

Exhibit 5A
Preliminary Geotechnical Report

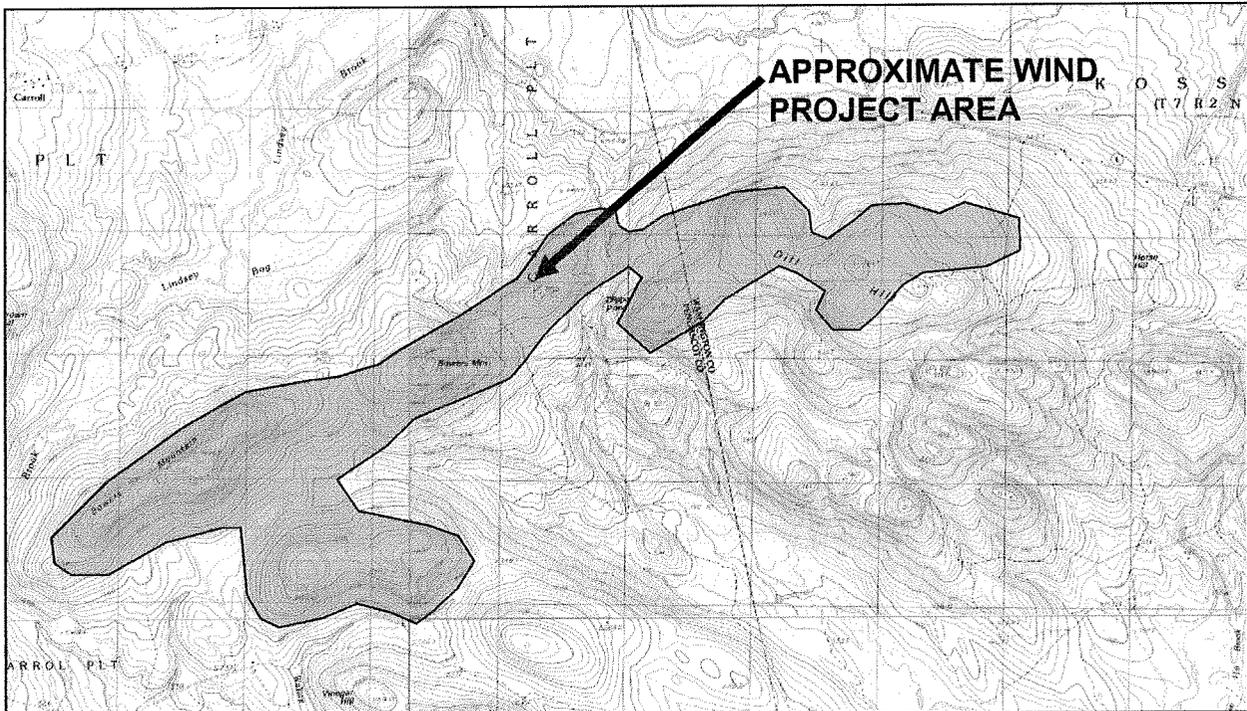
PRELIMINARY GEOLOGICAL INVESTIGATION
PROPOSED BOWERS MOUNTAIN WIND POWER PROJECT
CARROLL PLANTATION AND
KOSSUTH TOWNSHIP
MAINE

10-0725 G October 20, 2010

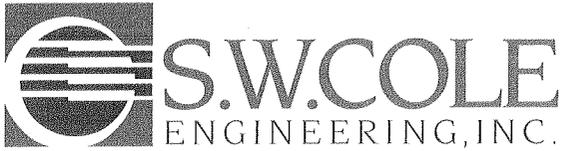
PREPARED BY



FOR
FIRST WIND



NOTE: Base Map from terraserver.com. Map not to scale.



• Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

10-0725 G

October 20, 2010

First Wind
Attention: Brad Kites
1 Dana Street
Portland, ME 0410

Subject: Preliminary Geological Investigation
Proposed Bowers Mountain Wind Power Project
Carroll Plantation and Kossuth Township, Maine

Dear Brad:

In accordance with our Proposal dated August 10, 2010, we have provided geological services associated with the proposed Bowers Mountain Power Project in Carroll Plantation and Kossuth Township, Maine. The purpose of this preliminary geological investigation was to collect samples from bedrock outcrops and perform observations, hand borings and seismic refraction testing to estimate overburden depths at potential turbine locations along the ridgeline and access road cut locations. Samples were collected to identify rock type and for preliminary Acid Base Analysis (ABA) testing and Acid Rock Drainage (ARD) evaluation. We understand that this geological reconnaissance is associated with the Bowers Mountain Wind Power LURC application. The contents of this report are subject to the limitations set forth in Attachment A.

INTRODUCTION

The proposed Bowers Mountain Wind Power project is located in portions of Carroll Plantation and Kossuth Township, Maine. The approximate location of the wind farm is shown on a portion of the U.S. Geological Survey 7.5 Minute Topographic Map (Bowers Mountain and Dill Hill, Maine Quadrangles) presented on the cover page of this report. Rock sample, landform evaluation traverse, turbine, and seismic refraction testing locations are shown on the Sample Location Map attached as Sheet 1. The area for the proposed Bowers Mountain Wind Farm is generally oriented in a west to east direction, south of Maine Highway 6. The majority of the site is currently accessible via Dipper

Pond Road. The county line between Penobscot and Washington Counties corresponds to the town line between Carroll Plantation and Kossuth Township.

SCOPE OF WORK

S. W. COLE ENGINEERING, INC. performed the following tasks:

- Reconnaissance of geological hazards and bedrock outcrops at proposed turbine sites and along access roads in the Bowers Mountain and Dill Hill area.
- Geological mapping verification with the collection of representative bedrock samples as reference hand specimens and for laboratory characterization of ARD generation potential. Nine samples were submitted for ABA testing, with five samples submitted for chloride and sulfate analysis to provide data for corrosivity evaluation.
- Evaluating the depth to bedrock based on visual observations and seismic refraction testing at 11 locations.
- Evaluating the earthquake seismic potential of the area.
- Preparing this report summarizing bedrock field observations and testing results.

GEOLOGICAL DATA

The area of Bowers Mountain and Dill Hill has been the subject of multiple geological publications. The *Bedrock Geologic Map of Maine* (Osberg et al., 1985), maps the bedrock in the area as being pelite and granite. Ludman (2010) and Ludman and Berry (2003) mapped the Bowers Mountain and Dill Hill area as being underlain by interbedded pelite and sandstone (arenite) with varying amounts of sulfidic and carbonaceous pelite. Proposed tower locations south of Bowers Mountain are underlain by biotite granite.

The sulfidic and carbonaceous pelite was interpreted by Ludman and Henry to be the lower strata within the Bowers Mountain Formation. This rusty weathering pelite is interpreted as an early indication of the potential to generate ARD. The sulfidic and carbonaceous pelite is overlain by non-sulfidic and non-carbonaceous pelite and sandstone, which is interpreted to have low ARD potential. These strata are isoclinally folded and have been metamorphosed by the granite intrusive to the south.

PUBLISHED SEISMIC – FAULTING DATA

Seismic activity can impact a site from two sources. These include ground rupture directly beneath a site or shaking produced at the site from nearby seismic activity. There are no documented, accepted cases of ground rupture that can be definitely attributed to seismic activity in New England since the departure of glaciers (more than 10,000 years before the present).

According to the Dill Hill Quadrangle Bedrock Geologic Map (Ludman and Henry, 2003), several faults cross the site. Based on the geological mapping, the movement on these faults was prior to the intrusion of the granite in the southern portion of the site, approximately 380 million years before the present.

Ground motion or shaking is produced by seismic activity. Ground motion decreases as the distance from an event increases due to the absorption of energy by the earth. Table 1 lists the earthquake events and Modified Mercalli intensities within an approximately 10,000 kilometer² area centered on the proposed site.

Table 1
 Modified Mercalli Intensities for 10,000 km² Area

Event - Longitude (θ_2)	Event - Latitude (ϕ_2)	Date	MMI Intensity	Richter Intensity	Distance Between Two Locations (Miles)	Distance Between Two Locations (Km)	MMI At Site (Calculated)	Log PGA	PGA
-68.20	45.30	1994	5	4.3	12.3	19.8	5	1.45	0.0287
-68.22	45.31	1994	4	3.7	13.1	21.0	4	1.07	0.0119
-68.00	45.00	1912	5	4.3	27.4	44.2	4	1.16	0.0147
-67.40	45.10	1912	3	3	35.2	56.6	1	0.29	0.0020
-68.67	45.20	2001	3	3.3	35.9	57.7	1	0.46	0.0030
-67.30	45.20	1929	2	2.3	36.1	58.1	0	0.01	0.0011
-67.50	45.00	1926	4	3.7	36.3	58.4	2	0.70	0.0051

MMI – Modified Mercalli Intensity

PGA – Peak ground Acceleration

According to the United States Geological Survey compilation of 1131 earthquake events in Maine commencing in 1534, the nearest recorded event within a 10,000 km²

area around the site (USGS, 2007) is approximately 19.8 kilometers (12.3 miles) from the site. The event would have exhibited a Modified Mercalli Intensity of 5 at the site and a horizontal Peak Ground Acceleration¹ (PGA) of 0.0287g (2.9%g). This event was recorded in 1994. The maximum PGA at the site was 0.0643g associated with an event recorded in 1904, approximately 47 miles from the site, this would convert to 0.0322 (3.2%g) for the horizontal acceleration. This is consistent with 2008 USGS Seismic Hazard mapping (Sheet 2) for the region having a 10% probability for a Peak Horizontal Acceleration of 3%g to 4%g in the next 50 years.

Since peak accelerations are generally short lived and are not generally the source of damage, peak acceleration is modified by a factor of 0.5 resulting, in this case, in a sustained horizontal component of acceleration of 0.032g for design.

FIELD WORK

Access to Bowers Mountain was gained off Dipper Pond Road from Maine Highway #6 and from various logging roads that cross the site. We reviewed the general access, finding skidder roads to generally be overgrown as the site appears to have been logged more than 5 years prior to our site work. Our staff reviewed all of the tower locations, confirming the proposed locations using GPS equipment with sub-meter accuracy. Our preliminary review of these locations is summarized on Sheet 3. Based on this review, we selected 11 tower and 4 road locations for seismic refraction testing to evaluate the depth to bedrock (Sheet 3).

Acid Rock Drainage

Nine bedrock samples were collected from locations across the site to provide a preliminary evaluation of the bedrock potential to generate ARD. Sample locations (Sheet 1) were surveyed using hand held GPS survey equipment. These samples were selected to be representative of the geology (pelite and sandstone) that may have the potential to generate ARD. We sampled representative outcrops of the sulfidic and carbonaceous pelite at 5 locations and of the siliceous arenite at 4 locations (Sheet 4).

¹ Peak ground acceleration (PGA) is a measure of earthquake acceleration on the ground and is not a measure of the total size of the earthquake, but rather how hard the earth shakes in an area. PGA is expressed in g , the acceleration due to earth's gravity, or in $m\ s^{-2}$ ($1g = 9.91\ m\ s^{-2}$)

The granites were not sampled as their potential to generate ARD is interpreted to be low unless specific alteration characteristics are observed (generally present near the contact with the metasediments).

The nine rock samples were submitted to Sturm Environmental Services (SES) of Bridgeport, West Virginia for acid-base accounting (ABA) analysis. Analyses for Fizz, Color, Paste pH, Neutralization Potential (NP) and total sulfur are used to calculate Maximum Potential Acidity (MPA) and Net Neutralization Potential (NPP). NP, MPA and NPP are expressed in calcium carbonate equivalent Tons/100 Tons of Material. Testing results from SES are summarized on Sheet 4 and included as Attachment B. Rock samples found to contain more than 0.5% sulfur were submitted to REI Consultants, Inc. (REIC) of Beaver, WV for sulfate and chloride analyses. Based on the SES results, five samples were submitted to REIC for testing. The REIC results are included in Attachment B.

Field Observations

While accessing the proposed turbine sites, we observed the site conditions that may influence construction activities. These observations included bedrock outcrops at the proposed turbine sites as listed on Sheet 3. In general, bedrock along the ridges of Bowers Mountain and Dill Hill is less than 10 feet below the ground surface, with bedrock consisting of interbedded-, metamorphosed- pelite (mudstone) and sandstone. On the north facing slopes where bedrock was not observed, bouldery terrain is interpreted to be indicative of shallow bedrock.

The ridge to the south (turbine sites T-15, T-16, and T-17) was found to be underlain by granite both as outcrop and near the ground surface. These observations were consistent with the published geological mapping for the area. The contact between the granite and the metamorphic rocks occurs in the low area between the ridges, and is interpreted to be covered by more than 20 feet of unconsolidated material (soil and glacial till).

Wet areas, which may be wetlands, were observed in areas of the current forest paths used as access to the proposed turbine sites.

Seismic Refraction

We contracted with Northeast Geophysical Services (NGS) of Bangor, Maine to perform seismic refraction testing at select locations on Bowers Mountain and Dill Hill. Of the 11 turbine and 4 road locations initially selected, testing was done on 7 turbine and 4 road locations (Sheet 3). The test lines were 115 feet in length with explosive charges (approximately $\frac{1}{4}$ of a stick of dynamite) used to generate the energy for testing. The center of the refraction lines was near to the center of the turbine locations. These locations were surveyed using GPS equipment with sub-meter accuracy. We will provide the survey coordinates at your request.

Preliminary modeling profiles by NGS and their testing summary are included as Attachment C.

Soil Sampling

We collected four soil samples for grain size analysis and moisture content testing. These samples were collected from proposed turbine locations T-8, T-17, T-22, and T-27. The results from this testing are included in Attachment D.

RESULTS AND DISCUSSION

General Conditions/Geological Hazards

We interpret overburden and bedrock conditions at this site to have a low potential for geological hazards. Depths to bedrock will vary between locations as a result of variations in rock composition, weathering, fracturing, and deposition of glacial sediments. Locations with bedrock fracturing and greater weathering are generally evidenced as saddles in the ridge-line.

Acid Rock

Bedrock outcrop ABA analytical results were received from SES on September 27, 2010, with sulfate and chloride analytical results received from REIC on October 11, 2010. These results are included as Attachment B, and summarized on Sheet 4. All of the samples were found to have an excess of CaCO_3 , with a Fizz (an indication of carbonate) ranging from 1 in DILL-W to 3 in four different samples. The pelite samples

(MET-2, TS-5/6, RTS-11, ARD-11B, and OBM-E) are dark gray fine grained metasediments, with more than 0.5% sulfur and visible cordierite grade metamorphism. The remaining four samples are metamorphosed gray siltstone and sandstone with a schistose texture in outcrop, and 0.013 to 0.384% sulfur. Paste pH measurements ranged from 5.2 to 6.5 and do not appear to correlate directly with the percentage of sulfur (DILL-W has a pH of 6.5 with 0.013% sulfur while RTS-11 has a pH of 6.5 with 0.588% sulfur).

Neutralization Potential (NP) is presumed to be a measure of carbonate minerals, exchangeable bases and weatherable silicate minerals to produce an index of available acid neutralizers in the rock. Formulas to calculate Maximum Potential Acidity (MPA) and Net Neutralization Potential (NNP) from percent total sulfur and NP are:

$$\text{MPA} = \%S \times 31.25$$

$$\text{NNP} = \text{NP} - \text{MPA}$$

The formula for MPA assumes that sulfide sulfur is the only acid generating source, with sulfate and organic sulfur assumed to be non-acid generating. In addition, the MPA formula assumes that carbon dioxide gas is exsolved and no carbonic acid is generated.

Guidelines from the Pennsylvania DEP (Perry 1998) on the interpretation of analytical results used for acid base accounting (ABA) were used to interpret the results from the Bowers Mountain samples. The following summarizes this comparison:

- Rocks with NNP (Excess CaCO_3) less than -5 parts per thousand (ppt) are potentially toxic - *All samples have a NNP greater than 9 ppt;*
- Rocks with pH <4.0 are considered acid toxic - *All samples have a pH of 5.2 or greater;*
- Rocks with greater than 0.5% sulfur may generate significant acidity - *Samples from MET 2 (T 5-6), TS-5/6, RTS-11, ARD-11B, and OBM-E contain more than 0.5% total Sulfur;*

- Rocks with NP >30 ppt CaCO₃ and Fizz are a significant source of alkalinity - *Samples TS-5/6, RTS-11, ARD-11B, RTS-12/13 and OBM-E have a NP greater than 30 ppt;*
- Rocks with NNP >20 ppt CaCO₃ produce alkaline drainage - *Samples TS-5/6, RTS-11, ARD-11B and RTS-12/13 have a NNP greater than 20 ppt;*
- Rocks with NNP less than -20 ppt CaCO₃ produce acid drainage - *All samples have a NNP greater than 9.7 ppt;*
- Rocks with NNP greater than 0 ppt CaCO₃ do not produce acid - *All samples have a NNP greater than 9.7 ppt;*
- NP/MPA ratio less than 1 likely results in acid drainage - *Ratios vary from 1.5 to 25.7 for the samples analyzed;* and
- Theoretical NP/MPA ratio of 2 or greater is needed for complete acid neutralization - *Ratios vary from 1.5 to 25.7 [only MET 2 (T 5-6) and DILL-W have a ratio of 1.5].*

In summary, using the above acid base accounting criteria, the rock samples analyzed from the Bowers Mountain area contain factors that may be interpreted to be toxic for either alkalinity or acidity. *MET 2 (T 5-6), TS-5/6, RTS-11, ARD-11B, and OBM-E* may be toxic for acidity based on sulfur content, however, the amount of carbonate present in the rock indicates that *TS-5/6, RTS-11, ARD-11B and RTS-12/13* may generate an alkaline drainage. Using the above criteria and the paste pH data, it appears that the potential for the Bowers Mountain metasediments to generate acid drainage is buffered by the carbonate, with the presence of metamorphic alteration resulting in altered rock that will weather slowly. Based on mapping by others and our observations from this geological reconnaissance, we interpret the rock samples submitted to SES to be generally representative of the bedrock in the Bowers Mountain area. Therefore, based on the ABA results, we interpret the proposed project to have a low potential to generate acid rock drainage (ARD) from bedrock exposures created during construction.

If future work in the area should encounter rock types containing significant amounts of soft unaltered metasediments with sulfide and carbonaceous material, then additional sampling and analyses may be warranted. Field observations of rock types and sulfide

minerals should be noted during future site evaluation and development activities (geotechnical investigation).

Seismic Refraction Testing

Seismic refraction profiles (Attachment C) generally were modeled to indicate that the bedrock, when not observed in the test area, is 5 to 15 feet below the ground surface. The shallowest bedrock was modeled at T-13 and RT8-17 at less than 5 feet below the ground surface. The bedrock for the road cut area at RT17 was the deepest, being modeled at approximately 25 feet below the ground surface.

Turbine sites T-9, T-19, T-24 and T-25 were not tested. The bedrock at proposed turbine sites T-9 and T-19 is interpreted to be shallow (less than 10 feet) based on field observation and published bedrock mapping in these turbine areas. The bedrock at proposed turbine sites T-24 and T-25 is interpreted to be between 10 and 15 feet below ground surface based on the local topography, testing at T-26, and bedrock reconnaissance and outcrops observed on Dill Hill.

Soil Sampling

Grain size analysis and moisture content testing from proposed turbine locations T-8, T-17, T-22, and T-27, found the soils between 1 and 2 feet below the ground surface to contain between 16.3% and 38.5% fines (Attachment D). Grain-size analyses are consistent with till (Attachment D). Surficial materials mapping indicates that there is an area of gravel and gravelly till in the vicinity of Dipper Pond. This area is not mapped as a sand and gravel aquifer by Neil (2001).



10-0725 G
October 20, 2010

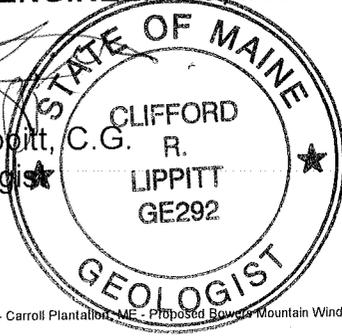
CLOSING

It has been a pleasure to assist you in this matter. If you have any questions, please contact us.

Sincerely,

S. W. COLE ENGINEERING, INC.

Clifford R. Lippitt,
Senior Geologist

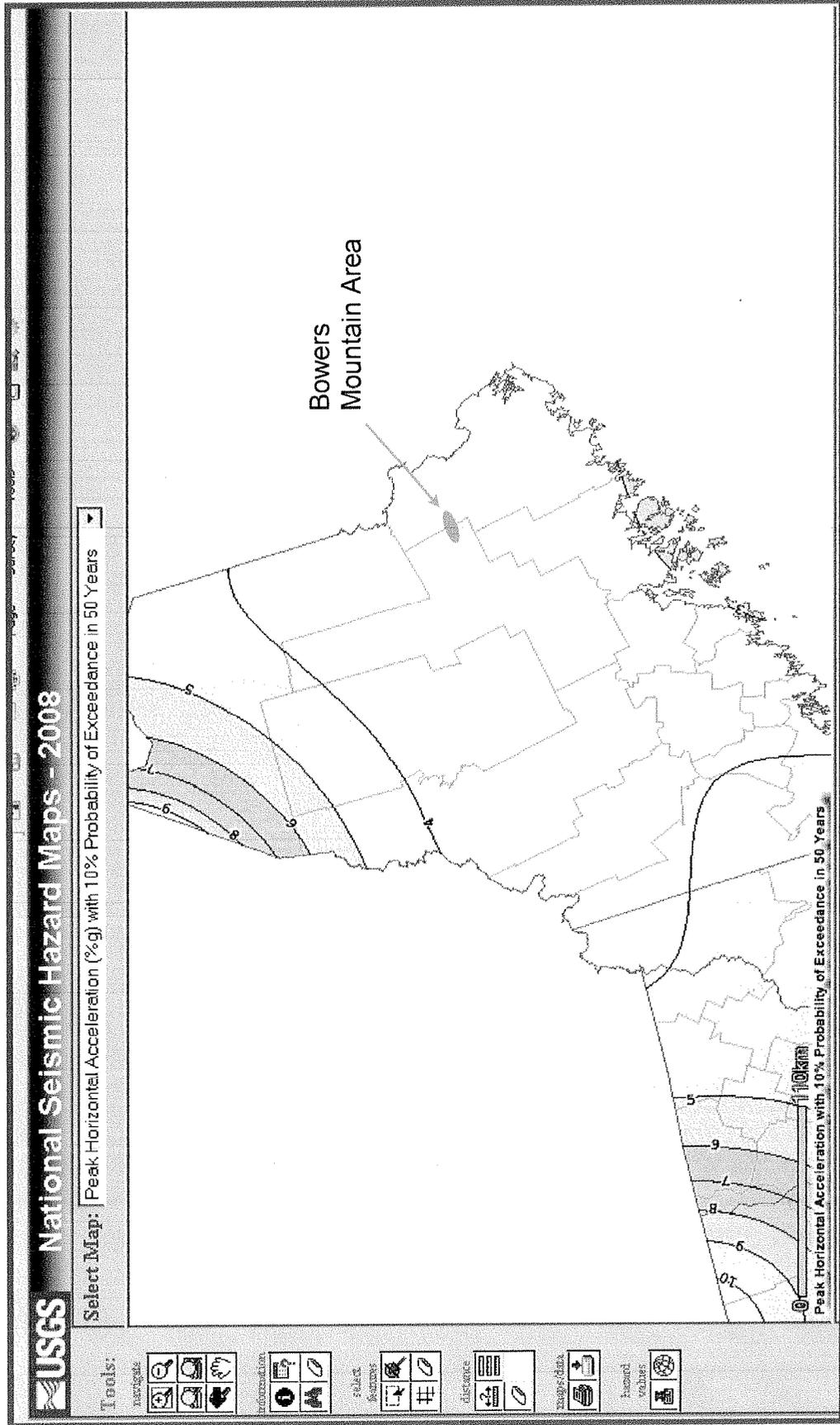


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- Berry, H and A Ludman. 2003. *Dill Hill Quadrangle Bedrock Geology*. Maine Geological Survey. Department of Conservation. Augusta, Maine, Open-File No. 03-93.
- Ludman, A. 2010. *Lincoln 100,000 Quadrangle Bedrock Geology (Progress Map Draft)*. Maine Geological Survey. Department of Conservation. Augusta, Maine.
- Neil, C. 2001. *Dill Hill Quadrangle Sand and Gravel Aquifer Map*. Maine Geological Survey. Department of Conservation. Augusta, Maine, Open-File No. 01-0335.
- Osberg, P. H., A. M. Hussey II, and G. M. Boone. 1985. *Bedrock Geologic Map of Maine*. Maine Geological Survey. Department of Conservation. Augusta, Maine.
- Perry, E. F. 1998. *Interpretation of Acid-Base Accounting*. Office of Surface Mining. Pittsburgh, PA 15220.

SHEET 2
BOWERS MOUNTAIN WIND PROJECT
SEISMIC HAZARDS MAP



TURBINE OBSERVATIONS FOR SEISMIC REFRACTION TESTING
BOWERS MOUNTAIN WIND POWER PROJECT
CARROLL PLANTATION KOSSUTH TOWNSHIP, MAINE

Turbine Number	TURBINE LOCATION - BEDROCK OBSERVATIONS	Estimated Depth to Bedrock (feet)
T-1	Outcrop observed at ground surface	0-5
T-2	Outcrop observed at ground surface	0-5
T-3	Outcrop observed at ground surface	0-5
T-4	Outcrop observed at ground surface	0-5
T-5	Outcrop observed at ground surface	0-5
T-6	Outcrop observed at ground surface (Met Tower)	0-5
T-7	Outcrop at ground surface approx. 25-feet east from turbine location	0-5
T-6 / T-7	Road - large angular boulders (shallow to bedrock) and outcrop observed along existing trail	0-10
T-8 ¹	Outcrop observed approximately 150 west of turbine location on ATV trail	?
T-9 ¹	No visible outcrop	?
T-8 / T-9 ¹	Road - Northwest facing slope, boulders, possible bedrock at location / Outcrop observed south of proposed road	?
T-10	Outcrop at ground surface approximately 75 feet from turbine site/ Boulders/ possible outcrop 20 feet from turbine site	0-10
T-10 / T-11	Angular Boulders - Like T-11	2-10
T-11 ¹	Outcrop observed near Met Tower approximately 200 feet west of turbine site	?
T-12	Outcrop / boulders at ground surface, large outcrop 50-100 feet SW	0-10
T-13 ¹	Boulders	?
T-14	Outcrop observed at ground surface	0-5
R-T8-T17 ¹	Road - Southeast facing slope, no bedrock observed, meta-sediment	?
R-T17 ¹	Road - North facing slope, no bedrock observed, granite	?
T-15	Granite outcrop observed 100 feet west, east and north of turbine location	0-10
T-16	Granite outcrop at ground surface	0-5
T-17	Granite outcrop at ground surface	0-5
T-18	Outcrop at ground surface	0-5
R-T19-T20 ¹	Road - North facing slope, no bedrock observed, metasediment	?
T-19 ¹	No visible outcrop	?
T-20	Mapped Outcrop	0-10
T-21 ¹	No visible outcrop	?
T-22 ¹	No visible outcrop	?
T-23	Outcrop at turbine location	0-5
T-24 ¹	No visible outcrop	?
T-25 ¹	No visible outcrop	?
T-26 ¹	No visible outcrop	?
T-27 ¹	No visible outcrop	?

¹ - Locations proposed for seismic refraction testing

SHEET 4
PROPOSED BOWERS MOUNTAIN WIND POWER PROJECT
ACID BASE ACCOUNTING - RESULTS SUMMARY

ACID - BASE ACCOUNTING^a

Sample ID	Depth (ft)	NP/MPA	Rock Type	Fizz	Color	% S	Calcium Carbonate Equivalent Tons/1000 Tons (ppt) of Material				Paste pH
							Max. From %S (MPA)	N.P. CaCO ₃ Equiv.	Max. Needed (pH-7)	Excess CaCO ₃ (NNP)	
(T 5-6) MET 2	Outcrop	1.5	Pelite	2	2.5Y 5/1	.605	18.91	28.65		9.74	5.2
TS - 5/6	Outcrop	2.2	Pelite	3	2.5Y 5/1	.977	30.53	67.31		36.78	5.7
RTS-11	Outcrop	3.4	Pelite	3	2.5Y 5/1	.588	18.38	62.77		44.39	6.5
ARD-11B (RTS-11B)	Outcrop	3.0	Pelite	3	2.5Y 5/1	.732	22.88	67.55		44.67	6.3
RTS-12/13	Outcrop	16.5	Silt/SS	3	2.5Y 7/2	.100	3.13	51.74		48.61	6.4
RTS-14	Outcrop	2.8	Silt/SS	2	2.5Y 6/1	.258	8.06	22.31		14.25	5.7
DILL1015	Outcrop	2.4	Silt/SS	2	2.5Y 6/1	.384	12.00	28.68		16.68	5.2
OBM-E	Outcrop	1.5	Pelite	2	2.5Y 6/1	.881	27.53	42.50		14.97	5.4
DILL-W	Outcrop	25.7	Silt/SS	1	2.5Y 8/2	.013	.41	10.53		10.12	6.5

^a**Definitions:** NP - neutralization potential; NNP - net neutralization potential; MPA - Maximum potential acid

Criteria for interpretation of ABA data for ARD potential, modified from Pennsylvania DEP guidelines.

1. Rocks with NNP (Excess CaCO₃) < -5 ppt CaCO₃ are potentially toxic
2. Rocks with pH <4.0 are considered acid toxic
3. Rocks with greater than 0.5% sulfur may generate significant acidity
4. Rocks with NP >30 ppt CaCO₃ and Fizz are a significant source of alkalinity
5. Rocks with NNP >20 ppt CaCO₃ produce alkaline drainage
6. Rocks with NNP less than -20 ppt CaCO₃ produce acid drainage
7. Rocks with NNP greater than 0 ppt CaCO₃ do not produce acid
8. NP/MPA ratios less than 1 may result in acid drainage
9. Theoretical NP/MPA ratio of 2 or greater is needed for complete acid neutralization

ATTACHMENT A

Attachment A Limitations

This report has been prepared for the exclusive use of First Wind for preliminary evaluation of the acid generation potential of bedrock in the proposed Bowers Mountain Wind Farm area in Carroll Plantation and Kossuth Township, Maine. S. W. COLE ENGINEERING, INC. has endeavored to conduct the work in accordance with generally geological practices. No warranty, expressed or implied, is made.

The bedrock descriptions are based on visual observations of outcrop samples. Variations in bedrock composition and texture may occur as referenced in the report. Geological mapping is based on work performed by others.

Observations have been made during exploration work to assess bedrock acid producing potential in the area investigated. Results may vary by location within the area of investigation and for other areas not included in this investigation.

ATTACHMENT B

Sturm Environmental Services

COMPANY: S. W. COLE ENGINEERING, INC.

SITE: BOWERS MOUNTAIN WP PROJECT # 10-0725.1

DATE: SEPTEMBER 17, 2010

RECEIVED
SEP 20 2010

ACID BASE ACCOUNT

Calcium Carbonate Equivalent
Tons/1000 Tons of Material

SAMPLE ID	Strata Thick (feet)	Rock Type	Fiz	Color	% Sulfur	Max from % Sulfur	N.P. CaCO ₃ Equiv	Max Needed (pH-7)	Excess CaCO ₃	Paste pH
8/30/2010	(T 5-6) MET 2		2	2.5Y 5/1	*.605	18.91	28.65		9.74	5.2
8/30/2010	TS - 5/6		3	2.5Y 5/1	*.977	30.53	67.31		36.78	5.7
8/30/2010	RTS-11		3	2.5Y 5/1	*.588	18.38	62.77		44.39	6.5
8/31/2010	ARD-11B (RTS-11B)		3	2.5Y 5/1	*.732	22.88	67.55		44.67	6.3
8/31/2010	RTS-12/13		3	2.5Y 7/2	.100	3.13	51.74		48.61	6.4
8/31/2010	RTS-14		2	2.5Y 6/1	.258	8.06	22.31		14.25	5.7
8/31/2010	DILL1015		2	2.5Y 6/1	.384	12.00	28.68		16.68	5.2
8/31/2010	OBM-E		2	2.5Y 6/1	*.881	27.53	42.50		14.97	5.4
8/31/2010	DILL-W		1	2.5Y 8/2	.013	.41	10.53		10.12	6.5

* REIC data for CI & SO4 due 10/05/2010

APPROVED 



Improving the environment, one client at a time...

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FAX: 540.400.8508

101 17th Street
Ashland, KY 41101
TEL: 606.393.5027

1557 Commerce Road, Suite 201
Verona, VA 24482
TEL: 540.248.0183

October 05, 2010

Ms. Mary Superak
STURM ENVIRONMENTAL SERVICES
P O BOX 650
BRIDGEPORT WV 26330

TEL: (304) 623-6549
FAX (304) 623-6552
S.W. COLE ENGINEERING
RE: 10-0725.1

Order No.: 1009K30

Dear Ms. Mary Superak:

REI Consultants, Inc. received 5 sample(s) on 9/23/2010 for the analyses presented in the following report.

Please note two changes you may see on your report.

- Results for "Dissolved" parameters will be shown under a separate sample ID, rather than as a separate analysis under the same sample ID. The sample ID for "Dissolved" parameters will include "Field Filtered" or "Lab Filtered", as appropriate.
- Metals results will no longer be identified as "Total" or "Total Recoverable". The methods have not been changed, only their appearance on the report.

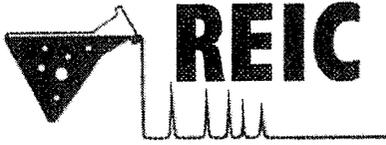
If you have any questions regarding these results, please do not hesitate to call.

Sincerely,

Jimmy Suttle
Project Manager



S.W. COLE ENGINEERING



Improving the environment, one client at a time...

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Report Narrative

Project Manager:: Jimmy Suttle

WO#: 1009K30
Date: 10/5/2010

CLIENT: STURM ENVIRONMENTAL SERVICES
Project: 10-0725.1

All analyses were performed using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. REI Consultants, Inc. (REIC) technical managers have verified compliance of reported results with the REIC's Quality Program and SOPs, except as noted in this case narrative. Any deviation from compliance or method modification is explained below and/or identified within the body of this report by a qualifier footnote which is defined at the bottom of each page.

All sample results are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5), may vary slightly from the sum of the individual parameter results. This apparent anomaly is caused by rounding individual results and summations at reporting, as required by EPA.

The test results in this report meet all NELAP requirements for parameters for which accreditations are required or available. Any exceptions are noted in this report. This report may not be reproduced, except in full, without the written approval of REIC.

In compliance with federal guidelines and standard operating procedures, all reports, including raw data and supporting quality control, will be disposed of after five years unless otherwise arranged by the client via written notification or contract requirement.

If you have any questions please contact the project manager whose name is listed above.

REI Consultants, Inc.

Analytical Results

Date: 05-Oct-10

CLIENT:	STURM ENVIRONMENTAL SERVICES	WorkOrder:	1009K30	Lab ID	1009K30-01A
Client Sample ID:	10427	DateReceived:	9/23/2010		
Project:	10-0725.1	Collection Date:	8/30/2010		
Site ID:	BOWERS MTN WP (TS-6) MET-2 8-3-10	Matrix:	SOIL		

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
ANIONS BY IC, WATER SOLUBLE			SW9056			Analyst: CW
Chloride	ND	mg/Kg	NA	10.0		10/1/2010 11:39:00 PM
Sulfate	635	mg/Kg	NA	50.0		10/1/2010 11:39:00 PM

Key:	MCL	Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit	E	Estimated Value above quantitation range
	NA	Not Applicable	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL	S	Spike/Surrogate Recovery exceeds REIC control limits
	PQL	Practical Quantitation Limit	*	Value exceeds MCL or Regulatory Limits
	TIC	Tentatively Identified Compound, Estimated Concentration		

REI Consultants, Inc.

Analytical Results

Date: 05-Oct-10

CLIENT:	STURM ENVIRONMENTAL SERVICES	WorkOrder:	1009K30	Lab ID	1009K30-02A
Client Sample ID:	10428	DateReceived:	9/23/2010		
Project:	10-0725.1	Collection Date:	8/30/2010		
Site ID:	BOWERS MTN WP TS-5/6 8-30-10	Matrix:	SOIL		

Analyses	Result Units	Qual	MDL	PQL	Date Analyzed
ANIONS BY IC, WATER SOLUBLE		SW9056			Analyst: CW
Chloride	ND mg/Kg	NA		10.0	10/1/2010 11:58:00 PM
Sulfate	604 mg/Kg	NA		50.0	10/1/2010 11:58:00 PM

Key: MCL Maximum Contaminant Level
 MDL Minimum Detection Limit
 NA Not Applicable
 ND Not Detected at the PQL or MDL
 PQL Practical Quantitation Limit
 TIC Tentatively Identified Compound, Estimated Concentration

B Analyte detected in the associated Method Blank
 E Estimated Value above quantitation range
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate Recovery exceeds REIC control limits
 * Value exceeds MCL or Regulatory Limits

REI Consultants, Inc.

Analytical Results

Date: 05-Oct-10

CLIENT:	STURM ENVIRONMENTAL SERVICES	WorkOrder:	1009K30	Lab ID	1009K30-03A
Client Sample ID:	10429	DateReceived:	9/23/2010		
Project:	10-0725.1	Collection Date:	8/30/2010		
Site ID:	BOWERS MTN WP RTS-11 8-30-10	Matrix:	SOIL		

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
ANIONS BY IC, WATER SOLUBLE			SW9056		Analyst: CW	
Chloride	ND	mg/Kg	NA		10.0	10/2/2010 1:52:00 AM
Sulfate	163	mg/Kg	NA		50.0	10/2/2010 1:52:00 AM

Key:	MCL	Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit	E	Estimated Value above quantitation range
	NA	Not Applicable	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL	S	Spike/Surrogate Recovery exceeds REIC control limits
	PQL	Practical Quantitation Limit	*	Value exceeds MCL or Regulatory Limits
	TIC	Tentatively Identified Compound, Estimated Concentration		

REI Consultants, Inc.

Analytical Results

Date: 05-Oct-10

CLIENT:	STURM ENVIRONMENTAL SERVICES	WorkOrder:	1009K30	Lab ID	1009K30-04A
Client Sample ID:	10430	DateReceived:	9/23/2010		
Project:	10-0725.1	Collection Date:	8/31/2010		
Site ID:	BOWERS MTN WP (RTS-11B) ARD-11B 8-31-10	Matrix:	SOIL		

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
ANIONS BY IC, WATER SOLUBLE				SW9056		Analyst: CW
Chloride	ND	mg/Kg		NA	10.0	10/2/2010 2:11:00 AM
Sulfate	165	mg/Kg		NA	50.0	10/2/2010 2:11:00 AM

Key:	MCL	Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit	E	Estimated Value above quantitation range
	NA	Not Applicable	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL	S	Spike/Surrogate Recovery exceeds REIC control limits
	PQL	Practical Quantitation Limit	*	Value exceeds MCL or Regulatory Limits
	TIC	Tentatively Identified Compound, Estimated Concentration		

REI Consultants, Inc.

Analytical Results

Date: 05-Oct-10

CLIENT:	STURM ENVIRONMENTAL SERVICES	WorkOrder:	1009K30	Lab ID	1009K30-05A
Client Sample ID:	10431	DateReceived:	9/23/2010		
Project:	10-0725.1	Collection Date:	8/31/2010		
Site ID:	BOWERS MTN WP OBM-E 8-31-10	Matrix:	SOIL		

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
ANIONS BY IC, WATER SOLUBLE			SW9056			Analyst: CW
Chloride	ND	mg/Kg		NA	10.0	10/2/2010 2:31:00 AM
Sulfate	665	mg/Kg		NA	50.0	10/2/2010 2:31:00 AM

Key:	MCL	Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit	E	Estimated Value above quantitation range
	NA	Not Applicable	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL	S	Spike/Surrogate Recovery exceeds REIC control limits
	PQL	Practical Quantitation Limit	*	Value exceeds MCL or Regulatory Limits
	TIC	Tentatively Identified Compound, Estimated Concentration		

ATTACHMENT C

Northeast Geophysical Services

4 Union Street, Suite 3, Bangor, Maine 04401

207-942-2700/Fax942-8798
E-mail: ngsinc@negeophysical.com

July 31, 2009

Clifford R. Lippitt, C. G., P.G.
Senior Geologist
SW Cole Engineering
6 Liberty Drive
Bangor, Maine 04401

Subject: Results of the seismic refraction survey for Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township, Maine.

Dear Cliff:

At the request of SW Cole, seismic refraction surveys were completed at eleven locations at the Bowers Mountain Wind Power Project site located in Carroll Plantation- Kossuth Township, Maine. The sites, located and designated by SW Cole, included RT 8-9, RT 8-17, RT 17, RT 19-20, T 8, T 11, T 13, T 21, T 22, T 26 and T 27. The objective of this survey was to determine the bedrock depth and configuration beneath the survey sites. The field survey was undertaken on September 13-16, 2010.

The seismic refraction lines were surveyed using a Geometrics Geode, 24-channel seismograph. Each line consisted of 24 geophones spaced 5 feet apart for a total line length of 115 feet. Each line was tested with 4 to 5 shots. The general shot configuration consisted of one shot at either end of the segment, one off each end about 50 to 100 feet, and one shot within the segment. The energy source consisted of a small explosive charge buried about 2 feet.

The seismic data were processed and interpreted using the RIMRock Geophysics SIPT-2 (formerly U.S.G.S. SIPT-2) seismic interpretation program. This program calculates seismic velocities by regression and by Hobson-Overtton method, and solves for layer thicknesses using the delay-time method and iterative ray tracing modeling.

The modeling identified two velocity layers for ten of the sites: Velocity Layer 1, ranged from 1,275 to 2,345 feet per second (fps) with a median for all sites of 1,800 fps. This is consistent with unsaturated to partly saturated soil. Layer 2, ranged from 12,600 to 16,245 fps with a median for all sites of 14,254 fps. This is consistent with bedrock. At Site RT 17 three velocity layers were identified at 1,842 fps, 5,091 fps and 12,600 fps which are interpreted to represent dry soil, saturated soil and bedrock respectively.

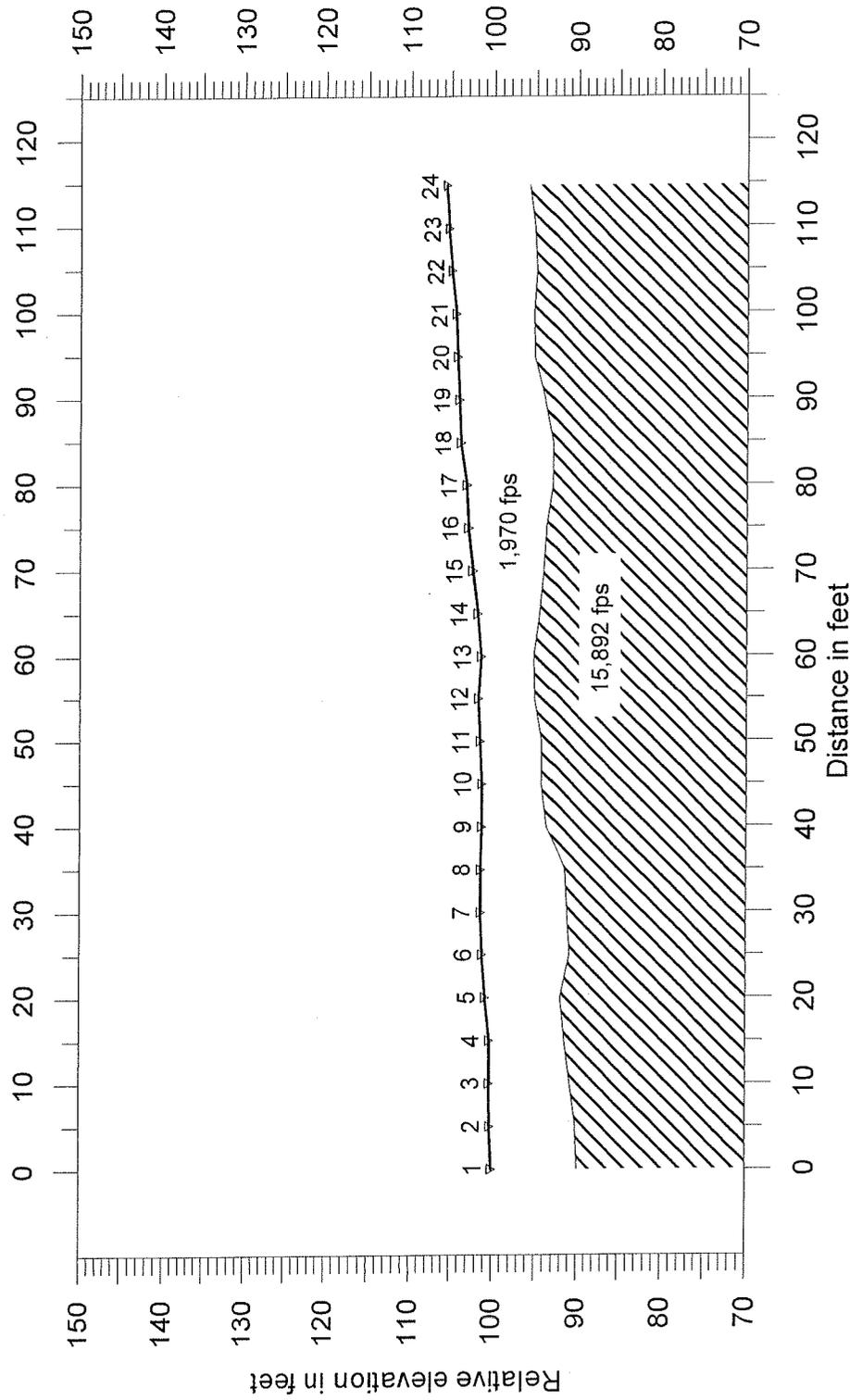
Profiles of each line showing the seismically interpreted bedrock depths and configurations are attached. The elevations are arbitrary using an assumed a surface elevation of 100 feet at each site. The seismically calculated bedrock depths are typically accurate to within 10% or +/- 3 feet (whichever is larger). Also shown on the profiles are the calculated bedrock and soil velocities for each site. These velocities represent the average across the line. Please call if you have any questions these profiles or if you need additional information.

Sincerely,

Rudy Rawcliffe, C.G.

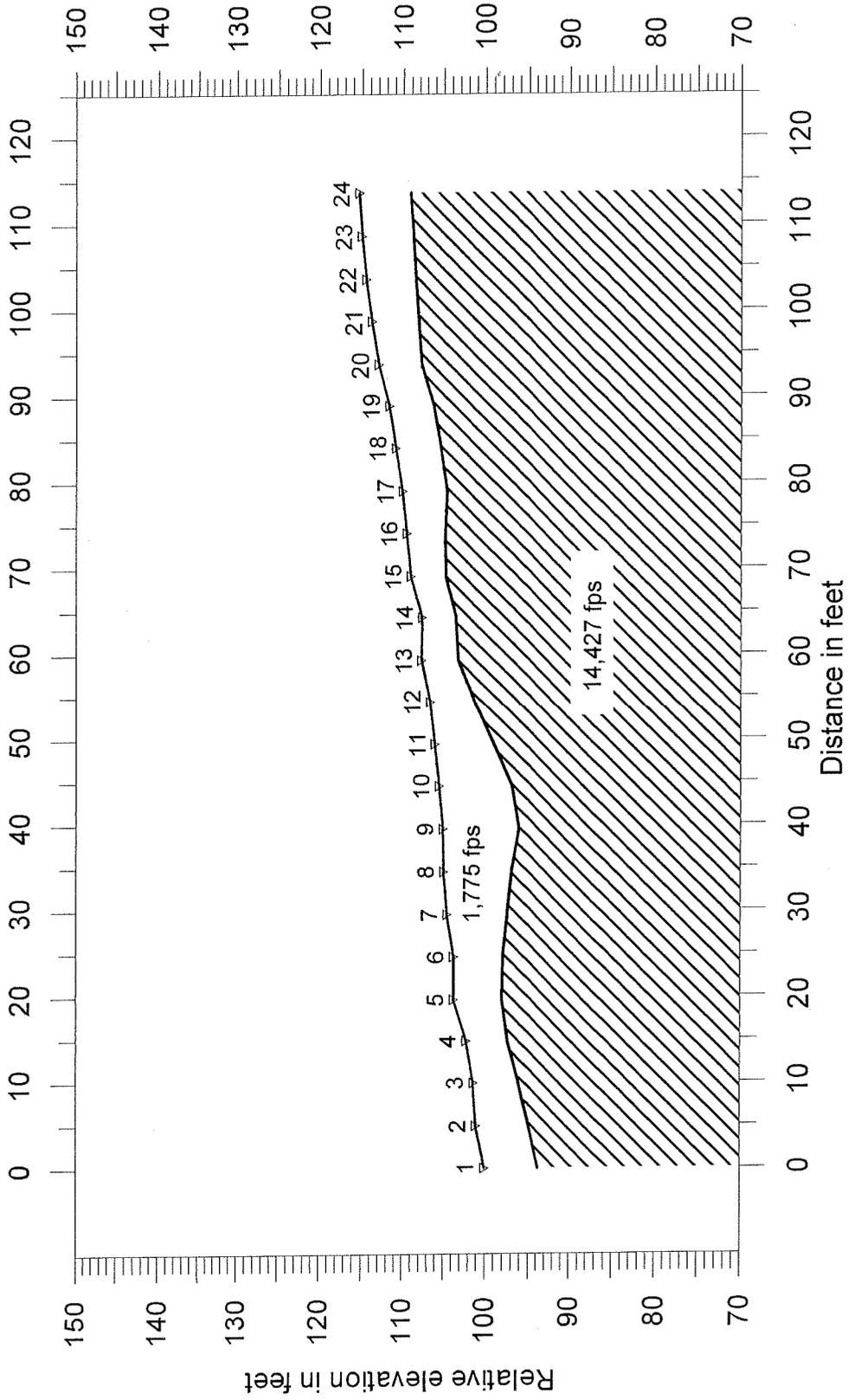
T-8 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



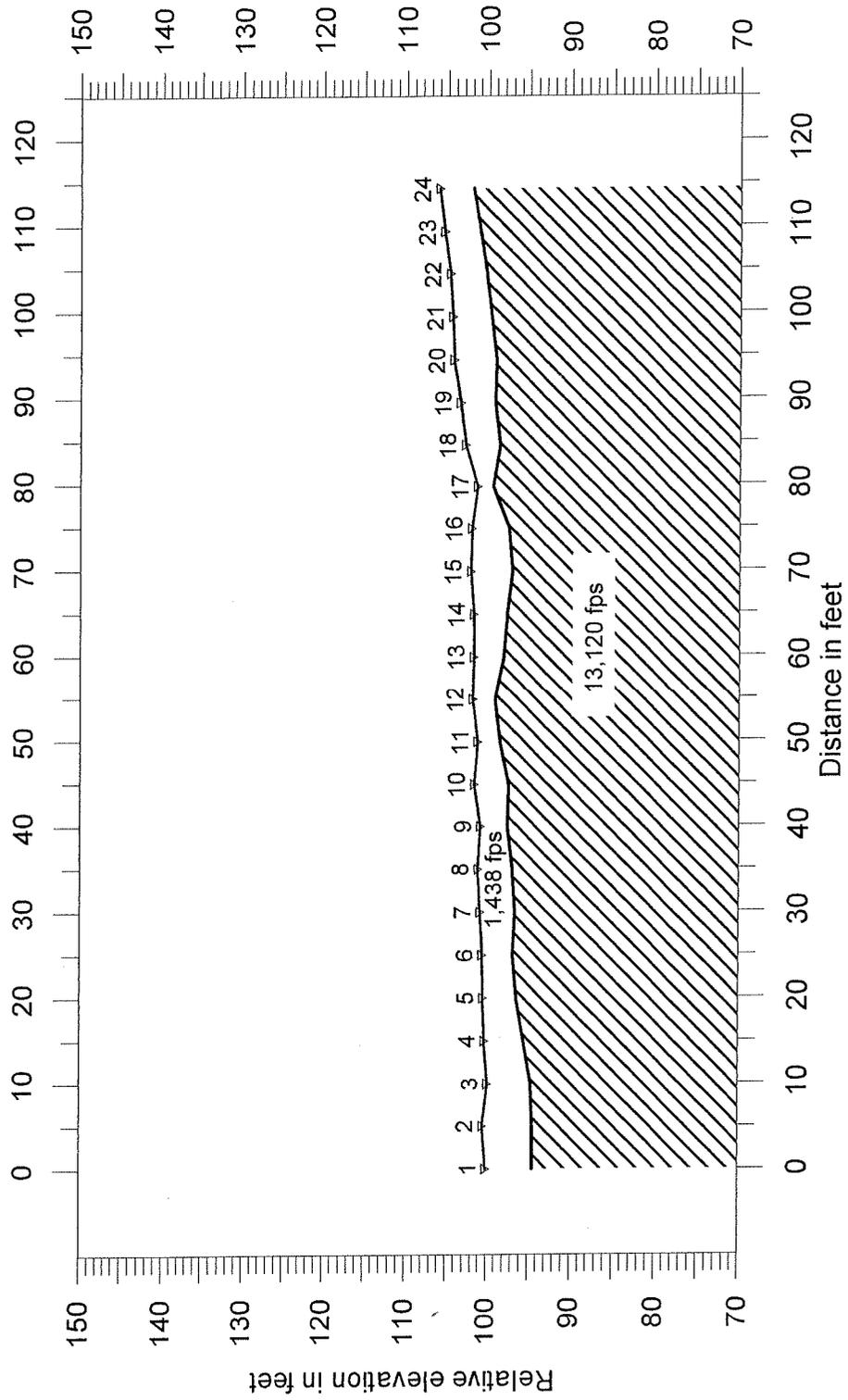
RT 8-9 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation - Kossuth Township



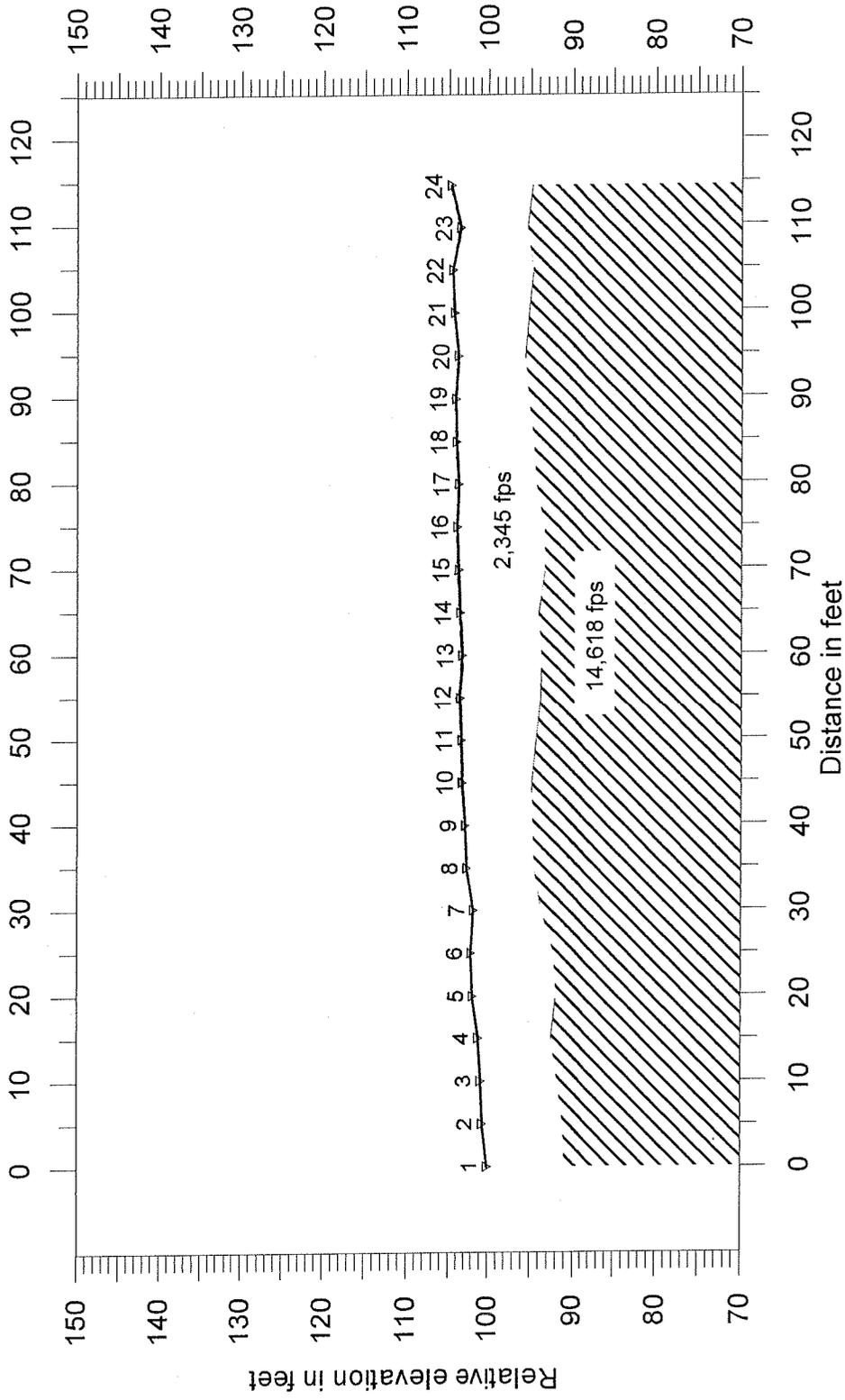
RT 8-17 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



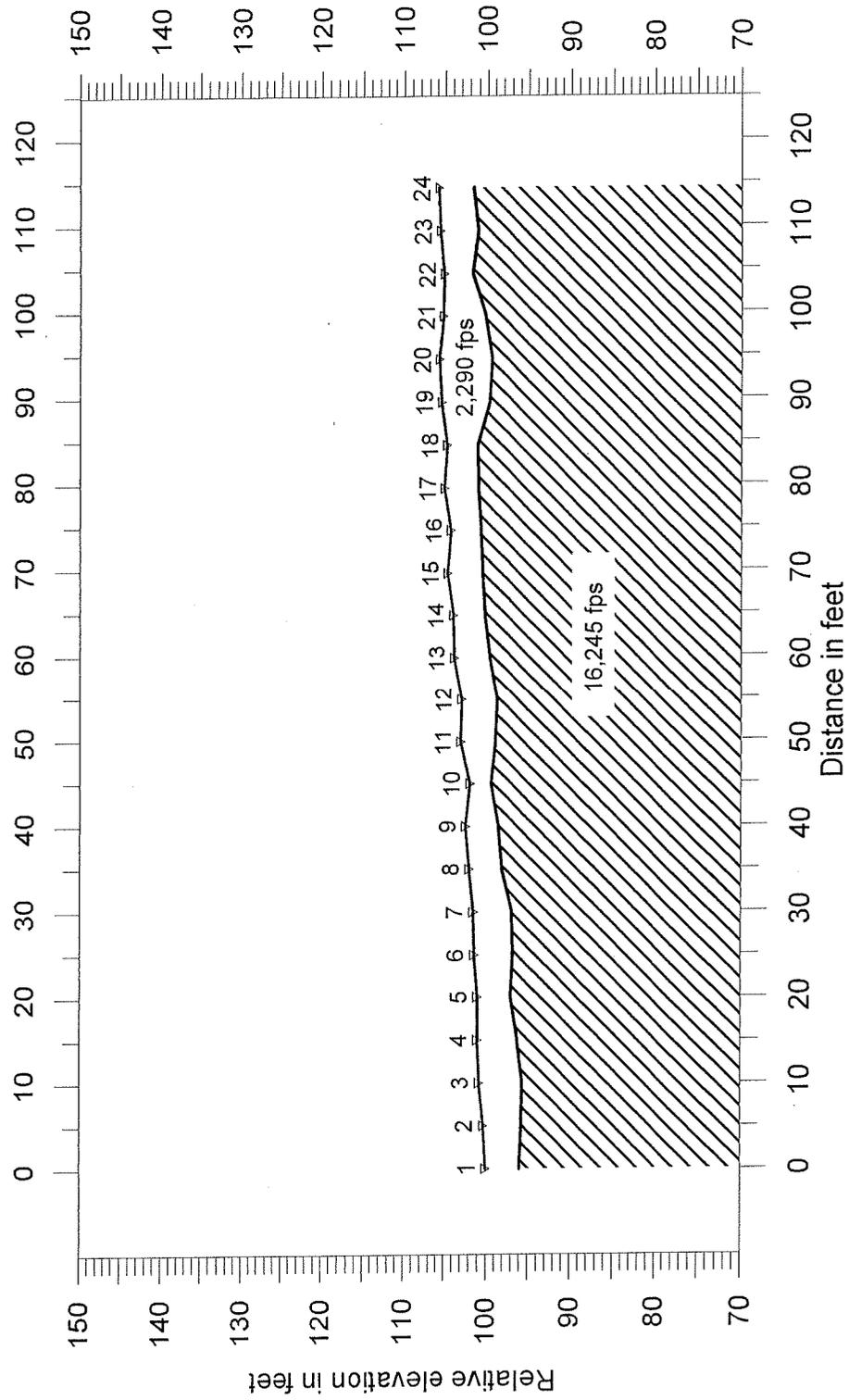
T-11 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



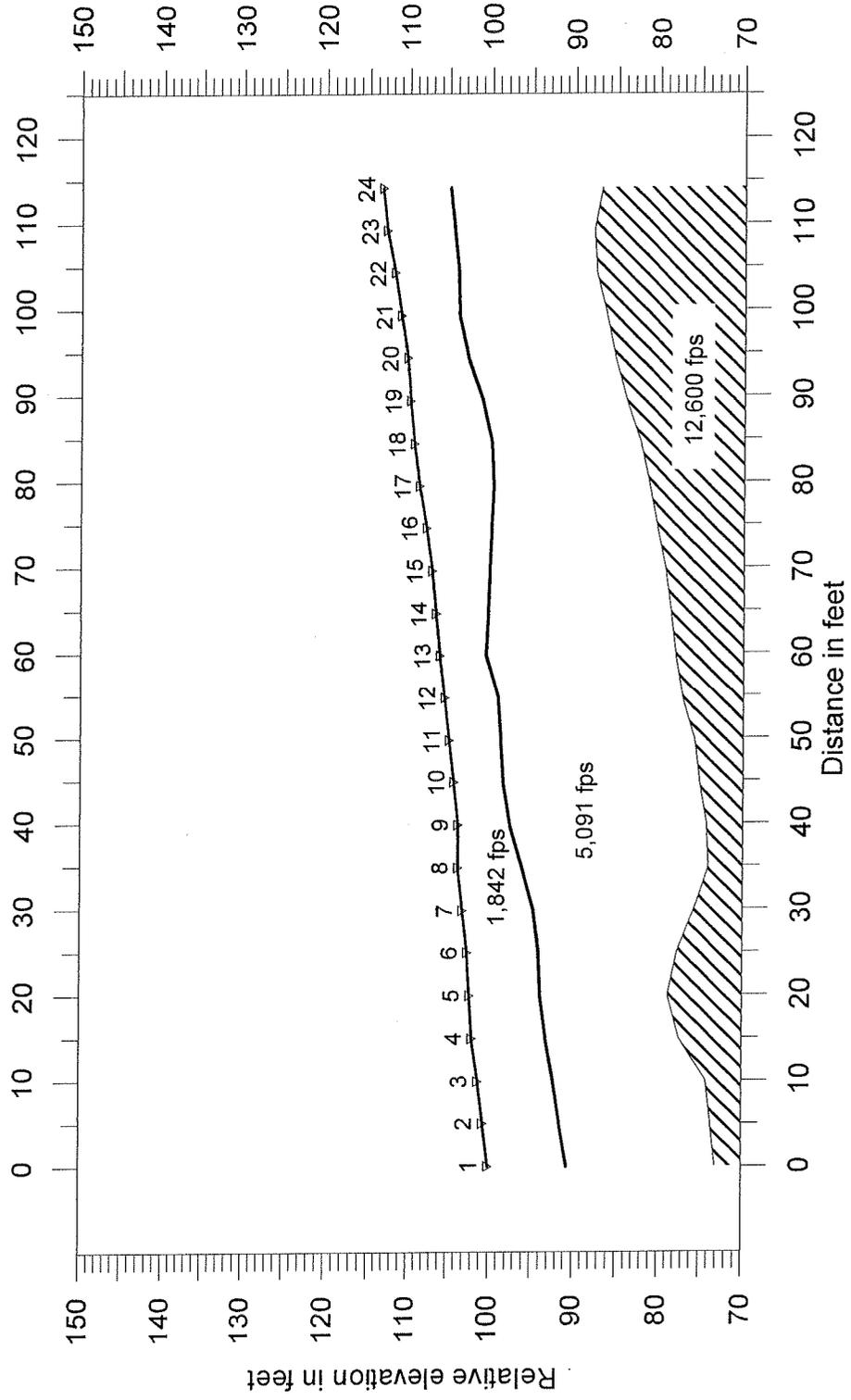
T-13 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



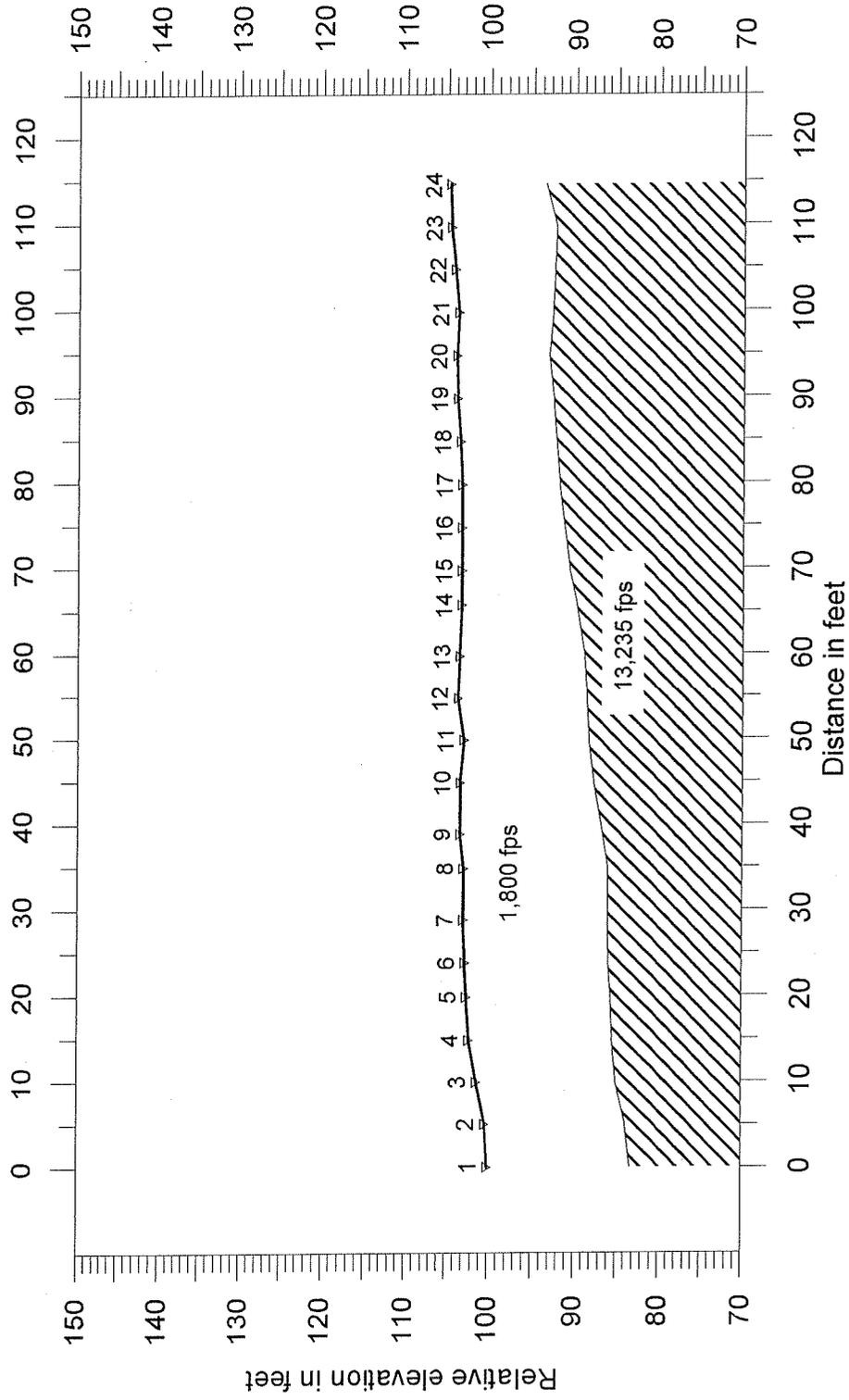
RT 17 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



RT 19-20 Site

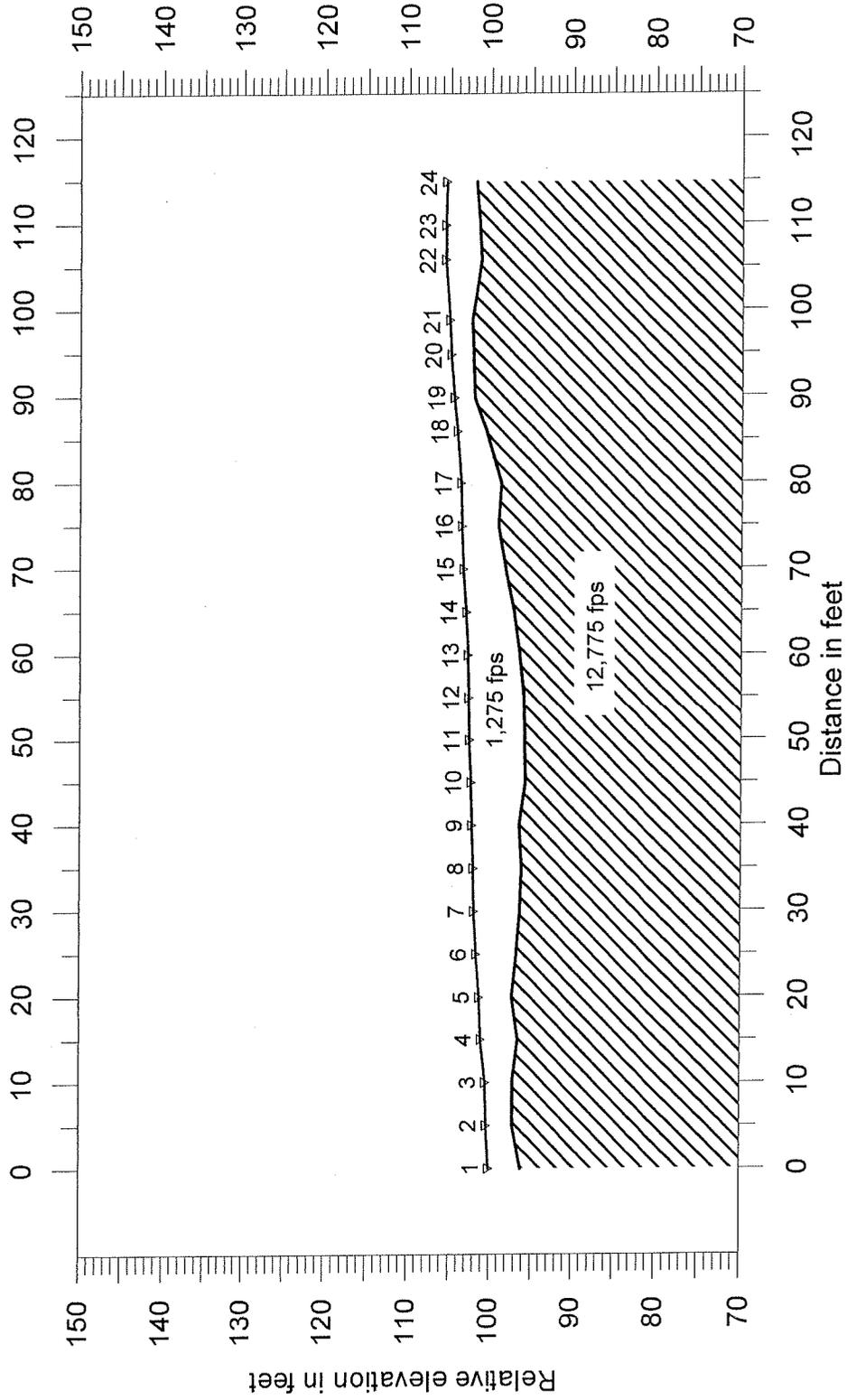
Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



T-21 Site

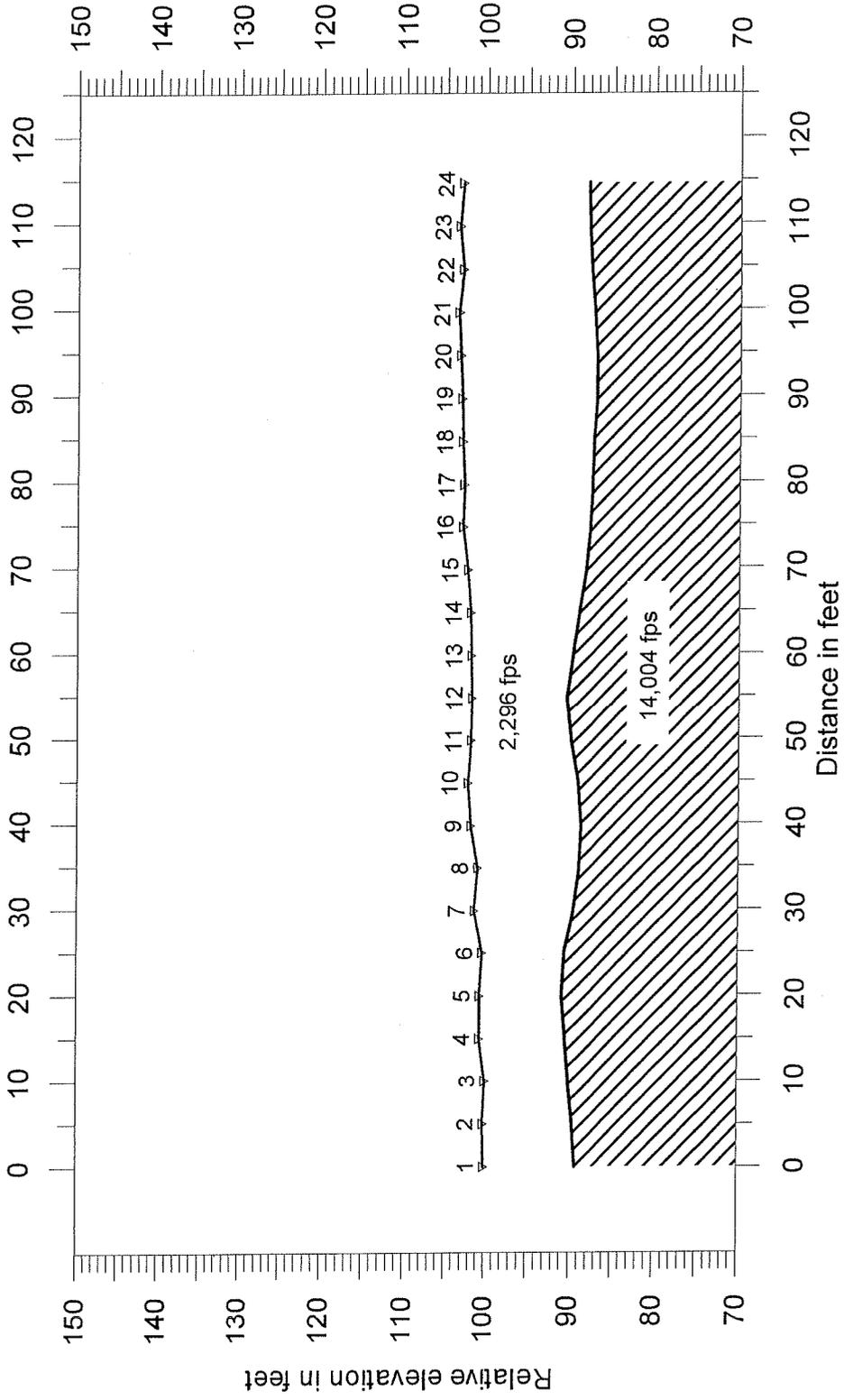
Interpreted Seismic Refraction Profile

Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



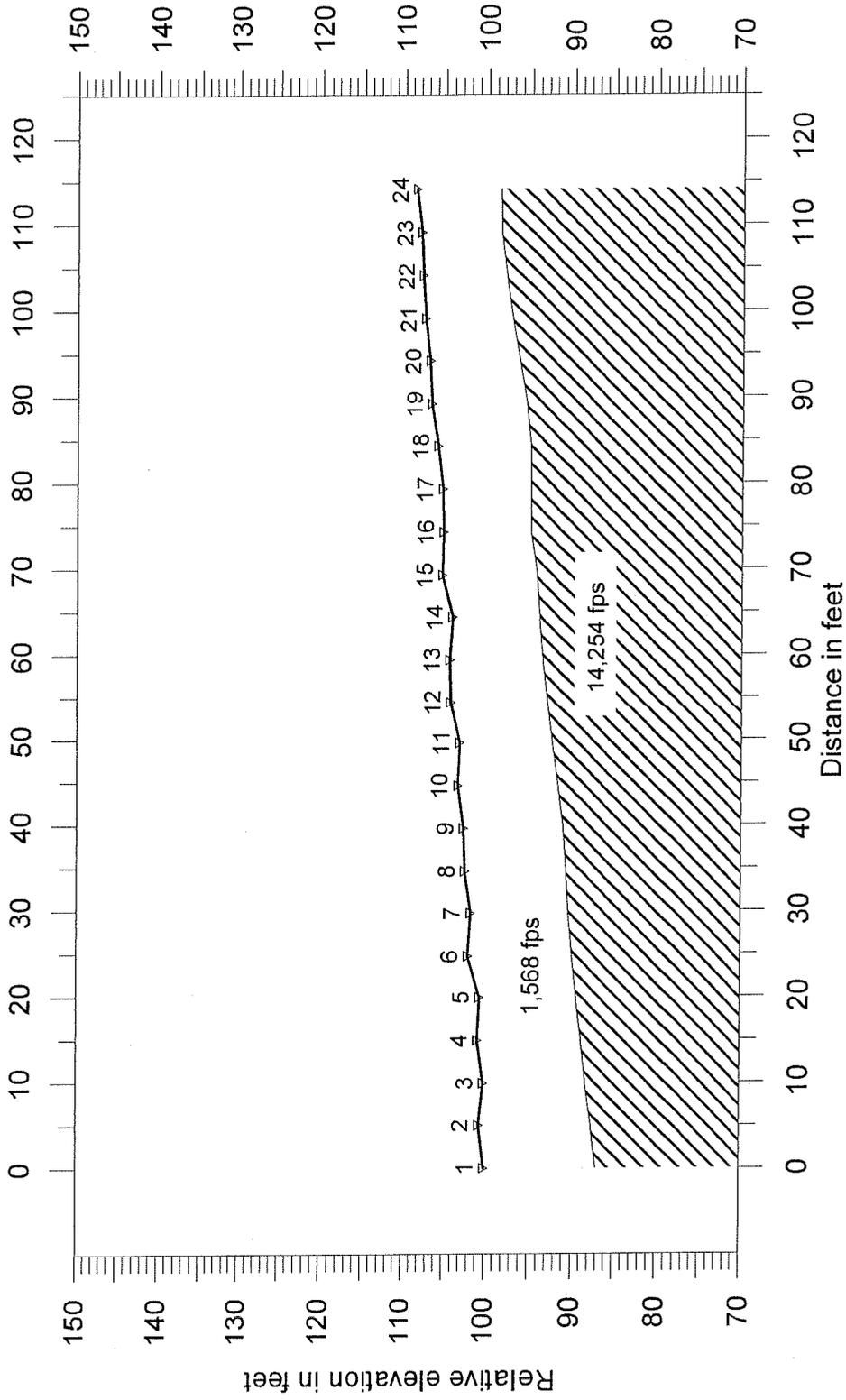
T-22 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



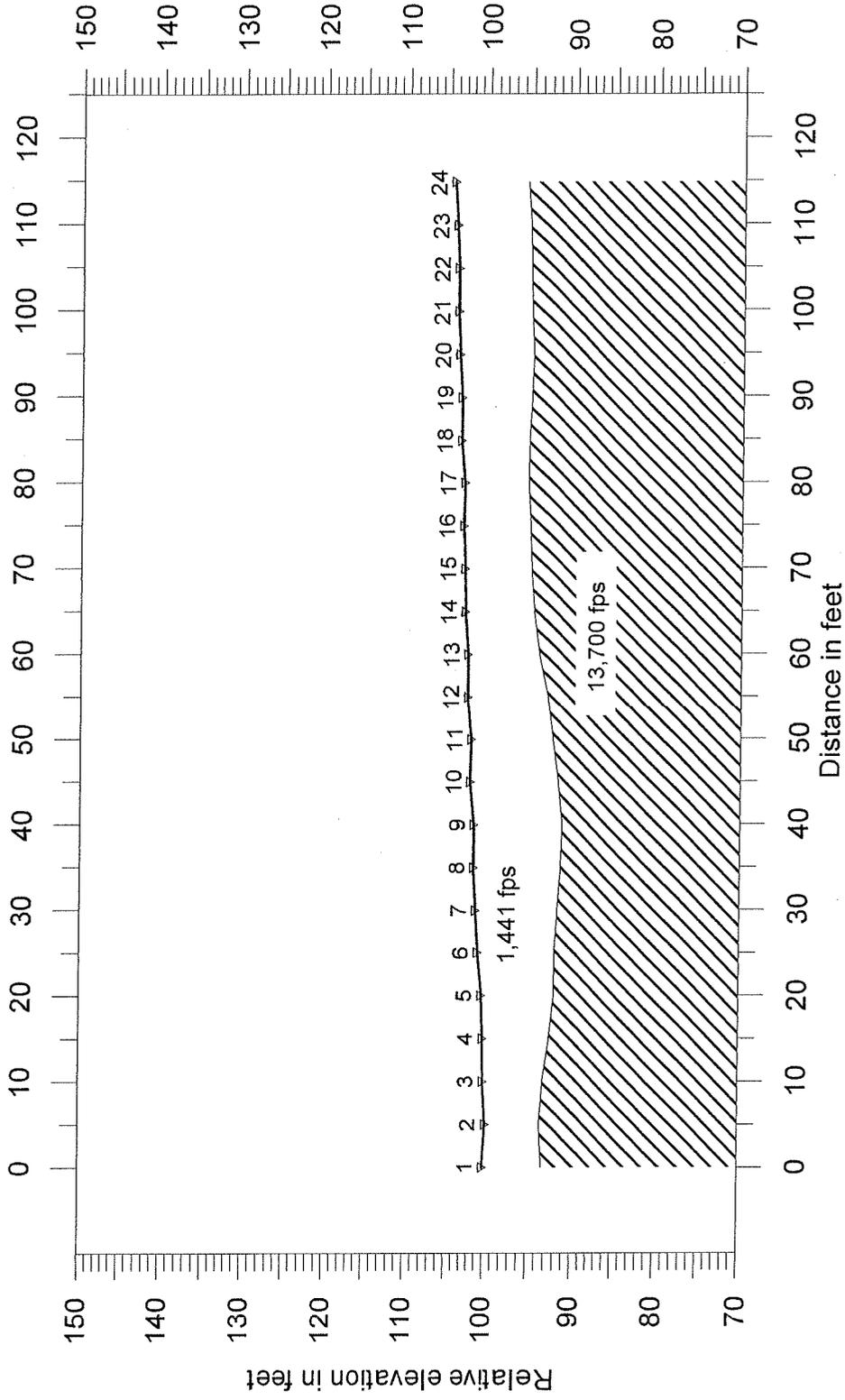
T 26 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



T 27 Site

Interpreted Seismic Refraction Profile
Bowers Mountain Wind Power Project
Carroll Plantation- Kossuth Township



Northeast Geophysical Services

ATTACHMENT D



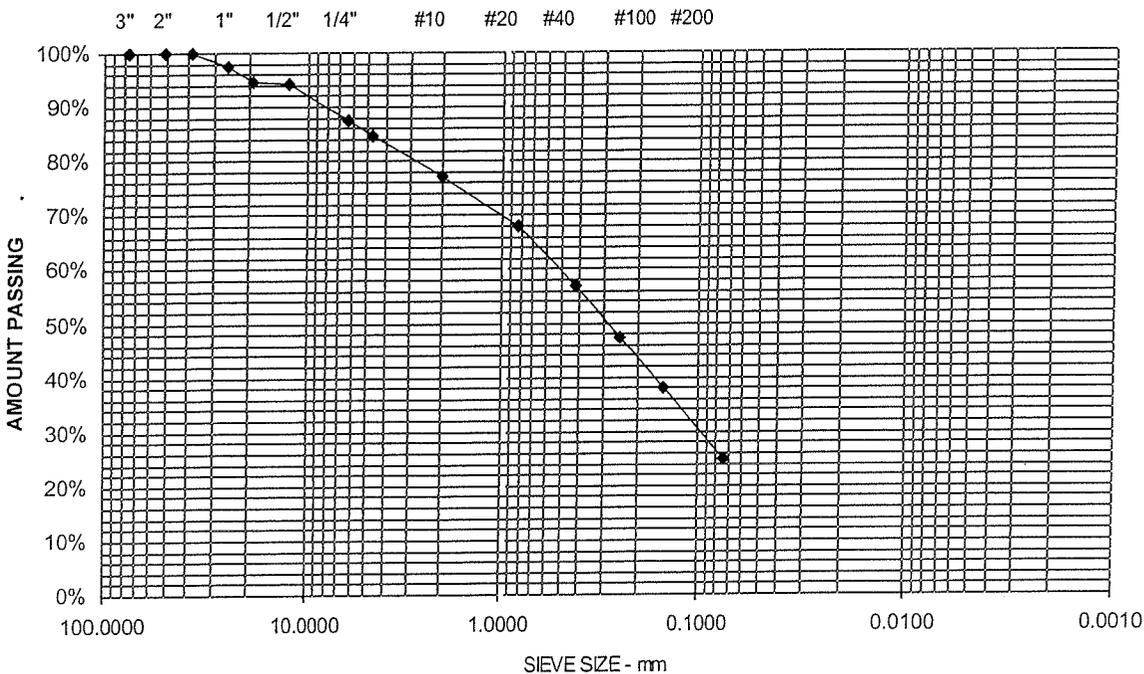
Report of Gradation

ASTM C-117 & C-136

Project Name CARROLL PLANTATION, ME - PROPOSED BOWERS MOUNTAIN
 WIND POWER PROJECT - PRELIMINARY CONSULTATION -
 Client FIRST WIND ENERGY, LLC
 Material Source T-8 1-1.8

Project Number 10-0725
 Lab ID 13084G
 Date Received 9/24/2010
 Date Completed 10/1/2010
 Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	98	
19.0 mm	3/4"	95	
12.5 mm	1/2"	94	
6.3 mm	1/4"	88	
4.75 mm	No. 4	85	15.2% Gravel
2.00 mm	No. 10	77	
850 μm	No. 20	68	
425 μm	No. 40	57	59.8% Sand
250 μm	No. 60	47	
150 μm	No. 100	38	
75 μm	No. 200	25.0	25% Fines





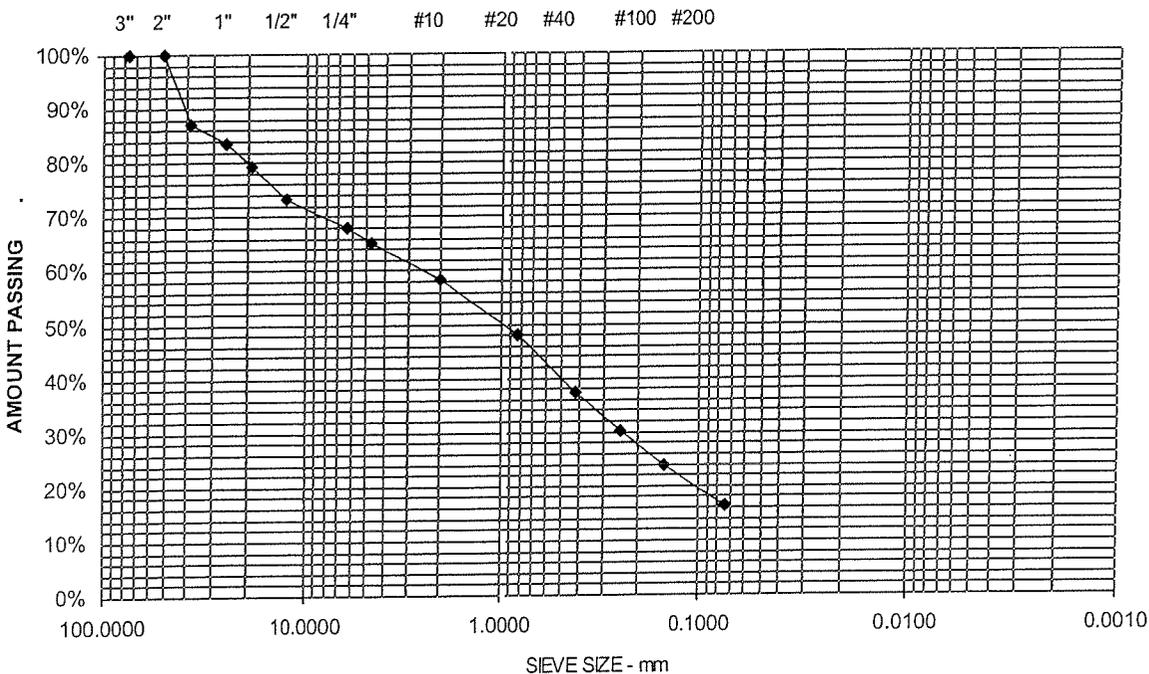
Report of Gradation

ASTM C-117 & C-136

Project Name CARROLL PLANTATION, ME - PROPOSED BOWERS MOUNTAIN
 WIND POWER PROJECT - PRELIMINARY CONSULTATION -
 Client FIRST WIND ENERGY, LLC
 Material Source T-22 1.2-1.8

Project Number 10-0725
 Lab ID 13087G
 Date Received 9/24/2010
 Date Completed 10/1/2010
 Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	87	
25.0 mm	1"	84	
19.0 mm	3/4"	79	
12.5 mm	1/2"	73	
6.3 mm	1/4"	68	
4.75 mm	No. 4	65	34.7% Gravel
2.00 mm	No. 10	58	
850 μm	No. 20	48	
425 μm	No. 40	37	49% Sand
250 μm	No. 60	30	
150 μm	No. 100	24	
75 μm	No. 200	16.3	16.3% Fines





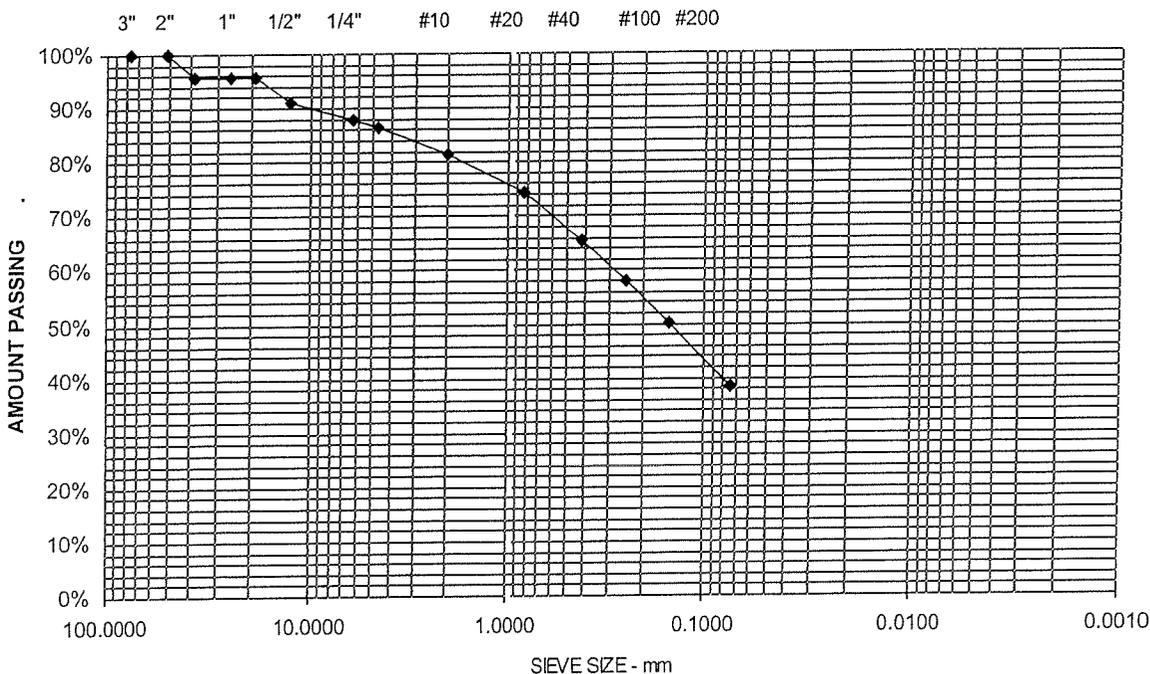
Report of Gradation

ASTM C-117 & C-136

Project Name CARROLL PLANTATION, ME - PROPOSED BOWERS MOUNTAIN
 WIND POWER PROJECT - PRELIMINARY CONSULTATION -
 Client FIRST WIND ENERGY, LLC
 Material Source RT-17 1.5-2.0

Project Number 10-0725
 Lab ID 13086G
 Date Received 9/24/2010
 Date Completed 10/1/2010
 Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	96	
25.0 mm	1"	96	
19.0 mm	3/4"	96	
12.5 mm	1/2"	91	
6.3 mm	1/4"	88	
4.75 mm	No. 4	86	13.6% Gravel
2.00 mm	No. 10	81	
850 μm	No. 20	74	
425 μm	No. 40	66	47.9% Sand
250 μm	No. 60	58	
150 μm	No. 100	50	
75 μm	No. 200	38.5	38.5% Fines





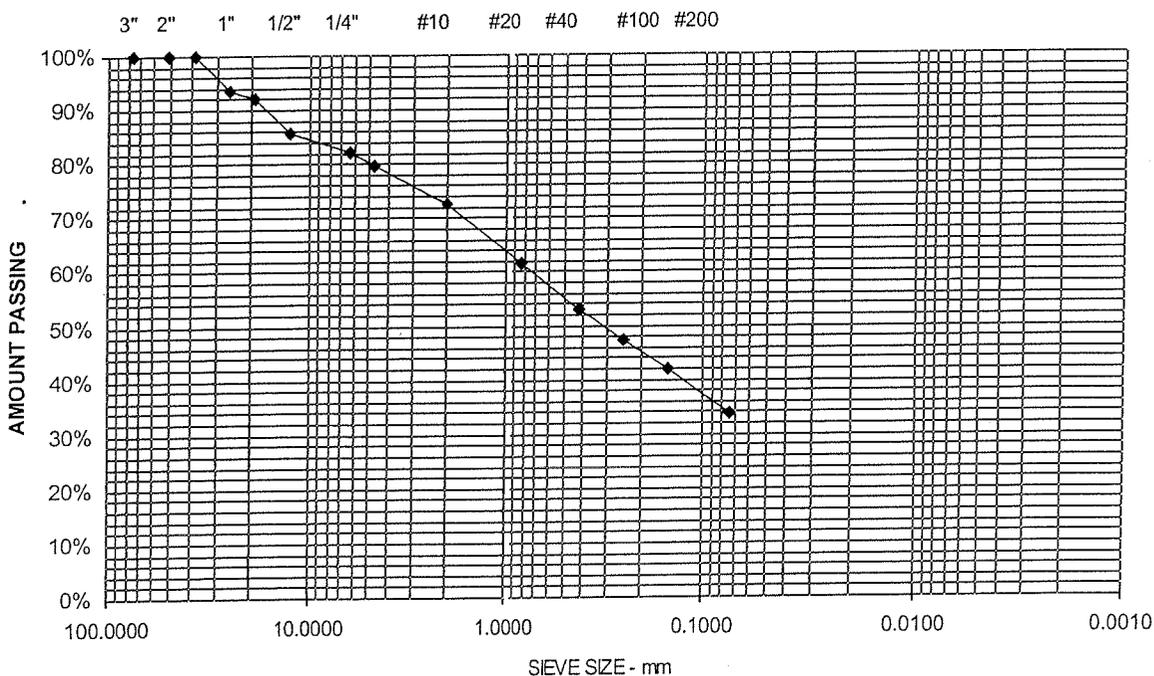
Report of Gradation

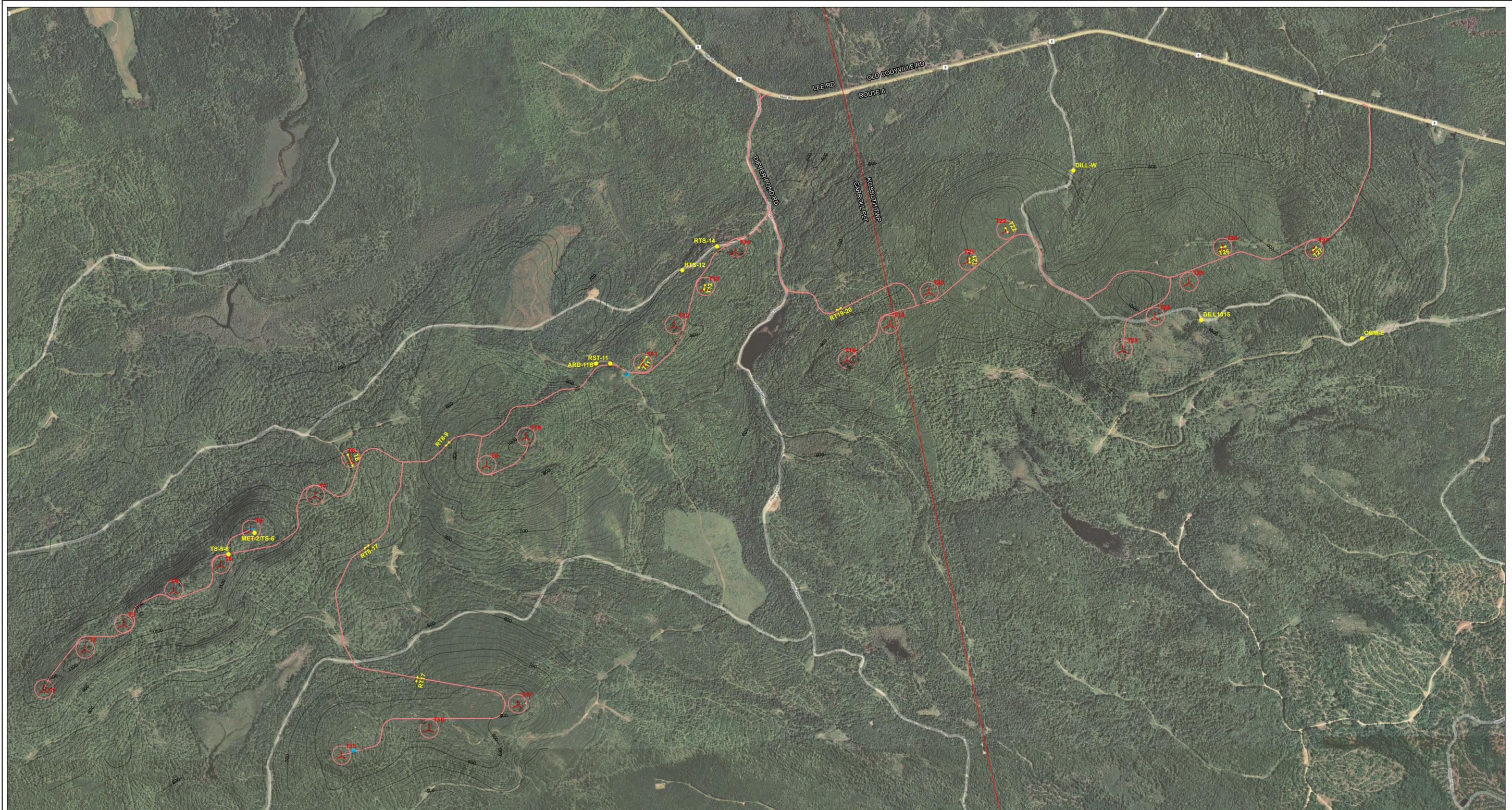
ASTM C-117 & C-136

Project Name CARROLL PLANTATION, ME - PROPOSED BOWERS MOUNTAIN
WIND POWER PROJECT - PRELIMINARY CONSULTATION -
Client FIRST WIND ENERGY, LLC
Material Source T-27 1-2

Project Number 10-0725
Lab ID 13085G
Date Received 9/24/2010
Date Completed 10/1/2010
Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	94	
19.0 mm	3/4"	92	
12.5 mm	1/2"	86	
6.3 mm	1/4"	82	
4.75 mm	No. 4	80	20.4% Gravel
2.00 mm	No. 10	73	
850 μm	No. 20	62	
425 μm	No. 40	53	45.8% Sand
250 μm	No. 60	47	
150 μm	No. 100	42	
75 μm	No. 200	33.8	33.8% Fines





NOTES:

1. THIS MAP SHOULD BE USED IN CONJUNCTION WITH THE REPORT ENTITLED "PRELIMINARY GEOLOGIC INVESTIGATION, PROPOSED BOWERS MOUNTAIN WIND POWER PROJECT, CARROLL PLANTATION AND KOSSUTH TOWNSHIP, MAINE," DATED OCTOBER 20, 2010.
2. PROPOSED TURBINE LOCATIONS AND PROPOSED ROAD CENTERLINES PROVIDED BY FIRST WIND.
3. BASE TOPOGRAPHY FROM U.S. GEOLOGICAL SURVEY (USGS), MAINE OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (MEGIS) (ED.), PUBLISHED APRIL 30, 2000, ACCESSED AUGUST 2010, 2008.
4. ORTHO IMAGERY WITH ROADS AND LABELS OVERLAID FROM ESRI ONLINE AND ASSOCIATED DATA PARTNERS INCLUDING MICROSOFT CORPORAION AND ITS DATA SUPPLIERS.
5. SEISMIC REFRACTION TESTING SPREADS AND BEDROCK OUTCROPS WERE LOCATED IN THE FIELD BY GPS SURVEY BY S.W. COLE ENGINEERING, INC. USING A MAPPING GRADE TRIMBLE GPS RECEIVER.
6. ROCK SAMPLES WERE LOCATED IN THE FIELD BY S.W. COLE ENGINEERING, INC USING A HAND HELD GPS DEVICE.

LEGEND	
●	ROCK SAMPLES
—	SEISMIC REFRACTION TESTING SPREADS
⊙	BEDROCK OUTCROP
✕	PROPOSED TURBINES AS OF 7/27/2010
▲	EXISTING MET TOWERS
—	PROPOSED ROAD CENTERLINE



SWCOLE ENGINEERING, INC.			
FIRST WIND			
GEOLOGIC TESTING LOCATION MAP			
BOWERS MOUNTAIN WIND POWER PROJECT			
ROUTE 6			
CARROLL PLT, MAINE			
Job No.	10-0725	Scale	1"=800'
Date:	10/20/2010	Sheet	1