Geotechnical Report for
US Wind Inc.

Project:
Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

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Volume 1: Field Operations and Preliminary Results Report

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22 June 2015 – 07 July 2015

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REPORT STRUCTURE

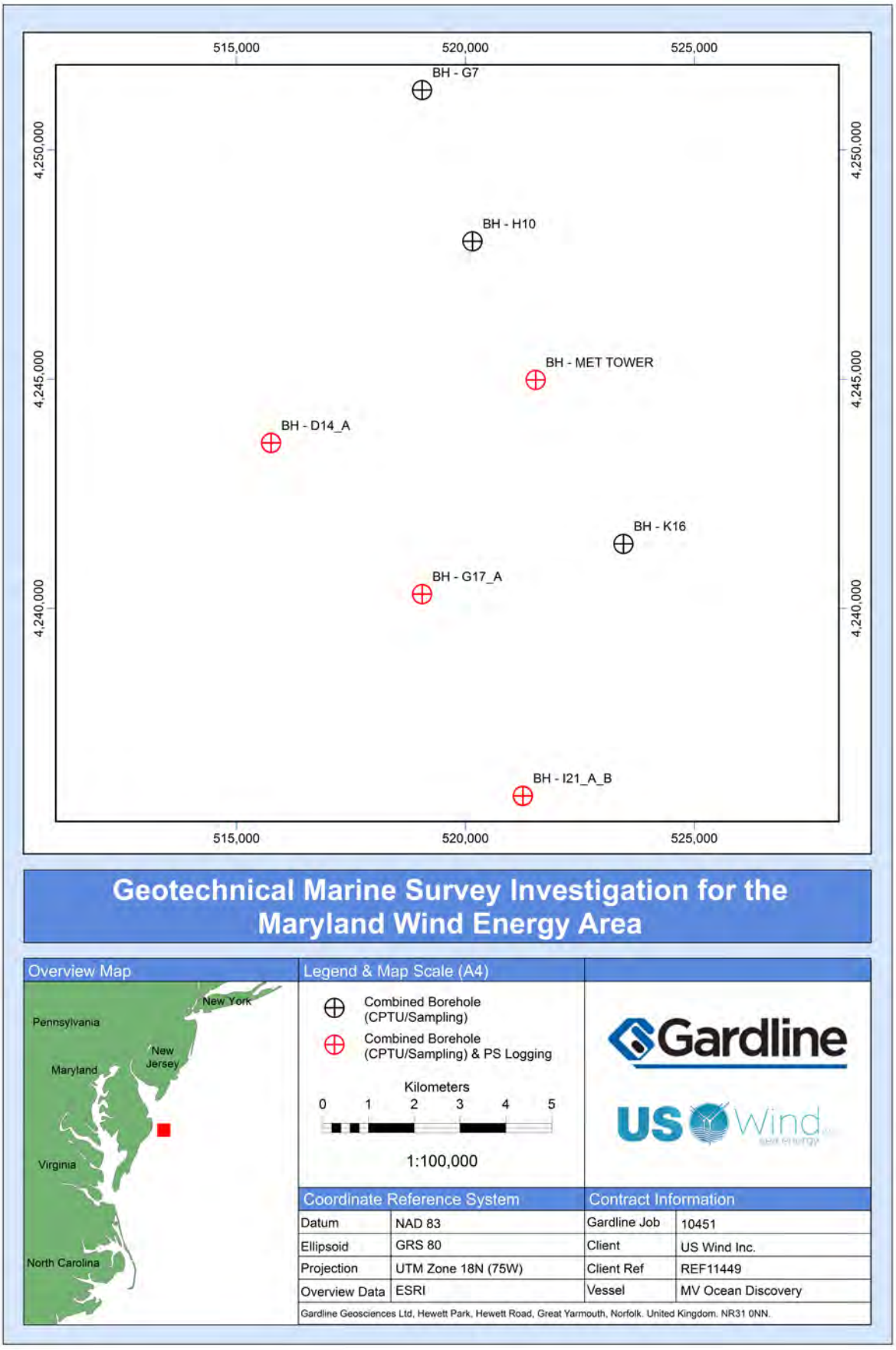
VOLUME 1: OPERATIONAL REPORT (BS EN ISO 19901)		VOLUME 3: DATA INTEGRATION AND ENGINEERING REPORT (BS EN ISO 19901-8)
Executive Summary 1. Scope of Project 2. Offshore Activities 3. Drilling Operations 4. InSitu testing-CPTU 5. InSitu testing-PS Logging 6. Sampling Operations 7. Field Laboratory 8. Preliminary Geotechnical logs and Soil profiles 9. Classification Laboratory results 10. CPTU Analysis 11. Laboratory Testing Procedures 12. Geodetic Information and Water Depths 13. Health Safety and Environment 14. References		Executive Summary 1. Scope of Project 2. Geological setting 3. Ground model (Integration of geophysical end geotechnical records) 4. Representative Soil Parameters for foundation design 5. Interpretation and Evaluation of Geotechnical Data 6. References

EXECUTIVE SUMMARY

This report presents the operational details and preliminary geotechnical results. These results and preliminary interpretations will be reviewed and verified after the completion of the onshore laboratory programme. The results of this report will therefore be superseded by detailed factual report (Volume 2) and the interpretative report (Volume 3) which will include an evaluation of the representative geotechnical parameters for the conceptual foundation design.

The Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area is in the North Atlantic Ocean, approximately 10km off the coast of Maryland (location shown in Figure 1).

Figure 1 Location of the Maryland Wind Energy site



Mobilisation of the M.V. Ocean Discovery was undertaken from Port of Baltimore, Maryland, United States of America starting on 16 June 2015 and completed by 18 June 2015.

The fieldwork at the location was performed between 22 June 2015 and 07 July 2015.

Seven boreholes were drilled at representative locations at the Maryland Wind Farm site. The purpose was to collect suitable geotechnical data in order to assess and select suitable foundations for the development of the wind farm. Boreholes comprised of combined undisturbed soil sampling and downhole CPTU data acquisition. At four locations PS logging data was also acquired.

Table 1 provides a summary of fieldwork; including the number of boreholes completed, fieldwork dates and vessel details.

Table 1 Fieldwork Summary

Fieldwork Summary	
Survey Vessel	MV Ocean Discovery
Fieldwork dates	22 June 2015 – 07 July 2015
Composite CPTU & Sample Borehole	7
PS logging locations	4

The water depth at the proposed Maryland Wind Energy Area ranged across site from 19.30m to 27.03m MSL.

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LIST OF SYMBOLS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BSF	Below Sea Floor
BC	Boxcore
BGS	British Geological Survey
BS	British Standard
ρ	Bulk density
σ_3	Cell pressure
cm	Centimetres
K_0	Coefficient of lateral earth pressure
CAU	Consolidated Anisotropic Undrained
CIU	Consolidated Isotropic Undrained
c_u	Cohesion (undrained)
α	Cone area ratio
N_{KT}	Cone factor
CPT(u)	Cone Penetration Test (with pore pressure measurement)
CRS	Controlled Rate of Strain
q_t	Corrected cone resistance
An	Cross sectional area of the load cell or shaft
CSS	Cyclic Simple Shear
°	Degree(s)
σ_1-σ_3	Deviatory stress
DGPS	Differential Global Positioning System
DS	Direct Shear
DSS	Direct Simple Shear
ρδ	Dry density
E	Easting
φ ′	Effective angle of internal friction
ED50	European Datum 1950
EPSG	European Petroleum Survey Group
e	Failure strain
R_f	Friction ratio
GIS	Geographical Information System
h	Hour
ISO	International Standards Organisation
IL	Incremental Loading
Kg	Kilo grams
kN	Kilo Newton
kPa	Kilo Pascal
I_L	Liquidity Index
f_s	Local side friction
LAT	Lowest Astronomical Tide
q_c	Measured cone resistance
A_c	Projected area of the cone
BPP	Borehole Progression Plan
CPT	Cone Penetration Test
w	Natural Moisture Content
MSL	Mean Sea Level
Mg/m^3	Mega grams per metre cubed
MPa	Mega Pascal
m	Metre
µm	Micrometres
mm	Millimetre
min	Minute
M.V.	Motor Vessel
NMC	Natural Moisture Content
q_{net}	Net cone resistance
NIOZ	Nederlands Institut Voor Onderzoek der Zee
F_r	Normalised friction ratio
N	Northing
N,E,S,W	North, East, South, West
NCS	Norwegian Continental Shelf
OCR	Over Consolidation Ratio
ρ_s	Particle Density
PSD	Particle Size Distribution
f'	Peak angle of shearing resistance
c'	Peak effective cohesion intercept
PPE	Personal Protective Equipment
PC	Pistoncore
PCD	Polycrystalline Diamond Composite
I_P	Plasticity Index
B_q	Pore pressure ratio
u_2	Pore water pressure measured behind the tip shoulder
D_r	Relative density / Equivalent relative density
R.V.	Research Vessel
SOW	Scope of Work
SBF	Seabed Frame
S_t	Sensitivity
S_u	Shear strength (undrained)
S_r	Shear strength (remoulded)
e_{50}	Strain which occurs at on-half the maximum stress during UUT
SBT	Soil Behaviour Type
σ_{v0}	Total overburden stress
UUT	Undrained Unconsolidated Triaxial
UKCS	United Kingdom Continental Shelf
UTM	Universal Transverse Mercator
VC	Vibrocore
e_0	Voids ratio
WGS84	World Geodetic System 1984
G_0	Initial Shear Modulus
v_s	Shear Wave Velocity
v_p	Compression Wave Velocity

VOLUME I: FIELD OPERATIONS AND PRELIMINARY RESULTS REPORT

1. Scope of Project

1.1 General

This report presents the operational details relating to the geotechnical campaign, including a summary of field activities, technical description of equipment used for sampling and in-situ testing and associated procedures. The preliminary geotechnical results are also presented in this report. These results and preliminary interpretations will be reviewed and verified after the completion of the onshore laboratory programme. The results of this report will therefore be superseded by a more detailed factual report which will integrate field and onshore laboratory results (Volume 2). An independent interpretation of soil investigation data and results will also be reported, including a detailed evaluation of the representative geotechnical parameters for the conceptual foundation design (Volume 3).

The objectives of the site investigation were to identify the underlying soils at the proposed location and to determine their geotechnical properties to enable engineering analyses in connection with foundations for the wind farm infrastructure.

2. Offshore Activities

2.1 General

Detailed descriptions of the methods used can be found in the method statements in Section 2 Offshore Activities, Section 3 Drilling Operations, Section 4 In Situ Testing – CPTU, Section 5 In Situ Testing – PS Logging and Section 6 Sampling Operations. A full breakdown of the production summary can be found on the final daily progress reports presented in Appendix 9.1 breakdown of the contract time by activity is given in Section 2.3.

The list of contractors involved in the project and their roles are given in Table 2.1.

Table 2.1 List of Contractors

Contractor	Responsibilities
Alpine	Lead Contractor Project Management Geophysical acquisition and associated reporting Environmental monitoring and associated reporting
Gardline	Sample logging and testing. Geotechnical reporting Positioning

2.2 Summary of Activities

Table 2.2 summarises fieldwork undertaken for the Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area and Table 2.3 summarises daily operations.

Table 2.2 Fieldwork Summary

Fieldwork Summary	
Survey Vessel	M.V. Ocean Discovery
Fieldwork dates	22 June 2015 – 07 July 2015
Composite CPTU & sample Borehole	7
PS logging locations	4

Table 2.3 Summary of Daily Fieldwork Operations

Date	Time	Key Event
22/06/15	13:23	Perform SV dip (Sound Velocity Profile)
	13:55	PAMS and MMO pre-work observation period
	17:45	Commence Sampling and CPT Testing at BH-I21
	22:15	SBF unstable on seabed requiring recovery of equipment to move over 5m
	22:55	Operations on standby as unable to initiate operations during hours of darkness
23/06/15	05:10	PAMS and MMO pre-work observation period
	06:10	Deploy drill spread
	08:00	Commence Sampling and CPT Testing at BH-I21A

Date	Time	Key Event
	16:20	Weather conditions deteriorated, picked up pipe but left SBF on seabed to allow return downhole
	16:30	40kts wind and thunderstorms forced full recovery of equipment, vessel moved 2.5m off position
24/06/15	05:10	Problems with hydrophone, equipment recovered and replaced
	06:12	PAMS and MMO pre-work observation period
	09:20	Commence sampling and testing at BH-I21B
	22:55	BH-I21B completed at 73.76m Drill out to 74m prior to commencing PS logging
25/06/15	04:00	Commence PS logging from 74-25m
	09:35	Hole collapse present significant risk to tool loss, this was discussed with onboard client and all equipment was recovered from downhole
	12:15	Transit to MET Tower location
	15:09	PAMS and MMO pre-work observation period
	16:50	Commence sampling and testing at BH-MET Tower
26/06/15	03:00	Lift drill string to change ring in BHA
	20:30	Changing hydraulic hose and fitting
	22:50	Client stopped hole at 65m. Drill out to 70m and prepare PS logger
27/06/15	00:14	Commence PS logging from 65m to 10m
	08:48	Waiting on weather
29/06/15	05:27	PAMS and MMO pre-work observation period
	11:50	Problems with hydraulics on SBF, recover SBF to repair
	13:50	Commence sampling and testing at BH-D14
	22:00	Damage to heavy lift wire forcing recovery of drill spread
30/06/15	17:50	Commence sampling and testing at BH-D14A
01/07/15	08:45	Drill out to 74m prior to commencing PS logging
	10:10	PS logging from 44m to 20m, BH collapse at bottom and top of hole prevented testing
	15:27	Transit to BH-G17
	17:24	PAMS and MMO pre-work observation period
	19:35	Commence sampling and testing at BH-G17
02/07/15	12:30	Pull drill string and recover PAMS equipment due to bad weather
	13:51	PAMS and MMO pre-work observation period
	18:15	Commence sampling and testing at BH-G17A
03/07/15	04:20	PS logging from 68.0-37.0m. No testing in areas of hole collapse
	08:37	Transit to BH-K16
	10:30	PAMS and MMO pre-work observation period
	12:40	Commence sampling and testing at BH-K16
04/07/15	16:00	Sampling and CPT completed at BH-K16. Drill out 6m prior to

Date	Time	Key Event
		PS logging
	17:30	Hole collapse at approx 60m onto PS logging tool, losing tool downhole. Perform re-termination and repair to 2nd tool
05/07/15	05:50	PAMS and MMO pre-work observation period
	07:58	Commence sampling and testing at BH-H10
06/07/15	07:05	BH-H10 complete
	12:05	Problems with PAMS equipment
	13:11	PAMS and MMO pre-work observation period
	14:17	Sea turtle spotted at 150m preventing deployment of equipment. Restart observation period
	15:01	Turtle sighting at less than 50m, restart observation period
	16:35	Commence sampling and testing at BH-G7
07/07/15	18:10	BH-G7 sampling and testing completed
	19:15	Recover anchors and spool on winch wire cables. Geotechnical operations completed.

For further details see Location Summary in Appendix 1.1 and Daily Progress Reports in Appendix 9.1

2.3 Time Breakdown

Table 2.3 details the time breakdown of all operations that were conducted on the M.V. Ocean Discovery.

Table 2.4 Time Breakdown of Operations at the site

Activity	Time (hh:mm)	Percentage (%)
Operations	288:55	58.96
Standby Weather/At Sea	58:54	12.02
Standby Mammal	29:23	6.00
Contractors Time	112:48	23.02
Total	490:00	100.00

2.4 Field Personnel

Key personnel on board the survey vessel are listed below in Table 2.5 and in Appendix 9.1 on the Daily Progress Reports.

Table 2.5 Field personnel

Gardline	Name	From	To
Master	Reynolds, Peter	16/06/2015	09/07/2015
Chief Officer	Riches, David Maurice	17/06/2015	09/07/2015
2nd Officer	De La Cruz, Bonifacio	16/06/2015	09/07/2015
2nd Officer	Monaghan, Stuart	16/06/2015	09/07/2015
OPM	Edgar, Michael David	16/06/2015	09/07/2015

Gardline	Name	From	To
Drill Supervisor	Trewin, Richard	16/06/2015	09/07/2015
Rig Mechanic	Bradu, Stefan	16/06/2015	09/07/2015
Driller	Ilie, Raul	17/06/2015	09/07/2015
Driller	Berindeie, Sergiu Valentin	17/06/2015	09/07/2015
Assistant Driller	Pripon, Radu	16/06/2015	09/07/2015
Assistant Driller	Lazar, Alexandru Romulus	16/06/2015	09/07/2015
Roughneck	Szekely, Adrian-Iosif	17/06/2015	09/07/2015
Roughneck	Satmari, Vlad	17/06/2015	09/07/2015
Roughneck	Marian, Vasile	17/06/2015	09/07/2015
Roughneck	Moldovan, Ovidiu	17/06/2015	09/07/2015
CPT Operator	Devlia, Bharat	17/06/2015	09/07/2015
CPT Operator	Lloyd, Richard	17/06/2015	09/07/2015
Geotechnical Engineer (EIC)	Harvie, Samuel Robertson	17/06/2015	09/07/2015
Geotechnical Engineer	Vowles-Sheridan, Nicholas	17/06/2015	09/07/2015
Geotechnical Engineer	Yao, Xue	17/06/2015	09/07/2015
Lab Technician	Bin Ali, Mohammad Jamaludin	17/06/2015	09/07/2015
Lab Technician	Hayward, Nigel Peter	17/06/2015	09/07/2015
Surveyor	Mobbs, Giles David	16/06/2015	09/07/2015
PSO/PAMS Op	Buckland, Lucy	17/06/2015	09/07/2015
PSO/PAMS Op	Price, Richard	17/06/2015	09/07/2015
PSO/PAMS Op	Duguid, Gareth	17/06/2015	09/07/2015
PSO/PAMS Op	James, Gemma	17/06/2015	09/07/2015
PSO/PAMS Op	Gilchrist, Claire	17/06/2015	09/07/2015
Client Representative	**Name**	**From**	**To**
Client Rep.	Salvatore Liccardo	17/06/2015	09/07/2015

3. Drilling Operations

3.1 General

Seven boreholes were drilled at representative locations at the Maryland Wind Farm site. The boreholes (composite boreholes) were progressed combining the collection of undisturbed soil samples and in situ CPTU data. At four locations PS Logging data was also acquired.

3.2 Equipment

Drilling operations onboard the geotechnical vessel M.V. Ocean Discovery were performed using a straight flush bit connected to a 3m heave compensator, drill pipe and rotary power swivel. Rig specifications are detailed in Table 3.1.

Table 3.1 Rig Specifications

Rig No / Name	GL 100 Twin Derrick
Weight of Seabed Frame	13 tonnes
Base Area	5.76m^2
Maximum Thrust force	100kN
Maximum Pull Up Force	200kN
Mud System	GD Pumps with Guar Gum

The drill string used was a standard 4 inch (nominal 102mm) inner diameter API drill pipe. A variety of drill bits were available for this project and were selected by the drilling supervisor to best suit the ground conditions across the site. The drill bits used for this project included Pilot and GeoQ and contained a variety of materials including tungsten carbide and PCD. The GeoQ and Pilot drill bits are used as sampling devices within high strength soils or low strength rock.

CEFAS approved drilling mud Guar Gum was used to both flush and stabilise the borehole. The drilling mud was mixed to a manufacturer's weight specification to best suit the particular ground conditions encountered during the drilling process. This was modified throughout the borehole drilling operations as different strata were encountered.

3.3 Operations

A remotely controlled wireline winch was used to deploy both Push sampling and CPTU tooling during drilling using the straight flush rotary coring system. When the samplers or CPTU reached the maximum stroke or refused due to ground conditions the borehole would be drilled out to the next required depth as stated in the borehole progression plan or depth of refusal.

To ensure sampling borehole strategies were in keeping with the scope of work a borehole progression plan (BPP) was prepared prior to the borehole.

4. In Situ Testing - CPTU

4.1 General

A series of CPTU tests were acquired at the Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area at the borehole locations. These tests were conducted using a WISON VdB downhole push unit.

4.2 Equipment

WISON VdB utilises a constant tension umbilical winch with which to provide communications and electrical and hydraulic power to the surface unit. Table 4.1 details the main specifications of the rig. Further details relating to the Downhole CPTU equipment used can be found in Appendix C-2.1, whilst the cone calibration certificates are presented in Appendix C-4.1. The 10cm^2 cones were calibrated to Class 1 accuracy, in accordance with ISO 22476-1:2012.

Downhole CPTU testing was carried out in accordance with the requirements of ISO 22476-1:2012. Cone offsets are tabulated in Appendix 3.3. The cone offsets were taken on deck before and after the test and on the seabed before and after each test. The offsets were checked for consistency before and after testing.

Table 4.1 Downhole CPTU Unit Specifications

Rig No / Name	Wison APB Wireline CPT and Sampling Equipment
Weight of Frame	10 Tonnes
Frame Base Area	5.76m^2
Deployment	Remotely controlled winch used to deploy tools
CPT Technical Specification	10cm^2 up to 3m stroke with 100kN thrust Capacity
Cone Size	10cm²
Cone Numbers	070815, 071216, 081213, 100904, 100905, 100912, 100917, 100981, 120911

4.3 Summary of Downhole CPTU Operations

CPTU tests were performed at each borehole at the Maryland Wind Energy site. Appendix 3.1 contains a summary showing operational details of each CPTU push.

4.4 CPTU Data Collection Operations

CPTU testing was carried out in accordance with the requirements of ISO 22476-1. A 10cm^2 was used for the testing. The CPTU data was within the appropriate classes (Class 1 and 2 for the encountered soils) as outlined in ISO 22476-1. Nine 10cm^2 piezocones were used.

The penetration test data (see Table 4.2) is captured by the CPTU surface unit in real-time and displayed in graphical format as the test is performed. This data can be plotted out in graphical form on completion of the test if required. The data is also saved automatically to the CPTU system hard drive and USB data storage. The ASCII data is transferred directly to an offline computer and the data from these CPTU tests was processed using Gardline software TerraFusion. The formatting of the raw file does not affect the data in any way, with the exception of removing the upper cone clearance data (data that is captured but not relevant to the soil profile). The formatting also removes the surface unit code areas that are not relevant.

Table 4.2 CPTU Data Units

Data Type	Symbol	Data Units	Comments
CPTU Number	-	-	Added by software
Depth of result for cone test	D	m	Read every 0.02m
Cone End Resistance	q_c	MPa	-
Local Side Friction	f_s	MPa	-
Pore Water Pressure	u_2	kPa	Measured behind the tip

5. In Situ Testing - PS Logging

5.1 General

The method is used for the in situ determination of compression (P) and shear (S) wave seismic velocities. The equipment, manufactured by OYO Corporation, comprises a directional seismic source and a pair of directional seismic detectors mounted together with associated power, switching and data transmission electronics, in a 7 m long wireline sonde (Figure 5.1 and 5.2). It is deployed in a fluid filled uncased borehole from a logging winch (Figure 5.3) fitted with depth encoder. Operation is controlled using Robertson Geologging Ltd (RGL) software running a RGL Micrologger 2 logging interface unit.

Figure 5.1 and 5.2 Sonde Component

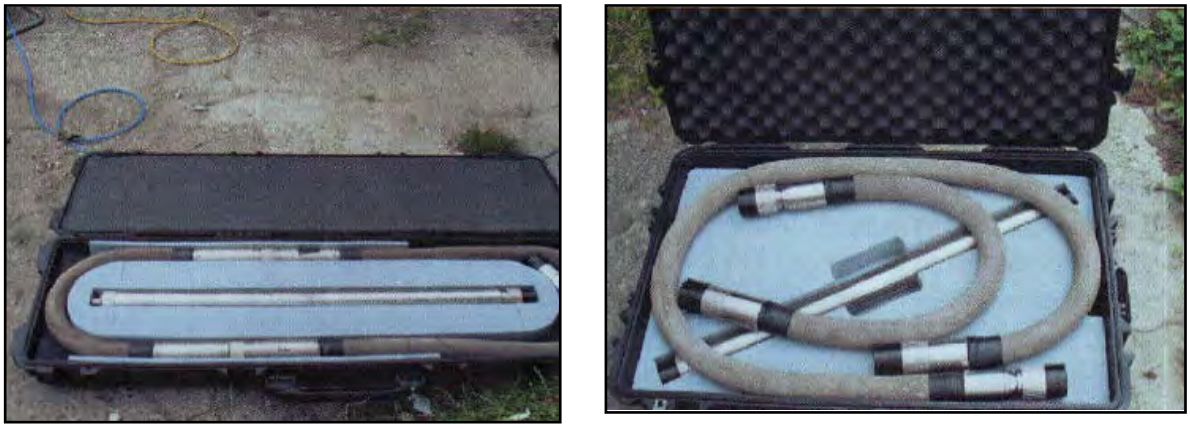
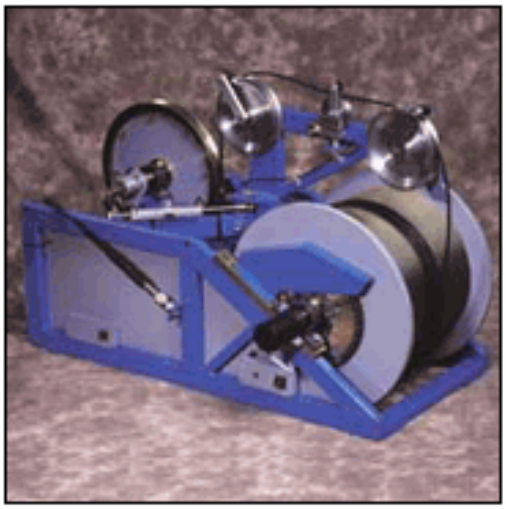


Figure 5.3 PS Logging Winch



5.2 Summary of PS Logging Operations

In operation the seismic source in the sonde is activated to produce a sequence of seismic pulses which excite ‘flexural’ waves. Depending on the direction of impulse the seismic waves which are generated travel at the P- and S-wave velocities of the formation and are detected by the seismic receivers which are 1 m apart. The difference in arrival time at the lower and upper receivers can be measured from the displayed waveforms and the seismic velocities can then be calculated.

It is necessary for the operator to control the system settings to ensure that the data recorded are of sufficient quality for the arrival time measurements to be carried out. Measurements are usually made from the bottom up at 1m intervals and a raw data file is stored for each record.

Once specified depths have been measured the data is then processed. From the resulting wave formation plots, the first arrival times from both the compression (P) and shear (S) wave velocities are picked. The seismic velocities are then determined and used along with other geotechnical data such as densities to aide in characterisation of the basic material properties and determination of G_0.

5.3 PS Logging Data Collection Operations

The scheduled start depth in BH-I21B was 74.0m. From the borehole log it was decided that the logging would be carried out in four stages. Run 1 from 74.0m to 56.0m, Run 2 from 56.00m to 44.0m depth, Run 3 from 44.0m to 34.0m and Run 4 from 34.0 to 25.0m. This was done to mitigate any chance of borehole collapse and loss of tool. However due to the unstable nature of the material the borehole collapsed at 25.0m.

The scheduled start depth in BH-MET TOWER was 65.0m. From the borehole log it was decided that the logging would be carried out in four stages. Run 1 from 65.0m to 51.0m, Run 2 from 51.0m to 27.0m depth, Run 3 from 27.0m to 18.0m and Run 4 from 18.0 to 10.0m. PS logging ended at 10m due to the high risk of tool loss by borehole collapse.

The scheduled start depth in BH-D14A was 69.0m. Borehole collapsed at 48m and between 8m and 20m prevented PS logging at further depths. Hence the data has been collected only between 44.0m and 20m. From the borehole log it was decided that the logging would be carried out in two stages. Run 1 from 44.0m to 33.0m and Run 2 from 32.0m to 20.0m depth.

PS logging data has been collected between 68.0 and 37.0m at BH-G17A because of repeated borehole collapse due to ground condition. PS logging was carried out in two stages. Run 1 from 68.0m to 41.0m and Run 2 from 40.0m to 37.0m depth. No PS logging data from 72.0m to 68.0m and from 37.0m to 0.0m as per client instruction to not test within areas where the borehole has collapsed.

The scheduled start depth in BH-K16 was 73.0m. The PS logging tool was lost downhole during deployment at approximately 60m below mudline due to borehole collapse, no data was collected. No PS logging data was acquired for BH-G7 and BH-H10.

Both P and S wave velocities were picked and represented in the log. In some instances it was not possible to pick shear wave velocities. This is often the case as the PS logger nears the seabed as loss of shear waves is expected as you approach the surface. Too much noise and vibration cause the shear waves to become drowned out as well as the degradation of the borehole caused by drilling operations is also more pronounced closer to mudline. The ground conditions of the Maryland Wind Energy Area affected the data quality due to the presence of very thick sandy layers which were prone to collapsing in the uncased drill borehole. This resulted in the borehole losing its linear shape while reshooting would not have improved the data.

6. Sampling Operations

6.1 *General*

A total of seven boreholes were drilled in the Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area. The samples collected were generally of good quality. Most of the samples were extruded onboard for description and geotechnical testing. Sections of samples were also selected for further specialist testing in the onshore laboratory facility. These sections were sealed with wax to preserve core integrity.

6.2 Equipment

The standard wire-line sampler system (WISON VdB downhole push unit) was used to collect push samples. The push sampler system hydraulically pushes the sample tube into the soil at a constant rate of 20 mm per second using the reaction obtained by clamping the drill pipe at mudline. The down-the-hole tools are pushed into the soil beyond the drill bit by means of a hydraulic cylinder. Details of the sampler system are presented below in Appendix 5.2.

A wide range of sampling tubes were available during the investigation. Adequate tubes were selected to optimise sample quality and recovery depending on soil conditions. Further details on sample geometry can be found in Table 6.1.

The drill string used was a standard 4 inch (nominal 102mm) inner diameter API drill pipe. A variety of drill bits were available for this project and were selected by the drilling supervisor to best suit the ground conditions across the site.

Table 6.1 Sampler Specifications

Equipment	Hole Diametre (mm)	Sample Diametre (mm)	Maximum Sample Length (m)
Thin Walled Shelby Sampler	76.2	70	1
Medium Walled Shelby Sampler	81.2	72	1

6.3 Operations

Offshore laboratory testing was scheduled onboard the vessel by Gardline Geotechnical Engineers and the testing carried out by qualified Laboratory Technicians once an initial assessment of the samples had been completed. All offshore sampling handling and laboratory operations are detailed in Section 7 - Field Laboratory.

7. Field Laboratory

7.1 General

All samples were extruded offshore and representative samples were tested according to ASTM 2488-09A:2009 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure

The geotechnical testing in the offshore laboratory consisted of the following tests:

- Soil description and soil classification
- Photography of extruded samples
- Moisture content and density determination with the use of cylindrical density rings.
- Index shear strength tests: Torvane, Pocket Penetrometer and Motorised Laboratory Vane
- Undrained Unconsolidated Triaxial testing
- Hydrochloric Acid (HCl 10%)

7.2 Laboratory Equipment

- Hydraulic extruder
- Digital Camera
- Torvane
- Pocket Penetrometer
- Motorised Laboratory Vane
- Munsell colour charts
- Drying oven
- Unconsolidated undrained triaxial frame/cell
- Data logging and processing computer
- Sufficient consumables for sealing and storing samples
- Sample boxes

All equipment was within valid calibration dates. The relevant certificates can be found in Appendix 7.1. Prior to sampling the soil drying oven was calibrated to make sure that the temperature remained stable and within the prescribed parameters noted in the ASTM D2488.

7.3 Summary of Laboratory Operations

Upon sample recovery to deck the samples were extruded and an assessment made of sample quality and suitability for offshore testing and / or preservation for further testing in the onshore laboratory facilities.

All extruded samples were photographed and then visually classified. The sample suitability was then assessed for onshore testing and preserved as either undisturbed samples (referenced as sample type “U” or “Q”), or double bagging as disturbed samples (referenced as sample type “B”).

Samples were extruded from the shelby tubes using a hydraulic extruder and then photographed in the laboratory. Once the samples were geotechnical logged they were bagged and labelled or, where high quality cohesive or granular material was identified, samples were preserved in quart

tubes for further onshore laboratory testing. Quart samples were wrapped in polythene film, aluminium foil, wax and cardboard “quart” tubes to protect the sample from damage and moisture loss.

All samples were stored within a temperature controlled container onboard the vessel to the standards specified in ASTM D 3213 -91: Standard Practices for Handling, Storing and Preparing Soft Undisturbed Marine Soil.

All samples are to be returned to the Gardline laboratory in Great Yarmouth, UK for further laboratory testing.

A summary of the number of laboratory tests performed based on visual classification and shear strength tests for this project are presented below in Table 7.1.

Table 7.1 Summary of Offshore Laboratory Tests Performed

Number of Tests	Type of Tests
138	Photographs
121	Pocket Penetrometer
64	Torvane
245	Moisture Content with Density
11	Motorised Laboratory Vane Undisturbed
11	Motorised Laboratory Vane Remoulded
28	Undrained Unconsolidated Triaxial Undisturbed

8. Preliminary Geotechnical Boring Logs and Soil Profiles

8.1 General

The borehole logs integrate CPTU data and laboratory results at each location (Appendix 2.1). Table 8.1 summarises the parameters presented on the logs. Borehole coordinates and water depths are stated on the individual borehole logs. Water depth measurements were corrected to MSL.

The borehole logs are generally presented as multiple plots (0-20m, 20-40m, 40-60m and 60-80m) with each log including interpretations of the CPTU data, where performed.

A location plan for the Geotechnical Survey is shown in Figure 1 and Appendix 1.1.

Table 8.1 Parameters presented on borehole logs

Data Type	Symbol	Data Units
Soil Description	-	-
Natural Moisture Content	-	%
Density	-	Mg/m^3
Corrected Cone tip resistance	q_t	MPa
Sleeve friction	f_s	MPa
Pore water pressure	u_2	kPa
Undrained Shear Strength	S_u	kPa
Relative Density	D_r	%
Friction Ratio	R_f	%
Pore Pressure Ratio	B_q	-

8.2 Soil Layering

Layer boundaries have been chosen based on four factors; the soil description, classification tests, index shear strength measurements and the CPTU data. For all clay units N_{kt} cone factors of 15.0 and 20.0 have been used for interpretation of the undrained shear strength (S_u) from the CPTU data.

The soil interpretations and stratigraphy will be reviewed once the onshore laboratory testing and logging suite has been completed and will be updated for the factual and interpretative reports (Volumes 2 and 3).

The seabed frame (SBF) was measured for sinkage below mudline during each borehole deployment using the sinkage metres attached upon the SBF. Any sinkage measured is presented upon the borehole logs and the soil stratigraphy is presented from the SBF sinkage depth.

Soil layering across the Maryland Wind Energy Area can be separated into five units. The survey site varied in stratigraphy across the site, with boundaries between the units characterised by a significant changes in homogeneity and densities.

Soil layer 1

At each borehole location a CPT testing and push sampling indicates poorly graded SAND with locally varying fractions of gravel and silt. This unit extended to a depth of between 7.52m and 27.00m. Within this unit stratifications and laminations of sandy CLAY of varying thickness and spacing were identified. At BH – D14A and BH-H10 an additional unit was identified that wasn't present at other locations. This additional unit was characterised by CLAY stratified with clayey sand.

Soil layer 2

This was identified at each borehole location. It is characterised by very dense to compact poorly graded SAND with gravel. It is characterised by its mechanical behaviour. During CPTU testing tip resistance of greater than 50mPa were found. It varied in depth at each location, extending to maximum depth of 37.00m.

Soil layer 3

Unit 3 is an in homogenous unit of sandy CLAY which varied in thickness across the site. This unit was defined by a marked change from the very dense to compact sands. Interpreted as a sandy CLAY this unit had frequent changes in fines and coarse grain fractions as well as stratifications of sand and silt within the unit.

Soil layer 4

This is a unit of poorly graded, locally well graded SAND with silt and locally clayey, fine to coarse, dense to compact. It was found between 43.92m to 73.98m below mudline. It is the terminal unit at four of the borehole locations. It is characterised by high tip readings during CPTU testing and lower clay content.

Soil layer 5

Identified at three borehole locations, it is a unit of sandy CLAY becoming CLAY, stiff to very stiff. It is mostly laminated with grey silt and fine sand with some stratification of SAND and shell. It is the terminal unit at three borehole locations.

9. Classification Laboratory Test Results

9.1 General

Offshore laboratory testing was scheduled by the geotechnical team onboard and testing was conducted alongside drilling operations. Borehole progression plans were authorised by the Onboard Client Representative prior to the start of each new borehole. All samples were extruded offshore and representative samples were tested in accordance with ASTM relevant standards

The geotechnical testing offshore consisted of the following tests:

- Soil description and soil classification
- Photography of extruded samples.
- Moisture content and density determination with the use of density rings.
- Index shear strength tests: Torvane, Pocket Penetrometer, and Motorised Laboratory Vane
- Unconsolidated Undrained Triaxial (UUT)
- Carbonate reaction with Hydrochloric Acid (HCl 10%)

9.2 Offshore laboratory testing

Classification tests were performed within the designated offshore laboratory in order to obtain basic soil characteristics on all recovered samples. All extruded samples were photographed and then visually classified.

Further onshore laboratory testing was scheduled by Gardline's Geotechnical Engineer and the samples will be subjected to further onshore testing at Gardline Geosciences Limited's onshore geotechnical testing laboratory.

All individual classification and strength test results are presented in the borehole logs in Appendix 2.1. A schedule of test performed offshore per borehole is presented on appendix 4.2.

The sample photographs are presented in Appendix 4.

The classification laboratory test results are presented in Appendix 4.1.

10. CPTU Analysis

10.1 General

Downhole CPTU operations were carried out in accordance with ISO 22476-1:2012 Geotechnical Investigation and Testing - Field Testing. Part I. All CPTUs carried out were within accuracy class 1 and 2, achieving the appropriate accuracy for the tested soils as set out by ISO 22476-1:2012. All testing was completed using $10cm^2$ piezocones at the Maryland Wind Energy location. The CPTU's were carried out using Wireline downhole CPTU. The data from these CPTU tests were processed using Gardline Geosciences TerraFusion software. The measured and derived plots for each test can be seen in Appendix 3.3.

10.2 Results

A total number of one hundred eighty nine CPT tests were performed at the Maryland Wind Energy location, two of them didn't pass our office QC process and details of these tests can be seen in the combined logs presented in Appendix 2.1. The zero readings of the tests were taken on deck before and after the test and on the seabed before and after each test, these readings are presented in Appendix 3.2.

The CPTU data are presented in two sets of plots. The first set represents corrected measured parameters. These plots consist of:

- Cone resistance – q_c
- Sleeve friction – f_s
- Pore water pressure – u_2 (behind the tip)

The data acquired downhole were corrected for the error involved in zeroing the cone sensors at the borehole base:

$$u_2 = u_2^* + \gamma_w * d$$
$$q_c = q_c^* + d * \alpha * \gamma_w$$

Where

u_2^* and q_c^* are the measured values of the downhole CPTU
d =depth of borehole below seabed
γ_w = unit weight of water
z = depth of cone tip below bottom of borehole

The second set represents corrected measured parameters and contains the following calculated data:

- Corrected cone resistance - q_t
- Sleeve friction - f_s
- Friction Ratio - R_f
- Pore pressure ratio - B_q

The data for the derived plots were calculated using the following formulae:

$$q_t = q_c + d*\alpha*\gamma_w + (1-\alpha)(u_2 + \gamma_w*d) = q_c + (1-\alpha)u_2 + \gamma_w*d$$
$$R_f = f_s/q_t * 100\%$$
$$B_q = \Delta u/q_n$$

where $q_n = q_t - \sigma_{v0}$
and $\Delta u = u_2 - \gamma_w * z$

- Ratio of the cone shaft to the area of the cone tip - α
- Net cone resistance - q_n
- Pore pressure in excess of hydrostatic pressure - Δu
- Total overburden pressure of overlying sediments - σ_{v0}

10.3 Discussion of Results

The majority of CPTUs conducted were within accuracy Class 1 and 2, the appropriate classes for the tested soils as set out by ISO 22476-1:2012. Cone changes were conducted if any cones offsets fell outside of class 1. Cone offsets were monitored by Gardline Geosciences CPTU operators and Geotechnical Engineers after each test. All cones where assessed for stability during mobilisation and any cones deemed unstable were removed from usage.

The zero reading offsets were consistent before and after testing and there is no evidence of sensor drift effects. In addition, the tip resistance pore pressure and sleeve friction measurements showed excellent responsiveness to layer changes and to the presence of any laminations, stratifications or coarse grained materials within fines. This is an indication of good sensor response and sensitivity. The zero readings of the tests were taken on deck before and after the test and on the seabed before and after each test.

11. Laboratory Testing Procedures

11.1 General

The objective of the laboratory test program was to evaluate the pertinent physical and mechanical characteristics of the soils encountered during sampling at the site.

This section of the report discusses the laboratory testing program performed. Tests were performed in accordance with ASTM where possible.

11.2 Soil Description

Descriptive terms are based on ASTM D2488-09A – Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

The basic soil types as defined by particle size analysis are as follows:

GRAVEL	Coarse	19.0mm to 75.0mm
	Fine	4.75mm to 19mm
SAND	Coarse	2.00mm to 4.75mm
	Medium	0.425mm to 2.00mm
	Fine	0.075mm to 0.425mm

SILT Soil that is less than 0.075mm that is non plastic or very slightly plastic and that exhibits little or no dry strength when air dry.

CLAY Soil that is less that 0.075mm that can be made to exhibit plasticity within a range of water contents and that exhibits considerable strength when air dry.

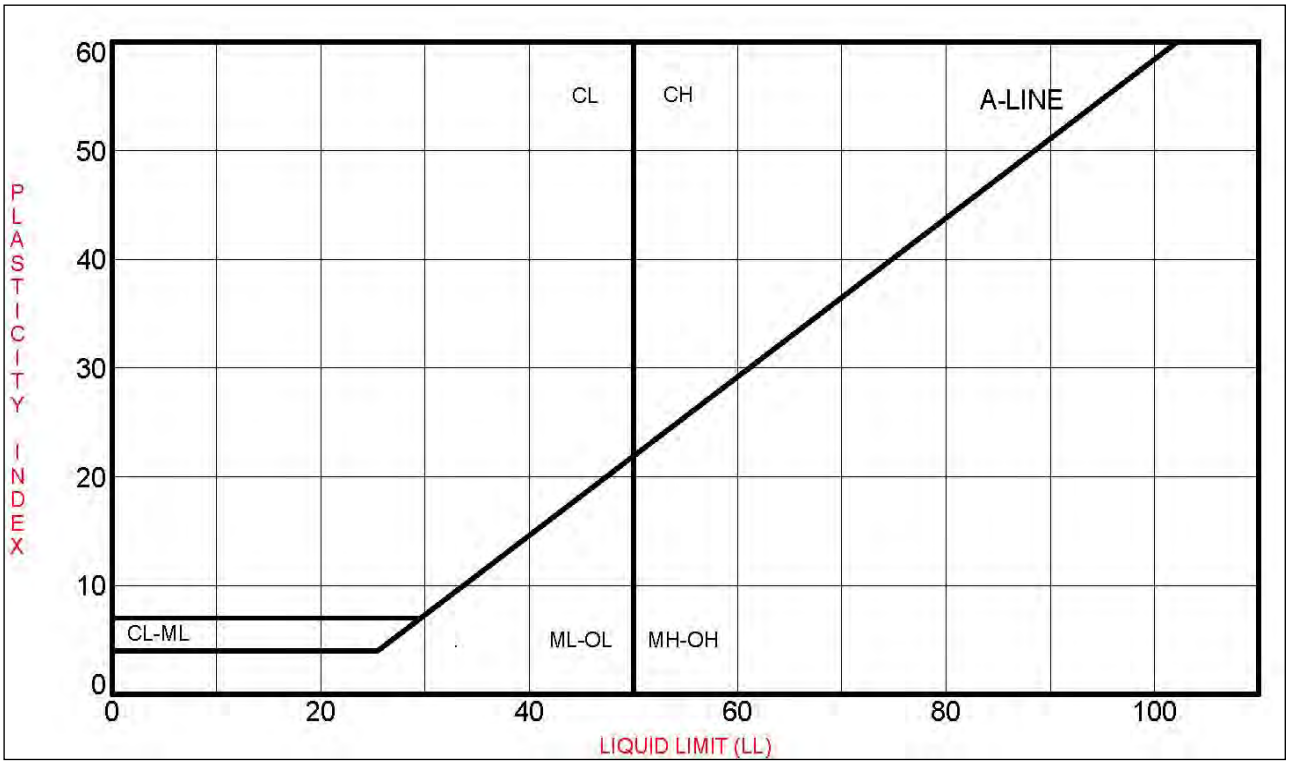
The principal soil type is based on particle size distribution of the coarse fraction and of the fine fraction as determined by a series of specified hand tests supplemented by soil classification tests.

11.2.1 Fine Grained Soils

The identification and description of fine grained soils is based both on a set of hand tests and the measurement of the particle size grading. These hand tests include: dry strength, plasticity and dilatancy.

In general terms, a soil lying above the A-line (Figure 11.1) would be identified as a CLAY and a soil below the A-line as a SILT, however it must be recognized that a soil above the A-line may be comprised of particles of non CLAY minerals (less than 2µm size such as rock flour); equally soils that fall below the A-line may be comprised of the clay minerals halloysite, kaolinite and chlorite.

Figure 11.1 Soil Plasticity Chart



A fine soil is also described according to its consistency shown below in Table 11.1 and shear strength shown in Table 11.2.

Table 11.1 Soil Consistency Classification Parameters

Descriptor	Criteria
Very Soft	Thumb will penetrate soil more than 1 inch (25mm)
Soft	Thumb will penetrate soil about 1 inch (25mm)
Firm	Thumb will indent soil about ¼ inch (6mm)
Hard	Thumb will not indent soil but readily indented with thumbnail
Very Hard	Thumb will not indent soil

Table 11.2 Soil Strength (ASTM D-5578-07 (2007))

Undrained shear strength of clays	Undrained shear strength (kPa)
Very Soft	<12.5
Soft	12.5 – 25
Firm	25 – 50
Stiff	50 – 100
Very Stiff	100 – 200
Hard	>200

Table 11.3 Soil Dilatancy Classification Parameters

Description	Criteria
None	No visible change in the specimen
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing

Table 11.4 Soil Plasticity Classification Parameters

Description	Criteria
Non-plastic	A ⅛ inch (3mm) thread cannot be rolled at any water content
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit

Secondary constituents within a fine soil are classified as summarised in Table 11.5.

Table 11.5 Secondary Constituent Classification (Fine Soils)

Group Symbol	Classification Steps			Group Name
CL	< 30% plus 75µm	<15% plus 75µm	% sand > % gravel	Lean clay
		15-25% plus 75µm	%sand < % gravel	Lean clay with sand Lean clay with gravel
	> 30% plus 75µm	% sand > % gravel	< 15% gravel	Sandy lean clay
			> 15% gravel	Sandy lean clay with gravel
		%sand < % gravel	< 15% sand	Gravelly lean clay
			> 15% sand	Gravelly lean clay with sand
ML	< 30% plus 75µm	<15% plus 75µm	% sand > % gravel	Silt
		15-25% plus 75µm	%sand < % gravel	Silt with sand Silt with gravel
	> 30% plus 75µm	% sand > % gravel	< 15% gravel	Sandy silt
			> 15% gravel	Sandy silt with gravel
		%sand < % gravel	< 15% sand	Gravelly silt
			> 15% sand	Gravelly silt with sand

CH	< 30% plus 75µm	<15% plus 75µm 15-25% plus 75µm	% sand > % gravel %sand < % gravel	Fat clay Fat clay with sand Fat clay with gravel
	> 30% plus 75µm	% sand > % gravel %sand < % gravel	< 15% gravel > 15% gravel < 15% sand > 15% sand	Sandy fat clay Sandy fat clay with gravel Gravelly fat clay Gravelly fat clay with sand
MH	< 30% plus 75µm	<15% plus 75µm 15-25% plus 75µm	% sand > % gravel %sand < % gravel	Elastic silt Elastic silt with sand Elastic silt with gravel
	> 30% plus 75µm	% sand > % gravel %sand < % gravel	< 15% gravel > 15% gravel < 15% sand > 15% sand	Sandy elastic silt Sandy elastic silt with gravel Gravelly elastic silt Gravelly elastic silt with sand

11.2.2 Coarse Grained Soils

The description of coarse soils (SAND and GRAVELS) is primarily performed by visual observation. There are two problems with the description of coarse soils. First, one must consider the visual differences observed between volume and weight percentages of a sample; and second, is the correct application of the 2mm grain size between SAND and GRAVEL. The correct visual description is in accordance with the “weight percentage”, and can be verified by a laboratory particle size distribution test.

Secondary constituents within a coarse soil are classified as summarised in Table 11.6.

Table 11.6 Secondary Constituent Classification (Coarse Soils)

			Group Symbol		Group Name
< 5% fines	Well-graded Poorly graded		GW GP	< 15% sand > 15% sand < 15% sand > 15% sand	Well-graded gravel Well-graded gravel with sand Poorly graded gravel Poorly graded gravel with sand
10% fines	Well-graded Poorly graded	Fines = ML or MH Fines = CL or CH Fines = ML or MH Fines = CL or CH	GW-GM GW-GC GP-GM GP-GC	< 15% sand > 15% sand < 15% sand > 15% sand < 15% sand > 15% sand < 15% sand > 15% sand	Well-graded gravel with silt Well-graded gravel with silt and sand Well-graded gravel with clay Well-graded gravel with clay and sand Poorly graded gravel with silt Poorly graded gravel with silt and sand Poorly graded gravel with clay Poorly graded gravel with clay and sand
> 15% fines		Fines = ML or MH Fines = CL or CH	GM GC	< 15% sand > 15% sand < 15% sand > 15% sand	Silty gravel Silty gravel with sand Clayey gravel Clayey gravel with sand
< 5% fines	Well-graded Poorly graded		SW SP	< 15% gravel > 15% gravel < 15% gravel > 15% gravel	Well-graded sand Well-graded sand with gravel Poorly graded sand Poorly graded sand with gravel
10% fines	Well-graded Poorly graded	Fines = ML or MH Fines = CL or CH	SW-SM SW-SC	< 15% gravel > 15% gravel < 15% gravel > 15% gravel	Well-graded sand with silt Well-graded sand with silt and gravel Well-graded sand with clay Well-graded sand with clay and gravel

		Fines = ML or MH	SP-SM	< 15% gravel	Poorly graded sand with silt
				> 15% gravel	Poorly graded sand with silt and gravel
		Fines = CL or CH	SP-SC	< 15% gravel	Poorly graded sand with clay
				> 15% gravel	Poorly graded sand with clay and gravel
> 15% fines		Fines = ML or MH	SM	< 15% gravel	Silty sand
				> 15% gravel	Silty sand with gravel
		Fines = CL or CH	SC	< 15% gravel	Clayey sand
				> 15% gravel	Clayey sand with gravel

All soil types are described in the following order:

- Group Name
- Group Symbol
- Percent of cobbles / boulders by volume
- Particle size range
- Particle angularity
- Particle shape
- Maximum particle size / dimension
- Plasticity of fines
- Dry strength
- Dilations
- Toughness
- Colour
- Odour
- Moisture
- Reaction with HCl
- Consistency
- Structure
- Cementation
- Additional information

11.3 Soil Classification

Classification tests were performed to identify the index properties of the soils encountered at the site. The offshore and onshore laboratories conducted moisture content, wet and dry density, visual identification and consistency tests. In addition, shear strength testing was also conducted using a torvane, pocket penetrometer, motorised lab vane and triaxial equipment. Advanced shear strength testing also included CIUC, DSS and CRS testing.

11.3.1 Natural Moisture Content and Bulk and Dry Density

Bulk densities of soil samples were measured by weighing samples of known volume immediately following sample extrusion; the dry density was then calculated from the measured wet density and the associated moisture content value.

Testing was carried out in accordance with ASTM D2488

11.3.2 Undrained Shear Strength

Undrained shear strength of cohesive samples were obtained from Torvane, Motorised Laboratory Vane, Pocket Penetrometer and triaxial tests offshore. Additional Fallcone, Triaxial, Shearbox and compressibility tests were undertaken in the onshore laboratory.

11.3.2.1 Pocket Penetrometer

The Pocket Penetrometer is a small hand held device consisting of a flat faced plunger and spring located in a cylindrical housing. The plunger is forced to penetrate the soil sample until a punching-type bearing failure occurs. The compression of the pocket penetrometer spring is directly calibrated to indicate the undrained shear strength of the soil, S_u.

The Pocket Penetrometer has a working limit of 300kPa; if this maximum limit is reached during testing it has been reported as 300+kPa on the summary tables. At higher strengths the most accurate method of measuring the undrained shear strength is the unconsolidated undrained triaxial test.

Testing was carried out in accordance with manufacturer's manual of operation.

11.3.2.2 Torvane Test

The Torvane is a small hand-operated device consisting of a plastic disc with thin, radial vanes projecting from one face. The Torvane is pressed against a flat surface of the soil until the vanes are fully embedded and is rotated through a torsion spring until the soil is sheared. The device is calibrated to indicate shear strength of the soil directly from the rotation of the torsion spring.

Testing was carried out in accordance with manufacturer's manual of operation.

11.3.2.3 Motorised Laboratory Vane

A Motorised Laboratory Vane setup comprises a four bladed cruciform vane mounted on a rod, the assembly being of stainless or plated steel and hard soldered. Typical blade dimensions are 12.7mm wide and 12.7mm long, but larger vanes may be used for measuring very low shear strengths. Rotation of the vane is provided by a motor applying torque via a worm and pinion drive with a suitable scale graduated in 1^{o} intervals for measuring angular rotation of the vane relative to the soil in which it is placed. A calibrated open coil torsion spring is used to increase torque with rotation. Shear is determined by the degree of rotation achieved after sufficient torque has been acquired to shear the vane within the sample.

11.3.2.4 Unconsolidated Undrained Triaxial Test (UUT)

In the unconsolidated undrained triaxial test the test specimen is encapsulated in a latex rubber membrane and subjected to a confining pressure as specified by sample depth. The soil specimen is then loaded axially in a load frame at a constant rate of strain; typically in the order of 1% per minute until the specimen fails. No drainage is allowed at any stage of the test. The undrained shear strength of the soil, S_u is half of the deviator stress at failure:

$$S_u = \frac{\sigma_1 - \sigma_3}{2}$$

Where σ_1-σ_3 is the maximum deviator stress (kN/m^2).

Testing was carried out in accordance with ASTM D2850-03a.

12. Geodetic Information and Water Depths

12.1 Equipment

The Primary positioning control for the survey was the Fugro Starpack DGPS System. The water depth within the Maryland Wind Energy site was obtained from EA400 Single-beam echo-sounder depths and reduced to mMSL (Mean Sea Level).

12.2 Geodetic Information

A summary of the geodetic information can be found in Table 12.1. For further details regarding geodetic and positioning information see the Positioning Report in Appendix 8.1.

Table 12.1 Geodetic Information

Ellipsoid	
Ellipsoid	WGS 84
Datum Name	WGS 84
EPSG code	7019
Semi-major Axis (a)	6378137.000metres
Semi-minor Axis (b)	6356752.31414metres
Inverse Flattening (1/f)	298.257222101
Eccentricity sq. (e^2)	0.006 694 380 0229
Projection	
Grid Name	UTM Zone 28N (15 W)
Projection Type	Transverse Mercator
EPSG code	9807
Origin Latitude	00° 00' 00.000" North
Origin Longitude	075° 00' 00.000" West
Origin False Easting	500000
Origin False Northing	0
Scale Factor	0.9996
Grid Unit	m
EPSG Code	9606
Geodetic Transformation	
Transformation	
EPSG transformation	8888
Transformation method	Position vector 7-parameter
Transformation Parameters:	
dX	0
dY	0
dZ	0
rX	0
rY	0
rZ	0
Scale	0

12.3 Water Depth Measurements and Locations

The reported water depths across the site were 19.30m – 27.03m. This has been corrected to mMSL and can be found in Appendix 1.1 along with the location coordinates.

13. Health, Safety and Environment

13.1 Health

Monitoring of onboard health was the responsibility of everyone on the vessel. During operations medical conditions were treated by the responsible personnel in the onboard hospital. All occupational health issues were discussed at monthly HSE meetings each Sunday.

13.2 Safety

Participation in a Vessel Safety and Back Deck Induction prior to starting work on the vessel was mandatory for all new crew joining the M.V. Ocean Discovery. This was to familiarise staff with the vessels safety procedures and details of muster and fire alarm drills, as well as behaviour and housekeeping expectations.

Safety meetings and shift hand over meetings were conducted prior to shift change at 11:45h and 23:45h. These included all staff on shift. Prior to any deck operations tool box talks were held with all relevant personnel present. Job Safety Assessment (JSA)'s, lifting plans, relevant permits to work and risk assessments were issued from the bridge. These were signed and dated by all staff involved in the operation and logged on the bridge.

13.3 Environment

Seven borehole were drilled the impact to the surrounding environment was minimal, onboard Marine Mammal Observers (MMO) were on board to mitigate any potential impact on the mammalian environment from noise.

A Marine Mammal Mitigation Plan (MMMP) was created specifically for this project that outlines the monitoring and mitigation requirements for minimising the impacts of noise and collision on marine mammals and turtles during the project. The MMMP is based on the mitigation requirements stipulated in the lease OCS-A 0489 and 0490 issued for the survey by BOEM and the Marine Mammal Monitoring and Mitigation Plan for the project submitted by ESS Group Inc. to BOEM on the behalf of US Wind Inc.

Five trained and dedicated PSOs, who are also experienced PAMS Operators, were onboard the geotechnical survey vessel and provided 24-hour visual and acoustic monitoring during the survey. Two PSO/PAMS Operators worked simultaneously on each watch, one on PAMS, the other doing visual watches, with PSOs alternating duties during both day time and night time operations.

Visual watches were conducted during all transits to the lease area and between borehole locations. Pre-drilling visual and acoustic watches were performed prior to each deployment of the seabed frame and associated drilling equipment. 12 of these watches were conducted before all drilling operations, and there was only one delay due to the proximity of protected species within the 200m mitigation zone.

Drilling operations only had a direct impact on the seabed environment within a 300m radius of the borehole locations due to the anchoring and drilling process.

13.4 Safety Drills and Health and Safety Executive (HSE) meetings

Safety drills were conducted by the marine crew based on Gardline and ISM regulations and procedures. Monthly safety meetings were conducted prior to start of project. These were chaired by the Captain. During these briefs, monthly assessment of on board health and safety was discussed. All safety observation cards submitted during the interim period between meetings were discussed along with the status of previous observation cards and changes to any safety or housekeeping procedures.

14. References

ASTM-3213-91, ASTM International Designation: D 3213 -97, Standard Practices for Handling, Storing and Preparing Soft Undisturbed Marine Soil

ASTM-2488-09, ASTM International Designation: D2488-09A: 2009**,** Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). *American Society for Testing and Materials,* Pennsylvania.

ASTM-5778-07, ASTM International Designation: D 5778 – 07, Electrical Friction Cone and Piezocone Penetration Testing of Soils

BS EN ISO 19901-8, 2013. Petroleum and Natural Gas Industries – Specific requirements for offshore structures, Part 8: Marine Soil Investigations

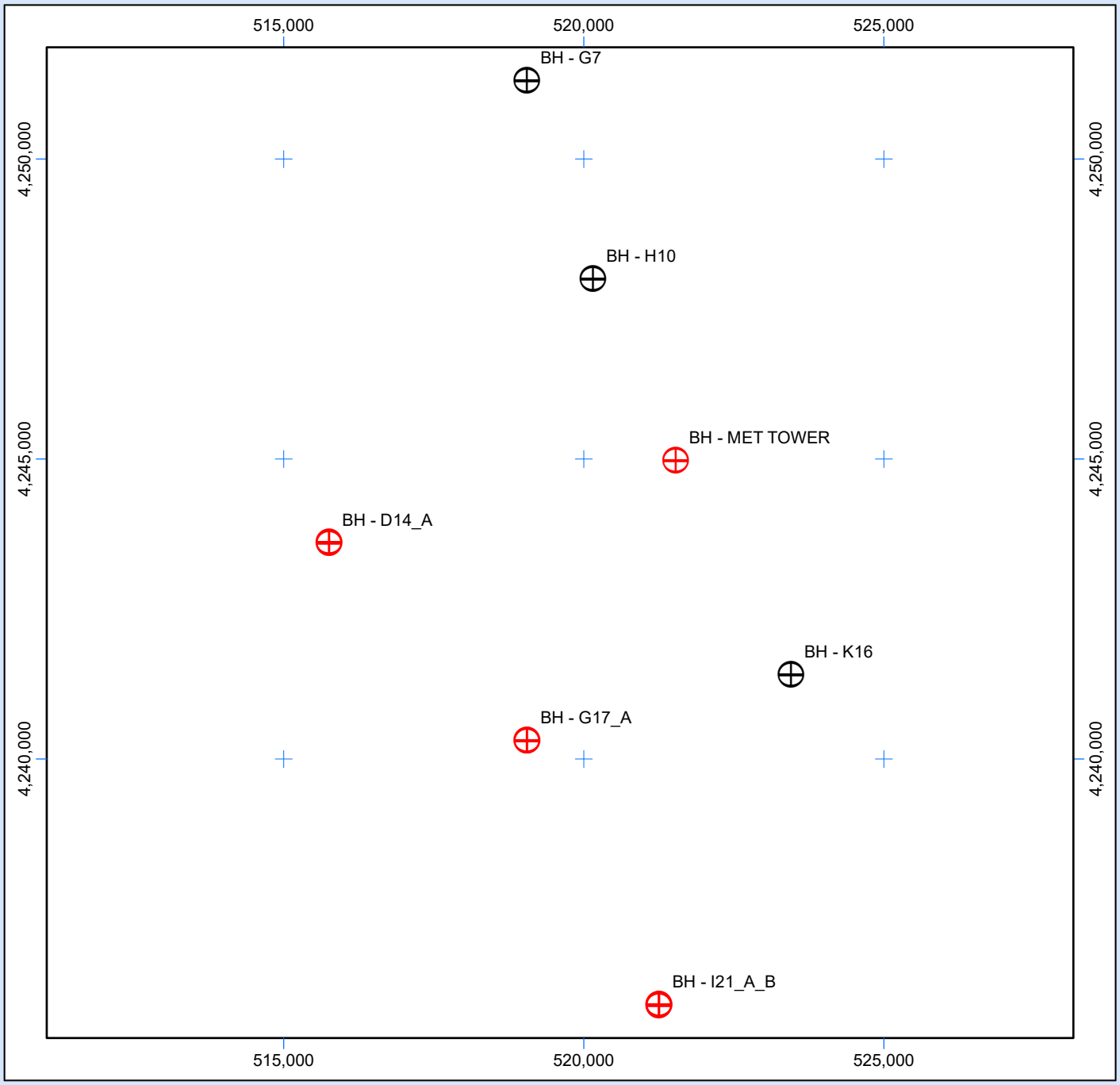
BS EN ISO 22476 – 1:2012 Geotechnical Investigation and testing - Field testing. Part1: Electrical cone and piezocone penetration test. British Standards Institution, London.

Jamiolkowski, M., Ghionna, V, N., and Lancellotta, R. 1988. New correlations of penetration tests for design practice. International Symposium on Penetration Testing ISOPT-1. Orlando, USA, pp. 263-296.

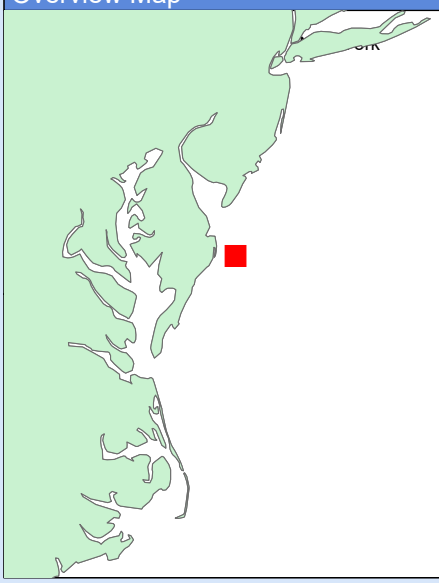
Robertson P.K. , Campanella R.G. , Gillespie, D. et Greig J. 1986. Use of piezometer cone data. Proceedings of the ASCE Speciality Conference In Situ '86: Use of In-Situ Tests in Geotechnical Engineering, Blacksburg, 1263-80, American Society of Engineers (ASCE).

APPENDIX 1

1.1 Location Details



Overview Map



Legend & Map Scale (A4)

Combined Borehole (CPTU/Sampling)

Combined Borehole (CPTU/Sampling) & PS Logging

Kilometers

0 1 2 3 4 5

1:100,000

Coordinate Reference System

Datum	NAD 83
Ellipsoid	GRS 80
Projection	UTM Zone 18N (75W)
Overview Data	ESRI

Contract Information

Gardline Job	10451
Client	US Wind Inc.
Client Ref	REF11449
Vessel	MV Ocean Discovery

Gardline Geosciences Ltd, Hewett Park, Hewett Road, Great Yarmouth, Norfolk. United Kingdom. NR31 0NN.

APPENDIX 2

2.1 Borehole Logs

2.2 PS Measurements Logs

2.1 Borehole Logs

LEGENDS

Cores - CPT - Photographs

Soil Identification Symbology

CLAY | SAND | COBBLES | PEAT | VOID

SILT | GRAVEL | CHALK | Mixed Soil

Key to Symbols

Onshore Lab Testing Symbols			Offshore Lab Testing Symbols	
■ Liquid Limit	● Moisture Content	★ Hand Vane	○ Moisture Content	✸ Hand Vane
□ Plastic Limit	● Bulk Density	✲ Hand Vane (Remoulded)	⊙ Bulk Density	✸ Hand Vane (Remoulded)
⊟ CAUC	○ Dry Density	▼ Fall Cone	⊙ Dry Density	◆ Fall Cone
⊞ CAUE	+ Torvane	▽ Fall Cone (Remoulded)	• Torvane	◇ Fall Cone (Remoulded)
⊠ CIDC	⊗ Lab Vane	▮ UUT	+ Lab Vane	▮ UUT
▬ CIUC	× Lab Vane (Remoulded)	▯ UUT (Remoulded)	× Lab Vane (Remoulded)	▮ UUT (Remoulded)
⊞ DSS	⚱ Pocket Pentrometer	⬟ Unit Weight (Density)	⚱ Pocket Pentrometer	⬟ Unit Weight (Density)
◘ Oedometer p0		⬠ Unit Weight (Moisture Content)	▣ Oedometer p1 Janbu Method	⬟ Unit Weight (Moisture Content)
⧈ Oedometer p1 Casagrande Method				

Strength of Soils

Relative Density Values (%)

Coarse Grained Soils	
0 - 15	Very Loose
15 - 35	Loose
35 - 65	Medium Dense
65 - 85	Dense
85 - 95	Very Dense
95 - 100	Compact

Shear Strength Values (kPa)

Fine Grained Soils	
0 - 12.5	Very Soft
12.5 - 25	Soft
25 - 50	Firm
50 - 100	Stiff
100 - 200	Very Stiff
200 +	Hard

Density of Intact Core (length used for measurement)

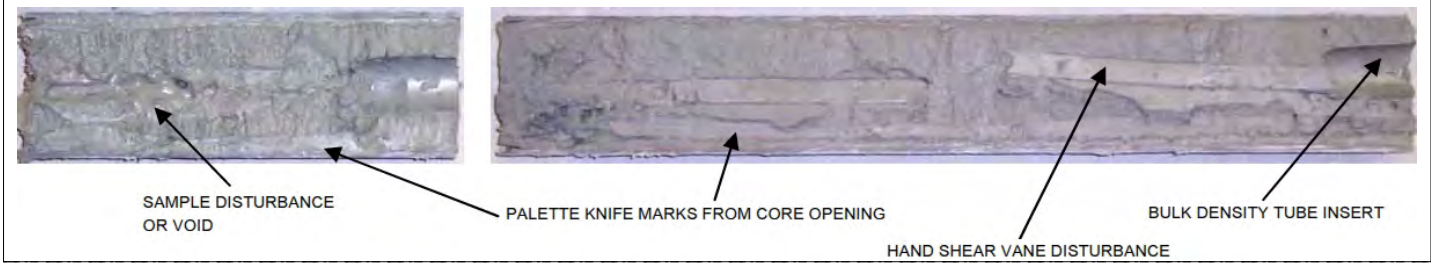
Abbreviations Used

AL : Atterberg Limits	**ANG** : Angularity	**LV** : Laboratory Vane
W_L : Liquid Limit	**n** : Porosity	**CPT** : Cone Penetration Test
W_P : Plastic Limit	**e** : Void Ratio	**q_c** : Cone End Resistance
I_P : Plasticity Index	**$CaCO_3$** : Calcium Carbonate	**f_s** : Local Side Friction
I_L : Liquidity Index	**ER**: Electrical Resistivity	**U_2** : Pore Pressure (behind Tip)
NP : Non Plastic	**TC**: Thermal Conductivity	**NMC** : Natural Moisture Content
PSD: Particle Size Distribution	**UW**: Unit Weight	**UUT** : Undrained Unconsolidated Triaxial
P_d : Particle Density (formulae)	**GC**: Gravity Core	**UUT(rem)** : Undrained Unconsolidated Triaxial (remoulded)
PD : Particle Density (core log)	**FC**: Fall Cone	**CAUC** : Consolidated Anisotropic Undrained Compression
MAX/MIN : Maximum/Minimum Density	**PC**: Piston Core	**CAUE** : Consolidated Anisotropic Undrained Extension
<425 um : % Sediment passing through sieve	**VC**: Vibrocore	**CIUC** : Consolidated Isotropic Undrained Compression
MPa : MegaPascal	**SBOX**: Shear Box Test	**CIDC** : Consolidated Isotropic Drained Compression
kPa : KiloPascal	**OED**: Oedometer	**DSS** : Direct Simple Shear

Formulae Used (Moisture Content)

Plasticity Index: $I_P = W_L - W_P$	Saturated Density = water density x $[(P_d + e) / (1+e)]$
Liquidity Index: $(NMC - W_P) / I_P$	<425 um = % sediment passing through 425 um sieve
Activity = I_P / (% clay-size fraction by weight)	Saturated Moisture Content: SMC = (e x 100) / P_d

Core Photography



Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0				BH - I21 P1		Poorly graded SAND. Sand is subangular, medium dense. Sand is light brown becoming dark grey, dry, little shell, shell is flat and fine to coarse gravel size (<60mm). Few lenses of black organic staining with mild to strong organic odour. Weak HCL reaction.
1				BH - I21 P2		
2				BH - I21 P3		*2.00m - 2.05m: Well graded GRAVEL with sand. Gravel is angular to sub rounded, fine (<18mm). Sand is medium, dark grey. Little shell, shell is fine gravel size (15mm).*
3						*3.16m - 3.45m: Sandy CLAY. Stiff to very stiff.*
4				002.5 081213G(10cm²) (0.75)	4.00	*3.74m - 3.91m: Sandy CLAY. Stiff.*
5						Well graded SAND with silt. Sand is subangular, fine becoming coarse at 5.90m. Dark grey, moist with lenses of black organic staining. Sand becomes coarse at 5.90m, with few laminations of clay. Few fine gravel sized (<15mm) shell. Strong HCL reaction
6				BH - I21 P4		
7						
8				006.5 081213G(10cm²) (0.75)	7.81	Well graded SAND. Fine to coarse, subrounded to subangular, dense to compact, dark olive grey, moist with trace shell fragments. Locally poorly graded. Stratified with poorly graded sand with gravel. Sand is angular and coarse. Gravel is subangular to subrounded and fine. Light brownish grey. No HCL reaction.
9						
10				BH - I21A P1		
11				010.5 081213G(10cm²) (0.75)		
12				011.0 081213G(10cm²) (0.75)		
13						
14				BH - I21A P2		
15				BH - I21A P3		
16				015.0 081213G(10cm²) (0.75)		
17						
18				BH - I21A P4A		
19				018.0 081213G(10cm²) (0.75)		

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**25.9**	**Comments:** **BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**22/06/2015 - 24/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.80m**		**SH/NV-S** (24/06/2015)
Method	**Wison**				

Sample Name: **BH - I21_A_B**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
21				BH - I21A P5		Well graded SAND. Fine to coarse, subrounded to subangular, dense to compact, dark olive grey, moist with trace shell fragments. Locally poorly graded. Stratified with poorly graded sand with gravel. Sand is angular and coarse. Gravel is subangular to subrounded and fine. Light brownish grey. No HCL reaction.
22						*20.81m - 22.00m: SAND with silt. Sand is fine, dense to compact, dark olive grey and moist. No HCL reaction.*
23						
24				022.0 209115G(10cm²) (0.75)		
25				BH - I21A P6		*23.80m - 25.25m: Well graded SAND with silt. Sand is fine to coarse, subangular to subrounded. Dense to compact. Olive grey, moist with few lenses of clay. Trace gravel, gravel is subangular and fine (<25mm). No HCL reaction.*
26				025.5 070815G(10cm²) (0.75) 026.0 070815G(10cm²) (0.75)	26.80	
27						Sandy CLAY. Sand is fine. Very stiff, dark greyish brown, moist, few laminations and lenses of silt. Micaceous. No HCL reaction.
28				026.5 070815G(10cm²) (0.75)		
29				BH - I21B P1		
30				BH - I21B P2		*29.80m - 30.00m: Elastic SILT with sand. Sand is fine. Very stiff, dark greyish brown, moist. Stratified with clay with sand. Sand is fine. No HCL reaction.*
31				030.0 100981(10cm²) (0.75)		*31.45m - 31.70m: Silty SAND. Medium dense.*
32						
33				BH - I21B P3	33.68	
34						Silty SAND. Sand is fine. Medium to dense, grey. Stratified with sandy silt. Sand is fine, medium dense, grey, moist. Micaceous. No HCL reactions
35				033.5 100981(10cm²) (0.75)		
36						*36.07m - 36.95m: Sandy SILT, sand is fine, medium dense, grey, moist. homogenous, micaceous. No HCL reaction. .*
37				BH - I21B P4		
38				037.0 100981(10cm²) (0.75)		
39						*38.62m - 38.95m: Sandy SILT. Medium dense.* *38.98m - 39.09m: Sandy CLAY. Hard.*

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

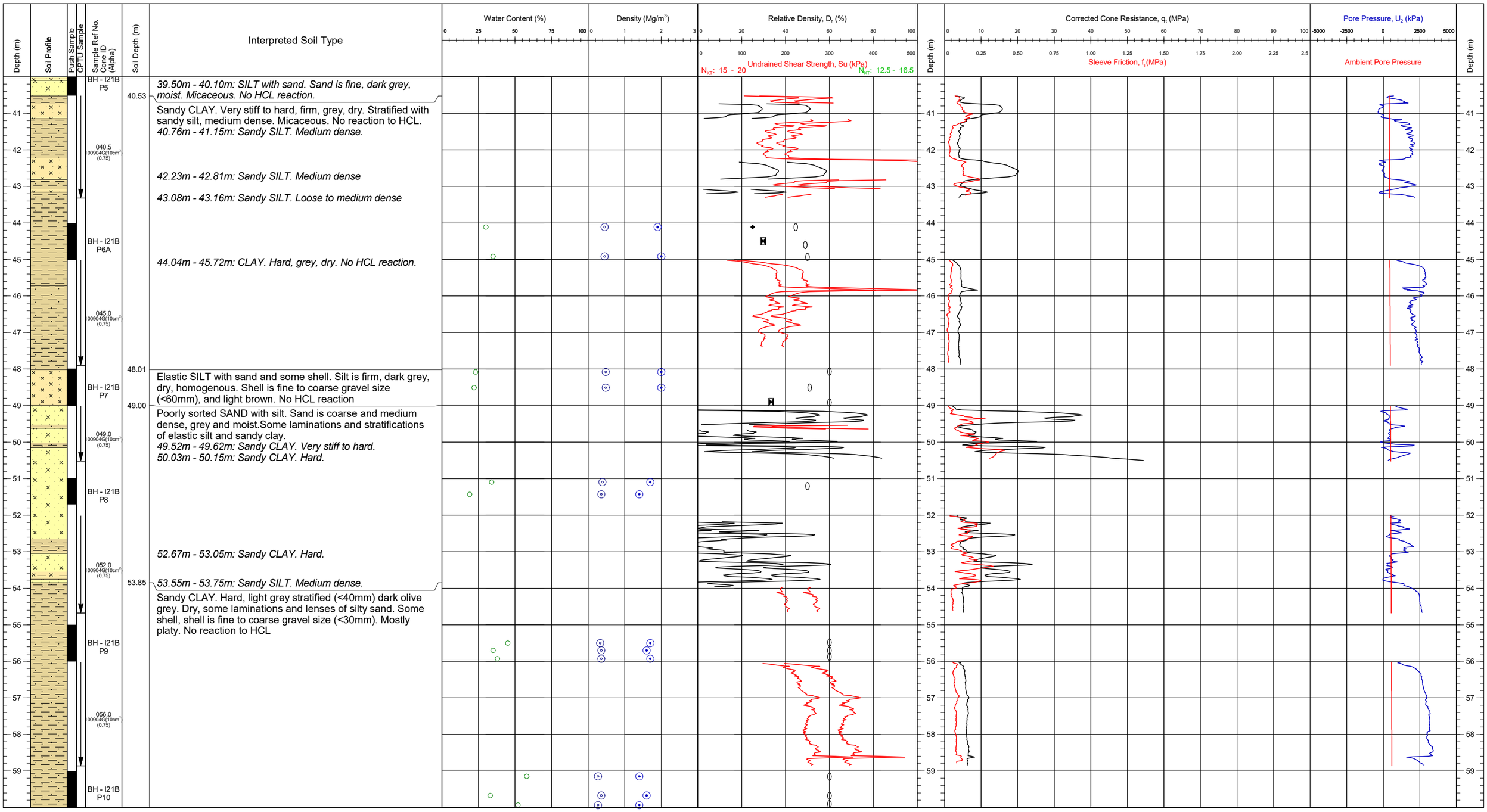
SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**25.9**	**Comments:** **BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa**	Sample Name: **BH - I21_A_B**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**22/06/2015 - 24/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.80m**		**SH/NV-S** (24/06/2015)
Method	**Wison**				

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING



KEY TO SOIL PROFILE

SILT · CLAY · CHALK · PEAT · SAND · GRAVEL · COBBLES · Mixed Soil

Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**25.9**	**Comments:** **BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**22/06/2015 - 24/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.80m**		**SH/NV-S** (24/06/2015)
Method	**Wison**				

Sample Name: **BH - I21_A_B**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Interpreted Soil Type	Soil Depth (m)
61	Sandy CLAY. Hard, light grey stratified (<40mm) dark olive grey. Dry, some laminations and lenses of silty sand. Some shell, shell is fine to coarse gravel size (<30mm). Mostly platy. No reaction to HCL	
66	Poorly graded SAND with silt. Sand is fine becoming medium, grey, medium dense to dense, moist with few shell. No HCL reaction.	66.42
69	*69.61m - 70.94m: Sandy SILT. Medium dense.*	
72	Sandy CLAY. Very stiff becoming hard. Gravel at base.	72.00
74	End of borehole at 73.80m	73.76

Push Sample: BH - I21B P11; BH - I21B P12; BH - I21B P13

CPTU Sample: 060.0 (0.75); 064.0 (0.75); 068.0 (0.75); 072.0 (0.75)

Sample Ref No. Cone ID (Alpha): 00904G(10cm²)

Water Content (%): 0 25 50 75 100

Density (Mg/m³): 0 1 2 3

Relative Density, D_r (%): 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa): 0 100 200 300 400 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa): 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa): -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT · CLAY · CHALK · PEAT · SAND · GRAVEL · COBBLES · Mixed Soil

Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**
Contract	**10451**	Water Depth (mMSL)	**25.9**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**22/06/2015 - 24/06/2015**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.80m**
Method	**Wison**		

CRS: **GRS 80 UTM ZONE 18 N (75 W)**

Comments:
BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa

QC Status: Preliminary | Draft | Final

SH/NV-S (24/06/2015)

Sample Name: **BH - I21_A_B**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0					0.10	Poorly graded SAND with gravel. Sand is angular, coarse, light brown with mostly shell. Shell is fine gravel size (15mm). Strong HCL reaction.
1				BH - MET TOWER P1		Poorly graded SAND with silt. Sand is angular to subangular. Fine to medium grained. Dense to compact. Light grey becoming dark grey. Few stratifications of GRAVEL, gravel is angular and fine. Few pockets of clayey SAND. Few laminations of black organic staining. Micaceous. Strong HCL reaction.
2				BH - MET TOWER P2		*0.10m - 0.30m: CLAY. Very soft, dark grey, wet, no HCL reaction.*
3				BH - MET TOWER P3		*1.00m - 1.15m: Poorly graded GRAVEL with clay. Gravel is angular, coarse (<28mm). Light grey to light brown. Some shell, shell is coarse gravel size (<50mm).*
4				003.0 070815G(10cm²) (0.79)		*1.15m - 1.20m: CLAY. Soft, grey, wet. Strong HCL reaction.*
5				BH - MET TOWER P4		
6						
7				005.5 120911G(10cm²) (0.79)		*6.67m - 7.74m: CLAY with sand. Stiff.*
8						
9				BH - MET TOWER P5		
10						
11				009.5 120911G(10cm²) (0.79)		
12					12.50	Poorly graded SAND. Sand is fine to medium grained, very dense to compact. Light grey and moist. Few laminations of black organic staining. Micaceous. No HCL reaction.
13				BH - MET TOWER P6		
14				013.5 120911G(10cm²) (0.79)		
15				015.0 120911G(10cm²) (0.79)		
16						
17				016.0 120911G(10cm²) (0.79)		
18						
19				018.5 120911G(10cm²) (0.79)		
				019.0 120911G(10cm²) (0.79)		
				019.5 120911G(10cm²)		

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.7**	**Comments:** **Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa**	**NV-S (27/06/2015)**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**25/06/2015 - 26/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**64.90m**		
Method	**Wison**				

Sample Name: **BH - MET TOWER**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
20				(0.79)	20.16	Sandy SILT. Medium dense to dense locally loose.
21				020.0 120911G(10cm² (0.79)		
22						
23					23.30	CLAY with sand. Sand is fine. Very stiff to hard, dark olive grey. Dry. Some laminations and lenses of silt. Micaceous. No HCL reaction.
24				023.0 120911G(10cm² (0.79)		
25						
26				BH - MET TOWER P9	26.50	Sandy CLAY. Sand is fine. Very hard to hard, very dark grey, dry. Little fine to coarse gravel size (<30mm) shell. Some laminations and lenses of sand and silt. Sand is fine grained. Micaceous with trace organics. Weak HCL reaction.
27				026.5 100904G(10cm² (0.75)		
28						
29				BH - MET TOWER P10		
30						
31				030.0 100904G(10cm² (0.75)		
32						
33				BH - MET TOWER P11		
34						
35				034.0 100904G(10cm² (0.75)		
36						*34.91m - 36.25m: CLAY with sand. Hard.*
37				BH - MET TOWER P12		*36.44m - 37.00m: Silty SAND. Medium dense.*
38						*37.00m - 37.30m: Drillers note: Damaged shelby, possible cobble/gravel.*
39				037.5 100904G(10cm² (0.75)		

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m^3): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s(MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**27.7**	**Comments:** **Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**25/06/2015 - 26/06/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**64.90m**	
Method	**Wison**			

QC Status		
Preliminary	Draft	Final
NV-S (27/06/2015)		

Sample Name: **BH - MET TOWER**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41				BH - MET TOWER P13		Sandy CLAY. Sand is fine. Very hard to hard, very dark grey, dry. Little fine to coarse gravel size (<30mm) shell. Some laminations and lenses of sand and silt. Sand is fine grained. Micaceous with trace organics. Weak HCL reaction. *40.50m - 41.53m: Elastic SILT. Firm, olive grey, moist, mostly laminated with sandy clay. Sand is fine. No HCL reaction.*
42				041.5 00904G(10cm²) (0.79)		*42.60m - 42.93m: Silty SAND. Dense.*
43						
44					44.01	Poorly graded SAND with silt. Sand is fine grained, grey, compact and wet. No HCL reaction. *44.50m - 44.69m: Drillers note: Damaged shelby, possible cobble/gravel*
45				BH - MET TOWER P13A 20911G(10cm²) (0.79) BH - MET TOWER P13 00904G(10cm²) (0.79)		
46				046.0 00904G(10cm²) (0.79)		
47				046.5 00904G(10cm²) (0.79) 047.0 00904G(10cm²) (0.79) 047.5 00904G(10cm²) (0.79)		
48				048.0 00904G(10cm²) (0.79)		
49				048.5 20911G(10cm²) (0.79) 049.0 20911G(10cm²) (0.79) 049.5 20911G(10cm²) (0.79)		
50						
51				050.0 20911G(10cm²) (0.79)		*50.77m - 53.50m: Sandy CLAY. Hard.*
52						
53						
54				BH - MET TOWER P16A		
55				054.0 20911G(10cm²) (0.79)		*55.30m - 57.30m: Sandy CLAY. Sand is fine. Hard, grey, moist. No HCL reaction.*
56						
57				BH - MET TOWER P17		*57.31m - 58.00m: Clayey SAND. Sand is fine to medium grained, grey, moist with some stratifications and lenses of sandy clay.*
58				058.0 20911G(10cm²) (0.79) 058.5 20911G(10cm²) (0.79) 059.0 20911G(10cm²) (0.79) 059.5 20911G(10cm²) (0.79)		
59						

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.7**	**Comments:** Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa	Sample Name: **BH - MET TOWER**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**25/06/2015 - 26/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**64.90m**		**NV-S (27/06/2015)**
Method	**Wison**				

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
61						Poorly graded SAND with silt. Sand is fine grained, grey, compact and wet. No HCL reaction.
62				061.0 20911G(10cm²) (0.79)		
63						
64				062.0 20911G(10cm²) (0.79)		*63.09m - 63.51m: Sandy CLAY. Hard.*
65				064.5 20911G(10cm²) (0.79)		End of borehole at 64.90m
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.7**	**Comments:** **Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**25/06/2015 - 26/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**64.90m**		**NV-S** (27/06/2015)
Method	**Wison**				

Sample Name: **BH - MET TOWER**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0						
1				BH - D14 P1		Poorly graded SAND locally gravelly. Sand is subangular to subrounded, medium to coarse. Sand is dense to very dense. Gravel is subrounded and fine (<8mm). Light brown becoming dark grey, dry, with little shell (<30mm). Weak HCL reaction.
2				BH - D14 P2		
3				BH - D14A P1		
4				BH - D14 P4		
5				BH - D14 P5		
6				004.0 081213G(10cm²) (0.83)		
7				BH - D14 P6		
8					8.50	Sandy CLAY with some stratifications of clayey sand. Stiff to very stiff, grey, moist. No HCL reaction. *9.00m - 9.14m: Sandy SILT. Loose* *9.34m - 9.44m: Sandy SILT. Loose*
9				007.5 081213G(10cm²) (0.83)		
10				BH - D14 P7		*10.00m - 10.98m: CLAY. Firm, dark grey, moist, trace becoming some shell. Shell is fine gravel size (<4mm). Weak HCL reaction.*
11						*11.42m - 12.41m: SAND with silt, loose to dense.*
12				011.0 081213G(10cm²) (0.83)		
13						
14				BH - D14 P8		
15					14.53	SAND, medium dense to very dense.
16				014.5 081213G(10cm²) (0.83)	15.11	Sandy CLAY mostly stratified with clayey sand. Clay is stiff to very stiff. *15.24m - 15.42m: Clayey SAND. Loose.* *15.97m - 16.16m: Clayey SAND. Loose* *16.24m - 16.41m: Clayey SAND. Loose*
17					16.52	SAND. Medium dense to very dense.
18				BH - D14 P9		*17.53m - 17.80m: Sandy CLAY with gravel. Clay is firm. grey, moist. Gravel is angular and fine (<12mm). No HCL reaction.*
19				018.0 081213G(10cm²) (0.83)		

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**19.1**	**Comments:** **BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A**	**SH** (01/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**28/06/2015 - 30/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**71.30m**		
Method	**Wison**				

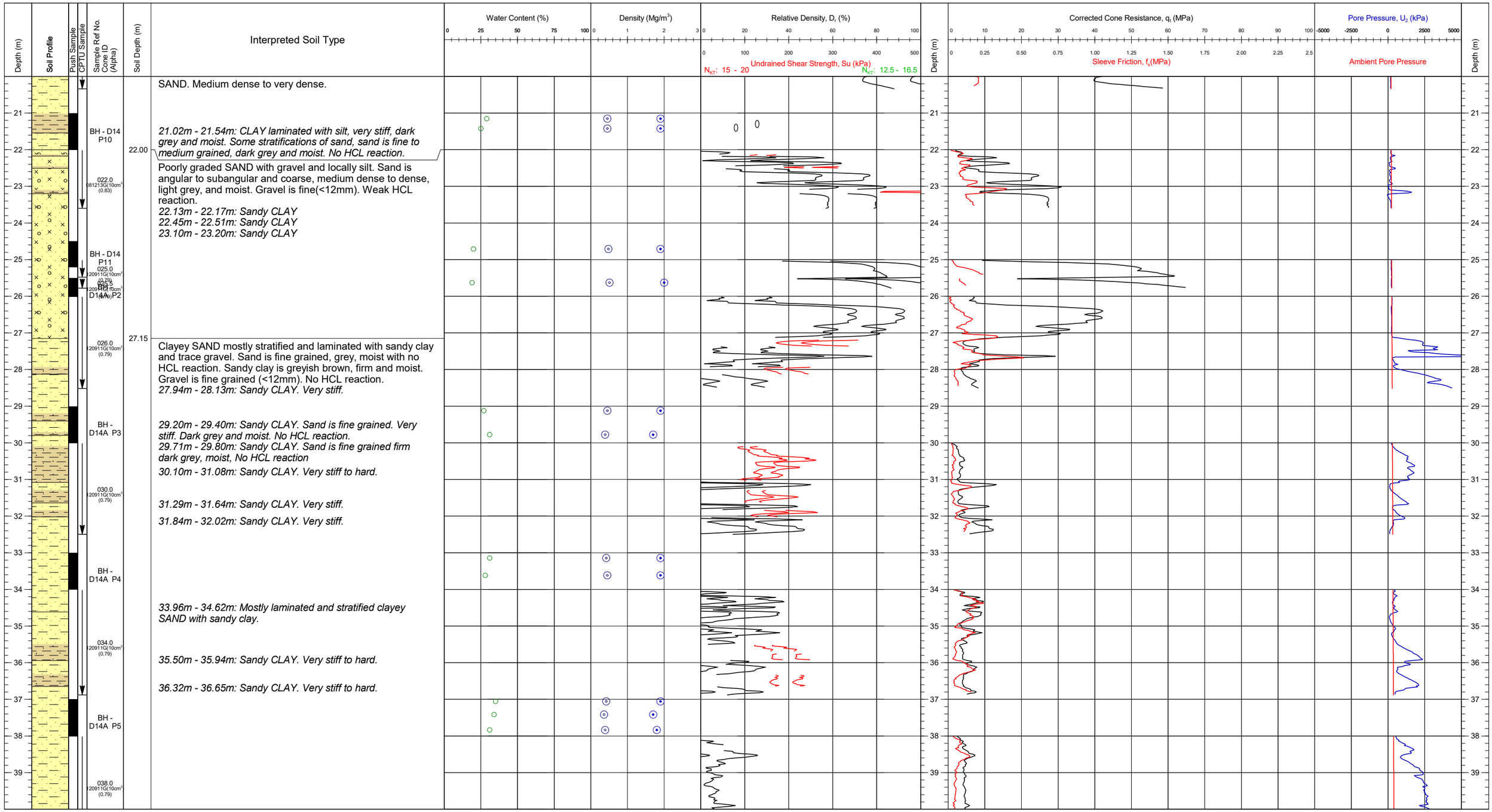
Sample Name: **BH - D14_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy



KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**19.1**	**Comments:** **BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A**	**SH** (01/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**28/06/2015 - 30/06/2015**		Sample Name: **BH - D14_A**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**71.30m**		
Method	**Wison**				

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41						Clayey SAND mostly stratified and laminated with sandy clay and trace gravel. Sand is fine grained, grey, moist with no HCL reaction. Sandy clay is greyish brown, firm and moist. Gravel is fine grained (<12mm). No HCL reaction.
42				BH - D14A P6		*42.03m - 42.38m: Sandy CLAY. Very stiff*
43				042.0 20911G(10cm² (0.79)		
44						*43.31m - 45.00m: Sandy SILT, medium dense.*
45				BH - D14A P7		
46						
47				045.5 20911G(10cm² (0.79)		
48						
49				BH - D14A P8	48.90	Sandy CLAY. Very stiff to hard, dark grey and moist. Little laminations of clay. Little to mostly shelly, fine to coarse gravel size(<60mm). Sand is fine to medium. Weak HCL reaction.
50						
51				049.5 20911G(10cm² (0.79)		
52						
53				BH - D14A P9		
54						
55				053.5 00912G(10cm² (0.76)		
56						*55.48m - 55.99m: Clayey SAND. Loose*
57				BH - D14A P10		*56.49m - 57.00m: Clayey SAND. Sand is fine to coarse grained, dark grey and moist. Little lenses of clay. Some shell fine to coarse gravel size (<20mm). No HCL reaction.*
58						
59				057.5 00912G(10cm² (0.76)		*59.16m - 59.42m: Clayey SAND. Medium dense.*

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**19.1**	**Comments:** **BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A**	**SH** (01/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**28/06/2015 - 30/06/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**71.30m**		
Method	**Wison**				

Sample Name: **BH - D14_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
61				BH - D14A P11	61.50	Sandy CLAY. Very stiff to hard, dark grey and moist. Little laminations of clay. Little to mostly shelly, fine to coarse gravel size(<60mm). Sand is fine to medium. Weak HCL reaction.
62						Silty SAND. Sand is fine, loose becoming dense, dark grey, moist with weak HCL reaction.
63				061.5 00912G(10cm² (0.76)		
64						
65				BH - D14A P12		*64.72m - 64.92m: Silty SAND with gravel. Sand is fine, dark grey and moist. Gravel is subangular to subrounded and fine (<15mm). Weak HCL reaction.*
66				065.0 00912G(10cm² (0.76)		
67						
68				BH - D14A P13	68.36	Sandy CLAY. Very stiff to hard.
69						*69.20m - 69.34m: Clayey SAND. Loose to medium dense.*
70				068.5 00912G(10cm² (0.76)		*70.46m - 70.66m: Clayey SAND. Loose to medium dense*
71						End of borehole at 71.30m
72						
73						
74						
75						
76						
77						
78						
79						

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s(MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**19.1**	**Comments:** **BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**28/06/2015 - 30/06/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**71.30m**	
Method	**Wison**			

QC Status		
Preliminary	Draft	Final
SH (01/07/2015)		

Sample Name: **BH - D14_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	PTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0				015.5 20911G(10cm²) (0.79) BH - G17 P1		
1				BH - G17 P2		Poorly graded SAND with gravel. Sand is angular and medium. Gravel is subrounded, fine (<10mm) grey, moist with some shell, Shell is fine gravel size (<8mm). Strong HCL reaction.
1.50					1.50	
2				BH - G17 P3		Poorly graded SAND with silt. Sand is fine grained, dense to compact, grey becoming light olive brown and moist. Locally with some gravel, gravel is rounded and fine (<12mm). Strong HCL reaction.
3						
4				002.5 20911G(10cm²) (0.79)		
5						*5.00m - 5.10m: CLAY. Soft, pale brown and moist. Mostly laminated with iron oxide stained sand. Sand is fine. No HCL reaction.*
6				BH - G17 P4		*5.40m - 5.50m: Sandy GRAVEL. Gravel is subrounded and fine (<12mm), olive brown and moist. No HCL reaction.*
7				006.0 20911G(10cm²) (0.79)		
8				BH - G17 P5		
9						
10				008.5 20911G(10cm²) (0.79)		
10.61					10.61	
11						Well graded SAND locally with gravel. Sand is subangular to subrounded, fine to coarse. Gravel is subrounded, fine to coarse (<25mm), very dense to compact, light yellowish brown and moist. No HCL reaction.
12				BH - G17 P7A		
13				012.5 20911G(10cm²) (0.79)		
14				014.0 20911G(10cm²) (0.79)		
15				BH - G17 P8		
16				015.5 20911G(10cm²) (0.79)		
17				BH - G17 P9		
18				017.5 20911G(10cm²) (0.79)		
19				BH - G17 P10		*19.59m - 19.77m: Clayey SAND. Dense.*

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**24.9**	**Comments:** **BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**01/07/2015 - 02/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**74.00m**		**NV-S** (03/07/2015)
Method	**Wison**				

Sample Name: **BH - G17_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
21				019.0 20911G(10cm²) (0.79)		Well graded SAND locally with gravel. Sand is subangular to subrounded, fine to coarse. Gravel is subrounded, fine to coarse (<25mm), very dense to compact, light yellowish brown and moist. No HCL reaction.
22						
23				022.5 20911G(10cm²) (0.79)		
24				023.5 20911G(10cm²) (0.79)		
25						*24.50m - 25.50m: Drillers note: Damaged shelby, possible COBBLE/GRAVEL.*
26				025.5 20911G(10cm²) (0.79)		
27				026.5 20911G(10cm²) (0.79)		
28				028.0 20911G(10cm²) (0.79)		
29				028.5 20911G(10cm²) (0.79) 029.0 20911G(10cm²) (0.79)		
30				BH - G17 P11 030.0 20911G(10cm²) (0.79)		
31					31.41	*30.53m - 31.40m: Silty SAND. Loose.*
32				030.5 20911G(10cm²) (0.79)		CLAY with sand stratified with sandy clay. Sand is fine. Very stiff to hard, dark grey to dark greyish brown, dry, micaceous. Locally some shell, shell is fine to coarse gravel size (<30mm). Trace gravel, gravel is subangular and fine (<8mm). No HCL reaction.
33						
34				BH - G17 P14A		*33.50m - 33.90m: Elastic SILT with sand. Sand is fine. Very stiff to hard, very dark grey and moist. Few lenses of weakly cemented, greyish brown silt. No HCL reaction.*
35						
36				034.5 00917G(10cm²) (0.8)		
37						
38				BH - G17 P15		
39				038.5 00904G(10cm²)		

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s(MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**24.9**	**Comments:** **BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**01/07/2015 - 02/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**74.00m**		**NV-S (03/07/2015)**
Method	**Wison**				

Sample Name: **BH - G17_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Sample Ref No. / Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41	(0.79)		CLAY with sand stratified with sandy clay. Sand is fine. Very stiff to hard, dark grey to dark greyish brown, dry, micaceous. Locally some shell, shell is fine to coarse gravel size (<30mm). Trace gravel, gravel is subangular and fine (<8mm). No HCL reaction.
42	BH - G17A P1		
43	042.0 00904G(10cm² (0.79)	43.11	Silty SAND, sand is fine, loose to medium dense, grey, dry. Locally mostly shelly, shell is fine gravel size (6mm). No HCL reaction.
44			
45	BH - G17A P2		
46	045.0 00904G(10cm² (0.79)		*46.60m - 46.67m: Sandy CLAY. Hard.*
47			*47.20m - 47.27m: Sandy CLAY. Hard.*
48	BH - G17A P3		
49		49.00	*48.46m - 49.00m: Elastic SILT with sand, grey, moist, homogenous. Sand is fine with few shell, shell is fine (6mm). No HCL reaction.*
50	049.0 00904G(10cm² (0.79)		Sandy CLAY. Very stiff to hard with few gravel/shell.
51		50.69	CLAY with sand. Sand is fine. Very stiff to hard, dark grey, dry with few shells, locally some shell. Shell is fine gravel size (<8mm). No HCL reaction.
52	BH - G17A P4		*52.30m - 52.40m: Clayey SAND. Sand is fine, dark grey and dry. No HCL reaction.*
53			
54	053.0 00904G(10cm² (0.79)		*54.06m - 54.19m: Clayey SAND. Very loose.*
55			*54.65m - 54.78m: Clayey SAND. Very loose.*
56	BH - G17A P5		
57			*57.01m - 57.36m: Clayey SAND. Dense.*
58	057.0 00904G(10cm² (0.79)		*57.91m - 58.44m: Clayey SAND. Loose to dense.*
59			

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**24.9**	**Comments:** **BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**01/07/2015 - 02/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**74.00m**		**NV-S** (03/07/2015)
Method	**Wison**				

Sample Name: **BH - G17_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
61				BH - G17A P6		CLAY with sand. Sand is fine. Very stiff to hard, dark grey, dry with few shells, locally some shell. Shell is fine gravel size (<8mm). No HCL reaction.
						60.00m - 60.75m: Clayey GRAVEL with sand. Carbonate gravel (shell) is angular and coarse (<40mm). Sand is fine, dark grey and moist. Strong HCL reaction.
62				061.0 00904G(10cm²) (0.79)		*61.62m - 63.10m: Clayey SAND. Loose to medium dense.*
63						
64				BH - G17A P7		*63.90m - 64.77m: Clayey SAND*
65						*65.04m - 65.30m: Clayey SAND. Loose to medium dense.*
66				065.0 00904G(10cm²) (0.79)	66.29	
67						SAND. Compact.
68				068.0 00904G(10cm²) (0.79)		*66.31m - 66.79m: Silty SAND. Medium dense to dense.*
				068.5 00904G(10cm²) (0.79)		
69						
				069.5 00904G(10cm²) (0.79)		
70						
				070.5 00904G(10cm²) (0.79)		
71					71.50	Silty SAND. Medium dense.
72						
				071.5 00904G(10cm²) (0.79)		
73						
74					73.98	End of borehole at 74.00m
75						
76						
77						
78						
79						

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**24.9**	**Comments:** **BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**01/07/2015 - 02/07/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**74.00m**	
Method	**Wison**			

QC Status		
Preliminary	Draft	Final
NV-S (03/07/2015)		

Sample Name: **BH - G17_A**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0				BH - K16 P1A		Poorly graded SAND locally with gravel. Sand is angular, medium, medium dense to compact. Gravel is subrounded, mostly fine with few coarse (25mm). Light olive grey and moist. Trace organic staining. No HCL reaction.
1						
2				001.0 20911G(10cm²) (0.79)		
3						
4				BH - K16 P3		*3.85m - 4.05m: Poorly graded SAND with clay. Sand is medium, light grey and moist. No HCL reaction.*
5						
6				004.5 20911G(10cm²) (0.79)		*5.83m - 5.91m: Silty SAND. Medium dense.*
7						
8				BH - K16 P4A		
9						
10				008.0 20911G(10cm²) (0.79)		
11						
12				011.0 20911G(10cm²) (0.79)		*11.62m - 12.62m: Sandy CLAY. Very stiff.*
13				BH - K16 P6		
14						*13.97m - 14.07m: Silty SAND. Medium dense.*
15				013.5 20911G(10cm²) (0.79)		
16						*16.02m - 16.56m: Silty SAND. Medium dense.*
17				016.0 20911G(10cm²) (0.79)		
18						
19						

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**24.6**	**Comments:** **CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.**	**SH** (04/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**03/07/2015 - 04/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.20m**		
Method	**Wison**				

Sample Name: **BH - K16**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
21				019.0 20911G(10cm²) (0.79)		*19.61m - 19.90m: Silty SAND. Medium dense.* Poorly graded SAND locally with gravel. Sand is angular, medium, medium dense to compact. Gravel is subrounded, mostly fine with few coarse (25mm). Light olive grey and moist. Trace organic staining. No HCL reaction.
22				BH - K16 P10		
23				022.5 20911G(10cm²) (0.79)		
24						
25						
26				025.0 20911G(10cm²) (0.79)		*26.26m - 26.89m: Silty SAND. Medium dense to dense.*
27					27.00	Well graded SAND with gravel. Sand is angular to subrounded, coarse, very dense to compact. Gravel is subrounded to rounded and fine (<18mm). Greyish brown and moist. No HCL reaction.
28				BH - K16 P12		
29				028.5 20911G(10cm²) (0.79)		
30						
31				BH - K16 P13		
32				032.0 20911G(10cm²) (0.79)		
33				033.5 20911G(10cm²) (0.79)		
34				034.0 20911G(10cm²) (0.79)		
35				035.0 20911G(10cm²) (0.79)		
36				035.5 20911G(10cm²) (0.79)		
37				036.5 081213G(10cm²) (0.83)	37.00	CLAY with sand, locally sandy clay. Very stiff to hard, dark olive grey, dry, micacious, few laminations of sandy silt. Few lenses of greyish brown clay. No HCL reaction.
38						
39				037.0 081213G(10cm²) (0.83)		

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**24.6**	**Comments:** **CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**03/07/2015 - 04/07/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.20m**	
Method	**Wison**			

QC Status		
Preliminary	Draft	Final
SH (04/07/2015)		

Sample Name: **BH - K16**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41				BH - K16 P15		CLAY with sand, locally sandy clay. Very stiff to hard, dark olive grey, dry, micacious, few laminations of sandy silt. Few lenses of greyish brown clay. No HCL reaction.
42						*40.01m - 40.39m: Elastic SILT with sand. Sand is fine, very stiff, dark grey, dry, micaceous, with few lenses of greyish brown weakly cemented SILT. Weak HCL reaction.*
43				041.0 0812136(10cm² (0.83)		
44						
45				BH - K16 P16		
46				045.0 0090406(10cm² (0.79)		
47						
48				BH - K16 P17		*48.53m - 48.73m: Sandy CLAY with gravel. Gravel is subrounded to subangular, fine to coarse (<20mm). Sand is fine to coarse. Clay is very stiff, dark olive grey, dry, with few shell, shell is fine to coarse gravel size (<40mm), micaceous, No HCL reaction.*
49						*49.50m - 49.69m: SAND. Sand is fine to medium, dark grey and moist. No HCL reaction.*
50				BH - K16 P18		
51				050.5 0712166(10cm² (0.74)		*50.98m - 51.58m: SAND with silt. Sand is fine to medium, dark grey, moist, laminated with clay. No HCL reaction.*
52				BH - K16 P19		*52.05m - 52.24m: Silty SAND. Loose to medium dense.*
53						*52.56m - 52.73m: Silty SAND. Loose to medium dense.*
54				052.0 0712166(10cm² (0.74)		*52.98m - 53.18m: Silty SAND. Loose to medium dense.*
55					55.00	*54.43m - 54.83m: Silty SAND. Loose to medium dense.*
56				BH - K16 P20		CLAY. Hard, dark greenish grey, dry, locally laminated with silt and sandy silt, Micaceous and friable. No HCL reaction.
57				056.0 0712166(10cm² (0.74)		
58						
59				BH - K16 P21		

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s(MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status		Sample Name
Contract	**10451**	Water Depth (mMSL)	**24.6**	**Comments:** **CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.**	Preliminary	Draft / Final	**BH - K16**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**03/07/2015 - 04/07/2015**				
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.20m**		**SH** (04/07/2015)		
Method	**Wison**						Page: 3/4

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Interpreted Soil Type	Soil Depth (m)
61	CLAY. Hard, dark greenish grey, dry, locally laminated with silt and sandy silt, Micaceous and friable. No HCL reaction.	
62		
63		
64	*62.98m - 63.99m: Becoming mostly shelly. Shell is fine to coarse (<30mm).*	64.00
65	Clayey SAND, sand is fine, loose to medium dense, dark grey, moist, little fine gravel size shell becoming mostly coarse gravel size shell (<45mm) at 66.90m. Trace lenses of clay, trace lenses of coarse sand. Weak becoming strong HCL reaction.	
66		
67		
68	Sandy CLAY. Very stiff to hard with some laminations of clayey sand.	68.03
69	*68.86m - 68.96m: Clayey SAND. Very loose.*	
70	*69.20m - 69.36m: Clayey SAND. Very loose.*	69.84
71	Silty SAND becoming poorly graded sand with silt. Sand is coarse, medium dense to dense, grey, moist, with few lenses of sandy clay. Weak HCL reaction.	
72		
73	End of borehole at 73.20m	
74		
75		
76		
77		
78		
79		

Soil Profile: Push Sample; CPTU Sample; Sample Ref No. Cone ID (Alpha)

- 060.0 071216G(10cm²) (0.74)
- BH - K16 P22
- 064.0 071216G(10cm²) (0.74)
- BH - K16 P23
- 067.5 071216G(10cm²) (0.74)
- 068.0 071216G(10cm²) (0.74)
- BH - K16 P24
- 071.5 071216G(10cm²) (0.74)

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

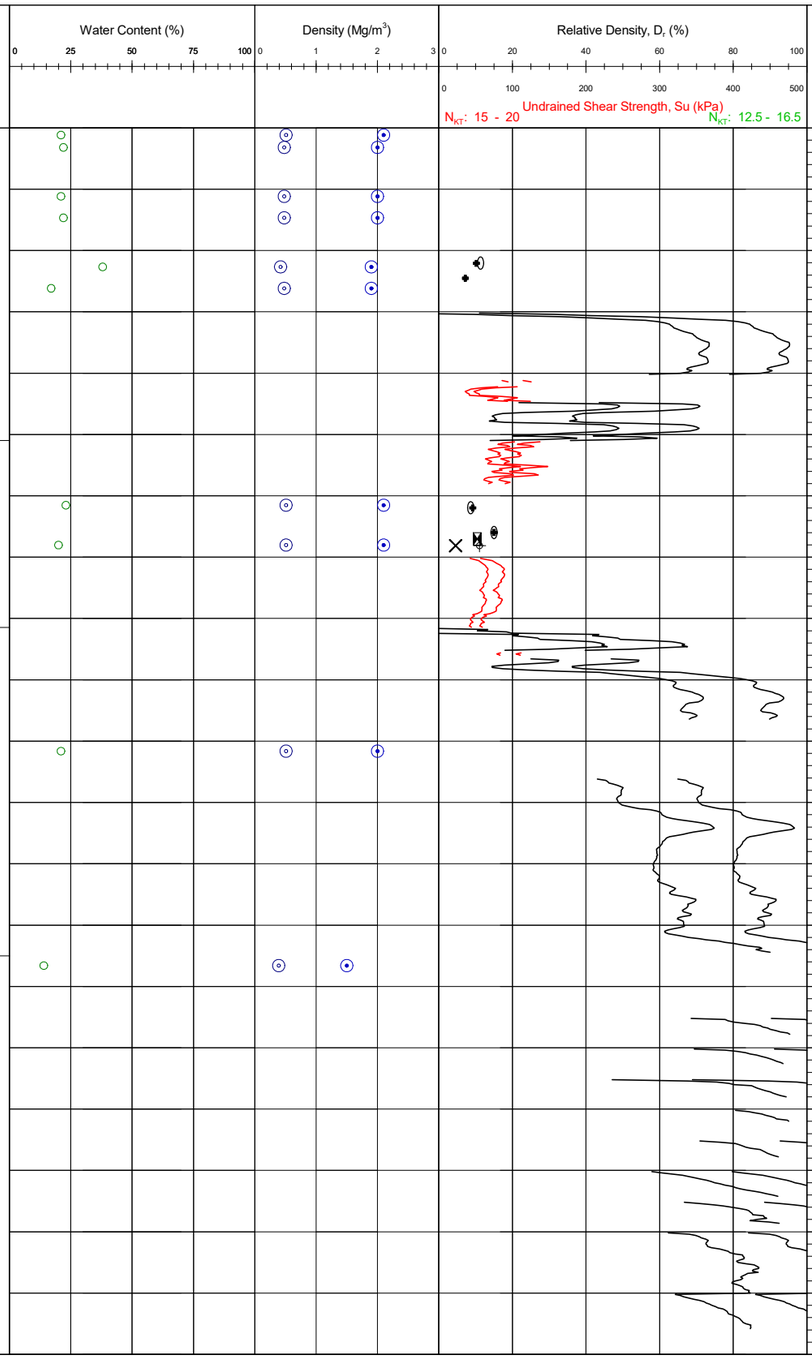
Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**24.6**	**Comments:** **CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.**	**SH** (04/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**03/07/2015 - 04/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**73.20m**		
Method	**Wison**				

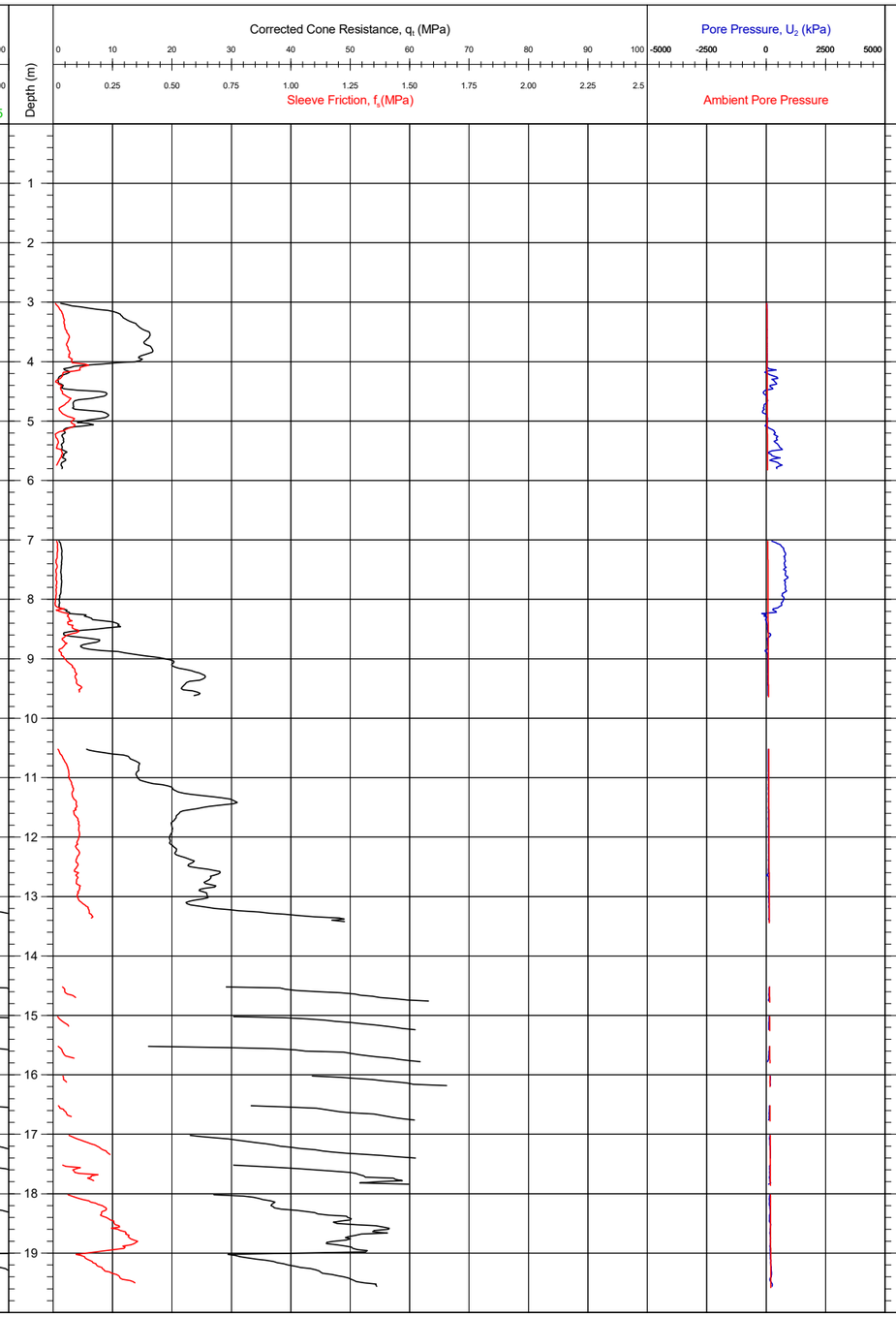
Sample Name: **BH - K16**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
0				BH - H10 P1		Well graded SAND. Subangular to subrounded, fine to coarse, loose becoming dense, olive brown to dark grey and moist. Locally poorly graded sand with gravel. Sand is angular to subrounded, mostly coarse. Gravel is fine to coarse (<22mm), dark grey and wet. No HCL reaction. *1.20m - 1.30m: Clayey SAND. Sand is fine, dark grey and wet. No HCL reaction.* *2.00m - 2.30m: CLAY. Firm to stiff, very dark grey and moist. Strong HCL reaction.* *2.30m - 2.40m: Gravelly SAND. Sand is angular to subrounded and coarse. Gravel is subangular to subrounded, fine, dark grey and wet. Little shell, shell is fine gravel size (<15mm). No HCL reaction.* *2.40m - 2.50m: CLAY. Firm to stiff, very dark grey and moist. Strong HCL reaction.* *4.10m - 4.30m: Sandy CLAY. Firm to stiff.*
1				BH - H10 P2		
2				BH - H10 P3		
3				003.0 20911G(10cm² (0.79)		
4						
5					5.10	CLAY. Firm to stiff, dark greyish brown, wet, stratified with clayey sand. Sand is angular to subangular, coarse, dark grey and wet. Strong HCL reaction.
6				BH - H10 P4		
7						
8				007.0 20911G(10cm² (0.79)	8.15	Semi graded SAND becoming well graded. Sand is angular to subrounded, medium to coarse, dense to very dense, olive grey to olive, wet, lenses of gravelly clay. Gravel is subrounded to subangular and fine (<15mm). No HCL reaction. *8.52m - 8.66m: Sandy CLAY. Stiff.*
9						
10				BH - H10 P5		
11						
12				010.5 20911G(10cm² (0.79)		
13					13.50	Poorly graded SAND with silt. Sand is fine, light olive grey and moist. Trace laminations of clayey sand. Sand is fine, pale brown and wet. No HCL reaction
14				BH - H10 P6A		
15				014.0 20911G(10cm² (0.79) 014.5 20911G(10cm² (0.79) 015.0 20911G(10cm² (0.79) 015.5 20911G(10cm² (0.79) 016.0 20911G(10cm² (0.79) 016.5 20911G(10cm² (0.79) 017.0 20911G(10cm² (0.79) 017.5 20911G(10cm² (0.79)		
16						
17						
18						
19				018.0 20911G(10cm² (0.79) 019.0 20911G(10cm² (0.79)		





KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**26.8**	**Comments:** **No PS logging took place at this location.**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.00m**	
Method				

QC Status		
Preliminary	Draft	Final
SH (06/07/2015)		

Sample Name: **BH - H10**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
21					21.26	Poorly graded SAND with silt. Sand is fine, light olive grey and moist. Trace laminations of clayey sand. Sand is fine, pale brown and wet. No HCL reaction
22				020.5 20911G(10cm²) (0.79)	22.35	Sandy CLAY. Very stiff to hard.
23						Silty SAND. Sand is fine, medium dense to dense, grey, wet and micaceous. No HCL reaction.
24				BH - H10 P8		
25				024.0 00905G(10cm²) (0.82)	24.80	Sandy CLAY. Sand is fine, very stiff, dark grey and moist. No HCL reaction.
26						
27				BH - H10 P9		
28				027.0 00905G(10cm²) (0.82)	28.42	Clayey SAND. Sand is fine, medium dense to dense, grey, moist, stratified with sandy clay. Sand is fine, very stiff to hard, dark olive grey and moist. Few laminations of grey silt. No HCL reaction. *28.66m - 28.82m: Sandy CLAY. Very stiff to hard.* *29.15m - 29.31m: Sandy CLAY. Very stiff to hard.* *29.48m - 29.61m: Sandy CLAY. Very stiff to hard.*
29						
30				BH - H10 P10		
31					31.02	Sandy CLAY. Sand is fine, very stiff to hard, olive grey to brownish grey and dry. Laminated with clay with fewstratifications of sand. Sand is medium to coarse, grey and moist. Micaceous. No HCL reaction.
32				031.0 00905G(10cm²) (0.82)		
33						
34				BH - H10 P11		
35						
36				035.0 00905G(10cm²) (0.82)		
37						
38				BH - H10 P12	37.80	Poorly graded SAND with silt. Sand is fine, loose to medium dense, grey and moist with some gravel. Gravel is fine (<15mm). Locally some shell, shell is fine to coarse gravel size (<35mm). Weak HCL reaction.
39						

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**
Contract	**10451**	Water Depth (mMSL)	**26.8**	**Comments:** **No PS logging took place at this location.**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.00m**	
Method				

QC Status		
Preliminary	Draft	Final
SH (06/07/2015)		

Sample Name: **BH - H10**

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41				039.0 (0.82)		Poorly graded SAND with silt. Sand is fine, loose to medium dense, grey and moist with some gravel. Gravel is fine (<15mm). Locally some shell, shell is fine to coarse gravel size (<35mm). Weak HCL reaction. *40.94m - 41.23m: Sandy CLAY. Very stiff to hard.* *41.41m - 41.50m: Sandy CLAY. Very stiff to hard.*
42				BH - H10 P13		
43					43.00	Sandy CLAY. Sand is fine to coarse, very stiff to hard, dark grey and moist. Stratified with clayey sand. Sand is fine to coarse, dark grey moist. Few lenses of clay and trace laminations of coarse sand. Locally some shell, fine to coarse gravel size (<65mm). No HCL reacton.
44				043.0 (0.82)		
45						
46					45.93	Clayey SAND, Sand is fine to coarse, dark grey and moist. Little to some shell. Shell is fine to coarse gravel size (<65mm). No HCL reaction.
47				BH - H10 P14	46.97	Sandy CLAY. firm to stiff.
48					47.97	Clayey SAND. Sand is medium to coarse, dark grey, moist with few lenses of clay. Some laminations of coarse grey sand. Trace shell, shell is fine to coarse gravel size(<20mm). No HCL reaction.
49				047.0 (0.76)	48.69	Silty SAND. Fine to coarse, dark grey, moist, few lenses and few laminations of clay. Few fine gravel (<6mm) and shell. Shell is fine to coarse gravel size (<20mm). No HCL reaction.
50						
51				BH - H10 P15		*50.58m - 51.28m: Sandy CLAY. Stiff to very stiff, grey and moist. Sand is fine to coarse.Few laminations of silt, grey coarse sand and clay. No HCL reaction.*
52				051.0 (0.76)		
53						
54				BH - H10 P16		
55					55.10	Silty SAND. Fine to coarse, mostly coarse, loose to medium dense, dark grey, moist and micacious. Few lenses and few laminations of clay. With few fine gravel and shell. Gravel and shell are fine to coarse (<20mm). No HCL reaction.
56				055.0 (0.76)		
57				BH - H10 P17		
58				056.5 (0.76)		
59						
				BH - H10		

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m^3): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s(MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT, CLAY, CHALK, PEAT, SAND, GRAVEL, COBBLES, Mixed Soil

Area	**Maryland USA**	Coordinates	**520154.3E** **4248006.5N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**26.8**	**Comments:** **No PS logging took place at this location.**	**SH** (06/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**		Sample Name: **BH - H10**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.00m**		
Method					

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
60				P18		Silty SAND. Fine to coarse, mostly coarse, loose to medium dense, dark grey, moist and micacious. Few lenses and few laminations of clay. With few fine gravel and shell. Gravel and shell are fine to coarse (<20mm). No HCL reaction.
61				060.0 00912G(10cm² (0.76)		
62						
63				BH - H10 P19		
64					64.07	CLAY. Very stiff to hard, dark grey and moist. Few weakly cemented lenses of silt. Few black organic staining. No HCL reaction.
65				063.5 00912G(10cm² (0.76)		
66						
67				BH - H10 P20	67.00	CLAY with sand. Sand is fine, very stiff to hard, dark grey, moist, mostly laminated with greysilt and fine sand. Little bioturbation infilled with grey silt. Locally mostly shelly, shell is fine to coarse gravel size (<20mm). Micaceous. No HCL reaction.
68				067.0 00912G(10cm² (0.76)		
69						
70				BH - H10 P21		
71				071.0 00912G(10cm² (0.76)		
72						
73						
74				BH - H10 P22	74.90	End of borehole at 75.00m
75						
76						
77						
78						
79						

Water Content (%): 0, 25, 50, 75, 100

Density (Mg/m³): 0, 1, 2, 3

Relative Density, D_r (%): 0, 20, 40, 60, 80, 100

Undrained Shear Strength, Su (kPa): 0, 100, 200, 300, 400, 500

N_{KT}: 15 - 20

N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Sleeve Friction, f_s (MPa): 0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.5

Pore Pressure, U_2 (kPa): -5000, -2500, 0, 2500, 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

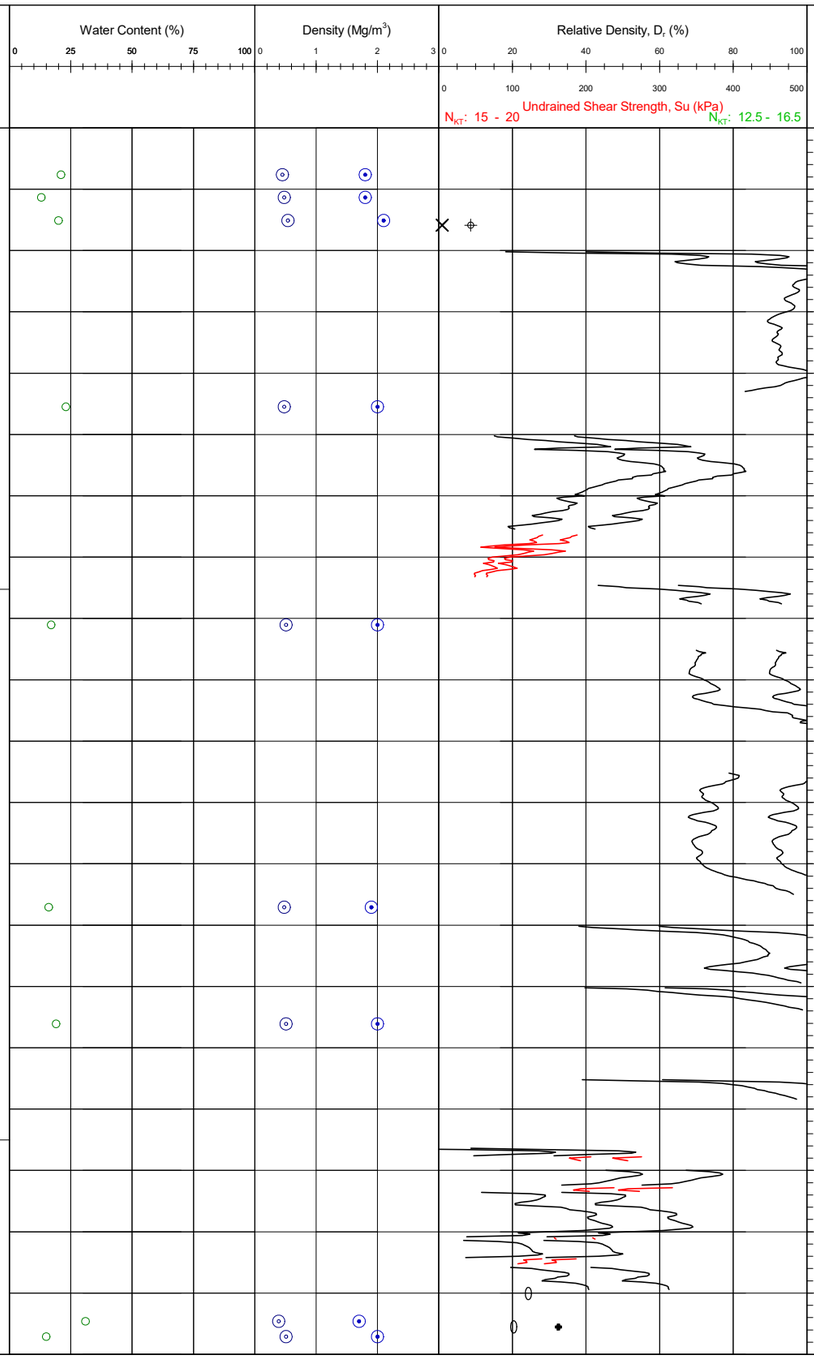
SAND | GRAVEL | COBBLES | Mixed Soil

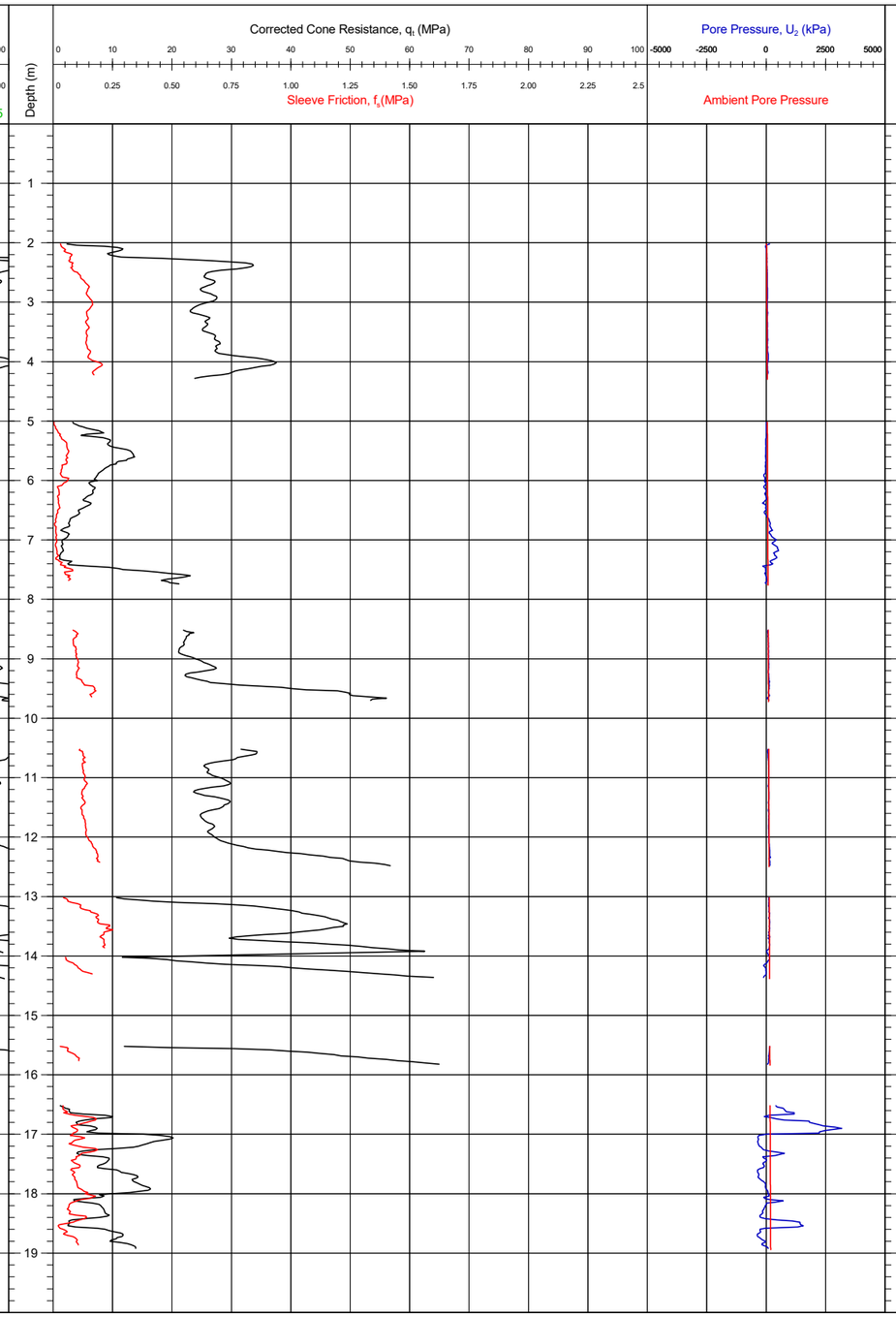
Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**26.8**	**Comments:** **No PS logging took place at this location.**	**SH** (06/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**		Sample Name: **BH - H10**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.00m**		
Method					Page: 4/4

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
1				BH - G7 P2		Poorly graded SAND locally with clay and gravel. Sand is medium, medium dense to compact, dark grey, wet with black organic staining and lenses of sandy clay. Mostly shelly. Gravel subangular to subrounded, fine (<15mm), shell is coarse (30mm). Strong HCL reaction.
2				BH - G7 P3		*1.10m - 1.15m: Sandy CLAY. Soft, grey and wet. No HCL reaction.*
3				002.0 070815G(10cm²) (0.79)		*1.15m - 1.50m: Clayey SAND. Sand is fine, grey and wet with mostly lenses of sandy clay. Weak HCL reaction.*
4						
5				BH - G7 P4		
6				005.0 070815G(10cm²) (0.79)		
7						*6.41m - 7.41m: Sandy CLAY. Very stiff.*
8				BH - G7 P5	7.52	Poorly graded SAND. Sand is medium, very dense to compact, light grey, moist with few lenses of sandy CLAY. No HCL reaction.
9				008.5 070815G(10cm²) (0.79)		
10				BH - G7 P6A		
11				010.5 070815G(10cm²) (0.79)		
12						
13				BH - G7 P7A		*12.50m - 12.79m: Gravelly SAND. Sand is angular and coarse. Gravel is subangular to subrounded, fine to coarse (<30mm). Light grey, moist, No HCL reaction.*
14				013.0 070815G(10cm²) (0.79)		
15				014.0 120911G(10cm²) (0.79)		
16				BH - G7 P8		
17				015.5 120911G(10cm²) (0.79)	16.50	CLAY, Stiff to very stiff, dark grey to dark greyish brown and moist. Few coarse shell (<30mm). Stratified with sandy elastic silt, sand is fine dark grey and moist. Stratified with sandy silt, Sand is fine, dark grey, and moist. Stratified with silty sand with gravel. Sand is coarse, gravel is subangular to subrounded, fine (<18mm) dark grey and moist. Stratified with silty sand, sand is fine, dark grey and moist. Micaceous with trace lenses of weakly cemented greyish brown silt. Few laminations of grey silt. No HCL reaction.
18				016.5 120911G(10cm²) (0.79)		*16.99m - 17.23m: Silty SAND. Dense.*
19				BH - G7 P10		*17.37m - 18.08m: Silty SAND. Medium dense.*





KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.0**	**Comments:** **No recovery 0.00-0.50m. No PS logging was performed at this location.**	**NV-S** (08/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**06/07/2015 - 07/07/2015**		Sample Name: **BH - G7**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.20m**		
Method	**Wison**				Page: 1/4

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m) | Soil Profile | Push Sample | CPTU Sample | Sample Ref No. Cone ID (Alpha) | Soil Depth (m) | Interpreted Soil Type

Water Content (%) 0 25 50 75 100

Density (Mg/m^3) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s(MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

Depth (m)

Depth (m)	Soil Profile	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
				18.14m - 18.41m: Silty SAND. Medium dense.
				18.57m - 18.96m: Silty SAND. Medium dense.
				19.65m - 20.22m: Gravelly SAND. Sand is angular to subrounded, fine to coarse. Gravel is subangular to rounded, fine to coarse (<25mm), dark grey and wet. No HCL reaction
21		020.0 20911G(10cm^2 (0.79)		CLAY, Stiff to very stiff, dark grey to dark greyish brown and moist. Few coarse shell (<30mm). Stratified with sandy elastic silt, sand is fine dark grey and moist. Stratified with sandy silt, Sand is fine, dark grey, and moist. Stratified with silty sand with gravel. Sand is coarse, gravel is subangular to subrounded, fine (<18mm) dark grey and moist. Stratified with silty sand, sand is fine, dark grey and moist. Micaceous with trace lenses of weakly cemented greyish brown silt. Few laminations of grey silt. No HCL reaction.
22				*20.54m - 21.37m: Silty SAND. Dense.*
23		BH - G7 P11		*21.66m - 22.66m: Silty SAND. Medium dense.*
24				*24.72m - 24.88m: Silty SAND. Medium dense.*
25		024.0 20911G(10cm^2 (0.79)		*25.15m - 25.30m: Silty SAND. Medium dense.*
26				*25.89m - 26.15m: Silty SAND. Medium dense.*
27		BH - G7 P12		*26.26m - 26.33m: Silty SAND. Medium dense.*
28				*26.39m - 26.54m: Silty SAND. Medium dense.*
29		028.0 20911G(10cm^2 (0.79)		*28.02m - 28.18m: Silty SAND. Loose.*
30				*29.07m - 29.20m: Silty SAND. loose.*
31		BH - G7 P13	30.62	*30.00m - 30.60m: Silty SAND. Loose to medium dense.*
32				CLAY with sand, locally sandy clay with gravel, very stiff to hard, dark greyish brown and moist. Few lenses and laminations of sand and silt. Few fine to coarse gravel size shell (<45mm), Few gravel, gravel is subrounded, fine to coarse (<30mm). No HCL reaction.
33		032.0 20911G(10cm^2 (0.79)		*31.04m - 31.62m: Sandy CLAY with gravel and sand, sand is fine to coarse, gravel is subangular to subrounded and fine. Very stiff, dark greyish brown, moist to dry with little laminations of silt, few lenses silty coarse sand with subrounded fine gravel, No HCL reaction.*
34				*33.32m - 33.48m: Silty SAND. Medium dense.*
35		BH - G7 P14		
36			36.06	*35.80m - 36.00m: Sandy gravelly CLAY. Sand is fine to medium, gravel is fine to coarse (<45mm) carbonate shell. very stiff, dark grey and dry. Weak HCL reaction.*
37		036.0 20911G(10cm^2 (0.79)		Silty SAND. Medium dense to dense.
38			37.96	Sandy CLAY. Very stiff to hard, dark grey, dry, few grey silt laminations and few locally some fine to coarse (<70mm) gravel size shell. No HCL reaction.
39		BH - G7 P15		

KEY TO SOIL PROFILE

SILT | CLAY | CHALK | PEAT

SAND | GRAVEL | COBBLES | Mixed Soil

Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.0**	**Comments:** **No recovery 0.00-0.50m. No PS logging was performed at this location.**	**NV-S** (08/07/2015)
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**06/07/2015 - 07/07/2015**		Sample Name: **BH - G7**
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.20m**		
Method	**Wison**				Page: 2/4

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Gardline

US Wind Inc. sea energy

Depth (m)	Soil Profile	Push Sample	CPTU Sample	Sample Ref No. Cone ID (Alpha)	Soil Depth (m)	Interpreted Soil Type
41				040.0 20911G(10cm²) (0.79)		Sandy CLAY. Very stiff to hard, dark grey, dry, few grey silt laminations and few locally some fine to coarse (<70mm) gravel size shell. No HCL reaction.
42						
43				BH - G7 P16		
44					43.92	Clayey SAND. Sand is fine to coarse, medium dense, dark grey and moist. Stratified with silty sand. Sand is fine to coarse, dark greenish grey and moist. Trace to locally mostly shelly. Shell is fine to coarse (<70mm). Few lenses of sand, sand is medium to coarse, dark greenish grey sand. Trace lenses of sandy clay. Weak HCL reaction *45.22m - 46.10m: Silty SAND. Medium dense.*
45				044.0 20911G(10cm²) (0.79)		
46						
47				BH - G7 P17		*47.05m - 47.50m: SAND with silt. Sand is fine to coarse, dark greenish grey and moist. Mostly shell, shell is fine to coarse gravel size (<70mm). Weak HCL reaction.*
48						
49				047.5 20911G(10cm²) (0.79)		*47.62m - 49.52m: Silty SAND. Dense becoming loose.*
50						
51				BH - G7 P18		
52				051.0 20911G(10cm²) (0.79)	51.62	Poorly graded SAND with silt. Sand is medium, very dense to compact, grey, moist, mostly shelly, shell is fine gravel size (12mm). No HCL reaction.
53				BH - G7 P19		
54				053.5 20911G(10cm²) (0.79) 054.0 20911G(10cm²) (0.79)		
55						
56				055.0 20911G(10cm²) (0.79)		
57				BH - G7 P20		
58					58.67	
59				058.0 20911G(10cm²) (0.79)		

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.0**	**Comments:** **No recovery 0.00-0.50m. No PS logging was performed at this location.**	Sample Name: **BH - G7**
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**06/07/2015 - 07/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.20m**		**NV-S (08/07/2015)**
Method	**Wison**				

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BOREHOLE LOG, LABORATORY TEST RESULTS AND INSITU CPTU TESTING

Depth (m)	Interpreted Soil Type
60.65	Sandy CLAY. Sand is fine. Very stiff to hard, grey becoming greyish brown and dry with some fine shell and micaceous. Few to some shell. Shell is fine gravel size (<6mm). Stratified with clayey sand. Sand is fine, grey and dry. Some laminations of silt and clay. Weak HCL reaction. *59.65m - 61.38m: Clayey SAND. medium dense to dense.*
63.33	*64.33m - 64.53m: Silty SAND, with some laminations of sandy clay. Sand is fine, dry, some fine shell. Weak HCL.* *64.71m - 64.84m: Silty SAND. Loose.*
65.39	*65.39m - 65.51m: Silty SAND. Loose*
66.07	*66.07m - 66.16m: Silty SAND. Loose.*
68.01	*68.01m - 68.15m: Gravelly CLAY. Gravel is carbonate shell, fine gravel size (<10mm), firm, grey and moist. Strong HCL reaction.*
70.45	*70.45m - 70.66m: Silty SAND. Medium dense.*
75.20	End of borehole at 75.20m

Soil Profile: BH - G7 P21; 061.0 00912G(10cm²) (0.76); BH - G7 P22; 064.5 00912G(10cm²) (0.76); BH - G7 P23; 068.5 00905G(10cm²) (0.82); BH - G7 P24; 072.5 00905G(10cm²) (0.82)

Push Sample / CPTU Sample / Sample Ref No. Cone ID (Alpha) / Soil Depth (m)

Water Content (%) 0 25 50 75 100

Density (Mg/m³) 0 1 2 3

Relative Density, D_r (%) 0 20 40 60 80 100

Undrained Shear Strength, Su (kPa) 0 100 200 300 400 500

N_{KT}: 15 - 20 N_{KT}: 12.5 - 16.5

Corrected Cone Resistance, q_t (MPa) 0 10 20 30 40 50 60 70 80 90 100

Sleeve Friction, f_s (MPa) 0 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00 2.25 2.5

Pore Pressure, U_2 (kPa) -5000 -2500 0 2500 5000

Ambient Pore Pressure

Depth (m) 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

KEY TO SOIL PROFILE

SILT CLAY CHALK PEAT

SAND GRAVEL COBBLES Mixed Soil

Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CRS: **GRS 80 UTM ZONE 18 N (75 W)**	QC Status: Preliminary / Draft / Final
Contract	**10451**	Water Depth (mMSL)	**27.0**	**Comments:** **No recovery 0.00-0.50m. No PS logging was performed at this location.**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start-End)	**06/07/2015 - 07/07/2015**		
Vessel	**MV Ocean Discovery**	Final Borehole Depth	**75.20m**		**NV-S** (08/07/2015)
Method	**Wison**				

Sample Name: **BH - G7**

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21

PUSH SAMPLE NO: P03

DEPTH (M): 2.00 - 3.00

RECOVERY (M): 0.30

DATE: 22/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 PUSH SAMPLE NO: P02

DEPTH (M): 1.00 - 2.00 RECOVERY (M): 0.55

DATE: 22/06/2015

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0.0m — 1.0m

CLIENT: US Wind Inc.

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LOCATION: Maryland USA

BOREHOLE NO: BH – I21 PUSH SAMPLE NO: P03

DEPTH (M): 2.00 - 2.50 RECOVERY (M): 0.30

DATE: 22/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21

PUSH SAMPLE NO: P 0 4

DEPTH (M): 5.50 - 6.50

RECOVERY (M): 0.6 5

DATE: 22/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

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LOCATION: Maryland USA

BOREHOLE NO: BH – I21 A — PUSH SAMPLE NO: P01

DEPTH (M): 9.50 - 10.15 — RECOVERY (M): 0.35

DATE: 23/06/2015

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0.0m — 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 A PUSH SAMPLE NO: P 0 3

DEPTH (M): 14. 50 - 14. 9 0 RECOVERY (M): 0. 3 5

DATE: 23/06/2015

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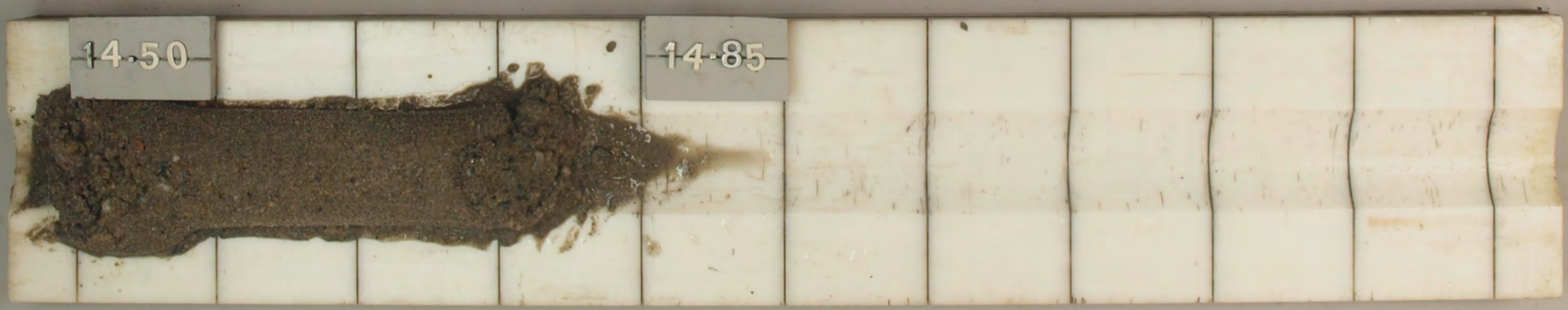
0.0m 1.0m



CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 A PUSH SAMPLE NO: P 0 4 A

DEPTH (M): 1 7.50 - 1 8. 2 0 RECOVERY (M): 0. 1 5

DATE: 23/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

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LOCATION: Maryland USA

BOREHOLE NO: BH – I21 A PUSH SAMPLE NO: P 0 5

DEPTH (M): 21.00 - 21.70 RECOVERY (M): 0.50

DATE: 23/06/2015

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0.0m 1.0m

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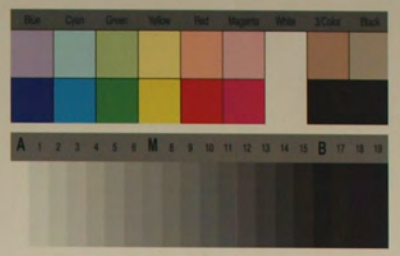
LOCATION: Maryland USA

BOREHOLE NO: BH – I21 A PUSH SAMPLE NO: P 0 6

DEPTH (M): 25.00 - 25.50 RECOVERY (M): 0.25

DATE: 23/06/2015



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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 01

DEPTH (M): 28.00 - 29.00 RECOVERY (M): 1.00

DATE: 24/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 0 2

DEPTH (M): 2 9. 0 0 - 3 0. 0 0 RECOVERY (M): 0. 9 5

DATE: 24/06/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 0 5

DEPTH (M): 3 9.50 - 4 0. 50 RECOVERY (M): 0. 6 0

DATE: 24/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 0 6 A

DEPTH (M): 4 4. 00 - 4 5. 00 RECOVERY (M): 1. 00

DATE: 24/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B

PUSH SAMPLE NO: P 0 7

DEPTH (M): 4 8. 00 - 4 9. 00

RECOVERY (M): 1. 00

DATE: 24/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 0 8

DEPTH (M): 5 1. 00 - 5 1. 7 0 RECOVERY (M): 0. 50

DATE: 24/06/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 0 9

DEPTH (M): 5 5. 00 - 5 6. 00 RECOVERY (M): 1. 00

DATE: 24/06/2015

US Wind inc sea energy

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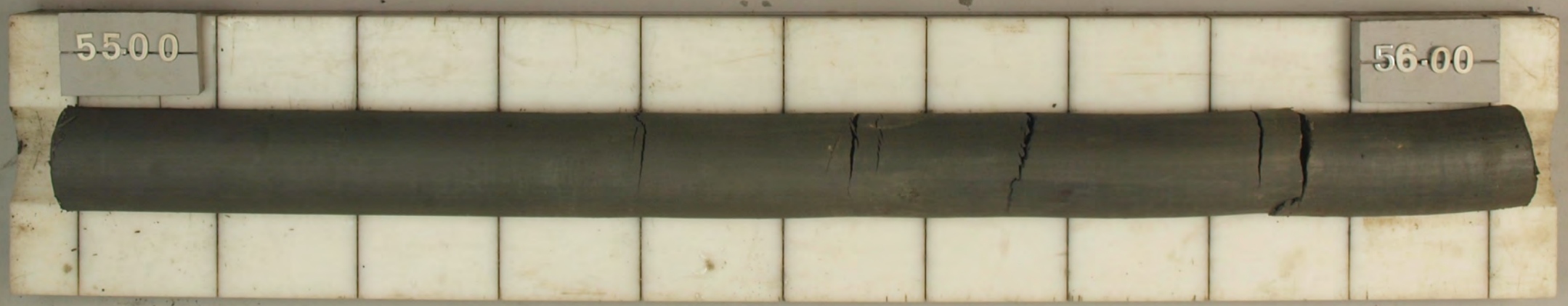
0.0m 1.0m



CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

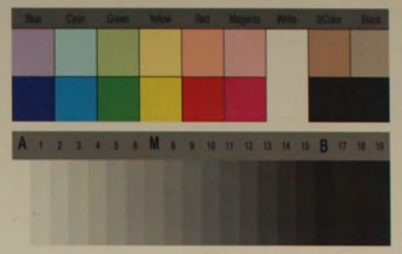
BOREHOLE NO: BH – I21 B

PUSH SAMPLE NO: P 1 0

DEPTH (M): 5 9. 00 - 6 0. 00

RECOVERY (M): 1. 00

DATE: 24/06/2015



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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 1 1

DEPTH (M): 6 3. 00 - 6 4. 00 RECOVERY (M): 1. 00

DATE: 24/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 12

DEPTH (M): 67.00 - 68.00 RECOVERY (M): 1.00

DATE: 24/06/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH – I21 B PUSH SAMPLE NO: P 1 3

DEPTH (M): 7 1. 00 - 7 2. 00 RECOVERY (M): 0.5 5

DATE: 24/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P01

DEPTH (M): 0.00 - 1.00 RECOVERY (M): 0.75

DATE: 25/06/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P02

DEPTH (M): 1.00 - 2.00 RECOVERY (M): 0.45

DATE: 25/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P03

DEPTH (M): 2.00 - 3.00 RECOVERY (M): 0.60

DATE: 25/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 0 4

DEPTH (M): 5.00 - 5.7 0 RECOVERY (M): 0. 3 5

DATE: 25/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P05

DEPTH (M): 8.50 - 9.20 RECOVERY (M): 0.55

DATE: 25/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P06

DEPTH (M): 12.50 - 13.30 RECOVERY (M): 0.50

DATE: 25/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P09

DEPTH (M): 25.50 - 26.50 RECOVERY (M): 0.95

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 0

DEPTH (M): 2 9.00 - 3 0.00 RECOVERY (M): 0.9 5

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 1

DEPTH (M): 3 3.00 - 3 4.00 RECOVERY (M): 0.9 8

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 2

DEPTH (M): 3 7. 00 - 3 7. 4 0 RECOVERY (M): 0. 3 0

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 3

DEPTH (M): 4 0. 50 - 4 1. 5 0 RECOVERY (M): 0. 9 0

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 4

DEPTH (M): 4 4. 50 - 4 5. 5 0 RECOVERY (M): 0. 1 0

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 4 A

DEPTH (M): 4 4. 50 - 4 5.00 RECOVERY (M): 0. 3 0

DATE: 26/06/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 6 A

DEPTH (M): 5 3. 50 - 5 4. 50 RECOVERY (M): 0. 4 0

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - MET TOWER PUSH SAMPLE NO: P 1 7

DEPTH (M): 5 7. 00 - 5 7. 7 5 RECOVERY (M): 0. 7 5

DATE: 26/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P 0 1

DEPTH (M): 0. 00 - 0. 7 0 RECOVERY (M): 0. 3 0

DATE: 29/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P 0 4

DEPTH (M): 2. 00 - 3. 00 RECOVERY (M): 0. 5 0

DATE: 29/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P05

DEPTH (M): 3.00 - 4.00 RECOVERY (M): 0.80

DATE: 29/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P06

DEPTH (M): 7.00 - 7.70 RECOVERY (M): 0.30

DATE: 29/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P07

DEPTH (M): 10.00 - 11.00 RECOVERY (M): 0.75

DATE: 29/06/2015

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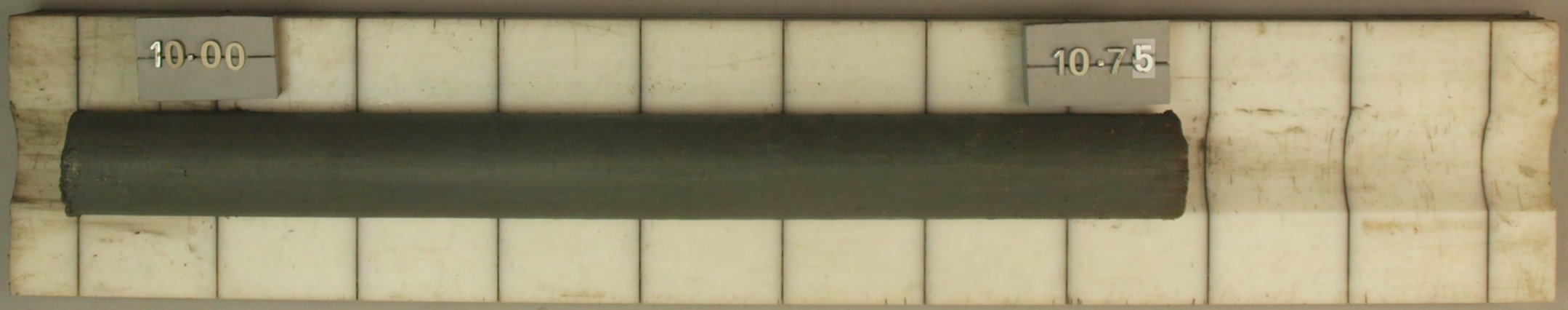

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14

PUSH SAMPLE NO: P08

DEPTH (M): 13.50 - 14.50

RECOVERY (M): 0.80

DATE: 29/06/2015

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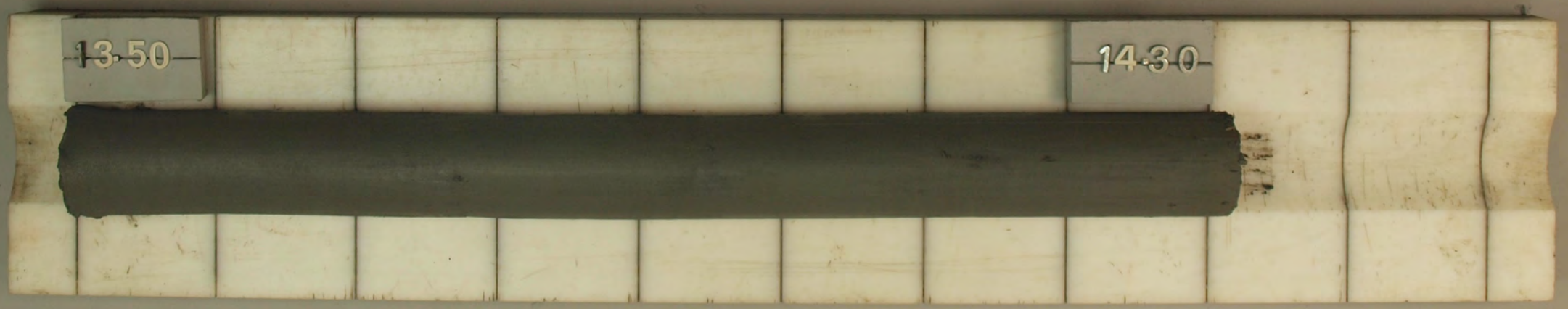

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P09

DEPTH (M): 17.50 - 17.90 RECOVERY (M): 0.30

DATE: 29/06/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14

PUSH SAMPLE NO: P10

DEPTH (M): 21.00 - 22.00

RECOVERY (M): 0.55

DATE: 29/06/2015

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CLIENT: US Wind Inc.

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LOCATION: Maryland USA

BOREHOLE NO: BH - D14 PUSH SAMPLE NO: P 11

DEPTH (M): 24.50 - 25.20 RECOVERY (M): 0.35

DATE: 29/06/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 A — PUSH SAMPLE NO: P 1 0

DEPTH (M): 5 6.5 0 - 5 7.5 0 — RECOVERY (M): 0.5 5

DATE: 01/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - D14 A — PUSH SAMPLE NO: P 1 1

DEPTH (M): 6 0. 5 0 - 6 1. 5 0 — RECOVERY (M): 1. 00

DATE: 01/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P01

DEPTH (M): 0.00 - 0.76 RECOVERY (M): 0.40

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 0 2

DEPTH (M): 0. 50 - 1. 4 0 RECOVERY (M): 0. 7 0

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 0 3

DEPTH (M): 1. 50 - 2. 2 6 RECOVERY (M): 0. 50

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17

PUSH SAMPLE NO: P 0 4

DEPTH (M): 5. 00 - 6. 00

RECOVERY (M): 0. 50

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P05

DEPTH (M): 8.00 - 8.80 RECOVERY (M): 0.25

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P07A

DEPTH (M): 12.00 - 12.50 RECOVERY (M): 0.10

DATE: 01/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 0 9

DEPTH (M): 17.00 - 17.50 RECOVERY (M): 0.20

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 1 0

DEPTH (M): 1 8. 5 0 - 1 8. 9 5 RECOVERY (M): 0. 2 5

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 1 3

DEPTH (M): 2 9. 50 - 3 0. 00 RECOVERY (M): 0. 2 5

DATE: 02/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 1 4 A

DEPTH (M): 3 3. 50 - 3 4. 50 RECOVERY (M): 0. 7 7

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P 1 5

DEPTH (M): 3 7. 50 - 3 8. 50 RECOVERY (M): 0. 94

DATE: 02/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 PUSH SAMPLE NO: P01

DEPTH (M): 0.00 - 0.76 RECOVERY (M): 0.40

DATE: 01/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A PUSH SAMPLE NO: P 02

DEPTH (M): 44.50 - 45.25 RECOVERY (M): 0.25

DATE: 02/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A PUSH SAMPLE NO: P 0 3

DEPTH (M): 4 8.00 - 4 8.9 0 RECOVERY (M): 0.7 0

DATE: 02/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A — PUSH SAMPLE NO: P 0 4

DEPTH (M): 5 2. 00 - 52. 80 — RECOVERY (M): 0. 7 5

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A PUSH SAMPLE NO: P 05

DEPTH (M): 56.00 - 57.00 RECOVERY (M): 0.90

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A PUSH SAMPLE NO: P 0 6

DEPTH (M): 6 0. 00 - 6 1. 00 RECOVERY (M): 1. 00

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G17 A PUSH SAMPLE NO: P 0 7

DEPTH (M): 6 4.00 - 6 5.00 RECOVERY (M): 0.8 0

DATE: 02/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P01A

DEPTH (M): 0.00 - 1.00 RECOVERY (M): 0.15

DATE: 03/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16

PUSH SAMPLE NO: P 03

DEPTH (M): 3.50 - 4.50

RECOVERY (M): 0.55

DATE: 03/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16

PUSH SAMPLE NO: P 0 4 A

DEPTH (M): 7. 50 - 8.3 0

RECOVERY (M): 0. 2 0

DATE: 03/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 0 6

DEPTH (M): 1 3. 00 - 1 3. 7 0 RECOVERY (M): 0. 1 5

DATE: 03/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P10

DEPTH (M): 22.00 - 22.70 RECOVERY (M): 0.25

DATE: 03/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P12

DEPTH (M): 28.00 - 28.70 RECOVERY (M): 0.40

DATE: 03/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P13

DEPTH (M): 31.00 - 31.75 RECOVERY (M): 0.30

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 1 5

DEPTH (M): 4 0. 00 - 4 1. 00 RECOVERY (M): 0. 9 5

DATE: 04/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

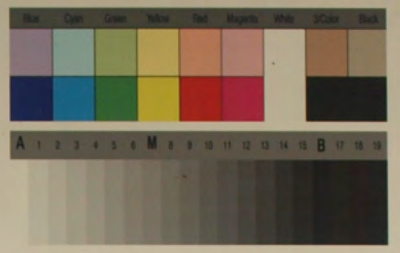
CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 1 6

DEPTH (M): 4 4. 00 - 4 5. 00 RECOVERY (M): 0. 9 8

DATE: 04/07/2015



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CLIENT: US Wind Inc.

CONTRACT NO: 10451

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LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 1 7

DEPTH (M): 4 8. 00 - 4 9. 00 RECOVERY (M): 0. 9 5

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 1 8

DEPTH (M): 4 9. 50 - 5 0. 3 0 RECOVERY (M): 0. 3 0

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 1 9

DEPTH (M): 5 1. 00 - 5 2.00 RECOVERY (M): 0. 7 0

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 20

DEPTH (M): 55.00 - 56.00 RECOVERY (M): 1.00

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 2 1

DEPTH (M): 5 9. 00 - 6 0. 00 RECOVERY (M): 1. 00

DATE: 04/07/2015

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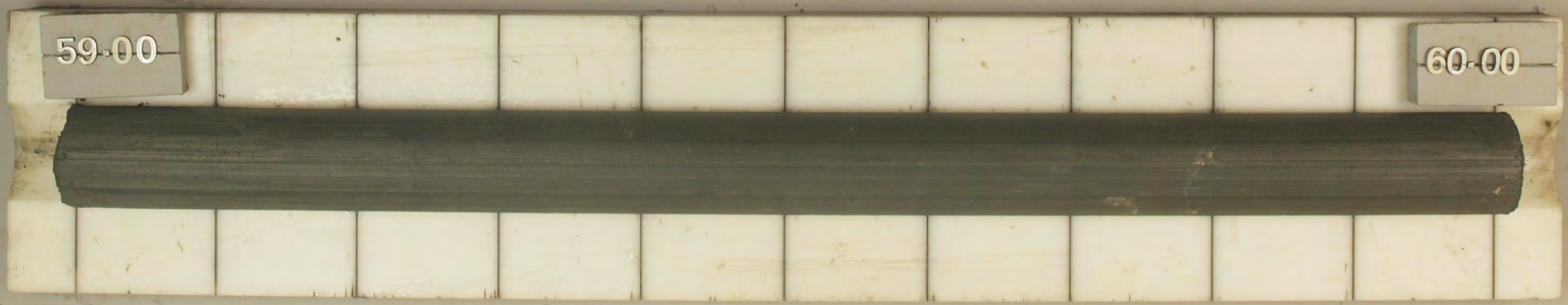

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 2 2

DEPTH (M): 6 3. 00 - 6 4. 00 RECOVERY (M): 1. 00

DATE: 04/07/2015

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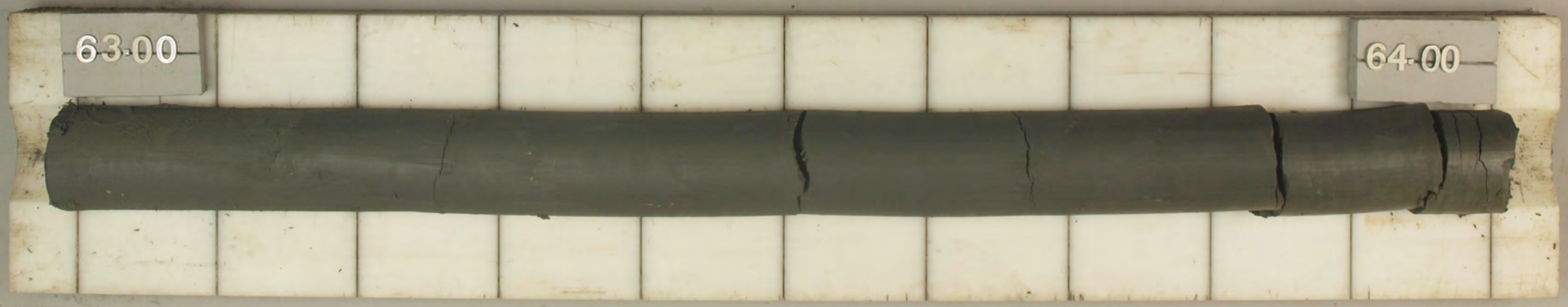

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 2 3

DEPTH (M): 6 6. 50 - 6 7. 50 RECOVERY (M): 0. 7 0

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - K16 PUSH SAMPLE NO: P 2 4

DEPTH (M): 7 1. 00 - 7 1. 7 0 RECOVERY (M): 0. 4 0

DATE: 04/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 1

DEPTH (M): 0.00 - 1.00 RECOVERY (M): 0.40

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 2

DEPTH (M): 1.00 - 2.00 RECOVERY (M): 0.55

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 3

DEPTH (M): 2. 00 - 3. 00 RECOVERY (M): 0. 7 0

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

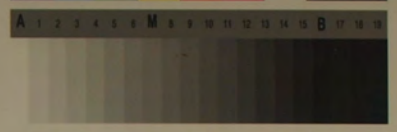
Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 4

DEPTH (M): 6.00 - 7.00 RECOVERY (M): 0. 8 4

DATE: 05/07/2015



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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 5

DEPTH (M): 1 0.00 - 10.5 0 RECOVERY (M): 0. 3 0

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10

PUSH SAMPLE NO: P 0 6 A

DEPTH (M): 1 3. 50 - 1 4. 0 0

RECOVERY (M): 0. 3 0

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 8

DEPTH (M): 2 3. 50 - 2 4. 50 RECOVERY (M): 0. 4 5

DATE: 05/07/2015

0.0m 1.0m

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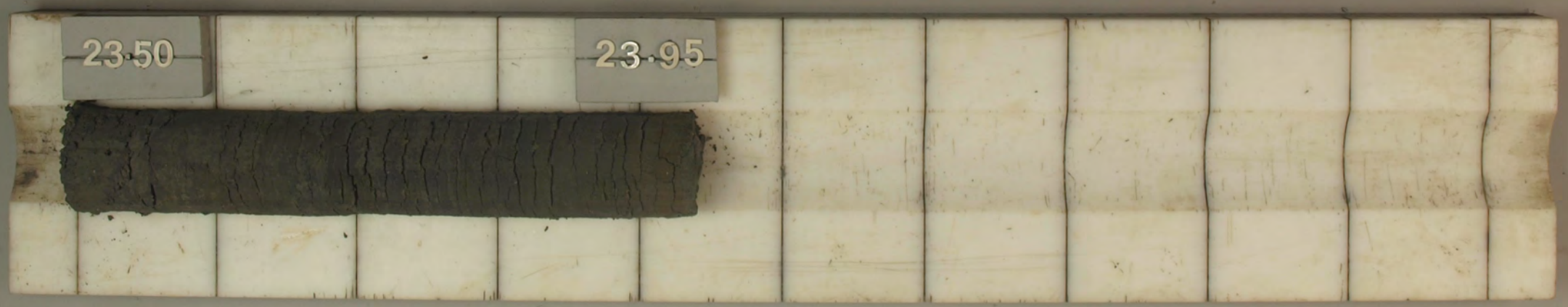

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 8

DEPTH (M): 2 3. 50 - 2 4. 50 RECOVERY (M): 0. 4 5

DATE: 05/07/2015

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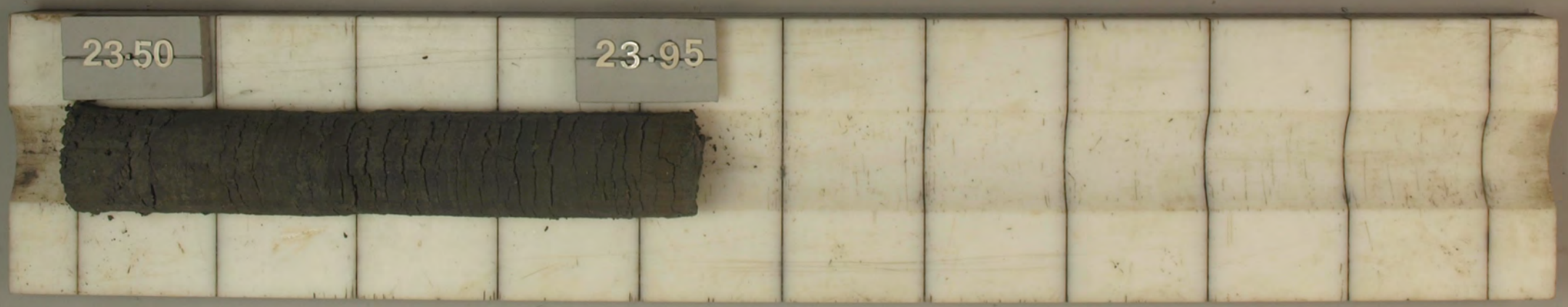

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 0 9

DEPTH (M): 2 6. 0 0 - 2 7. 0 0 RECOVERY (M): 0. 9 0

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P10

DEPTH (M): 30.00 - 30.85 RECOVERY (M): 0.80

DATE: 05/07/2015

0.0m 1.0m

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 1

DEPTH (M): 3 4. 0 0 - 3 4. 9 0 RECOVERY (M): 0. 8 0

DATE: 05/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 2

DEPTH (M): 3 8. 0 0 - 3 8. 9 0 RECOVERY (M): 0. 6 5

DATE: 05/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 3

DEPTH (M): 4 2. 0 0 - 4 3. 0 0 RECOVERY (M): 0. 8 5

DATE: 05/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P15

DEPTH (M): 50.00 - 51.00 RECOVERY (M): 1.00

DATE: 06/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 6

DEPTH (M): 5 4.00 - 5 5.00 RECOVERY (M): 0. 9 6

DATE: 06/07/2015

US Wind inc sea energy

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P17

DEPTH (M): 56.00 - 56.50 RECOVERY (M): 0.30

DATE: 06/07/2015

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CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 8

DEPTH (M): 5 9. 50 - 6 0. 00 RECOVERY (M): 0. 3 0

DATE: 06/07/2015

0.0m 1.0m

US Wind inc sea energy

Gardline

Gardline Geosciences,
1 Hewett Park,
Hewett Road,
Great Yarmouth,
Norfolk,
NR31 0NN.

Tel: +44(0)1493 845600
www.gardlinemarinesciences.com

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 1 9

DEPTH (M): 6 3.00 - 6 3. 50 RECOVERY (M): 0. 3 0

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 20

DEPTH (M): 66.00 - 67.00 RECOVERY (M): 1.00

DATE: 06/07/2015

US Wind inc sea energy

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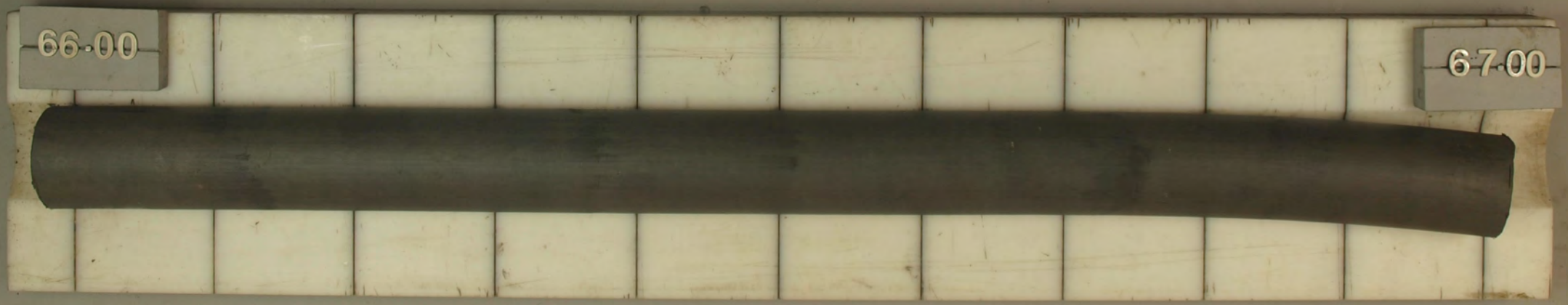
0.0m 1.0m



CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 2 1

DEPTH (M): 7 0. 00 - 7 1. 00 RECOVERY (M): 1. 0 0

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 2 1

DEPTH (M): 7 0. 00 - 7 1. 00 RECOVERY (M): 1. 0 0

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 2 2

DEPTH (M): 74.00 - 75.00 RECOVERY (M): 0.90

DATE: 06/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - H10 PUSH SAMPLE NO: P 2 2

DEPTH (M): 74.00 - 75.00 RECOVERY (M): 0.90

DATE: 06/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 0 2

DEPTH (M): 0. 50 - 1. 50

RECOVERY (M): 0. 4 5

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 0 3

DEPTH (M): 1. 00 - 2. 00 RECOVERY (M): 0. 6 0

DATE: 06/07/2015

US Wind inc sea energy

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NR31 0NN.

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 0 4

DEPTH (M): 4. 50 - 4. 9 0 RECOVERY (M): 0. 1 0

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 0 5

DEPTH (M): 8. 00 - 8. 2 0 RECOVERY (M): 0. 2 0

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P06A

DEPTH (M): 10.00 - 10.40 RECOVERY (M): 0.05

DATE: 06/07/2015

US Wind inc sea energy

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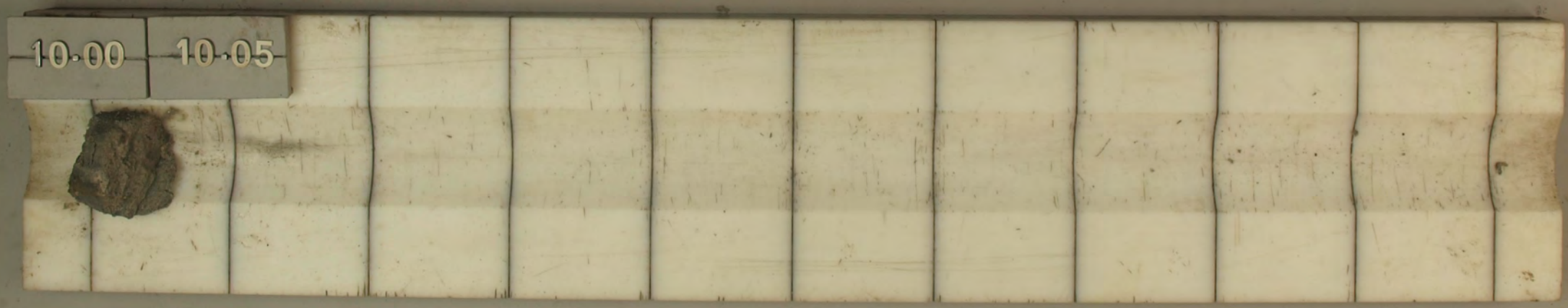
0.0m 1.0m



CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P07A

DEPTH (M): 12.50 - 12.90 RECOVERY (M): 0.30

DATE: 06/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P08

DEPTH (M): 14.50 - 15.14 RECOVERY (M): 0.18

DATE: 07/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P10

DEPTH (M): 19.00 - 20.00

RECOVERY (M): 0.78

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 1

DEPTH (M): 2 3. 00 - 2 4. 00 RECOVERY (M): 0. 8 0

DATE: 07/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 1 2

DEPTH (M): 2 7. 00 - 2 8. 00

RECOVERY (M): 0. 9 5

DATE: 07/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 3

DEPTH (M): 3 1. 00 - 3 2. 00 RECOVERY (M): 0. 7 4

DATE: 07/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 4

DEPTH (M): 3 5. 00 - 3 6. 00 RECOVERY (M): 1. 00

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 1 5

DEPTH (M): 3 9. 00 - 4 0. 00

RECOVERY (M): 1. 00

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 6

DEPTH (M): 4 3. 00 - 4 4. 00 RECOVERY (M): 1. 00

DATE: 07/07/2015

US Wind inc sea energy

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NR31 0NN.

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P17

DEPTH (M): 46.50 - 47.50 RECOVERY (M): 0.80

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 8

DEPTH (M): 5 0. 00 - 5 1. 00 RECOVERY (M): 1. 0 0

DATE: 07/07/2015

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 1 9

DEPTH (M): 5 3. 0 0 - 5 3. 8 0 RECOVERY (M): 0. 2 0

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451 Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 2 0

DEPTH (M): 5 7. 00 - 5 7. 5 5 RECOVERY (M): 0.3 0

DATE: 07/07/2015

US Wind inc sea energy

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Tel: +44(0)1493 845600
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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 2 1

DEPTH (M): 6 0. 5 0 - 6 1. 0 0

RECOVERY (M): 0. 4 0

DATE: 07/07/2015

0.0m

1.0m

US Wind inc sea energy

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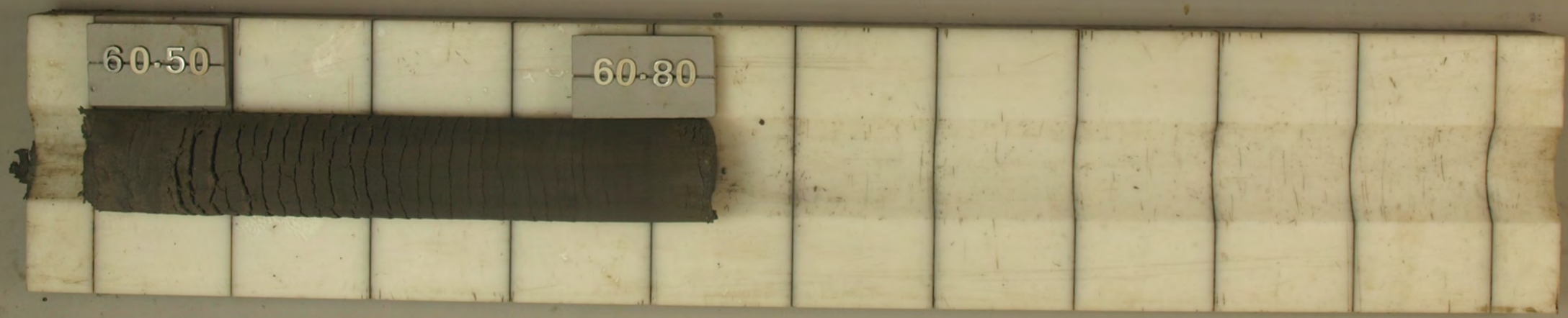

CLIENT: US Wind Inc.

CONTRACT NO: 10451 — Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7 PUSH SAMPLE NO: P 2 2

DEPTH (M): 6 4. 00 - 6 4. 50 RECOVERY (M): 0. 50

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 2 3

DEPTH (M): 6 7. 50 - 6 8. 2 5

RECOVERY (M): 0. 7 5

DATE: 07/07/2015

US Wind inc sea energy

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0.0m 1.0m

CLIENT: US Wind Inc.

CONTRACT NO: 10451

Geotechnical Marine Survey for the Maryland Wind Energy Area

LOCATION: Maryland USA

BOREHOLE NO: BH - G7

PUSH SAMPLE NO: P 2 4

DEPTH (M): 71. 50 - 72. 50

RECOVERY (M): 1. 00

DATE: 07/07/2015

0.0m

1.0m

US Wind inc sea energy

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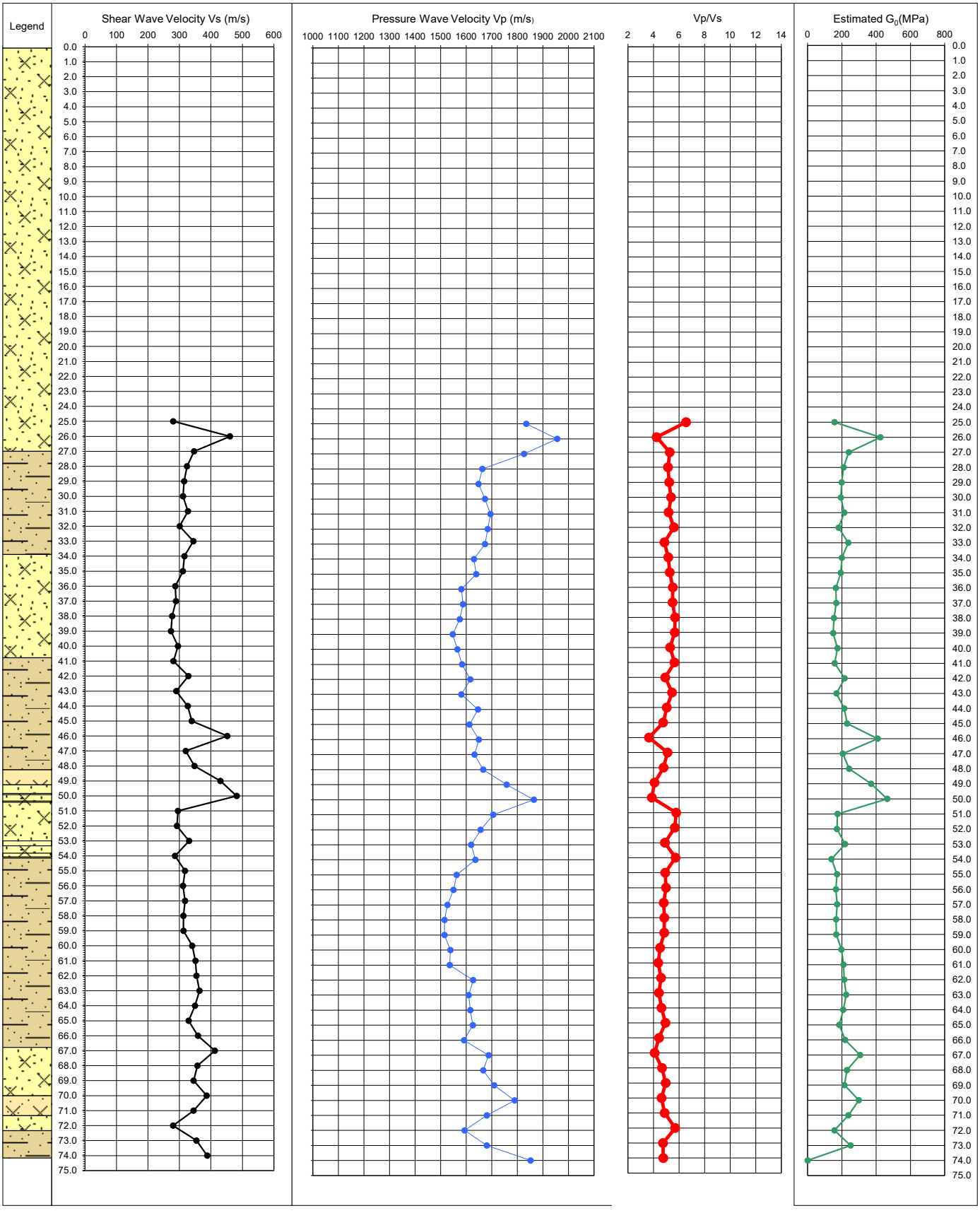
2.2 PS Measurements Logs

PS Logging

10451-Geotechnical Marine Survey Investigation for Maryland Wind Energy Area



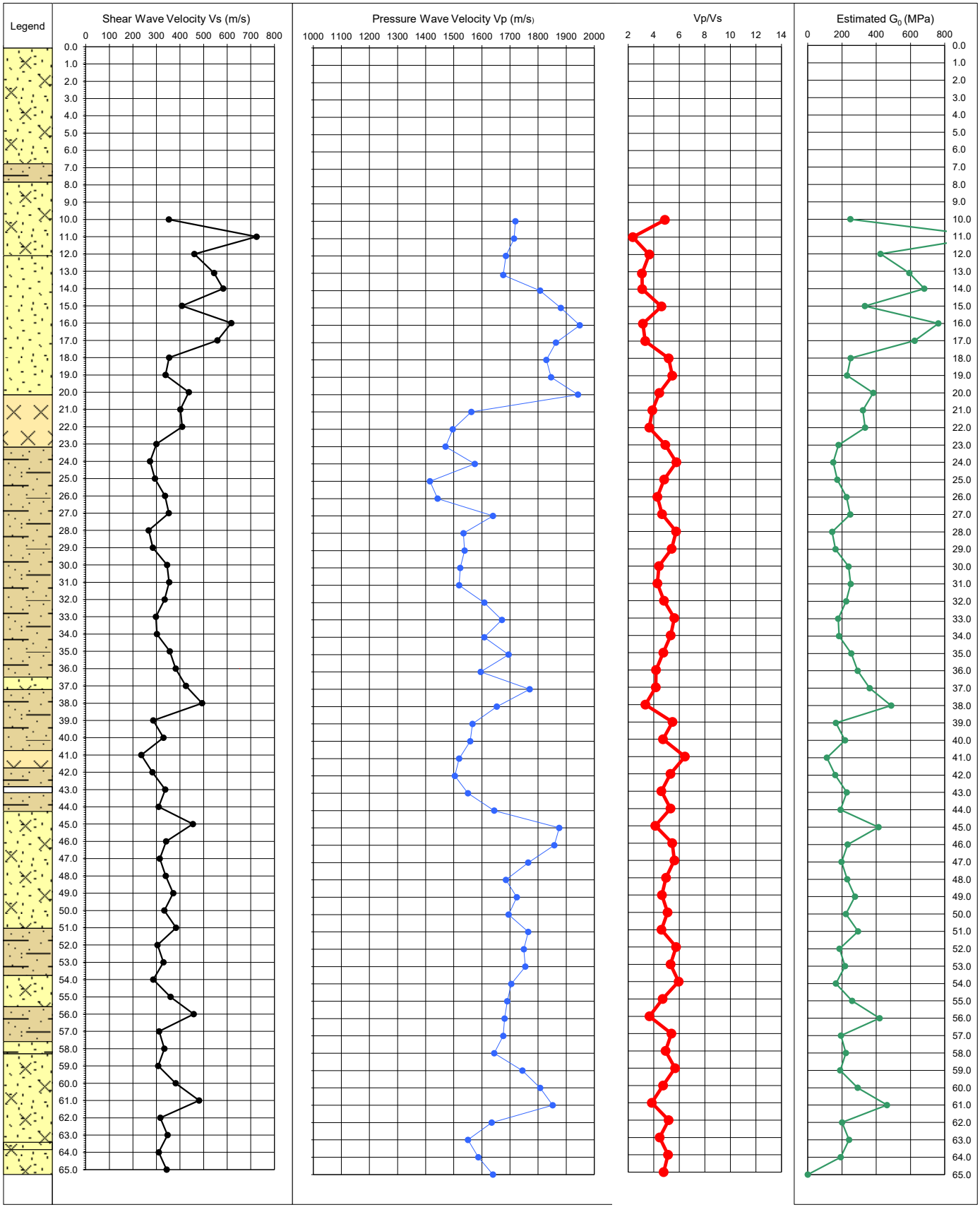
Borehole No:	**BH - I21B**	**Easting:**	**521,253.40**
Client:	**US Wind Inc.**	**Northing:**	**4,235,902.00**
Vessel:	**MV Ocean Discovery**	**Water Depth (m):**	**25.90**
Area:	**Maryland**	**Ellipsoid & Projection:**	**NAD 88 UTM ZONE 18 N**

Comments:

QC Status:	Preliminary	Draft	Final
Checked:	XY 25/06/2015	0 00/01/1900	0

PS Logging

10451-Geotechnical Marine Survey Investigation for Maryland Wind Energy Area



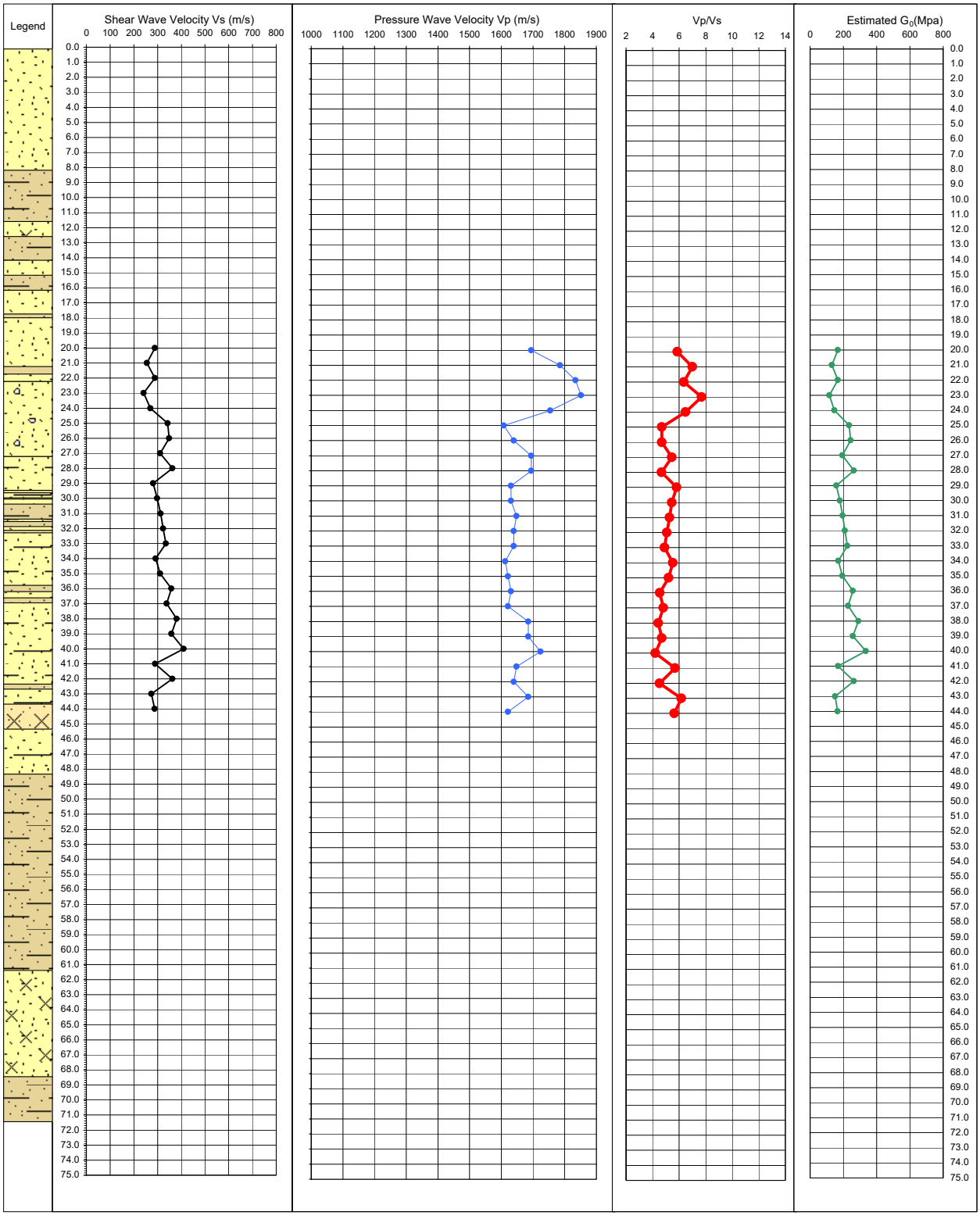
Borehole No:	**BH-MET TOWER**	**Easting:**	**521,533.90**
Client:	**US Wind Inc.**	**Northing:**	**4,244,983.30**
Vessel:	**MV Ocean Discovery**	**Water Depth (mMSL):**	**27.70**
Area:	**Maryland**	**Ellipsoid & Projection:**	**GRS 80 UTM ZONE 18 N (75W)**

Comments:

QC Status:	Preliminary	Draft	Final
Checked:	XY 27/06/2015	0 00/01/1900	0

PS Logging

10451-Geotechnical Marine Survey Investigation for Maryland Wind Energy Area



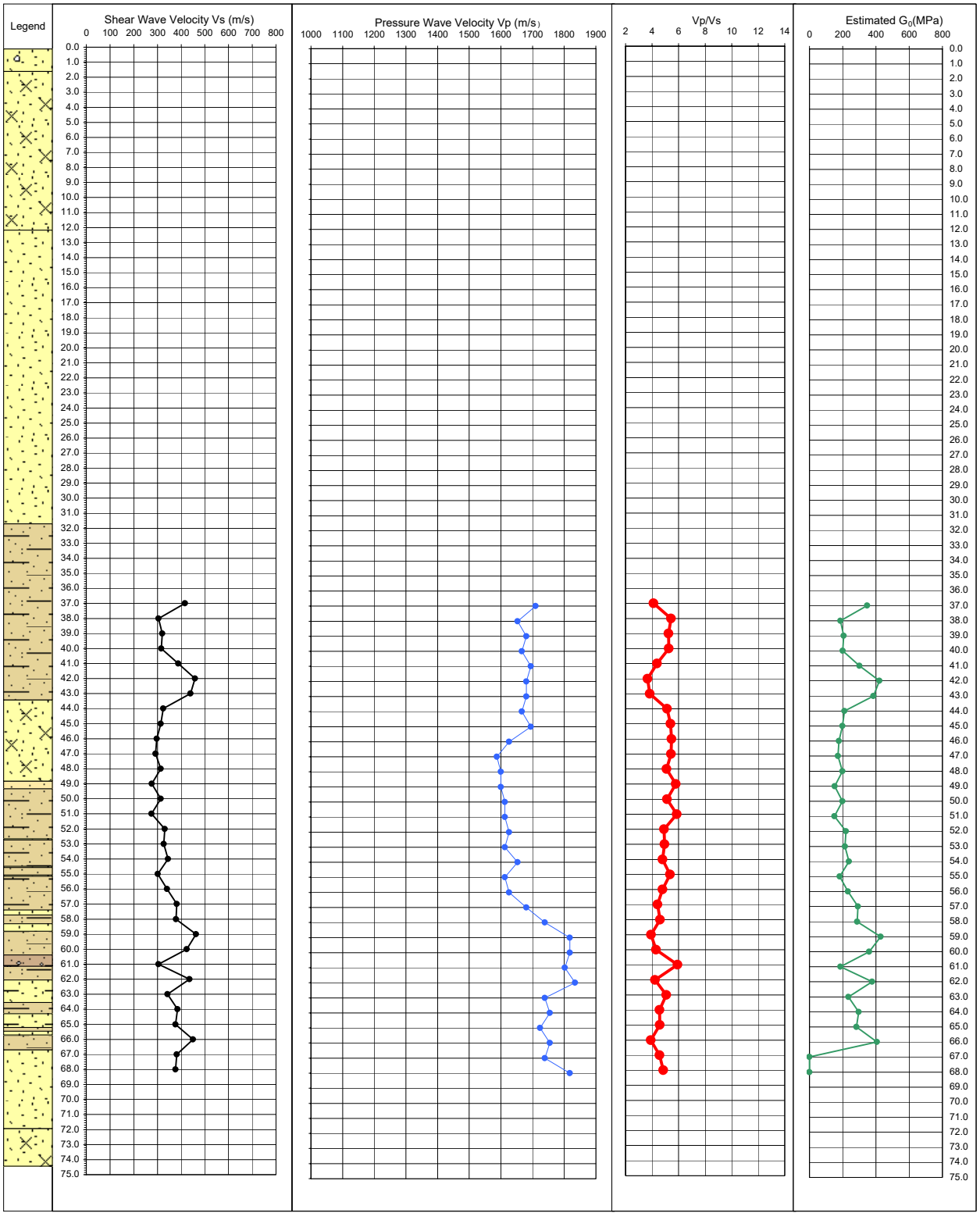
Borehole No:	**BH - D14A**	**Easting:**	**515,755.00**
Client:	**US Wind Inc.**	**Northing:**	**4,243,612.00**
Vessel:	**MV Ocean Discovery**	**Water Depth (m):**	**19.10**
Area:	**Maryland**	**Ellipsoid & Projection:**	**GRS 80 UTM ZONE 18 N**

Comments:

QC Status:	Preliminary	Draft	Final
Checked:	XY 01/07/2015	0 00/01/1900	0

PS Logging

10451-Geotechnical Marine Survey Investigation for Maryland Wind Energy Area



Borehole No:	**BH - G17A**	**Easting:**	**519,056.40**
Client:	**US Wind Inc.**	**Northing:**	**4,240,311.60**
Vessel:	**MV Ocean Discovery**	**Water Depth (m):**	**24.90**
Area:	**Maryland**	**Ellipsoid & Projection:**	**GRS 80 UTM ZONE 18 N**

Comments:

QC Status:	Preliminary	Draft	Final
Checked:	XY 03/07/2015	0 00/01/1900	0

APPENDIX 3

3.1 CPTU Operators logs

3.2 CPTU Reference readings

3.3 CPTU Measured and derived results

3.1 CPTU Operators logs

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	1	070815G	0.79	10	30.90	1.90	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	2	120911G	0.79	10	33.40	2.40	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	3	120911G	0.79	10	37.40	2.70	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	4	120911G	0.79	10	41.40	1.16	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	5	120911G	0.79	10	42.90	0.44	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	6	120911G	0.79	10	43.90	1.92	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	7	120911G	0.79	10	46.40	0.30	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	8	120911G	0.79	10	46.90	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	9	120911G	0.79	10	47.40	0.44	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	10	120911G	0.79	10	47.90	2.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	11	120911G	0.79	10	50.90	2.36	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	12	100904G	0.75	10	54.40	2.20	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	13	100904G	0.75	10	57.90	2.58	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	14	100904G	0.75	10	61.90	2.72	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	14.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	15	100904G	0.75	10	65.40	2.66	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	15.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	16	100904G	0.79	10	69.40	1.54	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	16.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	17	120911G	0.79	10	72.90	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	26.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	18	100904G	0.79	10	73.40	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	17 - Copy.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	19	100904G	0.79	10	73.90	0.20	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	18.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	20	100904G	0.79	10	74.40	0.42	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	19.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	21	100904G	0.79	10	74.90	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	20.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	22	100904G	0.79	10	75.40	0.20	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	21.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	23	100904G	0.79	10	75.90	0.24	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	22 - Copy.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	24	120911G	0.79	10	76.40	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	23.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	25	120911G	0.79	10	76.90	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	24.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	26	120911G	0.79	10	77.40	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	25.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	27	120911G	0.79	10	77.90	2.52	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	27.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	28	120911G	0.79	10	81.90	2.60	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	28.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	29	120911G	0.79	10	85.90	0.46	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	29.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	30	120911G	0.79	10	86.40	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	30.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	31	120911G	0.79	10	86.90	0.04	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	31.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	32	120911G	0.79	10	87.40	0.22	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	32.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	33	120911G	0.79	10	88.90	0.38	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	33.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	34	120911G	0.79	10	89.90	2.10	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	34.001
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	35	120911G	0.79	10	92.40	0.42	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	35.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
23/06/2015	00:00	BH - I21A(CPT)	23.0	1	081213G	0.75	10	25.50	2.82	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	2	081213G	0.75	10	29.50	2.66	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	3	081213G	0.75	10	33.50	0.72	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	4	081213G	0.75	10	34.00	2.66	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	5	081213G	0.75	10	38.00	2.40	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	6	081213G	0.75	10	41.00	2.88	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	7	120911G	0.75	10	45.00	2.92	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
23/06/2015	00:00	BH - I21A(CPT)	23.0	8	070815G	0.75	10	48.50	0.38	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	9	070815G	0.75	10	49.00	0.22	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
23/06/2015	00:00	BH - I21A(CPT)	23.0	10	070815G	0.75	10	49.50	2.02	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	1	100981	0.75	10	55.90	2.08	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	2	100981	0.75	10	59.40	2.84	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	3	100981	0.75	10	62.90	2.46	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	4	100904G	0.75	10	66.40	2.80	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
24/06/2015	00:00	BH - I21B (CPT)	25.9	5	100904G	0.75	10	70.90	2.88	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	6	100904G	0.75	10	74.90	1.50	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	7	100904G	0.75	10	77.90	2.66	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	8	100904G	0.75	10	81.90	2.84	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	9	100904G	0.75	10	85.90	2.80	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	10	100904G	0.75	10	89.90	2.74	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
24/06/2015	00:00	BH - I21B (CPT)	25.9	11	100904G	0.75	10	93.90	2.90	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
24/06/2015	00:00	BH - I21B (CPT)	25.9	12	100904G	0.75	10	97.90	1.74	10.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	1	081213G	0.83	10	23.10	2.54	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	2	081213G	0.83	10	26.60	2.34	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	3	081213G	0.83	10	30.10	2.48	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	4	081213G	0.83	10	33.60	2.70	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	5	081213G	0.83	10	37.10	2.32	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	6	081213G	0.83	10	41.10	1.58	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
28/06/2015	00:00	BH - D14 (cpt)	19.1	7	120911G	0.79	10	44.10	0.46	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
28/06/2015	00:00	BH - D14 (cpt)	19.1	8	120911G	0.79	10	44.60	0.26	0.00	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	1	120911G	0.79	10	45.00	2.50	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	2	120911G	0.79	10	49.00	2.48	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	3	120911G	0.79	10	53.00	2.86	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	4	120911G	0.79	10	57.00	2.52	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	5	120911G	0.79	10	61.00	2.62	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
30/06/2015	00:00	BH - D14A (CPT)	19.0	6	120911G	0.79	10	64.50	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	7	120911G	0.79	10	68.50	2.80	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	8	100912G	0.76	10	72.50	2.54	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	9	100912G	0.76	10	76.50	2.66	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	10	100912G	0.76	10	80.50	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	11	100912G	0.76	10	84.00	2.74	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
30/06/2015	00:00	BH - D14A (CPT)	19.0	12	100912G	0.76	10	87.50	2.78	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
01/07/2015	00:00	BH - G17(CPT)	25.0	1	120911G	0.79	10	27.50	2.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
01/07/2015	00:00	BH - G17(CPT)	25.0	2	120911G	0.79	10	31.00	1.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
01/07/2015	00:00	BH - G17(CPT)	25.0	3	120911G	0.79	10	33.50	2.62	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
01/07/2015	00:00	BH - G17(CPT)	25.0	4	120911G	0.79	10	37.50	1.00	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
01/07/2015	00:00	BH - G17(CPT)	25.0	5	120911G	0.79	10	39.00	0.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
01/07/2015	00:00	BH - G17(CPT)	25.0	6	120911G	0.79	10	40.50	1.38	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
01/07/2015	00:00	BH - G17(CPT)	25.0	7	120911G	0.79	10	42.50	0.62	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
01/07/2015	00:00	BH - G17(CPT)	25.0	8	120911G	0.79	10	44.00	2.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
01/07/2015	00:00	BH - G17(CPT)	25.0	9	120911G	0.79	10	47.50	1.00	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
01/07/2015	00:00	BH - G17(CPT)	25.0	10	120911G	0.79	10	48.50	0.92	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
01/07/2015	00:00	BH - G17(CPT)	25.0	11	120911G	0.79	10	50.50	0.54	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
01/07/2015	00:00	BH - G17(CPT)	25.0	12	120911G	0.79	10	51.50	1.22	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
01/07/2015	00:00	BH - G17(CPT)	25.0	13	120911G	0.79	10	53.00	0.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001
01/07/2015	00:00	BH - G17(CPT)	25.0	14	120911G	0.79	10	53.50	0.46	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	14.001

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Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
01/07/2015	00:00	BH - G17(CPT)	25.0	15	120911G	0.79	10	54.00	0.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	15.001
01/07/2015	00:00	BH - G17(CPT)	25.0	16	120911G	0.79	10	55.00	0.34	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	16.001
01/07/2015	00:00	BH - G17(CPT)	25.0	17	120911G	0.79	10	55.50	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	17.001
01/07/2015	00:00	BH - G17(CPT)	25.0	18	100917G	0.8	10	59.50	2.56	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	18.001
01/07/2015	00:00	BH - G17(CPT)	25.0	19	100904G	0.79	10	63.50	2.50	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	19.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	1	120911G	0.79	10	40.30	0.00	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	2	100904G	0.79	10	66.80	2.18	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
02/07/2015	00:00	BH - G17A(CPT)	24.8	3	100904G	0.79	10	69.80	2.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	4	100904G	0.79	10	73.80	2.66	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	5	100904G	0.79	10	77.80	2.70	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	6	100904G	0.79	10	81.80	2.70	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	7	100904G	0.79	10	85.80	2.88	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6(edit).001
02/07/2015	00:00	BH - G17A(CPT)	24.8	8	100904G	0.79	10	89.80	1.94	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	9	100904G	0.79	10	92.80	0.30	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
02/07/2015	00:00	BH - G17A(CPT)	24.8	10	100904G	0.79	10	93.30	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	11	100904G	0.79	10	94.30	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	12	100904G	0.79	10	95.30	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
02/07/2015	00:00	BH - G17A(CPT)	24.8	13	100904G	0.79	10	96.30	2.46	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	1	120911G	0.79	10	25.60	2.56	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	2	120911G	0.79	10	29.10	2.58	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	3	120911G	0.79	10	32.60	2.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
03/07/2015	00:00	BH - K16 (CPT)	24.6	4	120911G	0.79	10	35.60	1.98	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	5	120911G	0.79	10	38.10	1.98	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	6	120911G	0.79	10	40.60	2.38	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	7	120911G	0.79	10	43.60	2.86	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	8	120911G	0.79	10	47.10	1.94	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	9	120911G	0.79	10	49.60	2.96	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	10	120911G	0.79	10	53.10	2.08	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
03/07/2015	00:00	BH - K16 (CPT)	24.6	11	120911G	0.79	10	56.60	0.60	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	12	120911G	0.79	10	58.10	0.22	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	13	120911G	0.79	10	58.60	0.76	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	14	120911G	0.79	10	59.60	0.40	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	14.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	15	120911G	0.79	10	60.10	0.58	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	15.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	16	081213G	0.83	10	61.10	0.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	16.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	17	081213G	0.83	10	61.60	2.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	17.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
03/07/2015	00:00	BH - K16 (CPT)	24.6	18	081213G	0.83	10	65.60	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	18.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	19	100904G	0.79	10	69.60	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	19.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	20	071216G	0.74	10	75.10	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	21.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	21	071216G	0.74	10	76.60	2.80	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	22.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	22	071216G	0.74	10	80.60	2.74	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	23.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	23	071216G	0.74	10	84.60	2.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	24.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	24	071216G	0.74	10	88.60	2.44	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	25.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
03/07/2015	00:00	BH - K16 (CPT)	24.6	25	071216G	0.74	10	92.10	0.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	26.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	26	071216G	0.74	10	92.60	2.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	27.001
03/07/2015	00:00	BH - K16 (CPT)	24.6	27	071216G	0.74	10	96.10	1.70	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	28.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	1	120911G	0.79	10	30.00	2.80	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	2	120911G	0.79	10	34.00	2.62	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	3	120911G	0.79	10	37.50	2.92	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	4	070815G	0.79	10	40.00	0.00	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
05/07/2015	00:00	BH - H10 (CPT)	27.0	5	120911G	0.79	10	41.00	0.38	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	6	120911G	0.79	10	41.50	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	7	120911G	0.79	10	42.00	0.24	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	8	120911G	0.79	10	42.50	0.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	9	120911G	0.79	10	43.00	0.18	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	10	120911G	0.79	10	43.50	0.26	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	11	120911G	0.79	10	44.00	0.40	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
05/07/2015	00:00	BH - H10 (CPT)	27.0	12	120911G	0.79	10	44.50	0.34	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	13	120911G	0.79	10	45.00	0.98	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	14	120911G	0.79	10	46.00	0.56	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	15	120911G	0.79	10	47.50	2.64	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	14.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	16	100905G	0.82	10	51.00	1.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	15.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	17	100905G	0.82	10	54.00	2.66	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	16.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	18	100905G	0.82	10	58.00	2.68	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	17.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
05/07/2015	00:00	BH - H10 (CPT)	27.0	19	100905G	0.82	10	62.00	2.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	18.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	20	100905G	0.82	10	66.00	2.56	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	19.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	21	100905G	0.82	10	70.00	2.66	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	20.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	22	100912G	0.76	10	74.00	2.84	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	21.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	23	100912G	0.76	10	78.00	2.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	22.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	24	100912G	0.76	10	82.00	0.56	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	23.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	25	100912G	0.76	10	83.50	2.90	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	24.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
05/07/2015	00:00	BH - H10 (CPT)	27.0	26	100912G	0.76	10	87.00	3.02	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	25.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	27	100912G	0.76	10	90.50	2.52	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	26.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	28	100912G	0.76	10	94.00	2.88	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	27.001
05/07/2015	00:00	BH - H10 (CPT)	27.0	29	100912G	0.76	10	98.00	2.78	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	28.001
06/07/2015	00:00	BH - G7(CPT)	27.0	1	070815G	0.79	10	29.00	2.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	1.001
06/07/2015	00:00	BH - G7(CPT)	27.0	2	070815G	0.79	10	32.00	2.74	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	2.001
06/07/2015	00:00	BH - G7(CPT)	27.0	3	070815G	0.79	10	35.50	1.20	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	3.001

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CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
06/07/2015	00:00	BH - G7(CPT)	27.0	4	070815G	0.79	10	37.50	1.98	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	4.001
06/07/2015	00:00	BH - G7(CPT)	27.0	5	070815G	0.79	10	40.00	0.92	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	5.001
06/07/2015	00:00	BH - G7(CPT)	27.0	6	120911G	0.79	10	41.00	0.36	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	6.001
06/07/2015	00:00	BH - G7(CPT)	27.0	7	120911G	0.79	10	42.50	0.32	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	7.001
06/07/2015	00:00	BH - G7(CPT)	27.0	8	120911G	0.79	10	43.50	2.42	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	8.001
06/07/2015	00:00	BH - G7(CPT)	27.0	9	120911G	0.79	10	47.00	2.78	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	9.001
06/07/2015	00:00	BH - G7(CPT)	27.0	10	120911G	0.79	10	51.00	2.82	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	10.001

Gardline

CPT OPERATORS LOG (PART 1)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	Cone Number	Alpha Factor Cone Size (cm²)	Cone Type	Start Depth from ML (m)	Stroke (m)	Maximum Thrust	Base Inclination	CPT Unit	Geotech Engineer	Operator	Zeroed Above Seabed (m)	Raw File
06/07/2015	00:00	BH - G7(CPT)	27.0	11	120911G	0.79	10	55.00	2.78	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	11.001
06/07/2015	00:00	BH - G7(CPT)	27.0	12	120911G	0.79	10	59.00	2.72	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	12.001
06/07/2015	00:00	BH - G7(CPT)	27.0	13	120911G	0.79	10	63.00	2.28	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	13.001
06/07/2015	00:00	BH - G7(CPT)	27.0	14	120911G	0.79	10	67.00	2.48	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	14.001
06/07/2015	00:00	BH - G7(CPT)	27.0	15	120911G	0.79	10	71.00	2.16	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	15.001
06/07/2015	00:00	BH - G7(CPT)	27.0	16	120911G	0.79	10	74.50	2.36	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	16.001
06/07/2015	00:00	BH - G7(CPT)	27.0	17	120911G	0.79	10	78.00	1.74	0.0	X=0/Y=0	Wison	SH NV	RL BD	0.00	17.001

3.2 CPTU Reference readings

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	1	3.02	0.00	0.2250	0.011	85.4	0.4830	0.013	401.4	0.5150	0.009	404.8	0.2360	0.011	87.1	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	2	5.52	0.00	2.8910	0.018	62.9	3.1630	0.019	415.7	3.1500	0.015	388.8	2.9040	0.017	64.8	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	3	9.52	0.00	2.9200	0.017	70.8	3.2190	0.016	444.1	3.1960	0.016	422.8	2.9040	0.018	64.0	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	4	13.52	0.00	2.9120	0.017	63.5	3.2470	0.017	489.0	3.2420	0.016	433.9	2.8980	0.017	63.4	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	5	15.02	0.00	2.9060	0.017	63.6	3.2500	0.016	507.2	3.2350	0.016	445.9	2.9130	0.016	63.5	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	6	16.02	0.00	2.9210	0.016	71.0	3.2630	0.016	526.0	3.2660	0.016	393.8	2.9180	0.016	65.4	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	7	18.52	0.00	2.9370	0.017	63.8	3.2850	0.017	559.2	3.2620	0.016	512.1	2.9310	0.017	63.7	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	8	19.02	0.00	2.9380	0.017	63.3	3.2900	0.016	556.1	3.2370	0.017	511.2	2.9180	0.018	63.8	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	9	19.52	0.00	2.9240	0.017	63.1	3.2800	0.017	569.5	3.2980	0.016	518.0	2.9390	0.016	62.8	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	10	20.02	0.00	2.9390	0.016	63.2	3.2950	0.017	573.5	3.2940	0.016	361.4	2.9380	0.017	64.0	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	11	23.02	0.00	2.9450	0.016	63.8	3.3450	0.017	614.8	3.2750	0.016	545.1	2.9390	0.017	62.8	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	12	26.52	0.00	1.7580	0.020	33.1	2.2650	0.022	626.3	2.2260	0.019	607.1	1.7740	0.020	35.2	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	13	30.02	0.00	1.7590	0.020	33.4	2.2880	0.022	654.3	2.2880	0.019	707.9	1.7660	0.020	36.5	Latched <0.5m high.
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	14	34.02	0.00	1.7580	0.021	33.9	2.3050	0.022	678.0	2.3150	0.019	710.8	1.7650	0.020	37.1	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	15	37.52	0.00	1.7700	0.020	33.8	2.3470	0.022	709.3	2.3720	0.019	723.1	1.7780	0.020	35.3	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	16	41.52	0.00	1.7670	0.020	33.9	2.3890	0.019	757.8	2.3840	0.018	757.4	1.7730	0.020	37.4	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	17	45.02	0.00	2.8900	0.019	62.3	3.4810	0.019	927.8	3.4890	0.017	901.4	2.8950	0.019	63.0	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	18	45.52	0.00	1.7800	0.020	35.1	2.4310	0.019	806.3	2.4490	0.018	684.5	1.8040	0.019	33.1	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	19	46.02	0.00	1.8050	0.020	33.2	2.4670	0.018	808.1	2.4670	0.018	793.5	1.8050	0.020	33.2	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	20	46.52	0.00	1.7930	0.020	32.5	2.4640	0.018	818.6	2.4300	0.018	725.8	1.7880	0.021	33.9	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	21	47.02	0.00	1.7880	0.020	33.1	2.4730	0.018	830.2	2.4640	0.019	535.1	1.8080	0.019	33.3	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	22	47.52	0.00	1.8000	0.018	33.5	2.4940	0.018	832.0	2.4040	0.018	820.9	1.7800	0.019	33.2	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	23	48.02	0.00	1.7560	0.019	55.3	2.4170	0.018	832.2	2.3590	0.018	815.3	1.6880	0.020	32.8	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	24	48.52	0.00	2.8720	0.019	62.9	3.4660	0.023	917.8	3.5160	0.016	896.1	2.8860	0.019	63.4	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	25	49.02	0.00	2.8870	0.019	62.8	3.4890	0.018	917.3	3.4910	0.017	890.7	2.8850	0.019	62.9	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	26	49.52	0.00	2.8810	0.019	62.8	3.4680	0.020	916.6	3.4970	0.017	893.2	2.8920	0.019	62.7	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	27	50.02	0.00	2.8930	0.019	62.5	3.4870	0.019	926.1	3.5180	0.016	936.8	2.9120	0.018	62.1	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	28	54.02	0.00	2.9300	0.019	62.9	3.5430	0.019	977.7	3.5490	0.016	988.2	2.9240	0.018	64.3	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	29	58.02	0.00	2.9220	0.018	62.4	3.5680	0.019	1013.5	3.5630	0.016	900.6	2.9030	0.016	66.7	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	30	58.52	0.00	2.9040	0.017	61.6	3.5490	0.018	1011.8	3.5820	0.016	936.5	2.9090	0.018	62.3	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	31	59.02	0.00	2.9120	0.018	61.9	3.5640	0.018	1015.3	3.5530	0.017	943.6	2.9240	0.018	61.3	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	32	59.52	0.00	2.9220	0.018	62.0	3.5700	0.019	1022.4	3.6020	0.016	996.7	2.9220	0.019	61.4	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	33	61.02	0.00	2.9170	0.018	62.0	3.5840	0.018	1040.4	3.5610	0.016	841.5	2.8700	0.016	61.1	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	34	62.02	0.00	2.8700	0.016	62.2	3.5380	0.017	1046.1	3.4990	0.017	785.8	2.8880	0.016	63.9	
19/06/2015	00:00	BH - MET TOWER (cpt)	27.9	35	64.52	0.00	2.8860	0.016	64.8	3.5790	0.017	1078.7	3.5950	0.016	1054.9	2.8960	0.017	61.3	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
23/06/2015	00:00	BH - I21A(CPT)	23.0	1	2.52	0.00	0.7990	0.017	163.0	1.0450	0.018	463.8	1.0690	0.016	412.9	0.8140	0.017	167.0	
23/06/2015	00:00	BH - I21A(CPT)	23.0	2	6.52	0.00	0.8140	0.017	164.5	1.0850	0.017	494.9	1.0580	0.016	410.1	0.8050	0.016	166.0	
23/06/2015	00:00	BH - I21A(CPT)	23.0	3	10.52	0.00	0.8260	0.016	166.4	1.1330	0.017	536.6	1.1080	0.017	535.7	0.8000	0.016	169.1	
23/06/2015	00:00	BH - I21A(CPT)	23.0	4	11.24	0.00	0.8070	0.016	166.0	1.1210	0.016	540.6	1.1040	0.016	466.3	0.7940	0.016	166.1	
23/06/2015	00:00	BH - I21A(CPT)	23.0	5	15.02	0.00	0.8190	0.016	165.8	1.1800	0.018	597.1	1.2130	0.015	553.2	0.8260	0.016	161.5	
23/06/2015	00:00	BH - I21A(CPT)	23.0	6	18.02	0.00	0.8460	0.016	164.8	1.2380	0.018	636.6	1.2340	0.016	315.4	0.8210	0.016	159.1	
23/06/2015	00:00	BH - I21A(CPT)	23.0	7	22.02	0.00	2.9230	0.017	62.1	3.2930	0.018	546.6	3.2810	0.016	439.0	2.8800	0.017	63.9	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
23/06/2015	00:00	BH - I21A(CPT)	23.0	8	25.52	0.00	0.2720	0.010	86.1	0.7100	0.012	620.7	0.7010	0.008	589.5	0.2560	0.009	85.8	
23/06/2015	00:00	BH - I21A(CPT)	23.0	9	26.02	0.00	0.2580	0.008	86.2	0.6990	0.009	624.6	0.7020	0.009	613.2	0.2560	0.009	84.7	
23/06/2015	00:00	BH - I21A(CPT)	23.0	10	26.52	0.00	0.2510	0.009	85.7	0.7160	0.010	634.9	0.5640	0.008	614.8	0.2370	0.008	89.1	
24/06/2015	00:00	BH - I21B (CPT)	25.9	1	30.02	0.00	0.5240	0.018	26.8	0.9900	0.021	635.4	0.9950	0.019	635.4	0.5440	0.019	31.4	
24/06/2015	00:00	BH - I21B (CPT)	25.9	2	33.52	0.00	0.5270	0.018	26.6	1.0250	0.020	674.3	1.0400	0.016	626.7	0.5320	0.018	28.1	
24/06/2015	00:00	BH - I21B (CPT)	25.9	3	37.02	0.00	0.5450	0.017	51.9	1.0410	0.020	695.8	1.0330	0.017	649.7	0.6600	0.018	26.9	
24/06/2015	00:00	BH - I21B (CPT)	25.9	4	40.52	0.00	1.7570	0.021	36.0	2.3330	0.023	737.2	2.3560	0.020	726.3	1.7520	0.020	37.0	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
24/06/2015	00:00	BH - I21B (CPT)	25.9	5	45.02	0.00	1.7530	0.020	36.8	2.3740	0.023	771.9	2.3820	0.021	786.4	1.7710	0.021	39.4	
24/06/2015	00:00	BH - I21B (CPT)	25.9	6	49.02	0.00	1.7620	0.020	36.5	2.4380	0.023	834.5	2.4430	0.020	821.9	1.7510	0.020	37.9	
24/06/2015	00:00	BH - I21B (CPT)	25.9	7	52.02	0.00	1.7580	0.020	36.7	2.4680	0.023	872.2	2.4340	0.019	868.4	1.7450	0.021	39.4	
24/06/2015	00:00	BH - I21B (CPT)	25.9	8	56.02	0.00	1.7450	0.020	36.3	2.4770	0.019	898.4	2.4490	0.018	941.8	1.7450	0.020	36.3	
24/06/2015	00:00	BH - I21B (CPT)	25.9	9	60.02	0.00	1.7530	0.021	36.3	2.5150	0.019	939.0	2.4780	0.018	921.1	1.7580	0.021	37.6	
24/06/2015	00:00	BH - I21B (CPT)	25.9	10	64.02	0.00	1.7520	0.021	36.4	2.5540	0.021	982.8	2.5230	0.018	982.3	1.7570	0.022	40.2	
24/06/2015	00:00	BH - I21B (CPT)	25.9	11	68.02	0.00	1.7500	0.021	36.8	2.5840	0.021	1028.7	2.5450	0.018	824.3	1.7360	0.021	56.0	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
24/06/2015	00:00	BH - I21B (CPT)	25.9	12	72.02	0.00	1.7690	0.021	59.3	2.6140	0.022	1041.6	2.6170	0.018	1099.3	1.7870	0.021	36.4	
28/06/2015	00:00	BH - D14 (cpt)	19.1	1	4.02	0.00	0.9580	0.018	167.2	1.1560	0.019	413.4	1.1320	0.018	375.7	0.9370	0.017	159.0	
28/06/2015	00:00	BH - D14 (cpt)	19.1	2	7.52	0.00	0.9560	0.017	164.3	1.1840	0.018	450.9	1.1640	0.018	441.1	0.9560	0.018	169.6	
28/06/2015	00:00	BH - D14 (cpt)	19.1	3	11.02	0.00	0.9460	0.019	155.2	1.2110	0.018	475.0	1.1860	0.019	457.0	0.9510	0.019	141.9	cone change
28/06/2015	00:00	BH - D14 (cpt)	19.1	4	14.52	0.00	0.9400	0.018	166.0	1.2320	0.019	532.6	1.2380	0.018	519.1	0.9420	0.018	169.9	
28/06/2015	00:00	BH - D14 (cpt)	19.1	5	18.02	0.00	0.9390	0.018	166.7	1.2650	0.017	556.4	1.2550	0.018	507.6	0.9000	0.018	159.5	
28/06/2015	00:00	BH - D14 (cpt)	19.1	6	22.02	0.00	0.9260	0.018	166.1	1.2850	0.018	601.9	1.3130	0.018	396.2	0.9150	0.018	171.7	

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CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
28/06/2015	00:00	BH - D14 (cpt)	19.1	7	25.02	0.00	2.8830	0.018	63.8	3.2300	0.017	527.3	3.2200	0.015	490.5	2.8930	0.015	64.5	
28/06/2015	00:00	BH - D14 (cpt)	19.1	8	25.52	0.00	2.8980	0.015	63.4	3.2520	0.015	536.4	3.2600	0.015	523.4	2.8800	0.017	63.5	
30/06/2015	00:00	BH - D14A (CPT)	19.0	1	26.02	0.00	2.8530	0.016	63.8	3.2130	0.015	558.2	3.2280	0.015	567.3	2.8530	0.015	64.0	
30/06/2015	00:00	BH - D14A (CPT)	19.0	2	30.02	0.00	2.8640	0.015	64.2	3.2210	0.016	585.4	3.2130	0.015	550.5	2.8600	0.015	65.7	
30/06/2015	00:00	BH - D14A (CPT)	19.0	3	34.02	0.00	2.8630	0.015	64.4	3.2710	0.015	641.7	3.2140	0.015	353.2	2.8600	0.015	67.2	
30/06/2015	00:00	BH - D14A (CPT)	19.0	4	38.02	0.00	2.8620	0.015	64.3	3.2980	0.015	682.0	3.2580	0.015	635.2	2.8590	0.015	64.3	
30/06/2015	00:00	BH - D14A (CPT)	19.0	5	42.02	0.00	2.8610	0.015	63.7	3.3360	0.015	734.8	3.2870	0.015	601.1	2.8490	0.015	72.6	

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CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
30/06/2015	00:00	BH - D14A (CPT)	19.0	6	45.52	0.00	2.8580	0.015	64.9	3.3500	0.015	772.5	3.3220	0.015	590.8	2.8490	0.014	69.9	
30/06/2015	00:00	BH - D14A (CPT)	19.0	7	49.52	0.00	2.8570	0.014	63.4	3.3800	0.015	807.6	3.3770	0.015	584.1	2.8700	0.015	64.9	
30/06/2015	00:00	BH - D14A (CPT)	19.0	8	53.52	0.00	1.5370	0.026	10.4	2.1410	0.025	760.5	2.0920	0.020	765.0	1.5210	0.024	13.8	
30/06/2015	00:00	BH - D14A (CPT)	19.0	9	57.52	0.00	1.5310	0.025	11.3	2.1680	0.023	817.7	2.1820	0.021	854.4	1.5360	0.023	14.2	
30/06/2015	00:00	BH - D14A (CPT)	19.0	10	61.52	0.00	1.5360	0.024	11.4	2.1940	0.025	864.7	2.1910	0.021	364.4	1.5080	0.025	10.2	
30/06/2015	00:00	BH - D14A (CPT)	19.0	11	65.02	0.00	1.5310	0.025	11.2	2.2190	0.025	905.8	2.2490	0.022	738.9	1.5200	0.023	7.9	
30/06/2015	00:00	BH - D14A (CPT)	19.0	12	68.52	0.00	1.5230	0.025	12.0	2.2200	0.026	935.0	2.2340	0.021	958.3	1.5500	0.023	14.3	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
01/07/2015	00:00	BH - G17(CPT)	25.0	1	2.52	0.00	2.8630	0.017	64.1	3.0870	0.018	359.9	3.0730	0.014	317.1	2.8690	0.015	70.1	
01/07/2015	00:00	BH - G17(CPT)	25.0	2	6.02	0.00	2.8750	0.016	64.5	3.1750	0.015	412.3	3.1750	0.016	214.3	2.8620	0.015	66.4	
01/07/2015	00:00	BH - G17(CPT)	25.0	3	8.52	0.00	2.8840	0.016	64.3	3.1410	0.016	432.6	3.1490	0.015	217.0	2.8920	0.015	65.4	
01/07/2015	00:00	BH - G17(CPT)	25.0	4	12.52	0.00	2.9120	0.016	65.0	3.1990	0.017	476.0	3.2030	0.015	95.5	2.8880	0.015	65.9	
01/07/2015	00:00	BH - G17(CPT)	25.0	5	14.02	0.00	2.9000	0.015	63.8	3.1960	0.015	489.1	3.2220	0.015	116.6	2.8760	0.015	64.1	
01/07/2015	00:00	BH - G17(CPT)	25.0	6	15.52	0.00	2.8710	0.017	64.3	3.1780	0.017	498.1	3.1920	0.015	413.4	2.8870	0.015	64.1	
01/07/2015	00:00	BH - G17(CPT)	25.0	7	17.52	0.00	2.8910	0.016	64.7	3.2110	0.017	525.2	3.2830	0.015	513.6	2.8600	0.016	64.9	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
01/07/2015	00:00	BH - G17(CPT)	25.0	8	19.02	0.00	2.8780	0.016	64.6	3.2090	0.019	538.7	3.1920	0.015	244.0	2.8620	0.016	67.6	
01/07/2015	00:00	BH - G17(CPT)	25.0	9	22.52	0.00	2.8710	0.016	64.5	3.2330	0.019	584.7	3.2430	0.015	190.5	2.8760	0.015	64.0	
01/07/2015	00:00	BH - G17(CPT)	25.0	10	23.52	0.00	2.8800	0.016	64.4	3.2490	0.016	594.0	3.2650	0.015	189.7	2.8940	0.015	63.9	
01/07/2015	00:00	BH - G17(CPT)	25.0	11	25.52	0.00	2.8940	0.016	64.3	3.2760	0.016	610.0	3.2580	0.015	590.9	2.8800	0.015	64.7	
01/07/2015	00:00	BH - G17(CPT)	25.0	12	26.52	0.00	2.8840	0.015	64.0	3.2810	0.015	627.5	3.2600	0.015	271.4	2.8700	0.015	69.3	
01/07/2015	00:00	BH - G17(CPT)	25.0	13	28.02	0.00	2.8830	0.015	63.5	3.2960	0.016	652.0	3.3100	0.015	617.9	2.8880	0.015	63.8	
01/07/2015	00:00	BH - G17(CPT)	25.0	14	28.52	0.00	2.8870	0.017	63.5	3.3090	0.016	672.0	3.3540	0.015	604.7	2.8950	0.015	63.4	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
01/07/2015	00:00	BH - G17(CPT)	25.0	15	29.02	0.00	2.8940	0.015	63.7	3.3150	0.016	668.5	3.3230	0.015	679.0	2.8790	0.017	64.2	
01/07/2015	00:00	BH - G17(CPT)	25.0	16	30.02	0.00	2.8950	0.017	63.7	3.3360	0.018	702.4	3.3410	0.015	662.4	2.8850	0.015	62.5	
01/07/2015	00:00	BH - G17(CPT)	25.0	17	30.52	0.00	2.8970	0.016	63.7	3.3500	0.017	717.0	3.3930	0.015	173.7	2.9210	0.016	76.2	Cone changed. Pore pressure slow to respond in the clay.
01/07/2015	00:00	BH - G17(CPT)	25.0	18	34.52	0.00	1.4250	0.017	42.5	2.0020	0.018	721.3	2.0030	0.016	717.0	1.4160	0.016	48.1	
01/07/2015	00:00	BH - G17(CPT)	25.0	19	38.52	0.00	1.8200	0.022	46.0	2.4390	0.024	774.8	2.3240	0.020	702.0	1.7910	0.020	35.5	
02/07/2015	00:00	BH - G17A(CPT)	24.8	1	0.00	0.00	2.8640	0.018	64.8	3.2030	0.017	533.0	3.2190	0.016	517.6	2.8700	0.018	64.6	
02/07/2015	00:00	BH - G17A(CPT)	24.8	2	42.02	0.00	1.8210	0.022	32.7	2.4260	0.022	739.7	2.4430	0.020	661.0	1.7940	0.020	37.2	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
02/07/2015	00:00	BH - G17A(CPT)	24.8	3	45.02	0.00	1.8180	0.021	45.3	2.4520	0.024	794.4	2.4540	0.021	727.8	1.8000	0.021	51.2	
02/07/2015	00:00	BH - G17A(CPT)	24.8	4	49.02	0.00	1.8130	0.021	32.4	2.4960	0.024	834.3	2.4790	0.020	811.6	1.8260	0.021	34.0	
02/07/2015	00:00	BH - G17A(CPT)	24.8	5	53.02	0.00	1.8220	0.021	32.1	2.5350	0.020	872.0	2.5070	0.020	923.6	1.8150	0.021	35.5	
02/07/2015	00:00	BH - G17A(CPT)	24.8	6	57.02	0.00	1.8130	0.021	33.2	2.5770	0.020	930.0	2.5750	0.020	914.7	1.8160	0.021	39.6	
02/07/2015	00:00	BH - G17A(CPT)	24.8	7	61.02	0.00	1.8280	0.021	34.4	2.6140	0.020	948.9	2.6030	0.022	995.7	1.8350	0.021	33.1	
02/07/2015	00:00	BH - G17A(CPT)	24.8	8	65.02	0.00	1.8340	0.021	32.3	2.6660	0.020	1010.6	2.6710	0.019	935.4	1.8250	0.022	35.7	
02/07/2015	00:00	BH - G17A(CPT)	24.8	9	68.02	0.00	1.8370	0.021	32.2	2.6870	0.022	1068.9	2.7170	0.020	1059.1	1.8250	0.021	33.0	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
02/07/2015	00:00	BH - G17A(CPT)	24.8	10	68.52	0.00	1.8350	0.021	32.2	2.6680	0.021	1045.5	2.7090	0.019	916.7	1.8540	0.022	34.5	
02/07/2015	00:00	BH - G17A(CPT)	24.8	11	69.52	0.00	1.8610	0.021	32.0	2.6920	0.023	1055.8	2.6840	0.021	1009.9	1.8320	0.021	33.3	
02/07/2015	00:00	BH - G17A(CPT)	24.8	12	70.52	0.00	1.8410	0.022	40.1	2.6800	0.022	1068.1	2.6920	0.021	1035.5	1.8410	0.022	38.3	
02/07/2015	00:00	BH - G17A(CPT)	24.8	13	71.52	0.00	1.8390	0.021	32.0	2.6790	0.022	1071.1	2.6570	0.019	935.6	1.8370	0.019	33.6	
03/07/2015	00:00	BH - K16 (CPT)	24.6	1	1.02	0.00	2.9330	0.015	64.2	3.2220	0.016	435.8	3.0660	0.014	281.3	2.8960	0.015	64.0	
03/07/2015	00:00	BH - K16 (CPT)	24.6	2	4.52	0.00	2.9320	0.015	65.0	3.1530	0.015	365.8	3.1200	0.015	333.5	2.9170	0.015	64.5	
03/07/2015	00:00	BH - K16 (CPT)	24.6	3	8.02	0.00	2.9290	0.015	64.9	3.1870	0.015	402.8	3.1410	0.015	385.0	2.8930	0.015	63.3	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
03/07/2015	00:00	BH - K16 (CPT)	24.6	4	11.02	0.00	2.8790	0.015	64.2	3.1630	0.015	438.8	3.1500	0.015	430.3	2.8800	0.015	64.7	
03/07/2015	00:00	BH - K16 (CPT)	24.6	5	13.52	0.00	2.8940	0.015	65.0	3.1950	0.015	467.5	3.1720	0.015	456.6	2.8840	0.015	67.6	
03/07/2015	00:00	BH - K16 (CPT)	24.6	6	16.02	0.00	2.9020	0.015	64.3	3.2210	0.015	521.6	3.2150	0.015	494.2	2.8910	0.015	63.9	
03/07/2015	00:00	BH - K16 (CPT)	24.6	7	19.02	0.00	2.9050	0.015	64.9	3.2460	0.015	524.5	3.2190	0.015	452.5	2.8950	0.015	67.0	
03/07/2015	00:00	BH - K16 (CPT)	24.6	8	22.52	0.00	2.9140	0.015	63.6	3.2890	0.015	581.9	3.2860	0.015	523.7	2.9080	0.015	62.4	
03/07/2015	00:00	BH - K16 (CPT)	24.6	9	25.02	0.00	2.9140	0.016	63.5	3.2940	0.015	613.0	3.2880	0.015	549.8	2.9050	0.015	62.4	
03/07/2015	00:00	BH - K16 (CPT)	24.6	10	28.52	0.00	2.9180	0.015	63.9	3.3430	0.015	661.5	3.3350	0.015	485.4	2.8930	0.015	62.0	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
03/07/2015	00:00	BH - K16 (CPT)	24.6	11	32.02	0.00	2.9080	0.015	64.1	3.3750	0.015	705.1	3.4280	0.015	698.7	2.9060	0.016	63.1	
03/07/2015	00:00	BH - K16 (CPT)	24.6	12	33.52	0.00	2.9060	0.016	64.2	3.4000	0.015	745.7	3.3900	0.015	714.0	2.9050	0.015	63.7	hole collapse after test
03/07/2015	00:00	BH - K16 (CPT)	24.6	13	34.02	0.00	2.8930	0.015	63.4	3.3800	0.016	742.1	3.3660	0.015	682.1	2.9060	0.015	62.6	
03/07/2015	00:00	BH - K16 (CPT)	24.6	14	35.02	0.00	2.9110	0.015	63.6	3.4220	0.015	779.4	3.4070	0.015	748.8	2.8990	0.016	62.9	
03/07/2015	00:00	BH - K16 (CPT)	24.6	15	35.52	0.00	2.8990	0.016	63.4	3.4270	0.015	796.1	3.4230	0.015	753.4	2.8910	0.016	63.0	Tip and pore starting to driftfurther from theoretical values change cone
03/07/2015	00:00	BH - K16 (CPT)	24.6	16	36.52	0.00	0.6450	0.016	163.8	1.2480	0.017	861.1	1.2560	0.015	803.2	0.6850	0.015	163.7	
03/07/2015	00:00	BH - K16 (CPT)	24.6	17	37.02	0.00	0.7040	0.015	180.4	1.2870	0.015	887.5	1.3090	0.016	856.6	0.7040	0.015	175.7	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
03/07/2015	00:00	BH - K16 (CPT)	24.6	18	41.02	0.00	0.6790	0.015	167.7	1.3170	0.016	935.8	1.3150	0.015	894.4	0.7100	0.015	178.1	
03/07/2015	00:00	BH - K16 (CPT)	24.6	19	45.02	0.00	1.9170	0.023	31.2	2.5850	0.025	817.6	2.5310	0.023	769.7	1.9200	0.022	35.1	
03/07/2015	00:00	BH - K16 (CPT)	24.6	20	50.52	0.00	0.7320	0.018	49.6	1.3720	0.023	903.7	1.3860	0.020	824.2	0.7610	0.017	51.8	
03/07/2015	00:00	BH - K16 (CPT)	24.6	21	52.02	0.00	0.7610	0.017	49.9	1.4070	0.022	911.2	1.4390	0.017	941.6	0.7800	0.017	52.3	
03/07/2015	00:00	BH - K16 (CPT)	24.6	22	56.02	0.00	0.7590	0.017	50.8	1.4350	0.021	949.7	1.4160	0.017	892.7	0.7920	0.017	55.2	
03/07/2015	00:00	BH - K16 (CPT)	24.6	23	60.02	0.00	0.7560	0.017	51.3	1.4570	0.018	982.4	1.4250	0.017	900.8	0.7670	0.018	51.1	
03/07/2015	00:00	BH - K16 (CPT)	24.6	24	64.02	0.00	0.7540	0.017	52.1	1.4310	0.018	1002.8	1.4280	0.018	982.2	0.7400	0.018	52.2	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
03/07/2015	00:00	BH - K16 (CPT)	24.6	25	67.52	0.00	0.7360	0.017	51.8	1.4770	0.018	1043.8	1.4750	0.018	1021.0	0.7490	0.017	50.8	
03/07/2015	00:00	BH - K16 (CPT)	24.6	26	68.02	0.00	0.7470	0.017	50.8	1.5080	0.018	1042.2	1.4730	0.017	988.6	0.7180	0.017	56.3	
03/07/2015	00:00	BH - K16 (CPT)	24.6	27	71.52	0.00	0.7170	0.018	51.9	1.4910	0.018	1085.8	1.5100	0.016	1004.9	0.7440	0.017	50.9	
05/07/2015	00:00	BH - H10 (CPT)	27.0	1	3.02	0.00	2.9040	0.019	63.5	3.1260	0.018	366.8	3.1060	0.015	349.6	2.9080	0.016	66.2	
05/07/2015	00:00	BH - H10 (CPT)	27.0	2	7.02	0.00	2.9060	0.017	65.3	3.1810	0.016	431.1	3.1670	0.015	407.8	2.8990	0.016	70.7	
05/07/2015	00:00	BH - H10 (CPT)	27.0	3	10.52	0.00	2.9080	0.018	63.6	3.2030	0.017	461.1	3.1810	0.016	417.0	2.8800	0.017	67.7	
05/07/2015	00:00	BH - H10 (CPT)	27.0	4	0.00	0.00	0.2580	0.010	84.3	0.6070	0.011	512.4	0.6130	0.009	495.5	0.2480	0.010	82.5	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
05/07/2015	00:00	BH - H10 (CPT)	27.0	5	14.02	0.00	2.8960	0.017	65.7	3.2330	0.017	515.5	3.2300	0.016	455.0	2.9210	0.017	66.0	
05/07/2015	00:00	BH - H10 (CPT)	27.0	6	14.52	0.00	2.9200	0.017	65.3	3.2670	0.016	523.7	3.2400	0.016	524.7	2.8910	0.018	63.9	
05/07/2015	00:00	BH - H10 (CPT)	27.0	7	15.02	0.00	2.8940	0.017	64.4	3.2540	0.016	536.4	3.2330	0.017	502.0	2.8950	0.019	65.8	
05/07/2015	00:00	BH - H10 (CPT)	27.0	8	15.52	0.00	2.8950	0.018	64.4	3.2600	0.017	540.3	3.2170	0.016	503.3	2.8820	0.019	66.2	
05/07/2015	00:00	BH - H10 (CPT)	27.0	9	16.02	0.00	2.8810	0.018	64.7	3.2260	0.017	492.2	3.2040	0.017	506.6	2.8760	0.019	68.4	
05/07/2015	00:00	BH - H10 (CPT)	27.0	10	16.52	0.00	2.8870	0.018	64.4	3.2420	0.019	541.7	3.2110	0.017	518.3	2.8860	0.017	64.6	
05/07/2015	00:00	BH - H10 (CPT)	27.0	11	17.02	0.00	2.8890	0.017	64.5	3.2240	0.017	532.5	3.2320	0.016	285.3	2.8870	0.016	64.2	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
05/07/2015	00:00	BH - H10 (CPT)	27.0	12	17.52	0.00	2.8920	0.016	64.7	3.2420	0.017	556.1	3.2260	0.016	529.6	2.8860	0.018	64.8	
05/07/2015	00:00	BH - H10 (CPT)	27.0	13	18.02	0.00	2.8870	0.017	64.4	3.2360	0.017	553.5	3.2170	0.016	236.7	2.8920	0.016	65.1	
05/07/2015	00:00	BH - H10 (CPT)	27.0	14	19.02	0.00	2.9020	0.017	64.8	3.2470	0.017	542.2	3.2150	0.016	156.3	2.9100	0.017	65.0	
05/07/2015	00:00	BH - H10 (CPT)	27.0	15	20.52	0.00	2.9150	0.017	64.7	3.3050	0.017	613.8	3.2720	0.016	109.3	2.8940	0.017	63.9	
05/07/2015	00:00	BH - H10 (CPT)	27.0	16	24.02	0.00	1.0370	0.018	37.6	1.5370	0.018	574.1	1.5220	0.016	579.1	1.0480	0.017	40.0	
05/07/2015	00:00	BH - H10 (CPT)	27.0	17	27.02	0.00	1.0650	0.017	59.8	1.5800	0.019	632.8	1.5580	0.016	614.1	1.0400	0.017	56.0	
05/07/2015	00:00	BH - H10 (CPT)	27.0	18	31.02	0.00	1.0400	0.017	37.5	1.6040	0.018	654.6	1.5730	0.016	630.3	1.0530	0.017	46.9	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
05/07/2015	00:00	BH - H10 (CPT)	27.0	19	35.02	0.00	1.0600	0.017	59.1	1.6570	0.018	697.8	1.6380	0.016	753.9	1.0350	0.017	49.9	
05/07/2015	00:00	BH - H10 (CPT)	27.0	20	39.02	0.00	1.0240	0.017	37.0	1.6550	0.018	725.7	1.6210	0.016	731.6	1.0470	0.018	44.3	
05/07/2015	00:00	BH - H10 (CPT)	27.0	21	43.02	0.00	1.0330	0.017	32.9	1.6940	0.018	774.0	1.6710	0.016	762.4	1.0340	0.017	43.3	
05/07/2015	00:00	BH - H10 (CPT)	27.0	22	47.02	0.00	1.5050	0.025	13.9	2.1420	0.027	817.0	2.1280	0.021	855.1	1.5370	0.023	20.2	
05/07/2015	00:00	BH - H10 (CPT)	27.0	23	51.02	0.00	1.5390	0.025	13.8	2.1750	0.029	841.3	2.1850	0.020	918.4	1.5450	0.024	14.7	
05/07/2015	00:00	BH - H10 (CPT)	27.0	24	55.02	0.00	1.5440	0.025	13.0	2.2340	0.027	882.7	2.2600	0.022	879.5	1.5410	0.024	13.1	
05/07/2015	00:00	BH - H10 (CPT)	27.0	25	56.52	0.00	1.5500	0.024	12.8	2.2590	0.026	903.2	2.2980	0.022	564.5	1.5370	0.024	12.5	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
05/07/2015	00:00	BH - H10 (CPT)	27.0	26	60.02	0.00	1.5530	0.024	12.6	2.2810	0.027	951.3	2.2760	0.020	901.3	1.5520	0.023	14.0	
05/07/2015	00:00	BH - H10 (CPT)	27.0	27	63.52	0.00	1.5600	0.023	13.5	2.3560	0.025	997.6	2.2590	0.021	983.2	1.5610	0.022	15.3	
05/07/2015	00:00	BH - H10 (CPT)	27.0	28	67.02	0.00	1.5530	0.023	13.4	2.3640	0.025	1027.7	2.3050	0.020	980.4	1.5680	0.021	17.9	
05/07/2015	00:00	BH - H10 (CPT)	27.0	29	71.02	0.00	1.5600	0.023	13.9	2.3930	0.023	1056.7	2.3210	0.020	1057.1	1.5520	0.021	20.4	
06/07/2015	00:00	BH - G7(CPT)	27.0	1	2.02	0.00	0.2660	0.011	84.0	0.4880	0.012	371.2	0.4870	0.009	323.7	0.2380	0.009	82.8	
06/07/2015	00:00	BH - G7(CPT)	27.0	2	5.02	0.00	0.2550	0.009	83.9	0.5670	0.011	471.0	0.4760	0.009	411.4	0.2510	0.009	85.9	
06/07/2015	00:00	BH - G7(CPT)	27.0	3	8.52	0.00	0.2500	0.009	84.5	0.5440	0.009	457.4	0.5570	0.009	426.1	0.2480	0.010	83.5	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
06/07/2015	00:00	BH - G7(CPT)	27.0	4	10.52	0.00	0.2590	0.010	84.4	0.5700	0.012	493.0	0.6190	0.009	478.6	0.2440	0.010	82.0	
06/07/2015	00:00	BH - G7(CPT)	27.0	5	13.02	0.00	0.2580	0.010	84.3	0.6060	0.011	512.1	0.6260	0.009	495.7	0.2480	0.010	82.3	
06/07/2015	00:00	BH - G7(CPT)	27.0	6	14.02	0.00	2.8620	0.018	63.7	3.2100	0.018	523.8	3.2040	0.016	499.4	2.8490	0.018	63.3	
06/07/2015	00:00	BH - G7(CPT)	27.0	7	15.52	0.00	2.8640	0.018	64.8	3.2030	0.017	532.8	3.2190	0.016	517.9	2.8700	0.018	64.6	
06/07/2015	00:00	BH - G7(CPT)	27.0	8	16.52	0.00	2.8760	0.018	63.5	3.2370	0.018	564.2	3.2340	0.016	542.3	2.8850	0.016	72.6	
06/07/2015	00:00	BH - G7(CPT)	27.0	9	20.02	0.00	2.8850	0.018	65.5	3.2400	0.018	563.6	3.2290	0.017	525.4	2.8720	0.018	65.6	
06/07/2015	00:00	BH - G7(CPT)	27.0	10	24.02	0.00	2.8790	0.018	64.7	3.2820	0.018	622.9	3.2990	0.016	621.1	2.8860	0.017	65.8	

Gardline

CPT OPERATORS LOG (PART 2)

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
06/07/2015	00:00	BH - G7(CPT)	27.0	11	28.02	0.00	2.8870	0.018	64.9	3.3000	0.018	657.6	3.2760	0.018	607.1	2.8830	0.018	66.0	
06/07/2015	00:00	BH - G7(CPT)	27.0	12	32.02	0.00	2.8900	0.018	64.6	3.3360	0.018	710.2	3.2660	0.016	684.8	2.8710	0.016	66.0	
06/07/2015	00:00	BH - G7(CPT)	27.0	13	36.02	0.00	2.8700	0.016	64.6	3.3380	0.019	746.6	3.3630	0.016	690.9	2.8870	0.017	65.7	
06/07/2015	00:00	BH - G7(CPT)	27.0	14	40.02	0.00	2.9090	0.017	87.6	3.4180	0.019	826.6	3.4010	0.016	838.0	2.9170	0.017	86.7	
06/07/2015	00:00	BH - G7(CPT)	27.0	15	44.02	0.00	2.8970	0.017	64.6	3.4630	0.019	880.5	3.4640	0.016	886.8	2.9000	0.016	67.9	
06/07/2015	00:00	BH - G7(CPT)	27.0	16	47.52	0.00	2.8940	0.016	64.0	3.4780	0.018	914.8	3.4690	0.016	945.3	2.8980	0.018	68.1	
06/07/2015	00:00	BH - G7(CPT)	27.0	17	51.02	0.00	2.8930	0.016	63.8	3.5390	0.018	946.4	3.5650	0.016	89.9	2.8910	0.015	71.8	

Gardline

CPT OPERATORS LOG (PART 2)

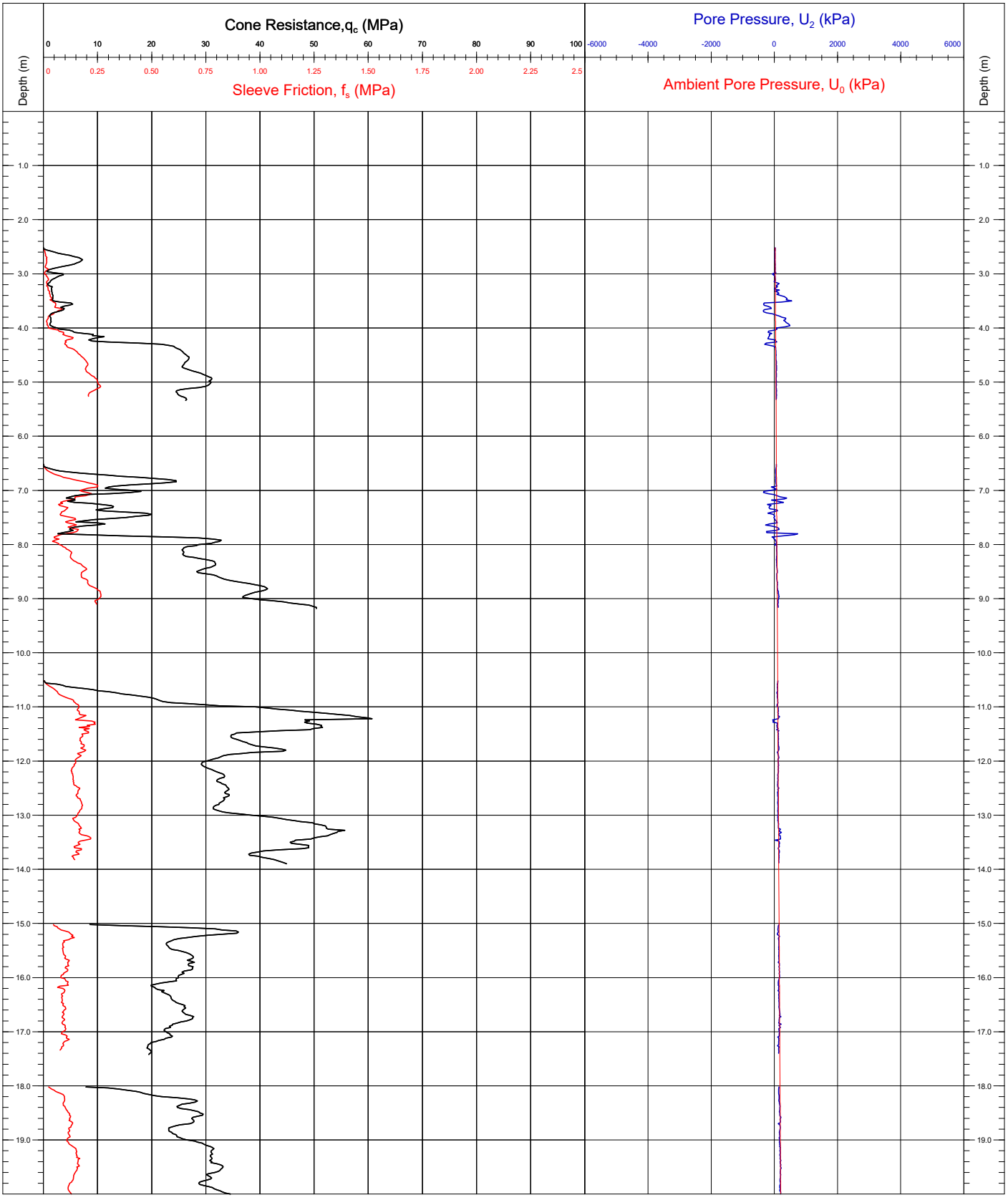
Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area - 10451

Date	Time	Location	Water Depth (m)	CPT Number	CPT Start Depth(m)	Zeroed Above Seabed (m)	Zero on Deck (Start)			Zero Before Test			Zero After Test			Zero on Deck (End)			Comments
							qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	qc(MPa)	fs(MPa)	U2(kPa)	
06/07/2015	00:00	BH - G7(CPT)	27.0	18	53.52	0.00	2.9070	0.016	66.1	3.5380	0.018	948.5	3.5490	0.016	423.1	2.9080	0.016	65.5	
06/07/2015	00:00	BH - G7(CPT)	27.0	19	54.02	0.00	2.9010	0.016	65.4	3.5160	0.018	944.6	3.5090	0.016	568.0	2.9010	0.016	65.5	
06/07/2015	00:00	BH - G7(CPT)	27.0	20	55.02	0.00	2.8880	0.016	64.5	3.4970	0.017	935.5	3.4960	0.016	335.7	2.8880	0.016	64.5	
06/07/2015	00:00	BH - G7(CPT)	27.0	21	58.02	0.00	2.8820	0.016	74.7	3.5130	0.018	985.5	3.5290	0.016	991.1	2.8690	0.016	68.7	
06/07/2015	00:00	BH - G7(CPT)	27.0	22	61.02	0.00	1.5560	0.023	11.3	2.2810	0.024	934.8	2.2390	0.021	913.2	1.5840	0.023	13.4	
06/07/2015	00:00	BH - G7(CPT)	27.0	23	64.52	0.00	1.5900	0.023	10.1	2.2960	0.028	946.3	2.2920	0.021	874.4	1.6100	0.022	11.5	
06/07/2015	00:00	BH - G7(CPT)	27.0	24	68.52	0.00	1.1240	0.018	32.1	1.9630	0.021	1019.7	1.9340	0.016	986.9	1.1480	0.016	37.7	

3.3 CPTU Measured and derived results

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

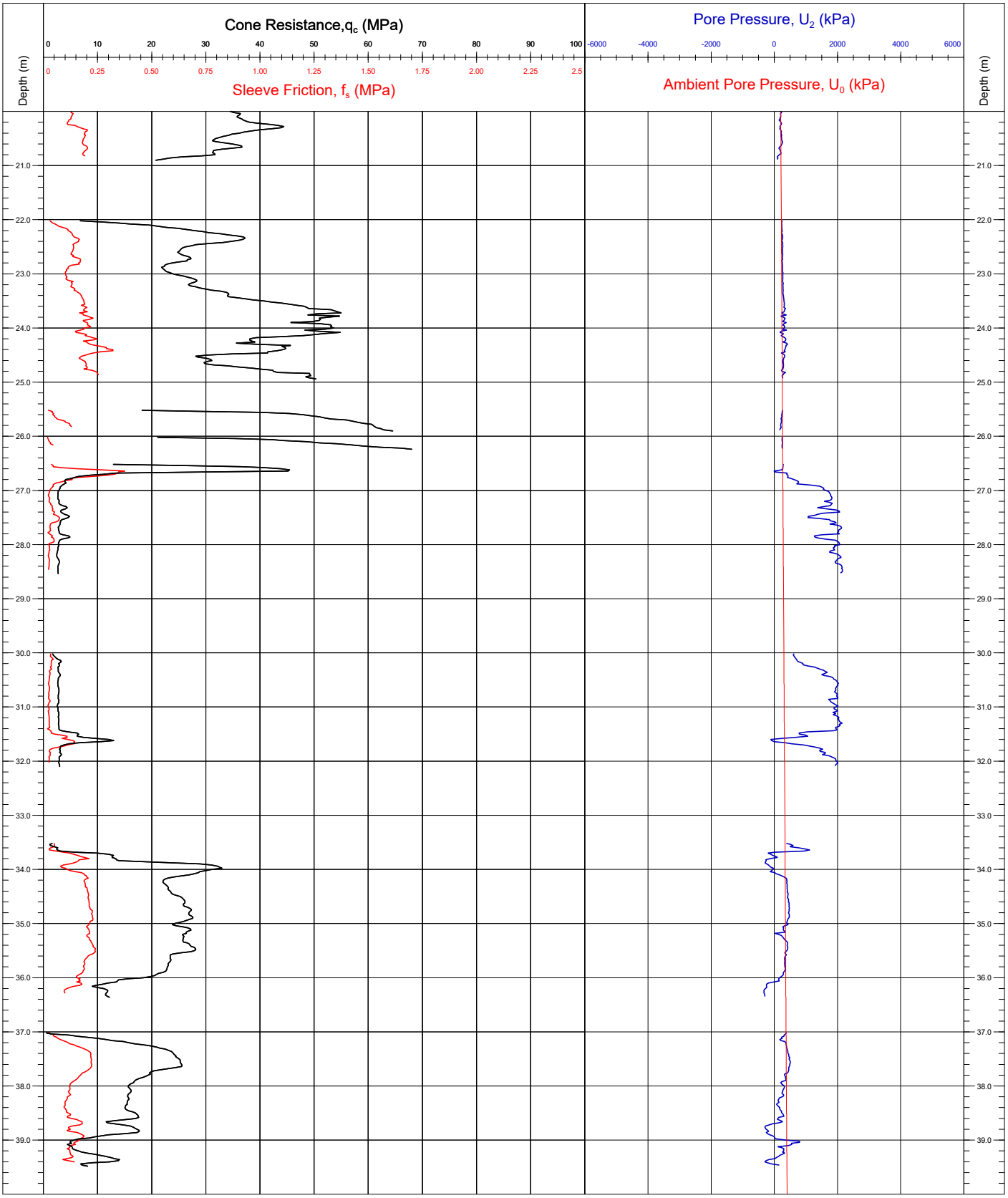
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

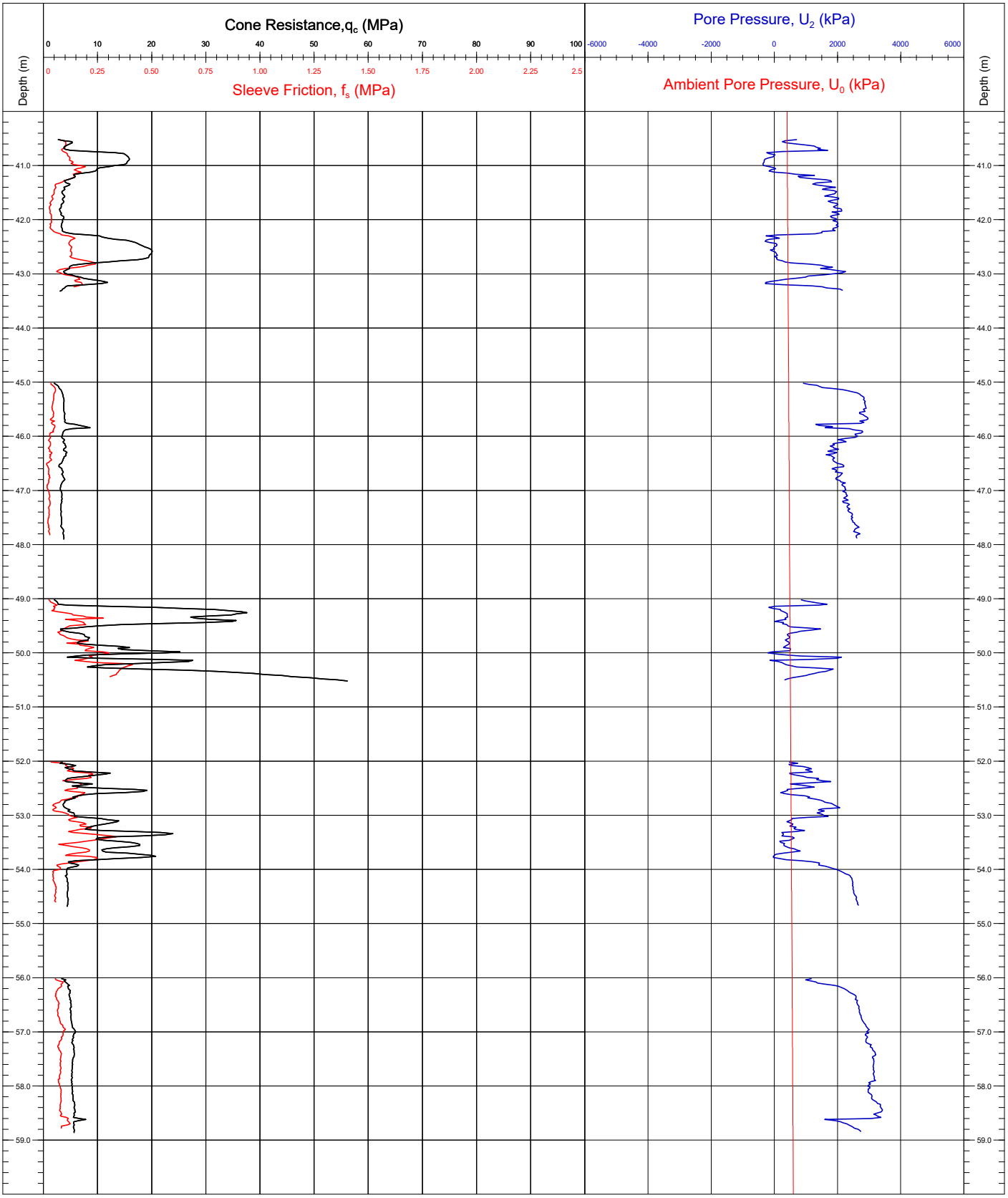
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

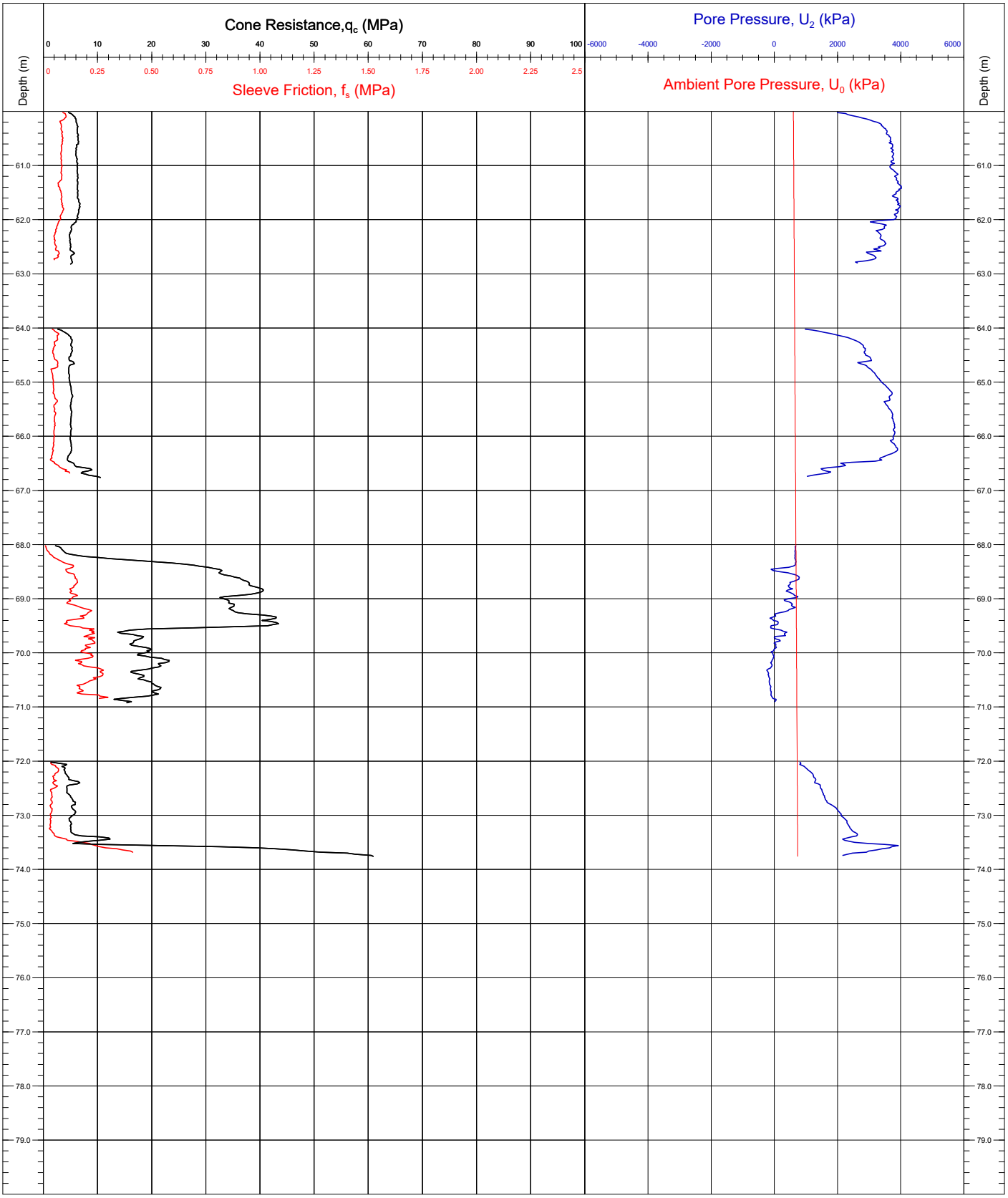
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

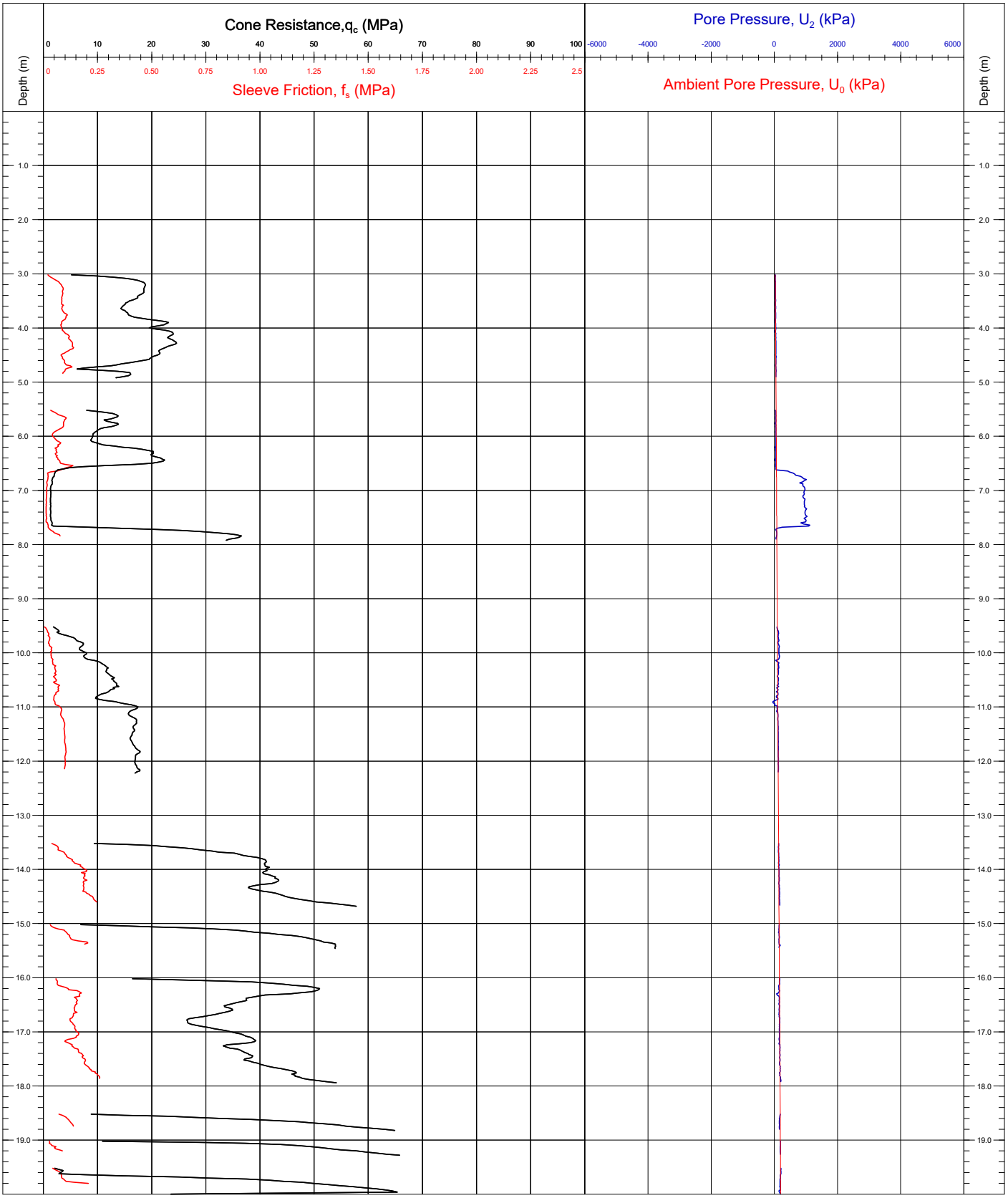
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

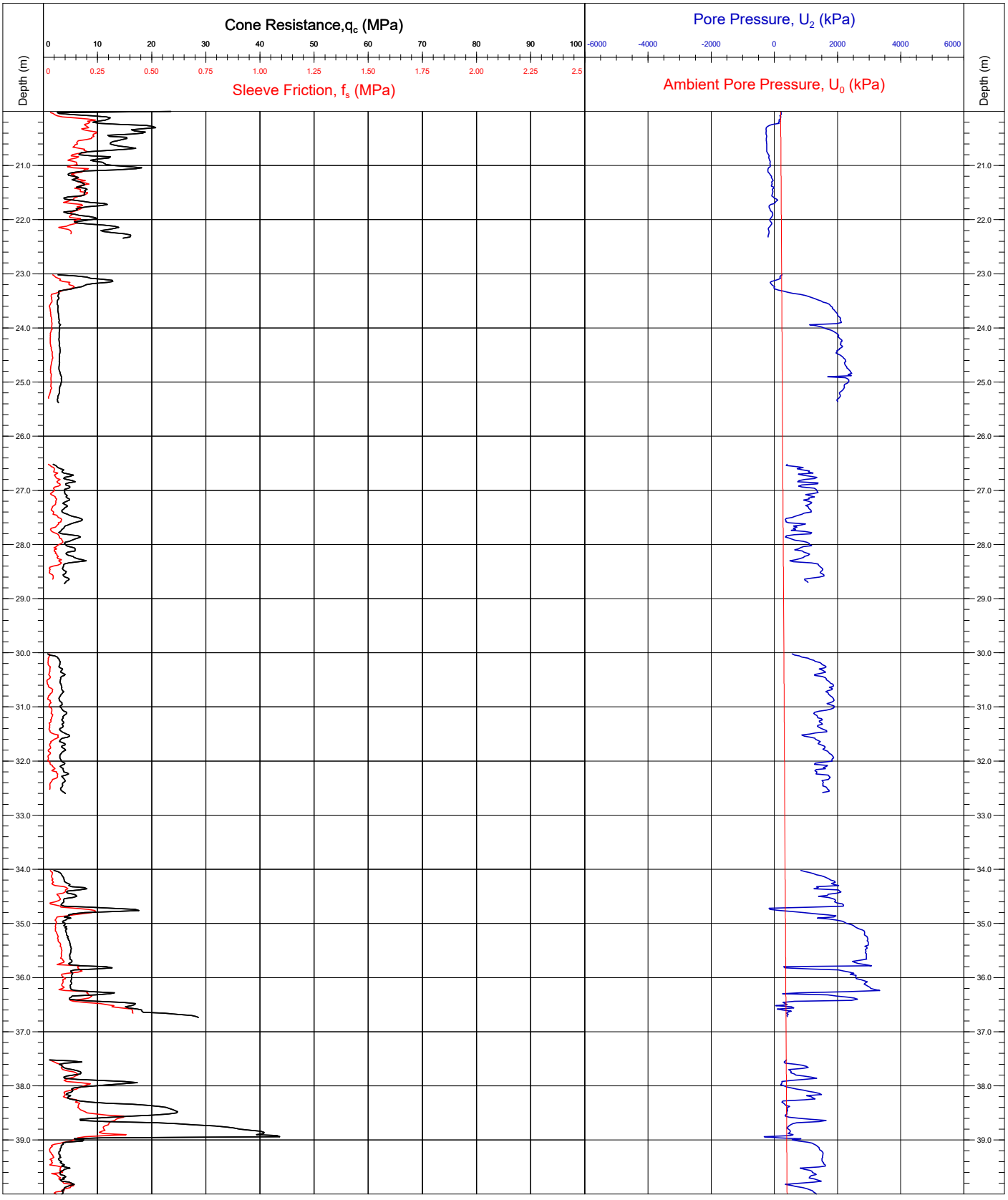
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (27/06/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

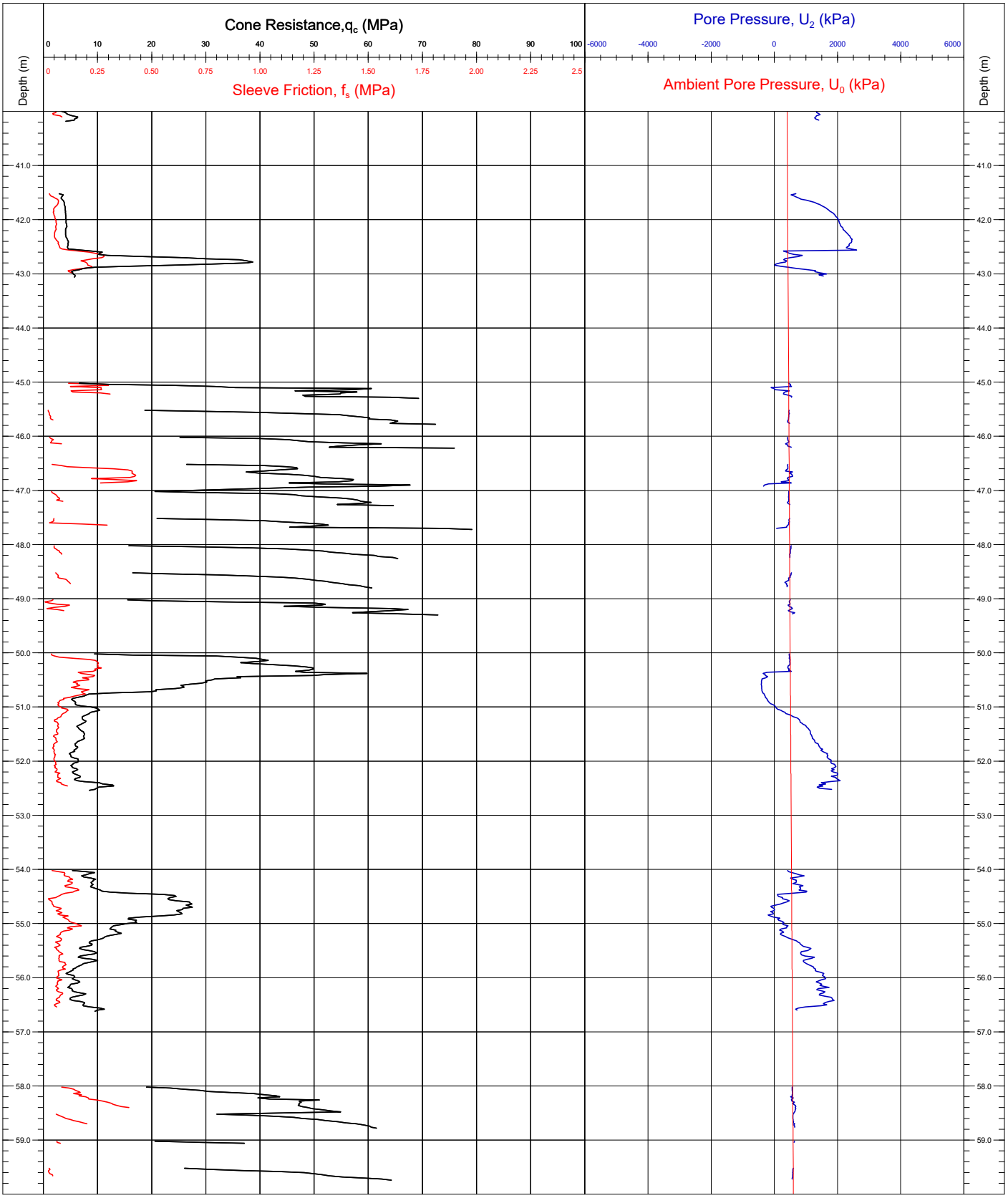
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	Page: 2/4
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	QC Status: Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S** (27/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

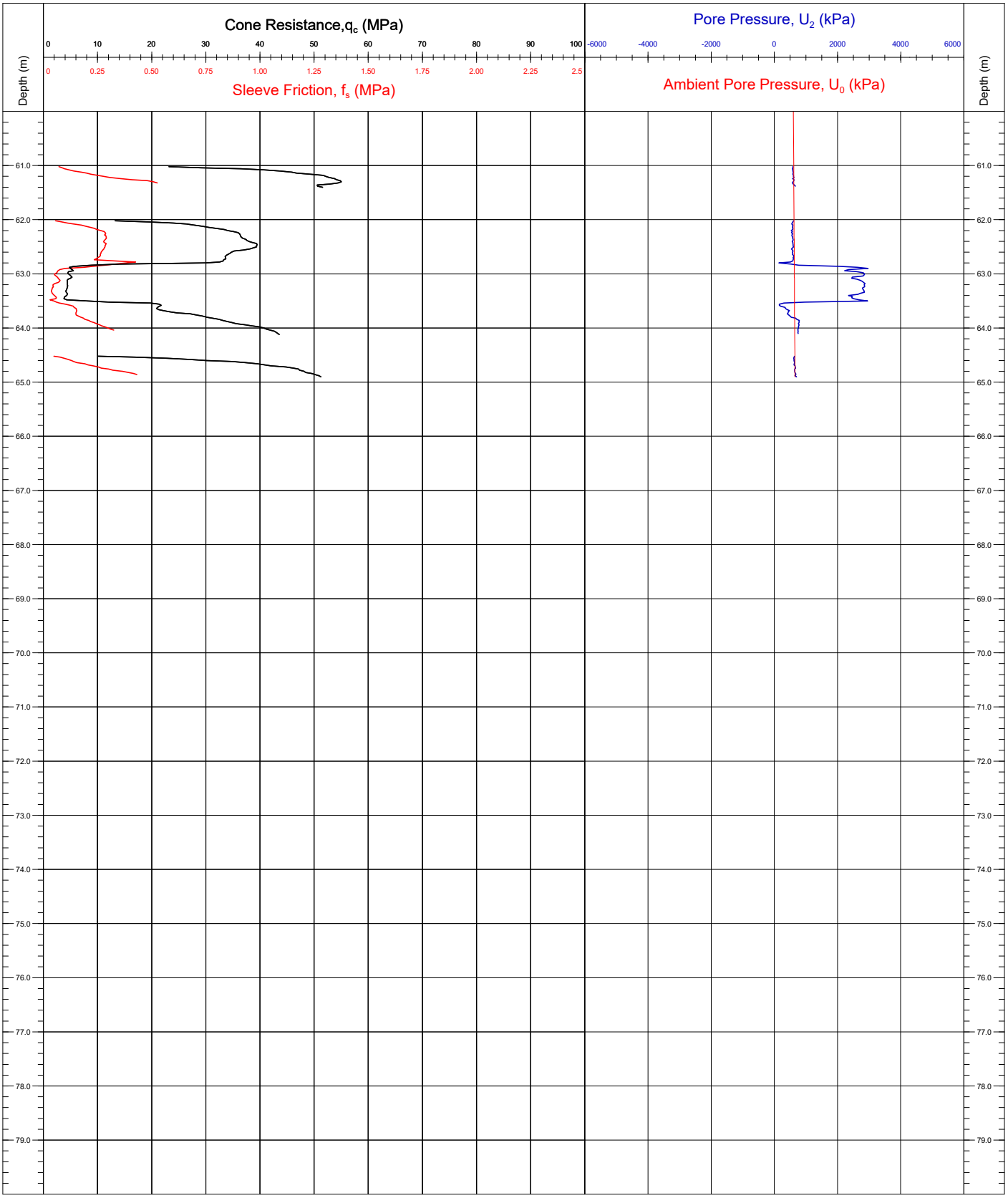
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (27/06/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

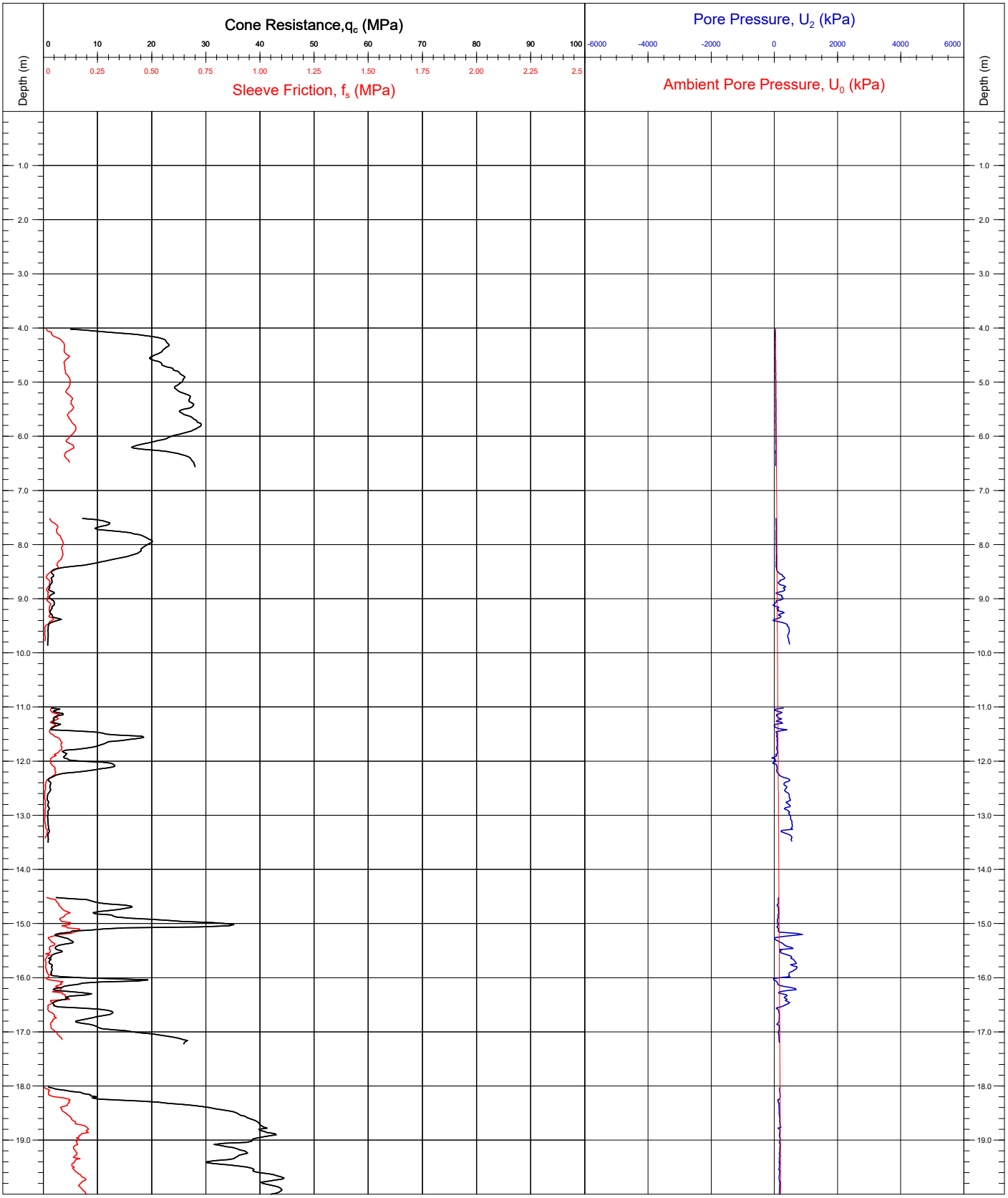
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number	**BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**		
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 4/4	
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status	
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary	Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S (27/06/2015)**	() / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

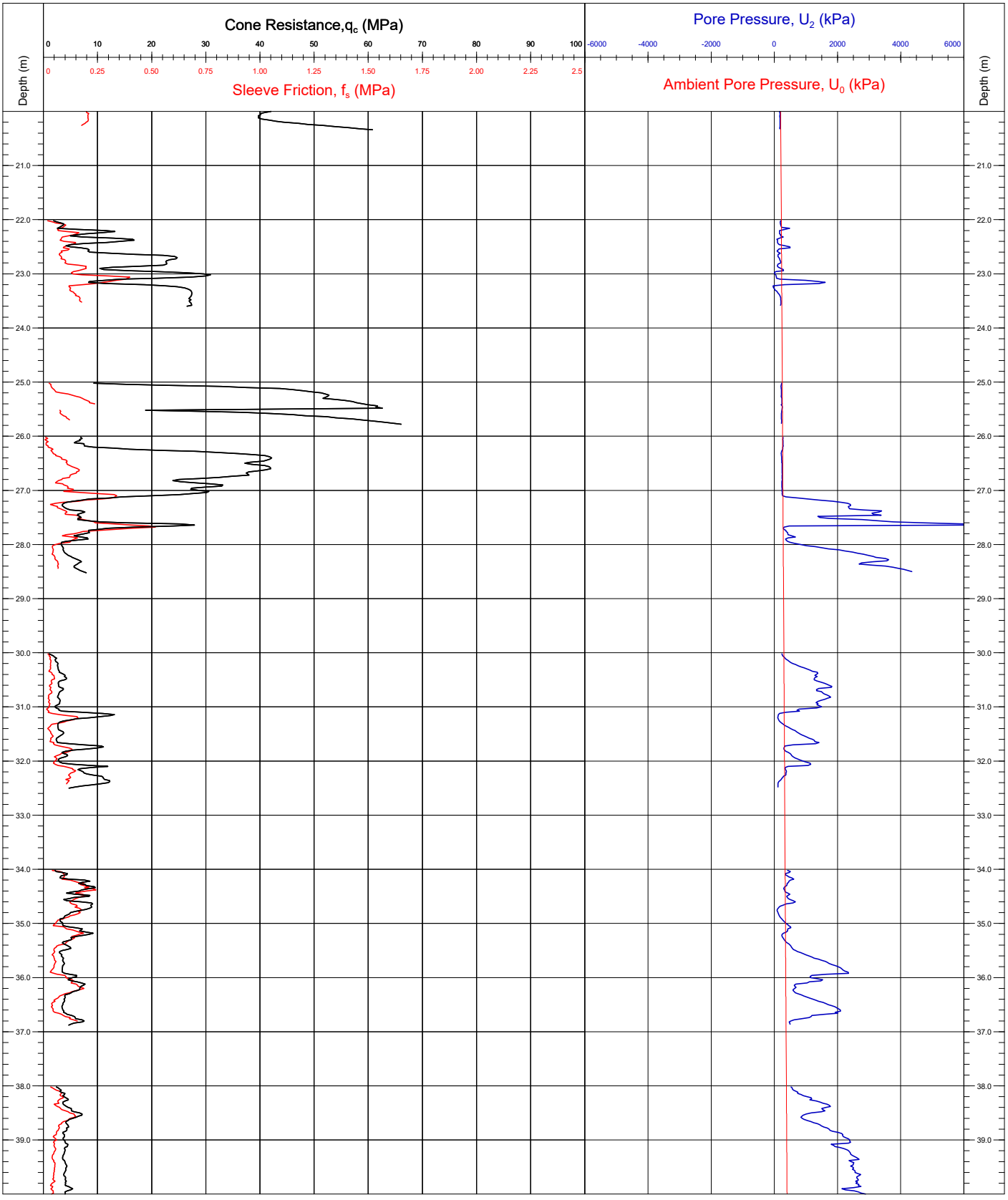
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

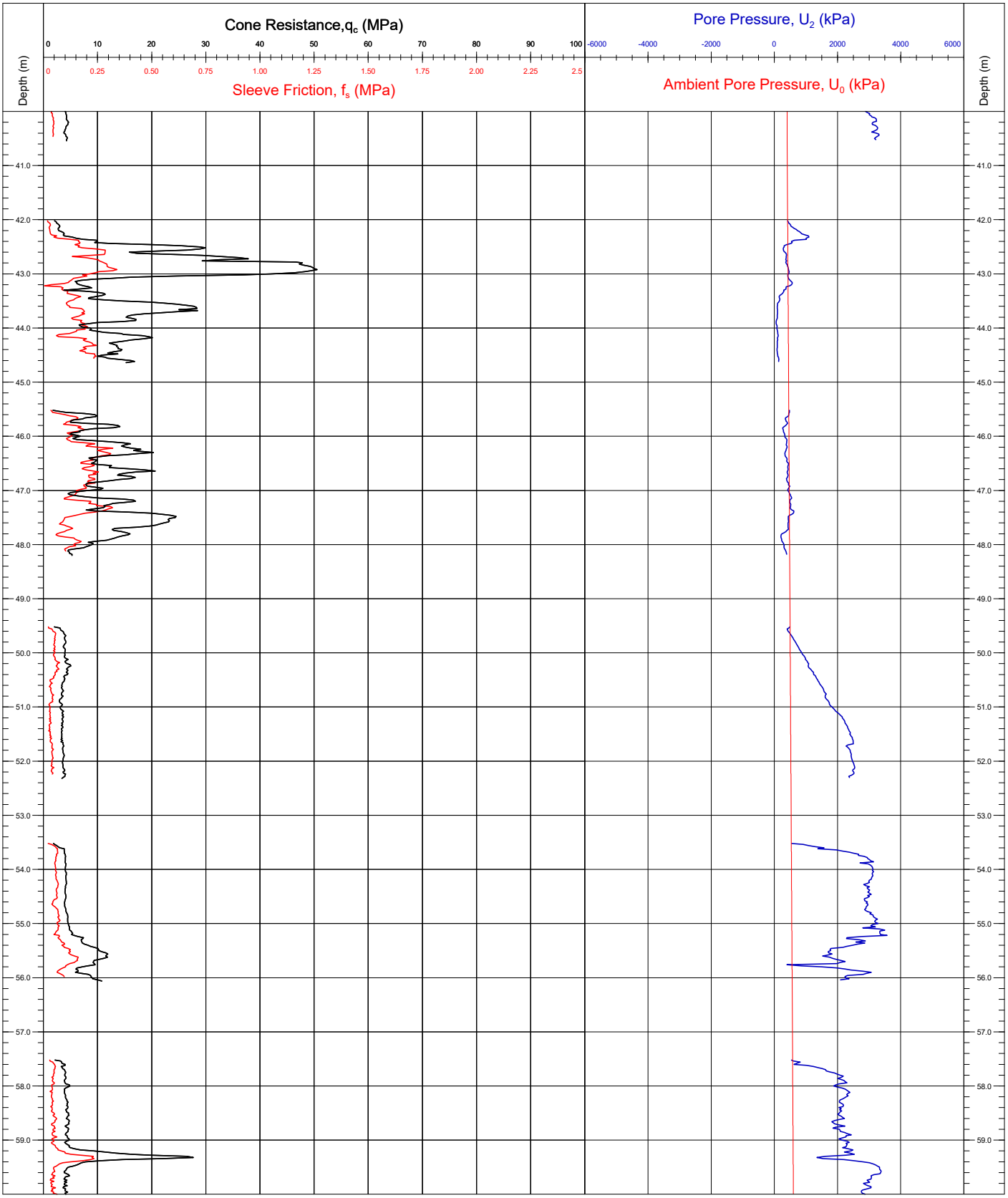
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

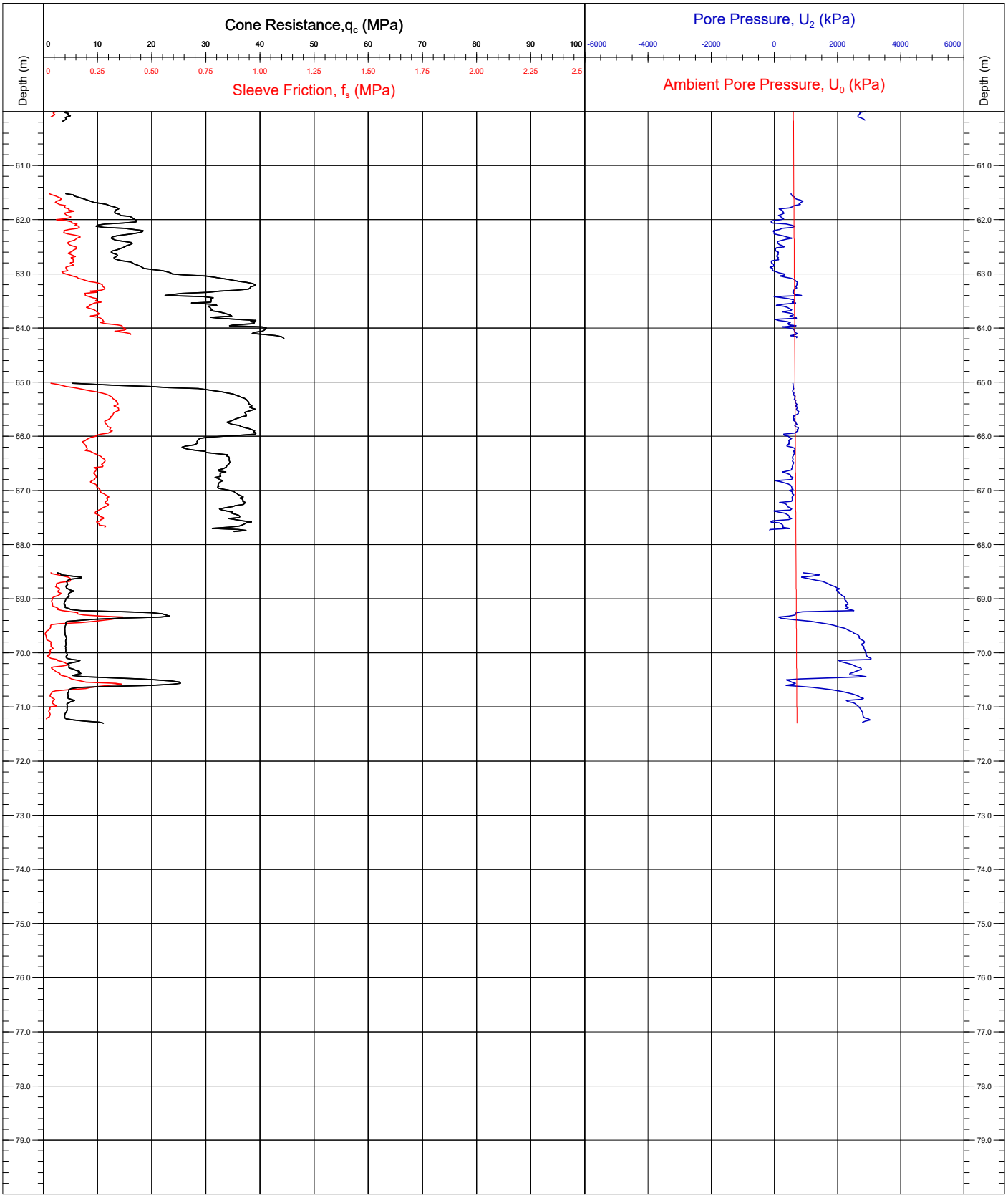
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

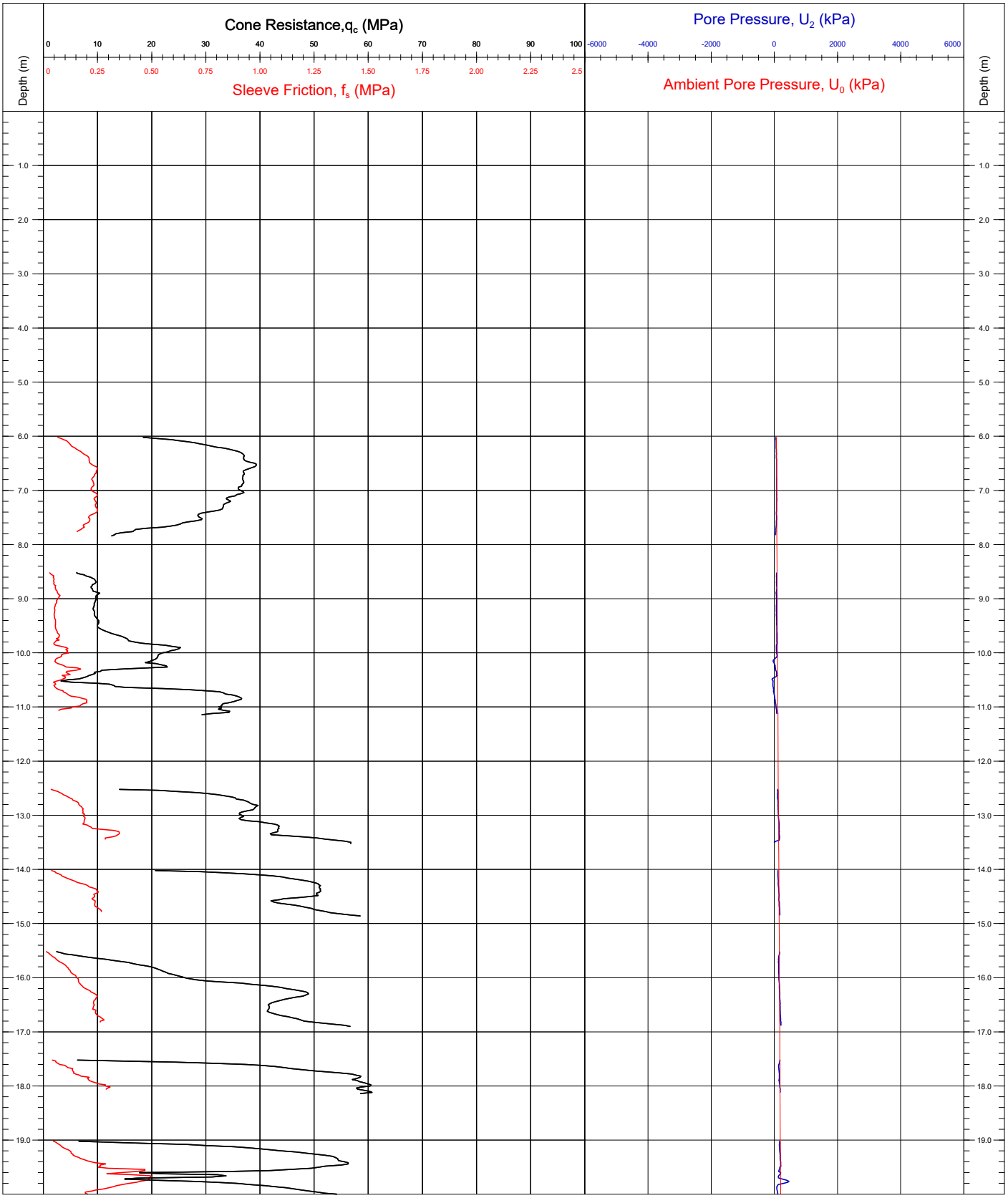
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm^2) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

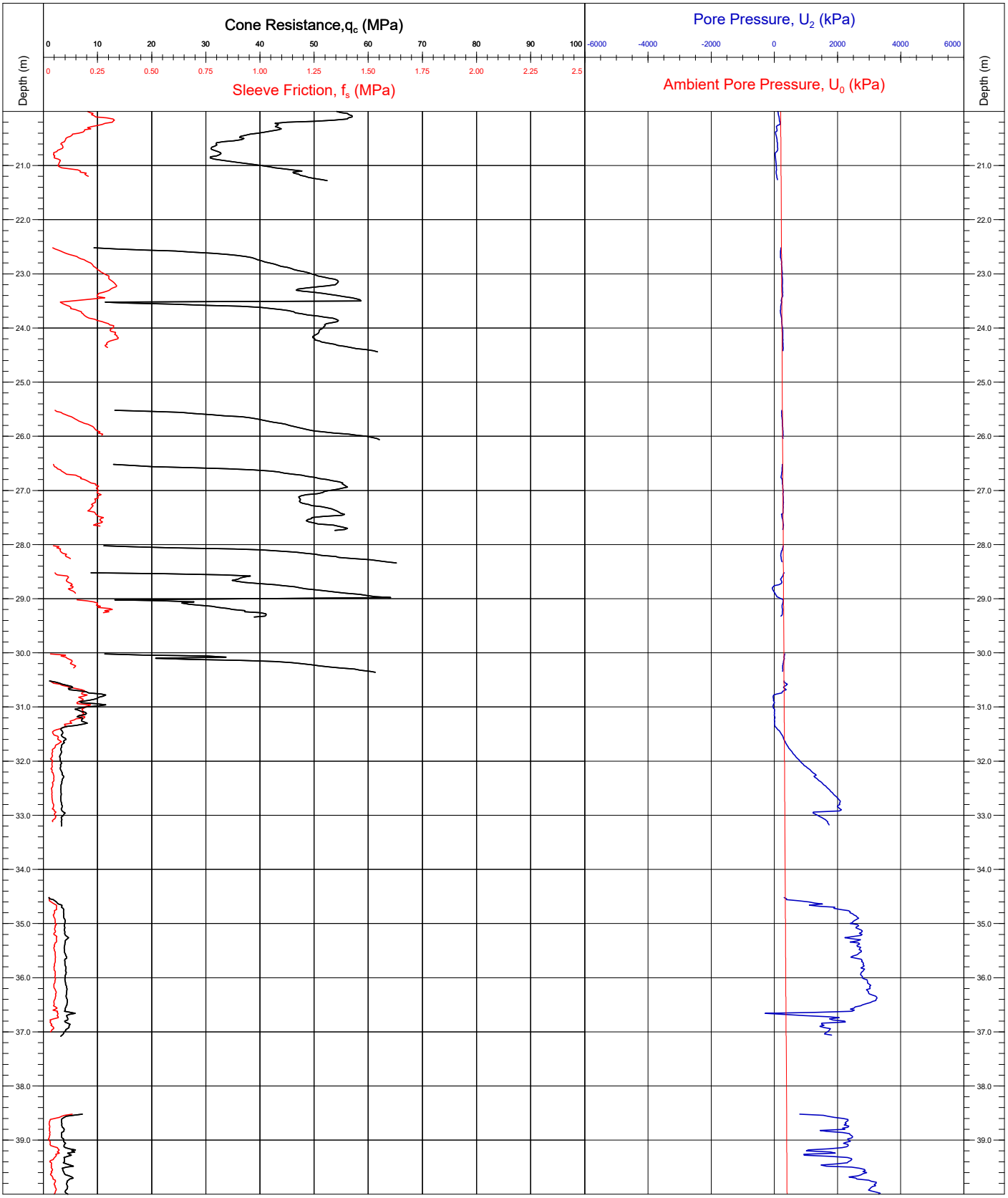
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm^2) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S** (03/07/2015) / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

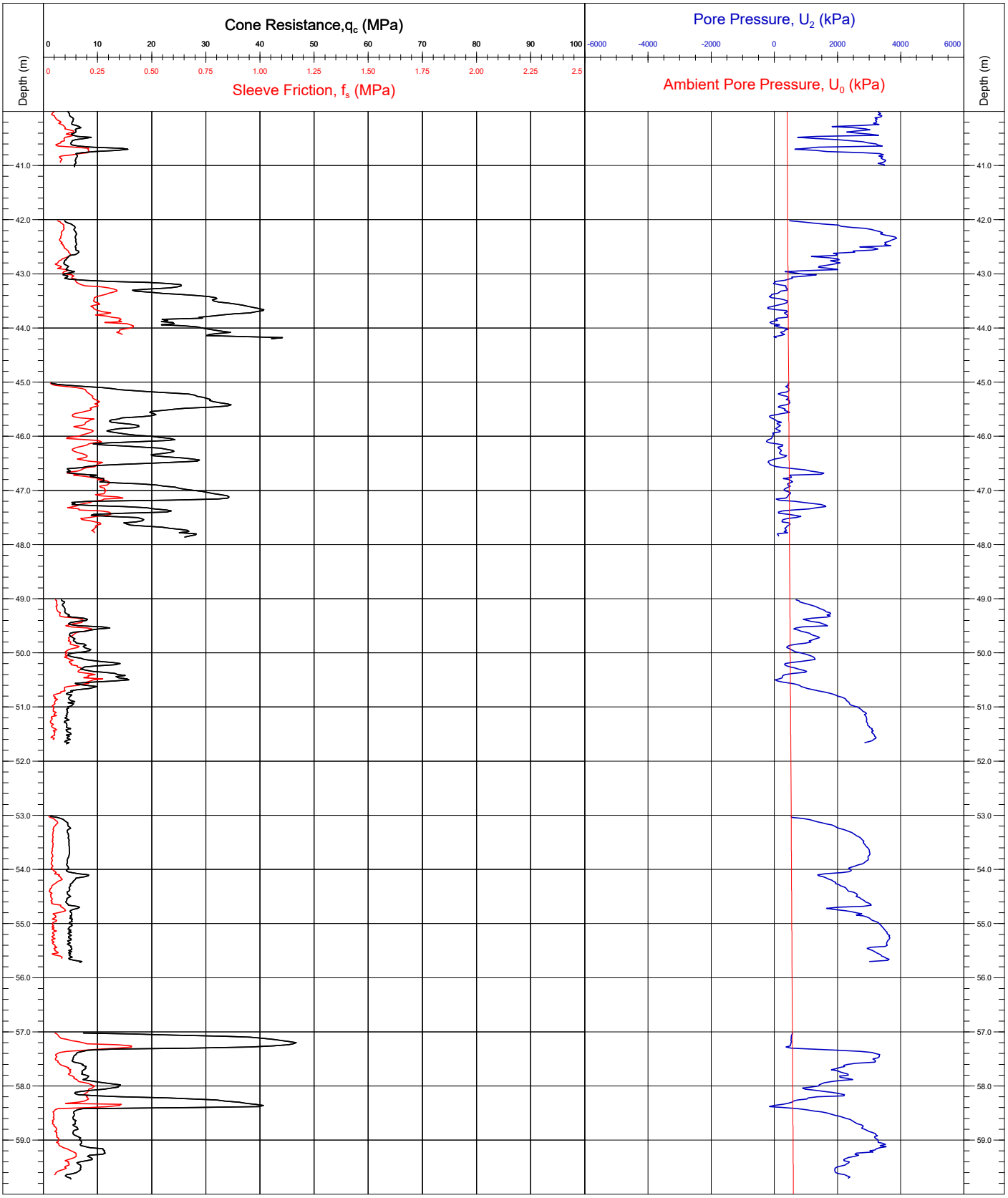
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm^2) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

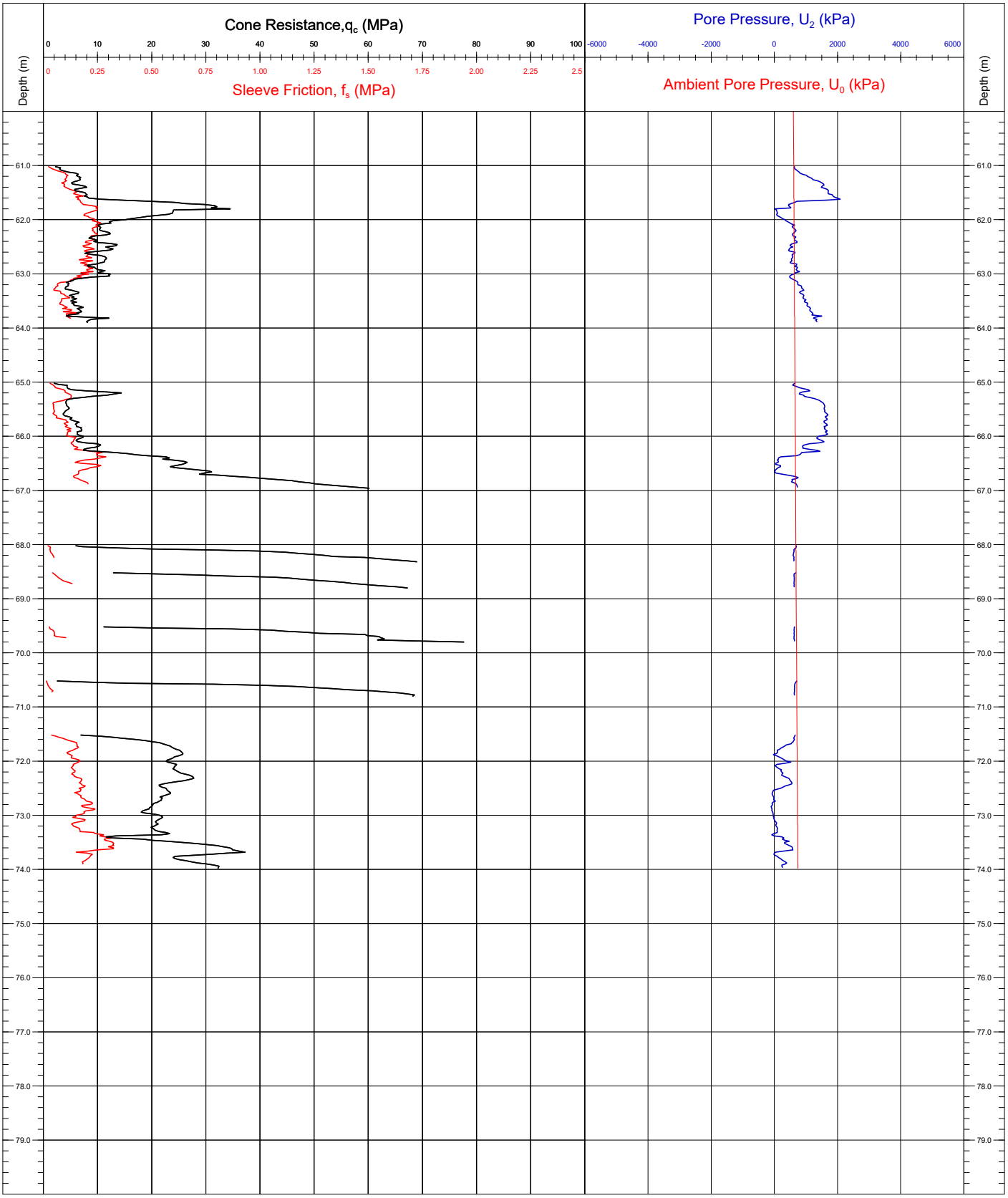
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm^2) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

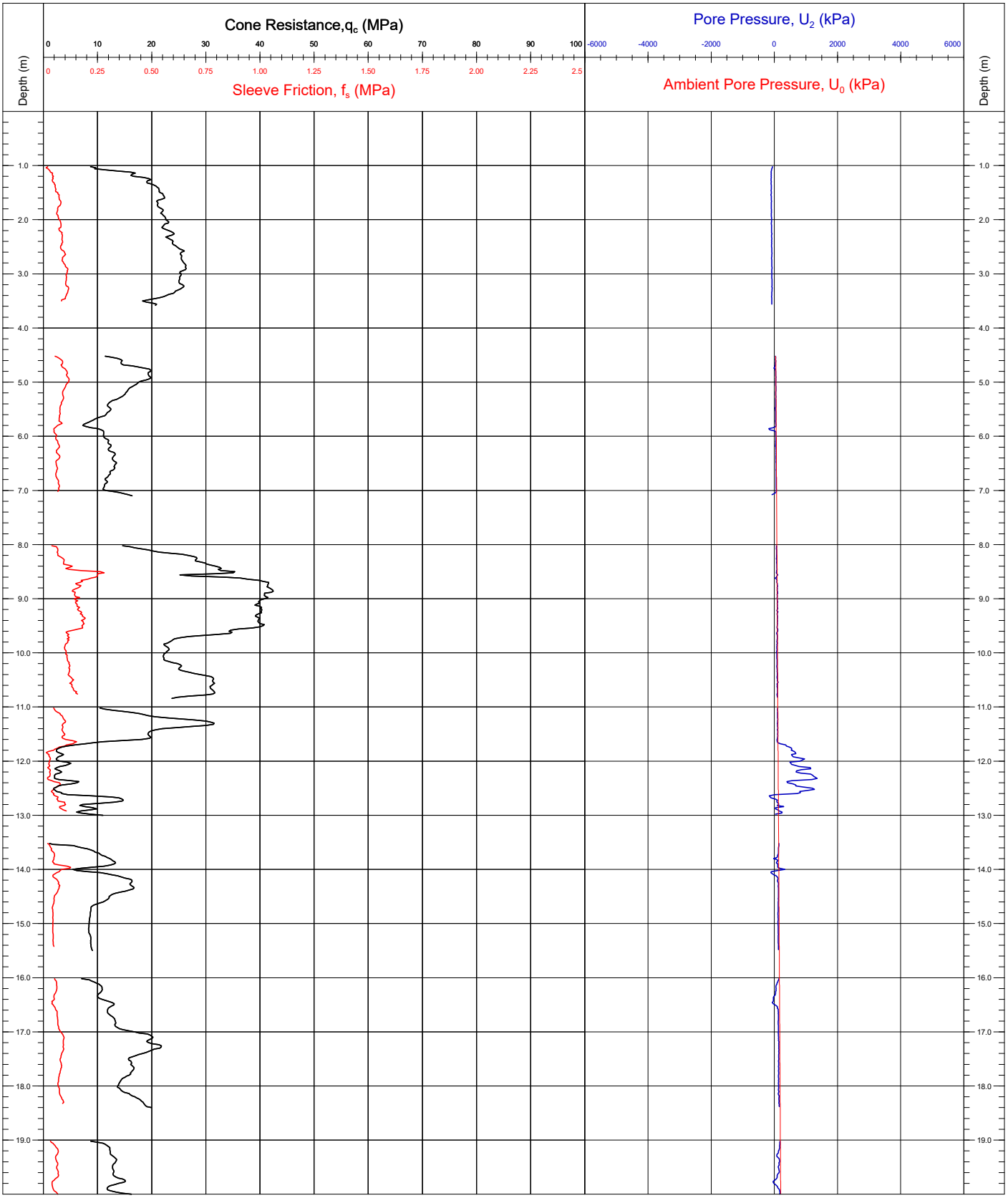
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm^2) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

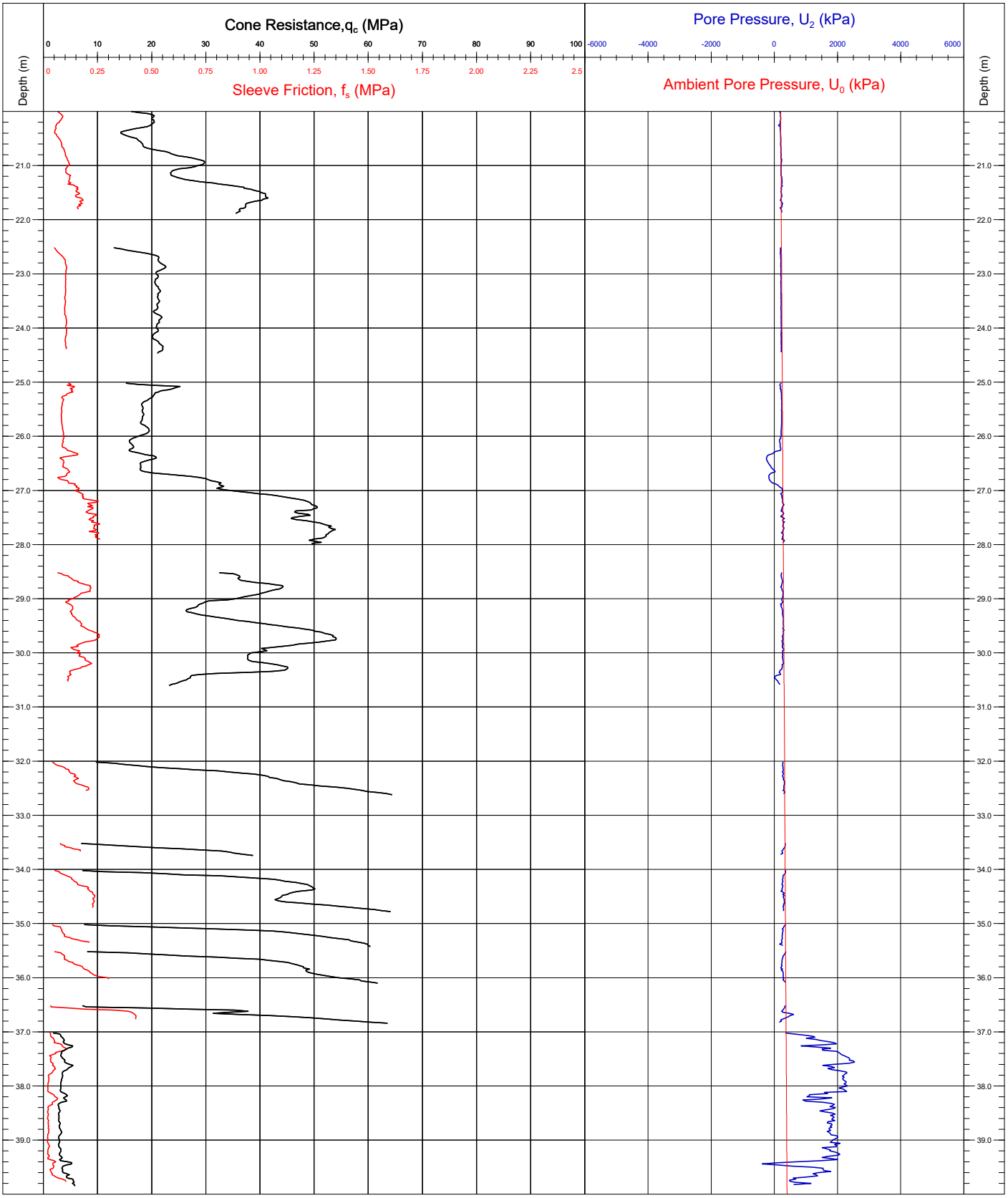
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

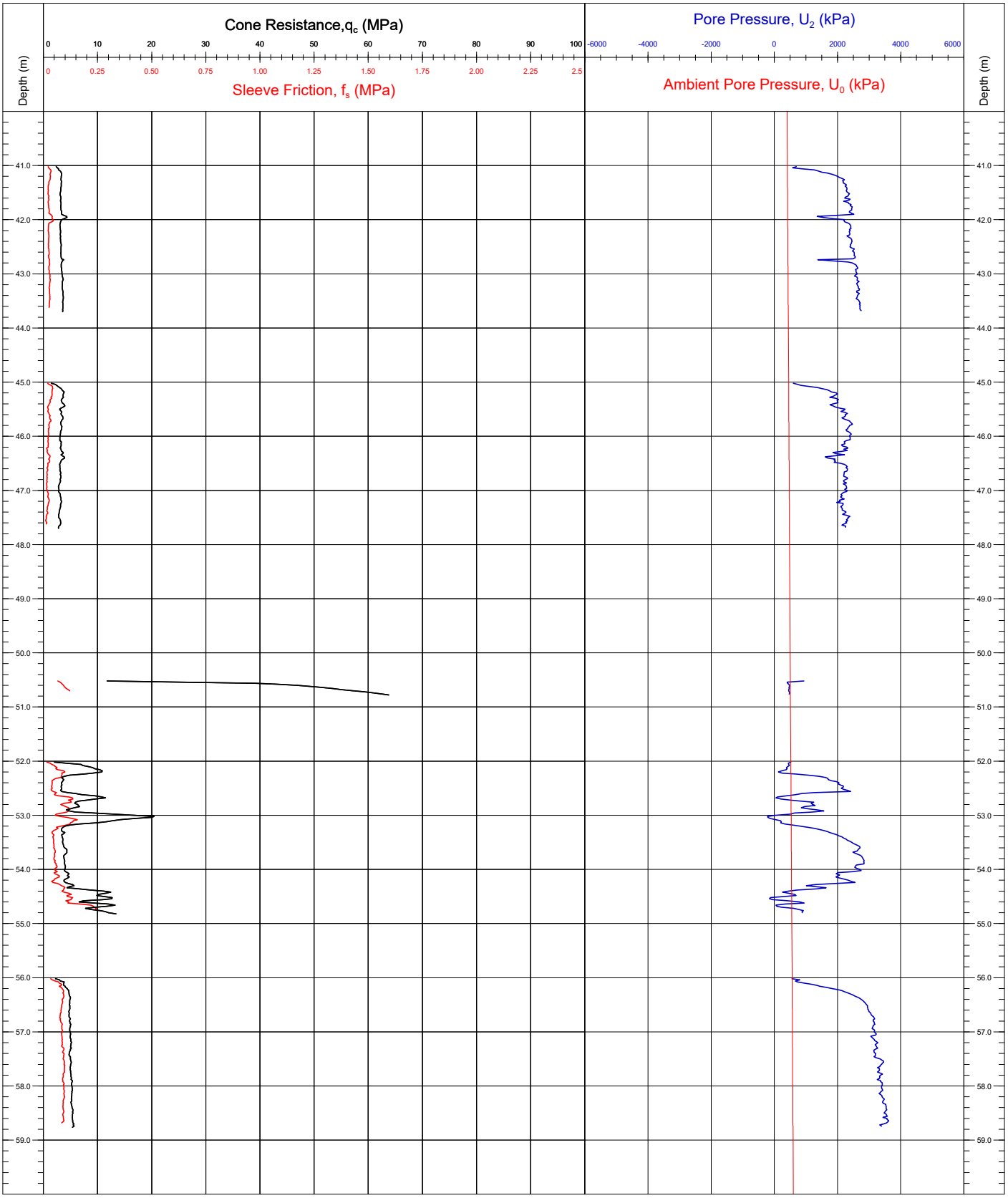
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

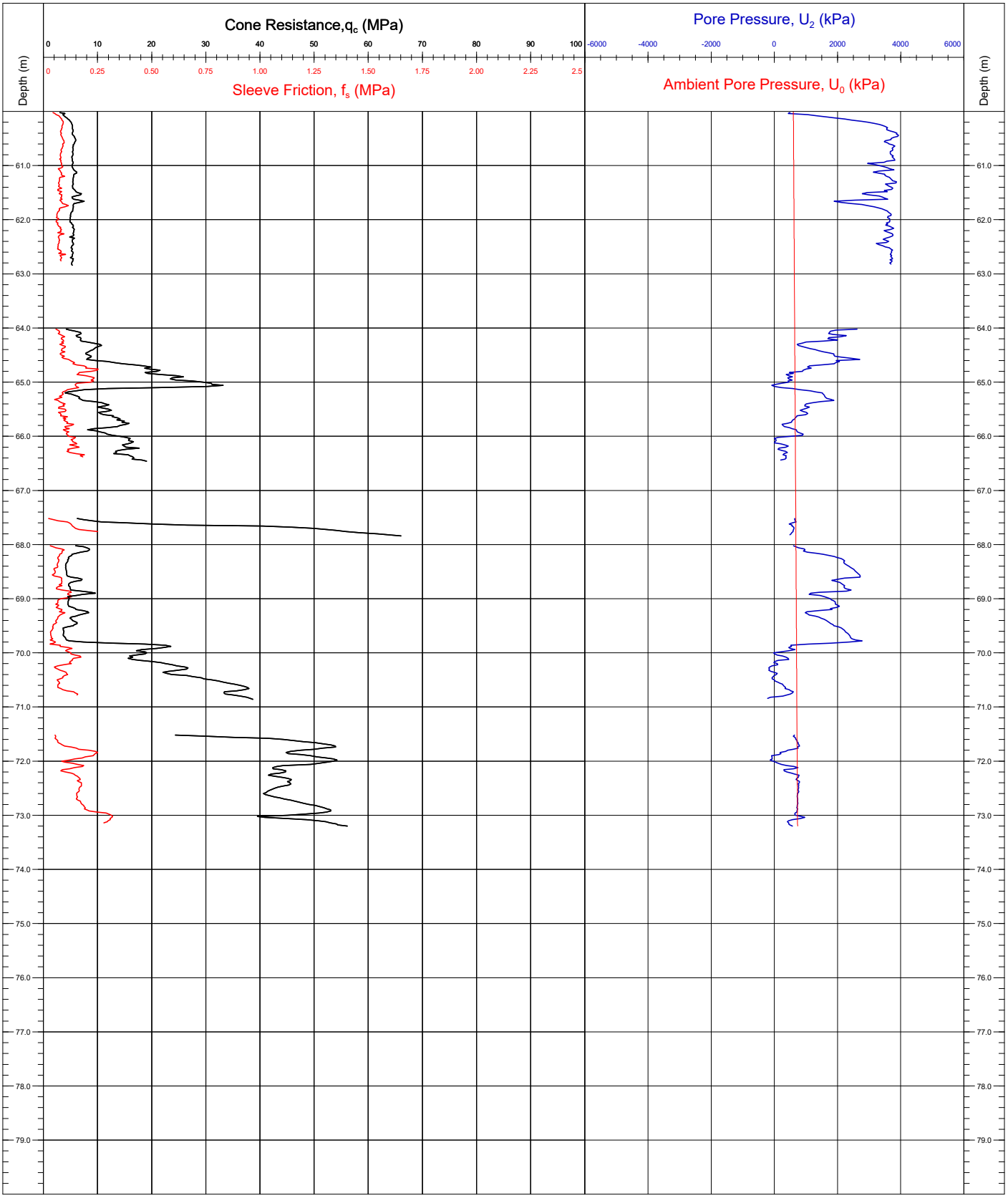
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm^2) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

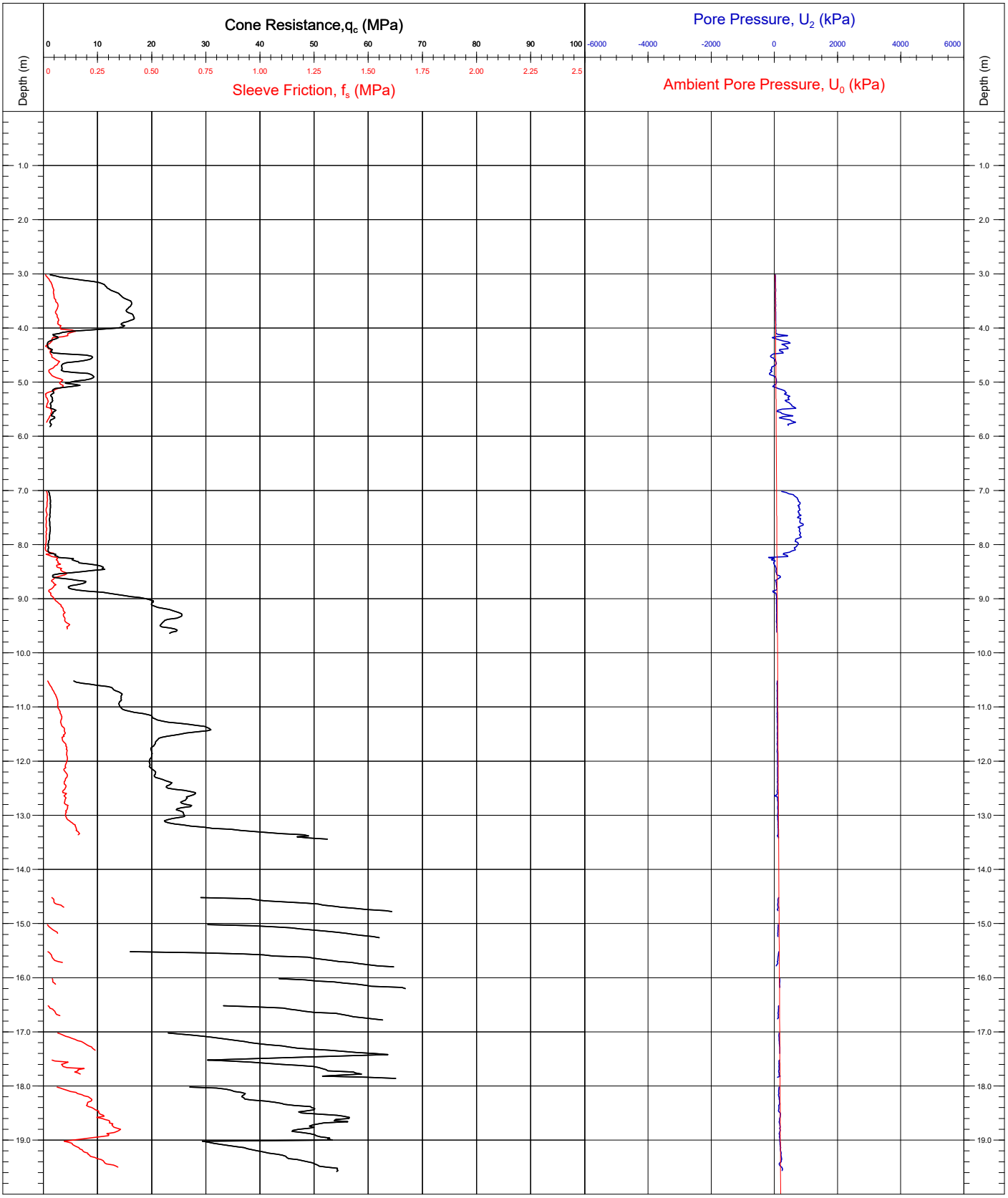
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

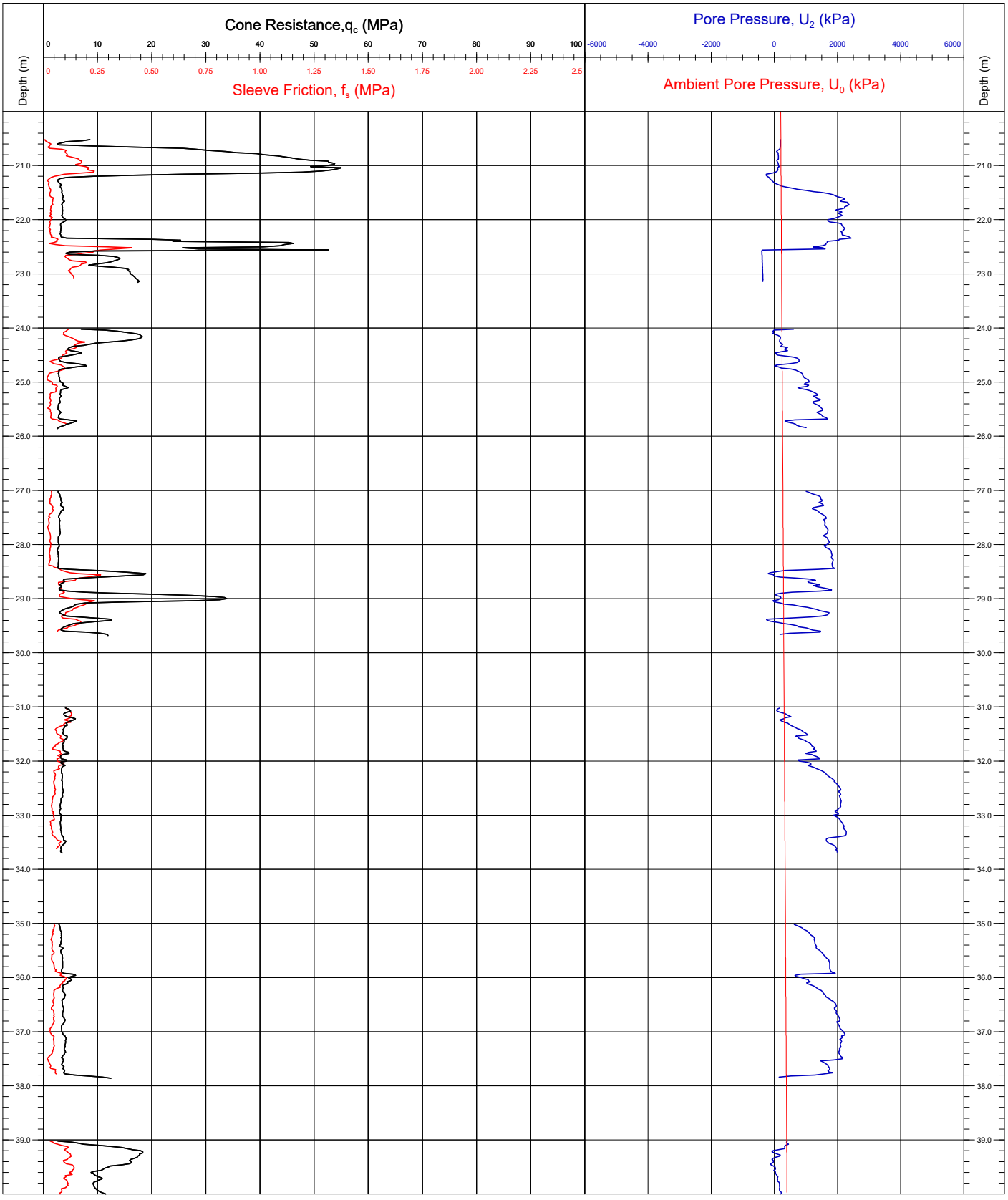
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

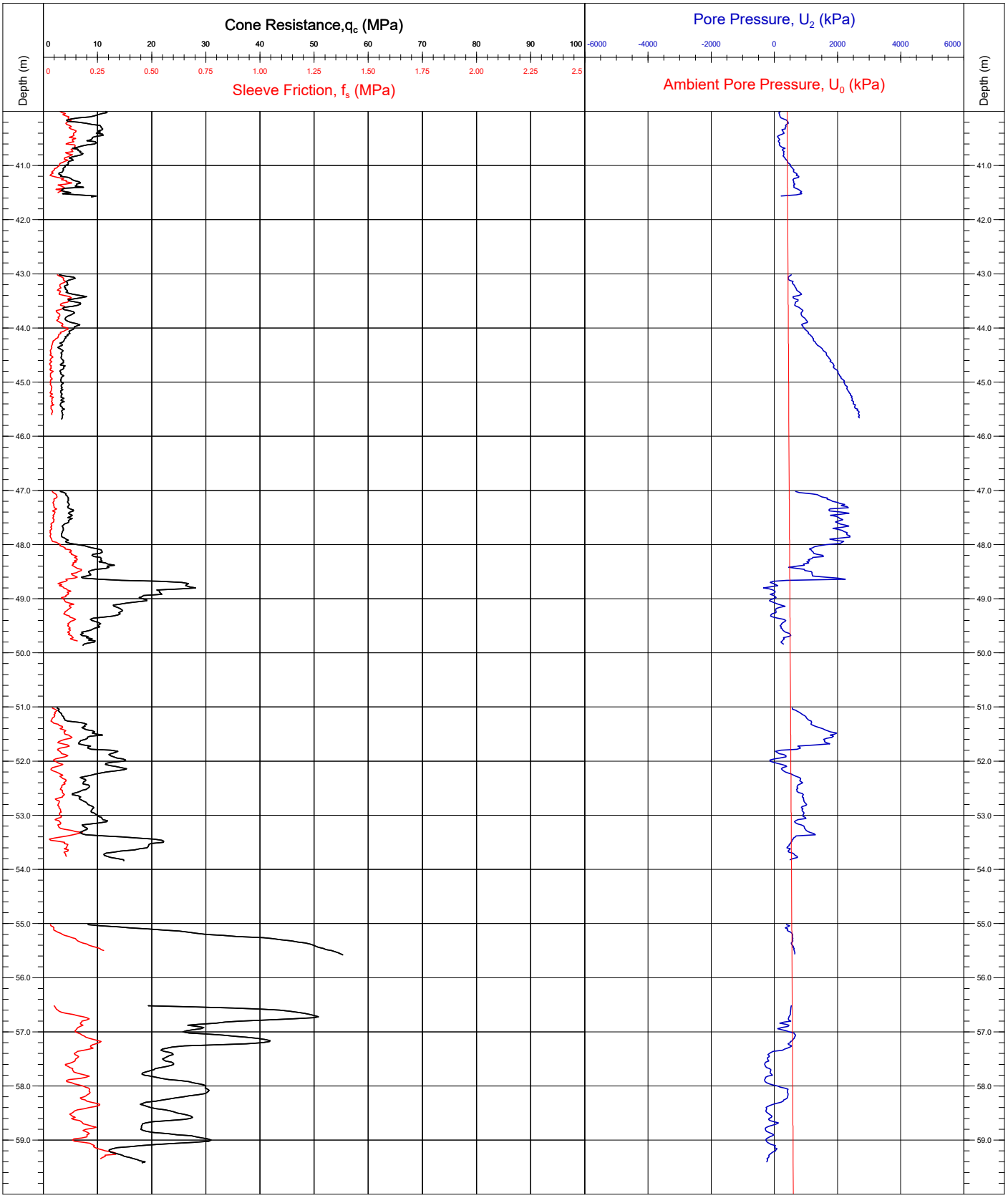
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

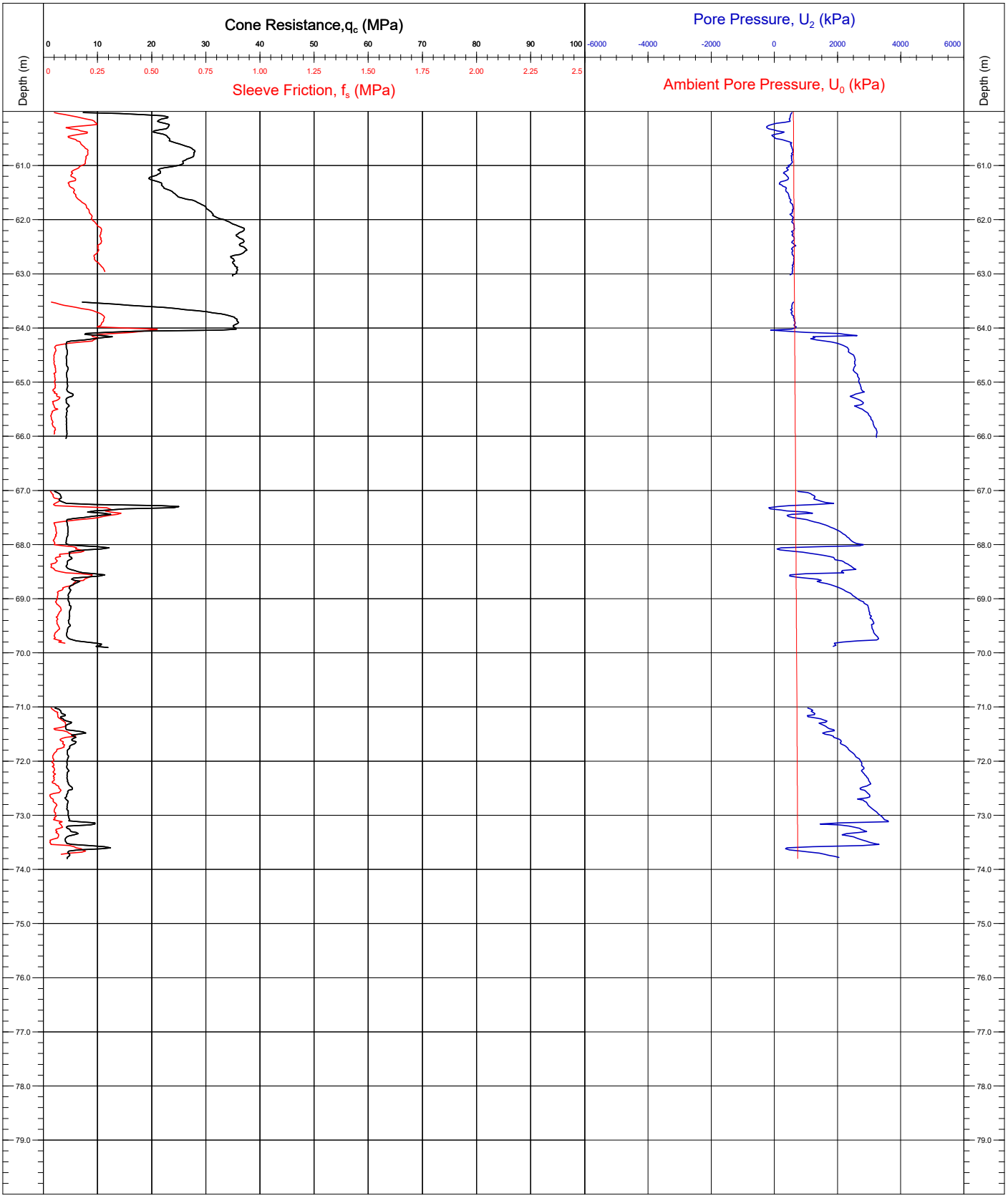
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

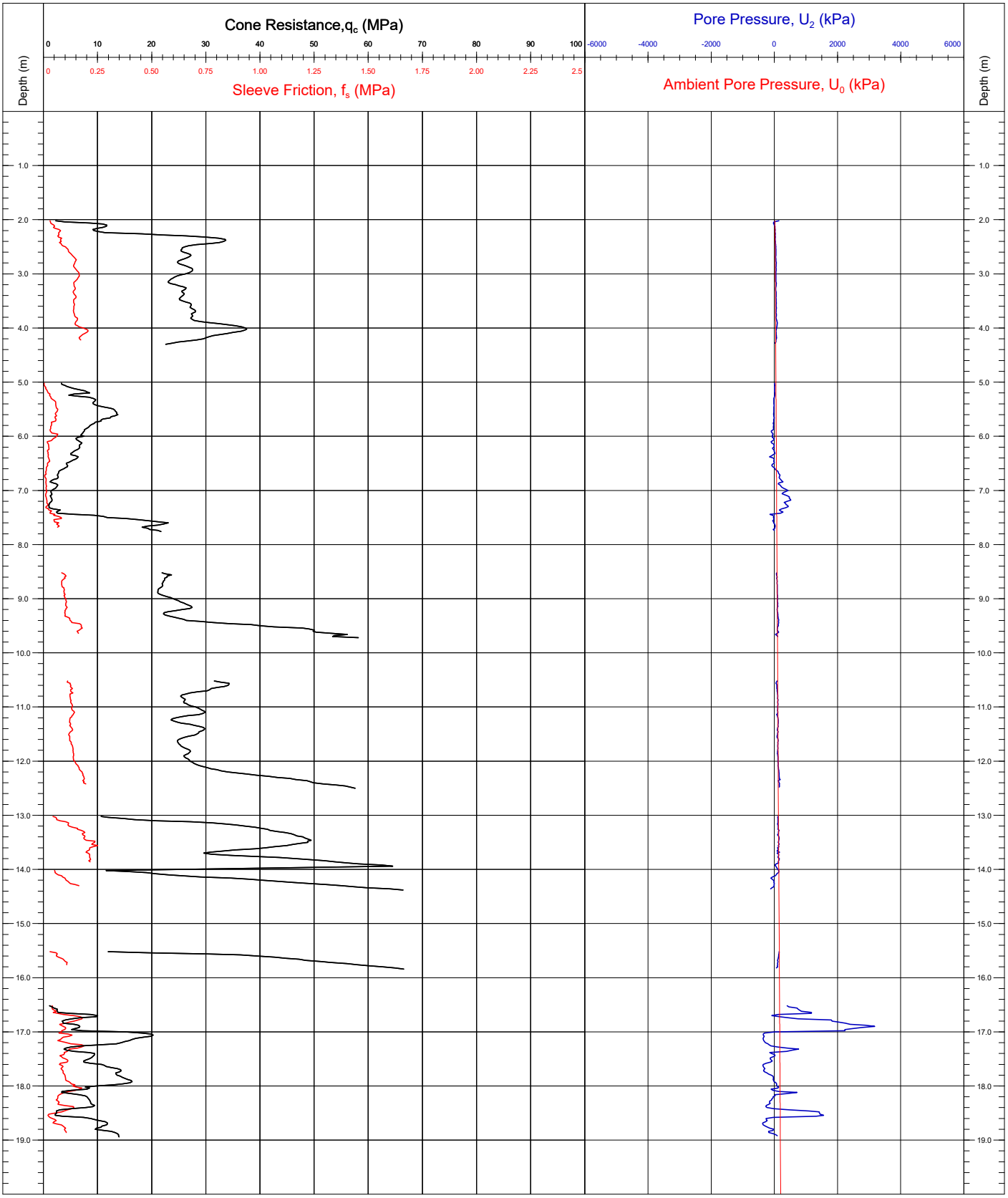
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

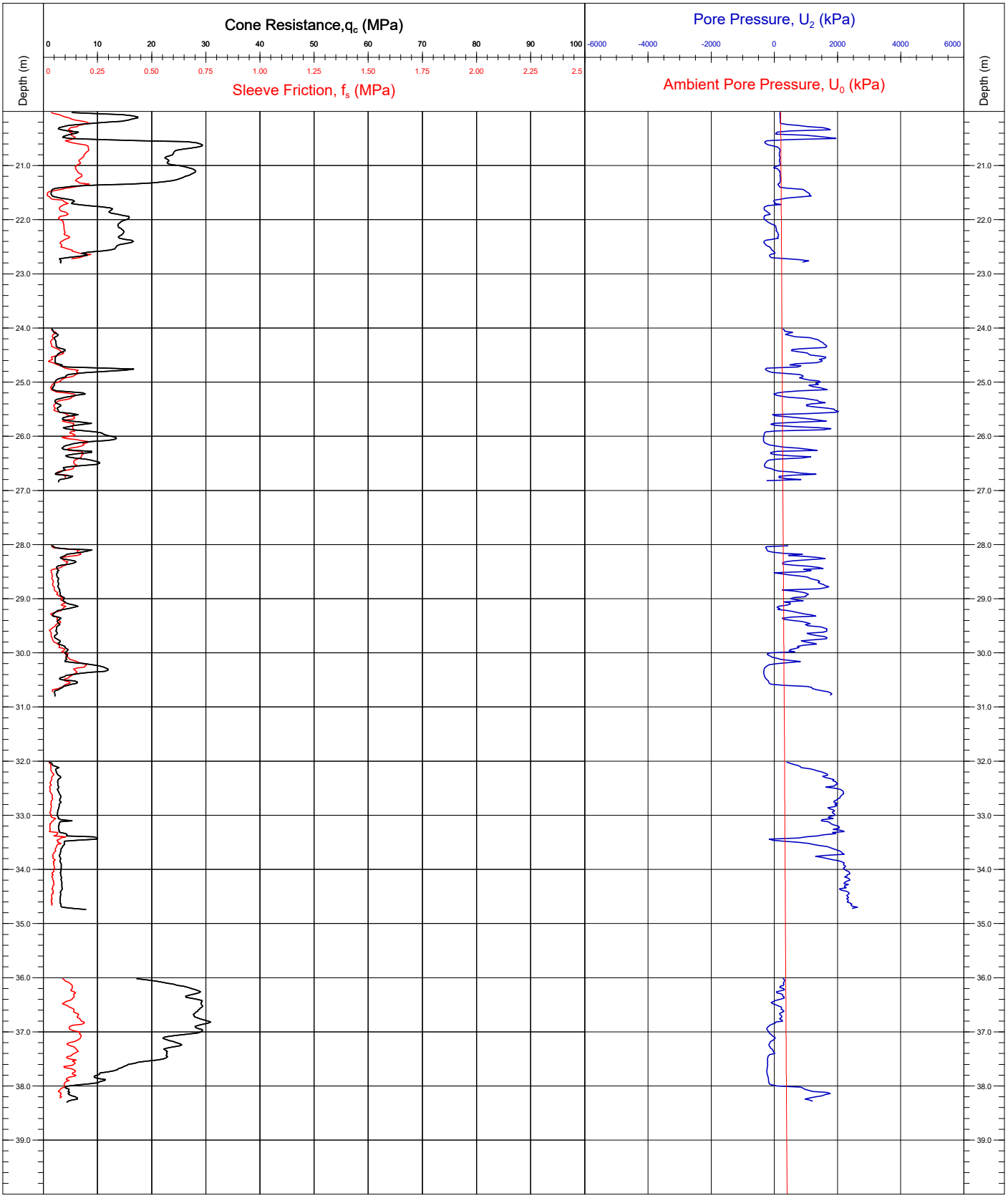
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S** (08/07/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

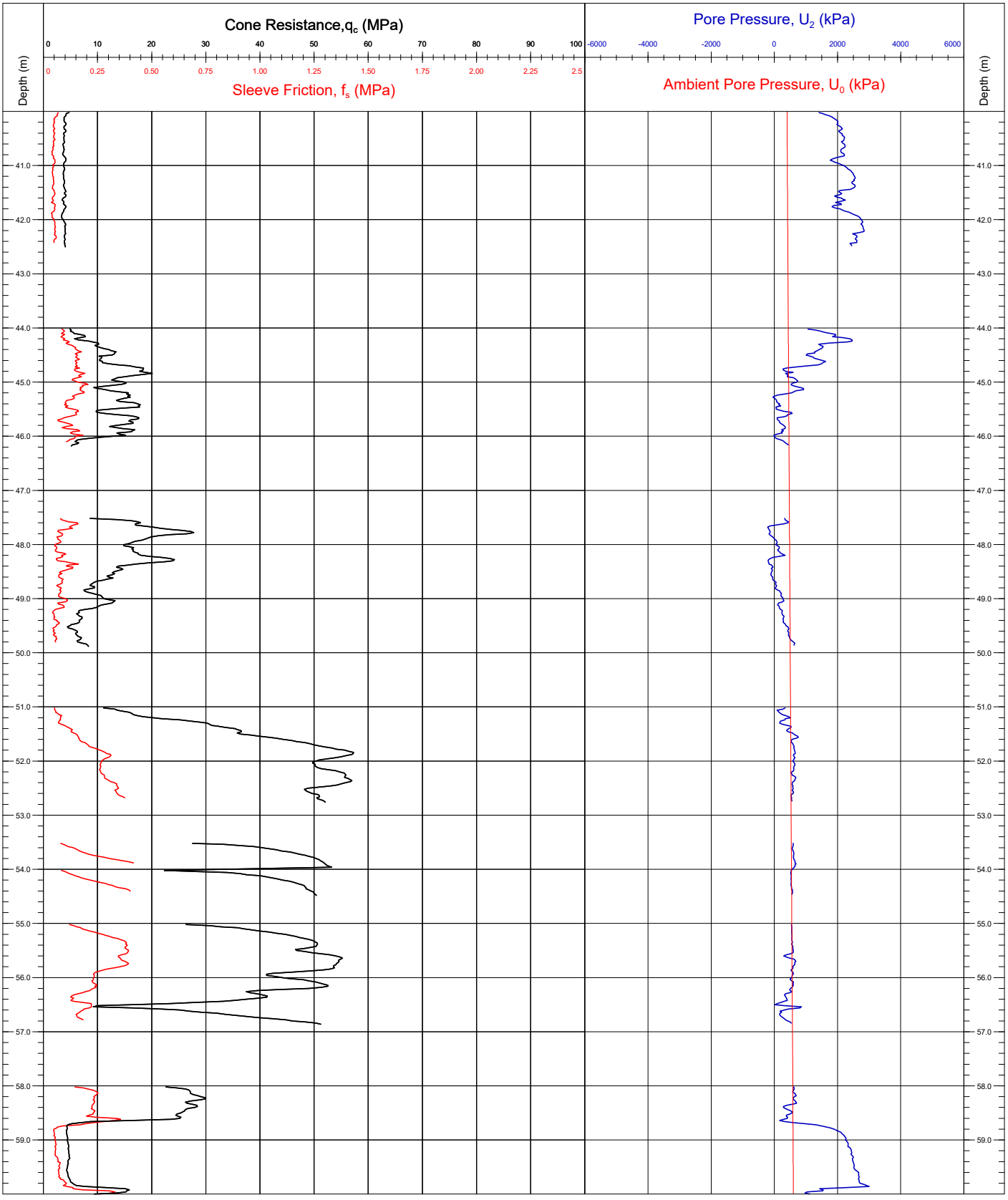
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (08/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

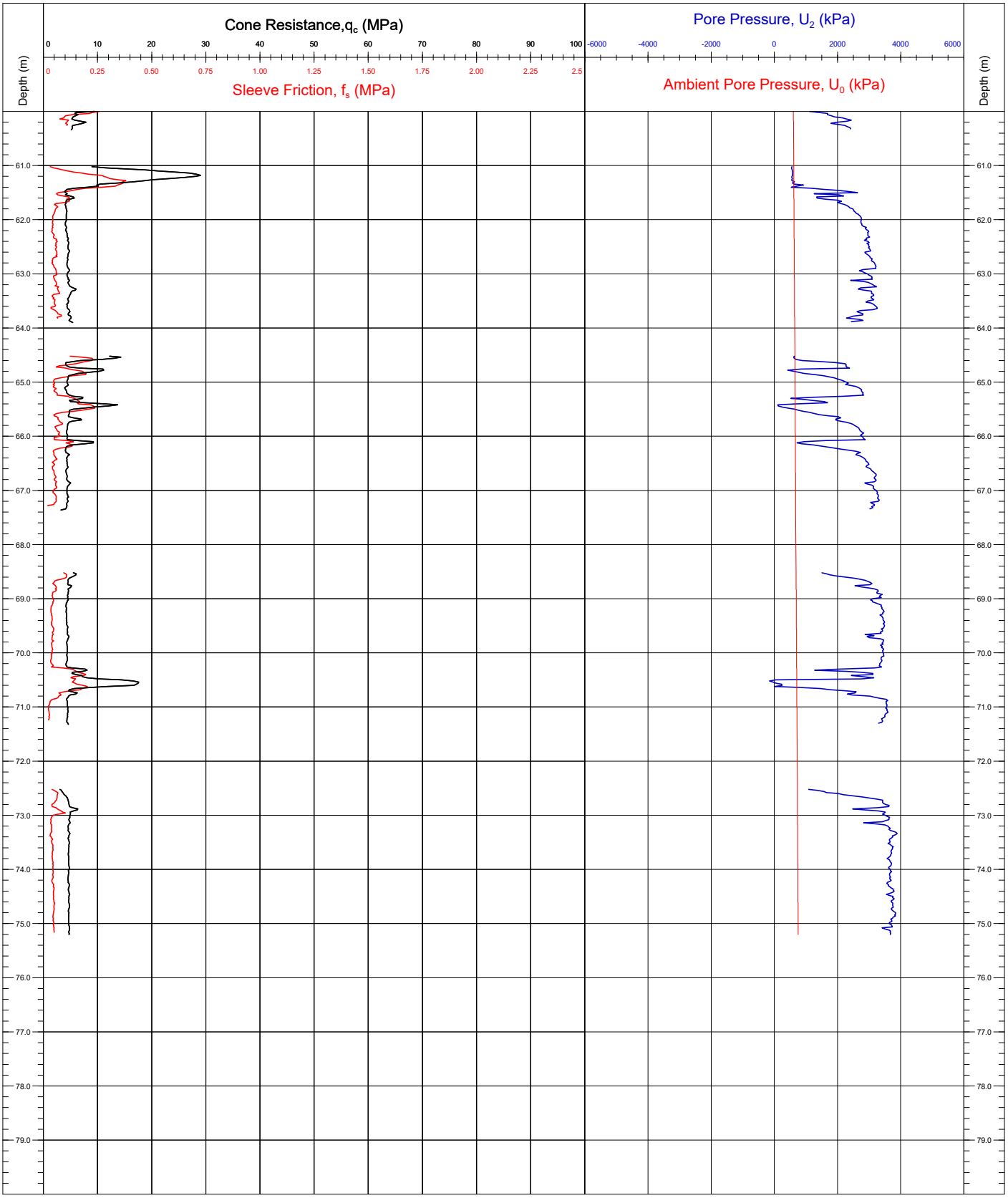
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S** (08/07/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

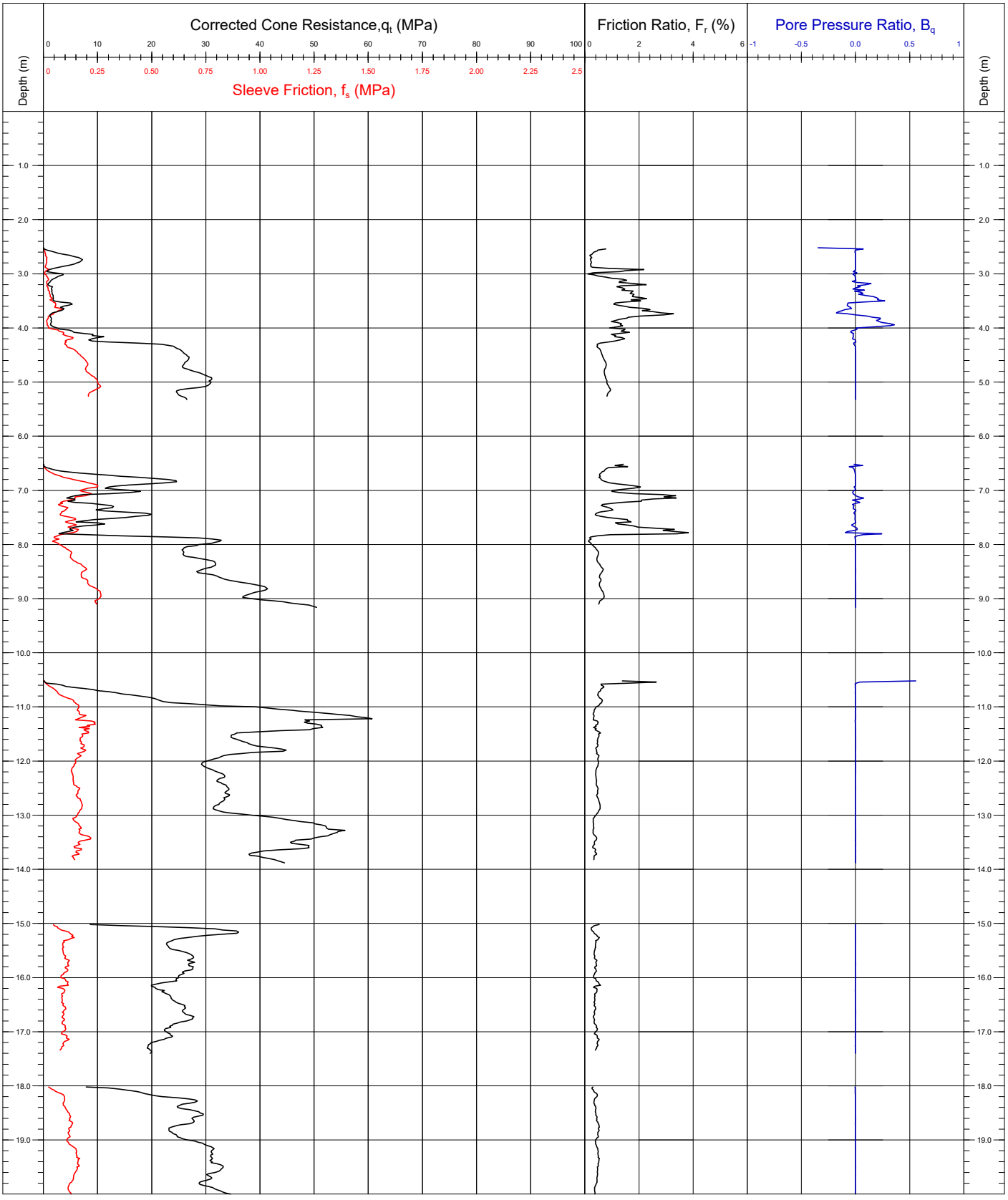
INSITU CPTU TESTING - MEASURED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S** (08/07/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

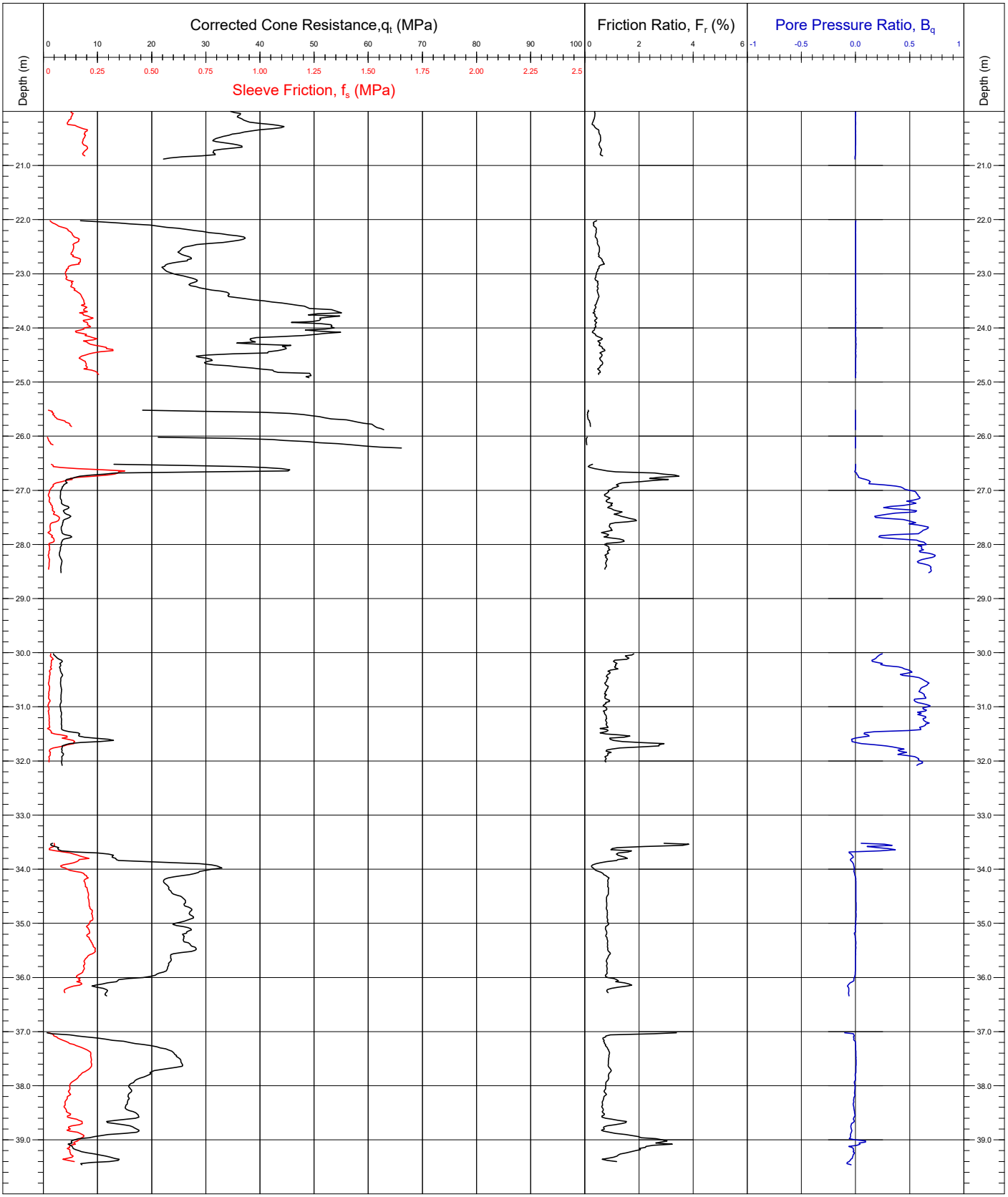
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

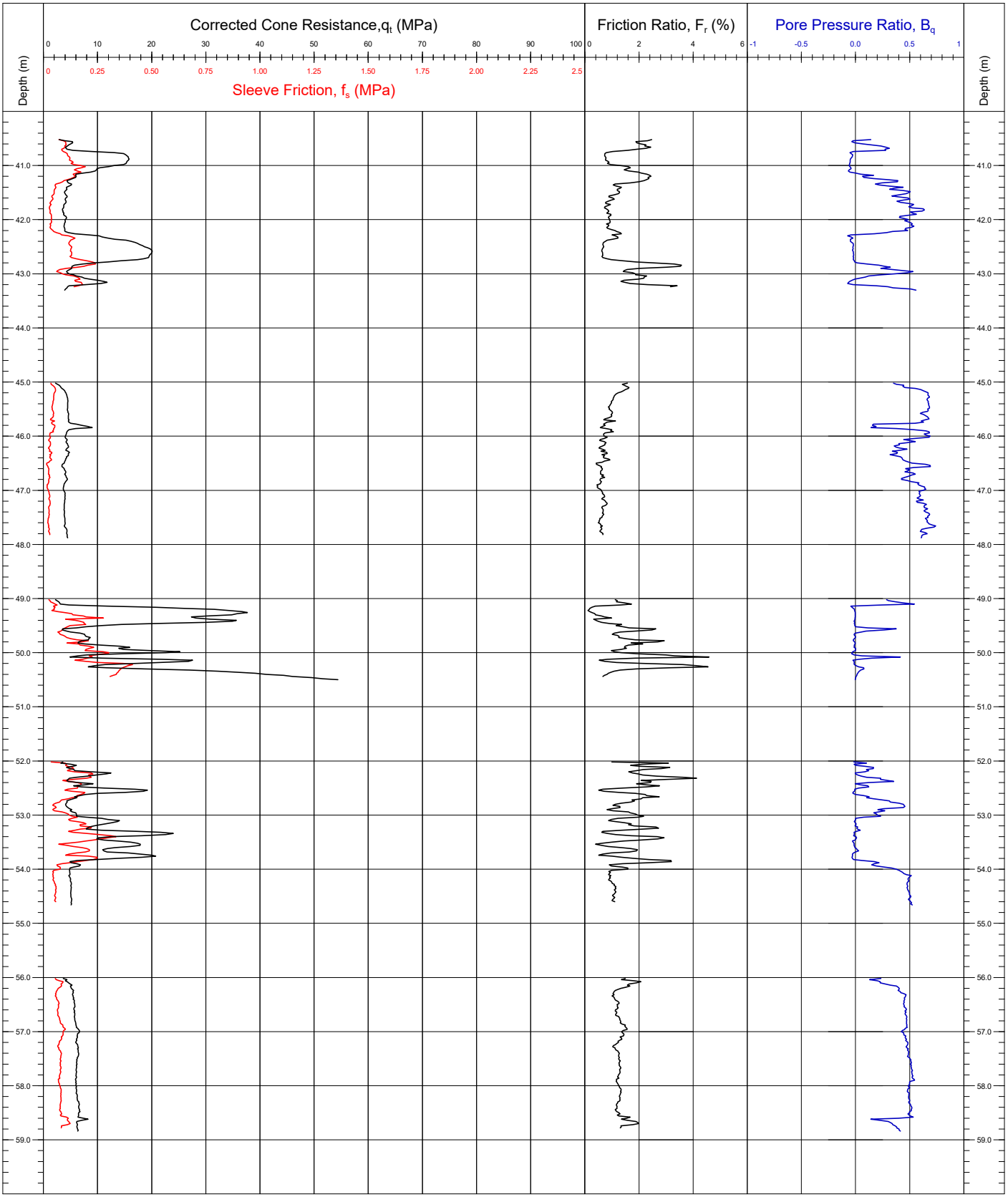
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

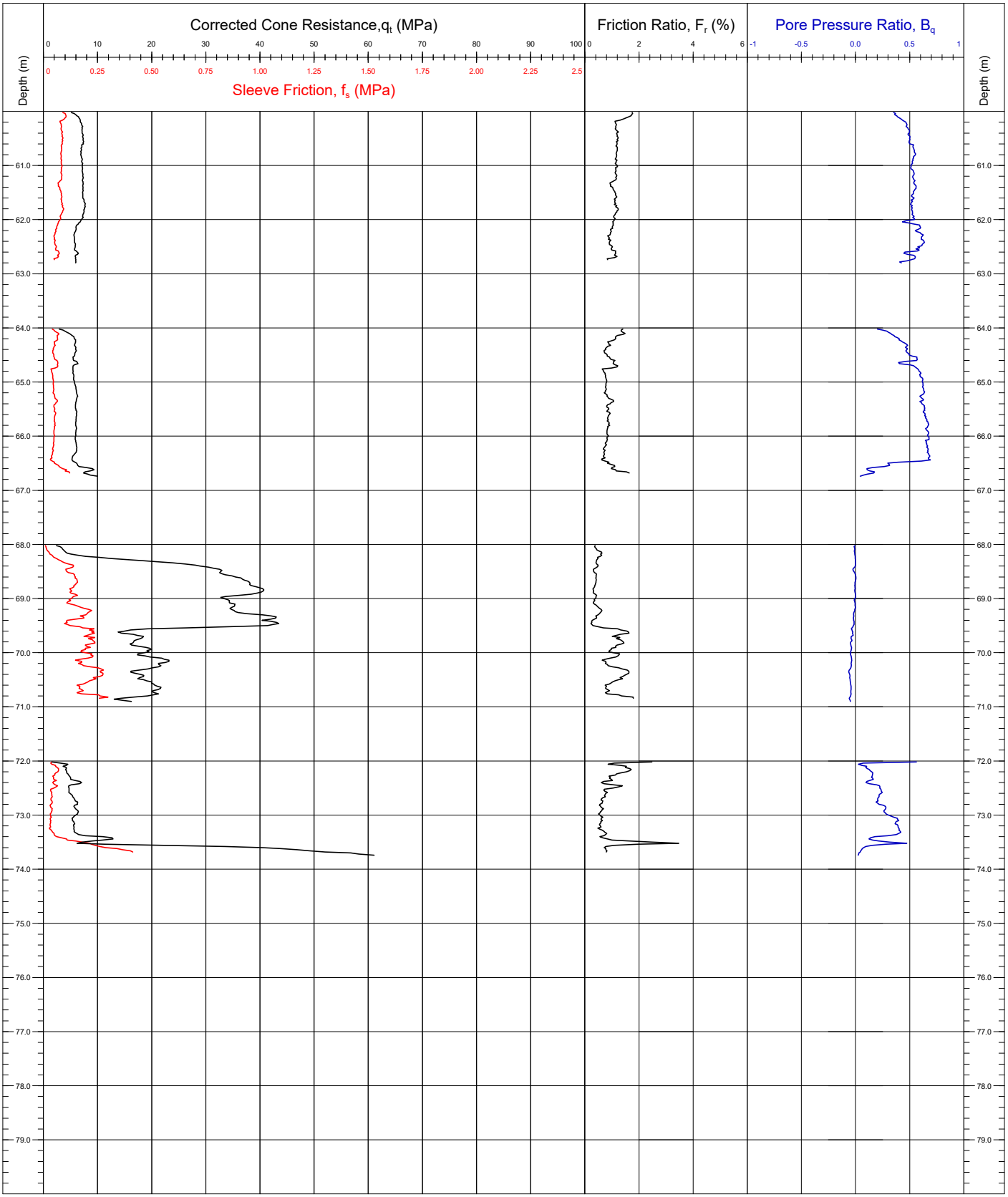
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

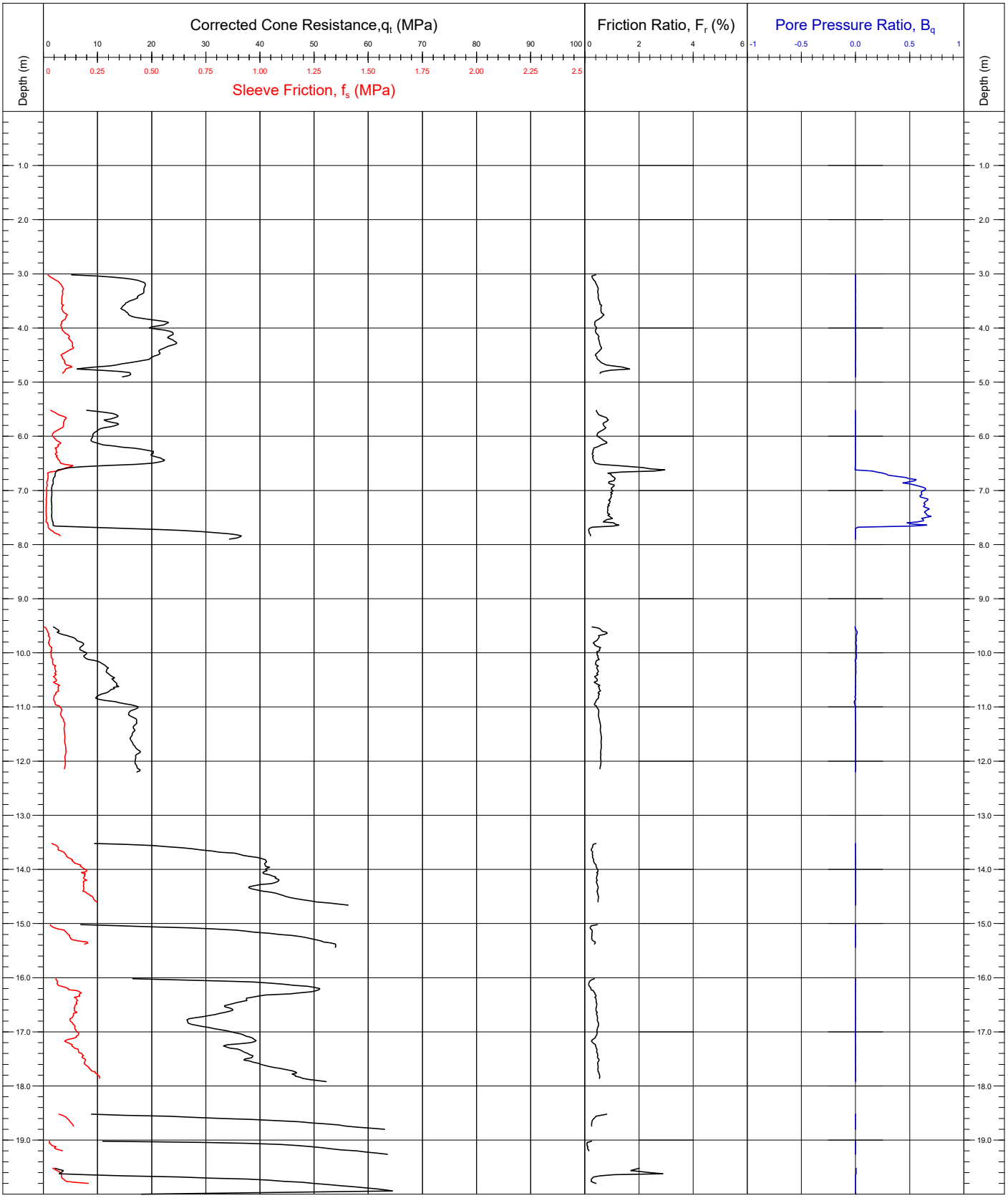
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521253.4E 4235902.0N**	CPT Number **BH - I21_A_B**
Contract	**10451**	Water Depth (mMSL)	**25.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**22/06/2015 to 24/06/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.75**	QC Status
Comments: BH - I21 was abandoned at 6m~ BH - I21A was abandoned at 29m due to weather. Location details taken from BH-I21B. Pocket penetrometer maximum of 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**SH/NV-S** (24/06/2015) / () / ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

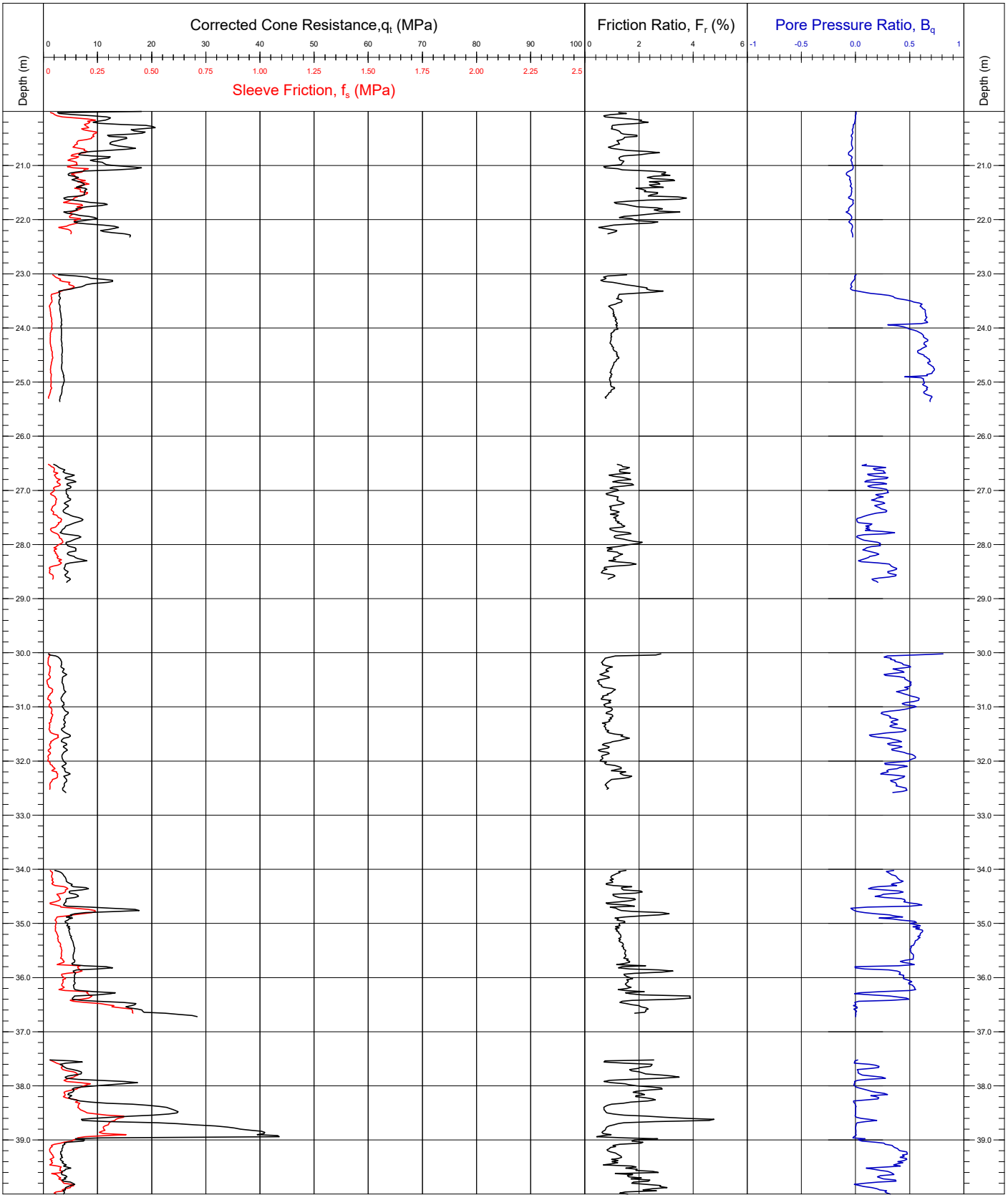
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: Draft: Final
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S** (27/06/2015) : () : ()

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

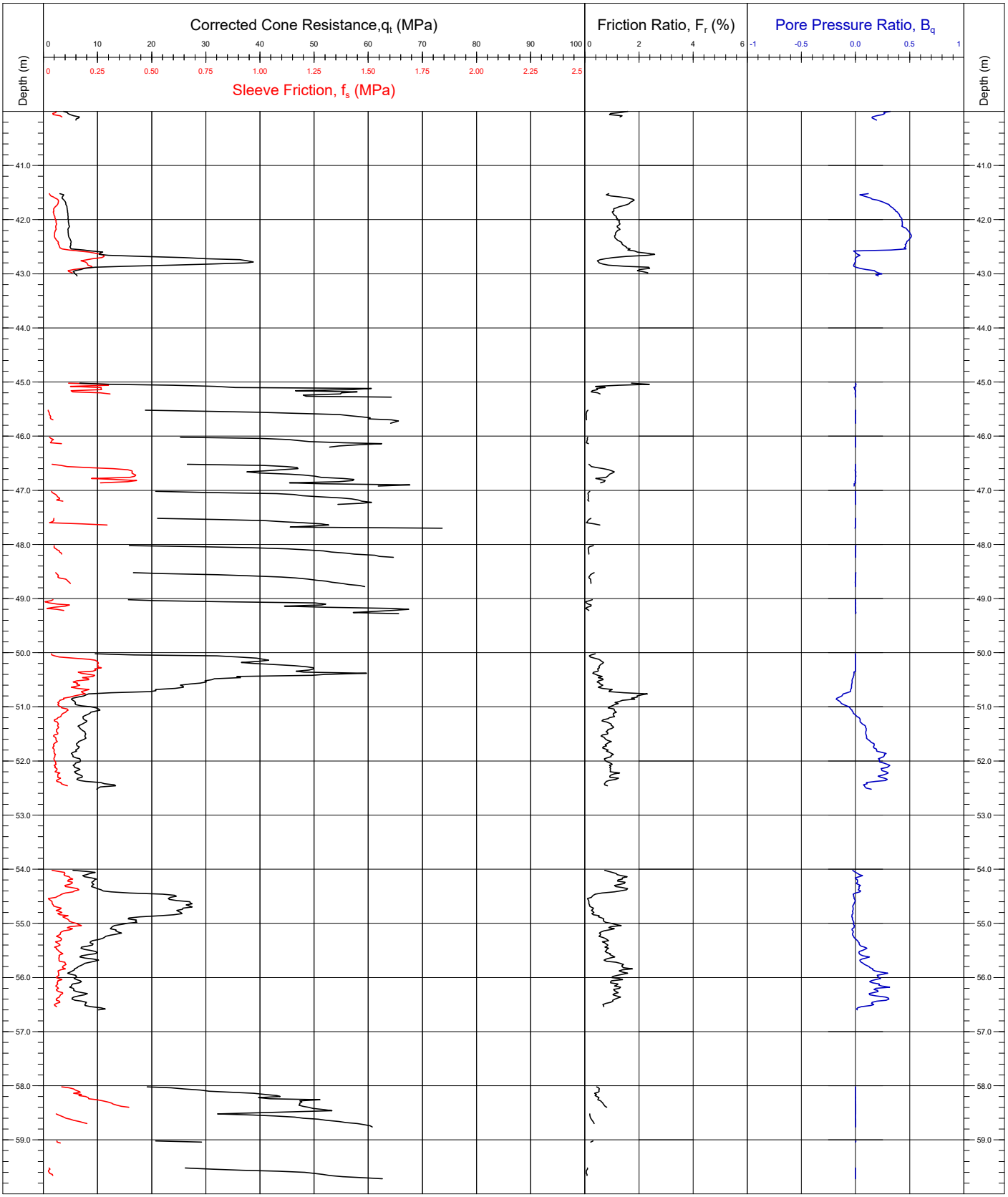
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (27/06/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

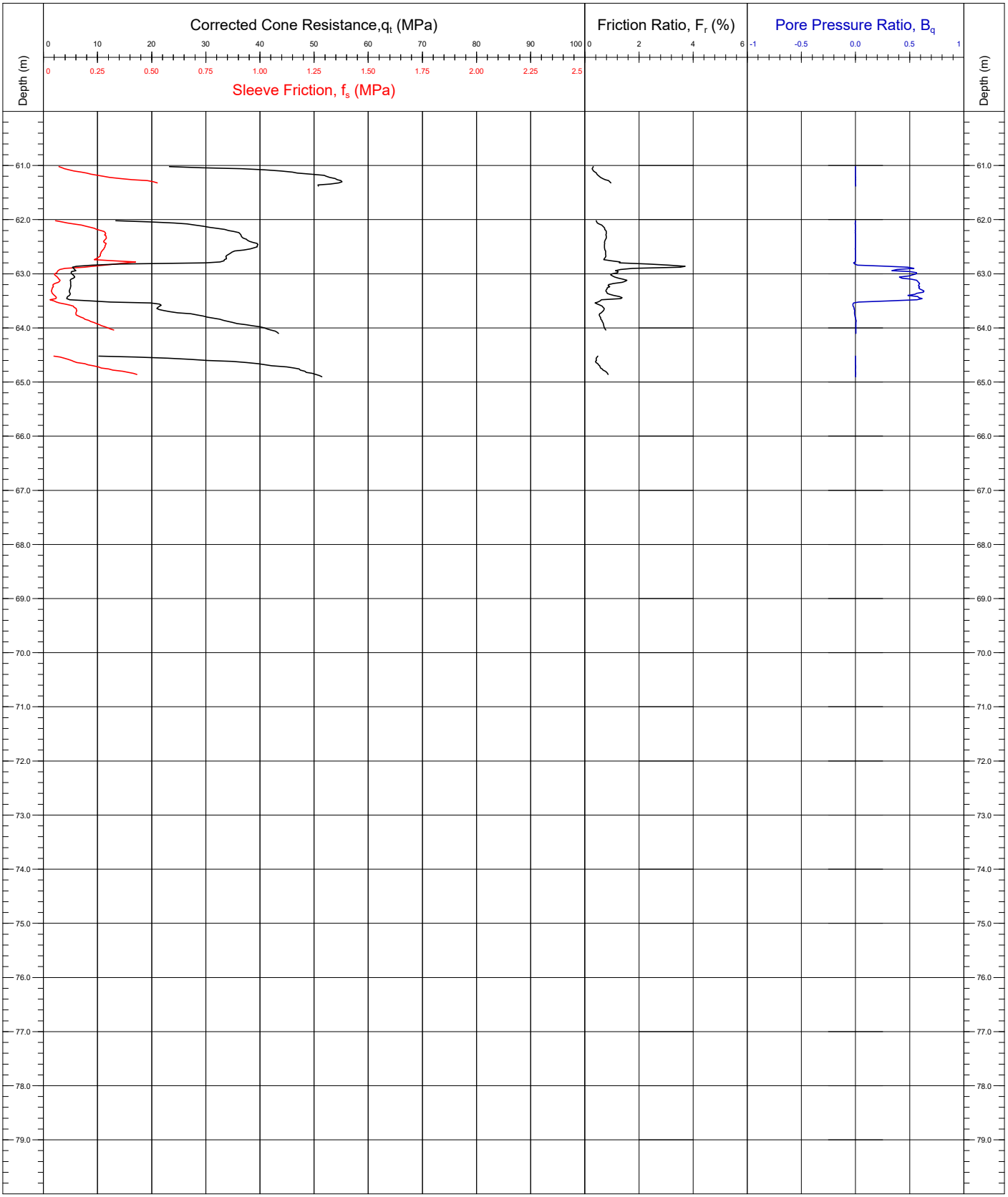
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number **BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (27/06/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

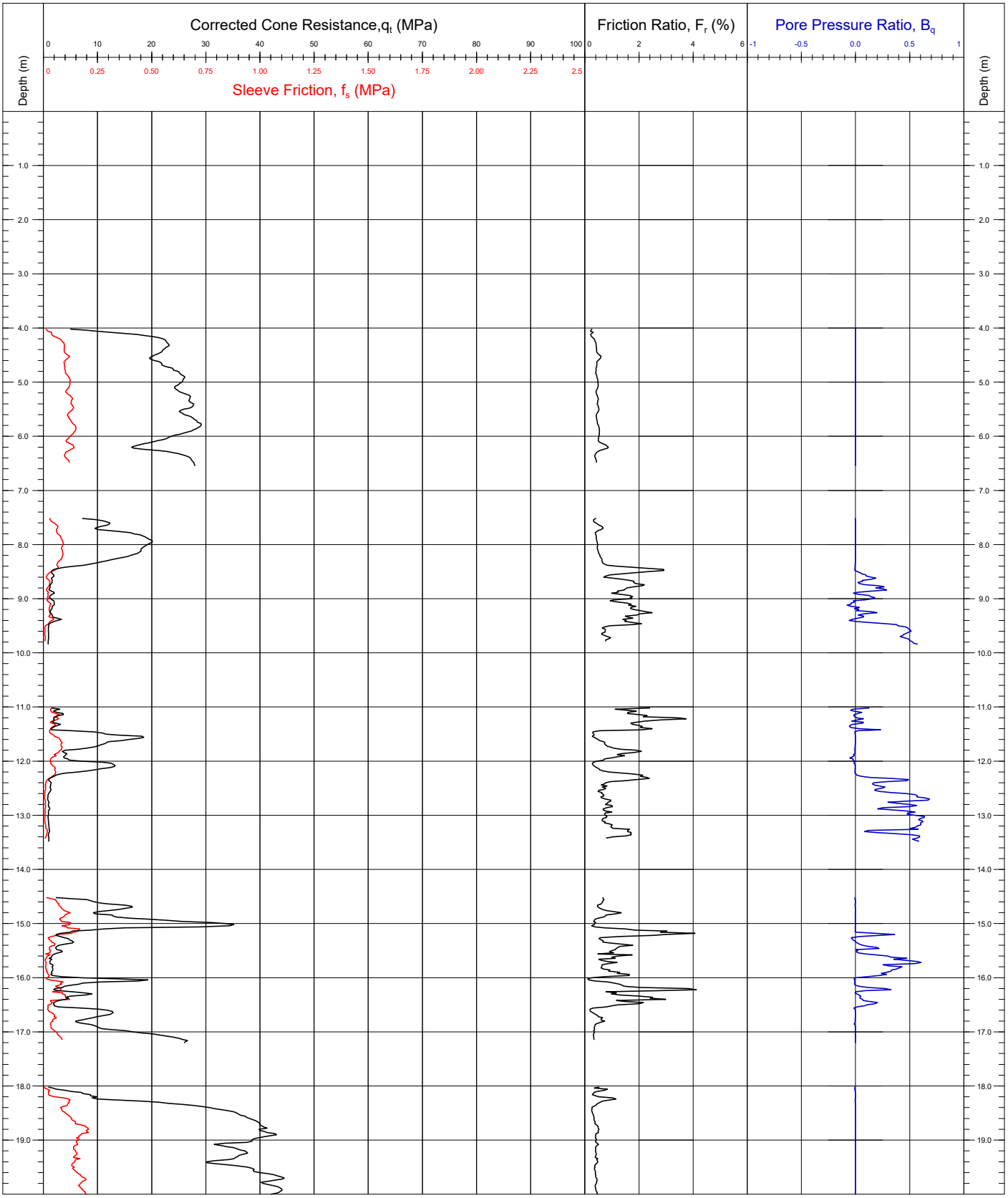
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**521533.9E 4244983.3N**	CPT Number	**BH - MET TOWER**
Contract	**10451**	Water Depth (mMSL)	**27.7**		
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**25/06/2015 to 26/06/2015**	Page: 4/4	
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm^2) / 0.79**	QC Status	
Comments: Borehole completed to a final depth of 64.94m at clients request. Pocket Penetrometer readings maxed out at 300kPa		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary / Draft / Final	
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	**NV-S (27/06/2015)** / () / ()	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

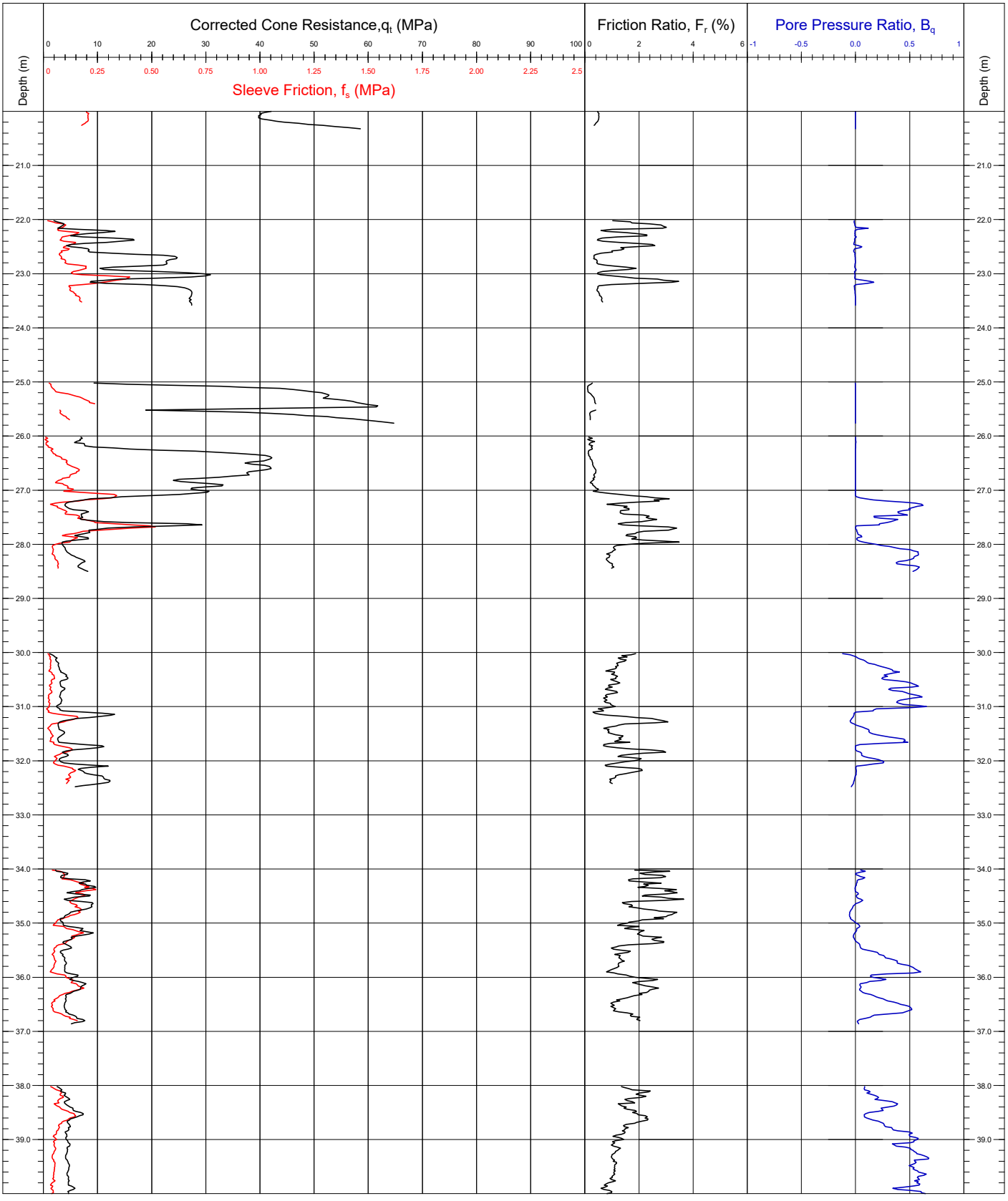
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

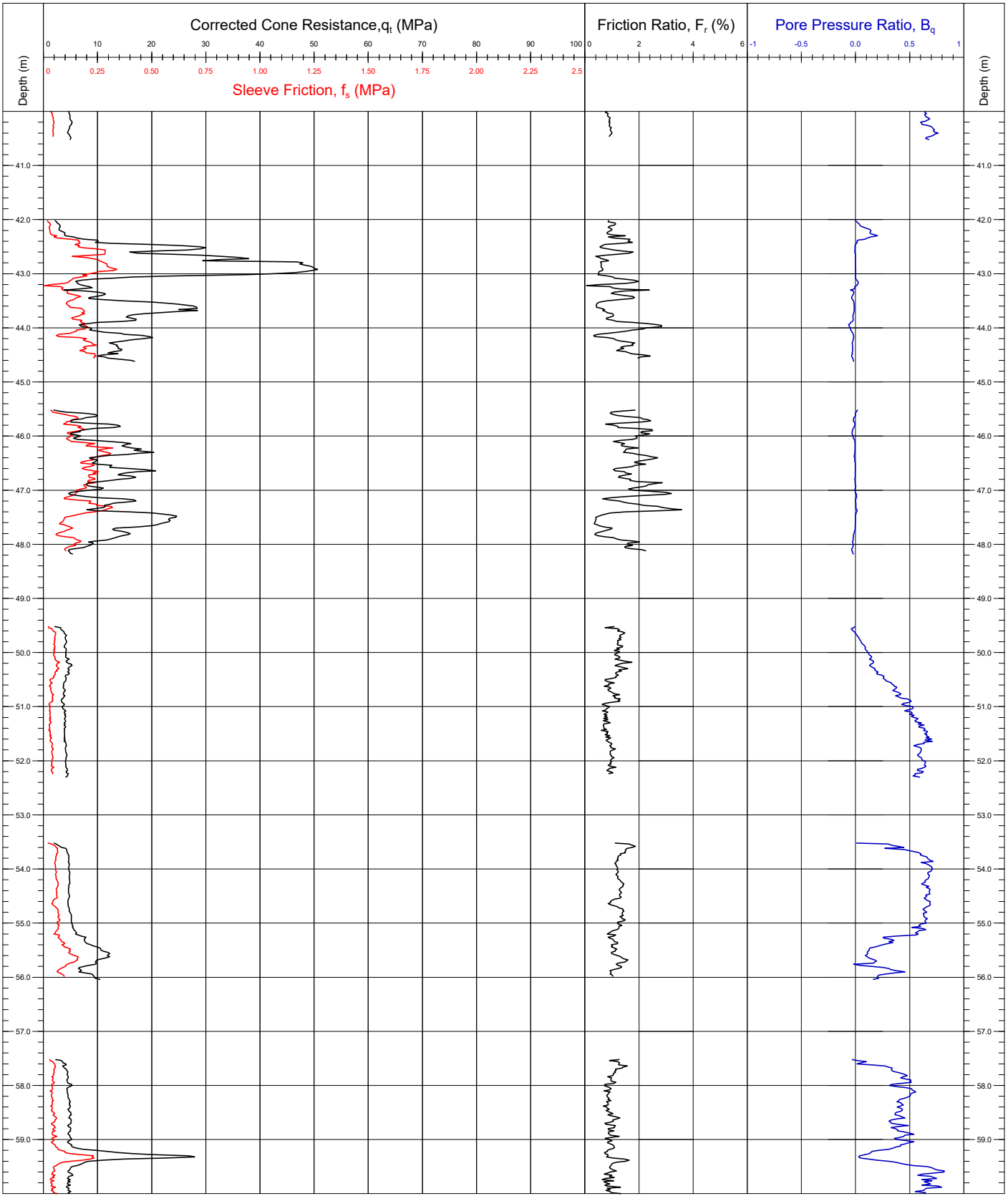
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

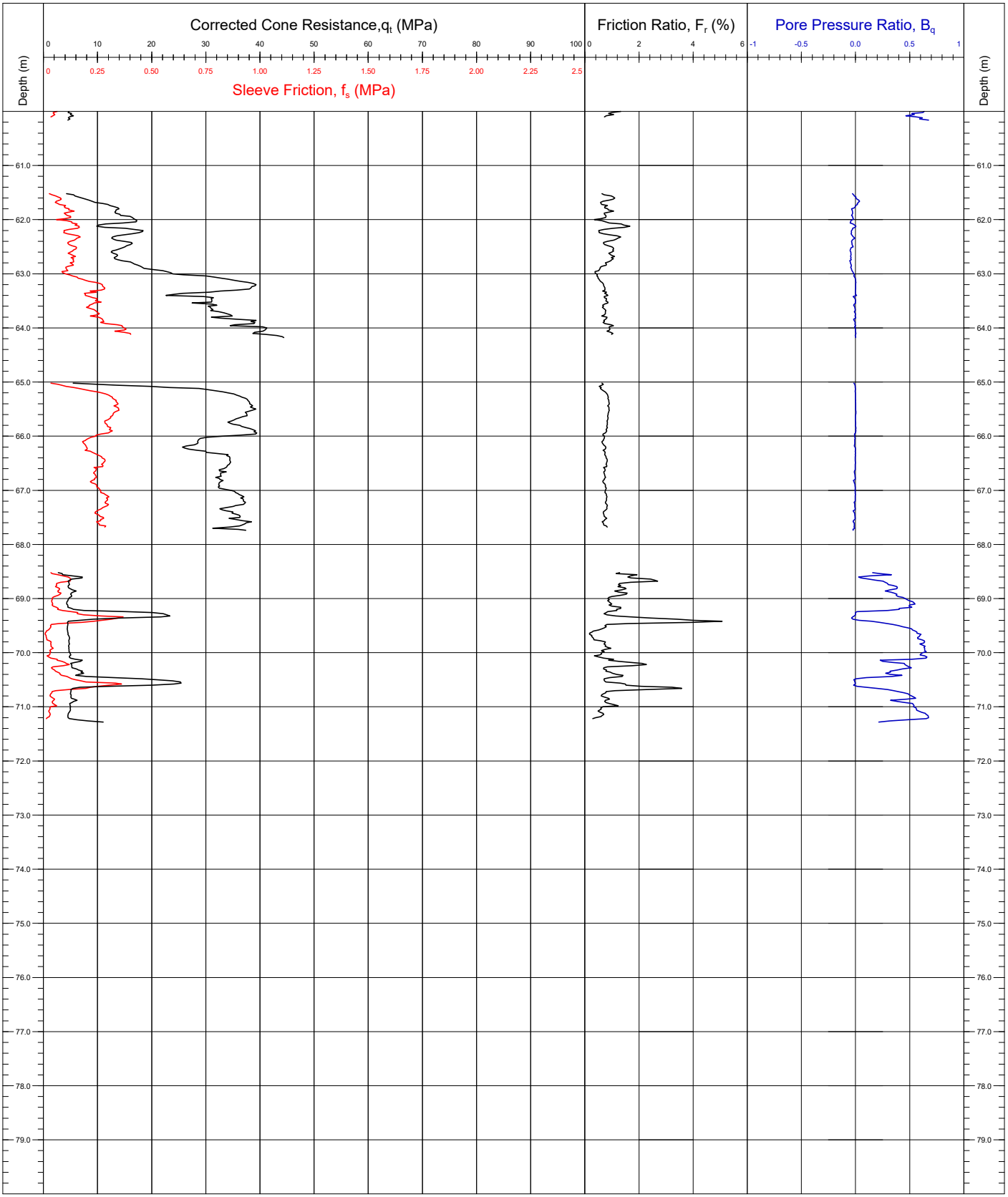
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

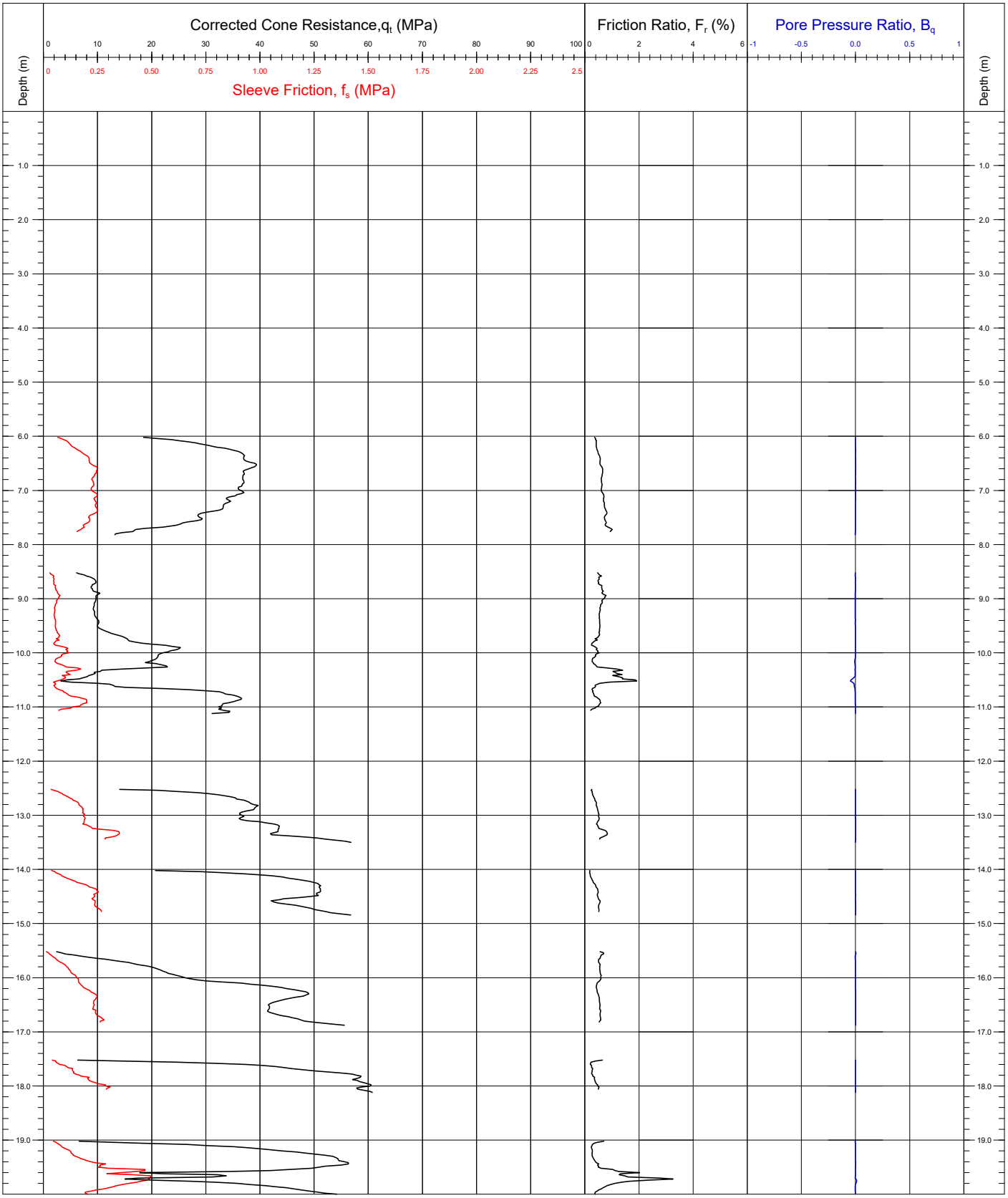
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**515755.1E 4243612.0N**	CPT Number **BH - D14_A**
Contract	**10451**	Water Depth (mMSL)	**19.1**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**28/06/2015 to 30/06/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**081213G (10cm²) / 0.83**	QC Status
Comments: BH - D14 completed to a depth of 25.78m. The BH was abandoned due to operational difficulties. BH - D14A was completed to a final depth of 71.30m. Location details taken from BH-D14A		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (01/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

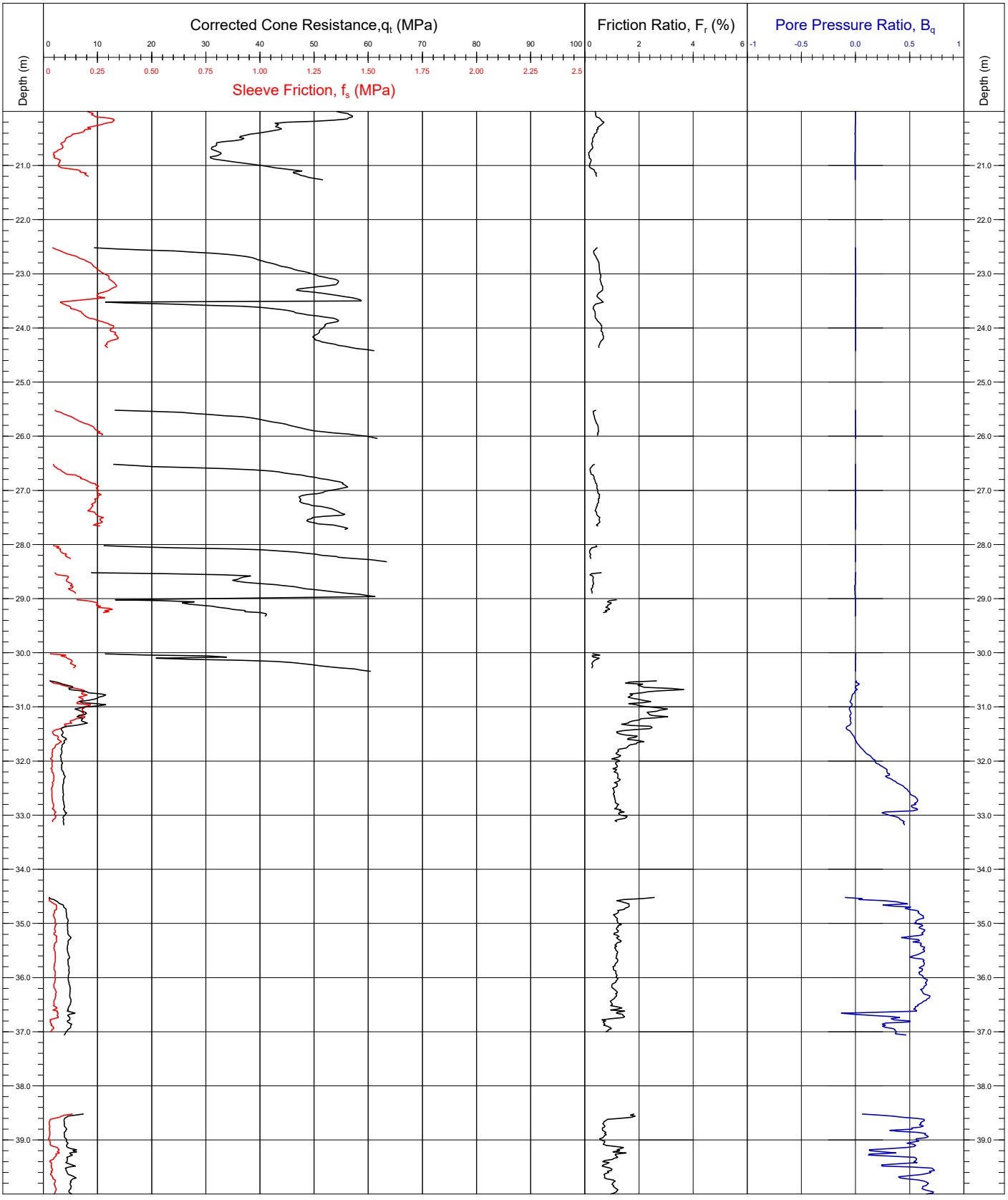
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

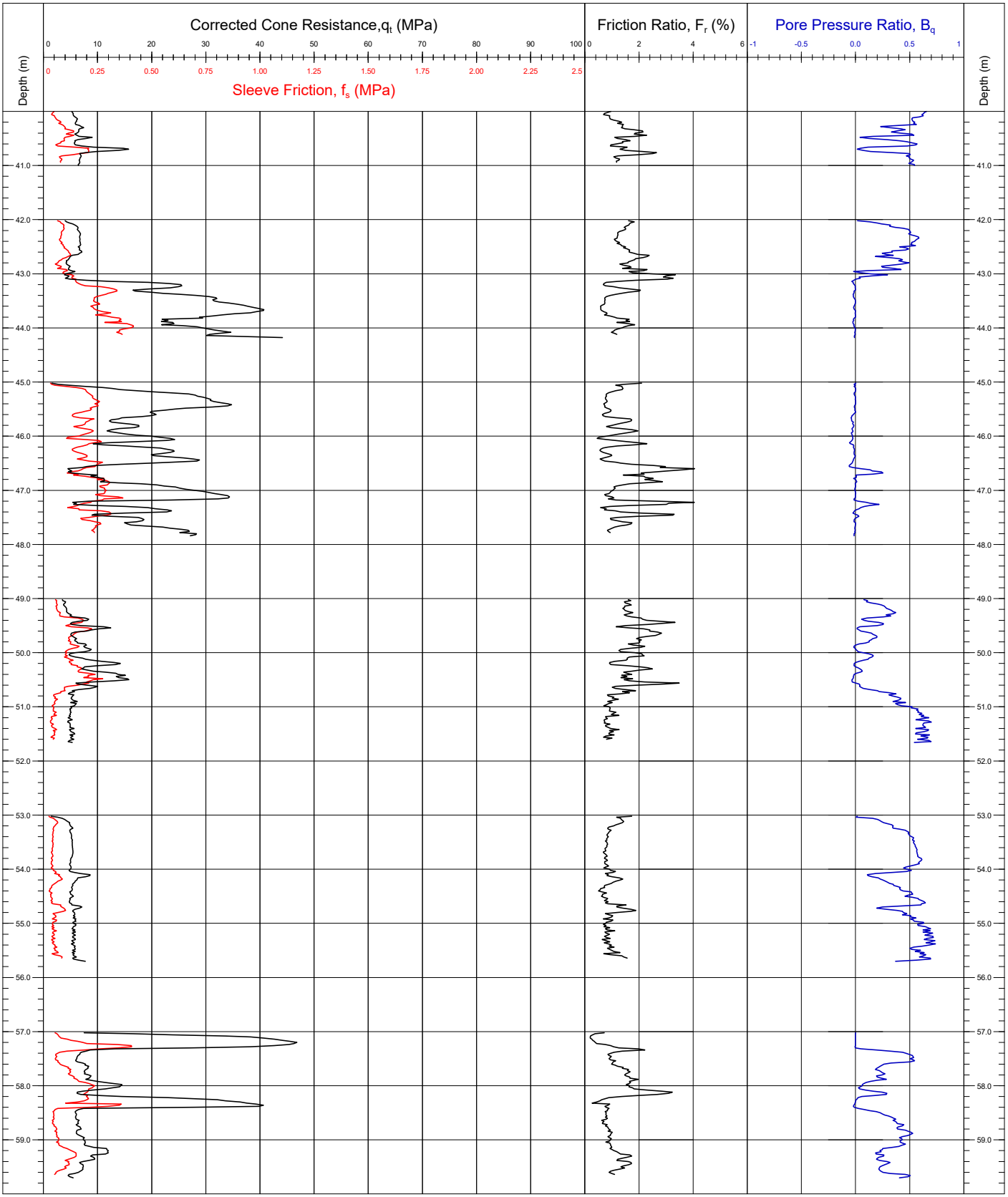
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

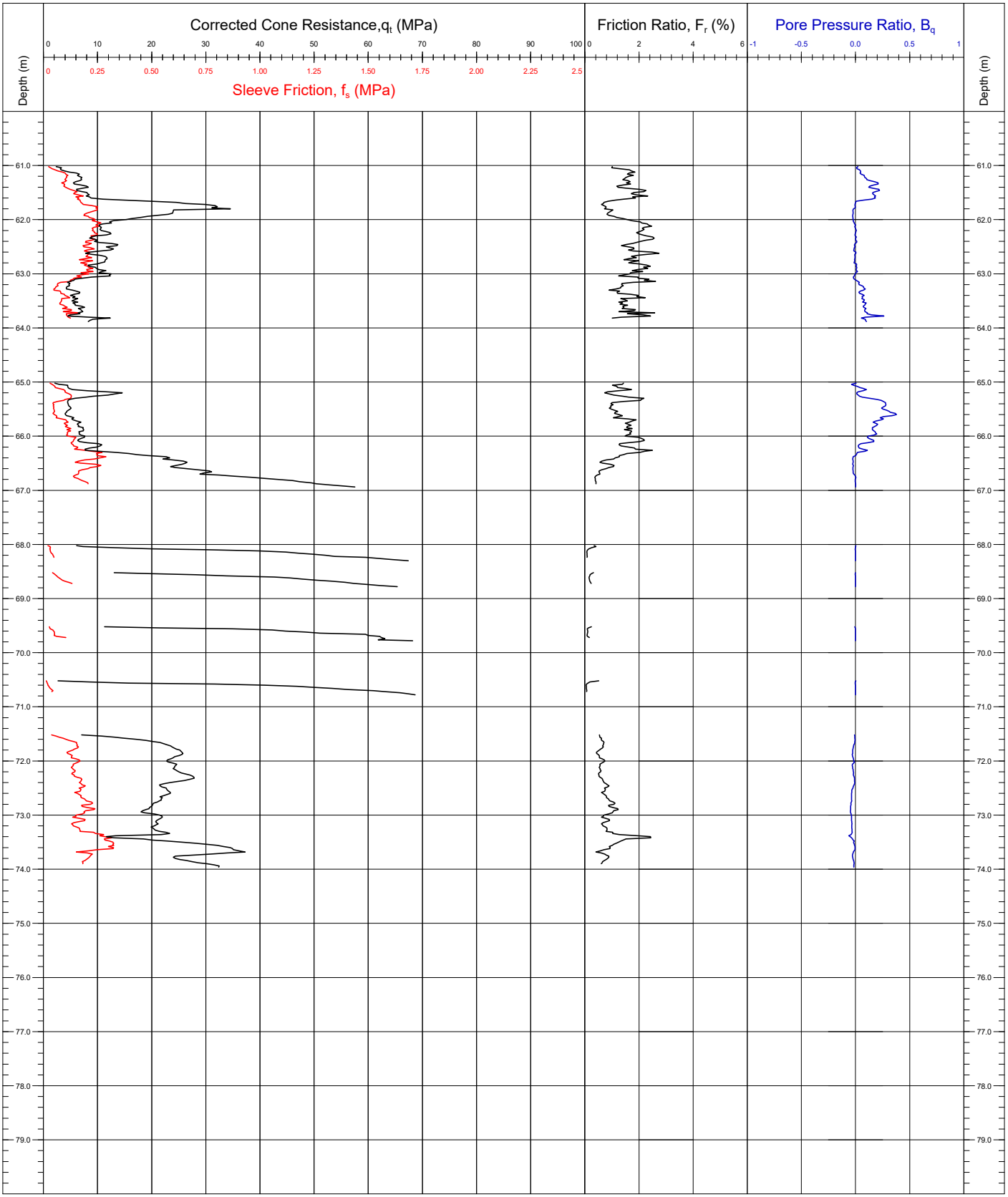
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

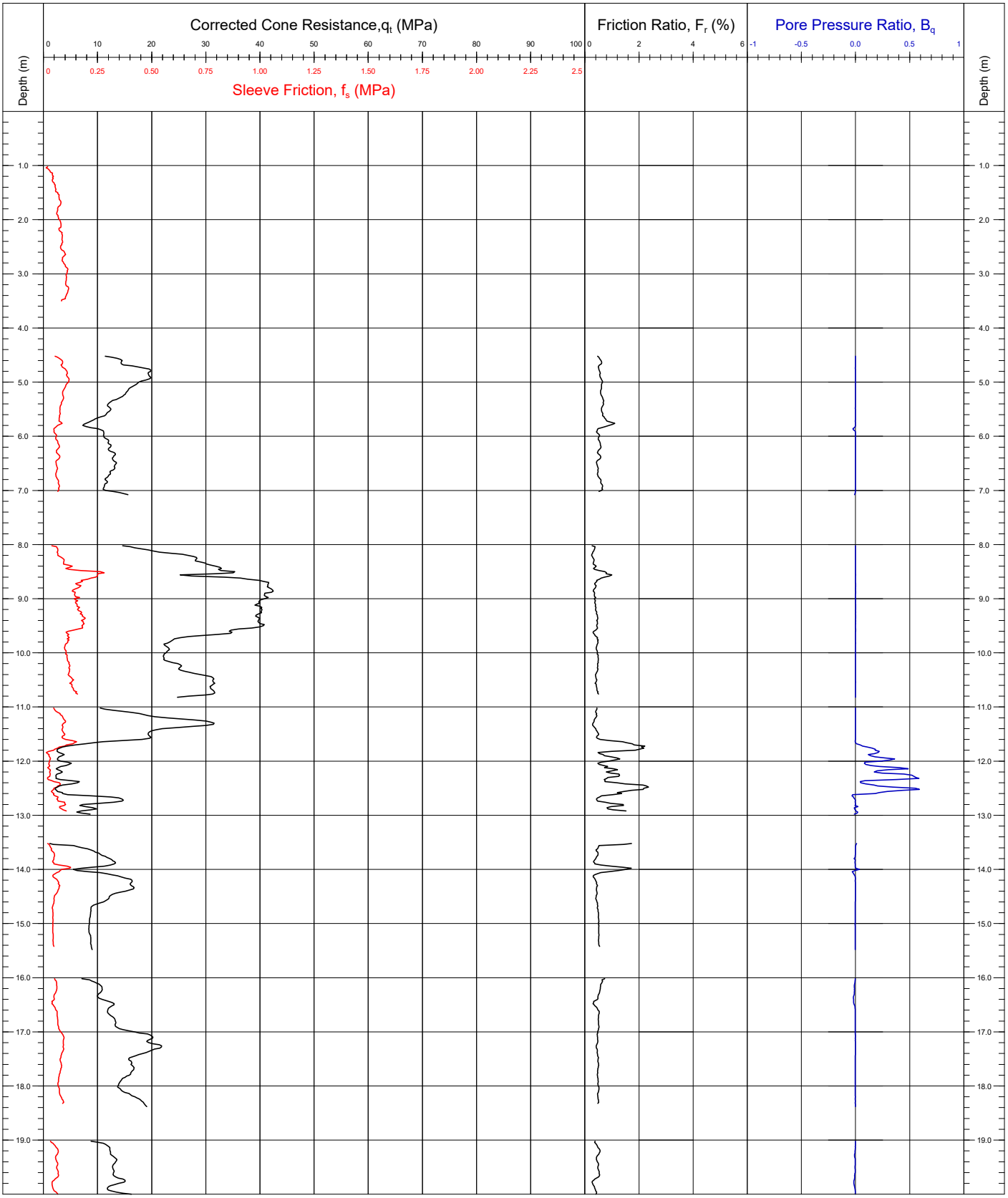
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519056.4E 4240311.6N**	CPT Number **BH - G17_A**
Contract	**10451**	Water Depth (mMSL)	**24.9**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**01/07/2015 to 02/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: BH-G17 abandoned at 41.02m due to weather. Location details are taken from BH-G17A. Pocket penetrometer readings maximum 300kPa.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (03/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

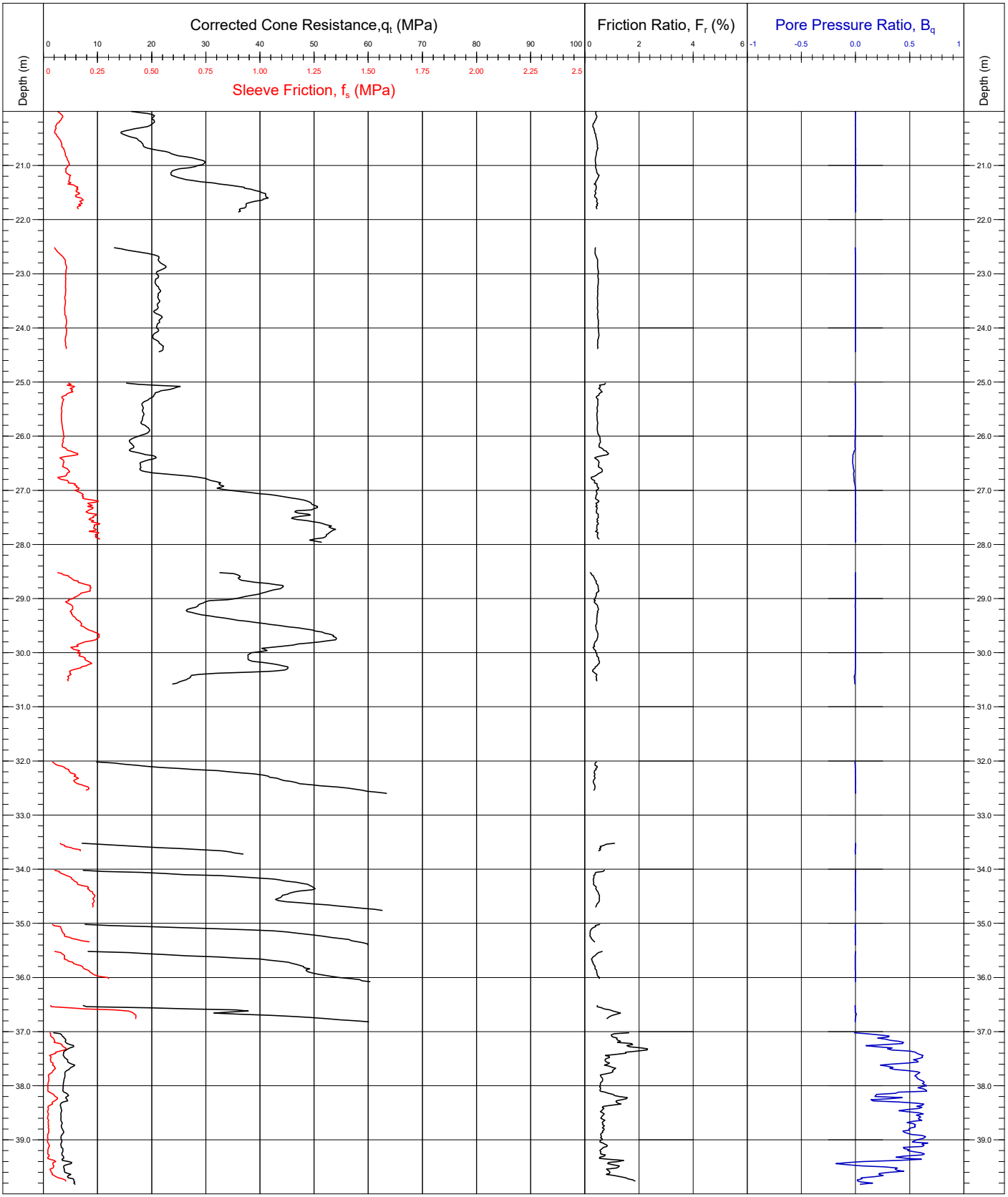
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	Page: 1/4
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	QC Status: Preliminary **SH (04/07/2015)** / Draft () / Final ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

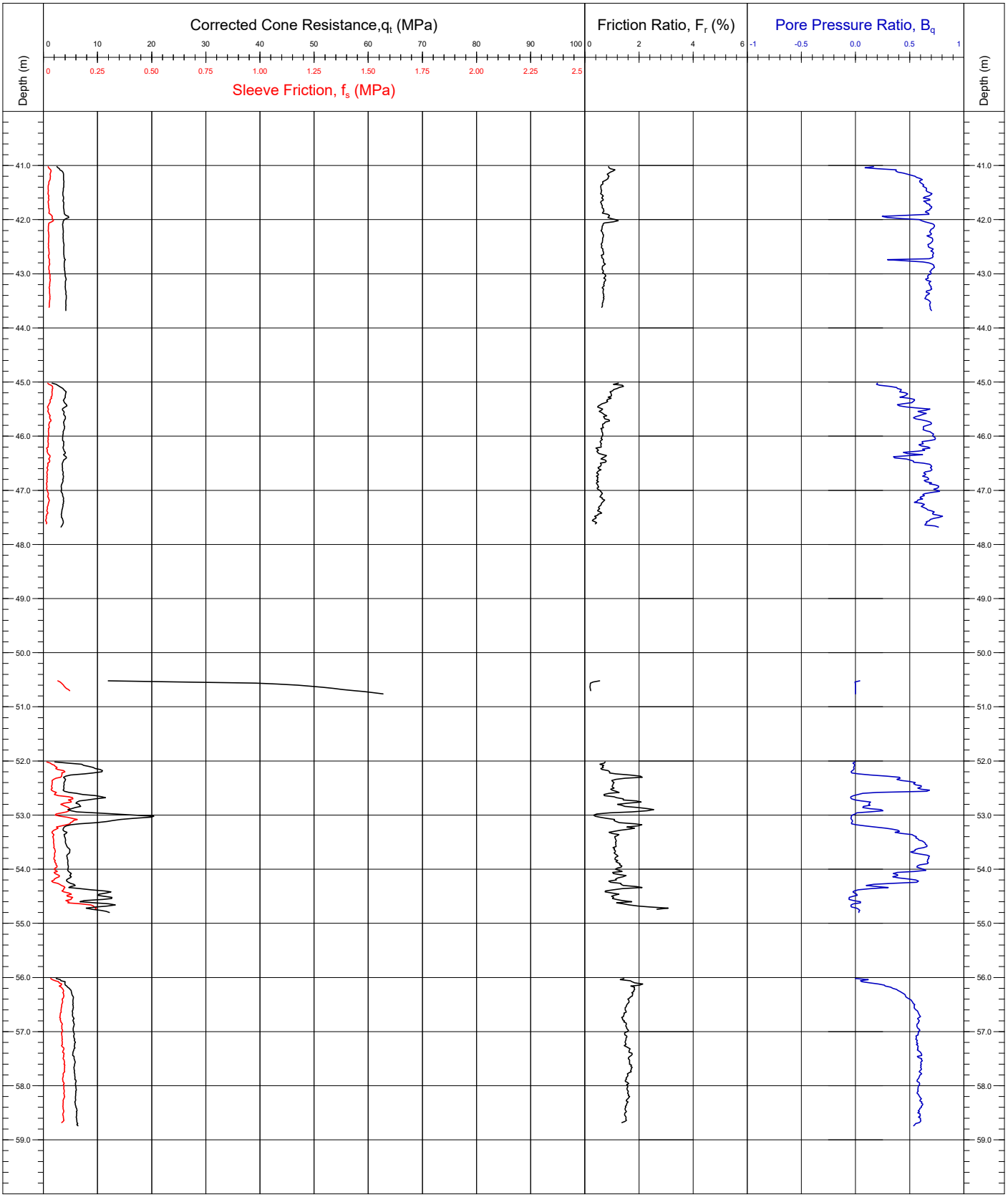
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

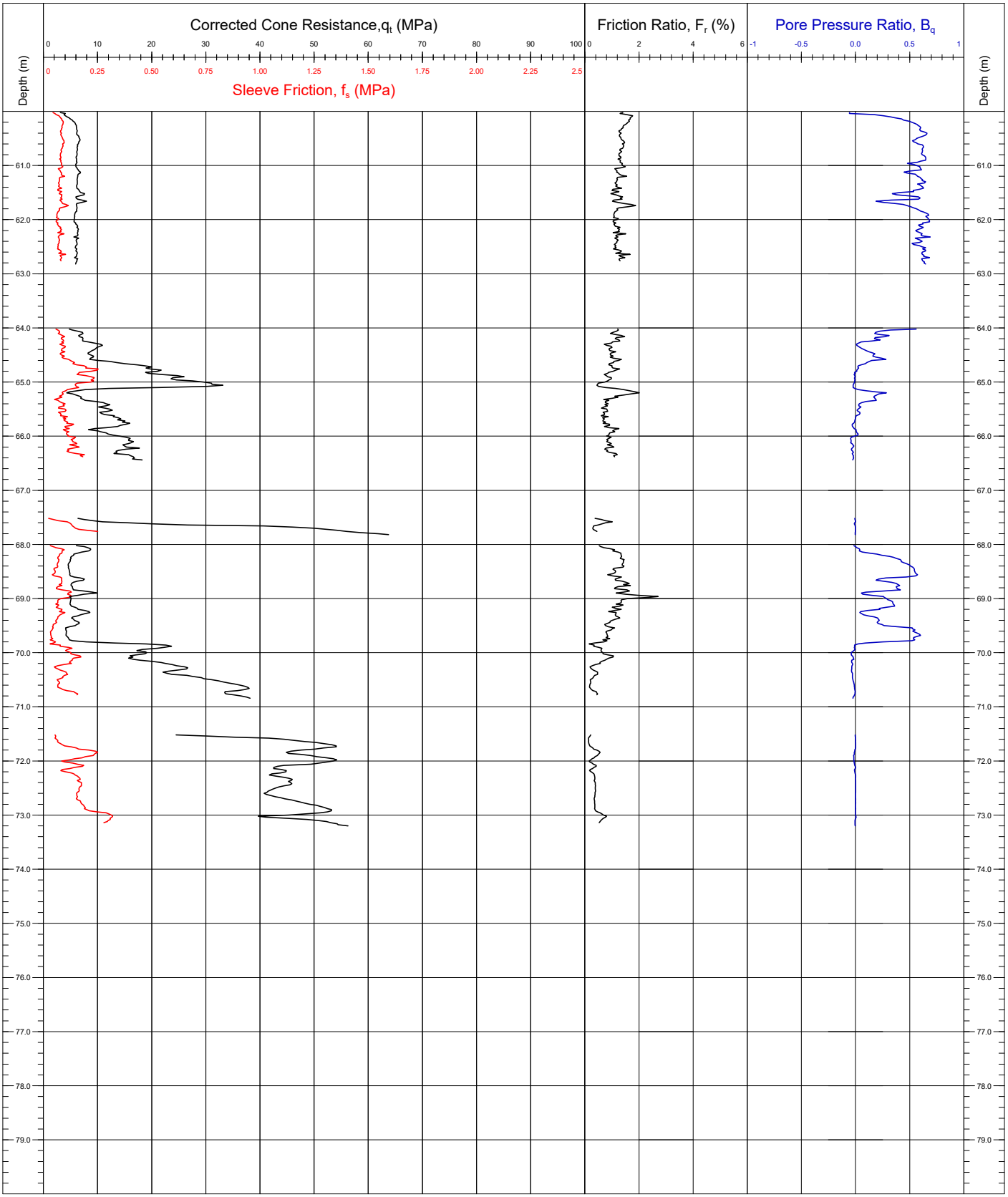
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

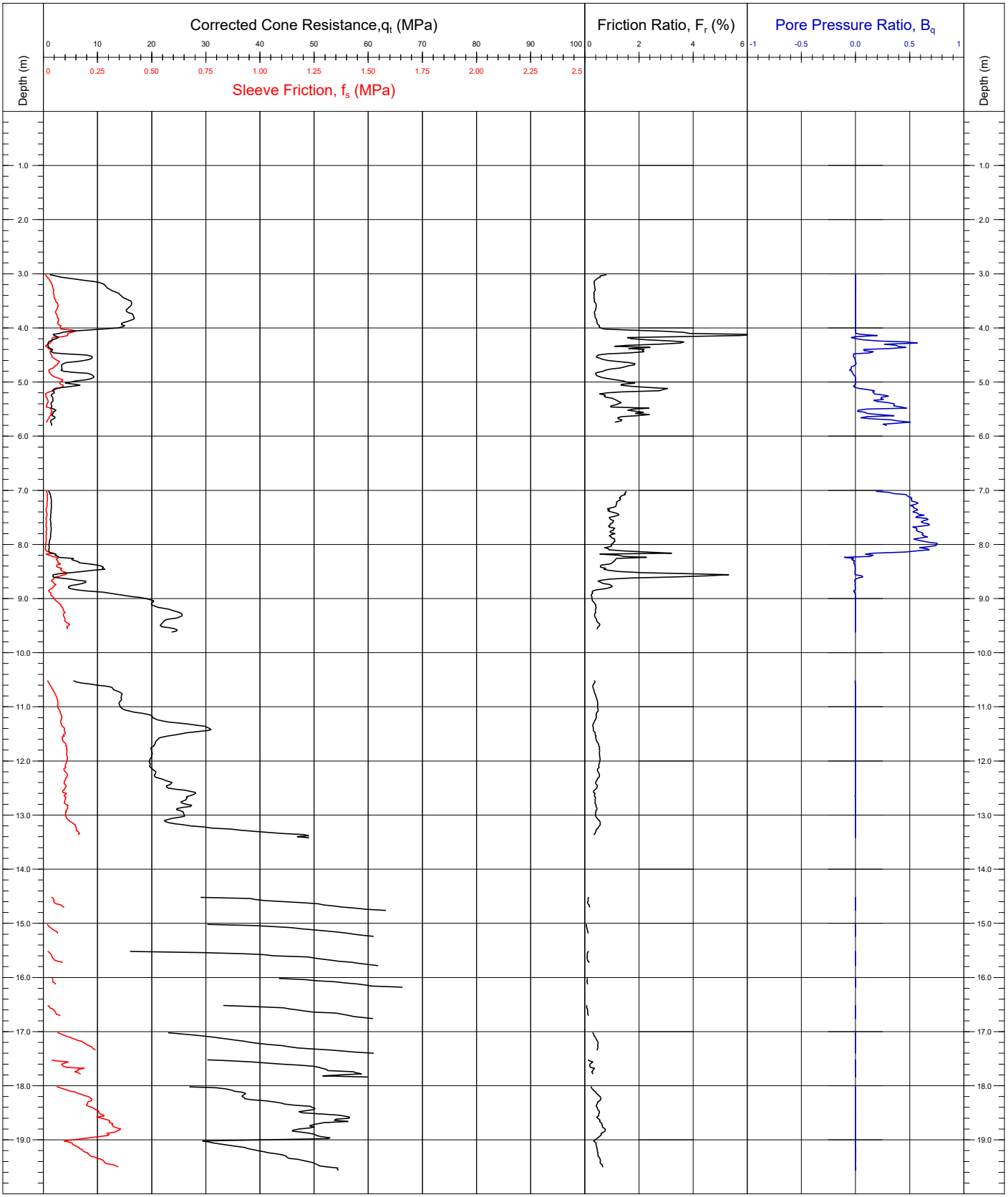
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**523454.4E 4241406.3N**	CPT Number **BH - K16**
Contract	**10451**	Water Depth (mMSL)	**24.6**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**03/07/2015 to 04/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: CPTU and push sampling completed to a final depth of 73.22m. Pore water pressure response of CPT01 was identified as being erronous. Plotted for completeness. CPT20 removed due to erroneous offsets and data.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (04/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

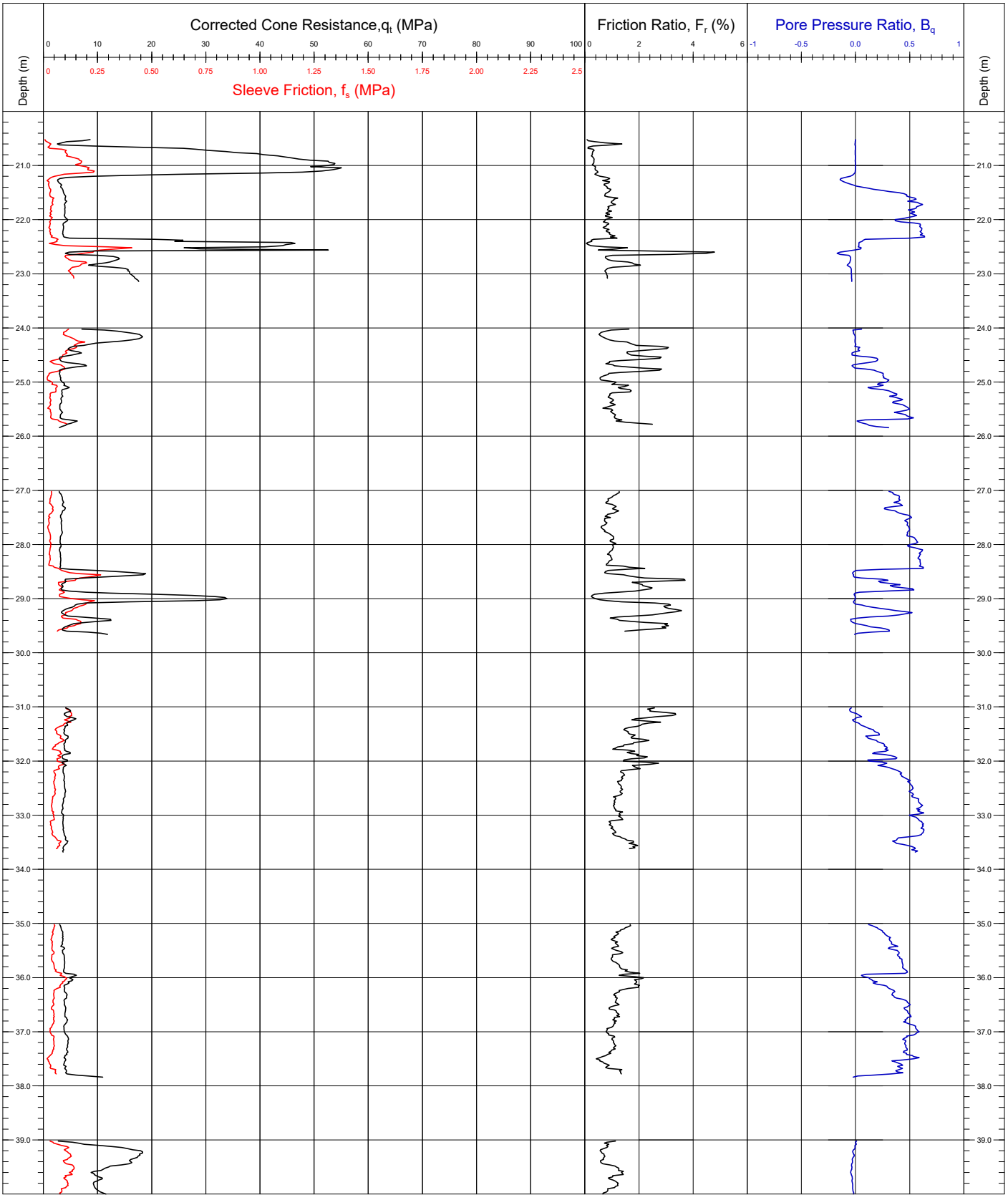
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

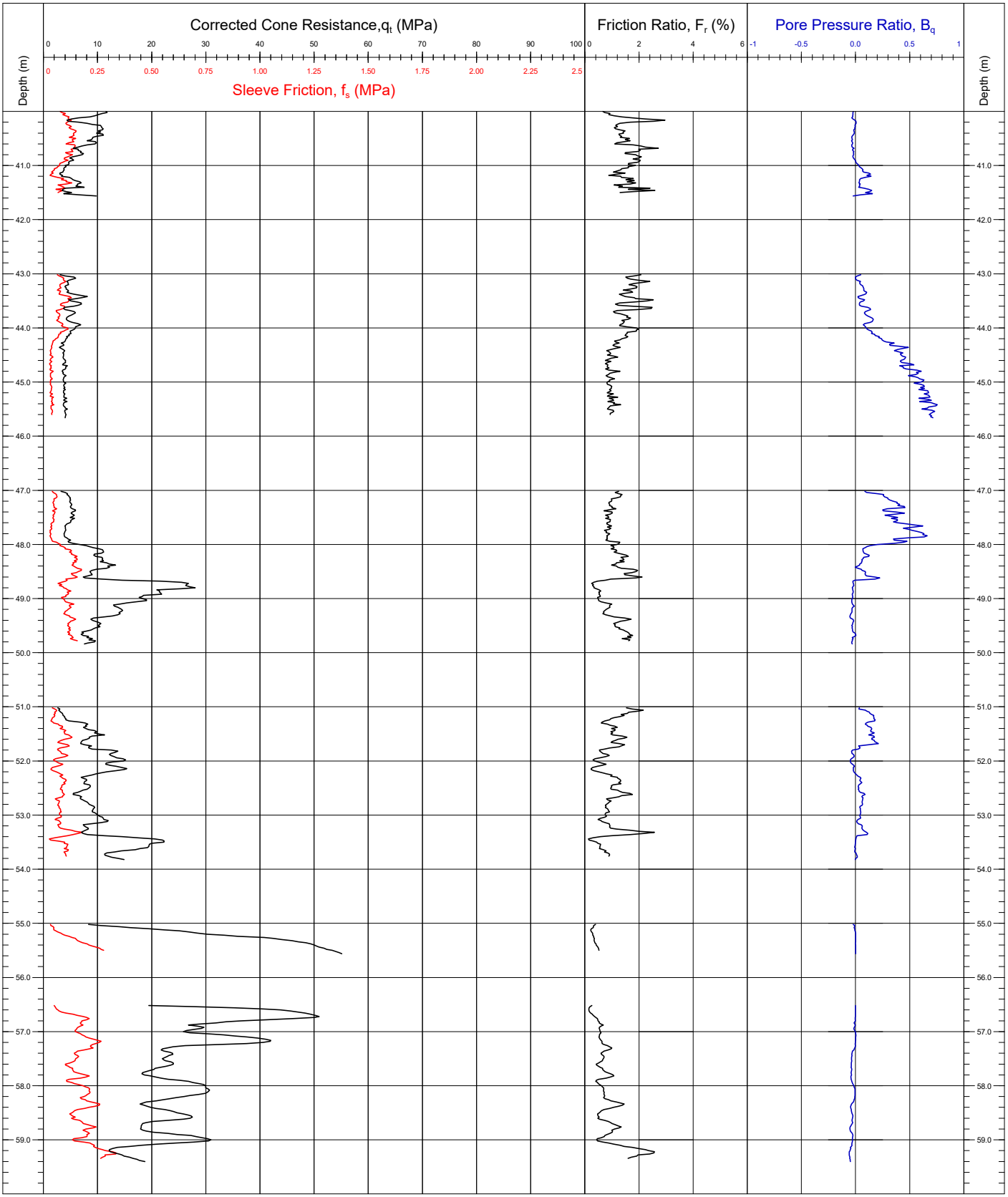
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

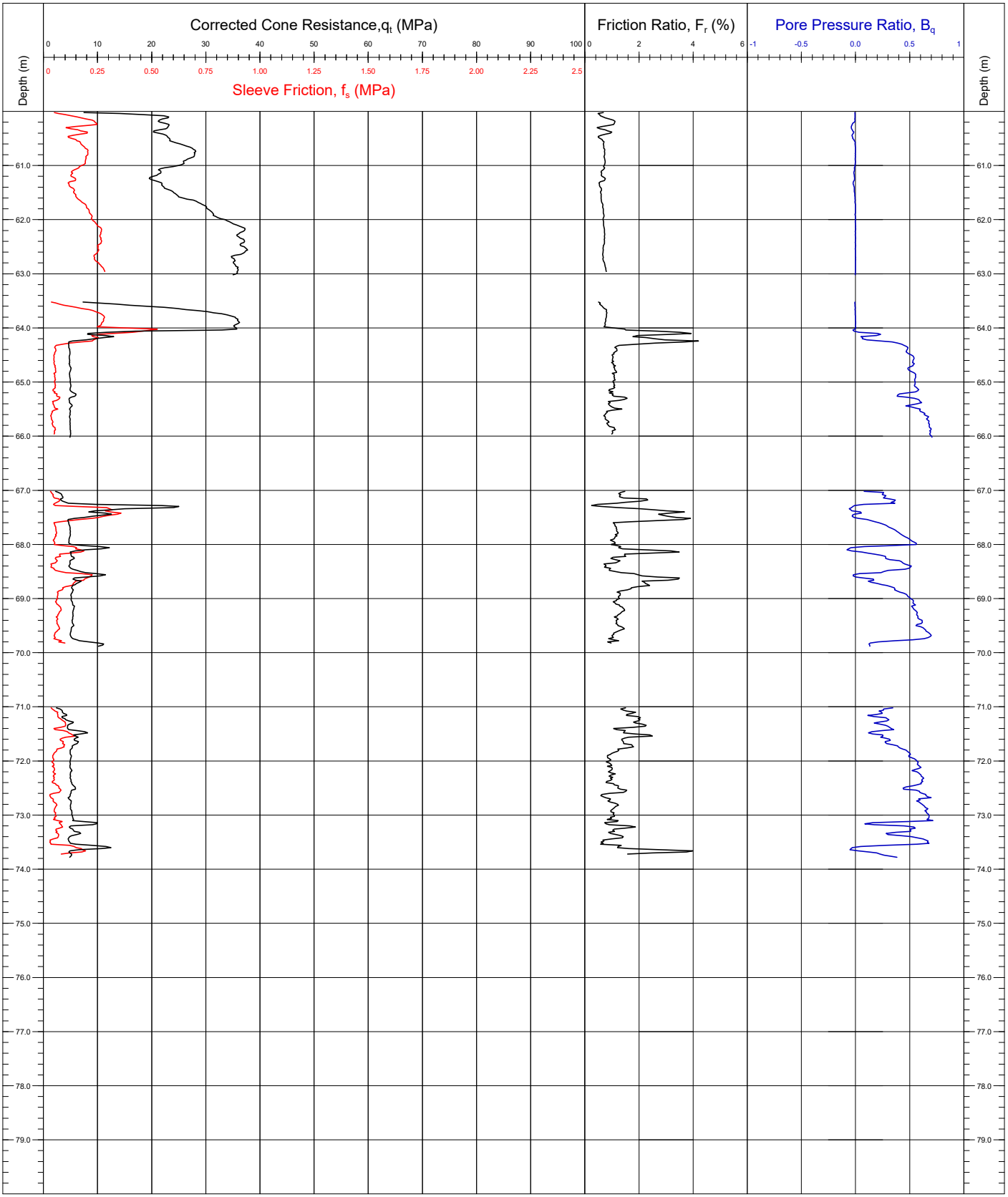
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

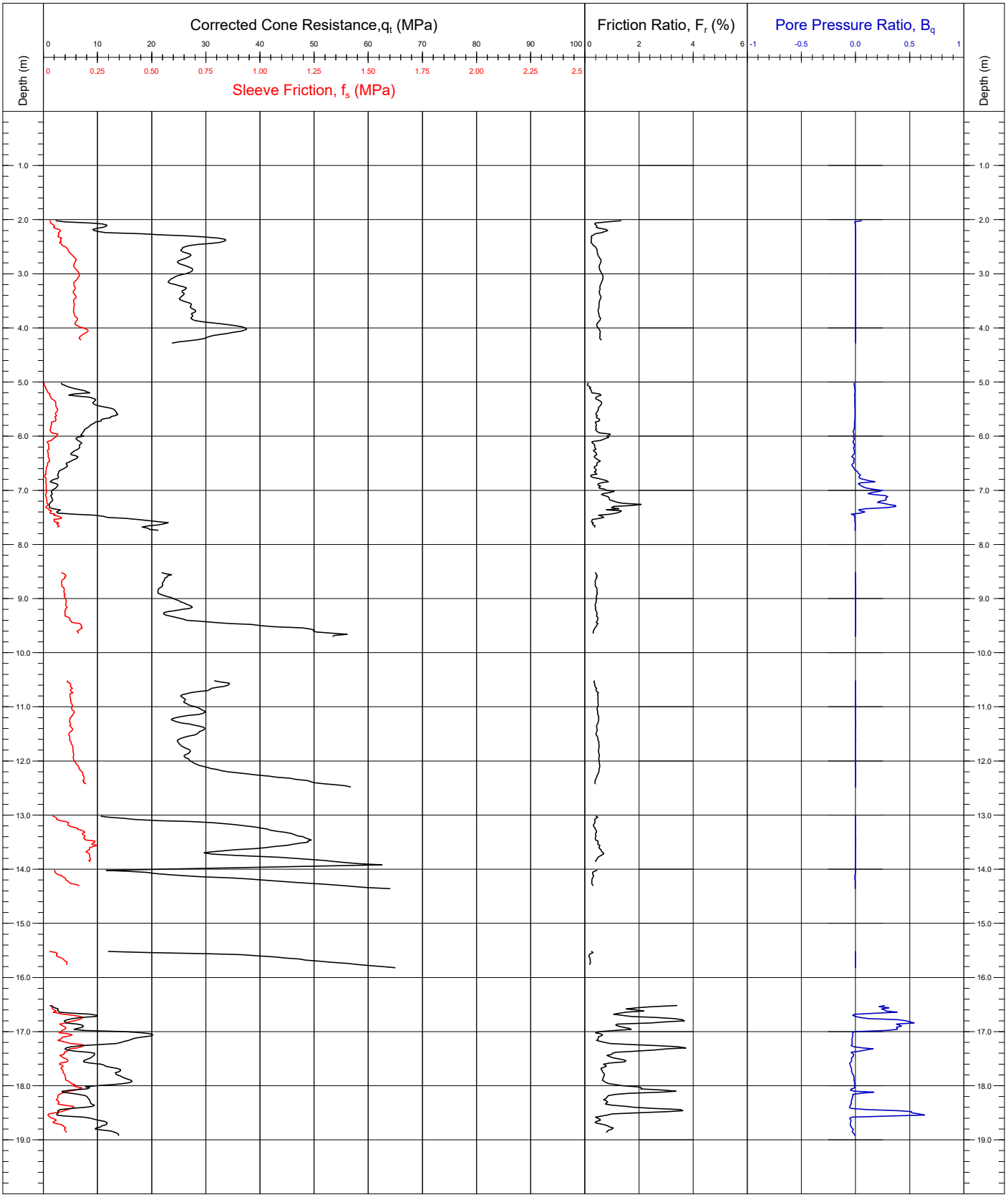
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**520154.3E 4248006.5N**	CPT Number **BH - H10**
Contract	**10451**	Water Depth (mMSL)	**26.8**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test	**05/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**120911G (10cm²) / 0.79**	QC Status
Comments: No PS logging took place at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **SH (06/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

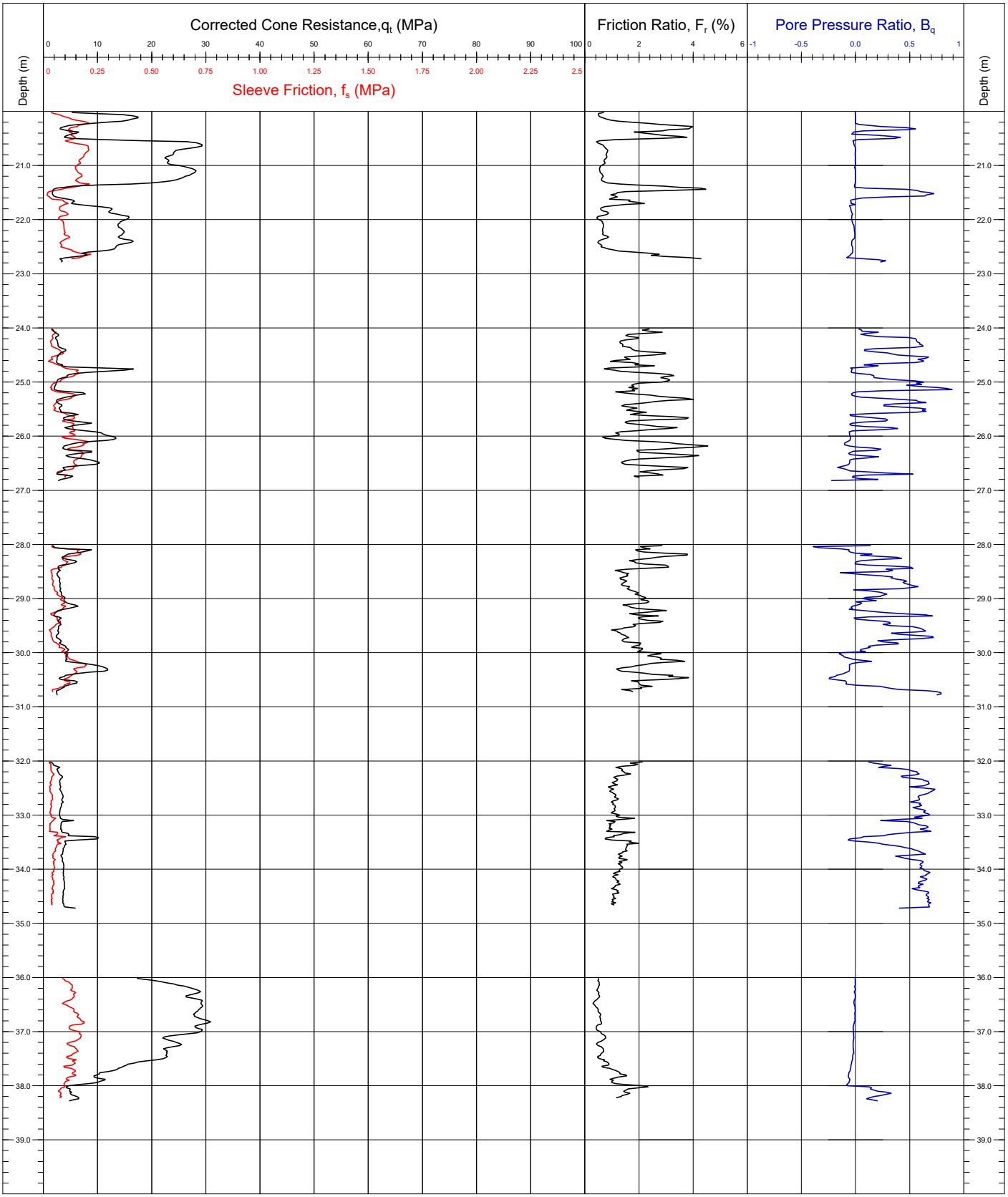
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 1/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (08/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

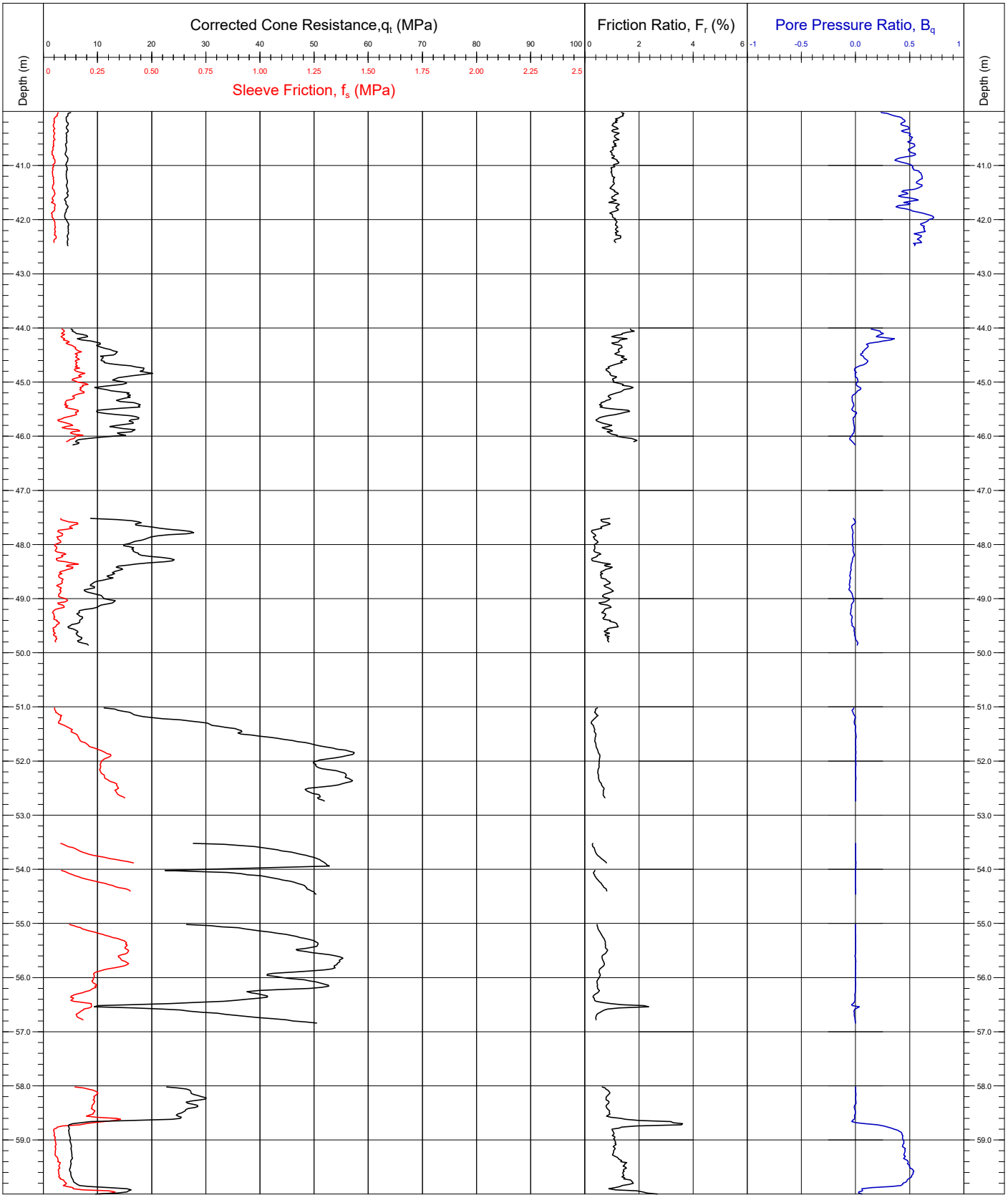
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 2/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (08/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

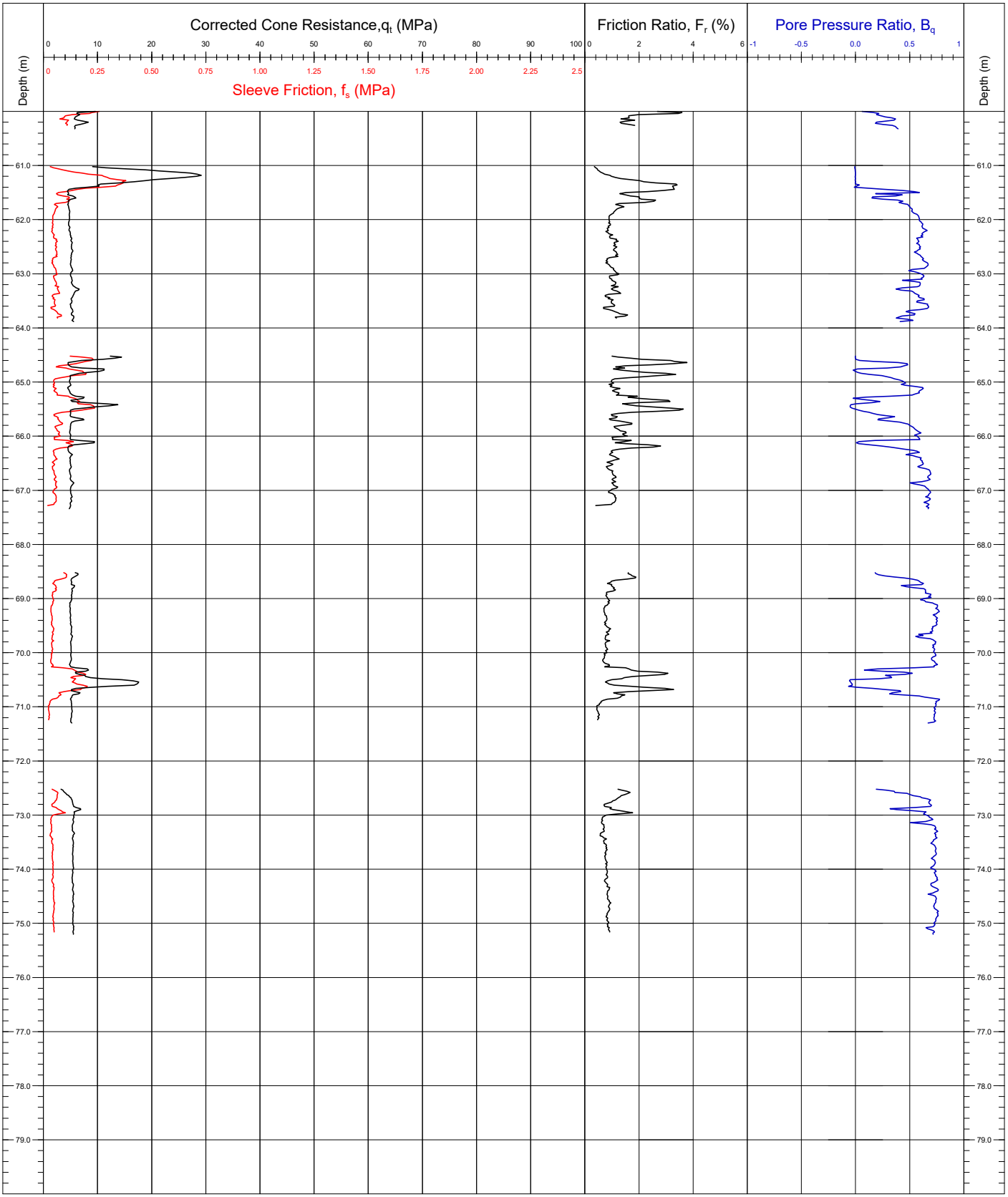
INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 3/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (08/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

INSITU CPTU TESTING - DERIVED PARAMETERS



Area	**Maryland USA**	Coordinates	**519055.3E 4251306.6N**	CPT Number **BH - G7**
Contract	**10451**	Water Depth (mMSL)	**27.0**	
Client Name/Ref	**US Wind Inc./REF11449**	Date of Test (Start/End)	**06/07/2015 to 07/07/2015**	Page: 4/4
Vessel	**MV Ocean Discovery**	Cone No.(type)/α Factor	**070815G (10cm²) / 0.79**	QC Status
Comments: No recovery 0.00-0.50m. No PS logging was performed at this location.		Base Inclination	**X = 0.0° / Y = 0.0°**	Preliminary: **NV-S (08/07/2015)** / Draft: () / Final: ()
		CRS	**GRS 80 UTM ZONE 18 N (75 W)**	

APPENDIX 4

4.1 Laboratory test results summary

4.2 Offshore testing schedule

4.3 List of samples

4.1 Laboratory test results summary

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	0.19									21	2.0	1.7		
P1B2	B	0.41									21	1.9	1.6		
P2B1	B	1.19									22	1.9	1.6		
P2B2	B	1.41									20	1.9	1.6		
P3B1	B	2.08									29	1.9	1.5		
P3B1	B	2.26									23	2.0	1.6		
P4B1	B	5.69									18	2.2	1.8		
P4B2	B	5.81									20	2.2	1.8		
P4B3	B	6.11									16	1.9	1.6		

All testing in accordance with BS 1377:1990

Testing carried out by Gardline Geosciences Limited

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21A

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	9.61									27	2.0	1.5		
P1B2	B	9.76									25	2.0	1.6		
P3B1	B	14.61									20	2.0	1.7		
P3B2	B	14.80									18	1.8	1.5		
P4AB1	B	17.59									20	1.9	1.6		
P5B1	B	21.21									28	1.9	1.5		
P5B2	B	21.41									28	2.0	1.5		
P6B1	B	25.11									29	2.0	1.5		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	28.16									29	2.0	1.5		
P1Q1	Q	28.20								65.00					
P1Q1	Q	28.20	85												
P1Q2	Q	28.40								130.00					
P1U1	U	28.60								135.00					
P1U1	U	28.60	100												
P1U1	U	28.70												121	
P1B2	B	28.80								150.00					
P1B2	B	28.80	125												
P1B2	B	28.86									25	2.1	1.7		
P1B2	B	28.99	188												
P2B1	B	29.15									21	1.9	1.6		
P2B1	B	29.19	85												
P2B1	B	29.20								100.00					
P2Q1	Q	29.39								140.00					
P2U1	U	29.51												95	
P2Q2	Q	29.60								130.00					
P2Q2	Q	29.60	88												
P2B2	B	29.80								140.00					
P2B2	B	29.80	100												
P2B2	B	29.85									29	1.9	1.5		
P2B2	B	29.91		79.80	19.40										
P3B1	B	32.63	100												
P3B1	B	32.63									23	2.1	1.7		
P3B1	B	32.64								125.00					
P3Q1	Q	32.90	120												
P3U1	U	32.91								120.00					
P3U1	U	32.99												113	
P3B2	B	33.38	115												

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P3B2	B	33.39									23	2.0	1.7		
P3B2	B	33.40								120.00					
P3B2	B	33.48	100												
P4B1	B	36.60									27	1.9	1.5		
P4B1	B	36.71									32	1.8	1.4		
P5B1	B	39.62									32	1.8	1.3		
P5B1	B	39.77									33	1.7	1.3		
P5B2	B	40.00									28	1.9	1.5		
P6AB1	B	44.11	125								30	1.9	1.5		
P6AB1	B	44.12								223.30					
P6AU1	U	44.50												149	
P6AQ2	Q	44.60								245.00					
P6AB2	B	44.92									35	2.0	1.5		
P6AB2	B	44.93								250.00					
P7B1	B	48.07								300.00					
P7B1	B	48.08									23	2.0	1.6		
P7B2	B	48.51								255.00					
P7B2	B	48.51									22	2.0	1.6		
P7U1	U	48.90												167	
P7U1	U	48.91								300.00					
P8B1	B	51.09									34	1.7	1.3		
P8B1	B	51.20								250.00					
P8B2	B	51.43									19	1.4	1.2		
P9B1	B	55.48								300.00					
P9B1	B	55.50									45	1.7	1.1		
P9B2	B	55.70									35	1.6	1.2		
P9B2	B	55.71								300.00					
P9B3	B	55.88								300.00					
P9B3	B	55.93									38	1.7	1.2		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P10B1	B	59.15									58	1.4	0.9		
P10B1	B	59.16								300.00					
P10B2	B	59.67									33	1.6	1.2		
P10B2	B	59.68								300.00					
P10B3	B	59.91								300.00					
P10B3	B	59.94									52	1.4	0.9		
P11B1	B	63.05								300.00					
P11B1	B	63.06									44	1.7	1.1		
P11B2	B	63.40								300.00					
P11B2	B	63.40									43	1.6	1.1		
P11B3	B	63.89								300.00	37	1.7	1.3		
P12B1	B	67.08									18	1.8	1.5		
P12B2	B	67.63									21	1.7	1.4		
P13B1	B	71.14									26	1.7	1.4		
P13B2	B	71.45									23	1.6	1.3		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - MET TOWER

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	0.24									29	2.0	1.5		
P1B3	B	0.69									19	2.1	1.8		
P2B1	B	1.11	25												
P2B1	B	1.14									18	1.7	1.5		
P2B2	B	1.40									22	2.0	1.7		
P3B1	B	2.07									29	1.9	1.5		
P3B2	B	2.46									31	1.9	1.4		
P4B1	B	5.12									34	2.1	1.6		
P4B1	B	5.31									29	1.9	1.5		
P5B1	B	8.65									19	1.9	1.6		
P5B2	B	8.99									19	1.7	1.5		
P6B1	B	12.67									28	1.9	1.5		
P6B2	B	12.95									28	1.9	1.5		
P9B1	B	25.68									33	1.9	1.4		
P9Q1	Q	25.70	115												
P9U1	U	26.00												166	
P9Q2	Q	26.11								198.30					
P9Q2	Q	26.11	140												
P9B2	B	26.31								203.30					
P9B2	B	26.38									32	1.9	1.4		
P10B1	B	29.18									28	2.0	1.5		
P10Q1	Q	29.20								158.30					
P10U1	U	29.50												160	
P10Q2	Q	29.60								176.70					
P10B2	B	29.81								190.00					
P10B2	B	29.88									28	1.9	1.5		
P10B2	B	29.91		216.50	85.40										
P11B1	B	33.16									30	1.9	1.5		
P11Q1	Q	33.20								190.00					

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - MET TOWER

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P11U1	U	33.50												145	
P11Q2	Q	33.60								188.30					
P11B2	B	33.81								168.30					
P11B2	B	33.86									28	1.9	1.5		
P13B1	B	40.59								300.00					
P13B1	B	40.60									52	1.6	1.1		
P13B2	B	41.22								300.00					
P13B2	B	41.25									51	1.4	1.0		
P14B1	B	44.54									26	2.0	1.5		
P16AB1	B	53.60									27	1.9	1.5		
P16AB2	B	53.81									27	1.8	1.4		
P17Q1	Q	57.10								200.00					
P17Q1	Q	57.11									32	1.7	1.3		
P17B2	B	57.57									23	1.9	1.5		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	0.16									18	1.8	1.6		
P4B1	B	2.11									21	2.0	1.7		
P5B2	B	3.21									22	1.7	1.4		
P5B3	B	3.41									24	1.8	1.4		
P6B1	B	7.16									24	2.0	1.6		
P7B1	B	10.09									38	1.6	1.1		
P7B1	B	10.10	40												
P7B1	B	10.10								75.00					
P7U1	U	10.37												40	
P7B2	B	10.70								90.00					
P7B2	B	10.74		60.40	12.50										
P7B2	B	10.74									33	1.8	1.4		
P7B2	B	10.75	45												
P7B2	B	10.75								90.00					
P8B1	B	13.61	45												
P8B1	B	13.61								85.00					
P8B1	B	13.62									33	1.9	1.4		
P8Q2	Q	13.90	50												
P8B2	B	14.21	40												
P8B2	B	14.21									43	1.8	1.3		
P8B2	B	14.22								70.00					
P8B2	B	14.26		63.80	10.30										
P10B1	B	21.15									29	1.9	1.5		
P10B1	B	21.30								128.30					
P10B2	B	21.40								80.00					
P10B2	B	21.42									25	1.9	1.5		
P11B1	B	24.71									20	1.9	1.6		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	1.12									27	2.0	1.6		
P2B1	B	25.63									19	2.0	1.7		
P3B1	B	29.12									27	1.9	1.5		
P3B2	B	29.78									31	1.7	1.3		
P4B1	B	33.14									31	1.9	1.4		
P4B3	B	33.62									28	1.9	1.5		
P5B1	B	37.06									35	1.9	1.4		
P5B2	B	37.42									34	1.7	1.2		
P5B3	B	37.84									31	1.8	1.3		
P6B1	B	41.08									30	1.9	1.5		
P6B2	B	41.34									33	1.6	1.2		
P6B3	B	41.72									33	1.9	1.4		
P7B1	B	45.07									28	1.9	1.5		
P7B2	B	45.41									25	1.8	1.4		
P8B1	B	48.61									30	1.8	1.4		
P8U1	U	49.01												185	
P8B2	B	49.40								188.30					
P8B2	B	49.41									35	1.7	1.3		
P9B1	B	52.60									40	1.8	1.3		
P9B1	B	52.70	120												
P9B2	B	52.70								196.70					
P9U1	U	52.96												166	
P9B3	B	53.05								208.30					
P9B4	B	53.30								225.00					
P9B4	B	53.30	138												
P9B4	B	53.32									37	1.8	1.3		
P10B1	B	56.55									24	1.8	1.4		
P10B2	B	57.00									26	1.9	1.5		
P11B1	B	60.65									27	1.8	1.5		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P11B1	B	60.70								185.00					
P11U1	U	60.84												125	
P12B1	B	64.55									30	1.8	1.4		
P12B2	B	64.75									28	1.8	1.4		
P13B1	B	68.11									29	1.9	1.4		
P13B2	B	68.31									32	1.9	1.4		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	0.17									17	1.9	1.6		
P1B1	B	0.35									23	1.9	1.5		
P2B1	B	0.64									30	2.0	1.6		
P3B1	B	1.64									25	2.1	1.7		
P3B2	B	1.90									23	1.8	1.5		
P4B1	B	5.06									29	1.9	1.5		
P4B2	B	5.44									10	1.8	1.7		
P5B1	B	8.14									24	2.0	1.6		
P9B1	B	17.12									20	1.9	1.6		
P10B2	B	18.72									19	2.0	1.7		
P11B1	B	29.62									18	1.8	1.6		
P11B1	B	29.72									17	1.9	1.6		
P14AB1	B	33.67									31	1.9	1.5		
P14AQ1	Q	33.70								206.70					
P14AB2	B	34.10	155												
P14AB2	B	34.11								193.30					
P14AB2	B	34.17									31	1.9	1.5		
P14AB2	B	34.26								210.00					
P15B1	B	37.67									27	2.0	1.6		
P15Q1	Q	37.70								178.30					
P15Q2	Q	38.10	125							190.00					
P15B2	B	38.31	125							176.70					
P15B2	B	38.37									29	1.9	1.5		
P15B2	B	38.40		199.40	66.10										

All testing in accordance with BS 1377:1990

Testing carried out by Gardline Geosciences Limited

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17A

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	41.11									28	1.8	1.4		
P1B1	B	41.20								180.00					
P1U1	U	41.51												184	
P1B2	B	41.91									20	1.7	1.4		
P2B1	B	44.59									25	1.7	1.4		
P2B1	B	44.70									27	1.6	1.2		
P3B1	B	48.22									29	1.9	1.4		
P3B2	B	48.49									29	1.8	1.4		
P4B1	B	52.06									35	1.9	1.4		
P4B2	B	52.41									32	1.7	1.3		
P4B3	B	52.69									31	1.8	1.3		
P5B1	B	56.05									39	1.7	1.3		
P5B1	B	56.06								300.00					
P5Q1	Q	56.30												223	
P5B2	B	56.81									37	1.7	1.2		
P5B2	B	56.83								300.00					
P6B1	B	60.11									22	1.7	1.4		
P6B3	B	60.61									23	1.8	1.4		
P6B4	B	60.81									24	2.0	1.6		
P7B1	B	64.16									22	2.0	1.7		
P7B3	B	64.71									23	2.0	1.6		

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1AB1	B	0.08									16	1.8	1.5		
P3B1	B	3.63									19	1.8	1.6		
P3B2	B	3.91									27	2.1	1.7		
P4AB1	B	7.60									18	1.9	1.6		
P10B1	B	22.11									25	1.9	1.5		
P12B1	B	28.13									18	1.7	1.4		
P12B1	B	28.30									20	1.9	1.6		
P13B1	B	31.16									16	1.9	1.6		
P15B1	B	40.16									31	1.9	1.4		
P15B1	B	40.20	140							143.30					
P15U1	U	40.50												133	
P15U1	U	40.60	150							188.30					
P15B2	B	40.86									30	2.0	1.5		
P15B2	B	40.91		181.10	51.30										
P15B2	B	40.94	125												
P15B2	B	40.94								118.30					
P16B1	B	44.16									26	2.0	1.6		
P16B1	B	44.19								236.70					
P16B1	B	44.20	148												
P16U1	U	44.50												128	
P16U1	U	44.59								226.70					
P16B2	B	44.86									27	2.0	1.6		
P16B2	B	44.94		205.10	59.20										
P16B2	B	44.98								190.00					
P17B1	B	48.16									28	2.0	1.6		
P17B1	B	48.19								128.30					
P17B1	B	48.19	125												
		48.30												118	
P17Q1	Q	48.40	130												

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P17Q1	Q	48.41								130.00					
P17B2	B	48.80								193.30					
P17B2	B	48.80	163												
P17B2	B	48.86									25	1.9	1.5		
P17B2	B	48.94								233.30					
P18B1	B	49.60									23	1.9	1.6		
P18B2	B	49.70								151.70					
P18B2	B	49.70	158												
P18B2	B	49.75									22	1.9	1.6		
P19B1	B	51.10									21	2.0	1.6		
P19B3	B	51.50									28	1.9	1.5		
P20B1	B	55.15									46	1.7	1.2		
P20B1	B	55.20								161.70					
P20U1	U	55.50												193	
P20Q2	Q	55.60								208.30					
P20Q2	Q	55.60	138												
P20B2	B	55.85								218.30					
P20B2	B	55.85									48	1.7	1.2		
P20B2	B	55.85	148												
P21B1	B	59.08								230.00					
P21B1	B	59.09									64	1.5	0.9		
P21U1	U	59.50												267	
P21U1	U	59.50								265.00					
P21B2	B	59.86									38	1.6	1.2		
P21B2	B	59.88								231.70					
P22B1	B	63.10								246.70					
P22B1	B	63.22									49	1.7	1.1		
P22B2	B	63.62								226.70					
P22B2	B	63.72									67	1.9	1.1		

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P22B3	B	63.90								245.00					
P23B1	B	66.61									23	2.0	1.6		
P23B3	B	67.11									24	1.6	1.3		
P24B1	B	71.09									20	1.8	1.5		
P24B1	B	71.27									19	1.9	1.6		

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SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P1B1	B	0.12									21	2.1	1.7		
P1B2	B	0.32									22	2.0	1.6		
P2B1	B	1.12									21	2.0	1.6		
P2B2	B	1.47									22	2.0	1.6		
P3B1	B	2.21								56.70					
P3B1	B	2.21	51												
P3B1	B	2.27									38	1.9	1.4		
P3B2	B	2.45	36												
P3B2	B	2.62									17	1.9	1.6		
P4B1	B	6.15									23	2.1	1.7		
P4B1	B	6.19								43.30					
P4B1	B	6.20	46												
P4Q2	Q	6.60	75							75.00					
P4U1	U	6.70												52	
P4B2	B	6.80									20	2.1	1.7		
P4B2	B	6.81		55.30	22.80										
P5B1	B	10.16									21	2.0	1.7		
P6AB1	B	13.66									14	1.5	1.3		
P8B1	B	23.68									19	1.9	1.6		
P8B2	B	23.91									21	1.9	1.6		
P9B1	B	26.15								151.70					
P9B1	B	26.16									19	1.9	1.6		
P9B2	B	26.80								165.00					
P9B2	B	26.81									19	1.9	1.6		
P10B1	B	30.12									18	1.8	1.5		
P10B3	B	30.56									17	1.7	1.4		
P11B1	B	34.07								98.30					
P11B1	B	34.12									34	1.9	1.4		
P11B2	B	34.57								170.00					

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P11B2	B	34.57	85												
P11B2	B	34.59									33	1.9	1.5		
P12B1	B	38.18									22	1.7	1.4		
P12B2	B	38.47									29	1.9	1.5		
P13B1	B	42.16									34	1.8	1.3		
P13B3	B	42.66									33	1.7	1.3		
P14B1	B	46.17									22	1.8	1.5		
P14B2	B	46.52									24	1.6	1.3		
P14B3	B	46.87									26	1.7	1.3		
P15B1	B	50.17									23	1.9	1.5		
P15U1	U	50.71												129	
P15B2	B	50.80								180.00					
P15B2	B	50.92									32	1.9	1.5		
P16B1	B	54.16									19	2.0	1.7		
P16B2	B	54.51									20	2.0	1.6		
P16B3	B	54.85									22	1.8	1.5		
P17B1	B	56.15									29	1.9	1.5		
P18B1	B	59.65									34	1.9	1.4		
P19B1	B	63.25									30	1.9	1.5		
P20B1	B	66.15									32	2.0	1.5		
P20B1	B	66.20								150.00					
P20B1	B	66.20	163												
P20U1	U	66.51												184	
P20U1	U	66.60								163.30					
P20U1	U	66.60	180												
P20B2	B	66.81								163.30					
P20B2	B	66.81	180												
P20B2	B	66.90									34	1.9	1.4		
P20B2	B	66.99								225.00					

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P20B2	B	66.99	200												
P21B1	B	70.11									27	1.8	1.4		
P21B1	B	70.20	115												
P21B1	B	70.20								120.00					
P21B2	B	70.61								165.00					
P21B2	B	70.61	150												
P21B2	B	70.61									29	1.8	1.4		
P21B3	B	70.95								210.00					
P21B3	B	70.95	198												
P21B3	B	70.96									36	1.7	1.3		
P22U1	U	74.10												166	
P22U1	U	74.20								200.00					
P22U1	U	74.20	170												
P22B1	B	74.50								215.00					
P22B1	B	74.50	165												
P22B1	B	74.51									40	2.1	1.5		
P22B2	B	74.81								161.70					
P22B2	B	74.81	205												
P22B2	B	74.81									39	2.0	1.5		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P2B2	B	0.76									21	1.8	1.5		
P3B1	B	1.13									13	1.8	1.6		
P3B3	B	1.51									20	2.1	1.8		
P3B3	B	1.59		43.30	4.60										
P4B1	B	4.55									23	2.0	1.6		
P5B1	B	8.10									17	2.0	1.7		
P7AB1	B	12.71									16	1.9	1.6		
P8B1	B	14.61									19	2.0	1.7		
P10Q1	Q	19.01								121.70					
P10B1	B	19.46									31	1.7	1.3		
P10B1	B	19.55								101.70					
P10B1	B	19.55	163												
P10B2	B	19.71									15	2.0	1.7		
P11Q1	Q	23.20	145												
P11Q1	Q	23.20								110.00					
P11B1	B	23.50								101.70					
P11B1	B	23.50	123								26	1.9	1.5		
P11B2	B	23.70									28	1.7	1.3		
P12U1	U	27.15												86	
P12B2	B	27.25	72												
P12B2	B	27.26								86.70					
P12B3	B	27.50								80.00					
P12B3	B	27.50	85												
P12B3	B	27.56									35	1.9	1.4		
P12B4	B	27.90								88.30					
P12B4	B	27.90	120												
P12B4	B	27.91									29	1.9	1.5		
P12B4	B	27.94		176.60	43.30										
P13B1	B	31.07								68.30					

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P13B1	B	31.07	100												
P13B1	B	31.08									30	2.0	1.5		
P13U1	U	31.20												85	
P13Q2	Q	31.50								100.00					
P13Q2	Q	31.50	118												
P13B2	B	31.70								126.70					
P13B2	B	31.70	163												
P13B2	B	31.71									25	2.0	1.6		
P13B2	B	31.71		166.30	44.40										
P14B1	B	35.16									26	2.0	1.6		
P14Q1	Q	35.20								165.00					
P14Q1	Q	35.20	140												
P14U1	U	35.40								136.70					
P14U1	U	35.40	138												
P14B2	B	35.81									27	1.8	1.4		
P15B1	B	39.15									30	1.8	1.4		
P15B1	B	39.20	125												
P15Q1	Q	39.21								200.00					
P15U1	U	39.50												168	
P15Q2	Q	39.60	155												
P15Q2	Q	39.61								205.00					
P15B2	B	39.80								210.00					
P15B2	B	39.90									36	1.8	1.3		
P15B2	B	39.99	135												
P16B1	B	43.10									26	1.9	1.5		
P16B1	B	43.19								211.70					
P16U1	U	43.50												179	
P16Q2	Q	43.60								210.00					
P16B2	B	43.90									37	1.9	1.4		

Gardline

SUMMARY OF OFFSHORE LABORATORY TEST RESULTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

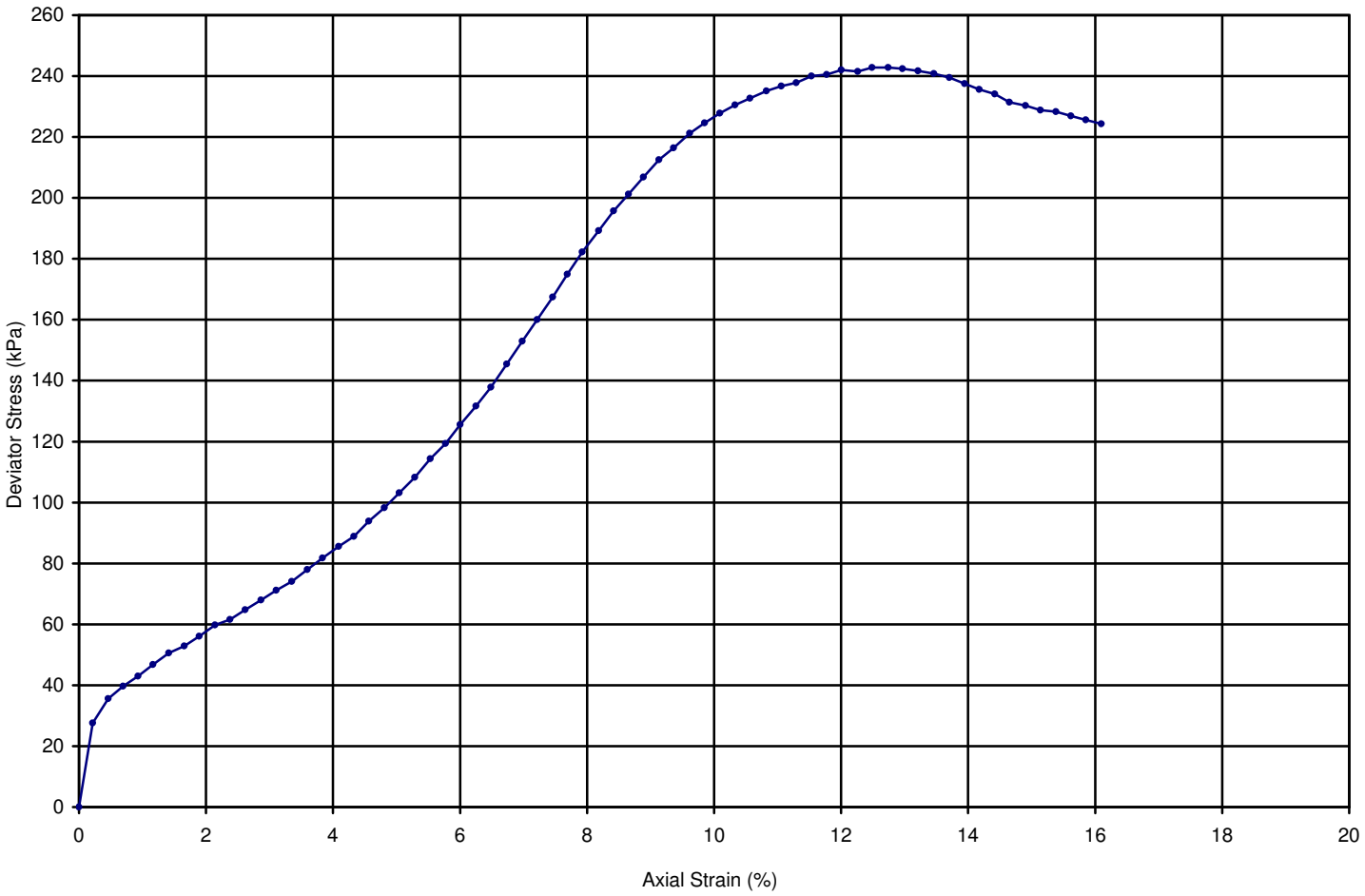
BH - G7

Number	Type	Depth(m)	Torvane Su(kPa)	Lab Vane Su(kPa)	Lab Vane Sr(kPa)	Handvane Su(kPa)	Handvane Sr(kPa)	Fall Cone Su(kPa)	Fall Cone Sr(kPa)	Pocket Pen (KN)	Nat Moisture Content	Wet Density (Mg/m³)	Dry Density (Mg/m³)	UU Triaxial (kPa)	Carbonate (%)
P16B2	B	44.00								276.70					
P17B1	B	46.56									22	1.9	1.6		
P17B2	B	47.21									17	1.9	1.6		
P18B1	B	50.11									26	2.0	1.5		
P18B2	B	50.51									22	1.9	1.6		
P18B3	B	50.91									25	2.0	1.6		
P19B1	B	53.11									25	1.9	1.5		
P20B1	B	57.15									29	1.8	1.4		
P21B1	B	60.63									30	1.8	1.4		
P21B1	B	60.82									25	2.0	1.6		
P22B1	B	64.08								170.00					
P22B1	B	64.12									34	1.7	1.3		
P22B2	B	64.37									29	1.9	1.5		
P23B1	B	67.56									36	1.9	1.4		
P23B1	B	67.57								175.00					
P23B2	B	68.17								161.70					
P24B1	B	71.55								125.00					
P24B1	B	71.58									25	2.0	1.6		
P24U1	U	71.90												139	
P24B2	B	72.10								125.00					
P24B2	B	72.12									27	2.0	1.6		
P24B3	B	72.40								125.00					
P24B3	B	72.42									29	2.1	1.6		

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - I21B
Soil description	**CLAY**	Sample No./Type	P 01_U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	28.60 - 28.80

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	26
Bulk Density ρ	Mg/m3	2.04
Dry Density $\rho\delta$	Mg/m3	1.63
Initial Height of the Specimen	mm	144.1
Initial Diameter of the Specimen	mm	71.9
Cell Pressure σ_3	kPa	883
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	243
Failure Strain e	%	12.5
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	121

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

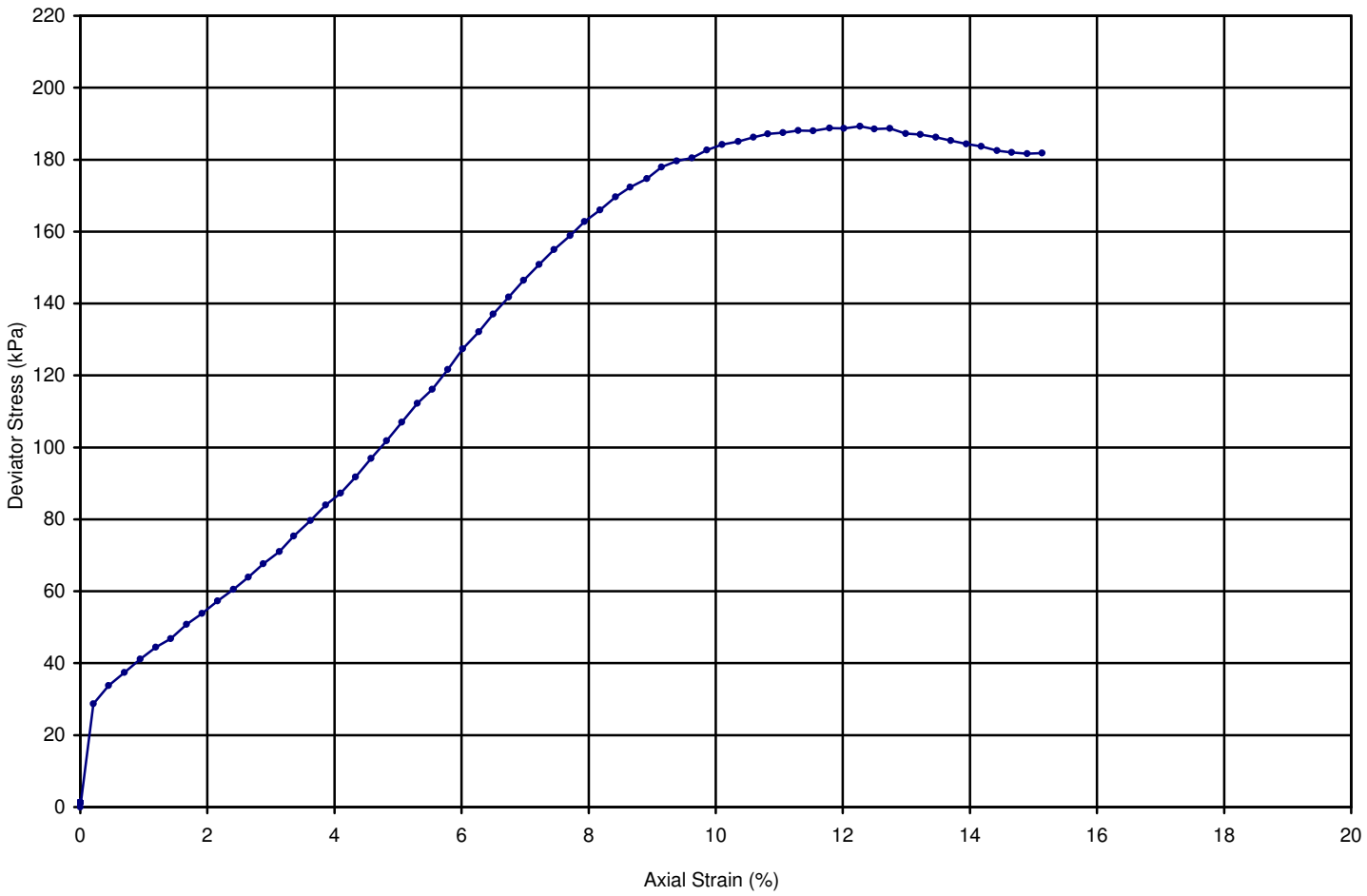
Tested by:	Checked by:	Approved by:
NH	**SH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - I21B
Soil description	**CLAY**	Sample No./Type	P02_U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	29.40 - 29.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	24
Bulk Density ρ	Mg/m3	2.02
Dry Density ρδ	Mg/m3	1.64
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	71.9
Cell Pressure σ_3	kPa	894
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	189
Failure Strain e	%	12.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	95

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

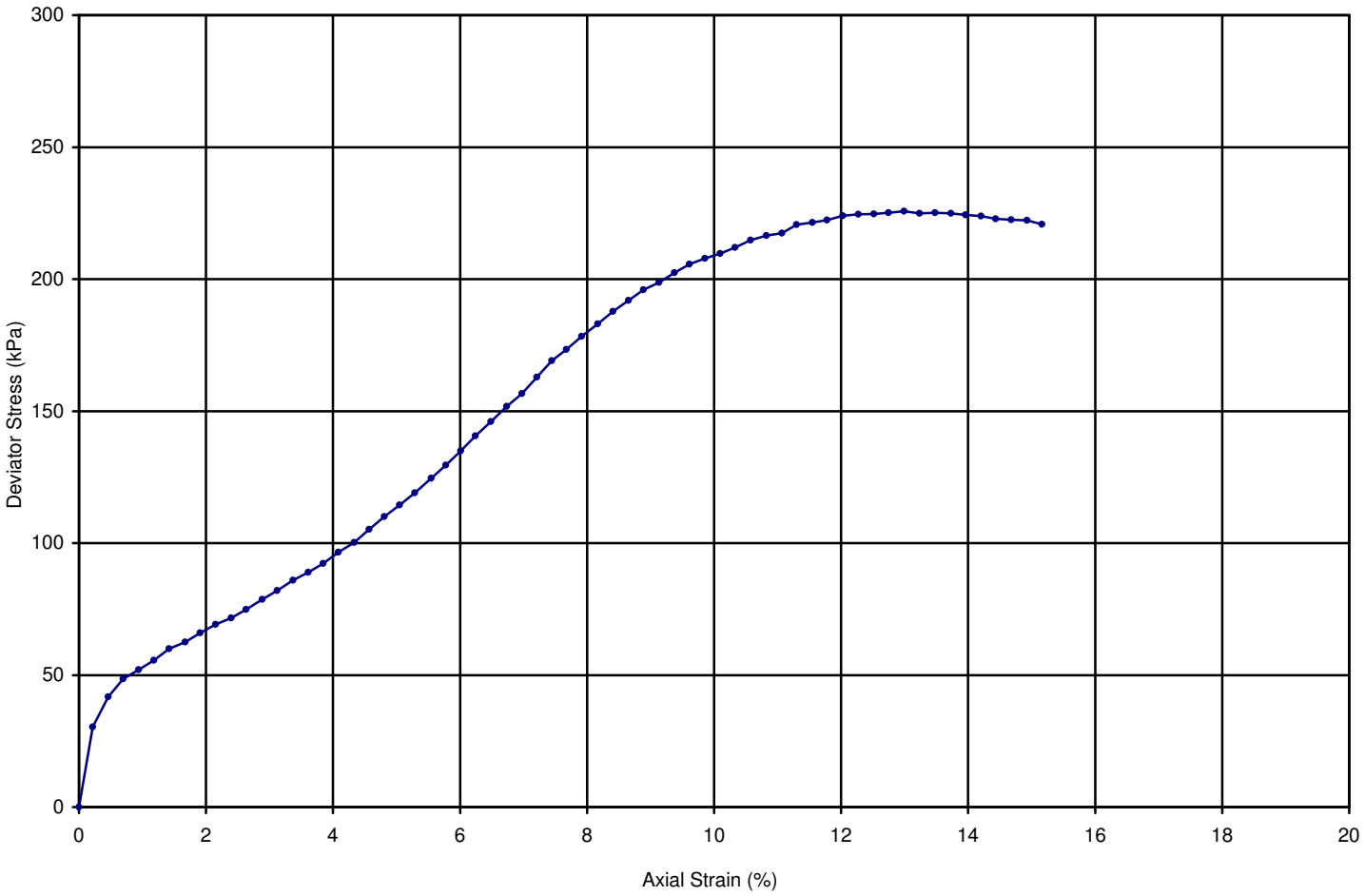
Tested by:	Checked by:	Approved by:
NH	**SH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - I21B
Soil description	**CLAY**	Sample No./Type	P03_U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	32.90 - 33.10

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	22
Bulk Density ρ	Mg/m3	2.06
Dry Density ρδ	Mg/m3	1.68
Initial Height of the Specimen	mm	143.6
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	993
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	226
Failure Strain e	%	13.0
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	113

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

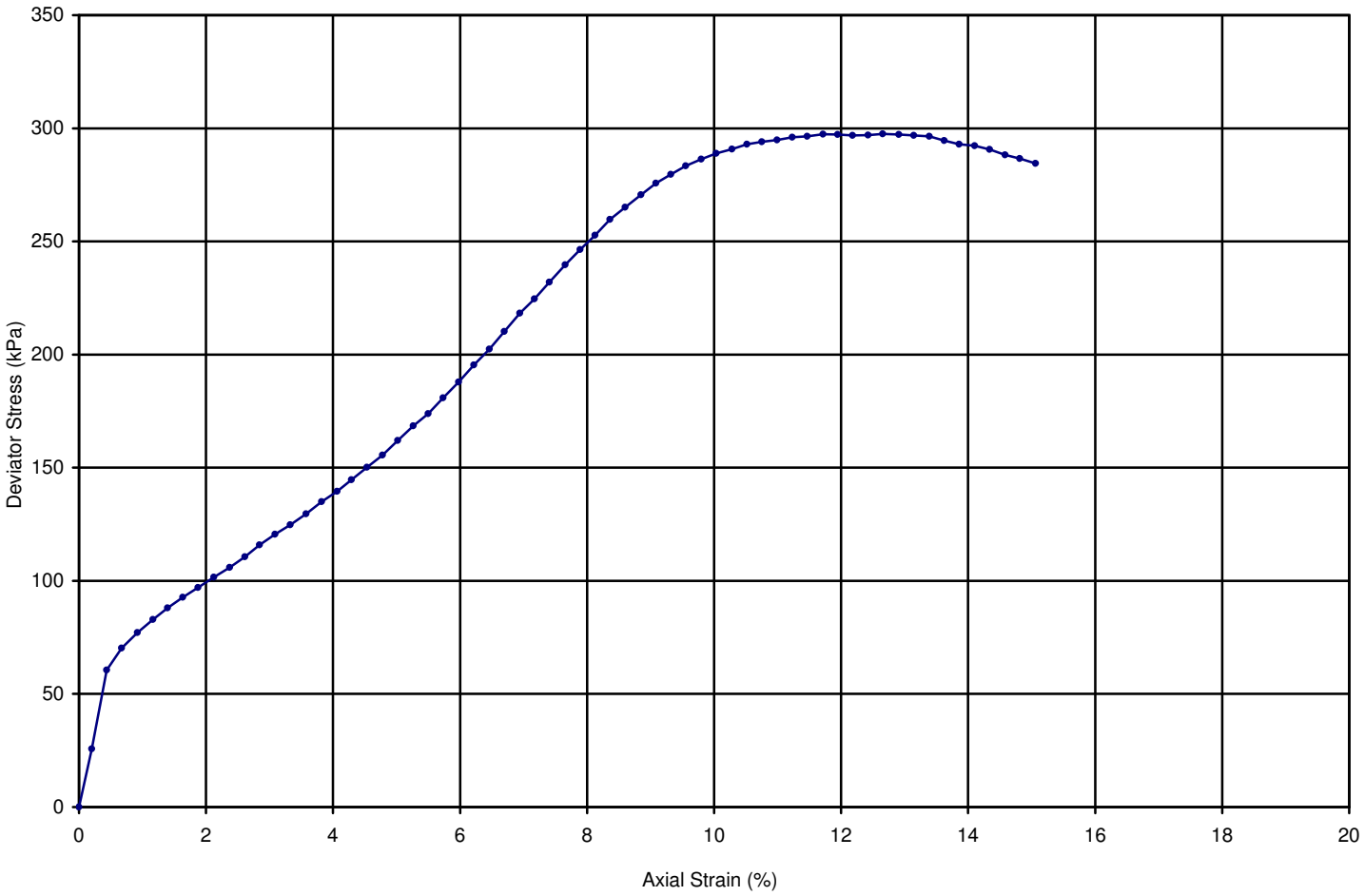
Tested by:	Checked by:	Approved by:
NH	**SH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - I21B
Soil description	**CLAY**	Sample No./Type	P06A_U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	44.40 - 44.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	34
Bulk Density ρ	Mg/m3	1.90
Dry Density ρδ	Mg/m3	1.42
Initial Height of the Specimen	mm	144.2
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1156
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	297
Failure Strain e	%	12.7
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	149

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

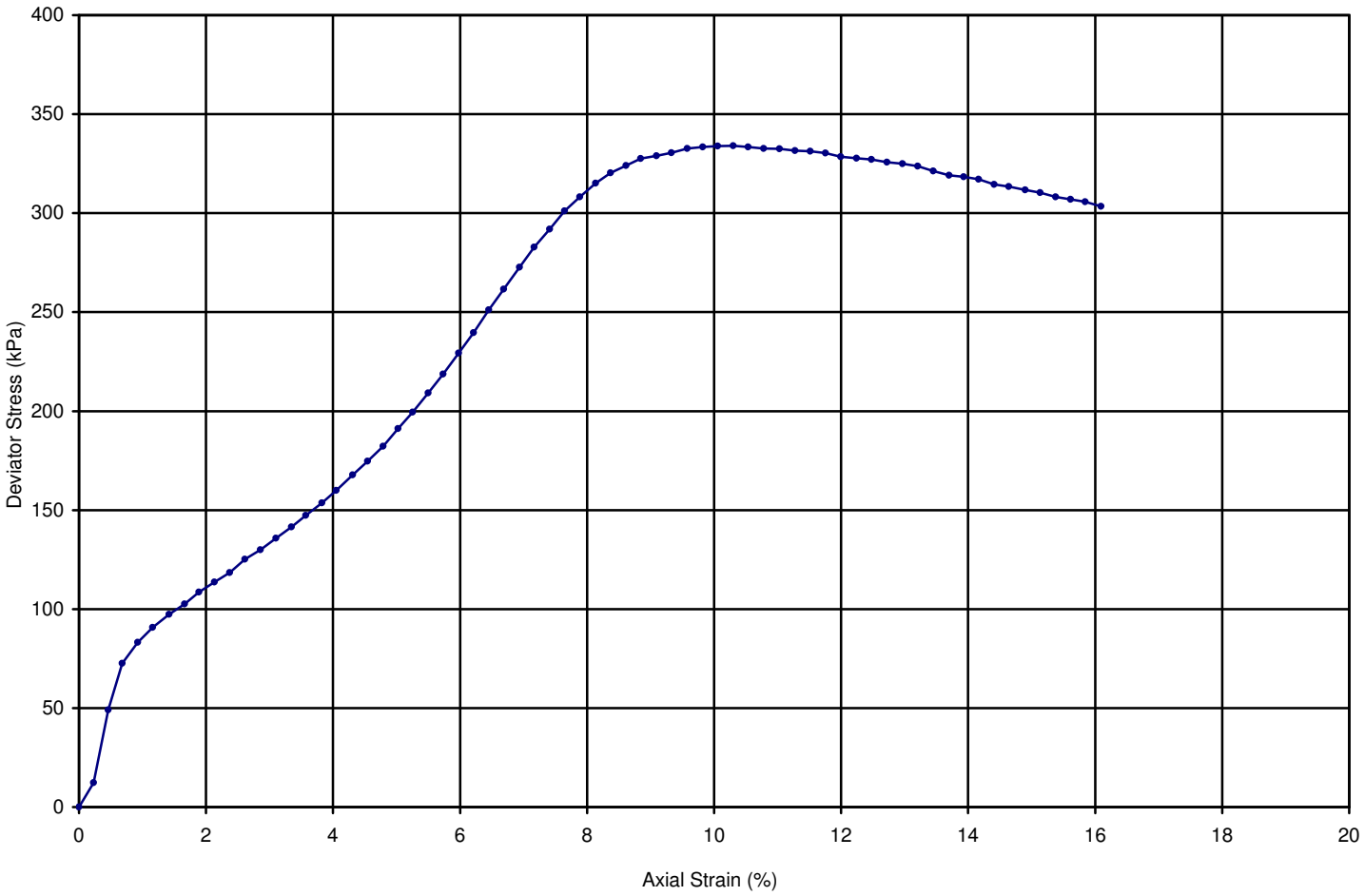
Tested by:	Checked by:	Approved by:
NH	**SH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH-I21B
Soil description	**CLAY**	Sample No./Type	P07_U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	48.80 - 49.00

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	29
Bulk Density ρ	Mg/m3	1.98
Dry Density ρδ	Mg/m3	1.54
Initial Height of the Specimen	mm	143.8
Initial Diameter of the Specimen	mm	71.7
Cell Pressure σ_3	kPa	1282
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	334
Failure Strain e	%	10.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	167

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

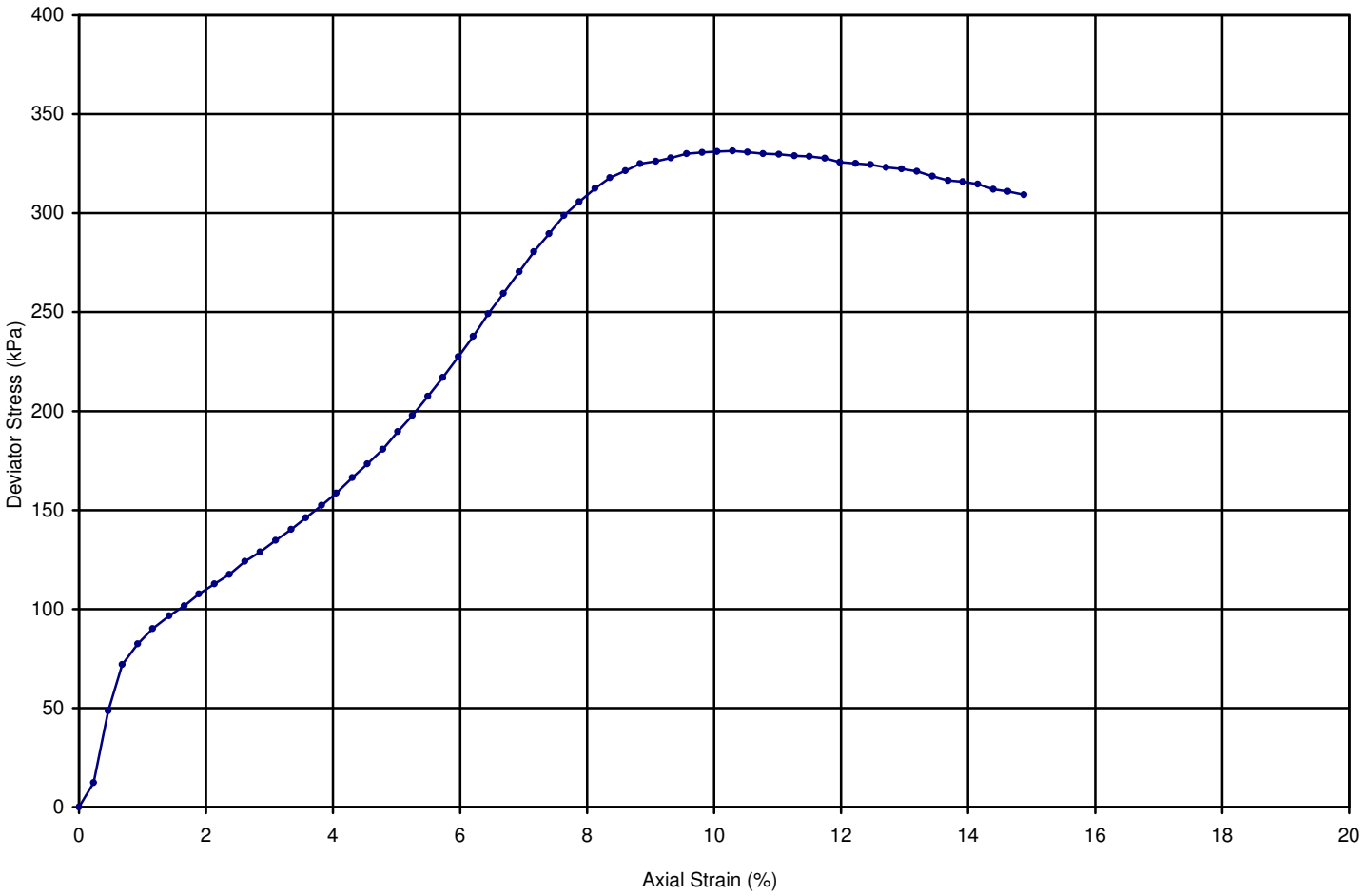
Tested by:	Checked by:	Approved by:
NH	**SH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	Met Tower
Soil description	**CLAY**	Sample No./Type	P09 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	25.9-26.1m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	42
Bulk Density ρ	Mg/m3	1.88
Dry Density ρδ	Mg/m3	1.33
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	798
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	331
Failure Strain e	%	10.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	166

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

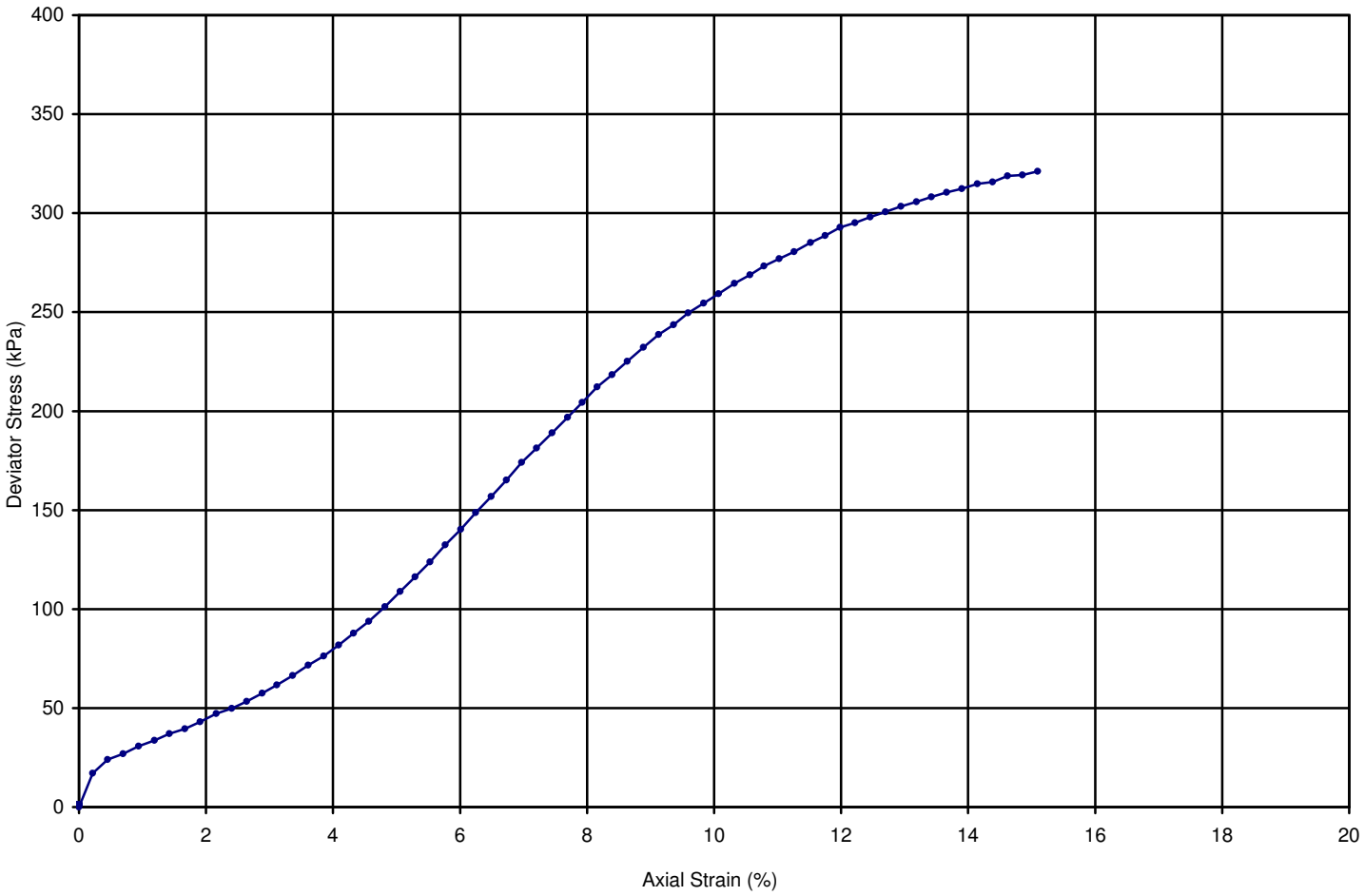
Tested by:	Checked by:	Approved by:
JA	**NH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	Met Tower
Soil description	**CLAY**	Sample No./Type	P10 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	29.4-29.6

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	27
Bulk Density ρ	Mg/m3	1.98
Dry Density ρδ	Mg/m3	1.56
Initial Height of the Specimen	mm	143.8
Initial Diameter of the Specimen	mm	72.2
Cell Pressure σ_3	kPa	901
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	321
Failure Strain e	%	15.1
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	160

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

Remarks:

Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm

Sample sheared at a strain rate of 1 %min

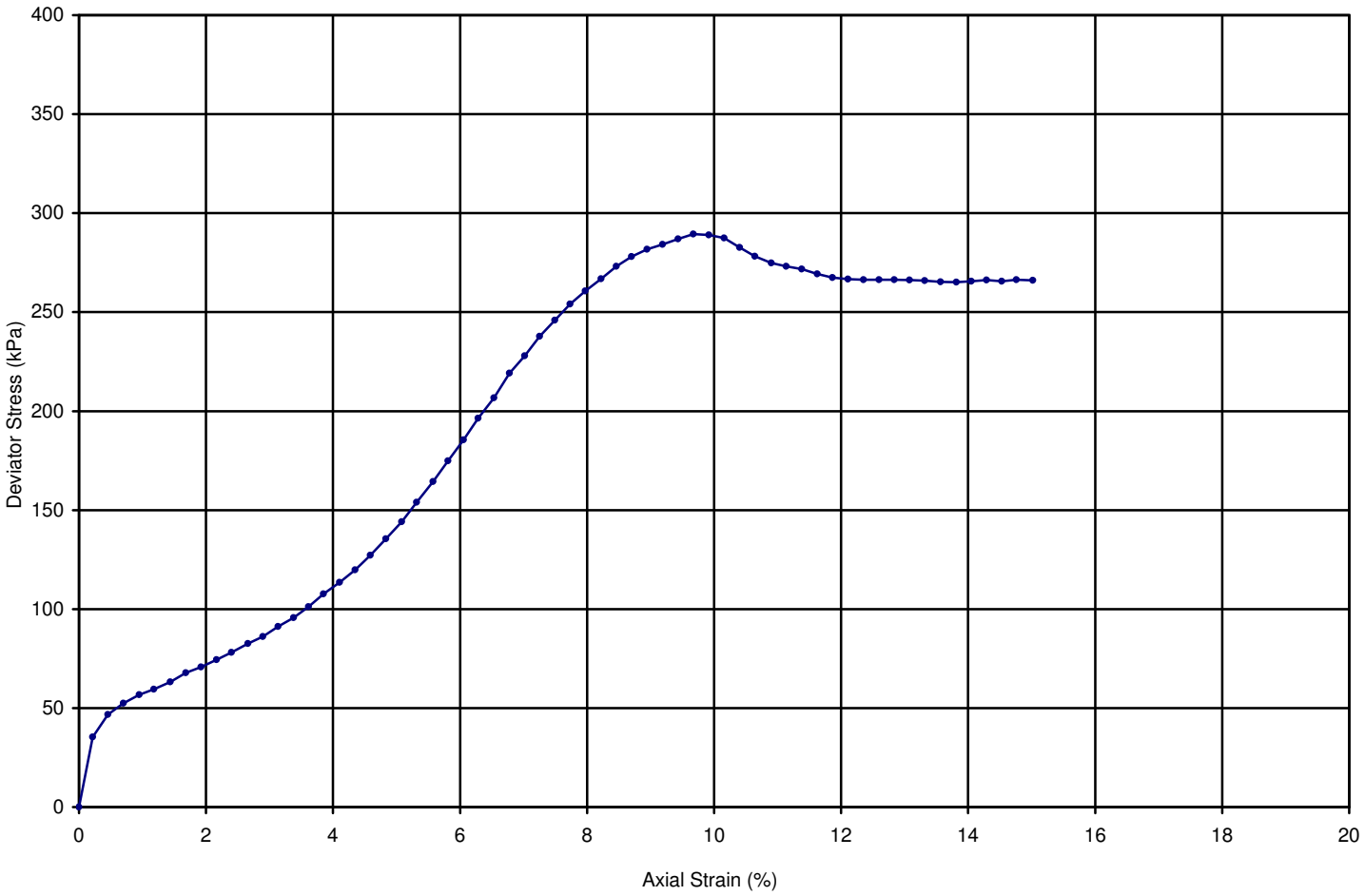
Tested by:	Checked by:	Approved by:
NH	**NV-S**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	Met Tower
Soil description	**CLAY**	Sample No./Type	P11 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	33.4-33.6m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	28
Bulk Density ρ	Mg/m3	1.94
Dry Density ρδ	Mg/m3	1.52
Initial Height of the Specimen	mm	142.5
Initial Diameter of the Specimen	mm	72.2
Cell Pressure σ_3	kPa	965
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	289
Failure Strain e	%	9.7
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	145

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

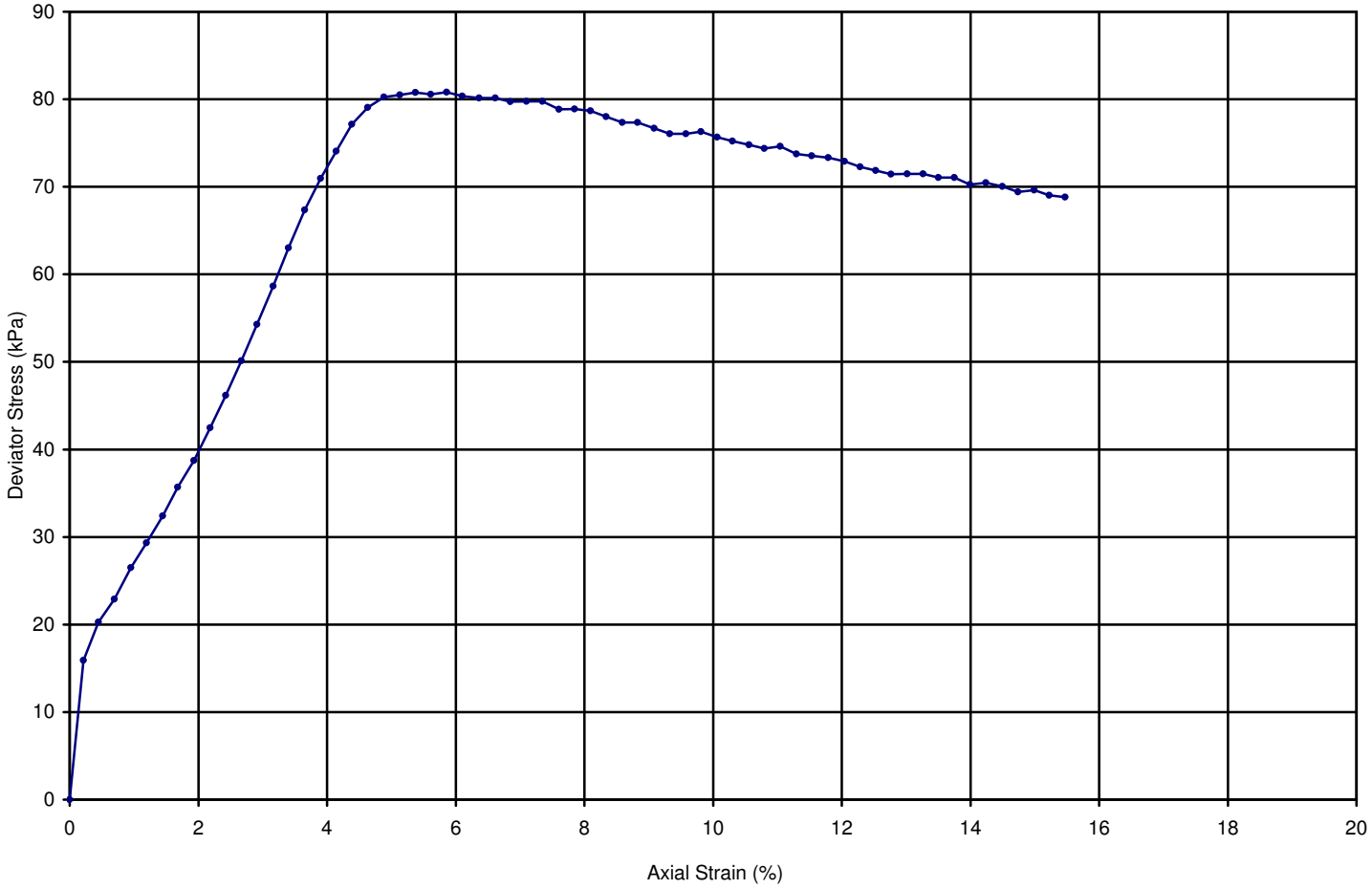
Tested by:	Checked by:	Approved by:
NH	**NV-S**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH-D14
Soil description	**CLAY**	Sample No./Type	P07 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	10.30 - 10.50m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	54
Bulk Density ρ	Mg/m3	1.72
Dry Density $\rho\delta$	Mg/m3	1.12
Initial Height of the Specimen	mm	136.4
Initial Diameter of the Specimen	mm	72.1
Cell Pressure σ_3	kPa	373
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	81
Failure Strain e	%	5.9
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	40

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

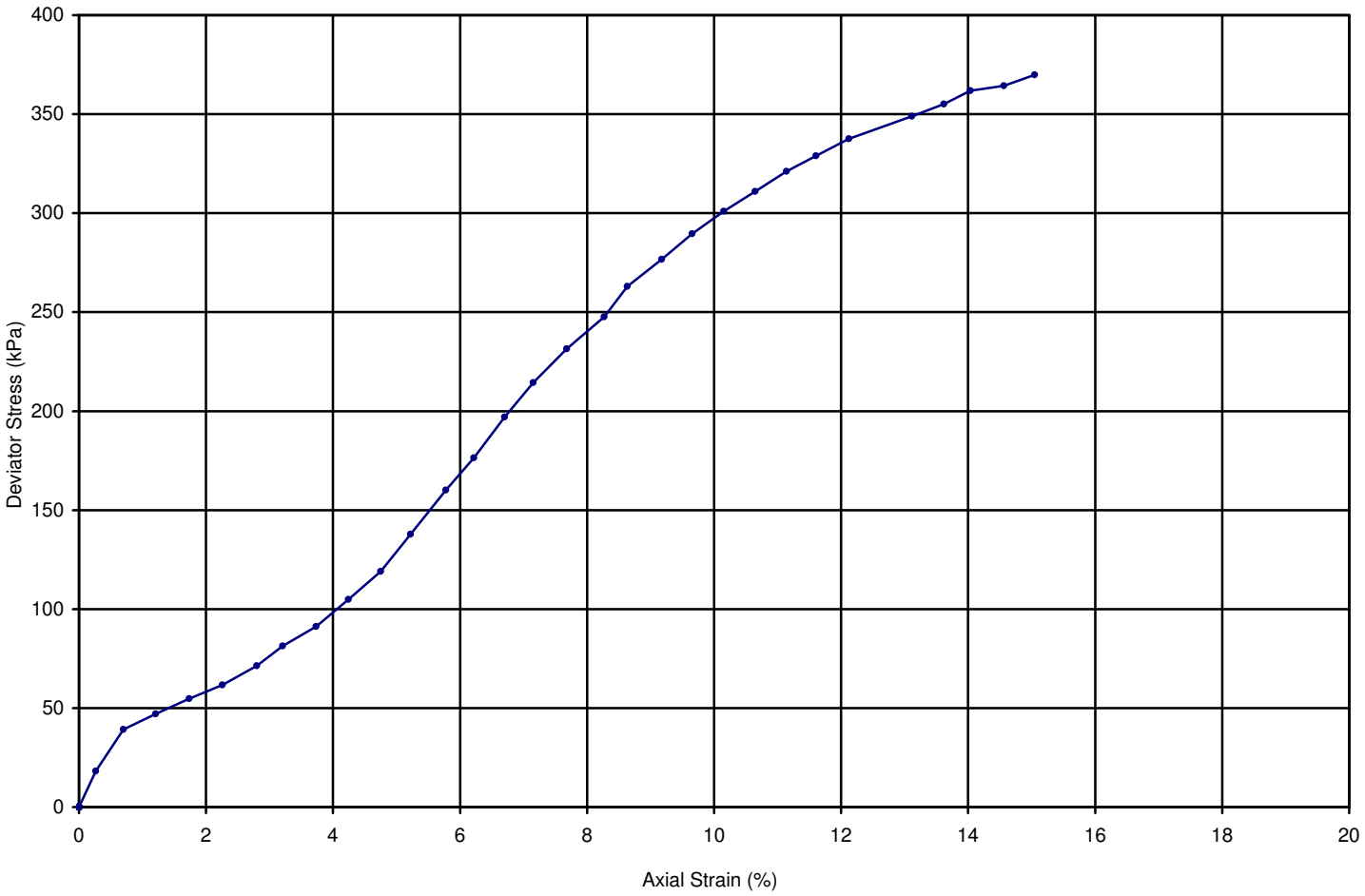
Tested by:	Checked by:	Approved by:
NH	**NV-S**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - D14A
Soil description	**0**	Sample No./Type	P08 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	48.8-49.1m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	28
Bulk Density ρ	Mg/m3	1.93
Dry Density ρδ	Mg/m3	1.51
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1129
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	370
Failure Strain e	%	15.0
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	185

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

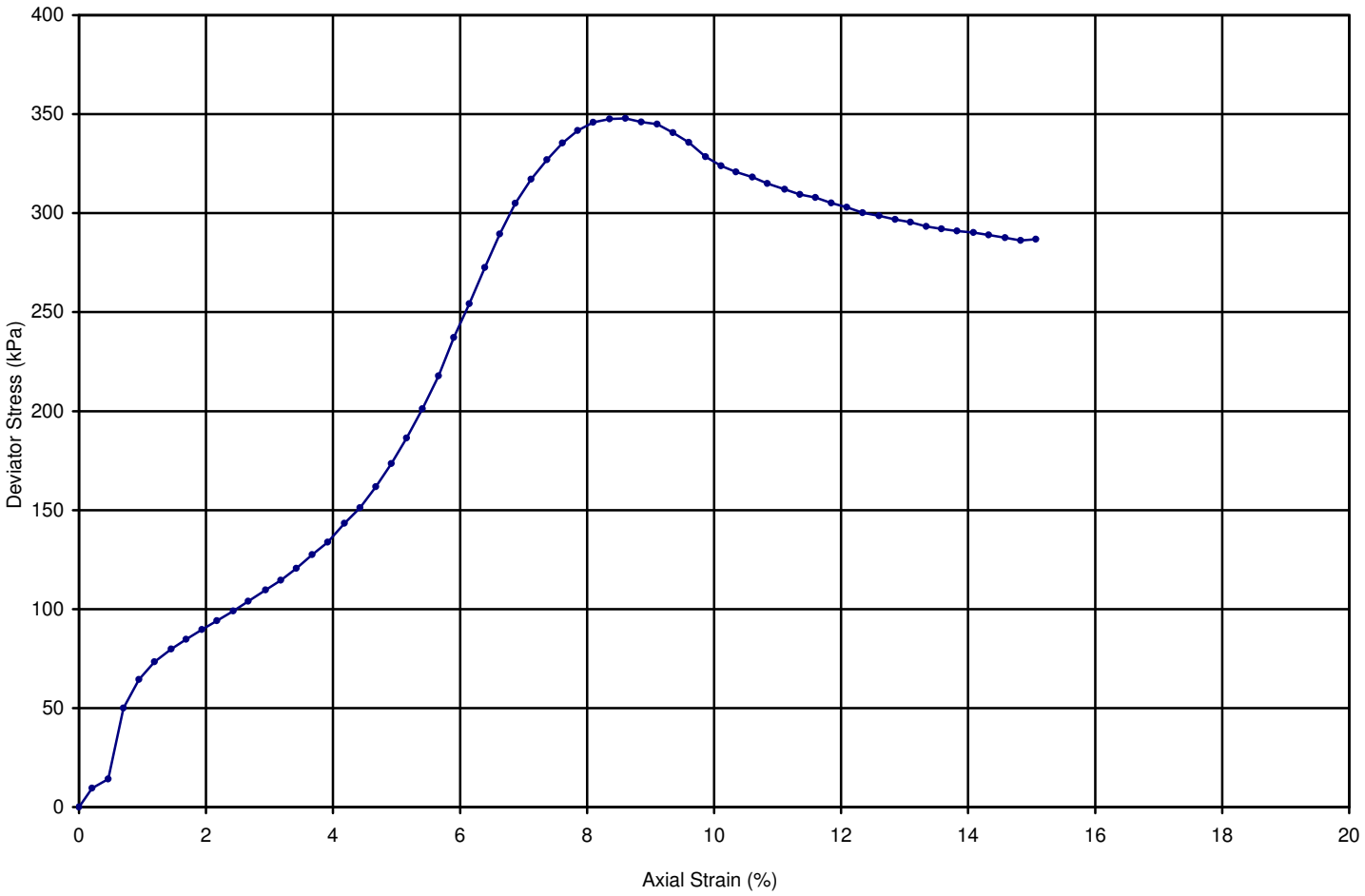
Tested by:	Checked by:	Approved by:
JA	**NH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - D14A
Soil description	**0**	Sample No./Type	P09 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	52.85-53.05

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	35
Bulk Density ρ	Mg/m3	1.87
Dry Density ρδ	Mg/m3	1.39
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1158
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	348
Failure Strain e	%	8.6
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	174

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

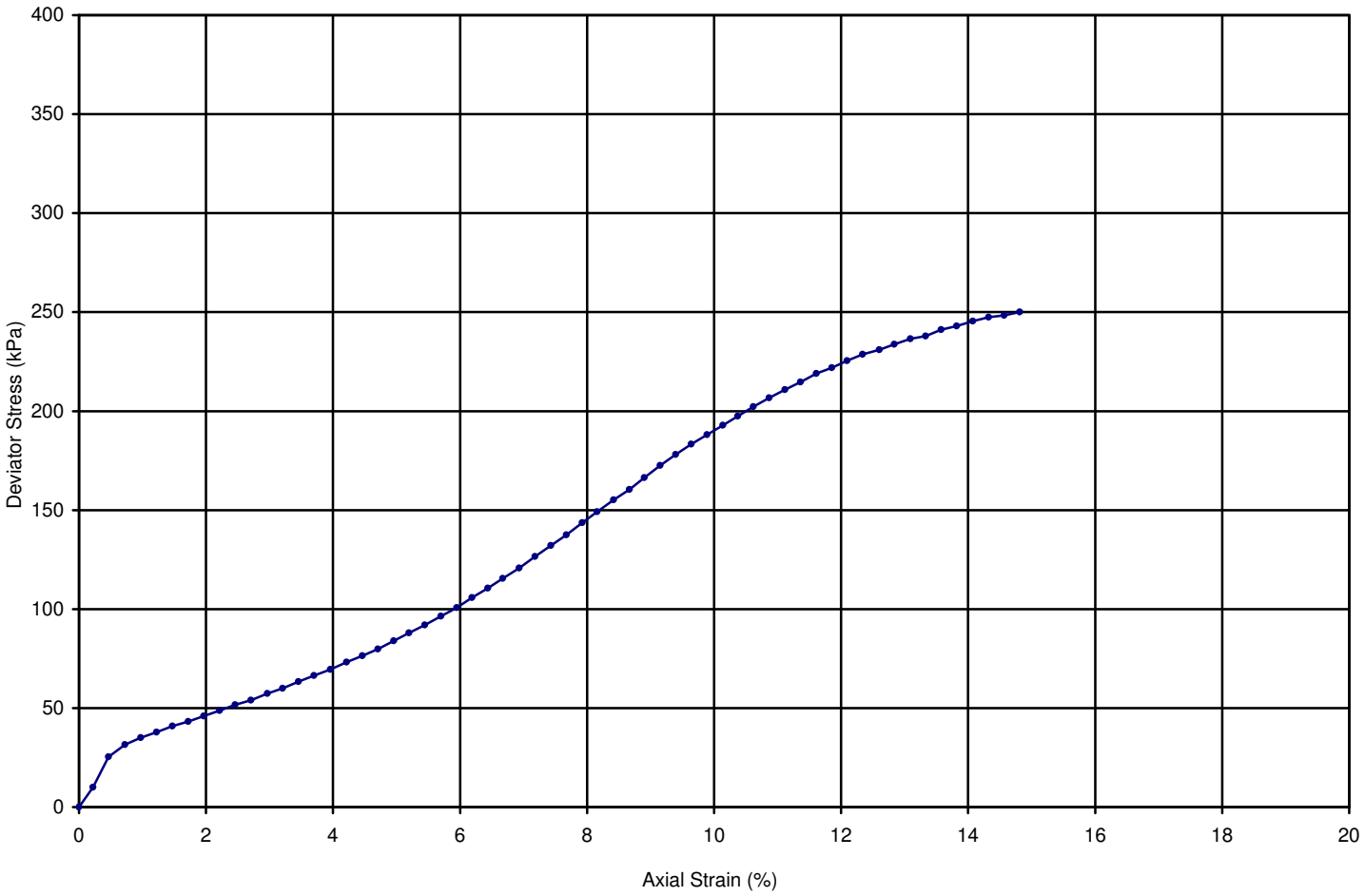
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA	**NH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - D14A
Soil description	**0**	Sample No./Type	P11 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	60.7-60.9m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	27
Bulk Density ρ	Mg/m3	1.99
Dry Density ρδ	Mg/m3	1.57
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1375
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	250
Failure Strain e	%	14.8
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	125

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

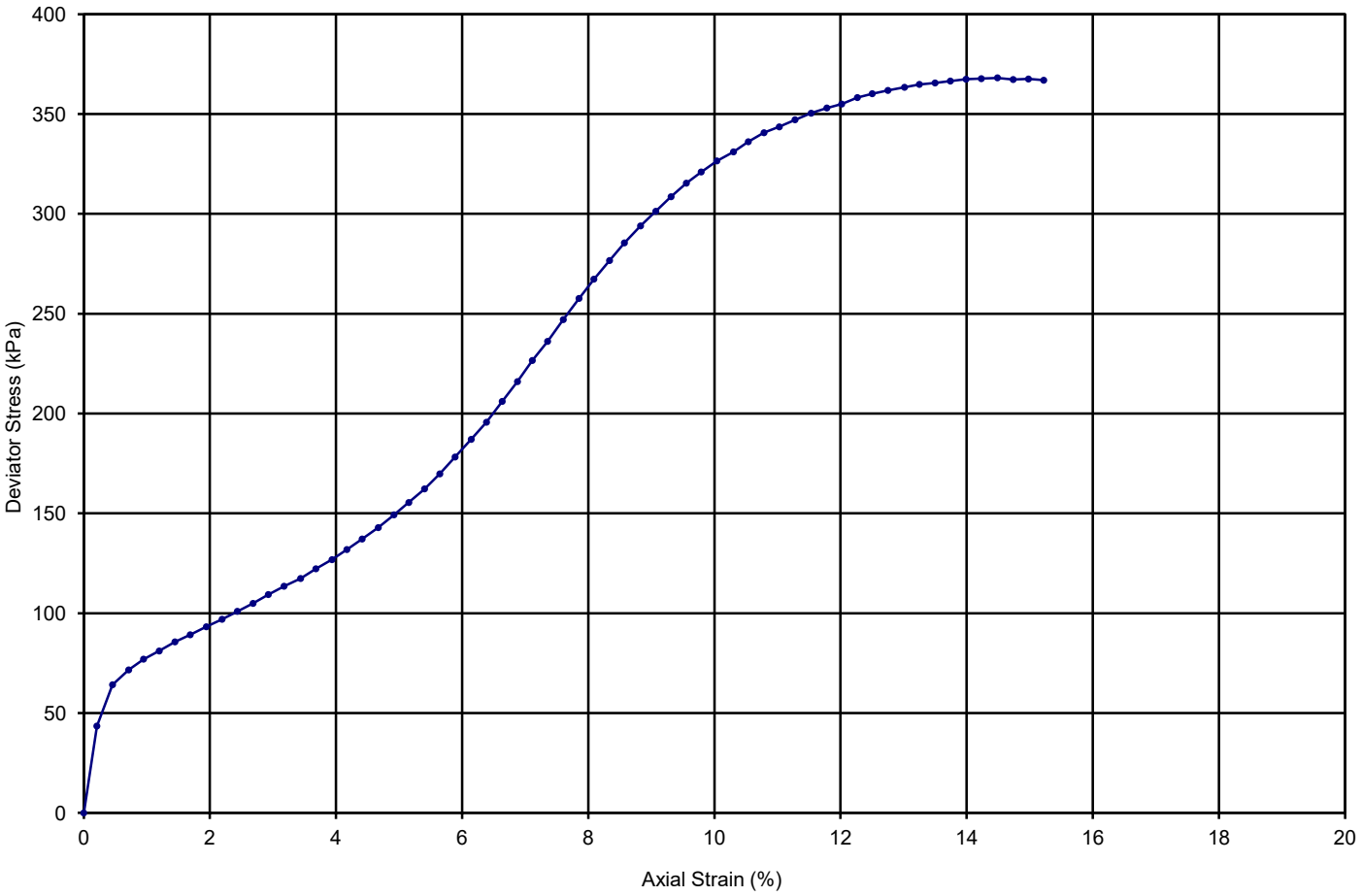
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA	**NH**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G17
Soil description	**CLAY**	Sample No./Type	P14A _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	33.90-34.10

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	-7340
Bulk Density ρ	Mg/m3	1.93
Dry Density $\rho\delta$	Mg/m3	-0.03
Initial Height of the Specimen	mm	144.5
Initial Diameter of the Specimen	mm	70.7
Cell Pressure σ_3	kPa	889
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	368
Failure Strain e	%	14.5
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	184

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

Intermediate

Remarks:

Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm

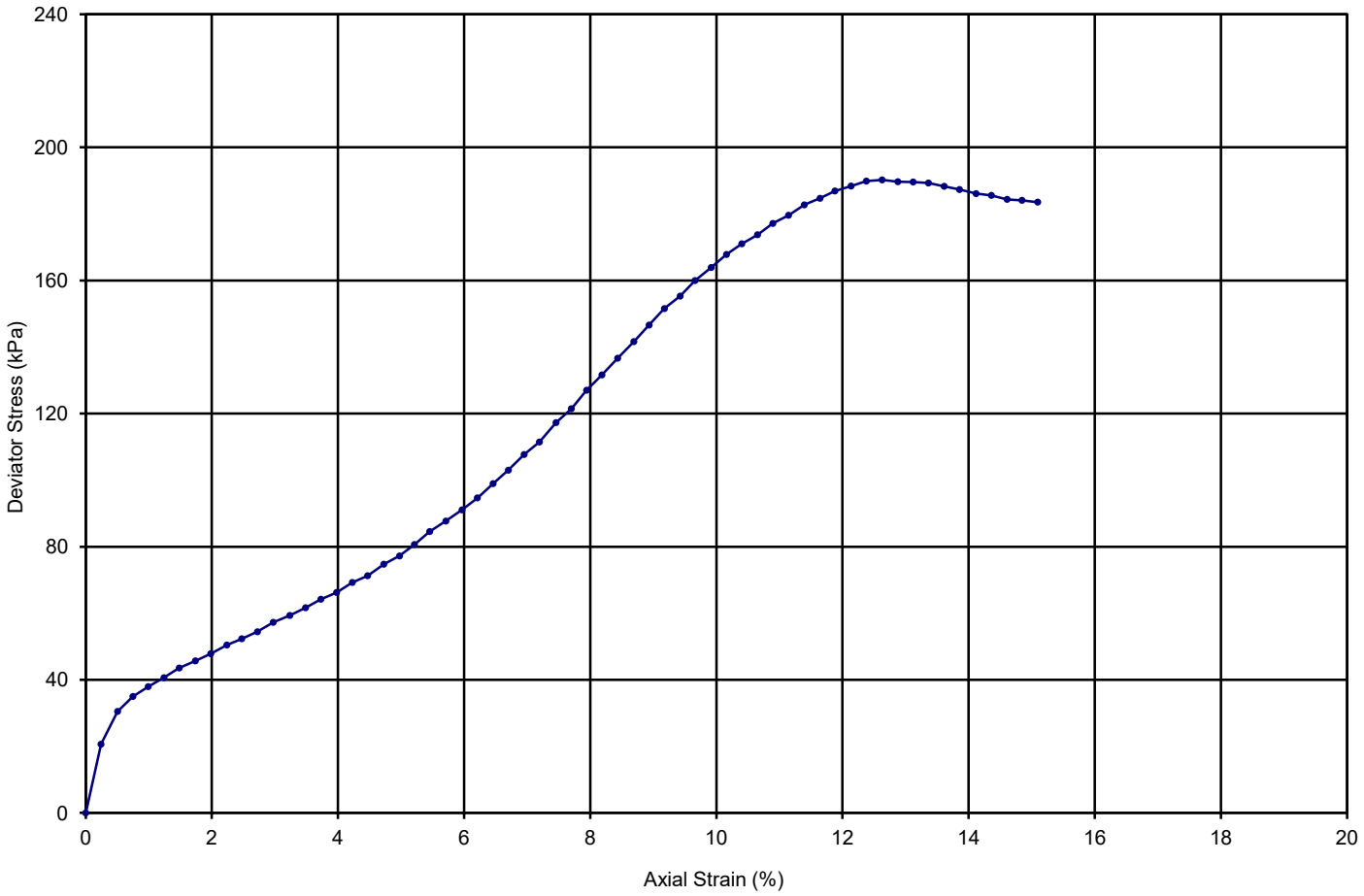
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G17
Soil description	**CLAY**	Sample No./Type	P15 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	37.90-38.10

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	-8630
Bulk Density ρ	Mg/m3	1.97
Dry Density $\rho\delta$	Mg/m3	-0.02
Initial Height of the Specimen	mm	144.3
Initial Diameter of the Specimen	mm	70.6
Cell Pressure σ_3	kPa	982
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	190
Failure Strain e	%	12.6
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	95

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

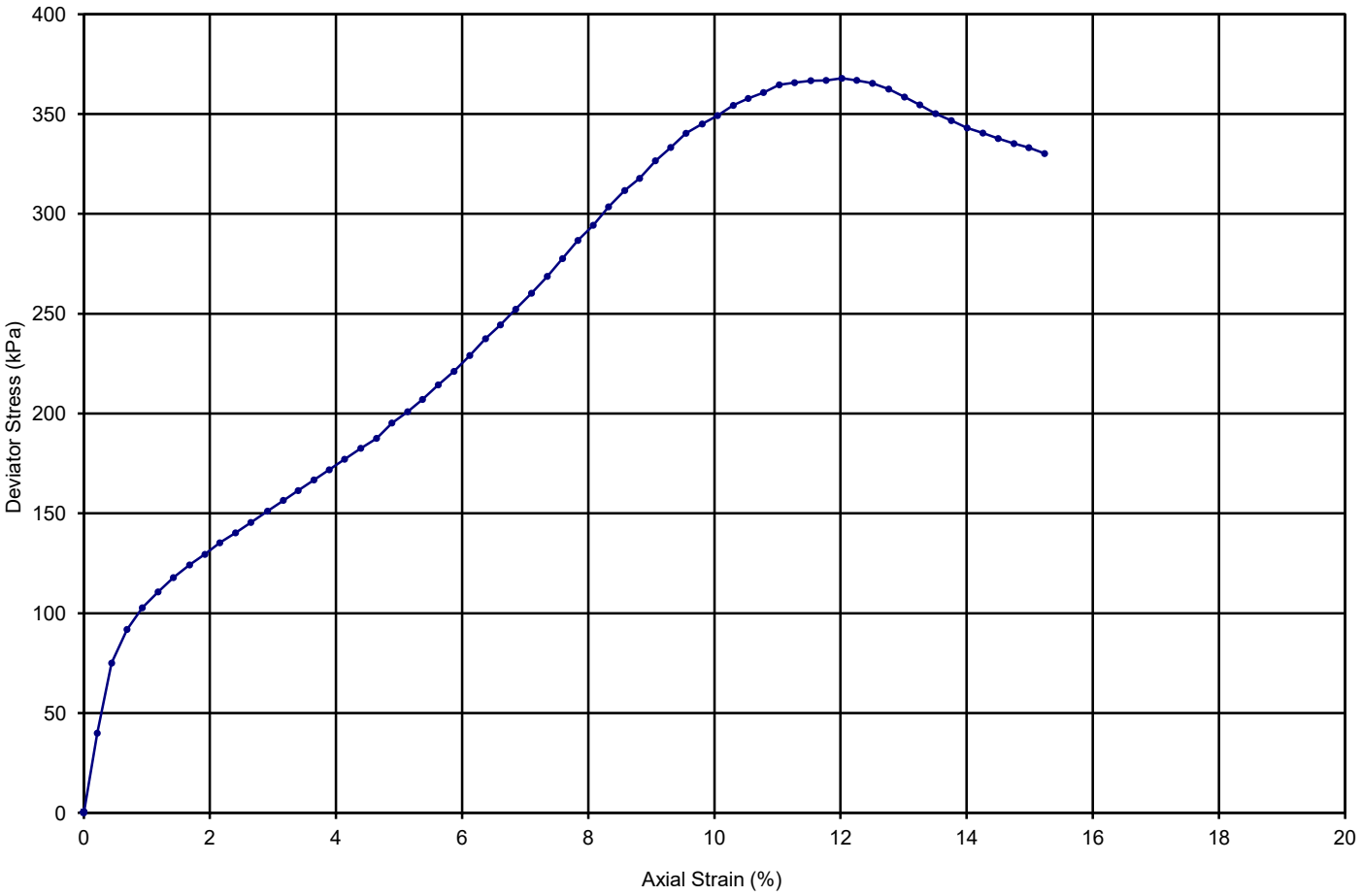
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G17A
Soil description	**CLAY**	Sample No./Type	P01 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	41.40-41.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	-6720
Bulk Density ρ	Mg/m3	1.88
Dry Density $\rho\delta$	Mg/m3	-0.03
Initial Height of the Specimen	mm	140.0
Initial Diameter of the Specimen	mm	70.0
Cell Pressure σ_3	kPa	1013
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	368
Failure Strain e	%	12.0
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	184

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

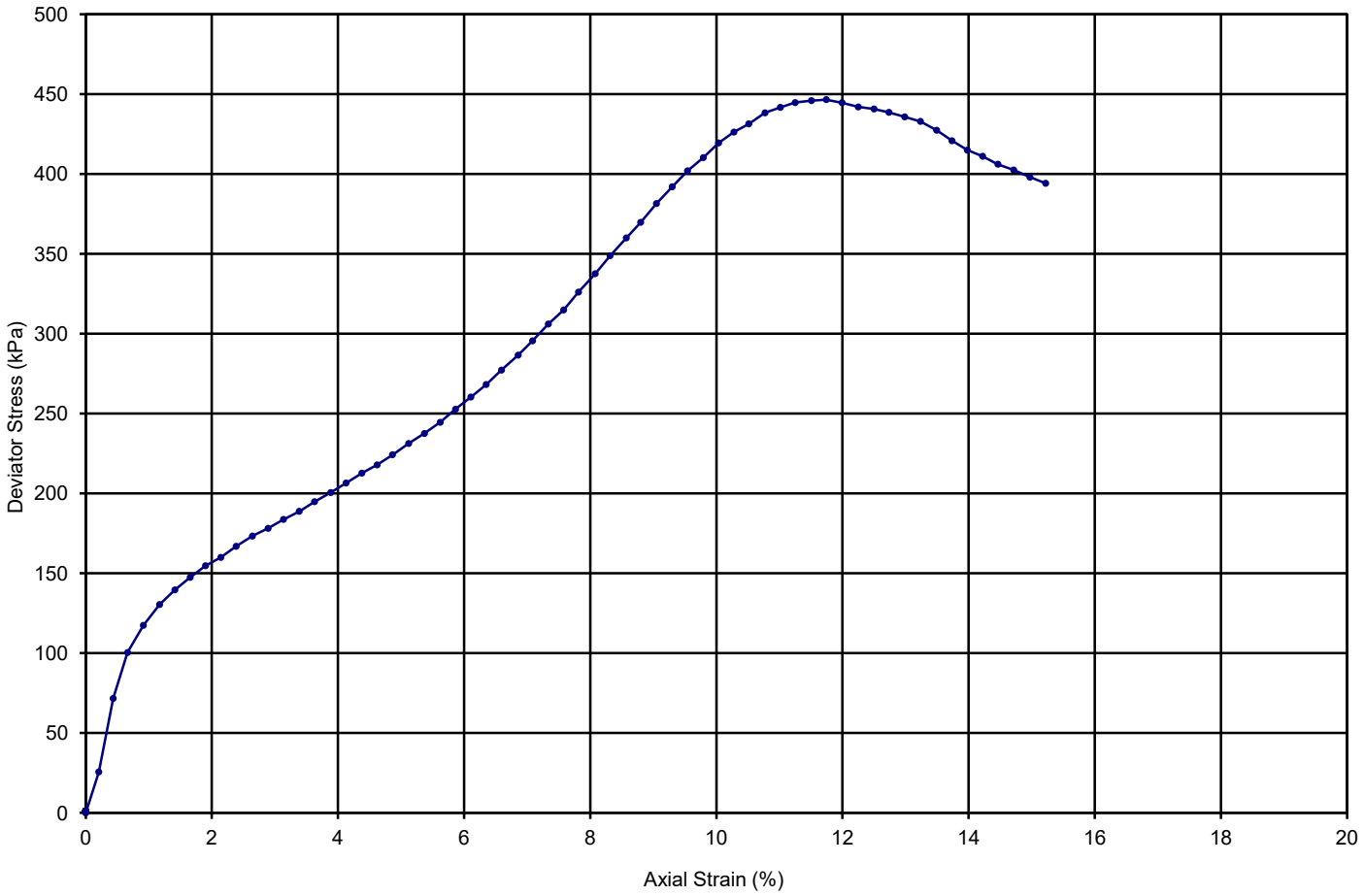
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G17A
Soil description	**CLAY**	Sample No./Type	P05_ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	56.30-56.50

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	-6810
Bulk Density ρ	Mg/m3	1.89
Dry Density $\rho\delta$	Mg/m3	-0.03
Initial Height of the Specimen	mm	140.0
Initial Diameter of the Specimen	mm	70.0
Cell Pressure σ_3	kPa	1293
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	446
Failure Strain e	%	11.7
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	223

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

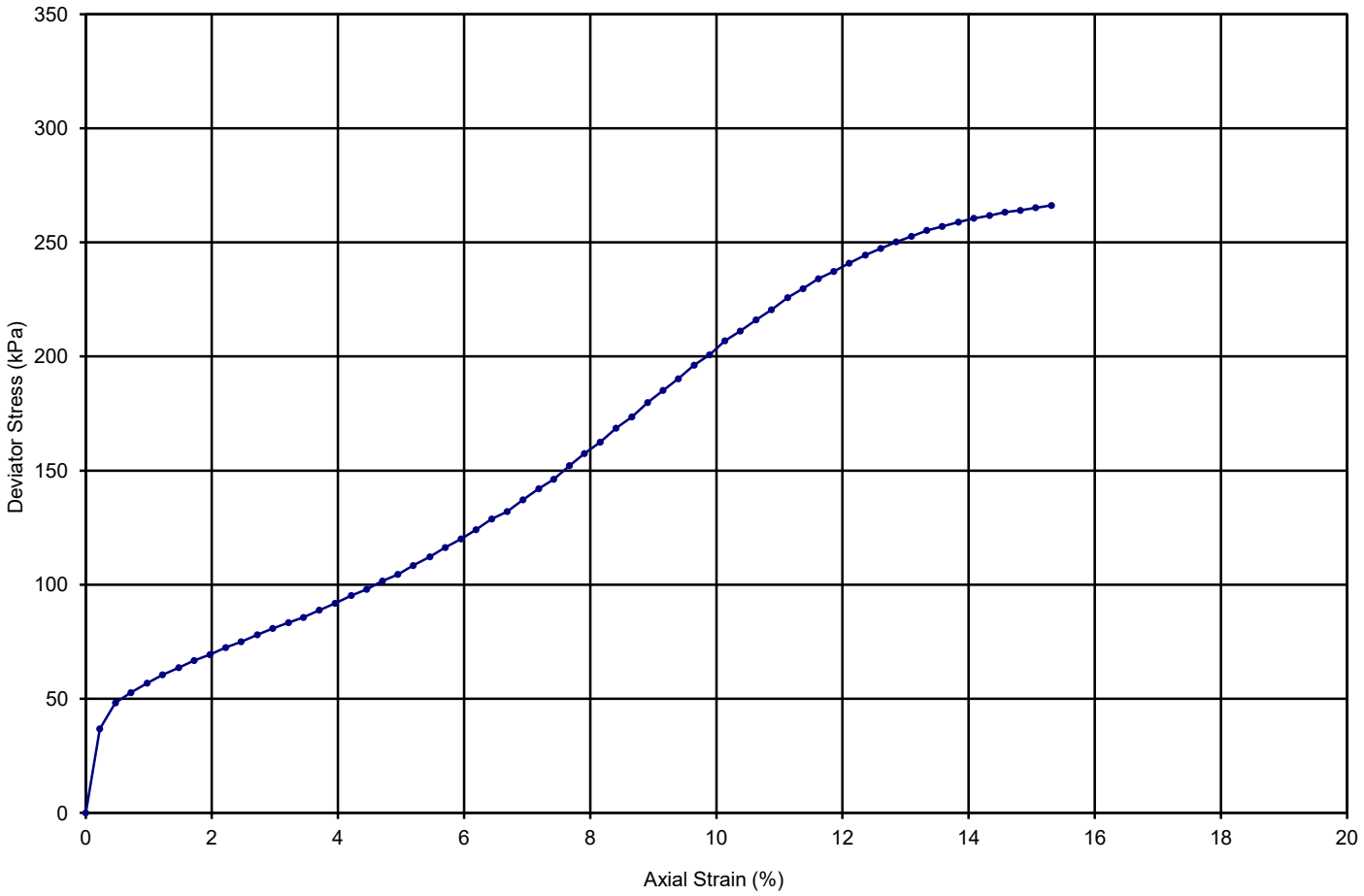
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - K16
Soil description	**CLAY**	Sample No./Type	P15 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	40.40 - 40.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	32
Bulk Density ρ	Mg/m3	1.96
Dry Density $\rho\delta$	Mg/m3	1.49
Initial Height of the Specimen	mm	139.6
Initial Diameter of the Specimen	mm	70.5
Cell Pressure σ_3	kPa	1011
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	266
Failure Strain e	%	15.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	133

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

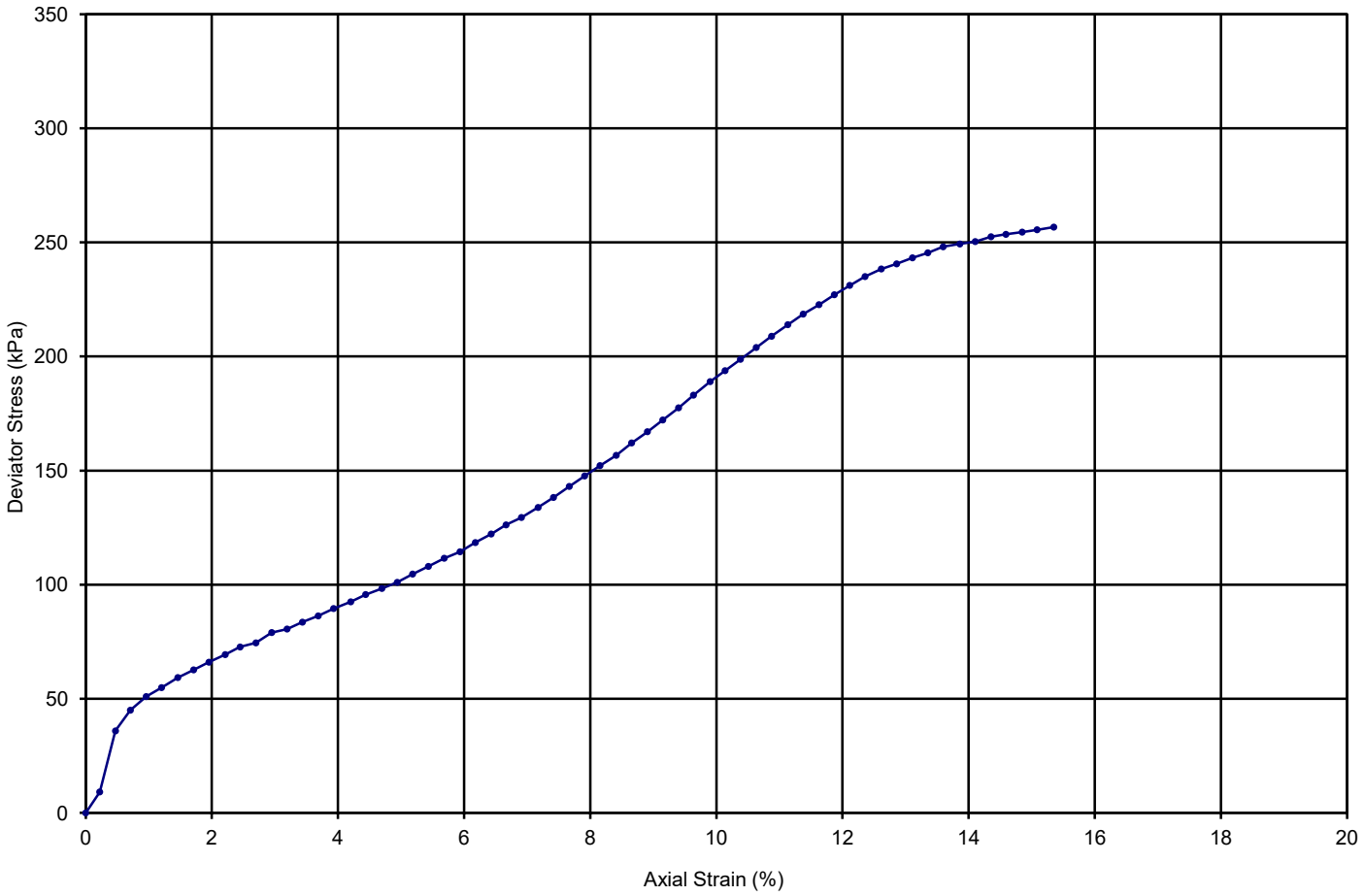
Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - K16
Soil description	**CLAY**	Sample No./Type	P16 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	44.40 - 44.60m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	28
Bulk Density ρ	Mg/m3	1.97
Dry Density $\rho\delta$	Mg/m3	1.54
Initial Height of the Specimen	mm	139.7
Initial Diameter of the Specimen	mm	70.5
Cell Pressure σ_3	kPa	1095
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	256
Failure Strain e	%	15.4
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	128

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

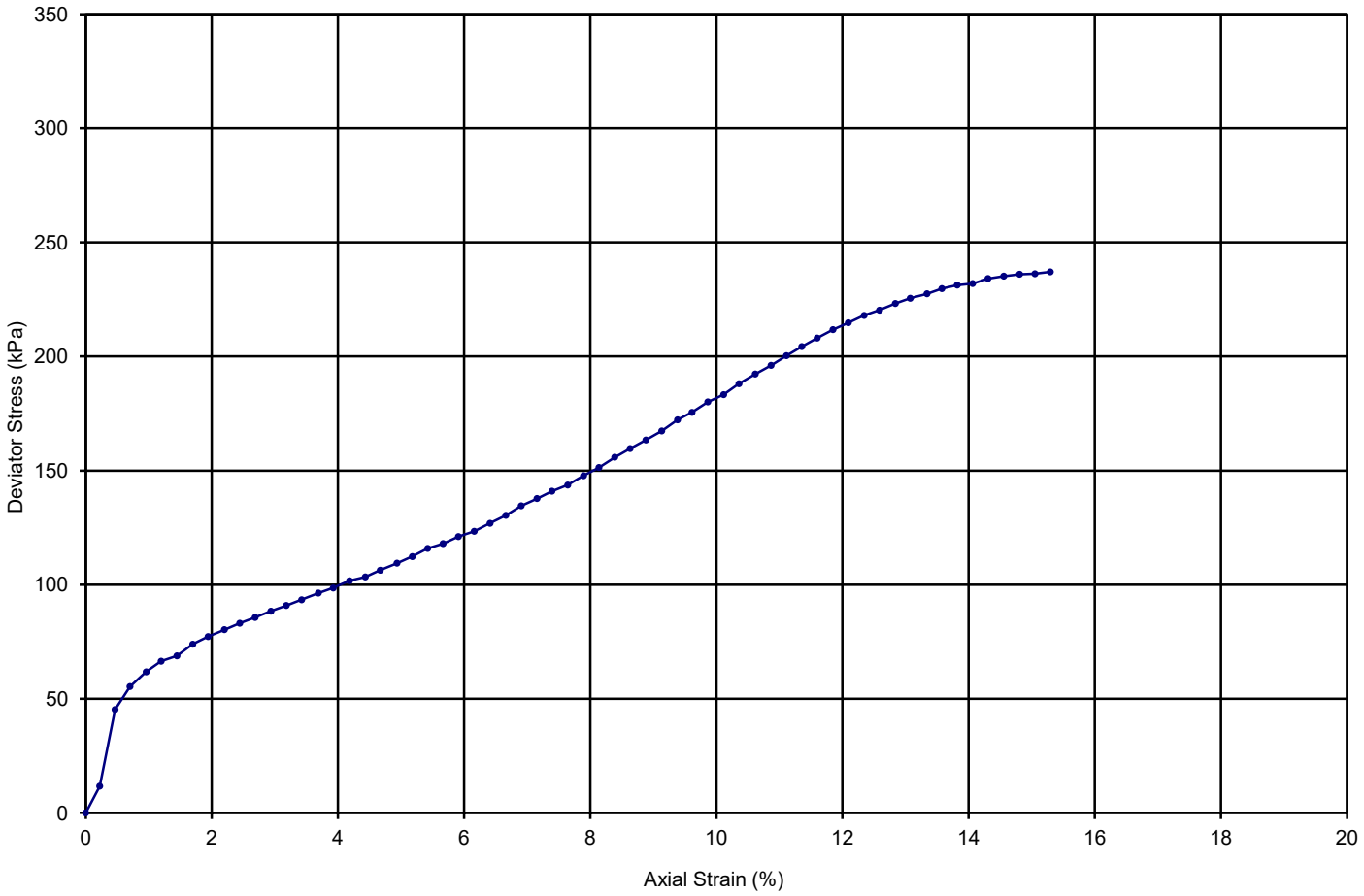
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	K16
Soil description	**CLAY**	Sample No./Type	P17 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	48.2-48.4m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	26
Bulk Density ρ	Mg/m3	1.97
Dry Density $\rho\delta$	Mg/m3	1.57
Initial Height of the Specimen	mm	139.6
Initial Diameter of the Specimen	mm	70.5
Cell Pressure σ_3	kPa	1177
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	237
Failure Strain e	%	15.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	118

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

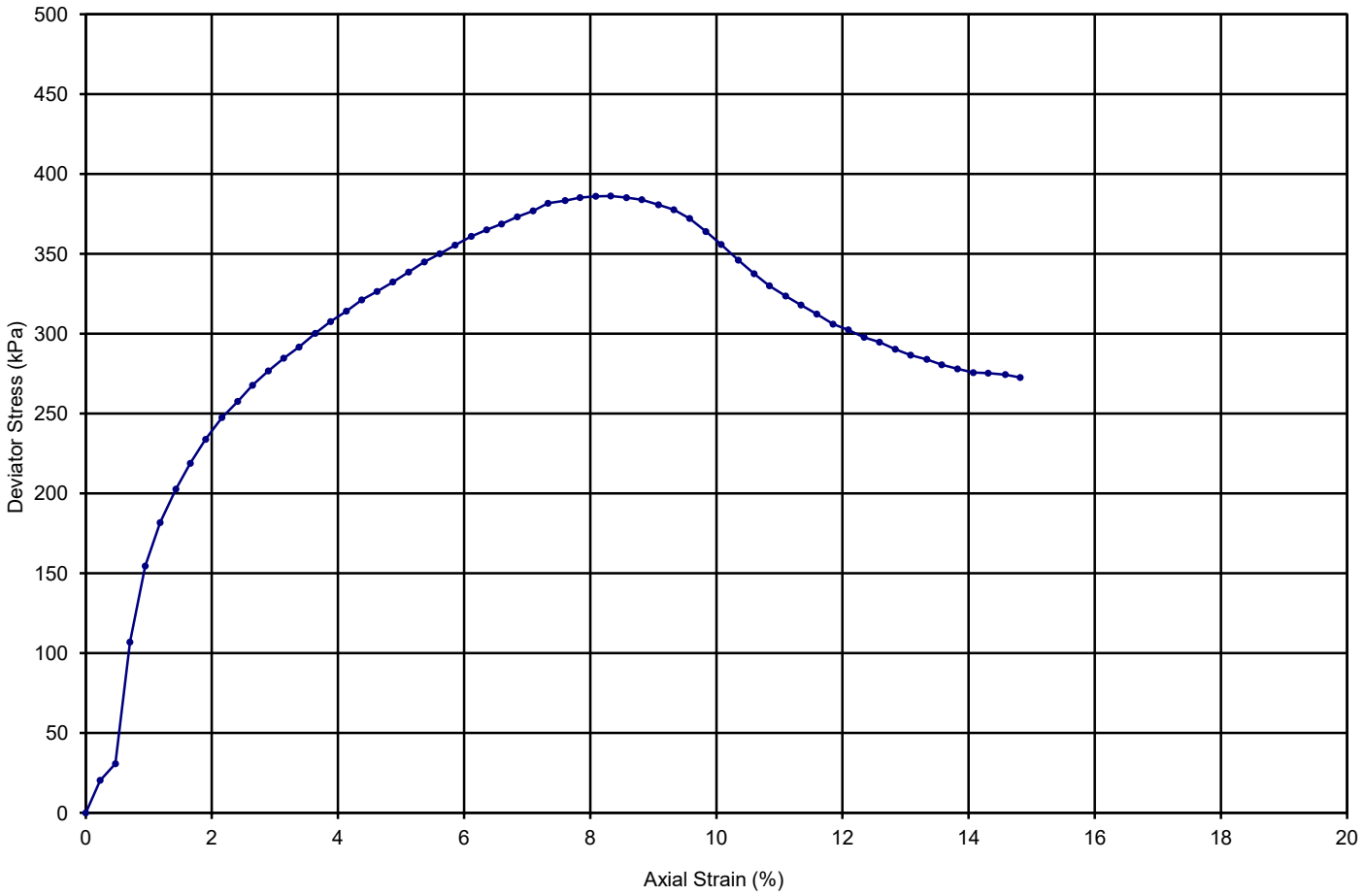
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - K16
Soil description	**CLAY**	Sample No./Type	P20 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	55.40 - 55.60m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	47
Bulk Density ρ	Mg/m3	1.75
Dry Density $\rho\delta$	Mg/m3	1.19
Initial Height of the Specimen	mm	139.8
Initial Diameter of the Specimen	mm	70.6
Cell Pressure σ_3	kPa	1194
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	386
Failure Strain e	%	8.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	193

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

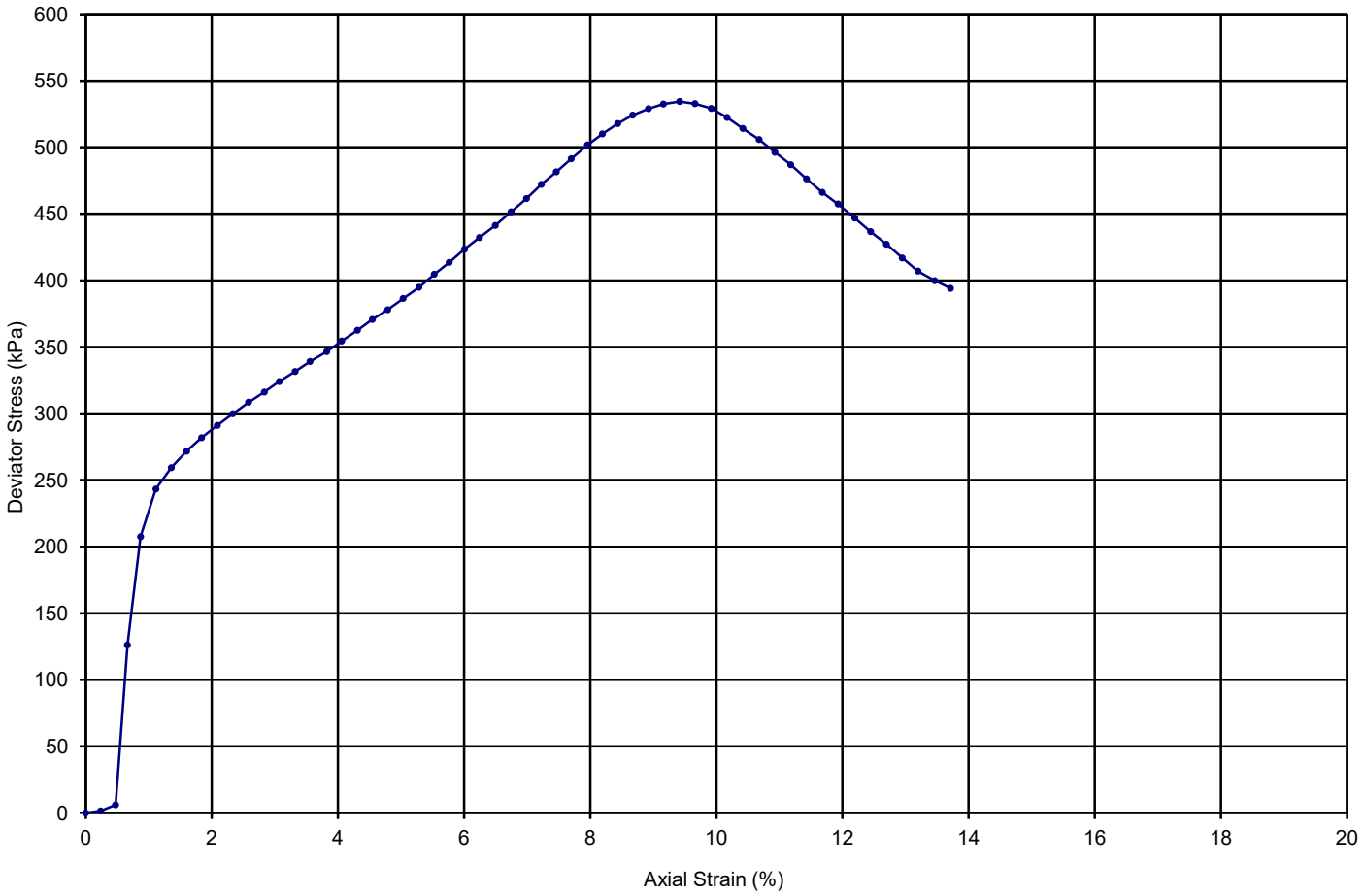
Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - K16
Soil description	**CLAY**	Sample No./Type	P21 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	59.40 - 59.60m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	48
Bulk Density ρ	Mg/m3	1.77
Dry Density $\rho\delta$	Mg/m3	1.19
Initial Height of the Specimen	mm	143.7
Initial Diameter of the Specimen	mm	70.7
Cell Pressure σ_3	kPa	1269
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	534
Failure Strain e	%	9.4
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	267

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

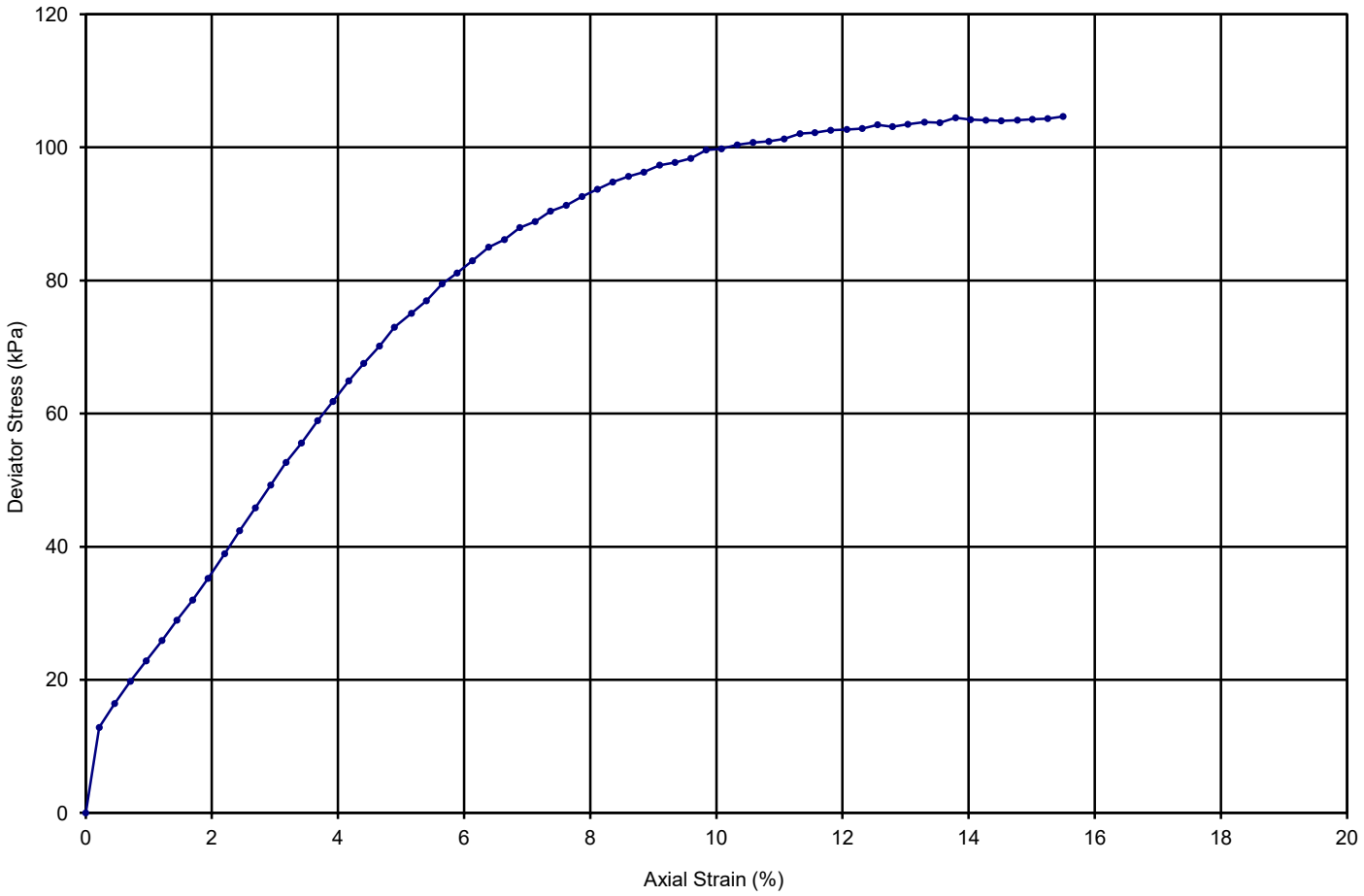
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - H10
Soil description	**CLAY**	Sample No./Type	P04 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	6.60 - 6.80

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	14
Bulk Density ρ	Mg/m3	2.08
Dry Density $\rho\delta$	Mg/m3	1.83
Initial Height of the Specimen	mm	143.8
Initial Diameter of the Specimen	mm	72.4
Cell Pressure σ_3	kPa	401
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	104
Failure Strain e	%	15.5
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	52

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Barrelling (plastic)

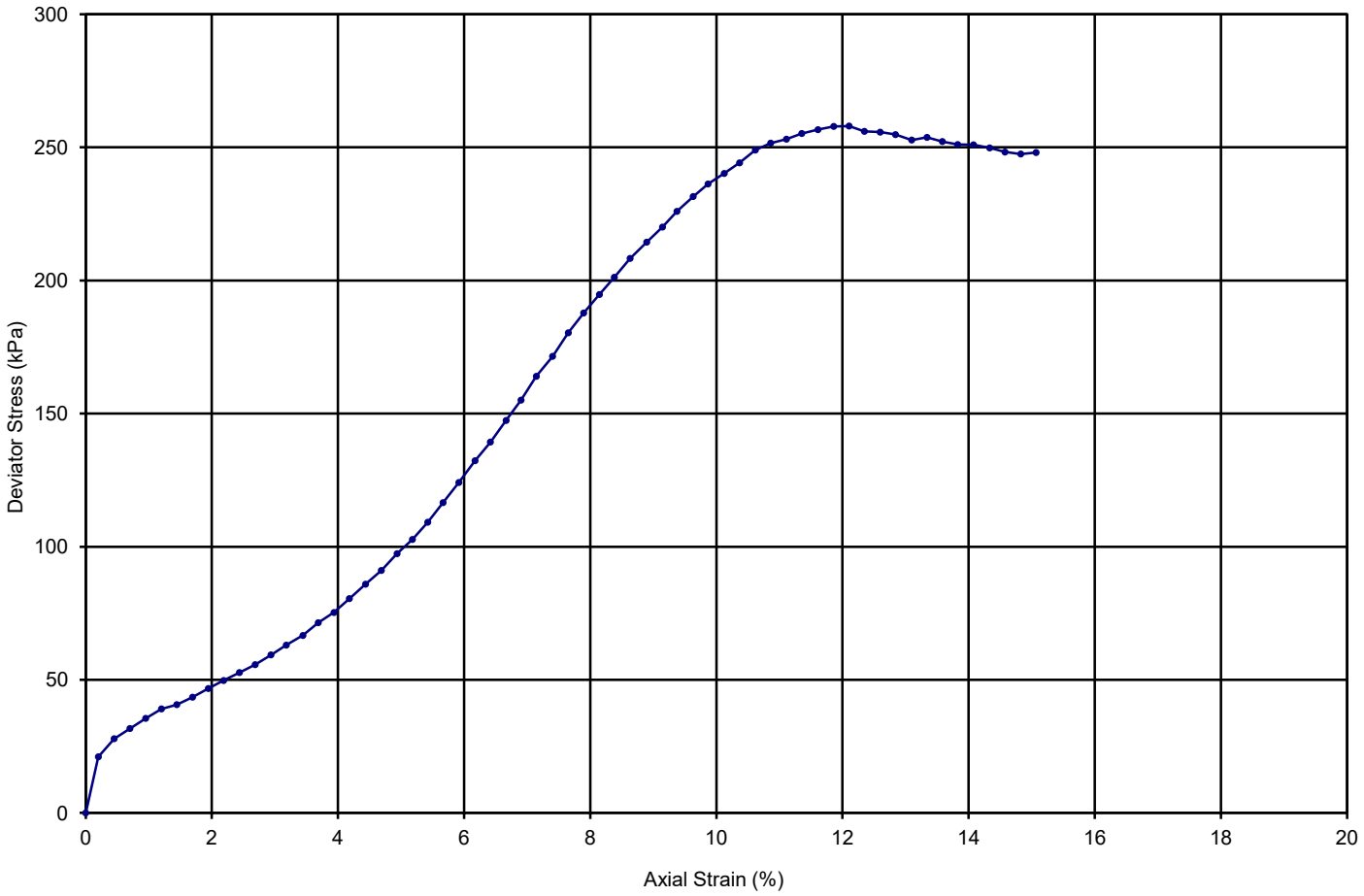
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH/XY		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - H10
Soil description	**sandy CLAY**	Sample No./Type	P15 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	50.60 - 50.80

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	32
Bulk Density ρ	Mg/m3	1.91
Dry Density $\rho\delta$	Mg/m3	1.45
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1216
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	258
Failure Strain e	%	12.1
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	129

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

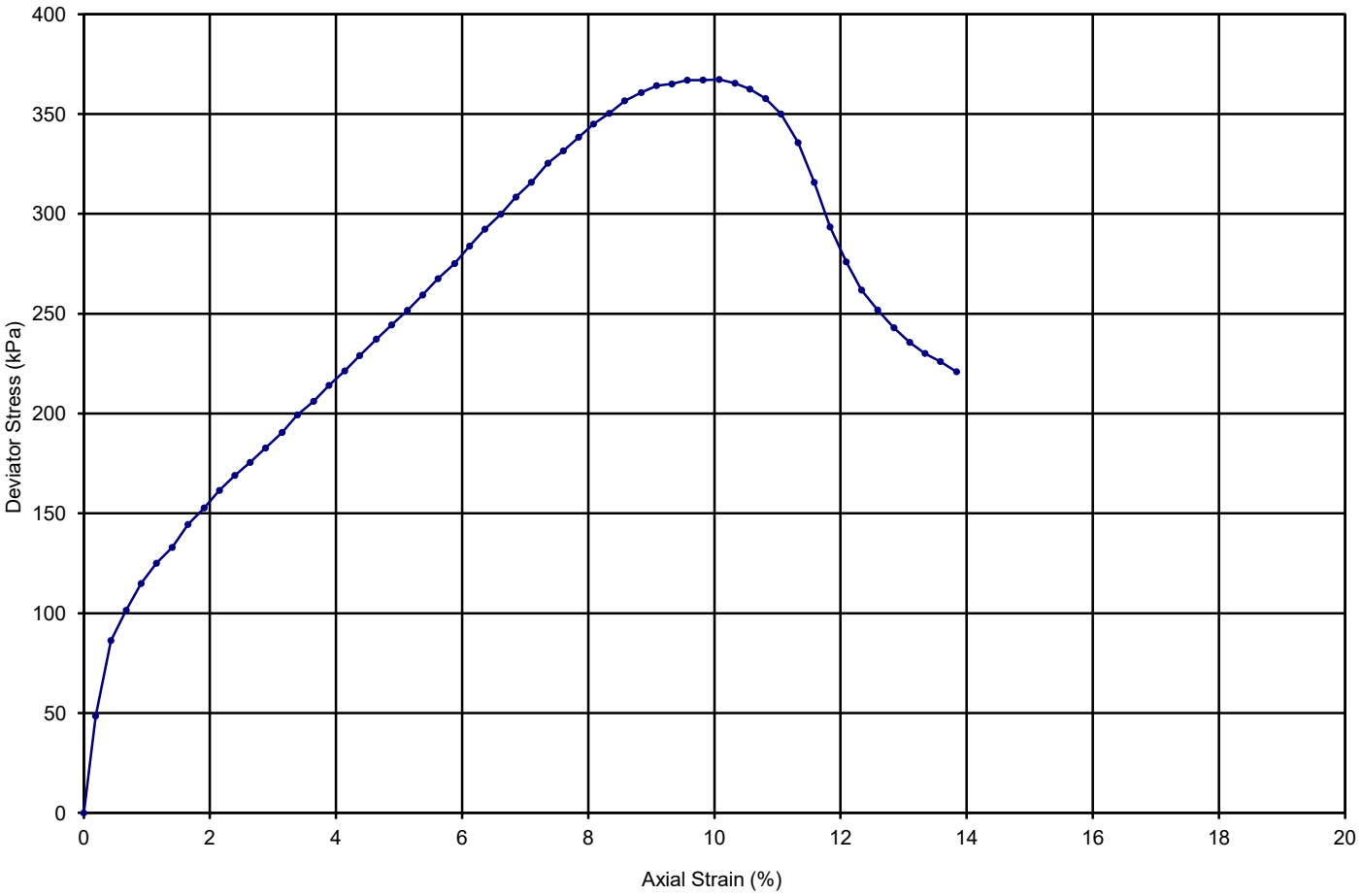
Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA		

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - H10
Soil description	**CLAY**	Sample No./Type	P20 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	66.40-66.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	35
Bulk Density ρ	Mg/m3	1.89
Dry Density $\rho\delta$	Mg/m3	1.39
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1498
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	367
Failure Strain e	%	10.1
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	184

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

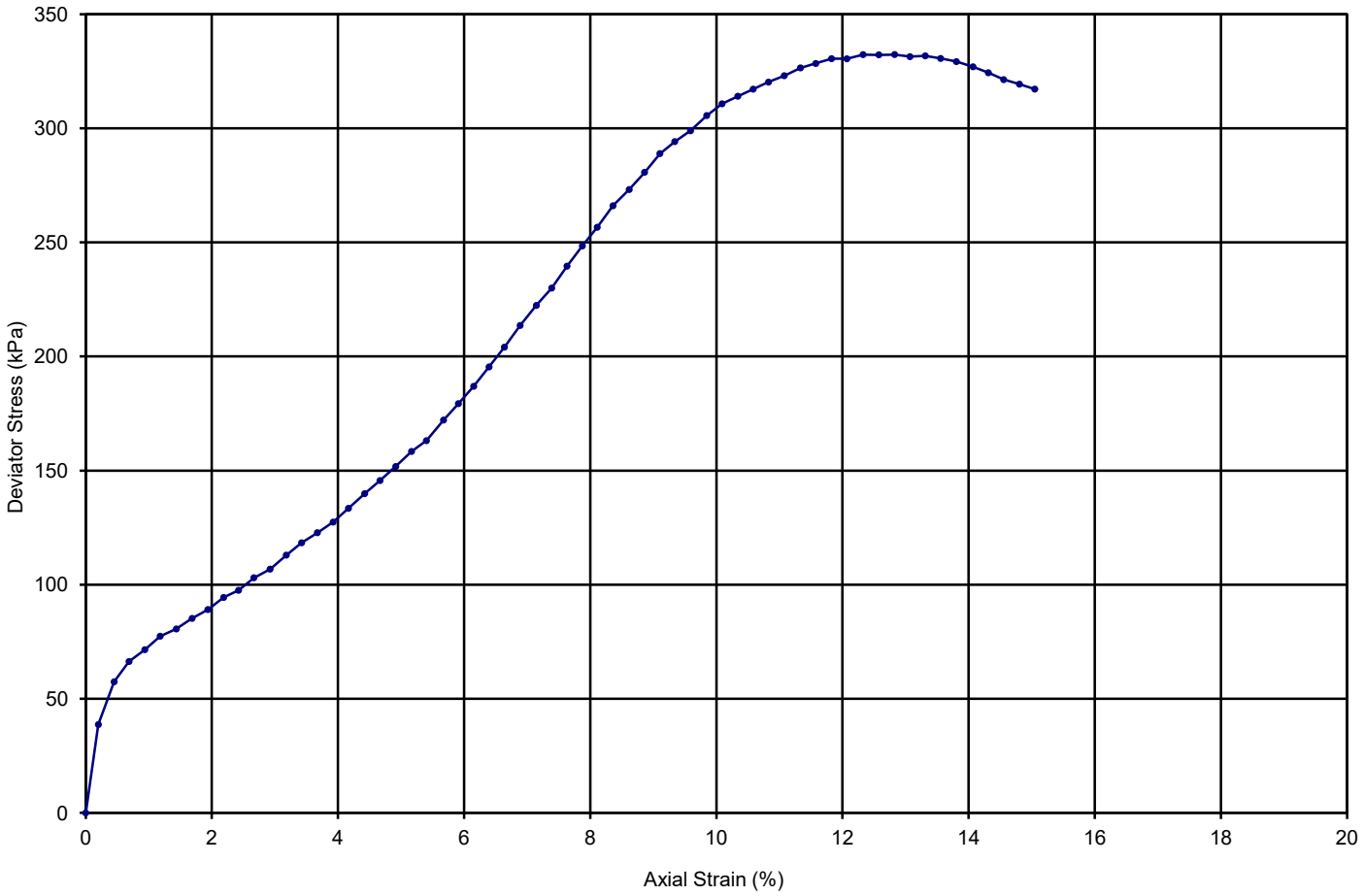
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - H10
Soil description	**CLAY**	Sample No./Type	P22 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	74.00 - 74.20

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	29
Bulk Density ρ	Mg/m3	1.98
Dry Density $\rho\delta$	Mg/m3	1.53
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	1705
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	332
Failure Strain e	%	12.8
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	166

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

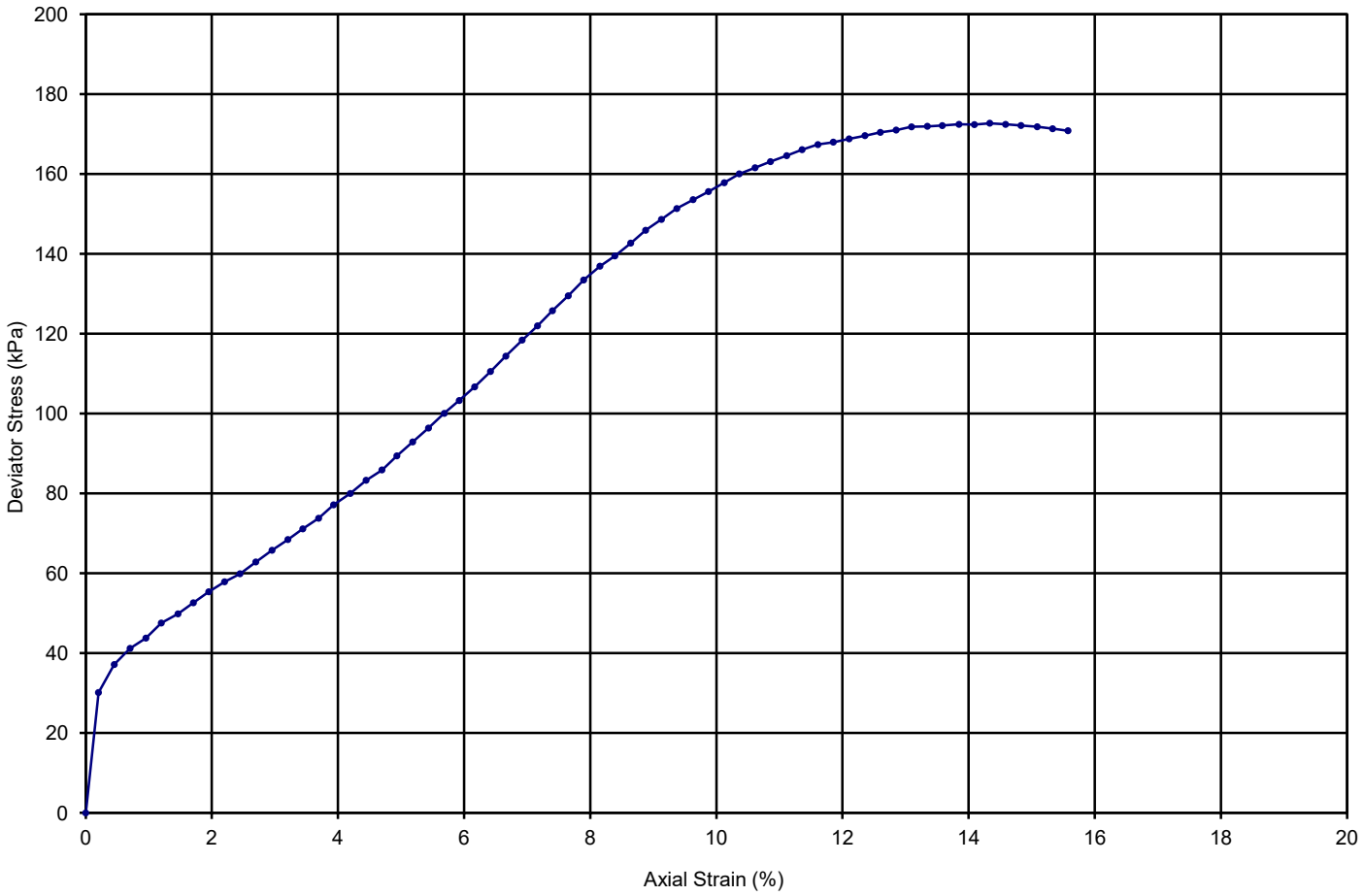
Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
JA		

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G7
Soil description	**CLAY**	Sample No./Type	P12 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	22.05 - 22.25

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	29
Bulk Density ρ	Mg/m3	1.91
Dry Density $\rho\delta$	Mg/m3	1.48
Initial Height of the Specimen	mm	143.5
Initial Diameter of the Specimen	mm	72.0
Cell Pressure σ_3	kPa	688
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	172
Failure Strain e	%	14.3
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	86

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

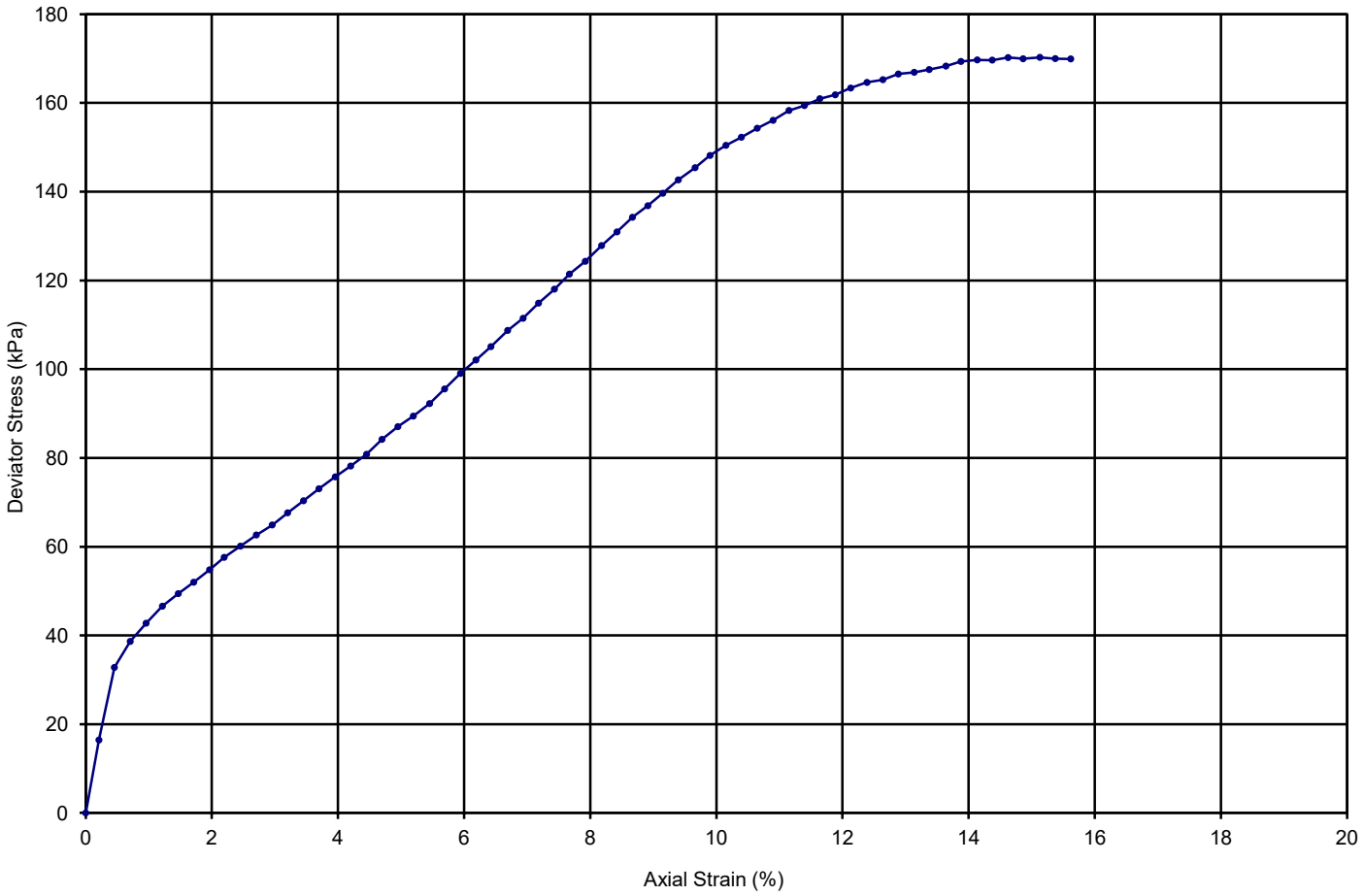
Tested by:	Checked by:	Approved by:
NH	**NV-S**	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy

Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G7
Soil description	**CLAY**	Sample No./Type	P13 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	31.10 - 31.30

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	22
Bulk Density ρ	Mg/m3	2.03
Dry Density $\rho\delta$	Mg/m3	1.67
Initial Height of the Specimen	mm	143.0
Initial Diameter of the Specimen	mm	71.4
Cell Pressure σ_3	kPa	895
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	170
Failure Strain e	%	15.1
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	85

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

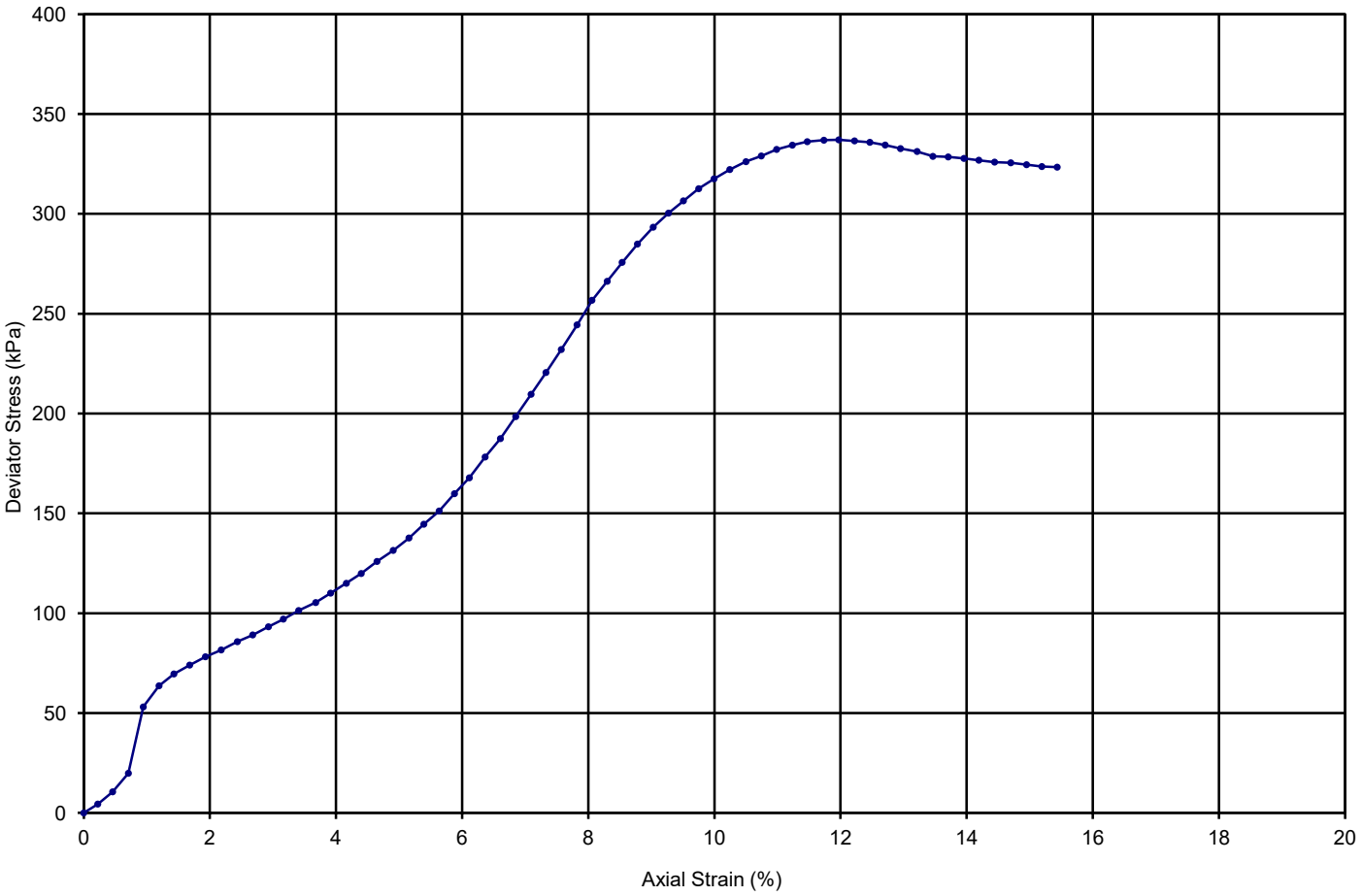
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH		

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G7
Soil description	**sandy CLAY**	Sample No./Type	P15 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	39.40-39.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	32
Bulk Density ρ	Mg/m3	1.88
Dry Density $\rho\delta$	Mg/m3	1.43
Initial Height of the Specimen	mm	144.1
Initial Diameter of the Specimen	mm	71.8
Cell Pressure σ_3	kPa	1002
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	337
Failure Strain e	%	12.0
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	168

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Shear (brittle)

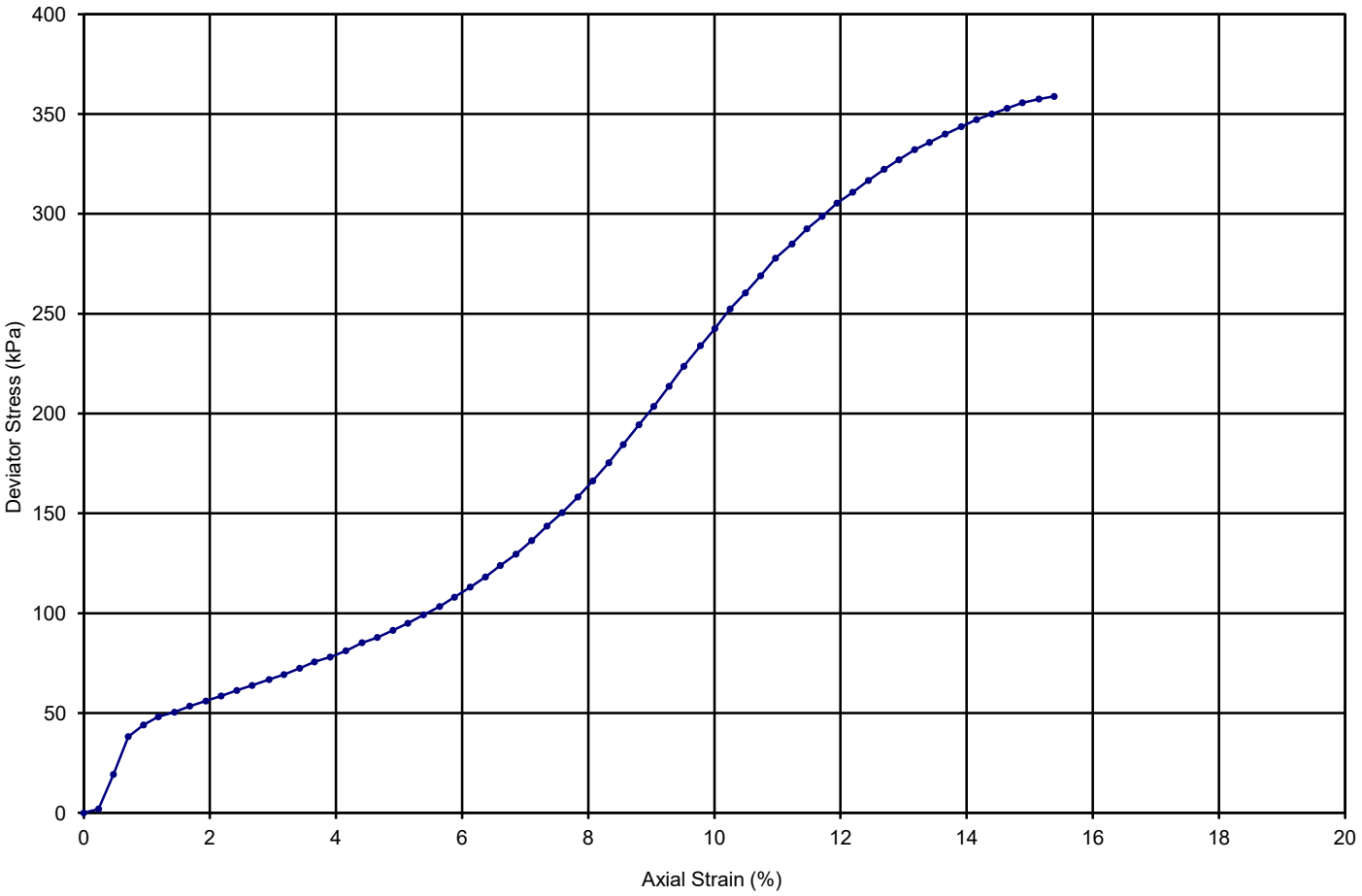
Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH	NV-S	

Revision: 1.0

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G7
Soil description	**CLAY/SAND**	Sample No./Type	P16 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	43.40 - 43.60

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	29
Bulk Density ρ	Mg/m3	1.98
Dry Density $\rho\delta$	Mg/m3	1.53
Initial Height of the Specimen	mm	144.6
Initial Diameter of the Specimen	mm	71.6
Cell Pressure σ_3	kPa	1111
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	359
Failure Strain e	%	15.4
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	179

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

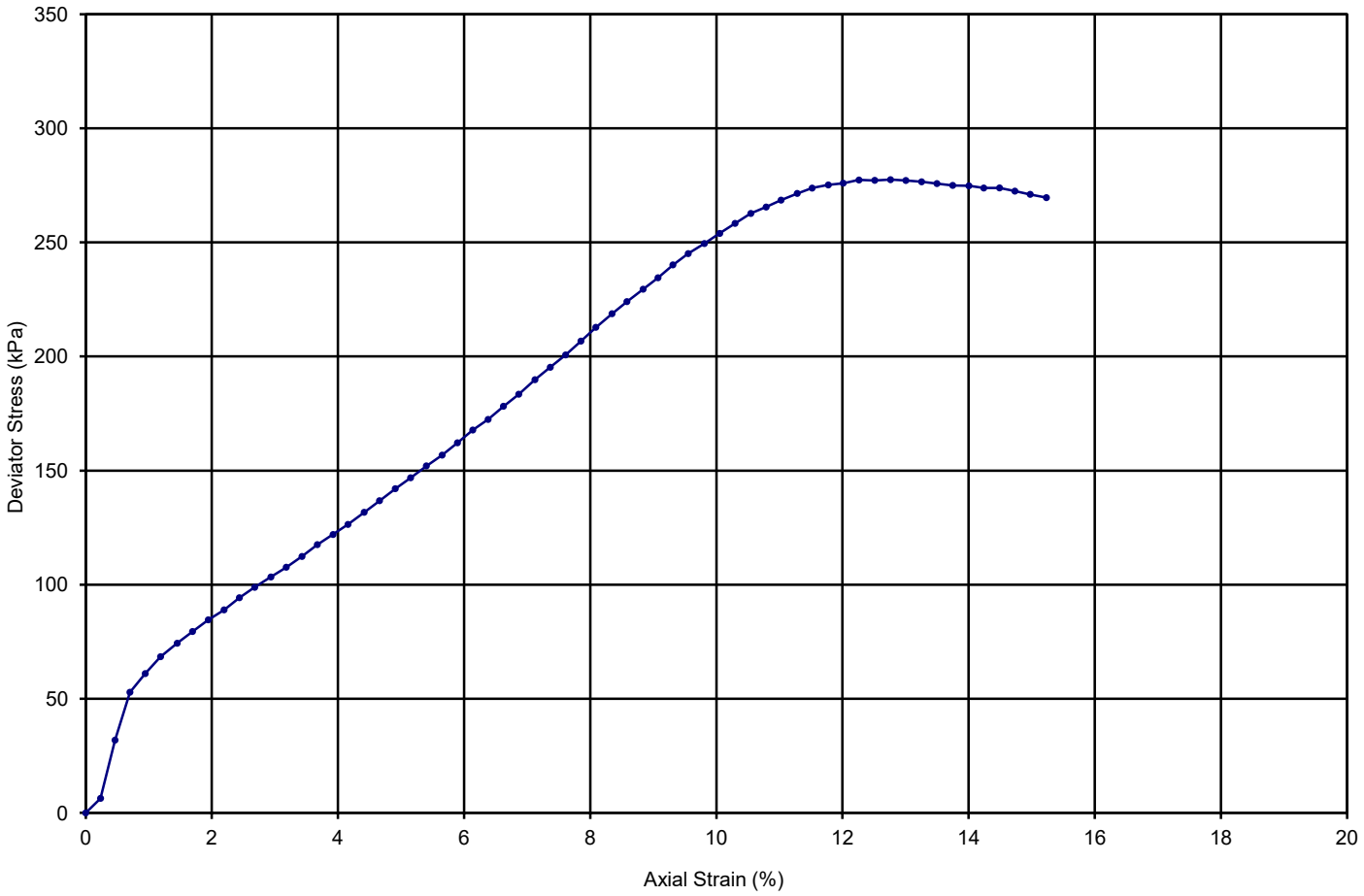
Intermediate

Remarks:
Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm
Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH	**NV-S**	

Gardline	Determination of the Undrained Shear Strength in Triaxial Compression	US Wind inc sea energy	
Location	**Geotechnical Marine Survey For the Maryland Wind Energy Area**	Contract No.	10451
		Borehole/Pit No.	BH - G7
Soil description	**CLAY**	Sample No./Type	P24 _ U1
Tested and prepared in accordance with	**ASTM D 2850 - 03a**	Depth (m)	71.80 - 72.00m

STRESS / STRAIN CURVE



RESULTS

Moisture Content	%	27
Bulk Density ρ	Mg/m3	1.98
Dry Density $\rho\delta$	Mg/m3	1.55
Initial Height of the Specimen	mm	144.0
Initial Diameter of the Specimen	mm	71.9
Cell Pressure σ_3	kPa	1666
Corrected Deviator Stress $(\sigma_1 - \sigma_3)_f$	kPa	277
Failure Strain e	%	12.8
Undrained Cohesion c_u $^1/_2(\sigma_1 - \sigma_3)_f$	kPa	139

PREPARATION DETAILS

Sample Type Undisturbed

FAILURE MODE

Intermediate

Remarks:

Membrane thickness: 38-50mm 0.2mm, 70-100mm 0.4mm

Sample sheared at a strain rate of 1 %min

Tested by:	Checked by:	Approved by:
NH	**NV-S**	

4.2 Offshore testing schedule

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		0.0-1.0																												
P1B1	B	0.0-0.2	x	x	x																									
P1B2	B	0.2-0.6	x	x	x																									
P2		1.0-2.0																												
P2B1	B	1.0-1.2	x	x	x																									
P2B2	B	1.2-1.6	x	x	x																									
P3		2.0-2.5																												
P3B1	B	2.0-2.3	x	x	x																									
P4		5.5-6.5																												
P4B1	B	5.5-5.7	x	x	x																									
P4B2	B	5.7-5.9	x	x	x																									
P4B3	B	5.9-6.2	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	22/06/2015 00:00
Client :	US Wind Inc.	End Date :	23/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
21/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		9.5-10.2																										x		
P1B1	B	9.5-9.7	x	x	x																									
P1B2	B	9.7-9.9	x	x	x																									
P2		14.0-15.0																												
P3		14.5-14.9																										x		
P3B1	B	14.5-14.7	x	x	x																									
P3B2	B	14.7-14.9	x	x	x																									
P4A		17.5-18.2																										x		
P4AB1	B	17.5-17.7	x	x	x																									
P5		21.0-21.7																										x		
P5B1	B	21.0-21.3	x	x	x																									
P5B2	B	21.3-21.5	x	x	x																									
P6		25.0-25.5																										x		
P6B1	B	25.0-25.3	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	23/06/2015 00:00
Client :	US Wind Inc.	End Date :	23/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
x		
23/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		28.0-29.0																												
P1B1	B	28.0-28.2	x	x	x																									
P1Q1	Q	28.2-28.4										x	x																	
P1Q2	Q	28.4-28.6										x																		
P1U1	U	28.6-28.8										x	x			x				833										
P1B2	B	28.8-29.0	x	x	x							x	x																	
P2		29.0-30.0																												
P2B1	B	29.0-29.2	x	x	x							x	x																	
P2Q1	Q	29.2-29.4										x																		
P2U1	U	29.4-29.6														x				894										
P2Q2	Q	29.6-29.8										x	x																	
P2B2	B	29.8-30.0	x	x	x							x	x	x																
P3		32.5-33.5																												
P3B1	B	32.5-32.7	x	x	x							x	x																	
P3Q1	Q	32.7-32.9											x																	
P3U1	U	32.9-33.1										x				x				993										
P3Q2	Q	33.1-33.3																												
P3B2	B	33.3-33.5	x	x	x							x	x																	
P4		36.5-37.2																												
P4B1	B	36.5-36.7	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	24/06/2015 00:00
Client :	US Wind Inc.	End Date :	24/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
24/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P4Q1	Q	36.7-36.9																												
P5		39.5-40.5																												
P5B1	B	39.5-39.8	x	x	x																									
P5B2	B	39.8-40.1	x	x	x																									
P6A		44.0-45.0																												
P6AB1	B	44.0-44.2	x	x	x							x	x																	
P6AQ1	Q	44.2-44.4																												
P6AU1	U	44.4-44.6														x				1156										
P6AQ2	Q	44.6-44.8										x																		
P6AB2	B	44.8-45.0	x	x	x							x																		
P7		48.0-49.0																												
P7B1	B	48.0-48.2	x	x	x							x																		
P7Q1	Q	48.2-48.4																												
P7B2	B	48.4-48.6	x	x	x							x																		
P7Q2	Q	48.6-48.8																												
P7U1	U	48.8-49.0										x				x				1282										
P8		51.0-51.7																												
P8B1	B	51.0-51.3	x	x	x							x																		
P8B2	B	51.3-51.5	x	x	x																									
P9		55.0-56.0																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	24/06/2015 00:00
Client :	US Wind Inc.	End Date :	24/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
24/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P9Q1	Q	55.0-55.2																												
P9Q2	Q	55.2-55.4																												
P9B1	B	55.4-55.6	x	x	x							x																		
P9B2	B	55.6-55.8	x	x	x							x																		
P9B3	B	55.8-56.0	x	x	x							x																		
P10		59.0-60.0																												
P10B1	B	59.0-59.2	x	x	x							x																		
P10Q1	Q	59.2-59.4																												
P10B2	B	59.4-59.8	x	x	x							x																		
P10B3	B	59.8-60.0	x	x	x							x																		
P11		63.0-64.0																												
P11B1	B	63.0-63.1	x	x	x							x																		
P11Q1	Q	63.1-63.3																												
P11B2	B	63.3-63.5	x	x	x							x																		
P11Q2	Q	63.5-63.7																												
P11B3	B	63.7-64.0	x	x	x							x																		
P12		67.0-68.0																												
P12B1	B	67.0-67.1	x	x	x																									
P12Q1	Q	67.1-67.3																												
P12Q2	Q	67.3-67.5																												

Key:

T = Undisturbed and preserved in sampling tube
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B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	24/06/2015 00:00
Client :	US Wind Inc.	End Date :	24/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
24/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - I21B

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P12B2	B	67.5-67.8	x	x	x																									
P12B3	B	67.8-68.0																												
P13		71.0-72.0																												
P13B1	B	71.0-71.3	x	x	x																									
P13B2	B	71.3-71.5	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	24/06/2015 00:00
Client :	US Wind Inc.	End Date :	24/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
24/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - MET TOWER

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		0.0-1.0																												
P1B1	B	0.0-0.3	x	x	x																									
P1B2	B	0.3-0.5																												
P1B3	B	0.5-0.7	x	x	x																									
P2		1.0-1.7																												
P2B1	B	1.0-1.2	x	x	x								x																	
P2B2	B	1.2-1.4	x	x	x																									
P3		2.0-3.0																												
P3B1	B	2.0-2.3	x	x	x																									
P3B2	B	2.3-2.6	x	x	x																									
P4		5.0-5.7																												
P4B1	B	5.0-5.3	x	x	x																									
P5		8.5-9.2																												
P5B1	B	8.5-8.8	x	x	x																									
P5B2	B	8.8-9.0	x	x	x																									
P6		12.5-13.3																												
P6B1	B	12.5-12.7	x	x	x																									
P6B2	B	12.7-13.0	x	x	x																									
P9		25.5-26.5																												
P9B1	B	25.5-25.7	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	25/06/2015 00:00
Client :	US Wind Inc.	End Date :	27/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
25/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - MET TOWER

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P9Q1	Q	25.7-25.9											x																	
P9U1	U	25.9-26.1														x				798										
P9Q2	Q	26.1-26.3										x	x																	
P9B2	B	26.3-26.5	x	x	x							x																		
P10		29.0-30.0																												
P10B1	B	29.0-29.2	x	x	x																									
P10Q1	Q	29.2-29.4										x																		
P10U1	U	29.4-29.6														x				901										
P10Q2	Q	29.6-29.8										x																		
P10B2	B	29.8-30.0	x	x	x							x		x																
P11		33.0-34.0																												
P11B1	B	33.0-33.2	x	x	x																									
P11Q1	Q	33.2-33.4										x																		
P11U1	U	33.4-33.6														x				965										
P11Q2	Q	33.6-33.8										x																		
P11B2	B	33.8-34.0	x	x	x							x																		
P12		37.0-37.4																												
P12B1	B	37.0-37.2																												
P13		40.5-41.5																												
P13B1	B	40.5-40.7	x	x	x							x																		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	25/06/2015 00:00
Client :	US Wind Inc.	End Date :	27/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
25/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - MET TOWER

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P13Q1	Q	40.7-40.9																												
P13Q2	Q	40.9-41.1																												
P13B2	B	41.1-41.4	x	x	x							x																		
P14		44.5-45.5																												
P14B1	B	44.5-44.6	x	x	x																									
P14A		44.5-45.0																												
P14AB1	B	44.5-44.8																												
P16A		53.5-54.5																												
P16AB1	B	53.5-53.7	x	x	x																									
P16AB2	B	53.7-53.9	x	x	x																									
P17		57.0-57.8																												
P17Q1	Q	57.0-57.2	x	x	x							x																		
P17B1	B	57.2-57.5																												
P17B2	B	57.5-57.8	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	25/06/2015 00:00
Client :	US Wind Inc.	End Date :	27/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
X		
25/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		0.0-0.7																												
P1B1	B	0.0-0.3	x	x	x																									
P2		0.5-1.0																												
P4		2.0-3.0																												
P4B1	B	2.0-2.2	x	x	x																									
P4B2	B	2.2-2.5																												
P5		3.0-4.0																												
P5B1	B	3.0-3.1																												
P5B2	B	3.1-3.4	x	x	x																									
P5B3	B	3.4-3.6	x	x	x																									
P5B4	B	3.6-3.8																												
P6		7.0-7.7																												
P6B1	B	7.0-7.3	x	x	x																									
P7		10.0-11.0																												
P7B1	B	10.0-10.1	x	x	x							x	x																	
P7Q1	Q	10.1-10.3																												
P7U1	U	10.3-10.5														x				373										
P7Q2	Q	10.5-10.7																												
P7B2	B	10.7-10.8	x	x	x							x	x	x																
P8		13.5-14.5																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

Ordered offshore
x Completed offshore
Unable to run
Test at GL onshore

Project No :	10451	Start Date :	28/06/2015 00:00
Client :	US Wind Inc.	End Date :	28/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
SH		
28/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P8B1	B	13.5-13.7	x	x	x							x	x																	
P8Q1	Q	13.7-13.9																												
P8Q2	Q	13.9-14.1											x																	
P8B2	B	14.1-14.3	x	x	x							x	x	x																
P9		17.5-17.9																												
P9B1	B	17.5-17.8																												
P10		21.0-22.0																												
P10B1	B	21.0-21.3	x	x	x							x																		
P10B2	B	21.3-21.6	x	x	x							x																		
P11		24.5-25.2																												
P11B1	B	24.5-24.8	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

Ordered offshore
x Completed offshore
Unable to run
Test at GL onshore

Project No :	10451	Start Date :	28/06/2015 00:00
Client :	US Wind Inc.	End Date :	28/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
SH		
28/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		1.0-1.6																												
P1B1	B	1.0-1.2	x	x	x																									
P2		25.5-26.0																												
P2B1	B	25.5-25.7	x	x	x																									
P3		29.0-30.0																												
P3B1	B	29.0-29.3	x	x	x																									
P3Q1	Q	29.3-29.5																												
P3Q2	Q	29.5-29.7																												
P3B2	B	29.7-29.9	x	x	x																									
P4		33.0-34.0																												
P4B1	B	33.0-33.3	x	x	x																									
P4B2	B	33.3-33.5																												
P4B3	B	33.5-33.7	x	x	x																									
P5		37.0-38.0																												
P5B1	B	37.0-37.1	x	x	x																									
P5Q1	Q	37.1-37.3																												
P5B2	B	37.3-37.5	x	x	x																									
P5Q2	Q	37.5-37.7																												
P5B3	B	37.7-37.9	x	x	x																									
P6		41.0-42.0																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	30/06/2015 00:00
Client :	US Wind Inc.	End Date :	30/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
x		
30/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P6B1	B	41.0-41.2	x	x	x																									
P6B2	B	41.2-41.4	x	x	x																									
P6Q1	Q	41.4-41.6																												
P6B3	B	41.6-41.8	x	x	x																									
P6Q2	Q	41.8-42.0																												
P7		45.0-45.6																												
P7B1	B	45.0-45.1	x	x	x																									
P7Q1	Q	45.1-45.3																												
P7B2	B	45.3-45.5	x	x	x																									
P8		48.5-49.5																												
P8B1	B	48.5-48.7	x	x	x																									
P8Q1	Q	48.7-48.9																												
P8U1	U	48.9-49.1														x				1129										
P8Q2	Q	49.1-49.3																												
P8B2	B	49.3-49.5	x	x	x							x																		
P9		52.5-53.5																												
P9B1	B	52.5-52.7	x	x	x								x																	
P9B2	B	52.7-52.9										x																		
P9U1	U	52.9-53.1														x				798										
P9B3	B	53.1-53.1										x																		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	30/06/2015 00:00
Client :	US Wind Inc.	End Date :	30/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
x		
30/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P9Q1	Q	53.1-53.3																												
P9B4	B	53.3-53.4	x	x	x							x	x																	
P10		56.5-57.5																												
P10B1	B	56.5-56.6	x	x	x																									
P10Q1	Q	56.6-56.8																												
P10Q2	Q	56.8-57.0																												
P10B2	B	57.0-57.1	x	x	x																									
P11		60.5-61.5																												
P11B1	B	60.5-60.7	x	x	x							x																		
P11U1	U	60.7-60.9														x				1375										
P11Q1	Q	60.9-61.1																												
P11Q2	Q	61.1-61.3																												
P11B2	B	61.3-61.5																												
P12		64.5-65.0																												
P12B1	B	64.5-64.6	x	x	x																									
P12Q1	Q	64.6-64.8																												
P12B2	B	64.8-64.8	x	x	x																									
P13		68.0-68.5																												
P13B1	B	68.0-68.2	x	x	x																									
P13B2	B	68.2-68.4	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	30/06/2015 00:00
Client :	US Wind Inc.	End Date :	30/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
x		
30/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - D14A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography			

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	30/06/2015 00:00
Client :	US Wind Inc.	End Date :	30/06/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
x		
30/06/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		0.0-0.5																												
P1B1	B	0.0-0.4	x	x	x																									
P2		0.5-1.5																												
P2B1	B	0.5-0.9	x	x	x																									
P2B2	B	0.9-1.2																												
P3		1.5-2.3																												
P3B1	B	1.5-1.8	x	x	x																									
P3B2	B	1.8-2.0	x	x	x																									
P4		5.0-6.0																												
P4B1	B	5.0-5.3	x	x	x																									
P4B2	B	5.3-5.5	x	x	x																									
P5		8.0-8.8																												
P5B1	B	8.0-8.2	x	x	x																									
P7A		12.0-12.5																												
P7AB1	B	12.0-12.1																												
P8		15.0-15.5																												
P9		17.0-17.5																												
P9B1	B	17.0-17.2	x	x	x																									
P10		18.5-19.0																												
P10B1	B	18.5-18.6																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	01/07/2015 00:00
Client :	US Wind Inc.	End Date :	01/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P10Q1	Q	18.6-18.7																												
P10B2	B	18.7-18.8	x	x	x																									
P11		29.5-30.0																												
P11B1	B	29.5-29.8	x	x	x																									
P14A		33.5-34.5																												
P14AB1	B	33.5-33.7	x	x	x																									
P14AQ1	Q	33.7-33.9										x																		
P14AU1	U	33.9-34.1																												
P14AB2	B	34.1-34.3	x	x	x							x	x																	
P15		37.5-38.5																												
P15B1	B	37.5-37.7	x	x	x																									
P15Q1	Q	37.7-37.9										x																		
P15U1	U	37.9-38.1																												
P15Q2	Q	38.1-38.3										x	x																	
P15B2	B	38.3-38.4	x	x	x							x	x	x																

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	01/07/2015 00:00
Client :	US Wind Inc.	End Date :	01/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		41.0-42.0																												
P1B1	B	41.0-41.2	x	x	x							x																		
P1Q1	Q	41.2-41.4																												
P1U1	U	41.4-41.6														x				1013										
P1Q2	Q	41.6-41.8																												
P1B2	B	41.8-42.0	x	x	x																									
P2		44.5-45.2																												
P2B1	B	44.5-44.7	x	x	x																									
P3		48.0-48.9																												
P3B1	B	48.0-48.3	x	x	x																									
P3B2	B	48.3-48.5	x	x	x																									
P3B3	B	48.5-48.7																												
P4		52.0-52.8																												
P4B1	B	52.0-52.1	x	x	x																									
P4Q1	Q	52.1-52.3																												
P4B2	B	52.3-52.5	x	x	x																									
P4Q2	Q	52.5-52.7																												
P4B3	B	52.7-52.8	x	x	x																									
P5		56.0-56.9																												
P5B1	B	56.0-56.1	x	x	x							x																		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

				QC Status		
Project No :	10451	Start Date :	02/07/2015 00:00			
Client :	US Wind Inc.	End Date :	02/07/2015 00:00	Prelim	Draft	Final
Site :	Maryland, USA	Engineer :	SH,NV	SH		
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB	02/07/2015		

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G17A

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P5Q1	Q	56.1-56.3														x				1293										
P5U1	U	56.3-56.5																												
P5Q2	Q	56.5-56.7																												
P5B2	B	56.7-56.9	x	x	x							x																		
P6		60.0-61.0																												
P6B1	B	60.0-60.3	x	x	x																									
P6B2	B	60.3-60.5																												
P6B3	B	60.5-60.8	x	x	x																									
P6B4	B	60.8-61.0	x	x	x																									
P7		64.0-65.0																												
P7B1	B	64.0-64.3	x	x	x																									
P7B2	B	64.3-64.6																												
P7B3	B	64.6-64.8	x	x	x																									

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	02/07/2015 00:00
Client :	US Wind Inc.	End Date :	02/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final
SH		
02/07/2015		

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1A		0.0-0.8																												
P1AB1	B	0.0-0.1	x	x	x																									
P3		3.5-4.3																												
P3B1	B	3.5-3.8	x	x	x																									
P3B2	B	3.8-4.0	x	x	x																									
P4A		7.5-8.3																												
P4AB1	B	7.5-7.7	x	x	x																									
P10		22.0-22.7																												
P10B1	B	22.0-22.2	x	x	x																									
P12		28.0-28.7																												
P12B1	B	28.0-28.4	x	x	x																									
P13		31.0-31.8																												
P13B1	B	31.0-31.3	x	x	x																									
P15		40.0-41.0																												
P15B1	B	40.0-40.2	x	x	x							x	x																	
P15Q1	Q	40.2-40.4																												
P15U1	U	40.4-40.6										x	x			x				1011										
P15Q2	Q	40.6-40.8																												
P15B2	B	40.8-41.0	x	x	x							x	x	x																
P16		44.0-45.0																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	03/07/2015 00:00
Client :	US Wind Inc.	End Date :	03/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P16B1	B	44.0-44.2	x	x	x							x	x																	
P16Q1	Q	44.2-44.4																												
P16U1	U	44.4-44.6										x				x				1095										
P16Q2	Q	44.6-44.8																												
P16B2	B	44.8-45.0	x	x	x							x		x																
P17		48.0-49.0																												
P17B1	B	48.0-48.2	x	x	x							x	x																	
P17U1	U	48.2-48.4																												
P17Q1	Q	48.4-48.6										x	x																	
P17Q2	Q	48.6-48.8																												
P17B2	B	48.8-49.0	x	x	x							x	x																	
P18		49.5-50.3																												
P18B1	B	49.5-49.7	x	x	x																									
P18B2	B	49.7-49.8	x	x	x							x	x																	
P19		51.0-52.0																												
P19B1	B	51.0-51.2	x	x	x																									
P19B2	B	51.2-51.4																												
P19B3	B	51.4-51.7	x	x	x																									
P20		55.0-56.0																												
P20B1	B	55.0-55.2	x	x	x							x																		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

				QC Status		
Project No :	10451	Start Date :	03/07/2015 00:00			
Client :	US Wind Inc.	End Date :	03/07/2015 00:00	Prelim	Draft	Final
Site :	Maryland, USA	Engineer :	SH,NV			
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB			

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P20Q1	Q	55.2-55.4																												
P20U1	U	55.4-55.6														x				1194										
P20Q2	Q	55.6-55.8										x	x																	
P20B2	B	55.8-56.0	x	x	x							x	x																	
P21		59.0-60.0																												
P21B1	B	59.0-59.2	x	x	x							x																		
P21Q1	Q	59.2-59.4																												
P21U1	U	59.4-59.6										x				x				1269										
P21Q2	Q	59.6-59.8																												
P21B2	B	59.8-60.0	x	x	x							x																		
P22		63.0-64.0																												
P22B1	B	63.0-63.3	x	x	x							x																		
P22Q1	Q	63.3-63.5																												
P22B2	B	63.5-63.8	x	x	x							x																		
P22B3	B	63.8-64.0										x																		
P23		66.5-67.5																												
P23B1	B	66.5-66.8	x	x	x																									
P23B2	B	66.8-67.0																												
P23B3	B	67.0-67.2	x	x	x																									
P24		71.0-71.7																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	03/07/2015 00:00
Client :	US Wind Inc.	End Date :	03/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - K16

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P24B1	B	71.0-71.4	x	x	x																									
P6		13.0-13.7																												
P6B1	B	13.0-13.2																												

Key:

T = Undisturbed and preserved in sampling tube
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U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	03/07/2015 00:00
Client :	US Wind Inc.	End Date :	03/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P1		0.0-1.0																										x		
P1B1	B	0.0-0.2	x	x	x																									
P1B2	B	0.2-0.4	x	x	x																									
P2		1.0-2.0																										x		
P2B1	B	1.0-1.3	x	x	x																									
P2B2	B	1.3-1.6	x	x	x																									
P3		2.0-3.0																										x		
P3Q1	Q	2.0-2.2																												
P3B1	B	2.2-2.4	x	x	x							x	x																	
P3B2	B	2.4-2.7	x	x	x								x																	
P4		6.0-7.0																										x		
P4B1	B	6.0-6.2	x	x	x							x	x																	
P4Q1	Q	6.2-6.4																												
P4Q2	Q	6.4-6.6										x	x																	
P4U1	U	6.6-6.8														x				401										
P4B2	B	6.8-6.8	x	x	x									x																
P5		10.0-10.5																										x		
P5B1	B	10.0-10.3	x	x	x																									
P6A		13.5-14.0																										x		
P6AB1	B	13.5-13.8	x	x	x																									

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	Test at GL onshore

Project No :	10451	Start Date :	05/07/2015 00:00
Client :	US Wind Inc.	End Date :	05/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P8		23.5-24.5																										x		
P8B1	B	23.5-23.8	x	x	x																									
P8B2	B	23.8-23.9	x	x	x																									
P9		26.0-27.0																										x		
P9B1	B	26.0-26.3	x	x	x							x																		
P9Q1	Q	26.3-26.5																												
P9Q2	Q	26.5-26.7																												
P9B2	B	26.7-26.9	x	x	x							x																		
P10		30.0-31.0																										x		
P10B1	B	30.0-30.3	x	x	x																									
P10B2	B	30.3-30.5																												
P10B3	B	30.5-30.8	x	x	x																									
P11		34.0-34.9																										x		
P11B1	B	34.0-34.3	x	x	x							x																		
P11Q1	Q	34.3-34.5																												
P11B2	B	34.5-34.8	x	x	x							x	x																	
P12		38.0-38.9																										x		
P12B1	B	38.0-38.3	x	x	x																									
P12B2	B	38.3-38.6	x	x	x																									
P13		42.0-43.0																										x		

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	Test at GL onshore

Project No :	10451	Start Date :	05/07/2015 00:00
Client :	US Wind Inc.	End Date :	05/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P13B1	B	42.0-42.3	x	x	x																									
P13B2	B	42.3-42.6																												
P13B3	B	42.6-42.8	x	x	x																									
P14		46.0-47.0																										x		
P14B1	B	46.0-46.2	x	x	x																									
P14Q1	Q	46.2-46.4																												
P14B2	B	46.4-46.6	x	x	x																									
P14Q2	Q	46.6-46.8																												
P14B3	B	46.8-47.0	x	x	x																									
P15		50.0-51.0																										x		
P15B1	B	50.0-50.2	x	x	x																									
P15Q1	Q	50.2-50.4																												
P15Q2	Q	50.4-50.6																												
P15U1	U	50.6-50.8														x				1216										
P15B2	B	50.8-51.0	x	x	x							x																		
P16		54.0-55.0																										x		
P16B1	B	54.0-54.2	x	x	x																									
P16Q1	Q	54.2-54.4																												
P16B2	B	54.4-54.6	x	x	x																									
P16Q2	Q	54.6-54.8																												

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Project No :	10451	Start Date :	05/07/2015 00:00
Client :	US Wind Inc.	End Date :	05/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
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Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P16B3	B	54.8-55.0	x	x	x																									
P17		56.0-56.5																										x		
P17B1	B	56.0-56.3	x	x	x																									
P18		59.5-60.0																										x		
P18B1	B	59.5-59.8	x	x	x																									
P19		63.0-63.5																										x		
P19Q1	Q	63.0-63.2																												
P19B1	B	63.2-63.3	x	x	x																									
P20		66.0-67.0																										x		
P20B1	B	66.0-66.2	x	x	x							x	x																	
P20Q1	Q	66.2-66.4																												
P20U1	U	66.4-66.6										x	x			x				1498										
P20Q2	Q	66.6-66.8																												
P20B2	B	66.8-67.0	x	x	x							x	x																	
P21		70.0-71.0																										x		
P21B1	B	70.0-70.2	x	x	x							x	x																	
P21Q1	Q	70.2-70.4																												
P21Q2	Q	70.4-70.6																												
P21B2	B	70.6-70.8	x	x	x							x	x																	
P21B3	B	70.8-71.0	x	x	x							x	x																	

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	Test at GL onshore

Project No :	10451	Start Date :	05/07/2015 00:00
Client :	US Wind Inc.	End Date :	05/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - H10

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P22		74.0-75.0																										x		
P22U1	U	74.0-74.2										x	x			x				1705										
P22Q1	Q	74.2-74.4																												
P22B1	B	74.4-74.6	x	x	x							x	x																	
P22Q2	Q	74.6-74.8																												
P22B2	B	74.8-74.9	x	x	x							x	x																	

Key:

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B = Disturbed and preserved in bag
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C = Rock core

Ordered offshore
x Completed offshore
Unable to run
Test at GL onshore

Project No :	10451	Start Date :	05/07/2015 00:00
Client :	US Wind Inc.	End Date :	05/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P2		0.5-1.1																										x		
P2B1	B	0.5-0.7																												
P2B2	B	0.7-0.9	x	x	x																									
P3		1.0-1.8																										x		
P3B1	B	1.0-1.2	x	x	x																									
P3B2	B	1.2-1.4																												
P3B3	B	1.4-1.6	x	x	x									x																
P4		4.5-4.9																										x		
P4B1	B	4.5-4.6	x	x	x																									
P5		8.0-8.2																										x		
P5B1	B	8.0-8.2	x	x	x																									
P6A		10.0-10.4																										x		
P6AB1	B	10.0-10.1																												
P7A		12.5-12.9																										x		
P7AB1	B	12.5-12.8	x	x	x																									
P8		14.5-15.1																										x		
P8B1	B	14.5-14.7	x	x	x																									
P10		19.0-20.0																										x		
P10Q1	Q	19.0-19.2										x																		
P10Q2	Q	19.2-19.4																												

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	06/07/2015 00:00
Client :	US Wind Inc.	End Date :	07/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P10B1	B	19.4-19.7	x	x	x							x	x																	
P10B2	B	19.7-19.8	x	x	x																									
P11		23.0-24.0																										x		
P11Q1	Q	23.0-23.2										x	x																	
P11Q2	Q	23.2-23.4																												
P11B1	B	23.4-23.6	x	x	x							x	x																	
P11B2	B	23.6-23.8	x	x	x																									
P12		27.0-28.0																										x		
P12B1	B	27.0-27.1																												
P12U1	U	27.1-27.3														x				688										
P12B2	B	27.3-27.3										x	x																	
P12Q1	Q	27.3-27.5																												
P12B3	B	27.5-27.7	x	x	x							x	x																	
P12Q2	Q	27.7-27.9																												
P12B4	B	27.9-28.0	x	x	x							x	x	x																
P13		31.0-32.0																										x		
P13B1	B	31.0-31.1	x	x	x							x	x																	
P13U1	U	31.1-31.3														x				895										
P13Q1	Q	31.3-31.5																												
P13Q2	Q	31.5-31.7										x	x																	

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Project No :	10451	Start Date :	06/07/2015 00:00
Client :	US Wind Inc.	End Date :	07/07/2015 00:00
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SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P13B2	B	31.7-31.7	x	x	x							x	x	x																
P14		35.0-36.0																										x		
P14B1	B	35.0-35.2	x	x	x																									
P14Q1	Q	35.2-35.4										x	x																	
P14U1	U	35.4-35.6										x	x																	
P14Q2	Q	35.6-35.8																												
P14B2	B	35.8-36.0	x	x	x																									
P15		39.0-40.0																										x		
P15B1	B	39.0-39.2	x	x	x								x																	
P15Q1	Q	39.2-39.4										x																		
P15U1	U	39.4-39.6														x				1002										
P15Q2	Q	39.6-39.8										x	x																	
P15B2	B	39.8-40.0	x	x	x							x	x																	
P16		43.0-44.0																										x		
P16B1	B	43.0-43.2	x	x	x							x																		
P16Q1	Q	43.2-43.4																												
P16U1	U	43.4-43.6														x				1111										
P16Q2	Q	43.6-43.8										x																		
P16B2	B	43.8-44.0	x	x	x							x																		
P17		46.5-47.5																										x		

Key:

T = Undisturbed and preserved in sampling tube
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C = Rock core

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Unable to run
Test at GL onshore

Project No :	10451	Start Date :	06/07/2015 00:00
Client :	US Wind Inc.	End Date :	07/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P17B1	B	46.5-46.6	x	x	x																									
P17Q1	Q	46.6-46.8																												
P17Q2	Q	46.8-47.0																												
P17B2	B	47.0-47.3	x	x	x																									
P18		50.0-51.0																										x		
P18B1	B	50.0-50.2	x	x	x																									
P18Q1	Q	50.2-50.4																												
P18B2	B	50.4-50.6	x	x	x																									
P18Q2	Q	50.6-50.8																												
P18B3	B	50.8-51.0	x	x	x																									
P19		53.0-53.8																										x		
P19B1	B	53.0-53.2	x	x	x																									
P20		57.0-57.6																										x		
P20B1	B	57.0-57.3	x	x	x																									
P21		60.5-61.0																										x		
P21B1	B	60.5-60.9	x	x	x																									
P22		64.0-64.5																										x		
P22B1	B	64.0-64.3	x	x	x							x																		
P22B2	B	64.3-64.5	x	x	x																									
P23		67.5-68.3																										x		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	06/07/2015 00:00
Client :	US Wind Inc.	End Date :	07/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

Gardline

SCHEDULE OF LABORATORY TESTS

Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area

BH - G7

SAMPLE			CLASSIFICATION									SHEAR STRENGTH									CONSOLIDATION			OTHER TESTS						REMARKS
Number	Type	Depth(m)	Moisture Content	Bulk Density	Dry Density	Partical Density	Atterberg Limit	PSD Wet Sieve	PSD Hydrometer	Carbonate Content	Organic Content	Pocket Penetrometer	Torvane	Lab Vane	Handvane	UU Triaxial	CU Triaxial	Fall Cone	Unconfirmed Comp.	Pressure (kPa)	Oedometer		Pressure (kPa)	Point Load Test	Remoulded UU			Core Photography		
P23B1	B	67.5-67.6	x	x	x							x																		
P23Q1	Q	67.6-67.8																												
P23Q2	Q	67.8-68.0																												
P23B2	B	68.0-68.3										x																		
P24		71.5-72.5																										x		
P24B1	B	71.5-71.6	x	x	x							x																		
P24Q1	Q	71.6-71.8																												
P24U1	U	71.8-72.0														x				1666										
P24B2	B	72.0-72.2	x	x	x							x																		
P24Q2	Q	72.2-72.4																												
P24B3	B	72.4-72.5	x	x	x							x																		

Key:

T = Undisturbed and preserved in sampling tube
Q = Undisturbed and preserved in wax
B = Disturbed and preserved in bag
U = Undisturbed and preserved in BAG
C = Rock core

	Ordered offshore
x	Completed offshore
	Unable to run
	Test at GL onshore

Project No :	10451	Start Date :	06/07/2015 00:00
Client :	US Wind Inc.	End Date :	07/07/2015 00:00
Site :	Maryland, USA	Engineer :	SH,NV
CRS :	GRS 80 UTM ZONE 18 N (75 W)	Lab Technician :	NH,JB

QC Status		
Prelim	Draft	Final

4.3 List of samples

Gardline	SAMPLE DESPATCH AND RECEIPT PROFORMA	QPRO 0659

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Fax: +44 (0) 1493 852106

Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0
Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
Bag 9					
BH - D14	P1B1	0.00	0.30	B	0.30
BH - D14	P4B1	2.00	2.15	B	0.15
BH - D14	P4B2	2.15	2.50	B	0.35
BH - D14	P5B1	3.00	3.10	B	0.10
BH - D14	P5B2	3.10	3.40	B	0.30
BH - D14	P5B3	3.40	3.60	B	0.20
BH - D14	P5B4	3.60	3.80	B	0.20
BH - D14	P6B1	7.00	7.30	B	0.30
BH - D14	P7B1	10.00	10.10	B	0.10
BH - D14	P7B2	10.70	10.75	B	0.05
BH - D14	P8B1	13.50	13.70	B	0.20
BH - D14	P8B2	14.10	14.30	B	0.20
BH - D14	P9B1	17.50	17.80	B	0.30
BH - D14	P10B1	21.00	21.30	B	0.30
BH - D14	P10B2	21.30	21.55	B	0.25
Box 7					
BH - D14	P7Q1	10.10	10.30	Q	0.20
BH - D14	P7Q2	10.50	10.70	Q	0.20
BH - D14	P8Q1	13.70	13.90	Q	0.20
BH - D14	P8Q2	13.90	14.10	Q	0.20
BH - D14A	P3Q1	29.30	29.50	Q	0.20
BH - D14A	P3Q2	29.50	29.70	Q	0.20
BH - D14A	P5Q1	37.10	37.30	Q	0.20
BH - D14A	P5Q2	37.50	37.70	Q	0.20
BH - D14A	P6Q1	41.40	41.60	Q	0.20
BH - D14A	P6Q2	41.80	42.00	Q	0.20
BH - D14A	P7Q1	45.10	45.30	Q	0.20
BH - D14A	P8Q1	48.70	48.90	Q	0.20
BH - D14A	P8Q2	49.10	49.30	Q	0.20
BH - D14A	P9Q1	53.10	53.30	Q	0.20
BH - D14A	P10Q1	56.60	56.80	Q	0.20
BH - D14A	P10Q2	56.80	57.00	Q	0.20
BH - D14A	P11Q1	60.90	61.10	Q	0.20
BH - D14A	P11Q2	61.10	61.30	Q	0.20
BH - D14A	P12Q1	64.55	64.75	Q	0.20
Bag 11					
BH - D14	P7U1	10.30	10.50	U	0.20
BH - D14A	P8U1	48.90	49.10	U	0.20
BH - D14A	P9U1	52.85	53.05	U	0.20
BH - D14A	P11U1	60.70	60.90	U	0.20
Bag 10					
BH - D14	P11B1	24.50	24.85	B	0.35
BH - D14A	P1B1	1.00	1.25	B	0.25
BH - D14A	P2B1	25.50	25.75	B	0.25
BH - D14A	P3B1	29.00	29.30	B	0.30
BH - D14A	P3B2	29.70	29.95	B	0.25
BH - D14A	P4B1	33.00	33.25	B	0.25
BH - D14A	P4B2	33.25	33.50	B	0.25
BH - D14A	P4B3	33.50	33.75	B	0.25
BH - D14A	P5B1	37.00	37.10	B	0.10
BH - D14A	P5B2	37.30	37.50	B	0.20
BH - D14A	P5B3	37.70	37.90	B	0.20
Bag 12					
BH - D14A	P6B1	41.00	41.20	B	0.20

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Fax: +44 (0) 1493 852106

Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0

Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
BH - D14A	P6B2	41.20	41.40	B	0.20
BH - D14A	P6B3	41.60	41.80	B	0.20
BH - D14A	P7B1	45.00	45.10	B	0.10
BH - D14A	P7B2	45.30	45.45	B	0.15
BH - D14A	P8B1	48.50	48.70	B	0.20
BH - D14A	P8B2	49.30	49.50	B	0.20
BH - D14A	P9B1	52.50	52.70	B	0.20
BH - D14A	P9B2	52.70	52.85	B	0.15
BH - D14A	P9B3	53.05	53.10	B	0.05
BH - D14A	P9B4	53.30	53.35	B	0.05
Bag 13					
BH - D14A	P10B1	56.50	56.60	B	0.10
BH - D14A	P10B2	57.00	57.05	B	0.05
BH - D14A	P11B1	60.50	60.70	B	0.20
BH - D14A	P11B2	61.30	61.50	B	0.20
BH - D14A	P12B1	64.50	64.55	B	0.05
BH - D14A	P12B2	64.75	64.80	B	
BH - D14A	P13B1	68.00	68.20	B	0.20
BH - D14A	P13B2	68.20	68.35	B	0.15
Bag 14					
BH - G17	P1B1	0.00	0.40	B	0.40
BH - G17	P2B1	0.50	0.85	B	0.35
BH - G17	P2B2	0.85	1.20	B	0.35
BH - G17	P3B1	1.50	1.75	B	0.25
BH - G17	P3B2	1.75	2.00	B	0.25
BH - G17	P4B1	5.00	5.25	B	0.25
BH - G17	P4B2	5.25	5.50	B	0.25
BH - G17	P5B1	8.00	8.25	B	0.25
BH - G17	P7AB1	12.00	12.10	B	0.10
Bag 15					
BH - G17	P9B1	17.00	17.20	B	0.20
BH - G17	P10B1	18.50	18.55	B	0.05
BH - G17	P10B2	18.70	18.75	B	0.05
BH - G17	P11B1	29.50	29.75	B	0.25
BH - G17	P14AB1	33.50	33.70	B	0.20
BH - G17	P14AB2	34.10	34.27	B	0.17
BH - G17	P15B1	37.50	37.70	B	0.20
BH - G17	P15B2	38.30	38.44	B	0.14
Box 10					
BH - G17	P10Q1	18.55	18.70	Q	0.15
BH - G17	P14AQ1	33.70	33.90	Q	0.20
BH - G17	P15Q1	37.70	37.90	Q	0.20
BH - G17	P15Q2	38.10	38.30	Q	0.20
BH - G17A	P1Q1	41.20	41.40	Q	0.20
BH - G17A	P1Q2	41.60	41.80	Q	0.20
BH - G17A	P4Q1	52.10	52.30	Q	0.20
BH - G17A	P4Q2	52.45	52.65	Q	0.20
BH - G17A	P5Q1	56.10	56.30	Q	0.20
BH - G17A	P5Q2	56.50	56.70	Q	0.20
Bag 17					
BH - G17	P14AU1	33.90	34.10	U	0.20
BH - G17	P15U1	37.90	38.10	U	0.20
BH - G17A	P1U1	41.40	41.60	U	0.20
BH - G17A	P5U1	56.30	56.50	U	0.20

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Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
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Total Quart	108	Total Bag Samples	265	Total Tube Samples	0
Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
Bag 16					
BH - G17A	P1B1	41.00	41.20	B	0.20
BH - G17A	P1B2	41.80	42.00	B	0.20
BH - G17A	P2B1	44.50	44.75	B	0.25
BH - G17A	P3B1	48.00	48.25	B	0.25
BH - G17A	P3B2	48.25	48.50	B	0.25
BH - G17A	P3B3	48.50	48.70	B	0.20
BH - G17A	P4B1	52.00	52.10	B	0.10
BH - G17A	P4B2	52.30	52.45	B	0.15
BH - G17A	P4B3	52.65	52.75	B	0.10
BH - G17A	P5B1	56.00	56.10	B	0.10
BH - G17A	P5B2	56.70	56.90	B	0.20
Bag 18					
BH - G17A	P6B1	60.00	60.25	B	0.25
BH - G17A	P6B2	60.25	60.50	B	0.25
BH - G17A	P6B3	60.50	60.75	B	0.25
BH - G17A	P6B4	60.75	61.00	B	0.25
BH - G17A	P7B1	64.00	64.30	B	0.30
BH - G17A	P7B2	64.30	64.60	B	0.30
BH - G17A	P7B3	64.60	64.80	B	0.20
Bag 28					
BH - G7	P2B1	0.50	0.70	B	0.20
BH - G7	P2B2	0.70	0.95	B	0.25
BH - G7	P3B1	1.00	1.20	B	0.20
BH - G7	P3B2	1.20	1.40	B	0.20
BH - G7	P3B3	1.40	1.60	B	0.20
BH - G7	P4B1	4.50	4.60	B	0.10
BH - G7	P5B1	8.00	8.20	B	0.20
BH - G7	P6AB1	10.00	10.05	B	0.05
BH - G7	P7AB1	12.50	12.80	B	0.30
Bag 29					
BH - G7	P8B1	14.50	14.68	B	0.18
BH - G7	P10B1	19.40	19.65	B	0.25
BH - G7	P10B2	19.65	19.78	B	0.13
BH - G7	P11B1	23.40	23.60	B	0.20
BH - G7	P11B2	23.60	23.80	B	0.20
BH - G7	P12B1	27.00	27.05	B	0.05
BH - G7	P12B2	27.25	27.30	B	0.05
BH - G7	P12B3	27.50	27.70	B	0.20
BH - G7	P12B4	27.90	27.95	B	0.05
BH - G7	P13B1	31.00	31.10	B	0.10
BH - G7	P13B2	31.70	31.74	B	0.04
Box 18					
BH - G7	P10Q1	19.00	19.20	Q	0.20
BH - G7	P10Q2	19.20	19.40	Q	0.20
BH - G7	P11Q1	23.00	23.20	Q	0.20
BH - G7	P11Q2	23.20	23.40	Q	0.20

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Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0

Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
BH - G7	P12Q1	27.30	27.50	Q	0.20
BH - G7	P12Q2	27.70	27.90	Q	0.20
BH - G7	P13Q1	31.30	31.50	Q	0.20
BH - G7	P13Q2	31.50	31.70	Q	0.20
BH - G7	P14Q1	35.20	35.40	Q	0.20
BH - G7	P14Q2	35.60	35.80	Q	0.20
BH - G7	P15Q1	39.20	39.40	Q	0.20
BH - G7	P15Q2	39.60	39.80	Q	0.20
BH - G7	P16Q1	43.20	43.40	Q	0.20
BH - G7	P16Q2	43.60	43.80	Q	0.20
BH - G7	P17Q1	46.60	46.80	Q	0.20
BH - G7	P17Q2	46.80	47.00	Q	0.20
BH - G7	P18Q1	50.20	50.40	Q	0.20
BH - G7	P18Q2	50.60	50.80	Q	0.20
BH - G7	P23Q1	67.60	67.80	Q	0.20
BH - G7	P23Q2	67.80	68.00	Q	0.20
Bag 32					
BH - G7	P12U1	27.05	27.25	U	0.20
BH - G7	P13U1	31.10	31.30	U	0.20
BH - G7	P14U1	35.40	35.60	U	0.20
BH - G7	P15U1	39.40	39.60	U	0.20
BH - G7	P16U1	43.40	43.60	U	0.20
BH - G7	P24U1	71.80	72.00	U	0.20
Bag 30					
BH - G7	P14B1	35.00	35.20	B	0.20
BH - G7	P14B2	35.80	36.00	B	0.20
BH - G7	P15B1	39.00	39.20	B	0.20
BH - G7	P15B2	39.80	40.00	B	0.20
BH - G7	P16B1	43.00	43.20	B	0.20
BH - G7	P16B2	43.80	44.00	B	0.20
BH - G7	P17B1	46.50	46.60	B	0.10
BH - G7	P17B2	47.00	47.30	B	0.30
BH - G7	P18B1	50.00	50.20	B	0.20
BH - G7	P18B2	50.40	50.60	B	0.20
BH - G7	P18B3	50.80	51.00	B	0.20
Bag 31					
BH - G7	P19B1	53.00	53.20	B	0.20
BH - G7	P20B1	57.00	57.30	B	0.30
BH - G7	P21B1	60.50	60.90	B	0.40
BH - G7	P22B1	64.00	64.25	B	0.25
BH - G7	P22B2	64.25	64.50	B	0.25
BH - G7	P23B1	67.50	67.60	B	0.10
BH - G7	P23B2	68.00	68.25	B	0.25
BH - G7	P24B1	71.50	71.60	B	0.10
BH - G7	P24B2	72.00	72.20	B	0.20
BH - G7	P24B3	72.40	72.50	B	0.10
Box 19					
BH - G7	P24Q1	71.60	71.80	Q	0.20
BH - G7	P24Q2	72.20	72.40	Q	0.20
Bag 23					
BH - H10	P1B1	0.00	0.20	B	0.20

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Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0
Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
BH - H10	P1B2	0.20	0.40	B	0.20
BH - H10	P2B1	1.00	1.30	B	0.30
BH - H10	P2B2	1.30	1.55	B	0.25
BH - H10	P3B1	2.20	2.40	B	0.20
BH - H10	P3B2	2.40	2.70	B	0.30
Box 15					
BH - H10	P3Q1	2.00	2.20	Q	0.20
BH - H10	P4Q1	6.20	6.40	Q	0.20
BH - H10	P4Q2	6.40	6.60	Q	0.20
BH - H10	P9Q1	26.30	26.50	Q	0.20
BH - H10	P9Q2	26.50	26.70	Q	0.20
BH - H10	P11Q1	34.30	34.50	Q	0.20
BH - H10	P14Q1	46.20	46.40	Q	0.20
BH - H10	P14Q2	46.60	46.80	Q	0.20
BH - H10	P15Q1	50.20	50.40	Q	0.20
BH - H10	P15Q2	50.40	50.60	Q	0.20
BH - H10	P16Q1	54.20	54.40	Q	0.20
BH - H10	P16Q2	54.60	54.80	Q	0.20
BH - H10	P19Q1	63.00	63.20	Q	0.20
BH - H10	P20Q1	66.20	66.40	Q	0.20
BH - H10	P20Q2	66.60	66.80	Q	0.20
BH - H10	P21Q1	70.20	70.40	Q	0.20
BH - H10	P21Q2	70.40	70.60	Q	0.20
BH - H10	P22Q1	74.20	74.40	Q	0.20
BH - H10	P22Q2	74.60	74.80	Q	0.20
Bag 24					
BH - H10	P4B1	6.00	6.20	B	0.20
BH - H10	P4B2	6.80	6.84	B	0.04
BH - H10	P5B1	10.00	10.30	B	0.30
BH - H10	P6AB1	13.50	13.80	B	0.30
BH - H10	P8B1	23.50	23.75	B	0.25
BH - H10	P8B2	23.75	23.95	B	0.20
BH - H10	P9B1	26.00	26.30	B	0.30
BH - H10	P9B2	26.70	26.90	B	0.20
BH - H10	P10B1	30.00	30.30	B	0.30
BH - H10	P10B2	30.30	30.50	B	0.20
BH - H10	P10B3	30.50	30.80	B	0.30
BH - H10	P11B1	34.00	34.30	B	0.30
BH - H10	P11B2	34.50	34.80	B	0.30
Bag 25					
BH - H10	P4U1	6.60	6.80	U	0.20
BH - H10	P15U1	50.60	50.80	U	0.20
BH - H10	P20U1	66.40	66.60	U	0.20
BH - H10	P22U1	74.00	74.20	U	0.20
Bag 26					
BH - H10	P12B1	38.00	38.30	B	0.30
BH - H10	P12B2	38.30	38.65	B	0.35
BH - H10	P13B1	42.00	42.30	B	0.30
BH - H10	P13B2	42.30	42.60	B	0.30
BH - H10	P13B3	42.60	42.85	B	0.25
BH - H10	P14B1	46.00	46.20	B	0.20
BH - H10	P14B2	46.40	46.60	B	0.20
BH - H10	P14B3	46.80	46.95	B	0.15

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Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0

Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
Bag 27					
BH - H10	P15B1	50.00	50.20	B	0.20
BH - H10	P15B2	50.80	51.00	B	0.20
BH - H10	P16B1	54.00	54.20	B	0.20
BH - H10	P16B2	54.40	54.60	B	0.20
BH - H10	P16B3	54.80	54.96	B	0.16
BH - H10	P17B1	56.00	56.30	B	0.30
BH - H10	P18B1	59.50	59.80	B	0.30
BH - H10	P19B1	63.20	63.30	B	0.10
BH - H10	P20B1	66.00	66.20	B	0.20
BH - H10	P20B2	66.80	67.00	B	0.20
BH - H10	P21B1	70.00	70.20	B	0.20
BH - H10	P21B2	70.60	70.80	B	0.20
BH - H10	P21B3	70.80	71.00	B	0.20
BH - H10	P22B1	74.40	74.60	B	0.20
BH - H10	P22B2	74.80	74.90	B	0.10
Bag 1					
BH - I21	P1B1	0.00	0.20	B	0.20
BH - I21	P1B2	0.20	0.55	B	0.35
BH - I21	P2B1	1.00	1.20	B	0.20
BH - I21	P2B2	1.20	1.55	B	0.35
BH - I21	P3B1	2.00	2.30	B	0.30
BH - I21	P4B1	5.50	5.70	B	0.20
BH - I21	P4B2	5.70	5.90	B	0.20
BH - I21	P4B3	5.90	6.15	B	0.25
Bag 2					
BH - I21A	P1B1	9.50	9.70	B	0.20
BH - I21A	P1B2	9.70	9.85	B	0.15
BH - I21A	P3B1	14.50	14.70	B	0.20
BH - I21A	P3B2	14.70	14.85	B	0.15
BH - I21A	P4AB1	17.50	17.65	B	0.15
BH - I21A	P5B1	21.00	21.25	B	0.25
BH - I21A	P5B2	21.25	21.50	B	0.25
BH - I21A	P6B1	25.00	25.25	B	0.25
Bag 3					
BH - I21B	P1B1	28.00	28.20	B	0.20
BH - I21B	P1B2	28.80	29.00	B	0.20
BH - I21B	P2B1	29.00	29.20	B	0.20
BH - I21B	P2B2	29.80	29.95	B	0.15
BH - I21B	P3B1	32.50	32.70	B	0.20
BH - I21B	P3B2	33.30	33.50	B	0.20
BH - I21B	P4B1	36.50	36.72	B	0.22
BH - I21B	P5B1	39.50	39.80	B	0.30
BH - I21B	P5B2	39.80	40.10	B	0.30
BH - I21B	P6AB1	44.00	44.20	B	0.20
BH - I21B	P6AB2	44.80	45.00	B	0.20
BH - I21B	P7B1	48.00	48.20	B	0.20
BH - I21B	P7B2	48.40	48.60	B	0.20
BH - I21B	P8B1	51.00	51.25	B	0.25
BH - I21B	P8B2	51.25	51.50	B	0.25
Box 2					
BH - I21B	P1Q1	28.20	28.40	Q	0.20
BH - I21B	P1Q2	28.40	28.60	Q	0.20
BH - I21B	P2Q1	29.20	29.40	Q	0.20

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Vessel name : M.V. Ocean Discovery

Client Name : US Wond Inc.

Contract Number : 10451

Project Name : Geotechnial Marine Survey Investigation for the Maryland Wind Energy Area

On-site Geotechnical Representative			Laboratory Receipt		
Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0

Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
BH - I21B	P2Q2	29.60	29.80	Q	0.20
BH - I21B	P3Q1	32.70	32.90	Q	0.20
BH - I21B	P3Q2	33.10	33.30	Q	0.20
BH - I21B	P4Q1	36.72	36.92	Q	0.20
BH - I21B	P6AQ1	44.20	44.40	Q	0.20
BH - I21B	P6AQ2	44.60	44.80	Q	0.20
BH - I21B	P7Q1	48.20	48.40	Q	0.20
BH - I21B	P7Q2	48.60	48.80	Q	0.20
BH - I21B	P9Q1	55.00	55.20	Q	0.20
BH - I21B	P9Q2	55.20	55.40	Q	0.20
BH - I21B	P10Q1	59.20	59.40	Q	0.20
BH - I21B	P11Q1	63.10	63.30	Q	0.20
BH - I21B	P11Q2	63.51	63.70	Q	0.19
BH - I21B	P12Q1	67.10	67.30	Q	0.20
BH - I21B	P12Q2	67.30	67.50	Q	0.20
Bag 5					
BH - I21B	P1U1	28.60	28.80	U	0.20
BH - I21B	P2U1	29.40	29.60	U	0.20
BH - I21B	P3U1	32.90	33.10	U	0.20
BH - I21B	P6AU1	44.40	44.60	U	0.20
BH - I21B	P7U1	48.80	49.00	U	0.20
Bag 4					
BH - I21B	P9B1	55.40	55.60	B	0.20
BH - I21B	P9B2	55.60	55.80	B	0.20
BH - I21B	P9B3	55.80	56.00	B	0.20
BH - I21B	P10B1	59.00	59.20	B	0.20
BH - I21B	P10B2	59.40	59.80	B	0.40
BH - I21B	P10B3	59.80	60.00	B	0.20
BH - I21B	P11B1	63.00	63.10	B	0.10
BH - I21B	P11B2	63.30	63.51	B	0.21
BH - I21B	P11B3	63.70	64.00	B	0.30
BH - I21B	P12B1	67.00	67.10	B	0.10
BH - I21B	P12B2	67.50	67.80	B	0.30
BH - I21B	P12B3	67.80	68.00	B	0.20
BH - I21B	P13B1	71.00	71.25	B	0.25
BH - I21B	P13B2	71.25	71.55	B	0.30
Bag 19					
BH - K16	P1AB1	0.00	0.15	B	0.15
BH - K16	P3B1	3.50	3.75	B	0.25
BH - K16	P3B2	3.75	4.05	B	0.30
BH - K16	P4AB1	7.50	7.70	B	0.20
BH - K16	P10B1	22.00	22.25	B	0.25
BH - K16	P12B1	28.00	28.40	B	0.40
BH - K16	P6B1	13.00	13.15	B	0.15
Bag 20					
BH - K16	P13B1	31.00	31.30	B	0.30
BH - K16	P15B1	40.00	40.20	B	0.20
BH - K16	P15B2	40.80	40.95	B	0.15
BH - K16	P16B1	44.00	44.20	B	0.20
BH - K16	P16B2	44.80	44.98	B	0.18
BH - K16	P17B1	48.00	48.20	B	0.20
BH - K16	P17B2	48.80	48.95	B	0.15
BH - K16	P18B1	49.50	49.69	B	0.19
BH - K16	P18B2	49.69	49.80	B	0.11

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Total Meterage (m)	84.19	Total Weight (kg)	1010.28	Total Undisturbed	31
Total Quart	108	Total Bag Samples	265	Total Tube Samples	0
Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
Box 13					
BH - K16	P15Q1	40.20	40.40	Q	0.20
BH - K16	P15Q2	40.60	40.80	Q	0.20
BH - K16	P16Q1	44.20	44.40	Q	0.20
BH - K16	P16Q2	44.60	44.80	Q	0.20
BH - K16	P17Q1	48.40	48.60	Q	0.20
BH - K16	P17Q2	48.60	48.80	Q	0.20
BH - K16	P20Q1	55.20	55.40	Q	0.20
BH - K16	P20Q2	55.60	55.80	Q	0.20
BH - K16	P21Q1	59.20	59.40	Q	0.20
BH - K16	P21Q2	59.60	59.80	Q	0.20
BH - K16	P22Q1	63.30	63.50	Q	0.20
Bag 22					
BH - K16	P15U1	40.40	40.60	U	0.20
BH - K16	P16U1	44.40	44.60	U	0.20
BH - K16	P17U1	48.20	48.40	U	0.20
BH - K16	P20U1	55.40	55.60	U	0.20
BH - K16	P21U1	59.40	59.60	U	0.20
Bag 21					
BH - K16	P19B1	51.00	51.15	B	0.15
BH - K16	P19B2	51.15	51.40	B	0.25
BH - K16	P19B3	51.40	51.70	B	0.30
BH - K16	P20B1	55.00	55.20	B	0.20
BH - K16	P20B2	55.80	56.00	B	0.20
BH - K16	P21B1	59.00	59.20	B	0.20
BH - K16	P21B2	59.80	60.00	B	0.20
BH - K16	P22B1	63.00	63.30	B	0.30
BH - K16	P22B2	63.50	63.80	B	0.30
BH - K16	P22B3	63.80	64.00	B	0.20
BH - K16	P23B1	66.50	66.80	B	0.30
BH - K16	P23B2	66.80	67.00	B	0.20
BH - K16	P23B3	67.00	67.20	B	0.20
BH - K16	P24B1	71.00	71.40	B	0.40
Bag 6					
BH - MET TOWER	P1B1	0.00	0.30	B	0.30
BH - MET TOWER	P1B2	0.30	0.50	B	0.20
BH - MET TOWER	P1B3	0.50	0.75	B	0.25
BH - MET TOWER	P2B1	1.00	1.20	B	0.20
BH - MET TOWER	P2B2	1.20	1.45	B	0.25
BH - MET TOWER	P3B1	2.00	2.30	B	0.30
BH - MET TOWER	P3B2	2.30	2.60	B	0.30
BH - MET TOWER	P4B1	5.00	5.35	B	0.35
BH - MET TOWER	P5B1	8.50	8.80	B	0.30
BH - MET TOWER	P5B2	8.80	9.05	B	0.25
BH - MET TOWER	P6B1	12.50	12.74	B	0.24
BH - MET TOWER	P6B2	12.74	13.00	B	0.26
Bag 7					
BH - MET TOWER	P9B1	25.50	25.70	B	0.20
BH - MET TOWER	P9B2	26.30	26.45	B	0.15
BH - MET TOWER	P10B1	29.00	29.20	B	0.20
BH - MET TOWER	P10B2	29.80	29.95	B	0.15
BH - MET TOWER	P11B1	33.00	33.20	B	0.20
BH - MET TOWER	P11B2	33.80	33.98	B	0.18
BH - MET TOWER	P12B1	37.00	37.20	B	0.20

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Total Quart	108	Total Bag Samples	265	Total Tube Samples	0

Borehole ID	Sample ID	Sample Top (m)	Sample Base (m)	Sample Type	Sample Length (m)
BH - MET TOWER	P13B1	40.50	40.70	B	0.20
BH - MET TOWER	P13B2	41.10	41.40	B	0.30
BH - MET TOWER	P14B1	44.50	44.60	B	0.10
BH - MET TOWER	P14AB1	44.50	44.80	B	0.30
BH - MET TOWER	P16AB1	53.50	53.70	B	0.20
BH - MET TOWER	P16AB2	53.70	53.90	B	0.20
BH - MET TOWER	P17B1	57.20	57.45	B	0.25
BH - MET TOWER	P17B2	57.45	57.75	B	0.30
Box 5					
BH - MET TOWER	P9Q1	25.70	25.90	Q	0.20
BH - MET TOWER	P9Q2	26.10	26.30	Q	0.20
BH - MET TOWER	P10Q1	29.20	29.40	Q	0.20
BH - MET TOWER	P10Q2	29.60	29.80	Q	0.20
BH - MET TOWER	P11Q1	33.20	33.40	Q	0.20
BH - MET TOWER	P11Q2	33.60	33.80	Q	0.20
BH - MET TOWER	P13Q1	40.70	40.90	Q	0.20
BH - MET TOWER	P13Q2	40.90	41.10	Q	0.20
BH - MET TOWER	P17Q1	57.00	57.20	Q	0.20
Bag 8					
BH - MET TOWER	P9U1	25.90	26.10	U	0.20
BH - MET TOWER	P10U1	29.40	29.60	U	0.20
BH - MET TOWER	P11U1	33.40	33.60	U	0.20

APPENDIX 5

5.1 Drillers Logs

5.2 General Drilling Equipment Specifications

5.1 Drillers Logs

OFFHORE DRILLING LOG

Date: 24.06.2015 | Borehole: i218 | Client: US Wind Inc.

Driller: SERGIO / Raul | Location: Offshore Maryland USA | Job No: 10470

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
	1	9.63	23.59	5.7	29.29	29.29	ML	EIS - 25.50 - DRILL TO 28.0									
09:20	4	9.48	52.33	5.16	57.49	29.49	28	+0.20 25.70 CLAY/SAND	✓ 50 min	500/800	10/40	0.50	PS	1	28	29	1 rec
09:40	4	9.48	52.33	6.06	58.39	29.39	29	+0.10 25.60 CLAY	✓ 10 min	500/600	-11-	-11-	PS	2	29	30	1 m
10:05	4	9.48	52.33	7.06	59.39	29.39	30	25.60	✓ -11-	-11-	-11-	-11-	CPT	1	30	32.5	2 m
10:40	5	9.51	61.84	0.05	61.89	29.39	32.5	25.60 -11-	✓ -11-	-11-	-11-	-11-	PS	3	32.5	33.5	1 m
11:00	5	9.51	61.84	1.25	63.09	29.59	33.5	+0.20 25.80	✓ -11-	-11-	-11-	-11-	CPT	2	33.5	36.5	3 m
11:40	5	9.51	61.84	4.45	66.29	29.79	36.5	+0.20 26.0 MAXED OUT / GRAVEL	✓ -11-	-11-	-11-	-11-	PS	4	36.5	37	0.50
12:00	5	9.51	61.84	5.16	67.0	30.0	37	+21 26.2 / DAY SHIFT / 7.5				✓	CPT	3	37	39.5	2.5
13:00	5	9.51	61.84	7.86	69.70	30.20	39.5	+20 26.40 ✓		100/600	30/40	✓	PS	5	39.5	40.5	
13:25	5	9.51	61.84	8.96	70.80	30.30	40.5	+10 sandy clay				✓	CPT	4	40.5	43.5	
14:00	6	9.71	71.55	2.35	73.90	30.40	43.5	+10 26.50				✓	PS	6	43.5	44	
14:10	6	9.71	71.55	2.85	74.40	30.40	44	clay				✓	PS	7	44	45	
14:30	6	9.71	71.55	3.85	75.40	30.40	45					✓	CPT	5	45	48	
15:10	6	9.71	71.55	6.85	78.40	30.40	48					✓	PS	8	48	49	
15:30	6	9.71	71.55	7.85	79.40	30.40	49					✓	CPT	6	49	51	2 m
15:50	7	9.68	81.23	0.17	81.40	30.40	51	EIS				✓	PS	9	51	52	.50
16:10	7	9.68	81.23	1.17	82.40	30.40	52	-30 (26-20)				✓	CPT	7	52	55	3 m
17:00	7	9.68	81.23	3.87	85.10	30.10	55					✓	PS	10	55	56	
17:40	7	9.68	81.23	4.87	86.10	30.10	56					✓	CPT	8	56	59	
18:35	7	9.68	81.23	7.87	89.10	30.10	59					✓	PS	10	59	60	
19:00	7	9.68	81.23	8.77	90	30.0	60	+0.06 (10)				✓	CPT	9	60	63	
19:45	8	9.47	90.70	1.9	92.60	29.60	63	+0.25.7 -				✓	PS	11	63	64	
20:10	8	9.47	90.70	2.9	93.60	29.60	64						CPT	10	64		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard:

Mud Usage: 16 BAGS NIGHT SI

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

Date: 24.06 20:15 / 25.06.2015

OFFHORE DRILLING LOG

Client: US Wind Inc.

Driller: RAUL / SERGIU

Borehole: 121B

Location: Offshore Maryland USA

Job No: 10470

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
20:20	8	9.47	90.70	2.9	93.60	29.60	64	ETS 25.7 clay		600 RPM	80 PSI	✓	CPT	10.	64.	67.	
20:45	8	9.47	90.70	5.9	96.60	29.60	67.	25.7 clay		600 RPM	40/120	✓	PS	12	67.	68	
21:00	8	9.47	90.70	6.90	97.60	29.60	68	25.7. sandy clay (soft)		600 RPM	60/100	✓	CPT	11	68	71	
21:50	9	9.54	100.24	0.41	100.70	29.70	71.	+10 25.8. sandy clay				↵	PS	13.	71	72	
22:20	9	9.54	100.24	1.66.	101.90	29.90	72	+20 .26.0					CPT	11.	72		
	9	9.54	100.24	2.76	103.0	30.0	78	DRILL OUT 4m FOR PS LOGGING									
24:00																	
								TOOL BOX / LIFT DRILL STRING TO 50m FOR PS LOG.									
	6	9.71	71.55	8.55	80.10	30.10	50	+0.10 26.10 LIFT TO 44.m FOR PS LOG		(06: 35)							
	-11-	-11-	-11-	2.35	73.9	29.90	44	-0.20 25.90 LIFT TO 41m. FOR PS LOG		(06: 50)							
	5	9.51	61.84	9.06	70.9	29.90	41	25.90 LIFT TO 31m FOR PS LOG TEST		(07: 45)							
	4	9.48	52.33	8.37	60.7	29.70	31	-0.20 25.70 LIFT TO 22m FOR PS LOG TEST		(08: 40)							
	3	9.56	42.85	8.75	51.6	29.60	22	-0.10 26.60									
09:35								LIFT DRILL STRING									
09:55								LIFT SBF									
10:05								SBF SECURE									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	24 BAGS

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 23.06.2015 / 24.06.2015 | Client: US Wind Inc.

Driller: Raup / Sergiu | Borehole: 121A / 121B | Location: Offshore Maryland USA | Job No: 10470

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
12:45	3	9.56	42.85	4.45	47.30	29.80	17.5			500/800		V	PS	4	17.5	18	.30
13:10	3	9.56	42.85	5.05	47.90	29.90	18.	+10 126.41		500/800		V	CPT	6	18.	21	3m
13:45	3	9.56	42.85	8.05	50.90	29.90	21.	Down Sent		500/800		V	PS	5	21	22.	.35
14:05	3	9.56	42.85	9.05	51.90	29.90	22.			500/800		V	CPT	7	22.	25	3m
14:50	4	9.48	52.33	2.57	54.90	29.90	25			500/800		V	PS	6	25	25.5	25.
15:10	4	9.48	52.33	2.97	55.40	29.90	25.5			500/800		V	CPT	8	25.5	26.	RETUS
15:40	4	9.48	52.33	3.47	55.90	29.90	26.			500/800		V	CPT	9	26.	26.5	REF
16:00	4	9.48	52.33	3.87	56.30	29.80	26.5	-10. 26.30 change to chisel		500/800		V	CPT	10	26.5	29.	2.5.
16:20	—	—	—	—	—	—	—	WEATHER PICK. PULL DRILL STRING									
16:30								DRILL STRING OUT FROM THE HOLE									
21:10								SBF ON ML MONITORING WELL									
								SBF SECURE IN MOON POOL									
24:00								VESSEL LOST POZITION									
07:25								TOOL BOX TALK, STAND BY ON WEATHER									
07:30								LOWERING SBF TO SEABED									
								SBF ON SEABED START RUNNIND DRILL STRING									
								DRILL OUT TO 28 AND START WITH SAMPLE									
	1	9.63	23.59	+4.0=	27.59	DECK TO	CL										
					27.59	+1.7=	29.29	DECK TO M.L.									
							29.29	-4.0 = 25.29 W.D. BY PIPE									
								25.50 ECHO SNDR.									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	18 bags

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

Date: 23.06.2015

OFFHORE DRILLING LOG

Client: US Wind Inc.

Driller: SERGIU / Raul

Borehole: i21A

Location: Offshore Maryland USA

Job No: 10470

Time	Complete Joints Below Deck			Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	C = A + B E = C - D B = E + D - A	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test				
	No	Length	Total (A)					Drilling Remarks					Type	No	From:	To:	Rec
24:00								TOOL BOX									
24:05								LIFT SBF ONDECK FOR MAINTANANCE									
01:00								SBF ONDECK									
06:45								LOWER SBF TO SEABED									
06:50								SBF ON SEABED START RUNNING DRILL STRING									
	1	9.63	23.59	+4 =	27.59	DECK	TO CL										
					27.59+	1.7 =	29.29	DECK TO ML									
							29.29	-4.0 = 25.29 W.D. BY PIPE									
								ECHO SNDR - 25.7 DRILL DOWN TO									
09:00	1	9.63	23.59	8.2	31.79	29.29	2.5	25.7 DENS SAND	2.5								
08:40								LIFT SBF TO CHANGE TO HYDRAULIC UMBILICAL	15 min	500/600	—	0.50	CPT	1	2.5	6.5	3m
08:55								SBF BACK ON SEABED		DRILL	STRING	IN	THE	GROUND			
09:40	2	9.70	33.29	2.6	35.89	29.39	6.5	+0.10 25.9 SAND/CLAY	15min	-11-	10	0.50	CPT	2	6.5	9.5	3m
10:10	2	9.70	33.29	5.6	38.89	29.39	9.5	25.9 -11-	10min	500/700	30/50	-11-	PS	1	9.5	10.5	0.35
10:50	2	9.70	33.29	6.7	39.99	29.49	10.5	+0.10 26.0 -11- MAKED OUT	7min	-11-	-11-	-11-	CPT	3	10.5	11.0	0.50
11:05	2	9.70	33.29	7.2	40.49	29.49	11.0	26.0 HARD	3min	500/700	10	0.50	CPT	4	11.0	14.0	3m
11:35	3	9.56	42.85	0.74	43.59	29.59	14.0	+0.10 26.1 -SAND SHELBY BENT	10min	-11-	-11-	-11-	PS	2	14.0	14.5	N/R
11:55	3	9.56	42.85	1.34	44.19	29.69	14.5	+0.10 26.20 -11-	2min	-11-	-11-	-11-	PS	3	14.5	15.00	35
12.00	=L	=L	=L	=L	=L	=L	=L	DAY SHIFT. / TOOL BOX					CPT	5	15	17.5	2.5
12'5	3	9.56	42.85	1.85	44.70	29.70	15	26.21					PS	4	17.5		
	3	9.56	42.85	4.45	47.30	29.80	17.5	+10 26.31					PS	4	17.5		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	9 BAGS

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 22.06.2015 | Client: US Wind Inc.

Driller: Raul | Borehole: 21 | Location: Offshore Maryland USA | Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
15:00								START PREPAIR DRILL FLOOR									
16:05						ML		START TO LOWER SBF TO SEA BED									
16:15				SBF/CLAMP		/		SBF ON SEA BED									
17:00	1	23.59 + 4 =	27.59	+ 1.7 =	29.29	- 4 =		25.29 W. Pipe									
17:35	1	9.63	23.59	5.7.	29.29	29.29	ML	25.80. W. ES									
17:50												V	PS	1	0	1	.55
18:30								Pic UP SBF IN MOON PULL TO check the clamps									
18:40	1	9.63	23.59	6.5	30.09	29.09	1.	SBF BACK ON SEA BED									
18:50	1	9.63	23.59	7.5	31.09	29.09	2	-20 (25.60)				V	PS	2	1	2	30
19:05	1	9.63	23.59	8.	31.59	29.09	2.5					V	PS	3	2	2.5	
20:20	2	9.70	33.29	1.3	34.59	29.09	5.5	(25.60 E/S)				V	CPT	1	2.5	5.5	
20:45	2.	9.70	33.29	2.5	35.79	29.29	6.5	+20. (25.80)				V	PS	4	5.5	6.5	
21:15								START TO RECOVER SBF TO MOON POOL.					CPT	2	6.5		
21:30								SBF IN MOON POLL. change broccom and hydr. house clamps on.									
22:15								SBF BACK ON SEA BED / (SBF SINK.)									
22:45								Pull DRILL STRING AND SBF TO MOON POOL									
22:55	1							SBF. BACK IN MOON POOL									
23:00								STAND BY									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 25.06.2015 | Client: US Wind Inc.

Driller: Raul / SERGiU | Borehole: ME-TOWER | Location: Offshore Maryland USA | Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
16:15					SBF CL	↓ ML		START LOWERING SBF (1ST ON SEA MUD)									
16:40	1	9.63	23.59	+6.6= 30.19	+1	7 = 31.89	-4 = 27.89	W. PIPE									
16:50	1	9.63	23.59	8.3	31.89	31.89	ML	28.23 W/ES.			20	✓	PS	1	0	1.	
17:00		9.63	23.59	9.31	32.90	31.90	1	28.21				✓	PS	2	1	2	
17:15	2	9.70	33.29	0.61	33.90	31.90	2					✓	PS	3	2	3	
17:35	2	9.70	33.29	1.61	34.90	31.90	3					✓	CPT	1	3	5.	
18:15	2	9.70	33.29	3.41	36.70	31.70	5	-20 (28.0) sandy				✓	PS	4	5	5.5	
18:35	2	9.70	33.29	3.91	37.20	31.70	5.5	sandy				✓	CPT	2	5.5	8.5	
19:10	2	9.70	33.29	6.81	40.10	31.60	8.5	-10 27.9			↓	✓	PS	5	8.5	9.5	
19:25	2	9.70	33.29	7.71	41.0	31.50	9.5	-10 27.8				✓	CPT	3	9.5	12.5	
20:00	3	9.56	42.85	1.05	43.90	31.40	12.5	-10 (27.7 very dens sand			20/80	✓	PS	6	12.5	13.5	
20:15	3	9.56	42.85	2.05	44.90	31.40	13.5	(27.7 dens sand			20/80	✓	CPT	4	13.5	15	
20:35	3	9.56	42.85	3.55	46.40	31.40	15	(27.7 dens sand			20/80	✓	CPT	5	15	16	
20:55	3	9.56	42.85	4.45	47.30	31.30	16.	-10 (27.6) dens sand			20	✓	CPT	6	16	18.	
21:25	3	9.56	42.85	6.45	49.30	31.30	18	(27.5			20	✓	PS	7	18	18.5	REF
21:40	3	9.56	42.85	6.95	49.80	31.30	18.5	↓			20	✓	CPT	7	18.5	19	REF
22:06	3	9.56	42.85	7.45	50.30	31.30	19.	↓				✓	CPT	8	19	19.5	REF
22:10	3	9.56	42.85	7.95	50.80	31.30	19.50	27.6				✓	CPT	9.	19.50	20	
22:30	3	9.56	42.85	8.45	51.30	31.30	20					✓	CPT	10	20	22.5	
23:00	4	9.48	52.33	1.47	53.80	31.30	22.5	= START sandy clay (soft) =				✓	PS	8	22.5	23	HR.
	4	9.48	52.33	2.17	54.50	31.50	23	-20 (27.8)					CPT	11	23	25.5	
24:00								TOOL BOX / LIFT DRILL STRING DUE TO WEATHER									
24:15								BOREHOLE CLEAR / SBF ON SEABED	STAND BY		ON	WEATHER					

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 26.06.2015 | Client: US Wind Inc.

Driller: SERGIU | Borehole: MET-TOWER | Location: Offshore Maryland USA | Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
02:50								LOWER DRILL PIPES AND START DRILLING									
	1	9.63	23.59	+6.6 =	30.19	DECK TO	CL										
					30.19 +	1.7 =	31.89	DECK TO ML									
							31.89 -	4.0 = 27.89 W.D. BY PIPE									
								E/S - 28.10									
	1	9.63	23.59	8.3	31.89	31.89	ML										
03:00	4	9.48	52.33	5.26	57.59	32.09	25.5	+0.20 28.30 CLAY/SILT	15 min	500/600	10/45	0.50	PS	9	25.5	26.5	1m
	4	9.48	52.33	6.26	58.59	32.09	26.5	28.30					CPT	12	26.5		
04:30								LIFT DRILL STRING TO CHANGE RING IN BHA									
04:55								STAND BY DUE TO HIGH WINDS									
05:45								LOWER DRILL STRING									
	1	9.63	23.59	+6.50	= 30.09	DECK TO	CL										
					30.09	+1.7 =	31.79	DECK TO ML.									
							31.79	-4.0 = 27.79 W.D. BY PIPE									
								E/S - 28.10									
	1	9.63	23.59	8.2	31.79	31.79	ML										
07:25	4	9.48	52.33	5.86	58.19	31.69	26.5	-0.10 28.0	—	—	—	—	CPT	12	26.5	29.0	2.5
07:55	4	9.48	52.33	8.13	60.49	31.49	29.0	-0.20 27.80 CLAY	7 min	500/600	10/50	0.50	PS	10	29.0	30	1m
08:20	4	9.48	52.33	9.06	61.39	31.39	30	-0.10 27.70	-11-	-11-	-11-	-11-	CPT	13	30	33	3m
08:50	5	9.51	61.84	2.45	64.29	31.29	33	-0.10 27.60 CLAY/	-11-	-11-	-11-	-11-	PS	11	33	34	1m
09:05	5	9.51	61.84	3.45	65.29	31.29	34	27.60	-11-	-11-	-11-	-11-	CPT	14	34	37	3m

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 26.06.2015 | Client: US Wind Inc.

Driller: SERGIU / Dorel | Borehole: MET-TOWER | Location: Offshore Maryland USA | Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Deck to Mudline (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
09:45	5	9.51	61.84	6.45	68.29	31.29	37	27.60 CLAY / MAXED OUT ON PUSH	13 min	500/650	10/55	0.50	PS	12	37	37.5	0.50
10:55	5	9.51	61.84	6.95	68.79	31.29	37.5	27.60 10:15 - 10:45 REARANGE CPT CABLE ON WINCH	-11-	-11-	-11-	-11-	CPT	15	37.5	40.5	3m
11:20	6	9.71	71.55	0.24	71.79	31.29	40.5	27.60 CLAY/SILT	11 min	500/600	10/60	0.50	PS	13	40.5	41.5	0.90
11:40	6	9.71	71.55	1.34	72.89	31.39	41.5	+0.10 27.70	05 min	-11-	-11-	-11-	CPT	16	41.5	44.5	
12:30	6	9.71	71.55	4.45	76.00	31.50	44.5	+10 DAY SHIFT. TOOL BOX				V	PS	14	44.5	45.5	
12:45	6	9.71	71.55	5.05	76.60	31.60	45.0	+10:				V	CPT	17	45	45.5	REF
13:15	6	9.71	71.55	5.65	77.2	31.70	45.5	+10 28.00 VERY DOMS LAYER				V	CPT	18	45.5	46	REF
13:30	6	9.71	71.55	6.15	77.70	31.70	46	+20 & 28.20				V	CPT	19	46	46.5	REF
13:50	6	9.71	71.55	6.85	78.40	31.90	46.5					V	CPT	20	46.5	47	REF
14:05	6	9.71	71.55	7.35	78.90	31.90	47					V	CPT	21	47	47.5	REF
14:30	6	9.71	71.55	7.85	79.40	32.00	47.5	+10 (28.80).				V	CPT	22	47.5	48	REF
15:00	6	9.71	71.55	8.45	79.90	32.00	48	28.30				V	CPT	23	48	48.5	REF
15:30	6	9.71	71.55	9.05	80.50	32.10	48.5	+10 28.40				V	CPT	24	48.5	49	REF
15:45	6	0.71	71.55	9.55	81.0	32.10	49					V	CPT	25	49	49.5	REF
16:05	7	9.68	81.23	0.27	81.50	32.10	49.5	VERY DOMS LAYER				V	CPT	26	49.5	50	REF
16:30	7	9.68	81.23	0.97	82.20	32.20	50	+10 28.50 / START SOFT SAND				V	CPT	27	50	53	3m
16:55	7	9.68	81.23	3.95	85.20	32.20	53					V	PS	15	53	53.5	NR
17:15	7	9.68	81.23	4.47	85.70	32.20	53.5	hole collapse (can not clamp in right position)				V	PS	16	53.5	54	
16:30	7	9.68	81.23	5.97	86.20	32.20	54	?				V	CPT	28	54	57	
19:05	7	9.68	81.23	7.57	88.80	31.80	57	-40. 28.10				V	PS	17	57	58	
19:15	7	9.68	81.23	8.57	89.80	31.80	58					V	CPT	29	58	58.5	
19:30	7	9.68	81.23	8.97	90.20	31.70	58.5	-10 28.0				V	CPT	30	58.5	59	
	7	9.68	81.23	9.37	90.60	31.60	59	-10 27.9					CPT	31	59		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	22 BAGS (NIGHTS)

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFSHORE DRILLING LOG

Date: 26.06.2015/27.06.15 | Client: EOG

Driller: Raul / SERGIU | Borehole: MET-TOWER | Location: EMZ Block, Trinidad | Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Depth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
19:50	7	9.68	81.23	9.37	90.60	31.60	59	ARMS 20 mt				V	CPT	31	59	59.1	NR
20:10	8	9.47	90.70	0.40	91.10	31.60	59.5	27.90.				V	CPT.	32	59.5	60	REF
21:00	8	9.47	90.70	1.8	92.5	31.60	61	-10 27.8. (20:30 - 21:00 fixing hydr. house)				V	CPT.	33	61		REF
21:30	8	9.47	90.70	2.60	93.30	31.30	62	-20 27.6.				V	CPT	34	62		
21:50	8	9.47	90.70	5.0	95.70	31.20	64.5	-10 27.5.									
22:50	9	9.55	100.24	7.6	101.0	31.00	70m	DRILL OUT TM for PS. Logging									
22:50	=/=	=/=	=/=	=/=	=/=	=/=	=/=	START PUMP TIHK MUD IN THE HOLE.									
24:00								TOOL BOX / PS LOG									
	6	9.71	71.55	7.55	79.1	31.10	48.0	+0.10 27.60									
00:04								start PS									
00:50								1st ILP1 complete 48 (casing)									
								Pull tool backs / LIFT TO 24m FOR PS LOG									
	4	9.48	52.33	2.97	55.30	31.30	24	+0.20 27.80									
								01:30 START LOGGING									
								02:10 FINISH PS - LIFT TO 14m									
	3	9.56	42.85	2.65	45.50	31.50	14	+0.20 02:30 START LOGGING (28.00 E/S)									
								03:00 END OF PS AT THIS DEPTH									
	2	9.70	33.29	4.41	37.7	31.70	6.0	+0.20 (28.20) 6m FINAL TESTING DEPTH									
								DUE TO BOREHOLE STABILIZATION									
								03:15 START LOGGING									
								04:00 FINISH PS									
								04:10 LIFT DRILL STRING + SBF									
								04:40 SBF + DRILL STRING SECURE									

DRILLING FLUID CONSUMPTION

Mud Viscosity	Mud Usage
	2 BAGS (NIGHT'S)

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 29.06.2015 | **Client:** US Wind

Driller: Raul / SERGIU | **Borehole:** D 14 | **Location:** Maryland wind farm | Job No:

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
C.A.		14.46	+7 = 21.46 + 4 = ML			17.46.		17.46 MR. pipe		500	20						
13:50		10.00	14.46	8.7	21.46	21.46	ML	19.00. E/S				V	PS	1	0	0.50	
14:20	C.A.	10.	14.46	9.30	22.10	21.60	0.50	+14 (19.14)				V	PS	2	0.50	1.	NR
14:30	C.A.	10	14.46	9.90	22.60	21.70	1	+10 (19.24)				V	PS	3	1	2.	NR
15:00	1	9.63	24.09	0.	24.10	22.10	2	15°-16° problem with CPT TOOL) +40				V	PS	4	2	3	NR
16:10	1	9.63	24.09	1.01	25.10	22.10	3	19.60				V	PS	5	3	4	
16:30	1	9.63	24.09	2.11.	26.20	22.20	4	+10 19.70				V	CPT	1	4	7	
17:00	1	9.63	24.09	5.21	29.30	22.30	7	+10. 19.80				V	PS	6	7	7.5	
17:15	1	9.63	24.09	5.81	29.90	22.40	7.5.	+10 19.90				V	CPT	2	7.5	10m	
17:55	1	9.63	24.09	8.41	32.50	22.50	10m.	+10 (20m)				V	PS	7	10.	11	
18:05	1	9.63	24.09	9.41	33.50	22.50	11m	20m				V	CPT	3	11.	13.5	
18:30	2	9.70	33.79	2.31	36.10	22.60	13.5.	+10 20 a 10				V	PS	8	13.5	14.5	
18:40	2	9.70	33.79	3.31	37.10	22.60	14.5	E/S 20. M.				V	CPT	4	14.5	17.5	
19:00	2.	9.70	33.79	6.31	40.10	22.60	17.5					V	PS	8	17.5	18.	
19:20	2	9.70	33.79	6.91	40.60	22.60	18.					V	CPT	5	18	20.5	
19:45	3	9.56	43.35	0.25	43.60	22.60	21.	20m.				V	PS	9	21.	22	
20:00	3	9.56	43.35	1.25	44.60	22.60	22					V	CPT	6	22	24.5	
20:20	3	9.56	43.35	3.45	46.80	22.30	24.5	-30 19.7.				V	PS	10	24.5	25	
20:35		9.56	43.35	3.95	47.30	22.30	25.	120:35 21:20) FIXING CPT. TOOL		V	V	V	CPT	7	25	25.5	
21:30	3	9.56	43.35	4.25	47.60	22.10	25.5	-20 (19.50)				V	CPT	8	25.5	26	
21:45	3	9.56	43.35	4.65	48.00	22.0	26.	-10 (19.40) HOLE COLLAPS (BLOCKED THE PIPE)					CPT	9	26		
24:00								TOOL BOX / SBF + DRILL STRING ON DECK									
								CHANGE AND FIX OMB. + SBF CABLE									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:

Lost / Damage Equipment: 100 m. OFF SBF CABEL DAMAGE

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 29.06.2015		**Client:** US Wind	
Driller: SERGIU / Raul	**Borehole:** D14	**Location:** Maryland wind farm	**Job No:**

Time	Complete Joints Below Deck			Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test				
	No	Length	Total (A)					Drilling Remarks					Type	No	From:	To:	Rec
24:00								TOOL BOX – WAIT ON WEATHER									
06:00								LOWER DRILL FLOOR									
06:30								LOWER SBF 10M ABOVE ML TO TEST	SBF	CLAMPS							
06:55								SBF IN MOONPOOL / WAIT FOR VESSEL	POSITION								
07:20								WAITING ON WEATHER									
10:05								CHANGE DRILL BIT									
10:55								LOWER SBF AND MONITOR SWELL									
11:00								SBF ON SEA BED									
11:15								LOWER DRILL STRING									
	A	10.00	14.46	+ 6.7 =	21.16	DECK TO	CL										
					21.16 +	1.7 =	22.86	DECK TO M.L.									
							22.86	-4.0 = 18.86 W.D. BY PIPE									
								18.80 E/S									
	A	10.00	14.46	8.4	22.86	22.86	ML										
12:00 – 13:30								FIXING HYDRAULICS SBF - CLAMPS									
13:40								SBF BACK ON SEABED									

DRILLING FLUID CONSUMPTION	
Mud Balance Onboard	Mud Usage

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

32.85

OFFHORE DRILLING LOG

Date: 01.07.2015 | Client: US Wind

Driller: SERGIU / Raul | Borehole: D14A | Location: Maryland wind farm | Job No:

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
01:50	6	9.71	72.05	3.25	75.30	22.80	52.5	-0.10 18.80 ← E/S SAND	✓ 10 min	500/700	10/30	0.60	PS	9	52.5	53.5	0.80
02:30	6	9.71	72.05	4.25	76.30	22.80	53.5	18.80	✓ 4 min	-11-	-11-	-11-	CPT	8	53.5	56.5	3m
02:55	-03:	50						OIL LEAK AT POWER PACKS									
04:10	6	9.71	72.05	7.55	79.60	23.10	56.5	+0.30 19.10 / SAND/CLAY	✓ 15 min	-11-	-11-	-11-	PS	10	56.5	57.5	0.55
04:20								LIFT DRILL STRING DUE TO VESSEL POSITION AND					TUNDER STORM				
04:30						SBF ON	SEABED	DRILL STRING OUT FROM BOREHOLE	WAIT ON WEATHER								
06:00	6	9.71	72.05	9.05	81.10	23.60	57.5	+0.50 / 04:55 LOWER STRING AND START A	STAN			✓	CPT	9	57.5	60.5	3m
06:25	7	9.68	81.73	2.47	84.20	23.70	60.5	+0.10 19.70	✓ 10 min	500/700	10/40	0.55	PS	11	60.5	61.5	0.95
06:40	7	9.68	81.73	3.47	85.2	23.70	61.5	19.70 MIXED OUT ON CPT TEST	✓ 3 min	-11-	-11-	-11-	CPT	10	61.5	64.5	3m
07:10	7	9.68	81.73	6.57	88.3	23.80	64.5	+0.10 19.80 DENS. SAND	✓ 13 min	500/850	10/20	0.65	PS	12	64.5	65.0	0.30
07:30	7	9.68	81.73	7.07	88.8	23.80	65.0	19.80	✓ 2 min	500/700	10	0.55	CPT	11	65.0	68.0	3m
08:00	8	9.47	91.20	0.7	91.9	23.90	68.0	+0.10 19.90 COMPACT SAND	17 min	500/900	-11-	0.65	PS	13	68.0	68.5	0.35
08:30	8	9.47	91.20	1.1	92.3	23.80	68.5	-0.10 19.80 -11- E.O.H.	—	-11-	-11-	0.55	CPT	12	68.5		
08:45								DRILL OUT TO 73m FOR PS LOG									
09:00								PUMP THICK MUD FOR BOREHOLE STABILIZATION									
10:10	3	9.56	43.35	9.05	52.4	23.40	29.0	LIFT TO 29m FOR PS LOG (-40/19.40)									
								10:45 PS LOG START									
								11:05 STOP PS LOG DUE TO BOREHOLE	COLAPS								
								11:20 RESTART PS LOG AND START	LOGGING	FROM	44	DUE TO	COLAPS	B.H.			
12:20	2	9.70	33.79	5.71		23.50	16.	START TESTING (ADY Shift									
13:20	1	9.63	24.09	7.21	31.30	23.30	8.	-20 Hole collaps. Can not do PS loggin									
14:00								DRILLING EQUIP. ON DECK									
								READY TO MOVE TO NEXT LOCATION									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	40 BAGS

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 30.06.2015 | Client: US Wind

Driller: SERGIU / Raul | Borehole: S 14 A | Location: Maryland wind farm | Job No:

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
02:35								SBF CABLE ON DECK READY FOR									
								NEW SOCKET									
16[00]								SBF CABEL REPAIR AND FIXT									
								BACK ON DERRICK.									
16[10]								PREPAIRE DRILL FLOOR FOR DRILLING									
1700					SDF.CL		ML	SBF BACK ON SEA BED									
	cA	10	14.46+	7.7=23.16 +	1.7=23.86	-4=	19.86	W/ pipe									
17[50]	C.A	10	14.46	9.40	23.86	23.86	ML	19.9 W/ ES.									
17.50	1	9.63	24.09	0.81	24.90	23.90	1	+04 19.94				✓	PS	1	1	2.	
2000	3	9.56	43.35	6.25	48.60	24.10	25.5	+20) DRILL OUT to 25.5 (20.10)			PRESSURE	✓	PS	2	25.5	26.	
20[15]	3	9.56	43.35	6.75	50.10	24.10	26.	ES 20.				✓	CPT	1	26	29	
20[40]	3	9.56	43.35	9.55	52.90	23.90	29	-20 19.90 (small clay)				✓	PS	3	29	30	
21[00]	4	9.48	52.83	1.07	53.90	23.90	30					✓	CPT	2	30	33	
21[25]	4	9.48	52.83	3.87	56.70	23.70	33	-20 19.70. sandy clay)				✓	PS	4	33	34	
21[40]	4	9.48	52.83	4.87	57.70	23.70	34	-10 19.60				✓	CPT	3	34	37	
22[10]	4	9.48	52.83	7.77	60.6	23.60	37					✓	PS	5	37	38	
22[25]	4	9.48	52.83	8.67	61.50	23.50	38	-10 19.5. sandy clay				✓	CPT	4	38	41.	
23[00]	5	9.51	62.34	1.96	64.30	23.30	41	-20 19.3.				✓	PS	6	41.	42	
	5	9.51	62.34	2.96	65.30	23.30	42.	19.3				✓	CPT	5	42.	45	
24:00	5	9.51	62.34	5.76	68.10	23 10	45	-R20 19.10 SAND	7min	500/700	10/40	0.50✓	PS	7	45	45.5	0.50
24:30	5	9.51	62.34	6.26	68.6	23.10.	45.5	TOOL BOX 19.10	✓3min	—	—	—	CPT	6	45.5	48.5	3m
24:55	5	9.51	62.34	9.06	71.4	22.90	48.5	-0.20 18.90 SAND/CLAY	✓7min	-11-	-11-	-11-	PS	8	48.5	49.5	0.95
01:15	6	9.71	72.05	0.35	72.4	22.90	49.5	18.90	✓4min	-11-	-11-	-11-	CPT	7	49.5		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard

Mud Usage

13 bags GUARGAM

14 BUKETS of PURE BORE

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 1.07.2015 / 2.07.2015 | **Client:** US Wind

Driller: Raul / SERGIU | **Borehole:** G 17 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
1960					SBFCL	5-ML	W.P	SBF ON SEA BED									
1920	1	9.63	24.09	+4.3=	28.39	3009 - 4	= 26.09	→ W. Pipe									
1935	1	9.63	24.09	6.	30.10	30.10	ML	2589 → ES				V	PS	1	0	0.50	
1940	1	9.63	24.09	6.51	30.60	30.10	0.50	25.80				V	PS	2	050	1.50	
2000	1	9.63	24.09	7.51	31.60	30.10	1.50	"25.80				V	PS	3	1.50	2.50	
2015	1	9.63	24.09	8.51	32.60	30.10	2.50	"25.80				V	CPT	1	2.50	5.	
2040	2	9.70	33.79	1.21.	35.0	30.0	5.	-10 "25.70" Hole collaps.				V	PS	4	5	6	
2055	2	9.70	33.79	2.21	36.0	30.0	6	"25.70" Hole collaps				V	CPT	2	6	8	
2130	2	9.70	33.79	4.11	37.90	29.90	8	-10 "25.60" Hole collaps.				V	PS	5	8	8.5	
2140	2	9.70	33.79	4.61	38.40	29.90	8.5	"25.60" Hole collaps				V	CPT	3	8.5	11.5	
2215	2	9.70	33.79	7.41	41.20	29.70	11.5	-20 "25.30" Hole collaps.				V	PS	6	11.5	12.00	
2230	2	9.70	33.79	7.91	41.70	29.70	12.0	"25.30" Hole collaps.				V	PS	7	12	12.5	
2245	2	9.70	33.79	8.41	42.20	29.70	12.5	"25.30" Hole collaps				V	CPT	4	12.5	14	
2320	2	9.70	33.79	9.61	43.40	29.40	14.	-30 "25.0" VERY DENSE SAND				V	CPT	5	14	15	
2345	3	9.56	43.35	1.05	44.40	29.40	15	"25.0" Hole collaps				V	PS	8	15	15.5	NR
24:00								TOOLBOX TALK					C				
24:40	3	9.56	43.35	1.45	44.8	29.30	15.5	-0.10 24.9 COLLAPS	—	500/600	10	0.50	CPT	6	15.5	17.0	1.5
01:05	3	9.56	43.35	2.85	46.2	29.20	17.0	-0.10 24.8	—	—	—	—	PS	9	17.0	17.5	0.30
01:25	3	9.56	43.35	3.25	46.6	29.10	17.5	-0.10 24.7 SAND	—	—	—	—	CPT	7	17.5	18.5	1m
01:55	3	9.56	43.35	4.15	47.5	29.0	18.5	-0.10 24.6	—	—	—	—	PS	10	18.5	19.0	0.30
02:10	3	9.56	43.35	4.55	47.9	28.9	19	-0.10 24.5 -11-	—	—	—	—	CPT	8	19.0	21.5	2.5
02:45	3	9.56	43.35	6.95	50.3	28.8	21.5	-0.10 24.4	10min	-11-	—	+11-	PS	11	21.5	22.5	NR
03:10	3	9.56	43.35	8.05	51.4	28.9	22.5	+0.10 24.5 COLLAPS HOLE	—	—	—	—	CPT	9	22.5	23.5	

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 02.07.2015 | **Client:** US Wind

Driller: SERGIY / Raul | **Borehole:** G17 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A — Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
03:40	3	9.56	43.35	9.05	52.4	28.9	23.5	24.5 E.S. COLLARS ✓	—	—	—	—	CPT	10	23.5	24.5	1m
04:05	4	9.48	52.83	0.67	53.5	29.0	24.5	+0.10 24.6 COLLARS/SHELBY DENT ✓	—	—	—	—	PS	12	24.5	25.5	NR
04:30	4	9.48	52.83	1.77	54.6	29.1	25.5	+0.10 24.7 SAND / ✓	—	—	—	—	CPT	11	25.5	26.5	0.86
04:55	4	9.48	52.83	2.87	55.7	29.2	26.5	+0.10 24.8 DENS SAND ✓	—	—	—	—	CPT	12	26.5	28	1.7m
05:40	4	9.48	52.83	4.57	57.4	29.4	28.0	+0.20 —25.0— ✓	—	—	—	—	CPT	13	28.0	28.5	0.70.
06:55	4	9.48	52.83	5.37	58.2	29.7	28.5	+0.30 25.3 COLLARS ✓	—	—	—	—	CPT	14	28.5	29.0	0.50
07:25	4	9.48	52.83	5.97	58.8	29.8	29.0	+0.10 25.4 SAND/GRAVEL ✓	—	500/800	—	—	CPT	15	29.0	29.5	0.50
07:55	4	9.48	52.83	6.57	59.4	29.9	29.5	+0.10 25.5 GRAVEL / COLLARS	—	-11-	—	0.60	PS	13	29.5	30.0	0.40
08:35	4	9.48	52.83	7.17	60.0	30.0	30.0	+0.10 25.6 VERY HARD TO DRILL/BOULDER	15min	500/1000	—	0.80	CPT	16	30.0	30.5	0.30
09:10	4	9.48	52.83	7.57	60.4	29.9	30.5	25.5 HARD	10min	500/800	—	-11-	CPT	17	30.5	33.5	3m
09:40	5	9.51	62.34	0.96	63.3	29.8	33.5	-0.10 25.4	7min	500/600	10/35	0.55	PS	14	33.5	-	NR
09:55								TRY AGAIN SAME DEPTH					PS	14A	33.5	34.5	0.80
10:15	5	9.51	62.34	1.86	64.2	29.7	34.5	-0.10 25.3 COLLARS HOLE	-11-	-11-	-11-	-11-	CPT	18	34.5	37.5	3m
10:50	5	9.51	62.34	4.76	67.1	29.6	37.5	-0.10 25.2 CLAY	-11-	-11-	+/-	-11-	PS	15	37.5	38.5	1m
11:20	5	9.51	62.34	5.66	68.0	29.5	38.5	-0.10 25.1 COLLARS FROM TOP/CLAY	5min	-11-	10/40	0.50	CPT	19	38.5	41.5	
12:25	5	9.51	62.34	8.26	70.60	29.10	41.5	-40 Day shift. „24.7"					PS	16	41.5	42.	
12:30								Pull DRILL STRING BAD WEATER									
12:15								DRILL STRING ON DECK. STAND 134									
13:50								LIFT UP SBE AND BOOM OVER SIDE									
15:00								SBE BACK ON SEA BED									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	2.9 PURE BORE

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 2.07.2015 / 3.07.2015 **Client:** US Wind

Driller: Raul / SERGIU **Borehole:** G17 A **Location:** Maryland wind farm **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
15:10	1	9.63	24.09	+2.80=	26.86	+1.7=28.59	-4=24.59	- W.P.									
15:15	1	9.63	24.09	4.5	28.60	28.60	ML	24.6 W.ES. START DRILL OUT.									
								RE-DRILL TO 41. M. (WS.)									
16:35								PICK UP SBF TO chang BOOM									
16:45								SBF BACK ON SEA BED									
18:15	5	9.51	62.34	8.06	70.40	29.40	41	+80 (DRILL OUT) 25.40				V	PS	1.	41.	42	
18:30	5	9.51	62.34	9.16	71.50	29.50	42	+10 25.50				V	CPT	1	42	42.5	
19:0	6	9.71	72.05	2.15	74.20	29.70	44.5	+20 Holle collops 25.70				V	PS	2	44.5	45	
19:20	6	9.71	72.05	2.75	74.60	29.80	45	+10 „Hole it not stobil" 25.80				V	CPT	2	45.	48	
20:0	6	9.71	72.05	5.85	77.90	29.90	48.	+10„ All the hole collops„25.90"				V	PS	3	48	49	
20:15	6	9.71	72.05	6.85	78.90	29.90	49.	„Hole get more stobil (cloy)"				V	CPT	3	49	52	
20:40	7	9.68	81.73	0.17	81.90	29.90	52	" Hole is stobil„				V	PS	4	52	53	
21:00	7	9.61	81.73	1.17	82.90	29.90	53					V	CPT	4	53	56	
21:45	7	9.61	81.73	4.07	85.80	29.80	56	-10 „25.80"				V	PS	5	56	57	
22:00	7	9.61	81.73	5.07	86.80	29.80	57	„Hole is stobil" „25.80"				V	CPT	5	57.	60	
22:30	7	9.61	81.73	7.87	89.60	29.60	60	-20 25.60				V	PS	6	60	61	
22:45	7	9.61	81.73	8.87	90.60	29.60	61	25.60				V	CPT	6	61	64	
23:20	8	9.47	91.20	2.20	93.40	29.40	64	-20 25.40				V	PS	7	64	65	
23:35	8	9.47	91.20	3.20	94.40	29.40	65					V	CPT	7	65	67	2.3m
24:30	8	9.47	91.20	5.10	96.30	29.30	67	-0.10 -25.3-	—	500/75	10/20	0.50V	PS	8	67	—	N/R
24:00						DROP SAMPLE →		TOOL BOX →/SAME DEPTH AGAIN/CHANGE LATCH ON			PUSH TOOL		PS	8A	67	68	N/R
01:00	8	9.47	91.20	6	97.2	29.20	68	-0.20 25.1	—	500/650	19	-11-	CPT	8	68	69	0.70
01:25	8	9.47	91.20	6.4	97.6	29.10	68.5	-0.10 25.0	—	—	—	—	CPT	9	68.5	69.5	0.50

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	26 PURE BORE 11 AQUA GEL

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

60.5 1.67

OFFHORE DRILLING LOG

Client: US Wind

Date: 03.07.2015

Driller: SERGIO

Borehole: D17A

Location: Maryland wind farm

Job No:

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
01:40	8	9.47	91.20	7.2	98.4	28.90	69.5	-0.20 24.8 SAND	—	500/800	—	0.65	CPT	10	69.5	70.5	0.70
02:00	8	9.47	91.20	8.1	99.3	28.80	70.5	-0.10 24.9 SAND/SILT	—	500/800	—	0.60	CPT	11	70.5	71.5	0.70
02:[illegible]	8	9.47	91.20	9	100.2	28.70	71.5	-0.10 24.8 E.O.H.	—	-11-	-11-	-11-	CPT	12	71.5	74.5	3m
								DRILL OUT TO 76m FOR PS LOG									
[illegible]							(03:40)	LIFT AND CLAMP AT 32.5m FOR PS LOG									
02:40								PREPARE PS LOG									
	4	9.48	52.83	8.17	61.0	28.50	32.5	-0.20 24.6									
04:20								START LOGGING									
05:15								LOST COMUNICATION ON PS LOG									
06:10								START LOGGING									
06:25								FINISH LOGGING									
06:35								LIFT DRILL STRING									
07:15								LIFT SBF									
07:25								SBF IN MOON POOL READY FOR NEXT LOCATION									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 3.07.2015 | **Client:** US Wind

Driller: Raul | **Borehole:** K16 | **Location:** Maryland wind farm | Job No:

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
12⁰⁵					Δ SEA EL	Δ ML		SBF ON SEA BED W.P E/S									
12³⁰	1	9.63	24.09	+3 =	27.09+1.7	28.79-4	=24.79	W.P. " 24.79" " 24.71"									
12⁴⁰	1	9.63	24.09	4.70	28.80	28.80	ML					V	PS	1	0	0.50	
13⁰⁰	1	9.63	24.09	5.20	29.30	28.80	0.50					V	PS	2	0.50	1	NR
13¹⁰	1	9.63	24.09	5.60	29.70	28.70	1	-10 " 24.60"				V	CPT	1	1	3.5	
13⁴⁵	1	9.63	24.09	7.81	31.90	28.40	3.5	-30 " 24.30"		500/800		V	PS	3	3.5	4.5	
14⁰⁰	1	9.63	24.09	8.81	32.90	28.40	4.5	sand, Hole it collaps " 24.30"				V	CPT	2	4.5	7.5	
14¹⁰	2	9.70	33.79	2.01	35.80	28.30	7.5	-10 24.20				V	PS	4	7.5	8	
15⁰⁵	2	9.70	33.79	2.51	36.30	28.30	8.	Hole not stabil. 24.20				V	CPT	3	8	11	
15³⁵	2	9.70	33.79	5.51	39.30	28.30	11.	(15³⁵-17³⁰) "CPT TOOL PROBLEM" Hole collaps"				V	CPT	4	11.	13	
18³⁰	2	9.70	33.79	8.31	42.10	29.10	13.	+80 25.0				V	PS	5	13	135	
18⁴⁰	2	9.70	33.79	8.81	42.60	29.10	13.5	very difficulty to get sample				V	CPT	5	13.5	15.5	A
19⁰⁵	3	9.56	43.35	1.35	44.70	29.20	15.5	+10 sand and gravel 25.10				V	PS	6	15.5	16.5	NR
20⁰⁰	3	9.56	43.35	2.15	45.50	29.50	16.	+30 SAMPLE drops from shellbag 25.40		(40+)	V	PS 7	CPT	6	16.5	18.5	
20²⁵	3	9.56	43.35	4.75	48.10	29.60	18.5	"All the time when I stop the pumps bit get blocked				V	PS	8 7	18.5	19	NR
20⁵⁵	3	9.56	43.35	5.35	48.70	29.70	19.	40, and can not reach the CPT Tool. Hole collaps				V	CPT	7	19	22	
21²⁰	3	9.56	43.35	8.45	51.80	29.80	22.	+10 " all the time " 25.70"				V	PS	9 8	22	22.5	
21³⁵	3	9.54	43.35	8.95	52.30	29.80	22.5	25.70"				V	CPT	8	22.5	24.5	
22¹⁵	4	9.48	52.89	1.27	54.10	29.60	24.5	-20 Hole collaps. Lifting neck " 25.50"				V	PS	10 9	24.5	25	NR
22²⁵	4	9.48	52.83	1.77	54.60	29.60	25.	clamp. 1.5m. Hole collaps.				V	CPT	9	25.	28.	
23¹⁰	4	9.48	52.83	4.67	57.50	29.50	28.	-10 25.40				V	PS	11 10	28.	28.5	
22²⁵	4	9.48	52.83	5.17	58.0	29.50	28.5	Hole collaps: 25.40				V	CPT	10	28.5	30.5	
				7.07.	59.90	29.40	30.5	-10 25.30					PS	12"	30.5		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	36+4 PUREBORE

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 04.07.2015 | **Client:** US Wind

Driller: SERGIU | **Borehole:** K 16 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A: Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
24:10	4	9.48	52.83	7.47	60.3	29.30	31.0	-0.10 25.20 /24:00 -TOOL 30 X/	—	—	—	0.50	PS	13	31	32	0.35
24:35	4	9.48	52.83	8.37	61.2	29.20	32.0	-0.10 25.10 COLLAPS	—	—	—	—	CPT	11	32	33.	1m
01:00	4	9.48	52.83	9.27	62.1	29.10	33.0	-0.10 25.00 /MAX OUT ON PUSH	—	500/600	—	0.50	PS	14	33	33.5	N/R
01:30	5	9.51	62.34	0.16	62.5	29.0	33.5	-0.10 24.9 SBF CLAMP SLIP	—	—	—	—	CPT	12	33.5	34.0	0.50
02:05	5	9.51	62.34	0.56	62.9	28.9	34.0	-0.10 24.8 CPT DELATCHED	—	—	—	—	CPT	13	34.	-	
02:30	-11-	-11-	-11-	-11-	-11-	-11-	34.0	CHANGE CPT LATCH /AGAIN SAME DEPTH					CPT	13	34	35	0.70
02:55	5	9.51	62.34	1.36	63.7	28.7	35.0	-0.20 24.6 COLLAPS	—	—	—	—	CPT	14	35	35.5	0.65
03:20	5	9.51	62.34	1.76	64.1	28.6	35.5	-0.10 24.5	—	—	—	—	CPT	15	35.5	36.5	0.88
04:00	5	9.51	62.34	2.66	65.0	28.5	36.5	-0.10 24.4 CHANGE CONE (03:40)	HARD	COLLARS			CPT	16	36.5	37.0	0.30
04:25	5	9.51	62.34	3.06	65.4	28.4	37.0	-0.10 24.3 HARD. (COLLARS)	—	500/1000	—	0.65	CPT	17	37.0	40	3m
05:35	5	9.51	62.34	6.06	68.4	28.4	40	24.3 CLAY - HOLE STABIL	—	500/600	10/25	0.50	PS	15	40	41	0.95
06:00	5	9.51	62.34	7.26	69.6	28.6	41	+0.20 24.50 STABIL /CHANGE CONE	—	-11-	-11-	-11-	CPT	18	41	43	3m
06:35	6	9.71	72.05	0.65	72.7	28.7	44	+0.10 24.60 CHANGE LATCH	—	—	—	—	PS	16	44	45	1m
07:05	6	9.71	72.05	1.75	73.8	28.8	45	+0.10 24.70	—	500/600	10/30	0.50	CPT	19	45	48	3m
07:35	6	9.71	72.05	4.95	77.0	29.0	48	+0.20 25.00 CLAY/HOLE STABIL	—	-11-	-11-	-11-	PS	17	48	49	1m
08:05	6	9.71	72.05	6.15	78.2	29.2	49	+0.20 25.20 HOLE COLAPS FROM TOP	—	—	—	—	CPT	20	49	49.5	0.66
08:40	6	9.71	72.05	6.75	78.8	29.3	49.5	+0.10 25.30 HARD	—	500/800	—	0.60	PS	18	49.5	50.5	0.30
09:05	6	9.71	72.05	7.85	79.9	29.4	50.5	+0.10 25.40 COLLAPS	—	500/700	—	0.55	CPT	21	50.5	51.0	0.65
09:50	6	9.71	72.05	8.35	80.4	29.4	51.	25.40 <STABIL>	—	-11-	—	—	PS	19	51.0	52	0.70
10:05	6	9.71	72.05	9.35	81.4	29.4	52	25.40 SAND/CLAY	—	500/600	10	—	CPT	22	52	55	3m
10:40	7	9.68	81.73	2.67	84.4	29.4	55	25.40 CLAY / SILT	—	-11-	-11-	-11-	PS	20	55	56	1m
11:00	7	9.68	81.73	3.57	85.3	29.3	56	-0.10 25.30	—	—	—	—	CPT	23	56	59	3m
11:35	7	9.68	81.73	6.57	88.3	29.3	59	25.30	—	500/600	10/35	0.50	PS	21	59	60	1m

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 04.07.2015 | **Client:** US Wind

Driller: SERGIU / Raul | **Borehole:** K16 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
11:50	7	9.68	81.73	7.47	89.2	29.2	60	-0.10 25.20 E/S is a bit stuff				✓	CPT	24	60	63	
12:40	8	9.47	91.20	0.80	92.0	29.0	63	-.20 25.0				✓	PS	22	63	64.	
12:50	8	9.47	91.20	1.80	93.0	29.0	64.	-.20 24.80				✓	CPT	25	64	66.5	
13:05	8	9.47	91.20	4.10	95.30	28.80	66.5	-.20 24.80				✓	PS	23	66.5	67.5	
13:55	8	9.47	91.20	4.90	96.10	28.60	67.5	-.20 24.60 very hard				✓	CPT	26	67.5	68.	
14:25	8	9.47	9120	5.30	96.50	28.50	68.	-.10 24.50 very hard ground				✓	CPT	27	68	71	
14:45	8	9.47	91.20	8.10	99.30	28.30	71.	-.20 24.30				✓	PS	24	71.	71.5	
15:00	8	9.47	91.20	8.60	99.80	28.30	71.5	END OF CPT AND PS TESTS.				✓	CPT	28	71.5	73.	
16:00	=	〃	〃	〃	〃	〃	78m	DRILL OUT 6m to clear hole for PS. Log				〃	〃	〃	〃	〃	
16:30	6	9.71	72.05	7.15	79.20	28.20	54	START TO RIG UP FOR PS. Logg.									
								LOST TOOL. (PS) Logg. tool									
								HOPE collaps and drillstring									
								get boogged.									
19								DRILL STRING OUT FROM THE GROUND									
19:10								SBF UP FROM ML									
19:55								SBF BACK ON SEABED									
20:00								Repaire PS Logging tool.									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard

Mud Usage: 26. PURE BORE; 13 GNARGUM

Remarks:

Lost / Damage Equipment: 1 DRILL PIPE BENT.

PS. Logging TOOL LOST IN THE HOLE

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 05.07.2015 | **Client:** US Wind

Driller: SERGIU | **Borehole:** H10 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
06:10								ON POSITION / WAIT FOR CLEARENCE FROM BRIDGE									
07:10								LOWER SBF									
07:15								SBF ON SEABED / RUN DRILL STRING									
	1	9.55	24.0	+5.6 =	29.6	DECK TO	CL.										
					29.6 +	1.7 =	31.3	DECK TO ML									
							31.3 -	4.0 = 27.3 W.D. BY PIPE									
								27.0 - E/S -									
08:00	1	9.55	24.0	7.3	31.3	31.3	ML	27.0					PS	1	ML	1	0.40
08:10	1	9.55	24.0	8.4	32.4	31.4	1	+0.10 27.10 SAND	-	500/600	-	0.40	PS	2	1	2	0.55
08:25	1	9.55	24.0	9.4	33.4	31.4	2	27.10	—	-11-	-	-11-	PS	3	2	3	0.70
09:05	2	9.70	33.7	0.9	34.6	31.6	3	+0.20 (08:35 - 09:00) REPAIR CPT TOOL	—	—	—	—	CPT	1	3	6	3 m
09:30	2	9.70	33.7	4	37.7	31.7	6	+0.10 27.40	—	500/600	-	0.45	PS	4	6	7	0.80
10:00	2	9.70	33.7	5.1	38.8	31.8	7	+0.10 27.50	—	500	10	0.50	CPT	2	7	10	3 m
10:35	2	9.70	33.7	8.2	41.9	31.9	10	+0.10 27.60 DROP CORE	—	500/600	10	0.50	PS	5	10	10.5	0.35
10:50	2	9.70	33.7	8.6	42.3	31.8	10.5	-0.10 27.50	—	—	—	—	CPT	3	10.5	13.5	3 m
11:20	3	9.55	43.25	2.05	45.3	31.8	13.5	27.50 SAND	—	500/650	10	0.55	PS	6	13.5		
11:25								COULD NOT LATCH / PUSHTOOL SNAP OFF									
								LIFT DRILL STRING TO GET OUT PUSHTOOL									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	4 BAGS

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 5.07.2015 | Client: US Wind

Driller: Raul | Borehole: 17.10 | Location: Maryland wind farm | Job No:

C = A + B E = C - D B = E + D - A

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B) D-CL	Pipe below Deck (C) D-ML	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E) WL.D.	Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
								ES: 27.30									
12:40	1	9.55	24.0+5	9=29.90	+17=31.60	-4=27.60		START TO REENTER IN THE HOLE									
13:00	3	9.55	43.25	1.65	44.90	31.40	13.5	-6(27.10) (Lost 5m collops on reenter)				V	PS	6.	13.5	14	
13:20	3	9.55	43.25	2.10	45.40	31.40	14	sand (dens)				V	CPT	4	14.	14.5	
13:35	3	9.55	43.25	2.65	46.90	31.40	14.5	-27.10 sand (dens)				V	CPT	5	14.5	15	
13:50		9.55	43.25	3.05	46.30	31.30	15	+0 27.0 very dens sand				V	CPT	6	15	15.5	
14:05	3	9.55	43.25	3.55	46.80	31.30	15.5	27.0 very dens sand				V	CPT	7.	15.5	16.	
14:20	3	9.55	43.25	3.95	47.20	31.20	16.	-10 26.9 dens sand				V	CPT	8	16.	16.5	
14:40	3	9.55	43.25	4.35	47.60	31.10	16.5	-10 29.80.				V	CPT	9.	16.5	17	
15:05	3	9.55	43.25	4.75	48.0	31.0	17.	-10 29.70 Hole is collops.				V	CPT	10	17.	17.5	
15:20	3	9.55	43.25	5.15	48.40	30.90	17.5	-10 29.60 very dens sand				V	CPT	11	17.5	18	
15:35	3	9.55	43.25	5.55	48.80	30.80	18.00	-10 29.50 dens sand				V	CPT	12	18.	19.	
15:50	3	9.55	43.25	6.45	49.70	30.70	19.	-10 26.40 ⇓				V	CPT	13	19.	20	
16:15	3	9.55	43.25	7.35	50.60	30.60	20.	-10 26.30				V	PS	7	20	20.5	
16:35	3	9.55	43.25	7.85	51.10	30.60	20.5	- 26.30				V	CPT	14	20.5	23.5	
17:20	4	9.50	52.75	1.45	54.20	30.70	23.5	26.40 start sandy clay				V	TS	8	23.5	24.5	
17:50	4	9.70	52.75	2.05	54.80	30.80	24.0.	+0 26.50 can not push the CPT TOOL				V	CPT	15	24.	26	
18:35	4	9.70	52.75	4.15	56.90	30.90	26.	+10 (Hole collops) (sand get into the bit)				V	PS	9	26	27	
19:00	4	9.70	52.75	5.15	57.90	30.90	27	sandy clay				V	CPT	16	27	30	
19:40	4	9.70	52.75	8.35	61.10	31.10	30	+20 26.80 sandy clay				V	PS	10	30	31	
20:00	4	9.70	52.75	9.55	62.30	31.30	31.	-20 27.00 sandy clay				V	CPT	17	30	34	
20:40	5	9.50	62.25	3.25	65.50	31.50	34	27.20 (20:40-21:10) FIXING PS TOOL				V	PS	11	34	35	
21:30	5	9.50	62.25	4.55	66.80	31.80	35	+30 27.50				V	CPT	18	35	38	
22:05	5	9.50	62.25	7.65	69.90	31.90	38	+10 27.60					PS	12	38	39	

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 5.07.2015 / 06.07.2015 | **Client:** US Wind

Driller: Raul / SERGIU | **Borehole:** H10 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A — Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
								EIS.									
22:05	5	9.50	62.25	7.65	69.90	31.90	38	+10 27.60 Holey (1.5m)				✓	PS	12	38	39	
22:25	5	9.50	62.25	8.75	71.0	32.0	39	+10 27.70 clay sand				✓	CPT	19	39	42	
22:50	6	9.70	71.95	2.05	71.0	32.00	42	27.70 clay sand				✓	PS	13	42	43	
23:15	6	9.70	71.95	3.05	75.0	32.0	43	27.70 clay sand				✓	CPT	20	43	46	
24:05	6	9.70	71.95	6.05	78.0	32.0	46	27.70 clay sand				✓	PS	14	46	47	0.90
24:30	6	9.70	71.95	6.95	78.9	31.9	47	TOOL 80% -0.10 27.60 EIS				✓	CPT	21	47	50	3m
24:55	7	9.70	81.65	0.15	81.8	31.8	50	-0.10 27.50 CLAY / SAND	—	500/650	10/20	0.60	PS	15	50	51	0.95
01:20	7	9.70	81.65	1.05	82.7	31.7	51	-0.10 27.40	—	—	—	—	CPT	22	51	54	3m
01:55	7	9.70	81.65	3.95	85.6	31.6	54	-0.10 27.30	—	—	—	—	PS	16	54		NR
02:05								TASTIN SAME DEPTH	—	—	—	—	PS	16A	54	55	0.95
02:20	7	9.70	81.65	4.85	86.5	31.5	55	-0.10 27.20	—	—	—	—	CPT	23	55	56	0.86
02:45	7	9.70	81.65	5.75	87.4	31.4	56	-0.10 27.10 HARD	—	—	—	—	PS	17	56	56.5	0.40
03:05	7	9.70	81.65	6.15	87.8	31.3	56.5	-0.10 27.0 SAND	—	500/700	—	0.60	CPT	24	56.5	59.5	3m
03:25	7	9.70	81.65	9.05	90.7	31.2	59.5	-0.10 26.9 SAND / CLAY	—	500/600	10/20	0.55	PS	18	59.5	60	0.35
03:40	8	9.45	91.10	P	91.1	31.1	60.0	-0.10 26.8	—	—	—	—	CPT	25	60	63	3m
04:10	8	9.45	91.10	2.9	94	31.0	63	-0.10 26.7 HARD	—	500/850	—	0.65	PS	19	63	63.5	0.30
04:30	8	9.45	91.10	3.3	94.4	30.9	63.5	-0.10 26.6	—	—	—	—	CPT	26	63.5	66	2.5
05:00	8	9.45	91.10	5.7	96.8	30.8	66.0	-0.10 26.5 CLAY	—	500/650	10/55	0.55	PS	20	66	67	1m
05:40	8	9.45	91.10	6.6	97.7	30.7	67	-0.10 26.4	—	-11-	-11-	-11-	CPT	27	67	70	3m
06:05	8	9.45	91.10	9.5	100.6	30.6	70	-0.10 26.3 CLAY	—	500/600	10/70	0.60	PS	21	70	71	1m
06:20	9	9.70	100.80	0.8	101.6	30.6	71	26.3	—	-11-	-11-	-11-	CPT	28	71	74	3m
06:50	9	9.70	100.80	3.9	104.7	30.7	74	+0.10 26.4	—	500/650	10/80	0.55	PS	22	74	75	0.95
07:05								E.O.H / LIFT DRILL STRING & SET.									

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	13 GUAR GUM 6 PURE ROCK

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 06.07.2015		**Client:** US Wind	
Driller: SERGIU	**Borehole:** H10	**Location:** Maryland wind farm	Job No:

Time	Complete Joints Below Deck			Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test				
	No	Length	Total (A)					Drilling Remarks					Type	No	From:	To:	Rec
07:10								LIFT DRILL STRING									
07:50								LIFT SBF									
07:55								SBF IN MOONPOOL / READY FOR NEXT LOCATION									

DRILLING FLUID CONSUMPTION		Remarks:
Mud Balance Onboard	Mud Usage	Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFSHORE DRILLING LOG

Client: [redacted]

Date: 7. 7.15.

Driller: Daul

Borehole:

Location: [redacted] US. WIND FARM

Job No: 10470

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Depth (E)	C = A + B E = C - D B = E + D - A — Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
1225	7	9.70	81.65	3.25	84.90	31.90	53					↓	PS	19	53	53.5	
1245	7	9.70	81.65	3.75	85.40	31.90	53.5					↓	CPT	18	53.5	54.	
1310	7	9.70	81.65	4.25	85.90	31.90	54.	-10 27.80 sand				↓	CPT	19	54.	55	
1320	7	9.70	81.65	5.15	86.80	31.80	55	-10 27.7. Sand				↓	CPT	20	55	57	
1355	7	9.70	81.65	7.15	88.80	31.80	57.	27.7. Sand				↓	PS	20	57	58	
1415	7	9.70	81.65	8.15	89.80	31.80	58	sand				↓	CPT	21	58	60.5	
1435	8	9.45	91.10	1.10	92.20	31.70	60.5.	-10 27.6. sandy clay				↓	PS	21	60.5	61.	
15	8	9.45	91.10	1.50	92.60	31.60	61.	-10 27.5				↓	CPT	22	61.	64	
1540	8	9.45	91.10	4.30	95.40	31.40	64.	-20 27.3				↓	PS	22	64	64.5	
1555	8	9.45	91.10	4.70	95.40	31.40	64.5	27.30				↓	CPT	23	64.5	67.5	
1630	8	9.45	91.10	7.80	98.90	31.40	67.5	- 27.20				↓	PS	23	67.5	78.5	
1655	8	9.45	91.10	8.70	99.80	31.30	68.5	-10 27.10				↓	CPT	22	78.5	71.5	
1730	9	9.70	100.80	1.80	102.60	31.10	71.5	-20 26.80				↓	PS	24	71.5	725	
1745	9	9.70	100.80	2.80	103.60	31.10	72.5	E.O.H.				↓	CPT	24.	72.5	75	E.O.H
1810								START TO RECOVER DRILL STRING									
1815								SEE UP FROM SEA BED.									
1915								ALL DRILLING EQUIPMEN ON DECK									

DRILLING FLUID CONSUMPTION

Mud Viscosity

Mud Usage

Remarks:
Lost / Damage Equipment:

TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Client: US Wind

Date: 07.07.2015

Borehole: G7

Location: Maryland wind farm

Job No:

Driller: SERGIU

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A — Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
01:00	3	9.55	43.25	3.25	46.5	32.0	14.5	27.90 E/S	—	500/600	—	0.55	PS	8	14.5	15	020
01:15	3	9.55	43.25	4.15	47.4	31.9	15.5	-0.10 27.8	—	500/700	—	0.60	CPT	7	15.5	16.0	0.30
01:40	3	9.55	43.25	4.65	47.9	31.9	16	27.8 SHELBY BENT	—	—	—	—	PS	9	16.0	16.5	N/R
02:30	3	9.55	43.25	5.05	48.3	31.8	16.5	-0.10 27.7 (01:50-02:25 FIX CPT TOOL	—	—	—	—	CPT	8	16.5	19	2.5
03:10	3	9.55	43.25	7.35	50.6	31.6	19.0	-0.20 27.5 CLAY	—	500/600	10/40	0.55	PS	10	19	20	0.75
03:30	3	9.55	43.25	8.25	51.5	31.5	20	-0.10 27.4	—	—	-11-	—	CPT	9	20	23	3m
03:55	4	9.50	52.75	1.65	54.4	31.4	23	-0.10 27.3	—	—	—	—	PS	11	23	24	0.80
04:10	4	9.50	52.75	2.55	55.3	31.3	24	-0.10 27.2 CLAY	—	—	—	—	CPT	10	24	27	3m
05:30	4	9.50	52.75	5.45	58.2	31.2	27	-0.10 27.1 FIX SBT P.P. CLAMP (04:30) - (05:00)	—	—	—	—	PS	12	27	28	0.95
05:45	4	9.50	52.75	6.25	59.0	31.0	28	-0.20 26.9	—	—	—	—	CPT	11	28	31	3m
06:10	4	9.50	52.75	9.15	61.9	30.9	31	-0.10 26.8 CLAY	—	500/600	10/55	0.50	PS	13	31	32	1m
06:45	5	9.50	62.25	0.55	62.8	30.8	32	-0.10 26.7	—	—	—	—	CPT	12	32	35	3m
07:10	5	9.50	62.25	3.55	65.8	30.8	35	26.7 CLAY	—	-11-	-11-	-11-	PS	14	35	36	1m
07:30	5	9.50	62.25	4.55	66.8	30.8	36	26.7	—	-11-	10/60	-11-	CPT	13	36	39	3m
07:55	5	9.60	62.25	7.65	69.9	30.9	39	+0.10 26.8 SAND/CLAY	—	500/650	10/55	0.60	PS	15	39	40	0.95
08:10	5	9.60	62.25	8.75	71.0	31.0	40	+0.10 26.9	—	-11-	-11-	-11-	CPT	14	40	43	3m
08:40	6	9.70	71.95	2.15	74.1	31.1	43	+0.10 27.0 CLAY	—	-11-	10/70	0.55	PS	16	43	44	1m
09:05	6	9.70	71.95	3.25	75.2	31.2	44	+0.10 27.1	—	—	—	—	CPT	15	44	46.5	2.5
09:40	6	9.70	71.95	5.85	77.8	31.3	46.5	+0.10 27.2 CLAY	—	500/600	10/75	0.60	PS	17	46.5	47.5	1m
10:30	6	9.70	71.95	6.95	78.9	31.4	47.5	+0.10 27.3	—	—	—	—	CPT	16	47.5	50	2.5
11:05	7	9.70	81.65	0.05	81.7	31.7	50	+0.30 27.6	—	-11-	10/60	0.55	PS	18	50	51	1m
11:55	7	9.70	81.65	11"	82.8	31.8	51	+0.10 27.7 (3 attempt CPT and leaching)	—	-11-	-11-	-11-	CPT	17	51	53	
12:25	7	9.70	81.65	3.25	84.90	31.90	53	+10 27.8.				V	PS	19	53		

DRILLING FLUID CONSUMPTION

Mud Balance Onboard

Mud Usage

14BAGS

Remarks:

Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration

PS = Push Sample (m/t), P = Piston

Gardline

OFFHORE DRILLING LOG

Date: 06.07.2015 | **Client:** US Wind

Driller: SERGIU / Raul | **Borehole:** G7 | **Location:** Maryland wind farm | **Job No:**

Time	Complete Joints Below Deck: No	Length	Total (A)	Length below deck (B)	Pipe below Deck (C)	Deck to mudline Echo Sndr. Reading (D)	Hole Deth (E)	C = A + B E = C - D B = E + D - A / Drilling Remarks	Rate of Penetration	Torque Indication (psi)	Mud Pressure (psi)	Bit Weight (tons)	Sample Test: Type	No	From:	To:	Rec
07:10								LIFT DRILL STRING									
07:50								LIFT SBF									
07:55								SBF IN MOONPOOL / READY FOR NEXT LOCATION									
15:10								All CLEAR TO DEPLOY									
15:20								STOP DEPLOYMANT DO TO TORTAL IRONING VESSEL									
16:10								START TO DEPLOY SBF									
16:15						A-ML	W.D	SBF. ON SEA BED									
	1	9.55	24.0 + 5.20 = 29.20	+17 =	30.90-4		26.90	E/S -26.80 .									
16:35	1	9.55	24.0	6.70	30.90	30.90	ML					V	PS.	1	0	0.50	NR
17:10	1	9.55	24.0.	7.20	31.40	30.90	0.50					V	PS.	2	0.50	1	
17:20	1	9.55	24.0	7.60	31.80	30.80	1	-10 26.7.				V	PS	3	1.	2.	
17:55	1	9.55	24.0	8.60	32.80	30.80	2.	26.7				V	CPT	1	2.	4.5	
18:35	2	9.70	33.70	1.60	35.30	30.80	4.5	26.7 Hardy layer				V	PS	4	4.5	50	
18:45	2	9.70	33.70	2.10	35.80	30.80	5	Hardy layer.				V	CPT	2	5	8	
19:15	2	9.70	33.70	5.20	38.90	30.90	8.	+10 26.80				V	PS	5	8.	8.5	NR
19:45	2	9.70	33.70	5.80	39.60	31.10	8.5	+20 27.0 (19:45-21:30) Fixing the CPT TOOL				V	CPT	3	8.5	10	
21:50	2	9.70	33.70	7.90	41.60	31.60	10.	+50 27.50.				V	PS	6	10	10.5	NR
22:15	2	9.70	33.70	8.50	42.20	31.70	10.5	+10 27.60 Sand				V	CPT	4	10.5	12.5	
22:40	3	9.55	43.25	1.05	44.30	31.80	12.5	+10 27.70 Sand. can not clamp in right place				V	PS	7	12.5	13.	
23:00	3	9.55	43.25	1.75	45.00	32.0	13.	+10 27.90 DENS SAND				V	CPT	5	13.	14	
23:25	3	9.55	43.25	2.75	46.0	32.0	14	~27.90 DENS SAND (23:25 -) (cone ch.)				V	CPT	6	14	—	
24:35							14	(24:00 TOOL BOX) (SAME DEPTH FOR CPT)				✓	CPT	6	14	14.5	0.40

DRILLING FLUID CONSUMPTION

Mud Balance Onboard	Mud Usage
	10 GUARGUM

Remarks:
Lost / Damage Equipment:

NOTE: PIPE LOG TO BE ATTACHED WITH THE DRILLING LOG

CR = Core Run, CPT = Cone Penetration
PS = Push Sample (m/t), P = Piston

Gardline

5.2 General Drilling Equipment Specifications

MARINE DRILL RIG GL100

- Fully heave compensated top drive drilling rig
- Permanently installed vessel-based system
- Power pack
- Air banks
- Mud system
- Workshop
- Wireline Cone Penetration Testing system
- Wireline undisturbed sampling system
- Offshore soil testing laboratory

TECHNICAL SPECIFICATIONS

- Heave compensated
- Wirth top drive drilling system
- API drill string
- 600m depth capability
- 22m twin tower drill derrick
- 10 tonne sea bed reaction frame
- 1 and 3m wireline CPT tools
- 1m wireline sampling tool

APPLICATIONS

- Wind Farm Investigations
- Studies for offshore structures
- Calibration of geophysical data
- Offshore laboratory testing
- Site surveys for exploration jack-ups
- Mineral prospecting
- Geohazard evaluation
- Geological investigations

DEPLOYMENT AND POSITIONING

- Permanently installed on Gardline's geotechnical survey vessel Ocean Discovery
- Deployed through moonpool via twin tower system
- Positioning via DP or 4 point mooring

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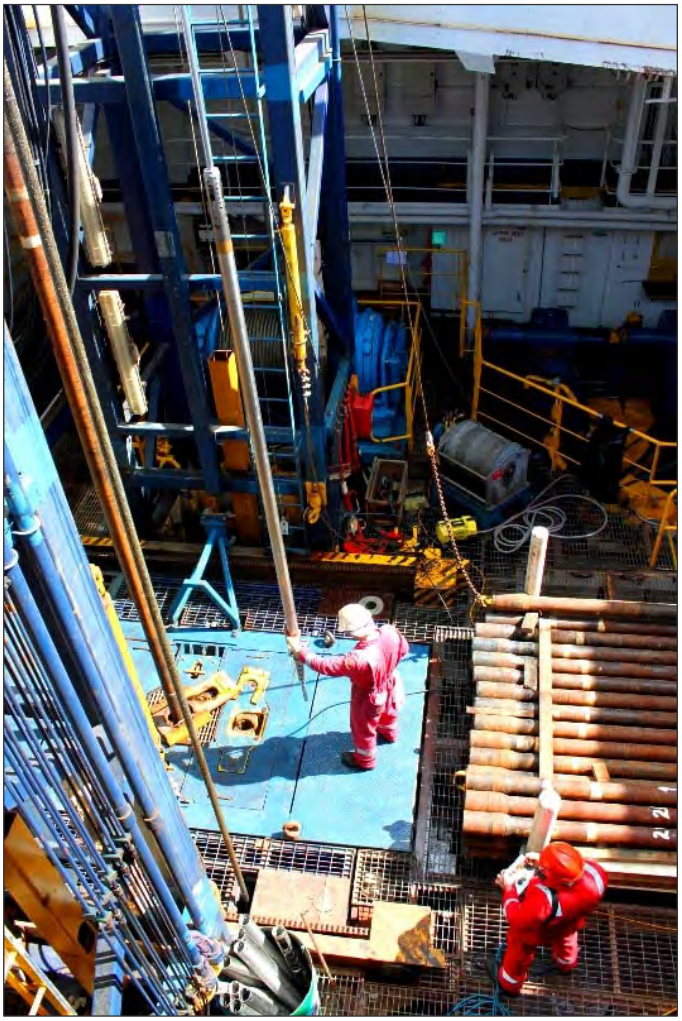
Tel: +44 1493 845600 Fax: +44 1493 852106 Web: www.gardlinemarinesciences.com

WIRELINE CPT AND SAMPLING EQUIPMENT

- Cone Penetration Testing (CPT) and Shelby push sampling
- Can be redeployed at any stage of borehole
- 1m and 3m CPT tools
- 1m push sample tool
- 70mm diameter Shelby samples
- Dedicated self-tensioning winch
- Deployed via hose umbilical down the hole
- Hydraulic push system
- Real-time data processing
- Deployed in conjunction with Gardline GL75 and GL100 drill systems.



TECHNICAL SPECIFICATIONS

- 20mm/sec constant hydraulic push
- 600m depth capability
- Deck level data acquisition
- Remote controlled winch
- 5cm^2 and 10cm^2 piezocone options
- 10cm^2 3m stroke = 50kN thrust capacity (45 MPa tip resistance)
- 10cm^2 1m stroke = 100kN thrust capacity (90 MPa tip resistance)
- 5cm^2 2.5m stroke = 50kN thrust capacity (90 MPa tip resistance)
- 90mm diameter tools
- 70mm diameter samples

APPLICATIONS

- Wind Farm Investigations
- Studies for offshore structures
- Calibration of geophysical data
- Offshore laboratory testing
- Site surveys for exploration jack-ups
- Mineral prospecting
- Geohazard evaluation
- Geological investigations

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P-S LOGGING

DIGITAL P-S SUSPENSION PROBE

The P-S suspension probe is a low-frequency acoustic sonde designed to measure compressional and shear-wave velocities (slowness) in soils and soft-rock formations. It operates using indirect excitation rather than mode conversion as in a conventional sonic. It is capable of acquiring high-resolution P and S wave data in borehole depths of up to 1000m.

Principle of Measurement

The P-S suspension probe contains a unique design of powerful hammer source and two receivers, separated by acoustic damping tubes. To acquire data, the probe is stopped at the required depth and the source is fired under surface command. Firing causes a solenoid-operated shuttle aligned cross the borehole axis to strike plate on opposite sides of the probe in turn, setting up a pressure doublet in the surrounding fluid. The resultant fluid motion produces a tube wave at the borehole wall with velocity close to the shear velocity of the formation together with a compressional wave. As the waves propagate parallel to the borehole axis, they set up corresponding fluid movements that are detected by the two neutral buoyancy 3D hydrophone receives, allowing the wave velocity to be directly measured. The facility to stack multiple shots and filter the data as in normal seismic data acquisition is included in the operating software.

Features

- High-energy shear-wave source has typically 20 x power of conventional sonic probes
- Low-frequency measurement, more representative of engineering situations
- Stacking of multiple shots
- Probe separates for shipping
- Real-time wavelet (wiggle) display

Measurements

- Formation compressional wave velocity (slowness)
- Formation shear-wave velocity (slowness)

Applications

Engineering	Rock strength and elasticity Correction of seismic velocity

Operating Conditions

Borehole type	Open-hole, water-filled

Specifications

Diameter	54mm
Length	8.25m (assembled)
Shipping case length	1.45m (4.75ft)
Weight	38kg
Max. temperature	70° (extended range available)
Max. pressure	20MPa (extended range available)
Transducer type	Solenoid and hammer
Receiver type	3D hydrophones
Receiver spacing	1000mm (3.28ft)
Waveform acquisition period	5.12mS to 409.6mS
Sampling	2.5µs minimum
Downhole gain	0db to 42db (surface control)

Gardline Geosciences Ltd, 1 Hewett Park, Hewett Road, Great Yarmouth, Norfolk, NR31 0NN, UK
Tel: +44 1493 845600 Fax: +44 1493 852106 Web: www.gardlinemarinesciences.com

MOBILE OFFSHORE LABORATORY

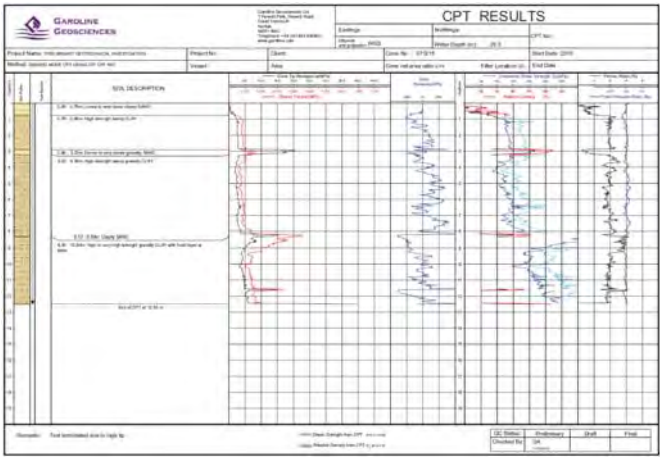
A 20ft cabin/container laboratory is provided for offshore laboratory testing. This contains laboratory equipment for preliminary classification testing and sample preparation for laboratory testing onshore together with work units, sink, water supply, lighting and electrical supply and photographic equipment.

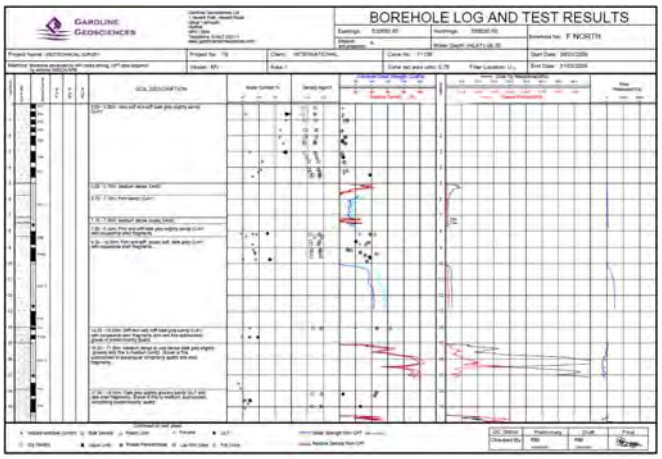
The offshore laboratory is operated by a full time laboratory technician with assistance from the Geotechnical Engineer on shift. Borehole cores and samples are extruded, logged, photographed and sub-sampled for relevant testing. Offshore handling of samples ensures the best results are achieved for interpretation and real time results to facilitate preliminary borehole logs and draft reports. Representative samples are waxed and stored in containers for transportation to the onshore laboratory. All cores are stored in an area onboard the vessel where temperatures are stable and out of direct sunlight.

TECHNICAL SPECIFICATIONS

Laboratory equipment provided includes:

- Hydraulic Sample Extruder
- Electric Oven
- Precision Triple Beam Balance
- Torvane
- Pocket Penetrometer
- Laboratory Vane
- Unconsolidated Undrained Triaxial
- Fall Cone
- Visual description and photography to British Standard, ASTM, CIRIA and NORSOK standards
- All necessary equipment and consumables for sample handling





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APPENDIX 6

6.1 Borehole Progression Plans

6.2 Borehole Clearance Records

6.3 Borehole Completion Records

6.1 Borehole Progression Plans

BOREHOLE OBJECTIVES: 10451 BH - I21 **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 74m.
2	1.00	2.00		Shelby	CPT	At the end of the borehole 4m to be drilled out for PS logging to be performed, starting from the base, stopping every 1m to perform a test.
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00						50
51		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00						54
55		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00						58
59		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00						62
63		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00						66
67		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72		71.00	72.00						72
73		72.00	73.00						73
74		73.00	74.00						74
75		74.00	75.00						75
76		75.00	76.00						76
77		76.00	77.00						77
78		77.00	78.00						78

END OF HOLE 74m

79

Client Signature..... **Date**..06/21/2015.....

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BOREHOLE OBJECTIVES: 10451 BH - I21A **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
	0.00	1.00			Push sample	Alternating CPT and sampling down to a depth 0f 74.5m.
	1.00	2.00			CPT	Open hole to 2.5m for retest of CPT, than drill out to 6.5m and continue alternating CPT and push sample.
	2.00	3.00				At the end of the borehole 4m to be drilled out for PS logging to be performed, starting from the base, stopping every 1m to perform a test.
	3.00	4.00			Rotary Core	
	4.00	5.00				
	5.00	6.00			Open Hole	
	6.00	7.00				
	7.00	8.00				
	8.00	9.00			PS Logging	
	9.00	10.00				
	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
	11.00	12.00				
	12.00	13.00				
	13.00	14.00				
	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
	15.00	16.00				
	16.00	17.00				
	17.00	18.00				
	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
	19.00	20.00				
	20.00	21.00				
	21.00	22.00				
	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
	23.00	24.00				
	24.00	25.00				
	25.00	26.00				
	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
	27.00	28.00				
	28.00	29.00				
	29.00	30.00				
	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
	31.00	32.00				
	32.00	33.00				
	33.00	34.00				
	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
	35.00	36.00				
	36.00	37.00				
	37.00	38.00				
	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
	39.00	40.00				
	40.00	41.00				
	41.00	42.00				
	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
	43.00	44.00				
	44.00	45.00				
	45.00	46.00				
	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

47.5		47.00	48.00						47
48.5		48.00	49.00						48
49.5		49.00	50.00						49
50.5		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			50
51.5		51.00	52.00						51
52.5		52.00	53.00						52
53.5		53.00	54.00						53
54.5		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			54
55.5		55.00	56.00						55
56.5		56.00	57.00						56
57.5		57.00	58.00						57
58.5		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			58
59.5		59.00	60.00		~~TV, UUT, MCD, PP, MLV~~	~~Shelby~~			59
60.5		60.00	61.00						60
61.5		61.00	62.00						61
62.5		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			62
63.5		63.00	64.00						63
64.5		64.00	65.00						64
65.5		65.00	66.00						65
66.5		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			66
67.5		67.00	68.00						67
68.5		68.00	69.00						68
69.5		69.00	70.00						69
70.5		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			70
71.5		71.00	72.00						71
72.5		72.00	73.00						72
73.5		73.00	74.00						73
74.5		74.00	75.00		TV, UUT, MCD, PP, MLV	Shelby			74
75.5		75.00	76.00						75
76.5		76.00	77.00						76
77.5		77.00	78.00						77
78.5		78.00	79.00						78

END OF HOLE 74.50m

Client Signature.....

Date..06/23/2015...

BOREHOLE OBJECTIVES: 10451 BH - I21B **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions: Sand <27.0m

	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00			Push sample	Open hole to 28.0m than start with two push samples, than continue alternating CPT and push sample until a depth of 74.0m is reached.
2	1.00	2.00			CPT	At the end of the borehole 4m to be drilled out for PS logging to be performed, starting from the base, stopping every 1m to perform a test.
3	2.00	3.00				
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00				
8	7.00	8.00				
9	8.00	9.00			PS Logging	
10	9.00	10.00				
11	10.00	11.00				
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00				
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00				
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00				
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00				
28	27.00	28.00				
29	28.00	29.00	TV, UUT, MCD, PP, MLV	Shelby		Extra sample included to confirm the CLAY seen in the CPT.
30	29.00	30.00	TV, UUT, MCD, PP, MLV	Shelby		
31	30.00	31.00				
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00	TV, UUT, MCD, PP, MLV	Shelby		
35	34.00	35.00				
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00	TV, UUT, MCD, PP, MLV	Shelby		
39	38.00	39.00				
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00	TV, UUT, MCD, PP, MLV	Shelby		
43	42.00	43.00				
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00	TV, UUT, MCD, PP, MLV	Shelby		
47	46.00	47.00				

48		47.00	48.00						47
49		48.00	49.00						48
50		49.00	50.00	TV, UUT, MCD, PP, MLV	Shelby				49
51		50.00	51.00						50
52		51.00	52.00						51
53		52.00	53.00						52
54		53.00	54.00	TV, UUT, MCD, PP, MLV	Shelby				53
55		54.00	55.00						54
56		55.00	56.00						55
57		56.00	57.00						56
58		57.00	58.00	TV, UUT, MCD, PP, MLV	Shelby				57
59		58.00	59.00						58
60		59.00	60.00						59
61		60.00	61.00						60
62		61.00	62.00	TV, UUT, MCD, PP, MLV	Shelby				61
63		62.00	63.00						62
64		63.00	64.00						63
65		64.00	65.00						64
66		65.00	66.00	TV, UUT, MCD, PP, MLV	Shelby				65
67		66.00	67.00						66
68		67.00	68.00						67
69		68.00	69.00						68
70		69.00	70.00	TV, UUT, MCD, PP, MLV	Shelby				69
71		70.00	71.00						70
72		71.00	72.00						71
73		72.00	73.00						72
74		73.00	74.00	TV, UUT, MCD, PP, MLV	Shelby				73
75		74.00	75.00						74
76		75.00	76.00						75
77		76.00	77.00						76
78		77.00	78.00						77
79		78.00	79.00						78

END OF HOLE 74.50m

Client Signature.....

Date..06/24/2015.....

BOREHOLE OBJECTIVES: 10451 BH - MET TOWER **Geotechnical Marine Survey For the Maryland Wind Energy Area**

	Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1		0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 74m.
2		1.00	2.00		Shelby	CPT	At the end of the borehole 4m to be drilled out for PS logging to be performed, starting from the base, stopping every 1m to perform a test.
3		2.00	3.00		Shelby		
4		3.00	4.00			Rotary Core	
5		4.00	5.00				
6		5.00	6.00			Open Hole	
7		6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8		7.00	8.00			PS Logging	
9		8.00	9.00				
10		9.00	10.00				
11		10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12		11.00	12.00				
13		12.00	13.00				
14		13.00	14.00				
15		14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16		15.00	16.00				
17		16.00	17.00				
18		17.00	18.00				
19		18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20		19.00	20.00				
21		20.00	21.00				
22		21.00	22.00				
23		22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24		23.00	24.00				
25		24.00	25.00				
26		25.00	26.00				
27		26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28		27.00	28.00				
29		28.00	29.00				
30		29.00	30.00				
31		30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32		31.00	32.00				
33		32.00	33.00				
34		33.00	34.00				
35		34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36		35.00	36.00				
37		36.00	37.00				
38		37.00	38.00				
39		38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40		39.00	40.00				
41		40.00	41.00				
42		41.00	42.00				
43		42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44		43.00	44.00				
45		44.00	45.00				
46		45.00	46.00				
47		46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48	47.00	48.00						48
49	48.00	49.00						49
50	49.00	50.00						50
51	50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52	51.00	52.00						52
53	52.00	53.00						53
54	53.00	54.00						54
55	54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56	55.00	56.00						56
57	56.00	57.00						57
58	57.00	58.00						58
59	58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60	59.00	60.00						60
61	60.00	61.00						61
62	61.00	62.00						62
63	62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64	63.00	64.00						64
65	64.00	65.00						65
66	65.00	66.00						66
67	66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68	67.00	68.00						68
69	68.00	69.00						69
70	69.00	70.00						70
71	70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72	71.00	72.00						72
73	72.00	73.00						73
74	73.00	74.00						74
75	74.00	75.00						75
76	75.00	76.00						76
77	76.00	77.00						77
78	77.00	78.00						78

END OF HOLE 74m

79

80

81

82

Client Signature..... **Date**.....06/21/2015.....

BOREHOLE OBJECTIVES: 10451 BH - D14 **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth of 69m.
2	1.00	2.00		Shelby	CPT	Borehole to be drilled out to 73m for PS logging. Starting from the base, stopping every 1m to perform a test.
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50	▼	49.00	50.00						50
51		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52		51.00	52.00						52
53		52.00	53.00						53
54	▼	53.00	54.00						54
55		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56		55.00	56.00						56
57		56.00	57.00						57
58	▼	57.00	58.00						58
59		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60		59.00	60.00						60
61		60.00	61.00						61
62	▼	61.00	62.00						62
63		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64		63.00	64.00						64
65		64.00	65.00						65
66	▼	65.00	66.00						66
67		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68		67.00	68.00						68
69		68.00	69.00						69
70	▼	69.00	70.00						70
71		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72		71.00	72.00						72
		72.00	73.00						73

END OF HOLE 69m

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Client Signature..... **Date**.06/28/2015.....

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BOREHOLE OBJECTIVES: 10451 BH - D14A **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Shelby sample at 0.5m to cover gap in data, then open hole to 26.0m and alternate CPT and shelby samples down to 69.0m.
2	1.00	2.00			CPT	
3	2.00	3.00				Borehole to be drilled out to 73m for PS logging after sampling. Starting from the base, stopping every 1m to perform a test.
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00				
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00				
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00				
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00				
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00				
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00				
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00	TV, UUT, MCD, PP, MLV	Shelby		
31	30.00	31.00				
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00	TV, UUT, MCD, PP, MLV	Shelby		
35	34.00	35.00				
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00	TV, UUT, MCD, PP, MLV	Shelby		
39	38.00	39.00				
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00	TV, UUT, MCD, PP, MLV	Shelby		
43	42.00	43.00				
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00	TV, UUT, MCD, PP, MLV	Shelby		
47	46.00	47.00				

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00		TV, UUT, MCD, PP, MLV	Shelby			50
51		50.00	51.00						51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00		TV, UUT, MCD, PP, MLV	Shelby			54
55		54.00	55.00						55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00		TV, UUT, MCD, PP, MLV	Shelby			58
59		58.00	59.00						59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00		TV, UUT, MCD, PP, MLV	Shelby			62
63		62.00	63.00						63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00		TV, UUT, MCD, PP, MLV	Shelby			66
67		66.00	67.00						67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00						71
72		71.00	72.00						72
		72.00	73.00						73

END OF HOLE 69m

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Client Signature..... **Date** 06/30/2015

BOREHOLE OBJECTIVES: 10451 BH - G17 **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 72m.
2	1.00	2.00		Shelby	CPT	At the end of the borehole opening hole drilling to 76m for PS logging to be performed, starting from the base, stopping every 1m to perform a test.
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00						50
51		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00						54
55		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00						58
59		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00						62
63		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00						66
67		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72		71.00	72.00						72
73		72.00	73.00						73
74		73.00	74.00						74
75		74.00	75.00						75
76		75.00	76.00						76
									77
									78
									79
									80
									81
									82

END OF HOLE 72m

Date 07/01/2015

Client Signature

BOREHOLE OBJECTIVES: 10451 BH -G17A **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 72m.
2	1.00	2.00		Shelby	CPT	Open hole drilling to 41m. Starting with push sampling, alternating push sampling and CPTU testing to 72m. Four meters to be drilled out after completion of push and CPTU for PS logging.
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00						50
51		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00						54
55		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00						58
59		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00						62
63		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00						66
67		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72		71.00	72.00						72
73		72.00	73.00						73
74		73.00	74.00						74
75		74.00	75.00						75
76		75.00	76.00						76
									77

END OF HOLE 72m

Date 07/02/2015 78

Client Signature 79 80 81 82

BOREHOLE OBJECTIVES: 10451 BH - H10 Geotechnical Marine Survey For the Maryland Wind Energy Area

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 74m.
2	1.00	2.00		Shelby	CPT	
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00						50
51		50.00	51.00	TV, UUT, MCD, PP, MLV	Shelby				51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00						54
55		54.00	55.00	TV, UUT, MCD, PP, MLV	Shelby				55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00						58
59		58.00	59.00	TV, UUT, MCD, PP, MLV	Shelby				59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00						62
63		62.00	63.00	TV, UUT, MCD, PP, MLV	Shelby				63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00						66
67		66.00	67.00	TV, UUT, MCD, PP, MLV	Shelby				67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00	TV, UUT, MCD, PP, MLV	Shelby				71
72		71.00	72.00						72
73		72.00	73.00						73
74		73.00	74.00						74
75		74.00	75.00						75
76		75.00	76.00						76
77		76.00	77.00						77
78		77.00	78.00						78

END OF HOLE 74m

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Client Signature..... **Date** 07/05/2015

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BOREHOLE OBJECTIVES: 10451 BH - G7 **Geotechnical Marine Survey For the Maryland Wind Energy Area**

Approx expected conditions:	Depth from:	Depth to:	LAB TESTS	SAMPLE TYPE	KEY:	COMMENTS
1	0.00	1.00	TV, UUT, MCD, PP, MLV	Shelby	Push sample	Alternating CPT and sampling down to a depth 0f 74m.
2	1.00	2.00		Shelby	CPT	
3	2.00	3.00		Shelby		
4	3.00	4.00			Rotary Core	
5	4.00	5.00				
6	5.00	6.00			Open Hole	
7	6.00	7.00	TV, UUT, MCD, PP, MLV	Shelby		
8	7.00	8.00			PS Logging	
9	8.00	9.00				
10	9.00	10.00				
11	10.00	11.00	TV, UUT, MCD, PP, MLV	Shelby		
12	11.00	12.00				
13	12.00	13.00				
14	13.00	14.00				
15	14.00	15.00	TV, UUT, MCD, PP, MLV	Shelby		
16	15.00	16.00				
17	16.00	17.00				
18	17.00	18.00				
19	18.00	19.00	TV, UUT, MCD, PP, MLV	Shelby		
20	19.00	20.00				
21	20.00	21.00				
22	21.00	22.00				
23	22.00	23.00	TV, UUT, MCD, PP, MLV	Shelby		
24	23.00	24.00				
25	24.00	25.00				
26	25.00	26.00				
27	26.00	27.00	TV, UUT, MCD, PP, MLV	Shelby		
28	27.00	28.00				
29	28.00	29.00				
30	29.00	30.00				
31	30.00	31.00	TV, UUT, MCD, PP, MLV	Shelby		
32	31.00	32.00				
33	32.00	33.00				
34	33.00	34.00				
35	34.00	35.00	TV, UUT, MCD, PP, MLV	Shelby		
36	35.00	36.00				
37	36.00	37.00				
38	37.00	38.00				
39	38.00	39.00	TV, UUT, MCD, PP, MLV	Shelby		
40	39.00	40.00				
41	40.00	41.00				
42	41.00	42.00				
43	42.00	43.00	TV, UUT, MCD, PP, MLV	Shelby		
44	43.00	44.00				
45	44.00	45.00				
46	45.00	46.00				
47	46.00	47.00	TV, UUT, MCD, PP, MLV	Shelby		

48		47.00	48.00						48
49		48.00	49.00						49
50		49.00	50.00						50
51		50.00	51.00		TV, UUT, MCD, PP, MLV	Shelby			51
52		51.00	52.00						52
53		52.00	53.00						53
54		53.00	54.00						54
55		54.00	55.00		TV, UUT, MCD, PP, MLV	Shelby			55
56		55.00	56.00						56
57		56.00	57.00						57
58		57.00	58.00						58
59		58.00	59.00		TV, UUT, MCD, PP, MLV	Shelby			59
60		59.00	60.00						60
61		60.00	61.00						61
62		61.00	62.00						62
63		62.00	63.00		TV, UUT, MCD, PP, MLV	Shelby			63
64		63.00	64.00						64
65		64.00	65.00						65
66		65.00	66.00						66
67		66.00	67.00		TV, UUT, MCD, PP, MLV	Shelby			67
68		67.00	68.00						68
69		68.00	69.00						69
70		69.00	70.00						70
71		70.00	71.00		TV, UUT, MCD, PP, MLV	Shelby			71
72		71.00	72.00						72
73		72.00	73.00						73
74		73.00	74.00						74
75		74.00	75.00						75
76		75.00	76.00						76
77		76.00	77.00						77
78		77.00	78.00						78

END OF HOLE 74m

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Client Signature..... **Date** 07/06/2015

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6.2 Borehole Clearance Records

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 25/06/2015

Borehole Number: BH–I21/A/B

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Combined CPT and sampling to a depth of 73.76m as agreed with client. Client agreed to stop PS logging at 25.0m due to hole collapse in the sands above this depth.
Client appreciates ground conditions prevented PS logging in upper 25m. Cleared to recover equipment due to other data coverage. Hole deemed complete.

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 27/06/15

Borehole Number: BH–MET TOWER

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Combined sample and alternating CPT borehole completed down to a depth of 64.95m where the client agreed to end the borehole before the proposed 74m. PS logging completed from a depth of 70-10m. PS logging ended at 10m due to the high risk of tool loss by hole collapse.

Signed..... for Gardline Geosciences Ltd.

Signed..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 01/07/2015

Borehole Number: BH – D14(A)

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Borehole combined CPT and sampling completed at BH – D14(A) to a final depth of 71.3m. PS logging completed from 44m to 20m. Borehole collapse at 48m prevented PS logging at further depths. Borehole collapse between 8m and 20m prevented further PS logging.

Signed..... for Gardline Geosciences Ltd.

Signed..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 03/07/15

Borehole Number: BH – G17/A

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Alternating Sampling and CPT down to a depth of 73.98m. PS logging data only from 68.0 - 37.0m because of repeated hole collapse due to ground conditions. No PS logging data from 72.0 – 68.0m and 37.0 – 0.0m as per client instruction to not test within areas where the hole has collapsed.

Signed..... for Gardline Geosciences Ltd.

Signed..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 05/07/15

Borehole Number: BH-K16

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Alternating shelby sampling and CPT data collected down to a depth 73.22m. PS logging tool lost downhole during deployment at 60m due to hole collapse, no data was collected.

Signed 05/07/2015 for Gardline Geosciences Ltd.

Signed ..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 06/07/15

Borehole Number: BH – H10

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Alternating shelby sampling and CPT data collected down to a depth of 74.90m. No PS logging data collected.

Signed..... for Gardline Geosciences Ltd.

Signed..... for Company

BOREHOLE CLEARANCE RECORD

Gardline

Document to be signed at accepted completion and clearance of each borehole location by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 07/017/2015

Borehole Number: BH – G7

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

BH – G7 completed with downhole CPTU and push sampling to a final depth of 75.24m. No PS logging at BH – G7.

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

6.3 Borehole Completion Records

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 25/06/15

Borehole Number: BH-I21/A/B

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH-I21/A/B

Proposed Schedule: Push sample the top 3m than alternate between CPT and Push sampler down to 74m. Than drill out to 78m so PS logging can be performed every 1m, starting from the base.

COMPLETED BOREHOLE DETAILS:

Completed combined alternating push sample and CPT down to a depth of 73.76m with client agreement. PS logging completed in 1m intervals from a depth of 74.0m to 25.0m. Client agreed to stop at 25.0m due to hole collapse in the sands above this depth.
2 samples obtained at start of BH-I21B to try and capture Sand/Clay boundary at client request.
Agreed Client appreciates ground conditions prevented PS logging in upper 25m. ~~Happy~~ to leave equipment due to other data coverage. Hole deemed complete.

CLIENT COMMENTS:

Consider that the most relevant data collected by PS log are between 0 ÷ 30 m of depth. It will be taken account on final price. Ty.

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 27/06/15

Borehole Number: BH–MET TOWER

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH–MET TOWER

Proposed Schedule: Combined CPT and sampling to a final depth of 74m. PS logging to be completed from 74m to Mudline.

COMPLETED BOREHOLE DETAILS:

Combined sample and alternating CPT borehole completed down to a depth of 64.95m where the client agreed to end the borehole before the proposed 74m. PS logging completed from a depth of 70-10m. PS logging ended at 10m due to the high risk of tool loss by hole collapse.

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

CPTs were performed instead of the push sampler where the soil was too dense for the push sampler.

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 01/07/2015

Borehole Number: BH – D14(A)

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH – D14(A)

Proposed Schedule: Combined CPT and push sampling to a final depth of 69m. PS logging to be completed from 69m to mudline.

COMPLETED BOREHOLE DETAILS:

Borehole combined CPT and sampling completed at BH – D14(A) to a final depth of 71.3m. PS logging completed from 44m to 20m. Borehole collapse at 48m prevented PS logging at further depths. Borehole collapse between 8m and 20m prevented further PS logging.

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 03/07/15

Borehole Number: BH-G17/A

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH-G17/A

Proposed Schedule: Alternating Sampling and CPT down to 72m, then PS logging from 72.0 to 0.0m.

COMPLETED BOREHOLE DETAILS:

Alternating Sampling and CPT down to a depth of 73.98m. PS logging data only from 68.0 - 37.0m because of repeated hole collapse due to ground conditions. No PS logging data from 72.0 – 68.0m and 37.0 – 0.0m as per client instruction to not test within areas where the hole has collapsed.

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Due to the very dense soil conditions encountered it was difficult to recover shelby samples in some areas so repeated CPT's were performed instead where it was deemed unsuitable for shelby sampling. The very dense/compact sands also caused repeated hole collapses during PS logging limiting data coverage.

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 05/07/15

Borehole Number: BH-K16

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH-K16

Proposed Schedule: Combined borehole with alternating sample and CPT down to a depth of 73m. PS logging from 73m to 0m.

COMPLETED BOREHOLE DETAILS:

Alternating shelby sampling and CPT data collected down to a depth 73.22m.
Data for CPT01 did not pass QC, client accepted data without requiring re-acquisition.
PS logger lost downhole and no data recorded for this location.

CLIENT COMMENTS:

Possibility of returning to complete PS logging, awaiting decision from onshore with regards to PS logging requirements.

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Due to the very dense soil conditions encountered it was difficult to recover shelby samples in some areas so repeated CPT's were performed instead where it was deemed unsuitable for shelby sampling.

PS logging tool lost downhole during deployment at 60m due to hole collapse, no data was collected.

Signed..... for Gardline Geosciences Ltd.

Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 06/07/15

Borehole Number: BH – H10

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH – H10

Proposed Schedule: Combined borehole with alternating sample and CPT down to a depth of 74m

COMPLETED BOREHOLE DETAILS:

Alternating shelby sampling and CPT data collected down to a depth of 74.90m.
No PS logging data collected.

CLIENT COMMENTS:

Possibility of returning to complete PS logging, awaiting decision from onshore with regards to PS logging requirements.

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Due to the very dense soil conditions encountered it was difficult to recover shelby samples in some areas so repeated CPT's were performed instead where it was deemed unsuitable for shelby sampling. No PS logging data collected.

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

BOREHOLE COMPLETION RECORD

Gardline

Document to be signed at accepted completion of geotechnical requirements of each borehole by Company Representative and Gardline Geosciences Ltd Party Chief

Client: US Wind Inc. Contract No: 10451

Project: Geotechnical Marine Survey For The Maryland Wind Energy Area Date: 07/07/2015

Borehole Number: BH – G7

DISTRIBUTION (circle as appropriate): Geotech Engineer, Engineer, Client, Driller,

BOREHOLE No: BH – G7

Proposed Schedule:

Downhole CPTU and push sampling to a target depth of 74m. With PS logging from 74m to mudline.

COMPLETED BOREHOLE DETAILS:

CPTU and push sampling completed to a final depth of 75.24m. No PS logging at this borehole location BH – G7.

CLIENT COMMENTS:

GARDLINE GEOSCIENCES ENGINEER COMMENTS:

Signed..... for Gardline Geosciences Ltd. Signed..... for Company

APPENDIX 7

7.1 CPTU Calibration Data

7.2 Laboratory Equipment Calibration Data

7.1 CPTU Calibration Data

Gardline

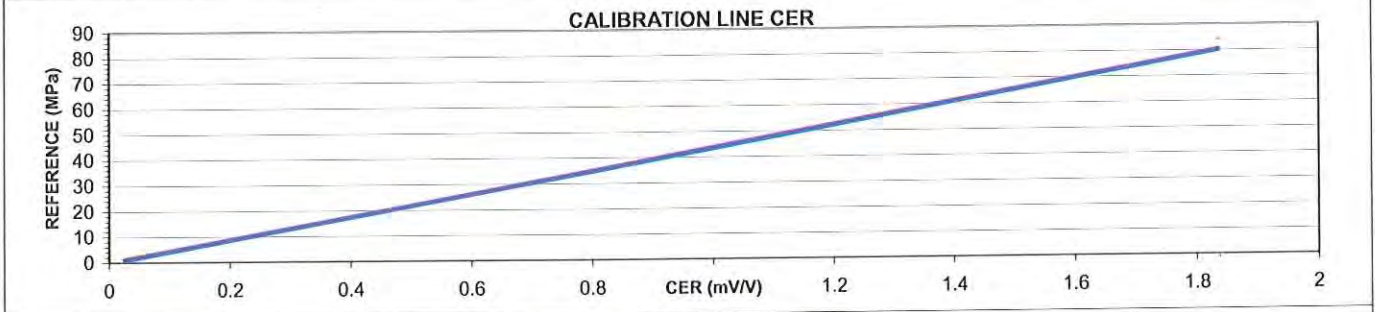
CALIBRATION CERTIFICATE

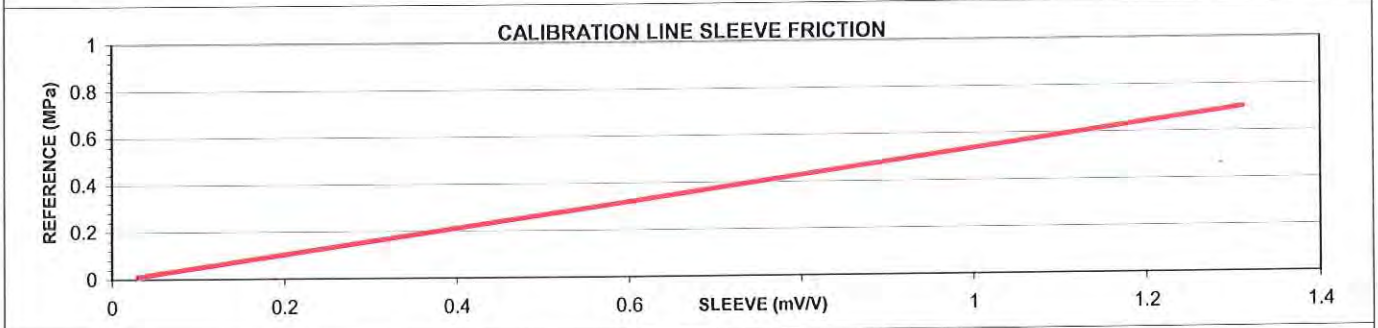
18 Pin 10cm Cone-Geopoint-070815G

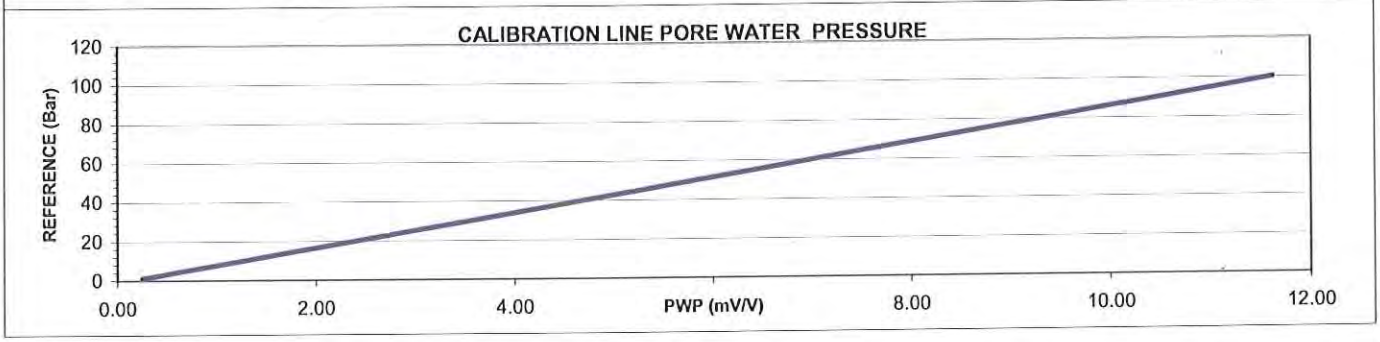
TYPE: CFP100-10

NO. = 070815G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.5	10
Maximum pressure (MPa,MPa,MPa)	100	1	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.145039866	1.394263116	11.48558649
Calibration Current (mA)	12.43591514	12.26909549	0.61961044
Scaling factor:			
Golog	1.0363262616	1.0224246240	12.3922088067
Wison	0.0026651979	0.0000328319	0.4251252214
Roson	1.0363262616	1.0224246240	1.2392208807
Alpha factor:		0.79	
Uncertainty (%):			
Reproducibility	0.19	0.48	-
Linearity	0.09	0.00	0.49
Hysterisis	0.15	0.17	-
Aplication class	1	1	1







Instrument:	18 Pin 10cm Cone	Location:	Gardline Calibration Laboratory
Serial Number:	070815G	Atmospheric pressure (mBar)	1037
Manufacturer:	Geopoint	Humidity (%)	12
Date of calibration:	05/03/2015	Temperature(° C)	20.1

Comments:

Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild 05/03/2015	Checked:	DG	DG
	Date:	05/03/2015	05/03/2015

Maintenance Checklist

ConeSerial No.	070815G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A		x		Y
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline

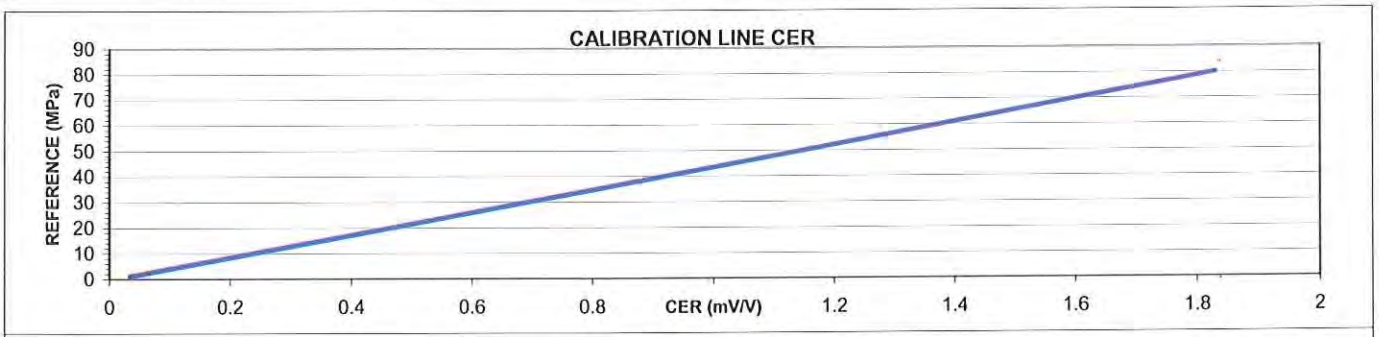
CALIBRATION CERTIFICATE

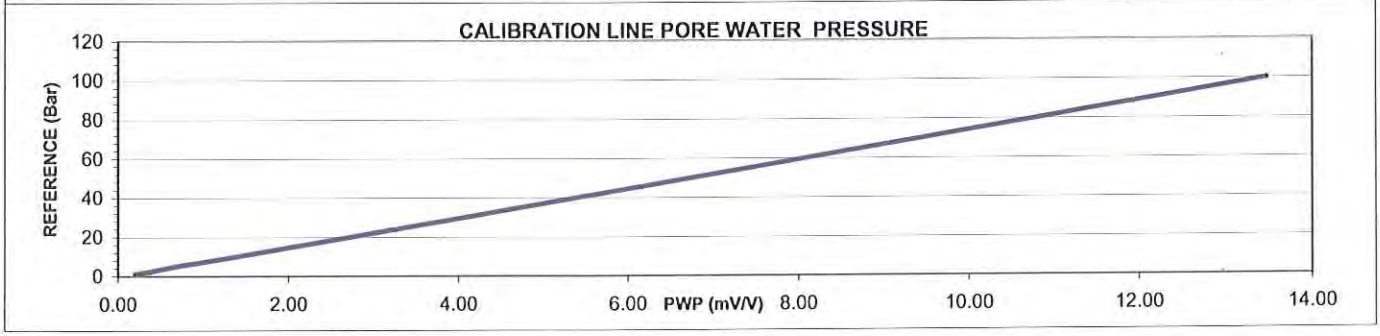
18 Pin Electric Cone-Geopoint-071216G

TYPE: CFP100-10

NO. = 071216G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.135954554	1.208146394	13.41272784
Calibration Current (mA)	12.57150192	14.17229959	0.491088501
Scaling factor:			
Golog	1.0476251602	1.1810249660	9.8217700133
Wison	0.0026865140	0.0000378898	0.3640432102
Roson	1.0476251602	1.1810249660	0.9821770013
Alpha factor:		0.74	
Uncertainty (%):			
Reproducibility	0.03	0.32	-
Linearity	0.22	0.01	0.20
Hysterisis	0.08	0.76	-
Aplication class	1	1	1





Instrument:	18 Pin Electric Cone	Location:	Gardline Calibration Laboratory
Serial Number:	071216G	Atmospheric pressure (mBar)	1007
Manufacturer:	Geopoint	Humidity (%)	12
Date of calibration:	24/02/2015	Temperature(° C)	20.2

Comments:

Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D Goodchild	Checked:	DG	DG
24/02/2015	Date:	24/02/2015	24/02/2015

Maintenance Checklist

ConeSerial No.	071216G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A			x	N
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline

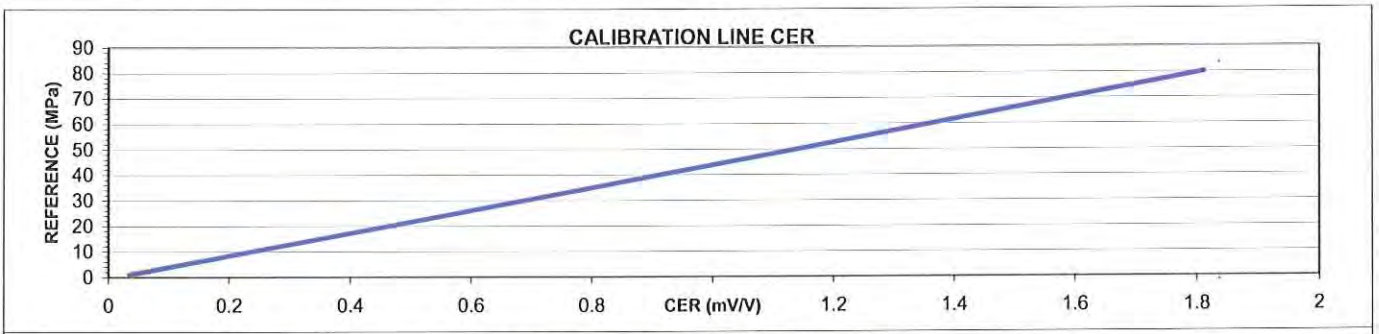
CALIBRATION CERTIFICATE

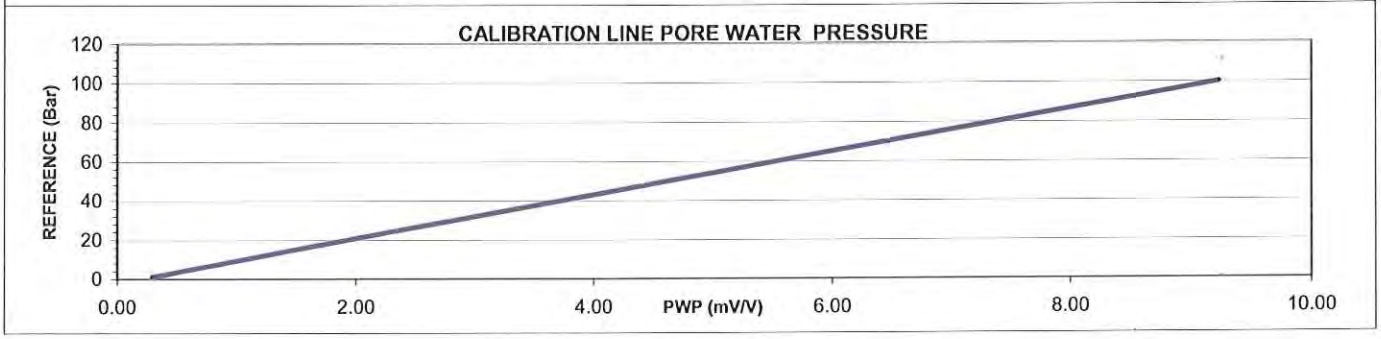
18 Pin Electric Cone-Geopoint-081213G

TYPE: CFP100-10

NO. = 081213G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.124076973	1.41697882	9.035409953
Calibration Current (mA)	12.70441151	12.08771008	0.520089842
Scaling factor:			
Golog	1.0587009588	1.0073091729	10.4017968368
Wison	0.0027149011	0.0000323056	0.5404085178
Roson	1.0587009588	1.0073091729	1.0401796837
Alpha factor:		0.83	
Uncertainty (%):			
Reproducibility	0.02	0.18	-
Linearity	0.25	0.01	0.85
Hysterisis	0.03	0.60	-
Aplication class	1	1	1





Instrument:	18 Pin Electric Cone	Location:	Gardline Calibration Laboratory
Serial Number:	081213G	Atmospheric pressure (mBar)	1036
Manufacturer:	Geopoint	Humidity (%)	12
Date of calibration:	05/03/2015	Temperature(° C)	20.2

Comments:

Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild 05/03/2015	Checked: Date:	DG 05/03/2015	DG 05/03/2015

Maintenance Checklist

ConeSerial No.	081213G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A		x		Y
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline

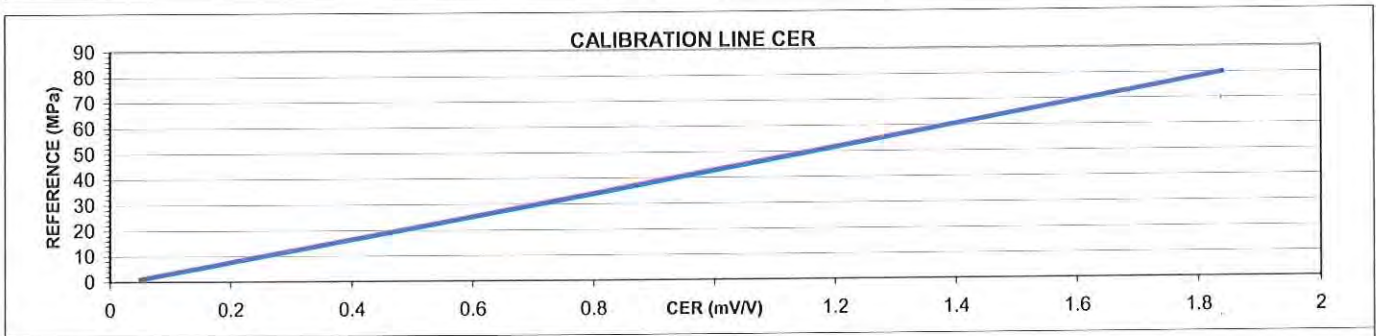
CALIBRATION CERTIFICATE

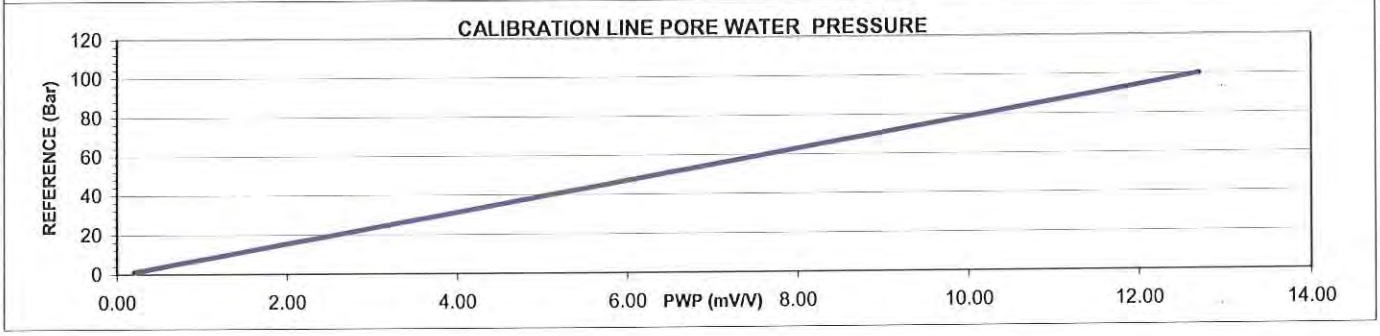
18 Pin 10cm Cone-Geopoint-100904G

TYPE: CFP100-10

NO. = 100904G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.132800145	1.430078331	12.62810018
Calibration Current (mA)	12.58304063	11.96250752	0.603019843
Scaling factor:			
Golog	1.0485867195	0.9968756265	12.0603968608
Wison	0.0026939949	0.0000320097	0.3866624772
Roson	1.0485867195	0.9968756265	1.2060396861
Alpha factor:		0.79	
Uncertainty (%):			
Reproducibility	0.34	0.43	-
Linearity	0.46	0.02	0.25
Hysterisis	0.04	0.50	-
Aplication class	1	1	1





Instrument:	18 Pin 10cm Cone	Location:	Gardline Calibration Laboratory
Serial Number:	100904G	Atmospheric pressure (mBar)	1018
Manufacturer:	Geopoint	Humidity (%)	17
Date of calibration:	25/02/2015	Temperature(° C)	20.5

Comments: Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild	Checked:	DG	DG
25/02/2015	Date:	25/02/2015	25/02/2015

Maintenance Checklist

ConeSerial No.	100904G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A		x		Y
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

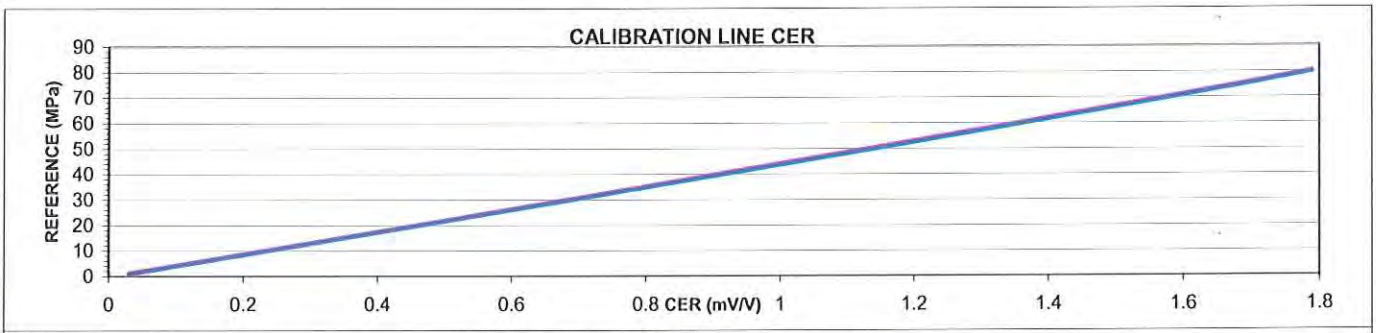
Completed Y

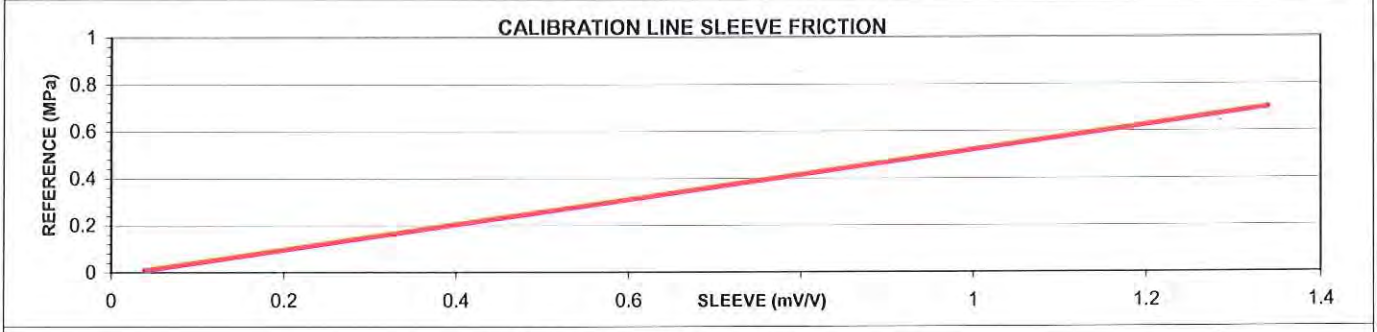
Not completed/Not required N

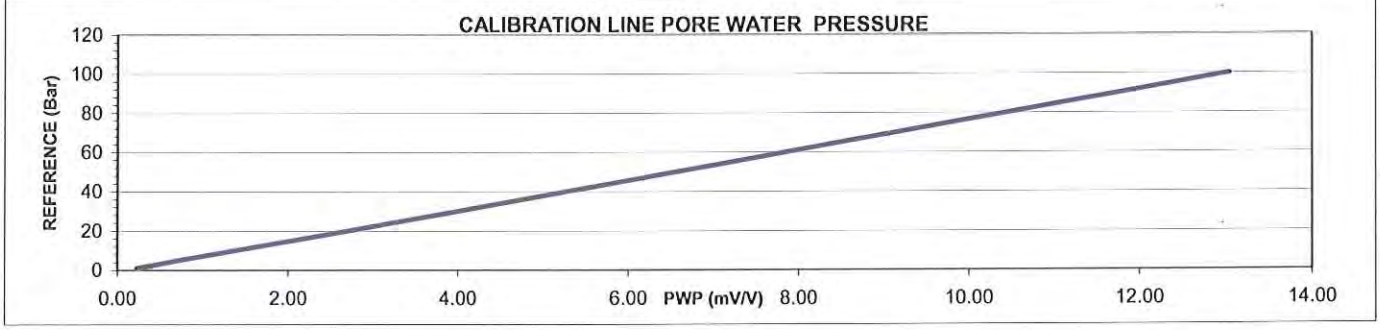
This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline	CALIBRATION CERTIFICATE 18 Pin Electric Cone-Geopoint-100905G	TYPE: CFP100-10 NO. = 100905G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.119081555	1.418621721	12.93987189
Calibration Current (mA)	12.72427097	12.06183211	0.544567052
Scaling factor:			
Golog	1.0603559141	1.0051526756	10.8913410414
Wison	0.0027270200	0.0000322682	0.3773462784
Roson	1.0603559141	1.0051526756	1.0891341041
Alpha factor:		0.82	
Uncertainty (%):			
Reproducibility	0.29	0.51	-
Linearity	0.29	0.01	0.34
Hysterisis	0.32	0.92	-
Aplication class	1	1	1







Instrument:	18 Pin Electric Cone	Location:	Gardline Calibration Laboratory
Serial Number:	100905G	Atmospheric pressure (mBar)	1025
Manufacturer:	Geopoint	Humidity (%)	21
Date of calibration:	13/03/2015	Temperature(° C)	20.4

Comments:	Calibrated by:	QC Status:	Draft	Final
Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa	D. Goodchild 13/03/2015	Checked: Date:	DG 13/03/2015	DG 13/03/2015

Maintenance Checklist

ConeSerial No.	100905G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced					x	N
1 X	Cone tip	APB Part No. 0101001A			x	N
2 X	Filter centering ring	APB Part No. 0101080A			x	N
1 X	Filter	APB Part No. 0101090A			x	N
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000			x	N
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1		x	N
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024			x	N
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2		x	N
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

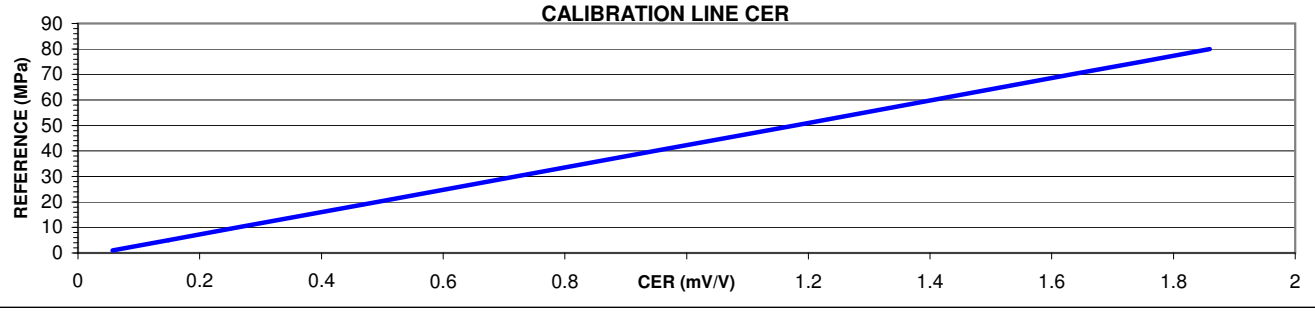
Note 2 Only 1 used on multiwave spring modified cones

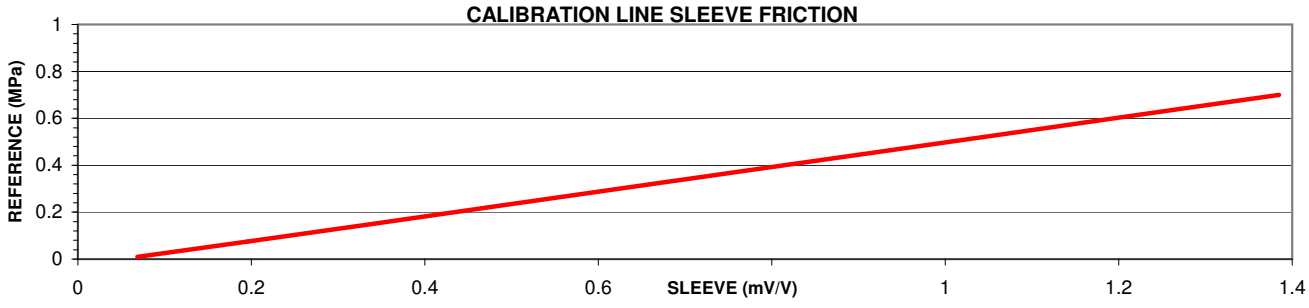
Key		
	Completed	Y
	Not completed/Not required	N

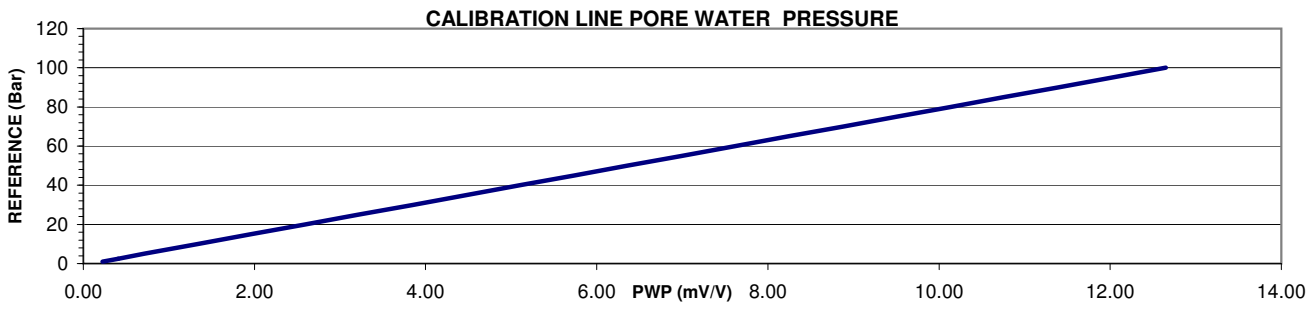
This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline	CALIBRATION CERTIFICATE 18 Pin Electric Cone-Geopoint-100912G	TYPE: CFP100-10 NO. = 100912G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.141390941	1.430918981	12.55855363
Calibration Current (mA)	12.4792612	11.94880221	0.533873221
Scaling factor:			
Golog	1.0399384329	0.9957335174	10.6774644144
Wison	0.0026737183	0.0000319909	0.3888037305
Roson	1.0399384329	0.9957335174	1.0677464414
Alpha factor:		0.76	
Uncertainty (%):			
Reproducibility	0.11	0.78	-
Linearity	0.55	0.02	0.29
Hysterisis	0.10	0.66	-
Aplication class	1	1	1







Instrument:	18 Pin Electric Cone	Location:	Gardline Calibration Laboratory
Serial Number:	100912G	Atmospheric pressure (mBar)	1025
Manufacturer:	Geopoint	Humidity (%)	18
Date of calibration:	27/01/2015	Temperature(° C)	20.0

Comments:	Calibrated by:	QC Status:	Draft	Final
Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa	D. Goodchild 27/01/2015	Checked: Date:	DG 27/01/2015	DG 27/01/2015

Gardline

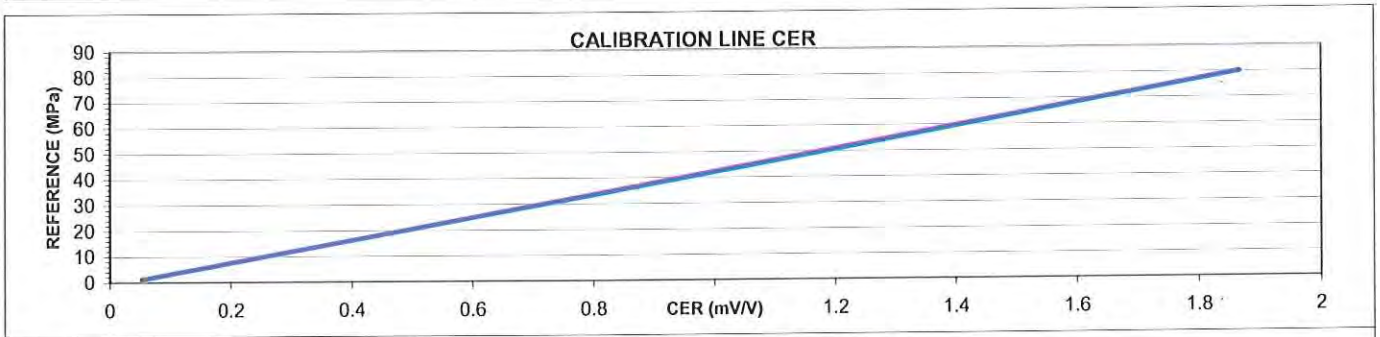
CALIBRATION CERTIFICATE

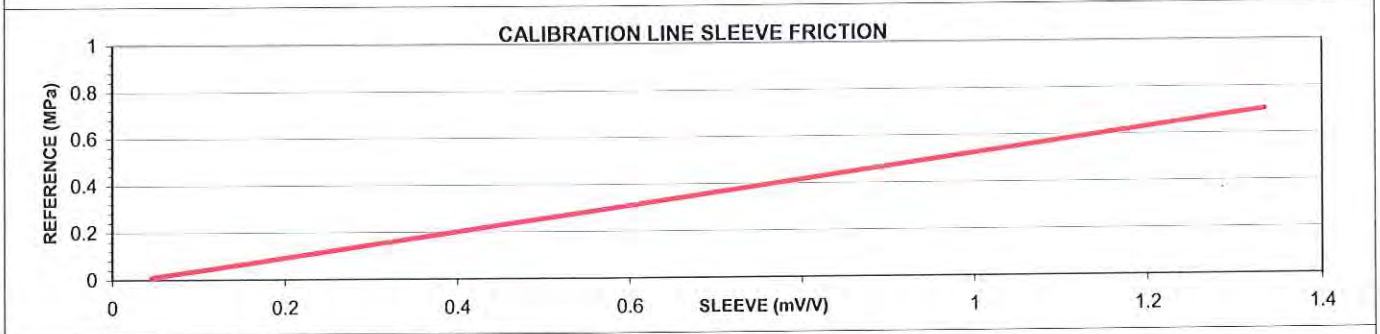
18 Pin Electric Cone-Geopoint-100917G

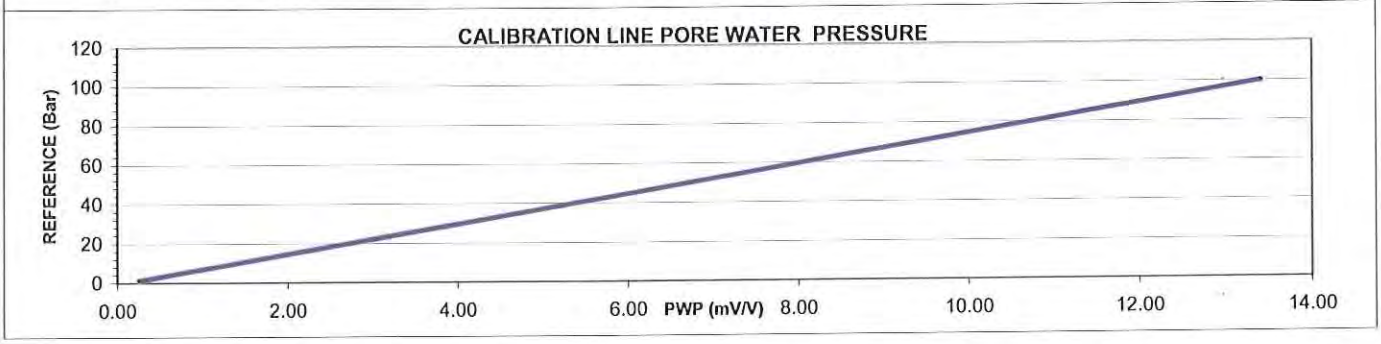
TYPE: CFP100-10

NO. = 100917G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.148355391	1.400702329	13.27955488
Calibration Current (mA)	12.41255949	12.22122948	0.493481542
Scaling factor:			
Golog	1.0343799577	1.0184357901	9.8696308403
Wison	0.0026575029	0.0000326810	0.3676939885
Roson	1.0343799577	1.0184357901	0.9869630840
Alpha factor:		0.80	
Uncertainty (%):			
Reproducibility	0.09	0.28	-
Linearity	0.50	0.01	0.38
Hysterisis	0.21	0.30	-
Aplication class	1	1	1







Instrument:	18 Pin Electric Cone	Location:	Gardline Calibration Laboratory
Serial Number:	100917G	Atmospheric pressure (mBar)	1010
Manufacturer:	Geopoint	Humidity (%)	25
Date of calibration:	26/02/2015	Temperature(° C)	20.3

Comments: Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild 26/02/2015	Checked:	DG	DG
	Date:	26/02/2015	26/02/2015

Maintenance Checklist

ConeSerial No.	100917G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A			x	N
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline

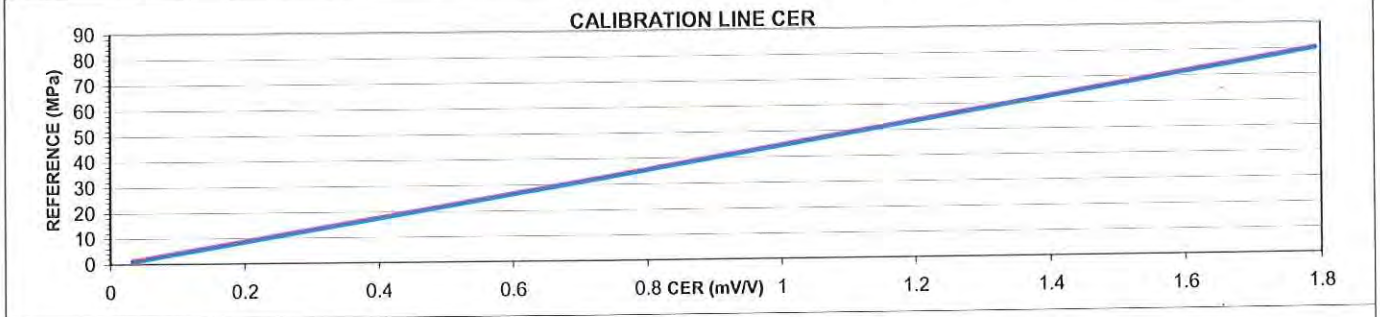
CALIBRATION CERTIFICATE

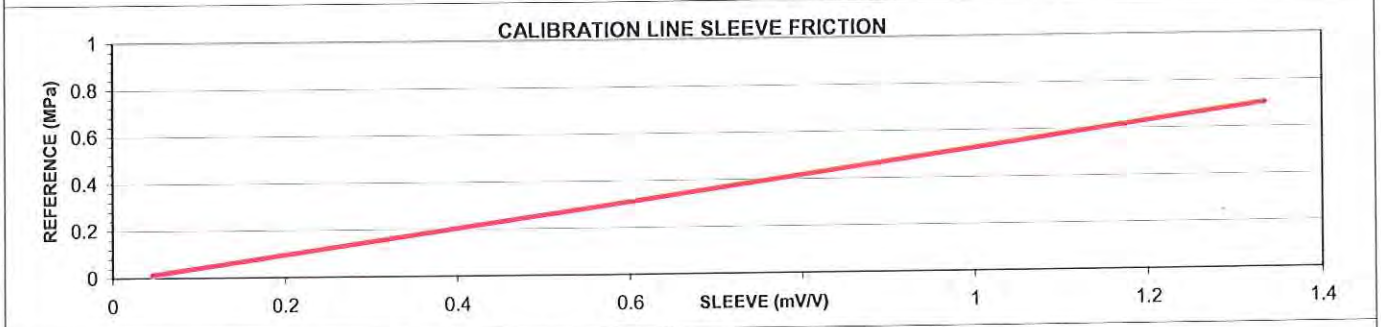
18Pin 10cm Cone-AP Van den Berg-100981

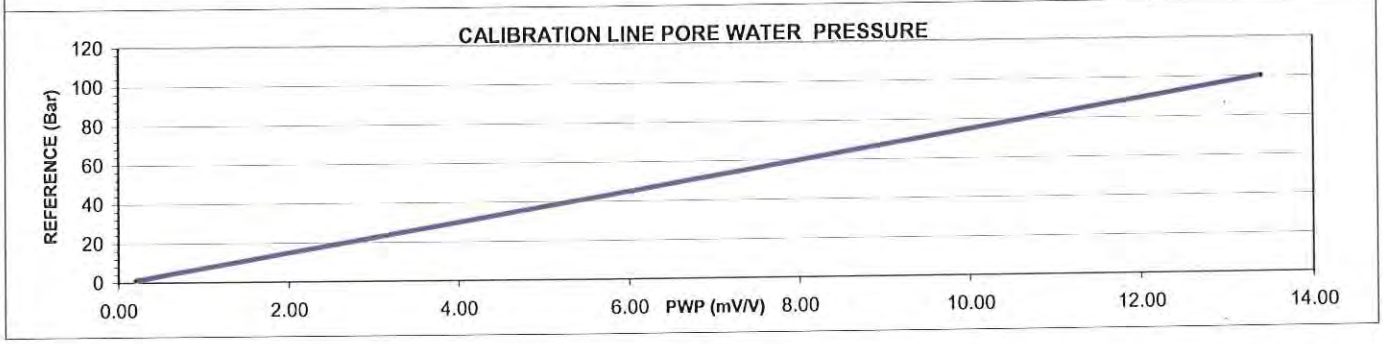
TYPE: CFP100-10

NO. = 100981

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.113483103	1.4026754	13.33532232
Calibration Current (mA)	12.77794854	12.17118865	0.530860995
Scaling factor:			
Golog	1.0648290449	1.0142657204	10.6172198920
Wison	0.0027407311	0.0000326350	0.3661563164
Roson	1.0648290449	1.0142657204	1.0617219892
Alpha factor:		0.77	
Uncertainty (%):			
Reproducibility	0.04	0.62	-
Linearity	0.21	0.01	0.20
Hysterisis	0.14	0.90	-
Aplication class	1	1	1







Instrument:	18Pin 10cm Cone	Location:	Gardline Calibration Laboratory
Serial Number:	100981	Atmospheric pressure (mBar)	1034
Manufacturer:	AP Van den Berg	Humidity (%)	14
Date of calibration:	16/02/2015	Temperature(° C)	20.0

Comments:

Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild	Checked:	DG	DG
16/02/2015	Date:	16/02/2015	16/02/2015

Maintenance Checklist

ConeSerial No.	100981

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A			x	N
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

Gardline

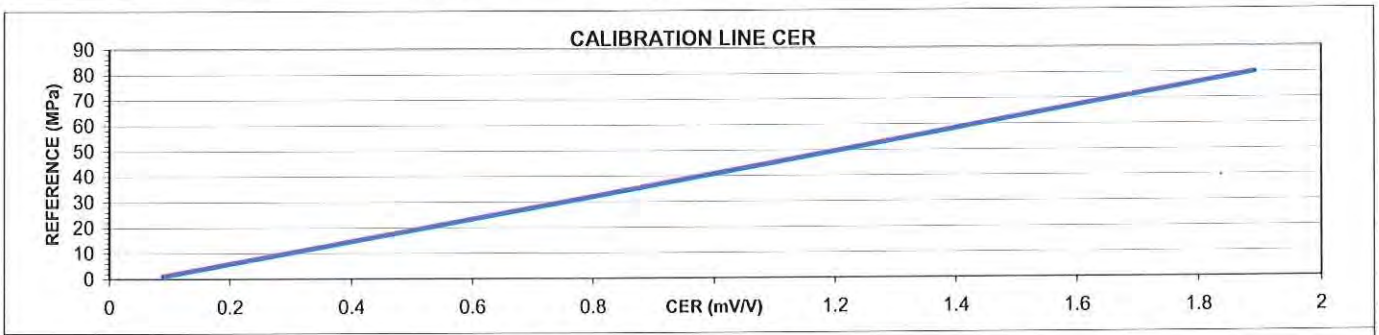
CALIBRATION CERTIFICATE

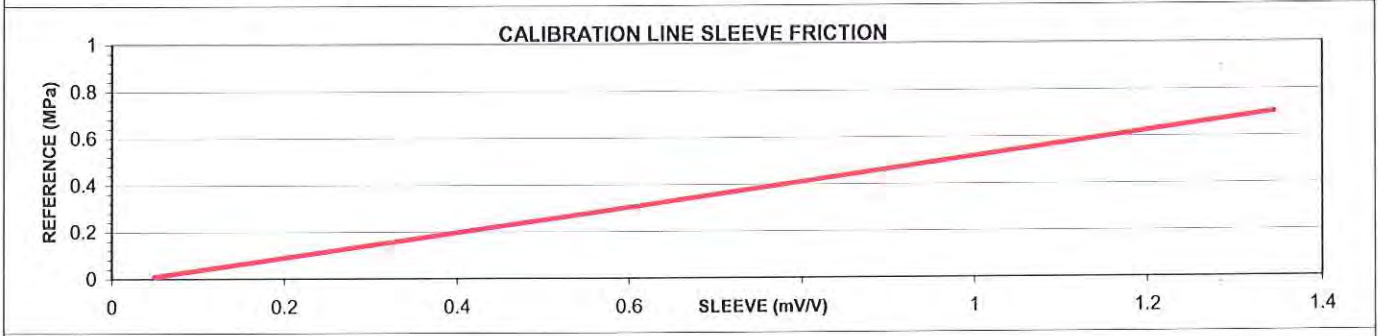
18Pin 10cm Cone-Geopoint-120911G

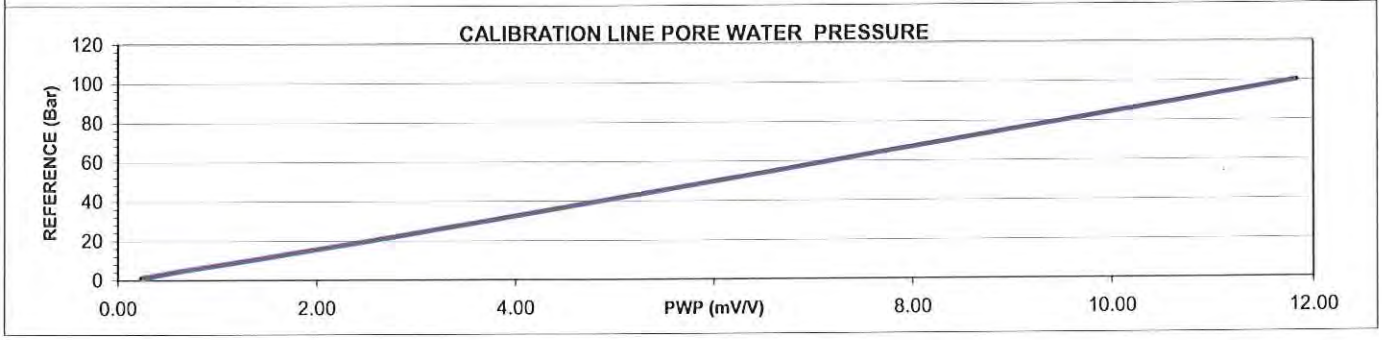
TYPE: CFP100-10

NO. = 120911G

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	014147S	1593930078	150210023
TYPE	U15/100kN	Z4A/20kN	P3TCP/200Bar
UNCERTAINTY	±0.06%	±0.06%	±0.1%
Nominal pressure (MPa,MPa,MPa)	50	0.75	10
Maximum pressure (MPa,MPa,MPa)	100	1.5	15
Area (cm^2)	10	150	N/A
Sensitivity (mV/V)	1.141189488	1.4087757	11.67891884
Calibration Current (mA)	12.48039754	12.13941673	0.512678992
Scaling factor:			
Golog	1.0400331286	1.0116180607	10.2535798456
Wison	0.0026741903	0.0000324937	0.4180877156
Roson	1.0400331286	1.0116180607	1.0253579846
Alpha factor:		0.79	
Uncertainty (%):			
Reproducibility	0.22	0.07	-
Linearity	1.06	0.01	0.62
Hysterisis	0.07	0.37	-
Aplication class	1	1	1







Instrument:	18Pin 10cm Cone	Location:	Gardline Calibration Laboratory
Serial Number:	120911G	Atmospheric pressure (mBar)	1018
Manufacturer:	Geopoint	Humidity (%)	12
Date of calibration:	16/02/2015	Temperature(° C)	20.1

Comments:

Tip 50 MPa Sleeve 0.75 MPa Pore 10 MPa

Calibrated by:	QC Status:	Draft	Final
D. Goodchild 16/02/2015	Checked: Date:	DG 16/02/2015	DG 16/02/2015

Maintenance Checklist

ConeSerial No.	120911G

				Yes	No	
Cone dismantled				x		Y
Cone cleaned				x		Y
Mechanical measurements complete				x		Y
Parts replaced				x		Y
1 X	Cone tip	APB Part No. 0101001A			x	N
2 X	Filter centering ring	APB Part No. 0101080A		x		Y
1 X	Filter	APB Part No. 0101090A		x		Y
2 X	Quad O ring 26.57 x 3.53	APB Part No. 77511000		x		Y
1 X	Lip seal	APB Part No. 0101100A			x	N
1 X	O Ring 28 x 1.5	APB Part No. 77509988	See note 1	x		Y
1 X	O Ring 15.6 x 1.78	APB Part No. 77510024		x		Y
2 X	O Ring 25.07 x 2.62	APB Part No. 77510099	See note 2	x		Y
Insulation Resistance				x		Y
Cone calibrated				x		Y
Cone reassembled				x		Y
Certificate checked				x		Y
Certificate printed				x		Y
Data files produced				x		Y
Data files transferred to USB stick and verified				x		Y
Calibration files copied to server				x		Y
Certificate and USB stick placed in cone box with cone				x		Y

Note 1 Only used on multiwave spring modified cones

Note 2 Only 1 used on multiwave spring modified cones

Key

Completed Y

Not completed/Not required N

This calibration is compliant with Gardline internal calibration procedures and meets the requirement of NORSOK G-001 using calibration equipment traceable to National and International Standards.

7.2 Laboratory Equipment Calibration Data

4-0286

VJ-TECH

Lab Vane Spring Calibration Sheet

Spring No 1 (A267)

Torque kg cm	Deg	Torque N m	Deg
0.25	32	0.025	33
0.50	64	0.050	65
0.75	97	0.075	99
1.00	129	0.100	132
1.25	161	0.125	164
1.50	194	0.150	198

1Deg =	0.0078	kg cm
1Deg =	0.00076	N m
1Deg =	0.760274568	N mm

Spring No 2 (A209)

Torque kg cm	Deg	Torque N m	Deg
0.25	14	0.025	14
0.50	27	0.050	28
1.00	54	0.100	55
1.50	81	0.150	83
2.00	108	0.200	110
2.50	135	0.250	138
3.00	162	0.300	165

1Deg =	0.0185	kg cm
1Deg =	0.00181	N m
1Deg =	1.813374514	N mm

Spring No 3 (A209)

Torque kg cm	Deg	Torque N m	Deg
0.50	18	0.050	18
1.00	36	0.100	37
1.50	54	0.150	55
2.00	72	0.200	73
2.50	90	0.250	92
3.00	108	0.300	110
3.50	126	0.350	129
4.00	144	0.400	147
4.50	162	0.450	165

1Deg =	0.0278	kg cm
1Deg =	0.00272	N m
1Deg =	2.723311547	N mm

Spring No 4 (A209)

Torque kg cm	Deg	Torque N m	Deg
0.50	11	0.050	11
1.00	22	0.100	22
2.00	44	0.200	45
3.00	66	0.300	67
4.00	88	0.400	90
5.00	110	0.500	112
6.00	128	0.600	131
7.00	150	0.700	153
8.00	172	0.800	175

1Deg =	0.0455	kg cm
1Deg =	0.00446	N m
1Deg =	4.456327986	N mm

Serial No	A267/A209
Cal Engineer	A.Waysome
Date	17/07/2014

VJ Tech

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Quality Manual; Gardline Geosciences Laboratory

Inhouse Calibration of Load Cells

Working load cell

Load Cell Make	IMPACT
Load Cell Inventory No.	LI-0384
Load Cell capacity	10kN
Load Cell Serial Number	30481

Reference Equipment

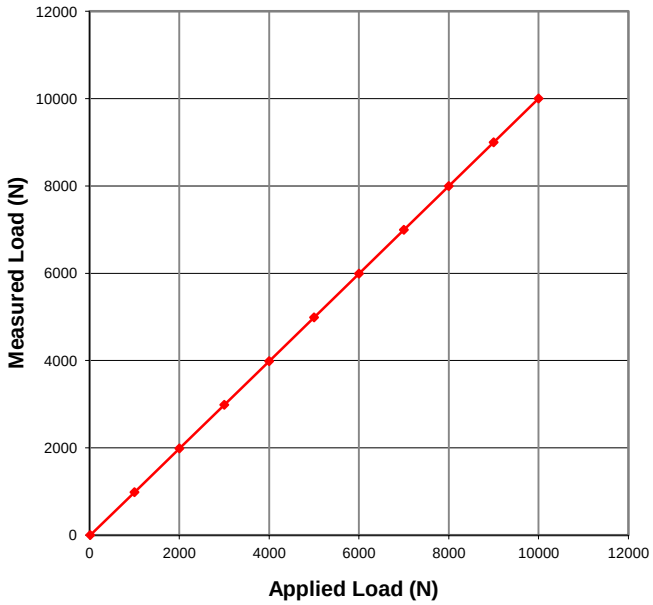
Reference load cell Number	LI-0906
Digital Read out used	LI-0360
Load Cell Capacity	50kN
Frame used for calibration	LI-0451

Range

Zero reading		Max Range	
Reference load cell	14	Reference load cell	50kN
Working transducer	0	Working transducer	10kN

Intermediate readings

Reading on Micometer (N)	Reading from working transducer (N)	Deviation %
14	0	
1000	983	-1.7
2000	1985	-0.8
3000	2985	-0.5
4000	3985	-0.4
5000	4988	-0.2
6000	5991	-0.2
7000	6995	-0.1
8000	7997	0.0
9000	9000	0.0
10000	10004	0.0



Calibrated By:	Date:	Visual Check	Calibration Result	Date of next calibration
LR	18/02/2015	Pass	Pass	18-Feb-16

Quality Manual; Gardline Geosciences Laboratory

Inhouse Calibration of Load Cells

Working load cell

Load Cell Make	IMPACT
Load Cell Inventory No.	LI-0578
Load Cell capacity	2.5kN
Load Cell Serial Number	29801

Reference Equipment

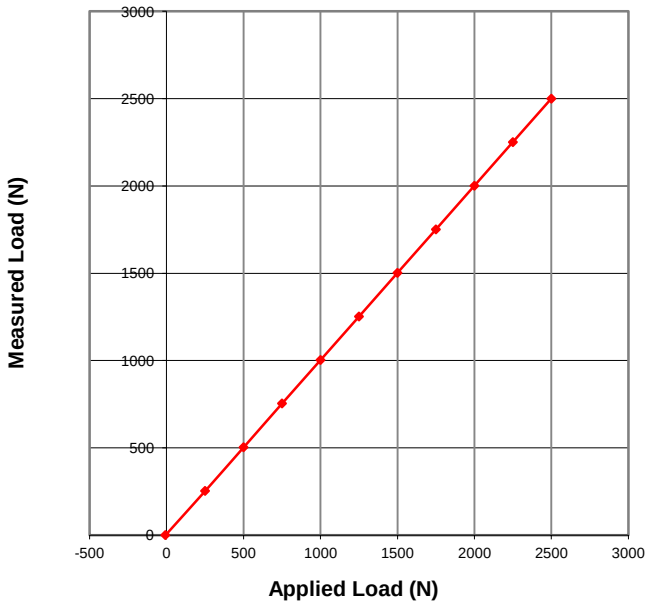
Reference load cell Number	LI-0362
Digital Read out used	Li0360
Load Cell Capacity	5kN
Frame used for calibration	LI-0451

Range

	Zero reading	Max Range
Reference load cell	-8	5kN
Working transducer	0	2.5kN

Intermediate readings

Reading on Micometer (N)	Reading from working transducer (N)	Deviation %
-8	0	
250	253	1.2
500	503	0.6
750	754	0.5
1000	1003	0.3
1250	1252	0.2
1500	1502	0.1
1750	1751	0.1
2000	2001	0.1
2250	2251	0.0
2500	2500	0.0



Calibrated By:	Date:	Visual Check	Calibration Result	Date of next calibration
LR	18/02/2015	Pass	Pass	18-Feb-16

CWS011 - Electronic Linear Measuring Device Calibration Worksheet

Gardline Geosciences
Issued By: Laboratory Quality Manager

CONTROLLED DOCUMENT

Working transducer

Transducer Make	IMPACT
Transducer Inventory No.	LI-0511
Transducer Range	0-50mm
Transducer Serial Number	V10040

Reference vernier calipers

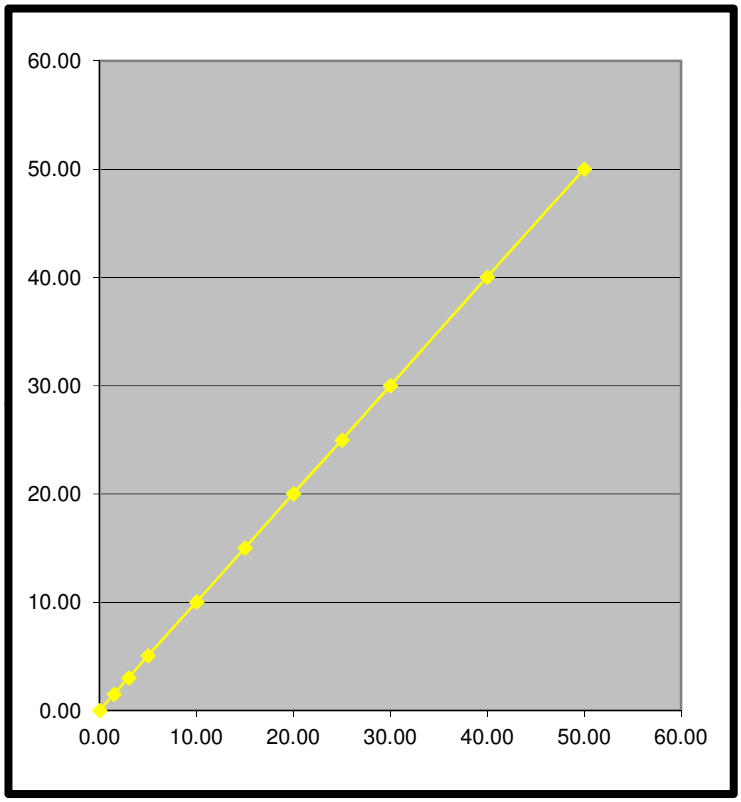
Inventory Number	LI-0799
Vernier Caliper Range	0-150mm

Range

Zero reading		Max Range	
Reference Vernier Calipers	0	Reference Vernier Calipers	150
Working transducer	0	Working transducer	50

Intermediate readings

Reading on Micometer (mm)	Reading from working transducer (mm)
0.00	0.00
1.50	1.50
3.00	3.02
5.00	5.05
10.00	10.01
15.00	15.00
20.00	20.02
25.00	24.97
30.00	29.99
40.00	40.02
50.00	49.99



Calibrated By:	Date:	Visual Check	Calibration Result	Date of next calibration
LR	16/02/2015	Pass	Pass	16-Feb-16

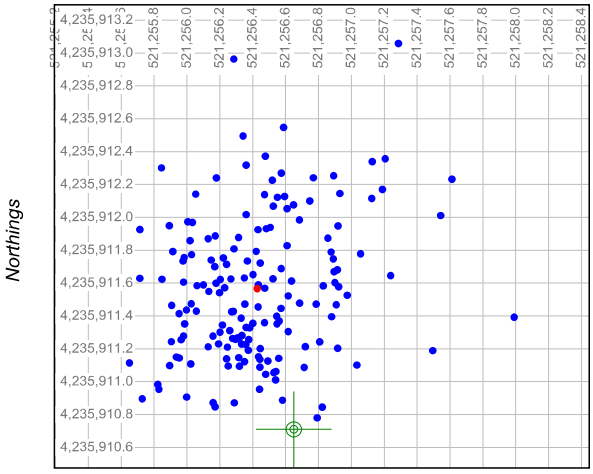
APPENDIX 8

8.1 Positioning report

Gardline	SAMPLING SUMMARY	I21A

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



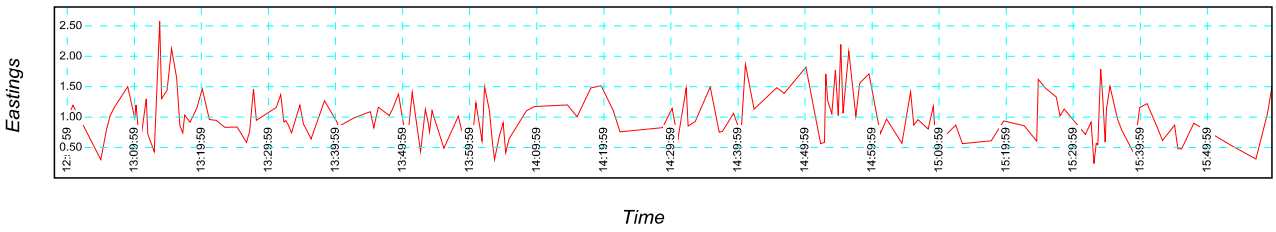
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	23/06/2015 12:58 to 23/06/2015 15:59
Sensor File	10451_OD_150623_125801_Drill_usx0.sensor

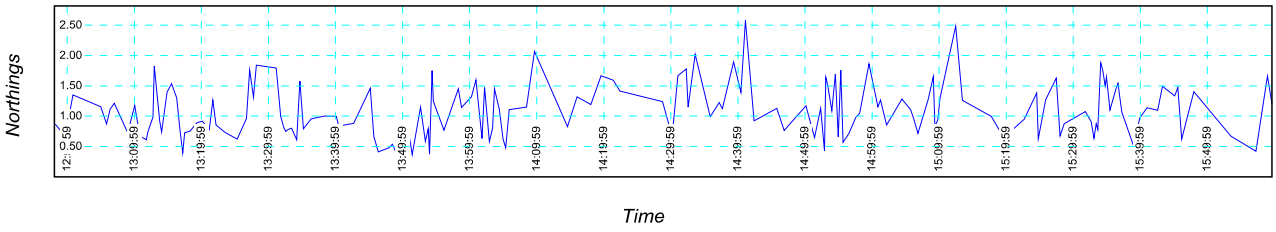
	Observed Avg	Observed Med	Target
Easting	521256.43	521256.47	521256.65
Northing	4235911.57	4235911.36	4235910.71
Depth	25.99	25.70	NA
Tidal Corr	0.24	-0.02	NA
Depth (MSL)	25.76	25.72	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	-0.22	-1.00	1.34	0.40
Northing	0.86	0.07	2.35	0.43

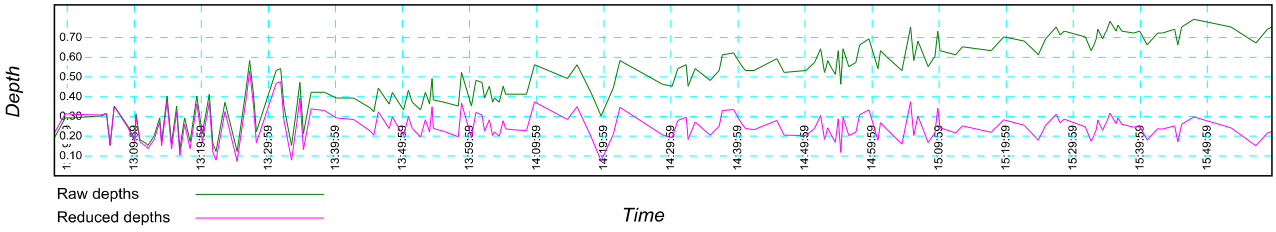
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

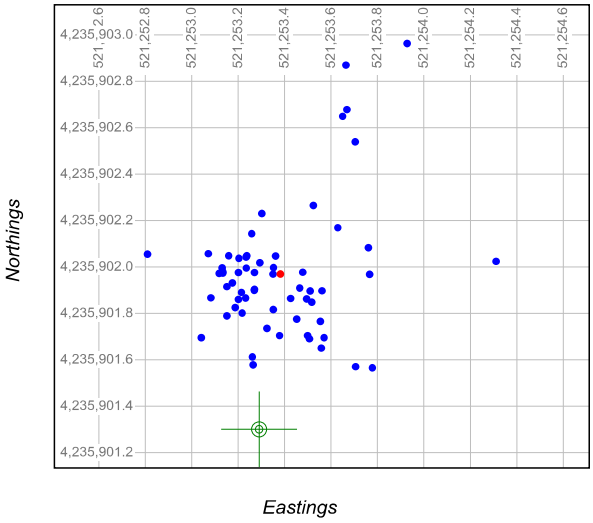


Comments			
Surveyor	GM	**Date**	23/06/2015 17:59

Gardline	SAMPLING SUMMARY	I21B

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



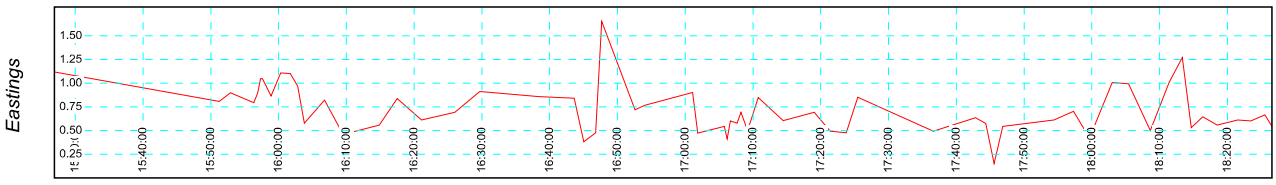
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	24/06/2015 15:26 to 24/06/2015 18:26
Sensor File	10451_OD_150624_152654_Drill_usx0.sensor

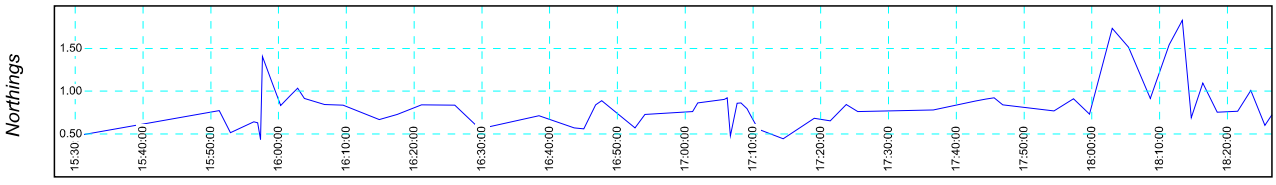
	Observed Avg	Observed Med	Target
Easting	521253.38	521253.78	521253.29
Northing	4235901.97	4235901.57	4235901.30
Depth	26.44	26.20	NA
Tidal Corr	0.54	0.29	NA
Depth (MSL)	25.90	25.91	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.09	-0.48	1.02	0.25
Northing	0.67	0.27	1.66	0.28

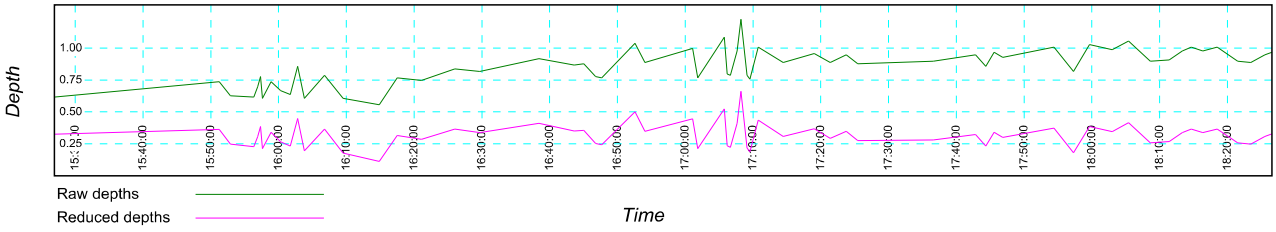
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

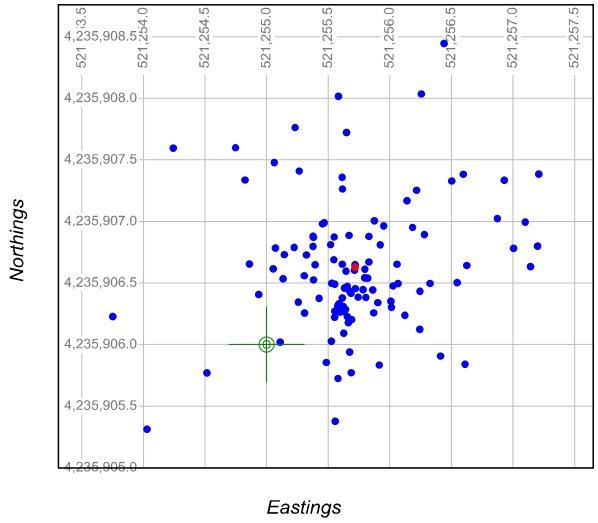


Comments			
Surveyor	GM	**Date**	24/06/2015 20:10

Gardline	SAMPLING SUMMARY	I21

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



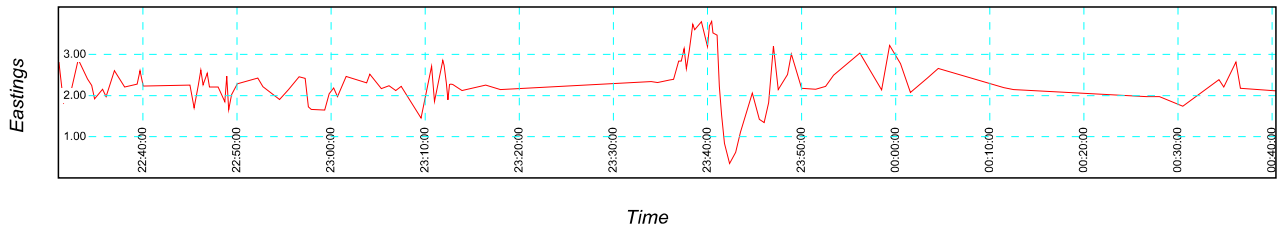
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	22/06/2015 22:31 to 23/06/2015 00:40
Sensor File	10451_OD_150622_223101_Drill_usx0.sensor

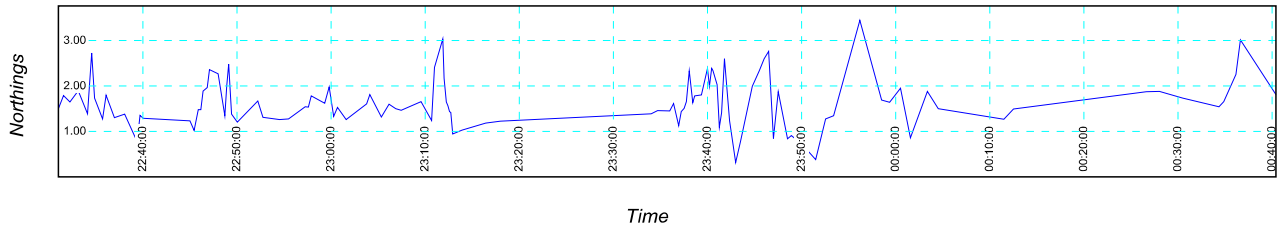
	Observed Avg	Observed Med	Target
Easting	521255.72	521256.33	521255.00
Northing	4235906.63	4235906.50	4235906.00
Depth	25.67	25.58	NA
Tidal Corr	-0.07	-0.12	NA
Depth (MSL)	25.74	25.70	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.72	-1.25	2.21	0.59
Northing	0.63	-0.69	2.45	0.53

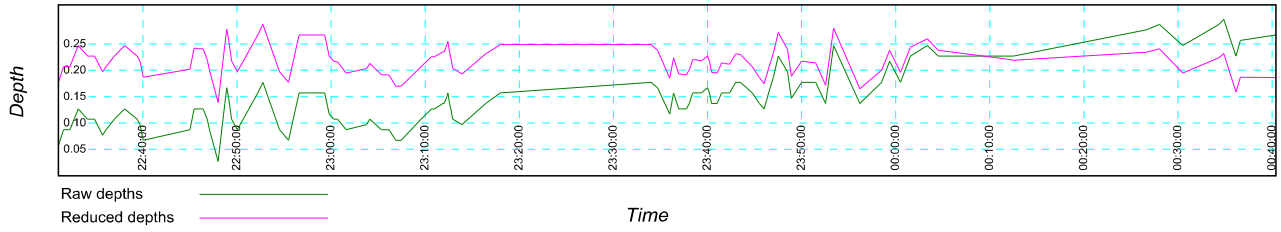
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

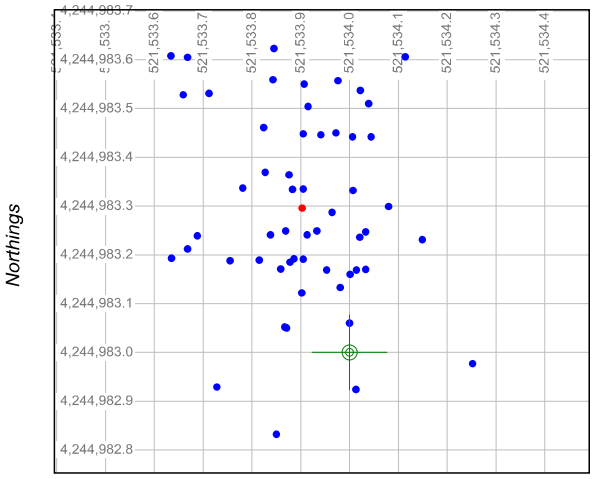


Comments			
Surveyor	GM	**Date**	25/06/2015 19:46

Gardline	SAMPLING SUMMARY	MET_TOWER

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



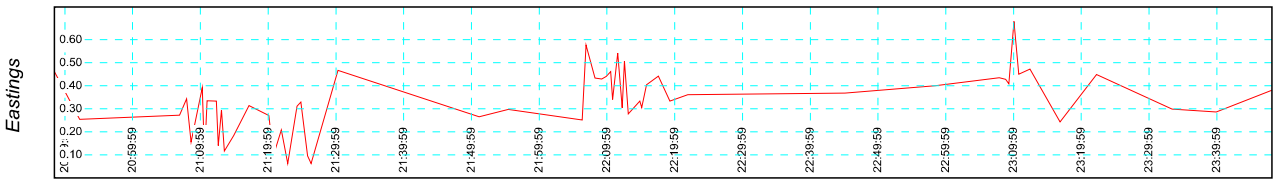
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	25/06/2015 20:48 to 25/06/2015 23:48
Sensor File	10451_OD_150625_204826_Drill_usx0.sensor

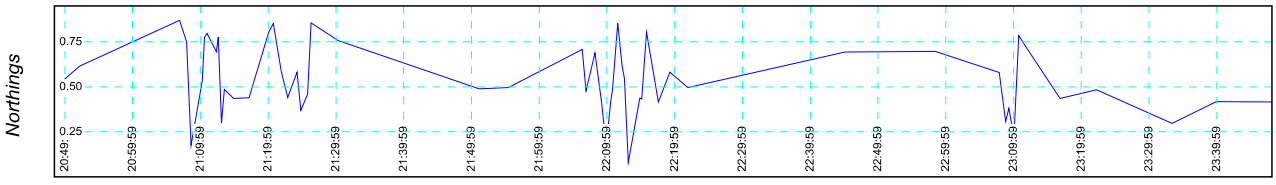
	Observed Avg	Observed Med	Target
Easting	521533.90	521534.03	521534.00
Northing	4244983.30	4244983.25	4244983.00
Depth	28.04	28.23	NA
Tidal Corr	0.37	0.57	NA
Depth (MSL)	27.67	27.66	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	-0.10	0.25	-0.37	0.13
Northing	0.30	-0.17	0.62	0.19

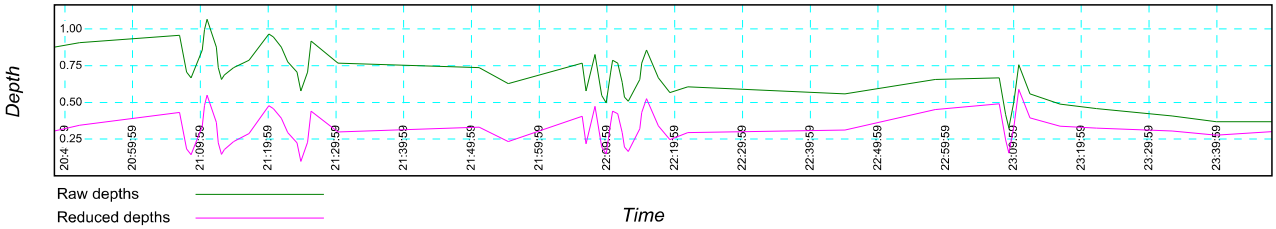
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

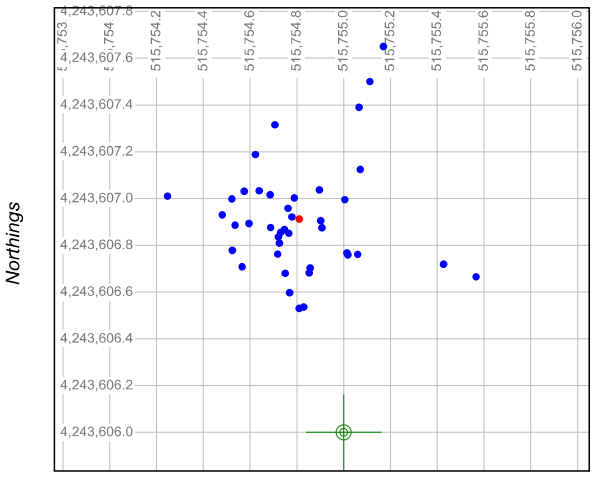


Comments			
Surveyor	GM	**Date**	26/06/2015 00:31

Gardline	SAMPLING SUMMARY	D14

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



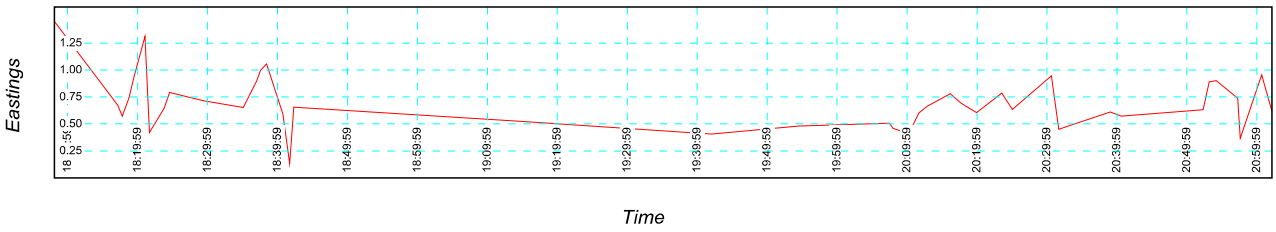
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	29/06/2015 18:08 to 29/06/2015 21:02
Sensor File	10451_OD_150629_180805_Drill_usx0.sensor

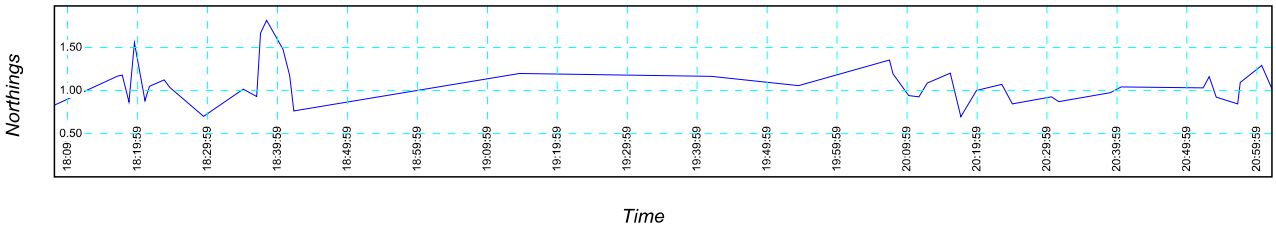
	Observed Avg	Observed Med	Target
Easting	515754.81	515755.57	515755.00
Northing	4243606.91	4243606.67	4243606.00
Depth	19.53	19.12	NA
Tidal Corr	0.39	-0.02	NA
Depth (MSL)	19.14	19.14	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	-0.19	0.57	-0.75	0.25
Northing	0.91	0.53	1.65	0.24

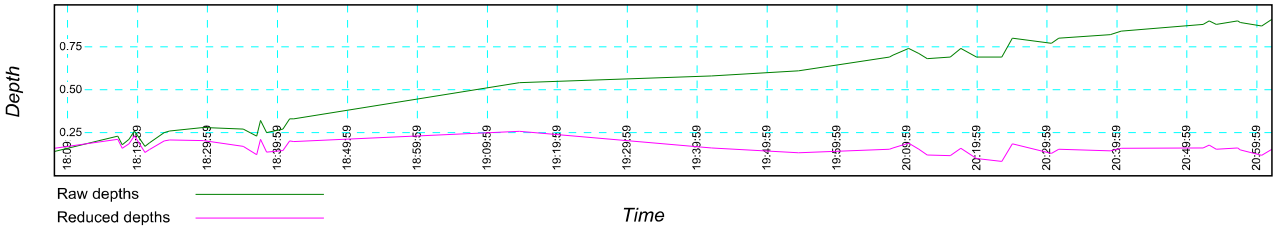
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

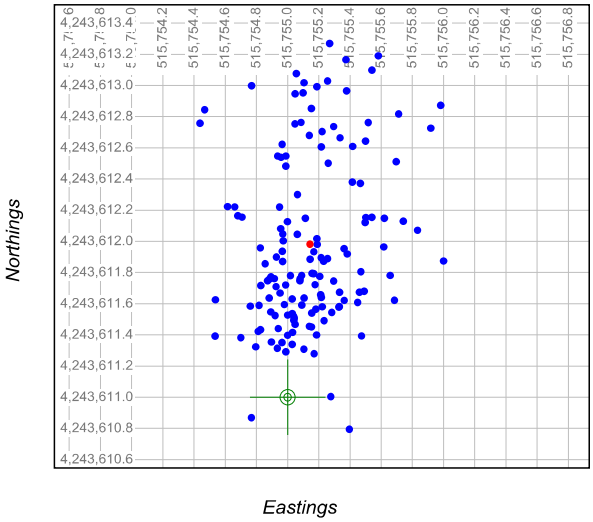


Comments			
Surveyor	GM	**Date**	29/06/2015 21:58

Gardline	SAMPLING SUMMARY	D14A

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



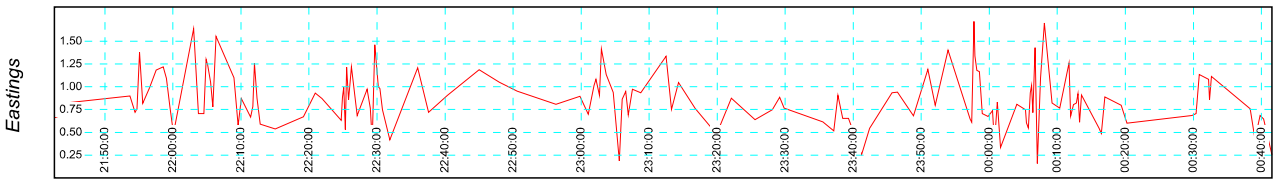
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	30/06/2015 21:42 to 01/07/2015 00:41
Sensor File	10451_OD_150630_214233_Drill_usx0.sensor

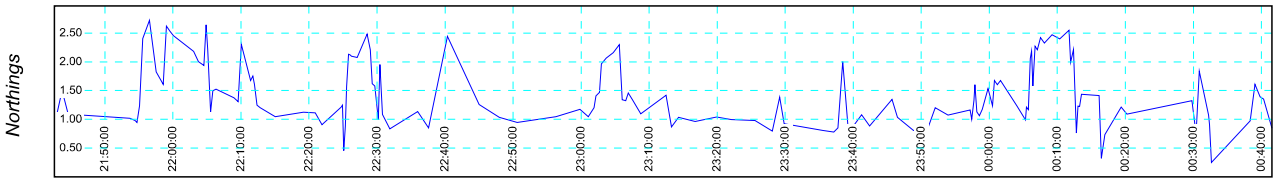
	Observed Avg	Observed Med	Target
Easting	515755.14	515754.94	515755.00
Northing	4243611.98	4243611.44	4243611.00
Depth	20.00	19.85	NA
Tidal Corr	0.93	0.79	NA
Depth (MSL)	19.07	19.06	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.14	-0.56	1.00	0.29
Northing	0.98	-0.21	2.27	0.55

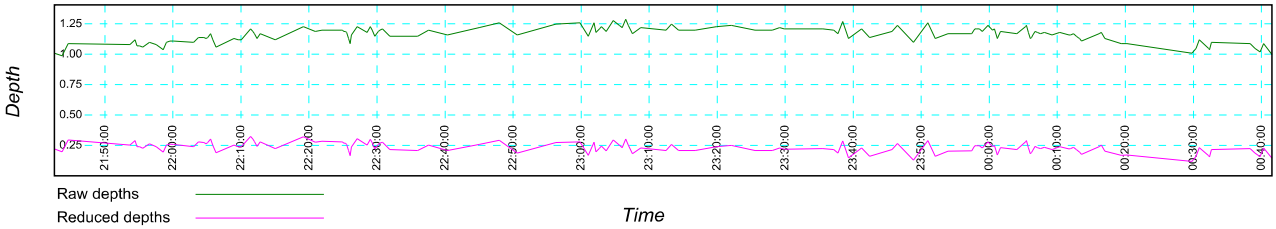
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

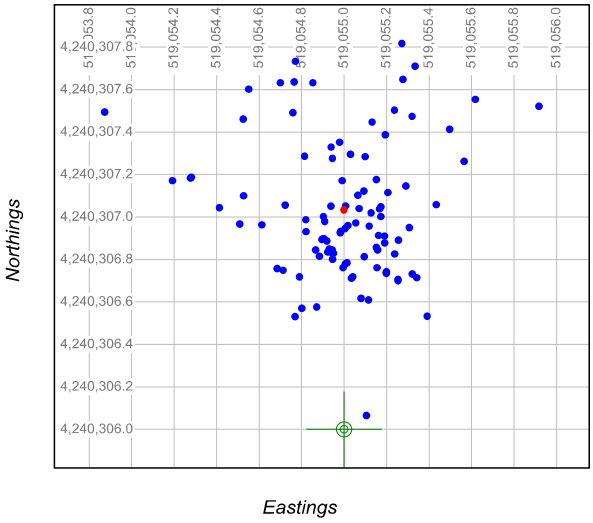


Comments			
Surveyor	GM	**Date**	01/07/2015 00:59

Gardline	SAMPLING SUMMARY	G17

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



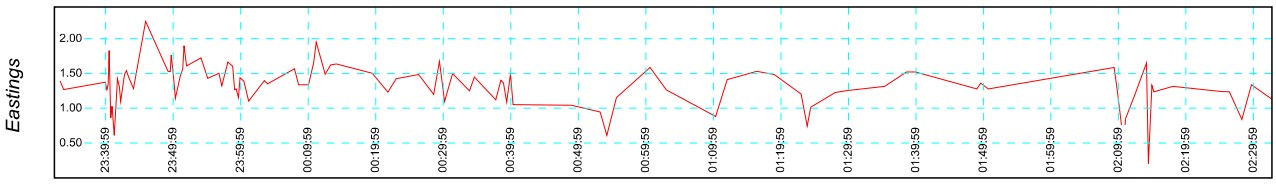
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	01/07/2015 23:32 to 02/07/2015 02:32
Sensor File	10451_OD_150701_233223_Drill_usx0.sensor

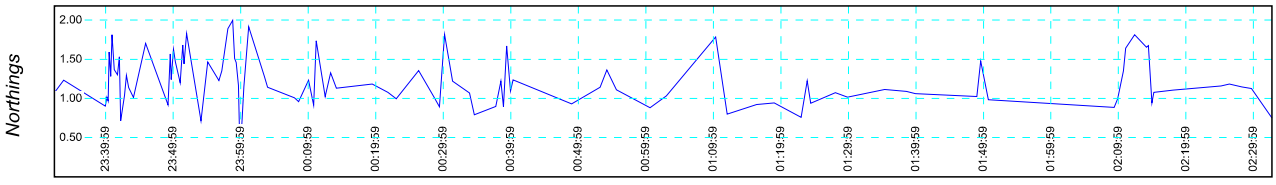
	Observed Avg	Observed Med	Target
Easting	519055.00	519055.10	519055.00
Northing	4240307.03	4240306.97	4240306.00
Depth	25.71	25.85	NA
Tidal Corr	0.95	1.01	NA
Depth (MSL)	24.76	24.84	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.00	0.92	-1.13	0.30
Northing	1.03	0.07	1.82	0.32

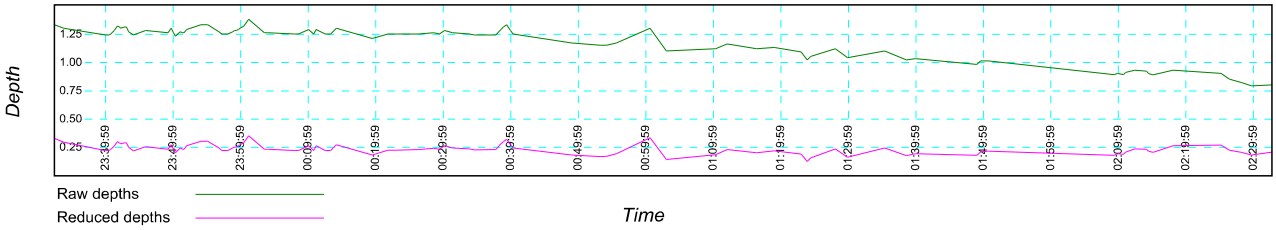
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

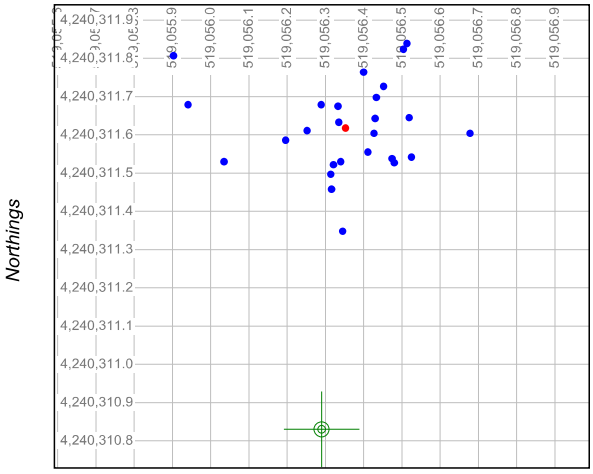


Comments			
Surveyor	GM	**Date**	02/07/2015 02:54

Gardline	SAMPLING SUMMARY	G17A

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



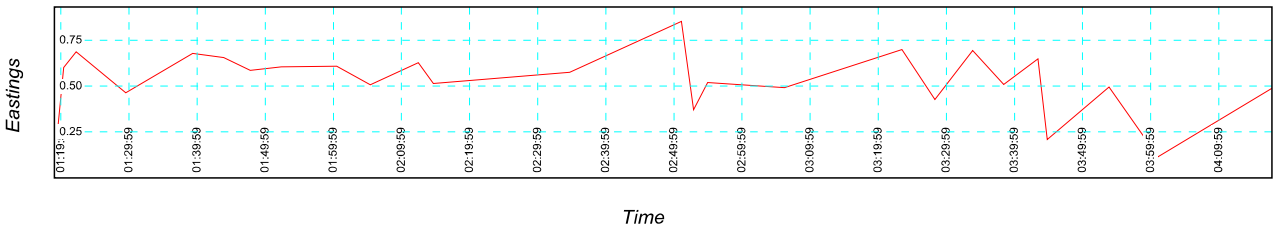
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	03/07/2015 01:19 to 03/07/2015 04:17
Sensor File	10451_OD_150703_011901_Drill_usx0.sensor

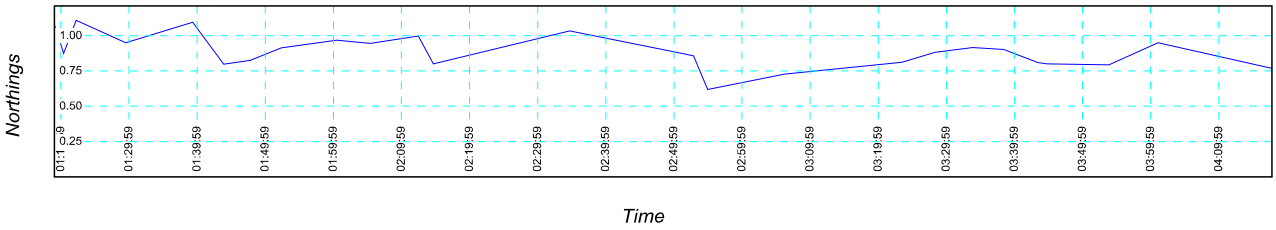
	Observed Avg	Observed Med	Target
Easting	519056.35	519056.17	519056.29
Northing	4240311.62	4240311.71	4240310.83
Depth	25.61	25.91	NA
Tidal Corr	0.74	1.03	NA
Depth (MSL)	24.86	24.87	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.06	-0.39	0.39	0.17
Northing	0.79	0.52	1.01	0.11

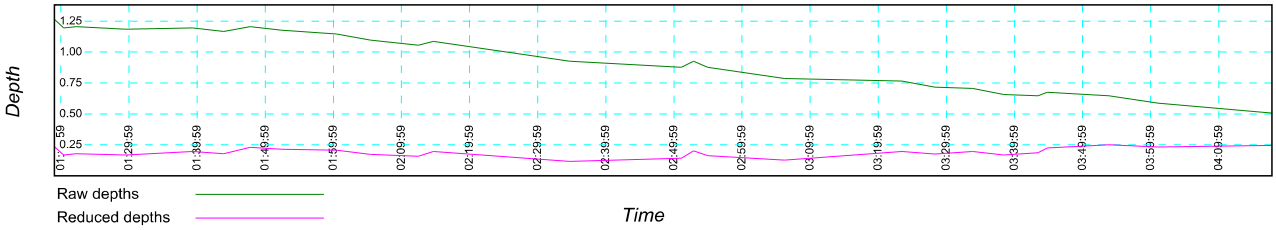
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

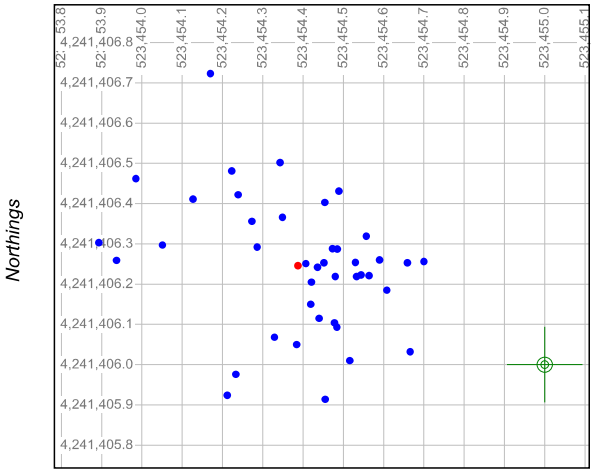


Comments			
Surveyor	GM	**Date**	03/07/2015 04:36

Gardline	SAMPLING SUMMARY	K16

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



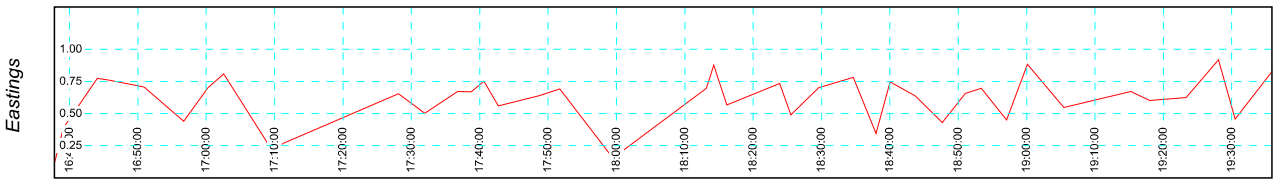
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	03/07/2015 16:37 to 03/07/2015 19:35
Sensor File	10451_OD_150703_163746_Drill_usx0.sensor

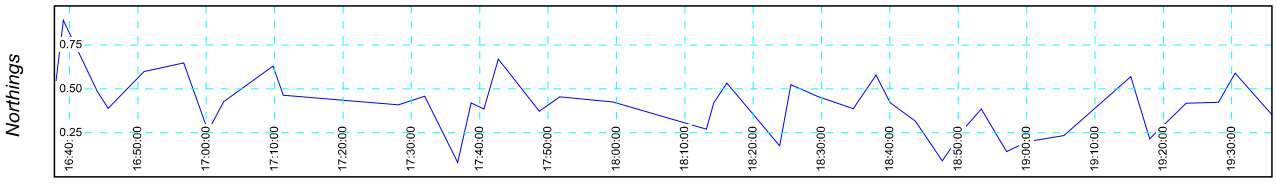
	Observed Avg	Observed Med	Target
Easting	523454.39	523453.89	523455.00
Northing	4241406.25	4241406.30	4241406.00
Depth	24.34	24.60	NA
Tidal Corr	-0.31	0.00	NA
Depth (MSL)	24.64	24.60	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	-0.61	-0.30	-1.11	0.19
Northing	0.25	-0.09	0.72	0.16

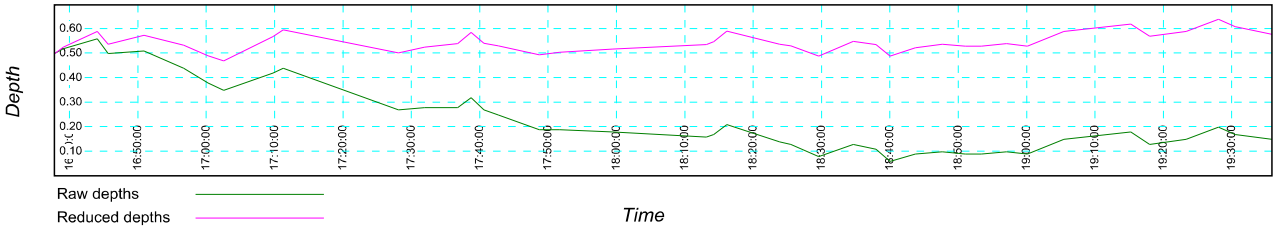
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

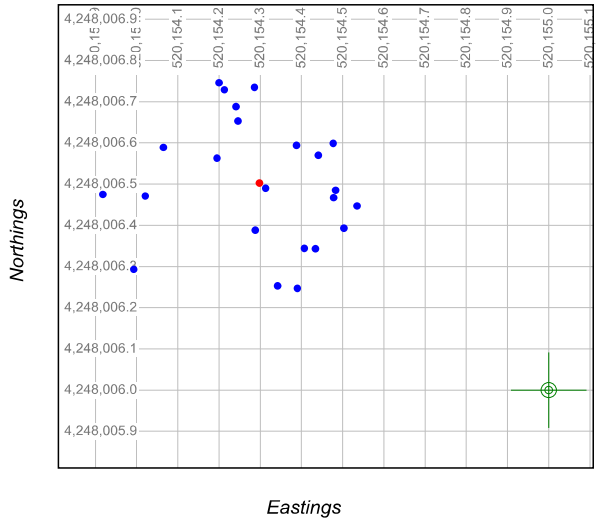


Comments			
Surveyor	GM	**Date**	04/07/2015 02:01

Gardline	SAMPLING SUMMARY	H10

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



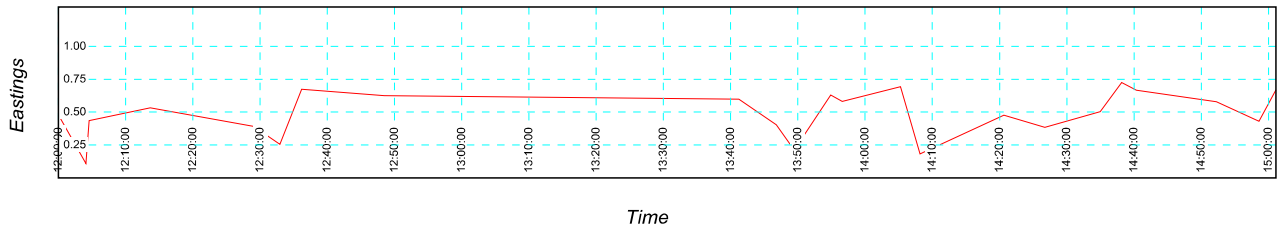
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	05/07/2015 11:59 to 05/07/2015 15:01
Sensor File	10451_OD_150705_115958_Drill_usx0.sensor

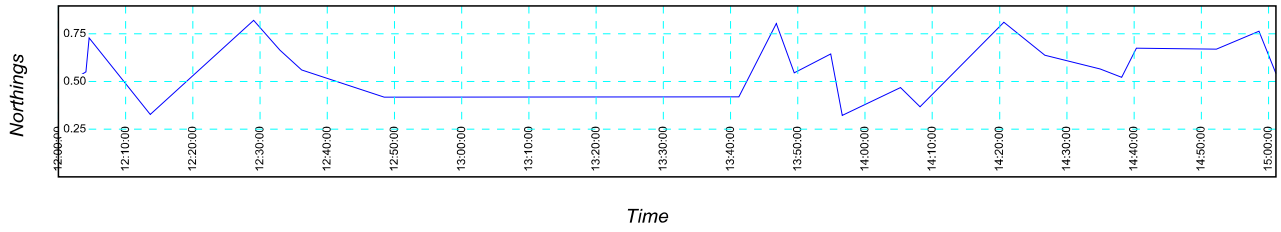
	Observed Avg	Observed Med	Target
Easting	520154.30	520154.29	520155.00
Northing	4248006.50	4248006.39	4248006.00
Depth	27.43	27.05	NA
Tidal Corr	0.59	0.24	NA
Depth (MSL)	26.84	26.81	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	-0.70	-0.47	-1.08	0.17
Northing	0.50	0.25	0.75	0.15

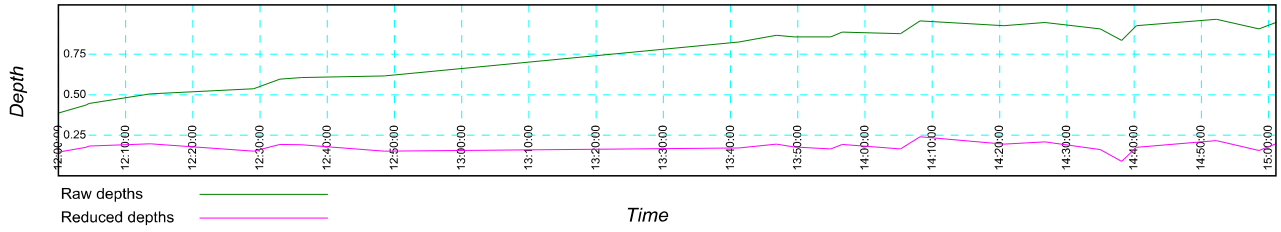
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)

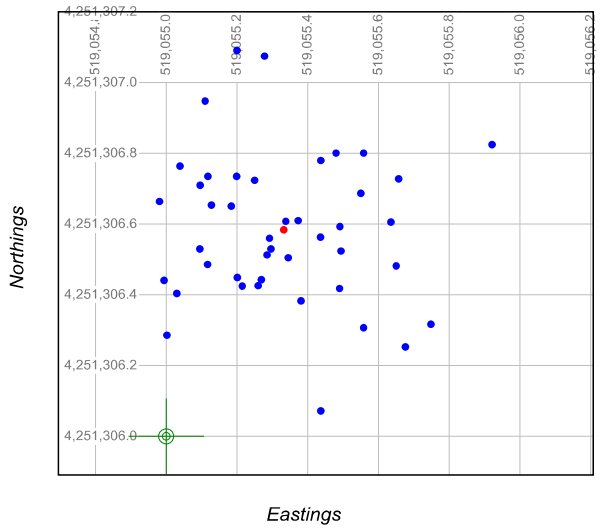


Comments			
Surveyor	GM	**Date**	05/07/2015 15:20

Gardline	SAMPLING SUMMARY	G7

Client	US Wind Inc.		
Project Name	Geotechnical Marine Survey Investigation for the Maryland Wind Energy Area		
Project Number	10451		
Project Type	Sampling & CPT Boreholes Survey	**Sample Type**	Borehole

Observations



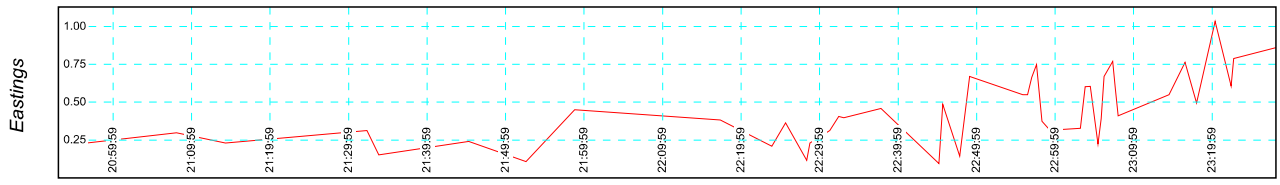
Spheroid	GRS 80
Datum	NAD83(HARN)(1)
Projection	UTM ZONE 18 N (75 W)

Vessel	Ocean Discovery
Date & Time	06/07/2015 20:53 to 06/07/2015 23:28
Sensor File	10451_OD_150706_205301_Drill_usx0.sensor

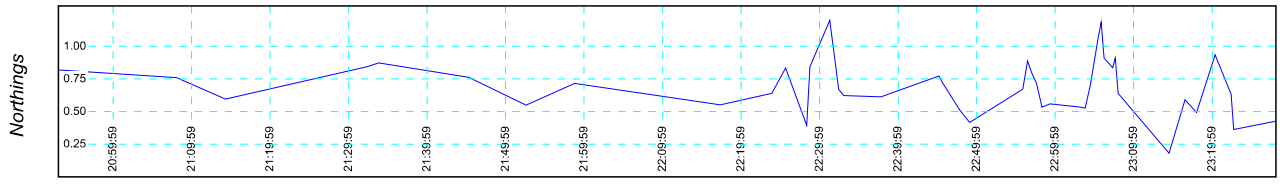
	Observed Avg	Observed Med	Target
Easting	519055.33	519055.10	519055.00
Northing	4251306.58	4251306.71	4251306.00
Depth	26.74	26.70	NA
Tidal Corr	-0.29	-0.31	NA
Depth (MSL)	27.03	27.01	NA

Deviation	Avg	Min	Max	Std.dev.
Easting	0.33	-0.02	0.92	0.22
Northing	0.58	0.07	1.09	0.21

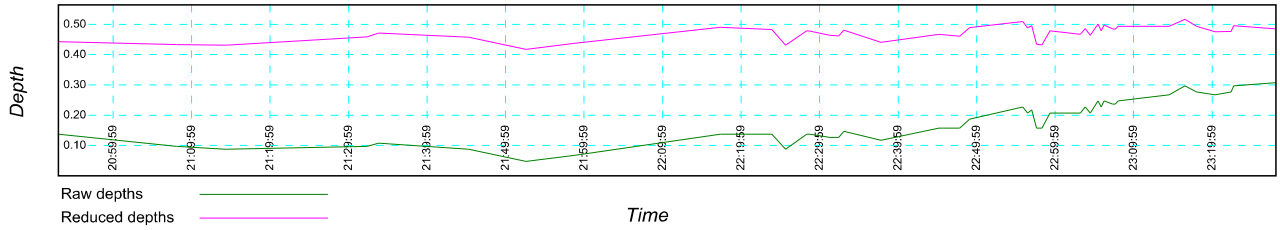
Time Series (Difference in Eastings)



Time Series (Difference in Northings)



Time Series (Difference in Depth)



Comments			
Surveyor	GM	**Date**	07/07/2015 00:02

APPENDIX 9

9.1 Daily Progress Reports

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	01	**Email Ref:**	OD.JN10451.DPR01.160615
Period	0000 – 2400		

1. Ship's Position & Status

Date 16/06/2015
Time 24:00
Present: In Port, Baltimore

Latitude 39° 15.7'N
Longitude 076° 36.0'W
Country Code: GY

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	24:00	Mob	24:00	Mobilisation

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	24:00	00:00	24:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	00:00	00:00	00:00
Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	00:00	00:00	00:00
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	00:00	00:00
	Total	**24:00**	**00:00**	**24:00**
	CT %	0.0%		**0.0%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	0	0
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.00	0.00	0.00
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.00	0.00	0.00
3.3	Other	Day	0.00	0.00	0.00

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Alongside		
08:00	Alongside		
12:00	Alongside		
16:00	Alongside		
20:00	Alongside		
24:00	Alongside		

Forecast next 24 hours: Alongside

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	0	0
Permits to Work Raised	3	3	3
Muster Drills and Safety Drills	0	0	0
Tool Box Meetings and Risk Assessments	3	3	3
Safety Induction Tours	1	1	1
Progress Meetings	0	0	0
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	Adam SMOLACK
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
3rd Engineer	Luke SEAMARKS
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
ETO	Michael RAFFERTY
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Cook	Sergej SEBUNIAJEV

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Surveyor	Giles MOBBS

Total Marine Crew **15**

Other Parties
Client Representative 0

Total persons onboard: 21

Total GGL Crew **6**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Embark remaining survey and Marine crew and continue mobilisation.

9. Key Dates	Location	Date

Last Port call	16/06/2015
Expected completion of acquisition	01/07/2015
Next Port call	TBA
Last safety muster	06/06/2015
Next safety muster	19/06/2015

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
280	13900	76

11. Party Chief Comments

Prejob meeting with Client Representative and Bill Wall (US Wind) to discuss project requirements.
Journalists onboard from Baltimore Sun to discuss project along with US Wind.

12. Site Instructions & Variations

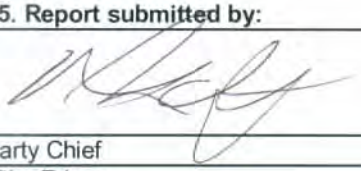
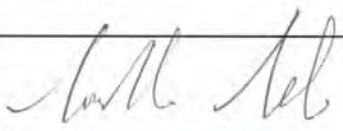
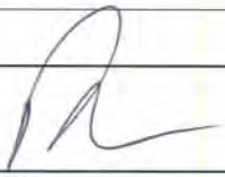
No. Date Details

13. Client Comments

None

14. Marine Mammal Observation Summary

Alongside

15. Report submitted by:		
		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	02	**Email Ref:**	OD.JN10451.DPR02.170615
Period	0000 – 2400		

1. Ship's Position & Status

Date	17/06/2015	Latitude	39° 15.7'N
Time	24:00	Longitude	076° 36.0'W
Present:	In Port, Baltimore	Country Code:	GY

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	24:00	Mob	24:00	Mobilisation

3. Activity

Code	Today	Previous	Total
Mobilisation	Mob	24:00	24:00	48:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	00:00	00:00	00:00
Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	00:00	00:00	00:00
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	00:00	00:00
	Total	**24:00**	**24:00**	**48:00**
	CT %	0.0%		**0.0%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	0	0
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.00	0.00	0.00
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.00	0.00	0.00
3.3	Other	Day	0.00	0.00	0.00

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Alongside		
08:00	Alongside		
12:00	Alongside		
16:00	Alongside		
20:00	Alongside		
24:00	Alongside		

Forecast next 24 hours:

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	0	0
Permits to Work Raised	2	5	5
Muster Drills and Safety Drills	0	0	0
Tool Box Meetings and Risk Assessments	2	5	5
Safety Induction Tours	1	2	2
Progress Meetings	0	0	0
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete mobilisation and depart for site.

9. Key Dates	Location	Date

Last Port call	16/06/2015
Expected completion of acquisition	01/07/2015
Next Port call	TBA
Last safety muster	
Next safety muster	19/06/2015

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
425	13900	74

11. Party Chief Comments

12. Site Instructions & Variations

No. Date Details

13. Client Comments

None

14. Marine Mammal Observation Summary

Alongside

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	03	**Email Ref:**	OD.JN10451.DPR03.180615
Period	0000 – 2400		

1. Ship's Position & Status

Date	18/06/2015	Latitude	38° 58.7'N
Time	24:00	Longitude	075° 07.7'W
Present:	Offshore Ocean City, MD	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	11:00	Mob	11:00	Mobilisation
10451	11:00	24:00	Oper	13:00	Pilot onboard, depart for worksite.

3. Activity

Mobilisation
Demobilisation
Operational
Weather Standby
Mammal Standby
Other Standby
Contractors Time

Code	Today	Previous	Total
Mob	11:00	48:00	59:00
Demob	00:00	00:00	00:00
Oper	13:00	00:00	13:00
WStdby	00:00	00:00	00:00
MStdby	00:00	00:00	00:00
OStdby	00:00	00:00	00:00
CT	00:00	00:00	00:00
Total	**24:00**	**48:00**	**72:00**
CT %	0.0%		**0.0%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	1	0	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.54	0.00	0.54
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.00	0.00	0.00
3.3	Other	Day	0.00	0.00	0.00

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Alongside		
08:00	Alongside		
12:00	Transit		
16:00	Transit		
20:00	Transit		
24:00	Transit		

Forecast next 24 hours:

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	0	0
Permits to Work Raised	5	10	10
Muster Drills and Safety Drills	2	2	2
Tool Box Meetings and Risk Assessments	8	13	13
Safety Induction Tours	10	12	12
Progress Meetings	0	0	0
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete transit to site, deploy anchor spread, perform PAMS assessment prior to commencing work at BH-Met Tower

9. Key Dates	Location	Date
Last Port call	16/06/2015	
Expected completion of acquisition	01/07/2015	
Next Port call	TBA	
Last safety muster	18/06/2015	
Next safety muster	21/06/2015	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
420	13900	88

11. Party Chief Comments

None

12. Site Instructions & Variations

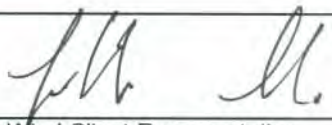
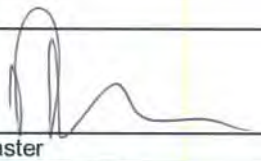
No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	04	**Email Ref:**	OD.JN10451.DPR04.190615
Period	0000 – 2400		

1. Ship's Position & Status

Date	19/06/2015	Latitude	30° 42.2'N
Time	24:00	Longitude	074° 54.4'W
Present:	Offshore Ocean City, MD	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	08:00	Oper	08:00	Transit to worksite
10451	08:00	10:20	Oper	02:20	Assessing conditions in DP
10451	10:20	11:57	Oper	01:37	Commence anchoring operations.
10451	11:57	12:26	CT	00:29	Problem with Port Aft winch, damage to anchor cable.
10451	12:26	16:00	CT	03:34	Recovering anchors to assess damage.
10451	16:00	16:35	CT	00:35	Damage to port aft winch wire. Discussing options to resolve issue.
10451	16:35	17:19	CT	00:44	Deployment of anchor 3 to determine amount of useable wire remaining on winch by paying out.
10451	17:19	19:03	CT	01:44	Insufficient cable remaining on winch to allow use of winch on operations, recover anchor and cable back to vessel.
10451	19:03	20:25	CT	01:22	Decision made to return to Baltimore, MD to replace winch wire with spare cable.
10451	20:25	24:00	CT	03:35	Commence transit to pilot station.

3. Activity

Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	11:57	13:00	24:57
Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	00:00	00:00	00:00
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	12:03	00:00	12:03
	Total	**24:00**	**72:00**	**96:00**
	CT %	50.2%		**12.6%**

4. Production Summary

	Unit	Today	Prev	Total

1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.50	0.54	1.04
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.00	0.00	0.00
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SW 3-4	Good	
08:00	W 2-3	Good	
12:00	NW3	Good	
16:00	NNW3	Good	
20:00	SSW 2/3	Good	
24:00	Transit		

Forecast next 24 hours:

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	7	7	7
Permits to Work Raised	6	16	16
Muster Drills and Safety Drills	0	2	2
Tool Box Meetings and Risk Assessments	11	24	24
Safety Induction Tours	0	12	12
Progress Meetings	1	1	1
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID

Other Parties		PSO/PAMS Op	Gemma JAMES
Client Representative	Salvatore Liccardo	PSO/PAMS Op	Claire GILCHRIST
	1		
		Total GGL Crew	**24**
Total persons onboard:	**42**	** indicates Supervisor or Shift Leader where applicable*	

8. Next 24 Hours

Come alongside Baltimore, MD to commence replacement of port aft winch wire.

9. Key Dates	Location	Date
Last Port call	16/06/2015	
Expected completion of acquisition	03/07/2015	
Next Port call	20/06/2015	
Last safety muster	18/06/2015	
Next safety muster	21/06/2015	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
409	13860	80

11. Party Chief Comments

None

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

2 x sightings of unidentified dolphins on transit to worksite.

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	05	**Email Ref:**	OD.JN10451.DPR05.200615
Period	0000 – 2400		

1. Ship's Position & Status

Date	20/06/2015	Latitude	38° 45.0'N
Time	24:00	Longitude	076° 36.0'W
Present:	Transit to Baltimore MD	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	16:32	CT	16:32	Transit to Baltimore MD to change winch wire.
10451	16:32	17:30	CT	00:58	Alongside and gangway down
10451	17:30	21:00	CT	03:30	Commence aft winch wire replacement operations.
10451	21:00	24:00	CT	03:00	Thunderstorms preventing use of crane. Operations to continue once environmental conditions allow.

3. Activity

Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	00:00	24:57	24:57
Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	00:00	00:00	00:00
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	24:00	12:03	36:03
	Total	**24:00**	**96:00**	**120:00**
	CT %	100.0%		**30.0%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.00	1.04	1.04
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00

3.2	Marine Mammal	Day	0.00	0.00	0.00
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Transit		
08:00	Transit		
12:00	Transit		
16:00	Transit		
20:00	Alongside		
24:00	Alongside		Thunderstorms and high winds in port.

Forecast next 24 hours:

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	2	9	9
Permits to Work Raised	2	18	18
Muster Drills and Safety Drills	0	2	2
Tool Box Meetings and Risk Assessments	7	31	31
Safety Induction Tours	0	12	12
Progress Meetings	1	2	2
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete wire replacement and return to site.

9. Key Dates	Location	Date
Last Port call	16/06/2015	
Expected completion of acquisition	03/07/2015	
Next Port call	20/06/2015	
Last safety muster	18/06/2015	
Next safety muster	21/06/2015	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
397	13860	69

11. Party Chief Comments

None

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	06	**Email Ref:**	OD.JN10451.DPR06.210615
Period	0000 – 2400		

1. Ship's Position & Status

Date 21/06/2015
Time 24:00
Present: Transit to worksite

Latitude 39° 17.8'N
Longitude 0758° 22.9'W
Country Code: US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	13:55	CT	13:55	Complete change of winch wire
10451	13:55	14:08	CT	00:13	Pilot onboard
10451	14:08	24:00	CT	09:52	Transit to worksite offshore Ocean City, MD

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	00:00	24:57	24:57
Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	00:00	00:00	00:00
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	24:00	12:03	36:03
	Total	**24:00**	**96:00**	**120:00**
	CT %	100.0%		**30.0%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.00	1.04	1.04
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.00	0.00	0.00

3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	0.00	0.00
4.2	Shelby/Piston Samples	Metre	0.00	0.00	0.00
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Alongside		Thunderstorms and high winds in port.
08:00	Alongside		
12:00	Alongside		
16:00	W 3	Good	
20:00	N 2	Good	
24:00	SSW 2/3	Good	

Forecast next 24 hours:

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	4	13	13
Permits to Work Raised	2	20	20
Muster Drills and Safety Drills	0	2	2
Tool Box Meetings and Risk Assessments	5	36	36
Safety Induction Tours	0	12	12
Progress Meetings	1	3	3
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Transit to site and commence work at BH-I21

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	03/07/2015	
Next Port call	TBC	
Last safety muster	18/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
390	13850	60

11. Party Chief Comments

Review of MET Tower data being performed prior to commencement of works due to damage incurred to winch wire during previous anchoring operations.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	07	**Email Ref:**	OD.JN10451.DPR07.220615A
Period	0000 – 2400		

1. Ship's Position & Status

Date	22/06/2015	Latitude	38° 16.3'N
Time	24:00	Longitude	074° 45.4'W
Present: Transit to worksite		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	10:33	CT	10:33	Transit to worksite offshore Ocean City, MD
10451	10:33	13:23	Oper	02:50	On location, DP trials to ascertain best heading and deploy anchor spread
10451	13:23	13:55	Oper	00:32	Perform SV dip (Sound Velocity Profile).
10451	13:55	14:55	Mstdby	01:00	PAMS and MMO pre-work observation period.
10451	14:55	15:05	Oper	00:10	Deploy USBL pole
10451	15:05	16:15	Oper	01:10	Deploy SBF (Seabed Frame)
10451	16:15	17:45	Oper	01:30	Trip in pipe
10451	17:45	17:50	Oper	00:05	Commence Sampling at **BH-I21 P01 from 0.00-1.00m**
10451	17:50	18:30	Oper	00:40	Recover SBF to adjust clamp settings.
10451	18:30	18:40	Oper	00:10	SBF frame on seabed, preparing sample tool.
10451	18:40	18:50	Oper	00:10	Commence Sampling at **BH-I21 P02 from 1.00-2.00m**
10451	18:50	19:05	Oper	00:15	Commence Sampling at **BH-I21 P03 from 2.00-2.50m**
10451	19:05	20:20	Oper	01:15	Commence Testing at **BH-I21 CPT01 from 2.50-5.50m**
10451	20:20	20:45	Oper	00:25	Commence Sampling at **BH-I21 P04 from 5.50-6.50m**
10451	20:45	21:15	Oper	00:30	Deploy CPT tool.
10451	21:15	21:30	CT	00:15	Problems with SBF clamps, recover SBF to switch to surface hydraulics.
10451	21:30	22:15	CT	00:45	SBF deployed to seabed.
10451	22:15	22:55	Mstdby	00:40	SBF unstable on seabed requiring recovery of equipment to move over 5m.
10451	22:55	24:00	Mstdby	01:05	Operations on standby as unable to initiate operations during hours of darkness.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	09:42	24:57	34:39

Weather Standby	WStdby	00:00	00:00	00:00
Mammal Standby	MStdby	02:45	00:00	02:45
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	11:33	60:03	71:36
	Total	**24:00**	**144:00**	**168:00**
	CT %	48.1%		**42.6%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.40	1.04	1.44
3	**Standby**				
3.1	Weather	Day	0.00	0.00	0.00
3.2	Marine Mammal	Day	0.11	0.00	0.11
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	3.00	0.00	3.00
4.2	Shelby/Piston Samples	Metre	3.50	0.00	3.50
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	NW 3/4	Good	Thunderstorms and high winds in port.
08:00	NNW4	Good	
12:00	Light airs	Good	
16:00	S 1	Good	
20:00	S 4	Good	
24:00	SSW 4	Good	

Forecast next 24 hours: 1.4m increasing to 2.6m swell, 14-21kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	3	3	16
Permits to Work Raised	4	4	24
Muster Drills and Safety Drills	0	0	2
Tool Box Meetings and Risk Assessments	7	7	43
Safety Induction Tours	0	0	12
Progress Meetings	1	1	4
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew		Survey Crew	
Master	Peter REYNOLDS	Party Chief	Mike EDGAR
Chief Officer	David RICHES	Drilling Supervisor*	Richard TREWIN
2nd Officer	Bonifacio DE LA CRUZ	Rig Mechanic	Stefan BRADU
2nd Officer	Stuart MONAGHAN	Driller	Sergiu BERINDEIE
Chief Engineer	Allan MACLACHLAN	Driller	Raul ILLIE
2nd Engineer	Sergiusz ZAGORSKI	Assistant Driller	Radu PRIPON
ETO	Michael RAFFERTY	Assistant Driller	Alex LAZAR
3rd Engineer	Helbert CHAVEZ	Roughneck	Vlad SATMARI
3rd Engineer	Aleksandr BOROVINSKICH	Roughneck	Vasile MARIAN
Bosun	Rolandas SLYZIUS	Roughneck	Ovidiu MOLDOVAN
AB Seaman	Michael KUNDENKO	Roughneck	Adrian-Iosif SZEKELY
AB Seaman	Romualdas DAUKINTIS	CPT Operator	Richard LLOYD

AB Seaman	Denis BORISKIJ	CPT Operator	Bharat DEVLIA
Oiler	Damljan LJUBOJEVIC	Surveyor	Giles MOBBS
Cook	Sergej SEBUNIAJEV	Geotechnical Engineer*	Sam HARVIE
Cook	Witold PRZYJEMCZAK	Geotech Engineer	Nicolas VOWLES-SHERIDAN
Steward	Dawid NECEL	Geotech Engineer	Xue YAO
		Soils Lab Tech	Nigel HAYWARD
		Soils Lab Tech	Mohammad Jamaludin BIN ALI
		PSO/PAMS Op	Lucy BUCKLAND
Total Marine Crew	**17**	PSO/PAMS Op	Richard PRICE
		PSO/PAMS Op	Gareth DUGUID
Other Parties		PSO/PAMS Op	Gemma JAMES
Client Representative	Salvatore Liccardo	PSO/PAMS Op	Claire GILCHRIST
	1		
		Total GGL Crew	**24**
Total persons onboard:	**42**	** indicates Supervisor or Shift Leader where applicable*	

8. Next 24 Hours

Transit to site and commence work at BH-I21

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	03/07/2015	
Next Port call	TBC	
Last safety muster	18/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
378	13830	55

11. Party Chief Comments

Following reconfiguration of SBF to topside hydraulics and subsequent redeployment, instability of SBF due to seafloor necessitated recovery of all equipment to adjacent position. Due to hours of darkness we were unable to initiate drilling operations as per the Marine Mammal Mitigation protocols. As per contract point Section III 3.1.1

12. Site Instructions & Variations

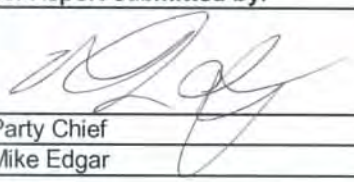
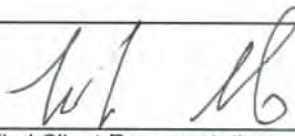
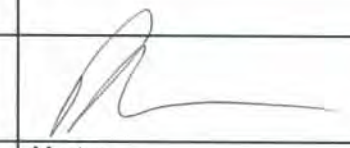
No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

1 Basking shark noted on transit.
1 Group of Dolphins noted at 06:08 during transit to worksite
1 Dolphin carcass noted at 06:49 during transit to worksite. – Onboard PSO submitted report yesterday after observation and contacted NMFS by telephone.

15. Report submitted by:		
		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	08	**Email Ref:**	OD.JN10451.DPR08.230615
Period	0000 – 2400		

1. Ship's Position & Status

Date	23/06/2015	Latitude	38° 16.3'N
Time	24:00	Longitude	074° 45.4'W
Present:	On location BH-I21A	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	05:10	Mstdby	05:10	Operations on standby as unable to initiate operations during hours of darkness.
10451	05:10	06:10	Mstdby	01:00	PAMS and MMO pre-work observation period.
10451	06:10	06:50	Oper	00:40	Deploy drill spread
10451	06:50	08:00	Oper	01:10	Trip in pipe
10451	08:00	08:40	Oper	00:40	Commence Testing at **BH-I21A CPT01 from 2.50-6.50m**
10451	08:40	08:55	CT	00:15	Lift SBF and change to topside hydraulics. Redeploy SBF
10451	08:55	09:40	Oper	00:45	Drill out.
10451	09:40	10:10	Oper	00:30	Commence Testing at **BH-I21A CPT02 from 6.50-9.50m**
10451	10:10	10:50	Oper	00:40	Commence Sampling at **BH-I21A P01 from 9.50-10.50m**
10451	10:50	11:05	Oper	00:15	Commence Testing at **BH-I21A CPT03 from 10.50-11.00m**, high tip reading
10451	11:05	11:35	Oper	00:30	Commence Testing at **BH-I21A CPT04 from 11.00-14.00m**
10451	11:35	11:55	Oper	00:20	Commence Sampling at **BH-I21A P02 from 14.00-14.50m**, bent shelby tube, drilled out 0.5m to obtain sample from this depth.
10451	11:55	12:00	Oper	00:05	Commence Sampling at **BH-I21A P03 from 14.50-15.00m**
10451	12:00	12:05	Oper	00:05	Toolbox talk and shift handover.
10451	12:05	12:45	Oper	00:40	Commence Testing at **BH-I21A CPT05 from 15.00-17.50m**
10451	12:45	13:10	Oper	00:25	Commence Sampling at **BH-I21A P04 from 17.50-18.00m**
10451	13:10	13:45	Oper	00:35	Commence Testing at **BH-I21A CPT06 from 18.00-21.00m**
10451	13:45	14:05	Oper	00:20	Commence Sampling at **BH-I21A P05 from 21.00-22.00m**
10451	14:05	14:50	Oper	00:45	Commence Testing at **BH-I21A CPT07 from 22.00-25.00m**
10451	14:50	15:10	Oper	00:20	Commence Sampling at **BH-I21A P06 from 25.00-25.50m**
10451	15:10	15:40	Oper	00:30	Commence Testing at **BH-I21A CPT08 from 25.50-26.00m**, maximum push force reached
10451	15:40	16:00	Oper	00:20	Commence Testing at **BH-I21A CPT09 from 26.00-26.50m**, maximum push force reached

Gardline

DAILY PROGRESS REPORT

2. Summary of Events

Time zone UTC -4.0 hr

10451	16:00	16:20	Oper	00:20
10451	16:20	16:30	WStdby	00:10
10451	16:30	21:10	WStdby	04:40
10451	21:10	24:00	WStdby	02:50

Commence Testing at **BH-I21A CPT10 from 26.50-29.00m**, maximum push force reached
Weather conditions deteriorated, picked up pipe but left SBF on seabed to allow return downhole.
40 kts wind and thunderstorms forced full recovery of equipment, vessel moved 2.5m off position.
Standby on weather.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	09:55	34:39	44:34
Weather Standby	WStdby	07:40	00:00	07:40
Mammal Standby	MStdby	06:10	02:45	08:55
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:15	71:36	71:51
	Total	**24:00**	**168:00**	**192:00**
	CT %	1.0%		**37.4%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.41	1.90	2.31
3	**Standby**				
3.1	Weather	Day	0.32	0.32	0.64
3.2	Marine Mammal	Day	0.26	0.33	0.59
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	22.00	6.00	28.00
4.2	Shelby/Piston Samples	Metre	4.50	7.00	11.50
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SSW 4	Good	
08:00	SSW 4	Good	
12:00	SSW 5	Good	
16:00	SSW 6	Good	
20:00	SSW 6	Moderate/Good	42 kts wind and thunderstorms
24:00	SSW 3/4	Good	Thunderstorms.

Forecast next 24 hours: 1.4m increasing to 2.6m swell, 14-21kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	5	8	21
Permits to Work Raised	7	11	31
Muster Drills and Safety Drills	0	0	2
Tool Box Meetings and Risk Assessments	11	18	54
Safety Induction Tours	0	0	12
Progress Meetings	1	2	5
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Transit to site and commence work at BH-I21

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	03/07/2015	
Next Port call	TBC	
Last safety muster	18/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
373	13820	64

11. Party Chief Comments

None

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	09	**Email Ref:**	OD.JN10451.DPR09.240615
Period	0000 – 2400		

1. Ship's Position & Status

Date	24/06/2015	Latitude	38° 16.3'N
Time	24:00	Longitude	074° 45.4'W
Present:	On location BH-I21B	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	04:55	Mstdby	04:55	Operations on standby as unable to initiate operations during hours of darkness.
10451	04:55	05:10	Mstdby	00:15	Deploy PAMS equipment.
10451	05:10	05:57	CT	00:47	Problems with hydrophone, equipment recovered and replaced.
10451	05:57	06:12	CT	00:15	Deploy PAMS equipment.
10451	06:12	07:12	Mstdby	01:00	PAMS and MMO pre-work observation period.
10451	07:12	09:20	Oper	02:08	Trip in pipe and drill out to 28.0m
10451	09:20	09:40	Oper	00:20	Commence Sampling at **BH-I21B P01 from 28.00 to 29.00**
10451	09:40	10:05	Oper	00:25	Commence Sampling at **BH-I21B P02 from 29.00 to 30**
10451	10:05	10:40	Oper	00:35	Commence Testing at **BH-I21B CPT01 from 30.00 to 32.50**
10451	10:40	11:00	Oper	00:20	Commence Sampling at **BH-I21B P03 from 32.50 to 33.50**
10451	11:00	11:40	Oper	00:40	Commence Testing at **BH-I21B CPT02 from 33.50 to 36.50**
10451	11:40	12:00	Oper	00:20	Commence Sampling at **BH-I21B P04 from 36.50 to 37.00**
10451	12:00	13:00	Oper	01:00	Commence Testing at **BH-I21B CPT03 from 37.00 to 39.50**
10451	13:00	13:25	Oper	00:25	Commence Sampling at **BH-I21B P05 from 39.50 to 40.50**
10451	13:25	14:00	Oper	00:35	Commence Testing at **BH-I21B CPT04 from 40.50 to 43.50**
10451	14:00	14:10	Oper	00:10	Commence Sampling at **BH-I21B P06 from 43.50 to 44.00**
10451	14:10	14:30	Oper	00:20	Commence Sampling at **BH-I21B P06A from 44.00 to 45.00**
10451	14:30	15:10	Oper	00:40	Commence Testing at **BH-I21B CPT05 from 45.00 to 48.00**
10451	15:10	15:30	Oper	00:20	Commence Sampling at **BH-I21B P07 from 48.00 to 49.00**
10451	15:30	15:50	Oper	00:20	Commence Testing at **BH-I21B CPT06 from 49.00 to 51.00**
10451	15:50	16:10	Oper	00:20	Commence Sampling at **BH-I21B P08 from 51.00 to 52.00**
10451	16:10	17:00	Oper	00:50	Commence Testing at **BH-I21B CPT07 from 52.00 to 55.00**
10451	17:00	18:35	Oper	01:35	Commence Sampling at **BH-I21B P09 from 55.00 to 56.00**
10451	18:35	19:00	Oper	00:25	Commence Testing at **BH-I21B CPT08 from 56.00 to 59.00**

2. Summary of Events

Time zone UTC -4.0 hr

10451	19:00	19:45	Oper	00:45	Commence Sampling at **BH-I21B P10 from 59.00 to 60.00**
10451	19:45	20:10	Oper	00:25	Commence Testing at **BH-I21B CPT09 from 60.00 to 63.00**
10451	20:10	20:20	Oper	00:10	Commence Sampling at **BH-I21B P11 from 63.00 to 64.00**
10451	20:20	20:45	Oper	00:25	Commence Testing at **BH-I21B CPT10 from 64.00 to 67.00**
10451	20:45	21:00	Oper	00:15	Commence Sampling at **BH-I21B P12 from 67.00 to 68.00**
10451	21:00	21:50	Oper	00:50	Commence Testing at **BH-I21B CPT11 from 68.00 to 71.00**
10451	21:50	22:20	Oper	00:30	Commence Sampling at **BH-I21B P13 from 71.00 to 72.00**
10451	22:20	22:55	Oper	00:35	Commence Testing at **BH-I21B CPT12 from 72.00 to 73.76**, client confirmed final depth was sufficient.
10451	22:55	24:00	Oper	01:05	Drill out to 74.00m prior to commencing PS logging.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	16:48	44:34	61:22
Weather Standby	WStdby	00:00	07:40	07:40
Mammal Standby	MStdby	06:10	08:55	15:05
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	01:02	71:51	72:53
	Total	**24:00**	**192:00**	**216:00**
	CT %	4.3%		**33.7%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.70	2.31	3.01
3	**Standby**				
3.1	Weather	Day	0.00	0.64	0.64
3.2	Marine Mammal	Day	0.26	0.59	0.84
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	33.76	28.00	61.76
4.2	Shelby/Piston Samples	Metre	13.00	11.50	24.50
4.3	PS Logging	Metre	0.00	0.00	0.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	N 4	Good	
08:00	NNW 4/5	Good	
12:00	N 3	Good	
16:00	ENE 2	Good	
20:00	SSW 2	Good	
24:00	SSW 2/3	Good	

Forecast next 24 hours: 1.0m increasing to 2.3m swell, 11-23kts wind. Thunderstorms predicted through the night.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	8	21
Permits to Work Raised	5	16	36
Muster Drills and Safety Drills	2	2	4
Tool Box Meetings and Risk Assessments	9	27	63
Safety Induction Tours	0	0	12

Progress Meetings	1	3	6
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Transit to site and commence work at BH-I21

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	05/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
369	13820	66

11. Party Chief Comments

Fire drill and SOPEP drill performed yesterday.
Client confirmed final borehole depth of 73.76m was sufficient and decided not to take additional tests beyond this depth as drill out would be to 74.00m.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary
None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	10	**Email Ref:**	OD.JN10451.DPR10.250615
Period	0000 – 2400		

1. Ship's Position & Status

Date	25/06/2015	Latitude	38° 21.2'N
Time	24:00	Longitude	074° 45.4'W
Present:	On location MET Tower	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	01:00	Oper	01:00	Setup PS logging equipment, deploy tool and check for hole collapse.
10451	01:00	02:00	CT	01:00	Problems with rotary encoder, forcing repair.
10451	02:00	04:00	Oper	02:00	Configure equipment and software parameters.
10451	04:00	06:20	Oper	02:20	Commence PS logging every 1m from 74m to 56m
10451	06:20	06:35	Oper	00:15	Lift drill pipe and perform PS logging from 56m to 44m
10451	06:35	06:50	Oper	00:15	Lift drill pipe and perform PS logging from 44m to 41m
10451	06:50	07:45	Oper	00:55	Lift drill pipe and perform PS logging from 41m to 34m
10451	07:45	08:40	Oper	00:55	Lift drill pipe and perform PS logging from 34m to 25m
10451	08:40	09:35	Oper	00:55	Lift drill pipe and perform PS logging to 25m.
10451	09:35	09:55	Oper	00:20	Hole collapse present significant risk to tool loss, this was discussed with onboard client and all equipment was recovered from downhole.
10451	09:55	10:05	Oper	00:10	All equipment back on deck.
10451	10:05	10:07	Oper	00:02	Recover PAMS equipment
10451	10:07	12:15	Oper	02:08	Recover anchor spread.
10451	12:15	13:04	Oper	00:49	Transit to MET Tower location.
10451	13:04	14:32	Oper	01:28	Deploy anchor spread
10451	14:32	14:55	Oper	00:23	On location performing SV dip.
10451	14:55	15:09	Mstdby	00:14	Deploy PAMS equipment
10451	15:09	16:09	Mstdby	01:00	PAMS and MMO pre-work observation period.
10451	16:09	16:50	Oper	00:41	Deploy drill spread
10451	16:50	17:00	Oper	00:10	Sampling at MET Tower **P01 from 0.00 to 1.00m**
10451	17:00	17:15	Oper	00:15	Sampling at MET Tower **P02 from 1.00 to 2.00m**
10451	17:15	17:35	Oper	00:20	Sampling at MET Tower **P03 from 2.00 to 3.00m**
10451	17:35	18:15	Oper	00:40	Sampling at MET Tower **CPT01 from 3.00 to 5.00m**
10451	18:15	18:35	Oper	00:20	Sampling at MET Tower **P04 from 5.00 to 5.50m**

2. Summary of Events

Time zone UTC -4.0 hr

10451	18:35	19:10	Oper	00:35	Sampling at MET Tower **CPT02 from 5.50 to 8.50m**
10451	19:10	19:25	Oper	00:15	Sampling at MET Tower **P05 from 8.50 to 9.50m**
10451	19:25	20:00	Oper	00:35	Sampling at MET Tower **CPT03 from 9.50 to 12.50m**
10451	20:00	20:15	Oper	00:15	Sampling at MET Tower **P06 from 12.50 to 13.50m**
10451	20:15	20:35	Oper	00:20	Sampling at MET Tower **CPT04 from 13.50 to 15.00m, test stopped due to total load**
10451	20:35	20:55	Oper	00:20	Sampling at MET Tower **CPT05 from 15.50 to 16.00m, test stopped due to total load**
10451	20:55	21:25	Oper	00:30	Sampling at MET Tower **CPT06 from 16.00 to 18.00m, test stopped due to total load**
10451	21:25	21:40	Oper	00:15	Sampling at MET Tower **P07 from 18.00 to 18.50m No Recovery**
10451	21:40	22:06	Oper	00:26	Sampling at MET Tower **CPT07 from 18.50 to 19.00m, test stopped due to total load**
10451	22:06	22:10	Oper	00:04	Sampling at MET Tower **CPT08 from 19.00 to 19.50m, test stopped due to total load**
10451	22:10	22:30	Oper	00:20	Sampling at MET Tower **CPT09 from 19.50 to 20.00m, test stopped due to total load**
10451	22:30	23:00	Oper	00:30	Sampling at MET Tower **CPT10 from 20.00 to 22.50m**
10451	23:00	23:20	Oper	00:20	Sampling at MET Tower **P08 from 22.50 to 23.00m No Recovery**
10451	23:20	24:00	Oper	00:40	Sampling at MET Tower **CPT11 from 23.00 to 25.50m**

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	21:46	61:22	83:08
Weather Standby	WStdby	00:00	07:40	07:40
Mammal Standby	MStdby	01:14	15:05	16:19
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	01:00	72:53	73:53
	Total	**24:00**	**216:00**	**240:00**
	CT %	4.2%		**30.8%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.91	3.01	3.92
3	**Standby**				
3.1	Weather	Day	0.00	0.64	0.64
3.2	Marine Mammal	Day	0.05	0.84	0.90
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	18.50	61.76	80.26
4.2	Shelby/Piston Samples	Metre	6.50	24.50	31.00
4.3	PS Logging	Metre	59.00	0.00	59.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	WNW 3	Good	
08:00	NW3	Good	
12:00	N 2	Good	
16:00	SSE 4	Good	
20:00	S 3/4	Good	
24:00	SSE 4/5	Good	

Forecast next 24 hours: 2.1-2.6m swell, Up to 23kts wind. Thunderstorms predicted.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	2	10	23
Permits to Work Raised	11	27	47
Muster Drills and Safety Drills	0	2	4
Tool Box Meetings and Risk Assessments	17	44	80
Safety Induction Tours	0	0	12
Progress Meetings	1	4	7
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Continue works at MET Tower.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	05/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
365	13820	65

11. Party Chief Comments

PS logging discussed with client, hole collapse prevented PS logging in upper 25m of BH.
Decision made by vessel to pull drill pipe at midnight for safety reasons due to approaching thunderstorm. SBF remained on seabed to enable continuation of works once passed.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
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M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	11	**Email Ref:**	OD.JN10451.DPR11.260615
Period	0000 – 2400		

1. Ship's Position & Status

Date	26/06/2015	Latitude	38° 21.2'N
Time	24:00	Longitude	074° 45.4'W
Present: On location MET Tower		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:15	Wstdby	00:15	Vessel instructed to lift drill pipe clear of seabed for safety due to incoming thunderstorm
10451	00:15	01:45	Wstdby	01:30	Standby until given all clear.
10451	01:45	02:50	Oper	01:05	Deploy drill pipe and commence drill out to 25.50m
10451	02:50	03:00	Oper	00:10	Sampling at MET Tower **P09 from 25.50 to 26.50m**
10451	03:00	04:55	CT	01:55	Lift drill string to change ring in BHA
10451	04:55	05:45	Wstdby	00:50	Standby on weather due to high winds.
10451	05:45	07:25	Oper	01:40	Lower drill string and drill out to 26.50m
10451	07:25	07:55	Oper	00:30	Testing at MET Tower **CPT 12 from 26.50 to 29.00m**
10451	07:55	08:20	Oper	00:25	Sampling at MET Tower **P10 from 29.00 to 30.00m**
10451	08:20	08:50	Oper	00:30	Testing at MET Tower **CPT 13 from 30.00 to 33.00m**
10451	08:50	09:05	Oper	00:15	Sampling at MET Tower **P11 from 33.00 to 34.00m**
10451	09:05	09:45	Oper	00:40	Testing at MET Tower **CPT 14 from 34.00 to 37.00m**
10451	09:45	10:55	Oper	01:10	Sampling at MET Tower **P12 from 37.00 to 37.50m**
10451	10:55	11:20	Oper	00:25	Testing at MET Tower **CPT 15 from 37.50 to 40.50m**
10451	11:20	11:40	Oper	00:20	Sampling at MET Tower **P13 from 40.50 to 41.50m**
10451	11:40	12:30	Oper	00:50	Testing at MET Tower **CPT 16 from 41.50 to 44.50m**
10451	12:30	12:35	Oper	00:05	Sampling at MET Tower **P14 from 44.50 to 45.00m Retested.**
10451	12:35	13:15	Oper	00:40	Sampling at MET Tower **P14A from 44.50 to 45.00m**
10451	13:15	13:15	Oper	00:00	Testing at MET Tower **CPT 17 from 45.00 to 45.50m**
10451	13:15	13:30	Oper	00:15	Testing at MET Tower **CPT 18 from 45.50 to 46.00m Total Load**
10451	13:30	13:50	Oper	00:20	Testing at MET Tower **CPT 19 from 46.00 to 46.50m Total Load**
10451	13:50	14:05	Oper	00:15	Testing at MET Tower **CPT 20 from 46.50 to 47.00m Total Load**
10451	14:05	14:30	Oper	00:25	Testing at MET Tower **CPT 21 from 47.00 to 48.00m Total**

2. Summary of Events

Time zone UTC -4.0 hr

10451	14:30	15:00	Oper	00:30	Testing at MET Tower **CPT 22 from 47.50 to 48.00m Total Load**
10451	15:00	15:30	Oper	00:30	Testing at MET Tower **CPT 23 from 48.00 to 48.50m Total Load**
10451	15:30	15:45	Oper	00:15	Testing at MET Tower **CPT 24 from 48.50 to 49.00m Total Load**
10451	15:45	16:05	Oper	00:20	Testing at MET Tower **CPT 25 from 49.00 to 49.50m Total Load**
10451	16:05	16:30	Oper	00:25	Testing at MET Tower **CPT 26 from 49.50 to 50.00m Total Load**
10451	16:30	16:55	Oper	00:25	Testing at MET Tower **CPT 27 from 50.00 to 52.50m**
10451	16:55	17:15	Oper	00:20	Sampling at MET Tower **P15 from 53.00 to 53.50m No Recovery**
10451	17:15	18:05	Oper	00:50	Sampling at MET Tower **P16 from 53.50 to 54.00m Retested due to latching high, No Recovery**
10451	18:05	18:30	Oper	00:25	Sampling at MET Tower **P16A from 53.50 to 54.00m**
10451	18:30	19:00	Oper	00:30	Testing at MET Tower **CPT 28 from 54.00 to 57.00m**
10451	19:00	19:15	Oper	00:15	Sampling at MET Tower **P17 from 57.00 to 58.00m**
10451	19:15	19:30	Oper	00:15	Testing at MET Tower **CPT 29 from 58.00 to 58.50m Total Load**
10451	19:30	19:50	Oper	00:20	Testing at MET Tower **CPT 30 from 58.50 to 59.00m Total Load**
10451	19:50	20:10	Oper	00:20	Testing at MET Tower **CPT 31 from 59.00 to 59.50m Total Load**
10451	20:10	20:30	Oper	00:20	Testing at MET Tower **CPT 32 from 59.50 to 60.00m Total Load**
10451	20:30	21:00	CT	00:30	Changing hydraulic hose and fitting.
10451	21:00	21:30	Oper	00:30	Testing at MET Tower **CPT 33 from 61.00 to 61.50m Total Load**
10451	21:30	21:50	Oper	00:20	Testing at MET Tower **CPT 34 from 62.00 to 64.50m**
10451	21:50	22:50	Oper	01:00	Testing at MET Tower **CPT 35 from 64.50 to 65.00m**
10451	22:50	24:00	Oper	01:10	Client stopped hole at 65m. Drill out to 70m and prepare PS logger.

3. Activity

Mobilisation
Demobilisation
Operational
Weather Standby
Mammal Standby
Other Standby
Contractors Time

Code	Today	Previous	Total
Mob	00:00	59:00	59:00
Demob	00:00	00:00	00:00
Oper	19:00	83:08	102:08
WStdby	02:35	07:40	10:15
MStdby	00:00	16:19	16:19
OStdby	00:00	00:00	00:00
CT	02:25	73:53	76:18
Total	**24:00**	**240:00**	**264:00**
CT %	10.1%		**28.9%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.79	3.92	4.71
3	**Standby**				
3.1	Weather	Day	0.11	0.64	0.75
3.2	Marine Mammal	Day	0.00	0.90	0.90
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				

4.1	WISON CPT tests	Metre	32.00	80.26	112.26
4.2	Shelby/Piston Samples	Metre	6.00	31.00	37.00
4.3	PS Logging	Metre	0.00	59.00	59.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	NNW 1	Good	
08:00	NW 2/3	Good	
12:00	NE 4/5	Good	
16:00	NE 3/4	Good	
20:00	E 3/4	Good	
24:00	E 4	Good	

Forecast next 24 hours: Upto 4.6m swell, 26kts wind. Predicted storms.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	5	15	28
Permits to Work Raised	5	32	52
Muster Drills and Safety Drills	0	2	4
Tool Box Meetings and Risk Assessments	8	52	88
Safety Induction Tours	0	0	12
Progress Meetings	1	5	8
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Continue works at MET Tower.

9. Key Dates	Location	Date
Last Port call	21/06/2015	

Expected completion of acquisition	05/07/2015
Next Port call	TBC
Last safety muster	24/06/2015
Next safety muster	TBC

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
361	13820	66

11. Party Chief Comments

PS logging stopped at 10m due to high risk of tool loss from hole collapse.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

Due to the strong density of sands, the decision was taken to drill from 59.5m to 61.00m and execute CPT test from 61.50m to 62.00m and perform CPT test up to 65.00m.

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	12	**Email Ref:**	OD.JN10451.DPR12.270615
Period	0000 – 2400		

1. Ship's Position & Status

Date	27/06/2015	Latitude	38° 22.9'N
Time	24:00	Longitude	074° 47.2'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:14	Oper	00:14	Drill out and prepare PS logger
10451	00:14	01:20	Oper	01:06	Commence PS logging every 1m from 65m to 51m
10451	01:20	02:12	Oper	00:52	Lift drill pipe and perform PS logging from 51m to 27m
10451	02:12	02:55	Oper	00:43	Lift drill pipe and perform PS logging from 27m to 18m
10451	02:55	03:44	Oper	00:49	Lift drill pipe and perform PS logging from 18m to 10m
10451	03:44	04:55	Oper	01:11	Recover all equipment back to deck.
10451	04:55	05:04	Oper	00:09	Recover PAMS and USBL pole.
10451	05:04	05:51	Oper	00:47	Commence anchor recovery
10451	05:51	08:48	Oper	02:57	Respooling of wire on anchor 4
10451	08:48	24:00	WStdby	15:12	Waiting on weather

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	08:48	102:08	110:56
Weather Standby	WStdby	15:12	10:15	25:27
Mammal Standby	MStdby	00:00	16:19	16:19
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	76:18	76:18
	Total	**24:00**	**264:00**	**288:00**
	CT %	0.0%		**26.5%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0

2	**Operations**				
2.1	Operations	Day	0.37	4.71	5.08
3	**Standby**				
3.1	Weather	Day	0.63	0.75	1.38
3.2	Marine Mammal	Day	0.00	0.90	0.90
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	112.26	112.26
4.2	Shelby/Piston Samples	Metre	0.00	37.00	37.00
4.3	PS Logging	Metre	55.00	59.00	114.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	NNW 1	Good	
08:00	NW 2/3	Good	
12:00	NE 4/5	Good	
16:00	NE 3/4	Good	
20:00	E 3/4	Good	
24:00	E 4	Good	

Forecast next 24 hours: Upto 4.6m swell, 26kts wind. Predicted storms.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	3	18	31
Permits to Work Raised	4	36	56
Muster Drills and Safety Drills	0	2	4
Tool Box Meetings and Risk Assessments	7	59	95
Safety Induction Tours	0	0	12
Progress Meetings	1	6	9
Management Safety Meetings	0	0	0

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

Total persons onboard: 42

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Await suitable weather and commence operations at BH-D14.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	05/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
357	13810	68

11. Party Chief Comments

PS logging stopped at 10m due to high risk of tool loss from hole collapse.

12. Site Instructions & Variations

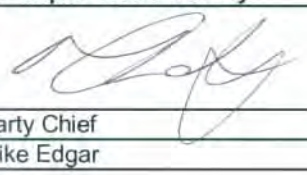
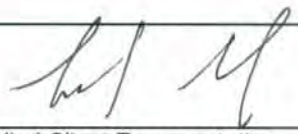
No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	13	**Email Ref:**	OD.JN10451.DPR13.280615
Period	0000 – 2400		

1. Ship's Position & Status

Date	28/06/2015	Latitude	38° 21.8'N
Time	24:00	Longitude	074° 46.8'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	24:00	WStdby	24:00	Waiting on weather

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	00:00	110:56	110:56
Weather Standby	WStdby	24:00	25:27	49:27
Mammal Standby	MStdby	00:00	16:19	16:19
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	76:18	76:18
	Total	**24:00**	**288:00**	**312:00**
	CT %	0.0%		**24.5%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.00	5.08	5.08
3	**Standby**				
3.1	Weather	Day	1.00	1.38	2.38
3.2	Marine Mammal	Day	0.00	0.90	0.90
3.3	Other	Day	0.00	0.00	0.00

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	112.26	112.26
4.2	Shelby/Piston Samples	Metre	0.00	37.00	37.00
4.3	PS Logging	Metre	0.00	114.00	114.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SSW 4	Good	
08:00	WSW 5/6	Good	
12:00	W 3	Good	
16:00	S 4	Good	
20:00	W x S 5/6	Good	
24:00	W 4	Good	

Forecast next 24 hours: Upto 4.6m swell, 26kts wind. Predicted storms.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	1	19	32
Permits to Work Raised	2	38	58
Muster Drills and Safety Drills	0	2	4
Tool Box Meetings and Risk Assessments	7	66	102
Safety Induction Tours	0	0	12
Progress Meetings	1	7	10
Management Safety Meetings	1	1	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Await suitable weather and commence operations at BH-D14.

9. Key Dates	Location	Date

Last Port call	21/06/2015
Expected completion of acquisition	05/07/2015
Next Port call	TBC
Last safety muster	24/06/2015
Next safety muster	TBC

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
350	13810	76

11. Party Chief Comments

Ships safety meeting held.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

None

14. Marine Mammal Observation Summary

Dolphin sighting
2 x Turtle sightings

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	14	**Email Ref:**	OD.JN10451.DPR14.290615
Period	0000 – 2400		

1. Ship's Position & Status

Date	29/06/2015	Latitude	38° 20.4'N
Time	24:00	Longitude	074° 49.2'W
Present: On location Maryland WEA		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	03:24	WStdby	03:24	Waiting on weather
10451	03:24	05:10	Oper	01:46	Deploy anchor spread
10451	05:10	05:27	MStdby	00:17	Deploy PAMS equipment
10451	05:27	06:27	MStdby	01:00	Pre work observation period.
10451	06:27	10:50	WStdby	04:23	Conditions not suitable for drilling, standby on weather.
10451	10:50	11:50	Oper	01:00	Deploy SBF
10451	11:50	13:34	CT	01:44	Problems with hydraulics on SBF, recover SBF to repair.
10451	13:34	13:50	Oper	00:16	Deploy SBF
10451	13:50	14:20	Oper	00:30	Sampling at BH-D14 **P01 from 0.00 to 0.50m**
10451	14:20	14:30	Oper	00:10	Sampling at BH-D14 **P02 from 0.50 to 1.00m**
10451	14:30	15:00	Oper	00:30	Sampling at BH-D14 **P03 from 1.00 to 2.00m**
10451	15:00	15:40	Oper	00:40	Sampling at BH-D14 **P04 from 2.00 to 3.00m**
10451	15:40	16:10	CT	00:30	Tool not latching.
10451	16:10	16:30	Oper	00:20	Sampling at BH-D14 **P05 from 3.00 to 4.00m**
10451	16:30	17:00	Oper	00:30	Sampling at BH-D14 **CPT01 from 4.00 to 7.00m**
10451	17:00	17:15	Oper	00:15	Sampling at BH-D14 **P06 from 7.00 to 7.50m**
10451	17:15	17:55	Oper	00:40	Sampling at BH-D14 **CPT02 from 7.50 to 10.00m**
10451	17:55	18:05	Oper	00:10	Sampling at BH-D14 **P07 from 10.00 to 11.00m**
10451	18:05	18:30	Oper	00:25	Sampling at BH-D14 **CPT03 from 11.00 to 13.50m**
10451	18:30	18:40	Oper	00:10	Sampling at BH-D14 **P08 from 13.50 to 14.50m**
10451	18:40	19:00	Oper	00:20	Sampling at BH-D14 **CPT04 from 14.50 to 17.50m**
10451	19:00	19:20	Oper	00:20	Sampling at BH-D14 **P09 from 17.50 to 18.00m**
10451	19:20	19:45	Oper	00:25	Sampling at BH-D14 **CPT05 from 18.00 to 20.50m**
10451	19:45	20:00	Oper	00:15	Sampling at BH-D14 **P10 from 21.00 to 22.00m**
10451	20:00	20:20	Oper	00:20	Sampling at BH-D14 **CPT06 from 22.00 to 24.50m**
10451	20:20	20:35	Oper	00:15	Sampling at BH-D14 **P11 from 24.50 to 25.00m**

2. Summary of Events

Time zone UTC -4.0 hr

10451	20:35	21:20	CT	00:45	Repair CPT tool
10451	21:20	21:30	Oper	00:10	Sampling at BH-D14 **CPT07 from 25.00 to 25.50m**
10451	21:30	21:45	Oper	00:15	Sampling at BH-D14 **CPT08 from 25.50 to 26.00m**
10451	21:45	22:00	Oper	00:15	Deploy CPT tool.
10451	22:00	23:15	CT	01:15	Damage to heavy lift wire forcing recovery of drill spread.
10451	23:15	24:00	CT	00:45	SBF secured, commencing repairs.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	09:57	110:56	120:53
Weather Standby	WStdby	07:47	49:27	57:14
Mammal Standby	MStdby	01:17	16:19	17:36
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	04:59	76:18	81:17
	Total	**24:00**	**312:00**	**336:00**
	CT %	20.8%		**24.2%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.41	5.08	5.49
3	**Standby**				
3.1	Weather	Day	0.32	2.38	2.70
3.2	Marine Mammal	Day	0.05	0.90	0.95
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	17.00	112.26	129.26
4.2	Shelby/Piston Samples	Metre	8.50	37.00	45.50
4.3	PS Logging	Metre	0.00	114.00	114.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	WNW 4/5	Good	
08:00	NW 4/5	Good	
12:00	W 3	Good	
16:00	SSW 5	Good	
20:00	SSW 3/4	Good	
24:00	S 4	Good	

Forecast next 24 hours: 1.8m swell INCREASING TO 2.8M, 18kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	1	1	33
Permits to Work Raised	6	6	64
Muster Drills and Safety Drills	0	0	4
Tool Box Meetings and Risk Assessments	10	10	112
Safety Induction Tours	0	0	12
Progress Meetings	1	1	11
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	42

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete repairs to SBF heavy lift wire.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	10/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
343	13810	85

11. Party Chief Comments

Delivery of wirelock to be received to vessel enabling completion of repairs

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

None

14. Marine Mammal Observation Summary

1 x Turtle sightings

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	15	**Email Ref:**	OD.JN10451.DPR15.300615
Period	0000 – 2400		

1. Ship's Position & Status

Date	30/06/2015	Latitude	38° 20.4'N
Time	24:00	Longitude	074° 49.2'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	17:00	CT	17:00	Repairs to SBF
10451	17:00	17:50	Oper	00:50	SBF on seabed, trip in pipe
10451	17:50	18:00	Oper	00:10	Sampling at BH-D14A **P01 from 1.00 to 2.00m**
10451	18:00	20:00	Oper	02:00	Drill out to 25.5m
10451	20:00	20:15	Oper	00:15	Sampling at BH-D14A **P02 from 25.50 to 26.00m**
10451	20:15	20:40	Oper	00:25	Testing at BH-D14A **CPT01 from 26.00 to 29.00m**
10451	20:40	21:00	Oper	00:20	Sampling at BH-D14A **P03 from 29.00 to 30.00m**
10451	21:00	21:25	Oper	00:25	Testing at BH-D14A **CPT02 from 30.00 to 33.00m**
10451	21:25	21:40	Oper	00:15	Sampling at BH-D14A **P04 from 33.00 to 34.00m**
10451	21:40	22:10	Oper	00:30	Testing at BH-D14A **CPT03 from 34.00 to 37.00m**
10451	22:10	22:25	Oper	00:15	Sampling at BH-D14A **P05 from 37.00 to 38.00m**
10451	22:25	23:00	Oper	00:35	Testing at BH-D14A **CPT04 from 38.00 to 41.00m**
10451	23:00	23:20	Oper	00:20	Sampling at BH-D14A **P06 from 41.00 to 42.00m**
10451	23:20	24:00	Oper	00:40	Testing at BH-D14A **CPT05 from 42.00 to 45.00m**

3. Activity

Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	07:00	120:53	127:53
Weather Standby	WStdby	00:00	57:14	57:14
Mammal Standby	MStdby	00:00	17:36	17:36
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	17:00	81:17	98:17
	Total	**24:00**	**336:00**	**360:00**
	CT %	70.8%		**27.3%**

4. Production Summary

Gardline

DAILY PROGRESS REPORT

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.29	5.49	5.78
3	**Standby**				
3.1	Weather	Day	0.00	2.70	2.70
3.2	Marine Mammal	Day	0.00	0.95	0.95
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	15.00	129.26	144.26
4.2	Shelby/Piston Samples	Metre	5.50	45.50	51.00
4.3	PS Logging	Metre	0.00	114.00	114.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SSE 3	Good	
08:00	SSE 4/5	Good	
12:00	SSE 4	Good	
16:00	SSE 5	Good	
20:00	SSE 5	Good	
24:00	S 5/6	Good	

Forecast next 24 hours: 2m swell decreasing throughout the day, >16kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	2	3	35
Permits to Work Raised	4	10	68
Muster Drills and Safety Drills	0	0	4
Tool Box Meetings and Risk Assessments	8	18	120
Safety Induction Tours	0	0	12
Progress Meetings	1	2	12
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew		Survey Crew	
Master	Peter REYNOLDS	Party Chief	Mike EDGAR
Chief Officer	David RICHES	Drilling Supervisor*	Richard TREWIN
2nd Officer	Bonifacio DE LA CRUZ	Rig Mechanic	Stefan BRADU
2nd Officer	Stuart MONAGHAN	Driller	Sergiu BERINDEIE
Chief Engineer	Allan MACLACHLAN	Driller	Raul ILLIE
2nd Engineer	Sergiusz ZAGORSKI	Assistant Driller	Radu PRIPON
ETO	Michael RAFFERTY	Assistant Driller	Alex LAZAR
3rd Engineer	Helbert CHAVEZ	Roughneck	Vlad SATMARI
3rd Engineer	Aleksandr BOROVINSKICH	Roughneck	Vasile MARIAN
Bosun	Rolandas SLYZIUS	Roughneck	Ovidiu MOLDOVAN
AB Seaman	Michael KUNDENKO	Roughneck	Adrian-Iosif SZEKELY
AB Seaman	Romualdas DAUKINTIS	CPT Operator	Richard LLOYD
AB Seaman	Denis BORISKIJ	CPT Operator	Bharat DEVLIA
Oiler	Damljan LJUBOJEVIC	Surveyor	Giles MOBBS
Cook	Sergej SEBUNIAJEV	Geotechnical Engineer*	Sam HARVIE
Cook	Witold PRZYJEMCZAK	Geotech Engineer	Nicolas VOWLES-SHERIDAN
Steward	Dawid NECEL	Geotech Engineer	Xue YAO
		Soils Lab Tech	Nigel HAYWARD
		Soils Lab Tech	Mohammad Jamaludin BIN ALI
		PSO/PAMS Op	Lucy BUCKLAND
Total Marine Crew	**17**	PSO/PAMS Op	Richard PRICE

		PSO/PAMS Op	Gareth DUGUID
Other Parties		PSO/PAMS Op	Gemma JAMES
Client Representative	Salvatore Liccardo	PSO/PAMS Op	Claire GILCHRIST
	1		
		Total GGL Crew	**24**
Total persons onboard:	**42**	** indicates Supervisor or Shift Leader where applicable*	

8. Next 24 Hours

Continue CPT, sampling and PS logging at BH-D14A

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	10/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
338	13800	83

11. Party Chief Comments

Delivery of wirelock received on vessel at 13:20.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

None

14. Marine Mammal Observation Summary

None.

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	16	**Email Ref:**	OD.JN10451.DPR16.010715
Period	0000 – 2400		

1. Ship's Position & Status

Date	01/07/2015	Latitude	38° 20.4'N
Time	24:00	Longitude	074° 49.2'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:30	Oper	00:30	Sampling at BH-D14A **P07 from 45.00 to 45.50m**
10451	00:30	00:55	Oper	00:25	Testing at BH-D14A **CPT06 from 45.50 to 48.50m**
10451	00:55	01:15	Oper	00:20	Sampling at BH-D14A **P08 from 48.0 to 49.50m**
10451	01:15	01:50	Oper	00:35	Testing at BH-D14A **CPT07 from 49.50 to 52.50m**
10451	01:50	02:30	Oper	00:40	Sampling at BH-D14A **P09 from 52.50 to 53.50m**
10451	02:30	02:55	Oper	00:25	Testing at BH-D14A **CPT08 from 53.50 to 56.50m**
10451	02:55	03:50	CT	00:55	Oil leak at power packs, contained on deck. Repair and continue operations
10451	03:50	04:20	Oper	00:30	Sampling at BH-D14A **P10 from 56.50 to 57.50m**
10451	04:20	04:30	WStdby	00:10	Recover drill string due to approaching storm.
10451	04:30	04:55	WStdby	00:25	Waiting on weather
10451	04:55	06:00	WStdby	01:05	Drill out to 57.50m
10451	06:00	06:25	Oper	00:25	Testing at BH-D14A **CPT09 from 57.50 to 60.50m**
10451	06:25	06:40	Oper	00:15	Sampling at BH-D14A **P11 from 60.50 to 61.50m**
10451	06:40	07:10	Oper	00:30	Testing at BH-D14A **CPT10 from 61.50 to 64.50m**
10451	07:10	07:30	Oper	00:20	Sampling at BH-D14A **P12 from 64.50 to 65.00m**
10451	07:30	08:00	Oper	00:30	Testing at BH-D14A **CPT11 from 65.00 to 68.00m**
10451	08:00	08:30	Oper	00:30	Sampling at BH-D14A **P13 from 68.00 to 68.50m**
10451	08:30	08:45	Oper	00:15	Testing at BH-D14A **CPT12 from 68.50 to 71.30m**
10451	08:45	10:10	Oper	01:25	Drill out to 73m, and lift drill pipe prior to PS logging.
10451	10:10	13:53	Oper	03:43	PS Logging from 44m to 20m. BH collapse at bottom and top of hole prevented testin.
10451	13:53	14:05	Oper	00:12	Recover drill spread
10451	14:05	14:23	Oper	00:18	Recover PAMS and USBL pole.
10451	14:23	15:27	Oper	01:04	Recover anchors
10451	15:27	15:56	Oper	00:29	Transit to BH-G17
10451	15:56	17:02	Oper	01:06	Deploy anchor spread

2. Summary of Events

Time zone UTC -4.0 hr

10451	17:02	17:24	MStdby	00:22	Deploy PAMS and perform SV dip
10451	17:24	18:24	MStdby	01:00	PAMS observation period.
10451	18:24	19:35	Oper	01:11	Deploy SBF and drill spread.
10451	19:35	19:40	Oper	00:05	Sampling at BH-G17 **P01 from 0.00 to 0.50m**
10451	19:40	20:00	Oper	00:20	Sampling at BH-G17 **P02 from 0.50 to 1.50m**
10451	20:00	20:15	Oper	00:15	Sampling at BH-G17 **P03 from 1.50 to 2.50m**
10451	20:15	20:40	Oper	00:25	Testing at BH-DG17 **CPT01 from 2.50 to 5.00m**
10451	20:40	20:55	Oper	00:15	Sampling at BH-G17 **P04 from 5.00 to 6.00m**
10451	20:55	21:30	Oper	00:35	Testing at BH-DG17 **CPT02 from 6.00 to 8.00m**
10451	21:30	21:40	Oper	00:10	Sampling at BH-G17 **P05 from 8.00 to 8.50m**
10451	21:40	22:15	Oper	00:35	Testing at BH-DG17 **CPT03 from 8.50 to 11.50m**
10451	22:15	22:30	Oper	00:15	Sampling at BH-G17 **P06 from 11.50 to 12.00m**
10451	22:30	22:45	Oper	00:15	Sampling at BH-G17 **P07 from 12.00 to 12.50m**
10451	22:45	23:20	Oper	00:35	Testing at BH-DG17 **CPT04 from 12.50 to 14.00m**
10451	23:20	23:45	Oper	00:25	Testing at BH-DG17 **CPT05 from 14.00 to 15.00m**
10451	23:45	24:00	Oper	00:15	Sampling at BH-G17 **P08 from 15.00 to 15.50m**

3. Activity

Mobilisation
Demobilisation
Operational
Weather Standby
Mammal Standby
Other Standby
Contractors Time

Code	Today	Previous	Total
Mob	00:00	59:00	59:00
Demob	00:00	00:00	00:00
Oper	20:03	127:53	147:56
WStdby	01:40	57:14	58:54
MStdby	01:22	17:36	18:58
OStdby	00:00	00:00	00:00
CT	00:55	98:17	99:12
Total	**24:00**	**360:00**	**384:00**
CT %	3.8%		**25.8%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.84	5.78	6.62
3	**Standby**				
3.1	Weather	Day	0.07	2.70	2.77
3.2	Marine Mammal	Day	0.06	0.95	1.01
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	30.80	144.26	175.06
4.2	Shelby/Piston Samples	Metre	11.00	51.00	62.00
4.3	PS Logging	Metre	24.00	114.00	138.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SW 4	Good	
08:00	WSW 4/5	Good	
12:00	SSW 3/4	Good	
16:00	SSW 4	Good	
20:00	SSW 4	Good	
24:00	SW 4	Good	

Forecast next 24 hours: <1.6m swell decreasing throughout the day, >10kts wind.

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	4	7	39
Permits to Work Raised	8	18	76
Muster Drills and Safety Drills	0	0	4
Tool Box Meetings and Risk Assessments	13	31	133
Safety Induction Tours	0	0	12
Progress Meetings	1	3	13
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Continue CPT, sampling and PS logging at BH-G17

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	10/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
334	13800	77

11. Party Chief Comments

None

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind/Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	17	**Email Ref:**	OD.JN10451.DPR17.020715
Period	0000 – 2400		

1. Ship's Position & Status

Date	02/07/2015	Latitude	38° 18.6'N
Time	24:00	Longitude	074° 46.9'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:40	Oper	00:40	complete test at P08 Drill out to 15.50m
10451	00:40	01:05	Oper	00:25	Testing at BH-G17 **CPT06 from 15.50 to 17.00m**
10451	01:05	01:25	Oper	00:20	Sampling at BH-G17 **P09 from 17.00 to 17.50m**
10451	01:25	01:55	Oper	00:30	Testing at BH-G17 **CPT07 from 17.50 to 18.50m**
10451	01:55	02:10	Oper	00:15	Sampling at BH-G17 **P10 from 18.50 to 19.00m**
10451	02:10	02:45	Oper	00:35	Testing at BH-G17 **CPT08 from 19.00 to 21.50m**
10451	02:45	03:10	Oper	00:25	Sampling at BH-G17 **P11 from 21.50 to 22.50m**
10451	03:10	03:40	Oper	00:30	Testing at BH-G17 **CPT09 from 22.50 to 23.50m**
10451	03:40	04:05	Oper	00:25	Testing at BH-G17 **CPT10 from 23.50 to 24.50m**
10451	04:05	04:30	Oper	00:25	Sampling at BH-G17 **P12 from 24.50 to 25.50m**
10451	04:30	04:55	Oper	00:25	Testing at BH-G17 **CPT11 from 25.50 to 26.50m**
10451	04:55	05:40	Oper	00:45	Testing at BH-G17 **CPT12 from 26.50 to 28.00m**
10451	05:40	06:55	Oper	01:15	Testing at BH-G17 **CPT13 from 28.00 to 28.50m**
10451	06:55	07:25	Oper	00:30	Testing at BH-G17 **CPT14 from 28.50 to 29.00m**
10451	07:25	07:55	Oper	00:30	Testing at BH-G17 **CPT15 from 29.00 to 29.50m**
10451	07:55	08:35	Oper	00:40	Sampling at BH-G17 **P13 from 29.50 to 30.00m**
10451	08:35	09:10	Oper	00:35	Testing at BH-G17 **CPT16 from 30.00 to 30.50m**
10451	09:10	09:40	Oper	00:30	Testing at BH-G17 **CPT17 from 30.50 to 33.50m**
10451	09:40	09:55	Oper	00:15	Sampling at BH-G17 **P14, no recovery so retested**
10451	09:55	10:15	Oper	00:20	Sampling at BH-G17 **P14A from 33.50 to 34.50m**
10451	10:15	10:50	Oper	00:35	Testing at BH-G17 **CPT18 from 34.50 to 37.50m**
10451	10:50	11:20	Oper	00:30	Sampling at BH-G17 **P15 from 37.50 to 38.50m**
10451	11:20	12:25	Oper	01:05	Testing at BH-G17 **CPT19 from 38.50 to 41.50m**
10451	12:25	12:30	Oper	00:05	Sampling at BH-G17 **P16 from 41.50 to 42.00m**
10451	12:30	13:44	Oper	01:14	Pull drill string and recover PAMS equipment due to bad weather.
10451	13:44	13:51	MStdby	00:07	Deploy PAMS equipment

2. Summary of Events

Time zone UTC -4.0 hr

10451	13:51	14:51	MStdby	01:00	PAMS pre work observation period.
10451	14:51	14:57	MStdby	00:06	Deploy SBF and trip in drill string at BH-G17A
10451	14:57	18:15	MStdby	03:18	Drill out to 42.00m
10451	18:15	18:30	Oper	00:15	Sampling at BH-G17A **P01 from 41.00 to 42.00m**
10451	18:30	19:00	Oper	00:30	Testing at BH-G17A **CPT01 from 42.00 to 44.50m**
10451	19:00	19:20	Oper	00:20	Sampling at BH-G17A **P02 from 44.50 to 45.00m**
10451	19:20	20:00	Oper	00:40	Testing at BH-G17A **CPT02 from 45.00 to 48.00m**
10451	20:00	20:15	Oper	00:15	Sampling at BH-G17A **P03 from 48.00 to 49.00m**
10451	20:15	20:40	Oper	00:25	Testing at BH-G17A **CPT03 from 49.00 to 52.00m**
10451	20:40	21:00	Oper	00:20	Sampling at BH-G17A **P04 from 52.00 to 53.00m**
10451	21:00	21:45	Oper	00:45	Testing at BH-G17A **CPT04 from 53.00 to 56.00m**
10451	21:45	22:00	Oper	00:15	Sampling at BH-G17A **P05 from 56.00 to 57.00m**
10451	22:00	22:30	Oper	00:30	Testing at BH-G17A **CPT05 from 57.00 to 60.00m**
10451	22:30	22:45	Oper	00:15	Sampling at BH-G17A **P06 from 60.00 to 61.00m**
10451	22:45	23:20	Oper	00:35	Testing at BH-G17A **CPT06 from 61.00 to 64.00m**
10451	23:20	23:35	Oper	00:15	Sampling at BH-G17A **P07 from 64.00 to 65.00m**
10451	23:35	24:00	Oper	00:25	Testing at BH-G17A **CPT07 from 65.00 to 67.00m**

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	19:29	147:56	167:25
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	04:31	18:58	23:29
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	99:12	99:12
	Total	**24:00**	**384:00**	**408:00**
	CT %	0.0%		**24.3%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.81	6.62	7.43
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.19	1.01	1.19
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	40.00	175.06	215.06
4.2	Shelby/Piston Samples	Metre	12.50	62.00	74.50
4.3	PS Logging	Metre	0.00	138.00	138.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SW 4	Good	
08:00	WSW 3	Good	
12:00	S 4	Good	
16:00	NNW 3	Good	
20:00	NNW 4	Good	
24:00	NNW 4	Good	

Forecast next 24 hours: <1.8m swell , >13kts wind.

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	7	39
Permits to Work Raised	6	24	82
Muster Drills and Safety Drills	0	0	4
Tool Box Meetings and Risk Assessments	12	43	145
Safety Induction Tours	0	0	12
Progress Meetings	1	4	14
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete BH-G17A and move to BH-K16

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	10/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
333	13800	69

11. Party Chief Comments

Initial problems with Beacon on BH-G17A giving offset position. Multiple SV dips performed whilst drilling as thermocline/halocline though to be affecting readings. Beacon position returned to expected values enabling recording of SBF position.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

1 x Turtle sighting
1 x acoustic detection of possible whale.

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	18	**Email Ref:**	OD.JN10451.DPR18.030715B
Period	0000 – 2400		

1. Ship's Position & Status

Date	03/07/2015	Latitude	38° 19.2'N
Time	24:00	Longitude	074° 43.9'W
Present: On location Maryland WEA		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:30	Oper	00:30	Sampling at BH-G17A **P08, no recovery so retested.**
10451	00:30	00:45	Oper	00:15	Sampling at BH-G17A **P08A from 67.00 to 68.00m**
10451	00:45	01:00	Oper	00:15	Testing at BH-G17A **CPT08 from 68.00 to 69.00m**
10451	01:00	01:25	Oper	00:25	Testing at BH-G17A **CPT09 from 68.50 to 69.50m**
10451	01:25	01:40	Oper	00:15	Testing at BH-G17A **CPT10 from 69.50 to 70.50m**
10451	01:40	02:00	Oper	00:20	Testing at BH-G17A **CPT11 from 70.50 to 71.50m**
10451	02:00	02:40	Oper	00:40	Testing at BH-G17A **CPT10 from 71.50 to 74.50m**
10451	02:40	04:20	Oper	01:40	Drill out, prepare PS logger
10451	04:20	06:25	Oper	02:05	PS logging from 68.0-37.0m. No testing in areas of hole collapse.
10451	06:25	07:25	Oper	01:00	Recover drill spread.
10451	07:25	08:37	Oper	01:12	Recover PAMS and anchor spread
10451	08:37	09:07	Oper	00:30	Transit to BH-K16
10451	09:07	10:10	Oper	01:03	Deploy anchor spread.
10451	10:10	10:30	MStdby	00:20	Deploy PAMS and SV dip
10451	10:30	11:30	MStdby	01:00	PAMS pre work observation period.
10451	11:30	12:40	Oper	01:10	Deploy drill spread.
10451	12:40	13:00	Oper	00:20	Sampling at BH-K16 **P01 from 0.00-0.50m**
10451	13:00	13:10	Oper	00:10	Sampling at BH-K16 **P02 from 0.50-1.00m**
10451	13:10	13:45	Oper	00:35	Testing at BH-K16 **CPT01 from 1.00 to 3.50m**
10451	13:45	14:00	Oper	00:15	Sampling at BH-K16 **P03 from 3.50-4.50m**
10451	14:00	14:40	Oper	00:40	Testing at BH-K16 **CPT02 from 4.50 to 7.50m**
10451	14:40	15:05	Oper	00:25	Sampling at BH-K16 **P04 from 7.50-8.00m**
10451	15:05	15:35	Oper	00:30	Testing at BH-K16 **CPT03 from 8.00 to 11.00m**
10451	15:35	17:30	CT	01:55	Problems with CPT tool water head. Repair tool.
10451	17:30	18:30	Oper	01:00	Testing at BH-K16 **CPT04 from 11.00 to 13.00m**
10451	18:30	18:40	Oper	00:10	Sampling at BH-K16 **P05 from 13.00-13.50m**

2. Summary of Events

Time zone UTC -4.0 hr

10451	18:40	19:50	Oper	01:10	Testing at BH-K16 **CPT05 from 13.50 to 15.50m**
10451	19:50	20:00	Oper	00:10	Sampling at BH-K16 **P06 from 15.50-16.50m**
10451	20:00	20:25	Oper	00:25	Testing at BH-K16 **CPT06 from 16.50 to 18.50m**
10451	20:25	20:55	Oper	00:30	Sampling at BH-K16 **P07 from 18.50-19.00m**
10451	20:55	21:20	Oper	00:25	Testing at BH-K16 **CPT07 from 19.00 to 22.00m**
10451	21:20	21:35	Oper	00:15	Sampling at BH-K16 **P08 from 22.00-22.50m**
10451	21:35	22:15	Oper	00:40	Testing at BH-K16 **CPT08 from 22.50 to 24.50m**
10451	22:15	22:25	Oper	00:10	Sampling at BH-K16 **P09 from 24.50-25.00m**
10451	22:25	23:10	Oper	00:45	Testing at BH-K16 **CPT09 from 25.00 to 28.00m**
10451	23:10	23:25	Oper	00:15	Sampling at BH-K16 **P10 from 28.00-28.50m**
10451	23:25	24:00	Oper	00:35	Testing at BH-K16 **CPT10 from 28.50 to 30.50m**

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	20:45	167:25	188:10
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	01:20	23:29	24:49
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	01:55	99:12	101:07
	Total	**24:00**	**408:00**	**432:00**
	CT %	8.0%		**23.4%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.86	7.43	8.30
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.06	1.19	1.25
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	31.50	215.06	246.56
4.2	Shelby/Piston Samples	Metre	7.00	74.50	81.50
4.3	PS Logging	Metre	31.00	138.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	NNW 3/4	Good	
08:00	N 2/3	Good	
12:00	NE 2	Good	
16:00	ENE 2/3	Good	
20:00	ESE 3	Good	
24:00	ESE 4	Good	

Forecast next 24 hours: Up to 2.8m swell , 19kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	5	12	44
Permits to Work Raised	6	30	88
Muster Drills and Safety Drills	0	0	4

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Tool Box Meetings and Risk Assessments	12	55	157
Safety Induction Tours	0	0	12
Progress Meetings	1	5	15
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete BH-K16 and move to BH-H10

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	11/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
326	13800	61

11. Party Chief Comments

None

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push

		samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

1 x Turtle sighting
1 x acoustic detection of dolphin.
1 x dolphin sighting

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	19	**Email Ref:**	OD.JN10451.DPR19.040715
Period	0000 – 2400		

1. Ship's Position & Status

Date	04/07/2015	Latitude	38° 19.2'N
Time	24:00	Longitude	074° 43.9'W
Present: On location Maryland WEA		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:35	Oper	00:35	Sampling at BH-K16 **P13 from 31.00-32.00m**
10451	00:35	01:00	Oper	00:25	Testing at BH-K16 **CPT11 from 32.00 to 33.00m**
10451	01:00	01:30	Oper	00:30	Sampling at BH-K16 **P14 from 33.00-33.50m**
10451	01:30	02:30	Oper	01:00	Testing at BH-K16 **CPT12 from 33.50 to 34.00m**
10451	02:30	02:55	Oper	00:25	Testing at BH-K16 **CPT13 from 34.00 to 35.00m**
10451	02:55	03:20	Oper	00:25	Testing at BH-K16 **CPT14 from 35.00 to 35.50m**
10451	03:20	04:00	Oper	00:40	Testing at BH-K16 **CPT15 from 35.50 to 36.50m**
10451	04:00	04:25	Oper	00:25	Testing at BH-K16 **CPT16 from 36.50 to 37.00m**
10451	04:25	05:35	Oper	01:10	Testing at BH-K16 **CPT17 from 37.00 to 40.00m**
10451	05:35	06:00	Oper	00:25	Sampling at BH-K16 **P15 from 40.00-41.00m**
10451	06:00	06:35	Oper	00:35	Testing at BH-K16 **CPT18 from 41.00 to 44.00m**
10451	06:35	07:05	Oper	00:30	Sampling at BH-K16 **P16 from 44.00-45.00m**
10451	07:05	07:35	Oper	00:30	Testing at BH-K16 **CPT19 from 45.00 to 48.00m**
10451	07:35	08:05	Oper	00:30	Sampling at BH-K16 **P17 from 48.00-49.00m**
10451	08:05	08:40	Oper	00:35	Testing at BH-K16 **CPT20 from 49.00 to 49.50m**
10451	08:40	09:05	Oper	00:25	Sampling at BH-K16 **P18 from 49.50-50.00m**
10451	09:05	09:50	Oper	00:45	Testing at BH-K16 **CPT21 from 50.50 to 51.00m**
10451	09:50	10:05	Oper	00:15	Sampling at BH-K16 **P19 from 51.00-52.00m**
10451	10:05	10:40	Oper	00:35	Testing at BH-K16 **CPT22 from 52.00 to 55.00m**
10451	10:40	11:00	Oper	00:20	Sampling at BH-K16 **P20 from 55.00-56.00m**
10451	11:00	11:35	Oper	00:35	Testing at BH-K16 **CPT23 from 56.00 to 59.00m**
10451	11:35	11:50	Oper	00:15	Sampling at BH-K16 **P21 from 59.00-60.00m**
10451	11:50	12:40	Oper	00:50	Testing at BH-K16 **CPT24 from 60.00 to 63.00m**
10451	12:40	12:50	Oper	00:10	Sampling at BH-K16 **P22 from 63.00-64.00m**
10451	12:50	13:05	Oper	00:15	Testing at BH-K16 **CPT25 from 64.00 to 66.50m**
10451	13:05	13:55	Oper	00:50	Sampling at BH-K16 **P23 from 66.50-67.50m**

2. Summary of Events

Time zone UTC -4.0 hr

10451	13:55	14:25	Oper	00:30	Testing at BH-K16 **CPT26 from 67.50 to 68.00m**
10451	14:25	14:45	Oper	00:20	Testing at BH-K16 **CPT27 from 68.00 to 71.00m**
10451	14:45	15:00	Oper	00:15	Sampling at BH-K16 **P24 from 71.00-71.50m**
10451	15:00	16:00	Oper	01:00	Testing at BH-K16 **CPT28 from 71.50 to 73.00m**
10451	16:00	16:30	Oper	00:30	Drill out 6m prior to PS logging.
10451	16:30	17:30	Oper	01:00	Lift dril string and commence PS logging.
10451	17:30	24:00	CT	06:30	Hole collapse at approx 60m onto PS logging tool, losing tool downhole. Perform re-termination and repair to 2nd tool.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	17:30	188:10	205:40
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	00:00	24:49	24:49
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	06:30	101:07	107:37
	Total	**24:00**	**432:00**	**456:00**
	CT %	27.1%		**23.6%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.73	8.30	9.02
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.00	1.25	1.25
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	30.00	246.56	276.56
4.2	Shelby/Piston Samples	Metre	10.50	81.50	92.00
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	E 4/5	Good	
08:00	E 4/5	Good	
12:00	NE X N 5/6	Good	
16:00	NNE 3/4	Good	
20:00	E 3/4	Good	
24:00	SE 2/3	Good	

Forecast next 24 hours: Up to 1.6m swell , 10kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	2	14	46
Permits to Work Raised	6	36	94

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Muster Drills and Safety Drills	0	0	4
Tool Box Meetings and Risk Assessments	12	67	169
Safety Induction Tours	0	0	12
Progress Meetings	1	6	16
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Commence works at BH-H10

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
326	13800	61

11. Party Chief Comments

Spare PS logger is not functional, currently unable to perform PS logging.

12. Site Instructions & Variations

No.	Date	Details

1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

2 x Turtle sighting

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	20	**Email Ref:**	OD.JN10451.DPR20.050715
Period	0000 – 2400		

1. Ship's Position & Status

Date	05/07/2015	Latitude	38° 22.8'N
Time	24:00	Longitude	074° 46.2'W
Present: On location Maryland WEA		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	01:03	Oper	01:03	Commence recovery of SBF and PAMS equipment.
10451	01:03	02:31	Oper	01:28	Recover anchors.
10451	02:31	04:21	Oper	01:50	Transit to BH-H10
10451	04:21	05:35	Oper	01:14	Deploy anchor spread
10451	05:35	05:50	MStdby	00:15	Deploy PAMS and SV dip
10451	05:50	06:50	MStdby	01:00	PAMS pre work observation period.
10451	06:50	07:58	Oper	01:08	Deploy drill spread
10451	07:58	08:10	Oper	00:12	Sampling at BH-H10 **P01 from 0.00-1.00m**
10451	08:10	08:25	Oper	00:15	Sampling at BH-H10 **P02 from 1.00-2.00m**
10451	08:25	09:05	Oper	00:40	Sampling at BH-H10 **P03 from 2.00-3.00m**
10451	09:05	09:30	Oper	00:25	Testing at BH-H10 **CPT01 from 3.00 to 6.00m**
10451	09:30	10:00	Oper	00:30	Sampling at BH-H10 **P04 from 6.00-7.00m**
10451	10:00	10:35	Oper	00:35	Testing at BH-H10 **CPT02 from 7.00 to 10.00m**
10451	10:35	10:50	Oper	00:15	Sampling at BH-H10 **P05 from 10.00-10.50m**
10451	10:50	11:25	Oper	00:35	Testing at BH-H10 **CPT03 from 10.50 to 13.50m**
10451	11:25	12:40	CT	01:15	Problems with latching sampling tool at P06. Pulled up drill string to access tool
10451	12:40	13:00	Oper	00:20	Tool recovered recommence operations.
10451	13:00	13:20	Oper	00:20	Sampling at BH-H10 **P06 from 13.50-14.00m**
10451	13:20	13:35	Oper	00:15	Testing at BH-H10 **CPT04 from 14.00 to 14.50m**
10451	13:35	13:50	Oper	00:15	Testing at BH-H10 **CPT05 from 14.50 to 15.00m**
10451	13:50	14:05	Oper	00:15	Testing at BH-H10 **CPT06 from 15.00 to 15.50m**
10451	14:05	14:20	Oper	00:15	Testing at BH-H10 **CPT07 from 15.50 to 16.00m**
10451	14:20	14:40	Oper	00:20	Testing at BH-H10 **CPT08 from 16.00 to 16.50m**
10451	14:40	15:05	Oper	00:25	Testing at BH-H10 **CPT09 from 16.50 to 17.00m**
10451	15:05	15:20	Oper	00:15	Testing at BH-H10 **CPT10 from 17.00 to 17.50m**
10451	15:20	15:35	Oper	00:15	Testing at BH-H10 **CPT11 from 17.50 to 18.00m**

2. Summary of Events

Time zone UTC -4.0 hr

10451	15:35	15:50	Oper	00:15	Testing at BH-H10 **CPT12 from 18.00 to 19.00m**
10451	15:50	16:15	Oper	00:25	Testing at BH-H10 **CPT13 from 19.00 to 20.00m**
10451	16:15	16:35	Oper	00:20	Sampling at BH-H10 **P07 from 20.00-20.50m**
10451	16:35	17:20	Oper	00:45	Testing at BH-H10 **CPT14 from 20.50 to 23.50m**
10451	17:20	17:50	Oper	00:30	Sampling at BH-H10 **P08 from 23.50-24.00m**
10451	17:50	18:35	Oper	00:45	Testing at BH-H10 **CPT15 from 24.00 to 26.00m**
10451	18:35	19:00	Oper	00:25	Sampling at BH-H10 **P09 from 26.00-27.00m**
10451	19:00	19:40	Oper	00:40	Testing at BH-H10 **CPT16 from 27.00 to 30.00m**
10451	19:40	20:00	Oper	00:20	Sampling at BH-H10 **P10 from 30.00-31.00m**
10451	20:00	20:40	Oper	00:40	Testing at BH-H10 **CPT17 from 31.00 to 34.00m**
10451	20:40	21:30	Oper	00:50	Sampling at BH-H10 **P11 from 34.00-35.00m**
10451	21:30	22:05	Oper	00:35	Testing at BH-H10 **CPT18 from 35.00 to 38.00m**
10451	22:05	22:25	Oper	00:20	Sampling at BH-H10 **P12 from 38.00-39.00m**
10451	22:25	22:50	Oper	00:25	Testing at BH-H10 **CPT19 from 39.00 to 42.00m**
10451	22:50	23:15	Oper	00:25	Sampling at BH-H10 **P13 from 42.00-43.00m**
10451	23:15	24:00	Oper	00:45	Testing at BH-H10 **CPT20 from 43.00 to 46.00m**

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	21:30	205:40	227:10
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	01:15	24:49	26:04
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	01:15	107:37	108:52
	Total	**24:00**	**456:00**	**480:00**
	CT %	5.2%		**22.7%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.90	9.02	9.92
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.05	1.25	1.30
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	35.00	276.56	311.56
4.2	Shelby/Piston Samples	Metre	11.00	92.00	103.00
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	NNE 3	Good	
08:00	NE x N 3	Good	
12:00	E 2	Good	
16:00	E 2	Good	
20:00	ESE 3	Good	
24:00	SE 3	Good	

Forecast next 24 hours: Up to 1.6m swell , 14kts wind.

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	7	21	53
Permits to Work Raised	7	43	101
Muster Drills and Safety Drills	1	1	5
Tool Box Meetings and Risk Assessments	10	77	179
Safety Induction Tours	0	0	12
Progress Meetings	1	7	17
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Commence works at BH-H10

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
317	13800	76

11. Party Chief Comments

Spare PS logger is not functional, currently unable to perform PS logging.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
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Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
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Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
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M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	21	**Email Ref:**	OD.JN10451.DPR21.060715
Period	0000 – 2400		

1. Ship's Position & Status

Date	06/07/2015	Latitude	38° 24.6'N
Time	24:00	Longitude	074° 46.9'W
Present:	On location Maryland WEA	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:30	Oper	00:30	Sampling at BH-H10 **P14 from 46.00-47.00m**
10451	00:30	00:55	Oper	00:25	Testing at BH-H10 **CPT21 from 47.00 to 50.00m**
10451	00:55	01:20	Oper	00:25	Sampling at BH-H10 **P15 from 50.00-51.00m**
10451	01:20	01:55	Oper	00:35	Testing at BH-H10 **CPT22 from 51.00 to 54.00m**
10451	01:55	02:05	Oper	00:10	Sampling at BH-H10 **P16, no recovery so retested.**
10451	02:05	02:20	Oper	00:15	Sampling at BH-H10 **P16A from 54.00-55.00m**
10451	02:20	02:45	Oper	00:25	Testing at BH-H10 **CPT23 from 55.00 to 56.00m**
10451	02:45	03:05	Oper	00:20	Sampling at BH-H10 **P17 from 56.00-56.50m**
10451	03:05	03:25	Oper	00:20	Testing at BH-H10 **CPT24 from 56.50 to 59.50m**
10451	03:25	03:40	Oper	00:15	Sampling at BH-H10 **P18 from 59.50-60.00m**
10451	03:40	04:10	Oper	00:30	Testing at BH-H10 **CPT25 from 60.00 to 63.00m**
10451	04:10	04:30	Oper	00:20	Sampling at BH-H10 **P19 from 63.00-63.50m**
10451	04:30	05:00	Oper	00:30	Testing at BH-H10 **CPT26 from 63.50 to 66.00m**
10451	05:00	05:40	Oper	00:40	Sampling at BH-H10 **P20 from 66.00-67.00m**
10451	05:40	06:05	Oper	00:25	Testing at BH-H10 **CPT27 from 67.00 to 70.00m**
10451	06:05	06:20	Oper	00:15	Sampling at BH-H10 **P21 from 70.00-71.00m**
10451	06:20	06:50	Oper	00:30	Testing at BH-H10 **CPT28 from 71.00 to 74.00m**
10451	06:50	07:05	Oper	00:15	Sampling at BH-H10 **P22 from 74.00-75.00m**
10451	07:05	07:50	Oper	00:45	Trip out drill string.
10451	07:50	07:50	Oper	00:00	Recover SBF
10451	07:50	08:28	Oper	00:38	Recover USBL and PAMS
10451	08:28	10:14	Oper	01:46	Recover anchors
10451	10:14	11:38	Oper	01:24	Deploy anchor spread
10451	11:38	11:51	MStdby	00:13	Deploy PAMS
10451	11:51	12:05	MStdby	00:14	Deploy USBL pole
10451	12:05	13:11	CT	01:06	Problems with PAMS equipment.

2. Summary of Events

Time zone UTC -4.0 hr

10451	13:11	14:11	MStdby	01:00	Pre work observation period.
10451	14:11	14:17	Oper	00:06	Prepare to deploy SBF
10451	14:17	15:01	MStdby	00:44	Sea turtle spotted at 150m preventing deployment of equipment. Restart observation period.
10451	15:01	15:08	MStdby	00:07	Turtle sighting at less than 50m, restart observation period.
10451	15:08	16:09	MStdby	01:01	Pre work observation period.
10451	16:09	16:35	Oper	00:26	Deploy SBF and trip in drill string
10451	16:35	17:10	Oper	00:35	Sampling at BH-G7 **P01 from 0.00-0.50m**
10451	17:10	17:20	Oper	00:10	Sampling at BH-G7 **P02 from 0.50-1.00m**
10451	17:20	17:55	Oper	00:35	Sampling at BH-G7 **P03 from 1.00-2.00m**
10451	17:55	18:35	Oper	00:40	Testing at BH-G7 **CPT01 from 2.00-4.50m**
10451	18:35	18:45	Oper	00:10	Sampling at BH-G7 **P04 from 4.50-5.00m**
10451	18:45	19:15	Oper	00:30	Testing at BH-G7 **CPT02 from 5.00-8.00m**
10451	19:15	19:45	Oper	00:30	Sampling at BH-G7 **P05 from 8.00-8.50m**
10451	19:45	21:30	CT	01:45	Problems with CPT water head.
10451	21:30	21:50	Oper	00:20	Testing at BH-G7 **CPT03 from 5.00-8.00m**
10451	21:50	22:15	Oper	00:25	Sampling at BH-G7 **P06 from 10.00-10.50m**
10451	22:15	22:40	Oper	00:25	Testing at BH-G7 **CPT04 from 10.50-12.50m**
10451	22:40	23:00	Oper	00:20	Sampling at BH-G7 **P07 from 12.50-13.00m**
10451	23:00	23:25	Oper	00:25	Testing at BH-G7 **CPT05 from 13.00-14.00m**
10451	23:25	24:00	Oper	00:35	Cone change.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	17:50	227:10	245:00
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	03:19	26:04	29:23
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	02:51	108:52	111:43
	Total	**24:00**	**480:00**	**504:00**
	CT %	11.9%		**22.2%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.74	9.92	10.66
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.14	1.30	1.44
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	33.00	311.56	344.56
4.2	Shelby/Piston Samples	Metre	11.50	103.00	114.50
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SE 3/4	Good	
08:00	SE 4	Good	
12:00	SSE 3	Good	
16:00	SSE 3	Good	
20:00	SSE 4	Good	
24:00	SSE 4	Good	

Forecast next 24 hours: Up to 1.6m swell , 14kts wind.

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	4	4	57
Permits to Work Raised	6	6	107
Muster Drills and Safety Drills	0	0	5
Tool Box Meetings and Risk Assessments	11	11	190
Safety Induction Tours	0	0	12
Progress Meetings	1	1	18
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Complete works at BH-G7 and depart site for demobilisation, Baltimore, MD

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
313	13800	65

11. Party Chief Comments

Spare PS logger is not functional, currently unable to perform PS logging.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

3 x Turle sightings

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
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Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	22	**Email Ref:**	OD.JN10451.DPR22.070715
Period	0000 – 2400		

1. Ship's Position & Status

Date	07/07/2015	Latitude	38° 27.0'N
Time	24:00	Longitude	074° 38.6'W
Present:	Transit to Balitmore, MD	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	00:35	Oper	00:35	Cone change.
10451	00:35	01:00	Oper	00:25	Testing at BH-G7 **CPT06 from 14.00-14.50m**
10451	01:00	01:15	Oper	00:15	Sampling at BH-G7 **P08 from 14.50-15.00m**
10451	01:15	01:40	Oper	00:25	Testing at BH-G7 **CPT07 from 15.50-16.00m**
10451	01:40	01:50	Oper	00:10	Sampling at BH-G7 **P09 from 16.00-16.50m**
10451	01:50	02:25	CT	00:35	Repair to CPT tool
10451	02:25	03:10	Oper	00:45	Testing at BH-G7 **CPT08 from 16.50-19.00m**
10451	03:10	03:30	Oper	00:20	Sampling at BH-G7 **P10 from 19.00-20.00m**
10451	03:30	03:55	Oper	00:25	Testing at BH-G7 **CPT09 from 20.00-23.00m**
10451	03:55	04:10	Oper	00:15	Sampling at BH-G7 **P11 from 23.00-24.00m**
10451	04:10	04:30	Oper	00:20	Testing at BH-G7 **CPT10 from 24.00-27.00m**
10451	04:30	05:00	CT	00:30	Repair to SBF power pack
10451	05:00	05:45	Oper	00:45	Sampling at BH-G7 **P12 from 27.00-28.00m**
10451	05:45	06:10	Oper	00:25	Testing at BH-G7 **CPT11 from 28.00-31.00m**
10451	06:10	06:45	Oper	00:35	Sampling at BH-G7 **P13 from 31.00-32.00m**
10451	06:45	07:10	Oper	00:25	Testing at BH-G7 **CPT12 from 32.00-35.00m**
10451	07:10	07:30	Oper	00:20	Sampling at BH-G7 **P14 from 35.00-36.00m**
10451	07:30	07:55	Oper	00:25	Testing at BH-G7 **CPT13 from 36.00-39.00m**
10451	07:55	08:10	Oper	00:15	Sampling at BH-G7 **P15 from 39.00-40.00m**
10451	08:10	08:40	Oper	00:30	Testing at BH-G7 **CPT14 from 40.00-43.00m**
10451	08:40	09:05	Oper	00:25	Sampling at BH-G7 **P16 from 43.00-44.00m**
10451	09:05	09:40	Oper	00:35	Testing at BH-G7 **CPT15 from 44.00-46.50m**
10451	09:40	10:30	Oper	00:50	Sampling at BH-G7 **P17 from 46.50-47.50m**
10451	10:30	11:05	Oper	00:35	Testing at BH-G7 **CPT16 from 47.50-50.00m**
10451	11:05	11:55	Oper	00:50	Sampling at BH-G7 **P18 from 50.00-51.00m**
10451	11:55	12:25	Oper	00:30	Testing at BH-G7 **CPT17 from 51.00-53.00m, 3 attempts at latching**

2. Summary of Events

Time zone UTC -4.0 hr

10451	12:25	12:45	Oper	00:20	Sampling at BH-G7 **P19 from 53.00-53.50m**
10451	12:45	13:10	Oper	00:25	Testing at BH-G7 **CPT18 from 53.50-54.00m**
10451	13:10	13:20	Oper	00:10	Testing at BH-G7 **CPT19 from 54.00-55.00m**
10451	13:20	13:55	Oper	00:35	Testing at BH-G7 **CPT20 from 55.00-57.00m**
10451	13:55	14:15	Oper	00:20	Sampling at BH-G7 **P20 from 57.00-58.00m**
10451	14:15	14:45	Oper	00:30	Testing at BH-G7 **CPT21 from 58.00-60.50m**
10451	14:45	15:00	Oper	00:15	Sampling at BH-G7 **P21 from 60.50-61.00m**
10451	15:00	15:40	Oper	00:40	Testing at BH-G7 **CPT22 from 61.00-64.00m**
10451	15:40	15:55	Oper	00:15	Sampling at BH-G7 **P22 from 64.00-64.50m**
10451	15:55	16:30	Oper	00:35	Testing at BH-G7 **CPT23 from 64.50-67.50m**
10451	16:30	16:55	Oper	00:25	Sampling at BH-G7 **P23 from 67.50-68.50m**
10451	16:55	17:30	Oper	00:35	Testing at BH-G7 **CPT24 from 68.50-71.50m**
10451	17:30	17:45	Oper	00:15	Sampling at BH-G7 **P24 from 71.50-72.50m**
10451	17:45	18:10	Oper	00:25	Testing at BH-G7 **CPT25 from 72.50-75.50m**
10451	18:10	19:15	Oper	01:05	Recover drill spread to deck.
10451	19:15	22:09	Oper	02:54	Recover anchors and spool on winch wire cables.
10451	22:09	24:00	Oper	01:51	Transit to pilot station.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	00:00	00:00	00:00
Operational	Oper	22:55	245:00	267:55
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	00:00	29:23	29:23
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	01:05	111:43	112:48
	Total	**24:00**	**504:00**	**528:00**
	CT %	4.5%		**21.4%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	0	0
2	**Operations**				
2.1	Operations	Day	0.95	10.66	11.62
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.00	1.44	1.44
3.3	Other	Day	0.00	0.00	0.00
4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	46.50	344.56	391.06
4.2	Shelby/Piston Samples	Metre	14.50	114.50	129.00
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	SSW 4	Good	
08:00	SSW 5	Good	
12:00	SSW 4	Good	
16:00	SSW 5	Good	
20:00	SSW 5	Good	
24:00	Transit		

Forecast next 24 hours: Transit

Gardline

DAILY PROGRESS REPORT

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	4	57
Permits to Work Raised	7	13	114
Muster Drills and Safety Drills	0	0	5
Tool Box Meetings and Risk Assessments	11	22	201
Safety Induction Tours	0	0	12
Progress Meetings	1	2	19
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Transit to Baltimore, MD for demobilisation.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	TBC	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
309	13800	57

11. Party Chief Comments

Spare PS logger is not functional, currently unable to perform PS logging.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	23	**Email Ref:**	OD.JN10451.DPR23.080715
Period	0000 – 2400		

1. Ship's Position & Status

Date	08/07/2015	Latitude	39° 15.7'N
Time	24:00	Longitude	076° 35.0'W
Present:	Alongside Balitmore, MD	Country Code:	US

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	21:00	Oper	21:00	Transit to Baltimore, MD for demobilisation.
10451	21:00	24:00	Demob	03:00	Alongside commence demobilisation.

3. Activity

Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	03:00	00:00	03:00
Operational	Oper	21:00	267:55	288:55
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	00:00	29:23	29:23
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	112:48	112:48
	Total	**24:00**	**528:00**	**552:00**
	CT %	0.0%		**20.4%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	1	0	1
2	**Operations**				
2.1	Operations	Day	0.88	11.62	12.49
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.00	1.44	1.44
3.3	Other	Day	0.00	0.00	0.00

4. Production Summary

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	391.06	391.06
4.2	Shelby/Piston Samples	Metre	0.00	129.00	129.00
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Transit		
08:00	Transit		
12:00	Transit		
16:00	Transit		
20:00	Transit		
24:00	Alongside		

Forecast next 24 hours: Alongside

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	2	6	59
Permits to Work Raised	4	17	118
Muster Drills and Safety Drills	0	0	5
Tool Box Meetings and Risk Assessments	8	30	209
Safety Induction Tours	0	0	12
Progress Meetings	1	3	20
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL

Total Marine Crew **17**

Other Parties

Client Representative	Salvatore Liccardo
	1

Total persons onboard: **42**

Survey Crew

Party Chief	Mike EDGAR
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Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
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Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
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Geotech Engineer	Nicolas VOWLES-SHERIDAN
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Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST

Total GGL Crew **24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Demobilisation.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	08/07/15	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
305	13800	56

11. Party Chief Comments

Spare PS logger is not functional, currently unable to perform PS logging.

12. Site Instructions & Variations

No.	Date	Details
1	18/06/2015	Change to sampling strategy for BH-D9, BH-H10, BH-K16. 1st 3m of BH's will now be push samples.
2	26/06/2015	MET Tower location final depth reduced to 65m. CPT's instructed for last part of BH.
3	02/07/2015	No PS logging to be performed where BH has collapsed for any reason or in an area where the operator suspects the hole will collapse under test execution.

13. Client Comments

None

14. Marine Mammal Observation Summary

None

15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds

Gardline — DAILY PROGRESS REPORT

Vessel	**MV OCEAN DISCOVERY**	**E-mail**	**partychief@discovery.gardline.co.uk**
Telephone	**+870 773 991 003**	**OPM Mobile**	**(+44) 07881013703**

Addressee	Role	Telephone	E-mail
Gardline Geosurvey	Operations Management	0044 1493 845600	operationsmanagement@gardline.co.uk
Gardline	GGL Group		10451_USWind_MD@gardline.com
Adam Harding	Gardline PM	0044 1493 845600	adam.harding@gardline.com
Justin Bailey	Alpine PM	001 201 995 7185	jbailey@alpineocean.com
Rob Mecarini	Alpine President	001 201 995 7185	rob@alpineocean.com
Leonardo Gherardi	Alpine Ops Manager	001 201 264 3512	lgherardi@alpineocean.com
Nicola Harris	Gardline Marine Wildlife Deputy Manager	0044 1493 845600	Nicola.harris@gardline.com
William Wall	US Wind Technical Director	001 240 277 8566	w.wall@uswindmaryland.com
F. Onorio	US Wind	N/A	f.onorio@uswindmaryland.com
M. Robertson	ESS Group	N/A	mrobertson@essgroup.com
Salvatore Liccardo	US Wind Offshore Rep.		client2@discovery.gardline.co.uk

Client	US Wind Inc.	**Gardline Job No**	10451
Project	Maryland WEA Geotechnical Survey		
Report No	24	**Email Ref:**	OD.JN10451.DPR24.090715
Period	0000 – 2400		

1. Ship's Position & Status

Date	09/07/2015	Latitude	39° 15.7'N
Time	24:00	Longitude	076° 35.0'W
Present: Alongside Balitmore, MD		Country Code: US	

2. Summary of Events

Time zone UTC -4.0 hr

Project Number	From	To	CT/TD Code	Duration	Activity
10451	00:00	24:00	Demob	24:00	Alongside commence demobilisation.

3. Activity

	Code	Today	Previous	Total
Mobilisation	Mob	00:00	59:00	59:00
Demobilisation	Demob	24:00	03:00	27:00
Operational	Oper	00:00	288:55	288:55
Weather Standby	WStdby	00:00	58:54	58:54
Mammal Standby	MStdby	00:00	29:23	29:23
Other Standby	OStdby	00:00	00:00	00:00
Contractors Time	CT	00:00	112:48	112:48
	Total	**24:00**	**552:00**	**576:00**
	CT %	0.0%		**19.6%**

4. Production Summary

		Unit	Today	Prev	Total
1	**General & Preliminaries**				
1.1	Vessel and Equipment Mobilisation	Lump Sum	0	1	1
1.2	Vessel and Equipment Demobilisation	Lump Sum	0	1	1
2	**Operations**				
2.1	Operations	Day	0.00	12.49	12.49
3	**Standby**				
3.1	Weather	Day	0.00	2.77	2.77
3.2	Marine Mammal	Day	0.00	1.44	1.44
3.3	Other	Day	0.00	0.00	0.00

4. Production Summary

4	**Investigation Performance**				
4.1	WISON CPT tests	Metre	0.00	391.06	391.06
4.2	Shelby/Piston Samples	Metre	0.00	129.00	129.00
4.3	PS Logging	Metre	0.00	169.00	169.00

5. Weather

Time	Obs Wind	Obs Sea State	Remarks
04:00	Alongside		
08:00	Alongside		
12:00	Alongside		
16:00	Alongside		
20:00	Alongside		
24:00	Alongside		

Forecast next 24 hours: Alongside

6. Safety & Environmental

	Today	This Week	Project Total
Hazardous Occurrences/Incident Reports Raised	0	0	0
Safety Observation Cards Raised	0	6	59
Permits to Work Raised	0	17	118
Muster Drills and Safety Drills	0	0	5
Tool Box Meetings and Risk Assessments	0	30	209
Safety Induction Tours	0	0	12
Progress Meetings	0	3	20
Management Safety Meetings	0	0	1

7. Personnel

Marine Crew

Master	Peter REYNOLDS
Chief Officer	David RICHES
2nd Officer	Bonifacio DE LA CRUZ
2nd Officer	Stuart MONAGHAN
Chief Engineer	Allan MACLACHLAN
2nd Engineer	Sergiusz ZAGORSKI
ETO	Michael RAFFERTY
3rd Engineer	Helbert CHAVEZ
3rd Engineer	Aleksandr BOROVINSKICH
Bosun	Rolandas SLYZIUS
AB Seaman	Michael KUNDENKO
AB Seaman	Romualdas DAUKINTIS
AB Seaman	Denis BORISKIJ
Oiler	Damljan LJUBOJEVIC
Cook	Sergej SEBUNIAJEV
Cook	Witold PRZYJEMCZAK
Steward	Dawid NECEL
Total Marine Crew	**17**

Other Parties

Client Representative	Salvatore Liccardo
	1
Total persons onboard:	**42**

Survey Crew

Party Chief	Mike EDGAR
Drilling Supervisor*	Richard TREWIN
Rig Mechanic	Stefan BRADU
Driller	Sergiu BERINDEIE
Driller	Raul ILLIE
Assistant Driller	Radu PRIPON
Assistant Driller	Alex LAZAR
Roughneck	Vlad SATMARI
Roughneck	Vasile MARIAN
Roughneck	Ovidiu MOLDOVAN
Roughneck	Adrian-Iosif SZEKELY
CPT Operator	Richard LLOYD
CPT Operator	Bharat DEVLIA
Surveyor	Giles MOBBS
Geotechnical Engineer*	Sam HARVIE
Geotech Engineer	Nicolas VOWLES-SHERIDAN
Geotech Engineer	Xue YAO
Soils Lab Tech	Nigel HAYWARD
Soils Lab Tech	Mohammad Jamaludin BIN ALI
PSO/PAMS Op	Lucy BUCKLAND
PSO/PAMS Op	Richard PRICE
PSO/PAMS Op	Gareth DUGUID
PSO/PAMS Op	Gemma JAMES
PSO/PAMS Op	Claire GILCHRIST
Total GGL Crew	**24**

** indicates Supervisor or Shift Leader where applicable*

8. Next 24 Hours

Demobilisation.

9. Key Dates	Location	Date
Last Port call	21/06/2015	
Expected completion of acquisition	12/07/2015	
Next Port call	08/07/15	
Last safety muster	24/06/2015	
Next safety muster	TBC	

10. Vessel status (midday)

Fuel Remaining m^3	Lube Oil remaining (litres)	Water remaining (MT)
305	13800	56

11. Party Chief Comments

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12. Site Instructions & Variations

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13. Client Comments

None

14. Marine Mammal Observation Summary

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15. Report submitted by:		
Party Chief	US Wind Client Representative	Master
Mike Edgar	Salvatore Liccardo	Peter Reynolds