

**STATE OF
COLORADO****Cazier - DNR, Tim** <tim.cazier@state.co.us>

Sht 8-2017, SWE Test Shot 7

1 message

Wayne Stoughton <Wayne.Stoughton@martinmarietta.com>

Mon, Nov 13, 2017 at 7:02 AM

To: "Cazier - DNR, Tim" <tim.cazier@state.co.us>

Good morning Time,

Here is the shot report for last week on the 13th. Note that we set off toe holes independent of the main shot. So you will be seeing two blast reports due to this. Only the main shot registered on the Seismic units.

Once they send the BOT info I will forward that also. It will have the video in that report.

Wayne

3 attachments

 **7_OphY6R.pdf**
93K **7_SsUHKz.pdf**
97K **Red Canyon 11-9-17 # 7.pdf**
1396K

Seismic Analysis

Velocity Waveform Analysis

Serial Number: 10696
 Firmware Version: 0C-06.05
 Event Date: 11/09/2017 12:24:52 (UTC -07:00)
 Event number: 9
 Recording Time: 5 s
 Client: Martin Marietta
 Operation: Red Canyon Quarry
 Location: Front Entrance
 Distance:
 Operator: Vibra Tech
 Comment:
 Seismic Trigger: 0.02 in/s
 Sound Trigger: 133 dB

Additional Info:

j-GEO-16222
 N38 36 04 W104 56 59

Summary Data

	L	T	V
PPV (in/s):	0.02	0.015	0.01
FREQ (HZ):	12.5	7.9	11.9
PD (.001"):	0.32	0.3	0.17
PPA (g):	0.013	0.013	0.013

Peak Vector Sum: 0.023 in/s
 Peak Air Pressure: 111 dB
 0.0011 psi @ 3.5 HZ

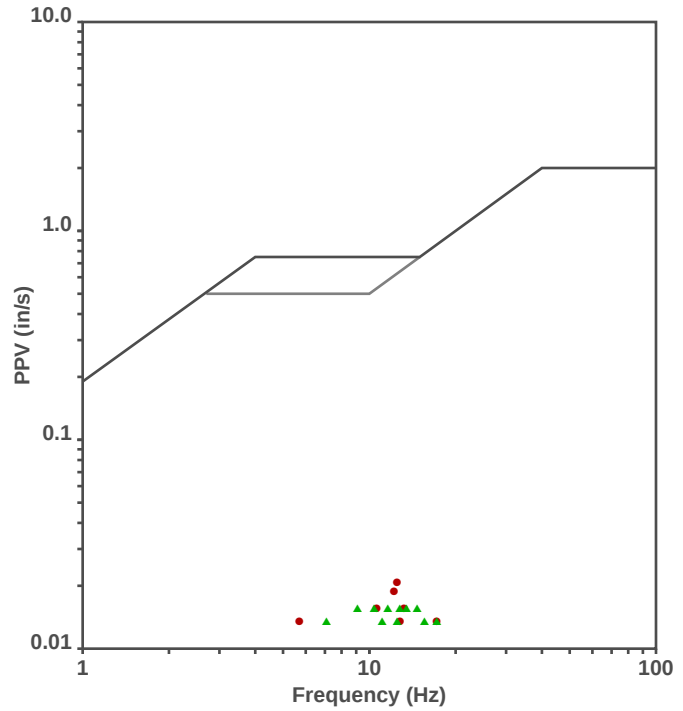
Shaketable Calibrated

On: 04/13/2017 (UTC -07:00)
 By: Vibra-Tech, Inc.
 2700 Holloway Road - Suite 113
 Louisville, KY 40203 U.S.A.

USBM Safe Blasting Levels

SSN: 10696 Event: 9

● Longitudinal ▲ Transverse ■ Vertical

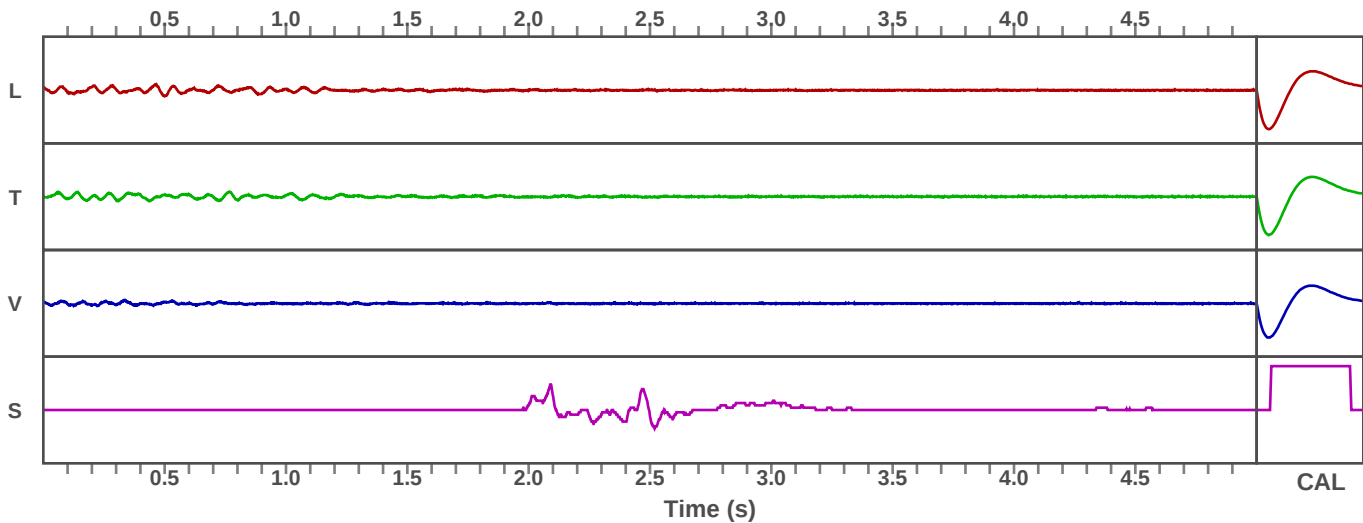


Waveform Graph Scale

Time Scale: 0.1 s
 Seismic Scale: +/- 0.16 in/s
 Sound Scale: +/- 0.0023 psi

Velocity Waveform

SSN: 10696 Event: 9



Seismic Analysis

Velocity Waveform Analysis

Serial Number: 7816
Firmware Version: 0C-06.05
Event Date: 11/09/2017 12:24:51 (UTC -07:00)
Event number: 3
Recording Time: 5 s
Client: Martin Marietta
Operation: Red Canyon Quarry
Location: North Hill Side
Distance:
Operator: Vibra Tech
Comment: Pueblo, Colorado
Seismic Trigger: 0.02 in/s
Sound Trigger: 133 dB

Additional Info:

j-GEO-16060
N38 36 22 W104 56 31

Summary Data

	L	T	V
PPV (in/s):	0.105	0.095	0.09
FREQ (HZ):	14.7	11.6	31.3
PD (.001"):	1.15	0.91	0.79
PPA (g):	0.039	0.046	0.065

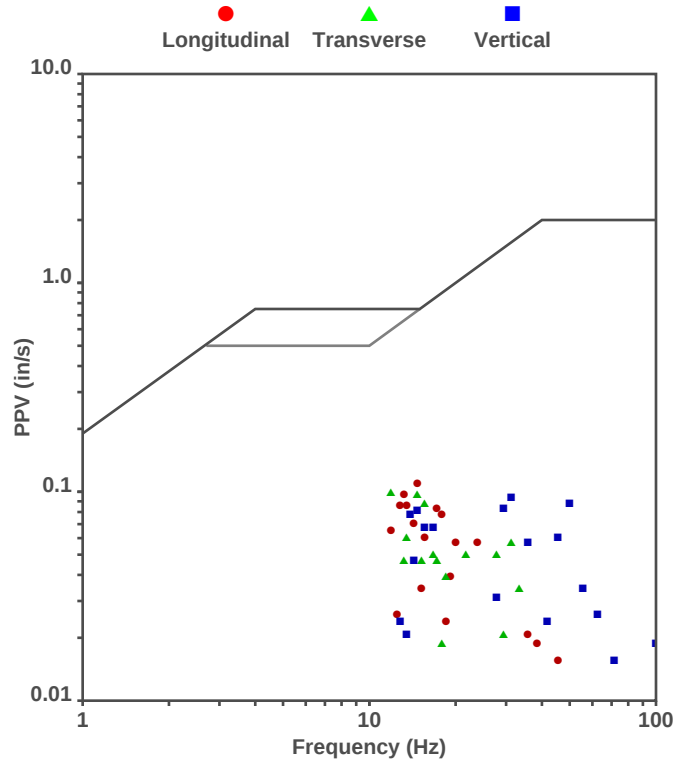
Peak Vector Sum: 0.123 in/s
Peak Air Pressure: 113 dB
0.0015 psi @ 4.3 HZ

Shaketable Calibrated

On: 09/02/2017 (UTC -07:00)
By: Vibra-Tech, Inc.
2700 Holloway Road - Suite 113
Louisville, KY 40203 U.S.A.

USBM Safe Blasting Levels

SSN: 7816 Event: 3

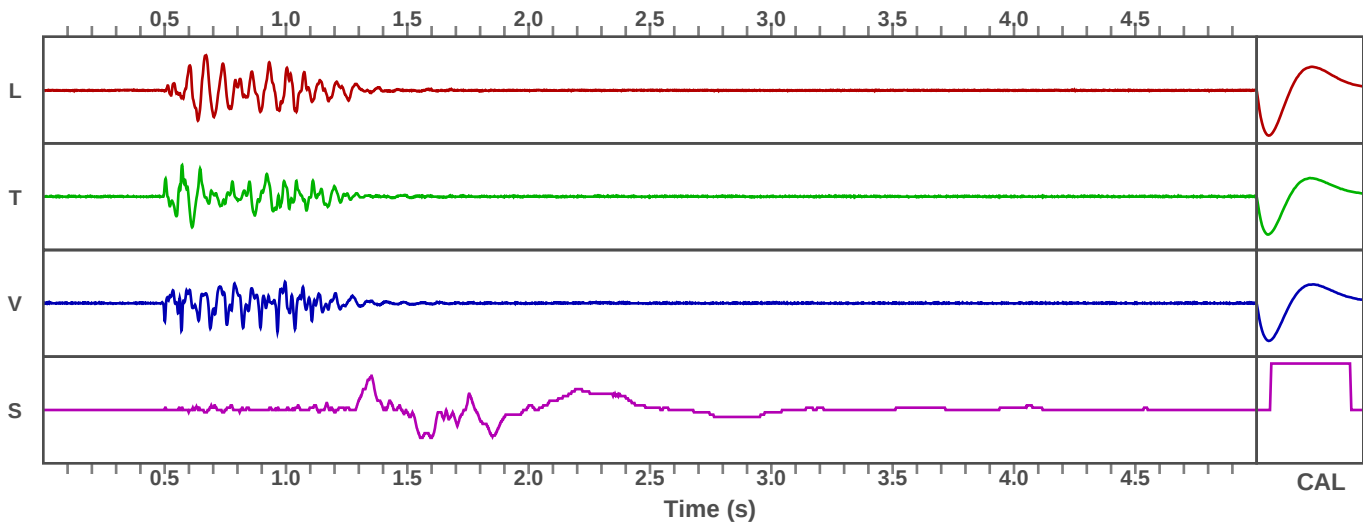


Waveform Graph Scale

Time Scale: 0.1 s
Seismic Scale: +/- 0.16 in/s
Sound Scale: +/- 0.0023 psi

Velocity Waveform

SSN: 7816 Event: 3





STATE OF
COLORADO

Cazier - DNR, Tim <tim.cazier@state.co.us>

More shot info for your files

1 message

Wayne Stoughton <Wayne.Stoughton@martinmarietta.com>
To: "Cazier - DNR, Tim" <tim.cazier@state.co.us>

Fri, Nov 17, 2017 at 6:33 AM

Hello Tim,

Here is some info on the angle holes on the last shot for your files.

Wayne

2 attachments



Shot 7 Angled Hole Burdens.pptx
493K



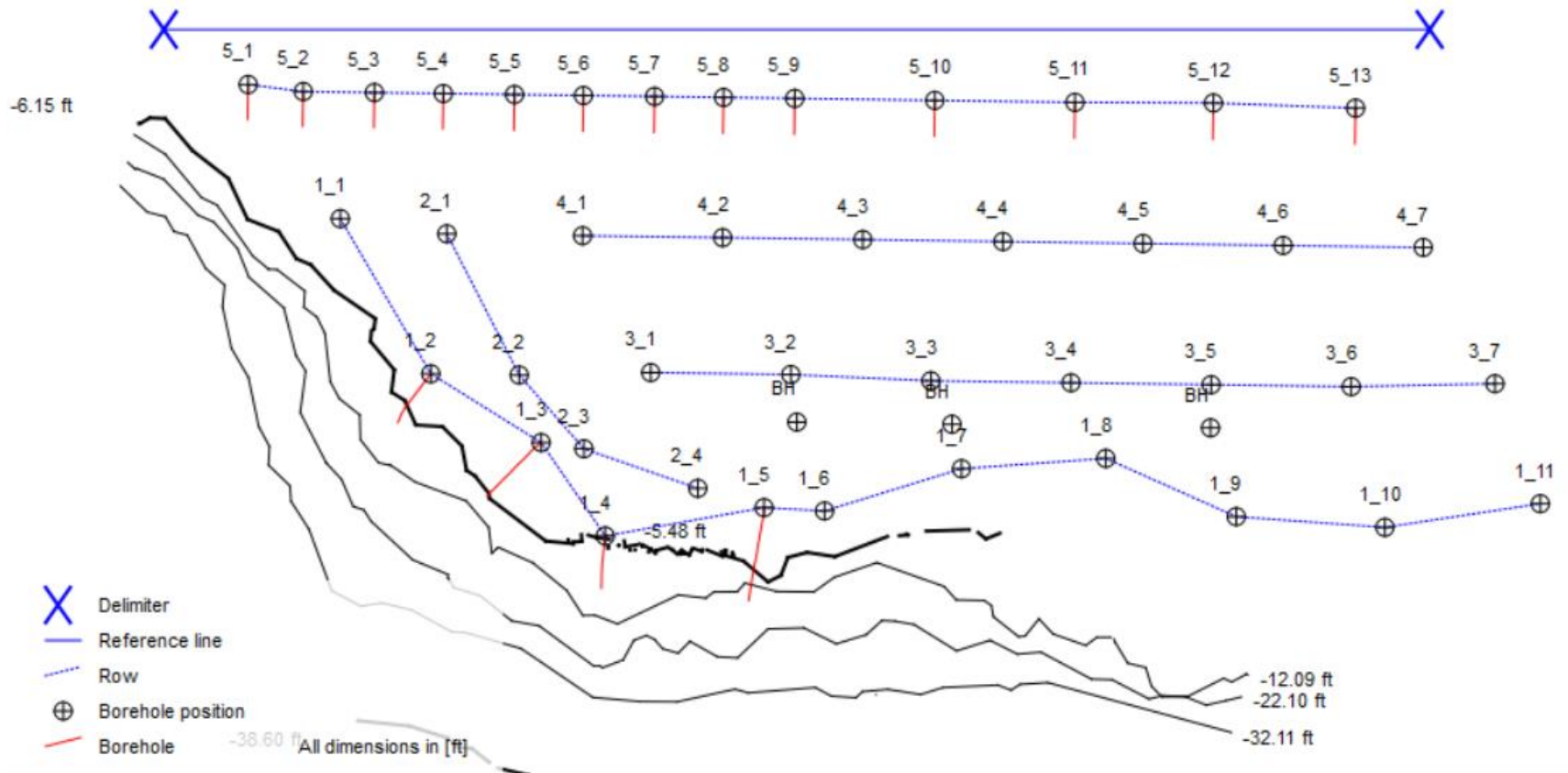
RC p#7.pptx
103K



A SOUTHWEST ENERGY / ORICA JOINT VENTURE

Shot 7 Angled Holes Burden Summary

Plan View (As of 11-6)

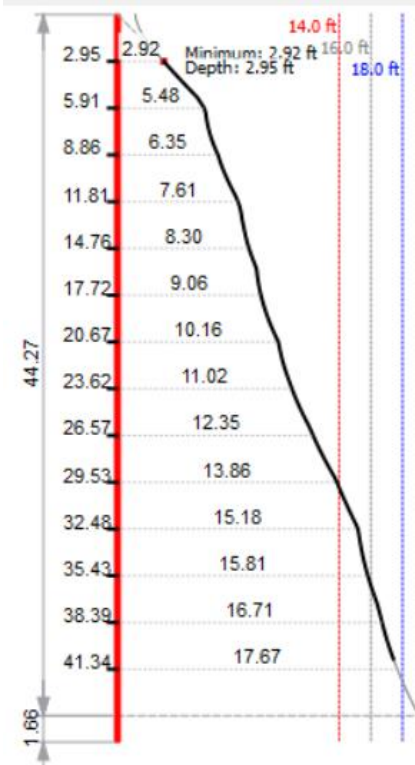




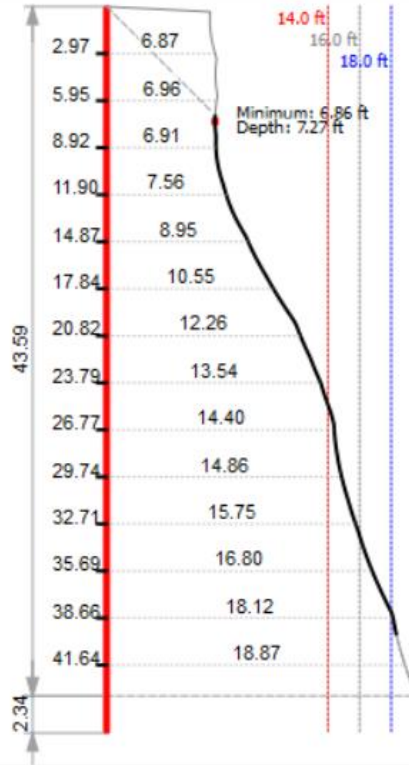
A SOUTHWEST ENERGY / ORIGA JOINT VENTURE

Burden Holes 1_1 through 1_5

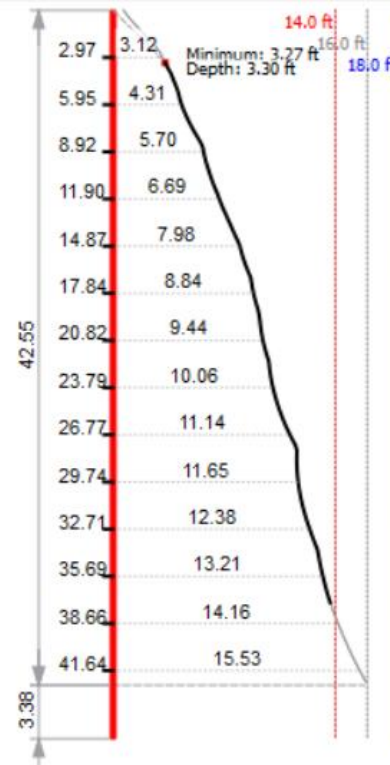
Hole 1_2



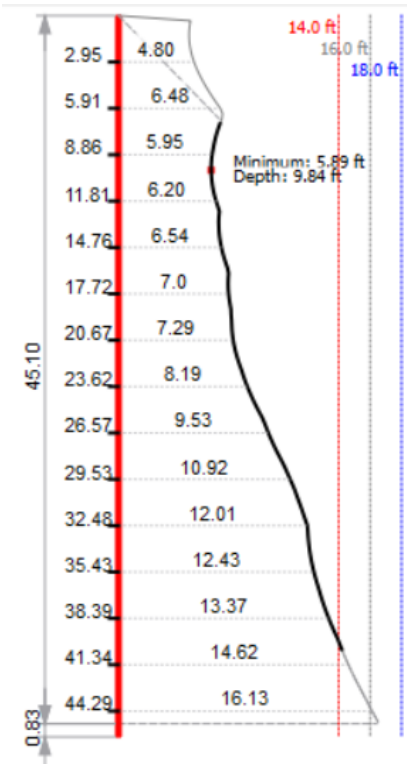
Hole 1_3



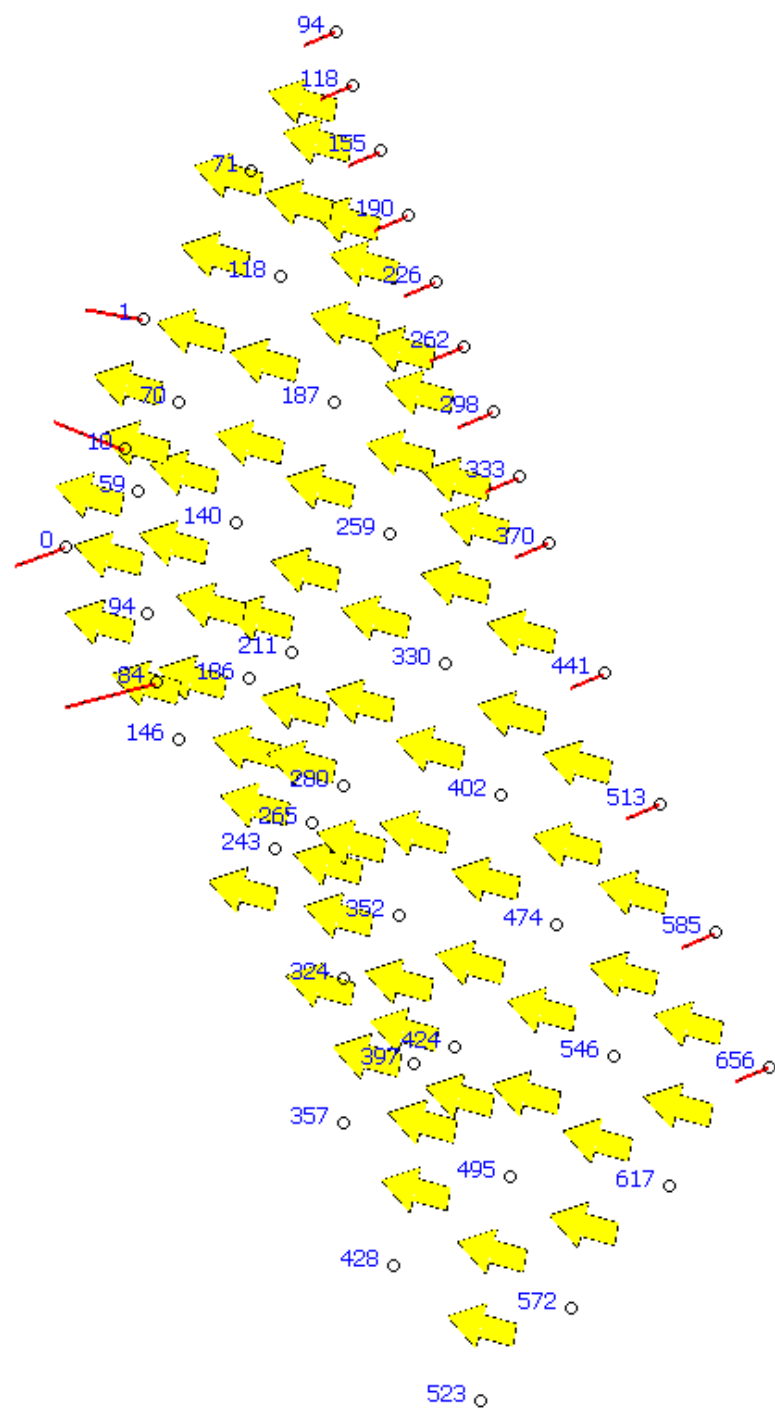
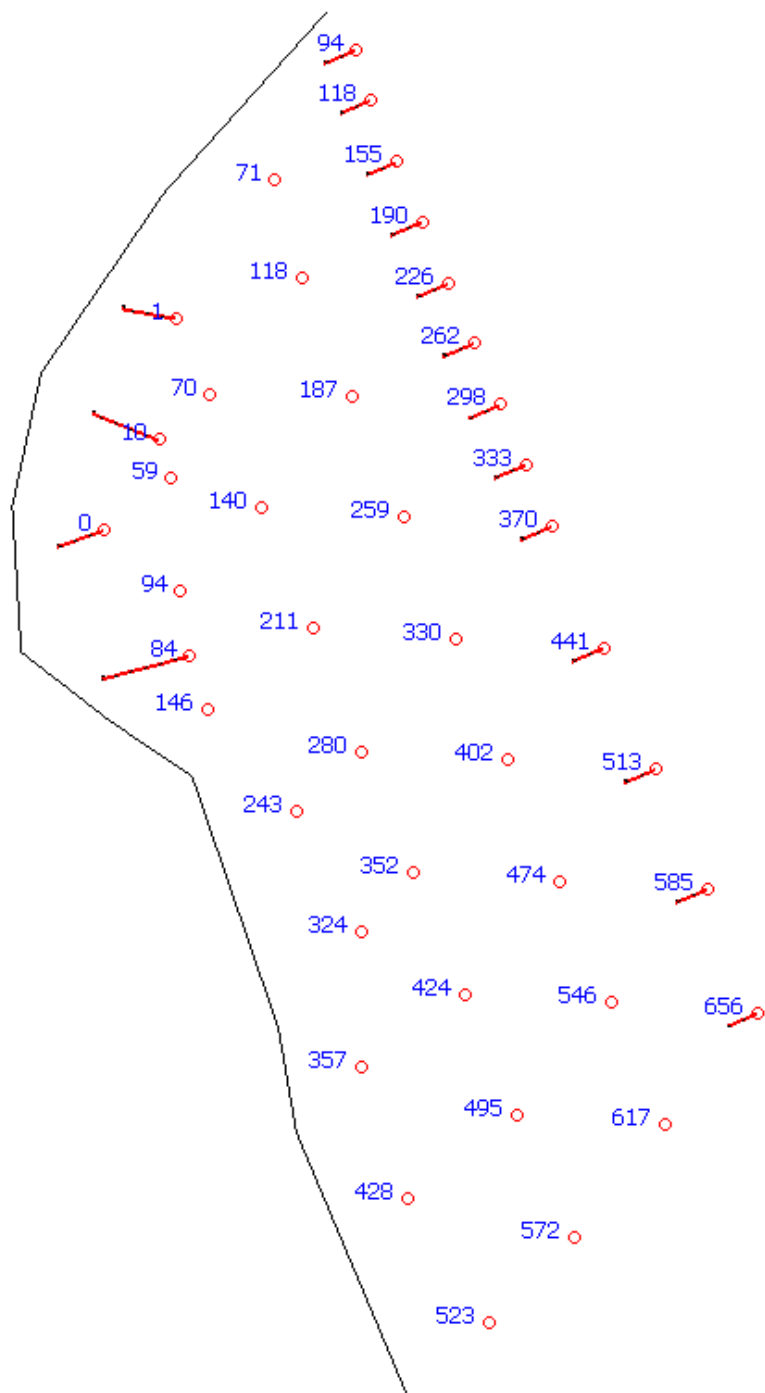
Hole 1_4



Hole 1_5



e





SOUTHWEST ENERGY LLC
2040 WEST GARDNER LANE
TUCSON, ARIZONA 85705-2208
(520) 696-9495

DAILY BLAST REPORT

Thursday, November 09, 2017

Red Canyon

PRODUCT DESCRIPTION		HOLES	QUANTITY	UNIT
Shot # 7 Main Pit 7	Holes	65		
	502 (Fortis Control)		10,880	Lbs
	Harness Wire 500m		1	Spool
	Pentex BC 12 (340)		94	Ea
	Unitronic 600 15M 50'		42	Ea
	Unitronic 600 9m 30'		52	Ea
Totals for 11/9/17	Total Holes	65		
	502 (Fortis Control)		10,880	Lbs
	Harness Wire 500m		1	Spool
	Pentex BC 12 (340)		94	Ea
	Unitronic 600 15M 50'		42	Ea
	Unitronic 600 9m 30'		52	Ea



BLAST REPORT

SOUTHWEST ENERGY LLC
2040 W GARDNER LANE
TUCSON, ARIZONA 85705-2208
(520) 696-9495

Date: 11/9/17 Customer: Martin Marietta Materials, Inc Location: Red Canyon
Shot Fired: 11:42 AM Permit No: 0405136 Pit: Main Pit Level: 7

Shot Number:	7	Shot Coordinates:	38°36'28"N 104°56'44"W
Rock Type:	Limestone/Granite	Rock Density:	148.5 lbs/cu ft
Shot Classification:	Production	Mats Used:	No
Sky Conditions:	Clear	Temperature:	38 °F
Wind Direction:	NE	Wind Speed:	2 mph
Hole Diameter:	5 in	Avg Stem Height:	9 ft
Burden-Spacing:	10 x 10 ft	Avg Hole Depth:	10 ft
Holes:	23	Sub-Drilling:	3 ft
Total Holes:	23	Shot Tons:	1,195
Total Lbs Explo:	362	Powder Factor:	0.30 lbs/ton
Max Lbs/Delay:	15	Max Holes/Delay:	575
Stemming Type:	Crushed Stone	Shot Duration:	575 ms
Contract Blaster:	Travis Taylor	License No:	1-059-11062
Blast Crew:	Smith, Atwood, Taylor, Miller		
Note:			
Safety Meeting:	Yes	Workplace Inspection:	Yes

Friday, November 10, 2017

Contract Blaster: _____



BLAST REPORT

SOUTHWEST ENERGY LLC
2040 W GARDNER LANE
TUCSON, ARIZONA 85705-2208
(520) 696-9495

Date: 11/9/17 Customer: Martin Marietta Materials, Inc Location: Red Canyon
Shot Fired: 12:25 PM Permit No: 0405136 Pit: Main Pit Level: 7

Shot Number:	7	Shot Coordinates:	38°36'28"N 104°56'44"W
Rock Type:	Limestone/Granite	Rock Density:	148.5 lbs/cu ft
Shot Classification:	Production	Mats Used:	No
Sky Conditions:	Clear	Temperature:	38 °F
Wind Direction:	NE	Wind Speed:	2 mph
Hole Diameter:	5 in	Avg Stem Height:	14 ft
Burden-Spacing:	16 x 16 ft	Avg Hole Depth:	47 ft
Holes:	42	Sub-Drilling:	3 ft
Total Holes:	42	Shot Tons:	35,127
Total Lbs Explo:	10,641	Powder Factor:	0.30 lbs/ton
Max Lbs/Delay:	426	Max Holes/Delay:	656
Stemming Type:	Crushed Stone	Shot Duration:	656 ms
Contract Blaster:	Travis Taylor	License No:	1-059-11062
Blast Crew:	Smith, Atwood, Taylor, Miller		
Note:			
Safety Meeting:	Yes	Workplace Inspection:	Yes

Friday, November 10, 2017

Contract Blaster: _____

Overview

Site Name:
Bench Name:
Blast Name:
Recording Date: 11/8/2017 4:08:43 PM
Rock Density: 0 t/cu. yd
3D image: RC 11-8 toe crest.jm3
Blast Site: RC 11-8 toe crest.smb
Notes:

Blast Site Geometry

Minimal Bench Height:	42.51 ft
Mean Bench Height:	43.88 ft
Maximum Bench Height:	44.94 ft
Front Plane Dipping:	33.86 °
Front Plane Dip Direction:	260.25 °
Lateral Distance between Delimiters:	149.75 ft
Lateral Distance between Delimiting Planes:	149.75 ft
Number of Boreholes:	45
Total Drilling Length:	1980.53 ft
Total Blasting Volume:	-
Total Blasting Mass:	-

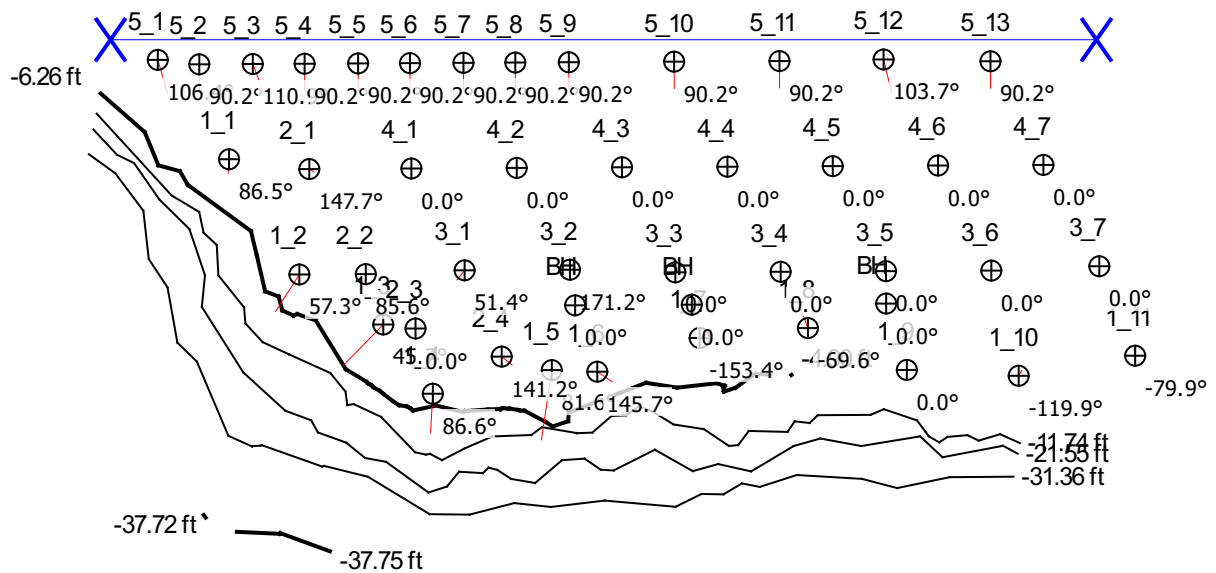
Design Parameters

Burden:	16.40 ft
Rows:	1
Row Shift:	0.0 ft
Side Spacing:	9.84 ft
Inclination:	20.00 °

It is noted that the blast site planned with BlastMetriX3D bases exclusively on the contact-free measured information of the bench face. The blast site planned with BlastMetriX3D has to be checked in any case for completeness and correctness by a responsible blaster. It is presumed that all legally binding laws, regulations and guidelines applicable in your country are met. By using BlastMetriX3D you agree to implement the result on your responsibility and free 3GSM from any possible claims.



Scale 1:350



- X Delimiter
 - Reference line
 - Row
 - ⊕ Borehole position
 - Borehole
- 90

All dimensions in [ft]

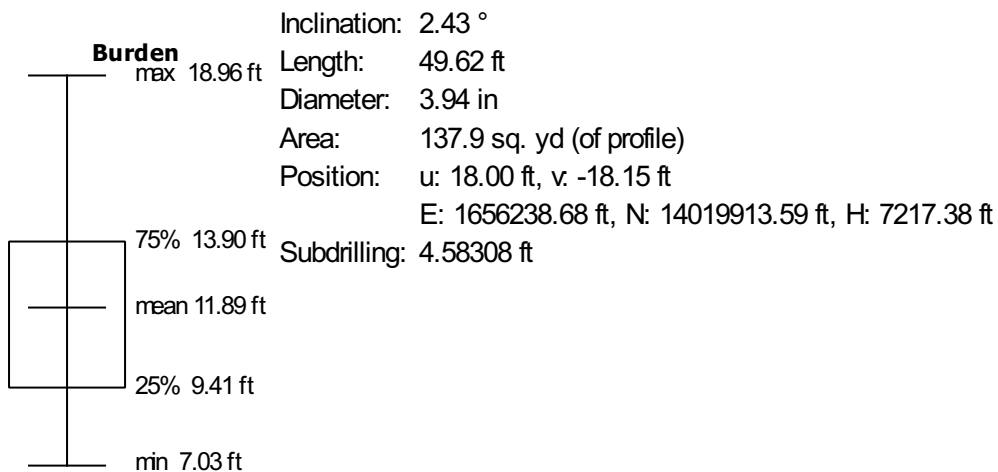
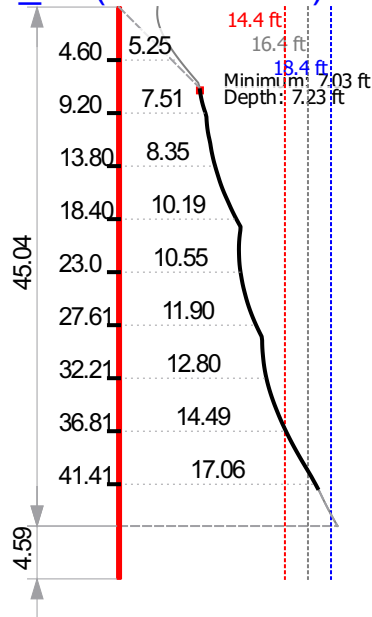
Borehole details

Name	u [ft]	v [ft]	E [ft]	N [ft]	H [ft]	Alpha [deg]	Inclination [deg]	Length [ft]	Diameter [in]
1_1	18.00	-18.15	1656238.68	14019913.59	7217.38	86.48	2.43	49.62	3.94
1_2	28.66	-35.65	1656226.69	14019896.96	7216.23	57.27	8.35	45.91	3.94
1_3	41.40	-43.24	1656224.63	14019882.27	7215.19	45.67	10.85	45.88	3.94
1_4	48.91	-53.76	1656217.86	14019871.25	7214.52	86.60	7.44	45.90	3.94
1_5	67.00	-50.17	1656228.17	14019855.99	7216.08	81.58	13.50	45.91	3.94
1_6	73.90	-50.41	1656230.62	14019849.53	7215.70	145.69	3.45	45.97	3.94
1_7	89.45	-45.29	1656241.37	14019837.19	7215.79	-153.41	2.11	45.92	3.94
1_8	105.88	-43.79	1656249.13	14019822.61	7214.90	-69.58	3.94	45.90	3.94
1_9	120.91	-50.14	1656249.10	14019806.30	7215.39	0.00	0.00	45.68	3.94
1_10	137.89	-51.03	1656254.86	14019790.29	7215.20	-119.94	1.39	39.34	3.94
1_11	155.60	-47.98	1656264.54	14019775.16	7216.34	-79.91	1.16	45.46	3.94
2_1	30.19	-19.64	1656242.03	14019901.78	7217.19	147.73	1.05	45.89	3.94
2_2	38.76	-35.59	1656230.65	14019887.68	7216.50	85.62	1.99	45.91	3.94
2_3	46.30	-43.86	1656225.96	14019877.52	7215.91	0.00	0.00	46.18	3.94
2_4	59.39	-48.12	1656227.11	14019863.80	7215.98	141.24	2.50	45.93	3.94
3_1	53.77	-35.02	1656237.00	14019874.07	7216.52	51.44	2.32	45.92	3.94
3_2	69.76	-34.93	1656243.29	14019859.36	7216.59	171.22	0.24	45.89	3.94
3_3	85.77	-35.33	1656249.12	14019844.45	7216.76	0.00	0.00	47.03	3.94
3_4	101.77	-35.24	1656255.41	14019829.74	7216.92	0.00	0.00	47.20	3.94
3_5	117.76	-35.15	1656261.70	14019815.03	7216.48	0.00	0.00	46.77	3.94
3_6	133.76	-35.06	1656267.98	14019800.32	7216.62	0.00	0.00	46.93	3.94
3_7	150.15	-34.40	1656274.95	14019785.45	7216.33	0.00	0.00	45.50	3.94
4_1	45.70	-19.55	1656248.12	14019887.52	7217.82	0.00	0.00	50.08	3.94
4_2	61.70	-19.46	1656254.41	14019872.81	7217.89	0.00	0.00	50.16	3.94
4_3	77.69	-19.37	1656260.69	14019858.10	7217.65	0.00	0.00	49.93	3.94
4_4	93.69	-19.28	1656266.98	14019843.38	7217.83	0.00	0.00	50.12	3.94
4_5	109.69	-19.19	1656273.27	14019828.67	7217.70	0.00	0.00	49.99	3.94
4_6	125.68	-19.10	1656279.55	14019813.96	7217.72	0.00	0.00	50.02	3.94
4_7	141.68	-19.01	1656285.84	14019799.25	7217.80	0.00	0.00	50.10	3.94
5_1	7.18	-3.06	1656248.39	14019929.42	7217.20	106.41	6.45	45.90	3.94
5_2	13.48	-3.73	1656250.22	14019923.34	7217.10	90.21	4.99	45.50	3.94
5_3	21.61	-3.69	1656253.41	14019915.87	7217.40	110.93	5.56	45.92	3.94
5_4	29.48	-3.64	1656256.50	14019908.63	7217.70	90.21	4.99	46.11	3.94
5_5	37.62	-3.60	1656259.69	14019901.16	7218.26	90.21	4.99	46.68	3.94

Borehole details

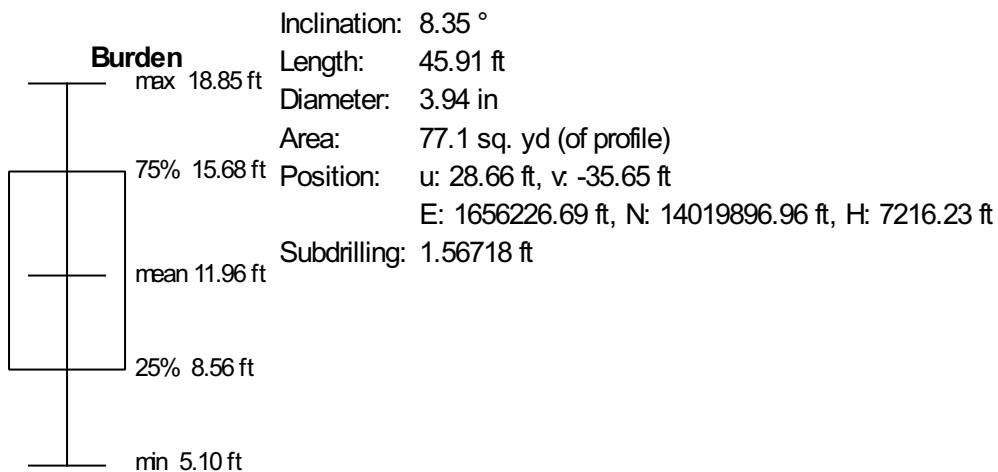
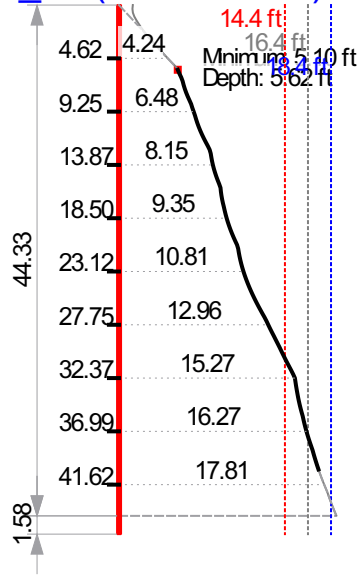
Name	u [ft]	v [ft]	E [ft]	N [ft]	H [ft]	Alpha [deg]	Inclination [deg]	Length [ft]	Diameter [in]
5_6	45.49	-3.55	1656262.79	14019893.92	7218.51	90.21	4.99	46.93	3.94
5_7	53.62	-3.51	1656265.98	14019886.45	7218.66	90.21	4.99	47.08	3.94
5_8	61.49	-3.46	1656269.07	14019879.21	7218.59	90.21	4.99	47.02	3.94
5_9	69.61	-3.42	1656272.27	14019871.74	7218.41	90.21	4.99	46.84	3.94
5_10	85.61	-3.33	1656278.55	14019857.03	7218.42	90.21	4.99	46.86	3.94
5_11	101.61	-3.24	1656284.83	14019842.31	7218.42	90.21	4.99	46.87	3.94
5_12	117.42	-2.99	1656291.19	14019827.83	7219.06	103.66	6.57	45.91	3.94
5_13	133.65	-3.27	1656297.23	14019812.76	7218.43	90.21	4.99	46.88	3.94
BH	117.78	-40.07	1656257.17	14019813.09	7216.23	0.00	0.00	5.00	3.94
BH	88.27	-40.23	1656245.57	14019840.24	7216.53	0.00	0.00	5.00	3.94
BH	70.55	-40.34	1656238.61	14019856.53	7216.26	0.00	0.00	5.00	3.94

1_1 (Scale 1:200) Minimum Burden



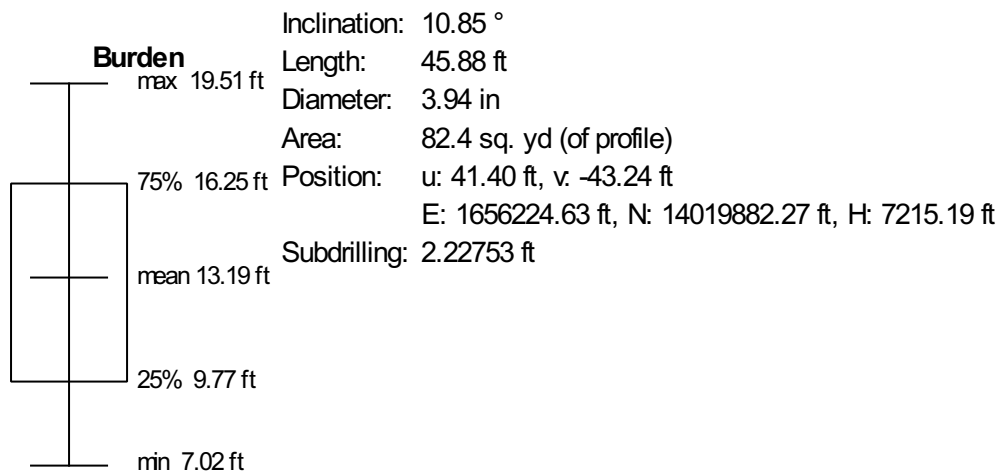
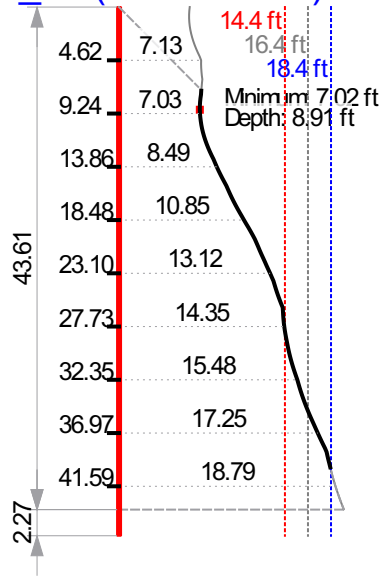
Depth	Min. burden
3.3	3.304 top
6.6	6.609 top
9.8	7.613
13.1	8.194
16.4	9.310
19.7	10.475
23.0	10.574
26.2	11.432
29.5	12.455
32.8	13.022
36.1	14.294
39.4	16.069
42.7	17.870

1_2 (Scale 1:200) Minimum Burden



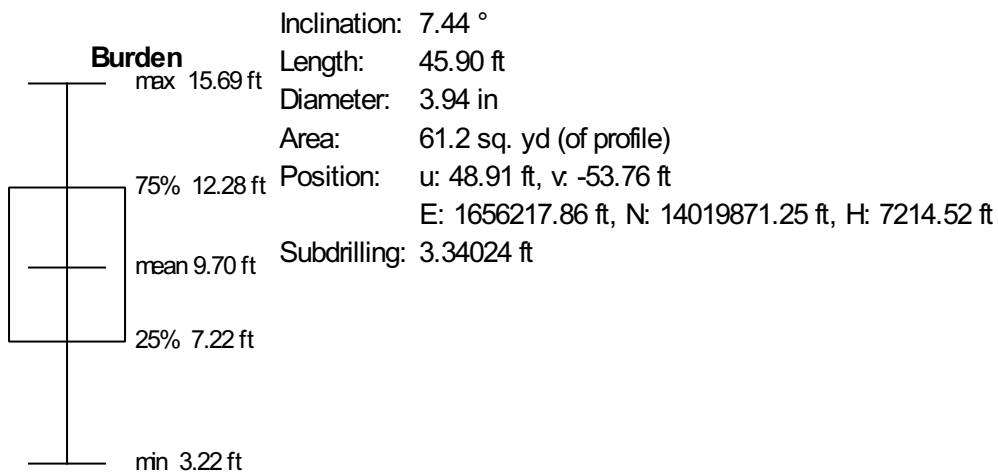
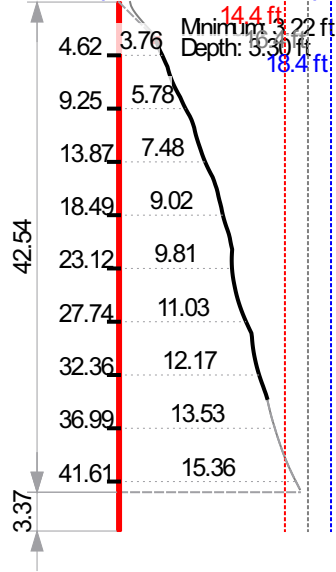
Depth	Min. burden
3.3	3.216 top
6.6	5.649
9.8	6.933
13.1	8.216
16.4	9.138
19.7	10.354
23.0	11.414
26.2	13.203
29.5	14.993
32.8	15.846
36.1	16.864
39.4	18.121

1_3 (Scale 1:200) Minimum Burden



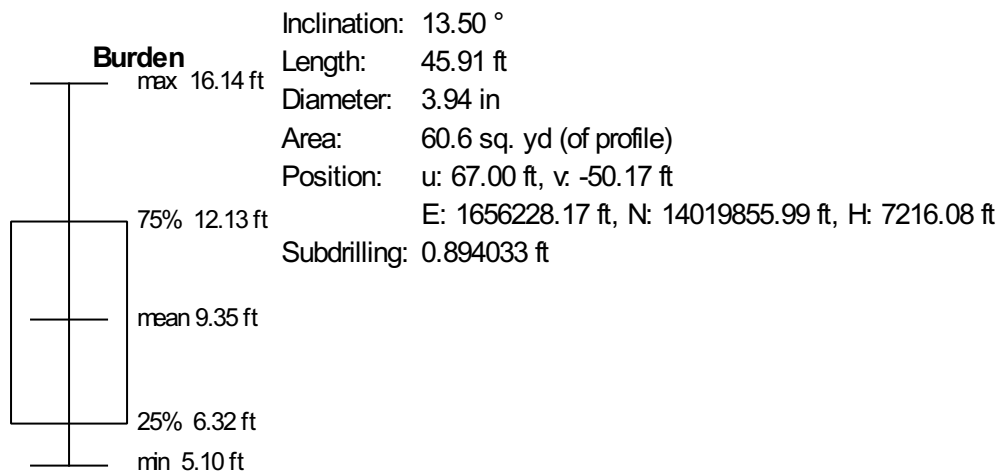
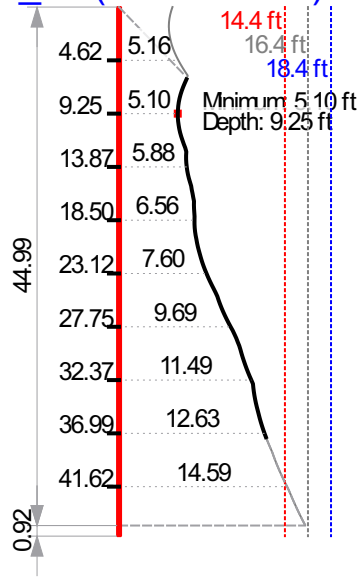
Depth	Min. burden
3.3	3.504 top
6.6	7.008 top
9.8	7.221
13.1	8.604
16.4	10.371
19.7	12.241
23.0	13.696
26.2	14.422
29.5	15.278
32.8	16.505
36.1	18.067
39.4	19.046

1_4 (Scale 1:200) Minimum Burden



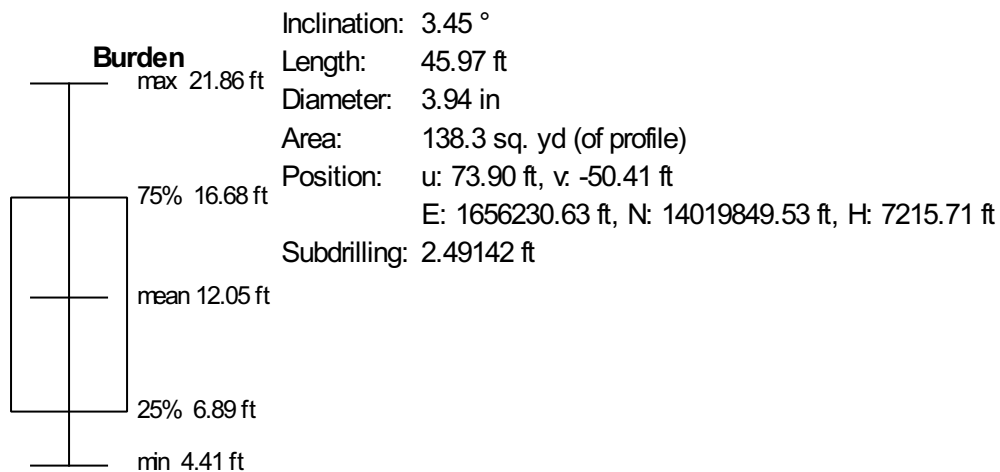
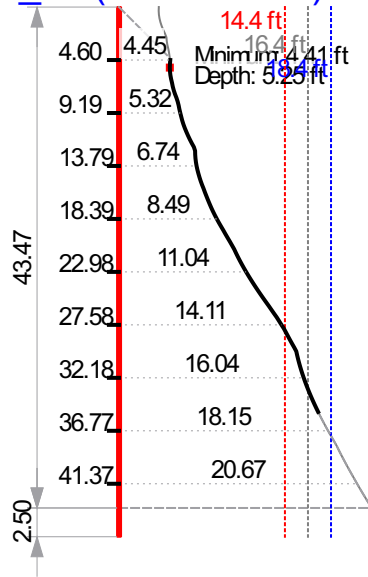
Depth	Min. burden
3.3	3.294
6.6	4.694
9.8	6.432
13.1	7.589
16.4	8.847
19.7	9.760
23.0	10.050
26.2	11.263
29.5	11.997
32.8	13.063
36.1	14.140
39.4	15.745

1_5 (Scale 1:200) Minimum Burden



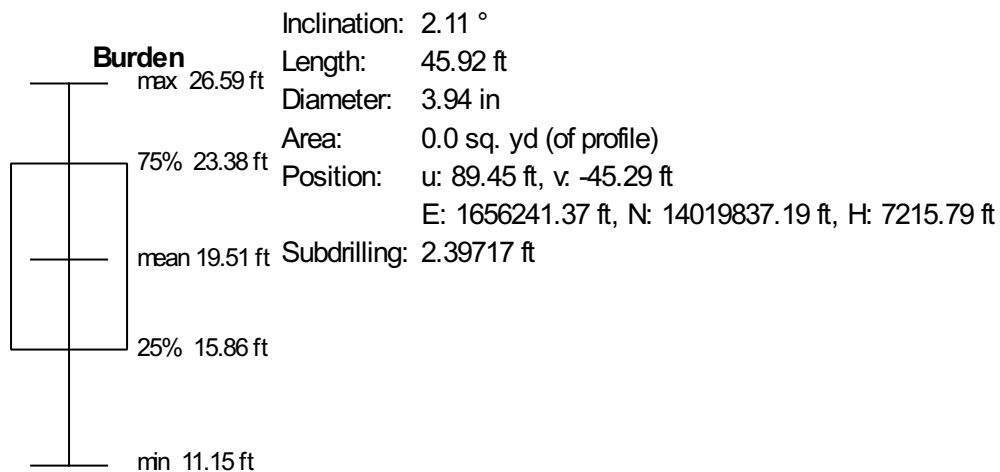
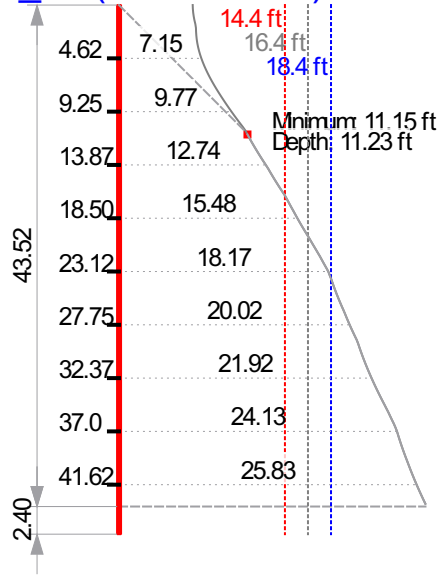
Depth	Min. burden
3.3	3.404 top
6.6	5.522
9.8	5.239
13.1	5.915
16.4	6.527
19.7	6.952
23.0	8.360
26.2	9.961
29.5	11.238
32.8	12.123
36.1	13.380
39.4	14.935

1_6 (Scale 1:200) Minimum Burden



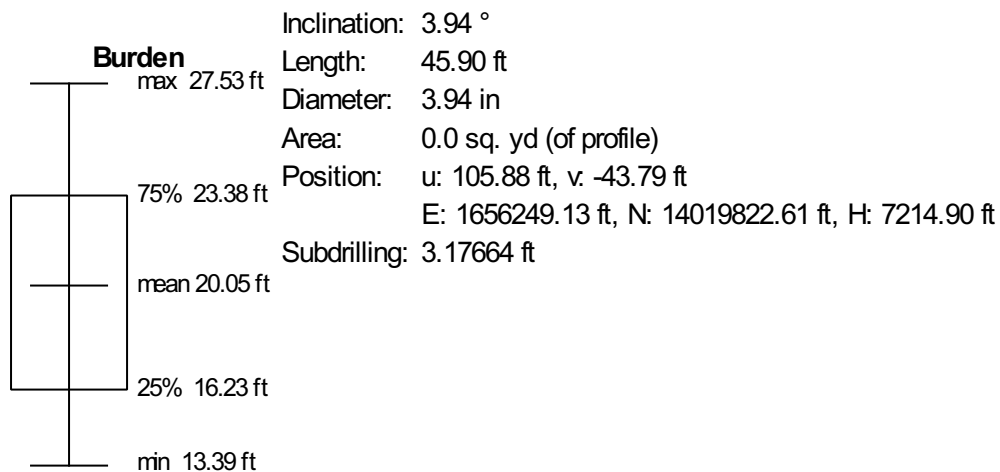
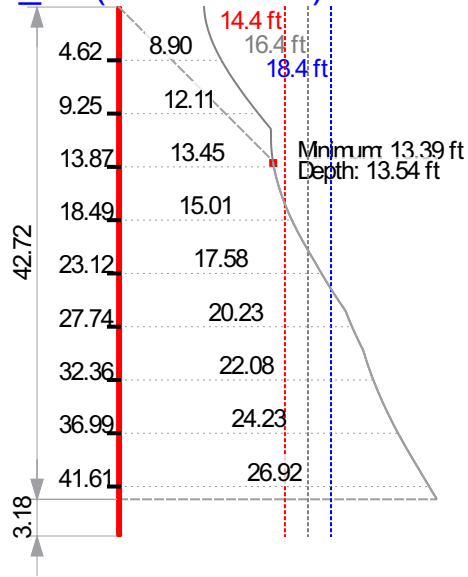
Depth	Min. burden
3.3	3.280 <i>top</i>
6.6	4.603
9.8	5.491
13.1	6.640
16.4	7.595
19.7	9.241
23.0	11.038
26.2	13.229
29.5	15.216
32.8	16.275
36.1	17.791
39.4	19.570
42.7	21.449

1_7 (Scale 1:200) Minimum Burden



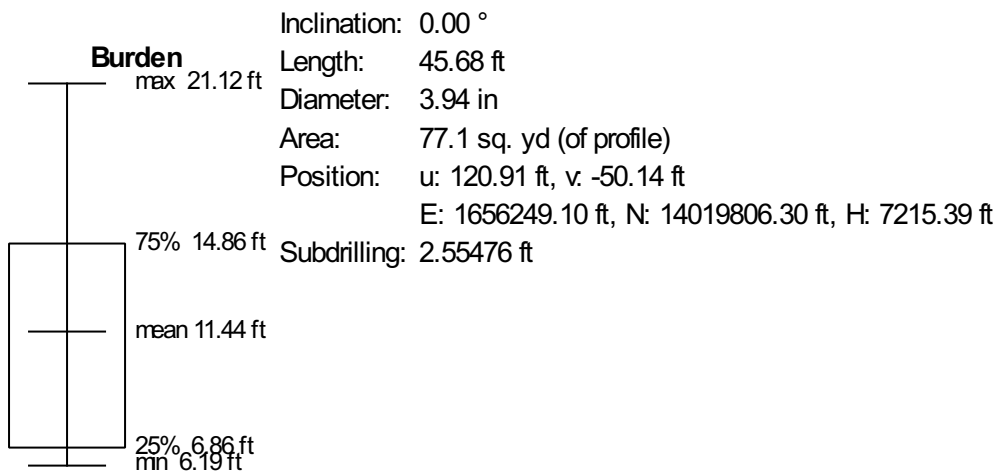
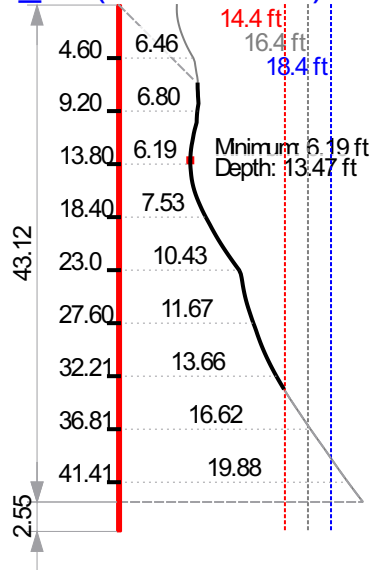
Depth	Min. burden
3.3	3.530 top
6.6	7.060 top
9.8	10.590 top
13.1	12.912
16.4	15.021
19.7	17.079
23.0	18.759
26.2	20.251
29.5	21.667
32.8	23.370
36.1	24.742
39.4	26.173

1_8 (Scale 1:200) Minimum Burden



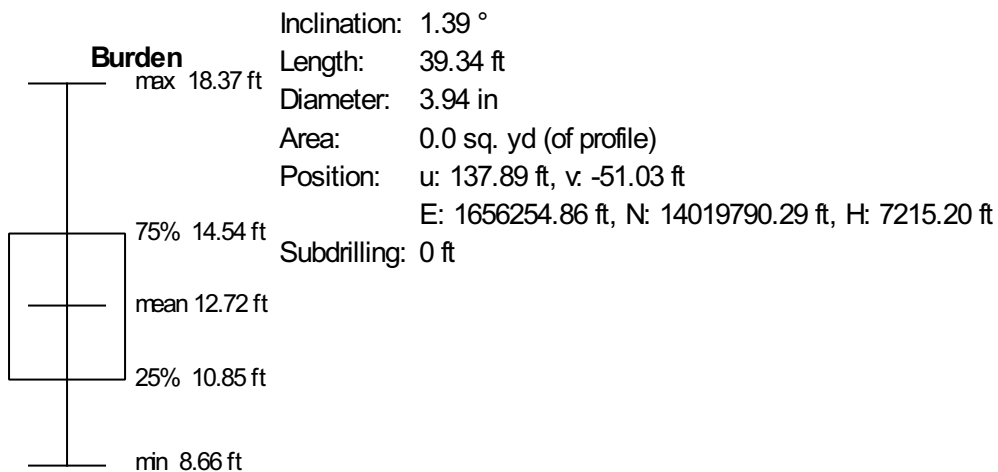
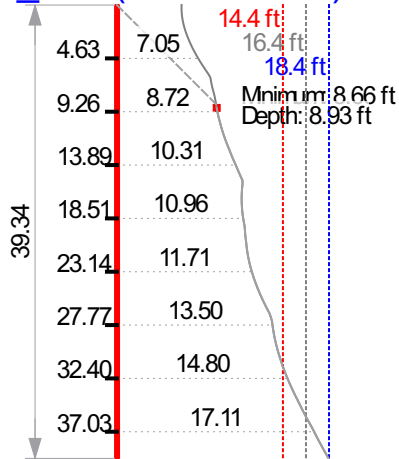
Depth	Min. burden
3.3	3.531 <i>top</i>
6.6	7.062 <i>top</i>
9.8	10.592 <i>top</i>
13.1	13.496
16.4	14.633
19.7	16.452
23.0	18.564
26.2	20.455
29.5	21.855
32.8	23.365
36.1	25.275
39.4	27.383

1_9 (Scale 1:200) Minimum Burden



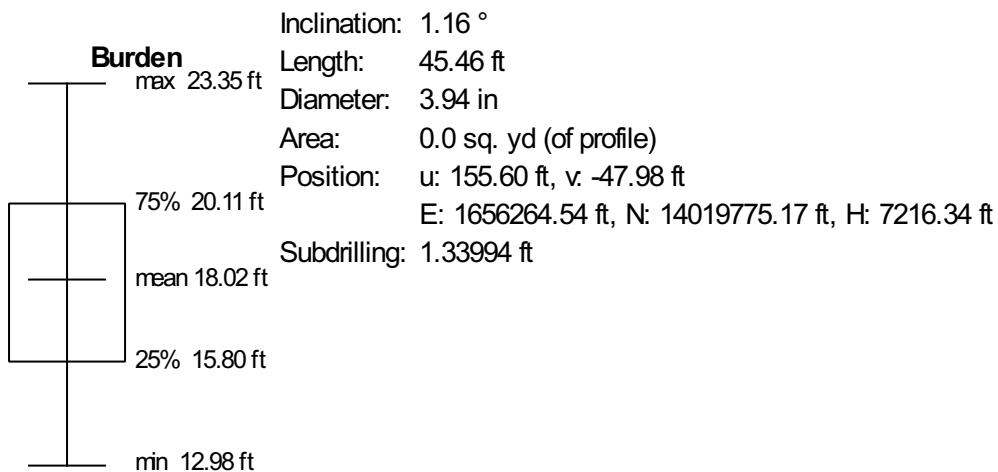
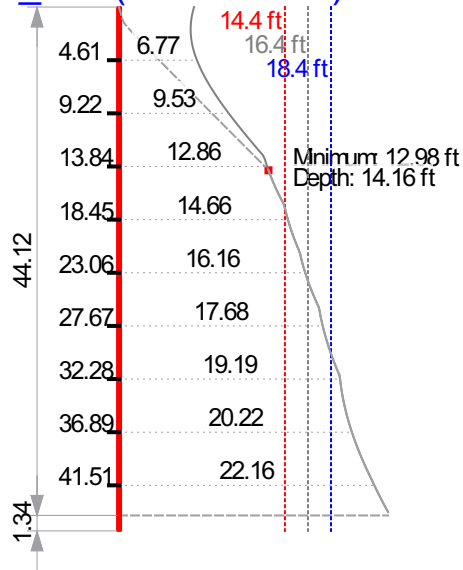
Depth	Min. burden
3.3	3.513 top
6.6	6.825
9.8	6.648
13.1	6.205
16.4	7.122
19.7	9.080
23.0	10.800
26.2	11.861
29.5	13.347
32.8	15.494
36.1	17.931
39.4	20.443

1_10 (Scale 1:200) Minimum Burden



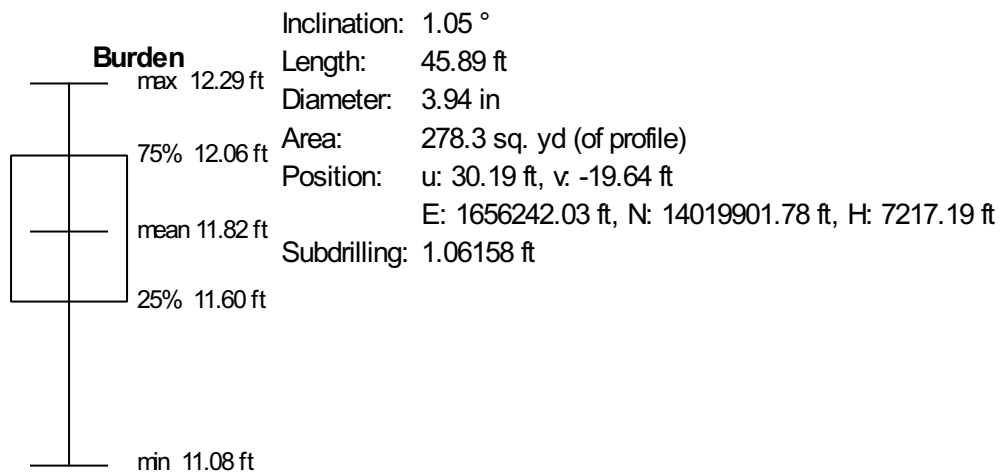
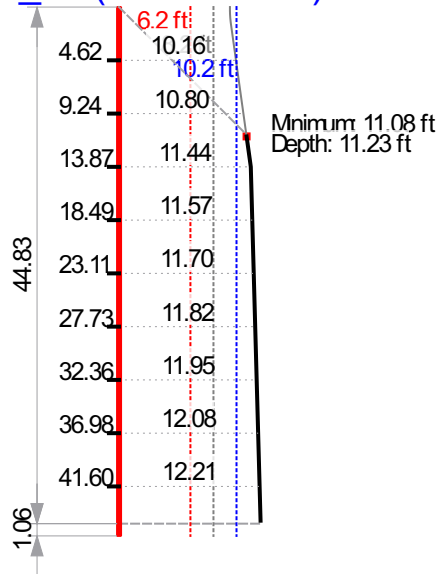
Depth	Min. burden
3.3	3.576 top
6.6	7.153 top
9.8	9.092
13.1	10.490
16.4	10.875
19.7	11.319
23.0	12.401
26.2	13.633
29.5	14.713
32.8	16.428
36.1	18.374

1_11 (Scale 1:200) Minimum Burden



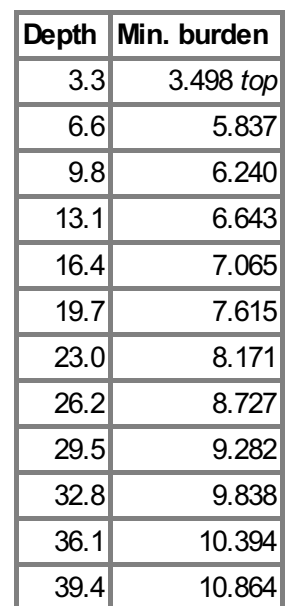
Depth	Min. burden
3.3	2.396 top
6.6	5.845 top
9.8	9.330 top
13.1	12.821 top
16.4	14.413
19.7	15.563
23.0	16.666
26.2	17.758
29.5	18.935
32.8	19.663
36.1	20.791
39.4	22.384

2_1 (Scale 1:200) Minimum Burden

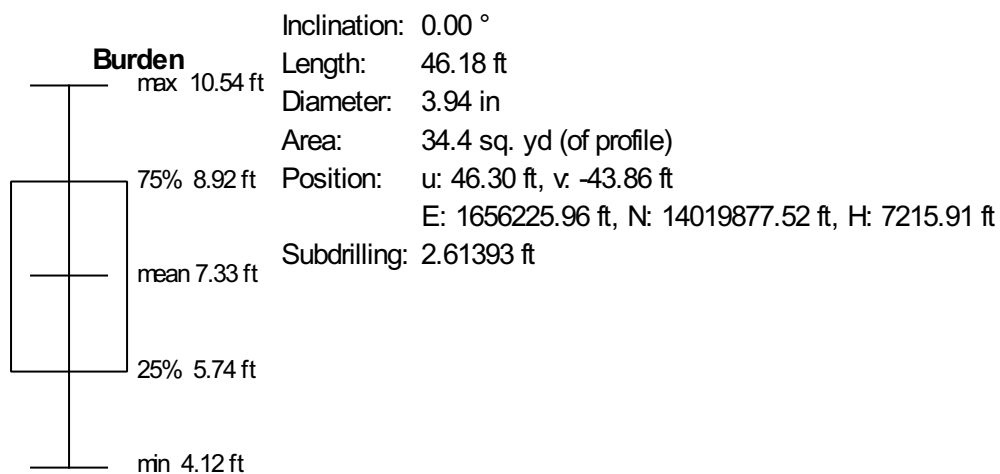
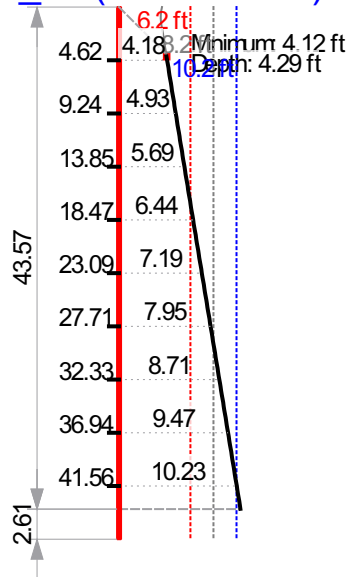


Depth	Min. burden
3.3	3.530 top
6.6	7.060 top
9.8	10.590 top
13.1	11.449
16.4	11.546
19.7	11.644
23.0	11.741
26.2	11.839
29.5	11.936
32.8	12.033
36.1	12.131
39.4	12.228

Figure 1 is a graph showing the relationship between depth and minimum water depth. The vertical axis represents depth in feet, ranging from 1.75 to 44.17. The horizontal axis represents minimum water depth in feet, ranging from 5.56 to 10.78. A solid black line shows the relationship, starting at (5.56, 44.17) and ending at (10.78, 1.75). A red dashed line is at 6.2 ft, and a blue dashed line is at 5.71 ft. The area between the solid line and the red dashed line is shaded red, and the area between the solid line and the blue dashed line is shaded blue.

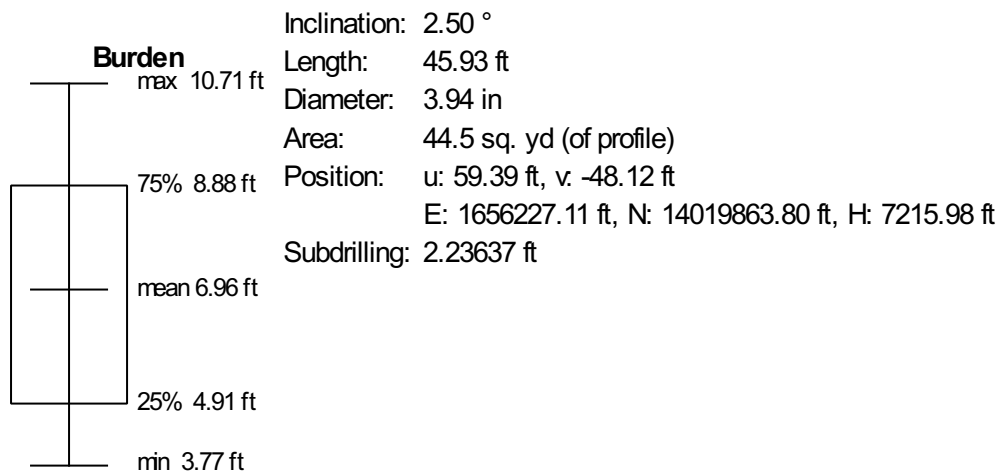
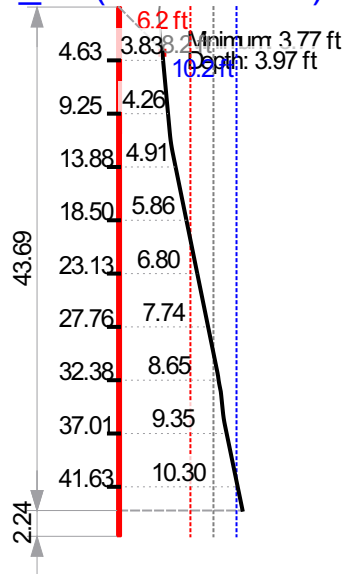


2_3 (Scale 1:200) Minimum Burden



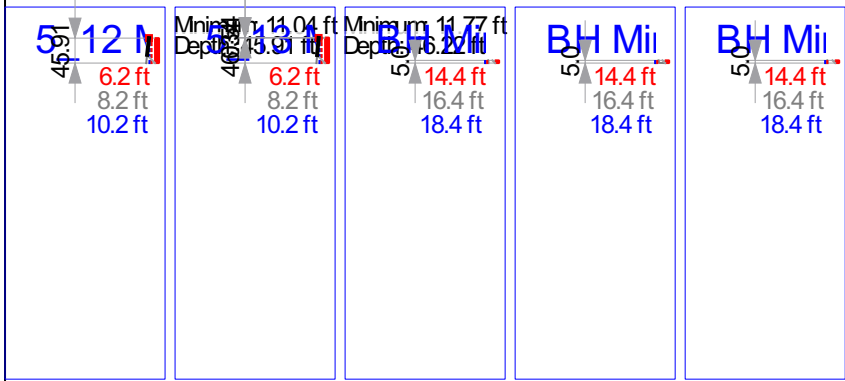
Depth	Min. burden
3.3	3.299 <i>top</i>
6.6	4.510
9.8	5.035
13.1	5.565
16.4	6.114
19.7	6.664
23.0	7.189
26.2	7.732
29.5	8.284
32.8	8.824
36.1	9.354
39.4	9.898
42.7	10.445

2_4 (Scale 1:200) Minimum Burden



Depth	Min. burden
3.3	3.507 top
6.6	4.057
9.8	4.384
13.1	4.967
16.4	5.686
19.7	6.405
23.0	7.124
26.2	7.843
29.5	8.562
32.8	9.043
36.1	9.731
39.4	10.462

45090 1 M 14.4 ft 16.4 ft 18.4 ft	45088 12 M 14.4 ft 16.4 ft 18.4 ft	45087 13 M 14.4 ft 16.4 ft 18.4 ft	45086 14 M 14.4 ft 16.4 ft 18.4 ft	45085 15 M 14.4 ft 16.4 ft 18.4 ft	45084 16 M 14.4 ft 16.4 ft 18.4 ft	45083 17 M 14.4 ft 16.4 ft 18.4 ft	45082 18 M 14.4 ft 16.4 ft 18.4 ft	Minimum Depth: 1
45080 19 M 14.4 ft 16.4 ft 18.4 ft	45079 110 M 14.4 ft 16.4 ft 18.4 ft	45077 111 M 14.4 ft 16.4 ft 18.4 ft	45076 21 M 6.2 ft 8.2 ft 10.2 ft	45075 22 M 6.2 ft 8.2 ft 10.2 ft	45074 23 M 6.2 ft 8.2 ft 10.2 ft	45073 24 M 6.2 ft 8.2 ft 10.2 ft	45072 31 M 6.2 ft 8.2 ft 10.2 ft	Minimum Depth: 4
44082 32 M 6.2 ft 8.2 ft 10.2 ft	44080 33 M 6.2 ft 8.2 ft 10.2 ft	44077 34 M 6.2 ft 8.2 ft 10.2 ft	44076 35 M 6.2 ft 8.2 ft 10.2 ft	44075 36 M 6.2 ft 8.2 ft 10.2 ft	44074 37 M 6.2 ft 8.2 ft 10.2 ft	44073 38 M 6.2 ft 8.2 ft 10.2 ft	44072 39 M 6.2 ft 8.2 ft 10.2 ft	Minimum Depth: 1
45039 43 M 6.2 ft 8.2 ft 10.2 ft	45038 44 M 6.2 ft 8.2 ft 10.2 ft	45037 45 M 6.2 ft 8.2 ft 10.2 ft	45036 46 M 6.2 ft 8.2 ft 10.2 ft	45035 47 M 6.2 ft 8.2 ft 10.2 ft	45034 51 M 6.2 ft 8.2 ft 10.2 ft	45033 52 M 6.2 ft 8.2 ft 10.2 ft	45032 53 M 6.2 ft 8.2 ft 10.2 ft	Minimum Depth: 4
45030 54 M 6.2 ft 8.2 ft 10.2 ft	45029 55 M 6.2 ft 8.2 ft 10.2 ft	45027 56 M 6.2 ft 8.2 ft 10.2 ft	45026 57 M 6.2 ft 8.2 ft 10.2 ft	45025 58 M 6.2 ft 8.2 ft 10.2 ft	45024 59 M 6.2 ft 8.2 ft 10.2 ft	45023 60 M 6.2 ft 8.2 ft 10.2 ft	45022 61 M 6.2 ft 8.2 ft 10.2 ft	Minimum Depth: 4



Borehole Report

Red Canyon Shot 7 Bench 7
Red Canyon

07/11/17 8:08 AM

Project Information

Operator Name:

Site Name: Red Canyon

Grid Magnetic Angle: 10.00(°)

Project Notes

Site Notes

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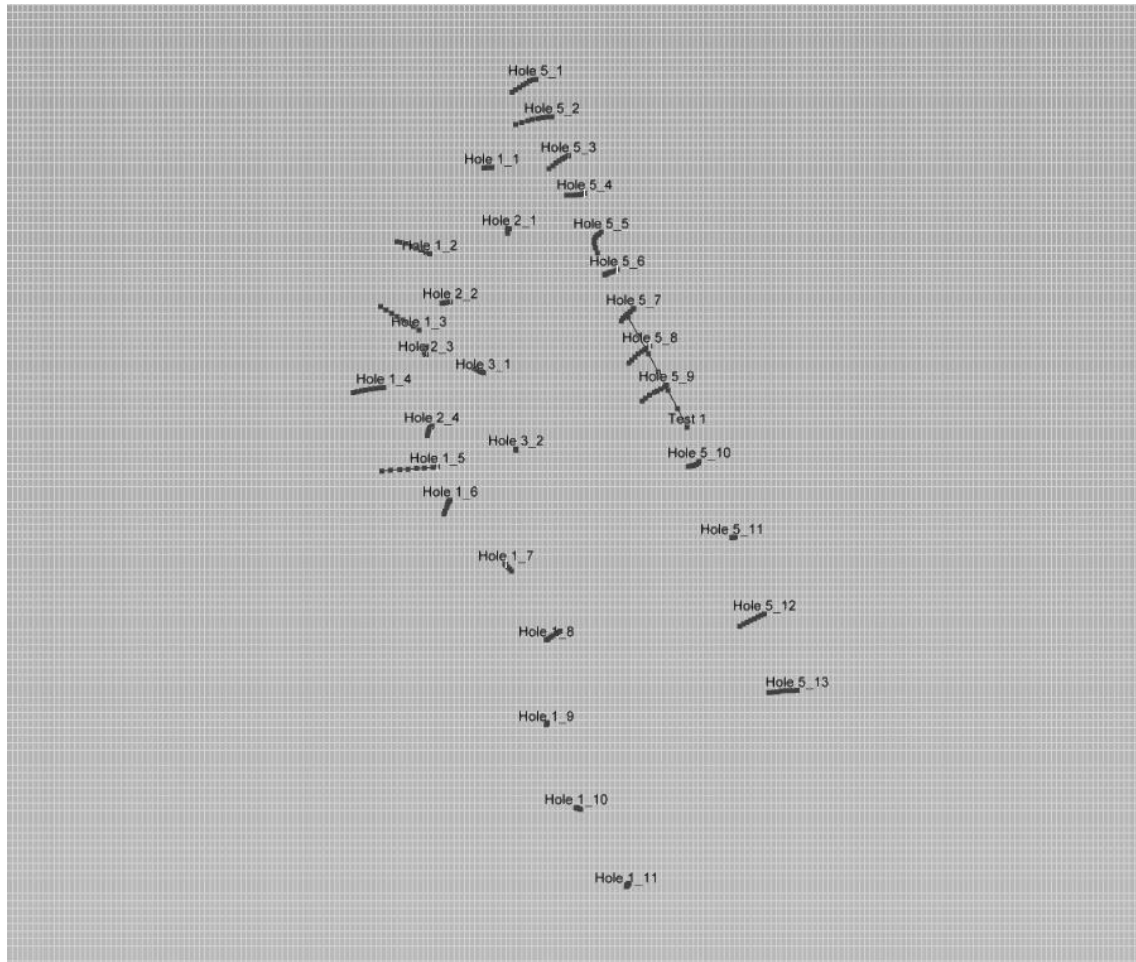
1.3.29 - Hole 1_8
1.3.30 - Hole 1_11
1.3.31 - Hole 1_6

1 Face 7

1.1 Hole Collar Report

Hole ID	X (ft)	Y (ft)	Z (ft)
Hole 5_1	1656247.120	14019930.590	7217.220
Hole 1_1	1656238.680	14019913.590	7217.380
Hole 1_2	1656226.690	14019896.970	7216.230
Hole 2_2	1656230.650	14019887.680	7216.500
Hole 1_3	1656224.630	14019882.270	7215.190
Hole 1_4	1656217.860	14019871.250	7214.520
Hole 2_4	1656227.110	14019863.800	7215.980
Hole 1_5	1656228.170	14019855.990	7215.080
Hole 3_2	1656243.290	14019859.360	7216.590
Hole 2_3	1656225.960	14019877.520	7215.780
Hole 3_1	1656237.010	14019874.070	7216.520
Hole 2_1	1656242.030	14019901.780	7217.190
Hole 5_3	1656253.410	14019915.870	7217.400
Hole 5_2	1656250.220	14019923.350	7217.100
Hole 5_4	1656256.500	14019908.630	7217.700
Hole 5_5	1656259.690	14019901.160	7218.270
Hole 5_6	1656262.790	14019893.920	7218.510
Hole 5_7	1656265.980	14019886.450	7218.660
Hole 5_8	1656269.070	14019879.210	7218.600
Hole 5_9	1656272.270	14019871.740	7218.410
Hole 5_10	1656278.550	14019857.030	7218.420
Hole 5_11	1656284.840	14019842.310	7218.420
Test 1	1656276.240	14019863.570	7218.000
Hole 5_13	1656297.410	14019812.890	7218.580
Hole 5_12	1656291.120	14019827.600	7218.590
Hole 1_10	1656254.860	14019790.290	7215.200
Hole 1_9	1656249.100	14019806.300	7215.390
Hole 1_7	1656241.370	14019837.190	7215.790
Hole 1_8	1656249.130	14019822.610	7214.900
Hole 1_11	1656264.537	14019775.166	7216.339
Hole 1_6	1656230.630	14019849.530	7215.710

*Note: Boretrak Viewer will generate default X,Y,Z collar positions starting at 1000,1000,100 if no values have been entered by the user.



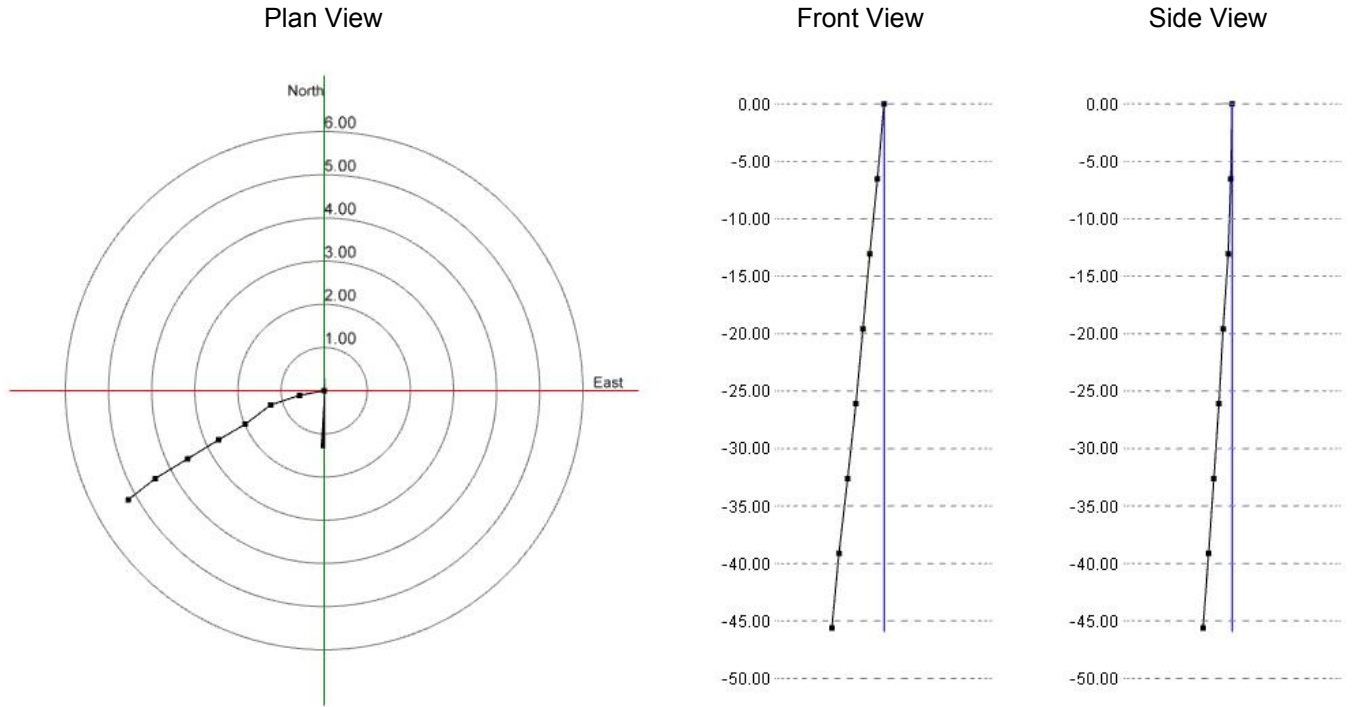
1.3.1

Survey Data 1

Face : Face 7 Hole : Hole 5_1 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -117.78 Average Inclination (°) : 6.57

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 26 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	259.30	5.09	0.58
13.12	251.50	6.18	1.29
19.69	233.00	6.47	1.99
26.25	239.70	6.23	2.70
32.81	238.40	7.41	3.54
39.37	238.80	7.69	4.42
45.93	231.80	6.93	5.20

1.3.2

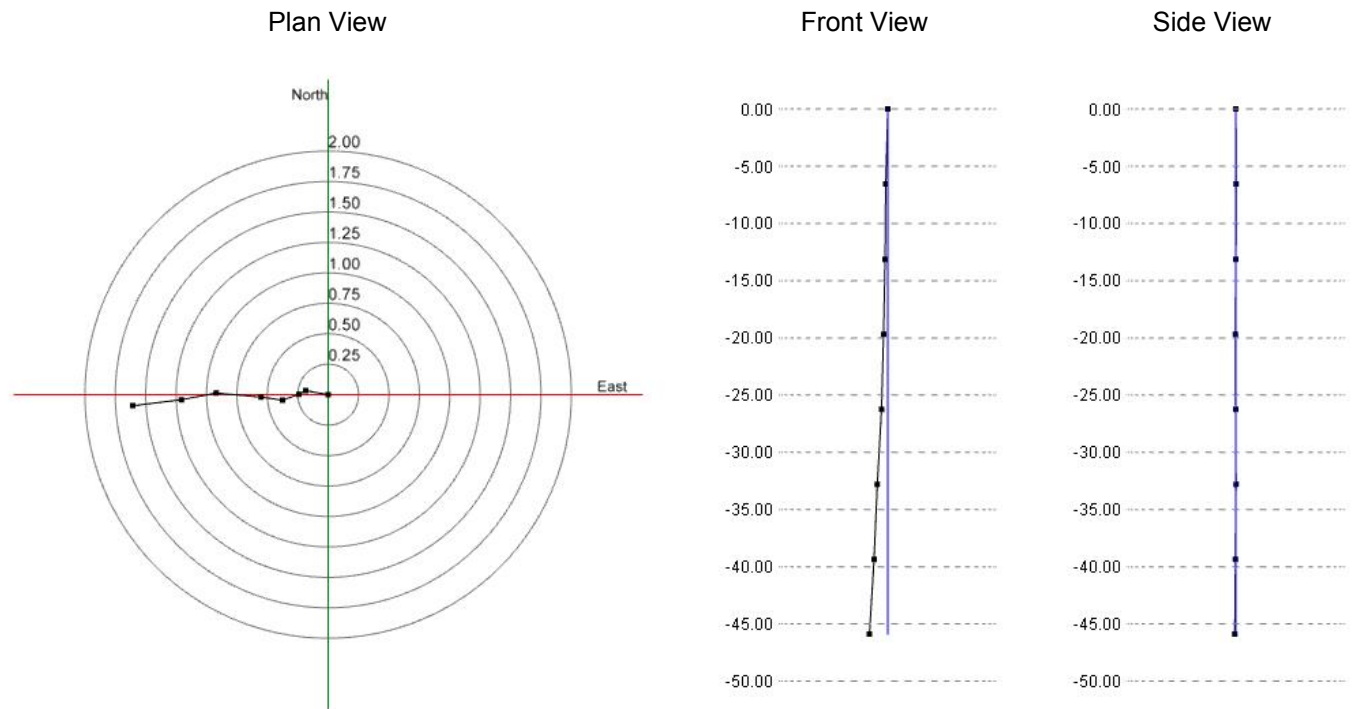
Hole 1_1

Survey Data 1

Face : Face 7 Hole : Hole 1_1 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -92.39 Average Inclination (°) : 2.04

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 1 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

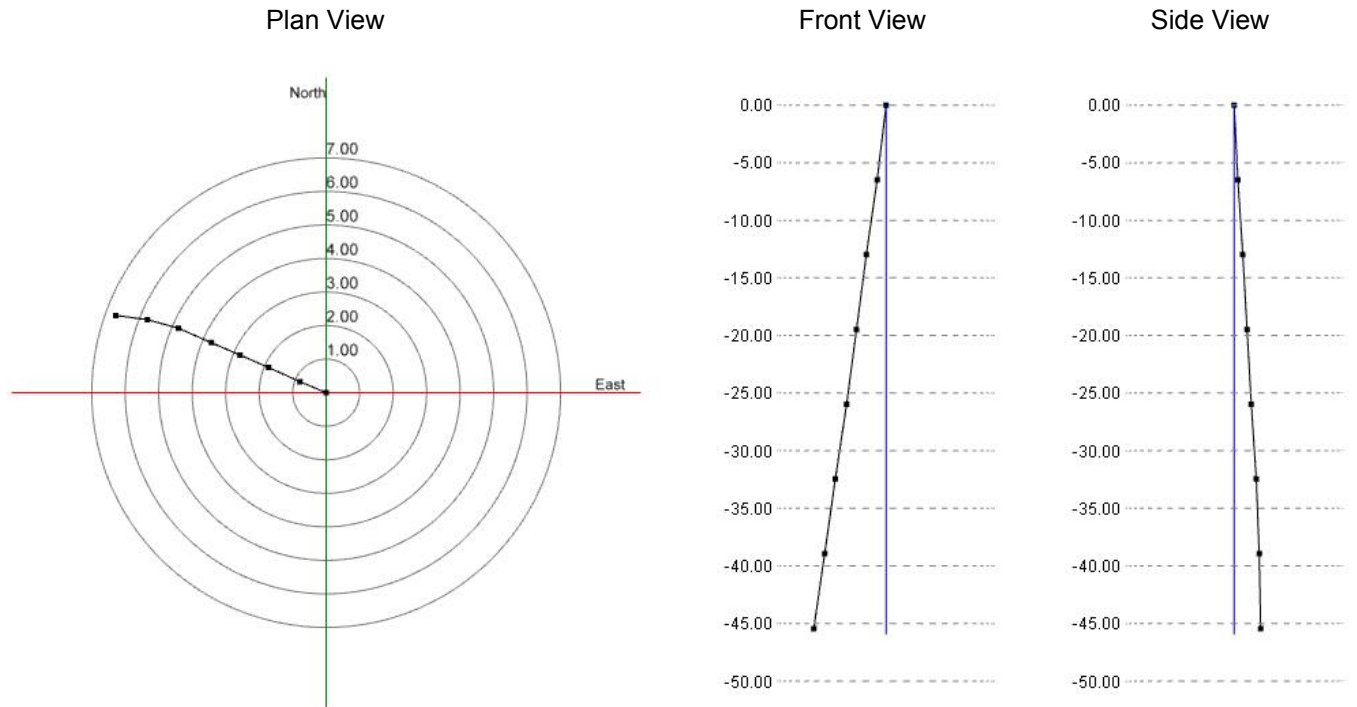
Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	280.10	1.64	0.19
13.12	241.70	0.56	0.24
19.69	250.40	1.25	0.38
26.25	278.40	1.55	0.55
32.81	275.00	3.24	0.92
39.37	259.30	2.53	1.21
45.93	262.90	3.53	1.61

Survey Data 1

Face : Face 7 Hole : Hole 1_2 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -68.28 Average Inclination (°) : 8.42

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



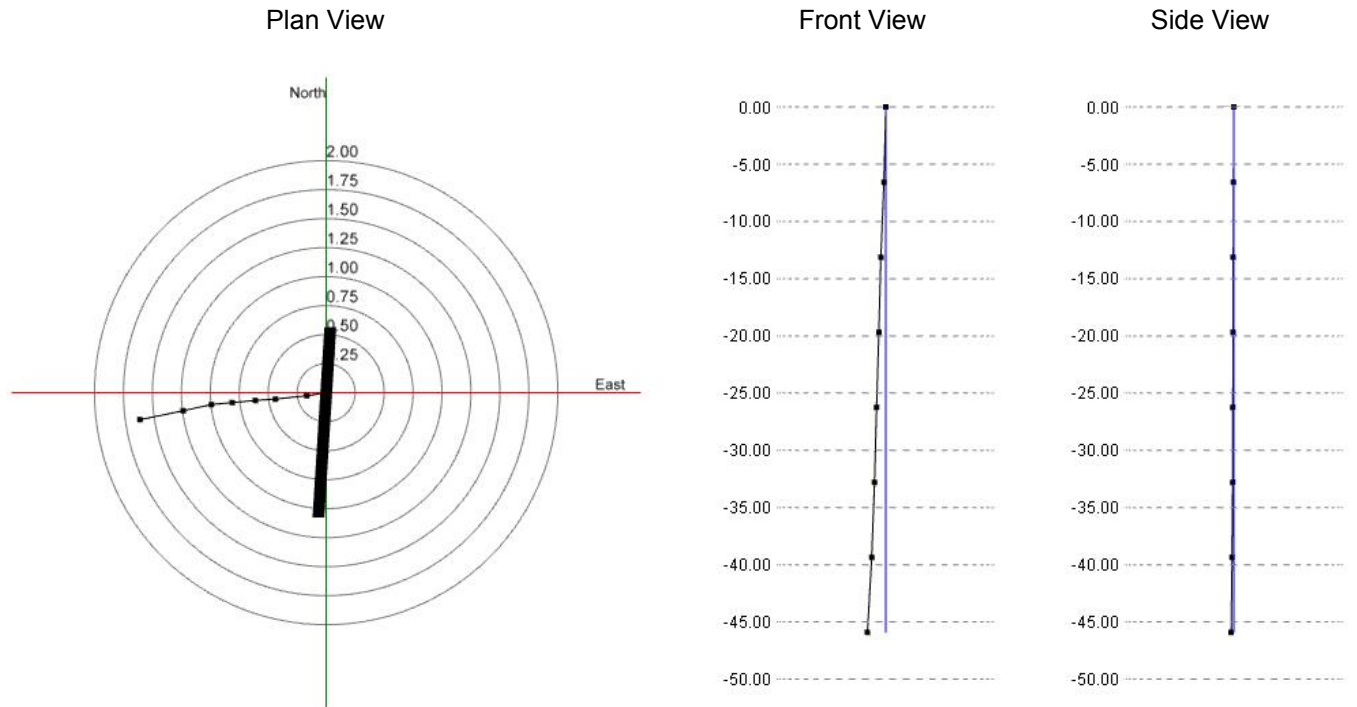
Face : 7 Hole : 2 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	292.70	7.43	0.85
13.12	294.40	9.01	1.88
19.69	293.40	8.14	2.81
26.25	293.30	8.20	3.74
32.81	293.70	9.39	4.81
39.37	285.40	8.39	5.76
45.93	277.60	8.37	6.69

Face : Face 7 Hole : Hole 2_2 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -97.39 Average Inclination (°) : 2.03

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



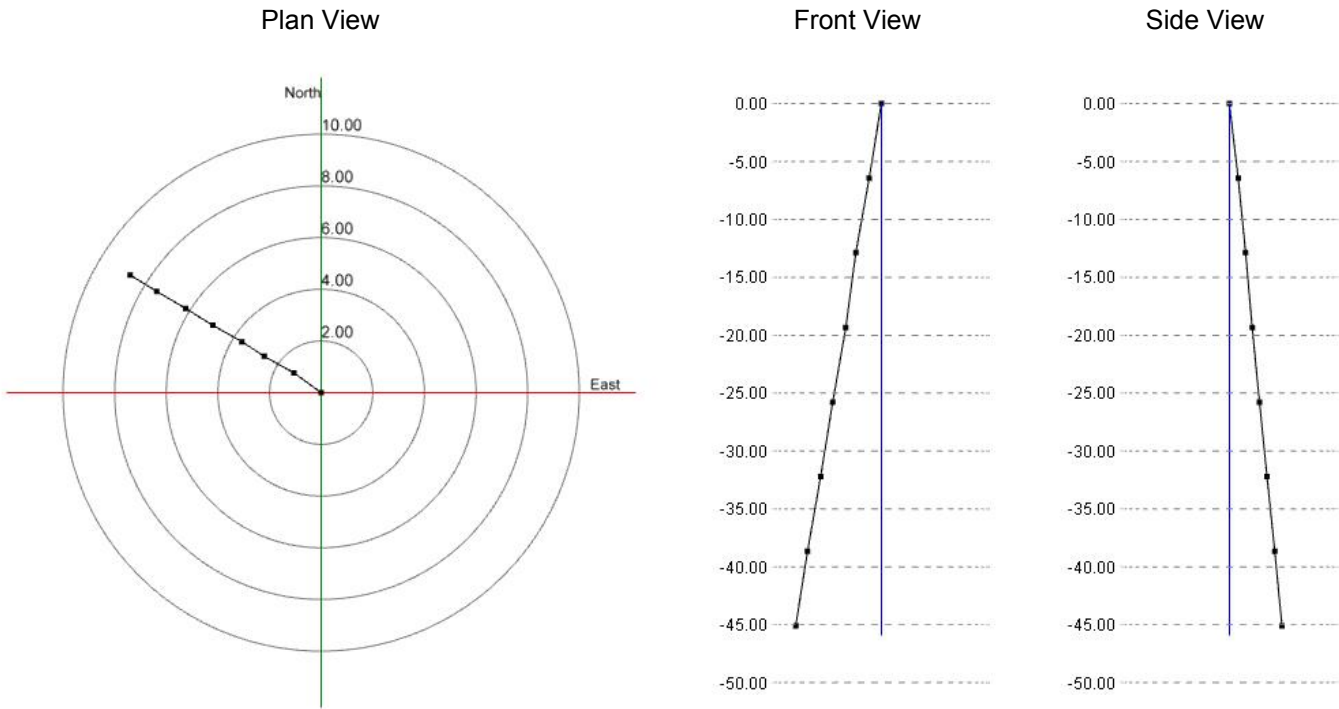
Face : 7 Hole : 11 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	261.00	1.47	0.17
13.12	264.00	2.38	0.44
19.69	266.00	1.53	0.62
26.25	264.60	1.74	0.81
32.81	264.80	1.57	0.99
39.37	257.60	2.20	1.25
45.93	258.30	3.31	1.62

1.3.5 Hole 1_3

Survey Data 1

Face : Face 7 Hole : Hole 1_3 Survey Date : 30/10/17 Dep (ft) : 45.93
 Average Azimuth (°) : -58.37 Average Inclination (°) : 10.90
 Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 3 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	306.00	11.40	1.30
13.12	299.10	11.62	2.61
19.69	303.20	9.07	3.65
26.25	299.30	11.38	4.94
32.81	301.80	10.80	6.17
39.37	300.60	11.54	7.48
45.93	301.40	10.50	8.68

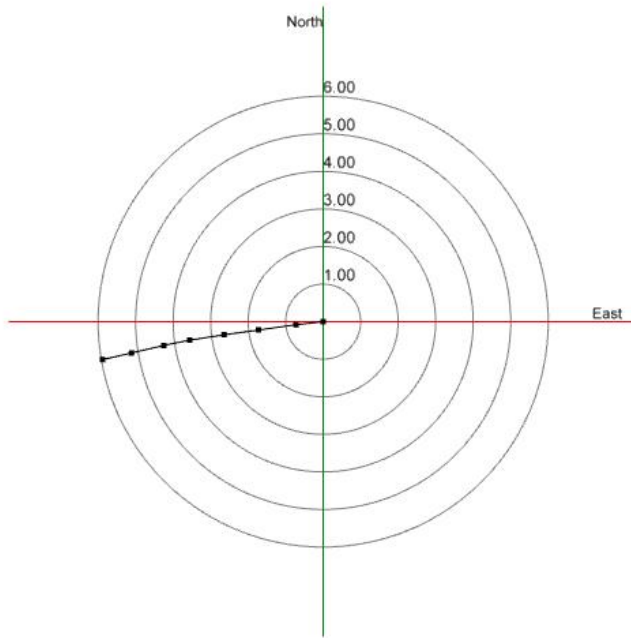
Survey Data 1

Face : Face 7 Hole : Hole 1_4 Survey Date : 30/10/17 Dep (ft) : 45.93

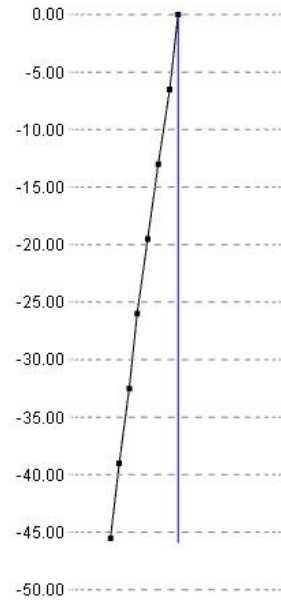
Average Azimuth (°) : -99.12 Average Inclination (°) : 7.47

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93

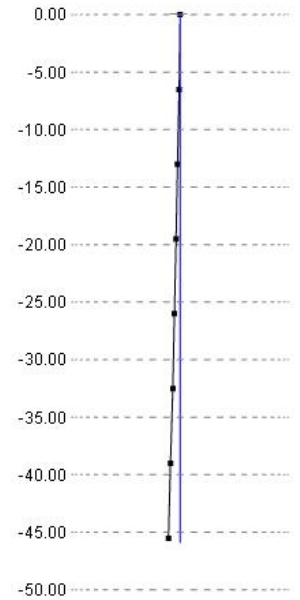
Plan View



Front View



Side View



Face : 7 Hole : 4 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	263.70	6.39	0.73
13.12	261.90	8.83	1.74
19.69	262.10	8.12	2.66
26.25	261.20	8.10	3.59
32.81	258.50	6.20	4.30
39.37	256.80	7.76	5.18
45.93	257.20	6.89	5.97

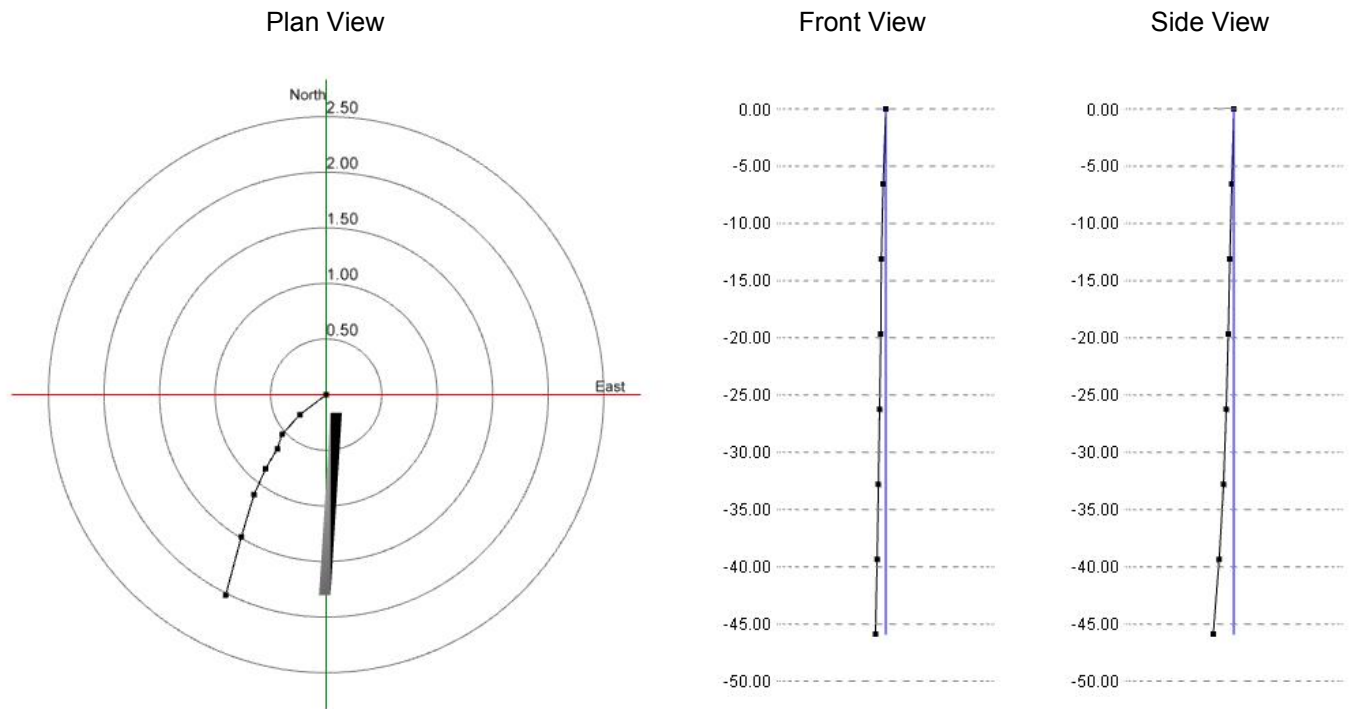
1.3.7 Hole 2_4

Survey Data 1

Face : Face 7 Hole : Hole 2_4 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -148.15 Average Inclination (°) : 2.59

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 13 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	232.80	2.60	0.30
13.12	222.10	2.07	0.53
19.69	198.60	1.20	0.66
26.25	210.40	1.81	0.86
32.81	204.10	2.24	1.11
39.37	196.80	3.47	1.49
45.93	195.00	4.74	2.02

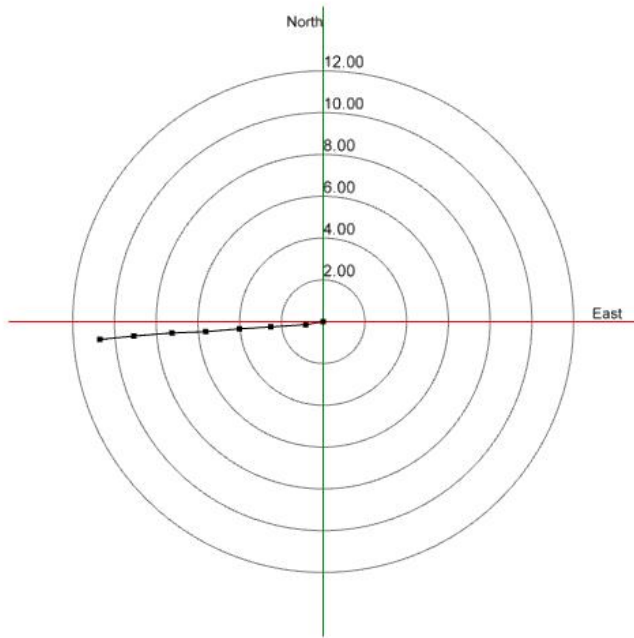
Survey Data 1

Face : Face 7 Hole : Hole 1_5 Survey Date : 30/10/17 Dep (ft) : 45.93

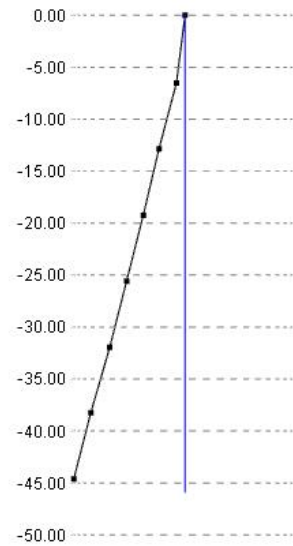
Average Azimuth (°) : -94.44 Average Inclination (°) : 13.54

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93

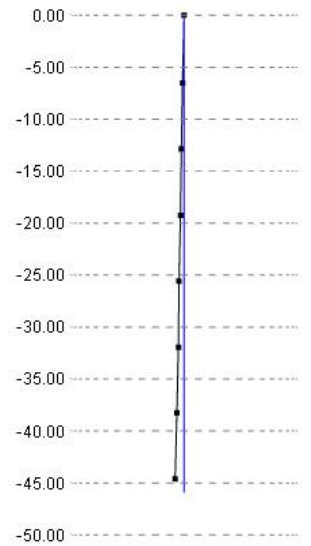
Plan View



Front View



Side View



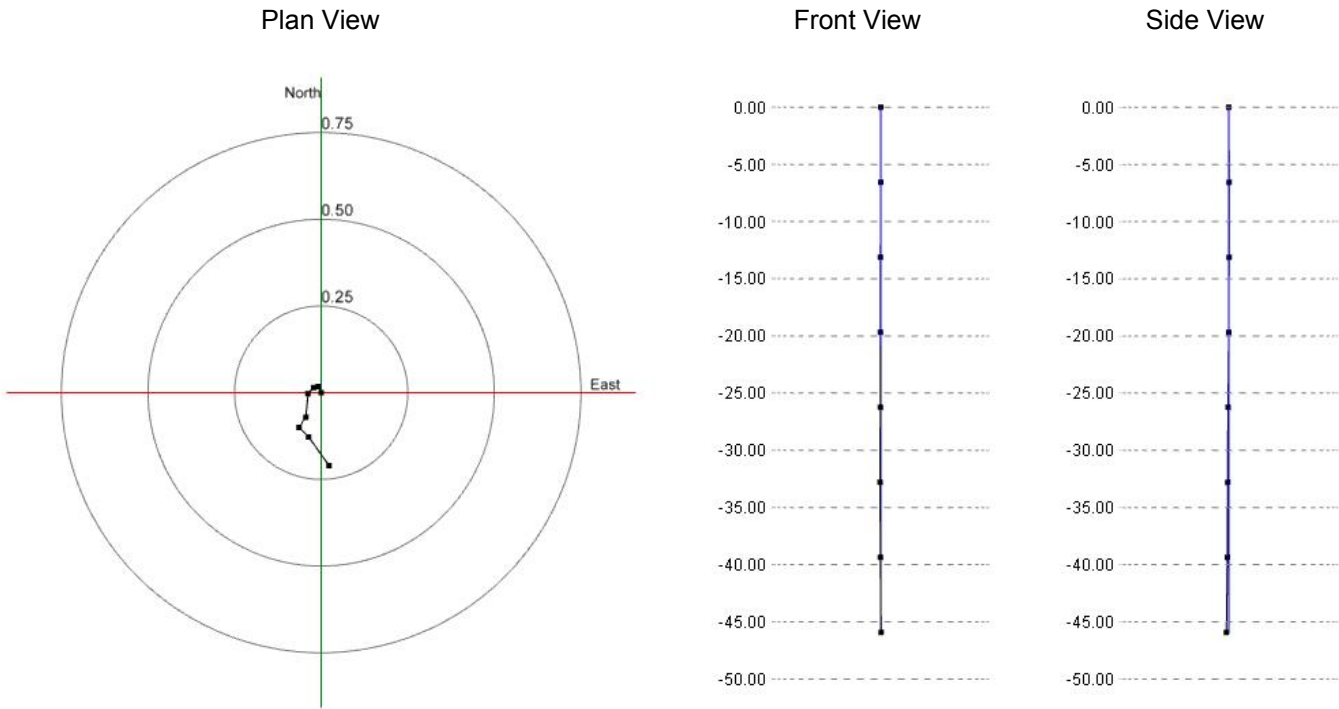
Face : 7 Hole : 5 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	260.30	7.34	0.84
13.12	266.20	14.85	2.52
19.69	266.60	13.35	4.03
26.25	265.10	14.25	5.65
32.81	267.90	14.29	7.26
39.37	265.40	16.20	9.10
45.93	264.10	14.48	10.74

1.3.9 Hole 3_2

Survey Data 1

Face : Face 7 Hole : Hole 3_2 Survey Date : 30/10/17 Dep (ft) : 45.93
 Average Azimuth (°) : 169.03 Average Inclination (°) : 0.38
 Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 20 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	334.60	0.17	0.02
13.12	258.40	0.12	0.03
19.69	222.00	0.21	0.04
26.25	185.40	0.59	0.08
32.81	213.20	0.31	0.12
39.37	135.20	0.34	0.13
45.93	144.40	0.89	0.21

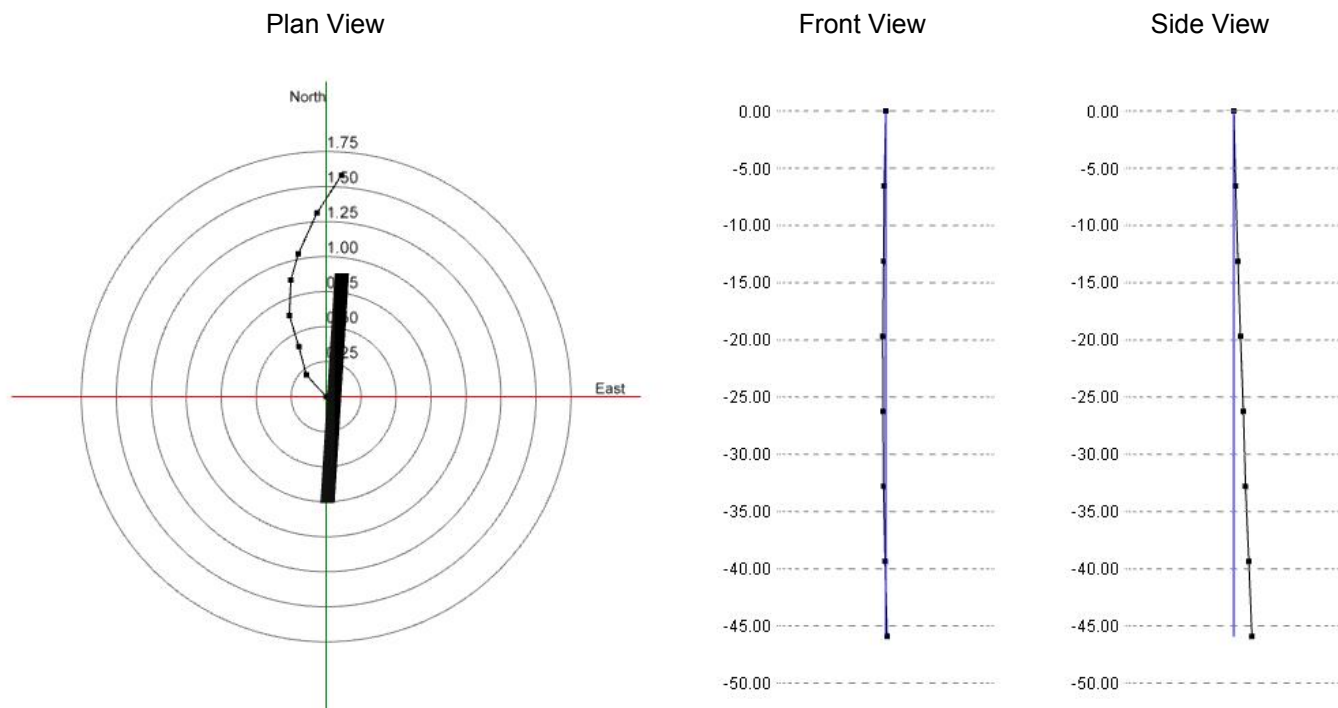
1.3.10 Hole 2_3

Survey Data 1

Face : Face 7 Hole : Hole 2_3 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -6.47 Average Inclination (°) : 2.17

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 11 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	317.60	1.83	0.21
13.12	345.00	1.84	0.41
19.69	343.20	2.02	0.64
26.25	2.30	2.20	0.87
32.81	15.80	1.72	1.04
39.37	24.70	2.81	1.31
45.93	33.00	2.78	1.58

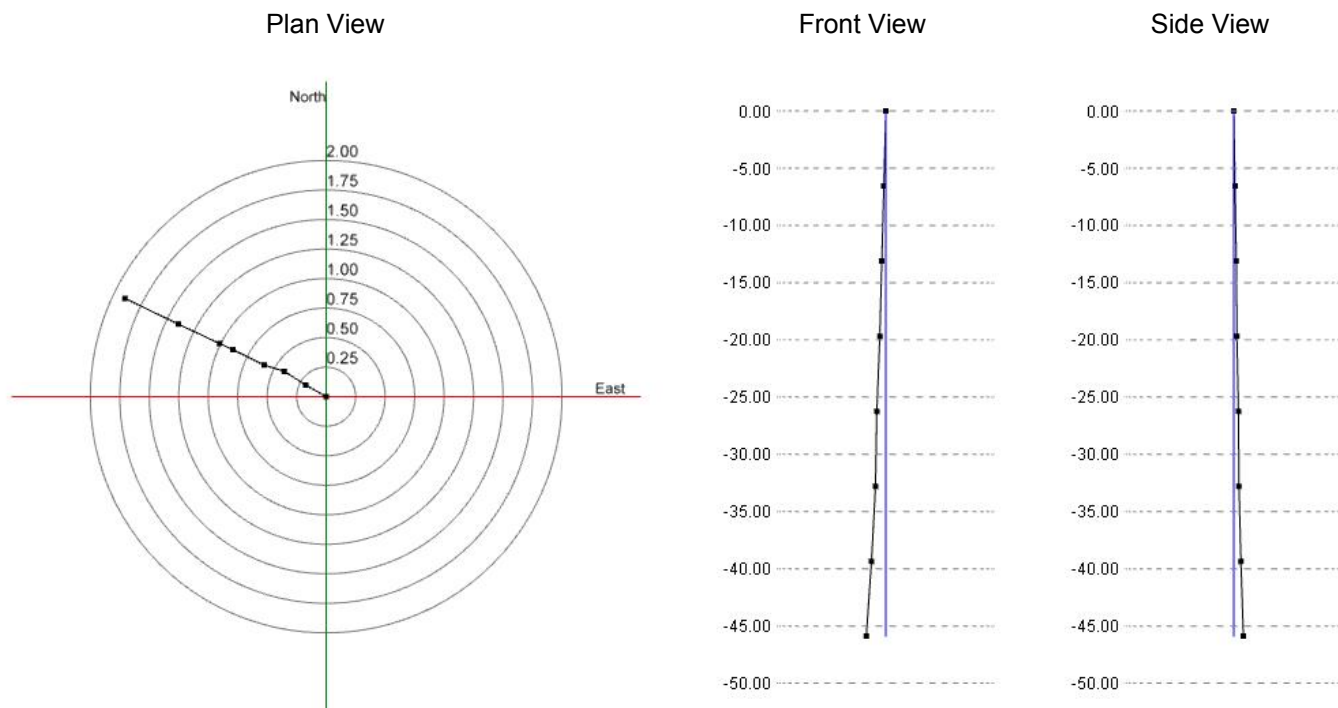
1.3.11 Hole 3_1

Survey Data 1

Face : Face 7 Hole : Hole 3_1 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -63.93 Average Inclination (°) : 2.38

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 19 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	299.80	1.73	0.20
13.12	302.30	1.90	0.42
19.69	287.20	1.55	0.59
26.25	296.20	2.60	0.89
32.81	294.70	1.08	1.01
39.37	295.20	3.37	1.40
45.93	295.70	4.40	1.90

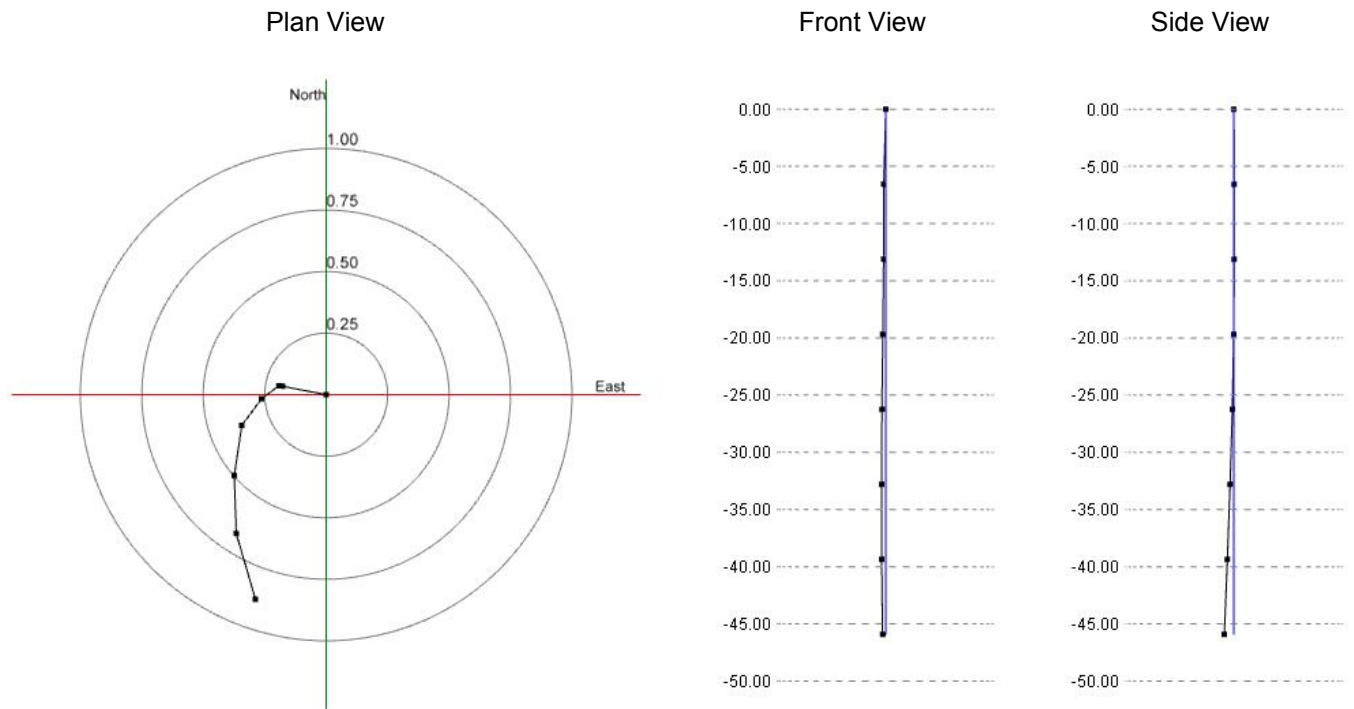
1.3.12 Hole 2_1

Survey Data 1

Face : Face 7 Hole : Hole 2_1 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -139.00 Average Inclination (°) : 1.42

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 10 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	280.90	1.58	0.18
13.12	275.60	0.13	0.20
19.69	233.50	0.76	0.26
26.25	216.60	1.18	0.36
32.81	188.60	1.80	0.50
39.37	178.00	2.06	0.67
45.93	163.70	2.43	0.88

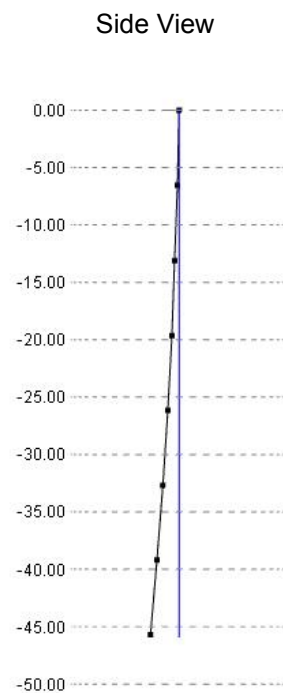
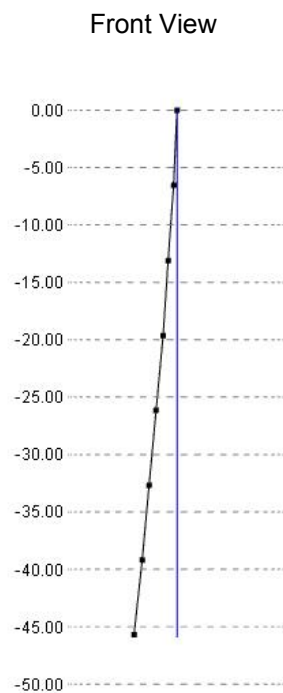
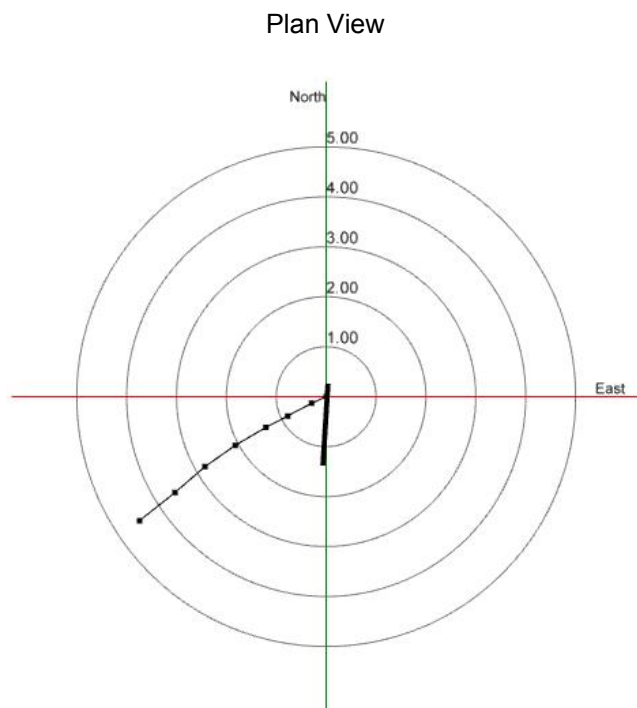
1.3.13 Hole 5_3

Survey Data 1

Face : Face 7 Hole : Hole 5_3 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -122.22 Average Inclination (°) : 5.64

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 28 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	245.90	2.80	0.32
13.12	242.00	4.75	0.86
19.69	242.30	4.30	1.36
26.25	239.70	6.21	2.06
32.81	234.90	6.53	2.81
39.37	229.20	6.93	3.59
45.93	231.70	7.94	4.49

1.3.14 Hole 5_2

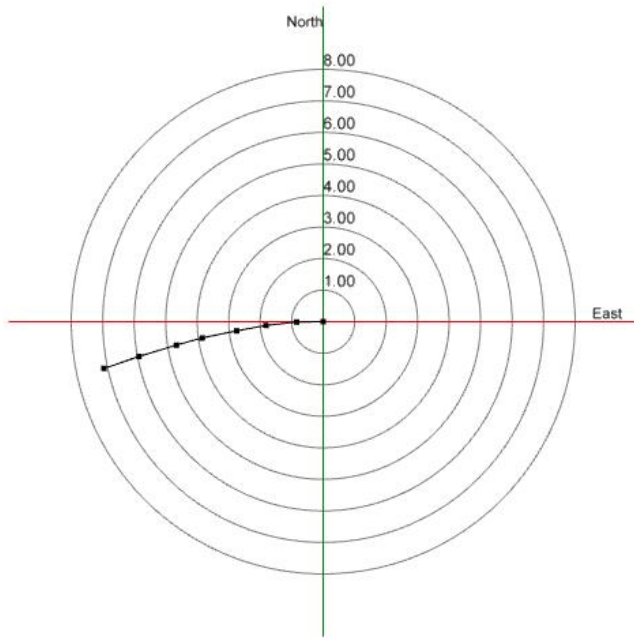
Survey Data 1

Face : Face 7 Hole : Hole 5_2 Survey Date : 30/10/17 Dep (ft) : 45.93

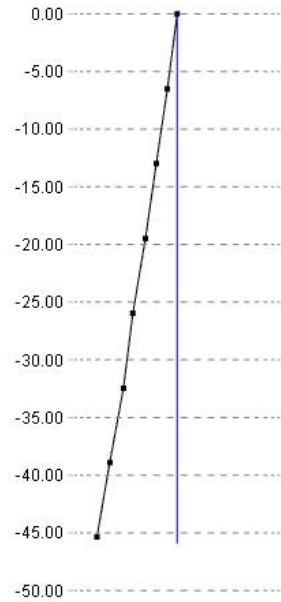
Average Azimuth (°) : -100.71 Average Inclination (°) : 8.96

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93

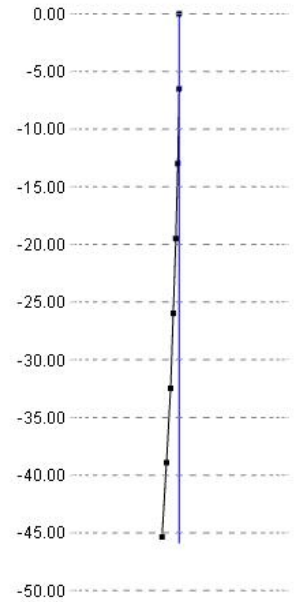
Plan View



Front View



Side View



Face : 7 Hole : 27 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	269.20	7.43	0.85
13.12	263.70	8.51	1.82
19.69	259.50	8.33	2.76
26.25	258.50	9.80	3.88
32.81	254.40	7.42	4.72
39.37	253.20	10.88	5.95
45.93	250.90	10.34	7.11

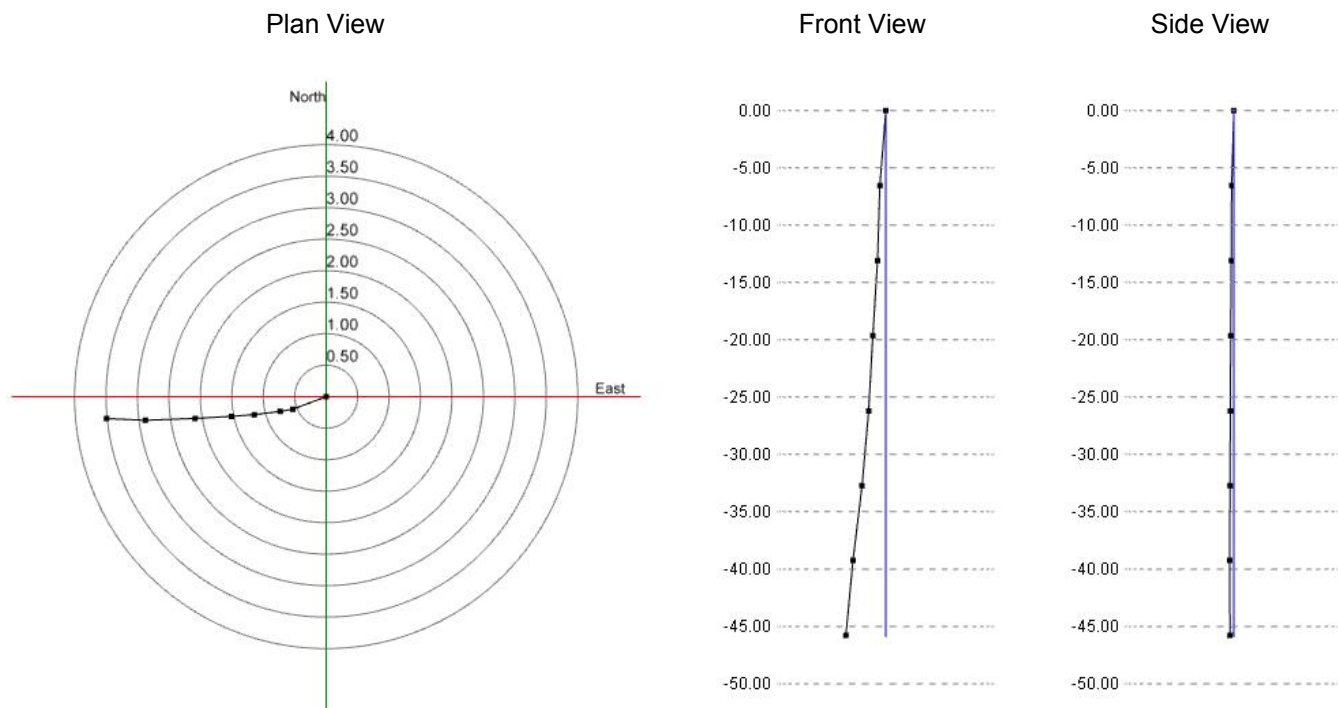
1.3.15 Hole 5_4

Survey Data 1

Face : Face 7 Hole : Hole 5_4 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -96.91 Average Inclination (°) : 4.42

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 29 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	249.40	4.95	0.57
13.12	260.30	1.80	0.77
19.69	262.90	3.60	1.18
26.25	265.80	3.20	1.54
32.81	266.60	5.03	2.11
39.37	267.90	6.93	2.90
45.93	272.50	5.42	3.51

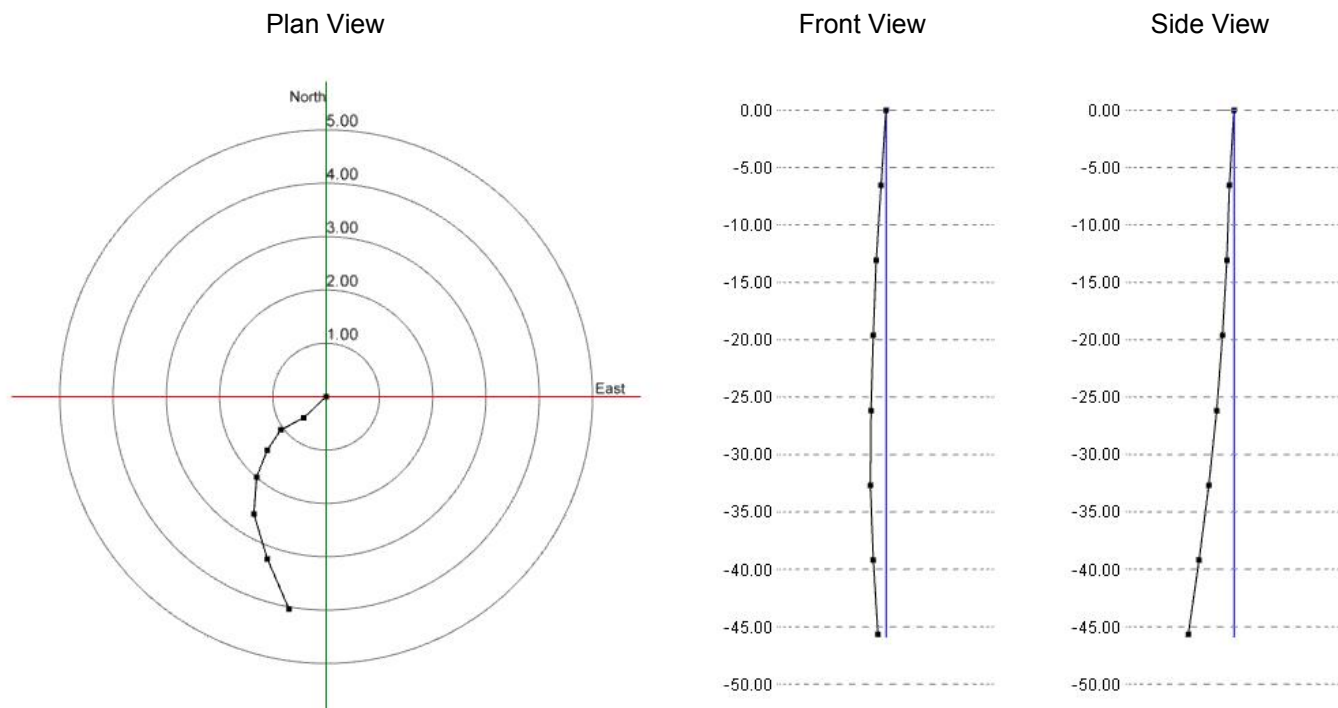
1.3.16 Hole 5_5

Survey Data 1

Face : Face 7 Hole : Hole 5_5 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : 189.86 Average Inclination (°) : 5.83

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 30 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	226.80*	5.07	0.58
13.12	242.30*	4.22	1.05
19.69	213.80*	4.03	1.49
26.25	201.50*	4.71	1.99
32.81	184.40*	6.05	2.58
39.37	163.30*	7.72	3.23
45.93	156.60*	8.98	4.04

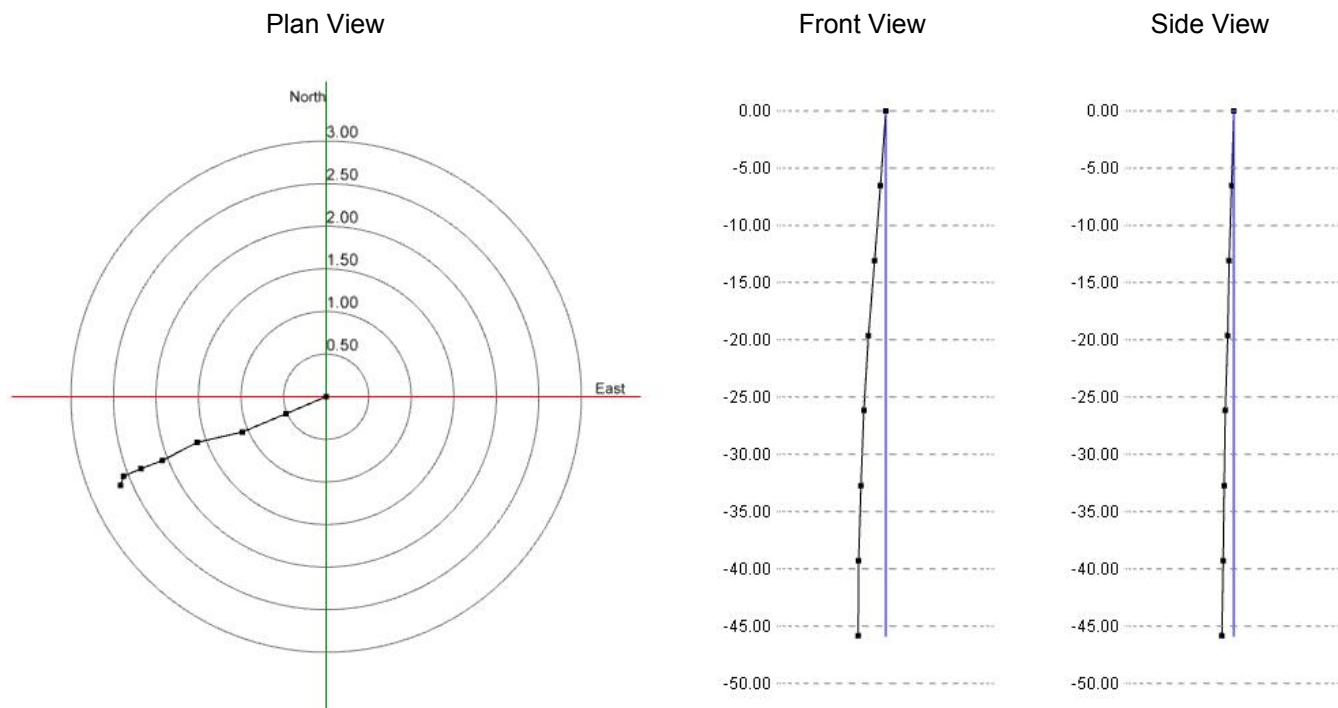
1.3.17 Hole 5_6

Survey Data 1

Face : Face 7 Hole : Hole 5_6 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -111.73 Average Inclination (°) : 3.35

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 31 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	247.00	4.48	0.51
13.12	247.30	4.86	1.07
19.69	257.10	4.78	1.61
26.25	242.40	4.01	2.07
32.81	249.20	2.35	2.33
39.37	246.40	1.94	2.56
45.93	199.90	1.00	2.63

1.3.18 Hole 5_7

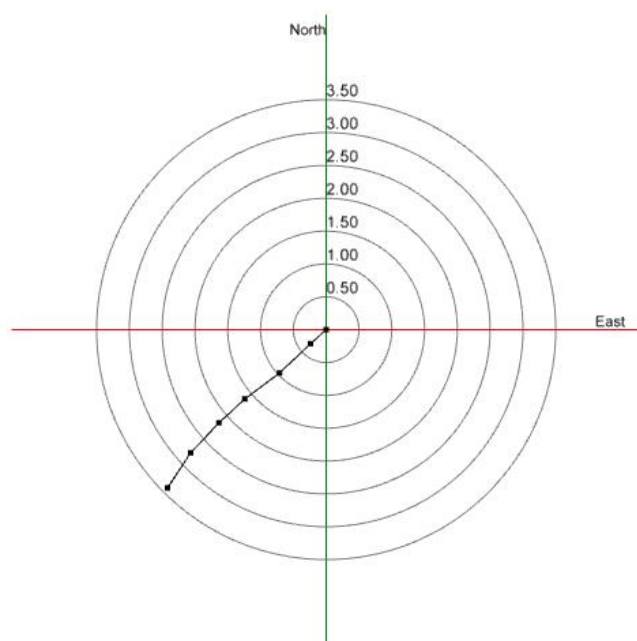
Survey Data 1

Face : Face 7 Hole : Hole 5_7 Survey Date : 30/10/17 Dep (ft) : 39.37

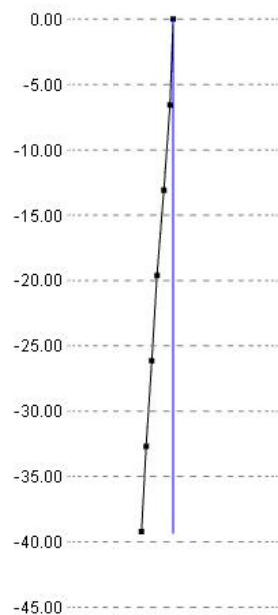
Average Azimuth (°) : -133.06 Average Inclination (°) : 5.01

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 39.37

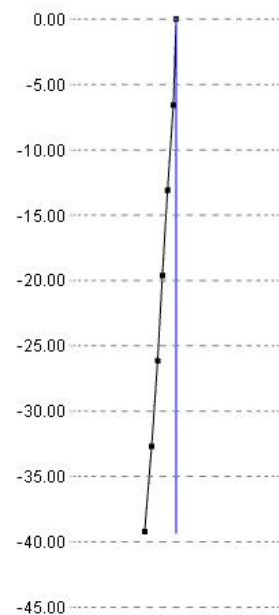
Plan View



Front View



Side View



Face : 7 Hole : 32 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 39.37(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	228.10	2.80	0.32
13.12	226.70	5.68	0.97
19.69	233.20	5.76	1.63
26.25	227.40	4.71	2.16
32.81	223.40	5.49	2.79
39.37	213.40	5.61	3.42

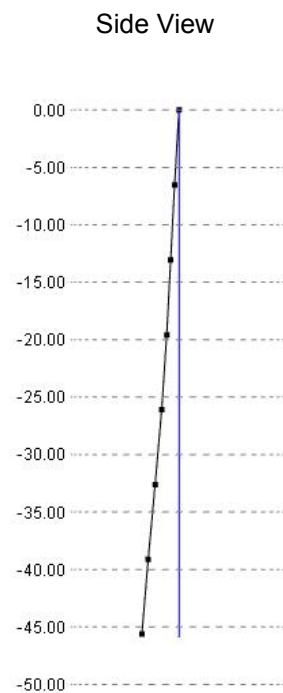
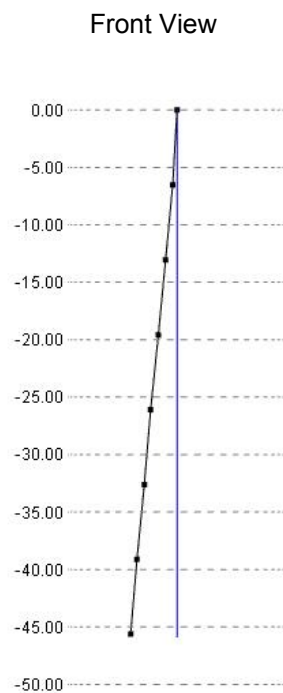
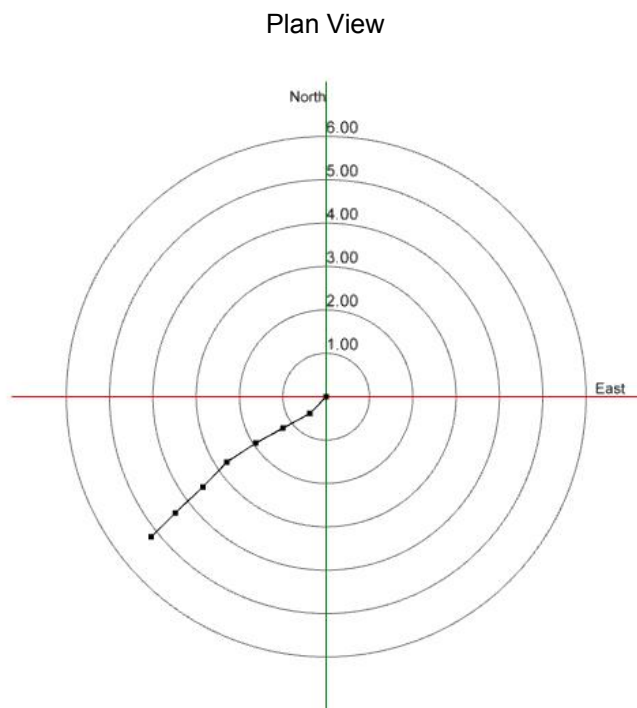
1.3.19 Hole 5_8

Survey Data 1

Face : Face 7 Hole : Hole 5_8 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : -127.16 Average Inclination (°) : 6.52

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 33 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	224.20	4.71	0.54
13.12	241.30	6.17	1.23
19.69	241.30	6.28	1.94
26.25	236.80	7.02	2.75
32.81	224.00	6.96	3.53
39.37	226.70	7.67	4.40
45.93	225.20	6.83	5.17

1.3.20 Hole 5_9

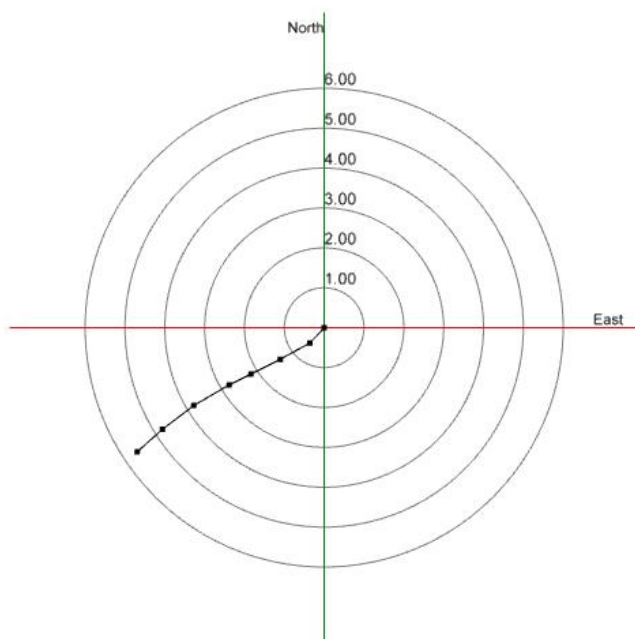
Survey Data 1

Face : Face 7 Hole : Hole 5_9 Survey Date : 30/10/17 Dep (ft) : 45.93

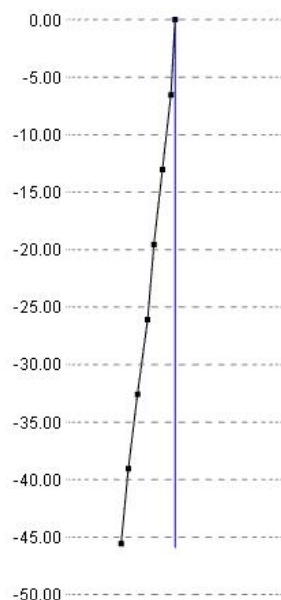
Average Azimuth (°) : -122.26 Average Inclination (°) : 7.09

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93

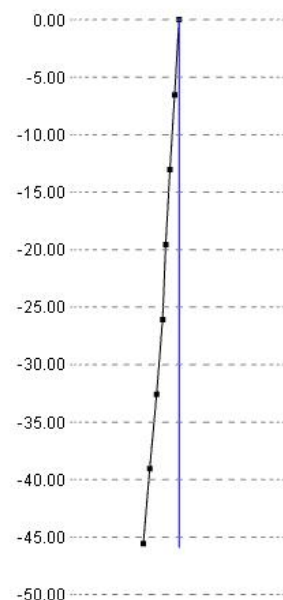
Plan View



Front View



Side View



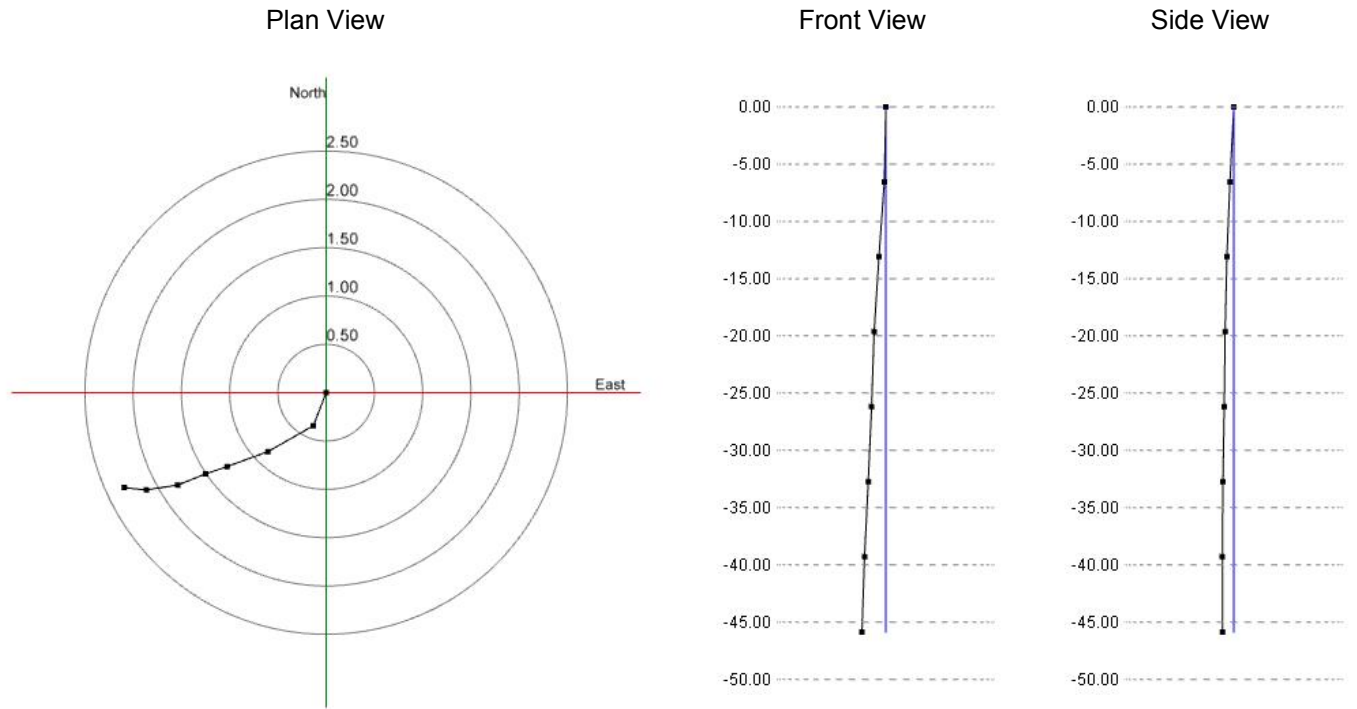
Face : 7 Hole : 34 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	223.00	4.60	0.53
13.12	241.30	7.40	1.35
19.69	243.40	7.22	2.17
26.25	243.50	5.33	2.78
32.81	239.70	9.00	3.81
39.37	232.90	8.73	4.80
45.93	228.30	7.32	5.62

1.3.21 Hole 5_10

Survey Data 1

Face : Face 7 Hole : Hole 5_10 Survey Date : 30/10/17 Dep (ft) : 45.93
 Average Azimuth (°) : -118.24 Average Inclination (°) : 3.08
 Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 35 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	201.20	3.21	0.37
13.12	240.40	4.73	0.86
19.69	249.90	3.93	1.28
26.25	251.10	2.07	1.51
32.81	248.40	2.71	1.81
39.37	261.10	2.88	2.12
45.93	276.00	2.00	2.31

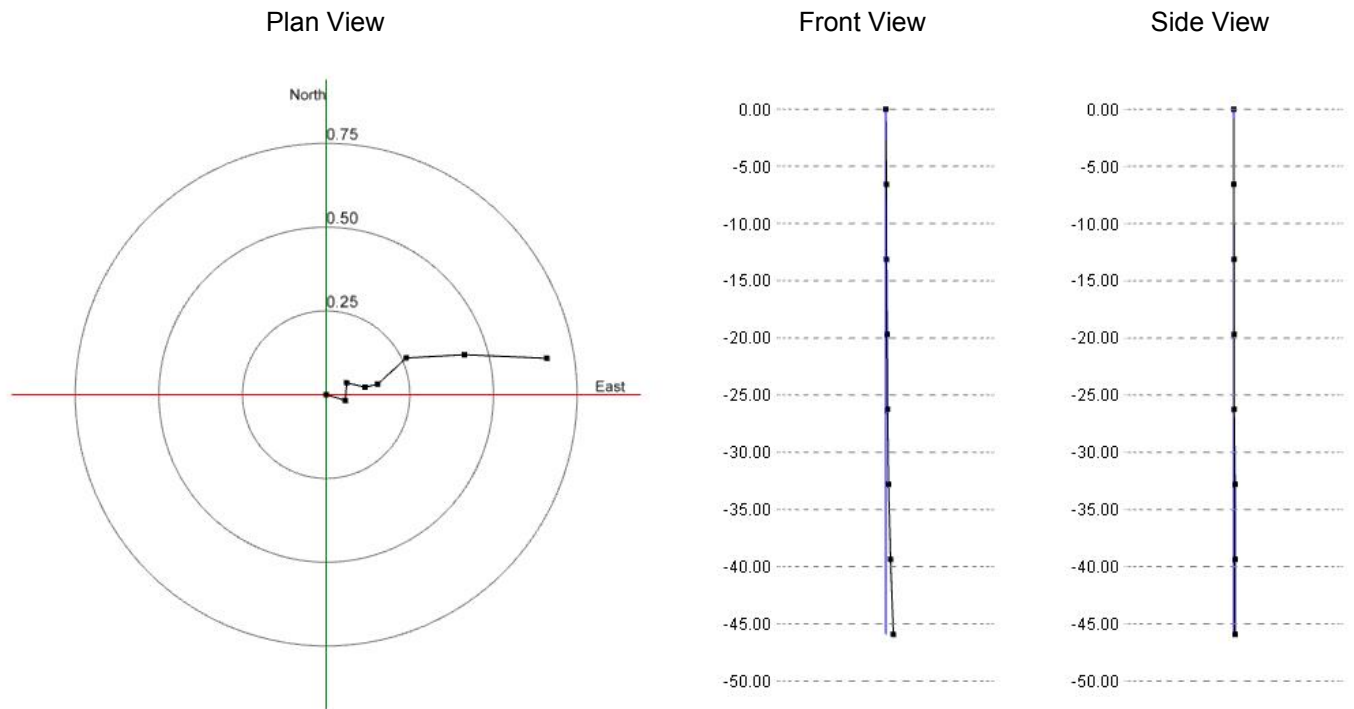
1.3.22 Hole 5_11

Survey Data 1

Face : Face 7 Hole : Hole 5_11 Survey Date : 30/10/17 Dep (ft) : 45.93

Average Azimuth (°) : 78.14 Average Inclination (°) : 0.93

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 36 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	106.70	0.52	0.06
13.12	4.90	0.46	0.07
19.69	103.30	0.49	0.12
26.25	77.20	0.34	0.16
32.81	47.30	1.01	0.26
39.37	86.80	1.52	0.43
45.93	92.50	2.15	0.67

1.3.23 Test 1

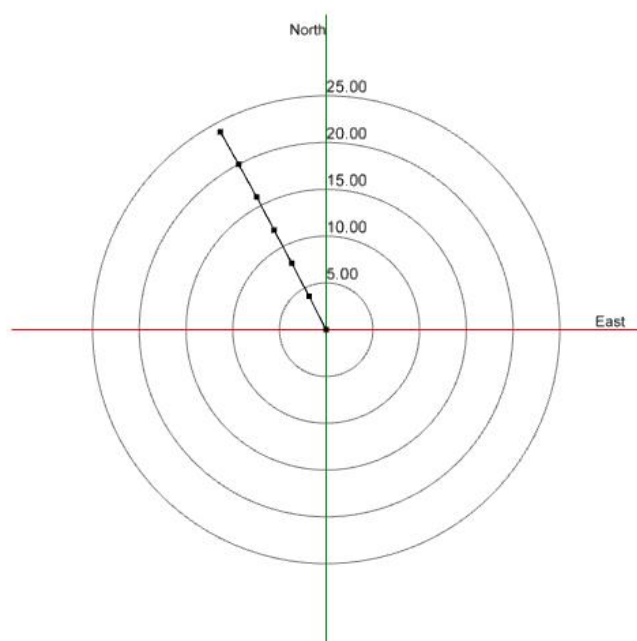
Survey Data 1

Face : Face 7 Hole : Test 1 Survey Date : 02/11/17 Dep (ft) : 39.37

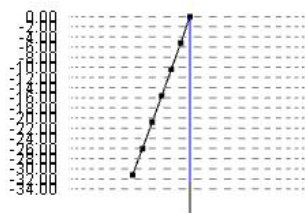
Average Azimuth (°) : -28.00 Average Inclination (°) : 37.52

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 39.37

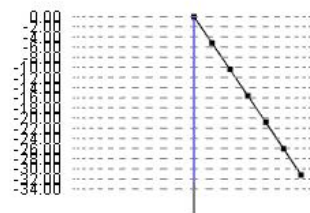
Plan View



Front View



Side View



Face : 7 Hole : 95 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 39.37(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	332.80	37.54	4.00
13.12	332.40	37.55	8.00
19.69	331.90	37.55	12.00
26.25	332.10	37.55	15.99
32.81	331.10	37.46	19.99
39.37	330.60	37.47	23.98

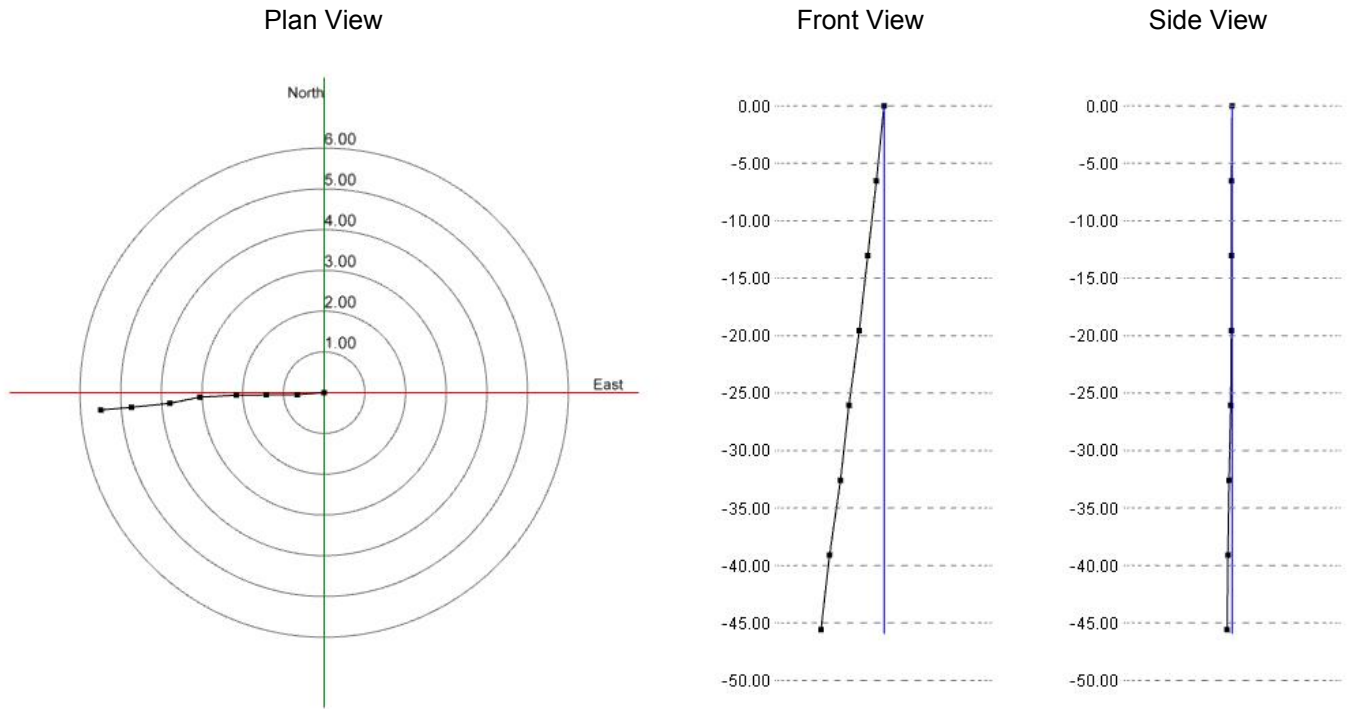
1.3.24 Hole 5_13

Survey Data 1

Face : Face 7 Hole : Hole 5_13 Survey Date : 02/11/17 Dep (ft) : 45.93

Average Azimuth (°) : -94.02 Average Inclination (°) : 6.90

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



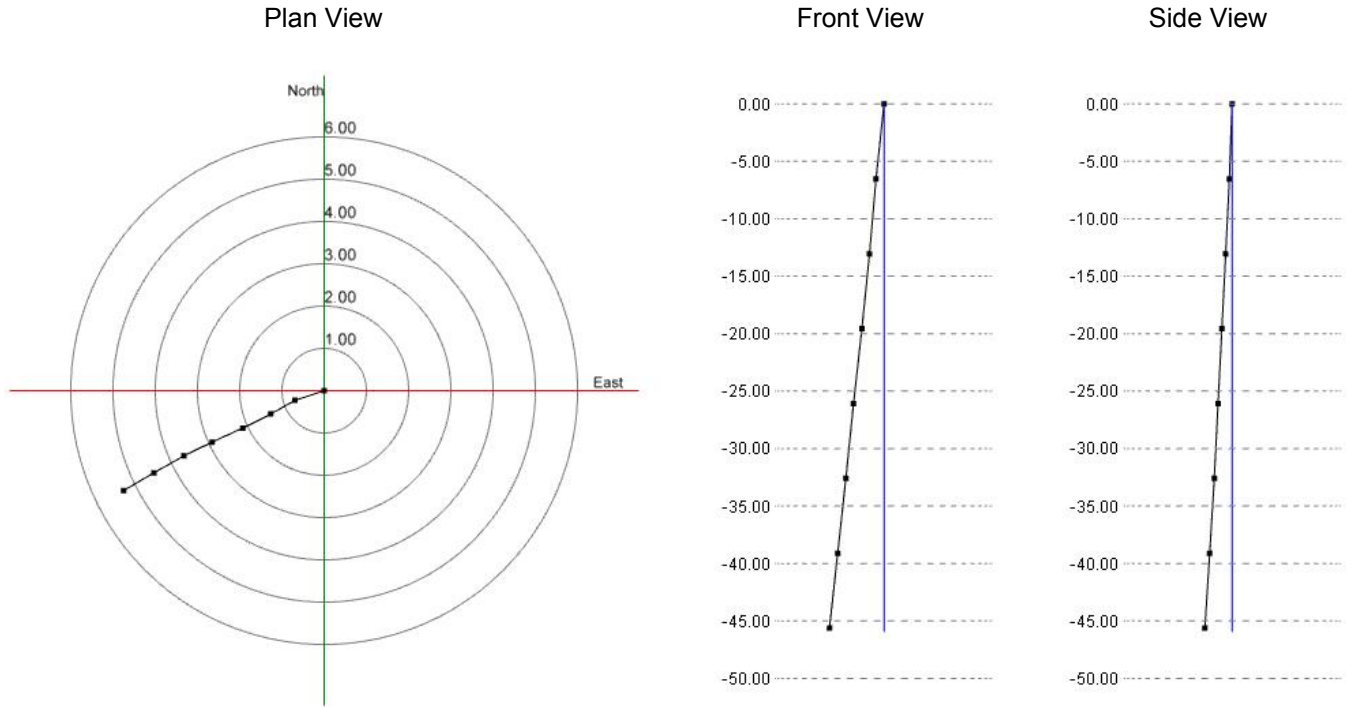
Face : 7 Hole : 45 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	265.90	5.82	0.67
13.12	269.60	6.60	1.42
19.69	269.30	6.44	2.15
26.25	267.00	7.92	3.06
32.81	258.30	6.55	3.80
39.37	264.00	8.35	4.75
45.93	265.20	6.59	5.50

1.3.25 Hole 5_12

Survey Data 1

Face : Face 7 Hole : Hole 5_12 Survey Date : 02/11/17 Dep (ft) : 45.93
 Average Azimuth (°) : -115.84 Average Inclination (°) : 6.65
 Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 44 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	251.70	6.40	0.73
13.12	240.50	5.70	1.38
19.69	243.40	6.50	2.12
26.25	245.40	7.00	2.92
32.81	244.00	6.51	3.66
39.37	240.60	7.13	4.47
45.93	239.70	7.28	5.30

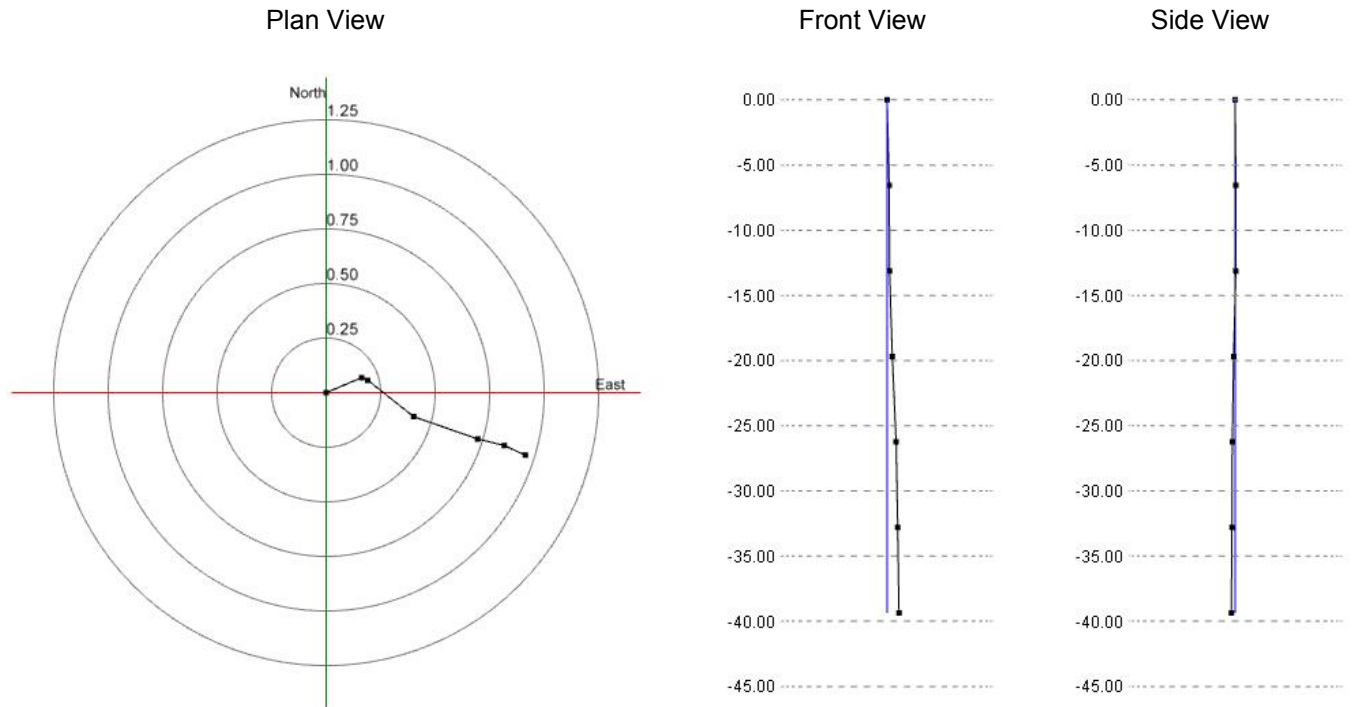
1.3.26 Hole 1_10

Survey Data 1

Face : Face 7 Hole : Hole 1_10 Survey Date : 02/11/17 Dep (ft) : 39.37

Average Azimuth (°) : 107.32 Average Inclination (°) : 1.48

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 39.37



Face : 7 Hole : 18 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 39.37(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	67.10	1.54	0.18
13.12	112.50	0.27	0.20
19.69	128.40	2.34	0.42
26.25	109.20	2.72	0.73
32.81	103.80	1.09	0.85
39.37	114.70	0.93	0.96

1.3.27 Hole 1_9

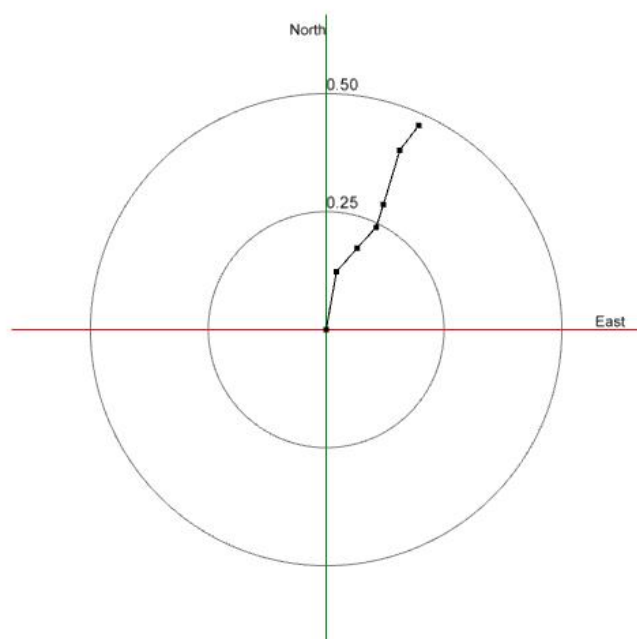
Survey Data 1

Face : Face 7 Hole : Hole 1_9 Survey Date : 02/11/17 Dep (ft) : 39.37

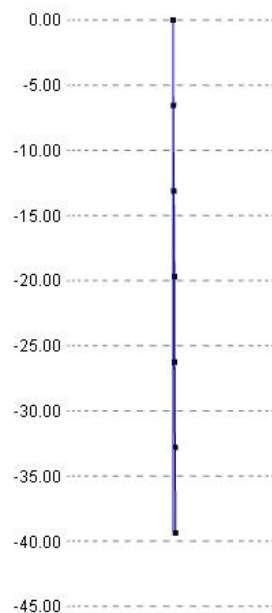
Average Azimuth (°) : 24.54 Average Inclination (°) : 0.71

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 39.37

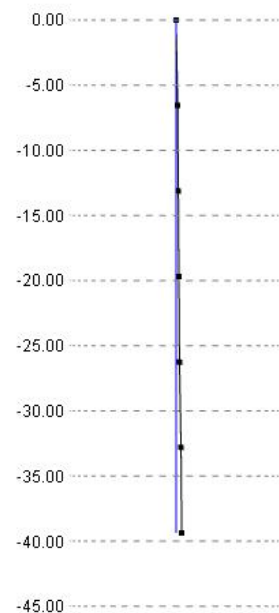
Plan View



Front View



Side View



Face : 7 Hole : 17 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 39.37(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	10.10	1.09	0.12
13.12	41.40	0.58	0.18
19.69	42.20	0.52	0.24
26.25	18.10	0.44	0.29
32.81	16.80	1.05	0.41
39.37	37.30	0.58	0.48

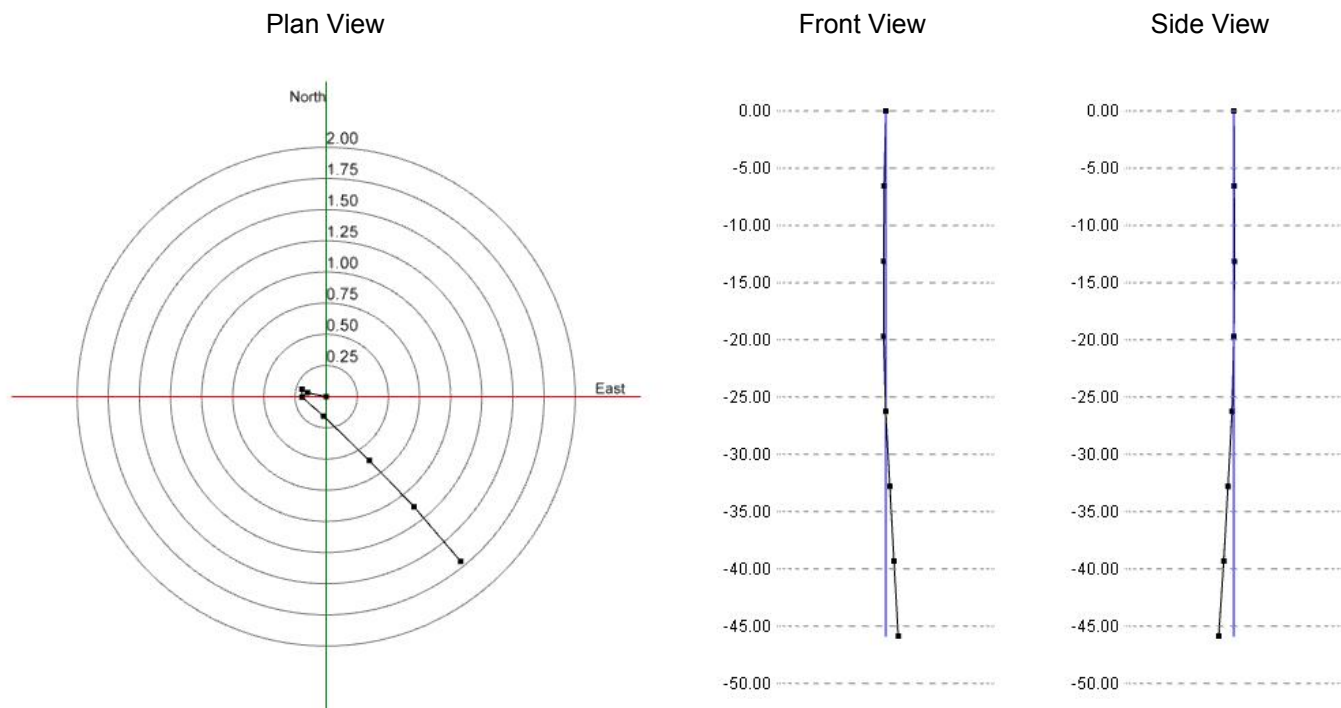
1.3.28 Hole 1_7

Survey Data 1

Face : Face 7 Hole : Hole 1_7 Survey Date : 06/11/17 Dep (ft) : 45.93

Average Azimuth (°) : 140.28 Average Inclination (°) : 2.62

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 15 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	281.80	1.35	0.15
13.12	304.50	0.44	0.20
19.69	180.00	0.56	0.19
26.25	131.50	2.00	0.16
32.81	134.10	4.48	0.62
39.37	135.90	4.52	1.13
45.93	139.50	5.02	1.71

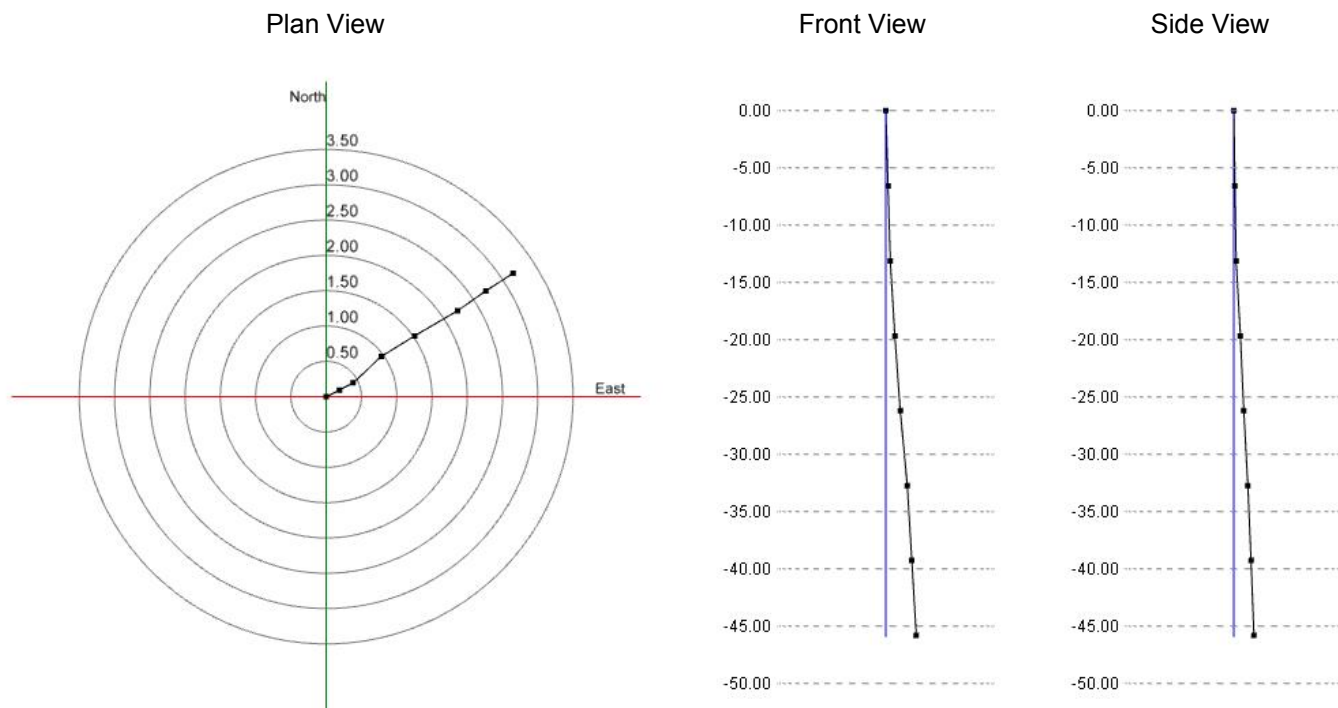
1.3.29 Hole 1_8

Survey Data 1

Face : Face 7 Hole : Hole 1_8 Survey Date : 06/11/17 Dep (ft) : 45.93

Average Azimuth (°) : 56.45 Average Inclination (°) : 3.98

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 16 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	63.60	1.82	0.21
13.12	62.40	1.94	0.43
19.69	46.80	4.75	0.96
26.25	58.30	4.87	1.52
32.81	59.70	6.20	2.23
39.37	54.90	4.24	2.71
45.93	57.20	4.05	3.18

1.3.30 Hole 1_11

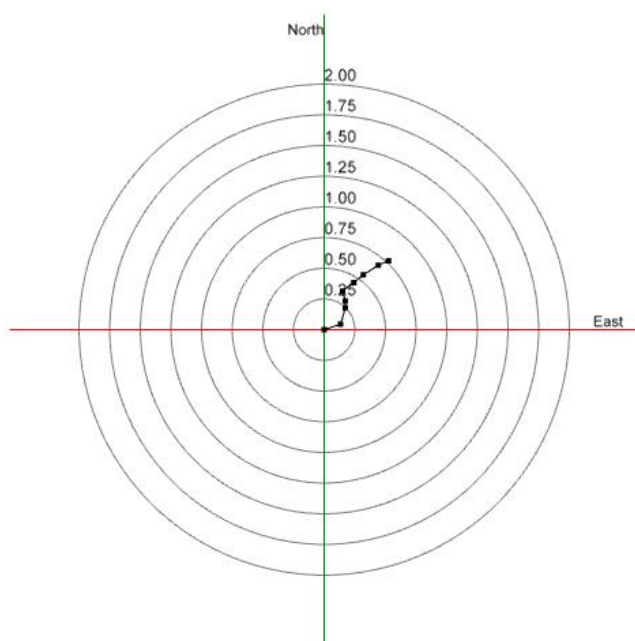
Survey Data 1

Face : Face 7 Hole : Hole 1_11 Survey Date : 06/11/17 Dep (ft) : 52.49

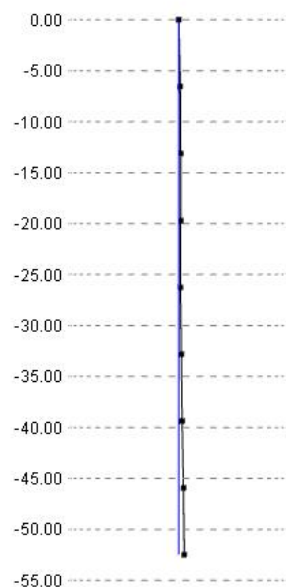
Average Azimuth (°) : 40.86 Average Inclination (°) : 0.95

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 52.49

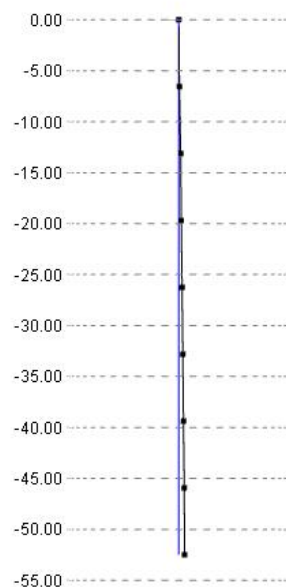
Plan View



Front View



Side View



Face : 7 Hole : 50 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 52.49(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	71.60	1.24	0.14
13.12	15.70	1.20	0.25
19.69	0.90	0.49	0.29
26.25	344.90	0.74	0.35
32.81	52.40	0.99	0.45
39.37	52.00	0.89	0.55
45.93	56.60	1.26	0.69
52.49	67.50	0.78	0.77

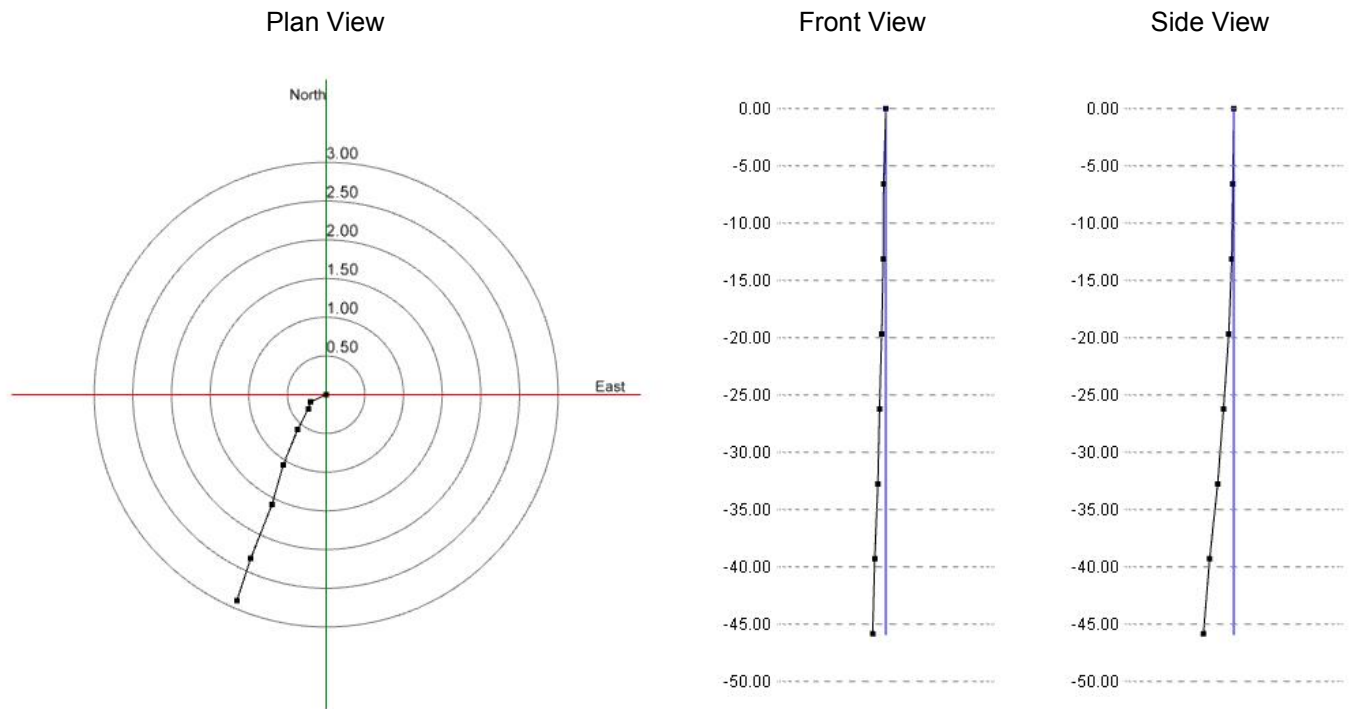
1.3.31 Hole 1_6

Survey Data 1

Face : Face 7 Hole : Hole 1_6 Survey Date : 06/11/17 Dep (ft) : 45.93

Average Azimuth (°) : -155.11 Average Inclination (°) : 3.70

Designed Azimuth (°) : 0.00 Designed Inclination (°) : 0.00 Designed Depth (ft) : 45.93



Face : 7 Hole : 14 Rod Increment : 6.56(ft) Offset : 0.00(ft) Dep : 45.93(ft) Grid Magnetic Angle : 10.00(°)

Dep(ft)	Heading(°)	Inclination(°)	Dev(ft)
6.56	245.70	1.93	0.22
13.12	196.90	0.84	0.29
19.69	207.70	2.63	0.58
26.25	202.10	4.31	1.06
32.81	195.90	4.63	1.58
39.37	201.50	6.58	2.33
45.93	198.20	4.99	2.90