \) 0° to 10° and 20° to 30°. \\ \text{Medium dense, brown (7.5YR 5/4), dappled greyish brown, } \\ \text{silty fine to coarse SAND with much angular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)} \\ \text{Strong, grey, dappled dark grey, slightly decomposed} \end{array}
				50	100	81	79	5.2			ד	Γ2ΙΟΙ 			- - - - - - - -	HHHHHH		impure MARBLE. Joints are medium spaced, locally very closely to closely spaced, rough planar and rough stepped, extremely narrow to very narrow, clean and locally iron oxide stained. dipping 10° to 20°. From 42.10m to 42.83m: Subvertical joints.
    <b><u>44</u> </b>								7.4	43.45 43.45 43.90 44.17	6,10, 13,11,6,7 N=37	58 _	<u> </u>	43.45 43.90	-42.71 -43.16	- 43.45 - - - - - - - - - - - - - - - - - - -	H 800 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	II	Dense, greyish brown (2.5Y 5/2), dappled brown, silty sandy angular fine to coarse GRAVEL sized rock fragments with occasional angular cobble sized moderately decomposed impure Marble. (CAVITY INFILL DEPOSIT)  Moderately strong to strong, dark grey, dappled grey,
_ _ _ _ _ _ <b>45</b>				50	77	33	19	>20 NR	44.90		ן	     		-44.16	- - - - - - 44.90	HHHH		slightly decomposed impure MARBLE. Joints are very closely to closely spaced, rough planar and rough stepped, extremely narrow to very narrow, iron and manganese oxide stained, dipping 0° to 10° and 50° to 60°. From 44.17m to 44.90m: With heavily solution features. From 44.90m to 45.20m: No recovery, inferred to be
 _ _ _ 19/ _ 20/ _	<u>01/2017</u> 01/2017	,	0.30m at 18:00 0.20m at 08:00	50	84	36	36	NI 4.0	45.20 45.20 45.65 45.80	3,1,  1,1,1,5  N=8	59 _	T2 O	45.20 45.65	-44.46 -44.91	45.20 - - - - 45.65		II	Cavity. Loose, brown (7.5YR 5/4), silty fine to coarse SAND with much angular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Strong, locally moderately strong, grey, striped light grey, slightly decomposed impure MARBLE.
				50	86	48	44	2.1	46.30 46.78		-	F2101	46.20	-46.41	- - - - - - - - - - - - - - - - - - -			Joints are closely to medium spaced, locally very closely spaced, rough planar and rough stepped, extremely narrow to very narrow, iron oxide stained and clean, dipping 0° to 10° and 10° to 20°.  From 45.65m to 45.75m: With solution features.  From 46.05m to 46.30m: With solution features.  From 46.80m to 47.15m: With solution features.
				50	93	63	34	10.0	47.15 47.30 47.60 47.75		-	[2101	47.30	46.56	47.30		II	From 47.15m to 47.30m : No recovery, inferred to be Cavity. From 47.30m to 47.85m : With solution features.
- - - - - - -			0.20m	50	87	85	71	4.3	48.90 48.90	No.5	1	F2101	48.25 48.90	-48.16				
	<u>01/2017</u> 01/2017	,	at 18:00 0.20m at 08:00	50	92				49.15	3,5, •67,33/25mm (100/100mm)	60 _	F2101	49.15	-48.41	-	000000000000000000000000000000000000000		Very dense, brown (7.5YR 5/4), silty sandy angular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)  Grey (N 5), dappled light brown, angular to subangular COBBLE sized slightly decomposed impure Marble with some subangular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
		samp	le sample		V /	ř I	In-situ Perme Pressu	vane abilit ureme	eter test		LOGG		_	T. C. Y		REMA	RKS	, , , , , , , , , , , , , , , , , , , ,
	Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample SpT liner sample Water sample Environmental Sample Environmental Sample								optical curvey tip er Samp	-	CHEC	CKED	_ _ <u>_                                 </u>	/. М. Le	eung			
<b>≜</b> En				le							DATE	•	_	15/02/2	017			J201617e



HOLE NO.

ADH04

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 6

**PROJECT** 

	METHO	OD				Ro	tary		7	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
T	MACH	INE	& NO.				M36		∣ ւ	E 820705.	48	N 83	4096.	.74		DATE: 10/01/2017 to 10/02/2017
F	LUSH	IING	MED	IUM		Wa	ater		1	ORIENTAT	TION	Verti	cal			GROUND LEVEL + 0.74 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Fevel	Depth (m)	Legend	Grade	Description
53 	21/01/2017 23/01/2017	HW		50		53 20 0	53 20 0	NA 4.8 NA >20	50.40 50.85 52.50	83 bls    5,7,   9,11,80/50mm   (100/200mm)   1,2,   2,3,3,4   N=12   11,15,19,26   N=71   N=71   N=76   N=76   N=76   N=26   N=	T2 O  50.40 61 50.50 62 50.85 50.85 63 51.85 52.00 64 52.45		50.00 50.40 50	80000000000000000000000000000000000000		Dense, brown (7.5YR 5/4), silty fine to coarse SAND with much angular to subangular fine to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)  Dark grey (N 3), dappled grey, angular to subangular medium to coarse GRAVEL sized rock fragments with some subangular cobble sized slightly decomposed impure Marble. (CAVITY INFILL DEPOSIT)  Moderately, dark grey, streaked light grey, slightly impure MARBLE. Joints are closely to medium spaced, locally extremely closely spaced, rough planar and undulating, very narrow, iron and manganese oxide stained, calcite coated, dipping 0° to 10° and 20° to 30°. Firm, brown (7.5YR 5/4), sandy SILT with some angular fine gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Dark grey (N 3), streaked brown, subangular COBBLE sized slightly decomposed impure MARBLE. Joints are medium spaced, locally closely spaced, rough planar and undulating, very narrow, calcite coated, dipping 0° to 10° and 50° to 60°. Dark grey (N 3), streaked brown, subangular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT) Very dense, brown (7.5YR 5/4), silty fine to coarse SAND with some angular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Moderately strong, dark grey, streaked white, brown, slightly decomposed impure MARBLE. Joints are extremely closely to very closely spaced, locally closely to medium spaced, very narrow, iron and manganese oxide stained, calcite coated, dipping 0° to 10°, 20° to 30°, 40° to 50° and 50° to 60°  From 58.00m to 58.20m: No recovery, inferred to be Cavity. Medium dense, grey (N 5), dappled dark grey and brown, silty sandy angular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)
- - 60	Distur	bed sa	0.20m at 18:00	60	94				enetratio		T2101		- - - - -	PEMAI	RKS	occasional silty sandy angular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
	Piston Split s U76 u U100 Mazie SPT lii	samp poon s ndistur undistr r samp ner sa r samp	le sample sample rbed sam urbed sam ble mple le	mple			In-situ Perme Pressu Packel Acoust elevie Piezon Standp Groun Vibrati	vane ability reme r Test tic or wer s neter pipe dwate	e shear to y test eter test t optical urvey tip er Samp re piezo	est ling Well meter	CHECKED	T. C. Y 13/02/2 Y. M. Le 15/02/2	017 eung		10	
E	n Enviro	nmen	tal Samp	le					packer t			10/02/2	· · ·			J201617e



HOLE NO.

ADH04

9

OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 7

**PROJECT** 

METHO	OD				Ro	tary			CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
MACH	INE	& NO.			VB	M36	i		E 820705.	48	N 83	34096	.74		DATE: 10/01/2017 to 10/02/2017
FLUSH					W	ater			ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.74 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Fevel	0.00 (m)	Legend	Grade	Description
24/01/2017 25/01/2017	HW	0.20m at 08:00	60	89						T21O1 60.10		- 	000000000000000000000000000000000000000		See sheet 6 of 9
2 2 - - - - - - - 25/01/2017	7	0.20m at 18:00	60	96	82	82	2.7			T2101	-61.61	- - - - - 62.35	000000	II	Strong, grey, dappled dark grey, striped white, slightly decomposed impure MARBLE.  Joints are medium spaced, locally very closely to closely
04/02/2017	7	0.20m at 08:00	60	100	100	91	3.3	63.10 63.70		T2101		- - - - - - - - -			spaced, rough planar and rough stepped, extremely narrow to very narrow, calcite coated, locally iron and manganese oxide stained, dipping 10° to 20°, 40° to 50°, 50° to 60° and occasional 60° to 70°.
54 			60	100	100	100	2.3			T2101		- - - - - - - - - - - - - - - - - - -			
		0.10m at 18:00	60	39	80	37	6.5	65.92 67.00		T2101		- - - - - - - - - - - - - - - - - - -			From 66.00m to 66.75m : With solution features along joints, dipping 50° to 60° and subvertically.
06/02/2017		0.10m at 08:00	60	100	100	95	2.5			T2101		- 			
			60	39	78	78	10.0	69.00 69.40		T2101		- - - - - - - - - - - - - - - - - - -			From 69.00m to 69.44m : With solution features along joints, dipping 50° to 60° and subvertically.
<b>o</b> Distur	bed s	ample		VŹ					ion test	T2¦IOI		<u></u>	REMA	RKS	
Piston Split s U76 u	n samp poon s indistu undist er samp iner sa	ole sample rbed sam urbed sa ole imple				Perme Pressi Packe Acoust televie Piezor Standi Groun	eability ureme r Test tic or o wer si neter pipe dwate	eter tes coptical urvey tip er Sam	st opling Well	_	T. C. \\ 13/02/2 Y. M. Le	017 eung			
U76 u U100 Maziei SPT lii	undistu undist r samp iner sa r samp	rbed sam curbed sa ple imple ble	mple			Packe Acoust televie Piezor Stand Groun Vibrati	r Test tic or o wer si neter oipe dwate ng wii	: optical urvey tip er Sam	opling Well cometer	_		eung			



HOLE NO.

ADH04

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

М	ETHO	OD				Ro	tary		$\top$	CO-ORDIN	NATES	 S					TASK ORDER NO. GE/2015/29.8
M	ACHI	INE	& NO.			VB	M36	;	<b>-</b>   1	E 820705	.48		N 83	34096	.74		DATE: 10/01/2017 to 10/02/2017
FL	.USH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.74 mPD
	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests		mples ype Dep	Sth -69.26	70.00	Legend	Grade	Description
- - - - - - - - - - -		HW		60	90	62	44	10.2 3.3 NR	70.06 70.55 70.85 71.00		т	2101	-70.11 -70.26	- - - - - - 70.85		=	See sheet 7 of 9 From 70.08m to 70.55m: With solution features.  From 70.85m to 71.00m: No recovery, inferred to be Cavity.
			0.20m	60	74	50	38	2.9 12.5	71.70 72.42		т.	71.:	-70.96 -71.68	71.70 - - - - - - - - - - - - - - - - - - -		II	Moderately strong to strong, dark grey, dappled light grey, striped white, slightly decomposed impure MARBLE. Joints are very closely to closely spaced, locally medium spaced, rough planar, very narrow to narrow, iron stained and occasional calcite coated, dipping 0° to 10°, 30° to 40° and 50° to 60°.
73 07/ 73	02/2017 02/2017 02/2017 02/2017 02/2017	HW 73.91	0.10m at 08:00 0.10m at 18:00 0.10m at 18:00 at	60	96	41	10	7.9 NI	72.82 73.20 73.57		т.	2101				II	From 72.20m to 72.42m: With solution features. From 72.42m to 72.82m: No recovery, inferred to be Cavity. From 72.82m to 73.60m: With solution features.
			08:00		81	59	49	NR >20	74.45 74.68 75.00		_	N W 75.	-73.71 -73.94	74.45 74.68		II	From 74.35m to 74.45m: With solution features. From 74.45m to 74.68m: No recovery, inferred to be Cavity. From 74.68m to 74.90m: With solution features.  From 75.20m to 75.26m: With solution features.
				60	79	68	26	NR	75.66 75.80 75.80 75.80	4,7, 15,15,9,17 N=56	71	75.3	25	75.80 75.80	9 0		From 75.66m to 75.80m: No recovery, inferred to be Cavity.  Very dense, dark brown (7.5YR 3/4), slightly silty fine to coarse SAND with some angular fine gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
									77.25 77.80 78.20	14,14,  22,28,31,19/2  (100/250mm)  5,9,  11,15,20,23	72 73 74 74	• 77 77 78 78 78	85 15 20	76.80			Firm to stiff, grey (N 5), locally dappled brown, dappled light grey, slightly sandy SILT with occasional angular to subangular fine gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
		samp	le sample	inle		V I I I	In-situ Perme Pressu Packe	vane ability ureme r Test	eter test	n test	LOGG	•	T. C. Y	-	REMA	RKS	
	U100 i Maziei SPT lii Water	undist r samp ner sa r samp	mple	mple		i ti i i i i i i i i i i i i i i i i i	Acoust elevie Piezon Standr Groun Vibrati	tic or ower someter oipe dwate	optical urvey tip		CHEC	KED	Y. M. Le	eung			J201617e



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ADH04

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SHEET 9 OF

**PROJECT** 

METHO	OD				Ro	tary		$\top$	CO-ORDIN	NATE	S						TASK ORDER NO. GE/2015/29.8
МАСН	INE	& NO.			VB	M36	i		E 820705	.48			N 83	34096.	74		DATE: 10/01/2017 to 10/02/2017
FLUSH	IING	MED	IUM	l	Wa	ater		(	ORIENTA	TION			Verti	cal			GROUND LEVEL + 0.74 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests		Sample Type		Reduced Level	00.08 (m)	Legend	Grade	Description
Ė	NW							80.25	•	76	•	80.25		Ė			See sheet 8 of 9
08/02/2017 09/02/2017 81		0.10m at 18:00 0.10m at 08:00	_					80.80 81.25	9,14, 17,22,28,31 N=98	77	•	81.25		-			
<u>8</u> 2    								81.80 82.25	5,5,  5,21,25,25  N=76	78	•	82.25	-81.06	81.80 - - - - - - - -			Stiff to very stiff, brown (7.5YR 5/4), dappled grey, slightly sandy SILT with some angular to subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
- 83 - - - - -								82.80 83.25	5,6,7,6 N=24	79	•	83.25		-			
								84.25	4,6,  8,15,23,25  N=71	80	•	84.25					
- 85 - - - - - -								85.02	10,21,  100/70mm (100/70mm)	81	•	85.02	-85.06	- - - - - - - - - - - - - - - - - - -			
86 - -								85.80 85.92	\$50/60mm 100/60mm (100/60mm)	82	•	85.92	-85.66	- - - - 86.40	0000	1	Very dense, grey (N 5), dappled dark grey, angular to subangular medium to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)
- - - - - - - - -			60	30							TNW	86.40 87.40	-86.66	- - - - - - - - - - - - - - - - - - -			Grey (N 5), dappled greyish brown, subangular BOULDER sized slightly decomposed impure Marble up to 250mm with some angular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
								87.40 87.85	7,10,25,29 N=71	83	•	87.85					Stiff to very stiff, brown (7.5YR 5/4), dappled grey, sandy SILT with some angular to subangular fine to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
	,	0.10m at 18:00 0.10m at 08:00						88.40 88.85	10,17,25,26 N=78	84	•	88.85			φ		
	NW 90.00	0.20m at 18:00						89.40 89.70	21,27, 44,56/75mm (100/150mm)	85 86	J	89.40 89.65 89.70	-89.26	90.00			End of Investigation Hole at 90.00m.
Distur Piston	bed s	ample	•		v	In-situ	vane	enetratio shear to		LOG	GED		T. C. \		REMA	RKS	
Split s	poon	sample rbed sam	nple		Ī ;	Packe	ureme r Test	eter test		DAT	E	_	13/02/2	2017			
	undist r sam	urbed sa ole				Piezor Stand <sub>l</sub>	neter pipe	•	E	CHE	CKEI	_ 	/. M. Le	eung			
▲ Water	r samp	le	ıle		Ĭ,	Vibrati	ing wi	er Sampl re piezoi packer te		DAT	E	_	15/02/2	2017			
		camp	-		-		. 2.511	, 23.01 0							·		J201617e



HOLE NO.

ADH05

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**CONTRACT NO.:** 

GE/2015/29

SHEET 1 OF

**PROJECT** 

h	METHO	OD				Ro	tary	,	7	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
Г	MACH	INE	& NO.			VB	M32	2	┦ :	E 820710.	33		N 83	34004.	26		DATE: 09/01/2017 to 20/01/2017
Г	LUSH	HING	MED	IUM		Wa	ater		7	ORIENTA	ΓΙΟΝ		Verti	cal			GROUND LEVEL + 0.79 mPD
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De		Reduced Level	O Depth (m)	Legend	Grade	Description
1 1 1 2	09/01/2017	r sw									B C 1	0.50 1.00 1.20	-1.21	0.10 — — — — — — — — — — — — — — — — — — —			Concrete surface.  Dark grey (N 3), spotted white, slightly clayey silty fine to coarse SAND with occasional shell fragments. (FILL)
3				60	95				3.10 3.56	4,4,4,7 N=19	2 3 3 3 4 3 3	3.00 3.10 3.20 3.50 3.55					Medium dense, brown (7.5YR 5/4), mottled reddish brown, clayey silty fine to coarse SAND. (ALLUVIUM)
5				60	90				5.10 5.58	2,2,4,6 N=14	6 7 6 6 6 6	5.00 5.10 5.20 5.50 5.55	-5.21	- - - - - - - - - - - - - - - - - - -			
<u> </u>				60	93				7.60 8.05	9,10,10,10 N=39	10 7 7 11 12 7 7 13	7.00 7.10 7.55 7.60 7.70 8.00 8.05					Dense, dark grey (N 3), spotted white, clayey silty fine to coarse SAND. (ALLUVIUM)
- - - - - - 10	Dietur	rbed sa	0.15m at 18:00	60	0	<u> </u>	Standa	ard pe	enetratio	on test				- - - - - - -	REMA	RKS	
	Piston	samp				ř I	In-situ Perme	vane abilit	shear t	est	LOGGED	_	S. C. L	aw			ion pit was excavated to 1.20m.
	U76 u U100 Mazie	indistu undist r samp	rbed sam urbed san ble				Packe Acoust elevie Piezor Standi	r Tes tic or wer s neter pipe	t optical urvey tip		DATE CHECKED	_	20/01/2 . M. Le				
4		r samp	le	le		Ĭ.,	Vibrati	ing wi	er Samp re piezo packer t		DATE	_(	06/02/2	017			J201617e



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**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

METHOD R	otary	CO-ORDII	NATES			TASK ORDE	ER NO.	GE/201	5/29.8
	BM32	E 820710	.33	N 834004	26	DATE :	09/01/2017	to 2	20/01/2017
FLUSHING MEDIUM V	Vater	ORIENTA	TION	Vertical		GROUND L	EVEL	+ 0.79	mPD
Drilling Progress Casing Casin	O D III	Tests	Samples No. Type Depth	Level Depth (m)	Legend		Description	on	
0.9001/2017   SW   0.11m at 08:00   986		13.80   2,2, 3,8,11,14   N=36	No. Type Depth  16	-9.21 10.00 -9.41 10.20 -9.41 10.20 -9.41 13.30	5	At 10.10m: With coarse quartz gradense, grey (N.5 (ALLUVIUM))  Extremely weak, brown, streaked METASILTSTON to subangular fin	greyish brown ( brown, complete UE. (Slightly sand	, silty fine to	appled reddish
15 60 96 16 60 96 18 60 96 20 96 20 60 90 96 20 60 90 90 90 90 90 90 90 90 90 90 90 90 90	Standard penetr		28   15.30 29	S. C. Law	REMARKS				
Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample	In-situ vane she Permeability tes Pressuremeter t Packer Test Acoustic or optic televiewer surve Piezometer tip Standpipe	tt test cal y	DATE _	S. C. Law 20/01/2017 Y. M. Leung					
Water sample  En Environmental Sample	Groundwater Sa Vibrating wire pi Impression pack	iezometer	DATE _	06/02/2017					J201617e



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**CONTRACT NO.:** 

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SHEET 3 OF

**PROJECT** 

М	ETH	OD				Ro	tary			CO-ORDIN	TAI	ES						TASK ORDER NO. GE/2015/29.8
М	ACHI	INE	& NO.			VB	M32		] •	E 820710.	.33			N 83	4004.	26		DATE: 09/01/2017 to 20/01/2017
FI	LUSH	IING	MED	IUM	l	Wa	ater			ORIENTA	TIO	N		Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Ε	Depth of FI / Test	Tests	N	Sample		Reduced 19.21	(m) 20.00	Legend	Grade	Description
         		PW								9,18, 23,35,42/20m (100/170mm)	3 3 3	8	20.30 20.40 20.67 20.72	-19.61			V	See sheet 2 of 8  Extremely weak to very weak, greyish brown (2.5Y 5/2), dappled reddish brown, streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with much angular to subangular fine to medium gravel)
- - - - - - - - - - - - - - - - - - -			0.13m	60	96				22.40 22.82	15,22,27,36/4 (100/270mm)	4 -5mm	1 2	22.30 22.40 22.47 22.77 22.82		-			
- - - - - - - - - - - - - - - - - - -	0/01/2017 1/01/2017		at 18:00 0.12m at 08:00	60	96				24.40 24.76	20,36,44/60m	4 4		24.30 24.40 24.41 24.71 24.76		- - - - - - - - - - - - - - - - - - -			
25  -  -				60	96					21,27,  30,45,25/15m  (100/165mm)	4 5	900	26.30 26.40 26.67 26.72	-24.51			V	Extremely weak to very weak, greyish brown (2.5Y 5/2), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with much angular to subangular fine to medium gravel)
            		Diaz		60	96				28.40 28.74	8,11,  27,35,38/35m  (100/185mm)	5 5		28.30 28.40 28.69 28.74	-26.51	- 27.30		V	Extremely weak to very weak, greyish brown (2.5Y 5/2), dappled reddish brown, streaked light yellowish brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
- - - - - - - - - -	Distur	PW 29.30 HW	ample	60	90				enetratio			6	29.30	0.6.	- - - - - - -	REMA	RKS	
	Piston Split s	samp poon s	le	nple		I 1	Perme Pressu Packe	ability ureme r Test	ter test	est	DA	GGED TE	_	S. C. L 20/01/2				
	Maziei SPT lii	r samp ner sa	mple	mple		I t	elevie Piezon Standp Groun	wer s neter oipe dwate	urvey tip er Samp	ling Well	СН	ECKED	) <u>\</u>	ſ. М. Le	ung			
≜ En	Water Enviro		ile tal Samp	le					re piezo packer t		DA	TE		06/02/2	017			J201617e



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SHEET

OF 8

**PROJECT** 

Tests   Samples   Description   Descriptio	METHOD	Rotary CO-0	ORDINATES		TASK ORDER NO. GE/2015/29.8
Second Content of the content of t	MACHINE & NO.	VBM32 E 82	20710.33	N 834004.26	DATE: 09/01/2017 to 20/01/2017
Part	FLUSHING MEDIUM	Water ORIE	NTATION	Vertical	GROUND LEVEL + 0.79 mPD
33	Drilling Progresss Progresss Casing Depty/Size Depty/Si	SCR% RQD% FI FI Depth of FI / Test		-29.21 30.00	·
50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		9,9,1 N=47	1,118 58 30.50 59 30.80 30.85		See sheet 3 of 8
13.0 25.22.27 62 3.28		32.40	61 32.30		Firm to stiff, brown (7.5YR 5/4), mottled dark brown, spotted white, slightly sandy SILT. (KARST SURFACE DEPOSIT)
12-06-0817	-   0.13m   at	13,12 13,20 N=83	63 32.80 32.85	-   1   1   1   1   1   1   1   1   1	
56 60 95 1 33.60 10.12 33.60 1	L 12/01/2017 0.13m at 08:00		24.20		
38.88   31.2   33.89   31.2   33.89   31.2   33.89   33.89   34.00   34.79   33.89   34.00   3	35 		67		greenish grey, silty sandy subangular fine to medium GRAVEL sized rock fragments. (KARST SURFACE
38.0  38.0		20,80	0/25mm 100mm) 68 35.70 35.75	jø 11;1	sandy SILT with some subangular fine gravel sized rock
Standard penetration test In-situ vane shear test Permeability test Pressuremeter test Poundisturbed sample U76 undisturbed u76 u					Firm to stiff, dark brown (7.5YR 3/4), spotted white, mottled greyish brown, clayey slightly sandy SILT. (KARST SURFACE DEPOSIT)
Standard penetration test In-situ vane shear test Permeability test Pressuremeter test Port undisturbed sample U100 undisturbed sample U100 undisturbed sample Piezometer tip Piezometer t	- - - - - - - - - - - - - - - - - - -	9,13, N=54	72 37.60 73 37.90 37.95		gravel sized rock fragments. (KARST SURFACE
Disturbed sample Piston sample U76 undisturbed sample U76 undisturbed sample U76 undisturbed sample U76 undisturbed sample U77 undisturbed sample U78 undisturbed sample U79 undisturbed sample U70 undisturbed sample			39.40		
Disturbed sample    Piston sample   Fermeability test   Permeability test	- - - - - 40	39.95 111,12	75 <b>39.50</b> 2,12,38 76 <b>39.60</b>		
Split spoon sample U76 undisturbed sample U100 undisturbed sample	Piston sample	In-situ vane shear test	LOGGED	S. C. Law REMARKS	
	U76 undisturbed sample U100 undisturbed sample	Pressuremeter test Packer Test Acoustic or optical televiewer survey Piezometer tip	_		
Water sample Vibrating wire piezometer En Environmental Sample Impression packer test	SPT liner sample  Water sample	<ul> <li>☐ Standpipe</li> <li>☐ Groundwater Sampling We</li> <li>♣ Vibrating wire piezometer</li> </ul>	ell		



HOLE NO.

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**CONTRACT NO.:** 

GE/2015/29

SHEET 5 OF

**PROJECT** 

METHO	D				Ro	tary			CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
MACHIN	E&N	10.			VB	M32			E 820710.	33		N 83	34004	.26		DATE: 09/01/2017 to 20/01/2017
FLUSHIN			UM		Wa	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.79 mPD
	Depth/Siz	iter vel n) nift art nd	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests		<b>nples</b> pe Dept	Reduced Fevel	(m)	Legend	Grade	Description
- H	W .		60	95				41.50 41.81	10,10, 23,57,20/10m (100/160mm)	78 79 80 m 81	41.44 41.50 41.77 41.8°			6		See sheet 4 of 8
44 	0.1	1m	60	95				43.50 43.66	13,37/25mm, 100/60mm (100/60mm)	82 83 84 85	42.44 43.44 43.51 43.66		- 42.40 			Firm to stiff, greyish brown (2.5Y 5/2), mottled light yellowish brown and dark greyish brown, slightly sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
12/01/2017 13/01/2017 	18: 0.0 a	at :00 9m at :00	60	95				l .	10.14, 35,65/55mm (100/130mm)	86 87 88 89	45.44 45.50 45.71	45.61	- - - - - - - - - - - - - - - - - - -			
47 			60	95				47.50 47.90	10,11, 12,28,30,30/2 (100/250mm)	90 91 92 5mm 93	47.44 47.54 47.55 47.86	46.71				Firm to stiff, grey (N 5), dappled greyish brown, slightly clayey slightly sandy SILT. (KARST SURFACE DEPOSIT)  Firm to stiff, dark brown, mottled reddish brown, spotted white, slightly clayey sandy SILT with occasional subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
13/01/2017 14/01/2017 - 14/01/2017 	18: 0.1 a	0m at :00 1m at :00	60	92				<b>49.50</b>	9,8,9, 9,9,10,11 N=39	94 95 96 97	49.44 49.56 49.99 49.99		- - - - - - - - - - - - - - - - - - -			
Disturbe Piston sa Split spor U76 undi U100 undi Mazier sa SPT linet Water sa	ample on samp isturbed disturbed ample r sample	ole samp d sam				n-situ Perme Pressu Packe Acoust elevie Piezor Standi Groun	vane ability reme r Testic or wer s neter pipe dwate	enetration e shear to y test eter test t optical urvey tip	on test est	LOGGE DATE CHECK	ED _	S. C. L 20/01/2 Y. M. Le	2017 eung	REMA	RKS	
En Environn	•	ample	Э					packer t		DATE	_	06/02/2	.01/			J201617.



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**PROJECT** 

	/ETH	OD				Ro	tary	,	$\top$	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
	//ACH	INE	& NO.			VB	M32	!	<b>│</b>	E 820710.	33	N 83	4004.	26		DATE: 09/01/2017 to 20/01/2017
F	LUSH	IING	MED	UМ		Wa	ater		1	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	E Casing	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Feduced Level	Depth (m)	Legend	Grade	Description
51 				60	95				51.50 51.95 53.50 53.90	6.6.8,10 N=30	105 <b>53.85</b> 53.90	-51.61 -53.61	- - - -	19 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		Very dense, grey (N 5), spotted dark grey, dappled brown, slightly clayey sandy subangular fine to medium GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
	14/01/2017	HW 55.00	0.12m at 18:00	60	50						106 54.40 107 54.90 55.00	-53.61 -54.21	54.40 - - - - - - 55.00	000000		Grey (N 5), striped white, slightly silty subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
56 - - - - - - - - - - - - - - - - - - -	16/01/2017		0.10m at 08:00	60	100	78	73	>20 6.7 1.1	55.25 56.14		T2101	-55.36			II	Strong, dark grey, spotted white and black, locally striped white, slightly decomposed BASALT. Joints are medium to widely spaced, locally very closely to closely spaced, extremely narrow, chlorite and calcite coated, dipping 0° to 10°, 30° to 40°, 50° to 60° and 60° to 70°. From 55.00m to 56.15m: Impure Marble. From 55.00m to 55.06m: With solution feature, fractured. From 56.15m to 56.78m: Subvertical joints.
57 - - - - - - - - - - 58	<u>16/01/2017</u> 17/01/2017		0.12m at 18:00 0.10m at	60	100	100	86				T21O1		- - - - - - - - - - - - - - - - - - -			From 56.35m to 56.39m: With quartz veins, dipping 0° to 10°.  At 56.46m: With quartz veins up to 8mm thick, dipping 10° to 20°.  At 56.95m: With quartz veins up to 12mm thick, dipping 10° to 20°.  From 57.32m to 57.37m: With quartz veins, dipping 0° to 10°.  At 57.47m: With quartz veins up to 22mm thick, dipping 10° to 20°.  At 57.60m: With quartz veins up to 35mm thick, dipping 10°
59 			08:00	60	100	100	100	0.5			T2101 59.28	-58.56	- - - - - - - - - - - - - - - - - - -		II	to 20°. At 57.71m: With quartz veins up to 12mm thick, dipping 30° to 40°. From 57.98m to 58.08m: With quartz veins, dipping 0° to 10°. From 58.91m to 59.02m: With quartz veins, dipping 0° to 10°. Strong, dark grey, striped white, slightly decomposed impure MARBLE.
60 ■		bed sa				v	In-situ	vane	enetratio		LOGGED _	S. C. L	- - - aw	REMA	RKS	Joints are widely spaced, locally closely to medium spaced, rough planar and slickensided planar, rough undulating,
	Split s U76 u U100 Mazie SPT li Water	poon s ndistur undistur r samp ner samp	ample bed sam urbed sar le mple	nple			Packer Acoust elevie Piezon Standr Groun Vibrati	r Testic or wer sineter oipe dwaten	eter test t optical urvey tip		DATE	20/01/2017  Y. M. Leung  06/02/2017				J201617e



HOLE NO.

ADH05

**CONTRACT NO.:** 

GE/2015/29

SHEET

7

OF 8

**PROJECT** 

М	ETH	OD.				Ro	tary			CO-ORDIN	ATES						TASK ORDER NO. GE/2015/29.8
м	ACHI	INE	& NO.			VB	M32	:	$\dashv$	E 820710.	33		N 83	34004	.26		DATE: 09/01/2017 to 20/01/2017
FI	USH	IING	MED	IUM	l	W	ater			ORIENTAT	ION		Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	1	SCR%	80 R D %	Е	Depth of FI / Test	Tests	Samples No. Type De		Reduced Fevel	00.00 (m)	Legend	Grade	Description  extremely narrow, occasional iron and manganese oxide
- - - - - - - <u>6</u> 1					100				60.31			0.70	-59.51 -59.71	60.30		=	stained, chlorite and calcite coated, dipping 0° to 10°, 10° to 20°, 30° to 40° and 40° to 50°. From 60.30m to 60.50m: BASALT DYKE.
- - - <b>62</b> - - - -				60		100	100				T2101	2.21	<u>-61.91</u>	62.70	· / / / / / / / / / / / / / / / / / / /		From 61.44m to 62.70m: BASALT DYKE.
63 - - - - - - - - - - -				60	100	100	100				T2101	3.68	-62.11	62.90			From 62.90m to 64.22m : BASALT DYKE.
- - - - - - - - - - 12 - 13	/ <u>01/2017</u> /01/2017		0.11m at 18:00 0.12m	60	100	100	100				T2101	5.21	-63.43	64.22 - - - - - - - - - - -			
<u>-</u> - <u>6</u> 6 - - -			at 08:00	60	100	100	99				T2101	6.62		- - - - - - - - - - - - -			
67 - - - - - - - - - - - - - - - - - - -	/01/2017 /01/2017		0.14m at 18:00 0.09m	60	108	100	100	0.7			T2101	3.13		- 			
69 	N 11.20 17		at 08:00	60	100	100	100				T2101	9.62					
_ 70						<u> </u>					T2101				THE STATE OF THE S		
	U76 u	samp poon s ndistui undisti r samp	le sample rbed sam urbed san ble				In-situ Perme Pressu Packe Acoust elevie Piezor Stand	vane ability ureme r Test tic or o wer si meter pipe	shear test eter test potical urvey tip	.	LOGGED DATE CHECKED		S. C. L 20/01/2	017	REMA	RKS	
<b>≜</b> En	Water		le tal Samp	le		Ā.	Vibrati	ng wi		ometer	DATE		06/02/2	017			J201617e



HOLE NO.

ADH05

**CONTRACT NO.:** 

GE/2015/29

SHEET

8

OF 8

**PROJECT** 

T	METH	OD				Ro	tary		7	CO-ORDIN	IATES						TASK ORD	ER NO.	GE/201	5/29.8
	MACH	INE	& NO.			VB	M32		ı	E 820710.	33		N 83	34004.	.26		DATE :	09/01/2017	7 to 2	20/01/2017
	LUSH	IING	MED	IUM	l	W	ater			ORIENTAT	TION		Verti	cal			GROUND L	EVEL	+ 0.79	mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sam <sub>l</sub>		Reduced 69.21	70.00 (m)	Legend	Grade		Descript	ion	
71 	<u>19/01/2017</u> 20/01/2017	7.77	0.12m at 18:00 0.10m at 08:00	60	100	100	100				T210	71.08				П	See sheet 7 of	8		
75 	20/01/2017	77	ample						75.27		LOGGE	75.27	74.48	75.27	REMA	RKS	End of Investiga	ation Hole at 75	.27m.	
	Piston Split s U76 u U100 Mazie SPT li	n samp spoon s undistu undist er samp iner sa r samp	ole sample rbed sam rurbed sa ple imple ole	mple			Perme Pressi Packe Acoust televie Piezor Standi Groun Vibrati	eability urement r Test tic or wer s meter pipe dwate ing wi	eter test t optical urvey tip	oling Well ometer	DATE CHECKI	  ED _ <u>`</u>	S. C. L 20/01/2 Y. M. Le 06/02/2	2017 eung						J201617e



HOLE NO.

1

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 9

**PROJECT** 

ME	ТНС	DD				Ro	tary			CO-ORDI	NATES						TASK ORDER NO. GE/2015/29.8
MA	СНІ	NE	& NO.			VB	M39	)		E 820726	.72		N 83	3953	.31		DATE: 17/12/2016 to 05/01/2017
FLU			MED	IUM		W	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.05 mPD
Drilling	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type D		Reduced 1.05	0.00 (m)	Legend	Grade	Description
17/12	/2016	SW									TION PIT		+0.85	0.20	XXXXX		Concrete surface.  Greyish brown (2.5Y 5/2), spotted white, clayey silty fine to
											A B B	0.50 0.80 1.10					coarse SAND with some subangular fine to medium gravel sized rock fragments. (FILL)
												2.00	-0.95	2.00			Yellowish brown (10YR 5/4), spotted white, sandy
				50	0							2.00		- - - - - -			subangular fine to medium GRAVEL sized rock fragments. (FILL)
					11					37 bls	3 4	3.00 3.10	-2.05	3.10 - -	-   -		Brown (7.5YR 5/4), dappled reddish brown, mottled light grey, slightly clayey silty fine to medium SAND.
					<u> </u>				3.6	0 1,1,	4 <b>2</b> 5 $\square$	3.55 3.60	-2.55	3.60			(ALLUVIUM)  Medium dense, light grey (N 7), locally reddish brown,
									4.0	N=12	6	3.70 4.00 4.05	-3.55	- - - - - - - - - - - - - - - - - - -			spotted white, silty fine to medium SAND. (ALLUVIUM)
											7	4.70		_	11-		Firm, light grey (N 7), mottled reddish brown, clayey slightly sandy SILT. (ALLUVIUM)
	_	SW 6.10 PW		50	66					62 bls	9 10	5.10 6.10 6.20	-4.05	5.10 	0		Light grey (N 7), spotted white, slightly clayey silty fine to coarse SAND with some subangular fine gravel sized rock fragments. (ALLUVIUM)
			0.00m at						6.7( 7.1!	7,5,2,7 N=21	11 12 13 13	6.65 6.70 6.80 7.10 7.15	-5.65	- 6.70 			Medium dense, reddish brown (2.5YR 5/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
17/12 20/12	/2016 /2016	•	18:00 0.44m at 08:00	-							14 •	7.80	-6.65 -6.75	7.70 7.80			From 7.70m to 7.80m : Firm, dark grey (N 3), mottled reddish brown, clayey sandy SILT.
				50	48						15	8.20	-7.15	8.20 - - - - -			Medium dense, dark grey (N 3), spotted white, slightly clayey silty fine to coarse SAND with some decayed wood pieces. (ALLUVIUM)
					98				9.8	84 bis	16 17 18	9.20 9.30 9.75 9.80		-			At 9.20m: With decayed wood pieces up to dia. 80mm.
			ample						l enetrations shear t		LOGGED	9.90	S. C. L	.aw	REMA		tion pit was excavated to 0.80m.
s		samp oon s	le ample			Ī	Perme Pressi	ability ureme	y test eter test			_					File that constituted to 0.00min
M S	100 u lazier PT lin	undisto samp ner sa	mple				Piezor Standı Groun	tic or wer s neter pipe dwate	optical urvey tip er Samp	oling Well	CHECKED	_ 	05/01/2 Y. M. Le	eung			
		samp nmen	ie tal Samp	le					re piezo packer		DATE	_	07/01/2	017			J2016



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF 9

**PROJECT** 

ME	THO	DD				Ro	tary		$\Box$	CO-ORDIN	NATES						TASK ORDER NO. GE/2015/29.8
MA	CHI	NE	& NO.			VB	M39		<u>'</u>	E 820726	.72		N 83	3953.	.31		DATE: 17/12/2016 to 05/01/2017
FL			MED	IUM		Wa	ater		<u> </u>	ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.05 mPD
Drilling	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Е	Depth of FI / Test	Tests	Sample No. Type D		Reduced Level	(m) 10.00	Legend	Grade	
11 11 12 13 14 1 15 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Disturt Piston Split sp	PW oped sa	ample le	Flush Peturns 9	10 R R R R R R R R R R R R R R R R R R R	<b>→ → → → → → → → → →</b>	Gtanda n-situe Pressu	ard peed vanee vanee aucement	10.25 10.25 12.90 13.35 15.50 17.50 19.95 19.95 19.95 19.95 19.95	125 bls  125 bls  125 bls  15,8, 14,14,17,28  16,20,28,36/5  16,20,28,36/5  17,11, 16,20,28,36/5  14,12,23,55  14,12,23,55  14,12,23,55	No. Type D  20  21  22  23  24  25  26  27  28  29  30  31  32  33  31  32  LOGGED	Depth 10.20 10.25 10.90 11.30 12.30 12.40 13.30 13.30 14.40 15.40 15.50 16.40 17.40 17.50 17.58 17.88 17.93 18.40 19.40 19.50 19.60 19.90	-11.35 -11.85	10.00	Pueden Cook of the	V	Extremely weak to very weak, brown (7.5YR 5/4), dappled greyish brown, completely decomposed METASILTSTONE. (Slightly silty angular to subangular fine to coarse GRAVEL)  Extremely weak, greyish brown (2.5Y 5/2), dappled brown, completely decomposed METASILTSTONE. (Sandy SILT with much subangular fine to coarse gravel)
	U76 ur	ndistur undistu samp	bed sam urbed sam le				Packer Acoust elevie Piezon Standp	r Test tic or o wer si neter pipe	t optical urvey tip	ling Well	DATE		05/01/2 . M. Le				
▲	Water	samp		le		<u>۱</u>	/ibrati	ing wi	er Samp ire piezo packer t	meter	DATE		07/01/2	017			J201617e



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

3

OF 9

**PROJECT** 

METH	OD			Ro	tary	,	$\top$	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
MACH		& NO.			M39		_	E 820726.		N	333953	.31		DATE: 17/12/2016 to 05/01/2017
FLUSH	HING	MED	IUM	W	ater		7	ORIENTAT	TION	Ver	tical			GROUND LEVEL + 1.05 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns % T C R %	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type De	Seth -18.9	(m) 5 20.00	Legend	Grade	Description
_ _ _ 	PW	0.00m at 18:00								-19.35	20.40		V	See sheet 2 of 9
20/12/2016 21/12/2016 	6	0.30m at 08:00	50 96							1.40 1.50 -20.45	-			Extremely weak to very weak, greyish brown (2.5Y 5/2), mottled brown, completely decomposed METASILTSTONE. (Angular to subangular fine to coarse GRAVEL)
				1			21.50 21.81	23,26,  34,53,13/10mi  (100/160mm)	m 43 21	1.76 1.81		1	V	Extremely weak, greyish brown (2.5Y 5/2), dappled brown, completely decomposed METASILTSTONE. (Slightly clayey sandy SILT with much subangular fine to coarse gravel)
			50 96				23.50	<sup>4</sup> 50/30mm	46 23 23 23 23	3.40 3.50 -22.45 3.56	- - - - - - - - - - - - - - - - - - -		V	Extremely weak to very weak, greyish brown (2.5Y 5/2),
 _ _ <b>24</b> _ _ _ _	PW 24.00 HW						23.56	100/30mm (100/30mm)		-23.35	- - - - - - - - - - - - - - - - - - -	000		mottled brown, completely decomposed METASILTSTONE. (Subangular fine to medium GRAVEL)
			50 96				25.50 25.60	↓50/40mm 100/60mm (100/60mm)	49 49 50 28	5.40 5.50 5.60				Very weak, greyish brown (2.5Y 5/2), dappled and streaked brown, highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)
            			50 95				27.50 27.60	\$50/35mm 100/65mm (100/65mm)	52 277	7.40 7.50 7.60				
	6016	0.00m at 18:00 0.45m at 08:00	50 96				29.50 29.57	\$50/25mm 100/45mm (100/45mm)		3.40 3.40 3.50 3.57				
Distu	rbed samp		! !	ž	In-situ	vane	enetratio shear to		LOGGED	S. C.	Law	REMA	RKS	
Split s	spoon s	sample	nle		Packe	ureme	eter test t		DATE	05/01	/2017			
U100 Mazie	undist er samp				Acous televie Piezor Stand	tic or wer s neter pipe	optical urvey tip		CHECKED	Y. M.		-		
1	iner sa r samp onmen	le	le	å	Groun Vibrati	dwate	er Sampl re piezo packer t		DATE	07/01	/2017			
					,,			-						J201617e



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 9

**PROJECT** 

N	1ETH0	OD				Ro	tary		7	CO-ORDII	NATES				TASK ORDER NO. GE/2015/29.8
N	IACHI	NE	& NO.			VB	M39	)	E	E 820726	.72	N 83	3953.	31	DATE : 17/12/2016 to 05/01/2017
F	LUSH	IING	MED	IUM		Wa	ater			ORIENTA	TION	Verti	cal		GROUND LEVEL + 1.05 mPD
	Drilling Progress	E Casing ₹ Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	E	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	00.00	Legend	Description
31 				50	96				31.50	12,17,18,33 N=80	57 30.40 58 31.40 59 31.50 60 31.95	-29.35	30.40 30.40 30.40 30.40 30.40 30.40	N	See sheet 3 of 9  Stiff, brown (7.5YR 5/4), spotted yellowish brown, dappled greyish brown, sandy SILT with much subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)
33				50	95						61 32.40	-31.35 -32.45	32.40 		Stiff, brown (7.5YR 5/4), locally dark grey, dappled light brown, slightly clayey sandy SILT with much subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
34 - - - - - - - -									33.50 33.95	6,10,19,30 N=65	63 33.60 64 33.95 65 34.40		-		Very dense, brown (7.5YR 5/4), dappled greyish brown, slightly clayey silty sandy angular to subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)
35 - - - - - - - - - - - - - - - - - - -				50	95				35.50 35.63	\$50/60mm 100/70mm (100/70mm)	66 <b>3</b> 35.40 67 <b>3</b> 35.63		- - - - - - - - - - - - - - - - - - -		
37	<u>22/12/2016</u> 33/12/2016		0.00m at 18:00 0.37m at 08:00	50	93				37.50 37.63	150/55mm • 100/75mm (100/75mm)	69 37.40 69 37.63 70 • 37.63	35.35	36.40		Very stiff, greyish brown (2.5Y 5/2), dappled light brownish grey, slightly clayey sandy SILT with much angular to subangular fine to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -				50	95				39.50 39.64	\$50/65mm 100/75mm (100/75mm)	71 38.40 72 39.40 39.50 73 9.64				
	U76 u	samp poon s ndistu	le sample rbed sam				In-situ Perme Pressi Packe Acous	vane eabilit ureme r Tes tic or	eter test t optical		LOGGED _	S. C. L		REMARKS	
	U100 i Maziei SPT lii Water	r samp ner sa	mple	mple			televie Piezor Stand Groun	wer s neter pipe dwate	urvey tip	ling Well	_	Y. M. Le			
	n Enviro			le					packer t		DATE _	07/01/2	V1/		J201617e



HOLE NO.

ADH06

9

OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 5

**PROJECT** 

Ī	/ETH	OD				Ro	tary		1	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
Ī	//ACH	INE	& NO.			VB	M39	)	י 🗍	E 820726	.72	N	83	3953	.31		DATE: 17/12/2016 to 05/01/2017
F	LUSH	HING	MED	IUM		Wa	ater		(	ORIENTA	TION	Ve	ertic	cal			GROUND LEVEL + 1.05 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De	8	.95	0.00 Depth (m)	Legend	Grade	Description
43 44 45 46 47 48	<u>23/12/2016</u> 24/12/2016	HW	0.00m at 18:00 0.38m at 08:00	50	95				43.9£ 45.50 45.9£	12,12,20,35 N=79 11,12,17,31 N=71 15,8,8,10,14,37 N=69	74	31.40 31.40 31.50 31.60 31.90 31		440.00	1		Very stiff, brown (7.5YR 5/4), dappled dark greyish brown, slightly clayey sandy SILT with much angular to subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Very stiff, dark grey (N 3), spotted white, yellowish brown, slightly sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)  Stiff, greyish brown (2.5Y 5/2), mottled dark greyish brown, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
50 •	Diotai		ample lle		<u> </u>	ž	In-situ	vane	enetration		LOGGED	S. (	C. L	aw	REMA	RKS	
	Split s U76 u U100 Mazie SPT li	poon indistu undist r samp iner sa r samp	sample rbed sam urbed sa ble mple ble	mple			Packe Acous elevie Piezor Stand Groun Vibrati	r Tes tic or wer s neter pipe dwate ing wi	eter test t optical urvey tip er Samp re piezo		DATE CHECKED DATE	05/0 Y. M	. Le	eung			
E	<b>n</b> Enviro	onmer	tal Samp	le		1	Impre	ssion	packer t	est					]		J201617e



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

6

OF 9

**PROJECT** 

М	IETHO	OD			R	otar	y		CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
М	IACH	INE	& NO.		٧	вм3	9		E 820726	.72		N 83	3953	.31		DATE: 17/12/2016 to 05/01/2017
FI	LUSH	IING	MED	IUM	٧	Vate	r		ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.05 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	. C	O	ū	Depth of FI / Test	Tests	Samp No. Type		Reduced 48.95	Depth (m)	Puegend	Grade	Description
- - - - - - <u>51</u> - -		HW		50 96				50.6i 50.8i	10,16, 27,73/55mm (100/130mm)	93 94 95	50.50 50.60 50.83 50.88	-49.55	- 50.60 			See sheet 5 of 9  Stiff, dark grey (N 3), mottled brown, occasional mottled light grey, slightly clayey slightly sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
	<u>4/12/2016</u> 8/12/2016		0.00m at 16:00 0.43m at 08:00	50 90	3			52.6i	0 [6,7, 11,12,14,20 N=57	97 98 99	52.50 52.60 52.70 53.00 53.05					
54 - - - - - - - - - - - - - - - - -				50 9	3			54.6i 55.0i	0  8,10, 14,14,18,31 N=77	100	53.50 54.50 54.60 54.70 55.00					
56 - - - - - - - - - - - - - - - - - - -				50 91	3			56.6i 57.0i	16,28,39,17/2 (100/250mm)	104   105   6   106   107   10	56.50 56.60 56.65 56.95 57.00	54.45	55.50			Very stiff, dark grey (N 3), mottled light grey, spotted white, sandy SILT with occasional subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
- - - - 58 - - - - - - - - - - - - - - -				50 83	3			58.6i 59.0i	8,10,13,24 N=55	108	58.50 58.60 58.70 59.00 59.05					
60	Distur	bed sa	ample		<u></u>			penetratio		LOGGEI		-58.45	59.50 - - -		RKS	Stiff, dark grey (N 3), spotted white, mottled light greenish grey, clayey slightly sandy SILT with occasional subangular fine gravel sized rock fragments. (KARST SURFACE
	Piston Split s U76 u U100 Mazie	samp poon s ndistui undisti r samp	le sample rbed sam urbed sa ble	•		Perm Press Pack	eabi surer er Te stic c ewer omete	r optical survey er tip		DATE CHECKE	_	S. C. L 05/01/2 Y. M. Le	017			
∐ ▲ En		r samp		le	<u>↑</u>	Grou Vibra	ndwa iting	ater Samp wire piezo n packer	ometer	DATE	_	07/01/2	017			J201617e



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

7

OF 9

**PROJECT** 

ME	ETHO	OD				Ro	tary			CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
M	ACHI	INE	& NO.			VB	M39	)		E 820726.	72		N 83	33953	.31		DATE: 17/12/2016 to 05/01/2017
FL	.USH	IING	MED	IUM		W	ater		1	ORIENTA	ΓΙΟΝ		Verti	cal			GROUND LEVEL + 1.05 mPD
illi-d	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %		SCR%	RQD%	Œ	Depth of FI / Test	Tests		<b>iples</b> pe Depti	Reduced	00.00 (m)	Legend	Grade	Description
– <u>6</u> 1 <sub>29/</sub>	12/2016 12/2016	HW 61.05	0.00m at 18:00 0.40m at 08:00 0.00m	50	96				60.6	<sup>0</sup>  4,6, 9,12,16,27 N=64	113 114 115	60.50 60.60 60.70 61.00 61.05		- - - - - - - - - - - - - -		-	DEPOSIT) See sheet 6 of 9
- 30/ 	12/2016		at 18:00 0.49m at 08:00	80	100	100	100	1.3	61.67		T2			- - - - - - - - - - - - -			Strong, dark grey (N 3), striped light grey, dappled white, slightly decomposed impure MARBLE. Joints are very widely to widely spaced, locally closely to medium spaced, rough planar, occasional slickensided and smooth planar, extremely narrow, occasional iron and manganese oxide stained, chlorite and calcite coated, dipping 0° to 10°, 10° to 20°, 40° to 50°, 50° to 60° and 60° to 70°.
63 - - - - - - 31/	<u>12/2016</u> 12/2016		0.00m at 18:00 0.50m	80	100	100	93	10.7	62.73		T2	iOI 63.38		- - - - - - - -	HHHHHH		
<u>-</u> - - <u>64</u> - - -			at 08:00	80	100	100	100				T2	IOI 64.15		- - - - - - - -			
				80	100	100	100				Т2	IOI		- - - - - - - - -			From 65.25m to 68.37m : Quartz vein.
				80	94	94	94				Т2	65.67		- - - - - - - - - - -			
67 			0.00m	80	100	100	100				Т2	67.20 IOI					
- 31/ - 03/ 	<u>12/2016</u> 01/2017		at 18:00 0.67m at 08:00	80	100	100	100	0.6			T2	68.75		- - - - - - - - - - - -			
	U76 u	samp poon s ndistu				V I I	In-situ Perme Pressu Packe	vane abilit ureme	eter test	test	LOGGE	ED _	S. C. L		REMA	RKS	
	Mazier SPT lir Water	r samp ner sa r samp	ole mple				Piezor Stand <sub>l</sub> Groun Vibrati	neter pipe dwate ng wi	tip		CHECK DATE	(ED _	Y. M. Le				J201617e



HOLE NO.

ADH06

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**CONTRACT NO.:** 

GE/2015/29

SHEET 8 OF

**PROJECT** 

h	VETH	OD				Ro	tary		7	CO-ORDIN	NATES					TASK ORE	DER NO.	GE/20	15/29.8	
T	MACH	INE	& NO.			VB	M39		ا	E 820726.	.72	N 83	33953.	.31		DATE :	17/12/2016	to	05/01/2	2017
Г	LUSH	IING	MED	IUM	l	W	ater		١,	ORIENTA	TION	Verti	cal			GROUND	LEVEL	+ 1.05		mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	FI	Depth of FI / Test	Tests	Samples No. Type Dep	Tevel	70.00	Legend	Grade		Descripti	on		
72 	03/01/2017 04/01/2017		start	80	100	100 100 100	100 100 89	11.1	74.92 77.05 77.05		T2101  T2101	-88.95 26 73 10				See sheet 7 of	9			
79	<u>04/01/2017</u> 05/01/2017		0.00m at 18:00 0.48m at 08:00					0.6	79.10		79. T2101	27	- - - - - - - - - - - - - - - - - - -							
	Piston Split s U76 u U100 Mazie	samp poon s ndistui undisti r samp	le sample rbed sam urbed san ble		, / ,		In-situ Perme Pressu Packer Acoust televier Piezon Standp	ard pervane vane vane vane vane vane vane vane	eter test coptical urvey tip	est	LOGGED  DATE  CHECKED	S. C. L 05/01/2 Y. M. Le	2017	REMA	RKS					
╽▲		samp	le	le		•	Vibrati	ng wii	er Samp re piezo packer t		DATE	07/01/2	017							J201617e



HOLE NO.

ADH06

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

N	IETH	OD				Ro	tary	,	$\top$	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
N	IACH	INE	& NO.			VB	M39	)		E 820726.	72	N 83	3953	.31		DATE: 17/12/2016 to 05/01/2017
F	LUSH	IING	MED	IUM		Wa	ater		(	ORIENTA	ΓΙΟΝ	Verti	cal			GROUND LEVEL + 1.05 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	% ⊔ ⊔ 100	% H O O	% O O Y	Œ	Depth of FI / Test	Tests	Samples No. Type Dep	Reduced Level	00.08 (m)	Legend	= Grade	Description
<u>-</u> - - - - - - - - - - - - - - - - - -					100				80.72		T2101	72				See sheet 8 of 9
E 82	E/04/004		0.00m at 12:00									<sub>19</sub> -81.04	82.09			
	Piston	rbed sa	ample le			ř †	In-situ Perme	vane			LOGGED	S. C. L		REMA	RKS	End of Investigation Hole at 82.09m.
	Piston	samp				Ŧ	Perme	ability		est	-	ა. ს. L	.dW			
	U76 u U100 Mazie	indistu undist r samp	rbed sam urbed sam ble				Packe Acoust elevie Piezor Standi	r Test tic or wer s neter pipe	t optical urvey tip	E 184 H	CHECKED	05/01/2 Y. M. Le				
<b>A</b>		r samp	le	la.		<b>•</b> '	Vibrati	ing wi	re piezo		DATE	07/01/2	017			
E	∎ Enviro	onmen	tal Samp	ie		1	impres	ssion	packer t	esī	-			1		J201617e



HOLE NO.

ADH07

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

М	ETH	OD				Ro	tary		1	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
М	ACHI	INE	& NO.			VB	M43	3	ا [	E 820715	.98		N 83	3862.	.93		DATE: 20/12/2016 to 11/01/2017
FI	LUSH	IING	MED	IUM		Wa	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.79 mPD
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type [			0.0 <b>Depth</b>	Legend	Grade	Description
20 	0/12/2016	SW									A B C C MSPECTION PIT	0.50 1.00 1.40	+0.69				Concrete surface. Firm, grey (N 5), mottled light yellowish brown, clayey sandy SILT with some subangular coarse gravel sized rock fragments and subangular cobble sized moderately decomposed and slightly decomposed Granite. (FILL)
2 - - - - - - - - 3				60	95						1	2.00 3.00 3.10	-1.21	2.00 - - - - - - - - - - - - - - - - - -			Yellowish brown (10YR 5/4), spotted white, slightly silty fine to coarse SAND. (ALLUVIUM)
_ _ _ _ _ 4									3.10 3.55	2,2, 2,2,2,3 N=9	3   4	3.20 3.50 3.55	-3.21	- - - - - - - - - - - - -			Firm, grey (N 5), mottled brown, clayey sandy SILT. (ALLUVIUM)
				60	60						5	5.00 5.10	-4.31	- - - - - - - - - - - - - - - - - - -	0 0 0		Light grey (N 7), spotted white, slightly silty fine to coarse SAND with some subangular to subrounded fine gravel sized rock fragments. (ALLUVIUM)
_					100					38 bls	7 8	5.55 5.60	-4.81	- - - - - 5.60			Light grey (N 7), dappled light brown, silty fine to medium SAND. (ALLUVIUM)
									5.60 6.05	11,11,12,14 N=48	9   10   11	5.60 5.70 6.00 6.05		-			Dense, light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)
Z. - - - -	<u>0/12/2016</u> 1/12/2016	SW 7 60	0.90m at 18:00		89					49 bls		7.10 7.55 7.60	-6.81				
<u>.</u>	I/12/2016	PW	0.90m at 08:00						7.60 8.05	8,6,7,13 N=34	14   15	7.60 7.70 8.00 8.05		- - - - - - - - 8.50			Dense, dark grey (N 3), spotted yellowish brown, clayey silty fine to coarse SAND. (ALLUVIUM)
					//					80 bls	17	9.10	-7.71	- 0.50 			Light yellowish brown (2.5Y 6/3), spotted white, silty fine to coarse SAND. (ALLUVIUM)
- - - - - - 10					<u> </u>				9.60	3,3, 4,4,3,4 N=15	18	9.55 9.60 9.70	-8.81	9.60			Medium dense, dark grey (N 3), spotted white, clayey silty fine to coarse SAND. (ALLUVIUM)
	Disturi Piston Split sp U76 ur	samp	le	ıple		VIII	In-situ Perme Pressu Packe	vane abilit ureme r Tes	eter test	est	LOGGED	_	S. C. L		REMA 1. An in		ion pit was excavated to 1.40m.
	U100 undisturbed sample  Mazier sample  SPT liner sample  Water sample						Piezor Standı Groun	neter pipe dwate	er Samp	oling Well	CHECKED	, _	Y. M. Le				
_			tal Samp	le					re piezo packer t		DATE	_	13/01/2	U17			J201617e



HOLE NO.

ADH07

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF 9

**PROJECT** 

METHOD	D			R	ota	ry		7	CO-ORDIN	TAP	ES						TASK ORDER NO. GE/2015/29.8
MACHIN	IE & N	Ю.		٧	BM	43			E 820715.	.98			N 83	3862.	.93		DATE: 20/12/2016 to 11/01/2017
FLUSHIN	NG ME	ΞDI	UM	٧	Vate	er		(	ORIENTA <sup>*</sup>	TIOI	N		Verti	cal			GROUND LEVEL + 0.79 mPD
	Depth/Size	/el n) ift art	Flush Returns % T C R %	% a C v		3	Œ	Depth of FI / Test	Tests	No		Depth	Reduced P.2.1	0.01 0.01 0.01	Legend	Grade	Description
111	w		889					11.60	19 bis  6,7,  8,8,9,12  N=37	21 22 23 24 25		10.05 10.60 11.10 11.55 11.60 11.70 12.05	-10.31	11.10			Dense, grey (N 5), spotted white, clayey silty fine to coarse SAND with occasional decayed wood pieces. (ALLUVIUM)
13 - - - - - - - - - -			60 95							27		13.10 14.10 14.20	-12.31	13.10 - - - - - - - - - - - - - - - - - - -	0 0	V	Extremely weak, yellowish brown (10YR 5/4), occasional streaked black, dappled reddish brown, completely decomposed METASANDSTONE. (Silty fine SAND with occasional subangular fine to medium gravel)
 _ _ _ _ _ _ _ <b>15</b>								14.20 14.65	2,2,  2,3,3,5  N=13	30	, [	14.30 14.60 14.65	-13.41			V	Extremely weak, dark grey (N 3), streaked yellowish brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)
	0.44 a 18: 0.94 a 08:	t 00 5m t	60 30							32 33		16.10 16.20 17.20 17.30	-16.51		<u> </u>	V	Extremely weak to very weak, dark grey (N 3), streaked yellowish brown and brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with much angular to subangular fine to medium gravel)
-  -  -  -  -  18				7				17.30 17.75	2,3,  5,8,11,15  N=39	36	5	17.40 17.70 17.75	-17.41	- 17.30 		V	Extremely weak, reddish brown (2.5YR 5/4), streaked yellowish brown, completely decomposed METASILTSTONE. (Slightly sandy SILT)
- - - - - - - - - - - - - - - - - - -			60 95					19.30	3,6, 12,21,25,39	38		19.20 19.30 19.40	-18.51				Very weak, reddish brown (2.5YR 5/4), dappled dark grey, streaked yellowish brown, highly decomposed graphitic METASILTSTONE. (Silty slightly sandy angular to subangular fine to coarse GRAVEL)  Extremely weak, dark grey (N 3), streaked yellowish brown and brown, completely decomposed graphitic
_ _ _ _ _ 20								19.75	N=97	40	)	19.70 19.75		<u>-</u> - -			METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
Disturbed Piston sa	ample			¥	In-s Per	situ v mea	vane ability			LOG	GGED	_	S. C. L	aw	REMA	RKS	
Split spool U76 undi U100 undi Mazier sa	isturbed disturbed ample	sam I san		<u>+</u>	Pre Pac Acc tele Pie: Sta	ssur ker justi view zom ndp	Test c or c ver su eter t	ter test optical urvey tip	Goog 184 - U	DAT	TE ECKE	_	11/01/2 Y. M. Le				
▲ Water sa	ample		е	† 1	Vib	ratin	ıg wir	r Sampl e piezo backer t		DAT	ΓE	_	13/01/2	017			J201617e



HOLE NO.

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 3

**PROJECT** 

 	/IETH	OD			Ro	tary	,	7	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
_	//ACH	INE	& NO.	ı	VB	M43	;	۱	E 820715	.98	N 83	3862.	.93		DATE: 20/12/2016 to 11/01/2017
F	LUSH	IING	MED	IUM	W	ater		7	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns % T C R %	SCR%	RQD%	Е	Depth of FI / Test	Tests	Samples No. Type De	Peduced	(m) 20.00	Legend	Grade	Description
21 		PW	, 6.14	60 95				21.30 21.75 23.30 23.75	6,8,11,14 N=39 5,8, 9,14,16,21 N=60	41 20 42 21 43 22 44 21 45 22 46 23 47 23 48 23	1.20 1.20 1.30 1.40 1.70 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.75			V	See sheet 2 of 9
25 - - - - - - - - - - - - - - - - - - -			0.62m at	60 95				25.30 25.75	4,6,  7,9,12,17  N=45	50	-24.51 .40 .70 .25.41				Extremely weak, reddish brown (2.5YR 5/4), streaked brown, completely decomposed METASILTSTONE. (Slightly sandy SILT)  Very weak, reddish brown (2.5YR 5/4), streaked and mottled brown, highly decomposed METASILTSTONE. (Silty sandy subangular fine to coarse GRAVEL)
28 - - - - 28 - - - - - - - - - - - - -	<u>22/12/2016</u>	PW 30.00	at 18:00 0.35m at 08:00	60 95				29.30 29.75	3.4. 5.8.13,22 N=48	55 27 56 27 57 28 57 28 58 29 59 29	.20	27.30		V	Extremely weak, dark grey (N 3), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
	Piston Split s U76 u U100 Maziei	bed samp poon s ndistui undisti r samp	le sample rbed sam urbed san ble		<u> </u>	In-situ Perme Pressi Packe	vane ability ureme r Test tic or o wer si neter	eter test coptical urvey		LOGGED  DATE  CHECKED	S. C. L 11/01/2 Y. M. Le	017	REMA	RKS	
E		r samp	le	le	į.	Groun Vibrati	dwate	er Sampl re piezo packer t		DATE	13/01/2	017			J201617e



HOLE NO.

ADH07

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**CONTRACT NO.:** 

GE/2015/29

SHEET 4 OF

**PROJECT** 

М	ETH	DD.				Ro	tary		7	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
$\vdash$			& NO.				M43		_	E 820715.		N 83	3862.	.93		DATE: 20/12/2016 to 11/01/2017
FI	USF	IING	MED	IUM		Wa	ater		1	ORIENTA <sup>*</sup>	ΓΙΟΝ	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests	Samples No. Type Dep	th -29.21	0.00 (m)	Legend	Grade	Description
34 - - 34 - - - - - - - - - - - - - - -	<u>8/12/2016</u> 8/12/2016	HW	0.30m at 18:00 0.35m at 08:00	60	95				31.30 31.75 33.30 33.75	10,15,18,26 N=69 14,6, 10,16,21,20 N=67	61 30.2 62 31.3 63 31.4 64 31.7 65 32.2 66 33.3 67 33.3 68 33.3 69 34.2	200 200 200 200 200 200 200 200 200 200	33.30		V	Extremely weak, dark grey (N 3), streaked white, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)  Very weak to weak, dark grey (N 3), streaked and striped brown, highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)
- - - - - - - - - - - - - - - - - - -				60	95					14,20,28,30 N=92		20 -35.41	36.20 - - - - - - - - - - - - - - - - - - -		IV	Very weak to weak, dark grey (N 3), streaked white, occasional mottled pinkish grey, highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)
37 	U100 Mazier SPT lii Water	samp poon s ndistur undistr r samp ner sa	le sample bed sam urbed sam ble mple	mple			In-situ Perme Pressu Packe Acoust elevie Piezor Standı Groun	vane eability ureme r Test tic or wer s neter pipe dwate ing wi	eter test t optical urvey tip	in test est ling Well meter	77 38.4 78 39.3 79 39.4 80 39.3 DATE CHECKED DATE	20 50 60	aw 017	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Very weak to weak, dark grey (N 3), streaked white, highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)



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**CONTRACT NO.:** 

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SHEET 5

**PROJECT** 

М	ETH	OD				Ro	tary	,	7	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
М	ACH	INE	& NO.			VB	M43	3	<b>│</b>	E 820715.	98	I	N 83	3862.	.93		DATE : 20/12/2016 to 11/01/2017
FI	LUSH	IING	MED	IUM		Wa	ater			ORIENTA	ΓΙΟΝ	'	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Ħ	Depth of FI / Test	Tests	Samples	s Depth	Reduced Level	0.00 (m)	Legend	Grade	Description
41 - 21 - 21 - 21 - 21 - 21 - 21 - 21 - 2	<u>8/12/2016</u> 8/12/2016	HW .	0.29m at 18:00 0.31m at 08:00	60	95				41.75	4,5, 8,10,13,18 N=49 17,43, 188,32/55mm (100/130mm)	82 83 84 85 86 87	41.20 41.30 41.40 41.70 41.75	<u>-39.41</u>	40.20		IV	See sheet 4 of 9  Very weak to weak, dark grey (N 3), streaked brown, completely to highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)  Very weak to weak, dark grey (N 3), streaked light yellowish brown, highly decomposed graphitic METASILTSTONE. (Silty sandy subangular fine to medium GRAVEL)
44 				60	95				45.30 45.61	15.35  37.43.20/5mm  (100/155mm)	90 91 92 93 93	45.20 45.30 45.56 45.61	43.41			V	Extremely weak to very weak, dark grey (N 3), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
3(           	<u>9/12/2016</u> 0/12/2016		0.28m at 18:00 0.29m at 08:00	60	95		Standalo	ard no	47.59 49.30 49.62	14,20, 25,53,22/20m (100/170mm)	96 97 97 97 98 99 99 99 99 99 99 99 99 99 99 99 99	47.20 47.30 47.54 47.59 48.20 49.20 49.30 49.57 49.62				Bre	
	Piston Split s U76 u U100	spoon s indistui undisti	le sample rbed sam urbed sa				In-situ Perme Pressi Packe	vane eabilit ureme r Tes tic or ewer s	eter test t optical urvey		LOGGED DATE	11	3. C. L	017	REMA	RKS	
□ A En	Water	ner sa r samp	mple	le			Stand Groun Vibrati	pipe dwate ing w			DATE	-	M. Le				J201617e



HOLE NO.

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**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

Progress Progress					M43	3	IJ .	- 000745							
		Water	IUM	14				E 820715.9	98		N 83	3862.	.93		DATE: 20/12/2016 to 11/01/2017
Drilling Progress	asing oth/Size	Water Level		VV	ater		(	DRIENTAT	ION		Verti	cal			GROUND LEVEL + 0.79 mPD
	HW D HW	(m) Shift start / end	Flush Returns % T C R %	œ	RQD%	Е	Depth of FI / Test	Tests	Sample No. Type		Peduced 49.21	(m) 50.00	Legend	Grade	Description
	HVV		60 95					15,25,  35,45,20/50mn  (100/200mm)	104	51.20 51.30 51.60 51.65	-51.41			V	See sheet 5 of 9
			60 95				53.30 53.75	9,12,17,25 N=63	106	53.20 53.30 53.40 53.70 53.75	-53.41	- - - - - - - - - - - - - - - - - - -	θ · · · · · · · · · · · · · · · · · · ·		Extremely weak to very weak, dark grey (N 3), occasional mottled and streaked light yellowish brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with occasional subangular fine to medium gravel)
<u>30/12/2016</u> 31/12/2016		0.55m at 18:00 0.00m at 08:00	60 95				55.30 55.51	10.39, ₱100/60mm (100/60mm)	110	55.20 55.30 55.46 55.51	-54.51	- - - - - - - - - - - - - - - -			Very weak, brown (7.5YR 5/4), dappled dark grey (N 3), streaked yellowish brown, highly decomposed graphitic METASILTSTONE. (Silty sandy angular to subangular fine to medium GRAVEL)  Extremely weak to very weak, dark grey (N 3), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
			60 95				57.30 57.75	10,14,20,31 N=75	113	57.20 57.30 57.40 57.70 57.75	-56.51	57.30		V	Extremely weak, dark brown (7.5YR 3/4), mottled light grey, spotted white, completely decomposed graphitic METASILTSTONE. (Slightly clayey sandy SILT)
			60 90				59.30	7,9, 13,21,28,31	117	59.20 59.30 59.40	-57.41 -58.51	58.20 		V	Extremely weak, dark grey (N 3), spotted and streaked white, mottled brown, completely decomposed graphitic METASILTSTONE. (Sandy SILT with some subangular fine to coarse gravel)  Stiff, dark brown (7.5YR 3/4), mottled dark grey and light grey, spotted white, clayey sandy SILT with occasional
Dieter	hod -	0.00m at 18:00			Standa	ard pe	59.75 enetratio	n test	120	59.75			-   -	RKS	subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
Piston Split sp U76 un U100 m Mazien SPT lin Water	samp poon s ndistur undistur samp ner samp	le sample sample rbed sam urbed sam ble mple	mple	¥V ⊦-I <mark>├</mark>  ⊞ ⊞#-¥ <b>▲</b> ■△□◆□◆■◆	In-situ Perme Pressi Packe Acous televie Piezor Standi Groun Vibrati	vane eability ureme r Test tic or o wer si neter pipe dwate ing wi	shear to / test eter test coptical urvey tip er Sampl re piezoi	ing Well meter	DATE CHECKEI	  <u>Y</u> _ O	11/01/2 /. M. Le	017 eung	KLWA	. 410	
	Distur Piston Split s U100 Maziei SPT lii Water	Disturbed sa Piston samp Split spoon s U76 undistu U100 undist Mazier samp SPT liner sa Water samp	0/12/2016 1/12/2	0.00m at 08:00  0.00m at 08:00  0.00m at 18:00  0.00m at 18:00  0.00m at 18:00  0.00m at 08:00	0.55m at 18:00 0.00m at 08:00  Disturbed sample Piston sample U76 undisturbed sample Water sample SPT liner sample Water sample Water sample Water sample	0.00m at 08:00  Disturbed sample Piston sample U100 undisturbed sample U100 undisturbed sample Mazier sample SPI liner sample SPI liner sample Water	0.712/2016 18:00 17/12/2016 18:00 0.00m at 08:00   Standard pe In-situ vane Piston sample Piston sample U76 undisturbed sample U76 undisturbed sample Mazier sample Mazier sample SPT liner sample Water sample  0.00m at 18:00 1987  Standard pe In-situ vane Permeability Pressure Packer Test Acoustic or telleview or tel	0.55m at 18:00 0.00m at 08:00  Disturbed sample Piston sample U76 undisturbed sample U100 undisturbed sample U100 undisturbed sample Water sample Wa	0.55m at	105   106   107   108   107   108   109	0.55m   10.6   0.55m   10.6   0.53.30   10.39   10.00m   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   11.2   0.55.81   10.00   0.55.81   10.00   11.2   0.55.81   10.00   0.55.81   10	105   52.20   51.41   105   52.20   51.41   106   53.30   53.30   10.39   107.277.25   107   53.40   53.30   10.39   110   55.30   53.30   10.39   110   55.30   55.30   10.39   110   55.30   55.30   10.39   110   55.30   55.30   10.39   110   55.30   55.30   10.39   110   55.30   55.30   10.39   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   55.30   110   55.30   110   55.30   55.	60 98   53.30   10.30   10.55m   10.00m   11.22016   10.00m   11.22016   10.00m   11.22016   10.00m   11.22016   10.00m   11.22016	60 95   Sample   Signature   Sample   Signature   Sign	60 38



HOLE NO.

ADH07

9

**CONTRACT NO.:** 

GE/2015/29

SHEET 7 OF

**PROJECT** 

	METH	OD				Ro	tary	,	$\Box$	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
	MACH	INE	& NO.			VB	M43	3	יַ	E 820715.	.98	N 83	33862.	.93		DATE: 20/12/2016 to 11/01/2017
	FLUSH	IING	MED	IUM		W	ater			ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dept	Reduced Fevel	00.00 (m)	Legend	Grade	Description
61 	31/12/2016 03/01/2017	HW	0.00m at 08:00	60	95				61.30 61.53	111.21, 146,54/5mm (100/80mm)	121 60.2 122 61.3 124 61.5	0 0 8 3		1 1		See sheet 6 of 9
63 				60	95				63.30 63.64	7,9, 13,47,40/40m (100/190mm)	125 62.2 126 63.2 127 127 128 63.5 129 64.2	D D D D D D D D D D D D D D D D D D D		-		Firm to stiff, dark brown (7.5YR 3/4), mottled greyish brown, spotted white, clayey sandy SILT with much subangular fine to medium gravel sized rock and marble fragments. (KARST SURFACE DEPOSIT)
65 - - - - - - - - - - - - - - - - - - -	03/01/2017	,	0.00m at 18:00						65.30 65.63	111,22, 32,43,25/30m (100/180mm)	132 65.6	-65.31	65.30			Stiff, brown (7.5YR 5/4), mottled greyish brown, slightly sandy SILT. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -	04/01/2017		0.00m at 08:00	60	93	92	92	2.1	67.50 67.60		T2101	<del>-66.71</del>			"	Strong, white, streaked grey, slightly decomposed MARBLE.  Joints are medium spaced, locally extremely closely spaced, rough planar, extremely narrow, iron and manganese oxide stained, dipping 0° to 10° and 40° to 50°. From 66.10m to 66.16m: With solution feature.  From 66.80m to 67.50m: With solution feature.
68 - - - - -			0.00m at	60	76			ISIN	68.05 68.60	8,10,13,18 N=49	68.0 68.1 T2 IOI 134 68.6 134 68.7 135 88.7	-67.31 0 -67.81	68.10 - - - - - - - - - - - - - - - - - - -			From 67.50m to 67.60m: No recovery, inferred to be Cavity.  No recovery, inferred to be Cavity infill.  Light grey (N 7), dappled white and dark brown, subangular BOULDER sized slightly decomposed Marble up to 240mm with some slightly clayey slightly silty angular medium to coarse gravel sized rock fragments. (CAVITY INFILL
<u>69</u>	04/01/2017 05/01/2017		18:00 0.00m at 08:00	60	80				69.50	**100/35mm (100/35mm)	T2101	0 <u>-68.71</u> 1	69.50 - 69.80			DEPOSIT) Firm, dark brown (7.5YR 3/4), spotted white, clayey sandy SILT. (CAVITY INFILL DEPOSIT) Light grey (N 7), dappled white and dark brown, subangular BOULDER sized slightly decomposed Marble up to 240mm with some slightly clayey slightly silty angular medium to coarse gravel sized rock fragments and angular cobble sized slightly decomposed Marble. (CAVITY INFILL
	Piston Split s U76 u	poon s ndistu undist	le sample rbed sam urbed sai		<u>r/</u>		In-situ Perme Pressi Packe Acous televie Piezoi	vane eability ureme er Test tic or ewer s meter	enetration e shear t y test eter test t optical urvey	on test rest	LOGGED DATE	S. C. L	2017	REMA	RKS	
	SPT li	ner sa r samp	mple le	le			Stand Groun Vibrat	pipe idwate ing wi			DATE _	Y. M. Le				J201617e



HOLE NO.

ADH07

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**CONTRACT NO.:** 

GE/2015/29

SHEET 8 OF

**PROJECT** 

METHOD			Ro	tary			CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
MACHINE	& NO.		VB	M43	3	7	E 820715.	98	N 83	33862	.93		DATE: 20/12/2016 to 11/01/2017
FLUSHING	MED	UM	w	ater			ORIENTA	ΓΙΟΝ	Verti	cal			GROUND LEVEL + 0.79 mPD
Drilling Progress Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns % T C R %	℃	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced -69.21	70.00	Legend	Grade	Description
- HW	0.00m at 18:00 0.00m at 08:00	60 58	88	88	1.2		8,15, 19,20,61/50mi (100/200mm)	T2101 138 70.40	-69.61 -70.11 -70.30	70.00		II	DEPOSIT) Firm, dark brown (7.5YR 3/4), mottled white. clayey slightly sandy SILT. (CAVITY INFILL DEPOSIT) Light grey (N 7), dappled brown, occasional dappled white, subangular BOULDER sized slightly decomposed Marble up to 250mm with some clayey silty angular medium to coarse gravel sized rock fragments and angular cobble sized slightly decomposed Marble. (CAVITY INFILL DEPOSIT) Stiff, brown (7.5YR 5/4), dappled dark brown and yellowish brown, clayey sandy SILT. (CAVITY INFILL DEPOSIT) Dark brown (7.5YR 3/4), streaked white, subangular COBBLE sized slightly decomposed Marble with much clayey silty angular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Strong, light grey, dappled white, occasional mottled brown, slightly decomposed impure MARBLE. Joints are widely spaced, locally extremely closely spaced, rough planar and undulating, extremely narrow to very narrow, iron and manganese oxide stained, dipping 10° to 20°, 40° to 50° and 70° to 80°. From 71.09m to 71.24m: With solution feature. From 73.39m to 73.60m: With solution feature.
755 	0.00m at 18:00 0.00m at 08:00	60 91 0 0 60 75	71	60	NR 3.3 NR	74.30 74.40 75.21 76.00 76.20	10.12. 15.17.19,21 N=72	T2101  T2101  T2101  74.40  T2101  74.90  75.20  75.25  75.40  T2101  T2101	-73.51 -73.61 -74.01 -74.61 -75.21 -75.41	74.30 74.40 74.80 75.40 76.00		II	From 74.25m to 74.30m: With solution feature. From 74.30m to 74.40m: No recovery, inferred to be Cavity. No recovery, inferred to be Cavity. Firm, dark brown (7.5YR 3/4), dappled dark greyish brown, spotted white, clayey sandy SILT. (CAVITY INFILL DEPOSIT)  Strong, light grey (N 7), dappled white, brown, slightly decomposed MARBLE. Joints are medium spaced, locally closely spaced, rough planar, very narrow, iron and manganese oxide stained, dipping 0° to 10°, 20° to 30° and 40° to 50°. From 75.40m to 75.45m: With solution feature. From 75.81m to 76.00m: With solution feature. From 76.00m to 76.20m: No recovery, inferred to be Cavity. No recovery, inferred to be Cavity.
Disturbed s Piston sam Split spoon U76 undist U100 undist Mazier sam SPT liner sa Water sam	ole sample urbed sam turbed san ple ample	•	→V·-I¬(□□□₹¥▲■<□◆□◆□	In-situ Perme Pressi Packe Acous televie Piezor Stand Groun	vane eability ureme er Tes tic or ewer s meter pipe idwate	78.2 78.6 79.0 79.0 2 shear t y test eter test t t optical urvey tip	11,20, 15,14,17,19 N=65	142 78.00 143 78.20 12 78.22 78.22 78.20 78.30 72 101 78.60 79.05 79.05 79.05 79.10  DATE  CHECKED  DATE	-77.21 -77.51 -77.81 -78.31  S. C. L 11/01/2 Y. M. Le	78.60 	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	RKS	Firm, dark brown (7.5YR 3/4), mottled brown, clayey sandy SILT. (CAVITY INFILL DEPOSIT) Light grey (N 7), dappled dark brown, white, Subangular COBBLES with much slightly clayey slightly sandy angular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Firm to stiff, dark grey (N 3), spotted white, mottled yellowish brown, clayey sandy SILT with much subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Light grey (N 7), dappled brown and dark brown, subangular COBBLE with much slightly clayey slightly sandy angular medium to coarse gravel sized quartz and



HOLE NO.

ADH07

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

r	METHO	OD				Ro	tary		7	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
	MACHI	INE	& NO.			VB	M43		ا [	E 820715.	.98	N 83	33862.	93		DATE: 20/12/2016 to 11/01/2017
	FLUSH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samples No. Type Dept		0.08 Depth (m)	Legend	Grade	Description
- - - - - - 81	<u>07/01/2017</u> 09/01/2017	HW 80.90	0.00m at 08:00	0	0					105 bls	145 80.16 80.26 80.66 80.70 80.90	5	- - - - - - - - - -	0000		rock fragments. (CAVITY INFILL DEPOSIT) See sheet 8 of 9
82				0		100	96	2.1			T2101		81.31		II	Strong, white, dappled light grey and brown, slightly decomposed MARBLE.  Joints are widely spaced, locally very closely to closely spaced, rough planar, occasional slickensided planar and rough stepped, extremely narrow to very narrow, iron and manganese oxide stained, dipping 0° to 10°, 10° to 20°, 50° to 60°, 60° to 70° and 70° to 80°.  From 81.51m to 81.59m: Quartz vein.
83 - - - - - - - 84			0.00m at	0	87	65	65	NR 6.3	82.71 82.89 83.85		T2101	-82.10	82.71 82.89		II	From 82.71m to 82.89m: No recovery, inferred to be Cavity. From 82.89m to 83.14m: With solution voids up to 250mm. From 83.44m to 83.84m: With solution voids up to 400mm.
85	09/01/2017 10/01/2017		18:00 0.00m at 08:00	0	100	96	92	0.7			T2101		- - - - - - - - - - - - - - - - - - -			
86	10/01/2017 11/01/2017		0.00m at 18:00	0	96	91	91		86.70 86.70 86.82	50/50mm 100/70mm (100/70mm)	T2101					From 86.52m to 86.70m : With solution feature.
87 	11/01/2017		at 08:00 0.00m at 18:00													clayey sandy SILT. with some subangular fine gravel sized rock fragments. (CAVITY INFILL DEPOSIT) End of Investigation Hole at 86.82m.
	Piston Split s U76 u	samp poon s ndistu	le sample rbed sam			ř I	In-situ Perme Pressu	vane ability ireme	enetration shear to test eter test coptical urvey	est	LOGGED _	S. C. L		REMA	RKS	
	Maziei SPT lii	r samp ner sa r samp	mple le				Piezor Standı Groun Vibrati	neter pipe dwate ng wi	tip		CHECKED _	Y. M. Le				J201617e



HOLE NO.

ADH08

8

**CONTRACT NO.:** 

GE/2015/29

SHEET 1 OF

**PROJECT** 

METH	OD				Ro	tary	,	<u> </u>	CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
MACH	IINE	& NO.			VB	M43	3	┥,	E 820708	.76	N 83	3826.	.39		DATE: 20/01/2017 to 09/02/2017
FLUS	HING	MED	IUM		Wa	ater		٦,	ORIENTA	TION	Verti	cal			GROUND LEVEL + 1.02 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Е	Depth of FI / Test	Tests	Samples No. Type Depth		© Depth (m)	Legend	Grade	Description
20/01/201	7 SW									A 0.50	+0.92				Concrete surface. Brown (7.5YR 5/4), mottled dark grey, spotted white, silty fine to coarse SAND. (ALLUVIUM)
			60	95				3.10	4,5,5,6 N=20	2 2.00 3 3.00 3.10 4 3.20 5 3.55	-2.08	2.00			Light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)  Medium dense, light brown (7.5YR 6/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
<u>4</u>			60	100				5.60	72 bls  2.3. 4.5.7.9	7 8 5.00 7 8 5.55 5.60 10 6.05	-2.98	4.00			Medium dense, light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)
8		0.00m at 18:00 0.00m at 08:00	60	100				8.70 9.18	6,7,7,8 N=28	13 7.10  14 8.10 15 8.20 16 8.80 17 8.80 18 9.10 3.15	-7.18				Reddish brown (2.5YR 5/4), spotted yellowish brown, silty fine to coarse SAND. (ALLUVIUM)  Medium dense, yellowish brown (10YR 5/4), mottled light grey, clayey silty fine to coarse SAND with occasional subangular to subrounded fine quartz gravel. (ALLUVIUM)
Pisto Split U76 U100	undistu	le sample rbed sam urbed sai				In-situ Perme Pressu Packe Acoust televie Piezor	vane eabilit ureme r Tes tic or wer s meter	eter test t optical urvey	est	LOGGED DATE CHECKED	S. C. L 09/02/2 Y. M. Le	017	REMA 1. An in		ion pit was excavated to 0.50m.
SPT	liner sa er samp	mple le	le		<b>•</b> '	Vibrati	dwate	er Samp re piezo packer t		DATE _	10/02/2				J201617e



HOLE NO.

ADH08

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF 8

**PROJECT** 

MET	ГНО	D				Ro	tary		7	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MAC	CHIN	NE 8	& NO.			VB	M43	;	۱ 🖯	E 820708	.76	N 8	33820	6.39		Ī	DATE: 20/01/2017 to 09/02/2017
FLU	ISHI	NG	MED	IUM		Wa	ater		(	ORIENTA	TION	Ver	tical				GROUND LEVEL + 1.02 mPD
Drilling		Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De	% -	(m) 10.00	Legend		Grade	Description
	,	sw									777 10	-9.18	10.20	-0			See sheet 1 of 8 Light grey (N 7), spotted white, silty fine to coarse SAND
- - - - - - - - - - - - - - - - - - -				60	100				11.80	79 bls   4,4,   3,4,5,7   1%=19	22 11	1.20 1.30 1.75 1.80 1.90	- - - - - - - - - - - - - - - - - - -	0	0 0		with some subangular to subrounded fine to medium quartz gravel. (ALLUVIUM)  Medium dense, dark grey (N 4), spotted light yellowish brown, clayey silty fine to coarse SAND. (ALLUVIUM)
13 	12	SW 2.25 PW							12.25	IV.	25 🛖 12	2.20 2.25 2.60 3.30	- - - - - - - - - - - - - - - - - - -			V	Extremely weak, reddish brown (2.5YR 5/4), dappled grey,
-  -				60	90				14.40 14.85	3,3, 4,5,6,8 N=23	27 4 14 28 14	4.30 4.40 4.50 4.80 4.85					streaked yellowish brown, completely decomposed METASILTSTONE. (Slightly clayey SILT)
16 				60	95				16.40	6,7,8,10 N=31	31 16	5.30 6.40 6.50 6.80 6.85	- 15.30 			V	Extremely weak, dark grey (N 4), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)
	/ <u>2017</u> /2017		0.00m at 18:00 0.00m at 08:00	60	95				18.40 18.85	3.5. 7,8,10,13 N=38	35 18	7.30 3.30 3.40 3.50 3.80 3.85					
- - - - - - - - 20				60	95		Standa	ard pe	potratio	on tost	38 19	9.30	19.30 - - - - -			V	Extremely weak, dark reddish grey (10R 4/1), streaked brown, dappled reddish brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)
Pi	isturbe ston s	ampl	e			ř I	In-situ Perme	vane abilit			LOGGED	S. C.	Law	- REI	//AR	K)	
<b>□</b> U7	76 und	distur	ample bed sam			1	acke	r Tes	eter test		DATE	09/02	/2017				
III Ma □ SF ▲ W	azier s PT line /ater s	samp er sar samp	mple				Piezor Standı Groun Vibrati	neter pipe dwate ing wi	•		CHECKED	Y. M. 1		- -			J201617e



HOLE NO.

ADH08

**CONTRACT NO.:** 

GE/2015/29

SHEET 3

OF 8

**PROJECT** 

	METH	OD				Ro	tary			CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
	MACH	INE	& NO.			VB	M43			E 820708	.76		N 83	33826	.39		DATE: 20/01/2017 to 09/02/2017
	FLUSH	IING	MED	IUM		Wa	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.02 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Ы	Depth of FI / Test	Tests	Samp No. Type		Reduced 18.98	20.00 (m)	Legend	Grade	Description
	1	PW		60	95				20.4	0   3,4,   5,6,8,10   N=29	39 40 41 42	20.30 20.40 20.50 20.80 20.85 21.30				<b>&gt;</b>	See sheet 2 of 8
				60	95				22.8		43 44 45 46	22.30 22.40 22.50 22.80 22.85 23.30	-21.38	- 22.40 		V	Extremely weak to very weak, dark grey (N 4), streaked brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT with some subangular fine to medium gravel)
				60	95				24.8		47 48 49 50	24.40 24.50 24.80 24.85 25.30	-23.38	- 24.40 		V	Extremely weak, dark grey (N 4), streaked and dappled brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)
22				60	95				26.8		52 53 54	26.50 26.80 26.85 27.30 28.30 28.40	-27.38			V	Extremely week dark grow (N.4.) etrophed and dampled
2:	23/01/2017 24/01/2017		0.00m at 18:00 0.00m at 08:00	60	95	<b>+</b> **	Standa	ard pe	28.8	15,21,29,31 15,21,29,31 N=96	56 57 58	28.50 28.80 28.85 29.30		- - - - - - - - - - - - - - - - - - -	REMA	RKS	Extremely weak, dark grey (N 4), streaked and dappled brown, completely decomposed graphitic METASILTSTONE. (Slightly sandy SILT)
	Piston Split s U76 u U100 Maziel	poon s ndistu undist r samp ner sa r samp	le sample rbed sam urbed san ble mple	mple			In-situ Perme Pressu Packel Acoust elevie Piezon Standp Ground	vane ability reme Test ic or wer s neter bipe dwate ng wi	shear to test eter test coptical urvey tip	est bling Well ometer	DATE CHECKE	_	S. C. L 09/02/2 Y. M. Le 10/02/2	2017 eung	KEMA	СЛУШ	



HOLE NO.

ADH08

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OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 4

**PROJECT** 

М	ETH	DD.				Ro	tary		7	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
M	ACHI	INE	& NO.				M43		<b>⊢</b> ,	E 820708.	76		N 83	3826.	.39		DATE: 20/01/2017 to 09/02/2017
FL	USH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.02 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samp No. Type		Reduced -28.98	00.00 (m)	Legend	Grade	Description
- - - - - - - - <b>31</b>		PW PW 30.40 HW							30.40 30.85	5,6, 17,23,26,30 N=96	59 60 61	30.30 30.40 30.50 30.80 30.85	-30.28	- - - - - - - - - - - - - - - - - - -		V	See sheet 3 of 8
322 				60	95				32.40 32.85	18,23,28,32 N=101	63 64 65	32.30 32.40 32.50 32.80 32.85	-32.28			V	Extremely weak, brown (7.5YR 5/4), mottled dark grey, completely decomposed graphitic METASILTSTONE. (Clayey slightly sandy SILT)
33 - - - - - - - - - - - - - - - - - -				60	95					8,11,  20,35,45/50m  (100/200mm)	66 67 68 69 69	34.30 34.30 34.40 34.75	-34.28	33.30	+		Firm to stiff, brown (7.5YR 5/4), mottled dark grey, clayey slightly sandy SILT. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -				60	95					10.13.  27.35,38/40m  (100/190mm)	70 71 72 mm 73	35.30 36.30 36.40 36.69 36.74		35.30			Firm to stiff, dark grey (N 4), dappled brown, clayey slightly sandy SILT with some angular to subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
37 	<del>//01/2017</del> //01/2017		0.00m at 18:00 0.00m at 08:00	60	95				38.40 38.73	12,14,  25,35,40/30m  (100/180mm)	74 77 77 78 78 78 78	38.30 38.40 38.68 38.73					
40				60	95		Stand	ard pe	enetratio	un toet				_ _ _ _	-  -  -  -  -  -  -  -  -	DVC	
	Distur Piston	samp	le			Ž į	In-situ Perme	vane ability	shear to test		LOGGE	) _	S. C. L	.aw	I VEININ		
		ndistu	sample rbed sam urbed sa				Packe Acoust elevie	r Test tic or wer s	optical urvey		DATE	_	09/02/2	017			
	Mazier SPT lir Water	ner sa	mple				Piezor Standı Groun	neter oipe dwate	tip	ling Well	CHECKE	D _	Y. M. Le				
_			tal Samp	le					packer t		DATE		10/02/2	U11			J201617e



HOLE NO.

ADH08

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

METH	OD			R	otary	,	7	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
МАСН	INE	& NO.		٧	BM4	3	<b>]</b> •	E 820708.	76	N 8	33826	.39		DATE: 20/01/2017 to 09/02/2017
FLUSI	HING	MED	IUM	٧	Vater			ORIENTA	ΓΙΟΝ	Vert	cal			GROUND LEVEL + 1.02 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	SCR%	ο	Œ	Depth of FI / Test	Tests	Samples No. Type De	%	(m) 40.00	Legend	Grade	Description
- - - - - - - - - - - -	HW							6,12, 34,40,26/10m (100/160mm)	m 81 44	0.30 0.40 -39.38 0.66 0.71	- - - 40.40 - - - - - - -	1 0 1 - 0		See sheet 4 of 8  Stiff, dark brown (7.5YR 3/4), mottled dark grey, spotted white, clayey slightly sandy SILT with occasional subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
- - - - - - - - - - - - - - - - - - -			60 9	3			42.40 42.73	10,12,  27,33,40/30m  (100/180mm)	83 44 44 44 44 44 44 44 44 44 44 44 44 44	2.30 2.40 2.68 2.73	-			
- - - - - - - - - - - - - - - - - - -			60 9				44.40 44.70	11,19,  47,53/75mm  (100/150mm)	87 44 44	4.30 4.40 4.65 4.70	-			
	<u>7</u> 7	0.00m at 18:00 0.00m	60 9				46.40 46.85	7,11,  15,23,30,32  N=100	91 44 44 92 44 44 92 44 44 44 44 44 44 44 44 44 44 44 44 44	6.30 6.40 6.50 6.80 6.85				
		at 08:00	60 9				48.40 48.85	7,8,9,11 N=35	95 44 44 96 48	7.30 8.30 8.40 8.50 8.80 8.85				
       			60 9		Otens				98 48	9.30	49.30 - - - - - -			Very stiff, dark brown (7.5YR 3/4), spotted and mottled white, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
Pistor	rbed sa n samp	le		¥ I		ı vane	enetratio e shear to y test		LOGGED	S. C. I	_aw	REMA	KKS	
U76 L		bed samurbed sam	•		Press Packe Acous televie Piezo	uremer Tes stic or ewer s meter	eter test t optical curvey		DATE CHECKED	09/02/2 Y. M. L				
SPT I	iner sa er samp	mple le	lo.		Vibra	ndwat ting w	ire piezo		DATE	10/02/2		•		
En Envir	orimen	ıaı samp	IE	<u> 1</u>	impre	SSION	packer t	હરા				<u> </u>		J201617e



HOLE NO.

ADH08

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

METHO	OD				Ro	tary			CO-ORDIN	ATES						TASK ORD	ER NO.	GE/20	15/29.8	
MACH	INE	& NO.			VB	M43		$\neg$	E 820708.7	76		N 83	3826.	.39		DATE :	20/01/2017	to	09/02/20	)17
FLUSH	IING	MED	IUM		Wa	ater		$\dagger$	ORIENTAT	ION		Verti	cal			GROUND L	EVEL	+ 1.02	1	mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samp No. Type		Reduced 68.98	© Depth (m)	Legend	Grade		Descripti	on		
26/01/2017	HW	0.00m at 18:00								99	50.25 50.35	-49.33	- - - 50.35	1-1-		See sheet 5 of 8	3			
26/01/2017 04/02/2017	7	0.00m at 08:00	60	100	89	88	>20	51.51		T210	ы		-		=	Strong, white, lost slightly decomposition of the slightly decompo	osed MARBLE.  to very widely some occasional very all rough undulation, occasional irocated, dipping and 70° to 80° to 80	spaced, lo y closely s iting and s on and ma 20° to 30	cally closely spaced, rou- mooth plan nganese ox °, 30° to 40°	y to gh ar, kide
			60	95	89	89	2.2	52.88		T210	51.75 DI		- - - - - - - - - - - - - - - - - - -			11011100.00011110	oo.oo	5514401116	ataroo.	
04/02/2017 06/02/2017	HW 53.35	0.00m at 18:00 0.00m at 08:00	60	100	100	100	>20	53.00		T210	53.17 DI					From 52.88m to	53.00m : Fracti	ured.		
			60	100	100	100	0.9			T210	_ <b>54.61</b>									
06/02/2017 07/02/2017	7	0.00m at 18:00 0.00m	60	108	64	64	11.8	56.37 56.71		T210	56.05 DI 56.71					From 56.15m to subvertical joints	<b>S</b> .		atures and	
		at 08:00	60	100	100	100				T210										
			60	108	98	100				T2IC										
							0.7			T210	59.67 OI		<u>-</u> -	開						
Piston Split s U76 u U100 Maziei	U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample					In-situ Perme Pressu Packer Acoust elevier Piezon Standr	vane ability r Test ic or o wer si neter oipe	shear y test eter test t optical urvey tip	st I	LOGGEI DATE CHECKI		S. C. L 09/02/2 /. M. Le	017	REMA	RKS					
	r samp	ole	le_		Ĭ.,	Vibrati	ng wi		npling Well zometer er test	DATE		10/02/2	017							



HOLE NO.

ADH08

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 8

**PROJECT** 

	/ETH	OD				Ro	tary		$\top$	CO-ORDIN	ATES					TASK ORDER NO. GE/2015/29.8
$\vdash$			& NO.				M43		_	E 820708.		N 83	33826	.39		DATE: 20/01/2017 to 09/02/2017
F	LUSF	IING	MED	IUM		Wa	ater			ORIENTAT	ION	Verti	cal			GROUND LEVEL + 1.02 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Е	Depth of FI / Test	Tests	Samples No. Type Dept	Reduced 158.98	00.00 (m)	Legend	Grade	Description
<u></u>				60	100	100	100				T2101	0	-		=	See sheet 6 of 8
- - - - - - 62			0.00m at	60	100	100	100				T2101		-			From 61.15m to 62.13m : With some microfractures, randomly oriented.
63 - - - - - -	07/02/2017 08/02/2017		at 18:00 0.00m at 08:00	60	100	100	100	11.4	62.89 63.24		T2101	1	- - - - - - - - - -			
65 -				60	100	100	100				T2101	2	-			
<u> </u>				60	100	100	100	0.7			T2101		-			
67 - - - - - - 68 - - - -				60	100	100	100				T2101		- - - - - - - - - - - - -			
<u>69</u>	08/02/2017 19/02/2017		0.00m at 18:00 0.00m	60	100	100	100	2.6	68.72 69.50 69.71		T2101		- - - - - - - - - - - - - - - - - - -			
70 •	Distur Piston	bed sa	at ample			ř		vane	shear	on test test	T2 IOI LOGGED	S. C. L	_aw	REMA	RKS	
	U76 u U100 Mazie	ndistu undist r samp					Pressu	r Test ic or ower sineter	eter test t optical urvey		DATE _	09/02/2 Y. M. Le				
E	Water	r samp		le		•	Groun Vibrati	dwate		oling Well ometer test	DATE _	10/02/2	2017			J201617e



HOLE NO.

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**CONTRACT NO.:** 

GE/2015/29

SHEET

8

OF 8

**PROJECT** 

М	ETH	OD				Ro	tary	,	T	CO-ORDIN	NATES					TASK ORD	ER NO.	GE/20	15/29.8	3
M	ACH	INE	& NO.	ı		VB	M43	3		E 820708	.76	N 83	33826	.39		DATE :	20/01/2017	to	09/02/2	2017
FL			MED			W	ater			ORIENTA	TION	Verti	cal			GROUND I	EVEL	+ 1.02		mPD
į	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De	Reduced Level	70.00	Legend	Grade		Descripti	on		
	0/02/2017	,	0.00m at 18:00	60	100	90	90	9.5	70.38		T2101	8n -69.78	- - - - - - - 70.80		II	See sheet 7 of	8			
71 71 72 73 73 73 74 75 75 75 77 78 78 78 79	U76 u U100 Maziei SPT lii Water	bed sa samp pools undidist r samp ner sa r samp	ample lesample sample sambet sam urbed sam urbed sam urbed sam urbed sam	mple			In-situ Perme Pressi Packe Acous televie Piezor Stand Groun Vibrati	vane eabilit ureme r Tes tic or ewer s meter pipe dwate ing wi	eter test t optical urvey tip	est ling Well meter	LOGGED DATE CHECKED DATE	S. C. L 09/02/2 Y. M. Le	2017 eung	REMA	RKS	End of Investig	ation Hole at 70.	30m.		J201617e



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

1

OF 9

**PROJECT** 

h	METH(	OD				Ro	tary		T	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
Г	MACH	INE (	& NO.			VB	M48	,	<b>-</b>   [	E 820715	.41	N	8337	82.	26		DATE: 19/01/2017 to 11/02/2017
П	LUSH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION	Ve	rtical				GROUND LEVEL + 1.19 mPD
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests	Samples No. Type De		19 0.	<b>E</b>	Legend	Grade	Description
	19/01/2017	'sw									A 0.	+1.0	99 0.	10			Concrete surface. Grey (N 5), spotted yellowish brown and black, silty fine to coarse SAND with some angular fine to medium gravel sized rock fragments. (FILL)
2				50	95				3.10 3.55	1,4, 4,3,2,3 N=12	3 3.3.3.4 3.3 3.3	-0.8 -0.8 -0.8 -0.0 10 20 -50 -55					Medium dense, light grey (N 7), spotted white, mottled brown, slightly clayey silty fine to coarse SAND. (ALLUVIUM)
<u>4</u> 				50	55					9011		.00 -2.8					Brown (7.5YR 5/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
<u> </u>	<u>19/01/2017</u>	SW	0.10m at		91				5.60 6.05	3,4,4,8 N=19	9 5. 5. 10 5. 11 6.	.55 60 .70 .00 .05					Medium dense, light brown (7.5YR 6/4), locally brown, spotted white, silty fine to coarse SAND. (ALLUVIUM)
8	19/01/2017 20/01/2017	PW	18:00 0.10m at 08:00	75	0				8.70	63 bis	13 8. 14 8.	.10 .10 .20	1 8.	70			
<u>9</u> - - - - - 10									9.15	6,6,6,8 N=26	16 8. 17 9.	.10 .15			o		Medium dense, light grey (N 7), locally light brown, spotted white, silty fine to coarse SAND with occasional subangular to subrounded fine gravel sized rock fragments. (ALLUVIUM)
	Piston Split s U76 u	poon s	le ample bed sam			ř	In-situ Perme Pressu Packe	vane ability ureme	ter test		LOGGED		C. Yip 2/2017		REMA 1. An in		ion pit was excavated to 0.50m.
	Mazie SPT lii	r samp ner sai r samp	mple le				Piezor Standı Groun Vibrati	neter pipe dwate ng wi	tip		CHECKED		Leun 2/2017	_			



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

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OF 9

**PROJECT** 

METHOD R	cotary CO-ORDI	NATES		TASK ORDER NO. GE/2015/29.8
MACHINE & NO. V	BM48 E 820715	5.41 N	N 833782.26	DATE: 19/01/2017 to 11/02/2017
FLUSHING MEDIUM V	Vater ORIENTA	TION V	ertical	GROUND LEVEL + 1.19 mPD
Progress Arter (m) Progress Arte	Tests	Samples No. Type Depth	Legend Grade	Description
75 <b>0</b>	11.80   5.9, 4.3.4.10   N=21	20	10.11 11.30 P	Light brown (7.5YR 6/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)  Firm, grey (N 5), spotted white, clayey sandy SILT. (ALLUVIUM)
13		24 • 12.80	-   -   -   -   -   -   -   -   -	Firm to stiff, brown (7.5YR 5/4), spotted yellowish brown, mottled grey, clayey sandy SILT with some angular to subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
	14.40 4,6,10,14 N=34	26 14.30 14.40 27 14.50 28 14.85		
16	16.40 7.8,10,13 N=38	30 16.30 16.40 31 16.50 16.80 32 17.30		Firm to stiff, dark brown (7.5YR 3/4), spotted and mottled yellowish brown, clayey sandy SILT with occasional
Tis	18.40   3,3, 2,5,5,7  N=19	34 18.30 18.40 35 18.50 36 18.85		subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
			<u> </u>	
Disturbed sample Piston sample	Standard penetration test In-situ vane shear test Permeability test	LOGGED T.	. C. Yip REMARKS	
Split spoon sample U76 undisturbed sample	Pressuremeter test Packer Test	DATE 13/	/02/2017	
U100 undisturbed sample  Mazier sample  SPT liner sample	Acoustic or optical televiewer survey Piezometer tip Standpipe Groundwater Sampling Well	CHECKED Y. N	M. Leung	
▲ Water sample  En Environmental Sample   1	Groundwater Sampling Well Vibrating wire piezometer Impression packer test	DATE 15/	/02/2017	
	pression packer test	1	<u> </u>	J201617e



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

3

OF 9

**PROJECT** 

METHO	DD				Ro	tary			CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MACHII	NE	& NO.			VB	M48	}		E 820715	.41		N 83	33782	.26		DATE: 19/01/2017 to 11/02/2017
FLUSH			IUM		W	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.19 mPD
	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type [		Reduced Level	(m) 20.00	Legend	Grade	Description
ı	PW PW 21.20							20.40	3,4, 5,6,7,13 N=31	38 39 40	20.30 20.40 20.50 20.80 20.85	-20.01	- - - - - - - - - - - - - - - - - - -	1		See sheet 2 of 9
,	HW		50	98	85	31	3.1	22.50 22.50	D  2,3,	T2101	22.50	-21.31			=	Moderately strong, white, mottled brown, spotted light grey slightly decomposed MARBLE with solution features. Joints are medium spaced, locally extremely closely spaced, rough planar and undulating, very narrow, iron an manganese oxide stained, dipping 0° to 10°, 40° to 50° an 60° to 70°.  From 21.20m to 21.50m: With solution voids up to dia. 300mm.
i			75	95				22.96	N=22	41 42 43	22.60 22.90 22.95 23.00 24.00 24.10		- - - - - - - - - - - - - - - - - - -			\\$30mm.  Medium dense, dark brown (7.5YR 3/4), mottled brown, light grey, spotted white, clayey fine to coarse SAND with occasional subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
i			75	95				24.50 24.9t	2.4, 8.8,6,8 N=30	45 46 47	24.60 24.90 24.95 25.00	-23.91				Firm, brown (7.5YR 5/4), mottled dark brownish grey and light grey, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
,			75	93				26.56 26.98	2,3, 4,4,6,8 N=22	49 50 51	26.60 26.90 26.95 27.00					
21/01/2017 23/01/2017	_	0.00m at 18:00 0.10m at 08:00					6.3	28.73	20,28, s)44,66/5mm (100/80mm)	53 54	28.00 28.10 28.50 28.68 28.73	-27.54			=	Strong, white, dappled light grey, slightly decomposed MARBLE.
			75	100		<b>94</b>	ard =	29.21	on toet	T2101			- - - - - - -		DIVO	Joints are very widely to widely spaced, rough planar, extremely narrow, iron oxide stained and occasional calcitr coated, dipping 0° to 10°, 10° to 20° and occasional 50° to 60°.  From 28.73m to 28.83m: Subvertical joints.  From 29.65m to 31.30m: Impure Marble.
Piston s Split sp U76 un U100 u Mazier	Disturbed sample Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample SPT liner sample Water sample					In-situ Perme Pressi Packe Acous televie Piezor Stand	vane eability urement r Test tic or wer s wer s meter pipe	eter test t optical urvey tip	est	LOGGED  DATE  CHECKED		T. C. Y 13/02/2 /. M. Le	2017	REMA	ккs	



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 9

**PROJECT** 

М	ETHO	)D			F	₹ot	ary		7	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
M	ACHI	INE	& NO.		٧	BN	<b>/</b> 148		۱ 🕇	E 820715.	41	N 83	3782.	.26		DATE: 19/01/2017 to 11/02/2017
FL	USH	IING	MED	IUM	1	Vа	ter		7	ORIENTA	ΓΙΟΝ	Verti	cal			GROUND LEVEL + 1.19 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	۰ ا د	% X ) 0	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dep	Bednced Level	0.00 (m)	Legend	Grade	Description
31 		HW		75 14				0.8			T2101 30.  T2101	17			II	See sheet 3 of 9
- 33 - - - - - - 23 - 24	<u>/01/2017</u> /01/2017		0.00m at 18:00 0.10m at	75 1	30 10	00	100				T2 IOI 33.		- - - - - - - - - -			
			08:00	75 1	10 11	00	100	7.1	34.05 34.47		T2101	58	- - - - - - -			
35 _ _ _ _ _ _ _ 36				75 14	10 11	00	79		35.25		T2101	14	- - - - - - - - - - -			
- - - - - - - - - - - - - - - - - - -				75 14	10 10	00	70	2.2	37.50		T2101		- - - - - - - - - - - - - - - - - - -			From 36.66m to 37.22m : Subvertical joints.
38 - - - - - - - -				75 14	9	9	97				T21O1	<b>11</b>	- - - - - - - - - - - - - - - - - - -			From 37.47m to 37.57m : Subvertical joints.
39 - - - - - -				75 11	10	00	100	0.7			T2101 39.		- - - - - - -			From 39.15m to 40.80m : Impure Marble.
40 10 10 10 10 10 10 10 10 10 1	Disturi Piston Split s	samp poon s	le sample	nlo		Ir P P	n-situ erme ressu acker	vane ability reme	eter test		LOGGED	T. C. Y		REMA	RKS	
	U100 undisturbed sample  Mazier sample  SPT liner sample						coust eleviev iezon tandp fround	ic or wer s neter oipe dwate	optical urvey tip	ling Well meter	CHECKED	Y. M. Le	eung			
En	Enviro	nmen	tal Samp	le	<u>ī</u>				packer t			. 0, 02, 2		·		J201617e



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

5

OF 9

**PROJECT** 

ME	ГНОІ	D				Ro	tary		7	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
MA	CHIN	IE (	& NO.			VB	M48		ا [	E 820715	41		N 83	3782	.26		DATE: 19/01/2017 to 11/02/2017
FLU	ISHII	NG	MED	IU۱	1	Wa	ater			ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.19 mPD
Drilling		Depth/Size	Water Level (m) Shift start / end	Flush Refurre %	TCR	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sam No. Typ	<b>ples</b> e Depth	Reduced 18.85-	(m) (m)	Legend	Grade	Description
 _ <u>24/01</u> 25/01		·W	0.00m at 18:00	/5	100	100	100		40.42		T210	OI 40.42		_	HHH	=	See sheet 4 of 9
								2.6	40.81					-			
41 - - - - - -				0	100	94	90	5.0			T210						From 41.63m to 45.50m : Impure Marble.
								>20	42.01 42.11		1	41.86			HHH		From 42.01m to 42.11m : Subvertical joints.
42 				0	89	93	93	1.9			T210	OI		- - - - - - - -			
									43.65			43.34		- - - -	HHHH		
<b>44</b>    				0	100	100	83	5.4	44.76		T210	⊃I 44.76		- - - - - - -	HHHHH		
- <b>45</b> - - - -				0	180	100	100				T210			- - - - - - - -			
								0.8				46.17		- - - -	HHH		
- - - - - - <b>47</b>				0	97	97	97				T210	OI		- - - - - - -	HHHHH		
25/01 26/01	/2017 /2017		0.10m at		///				47.20 47.20	4,6, 2,5,7,9 N=23	55	47.20 47.30	-46.01	47.20 - -			From 47.05m to 47.20m: With solution features. Firm, brown (7.5YR 5/4), clayey SILT. (CAVITY INFILL DEPOSIT)
26/01 06/02 	/ <u>2017</u> /2017		08:00 0.00m at 18:00 0.10m at 08:00	0	88	59	59	NI 3.3		5	56		-46.46 -47.21	- 47.65       48.40	HHHHE	=	Strong, white, slightly decomposed MARBLE. Joints are closely to medium spaced, locally very closely spaced, rough planar, extremely narrow, dipping 0° to 10° and 60° to 70°. From 47.65m to 47.80m: With slightly solution features.
- - - - - <b>49</b> -									48.40 48.40 48.85	N=3	57 •	48.85 48.90		- - - - - -	a		Firm, dark brown (7.5YR 3/4), sandy clayey SILT with some angular to subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) From 48.40m to 48.85m: No sample.
_ _ _ _ _ _ _ _ 	/2017		0.00m at 18:00	0	42						59	49.90 50.00	-48.81		- - -  - - -  - - -  - - -  - - -		
<b>₽</b>	isturbe iston sa	ampl	le			Ž i	In-situ Perme	vane ability			LOGGE	D _	T. C. Y	'ip	REMA	KKS	
U U M	100 un lazier sa PT line	listur idistu samp er sai	rbed sam urbed san ble mple				Packe Acoust elevie Piezor Stand Groun	r Test tic or wer s neter oipe dwate	optical urvey tip er Samp	ling Well	DATE	_	13/02/2 Y. M. Le				
	/ater sa nvironr		le tal Samp	le		<b>•</b> '			re piezo packer t		DATE		15/02/2	017			J201617e



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

6

OF 9

**PROJECT** 

N	IETHO	DD.				Ro	tary			CO-ORDIN	NATES						TASK ORDER NO. GE/2015/29.8
N	IACHI	NE	& NO.			VB	M48	,	┦ :	E 820715.	.41		N 83	3782.	.26		DATE: 19/01/2017 to 11/02/2017
F	LUSH	IING	MED	IUM		Wa	ater		١,	ORIENTA	TION		Verti	cal			GROUND LEVEL + 1.19 mPD
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sam <sub>l</sub>	<b>ples</b> e Depth	Reduced 18.84 Level	Depth (m)	Legend	Grade	Description
51 	77/02/2017	HW	0.10m at 08:00	0	8				51.10 51.58	7,4,4,4 N=19	61 62 •	51.00 51.10 51.55					Firm, dark brown (7.5YR 3/4), clayey SILT. (CAVITY INFILL DEPOSIT)  From 51.10m to 51.55m: No sample.
53 	0 0										64	53.00 53.10	-51.91	53.10			Firm, dark brown (7.5YR 3/4), sandy clayey SILT with some angular to subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)
<u>54</u> _ _ _ _ _ _ _ 55									54.20 54.69	8,9, 6,4,6,8 N=24	65 66 67	54.10 54.20 54.30 54.60 54.65	-53.74				From 54.10m to 54.20m : With occasional angular cobble sized slightly decomposed Marble.
	0 0.00m HW at 07/02/2017 55.33 18:00 08/02/2017 0.10m 60					88	88	1.1	55.38 56.33		T210						Strong, light grey, dappled white, slightly decomposed MARBLE.  Joints are very widely to widely spaced, locally closely to medium spaced, rough planar, extremely narrow and locally very narrow, clean and calcite coated, dipping 10° to 20°, 20° to 30°, 40° to 50° and occasional 60° to 70°.  From 54.93m to 55.05m: With solution features.  From 55.25m to 55.40m: With solution features.
Ė,	8/02/2017		0.10m at 08:00	60	96	96	0	12.5	56.57		T2 10			-			
57 - - - - - - - - 58	07/02/2017 56.33   18:00   08:00   08:00   60					100	100	4.6	57.44		T2IC	⊃I 58.02					
<u> 59</u>	60					100	100	4.0	59.10 59.35		T210	⊃I 59.46					
F											T210	ы		<u>-</u> -			
60 ● Ⅲ ☑ M	Disturi Piston Split sp	samp poon s	le	iple	<b>/</b> //	<u>VIII</u>	In-situ Perme Pressu Packe	vane abilit ureme r Tes	eter test		LOGGE	-	T. C. Y		REMA	RKS	
	U100 Mazier SPT lir Water	undistor r samp ner sa r samp	urbed sar ble mple	mple			Piezor Standı Groun Vibrati	neter pipe dwate ng wi			CHECKI	_	/. M. Le				J201617e



HOLE NO.

ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET 7 OF 9

**PROJECT** 

METH	OD				Ro	tary			RDINATES					TASK ORDI	ER NO.	GE/ZU	15/29.8	
MACH	INE	& NO.			VB	M48		E 820	715.41	N 83	33782	.26		DATE :	19/01/2017	to	11/02/201	17
FLUSH	HING	MED	IUM		W	ater		ORIE	NTATION	Verti	cal			GROUND L	EVEL	+ 1.19	n	nPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	F	Depth of FI / Test	ests Samples  No. Type Dept	Reduced h -58.81	00.00 (m)	Legend	Grade		Descriptio	on		
		7 Ona	60	100	100	100	1.0		T2101	55.61		HHHHHH	II	See sheet 6 of 9				
1			60	100	100	100	8.3 6 3.1	1.28	T210I		-							
3		0.00m at	60	100	100	100	1.3	2.36	T2101	5	-							
08/02/2017 09/02/2017 4	77	at 18:00 0.10m at 08:00	65	100	100	100	7.5 6	9.90 1.30 5.03 5.13	T2101		-							
ì			65	100	100	100	1.5		T2101		- - - - - - - - - - -							
09/02/2017 10/02/2017	7	0.00m at 12:00	65	100	100	100	9.1 6 1.4	7.13 7.24	T2101		- - - - - - -							
10/02/2017	,	0.10m at 08:00	65	100	100	100	7.7	7.94	T2101		-							
			65	100	100	100	0.9		T2101		-							
)					<u> </u>	Chr.: '		otrati t	T2101		_		Dita					
Pistor Split s U76 u U100 Mazie SPT li	undistu	ele sample rbed sam urbed san ble mple				In-situ Perme Pressu Packer Acoust televier Piezon Standr	vane : ability iremet Test ic or o wer su neter to ipe dwater	er test otical ovey	-	T. C. Y 13/02/2 Y. M. Le	2017	REMA	KKS					



HOLE NO.

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ADH09

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 9

**PROJECT** 

ME	THO	)D			R	otary	,		CO-ORDIN	NATES					TASK ORDER NO. GE/2015/29.8
MA	СНІ	NE	& NO.		VE	3M48	3		E 820715.	.41	N 83	3782	.26		DATE: 19/01/2017 to 11/02/2017
FLU	JSH	IING	MED	IUM	W	ater			ORIENTA	TION	Verti	cal			GROUND LEVEL + 1.19 mPD
Drilling	Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	C R	RQD%	Е	Depth of FI / Test	Tests	Samples No. Type Dep	Hr Reduced 18.89-	70.00 (m)	Legend	Grade	Description
1				65 10	0 100	100	2.9	70.39		T2IOI				II	See sheet 7 of 9  From 70.80m to 71.28m : Subvertical joints.
2				65 10	0 100	100	3.6	.71.09 .72.21		T2101	19				From 71.45m to 71.75m : Subvertical joints.
3	65 100 98 93						2.3	.72.80 .72.94		72.6 T2101	58				From 72.80m to 72.94m: Moderately strong, with closely spaced silt infilled joints up to 3mm thick, dipping 0° to 10° and 20° to 30°.  From 73.58m to 74.98m: Impure Marble.
11/02	<u>2/2017</u> 2/2017		at 18:00 0.10m at	65 10	0 100	100	3.8	73.80		73.5 T2101	95				Troni 73.30m to 74.30m : impure warbe.
ì						20.0	75.65 75.75		T2101 76.4					From 75.65m to 76.75m: Moderately strong, with closely spaced silt infilled joints up to 3mm thick, dipping 0° to 10° and 20° to 30°.	
•	65 100 100 100					1.5			T2101						
65 ;					0 100	100	9.1	.78.45 .78.56		T2101					
;	65 10 Disturbed sample					100	40.0	79.50 79.60		T2101		- - - - - - - - -			
	Piston Split sp J76 ur J100 u	samp poon s ndistu undist	le sample rbed sam urbed sai		<b>→&gt;</b>	In-situ Perme Press Packe Acous televie Piezo	u vane eabilit ureme er Tes tic or ewer s meter	e shear y test eter tes t optical survey		DATE CHECKED	T. C. Y 13/02/2 Y. M. Le	017	REMA	RKS	
☐ s	Mazier sample								ometer	DATE	15/02/2				J201617



HOLE NO.

ADH09

9

OF

**CONTRACT NO.:** 

GE/2015/29

SHEET 9

**PROJECT** 

М	ETH	OD				Ro	tary	,	T	CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8
М	ACH	INE	& NO.			VB	M48	}		E 820715.	41	N 83	3782.	26		DATE: 19/01/2017 to 11/02/2017
F			MED	IUM		Wa	ater			ORIENTA	TION	Verti	cal			GROUND LEVEL + 1.19 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dep	Reduced the Level	00.08 (m)	Legend	= Grade	Description
1	1/02/2017	,	18:00		///				80.23		T2[101 80.	23 -79.04	- - 80.23 -	***	"	See sheet 8 of 9  End of Investigation Hole at 80.23m.
	Distur		ample			Ň	In-situ	vane	enetratio sheart		LOGGED	T. C. Y	(ip	REMA	RKS	End of Investigation Hole at 80.23m.
	Split s	poon	ile sample rbed sam	ıple		Ī !	Perme Pressu Packe	ability ureme	y test eter test t		DATE	13/02/2				
	U100 Mazie	undist r sam	urbed sa ole				Piezor Stand <sub>l</sub>	neter pipe		ding Mol	CHECKED	Y. M. Le	eung			
▲	SPT liner sample  Water sample  Environmental Sample  Sroundwate  Vibrating with Impression								re piezo	meter	DATE	15/02/2	017			
En		Jilinen	ııaı samp	IE		T	inpres	SSION	packer t	ાઇડા						J201617e



HOLE NO.

ADH10

**CONTRACT NO.:** 

GE/2015/29

SHEET

1

OF 6

**PROJECT** 

М	ETHO	DD.				Ro	tary		$\top$	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8
М	ACHI	NE	& NO.			VB	M48	,	┦ :	E 820714	.65		N 83	3696.	.77		DATE : 19/12/2016 to 31/12/2016
FI	LUSH	IING	MED	IUM		Wa	ater		7	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.79 mPD
ı		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample:		Reduced 6.04 Level	© Depth © (m)	Legend	Grade	Description
19	9/12/2016	SW									M P INSPECTION PIT	0.50 0.60	+0.59	- 0.20 			Concrete surface.  Greyish brown (2.5Y 5/2), spotted white, mottled light grey, sitly fine to coarse SAND with much subangular fine to coarse gravel sized rock fragments. (FILL)
_ _ _ _ _ <b>2</b>												1.60	-1.21				From 1.50m to 1.60m : Firm, light grey (N 7), clayey sandy SILT with much subangular fine to coarse gravel.
- - - - - - - - - - - - - - - - - - -				90	95				3.10	5.4, 2.2,2,3 N=9	3 4	3.00 3.10 3.20 3.50	-2.71	- - - - - - - - - - - - - - - - - - -			Loose, yellowish brown (10YR 5/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
4 19 20	9/12/2016 0/12/2016	_	0.20m at 18:00	90	35				3.55	33 bls	6	3.55 4.00 5.00 5.10	-2.71 -2.76	- 3.55			From 3.50m to 3.55m : Firm, clayey slightly sandy SILT.
- - - - - - - - - - - - - - - - - - -		SW 6.05 PW							5.60 6.05	4,4,6,10 N=24	10   11	5.55 5.60 5.70 6.00 6.05	-4.81	- 5.60 			Medium dense, light grey (N 7), spotted white, silty fine to coarse SAND. (ALLUVIUM)
- - - - - - - - - - - - - - - - - - -				90	95				8.20			7.10 8.10 8.20	-6.31 -7.41	7.10 - - - - - - - - - - - - - - - - - - -			Firm, dark grey (N 3), spotted white, slightly clayey sandy SILT with occasional decayed wood pieces. (ALLUVIUM)
_ _ _ _ _ <b>9</b> _									8.65	6,3,3,7 N=19	16	8.30 8.60 8.65	-8.31	- - - - - - - - - 9.10			Medium dense, yellowish brown (10YR 5/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
_ _ _ _ _ _ _ _ _ _				90	92						17	9.10		- - - - - - -			Very dense, light yellowish brown (2.5Y 6/3), spotted white, silty fine to coarse SAND (ALLUVIUM)
•	Disturi Piston					ř		vane	enetratio shear to test		LOGGED	_	S. C. L	aw	REMA 1. An in		ion pit was excavated to 0.60m.
		ndistur	bed sam			Ī	Pressu Packe	ıreme r Test	ter test		DATE		03/01/2	017			
	Mazier	samp		mple			Piezon Standp	neter oipe	tip	line Mar	CHECKED	_	/. М. Le	ung			
•	SPT liner sample  Water sample  Water sample  The Environmental Sample  Groundwe  Vibrating  Impressio									meter	DATE		07/01/2	017			J201617e



HOLE NO.

ADH10

**CONTRACT NO.:** 

GE/2015/29

SHEET 2 OF 6

**PROJECT** 

М	ETHO	OD				Ro	tary		7	CO-ORDIN	NATES						TASK ORDER NO. GE/2015/29.8
M	ACHI	INE	& NO.	ı		VB	M48	3	<u> </u>	E 820714.	.65		N 83	3696.	.77		DATE: 19/12/2016 to 31/12/2016
FL	USH	IING	MED	IUM		Wa	ater		(	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Gasing Septh/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type D	Depth	Reduced P.2.1	(m) 10.00	Legend	Grade	Description
									10.20 10.65	14,17,20,25 N=76	19 20	10.10 10.20 10.30 10.60 10.65		-			See sheet 1 of 6
12 - - - - - - - - - - - - -	/12/2016 /12/2016		0.10m at 18:00	90	96				12 70	66 bis		12.10 12.20 12.65 12.70	-11.91				
21 13 	21/12/2016 0.70m at at 08:00								13.15	5,5,  9,7,12,16  N=44	24 25 26	12.80 13.10 13.15 13.70	-13.41	            			Dense, yellowish brown (10YR 5/4), mottled light grey, slightly clayey sandy subangular to subrounded fine to coarse GRAVEL sized rock fragments. (ALLUVIUM)
15 	90 95								15.30 15.75	3,3,3,4 N=13	28 29 30	15.20 15.30 15.40 15.70 15.75	-15.41		+-[		Firm, reddish brown (2.5YR 5/4), mottled yellowish brown, clayey slightly sandy SILT. (ALLUVIUM)
- - - - - - - - - - - - - - - - - - -	90 95								17.30 17.75	10.8.   5,9,8,17   N=39	32	17.20 17.30 17.40 17.70 17.75	-16.51				Brown (7.5YR 5/4), spotted white, sandy SILT. (ALLUVIUM)  Firm to stiff, brown (7.5YR 5/4), striped reddish brown, clayey SILT. (ALLUVIUM)
	Disturbed sample   Sta								19.30 19.75	3.3, 3.3,8,14 N=28	36	19.20 19.30 19.40 19.70 19.75	-17.41	- 18.20 	-1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		Firm to stiff, brown (7.5YR 5/4), mottled dark grey, reddish brown and light grey, clayey sandy SILT with some subangular fine gravel sized rock fragments. (KARST SURFACE DEPOSIT)
	Piston sample  Piston sample  Split spoon sample  U76 undisturbed sample  U100 undisturbed sample  Mazier sample  Mazier sample  Standpip										LOGGED  DATE  CHECKED		S. C. L 03/01/2 /. M. Le	017	REMA	RKS	
	▲ Water sample 🛔 Vibratii								er Samp re piezo packer t		DATE	_	07/01/2				J201617e



HOLE NO.

ADH10

6

**CONTRACT NO.:** 

GE/2015/29

SHEET 3 OF

**PROJECT** 

METI	HOD				Ro	tary			CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
MAC	HINE	& NO.			VB	M48	}	l	E 820714.	65		N 83	33696.	.77		DATE: 19/12/2016 to 31/12/2016
FLUS		MED	IUM		Wa	ater		<u> </u>	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.79 mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type I		Reduced Level	(m) 20.00	Legend	Grade	Description
	PW 116	0.10m at 18:00 0.10m at 08:00	90	95				21.30 21.76	5.5.   6.4.7.8   N=25	40 41 42 43 43 43	21.20 21.30 21.40 21.70 21.75	-21.41		1,, 1,		See sheet 2 of 6  Firm to stiff, dark brown (7.5YR 3/4), mottled brown, spotted
	90 91 24.20 HW								9,8,9, 9,9,10,12 N=40	44 45 46 47	23.20 23.30 23.40 23.70 23.75			<u> </u>		white, clayey sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
25             									9 6.6,   5.4.5.6   N=20	48 49 50	25.20 25.30 25.40 25.70 25.75	-24.51		-   -   -   -   -   -   -   -   -   -		Firm to stiff, dark greyish brown (10YR 4/2), spotted and mottled white, clayey sandy SILT with some subangular fine to medium gravel sized rock and marble fragments. (KARST SURFACE DEPOSIT)
			90	95				28.4 <b>6</b> 28.8 <b>6</b>	3,5,5,6 N=19	52 53 54 54 55 56	27.20 27.30 28.30 28.40 28.50 28.85 29.30			<u>- 1,1                               </u>		
Dist Pist Spli	0 undis tier sam liner sa ter sam	ole sample arbed sam turbed sa ple ample	mple			In-situ Perme Pressi Packe Acous elevie Piezor Stand Groun Vibrati	vane eabilit urement or Testic or twer someter pipe dwater ing w	·	est Jing Well ometer	LOGGED  DATE  CHECKED  DATE	_ _ <u>_                                 </u>	S. C. L 03/01/2 7. M. Le 07/01/2	2017 eung	REMA	RKS	



HOLE NO.

ADH10

**CONTRACT NO.:** 

GE/2015/29

SHEET

OF 6

**PROJECT** 

LUSH		& NO.  MED  Water  Level (m) Shift	%			M48		7	E 820714.	CE					
Drilling Progress	Casing Depth/Size	Water Level (m)	%		Wa					.00	N 83	3696.	.77		DATE: 19/12/2016 to 31/12/2016
		Level (m)	%			ater		(	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.79 mPD
<u>2/12/2016</u> 3/12/2016		start / end	Flush Returns	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samples No. Type Dept	Reduced Level	30.00	Legend	Grade	Description
		0.10m at 18:00 0.10m at 08:00						30.40 30.85	5,5,9,11 N=30	58 30.31 59 30.55 60 30.86					See sheet 3 of 6
90 95								32.40 32.85	5,5,  6,8,9,11  N=34	63 32.50 64 32.80		- - - - - - - - - - - - - - - - - - -			Stiff, brown (7.5YR 5/4), slightly sandy SILT with some subangular fine to medium gravel sized rock fragments. (KARST SURFACE DEPOSIT)
90 95								34.40 34.85	7,7, 8,15,20,25 N=68	66 34.3d 34.4d 67 34.50					Stiff, light yellowish brown (2.5Y 6/3), spotted white, slightly sandy SILT. (KARST SURFACE DEPOSIT)
90 44										70 36.20		-			Light yellowish brown (2.5Y 6/3), spotted white, slightly sandy subangular fine to coarse GRAVEL sized rock fragments. (KARST SURFACE DEPOSIT)  Greyish brown (2.5Y 5/2), mottled light grey, subangular COBBLE sized slightly decomposed Monzonite with some
3/12/2016	HW 36.92	0.10m at 18:00	60		100	100	26				-35.89	36.68	0.200	П	slightly silty angular medium to coarse gravel sized rock fragments. (KARST SURFACE DEPOSIT)
HW at 18:00 100 100 100 100 100 100 100 100 100							>20	37.17		T2101		- - - - - - - - - - - - -			Moderately strong to strong, white, dappled light grey, occasional spotted greenish grey, slightly decomposed MARBLE.  Joints are very widely to widely spaced, locally closely to medium spaced, occasional very closely spaced, rough planar and undulating, occasional smooth and slickensided planar, extremely narrow, occasional iron and manganese oxide stained, chlorite coated, dipping 10° to 20°, 20° to 30°, 40° to 50° and 50° to 60°.  From 36.68m to 36.70m: With solution feature.
		60	91	88	75	8.2			T2101		- - - - - - - - - - - - - - - - - - -			From 37.07m to 37.22m : With solution feature.  From 38.83m to 38.92m : With solution feature.  From 39.32m to 39.41m : With solution feature.	
										T2 IOI		_			From 39.77m to 39.87m : With solution feature.
Piston sample  Piston sample  Split spoon sample  U76 undisturbed sample  U100 undisturbed sample  Mazier sample  SPT liner sample  Water sample								shear to test eter test coptical urvey tip er Samplere piezo	est ling Well meter	LOGGED _ DATE _ CHECKED _ DATE _	03/01/2 Y. M. Le	017 ung	REMAI	RKS	
4	Distur Pistor Split s U100 Mazie SPT li Water	Disturbed sa Piston samp Split spoon s U76 undisturbed samp SPT liner sa Water samp Water samp	Disturbed sample Piston sample Split spoon sample UT6 undisturbed sam UT6 undisturbed sam UT6 undisturbed sam UT700 undisturbed sam UT700 undisturbed sam UT700 undisturbed sam Mazier sample SPT liner sample Water sample	Disturbed sample Piston sample U160 Split spoon sample U176 undisturbed sample Wazier sample Wazier sample Water sample Water sample	90 95  90	90 95  90 95  90 95  100  100  100  100  100  100  100  1	90 95   90 9	90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 98 90 90 98 90 90 90 90 90 90 90 90 90 90 90 90 90	90 98 32.86  90 98 38 32.86  90 98 38 32.86  34.86  90 98 38 79 1.7  20 37.07  20 37.07  10.0 37.27  60 85 79 1.7  37.85  6.3  38.17  1.6  38.81  1.6  38.81  1.6  38.81  1.6  38.81  1.6  38.81  1.6  38.81  1.6  38.81  2.0  39.30  2.0  39.30  2.0  39.80  Standard penetration in-situ vane shear to permeability test per	90 95   34.40   7,7,   3,15,20,25   34.85   79   1.7   37.85   6.3   38.81   88   75   8.2   39.80   2.0   39.80   3.80	90 95   95   95   95   95   95   95   95	90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 90 98 98 98 98 98 98 98 98 98 98 98 98 98	90 95 96 96 95 96 96 95 96 96 96 96 97 97 97 97 97 97 97 97 97 97 97 97 97	90 95   32.40	90 95  90



HOLE NO.

ADH10

6

**CONTRACT NO.:** 

GE/2015/29

SHEET 5 OF

**PROJECT** 

Г	МЕТНО	OD				Ro	tary			CO-ORDIN	ATES	3					TASK ORDER NO. GE/2015/29.8				
Г	MACH	INE	& NO.			VB	M48	,		E 820714.0	65		N 83	33696	.77		DATE: 19/12/2016 to 31/12/2016				
	FLUSH	IING	MED	IUM		Wa	ater			ORIENTAT	ION		Verti	cal			GROUND LEVEL + 0.79 mPI				
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests		<b>nples</b> pe Depth	Reduced -39.21	0.00 (m)	Legend	Grade	Description				
41	24/12/2016 28/12/2016		0.10m at 18:00 0.10m at	60	96	78	61	13.2	40.71		T2	41.10		- - - - - - - - - -		=	From 39.96m to 40.02m : With solution feature.  From 40.31m to 41.08m : With solution feature.				
42 -			08:00	60	93	79	74				T2	42.34		- - - - - - - - -			From 41.61m to 41.88m : With solution feature. From 42.34m to 43.03m : Impure Marble.				
43	60 100 98 98										Т2	101		- - - - - - - - - -							
44	28/12/2016 29/12/2016	6	0.00m at 18:00 0.10m at 08:00	60	97	94	89				T2	101 44.44		- - - - - - - -							
45 _ _ _ _ 46				60	100	100	99	1.2			Т2	45.89		- - - - - - - -							
				60	100	100	100				Т2	101		- - - - - - - - - -							
48	29/12/2016 30/12/2016		Dry at 18:00	60	100	100	100				T2	47.30 IOI 48.06		- - - - - -							
49		at   //									T2	101 48.79		- - - - - - -							
50		60 100 100 100 Disturbed sample Standard In-situ val									Т2	101		- - - - - - - -							
	Piston Split s U76 u U100	poon : ndistu undist	ole sample rbed sam urbed sa				In-situ Perme Pressu Packe Acoust elevie Piezor	vane abilit ureme r Tes tic or wer s neter	e shear t y test eter test t optical urvey	test	LOGG DATE CHECK	_	S. C. L 03/01/2 /. M. Le	2017	REMA	RKS					
	SPT li	ner sa r samp	imple ole	le		<u> </u>	Vibrati	dwate	er Samp re piezo packer	oling Well ometer	DATE	_	07/01/2				J2016				



HOLE NO.

ADH10

**CONTRACT NO.:** 

GE/2015/29

SHEET

6

OF 6

**PROJECT** 

Г	METH	OD				Ro	tary		7	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
Г	MACH	INE	& NO.			VB	M48		ا [	E 820714.	65		N 83	33696	.77		DATE: 19/12/2016 to 31/12/2016
	FLUSH	HING	MED	IUM	l	W	ater			ORIENTA	ΓΙΟΝ		Verti	cal			GROUND LEVEL + 0.79 mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests		<b>iples</b> be Depth	Reduced Level	00.00 <b>Depth</b>	Legend	Grade	Description
51 				60	100	100	100	3.8	51.51		T21	50.27		- - - - - - - - - - - - - - - - - - -		=	See sheet 5 of 6
52 - - - - 53				60	100	100	100	0.5			T21	OI 53.21		-			
54 	30/12/2016		Dry at 18:00	60	100	85	79	>20	53.33 53.57 53.67		T21	OI 54.64		- - - - - - - - - - - - - - - - - - -			From 53.33m to 53.37m : With solution feature.
55 - - - - 56	31/12/2010	Dry at 18:00 0.10m at 08:00 60 100 100 100									T21	OI 56.09		-			From 56.00m to 57.29m : Impure Marble.
57	60 100 100 100								57.29		T21	57.29	-56.50	57.29			End of Investigation Hole at 57.29m.
588																	
	Distur Piston Split s	samp			1	Ĭ	In-situ Perme Pressu	vane abilit ireme	eter test	test	LOGGE	ED _	S. C. L		REMA	RKS	
	U76 u	indistu undist r samp	rbed sam urbed sa ole				Packer Acoust televie Piezon Stand	r Tes ic or wer s neter oipe	t optical urvey tip	oling Well	DATE	 (ED	03/01/2 Y. M. Le				
	Water En Enviro			le		<b>•</b>	Vibrati	ng wi	re piezo packer t	ometer	DATE	_	07/01/2	2017			J20161



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET

1

OF 9

**PROJECT** 

ſ	METHO	OD				Ro	tary		7	CO-ORDIN	IATES						TASK ORDER NO. GE/2015/29.8
	MACH	NE	& NO.			VB	M32	!	l	E 820730.	06		N 83	34148	.44		DATE: 05/12/2016 to 22/12/2016
	FLUSH	IING	MED	IUM	Air F	oai	n / V	Vat	er (	ORIENTAT	TION		Verti	cal			GROUND LEVEL + 0.67 mPE
		Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samp No. Type			© Depth © (m)	Legend	Grade	Description
2	05/12/2016 05/12/2016 06/12/2016		0.25m at 18:00 0.65m at 08:00		0						ILI MOLICIAGNI — — — — — — — — — — — — — — — — — — —	0.50 1.00 1.20 2.00	+0.57	0.10			Concrete surface. Soft, dark grey (N 3), locally brown, spotted white, clayey sandy SILT with some angular to subangular fine to coarse gravel sized rock fragments and shell fragments. (FILL) Soft, dark grey (N 3), spotted white, clayey sandy SILT with some shell fragments. (FILL)  Dark grey (N 3), spotted white, silty fine to coarse SAND with occasional shell fragments. (FILL)  Grey (N 5), spotted white, silty fine to coarse SAND. (ALLUVIUM)
5	06/12/2016 07/12/2016	0.45m at 18:00 0.7/12/2016 18:00 0.50m at 08:00								3,5, 5,4,4,6 N=19	3 4 5	4.10 4.20 4.30 4.60 4.65 5.10	-3.53	4.20			Medium dense, brown (7.5YR 5/4), spotted white, silty fine to coarse SAND. (ALLUVIUM)
7		0								3.7. 7.6.7.8 N=28	8 9 10	7.20 7.30 7.40 7.75 8.20	-5.53	6.20			Medium dense, grey (N 5), locally dark grey, spotted white, slightly clayey silty fine to coarse SAND. (ALLUVIUM)
9	07/12/2016 08/12/2016		0.60m at 18:00 1.40m at 08:00		40						11 12	9.20 9.30		- - - - - - - - -			From 9.30m to 10.40m : Dark grey (N 3).
	Disturi Piston Split s U76 ui U100 u Maziei	samp poon s ndistui undisti r samp	le sample rbed sam urbed sa ble				In-situ Perme Pressu Packe Acoust televie Piezor Stand	vane abilit ureme r Tes tic or wer s neter pipe	eter test t optical curvey tip	est	LOGGED DATE CHECKE	_	S. C. L 07/01/2 Y. M. Le	017	2. Wate	nspect er was	tion pit was excavated to 1.20m. used as flushing medium from 21.50m to 81.24m as instructed b e Manager.
		SPT liner sample  Water sample  Environmental Sample  Groundw  Vibrating  Impression								meter	DATE		09/01/2	017			J2016



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET 2

OF 9

**PROJECT** 

Г	ИЕТНО	OD			R	otar	у		С	O-ORDIN	NATE	S						TASK ORDER NO.	GE/2015/	/29.8
	ИАСНІ	NE	& NO.	ı	٧	вмз	2		Ε	820730	.06			N 83	4148	.44		DATE : 05/12/2016	6 to 22	/12/2016
	LUSH	IING	MED	IUMAi	r Fo	am /	Wa	iter	0	RIENTA	TION			Verti	cal			GROUND LEVEL	+ 0.67	mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 0		Depth of	FI / Test	Tests		<b>Sampl</b> Type	<b>es</b> Depth	Reduced 88.88 Level	0.00 (m)	Legend	Grade	Descript	ion	
12 12 13 14	08/42/20146	sw	1.60m at 18:100	311	0				10.85	3,8, 10,12,12,14 N=48	13 14 15 16 17 18		10.30 10.40 10.50 10.85 11.30 12.30 12.40 13.40 13.50	1373				See sheet 1 of 9		
15 15 16	<u>08/12/2016</u>	SW 15.50 PW	18:00 1.10m at 08:00	3	5				15.50	5,6, 3,10,10,11 N=37	22 23 24		15.40 15.50 15.60 15.90	<u>-13.73</u>	14.40 		V	Extremely weak, brown (7.5YR completely decomposed META SAND)		
17 17 18 19 19				***	000					3,4, 5,8,10,11 N=34	26 27 28 29 30		17.40 17.50 18.50 18.60 18.70	-18.83	19.50		V	Extremely weak, brown (7.5YR completely decomposed META SILT with some subangular fine	SILTSTONE. (	(Slightly sandy
											31		19.50		-			Brown (7.5YR 5/4), dappled light silty sandy subangular to subro GRAVEL sized rock fragments.	unded fine to c	coarse
20 ■					Ť	In-si	tu va	penetr ne she	ar tes		LOG	GED		S. C. L	aw	REMA	RKS	5		
	Split s	poon s	sample		Ŧ	Pres		ility tes meter t			DATI	E	_	07/01/2	017					
	U100 i	undist	rbed sam urbed sa ole		<u>†</u>	Acou telev Piez	istic o iewei omet	or optic r surve er tip	al y		CHE		-	r. M. Le						
	SPT lir	ner sa	mple		≙	Grou				g Well eter	DATI		_	09/01/2		•				
	<b>n</b> Enviro			le	<u>ī</u>			on pack			DAII		_	03/01/2	V1/					J201617e



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET 3 OF 9

**PROJECT** 

METHOD Rotary						7	CO-ORDINATES						TASK ORDER NO. GE/2015/29.8						
MACHINE	& NO.			VBI	M32	2	ı	E 820730	.06		N 83	4148.	.44		DATE: 05/12/2016 to 22/12/2016				
FLUSHING		UM4	ir F	oan	n / V	Vat	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.67 mPD				
Drilling Progress Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Sample No. Type		Reduced 19.33 Level	(m) 20.00	Legend	Grade	Description				
PW -	0.95m at 18:00		108				20.60 21.05	12,9, 6,6,11,13 N=36	32 33 34	20.50 20.60 20.70 21.00 21.05		-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		DEPOSIT) See sheet 2 of 9				
10/12/2016 	1.05m at 08:00 1.30m at	50	0						35	21.50		- - - - - - - - - -							
10/12/2016 13/12/2016 - 23 - -	18:00 0.35m at 08:00	60	74	20	0	>20 NR	23.12 23.30		T2101	22.60	-21.93 -22.45 -22.63	22.60 - - - 23.12 - 23.30	HHHI	=	Moderately strong, light brownish grey, striped light brown, slightly decomposed impure MARBLE.  Joints are very closely to closely spaced, locally medium spaced, occasional extremely closely spaced, extremely narrow, iron and manganese oxide stained, chlorite coated, dipping 0° to 10°, 10° to 20°, 30° to 40° and 40° to 50°.  From 22.60m to 23.12m: With solution feature.  From 22.88m to 22.96m: With kaolin infilled up to 55mm				
	0.50m at 18:00	60	98	64	40	5.9 >20 5.0 >20	23.47 23.90 24.10 24.22		HMLC	24.22	-23.55		HHHHH	=	dipping 0° to 10°, 10° to 20°, 30° to 40° and 40° to 50°. From 22.60m to 23.12m: With solution feature. From 22.88m to 22.96m: With kaolin infilled up to 55mm thick, dipping 40° to 50°. From 23.12m to 23.30m: No recovery, inferred to be Cavity. From 23.30m to 24.22m: With solution feature.				
14/12/2016       <b>25</b>	0.25m at 08:00	60	0					24.22					0000	From 23.30m to 24.22m: With solution feature.  No recovery, inferred to be Cavity.  Brown (7.5YR 5/4), locally light greenish grey, spotted light brown, clayey sitty subangular fine to medium GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)					
		60	67					36 25.50 24.93 25.60 0 0 0 Brown (7.5YR 5/4), dappled light brownish grey angular fine to coarse GRAVEL sized rock frag (CAVITY INFILL DEPOSIT)											
		50 1	100	100	100	0.8	26.92	7,8,  100/70mm (100/70mm)	72101	26.87 26.92	-26.25	26.92			Firm, light greenish grey (10GY 7/1), sandy SILT with occasional subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT) Moderately strong to strong, grey (N 5), dappled striped white, slightly decomposed impure MARBLE. Joints are very widely spaced, locally extremely closely spaced, rough undulating, extremely narrow, iron and manganese oxide stained, dipping 10° to 20° and 20° to 30°.				
	0.30m at 18:00 0.20m	50	91	86	86	NA NR	29.30 29.40 29.50		T2101	28.43	-28.63 -28.73 -28.83	29.30			From 29.30m to 29.40m: Very stiff, brown (7.5YR 5/4), spotted white, clayey sandy SILT. (CAVITY INFILL DEPOSIT) From 29.40m to 29.50m: No recovery, inferred to be Cavity.				
30	at 08:00	60		L s	Standa	ard pe	enetratio	on test				- - - -	-	RKS	Firm, brown (7.5YR 5/4), spotted white, clayey slightly sandy SILT with occasional subangular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)				
Disturbed sa Piston samp Split spoon s U76 undistu U100 undist Mazier samp SPT liner sa	ele sample rbed sam urbed sar ble mple		; ; ;		n-situ Perme Pressu Packel Acoust elevie Piezon Standp Groun	vane eability urement r Test tic or wer s meter pipe dwate	e shear t y test eter test t optical urvey tip	est ling Well	DATE CHECKET	  D _ <u>Y</u>	S. C. L 07/01/2 '. M. Le	017 eung	S CONTROL OF THE CONT						
▲ Water samp En Environmen		le					re piezo packer t		DATE		09/01/2	017			J201617e				



HOLE NO.

ADH11

CONTRACT NO.:

GE/2015/29

SHEET

OF 9

**PROJECT** 

METHOD			Ro	tary		(	CO-ORDII	NATES						TASK ORDER NO. GE/2015/29.8			
MACHINE & I	NO.		VB	M32	2	ا [	E 820730	.06		N 83	4148.	.44		DATE: 05/12/2016 to 22/12/2016			
FLUSHING M	IEDIUN	⁄Air F	oaı	m / V	Vate	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.67 mPD			
Drilling Progress Casing bepth/Siz	dater evel (m) % start end	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type De		Reduced Section Reserved	Depth (m)	Legend	Grade	Description			
31	50 60 50	100	83	71 0	3.2 >20 5.7	.32.85	7,9,9,15 N=40	42	10.40 10.50 10.50 12.40 12.250 13.300 14.00 14.10 14.50 14.55	-29.83 -29.83 -31.23 -31.33 -31.83	30.00	6 1 1 1 1 1 1 1	11	Moderately strong, light grey (N 7), dappled greyish brown, slightly decomposed impure MARBLE. Joints are medium to widely spaced, locally closely spaced, rough planar and slickensided planar, extremely narrow, iron and manganese oxide stained, dipping 20° to 30°, 40° to 50° and 50° to 60°.  From 31.90m to 32.00m: Stiff, brown (7.5YR 5/4), locally dark brown, spotted white, silty sandy subangular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)  Very stiff, dark brown (7.5YR 3/4), spotted white, clayey slightly sandy SILT. (CAVITY INFILL DEPOSIT)  Moderately strong to strong, grey (N 5), dappled white, slightly decomposed impure MARBLE. Joints are medium spaced, locally extremely closely spaced, rough planar and rough stepped, extremely narrow occasional iron and manganese oxide stained, dipping 10° to 20°, 40° to 50° and 50° to 60°.  Very stiff, dark brown (7.5YR 3/4), spotted black, clayey slightly sandy SILT. (CAVITY INFILL DEPOSIT)  Firm, brown (7.5YR 5/4), dappled dark grey, clayey slightly sandy SILT. (CAVITY INFILL DEPOSIT)  Grey (N 5), dappled light grey, subangular COBBLE sized moderately decomposed and slightly decomposed impure Marble with much angular medium to coarse gravel sized rock fragments. (CAVITY INFILL DEPOSIT)			
37 15/12/2016 11 0 00 0	50 60 35m at 8:00 20m at 8:00 50	34				38.266	16,26,  30,41,29/50m  (100/200mm)	50 T2IOI 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	15.500 15	34.93 35.33 38.43	35.00 35.60 36.00 36.00 - - - - - - - - - - - - -			sandy SILT. (CAVITY INFILL DEPOSIT)  Grey (N 5), dappled light grey, subangular COBBLE sized moderately decomposed and slightly decomposed impure Marble with much angular medium to coarse gravel sized			
Disturbed samp Piston sample Split spoon sam U76 undisturbed U100 undisturbed Mazier sample	nple d sample ed sample			In-situ Perme Pressu Packe	vane eability ureme r Test tic or wer s meter	eter test t optical urvey		LOGGED  DATE  CHECKED		S. C. L 07/01/2 /. M. Le	017	REMA	RKS	Eight groy (117), adaption during groy, only of our with			
SPT liner sample  Water sample  En Environmental S			Ů ♣	Groun Vibrati	dwate	er Samp re piezo packer t		DATE		09/01/2	017			J201617e			



HOLE NO.

ADH11

9

**CONTRACT NO.:** 

GE/2015/29

SHEET 5 OF

**PROJECT** 

М	METHOD Rotary  MACHINE & NO. VBM32						,	7	CO-ORDINATES						TASK ORDER NO. GE/2015/29.8	
M	ACHI	NE	& NO.			VB	M32		<b>-</b>	E 820730	.06	N 83	34148	.44		DATE : 05/12/2016 to 22/12/2016
FL	.USH	IING	MED	IUM	Air F	oar	n / V	Vate	er	ORIENTA	TION	Verti	cal			GROUND LEVEL + 0.67 mPD
	Progress	Casing Depth/Size	Water Level (m) Shift start	Flush Returns %	TCR%	SCR%	RQD%	Н	Depth of FI / Test	Tests	Samples No. Type Depti	Reduced Level	Depth (m)	Legend	Grade	Description
411	<u>/12/2016</u>	HW	0.25m at 18:00 0.25m at 08:00	50 50 50 50	25 0 0				42.0 <sup>1</sup> 42.4 <sup>1</sup> 45.5 <sup>1</sup>	12,16,17,14 N=59	61 41.90 62 42.90 63 44.00 64 45.00 65 45.50 66 45.00 67 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10 47.10	40.23	45.10			much angular fine to medium gravel sized rock fragments.  (CAVITY INFILL DEPOSIT)  Firm, dark brown, dappled dark grey, clayey sandy SILT with much angular fine to medium gravel sized rock fragments. (CAVITY INFILL DEPOSIT)  Dark grey (N 3), dappled brownish grey, slightly sandy angular to subangular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)  Very dense, grey (N 5), dappled dark grey, clayey sandy angular fine to coarse GRAVEL sized rock fragments. (CAVITY INFILL DEPOSIT)
					180						T2101  48.60				=	Strong, grey, dappled white, slightly decomposed impure MARBLE. Joints are very widely spaced, locally moderately weak rough planar and occasional undulating, extremely narrow, chlorite and calcite coated, occasional iron and manganese oxide stained, dipping 10° to 20°, 20° to 30°, 40° to 50° and 60° to 70°.  From 48.58m to 48.64m: With solution feature.
	U100 Mazier	samp poon s ndistui undisti r samp	le sample rbed sam urbed san ble				In-situ Perme Pressu Packe	vane ability ureme r Test tic or o wer si meter	eter test coptical urvey	test	LOGGED	S. C. L 07/01/2 Y. M. Le	2017	REMA	RKS	
SPT liner sample  ▲ Water sample  En Environmental Sample  Groundwater S  Vibrating wire p  Impression page						re piezo	piezometer DATE 09/01/2017						J201617e			



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET

6

OF 9

**PROJECT** 

N	IETHO	OD				Ro	tary	,		CO-ORDIN	IATES					TASK ORDER NO. GE/2015/29.8			
N	IACHI	INE	& NO.				M32		┨ ,	E 820730.	06	N 83	34148	.44		DATE: 05/12/2016 to 22/12/2016			
F	LUSH	IING	MED	IUM	Air I	oar	n / V	Vate	er (	ORIENTAT	TION	Verti	cal			GROUND LEVEL + 0.67 mPD			
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	ш	Depth of FI / Test	Tests	Samples No. Type Dep	Reduced -49.33	00.00 (m)	Legend	Grade	Description			
<u>-</u> - - - - - - - - - - - - - - - - - -				50	100	100	100	0.7			T2101 50.	77	- - - - - - - - - -		=	See sheet 5 of 9			
52 - 1	<u>7/12/2016</u> 9/12/2016		0.30m at 18:00 0.10m at 08:00	50	100	100	100				T2101	13	- - - - - - - - -			From 51.30m to 53.50m : With quartz veins			
53 			00.00	50	108	100	100				T2101	62	- - - - - - - - -						
<u>54</u> 				50	100	100	100		53.89 54.12 54.65		T2101		- - - - - - - - - - -						
<u>-</u> - - - - - - - - - - - - - - - - - -				50	100	100	100				T2101	10	- - - - - - - - - - - - - - - - - - -			From 55.70m to 56.56m : With quartz veins			
57 - - - - - - - -				50	100	100	100				T2101	56	- - - - - - - - - - - - - - - - - - -						
57 				50	100	100	100				T2101								
60	Distur								enetration		T2101 LOGGED	S. C. L	- - - - - - -	REMA	RKS				
	Piston sample  Permeability te  Split spoon sample  T Pressuremeter				y test eter test		DATE 07/01/2017												
	U100 undisturbed sample  Mazier sample  Mazier sample  Standpipe					tip	Ning Mall	CHECKED Y. M. Leung											
							re piezo	zometer <b>DATE</b> 09/01/2017						J201617e					



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET

7

OF 9

**PROJECT** 

METH	METHOD Rotary					<b>—</b> (	CO-ORDINATES						TASK ORDER NO.	GE/2015	5/29.8		
MACH	INE	& NO.	ı		VB	M32		<b>-</b>	E 820730.	06	N 83	34148	.44		DATE: 05/12/201	6 to 22	2/12/2016
FLUSH	HING	MED	IUM	Air I	Foar	n / V	Vate	er (	ORIENTA	ΓΙΟΝ	Verti	cal			GROUND LEVEL	+ 0.67	mPD
Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR%	SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dep	th -59.33	00.00 (m)	Legend	Grade	Descrip	tion	
61	aria	start	50 50 50 50	100	100 100 100	100 100 100	0.8			T2101  T2101  T2101  G2.4  T2101  G6.4  T2101  G6.7  T2101  G6.7	11 -59.33 11 -59.33			9	See sheet 6 of 9		
- 20/12/2010 - 21/12/2010 		0.15m at 08:00				Stand	and a	enetratio	on tast	T2101		- - - -		DIVO			
Pistor	rbed samp spoon s	le			Ĭ	In-situ Perme	vane ability	e shear t y test	test	LOGGED	S. C. L	.aw	REMA	СЛЯ			
U76 L U100 Mazie	U100 undisturbed sample  Mazier sample  Mazier sample  SEATOPINE Groundwater Sa			t optical urvey tip er Samp	oling Well	CHECKED _	07/01/2 Y. M. Le	eung									
En Envir			le					re piezo packer t		DATE	09/01/2	2017					J201617e



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET 8 OF 9

**PROJECT** 

h	METHOD Rotary CO-ORDINATES TASK ORDER NO. GE/2015/29.8							15/29.8											
T	MACHI	INE	& NO.			VB	M32	2	┤ 	E 820730.	06	N 83	34148	.44		DATE: 0	)5/12/2016	to	22/12/2016
h	LUSH	IING	MED	IUM	Air F	oar	n / V	Vat	er	ORIENTA	TION	Verti	cal			GROUND LE	VEL	+ 0.67	mPD
	Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %		SCR%	RQD%	Œ	Depth of FI / Test	Tests	Samples No. Type Dep	Reduced Level	70.00	Legend	Grade		Descriptio	on	
73 74 75 77 78	21/12/2016		start	50 50 50 50	100 100 100 100 100 100 100 100 100 100	94 97 100 100	90 97 100 100	12.8	77.80		T2101  T2101	-69.33 73 81 96				See sheet 7 of 9  From 72.48m to 73 thick, dipping 40° to		ated layer	up to 530mm
	Piston sample Split spoon sample U76 undisturbed sample U100 undisturbed sample Mazier sample  Dazzier sample  V In-situ vane si Permeability te Pressuremete Packer Test Acoustic or op televiewer sun Piezometer tip Standpipe				e shear t sy test eter test t optical survey	est	LOGGED  DATE  CHECKED	S. C. L 07/01/2 Y. M. Le	2017	REMA	RKS								
	SPT liner sample 🔓 Groundwate						dwate	ire piezo	ng Well DATE 09/01/20			2017						J201617e	



HOLE NO.

ADH11

**CONTRACT NO.:** 

GE/2015/29

SHEET

9

OF 9

**PROJECT** 

221020218	М	METHOD Rotary						7	CO-ORDINATES						TASK ORDER NO. GE/2015/29.8			
Disturbed sample state of the s	М	ACH	INE	& NO.			VB	M32	2	۱ 🗆	E 820730	.06		N 83	34148	.44		DATE: 05/12/2016 to 22/12/2016
Distincted campile Participation  Distincted campile Service Participation Participati	FI	USF	IING	MED	IUN	<b>L</b> ir I	Foai	m / V	Vate	er (	ORIENTA	TION		Verti	cal			GROUND LEVEL + 0.67 mPD
Disturbed comple  Palify sample  Disturbed comple  Distur		Drilling Progress	Casing Depth/Size	(m) Shift start	Flush Returns %	TCR%	ပ	RQD%	Œ	Depth of FI / Test	Tests			Reduced Level		Legend		
Distance sample  Plate across considered to the construction field in relative sample  Uniform desirated sample  Uniform d	<u>-</u> - - - - <u>8</u> 1	2/12/2016		0.12m at 18:00	50	100	100	100	-	81 24		+	80.34 OI	-80.57	- - - - - - - - - - - - - - - - - - -		II	See sheet 8 of 9
Mazier sample SPT liner sample Water sample Without sample Vibrating wire piezometer  DATE  Piezometer tip CHECKED Y. M. Leung V. M. Leung DATE  O9/01/2017		Distur Piston Split s U76 u	bed samp	at 18:00			V I I I I I I I I	In-situ Perme Pressu	vane eability ureme	enetratio s hear t	est		D _	S. C. L	aw	REMA	RKS	
		Mazier sample				tip er Samp re piezo	meter		_									

## APPENDIX D

DRILLHOLE COREBOX PHOTOGRAPHS





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

CONT'D

折創建集團成員 Member of NWS Holdings

Contract	No.: GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 4

Depth: \_\_\_\_\_0 . 0 0 \_\_\_\_ m to \_\_\_\_13 . 3 5 \_\_\_\_ m

Date of Photograph : 22-02-2017



0.00m

(1) (20) (20)





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_ of \_\_\_\_14

Depth: 13.35 m to (23.62) m

Date of Photograph : 22-02-2017



0.00m





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

前創建集團成員 Member of NWS Holdings

Contract	No.: G	E/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

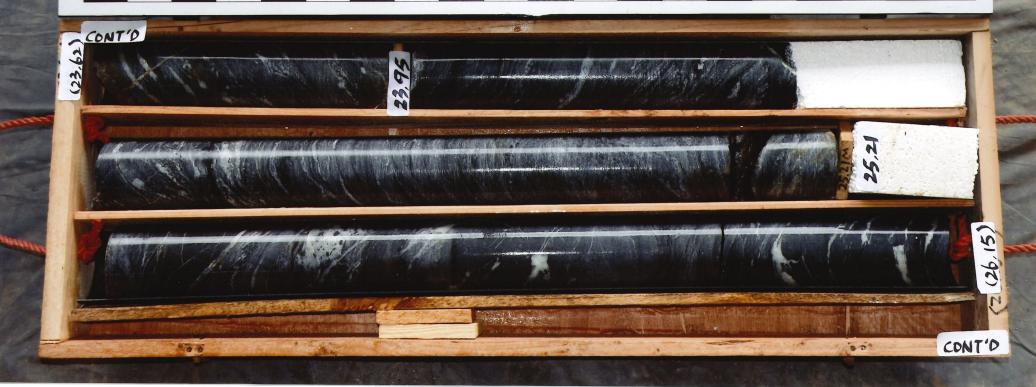
Box No.:

Depth: \_\_\_\_ ( 2 3 . 6 2 ) \_\_\_ m to \_\_\_ ( 2 6 . 1 5 ) \_\_\_ m

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_4 of \_\_\_\_14

Depth: (26.15) m to 28.80

Date of Photograph : 22-02-2017



0.00m







### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	201	5/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

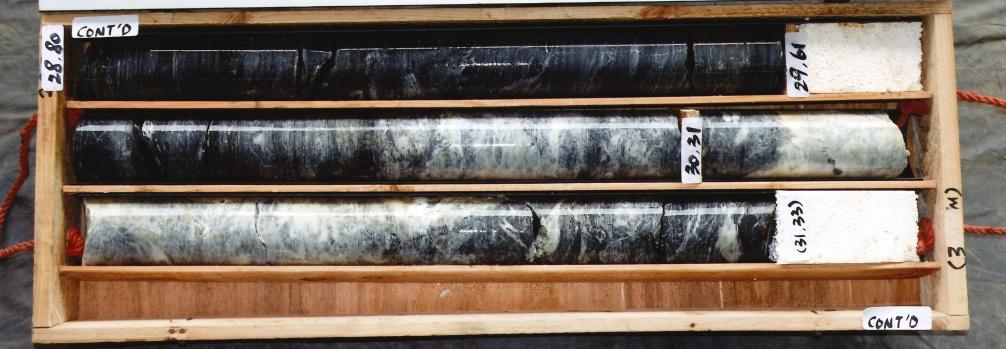
Hole No.: ADH01

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ m to \_\_\_ (31.33) \_\_\_\_ m

Date of Photograph : 22-02-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/201	5	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: 6 of

Depth: (31.33) m to (34.13) m

Date of Photograph : 22-02-2017

Kodak Color Control Patches

Blue Cyan Green Yellow Red Magenta White 3/Color Black







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_\_ of \_\_\_\_\_

Depth: \_\_\_\_(34.13) \_\_\_\_ m to \_\_\_(36.85) \_\_\_\_ m

Date of Photograph : 22-02-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No .	CE	201	E/20
Contract	NO.:	GE/	<b>ZU</b> I	3/23

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

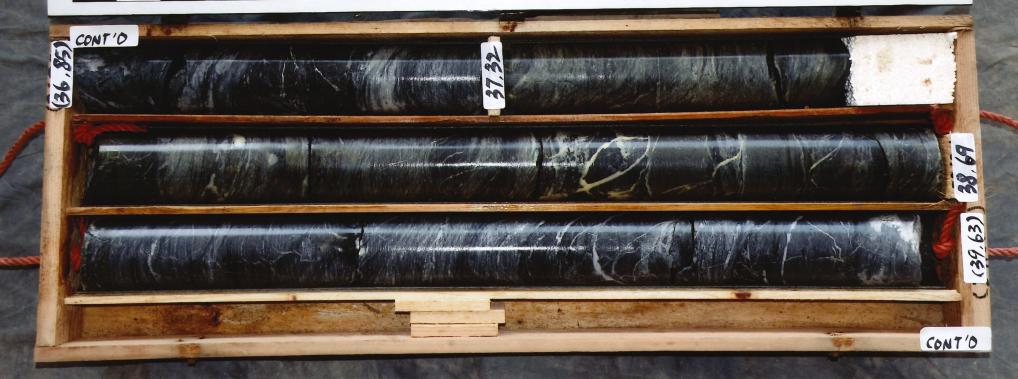
Hole No.: ADH01

Box No: 8

Depth: \_\_\_\_(36.85) \_\_\_\_ m to \_\_\_\_(39.63) \_\_\_\_ m

Date of Photograph : 22-02-2017









# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

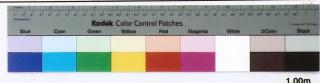
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_\_ of

Depth: \_\_\_\_(39.63) \_\_\_\_ m to \_\_\_(42.19)

Date of Photograph : 22-02-2017



CONT'D CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdinas

Contract	No.:	GE	201	5/20
	140			J/E-

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

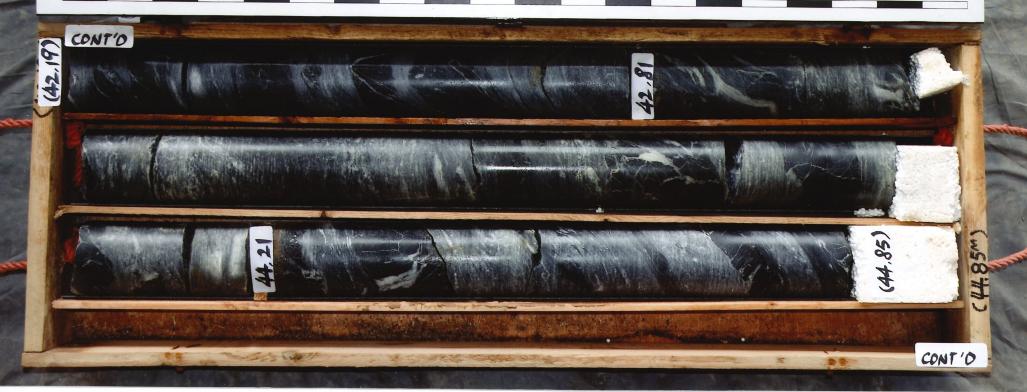
Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: (42.19) m to (44.85) m

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdings

Contract	No .	GF	201	5/	29
Contract	140		201	9/	_

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

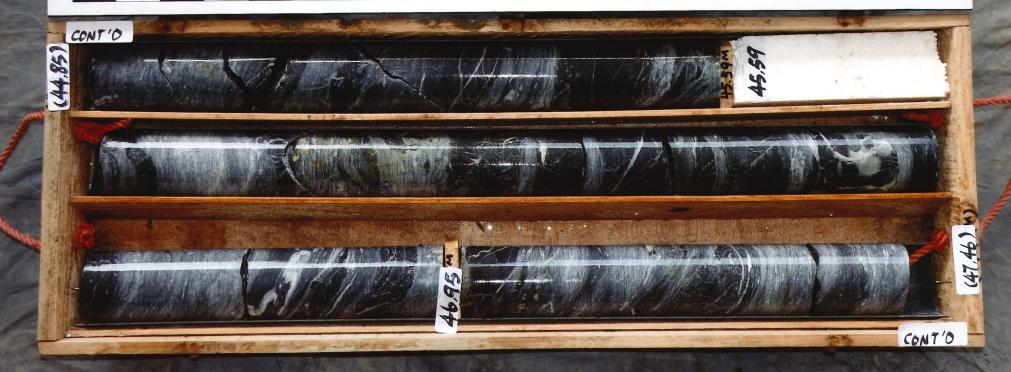
Box No.: 11 of \_\_\_\_\_14

Depth: (44.85) m to (47.46)

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITEC

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

12 of 14

Depth: \_\_\_\_\_ (47.46) \_\_\_\_ m to \_\_\_\_ (50.17) \_\_\_\_ m

Date of Photograph : 22-02-2017









惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

CONT'D

Contract	No.: (	GE/20	15/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: \_\_\_\_\_

Depth: (50.17) m to (53.00)

Date of Photograph : 22-02-2017



CONT'D





# ▼IBRO (H.K.) LIMITED

CUITLIACTING GE/2013/25	SE/2015/2	GE	No.:	ntract	C
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

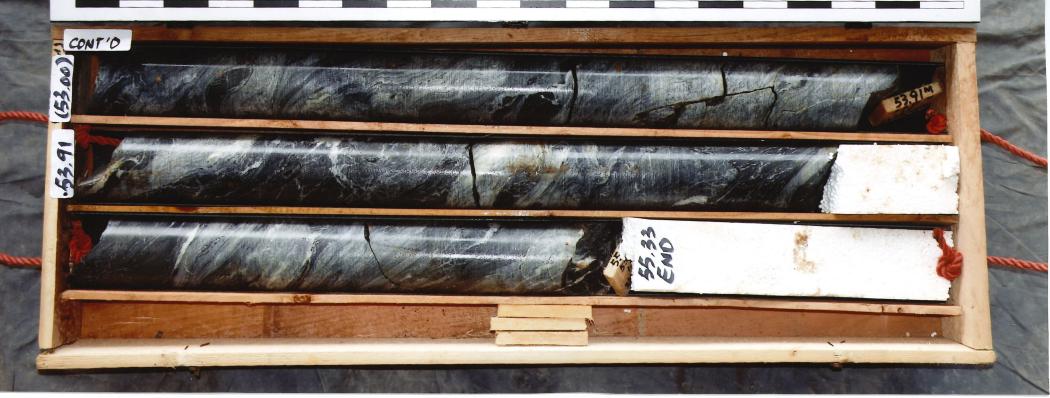
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH01

Box No.: 14

55.33 Depth: (53.00) m to \_

Date of Photograph : 22-02-2017







	Contract	No.: (	GE/20	015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

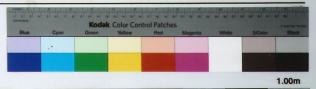
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH02 Hole No.: \_

Box No.:

0.00 13.10 Depth: .

Date of Photograph : 22-02-2017



(2) (A) (24) CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: 2 14

Death 13.10 22.90

Depth: 13.10 m to \_\_\_\_\_

Date of Photograph: 22-02-2017



0.00m

CONT 10 (26)

01/21

04/40

01/27

05/27

05/27





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: G	iE/2015/29	9
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 4

Depth: 2290 m to 2630 m

Date of Photograph : 22-02-2017









Contract	No :	GE	201	5/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH02

Box No.: \_\_\_

Depth: 26.30 m to (29.11)

Date of Photograph : 22-02-2017



CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_ 5 \_\_\_\_ of \_\_\_\_ 1 2

Depth: (29.11) m to (31.97)

Date of Photograph : 22-02-2017



0.00m







# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

-					
Con	tract	No.:	GE	/201	5/20

Contract Title: Ground Investigation - New Territories West

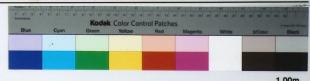
Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH02

Box No.: \_\_

(31.97) m to (34.77) Depth: \_

Date of Photograph : 22-02-2017









惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	No .	GE	201	15/20
Contract	NO.:	GE	20	13/2

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH02

Depth: (34.77) m to 37.17

Date of Photograph : 22-02-2017



CONT'D CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Con	tract	No.:	GF	/201	5/20
		140			

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_\_ of \_\_\_\_\_

Depth: \_\_\_\_\_37.17 \_\_\_ m to \_\_\_\_40.04

Date of Photograph : 22-02-2017



0.00m







	Con	tract	No.:	GE	/201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.:

42.95 40.04 Depth:

Date of Photograph : 22-02-2017









Contract No.: GE/2015/29	5/29	/201	GE	No.:	tract	Con
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_10

45.76 42.95 Depth: \_

Date of Photograph : 22-02-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Con	tract	No .	GF	/201	15	129
	uavi	140				

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: 11 1 of 14

Depth: \_\_\_\_\_\_ m to \_\_\_\_\_ 48.64 m

Date of Photograph : 22-02-2017



0.00m

CONT'D

47.22





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_ 1 2 \_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ 48.64 \_\_\_ m to \_\_\_\_ (51.39)

Date of Photograph : 22-02-2017



CONT 'D'

48.87

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CONT 'D





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

13 Box No.:

(51.39)

53.67

Date of Photograph : 22-02-2017









Contract	No.: G	E/201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH02

Box No.: \_\_\_\_\_ of

Depth: 53.67 m to \_\_ 55.81

Date of Photograph : 22-02-2017









Contract	No.:	GE,	201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03 Box No.: 0.00

Date of Photograph : 18-01-2017



0.00m

(2) (A) 00.00 (36) CONTO

Depth:





Contract	No .	GF	/201	5	129
Culluact	140	UL	201		_

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.:

19

21.50

Date of Photograph : 18-01-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 9

Depth: 28.20 m to (33,18) m

Date of Photograph : 18-01-2017



0.00m





### 息保 (香 港)有 限 公 司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	NI-	CE IOO	4 5 /00
Contract	MU.	(-1-1-1)	15/24

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 9

Depth: (33,18) m to 37,50

Date of Photograph : 21/03/2017



0.00m

CONT'D

NR

33.18- 33.40 %

NR

34.60- 34.80 %

(49)





## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

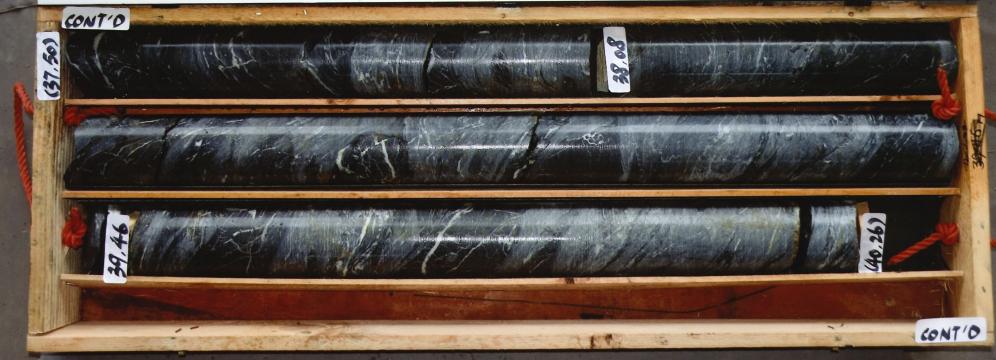
Hole No.: ADH03

Box No.:

Depth: (37.50) m to (40.26)

Date of Photograph : 18-01-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新 創 準 作 圖 成 员 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: (40.26) m to (42

Date of Photograph : 18-01-2017



0.00m

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### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.: \_\_\_\_\_ of

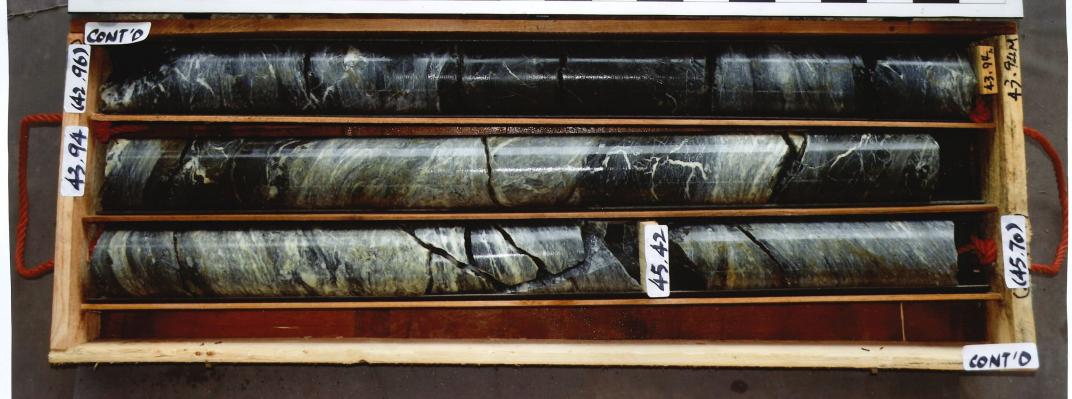
Depth: (42.96)

- - -

Date of Photograph : 18-01-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract	No.:	GE	201	5/2	29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

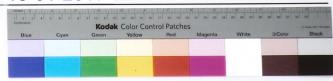
Hole No.: ADH03

Box No.: \_\_\_\_\_\_ 6 \_\_\_\_\_ 1

of 19

Depth: (45.70) m to

Date of Photograph : 18-01-2017



0.00m







# ▼IBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.:

to (50.97)

Date of Photograph : 18-01-2017









## ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

10 Box No.: \_\_\_

Depth: (50.97) m to 53.50

Date of Photograph : 18-01-2017









# ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	No.: (	GE/2015/2	29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.: \_\_\_\_

Depth: 53.50

Date of Photograph : \_\_18-01-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

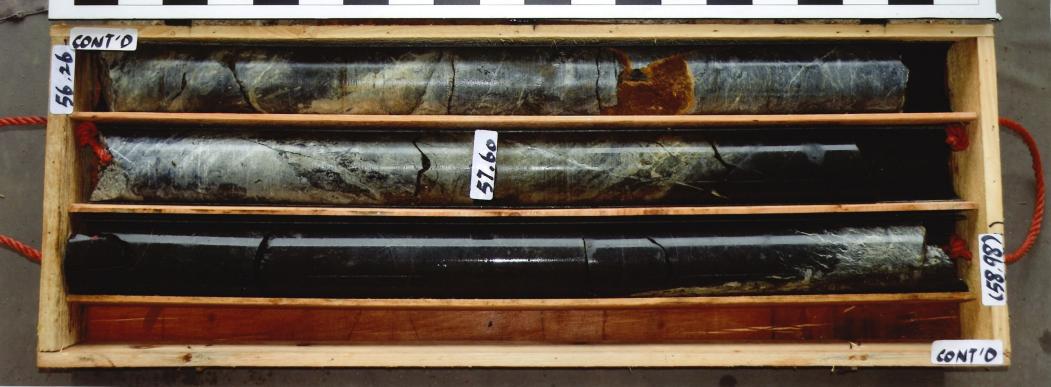
Box No.: 12 of 19

Depth: 56.26 m to (58.98)

Date of Photograph : \_\_\_\_18-01-2017



0.00m







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

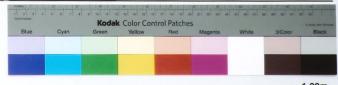
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

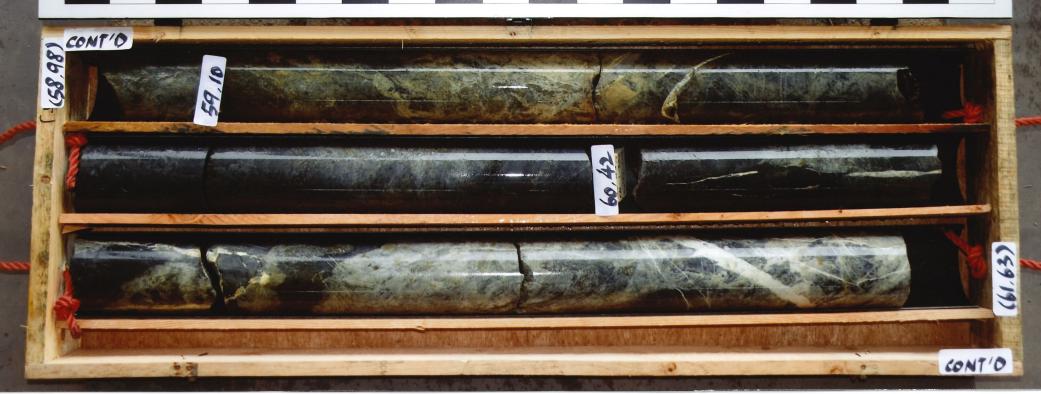
Hole No.: ADH03

Box No.:

Depth: (58.98) m to (61.63)

Date of Photograph : \_\_\_18-01-2017









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

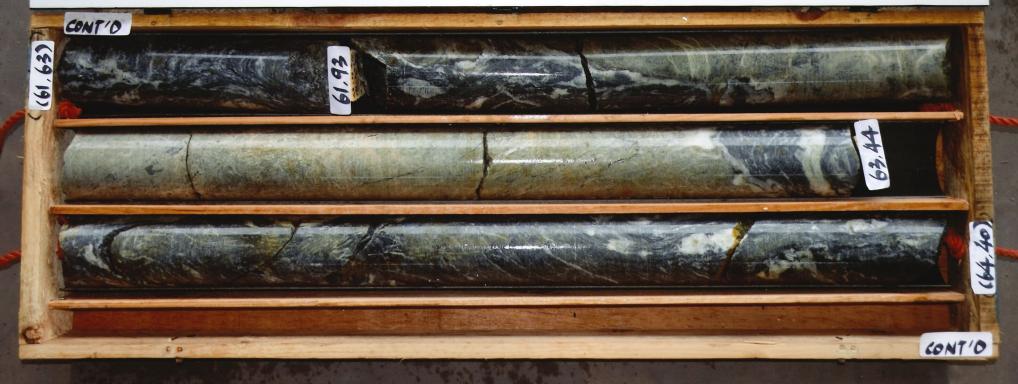
Hole No.: ADH03

Box No.: \_

Depth: (61.63) m to (64.40)

Date of Photograph : 18-01-2017









Contract No.: GE/2015/2	26	12	5	1	20	GE	No.:	t	trac	Con	(
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.:

to (66.97)

Date of Photograph : 18-01-2017









# ▼IBRU 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

Box No.:

m to (69.78) Depth: (66.97)

Date of Photograph : \_\_18-01-2017









▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH03

Depth: (69.78) m to (72.28)

Date of Photograph : \_\_18-01-2017









# ▼IBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC Hole No.: ADH03

Box No.: \_\_\_\_\_

Depth: (72.28) m to 74.88

Date of Photograph : 18-01-2017



0.00m

CONT'O CONT'O





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH03

19

Date of Photograph : \_

18-01-2017







# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 7

Depth: \_\_\_\_\_0.00 \_\_\_ m to \_\_\_\_20.20









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.: G	E/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

Box No.: \_\_\_\_\_ 2 \_\_\_\_ 1 7

Depth: 20.20 m to (25,33)

Date of Photograph : 22-02-2017



0.00m







## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

17 Box No.:

(25,33) 28.50 Depth:









## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

CONT'D

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

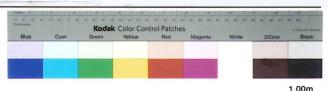
ADH04 Hole No.: \_\_\_\_\_

17 Box No.: \_

34.20 28.50

Depth:

22-02-2017 Date of Photograph:



0.00m

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34.20

Cont	ract	No.:	GE	201	5	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

Box No.:

17

(37.00)

Date of Photograph:

Depth:

22/02/2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC ADH04

Hole No.:

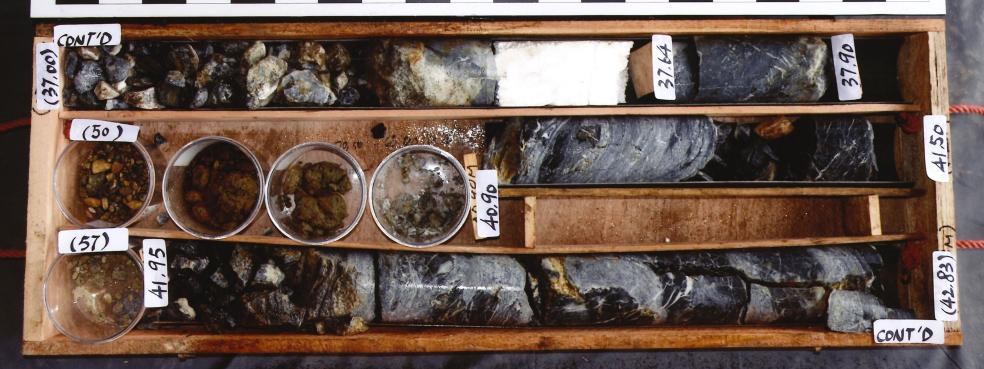
Box No.: \_\_\_\_\_ 6 \_\_\_\_ of \_\_\_\_ 17

Depth: \_\_\_\_\_(37.00) \_\_\_ m to \_\_\_\_(42.83) \_\_\_ m

Date of Photograph : 22-02-2017



0.00m







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

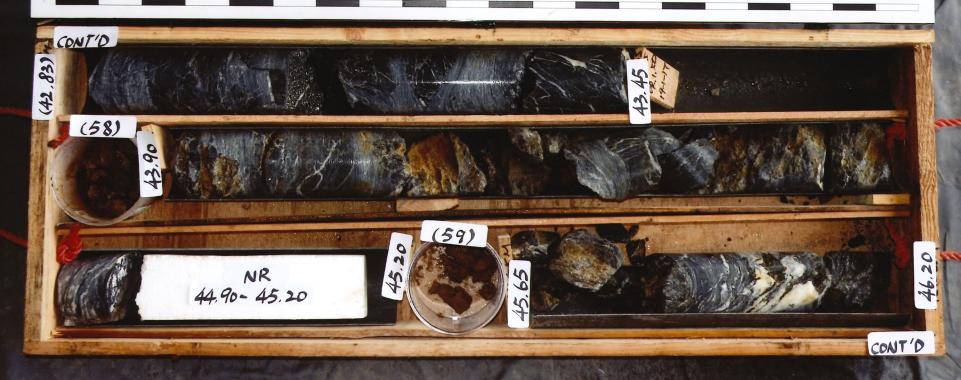
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH04 Hole No.:

Box No.: \_\_\_\_\_ of 17

Depth: (42.83) m to \_ 46.20









# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH04 Hole No.: \_\_

Box No.: \_\_\_\_\_8 17

46.20 49.15 Depth : \_\_\_\_









## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract N	o.: GE	/2015	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

17 Box No.:

49.15 54.05 Depth:

22/02/2017 Date of Photograph:



0.00m

CONT'D (62) (66) CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

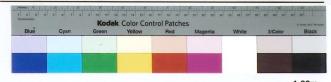
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH04

Box No.: \_\_\_\_\_ 10 \_\_\_\_ of \_\_\_\_ 17

Depth: \_\_\_\_\_\_ m to \_\_\_\_\_ 57.00 m

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long

Town connecting with Long Ping Station - IDC

Hole No.:

Box No.: 11 of 17

Depth: \_\_\_\_\_\_ **57.** 00 \_\_\_\_\_ m to \_\_\_\_ (**60.65**)

Date of Photograph : 22-02-2017

Kodak Color Control Patches
Blue Cyan Green Yellow Red Magenta White 3.Color Black

0.00m

Service (19) (70)

58.00-58.20 (8)

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Con	tract	No.:	GE	/201	15/29

Contract Title: Ground Investigation - New Territories West

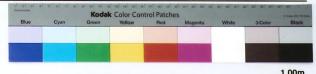
Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH04 Hole No.: \_\_\_

Box No.: \_\_\_\_\_ 1 2 \_\_\_\_ of \_\_\_\_ 1 7

Depth: (60.65) m to







### **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

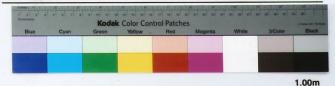
Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

ADH04 Hole No.:

Box No.: \_\_\_\_\_ 13 \_\_\_\_ of \_\_\_\_ 17

Depth: (63.26) m to (65.79)

Date of Photograph : 22-02-2017



CONT'D CONT'D





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH04

Hole No.: \_\_\_

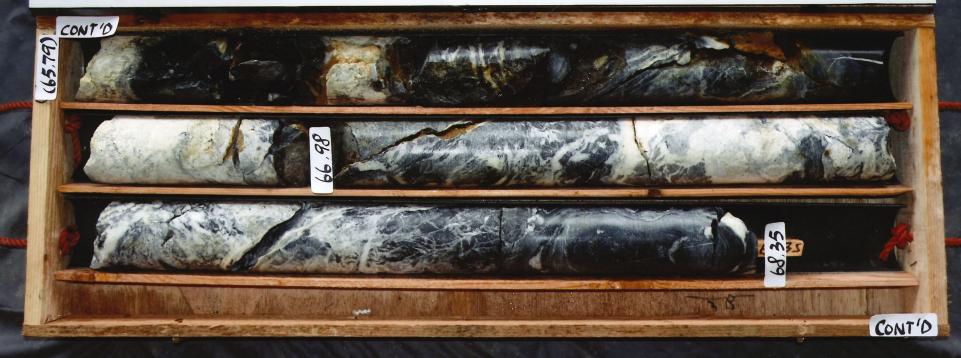
Box No.: \_\_\_\_\_ 1 4

17

Depth: (65.79) m to \_\_\_

68.35







### **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

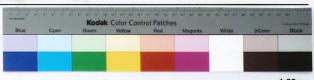
Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

ADH04

Hole No.: Box No.: \_\_\_\_\_

Depth: \_\_\_\_\_\_ 68.35 \_\_\_\_ m to \_\_\_\_\_ 71.30









# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

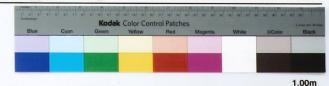
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.:

Box No.: \_\_\_\_\_ 1 6 \_\_\_\_\_ of \_\_\_\_\_ 1 7

Depth: 71.30 m to 75.80

Date of Photograph : **22-02-2017** 



0.00m

CONT'D NR 74.45-74.68 CONT'D





# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

ADH04 Hole No.:

Box No.: \_\_\_\_\_ 1 7 \_\_\_\_ of \_\_\_\_ 1 7

Depth: \_\_\_\_\_\_ 75.80 \_\_\_\_ m to \_\_\_\_\_ 90.00









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdings

Contract No	).: GE	/2015	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_\_\_\_\_ 1 1

Depth: \_\_\_\_\_0.00 \_\_\_\_ m to \_\_\_11.70

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ m to \_\_\_\_ m

Date of Photograph : 22-02-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

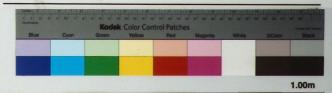
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: 3

Depth: \_\_\_\_\_\_ 2 7 . 3 0 \_\_\_\_ m to \_\_\_\_ 43 . 5 0

Date of Photograph : 22-02-2017



0.00m

CONT'D (53)

(83)

(83)

CONT'D





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 1

Depth: \_\_\_\_\_ 43.50 \_\_\_ m to \_\_\_\_ 56.35

Date of Photograph : 22-02-2017



0.00m

CONT'D (85)\*

CONT'D

CONT'D





	Contr	act N	o.: G	E/20	115	29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH05 Hole No.: \_

Box No.: \_

(59.13) 56.35 Depth:

Date of Photograph : 22-02-2017



CONTO CONT'D





Con	tract	No.:	GE	201	5/20

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_\_\_

(59.13) m to (61.76)

Date of Photograph : 22-02-2017



CONT'D CONT'D





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_\_\_\_\_ of \_\_\_

Depth: \_\_\_\_(61.76) m to \_\_\_(64.61)









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: \_

Depth: (64.61) m to (67.30)









#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/2	
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

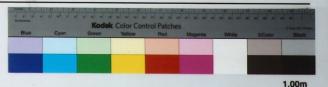
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

Box No.: 9

Depth: (67.30) m to (69.99)

Date of Photograph : 22-02-2017



0.00m

CONT'D





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

10 Box No.:

11

(69.99)Depth:

72.57









Con	tract	No.:	GE	201	5/20

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH05

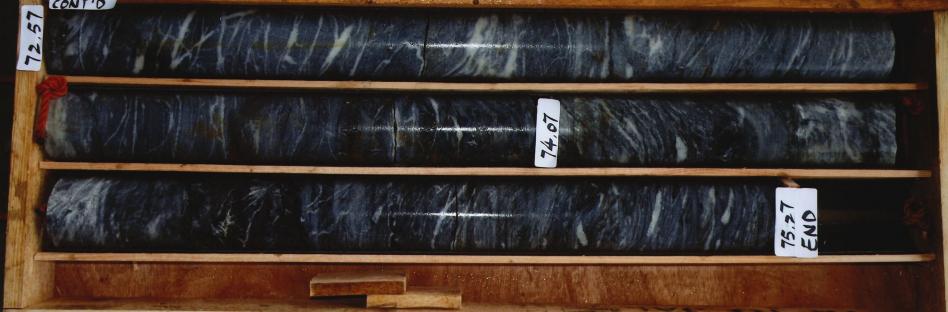
Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: 72.57 m to 75.27

Date of Photograph : 22-02-2017



CONT'D







## ▼IBRO 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH06 Hole No.: \_\_

12 Box No.: \_\_\_

Depth : \_\_\_\_\_0 . 00 \_\_\_\_ m to \_\_\_\_ 10.90









## ▼IBRO 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8 Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC Hole No.: ADH06

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ n to \_\_\_\_

25.60

Date of Photograph : 22-02-2017



0.00m







# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

12

2 5 . 60 m to \_\_\_ Depth: \_









## ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

Box No.: \_\_\_\_\_ 4 \_\_\_\_ of \_\_\_\_12

Depth: \_\_\_

41.95 m to \_\_\_\_58.60









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

Box No.: \_\_\_\_\_**5** 

Depth: \_\_\_\_\_ m to









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

創建集團成員 Member of NWS Holdinas

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Agreement No. GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long

Town connecting with Long Ping Station - IDC

ole No. ADH06

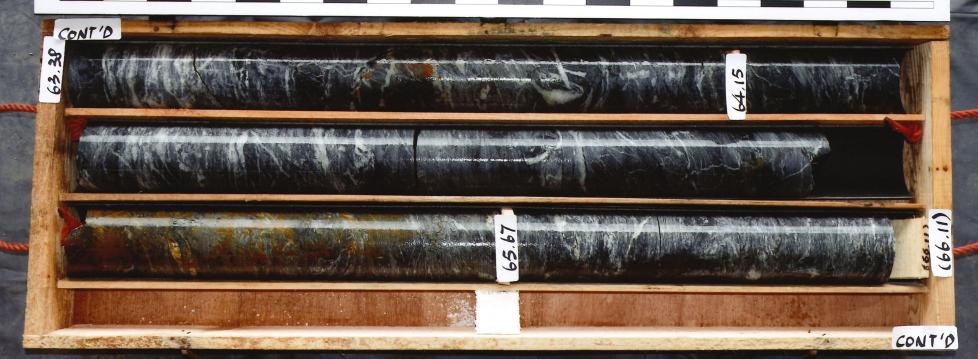
Box No.: 6 12

Depth: \_\_\_\_\_63.38 \_\_\_\_ m to \_\_\_\_(66.11)

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ (66.11) \_\_\_ m to \_\_\_\_ 68.75 \_\_\_ m

Date of Photograph : 22-02-2017









Contract	No.: G	E/2015/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8 Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC Hole No.: ADH06

Box No.:

Depth: \_\_\_\_\_ 68.75 \_\_\_\_ m to \_\_\_\_ (71.53)









# ▼IBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

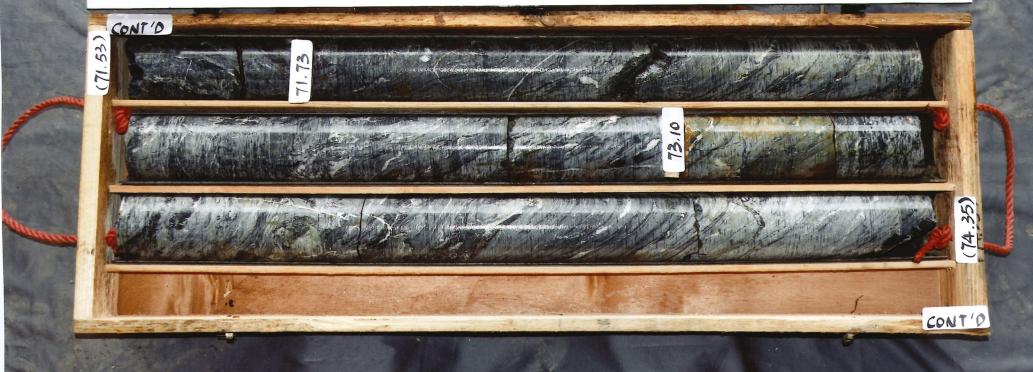
Hole No.: ADH06

Box No.: **9** 

(71.53) m to (74.35) Depth:

Date of Photograph : 22-02-2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE,	201	15	29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

Box No.: \_\_\_\_\_ 1 0

1 2

Depth: (74.35)

(74.35) m to (77.05)

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

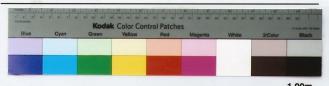
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: (77.05) m to (79.76)

Date of Photograph : 22-02-2017



0.00m

CONT'O





#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

前建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH06

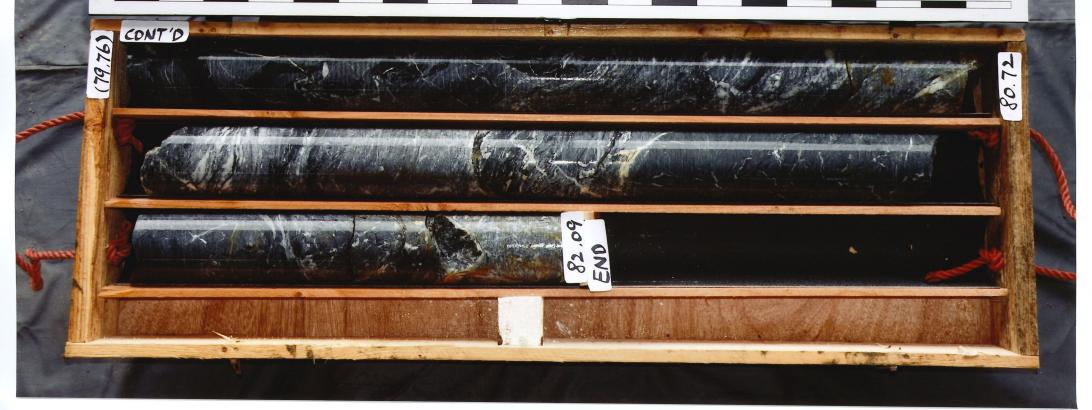
Box No.: 12

Depth: (79.76) m to 82.09

Date of Photograph : 22-02-2017



0.00m







### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/201	15	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ 0 . 0 0 \_\_\_\_ m to \_\_\_\_ 1 0 . 6 0 \_\_\_ m

Date of Photograph : 22-02-2017



0.00m







### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.: \_\_\_\_\_ of \_\_\_\_\_

Depth: \_\_\_\_\_10.60 \_\_\_ m to \_\_\_25.75

Date of Photograph : 22-02-2017

Blue Cyan Green Yellow Red Magenta White 3-Color Black

0.00m

CONT'D (123)

SO (125)

SO





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

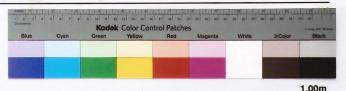
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.: 0f 10

Depth: \_\_\_\_\_\_ m to \_\_\_\_\_ 41.75

Date of Photograph : 22-02-2017



0.00m

SCONTID (54)





### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

折創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

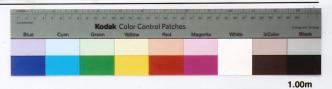
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.: \_\_\_\_\_ 4 \_\_\_\_ of \_\_\_\_ 1 0

Depth: \_\_\_\_\_ 41.75 \_\_\_ m to \_\_\_\_ 57.75 \_\_\_ m

Date of Photograph : 22-02-2017









### 息保 ( 香 港 ) 有 限 公 司 /IBRO (H.K.) LIMITED

創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH07

Box No.: 5 of 10

Depth: \_\_\_\_\_\_5 7,7 5 \_\_\_\_ m to \_\_\_\_\_6 7,6 0 \_\_\_\_ m

Date of Photograph : 22/02/2017









# ▼IBRO 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Con	tract	No.:	GF	201	5/20
		140			0/2

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

10 Box No.:

Depth: \_\_\_\_\_\_ 67.60 \_\_\_\_ m to \_\_\_\_\_ (71.60)

Date of Photograph : 22-02-2017









CONT'D

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

10 Box No.:

(71.60) 74,40 Depth:

22/02/2017 Date of Photograph : \_\_\_



CONTO





Contract	No .	GE	201	5/20
Contract	140		20	J/23

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH07 Hole No.:

10 Box No.:

74.40 (81,98) Depth:

22/02/2017 Date of Photograph : \_\_



0.00m

CONT'D (141) CAVITY 74.40- 74.80 CAVITY 76.00-7620 76.20-78.00 (86.18) 80.90 CONT'D





# VIBRO (BRO (H.K.) LIMITED

Contract No.: (	GE/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.:

10

(81.98)

(84,56)

Date of Photograph : \_

22/02/2017









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH07

Box No.: \_\_\_\_\_ of \_\_\_\_

1 1

Depth: (84.56) m to \_\_

86.82

Date of Photograph : 22-02-2017



0.00m

CONT'D

87-58

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# VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH08

Box No.: \_\_\_\_

Depth: \_\_\_\_\_0.00 \_\_\_\_ m to \_\_\_\_12.25







# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/2015	/29
O O I I I I I I I I	140	~		

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.:

Box No.: \_\_\_\_\_ of \_\_\_

Depth: 12.25 m to 28.40









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

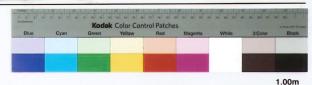
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ 8 . 40 \_\_\_\_ m to \_\_\_\_ 44 . 40

Date of Photograph : 22-02-2017



0.00m

CONT'D (57)

9482

(87)





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH08 Hole No.:

11 Box No.: \_

44.40 m to 51.75 Depth:

Date of Photograph : 22-02-2017



CONT'D (89) CONT'D





# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_

Depth: 51.75 m to 54.61

Date of Photograph : 22-02-2017



CONT'D CONT'D





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_\_

54.61 m to \_\_\_\_\_\_(57.35) Depth: \_\_









Con	tract	No .	GE	/201	5/	29
CUII	uacı	INU		201	2/4	

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_

Depth: (57.35) m to (60.07)

Date of Photograph : 22-02-2017



CONT'D CONT'D





#### **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.: GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_\_8

Depth: (60.07) m to 62.51









### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/2	2015/29	<b>GE/20</b>	).:	N	tract	Cont	C
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_\_ 62.51 \_\_\_\_ m to \_\_\_\_ 65.38 \_\_\_ m

Date of Photograph : 22-02-2017



0.00m

CONT'D





## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	No .	CE/2015	120
Contract	NO:	GE/ZUIS	1/25

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

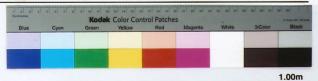
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_

m to \_\_\_\_(68.12) 65.38 Depth: \_

Date of Photograph : 22-02-2017







#### **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



# ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	No.: G	E/2015/2	29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

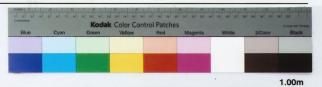
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH08

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 1

Depth: (68.12) m to 70.80

Date of Photograph : 22-02-2017



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#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdinas

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ 1 \_\_\_\_ of \_\_\_\_\_ 2 0

Depth: 0.00 m to 12.25 m

Date of Photograph : 22-02-2017









#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

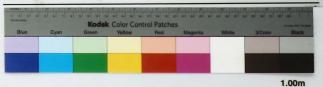
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_\_ 2 0

Depth: \_\_\_\_\_12.25 \_\_\_ m to \_\_\_\_26.10 \_\_\_ m

Date of Photograph : 22-02-2017









#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_

20

Depth: 26.10 m to \_\_\_

(30.97)

Date of Photograph : 22-02-2017



0.00m







#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ 4 \_\_\_\_ of \_\_\_\_ 2 0

Depth: \_\_\_\_\_ (30.97) \_\_\_ m to \_\_\_\_\_ 33.73

Date of Photograph : 22-02-2017



0.00m

CONT'D

SECONT'D

CONT'D

CONT'D





# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE	=/20	115	129
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_

Depth: \_\_\_\_\_\_ m to \_\_\_\_ (36.49)







惠保(香港)有限公司 VIBRO (H.K.) LIMITED

<b>Contract No</b>	.: GE	/201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

20 Box No.: \_\_\_\_\_6

Depth: (36.49) m to (39.32)







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

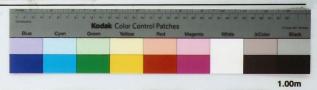
Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_

Depth: \_\_\_\_(39.32) \_\_\_ m to \_\_\_\_41.86









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

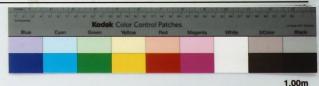
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_

Depth: 41.86 m to 44.76

Date of Photograph : 22-02-2017



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#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

所創建集團成員 Member of NWS Holdings

	Cont	ract	No.:	GE	201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

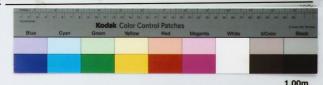
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_\_ 2 0

Depth: \_\_\_\_\_ 44.76 \_\_\_ m to \_\_\_\_ 47.65 \_\_\_ m

Date of Photograph : 22-02-2017



0.00m

CONTO 92.44

L1.49

L1.49

(56)

(56)





# ▼IBRO (H.K.) LIMITED

Contract	No.: GE	E/2015/29
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Contract Title: Ground Investigation - New Territories West

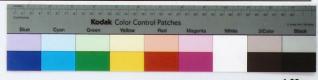
Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_

Depth: \_\_\_\_\_\_ m to \_\_\_\_\_(55.94)









# ▼IBRO (H.K.) LIMITED

-	-	No.	CE	1001	E /20
Con	ıracı	No.:	GE	201	3/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

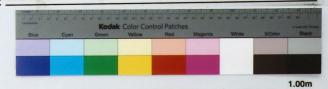
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

20 Box No.: \_

(55.94) m to \_\_\_\_\_(58.85) Depth: \_

Date of Photograph : 22-02-2017



0.00m

CONT'O CONT'D



#### **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



# ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	No.: GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

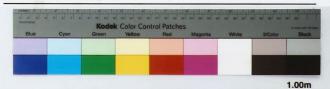
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_

(58.85) m to (61.50)

Date of Photograph : 22-02-2017



CONT'O CONT'D





# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.: GE	/2015/29
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Contract Title: Ground Investigation - New Territories West

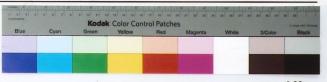
Task Order No.: GE/2015/29.8

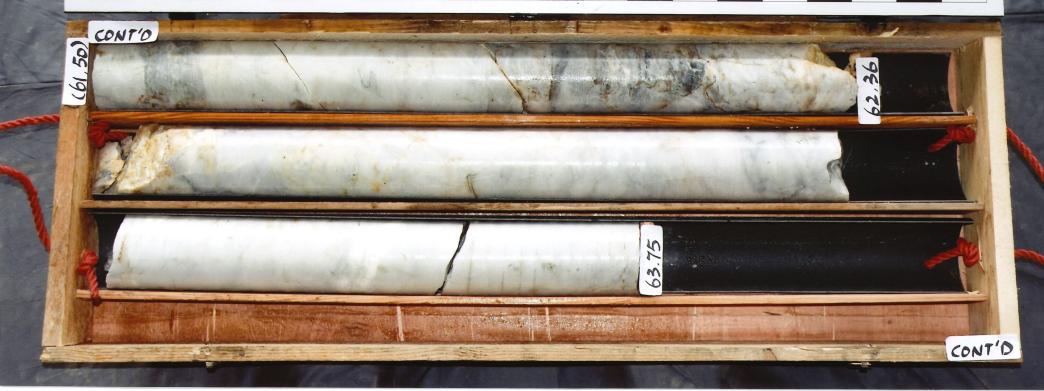
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of 20

(61.50)63.75 Depth:









# ▼IBRO (H.K.) LIMITED

Contract	No.: GE	/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

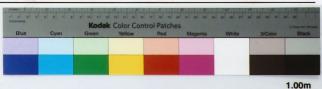
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ 1 4 \_\_\_\_ of \_\_\_\_ 20

Depth: 63.75 m to (66.50)

Date of Photograph : 22-02-2017



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75 63.

(05.99)





#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No .	GF/2	015	/20
Contract	IAO	GEZ	UID	123

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: \_\_\_\_(66.50) \_\_\_ m to \_\_\_\_69.13 \_\_\_ m

Date of Photograph : 22-02-2017







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ 0f \_\_\_\_ 2 0

Depth: \_\_\_\_\_69.13 \_\_\_\_ m to \_\_\_\_(71.79)









# ▼IBRO 恵保(香港)有限公司 VIBRO (H.K.) LIMITED

Can	+	No	CE	1201	E/20
Con	uracı	NO.	GE	/2U I	0/23

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ 1 7 \_\_\_\_ of \_\_\_\_ 2 0

Depth: (71.79) m to (74.29)









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

20 Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: (74.29) m to \_\_\_\_\_







#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

創建集團成員 Member of NWS Holdings

		0	001	F 100
Contract	NO.:	GE/	201	5/2

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_\_1 9 \_\_\_\_\_ of \_\_\_\_\_2 0

Depth: \_\_\_\_\_\_76.58 \_\_\_\_ m to \_\_\_\_\_79.05

Date of Photograph : 22-02-2017



0.00m

CONT'D





#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH09

Box No.: \_\_\_\_\_ of \_\_\_\_

Depth: 79.05 m

80.23

Date of Photograph : 22-02-2017



0.00m

CONTO





# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)

Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.:

0.00 Depth:

Date of Photograph : 18-01-2017









## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

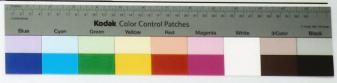
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.:

Depth: 12.20

Date of Photograph : \_\_\_18-01-2017









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Depth: 27.30

Box No.:

m to (38.17)

Date of Photograph : 18-01-2017









#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

听創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.: \_\_\_\_\_4

Depth: (38.17) m to 41.10

Date of Photograph : \_\_\_\_18-01-2017



0.00m







# 

Contract No.: GE/2015/29	9
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

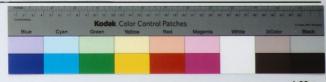
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.:

Depth: 41.10

Date of Photograph : \_\_\_18-01-2017



CONT'D CONTO





#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	/201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.: 6

Depth: 43.82 m to (46.71)

Date of Photograph : 18-01-2017



0.00m







#### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

前建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Depth: (46.71) m to (49.24) m

Date of Photograph : 18-01-2017

Blue Cyan Green Yellow Red Magenta White 3-Color Black

0.00m







Contract	No.: GI	E/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.:

Depth: (49.24)

m to (52.06)

Date of Photograph : \_\_18-01-2017









#### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

E 創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

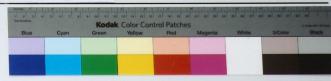
Box No.: \_\_\_\_\_ 9 \_\_\_\_ of \_\_\_

10

Depth: (52.06)

to 54.64

Date of Photograph : \_\_\_18-01-2017



0.00m

CONTO





Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH10

Box No.:

Depth: 54.64

Date of Photograph : \_\_\_18-01-2017



0.00m





## **GEOTECHNICAL ENGINEERING OFFICE** GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新刺達集團成員 Member of NWS Holdings

Contract	No.: GE	E/2015	/29
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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 8

Depth: \_\_\_\_\_ 0 . 0 0 \_\_\_ m to \_\_\_\_ 13.95

Date of Photograph : 22-02-2017



(1)





## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

CONT'D

新創建集團成員 Member of NWS Holdings

Contract	No .	GF	/201	5	20
Contract	INO	GE	/ <b>ZU</b> I		

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

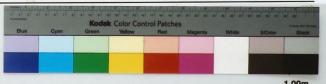
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 8

Depth: \_\_\_\_\_ 13.95 \_\_\_ m to \_\_\_\_\_ 24.22

Date of Photograph : 22-02-2017







# ▼IBRO 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract	NO.	GE	/201	5/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_

Depth: \_\_\_\_\_ m to \_\_\_\_(28.95)









# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_

18

Depth: (28.95) m to 33.00

Date of Photograph : 22/02/2017



CONTID 29.40-29.50 CONT'D





Contract	No.	CE	1201	FIDO
Contract	NO	GE	20	0/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_\_

Depth: \_\_\_\_\_ 33.|0|0 \_\_\_\_ m to \_\_\_\_ 42.45

Date of Photograph : 22-02-2017



CONT'D







# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract	No.:	GE	201	5	/29
Collillact	140				

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

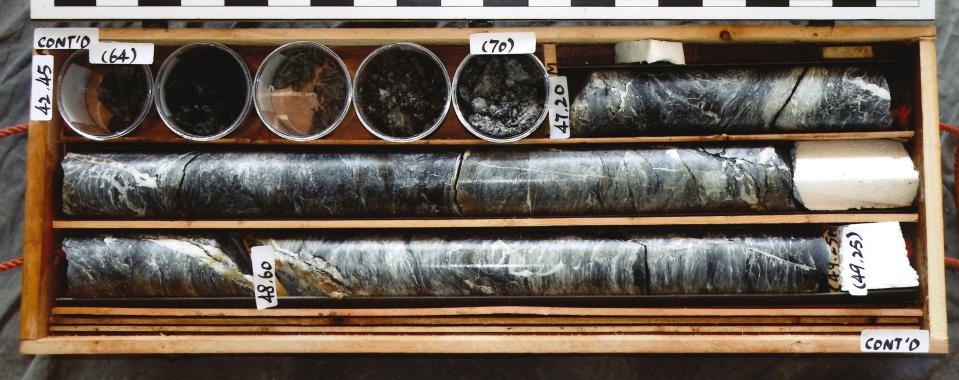
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.:

42.45 m to \_ (49.25)Depth: \_









# 惠保(香港)有限公司 VIBRO (H.K.) LIMITED 新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

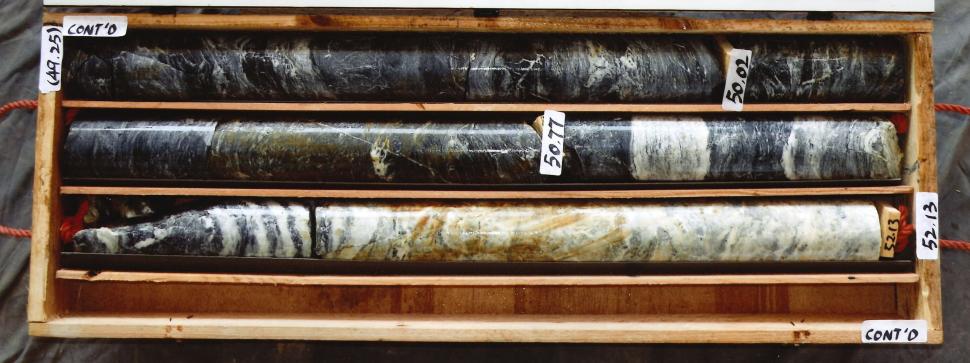
Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY) Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station - IDC Hole No.: ADH11

Box No.: \_\_\_\_\_ of \_\_\_\_ 1 8

Depth: \_\_\_\_\_ m to \_\_\_\_\_ 52.13









## ▼IBRO 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

Contract No.: GE/2015/
------------------------

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_

Depth: \_\_\_\_\_ 52.13 \_\_\_\_ m to \_\_\_\_ (54.72)









## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No .	GE	201	5/	20
Contract	NO.:	GE	20	3/4	4

Contract Title: Ground Investigation - New Territories West

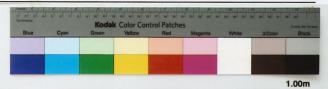
Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Depth: (54.72) m to (57.35)

Date of Photograph : 22-02-2017



0.00m

CONT'D





#### 惠 保(香 港)有 限 公 司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Cont	ract	No:	GE	201	5/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: 18

Depth: \_\_\_\_\_ (57.35) \_\_\_\_ m to \_\_\_\_ (59.99)

Date of Photograph : 22-02-2017



0.00m

1.00m







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_

(59.99) m to \_

62.47









## VIBRO (H.K.) LIMITED

Contract	No.:	GE	/201	5	29
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Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_12

(65.32) Depth: 62.47 m to

Date of Photograph : 22-02-2017



CONT'D







Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

ADH11 Hole No.: \_

13 Box No.:

18

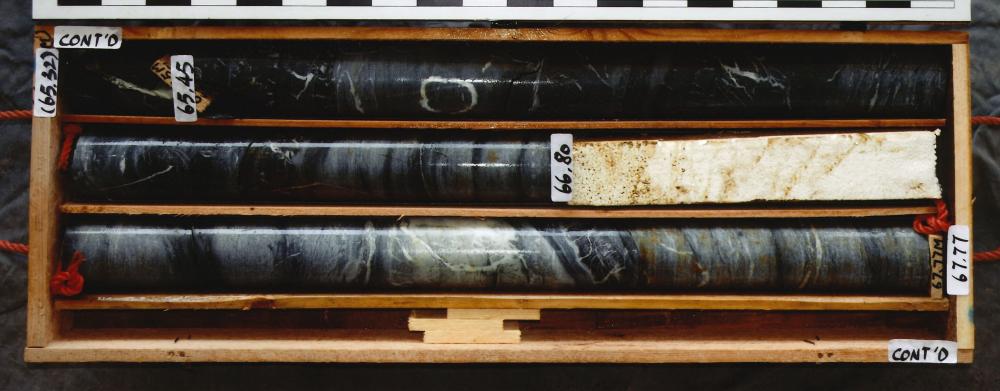
(65.32) Depth:

67.77

Date of Photograph : 22-02-2017



0.00m





**VIBRO** 

#### 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

f 創建作圖成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

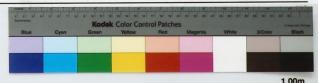
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ 1 4 \_\_\_\_ of \_\_\_\_ 1 8

Depth: \_\_\_\_\_ m to \_\_\_\_ (70.49)

Date of Photograph : 22-02-2017



0.00m







	Con	tract	No.:	GE	/201	5/29
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Contract Title: Ground Investigation - New Territories West

Task Order No. GE/2015/29.8

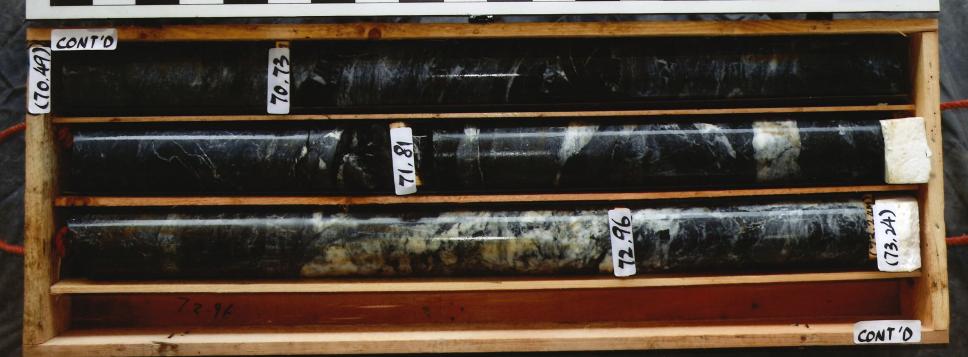
Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_15

Depth: \_\_\_\_ (70.49) \_\_\_ m to \_\_\_ (73.24)









## 惠保(香港)有限公司 VIBRO (H.K.) LIMITED

新創建集團成員 Member of NWS Holdings

Contract	No .	GE	/201	5/20
Culluact	140			3/23

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ 1 6 \_\_\_\_ of \_\_\_\_ 1 8

Depth: \_\_\_\_\_ (73.24) \_\_\_ m to \_\_\_\_ 75.92 \_\_\_ m









Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11









Contract	No .	GE	201	5/20
Contract	INO	GE	201	3/23

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.8

Agreement No. GE 32/2014(HY)
Elevated Pedestrian Corridor in Yuen Long
Town connecting with Long Ping Station - IDC

Hole No.: ADH11

Box No.: \_\_\_\_\_ of

Depth: \_\_\_\_\_ (78.52) m to \_\_\_\_81.24





## **APPENDIX E**

AGS DIGITAL DATA & DIGITAL IMAGE OF
FINAL FIELDWORK REPORT, INDIVIDUAL STATION
RECORD & PHOTOGRAPHS