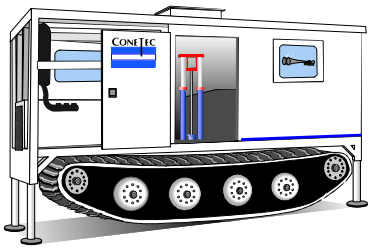

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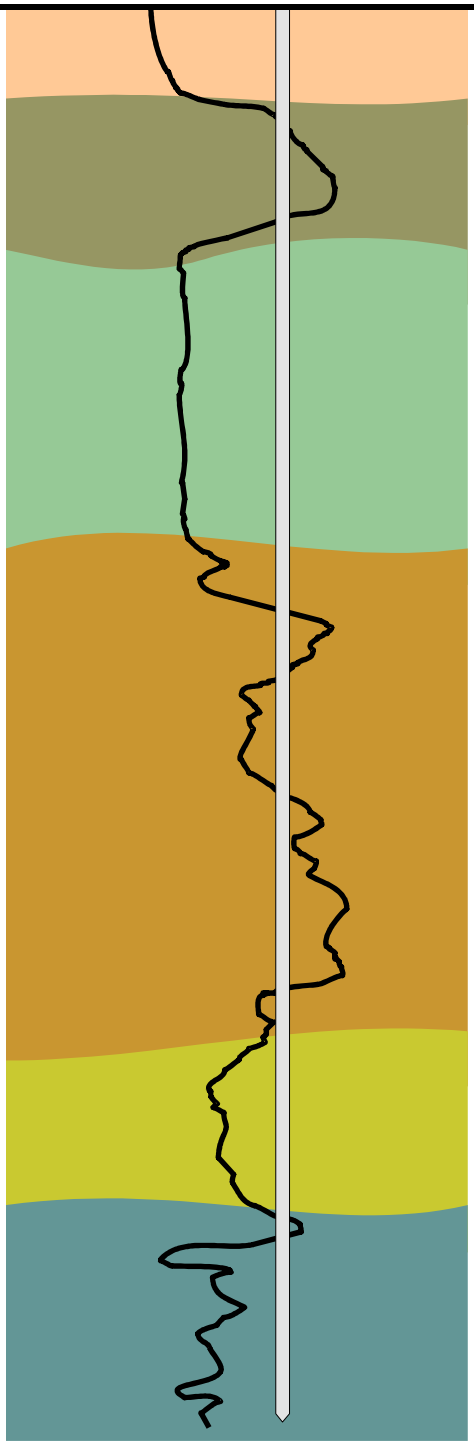
Geotechnical, Environmental and Marine Site Investigation Services



Cone Penetration Test Data

I-15 Reconstruction Project
Utah County, Utah

August 4 - 27, 2008

Prepared for:
IGES, Inc.
Bluffdale, Utah

- October 12, 2008 -

Salt Lake City, UT • West Berlin, NJ • Richmond, VA • Vancouver, BC • Edmonton, AB
Tel: (801) 973-3801 • Fax: (801) 973-3802 • Email: SaltLakeCity@conetec.com

ConeTec, Inc.
Geotechnical and Environmental Site Investigation Contractors
3589 West 500 South, Suite 3, Salt Lake City, UT 84104 ● PO Box 22082, Salt Lake City, UT 84122
Tel: (801) 973-3801 ● Fax: (801) 973-3802 ● Web: www.conetec.com ● Email: saltlakecity@conetec.com

October 12, 2008 Job No.: 08-409

Mr. David Peterson
IGES, Inc.
14881 South Concorde Park Drive
Suite 2
Bluffdale, UT 84065

Tel: (801) 748-4044
Fax: (801) 748-4045
Email: davidp@igesinc.com

Re: CPT Test Results
I-15 Reconstruction Project
Utah County, Utah

Dear Dave,

Per your request, we have completed the CPT investigation for the above referenced project. Enclosed is one set of standard CPT plots, pore pressure dissipation plots, shear wave velocity calculations, seismic CPT plots and a data CD. The CD contains the CPT and PPD data files in Excel format. In addition to the data files, we have included digital copies of the CPT plots, PPD plots, shear wave velocity calculations, seismic CPT plots in PDF format. The attached summary sheet outlines the work completed at the site.

Many correlations have been developed for design parameters based on CPT data. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design.

Assumptions have been made regarding soil unit weights, groundwater level and interpretational methods, which may or may not apply to this site. Additionally, the following table summarizes the values assigned to the specific soil behavior type zones. Furthermore, the coordinates provided on the plots are for general location only and should not be inferred to provide survey grade data.

Zone	SPT qt/N	Unit Wt. (kN/m^3)	Unit Wt. (pcf)	k (cm/s)	Description
0	1.0	19.5	124.1	$1x10^{-15}$	Undefined
1	2.0	12.5	79.6	$1x10^{-7}$	Sensitive Fines
2	1.0	17.5	111.4	$1x10^{-15}$	Organic Soil
3	1.0	17.5	111.4	$5x10^{-8}$	Clay
4	1.5	18.0	114.6	$5x10^{-7}$	Silty Clay
5	2.0	18.0	114.6	5x10-6	Clayey Silt

Zone	SPT qt/N	Unit Wt. (kN/m^3)	Unit Wt. (pcf)	k (cm/s)	Description
6	2.5	18.0	114.6	$5x10^{-5}$	Silt
7	3.0	18.5	117.8	$5x10^{-4}$	Sandy Silt
8	4.0	19.0	120.9	$5x10^{-3}$	Silty Sand/Sand
9	5.0	19.5	124.1	$5x10^{-2}$	Sand
10	6.0	20.0	127.3	5	Gravelly Sand
11	1.0	20.5	130.5	$1x10^{-15}$	Stiff Fine Grained
12	2.0	19.0	120.9	$1x10^{-5}$	Cemented Sand

We appreciate the opportunity of providing these services to you. If you have any questions regarding the enclosed material or if, we can be of additional assistance, please contact us.

Sincerely,

ConeTec, Inc.

Shawn Steiner

Shawn D. Steiner, P.E.
Manager

Enclosures

ConeTec, Inc. • Salt Lake City
Job No: 08-419
Client: IGES, Inc.
Project: Utah County I-15 Reconstruction

CPT Testing Summary

CPT Location	CPT Filename	CPT Depth	PPD Depth	PPD Duration	Ueq	Apparent Water Table	Seismic Vs Test	Comments
08-AF5-C1	419CP01	100.06	38.55	300	36.1	2.5	X	
08-AF6-C1	419CP02	91.21	89.73	200	106.7	5.0	X	Refusal
08-PG2-C2	419CP03	100.06	83.17	300	99.5	5.0		
08-PG2-C1	419CP04	100.06	82.35	300	100.5	5.0	X	
08-AF6-C2	419CP05	96.78	30.18	600	24.8	5.4		Refusal
08-AF5-C2	419CP06	100.39	26.41	600	24.0	2.4		Refusal
08-L1-C1	419CP07	110.56	77.76	800	73.0	4.8	X	
08-L1-C2	419CP08	100.06	40.85	400	49.4	5.0		
08-OR2-C2	419CP09	74.47	40.03	600	14.4	25.6	X	Refusal
08-OR2-C1	419CP10	111.06	58.56	600	35.2	23.4		
08-OR1-C2	419CP11	106.95	22.80	300	10.9	11.9	X	Refusal
08-AF4-C1	419CP12	97.44	35.43	300	27.7	7.7	X	Refusal
08-AF2-C2	419CP13	83.99	61.52	300	37.5	24.0		Refusal
08-AF2-C1	419CP14	82.84	82.84	300	58.5	24.3	X	Refusal
08-OR3-C2	419CP15	73.16	51.84	400	16.5	35.3	X	Refusal
08-OR3-C1	419CP16	112.70	89.73	600	38.3	51.4		Refusal
08-L2-C1	419CP17	3.12				5.0		Hit Pipeline
08-L2-C2	419CP18	112.04	31.50	600	26.3	5.2	X	
08-OR5-C2	419CP19	84.64	77.59	900	46.5	31.1	X	Refusal
08-OR6-C1	419CP20	114.17	56.92	900	44.4	12.5	X	
08-OR6-C2	419CP21	100.06	66.11	600	56.3	9.8		
08-OR8-C1	419CP22	100.06	46.92	900	44.2	2.7	X	
08-OR5-C1	419CP23	100.72	54.13	900	36.0	18.1		Refusal

CPT Location	CPT Filename	CPT Depth	PPD Depth	PPD Duration	Ueq	Apparent Water Table	Seismic Vs Test	Comments
08-AF4-C2	419CP24	89.89	24.77	400	20.0	4.8		Refusal
08-P5-C1	419CP25	78.08	53.81	600	34.8	19.0	X	Refusal
08-P5-C2	419CP26	17.06				5.0		Refusal
08-P5-C2A	419CP26A	18.21				5.0		Refusal
08-S3-C1	419CP27	111.06	58.89	400	50.6	8.3	X	Refusal
08-L2-C1	419CP28	110.73	60.20	400	56.3	3.9		
08-S3-C2	419CP29	115.16	66.77	300	56.3	10.5		
08-P5-C2	419CP30	76.44	74.97	400	62.5	12.5	X	Refusal
08-P10-C1	419CP31	4.59				5.0		Refusal
08-P10-C1A	419CP31A	1.64				5.0		Refusal

CPT Plots

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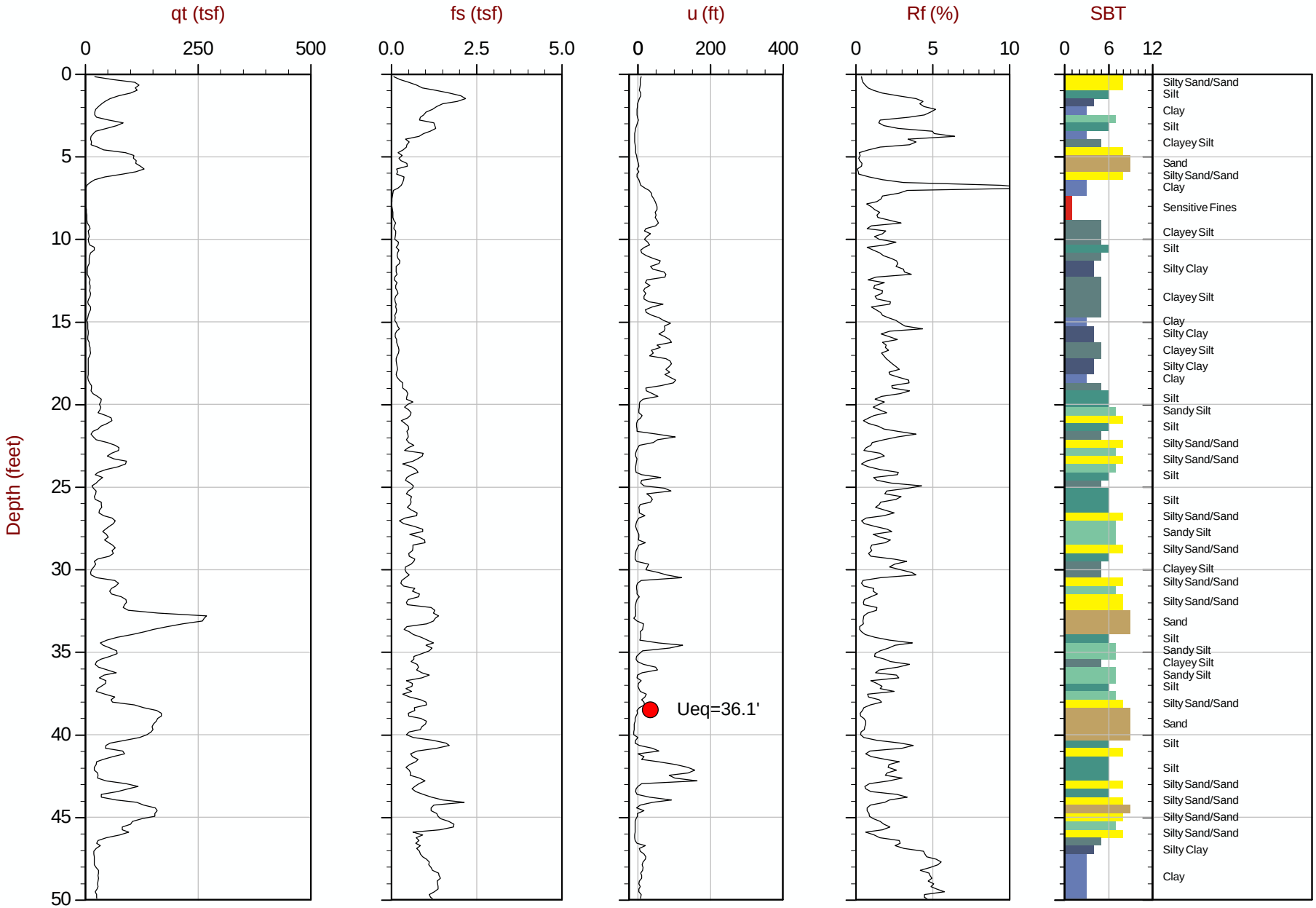
IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP01.COR
Unit Wt: SBT Chart Soil Zones

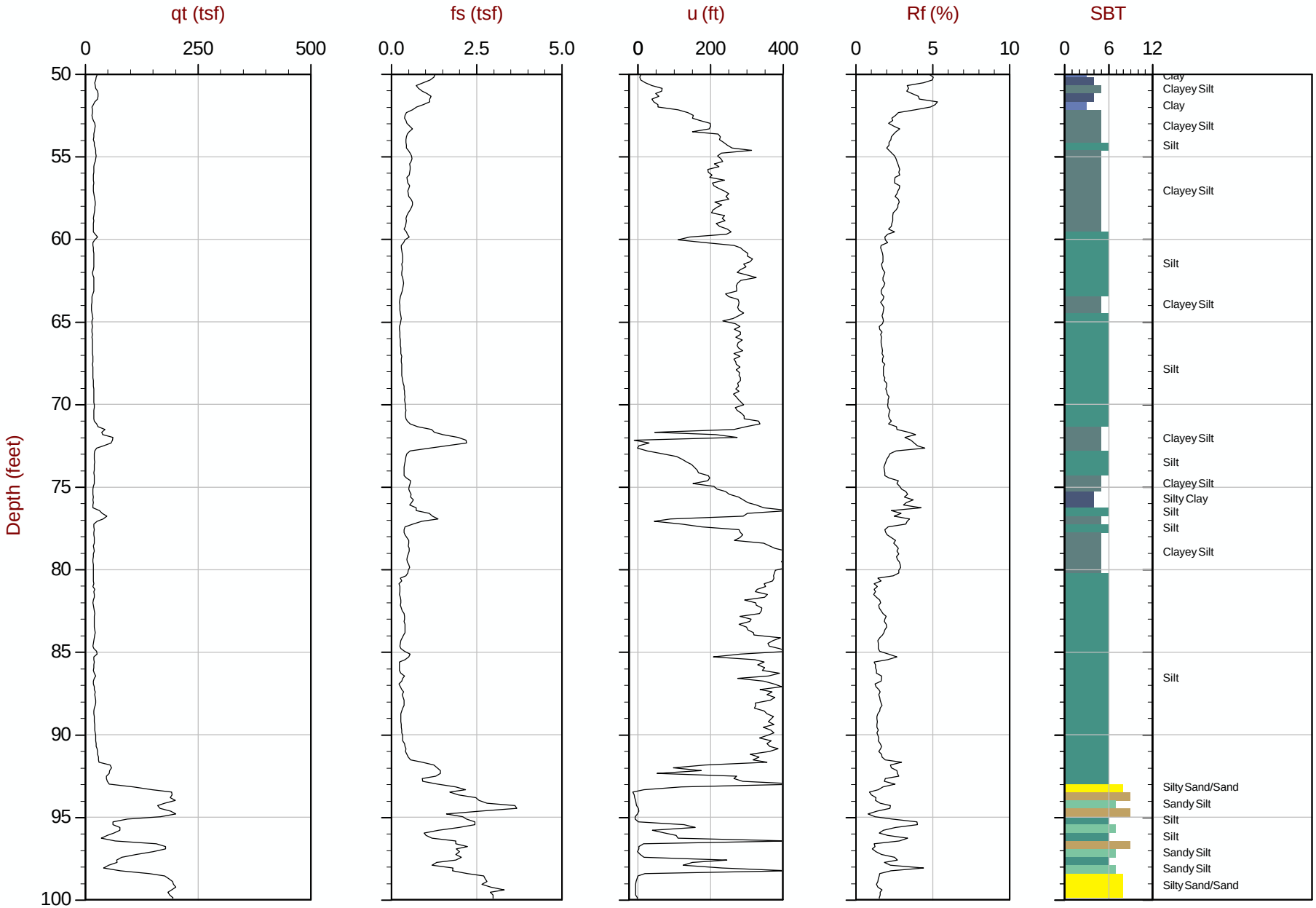
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36002° Long: W 111.78509°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
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Avg Int: 0.150 m

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Unit Wt: SBT Chart Soil Zones

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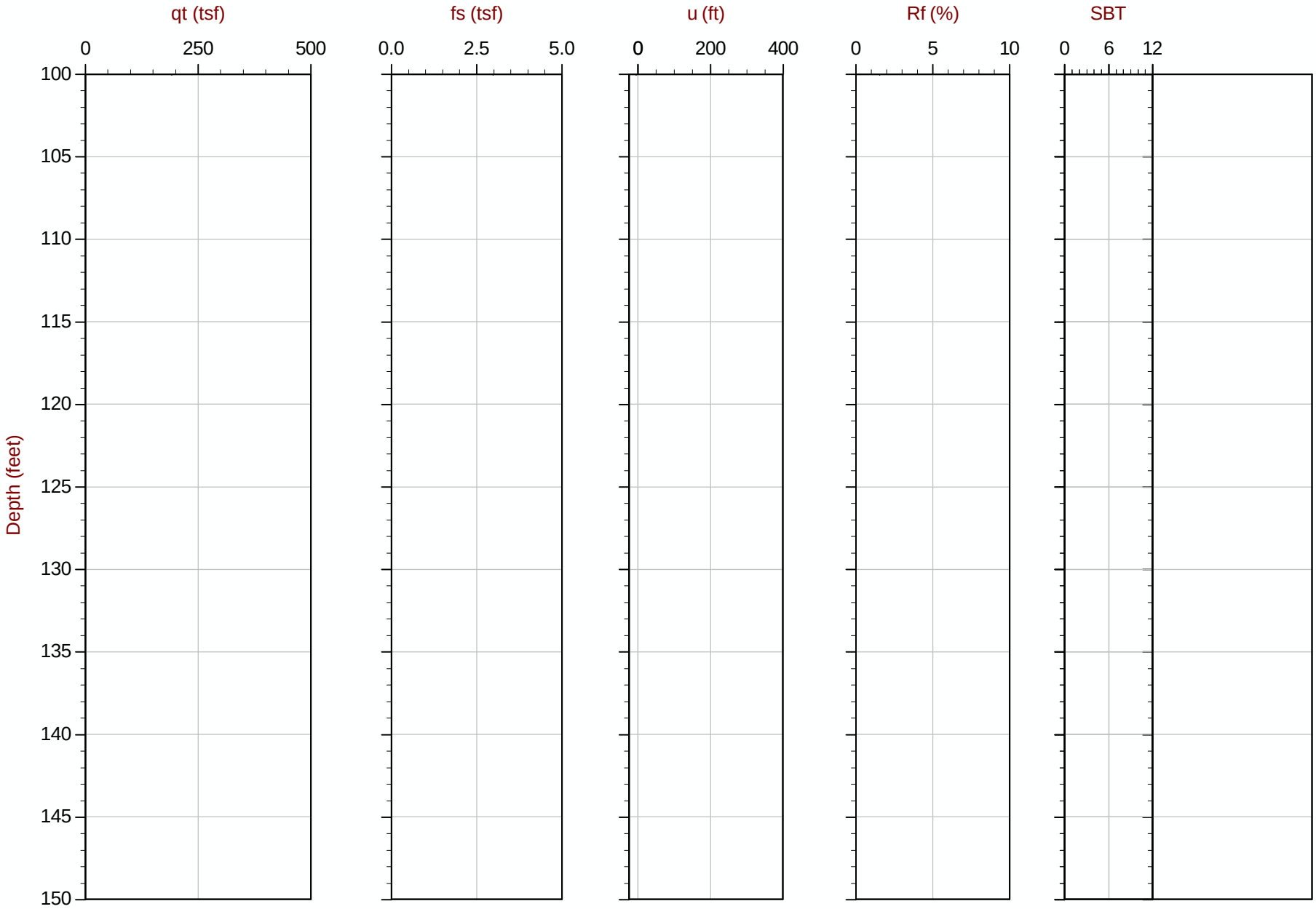
CONETEC

IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP01.COR
Unit Wt: SBT Chart Soil Zones

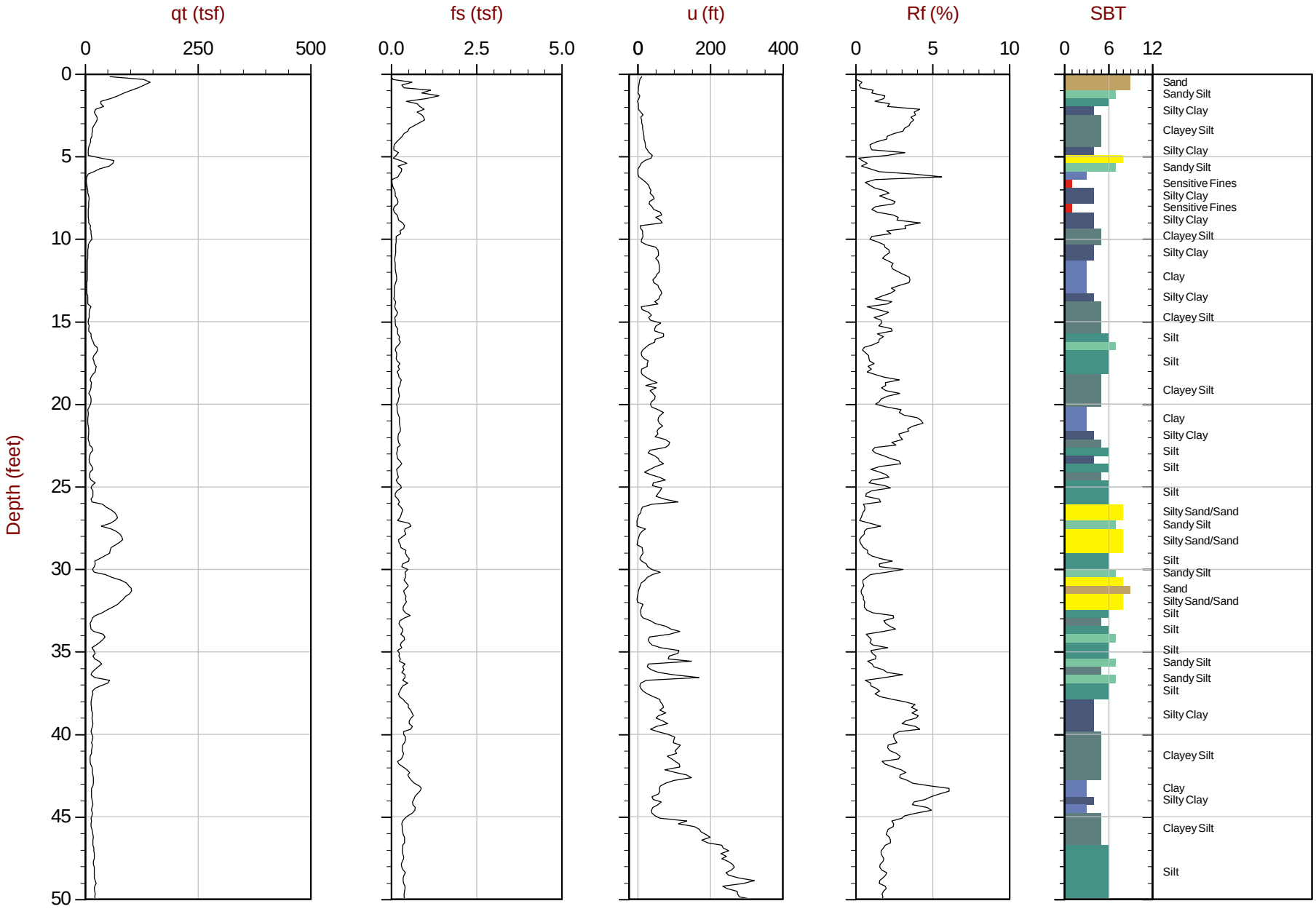
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36002° Long: W 111.78509°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 15:08
Site: I-15

Sounding: 08-AF6-C1
Cone: STD 20T AD242



Max Depth: 27.800 m / 91.21 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP02.COR
Unit Wt: SBT Chart Soil Zones

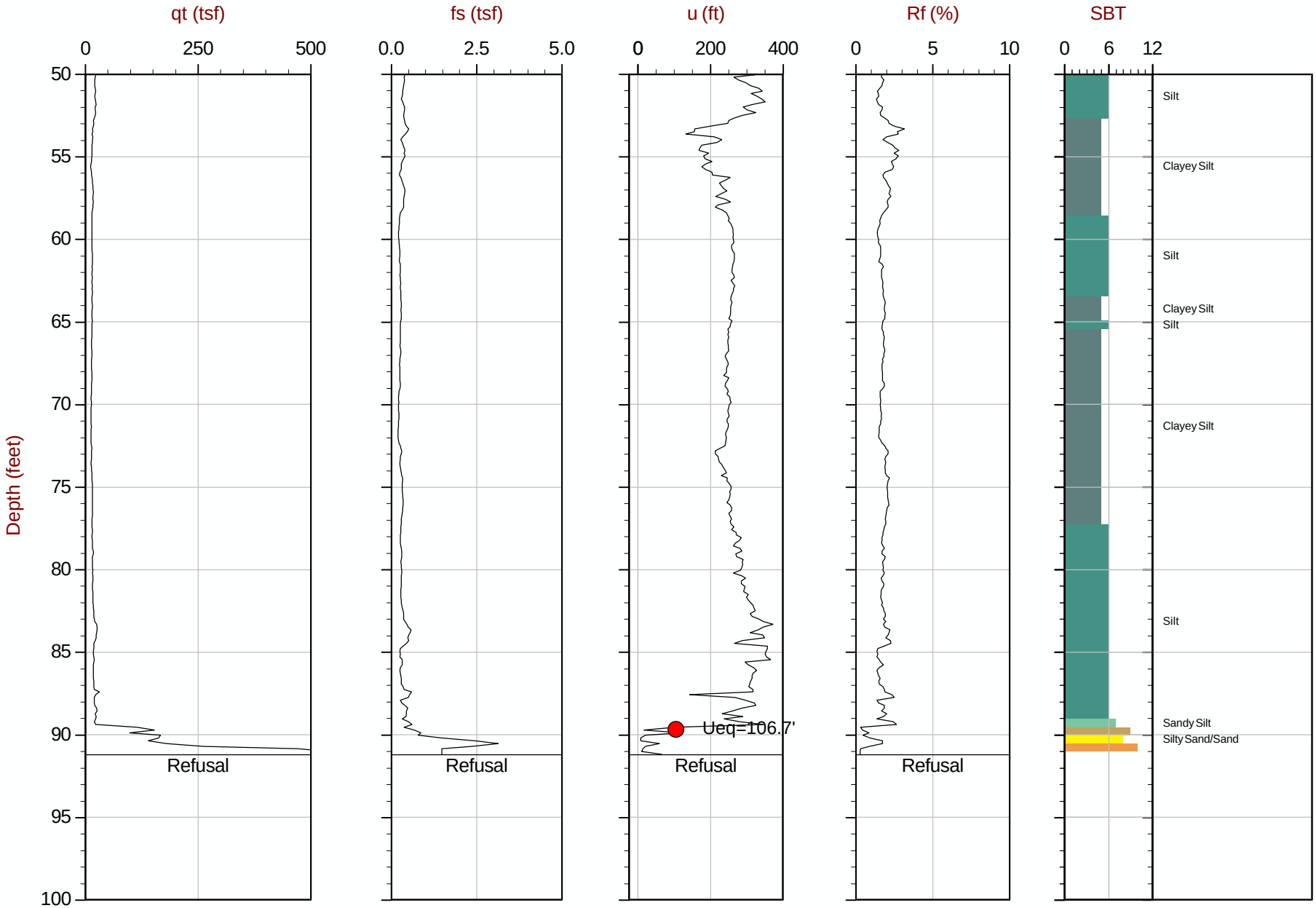
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35493° Long: W 111.77753°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 15:08
Site: I-15

Sounding: 08-AF6-C1
Cone: STD 20T AD242



Max Depth: 27.800 m / 91.21 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP02.COR
Unit Wt: SBT Chart Soil Zones

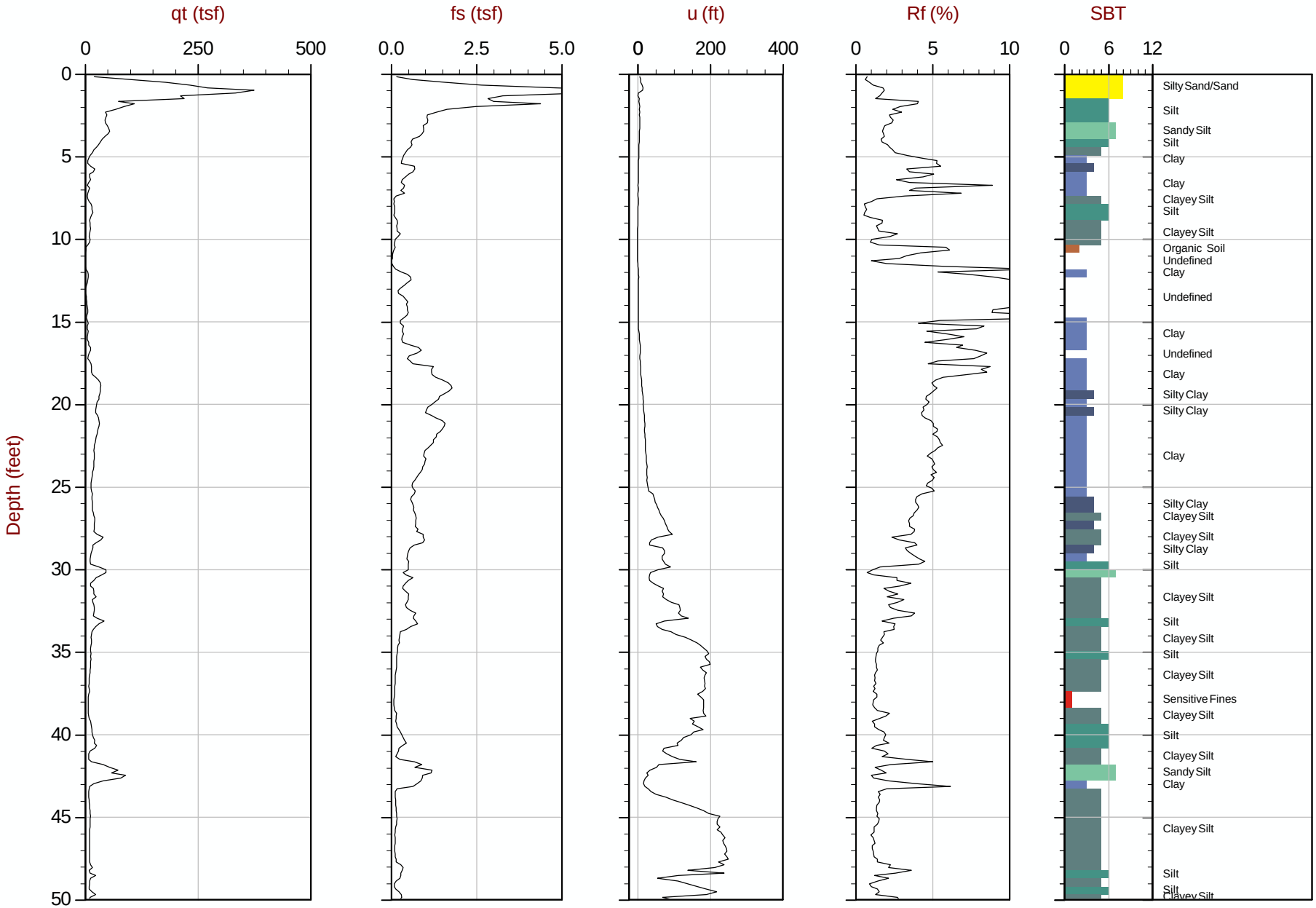
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35493° Long: W 111.77753°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 11:17
Site: I-15

Sounding: 08-PG2-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP03.COR
Unit Wt: SBT Chart Soil Zones

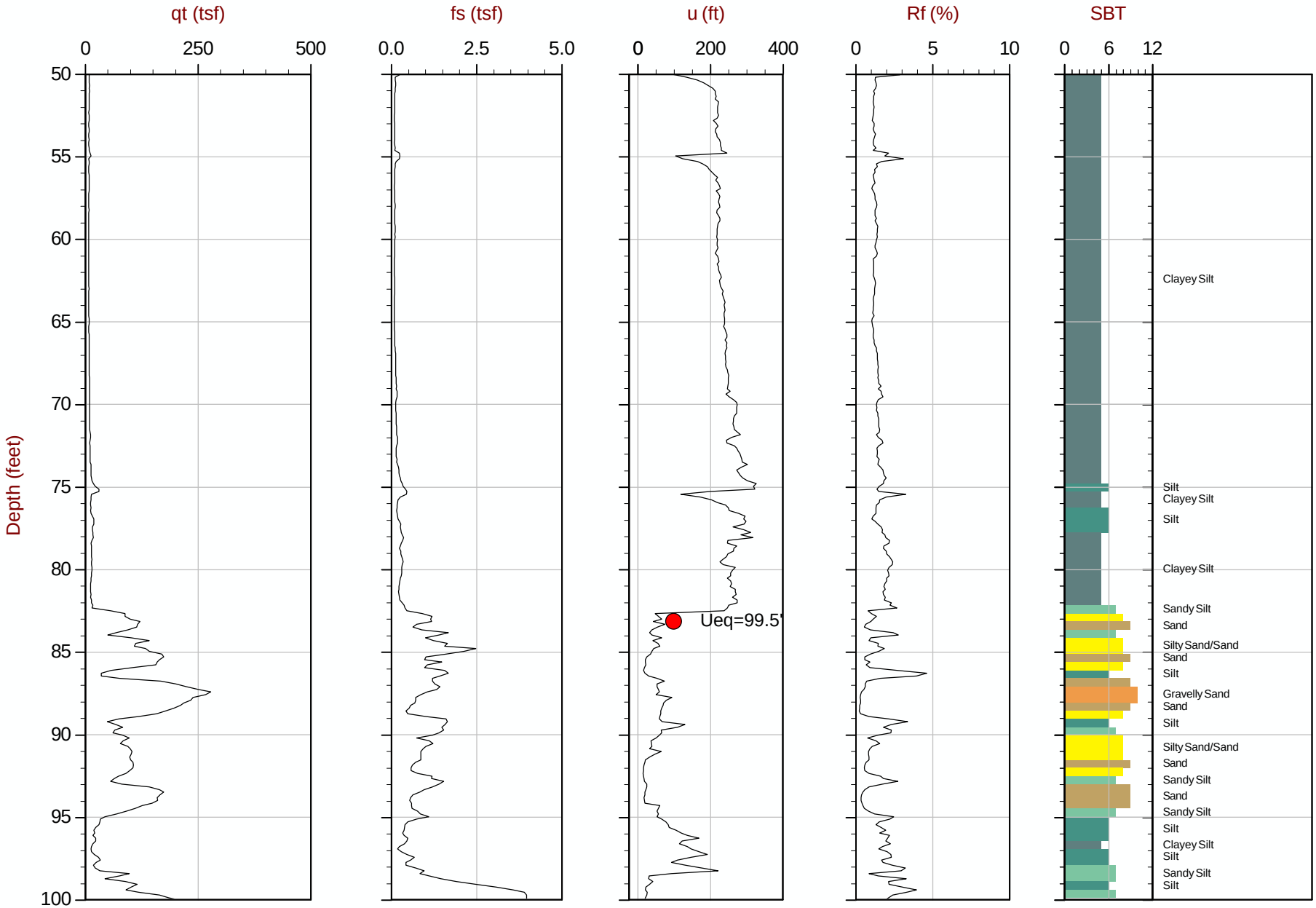
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34412° Long: W 111.76065°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 11:17
Site: I-15

Sounding: 08-PG2-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP03.COR
Unit Wt: SBT Chart Soil Zones

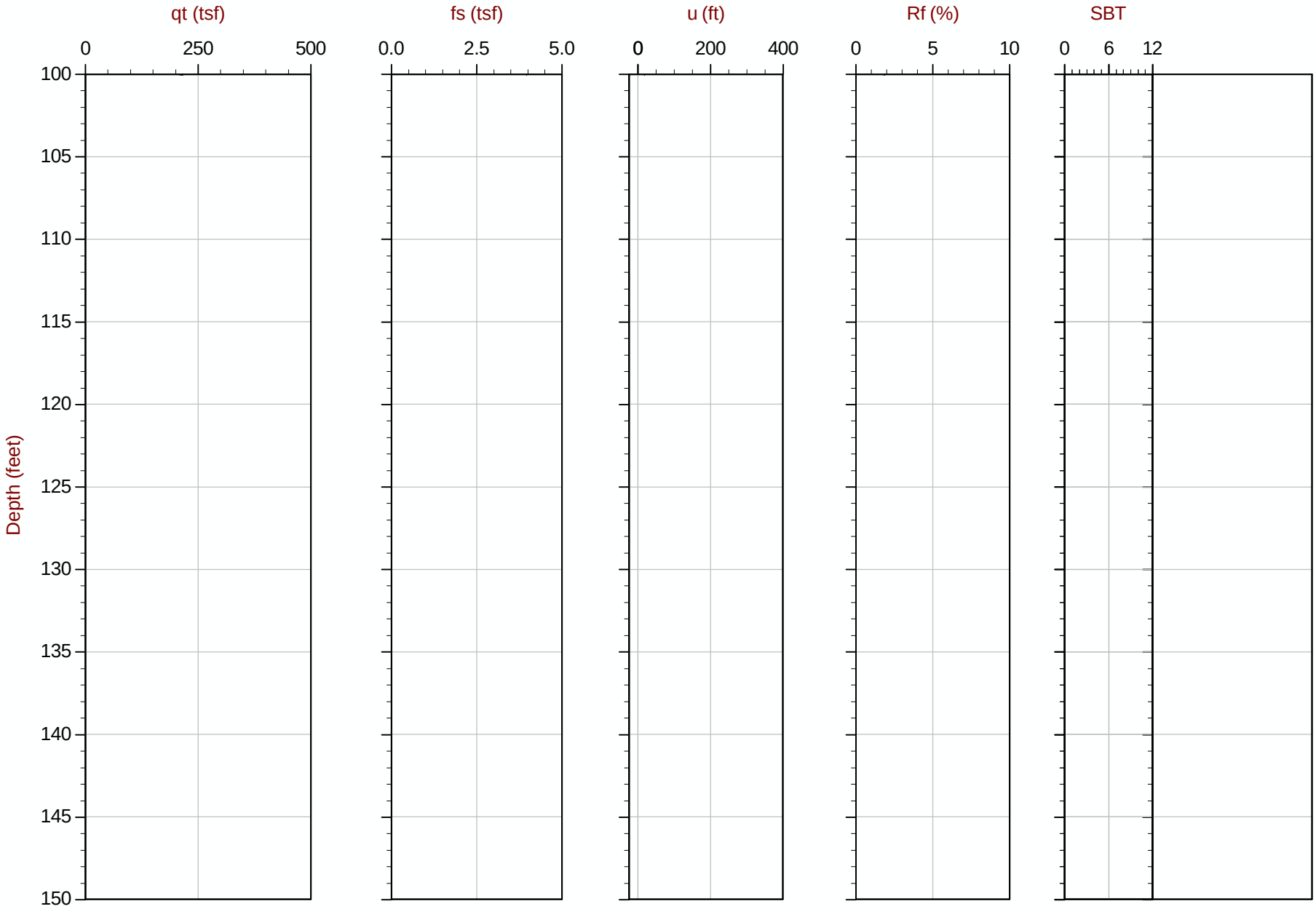
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34412° Long: W 111.76065°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 11:17
Site: I-15

Sounding: 08-PG2-C2
Cone: STD 20T AD242



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Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP03.COR
Unit Wt: SBT Chart Soil Zones

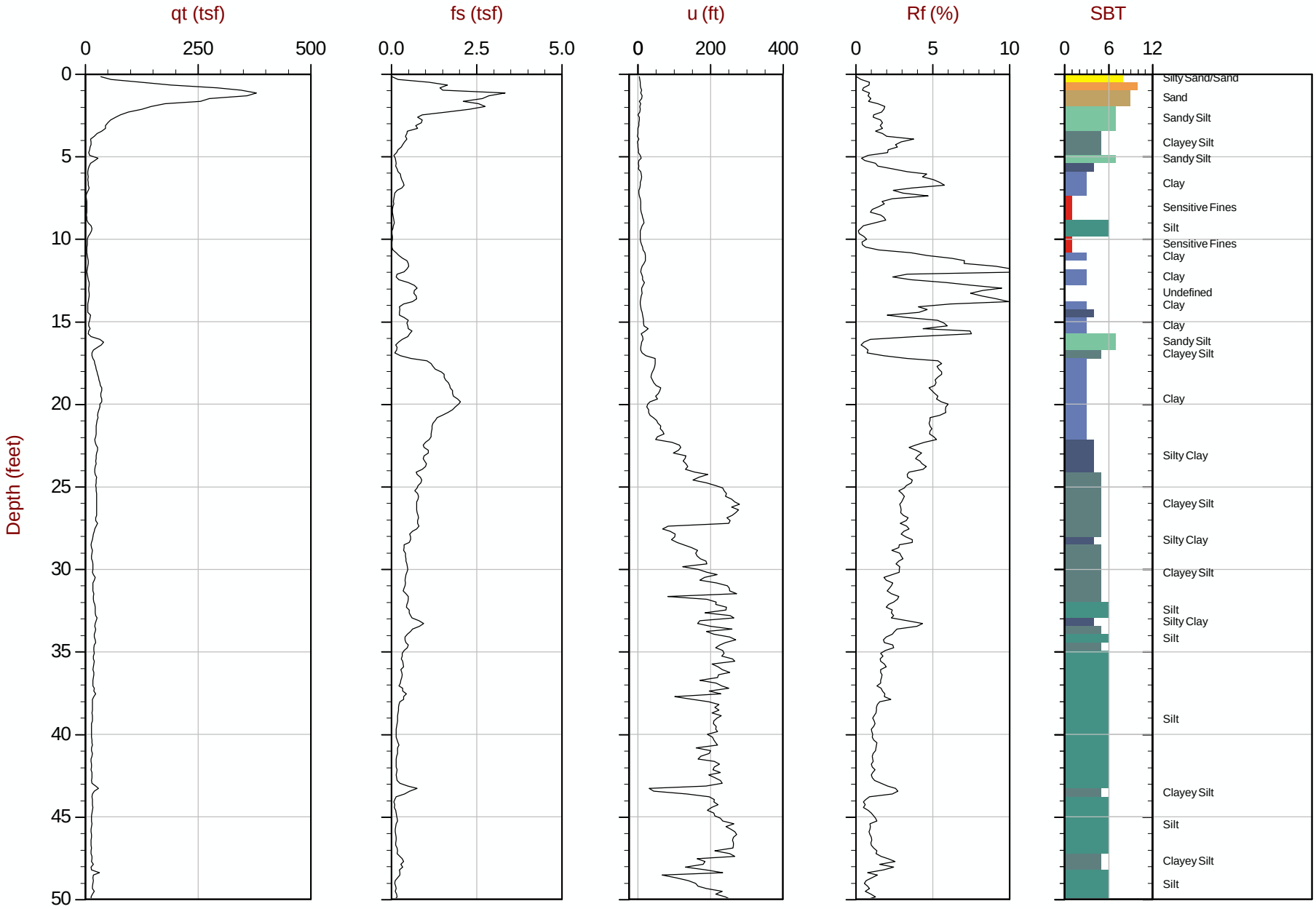
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34412° Long: W 111.76065°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

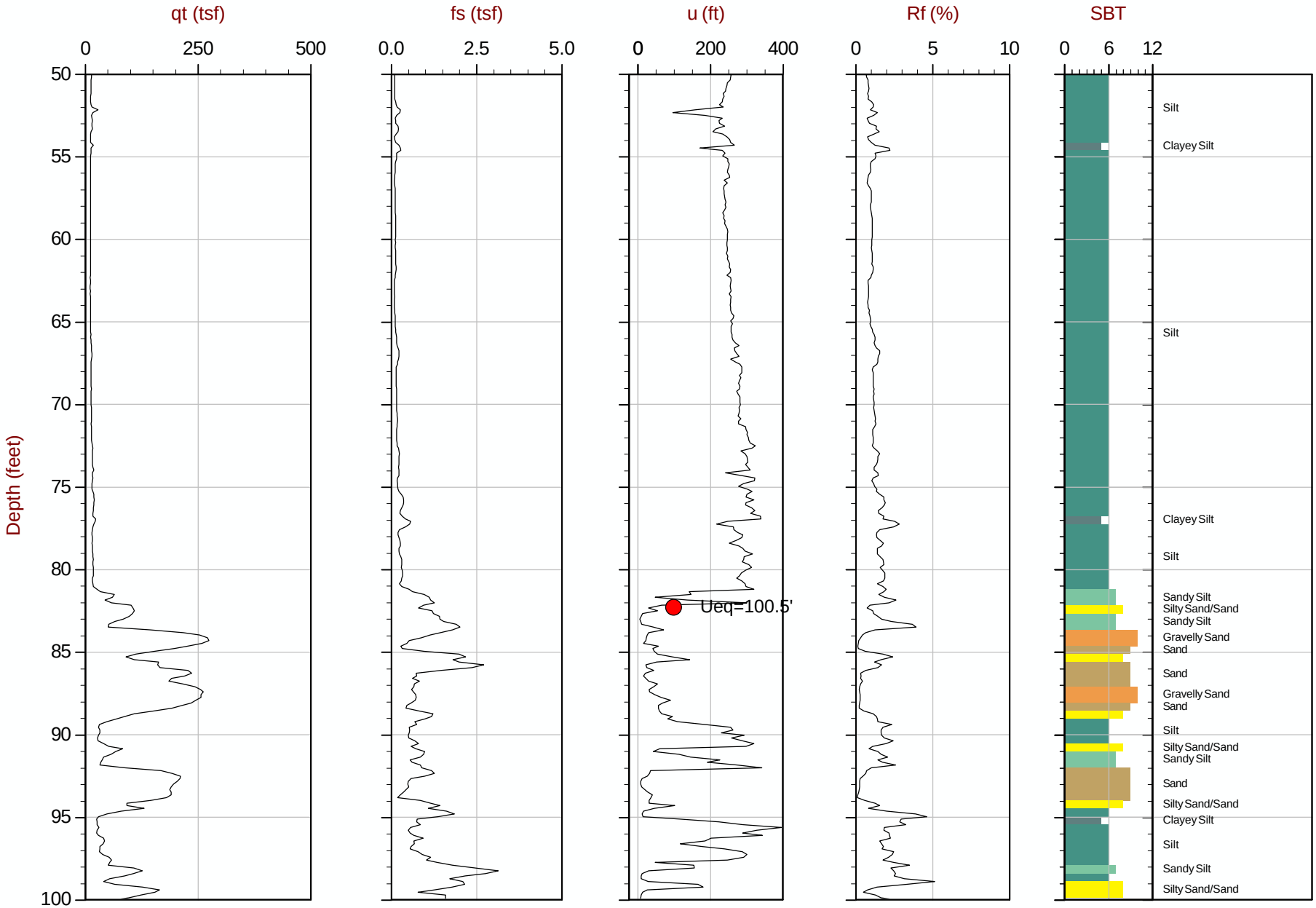
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
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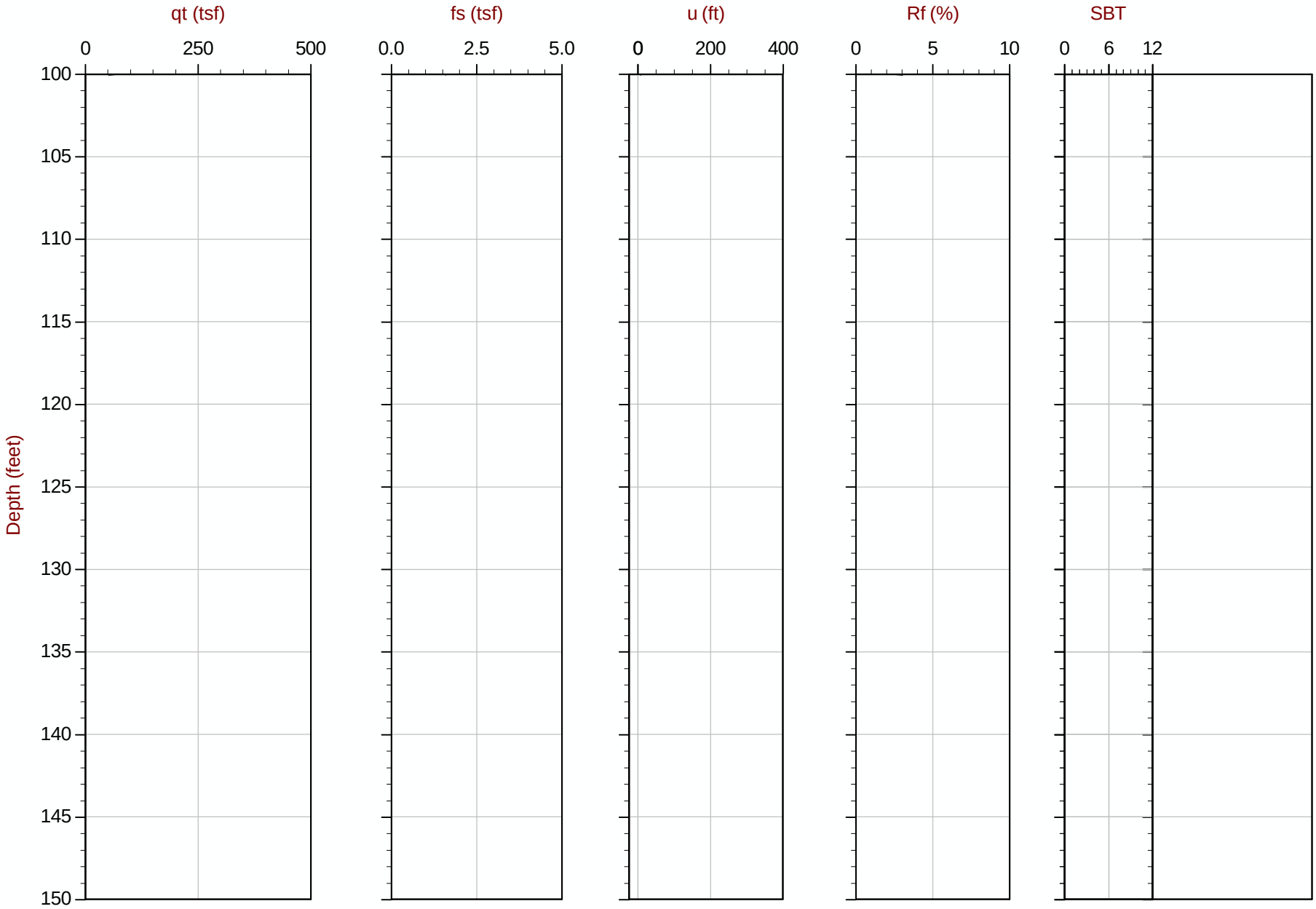


Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

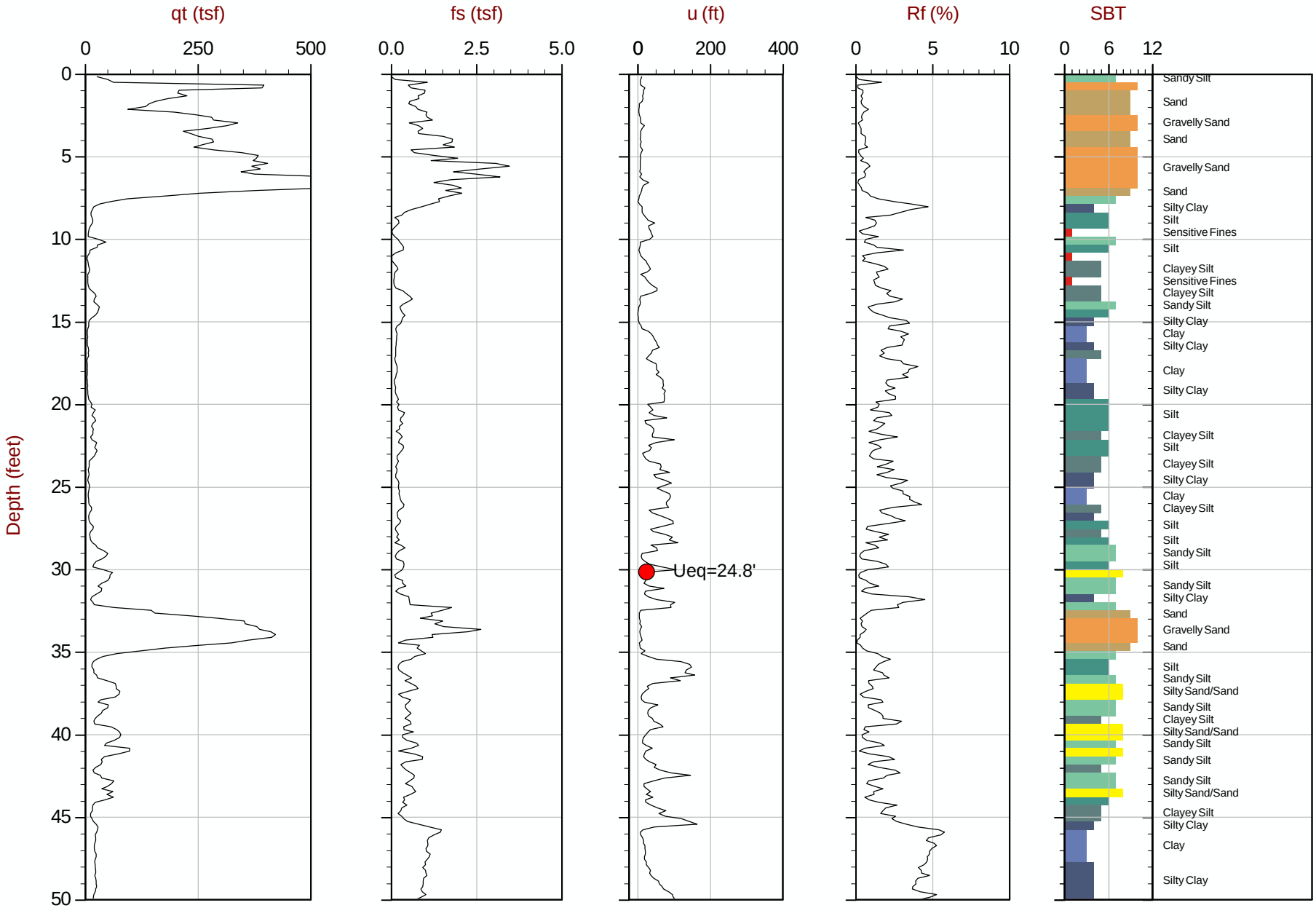
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 14:14
Site: I-15

Sounding: 08-AF6-C2
Cone: STD 20T AD242



Max Depth: 29.500 m / 96.78 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP05.COR
Unit Wt: SBT Chart Soil Zones

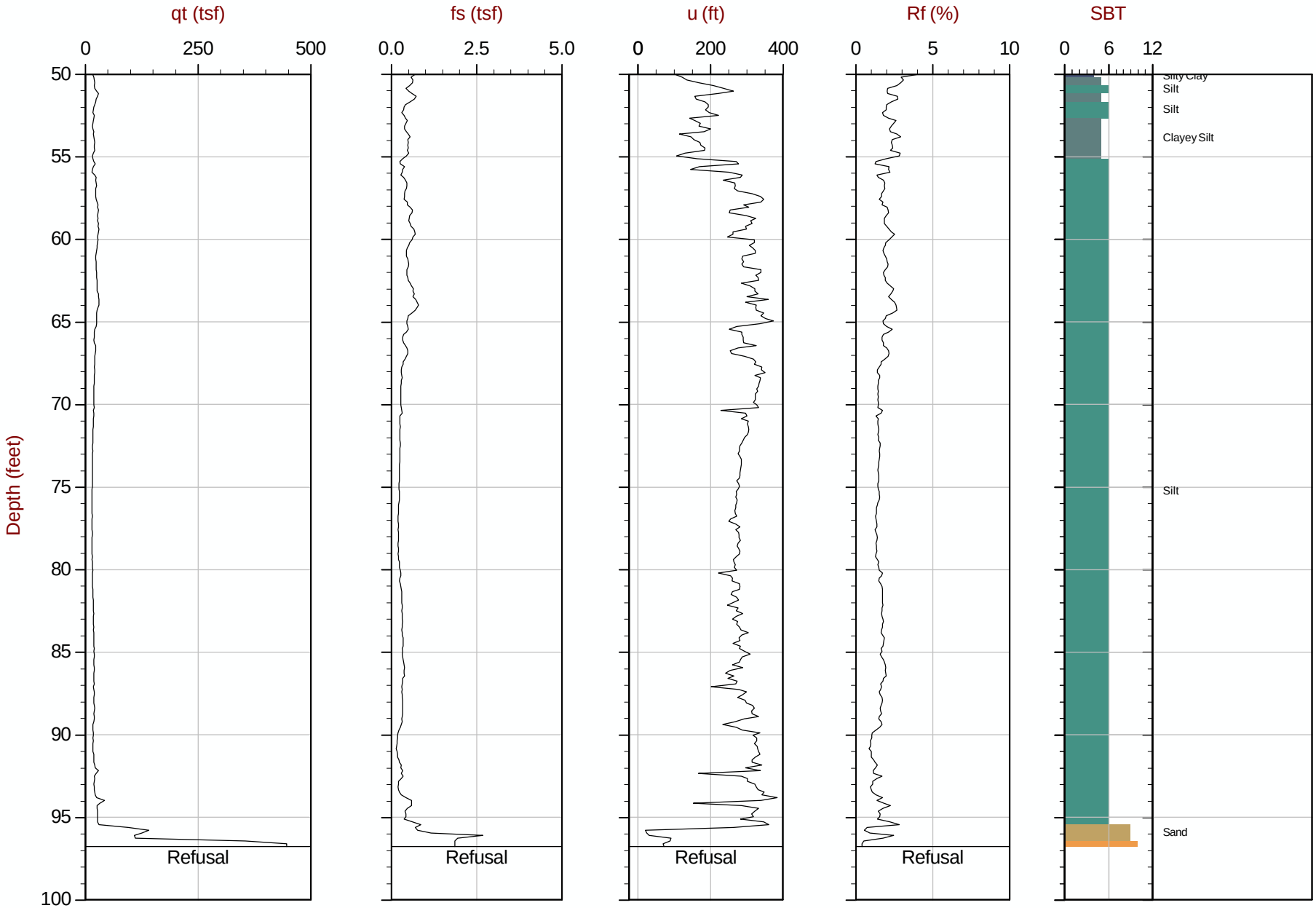
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35489° Long: W 111.77705°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 14:14
Site: I-15

Sounding: 08-AF6-C2
Cone: STD 20T AD242



Max Depth: 29.500 m / 96.78 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP05.COR
Unit Wt: SBT Chart Soil Zones

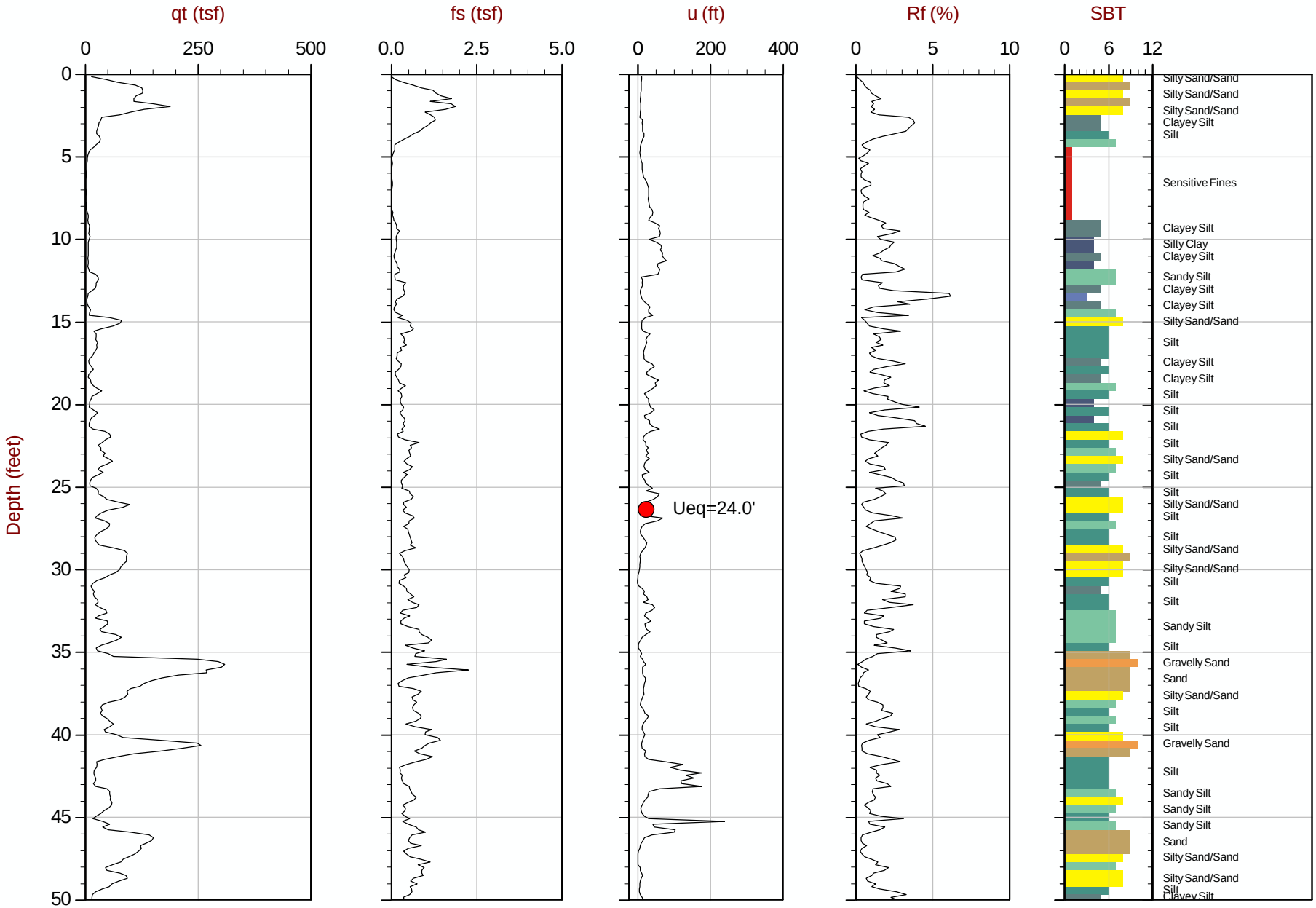
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35489° Long: W 111.77705°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 08:10
Site: I-15

Sounding: 08-AF5-C2
Cone: STD 20T AD242



Max Depth: 30.600 m / 100.39 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP06.COR
Unit Wt: SBT Chart Soil Zones

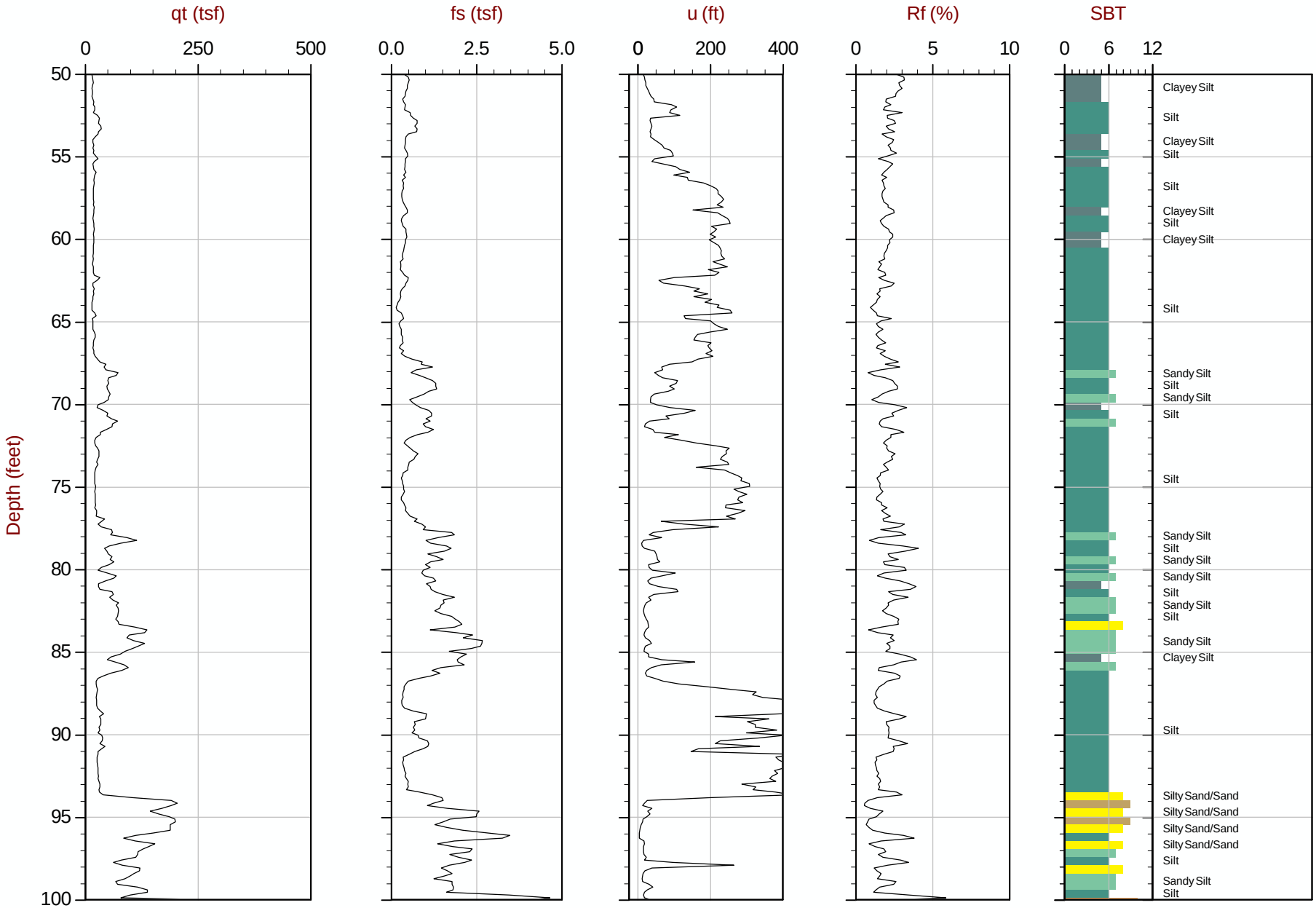
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36118° Long: W 111.78450°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 08:10
Site: I-15

Sounding: 08-AF5-C2
Cone: STD 20T AD242



Max Depth: 30.600 m / 100.39 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP06.COR
Unit Wt: SBT Chart Soil Zones

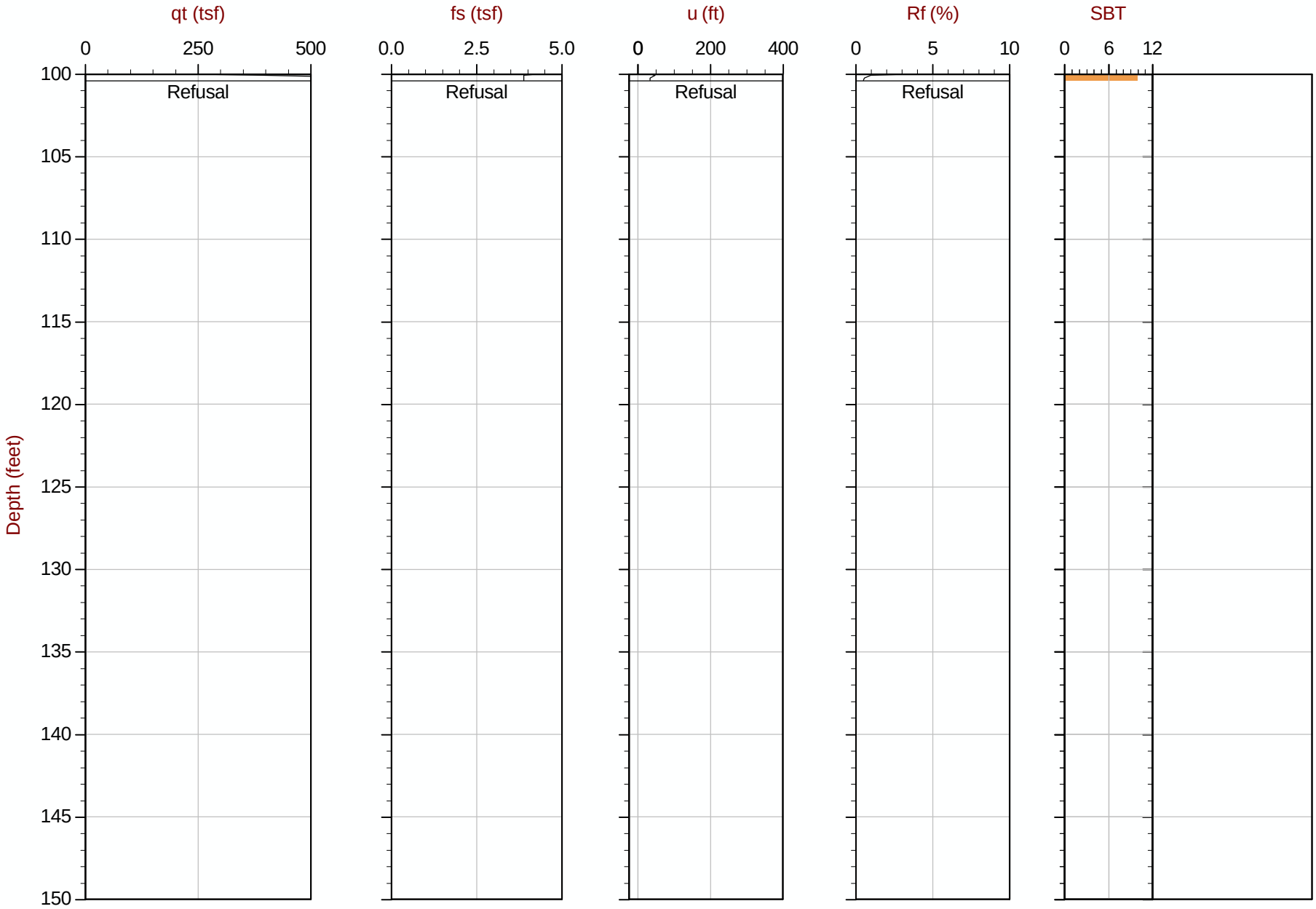
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36118° Long: W 111.78450°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 08:10
Site: I-15

Sounding: 08-AF5-C2
Cone: STD 20T AD242



Max Depth: 30.600 m / 100.39 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP06.COR
Unit Wt: SBT Chart Soil Zones

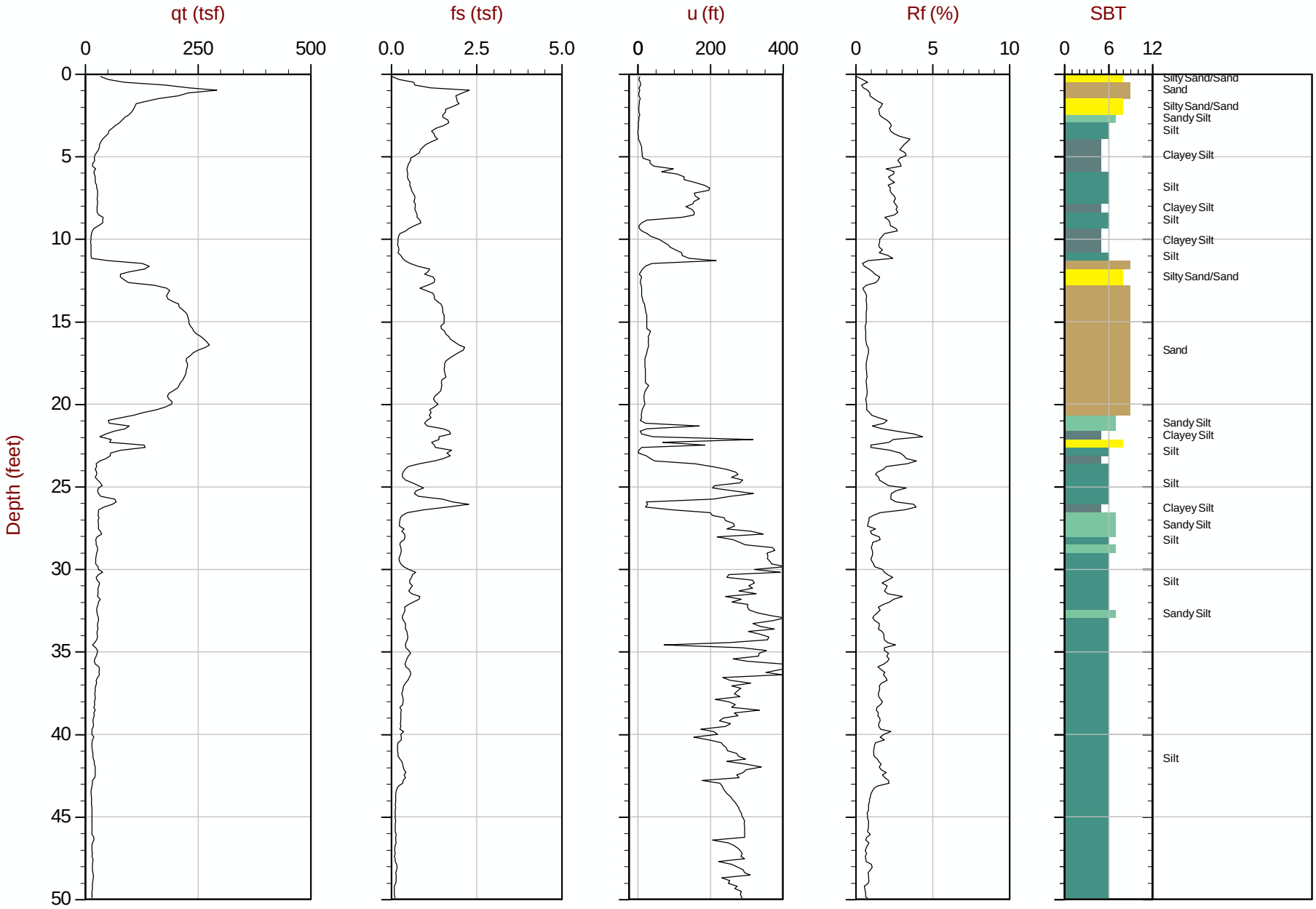
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36118° Long: W 111.78450°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

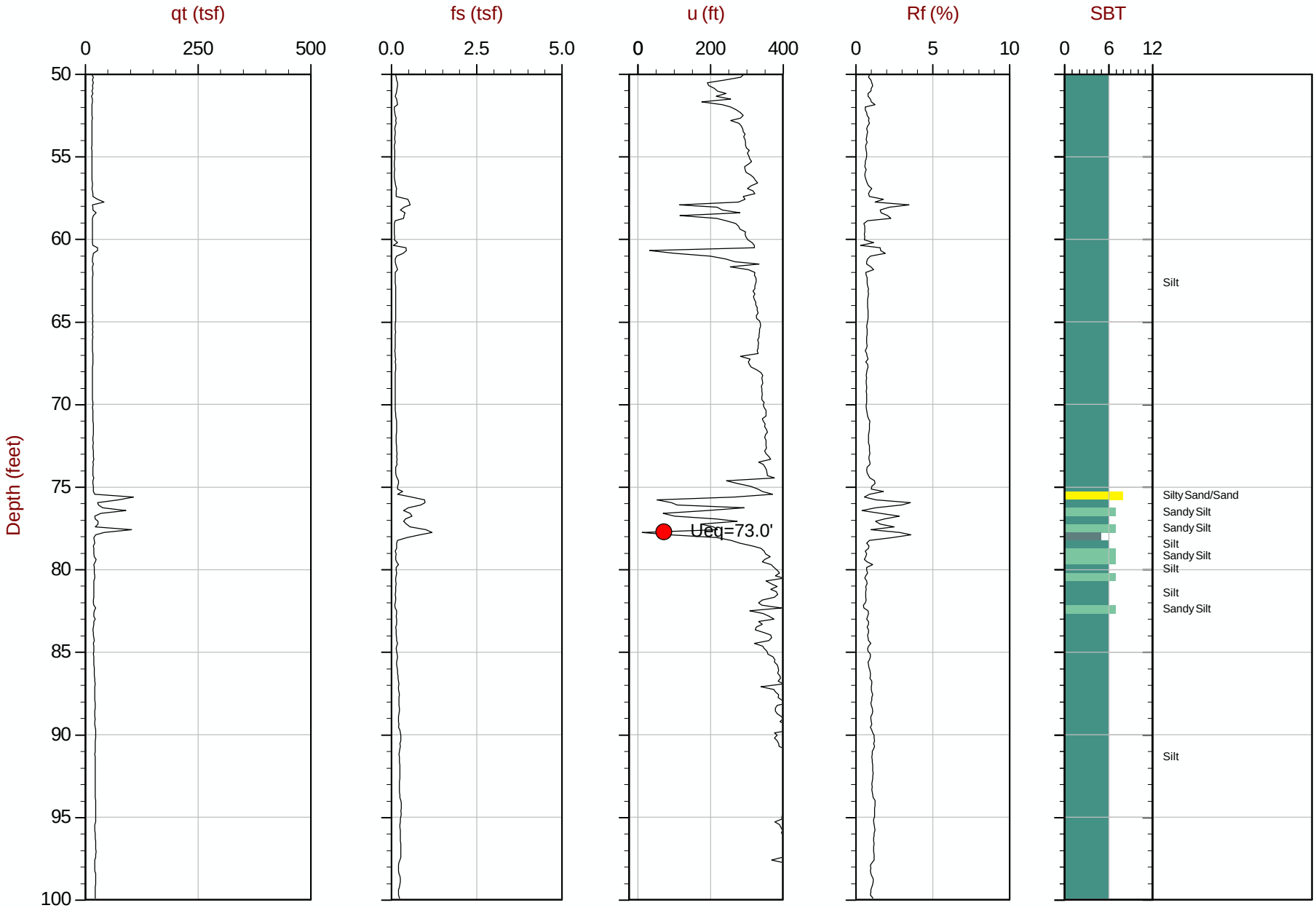
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

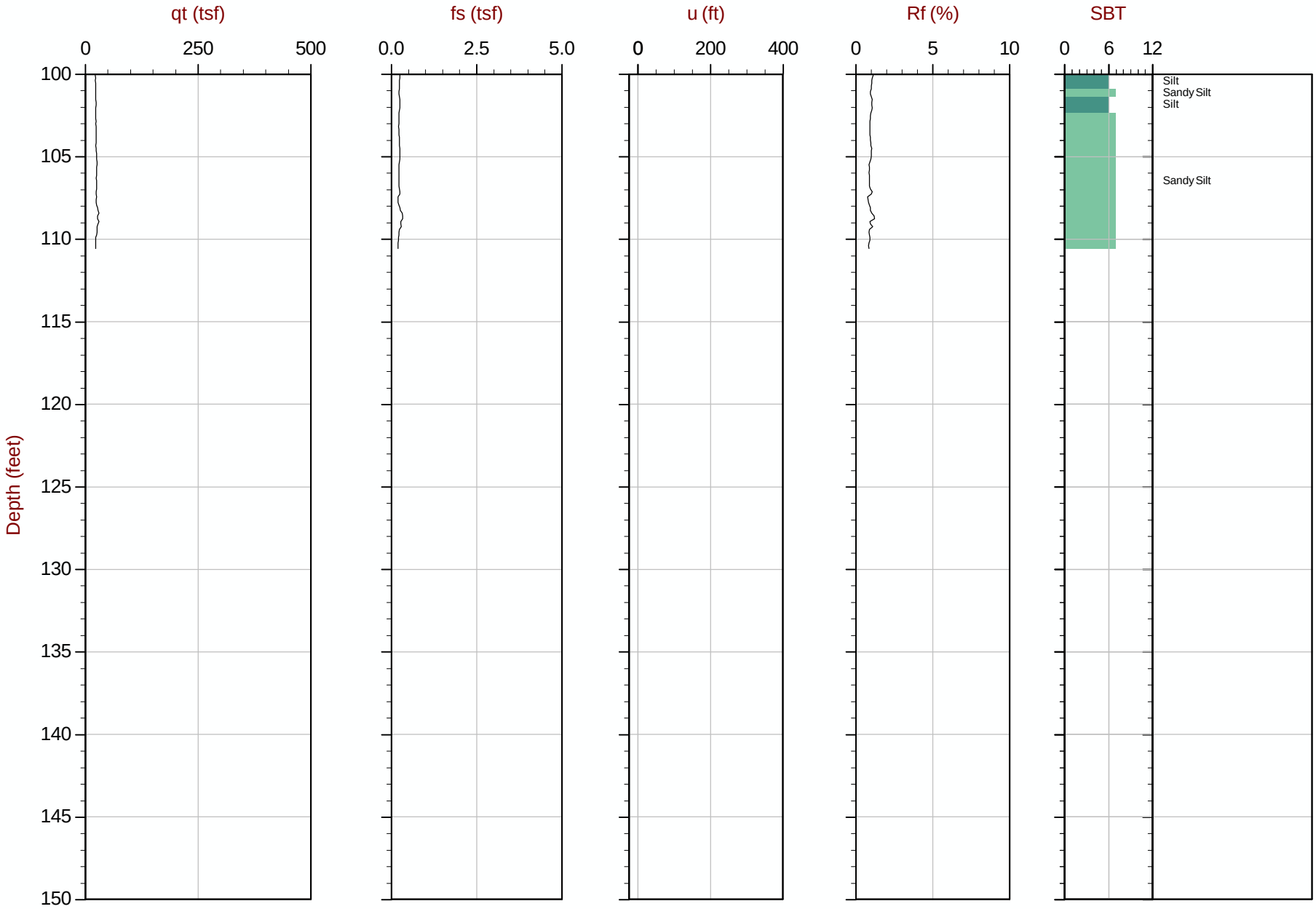
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

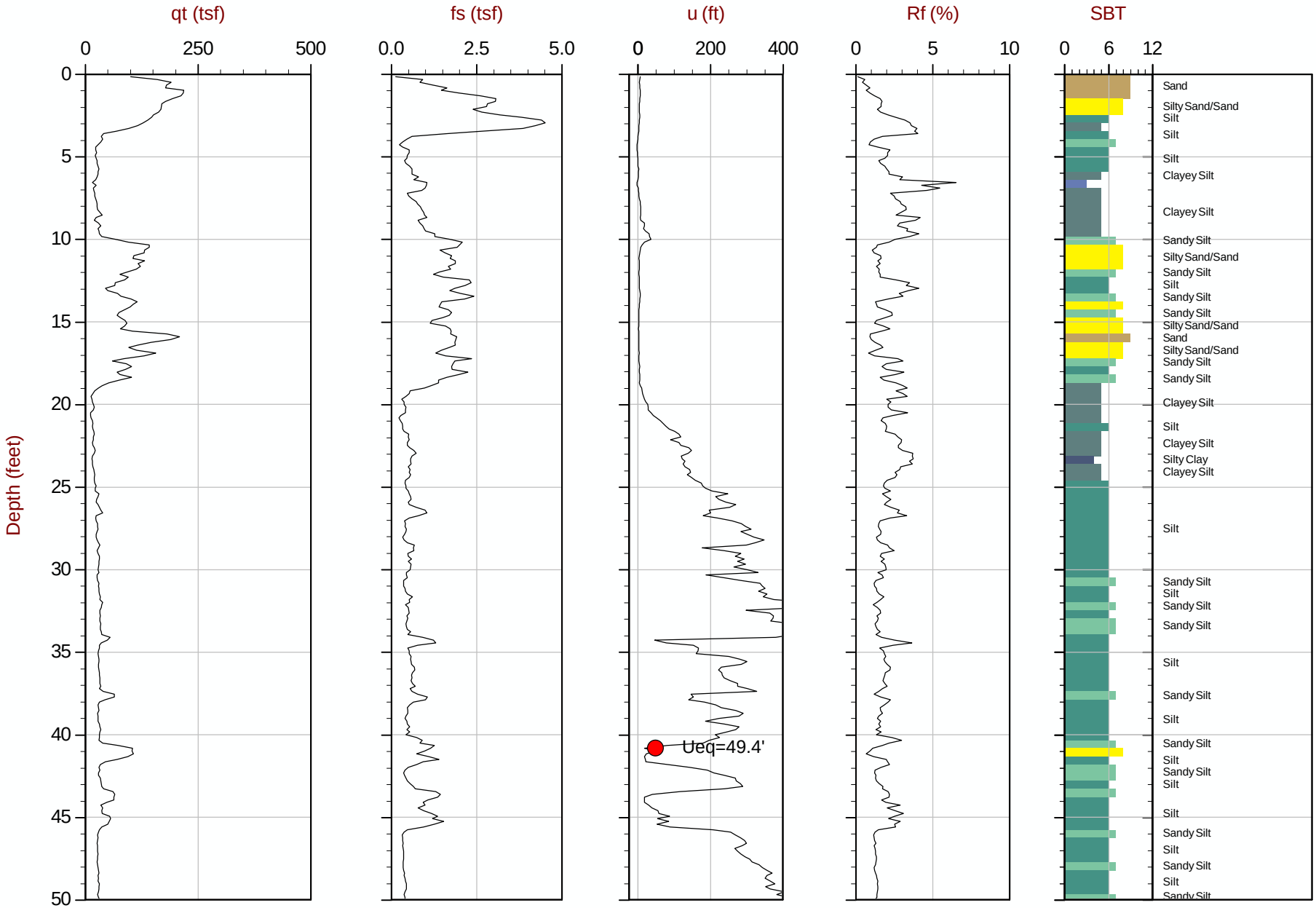
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 10:24
Site: I-15

Sounding: 08-L1-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP08.COR
Unit Wt: SBT Chart Soil Zones

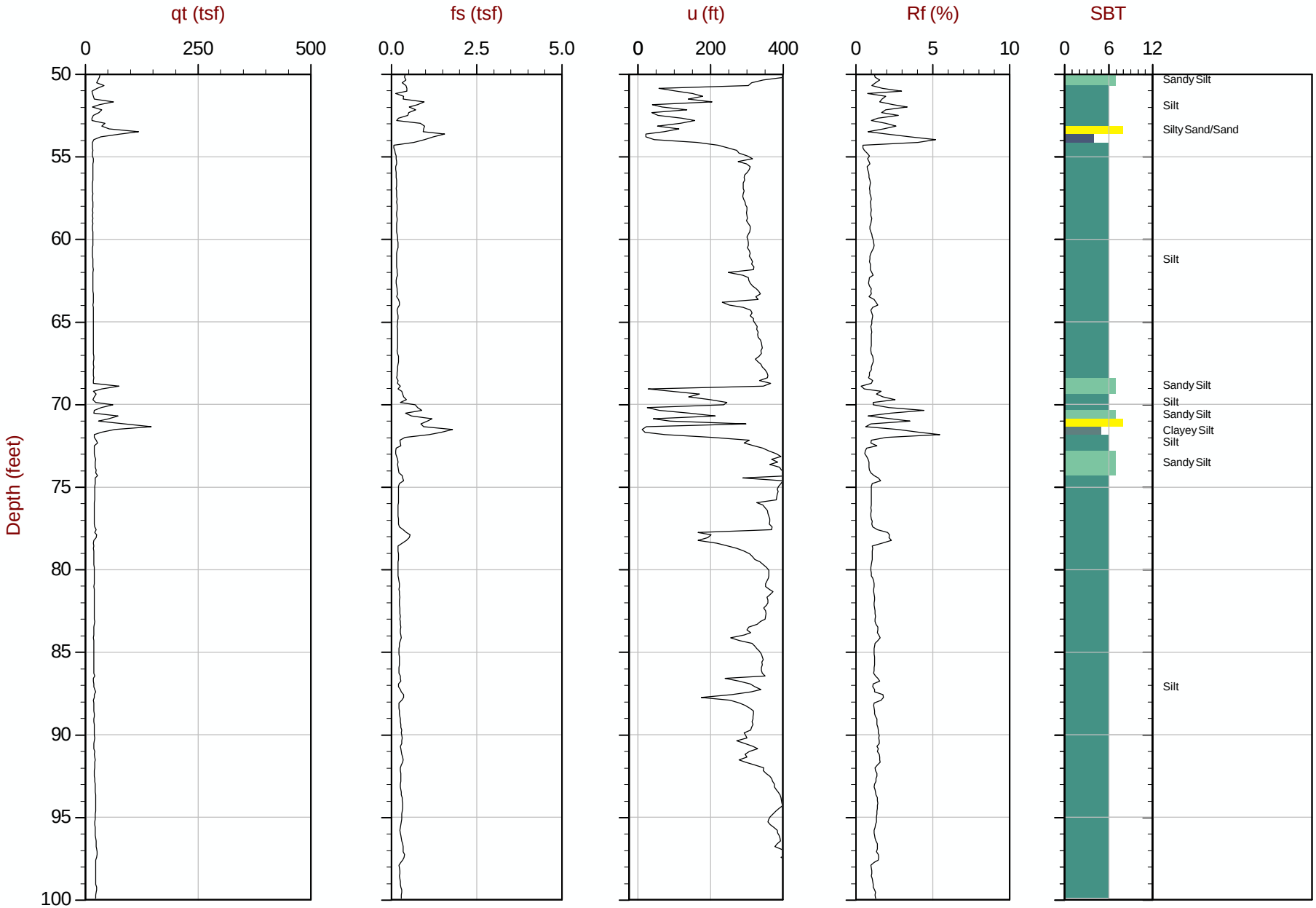
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33381° Long: W 111.74439°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 10:24
Site: I-15

Sounding: 08-L1-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP08.COR
Unit Wt: SBT Chart Soil Zones

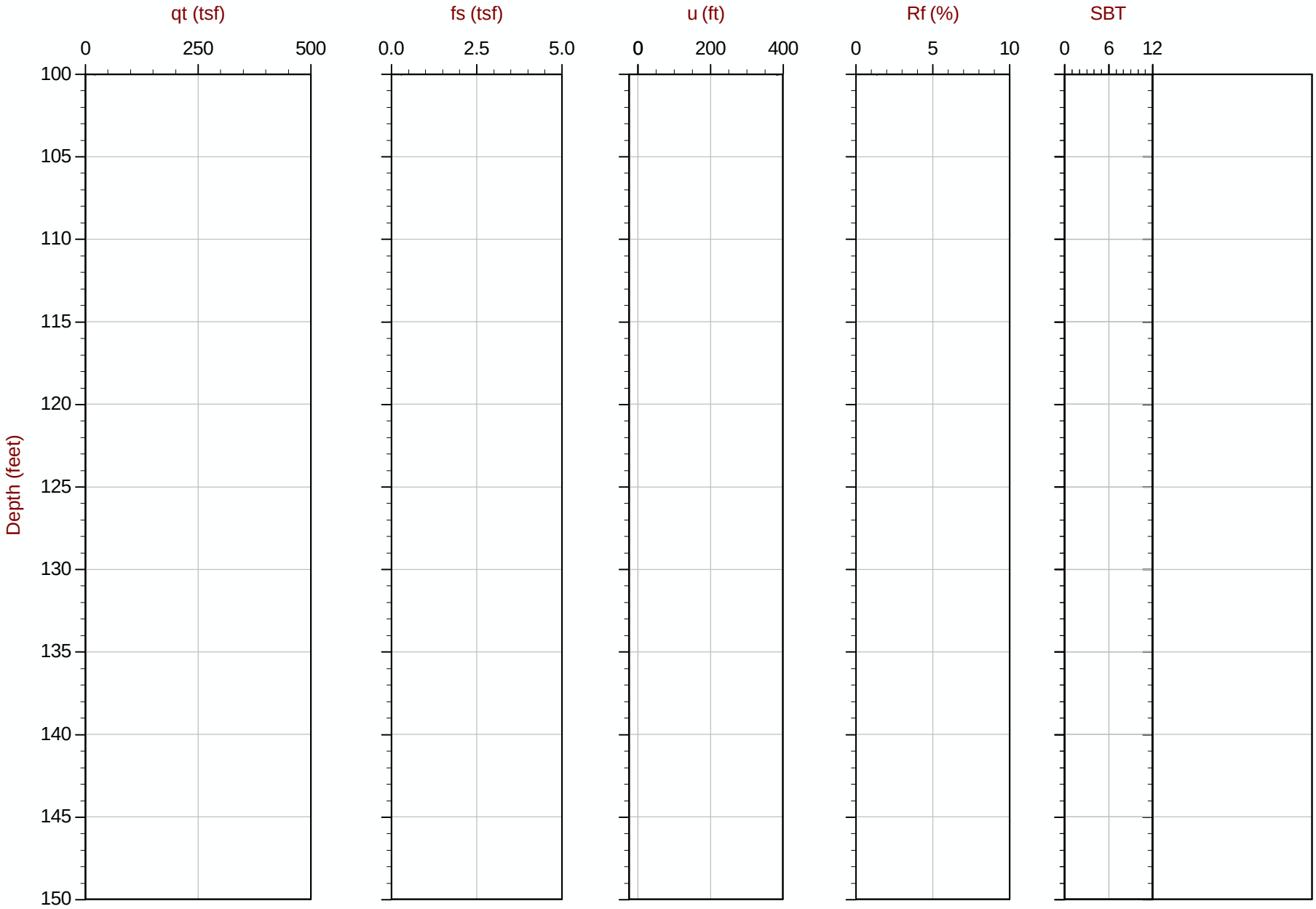
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33381° Long: W 111.74439°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 10:24
Site: I-15

Sounding: 08-L1-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP08.COR
Unit Wt: SBT Chart Soil Zones

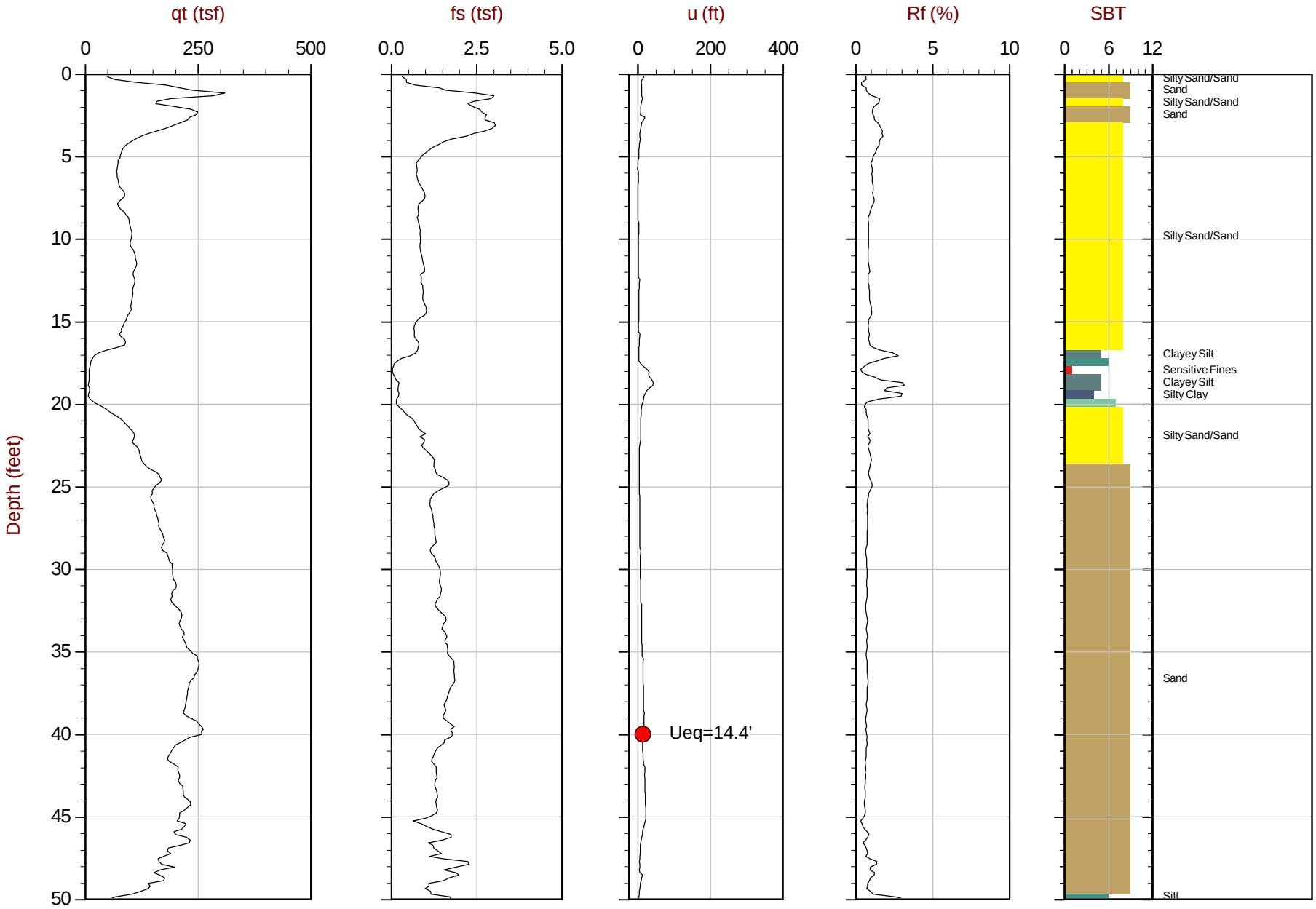
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33381° Long: W 111.74439°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 11:44
Site: I-15

Sounding: 08-OR2-C2
Cone: STD 20T AD242



Max Depth: 22.700 m / 74.47 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP09.COR
Unit Wt: SBT Chart Soil Zones

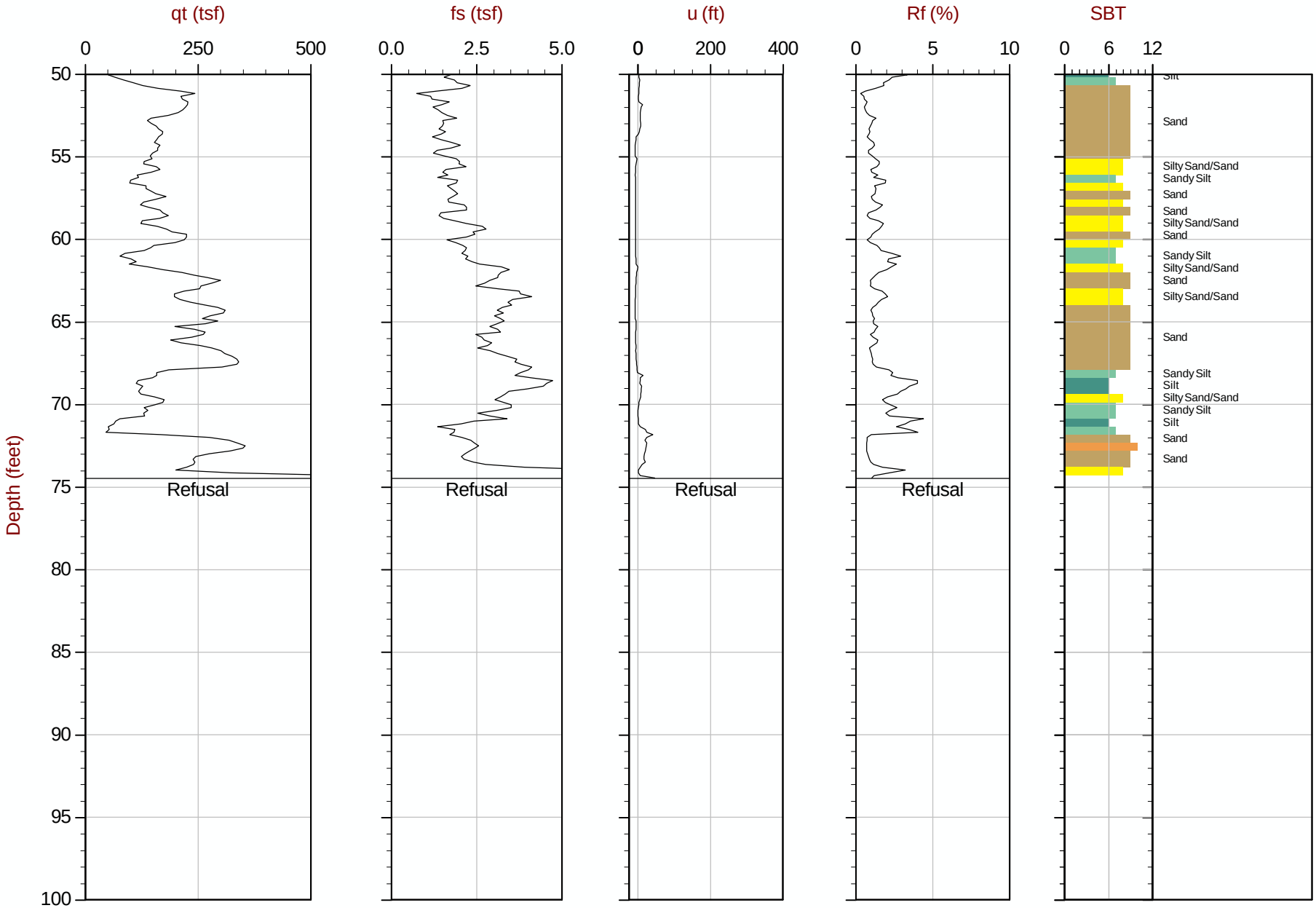
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31910° Long: W 111.72668°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 11:44
Site: I-15

Sounding: 08-OR2-C2
Cone: STD 20T AD242



Max Depth: 22.700 m / 74.47 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP09.COR
Unit Wt: SBT Chart Soil Zones

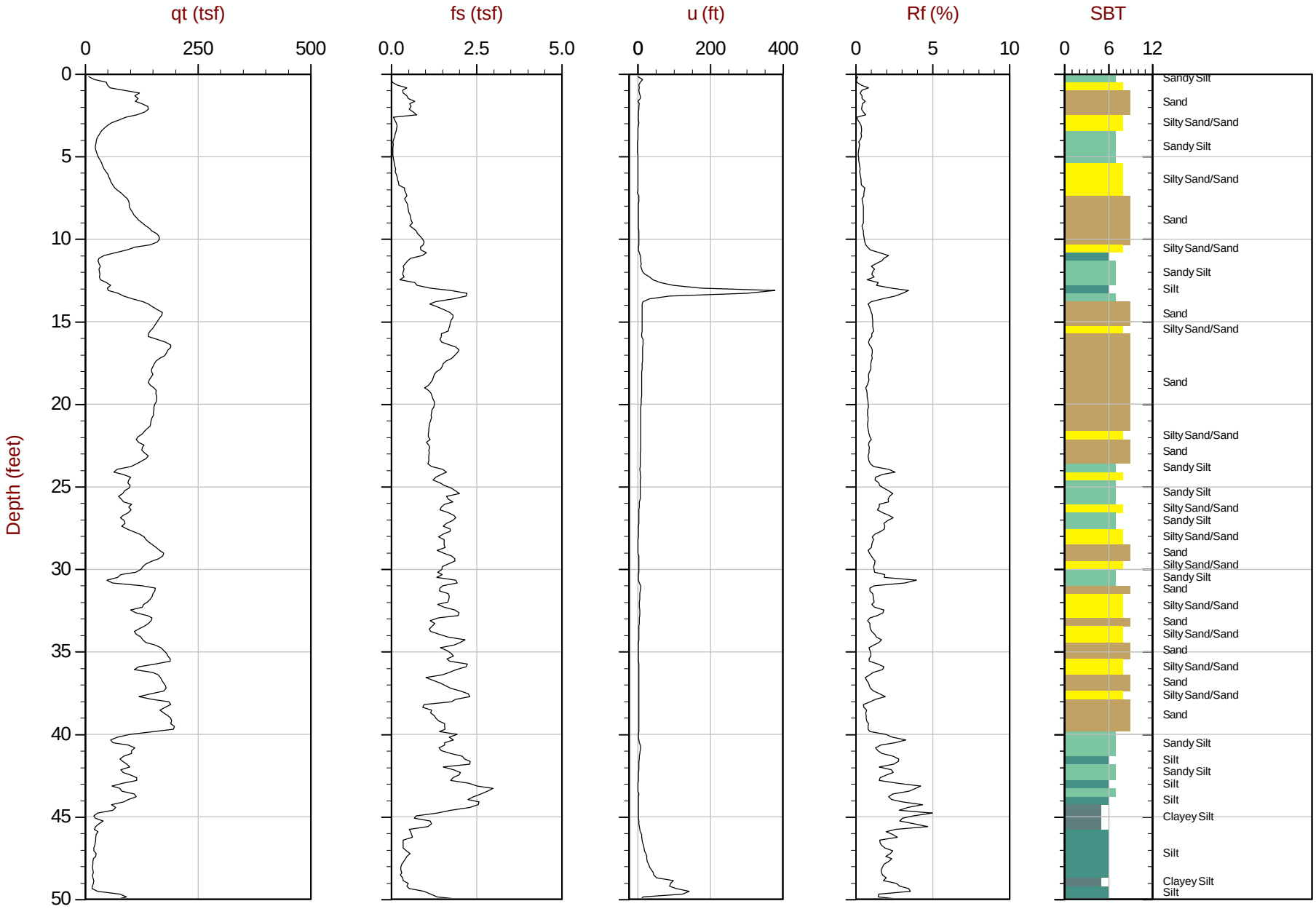
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31910° Long: W 111.72668°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 13:05
Site: I-15

Sounding: 08-OR2-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP10.COR
Unit Wt: SBT Chart Soil Zones

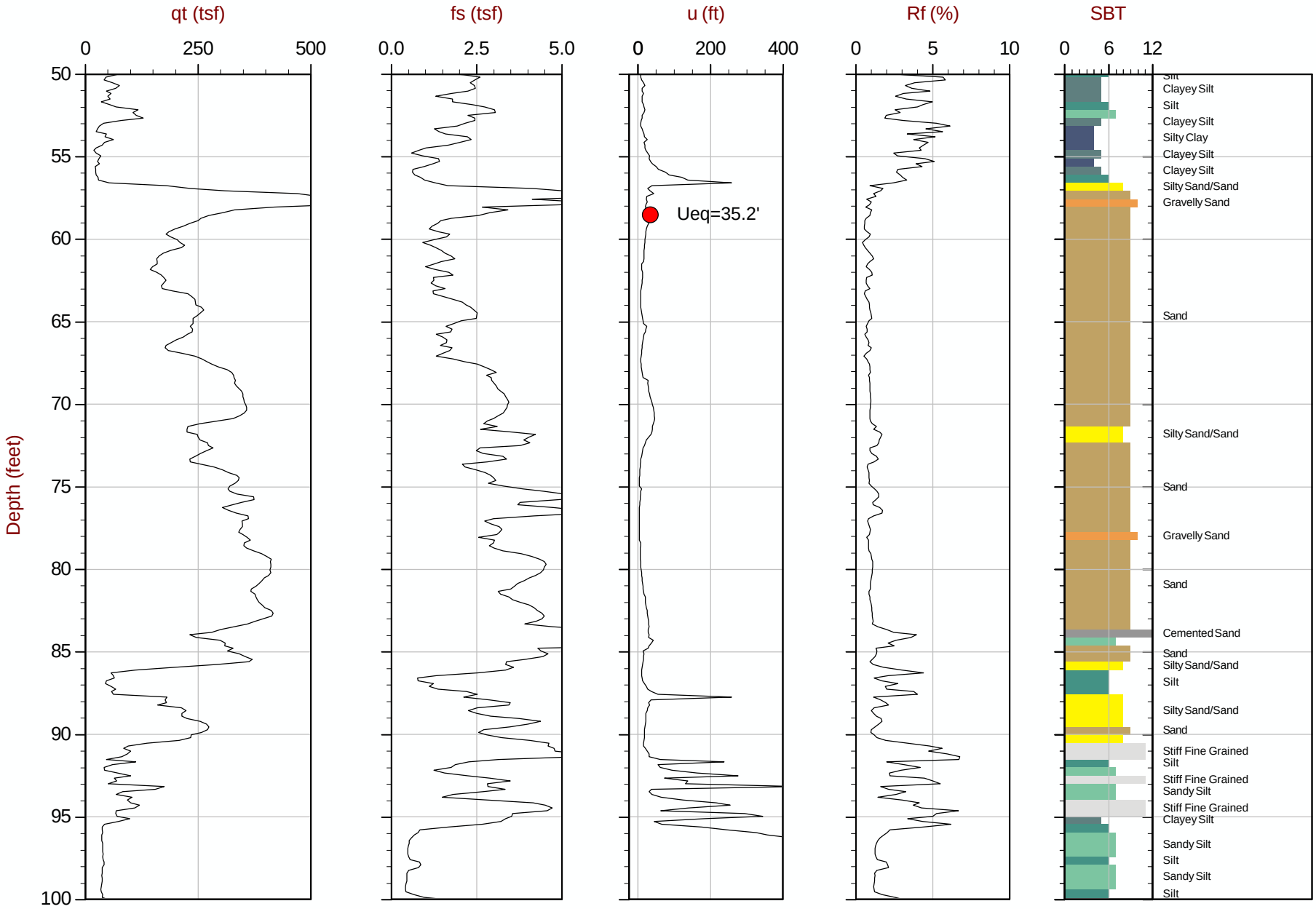
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31915° Long: W 111.72572°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 13:05
Site: I-15

Sounding: 08-OR2-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP10.COR
Unit Wt: SBT Chart Soil Zones

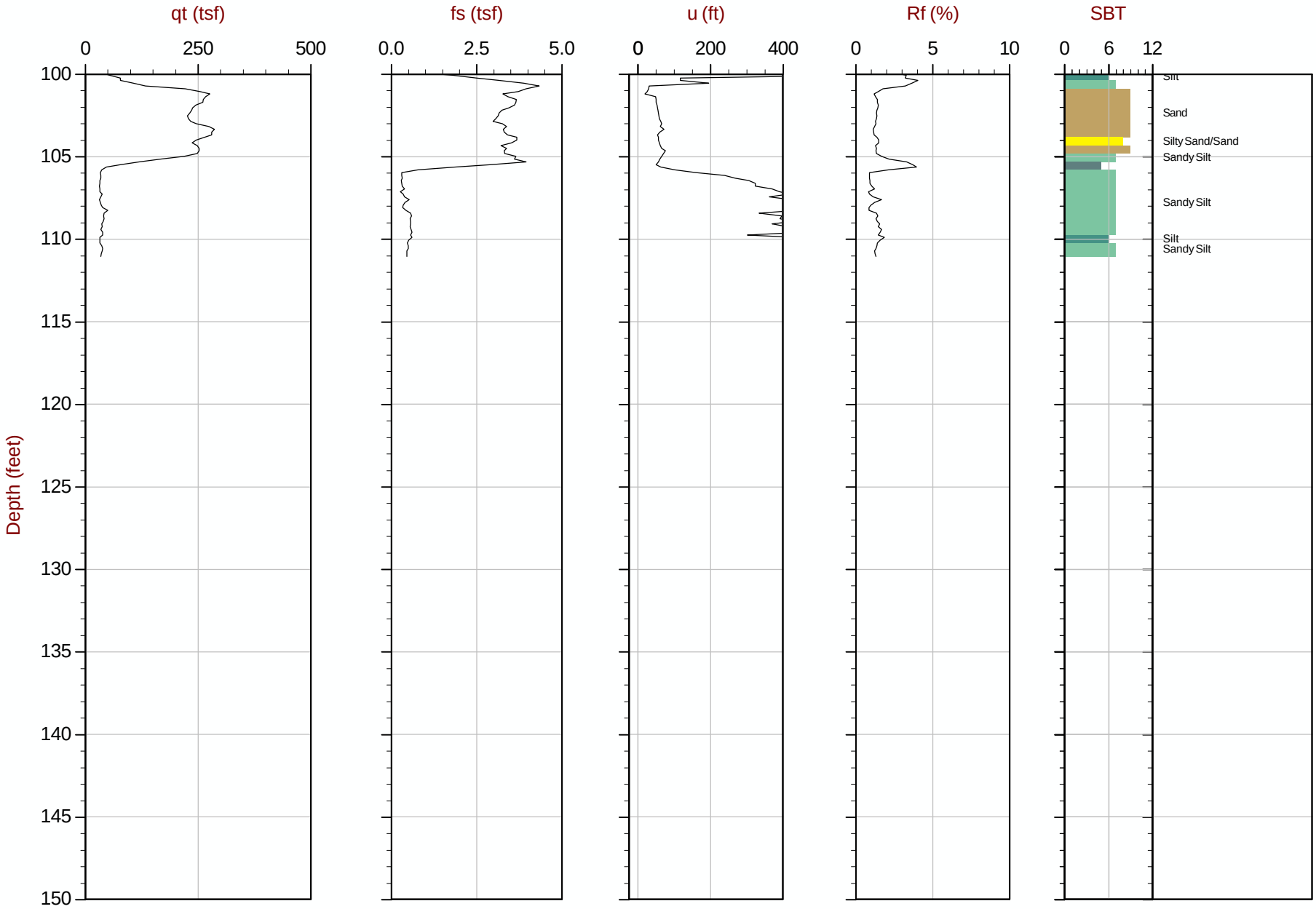
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31915° Long: W 111.72572°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 13:05
Site: I-15

Sounding: 08-OR2-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP10.COR
Unit Wt: SBT Chart Soil Zones

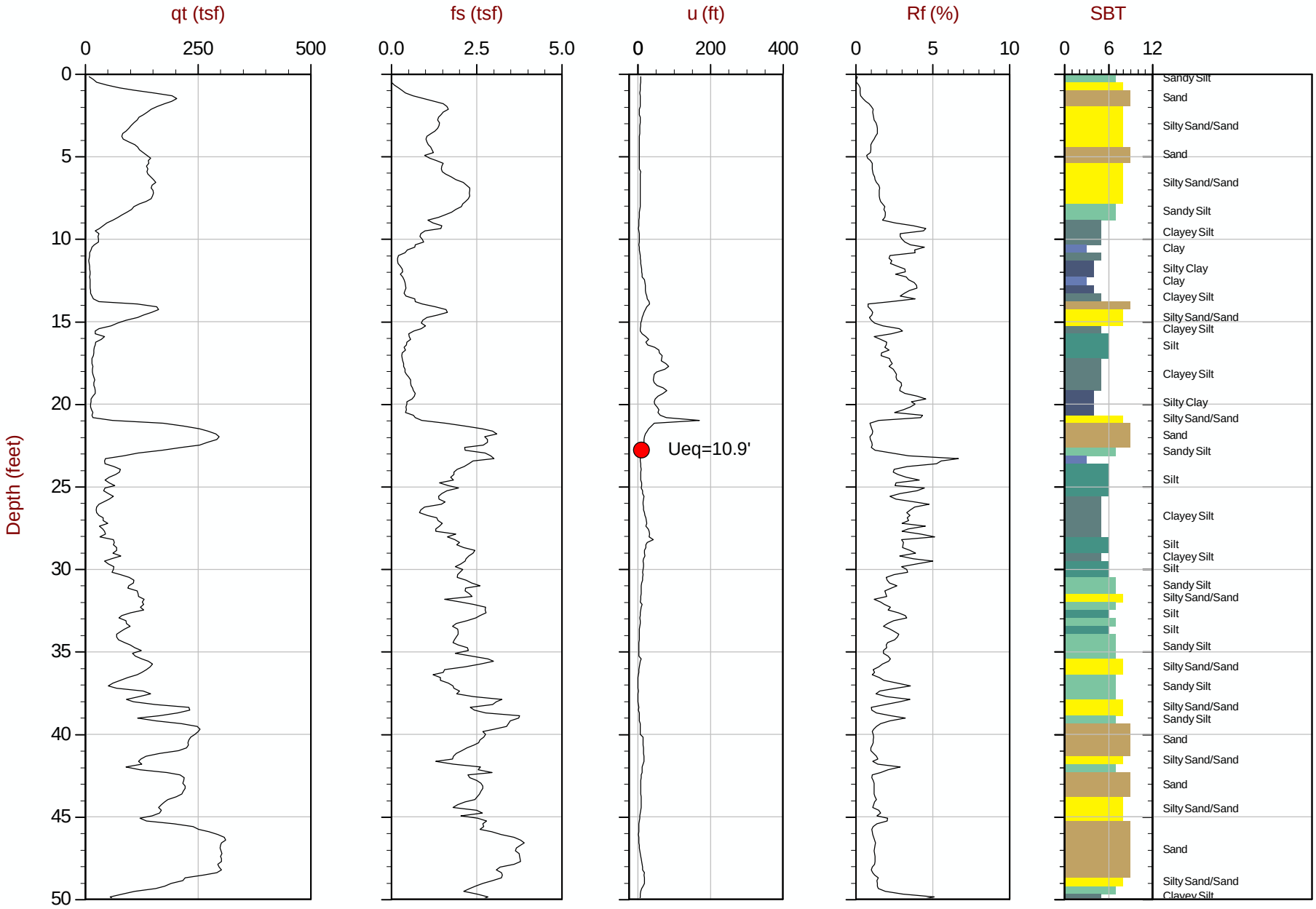
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31915° Long: W 111.72572°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

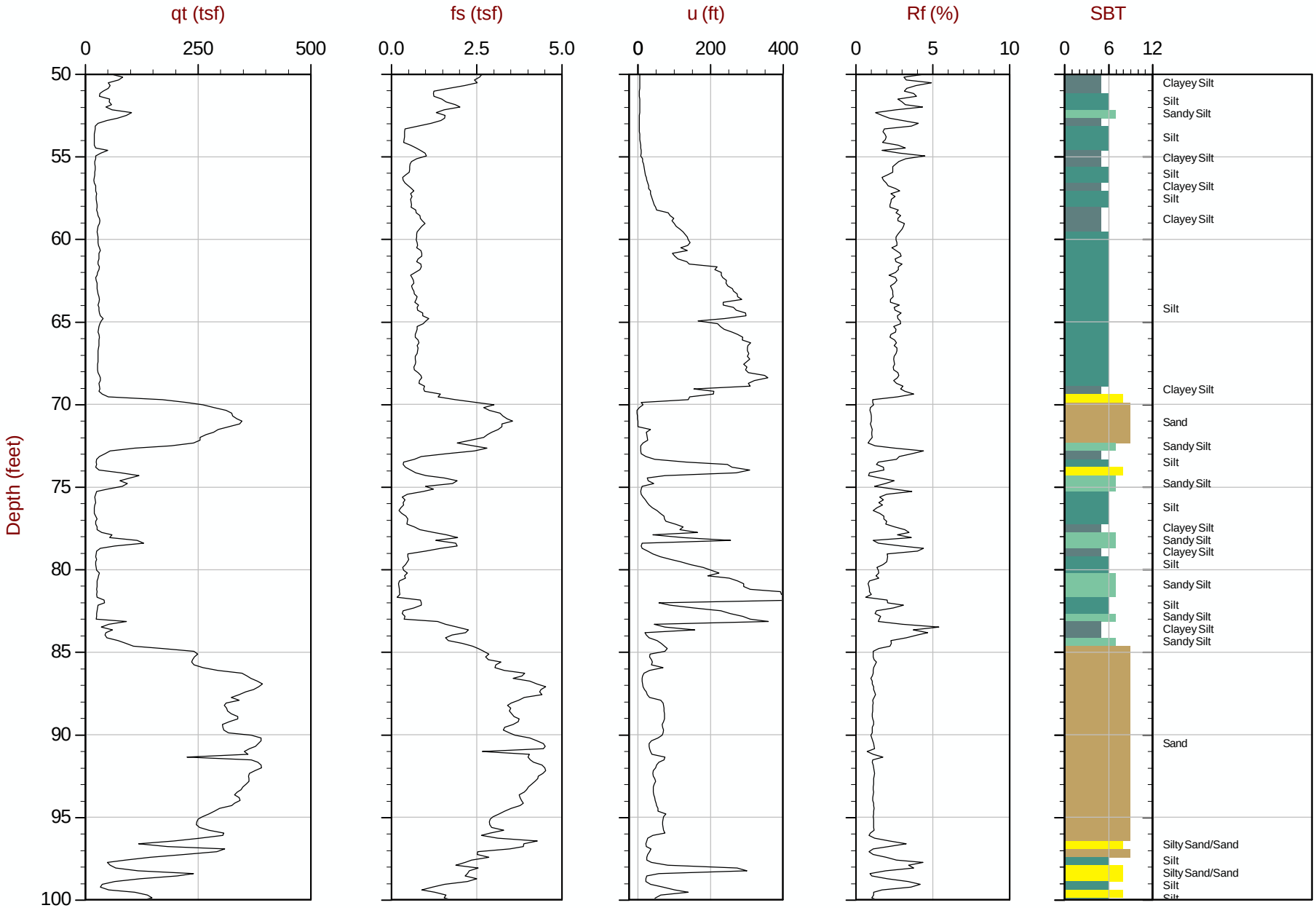
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

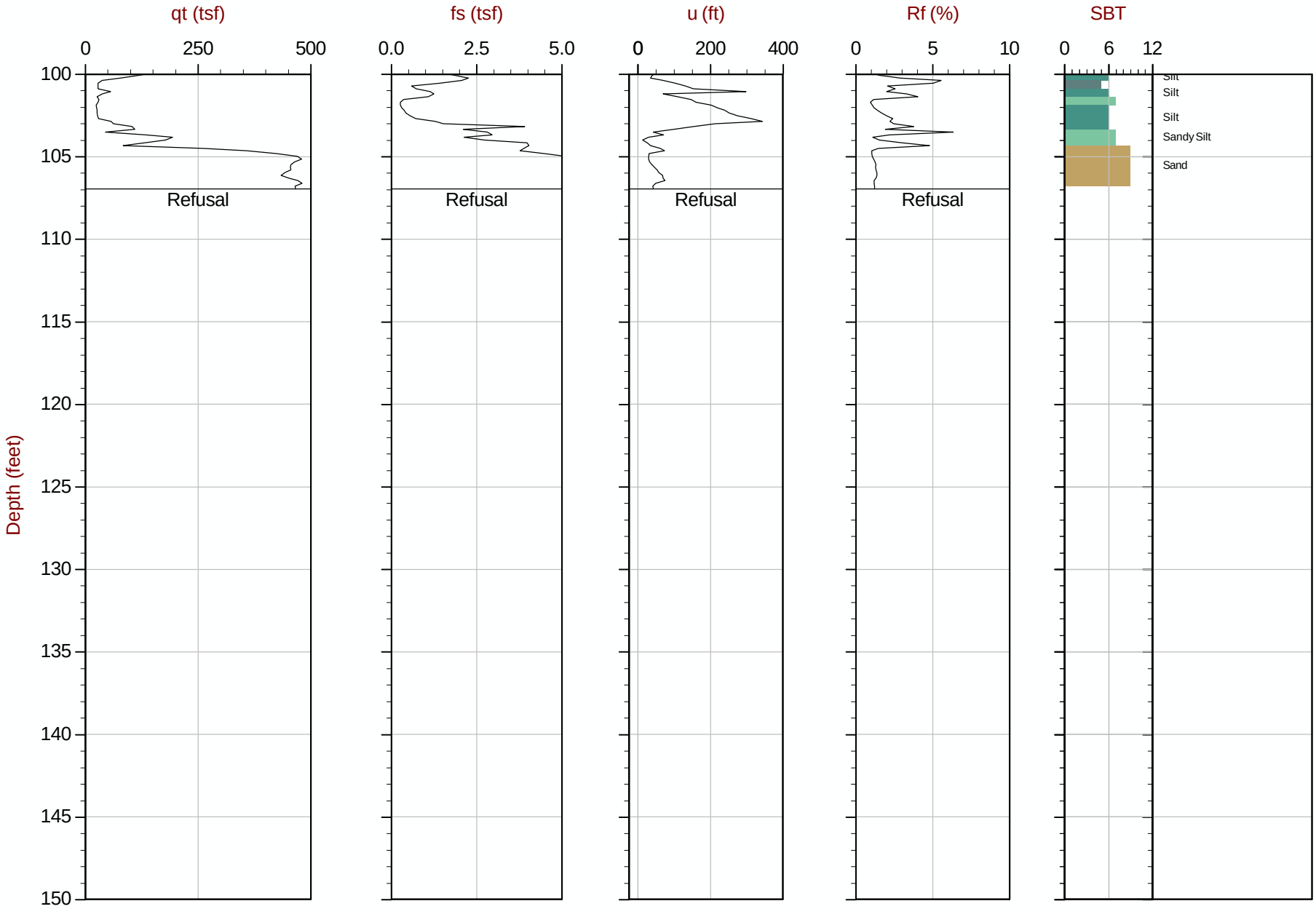
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

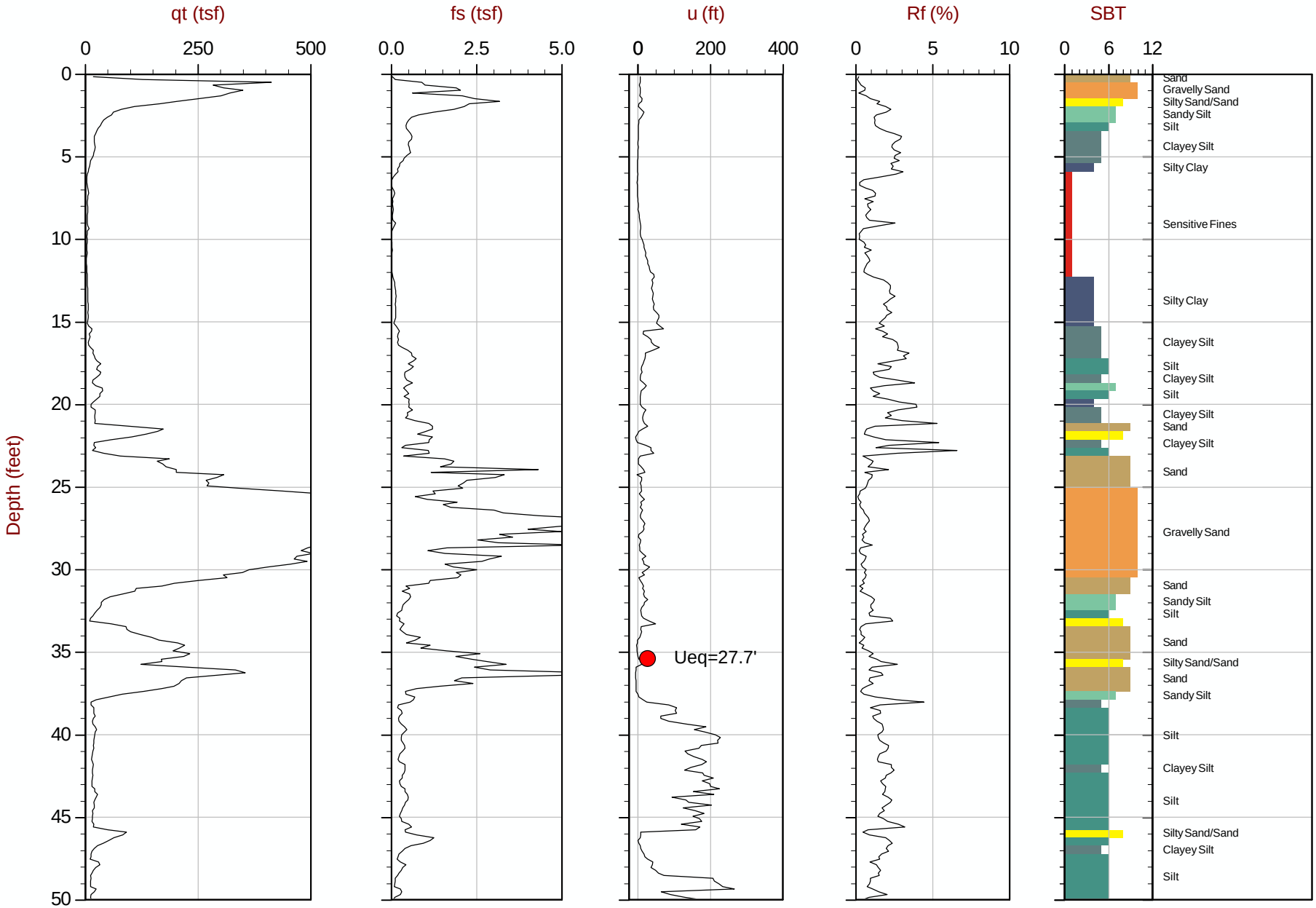
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 10:21
Site: I-15

Sounding: 08-AF4-C1
Cone: STD 20T AD242



Max Depth: 29.700 m / 97.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP12.COR
Unit Wt: SBT Chart Soil Zones

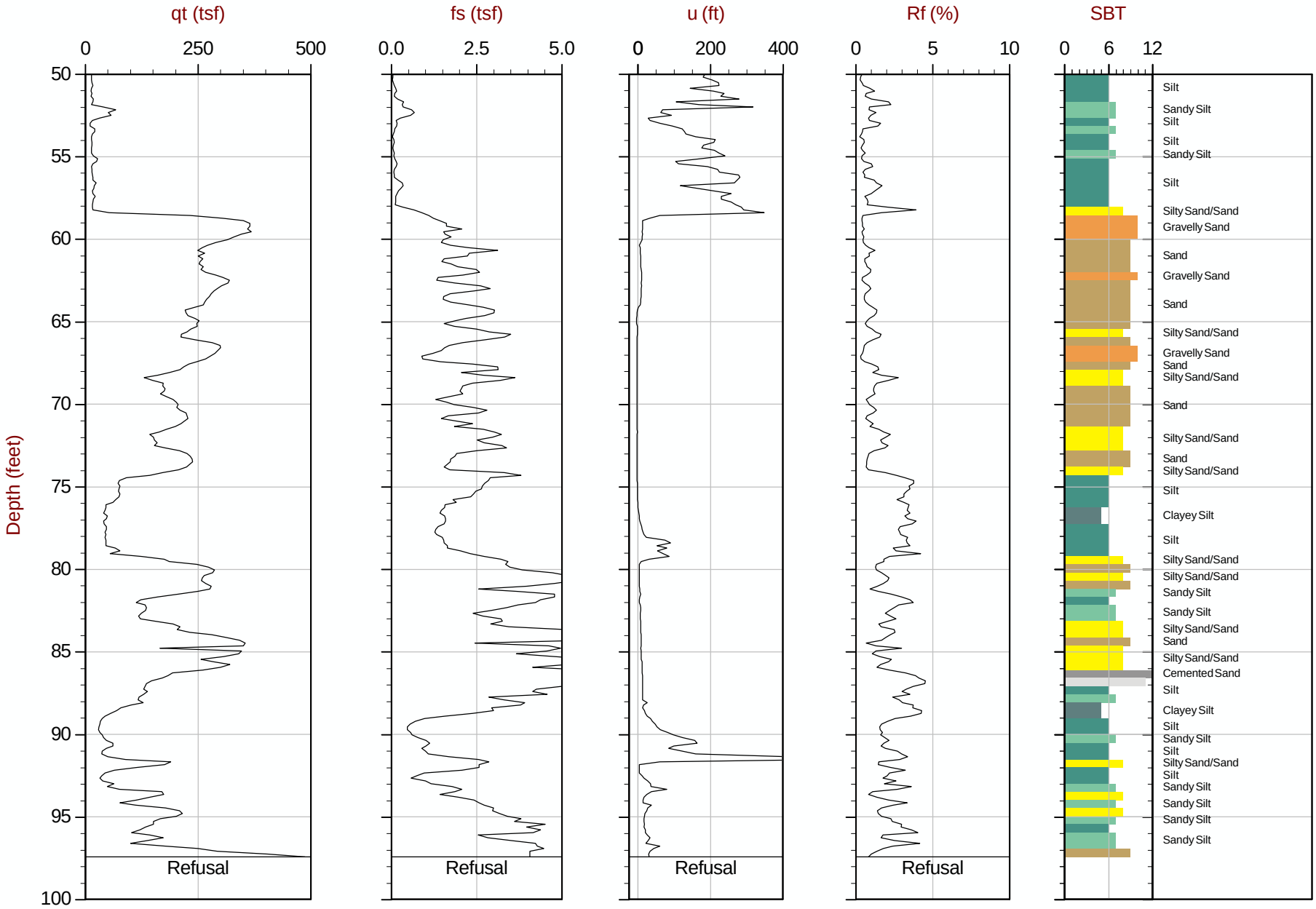
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36735° Long: W 111.79491°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 10:21
Site: I-15

Sounding: 08-AF4-C1
Cone: STD 20T AD242



Max Depth: 29.700 m / 97.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP12.COR
Unit Wt: SBT Chart Soil Zones

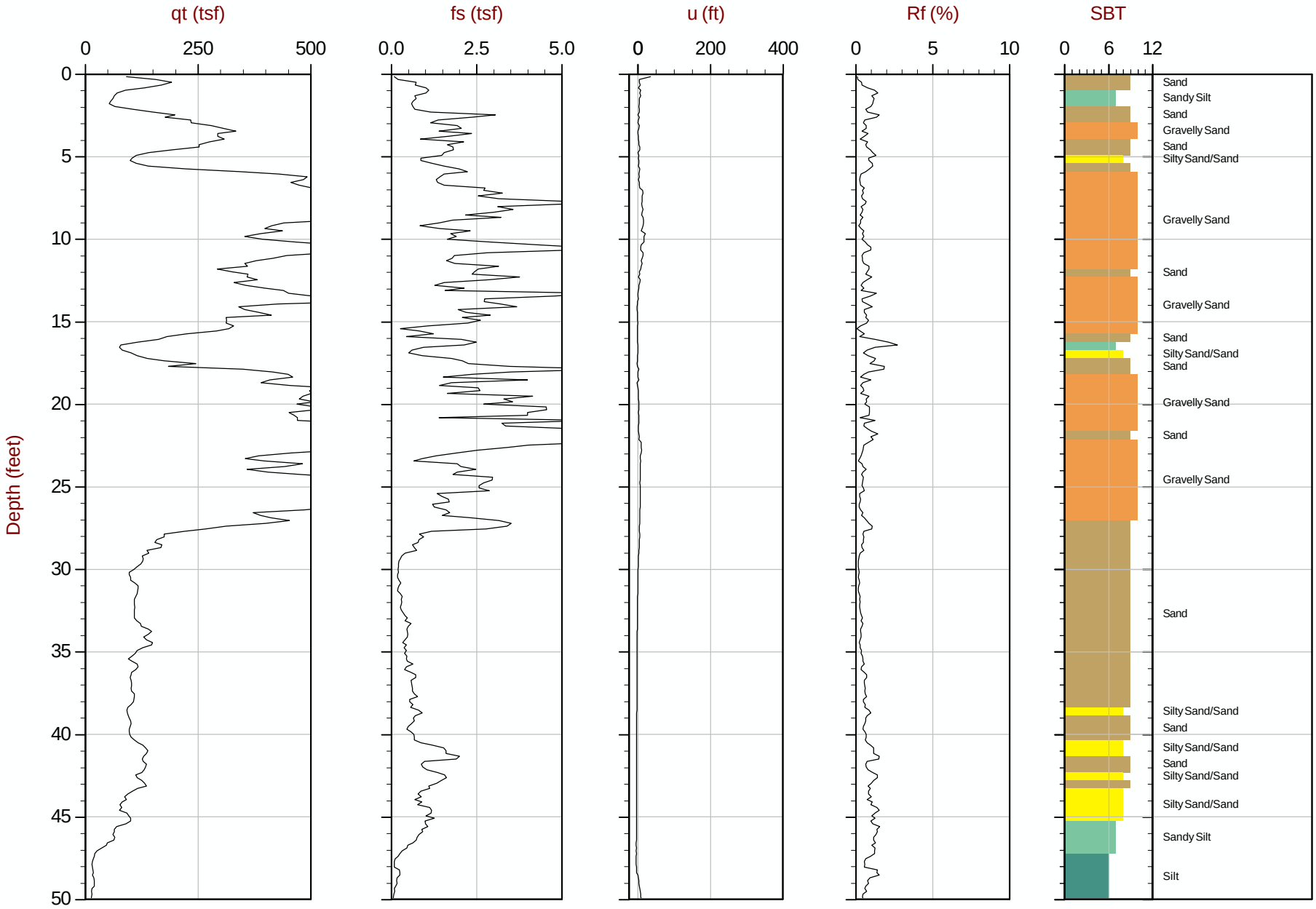
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36735° Long: W 111.79491°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 11:53
Site: I-15

Sounding: 08-AF2-C2
Cone: STD 20T AD242



Max Depth: 25.600 m / 83.99 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP13.COR
Unit Wt: SBT Chart Soil Zones

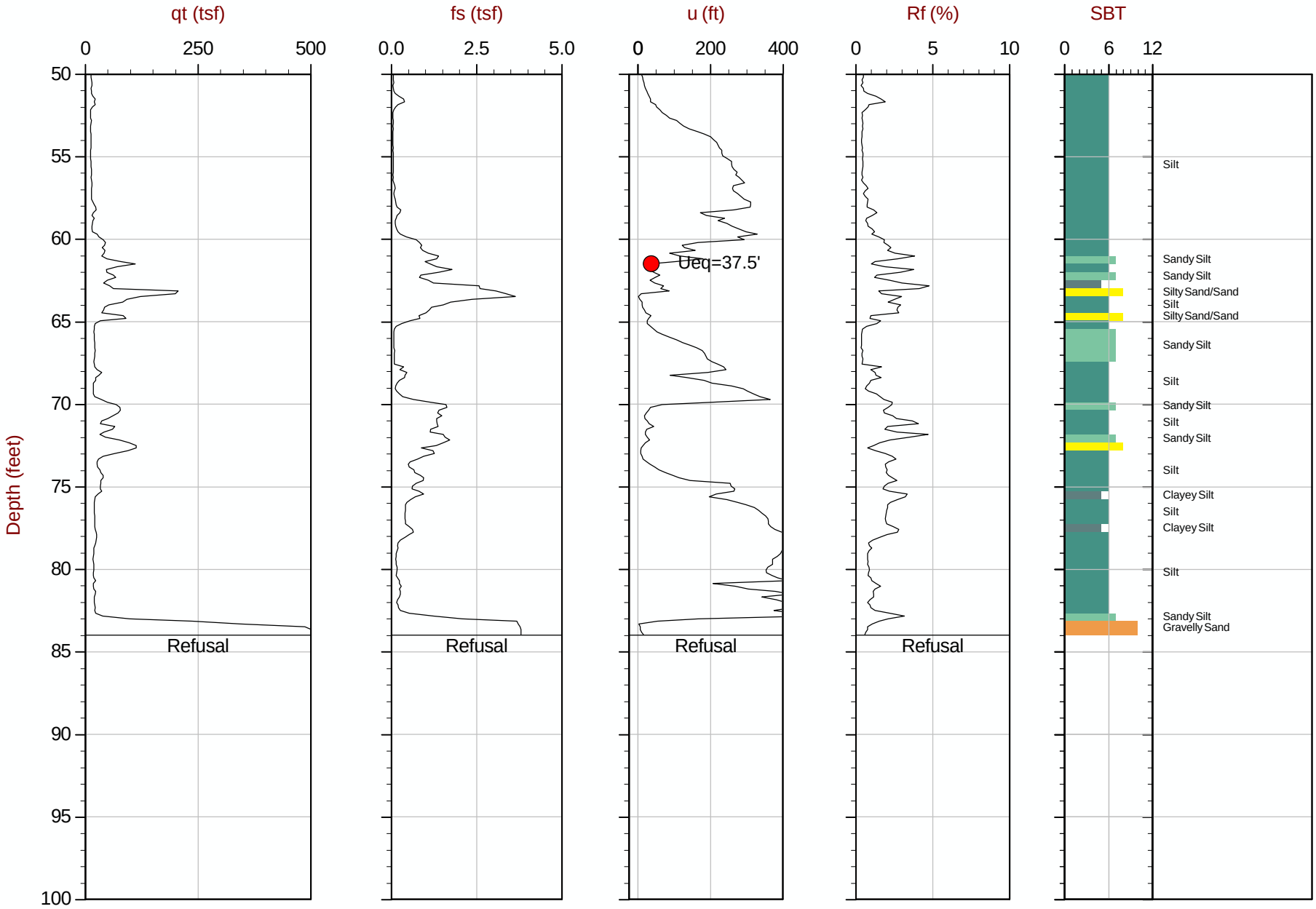
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37331° Long: W 111.80721°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 11:53
Site: I-15

Sounding: 08-AF2-C2
Cone: STD 20T AD242



Max Depth: 25.600 m / 83.99 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP13.COR
Unit Wt: SBT Chart Soil Zones

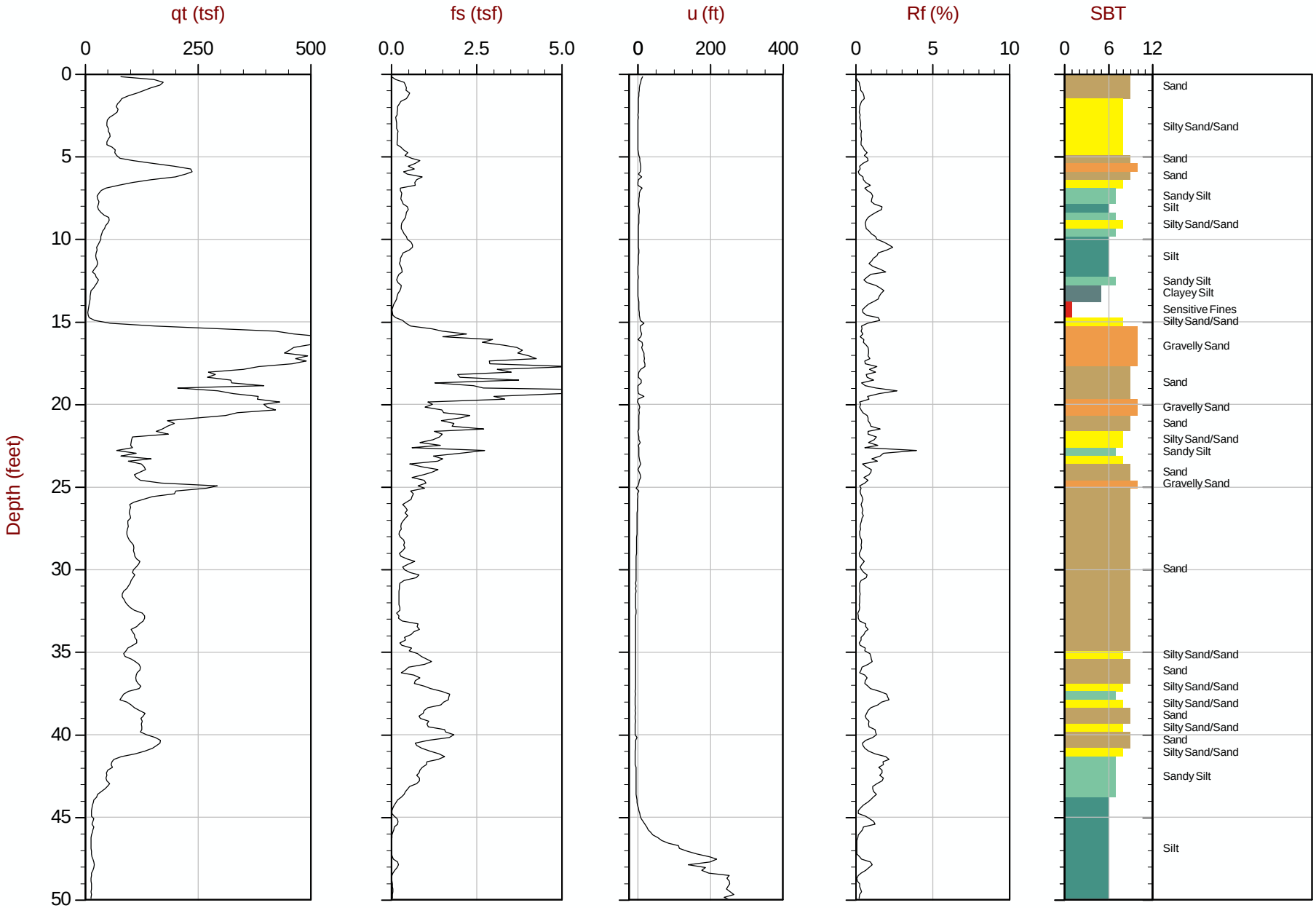
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37331° Long: W 111.80721°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 13:11
Site: I-15

Sounding: 08-AF2-C1
Cone: STD 20T AD242



Max Depth: 25.250 m / 82.84 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP14.COR
Unit Wt: SBT Chart Soil Zones

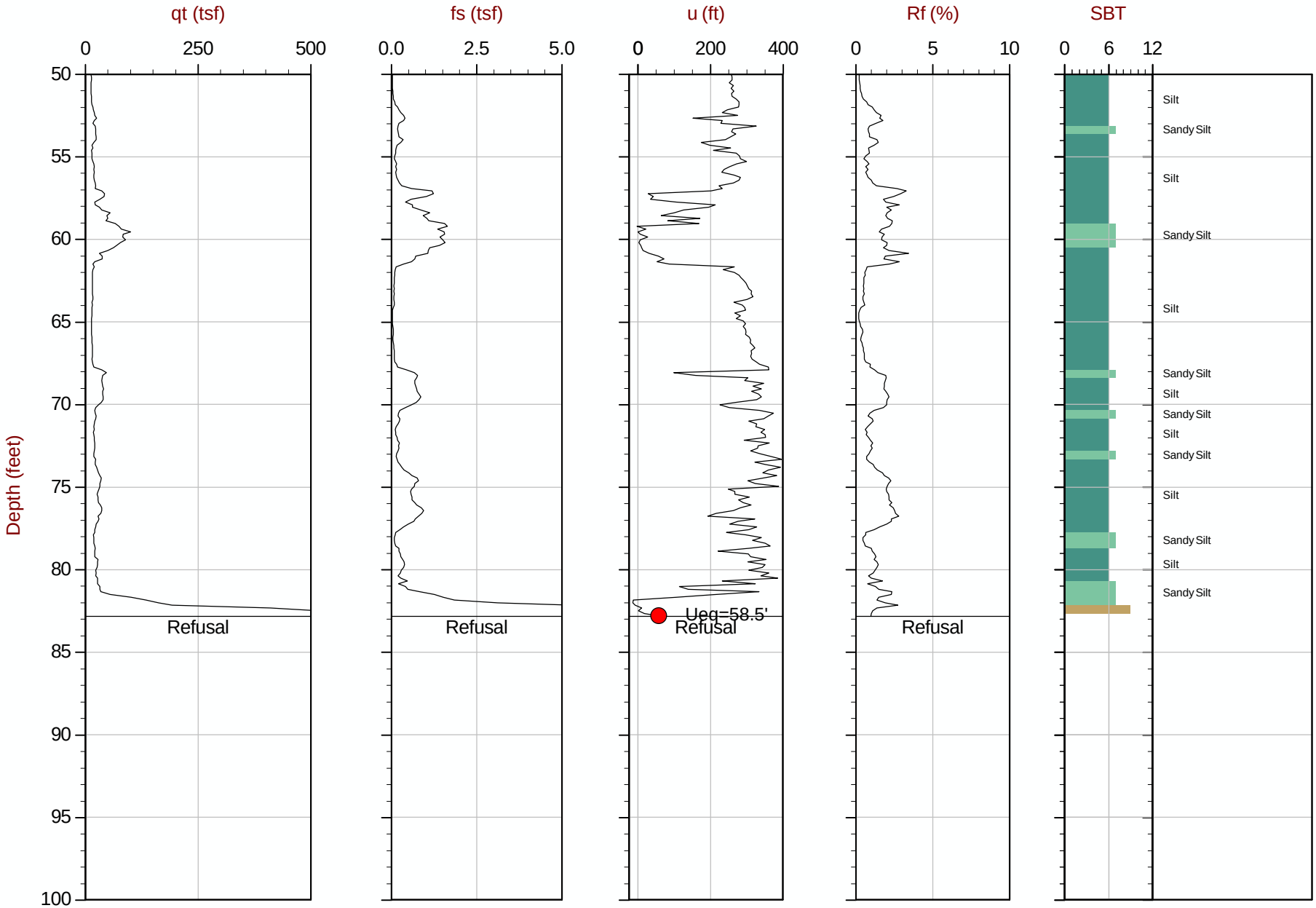
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37255° Long: W 111.80731°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 13:11
Site: I-15

Sounding: 08-AF2-C1
Cone: STD 20T AD242



Max Depth: 25.250 m / 82.84 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP14.COR
Unit Wt: SBT Chart Soil Zones

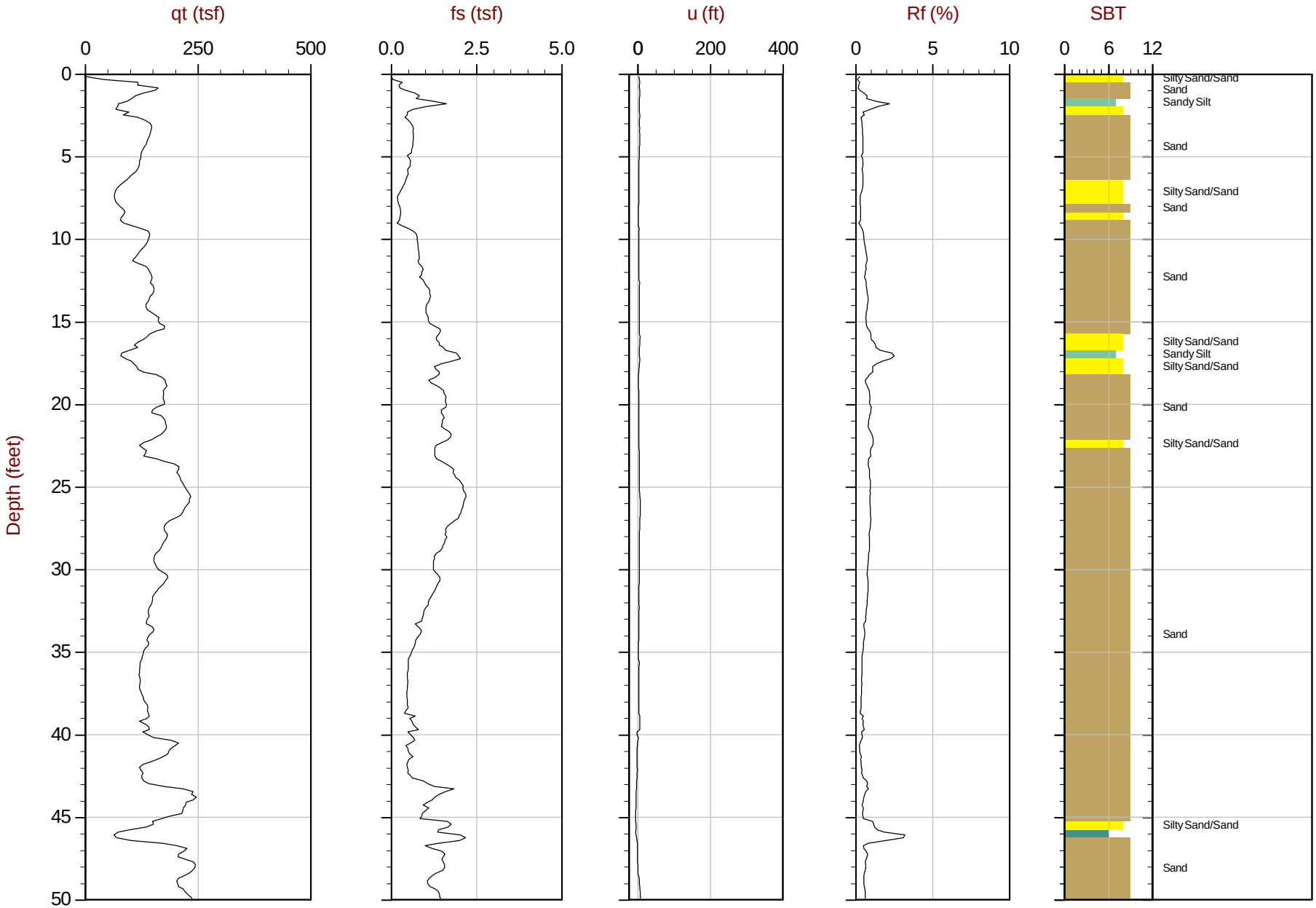
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37255° Long: W 111.80731°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 08:32
Site: I-15

Sounding: 08-OR3-C2
Cone: STD 20T AD242



Max Depth: 22.300 m / 73.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP15.COR
Unit Wt: SBT Chart Soil Zones

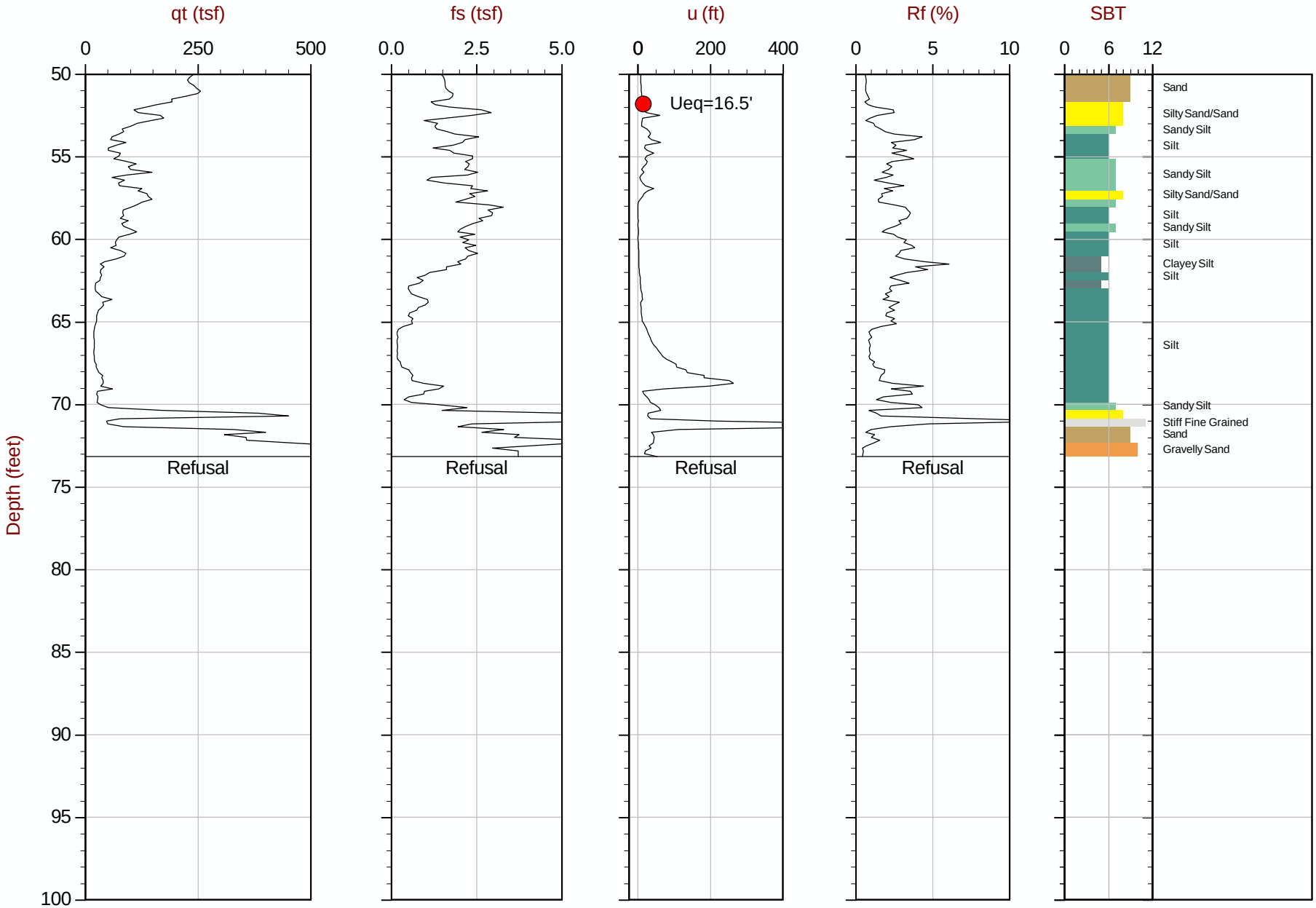
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31252° Long: W 111.72525°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 08:32
Site: I-15

Sounding: 08-OR3-C2
Cone: STD 20T AD242



Max Depth: 22.300 m / 73.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP15.COR
Unit Wt: SBT Chart Soil Zones

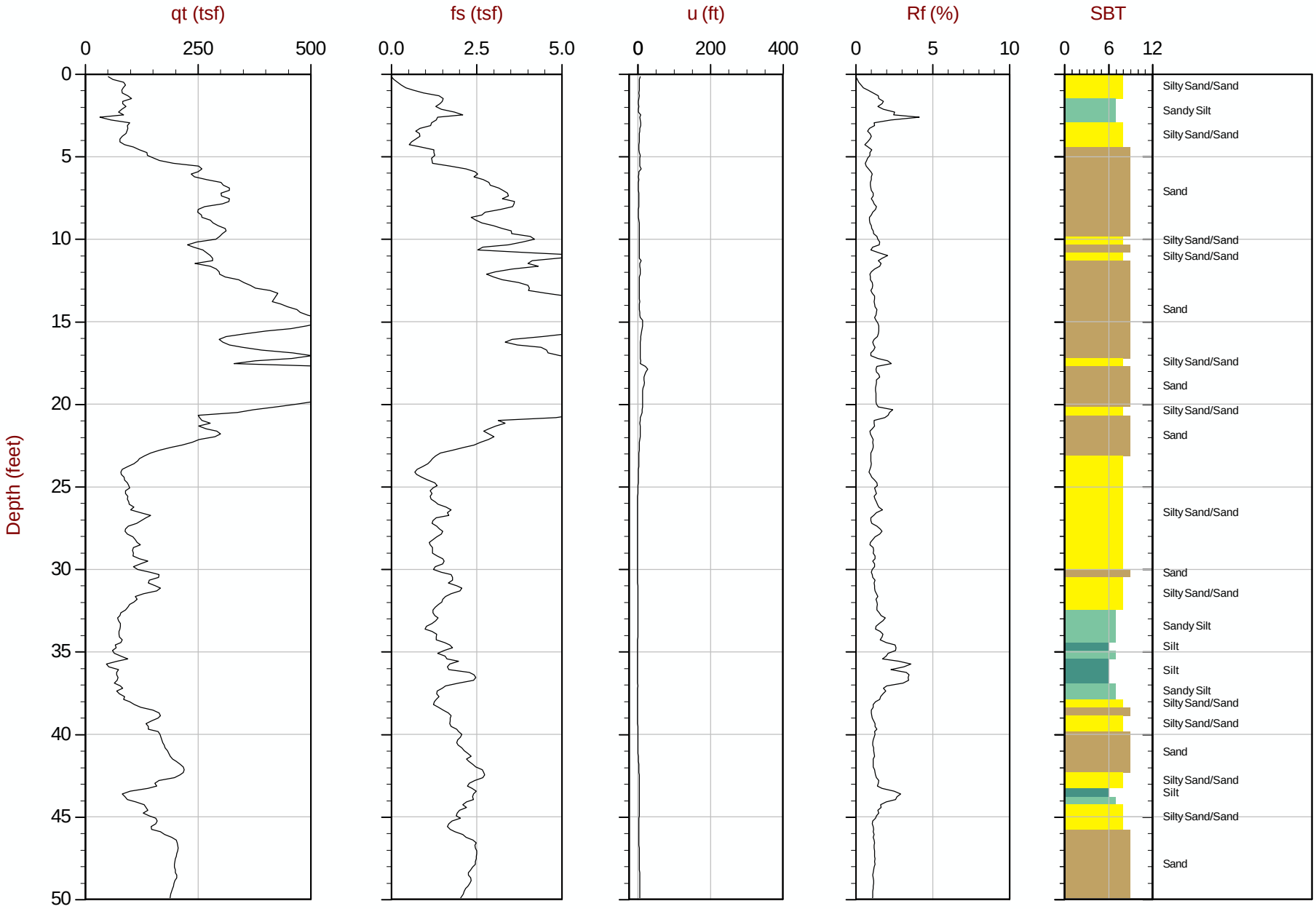
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31252° Long: W 111.72525°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 10:39
Site: I-15

Sounding: 08-OR3-C1
Cone: STD 20T AD242



Max Depth: 34.350 m / 112.70 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP16.COR
Unit Wt: SBT Chart Soil Zones

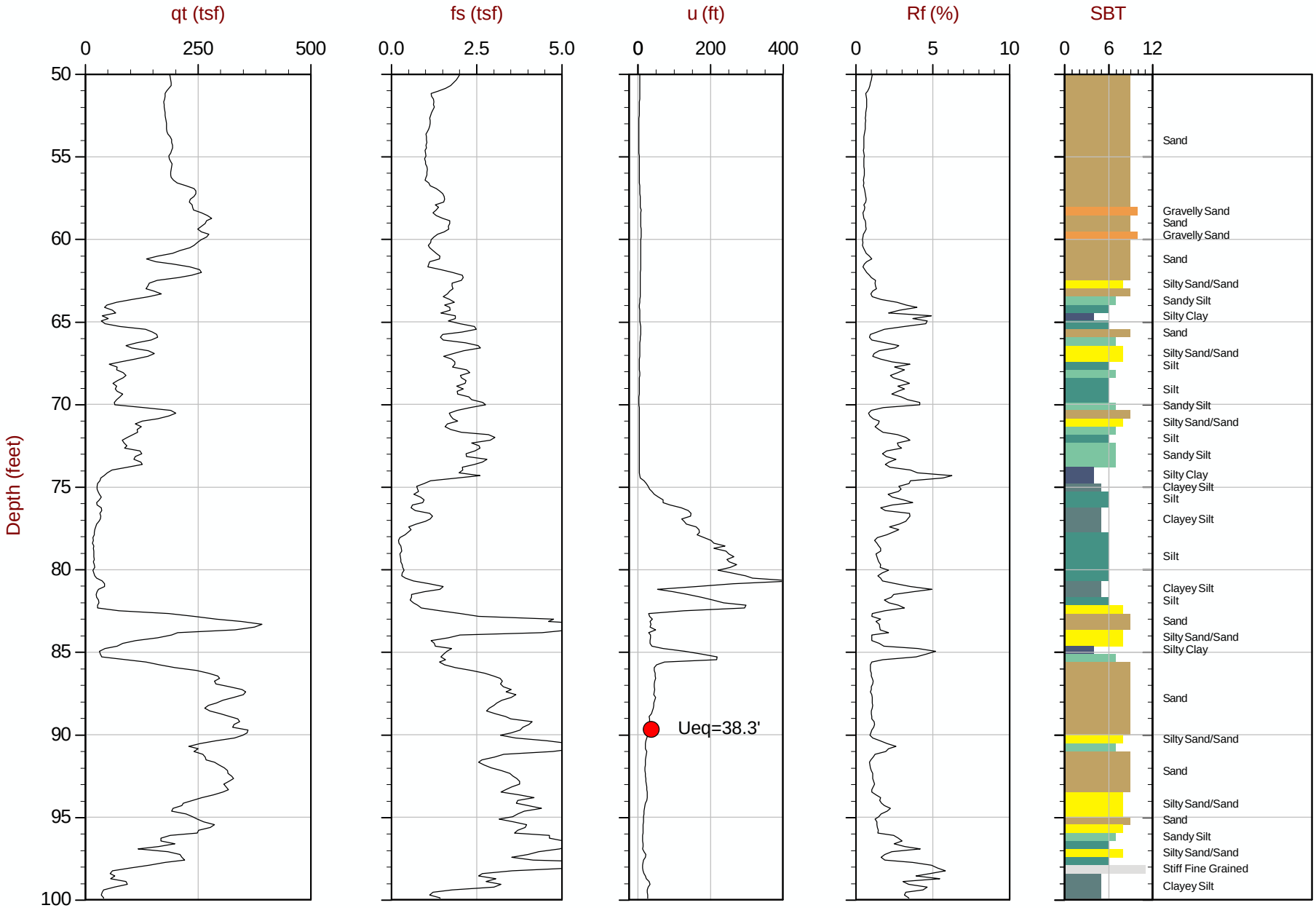
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31147° Long: W 111.72633°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 10:39
Site: I-15

Sounding: 08-OR3-C1
Cone: STD 20T AD242



Max Depth: 34.350 m / 112.70 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP16.COR
Unit Wt: SBT Chart Soil Zones

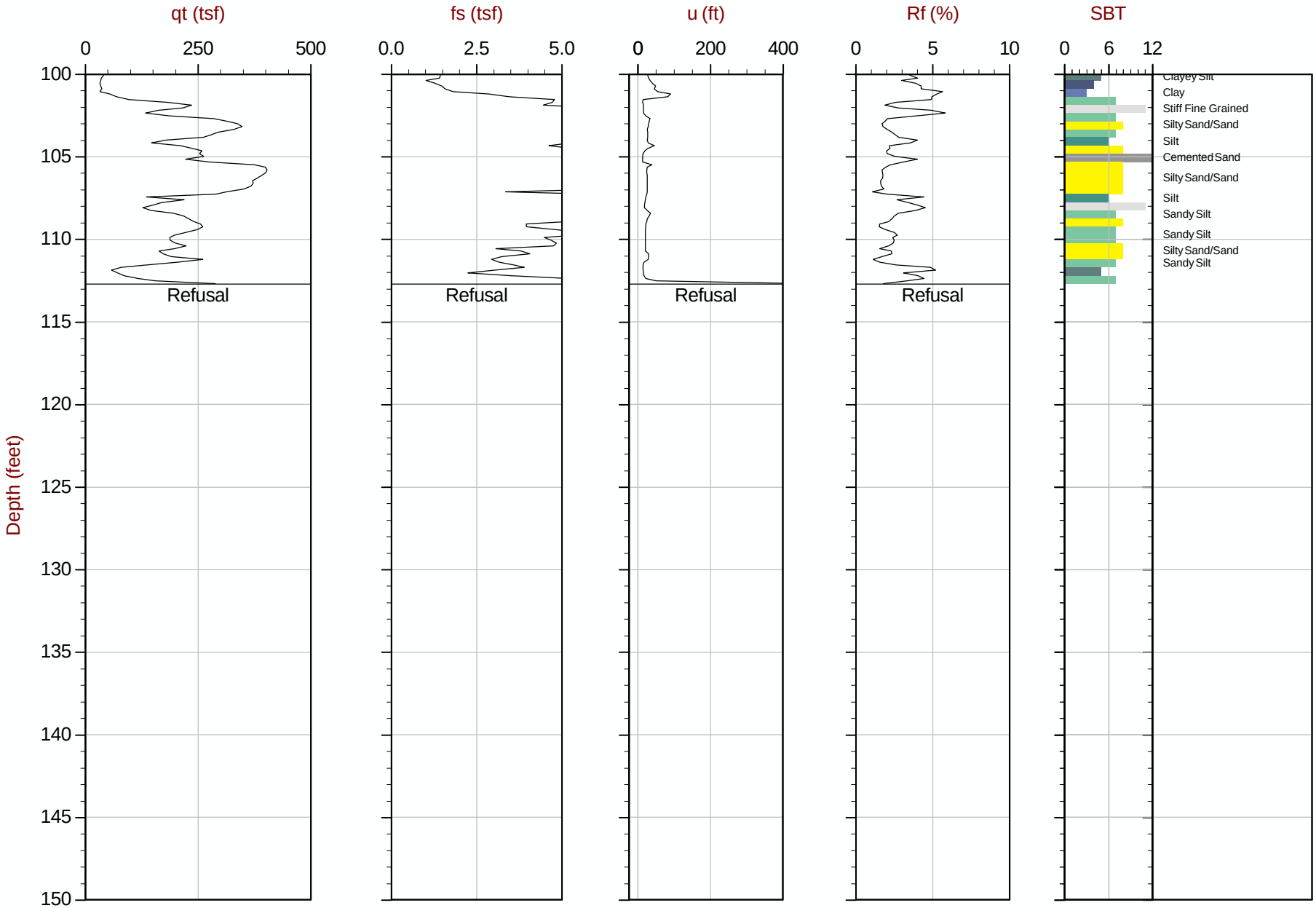
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31147° Long: W 111.72633°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 10:39
Site: I-15

Sounding: 08-OR3-C1
Cone: STD 20T AD242



Max Depth: 34.350 m / 112.70 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP16.COR
Unit Wt: SBT Chart Soil Zones

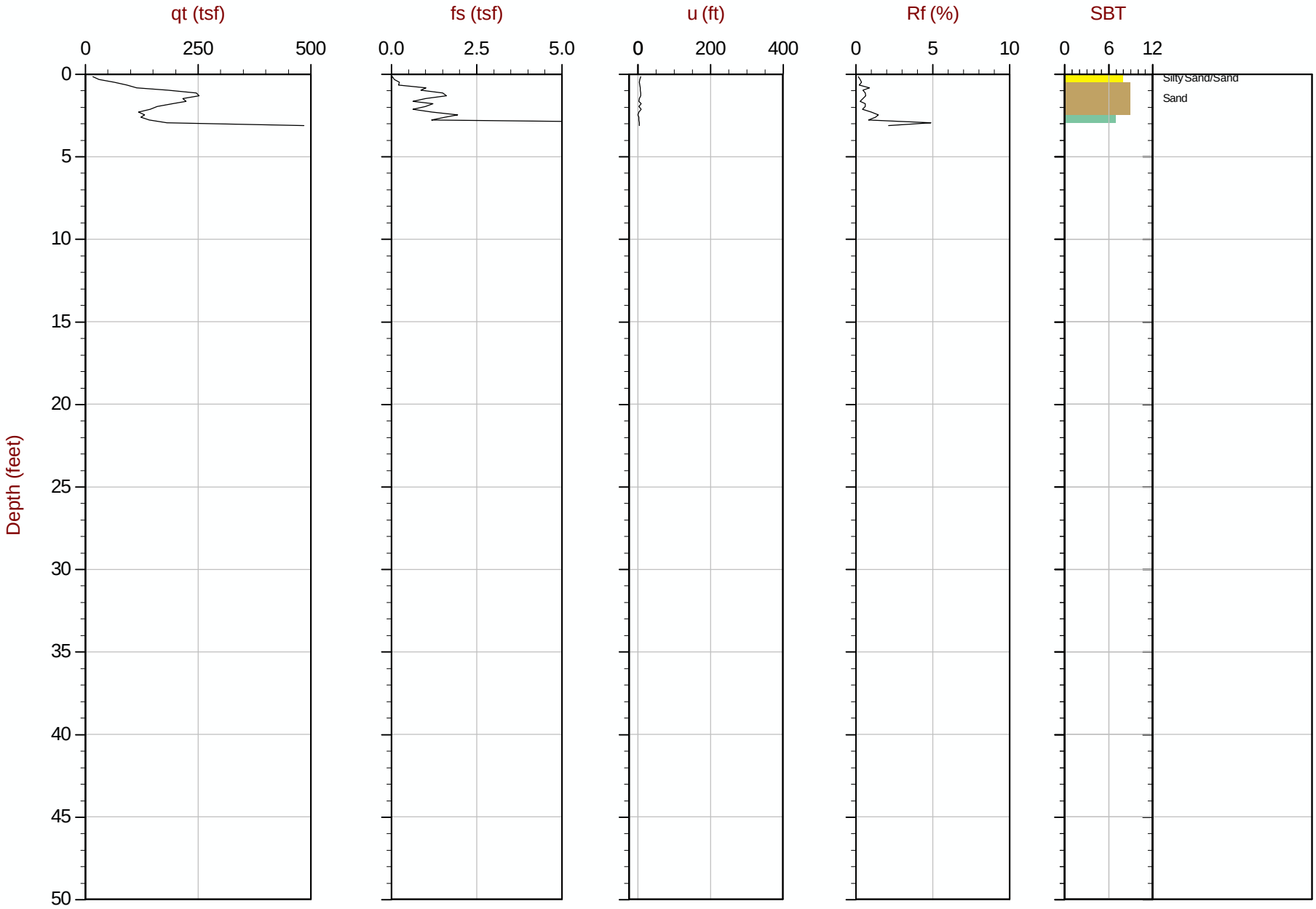
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31147° Long: W 111.72633°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 12:37
Site: I-15

Sounding: 08-L1-C2
Cone: STD 20T AD242



Max Depth: 0.950 m / 3.12 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP17.COR
Unit Wt: SBT Chart Soil Zones

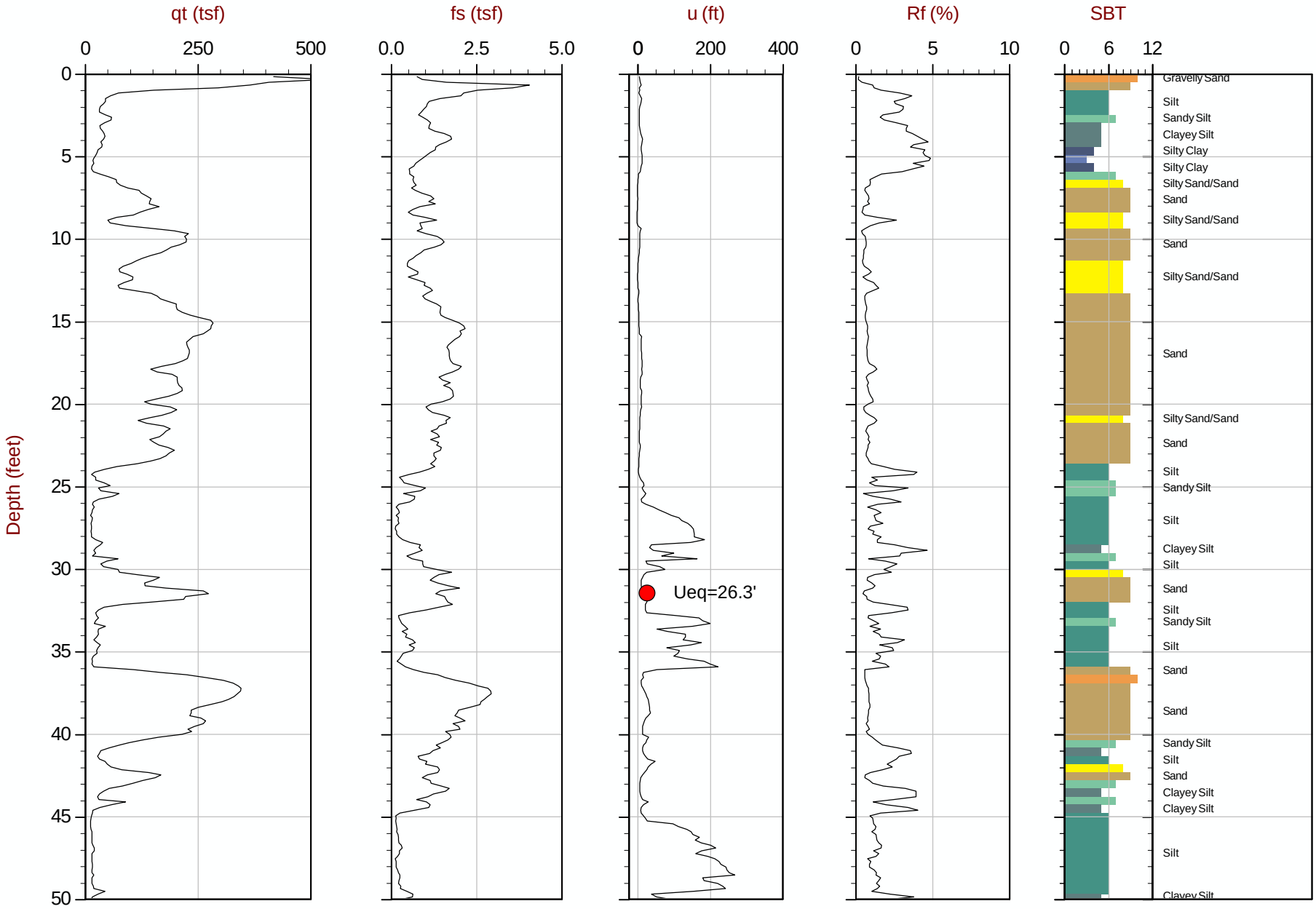
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33058° Long: W 111.73801°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

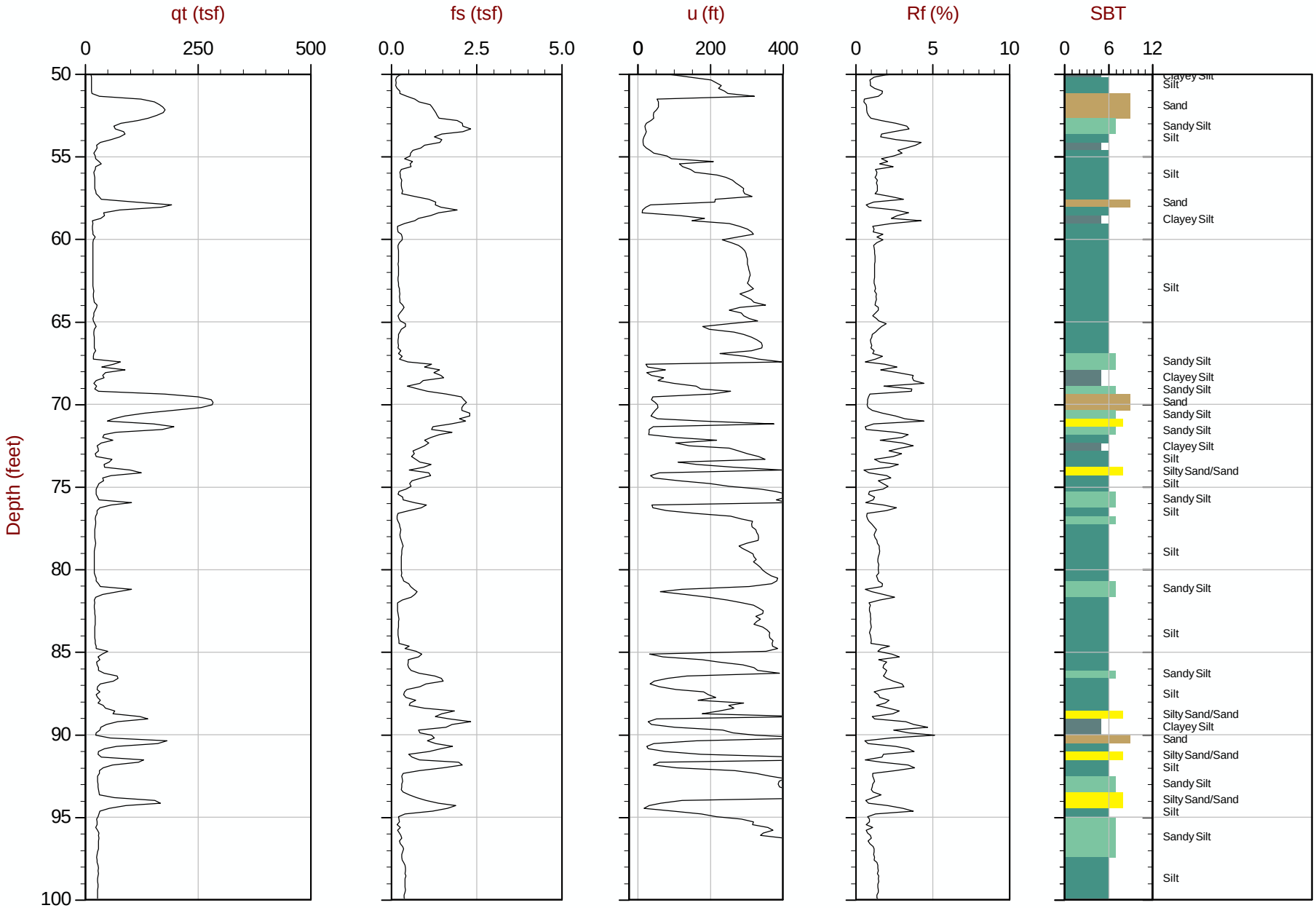
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

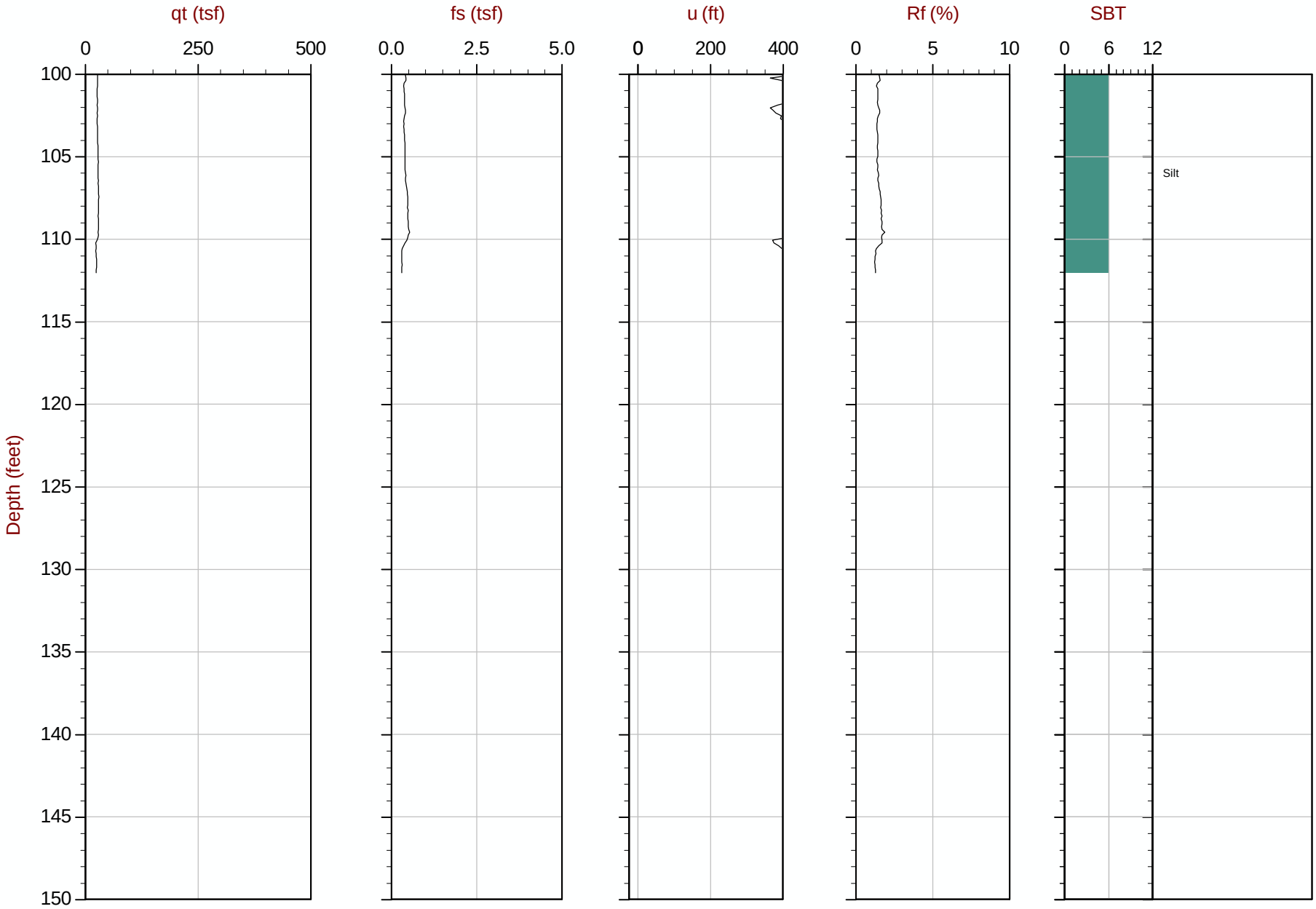
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

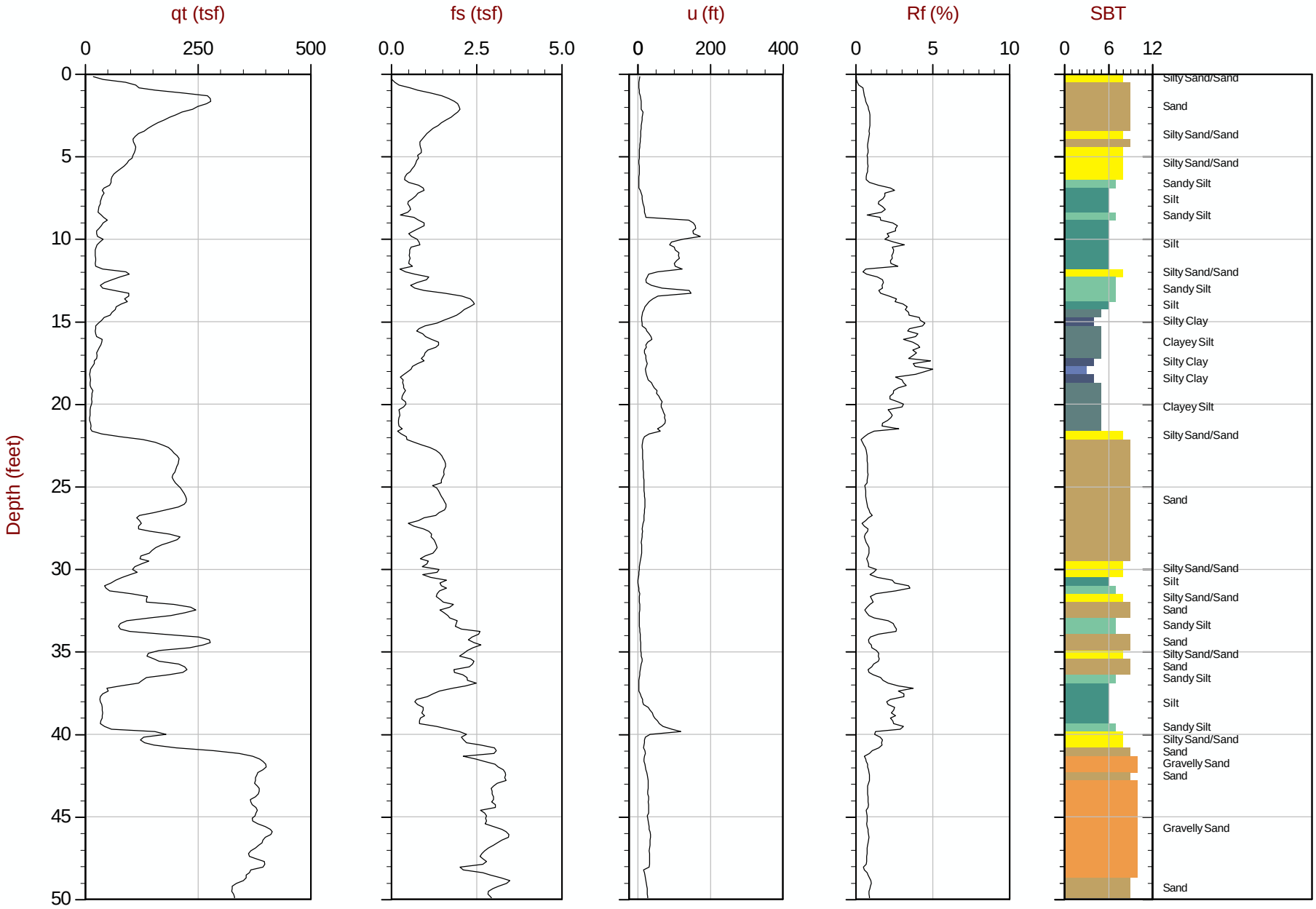
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 11:34
Site: I-15

Sounding: 08-OR5-C2
Cone: STD 20T AD242



Max Depth: 25.800 m / 84.64 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP19.COR
Unit Wt: SBT Chart Soil Zones

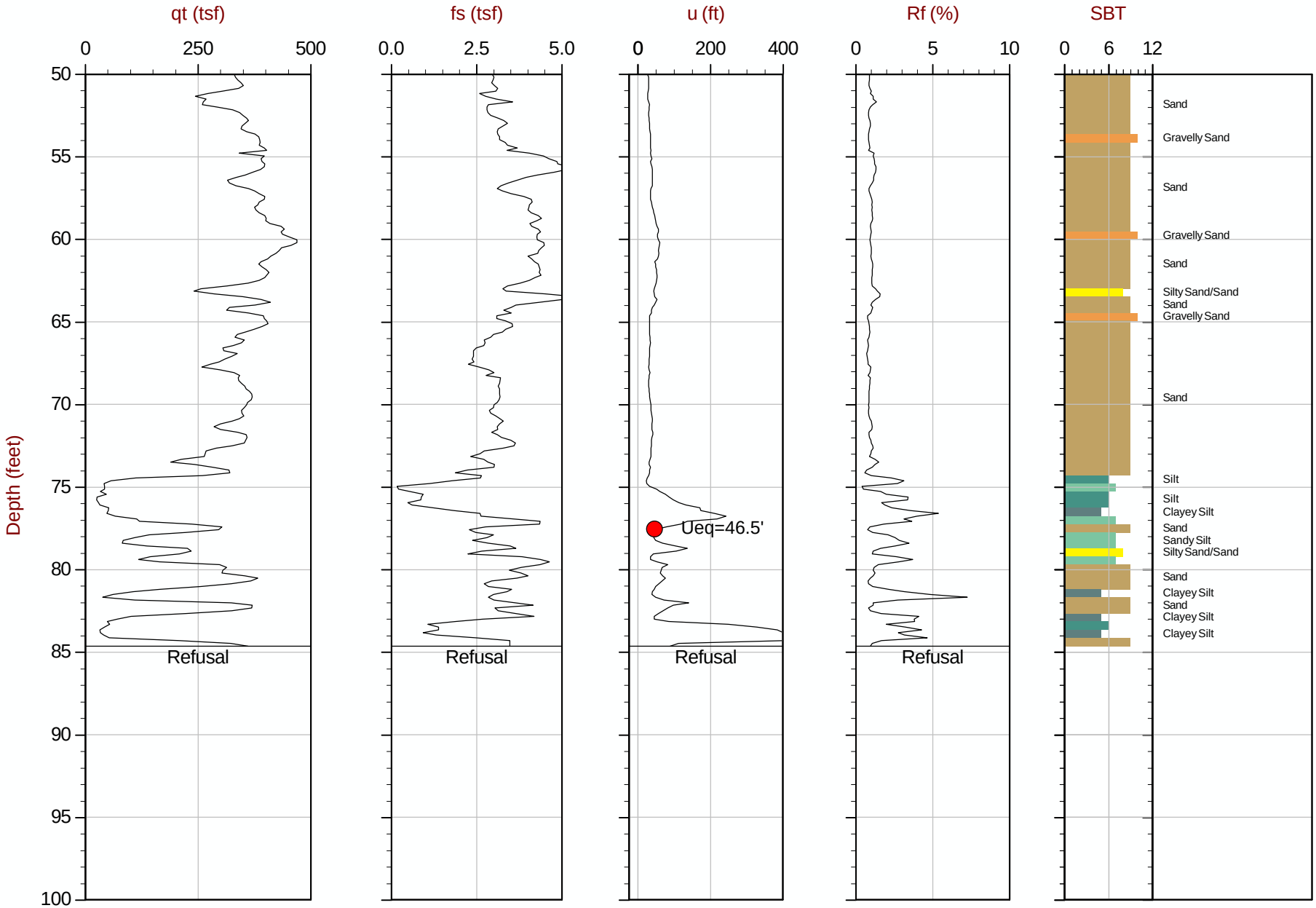
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29667° Long: W 111.72604°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 11:34
Site: I-15

Sounding: 08-OR5-C2
Cone: STD 20T AD242



Max Depth: 25.800 m / 84.64 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP19.COR
Unit Wt: SBT Chart Soil Zones

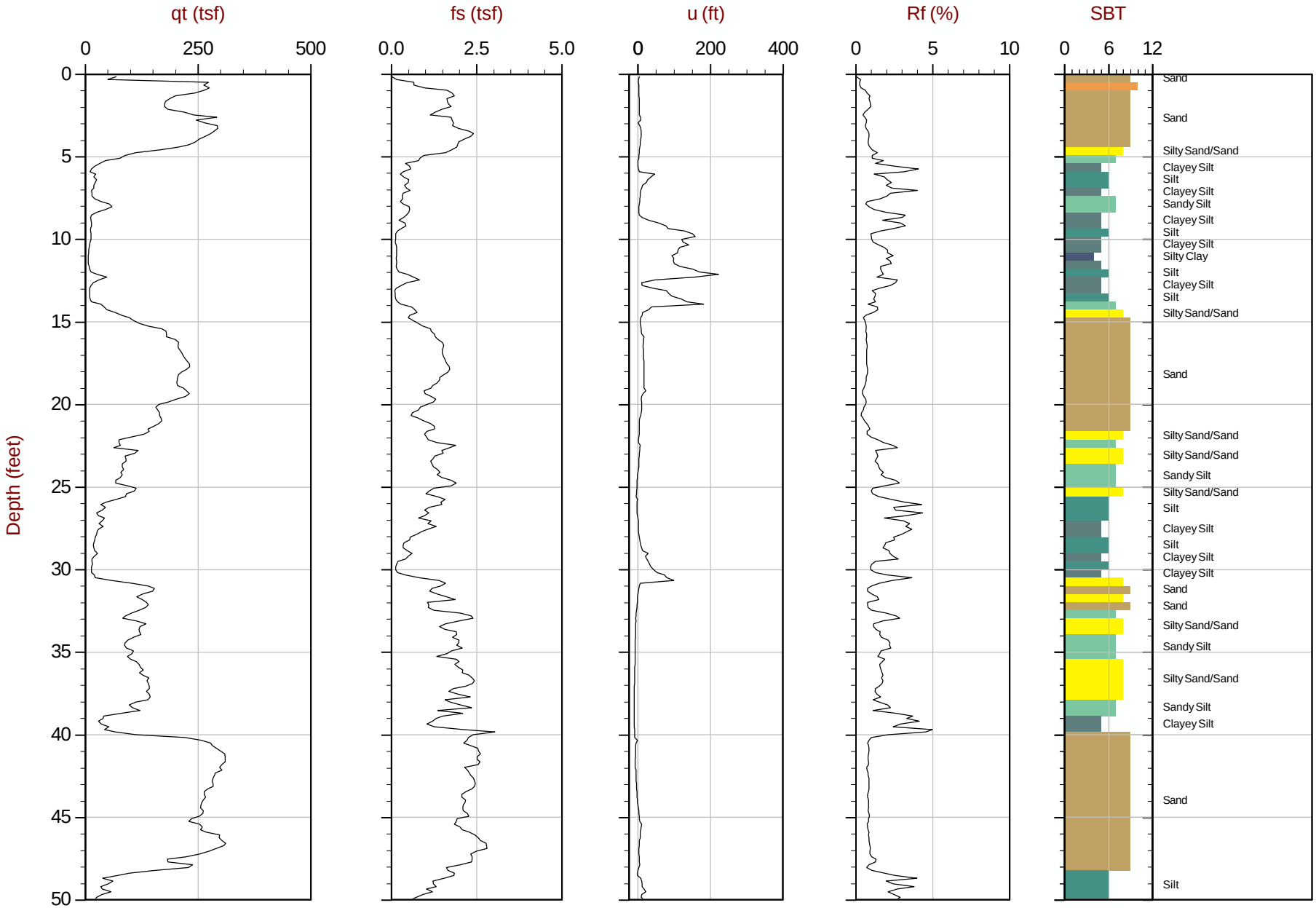
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29667° Long: W 111.72604°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

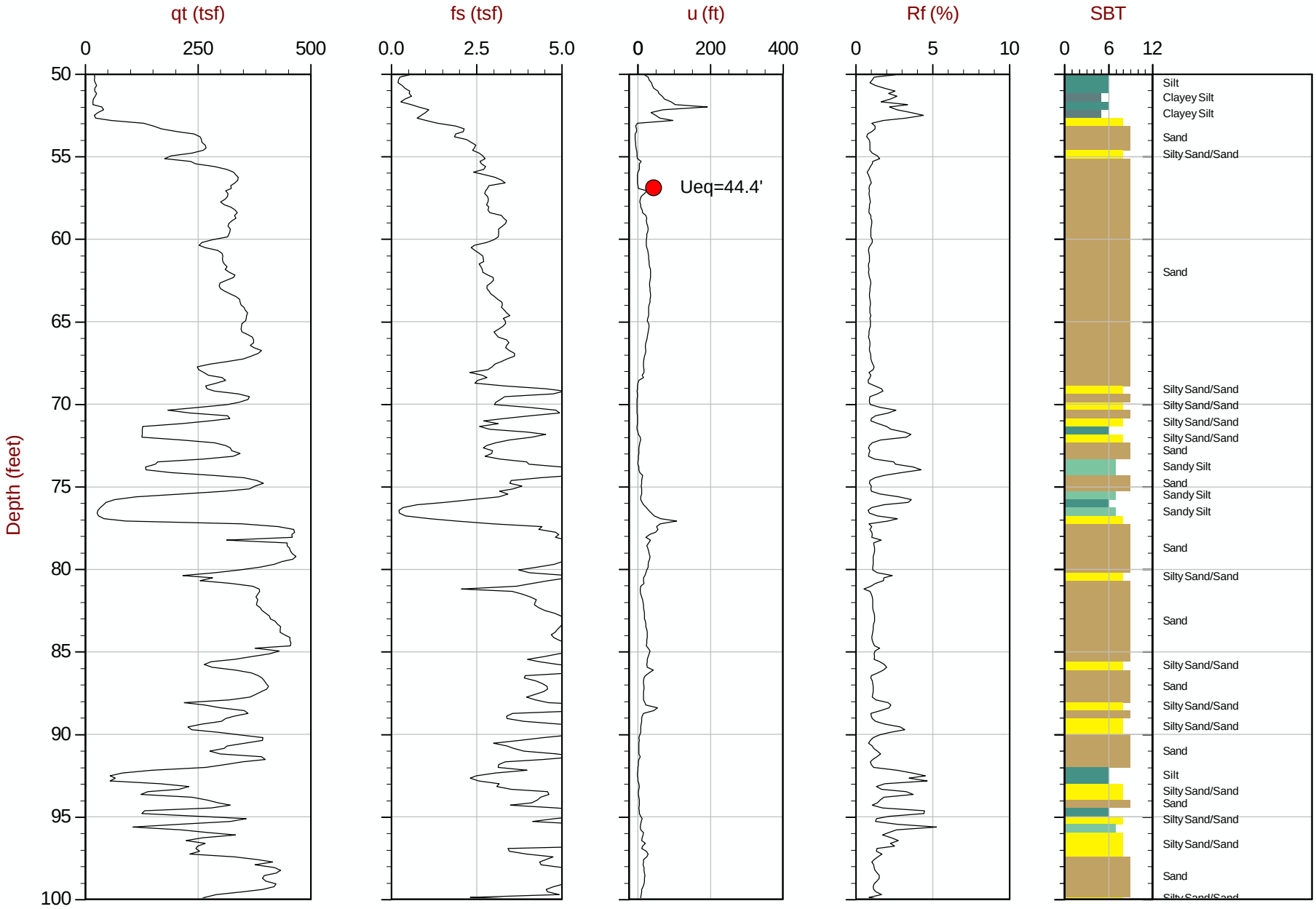
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

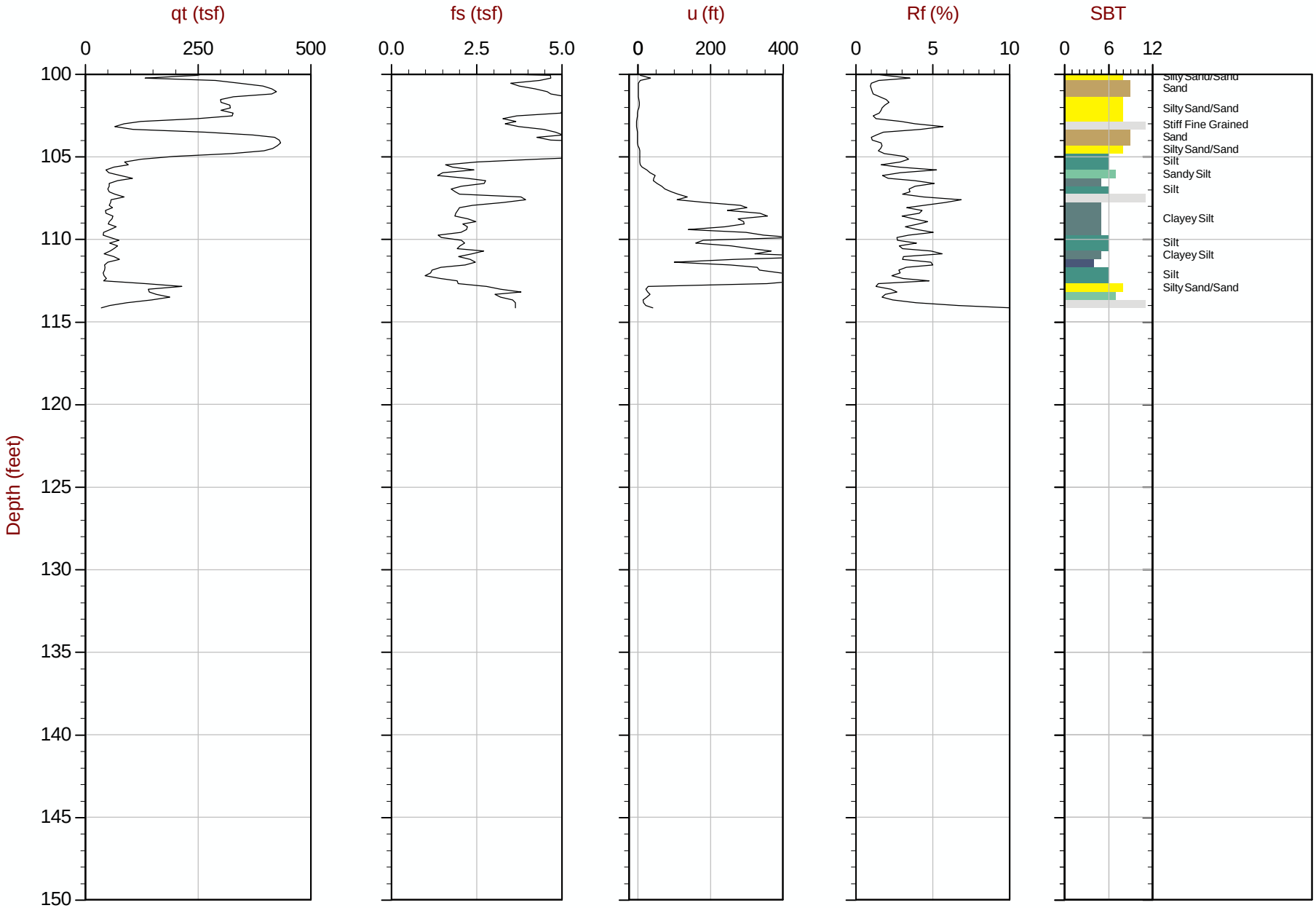
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

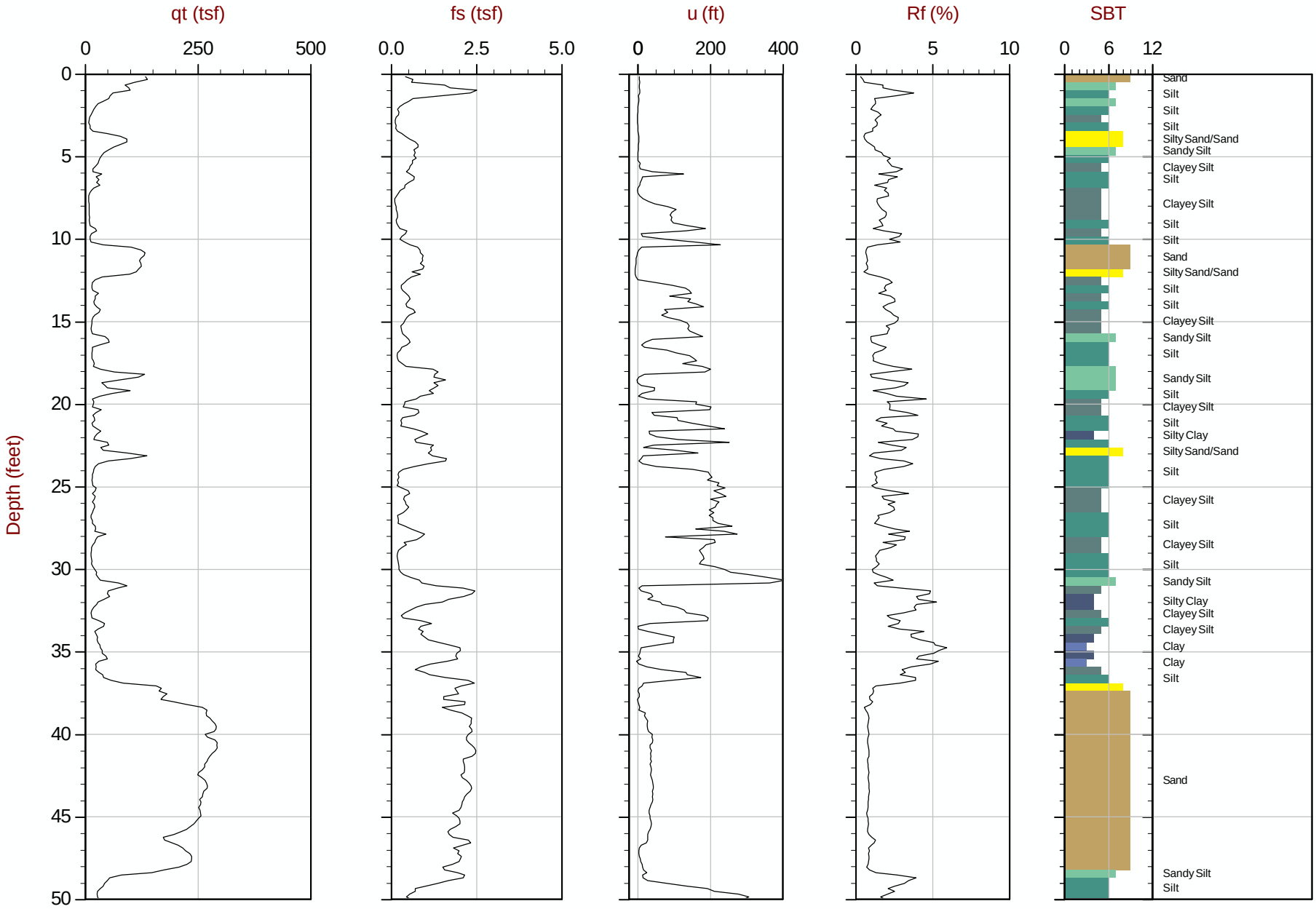
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 15:42
Site: I-15

Sounding: 08-OR6-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP21.COR
Unit Wt: SBT Chart Soil Zones

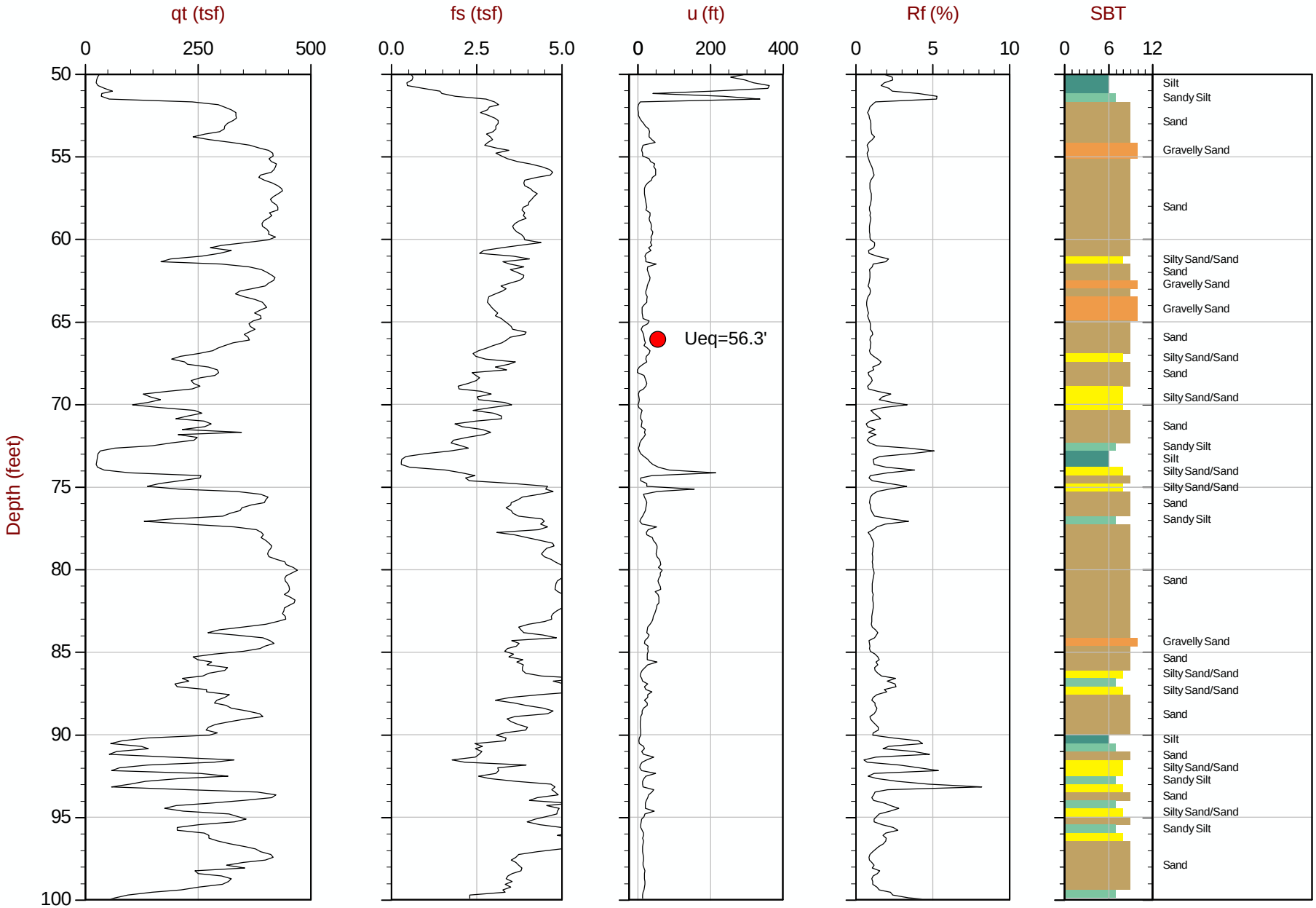
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28967° Long: W 111.72579°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 15:42
Site: I-15

Sounding: 08-OR6-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP21.COR
Unit Wt: SBT Chart Soil Zones

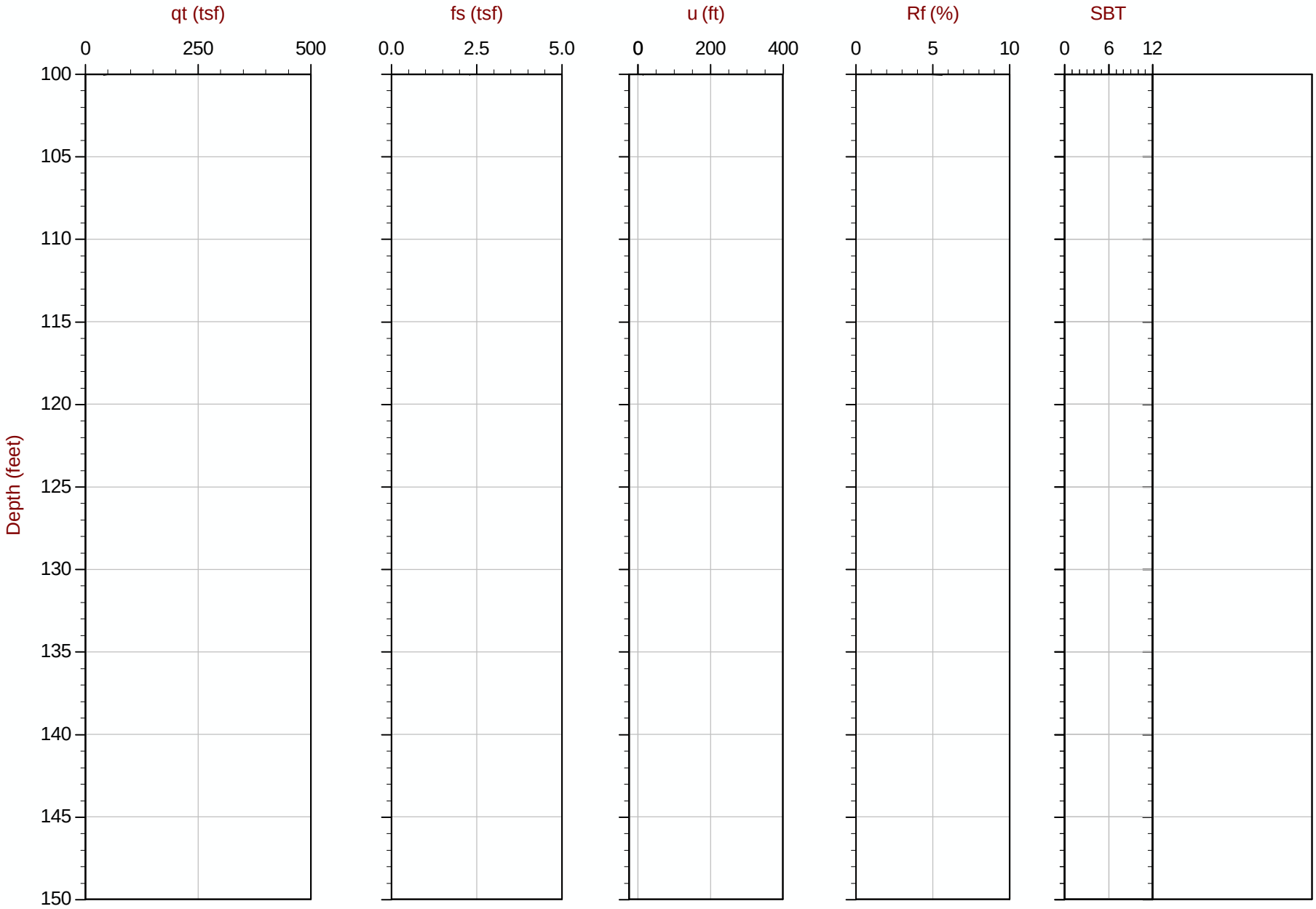
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28967° Long: W 111.72579°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 15:42
Site: I-15

Sounding: 08-OR6-C2
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP21.COR
Unit Wt: SBT Chart Soil Zones

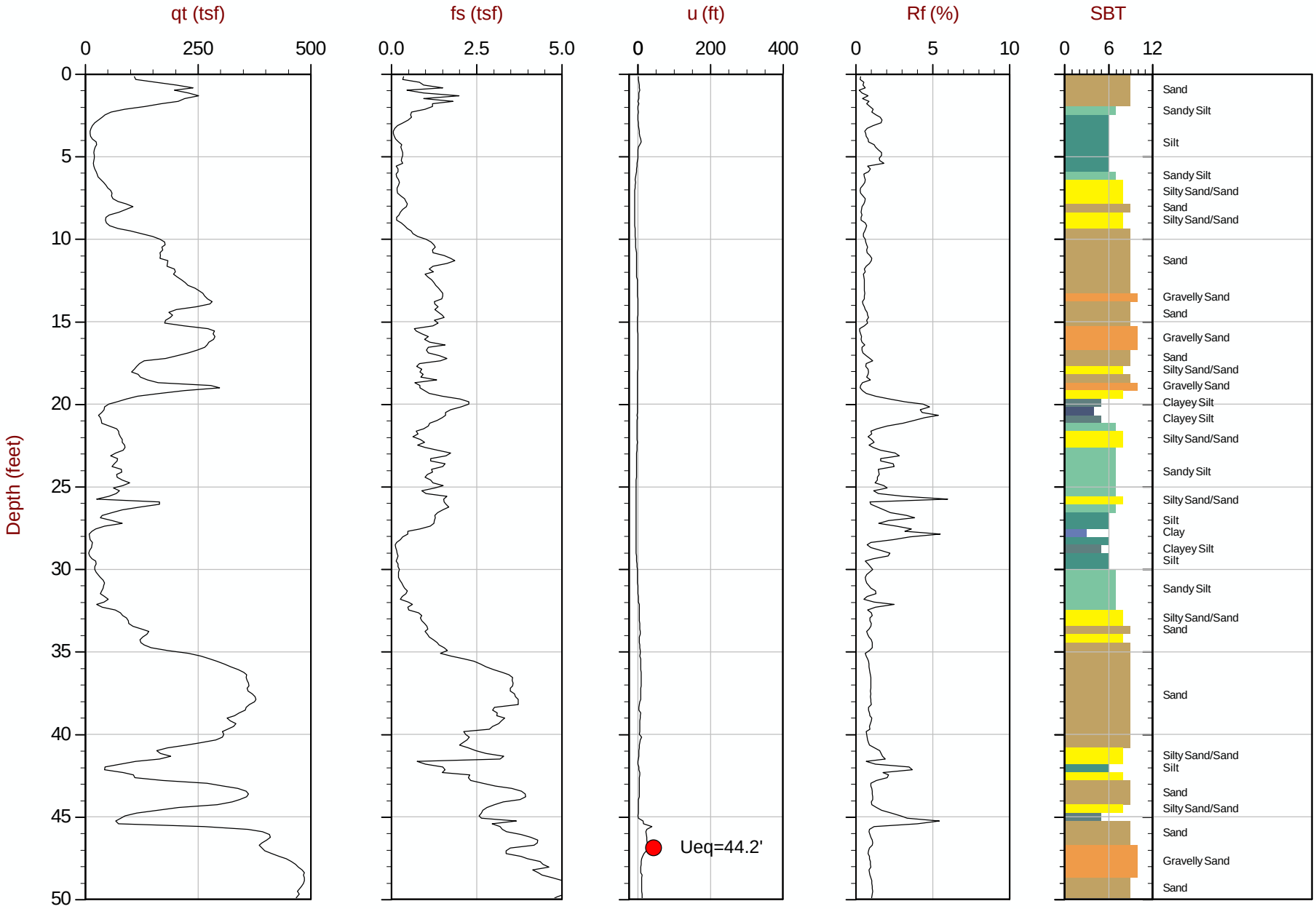
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28967° Long: W 111.72579°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

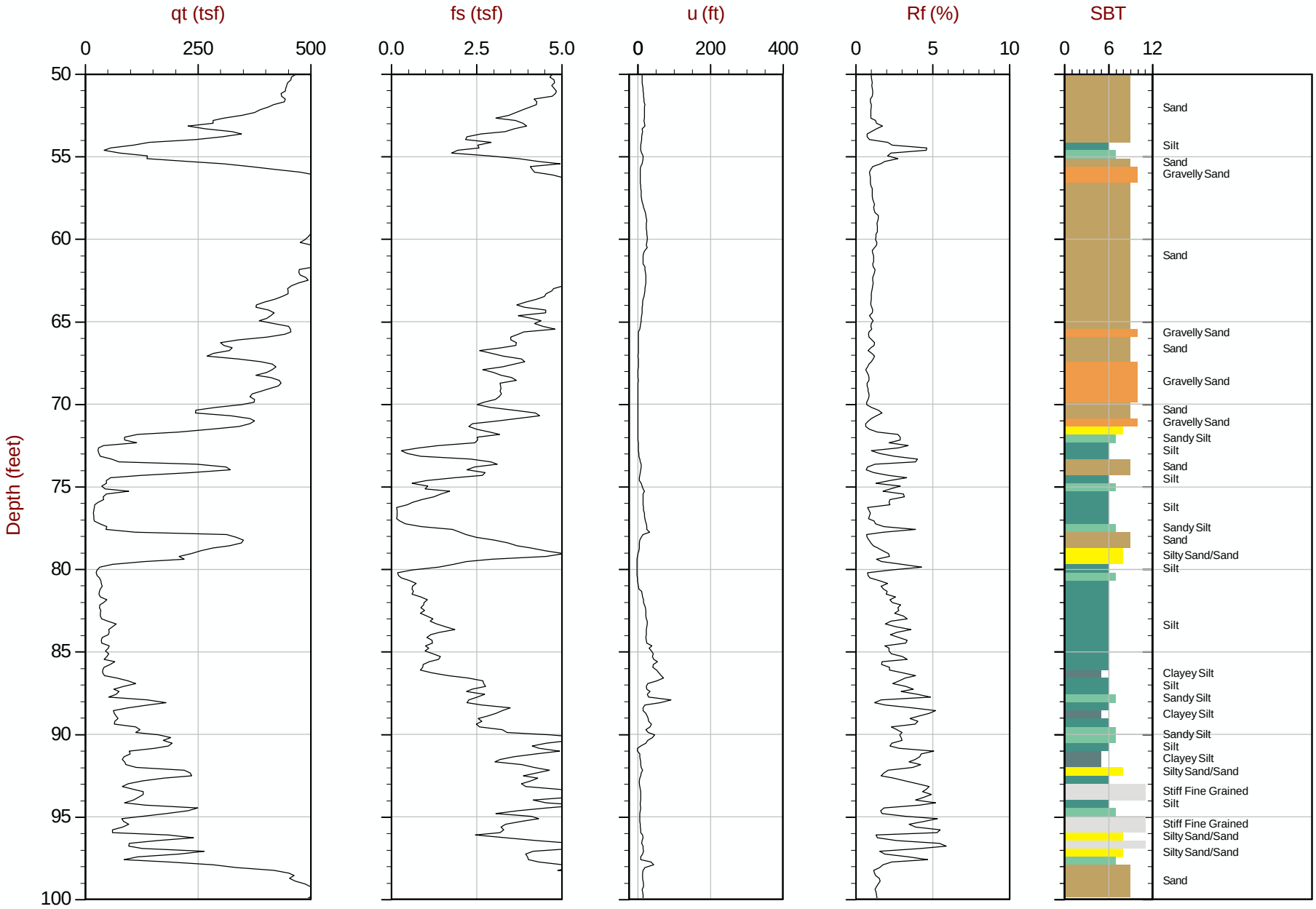
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

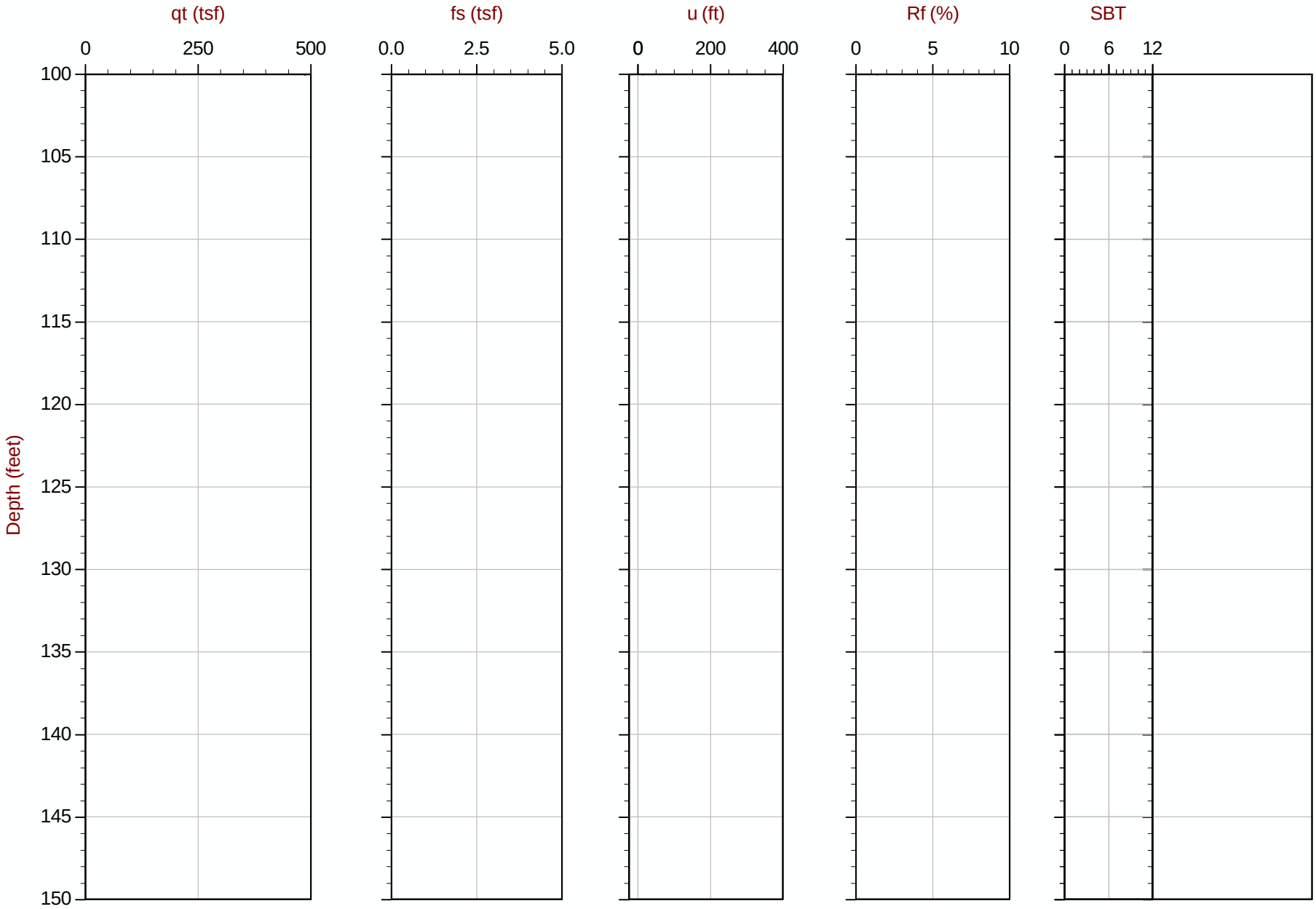
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

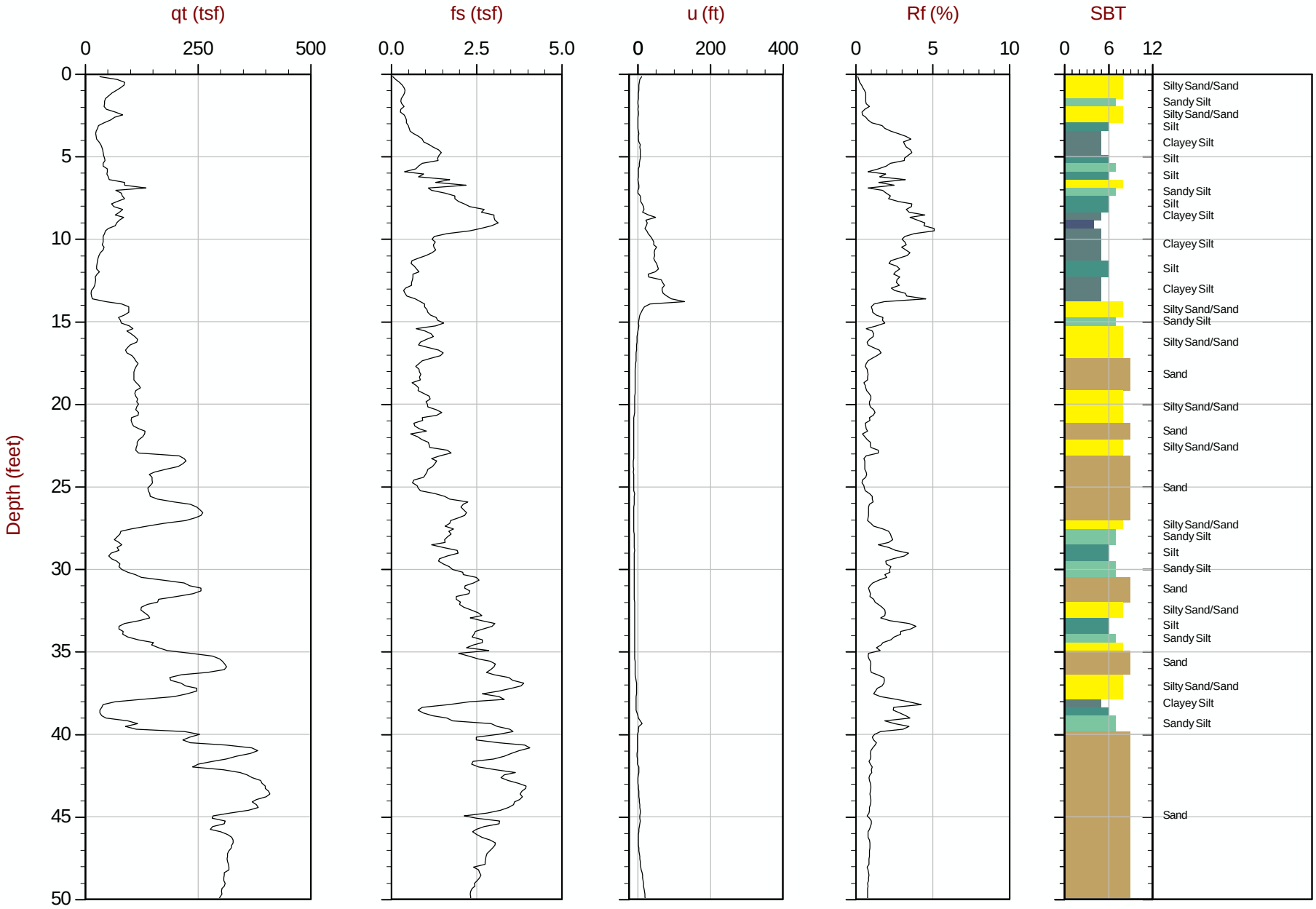
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 11:01
Site: I-15

Sounding: 08-OR5-C1
Cone: STD 20T AD242



Max Depth: 30.700 m / 100.72 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP23.COR
Unit Wt: SBT Chart Soil Zones

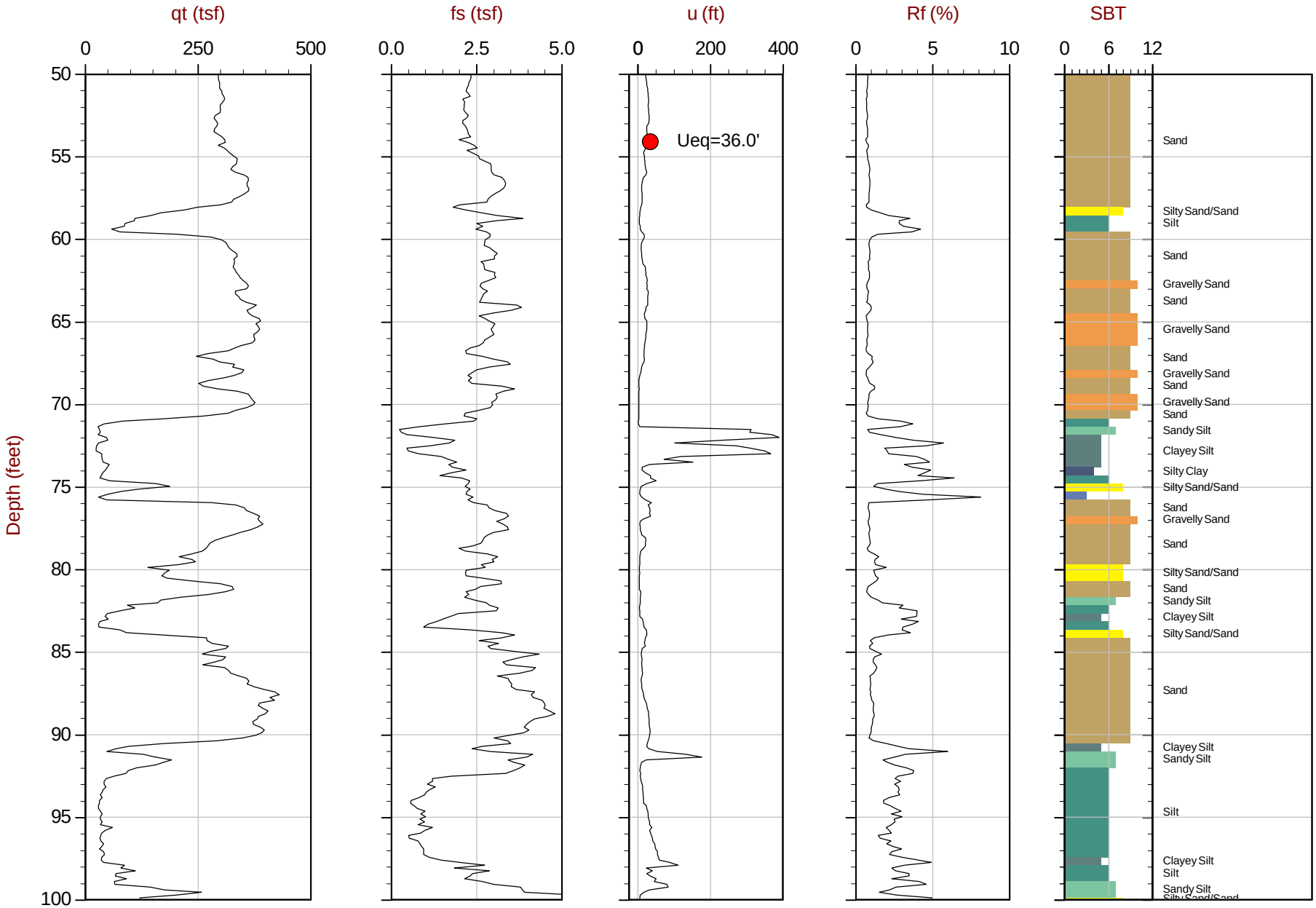
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29679° Long: W 111.72503°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 11:01
Site: I-15

Sounding: 08-OR5-C1
Cone: STD 20T AD242



Max Depth: 30.700 m / 100.72 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP23.COR
Unit Wt: SBT Chart Soil Zones

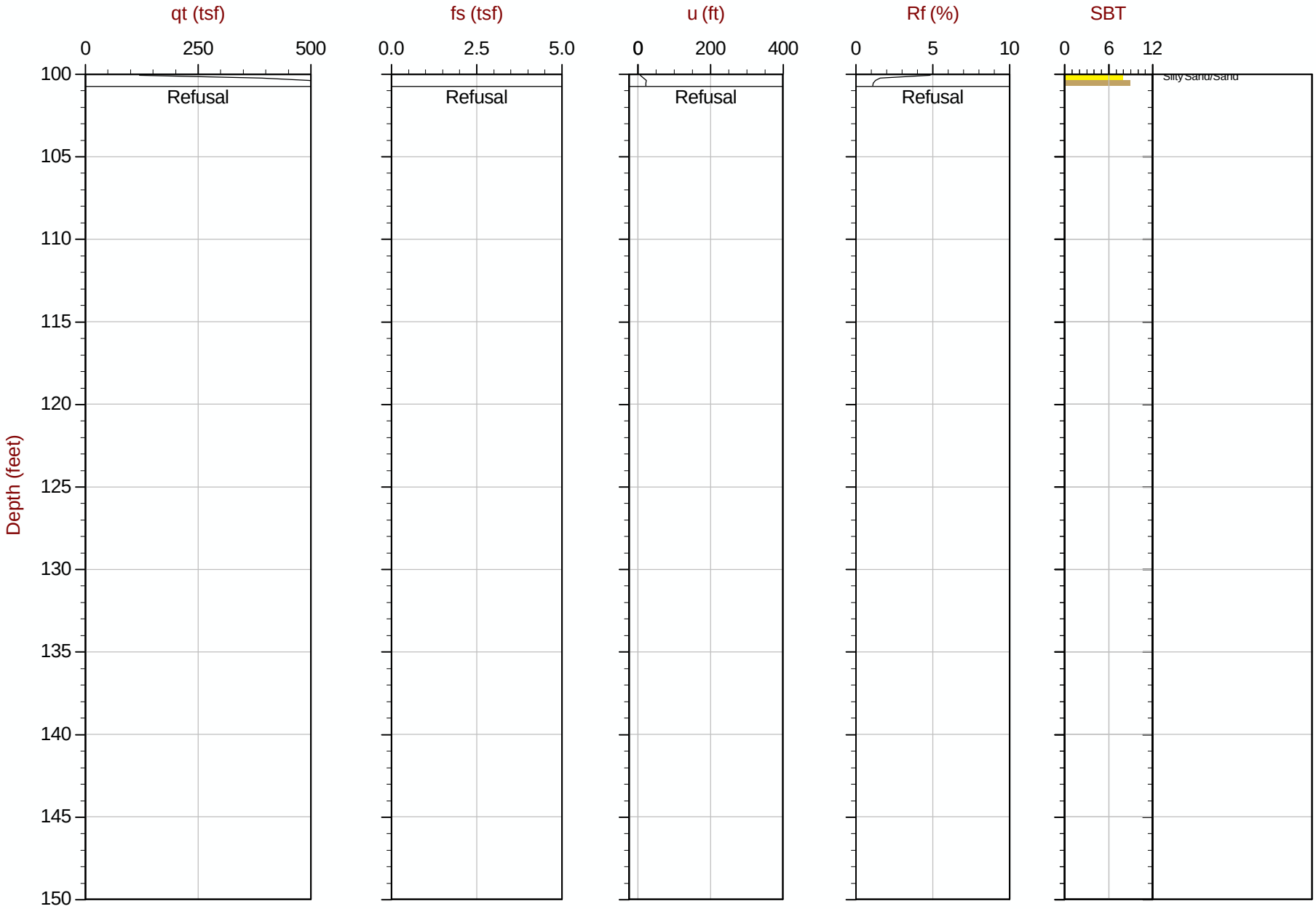
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29679° Long: W 111.72503°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 11:01
Site: I-15

Sounding: 08-OR5-C1
Cone: STD 20T AD242



Max Depth: 30.700 m / 100.72 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP23.COR
Unit Wt: SBT Chart Soil Zones

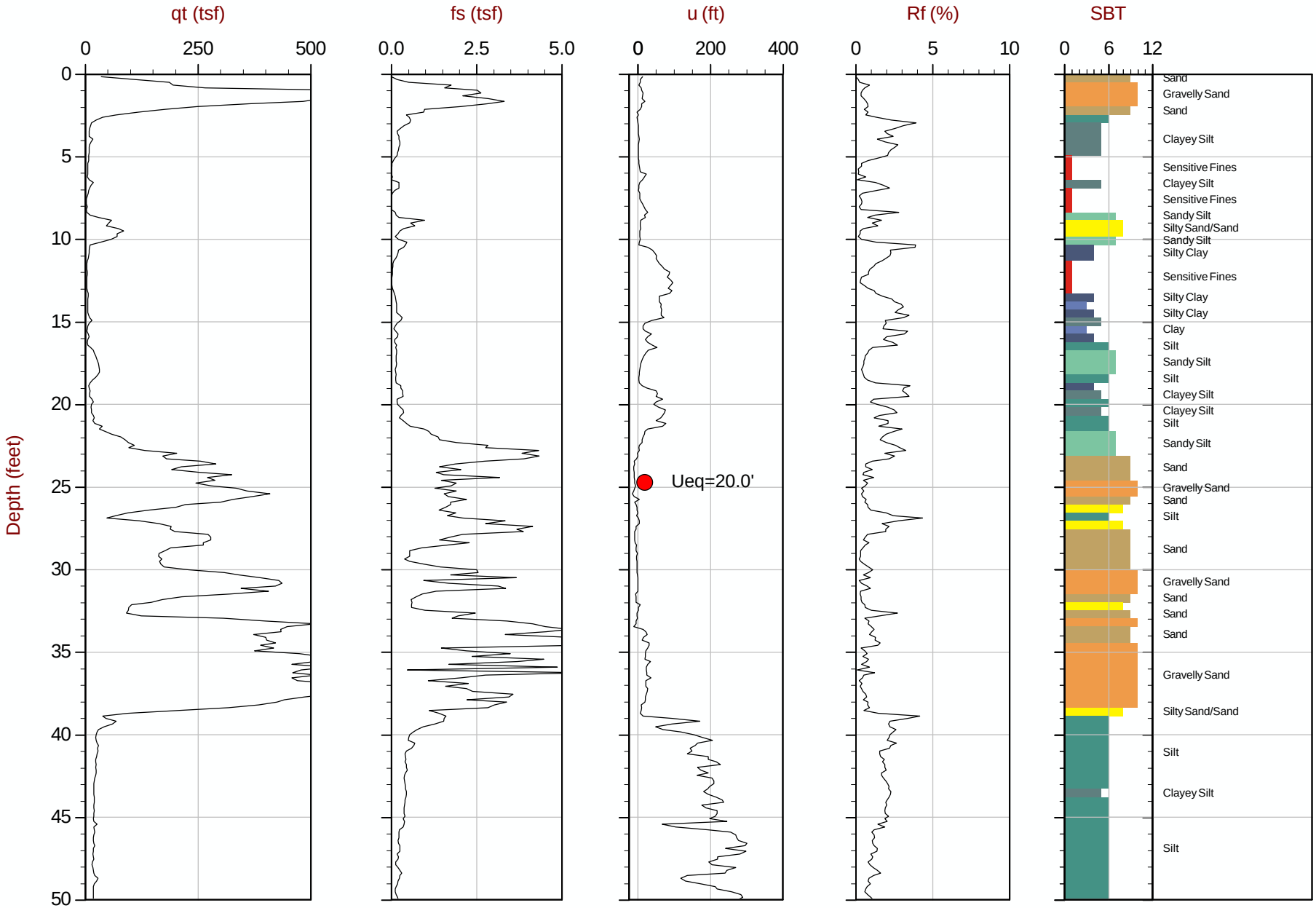
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29679° Long: W 111.72503°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 13:05
Site: I-15

Sounding: 08-AF4-C2
Cone: STD 20T AD242



Max Depth: 27.400 m / 89.89 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP24.COR
Unit Wt: SBT Chart Soil Zones

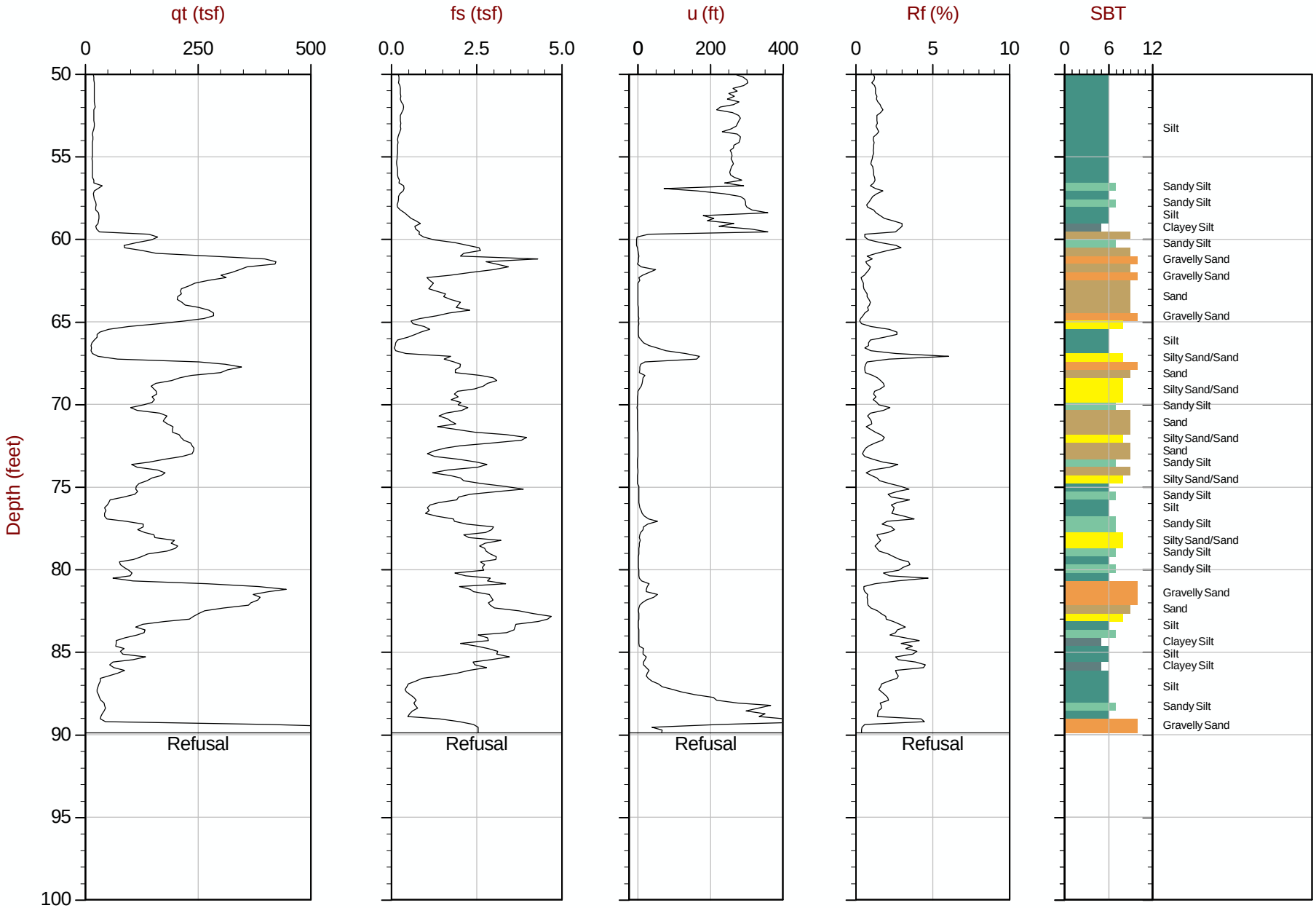
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36666° Long: W 111.79507°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 13:05
Site: I-15

Sounding: 08-AF4-C2
Cone: STD 20T AD242



Max Depth: 27.400 m / 89.89 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP24.COR
Unit Wt: SBT Chart Soil Zones

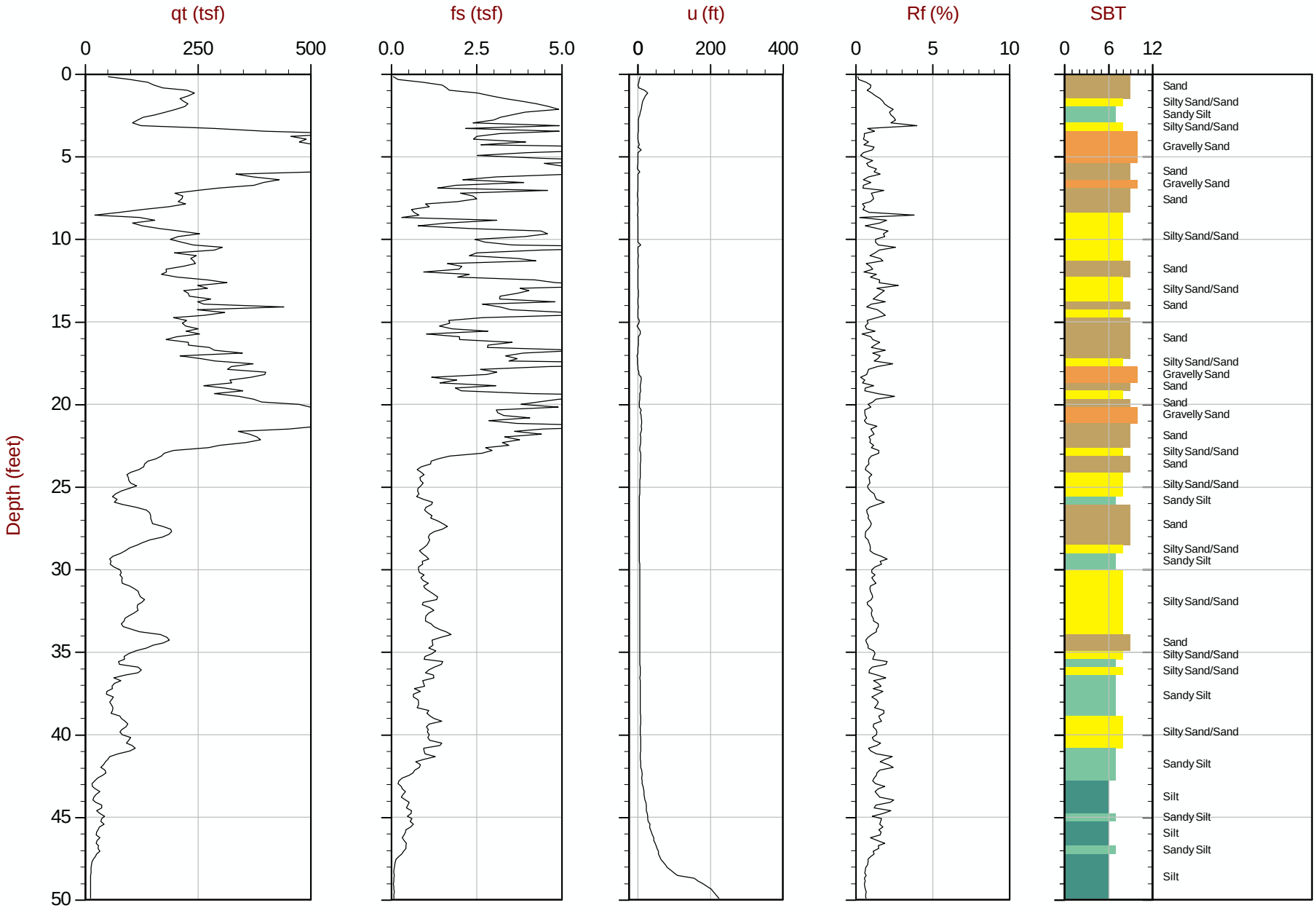
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36666° Long: W 111.79507°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 09:02
Site: I-15

Sounding: 08-P5-C1
Cone: STD 20T AD242



Max Depth: 23.800 m / 78.08 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP25.COR
Unit Wt: SBT Chart Soil Zones

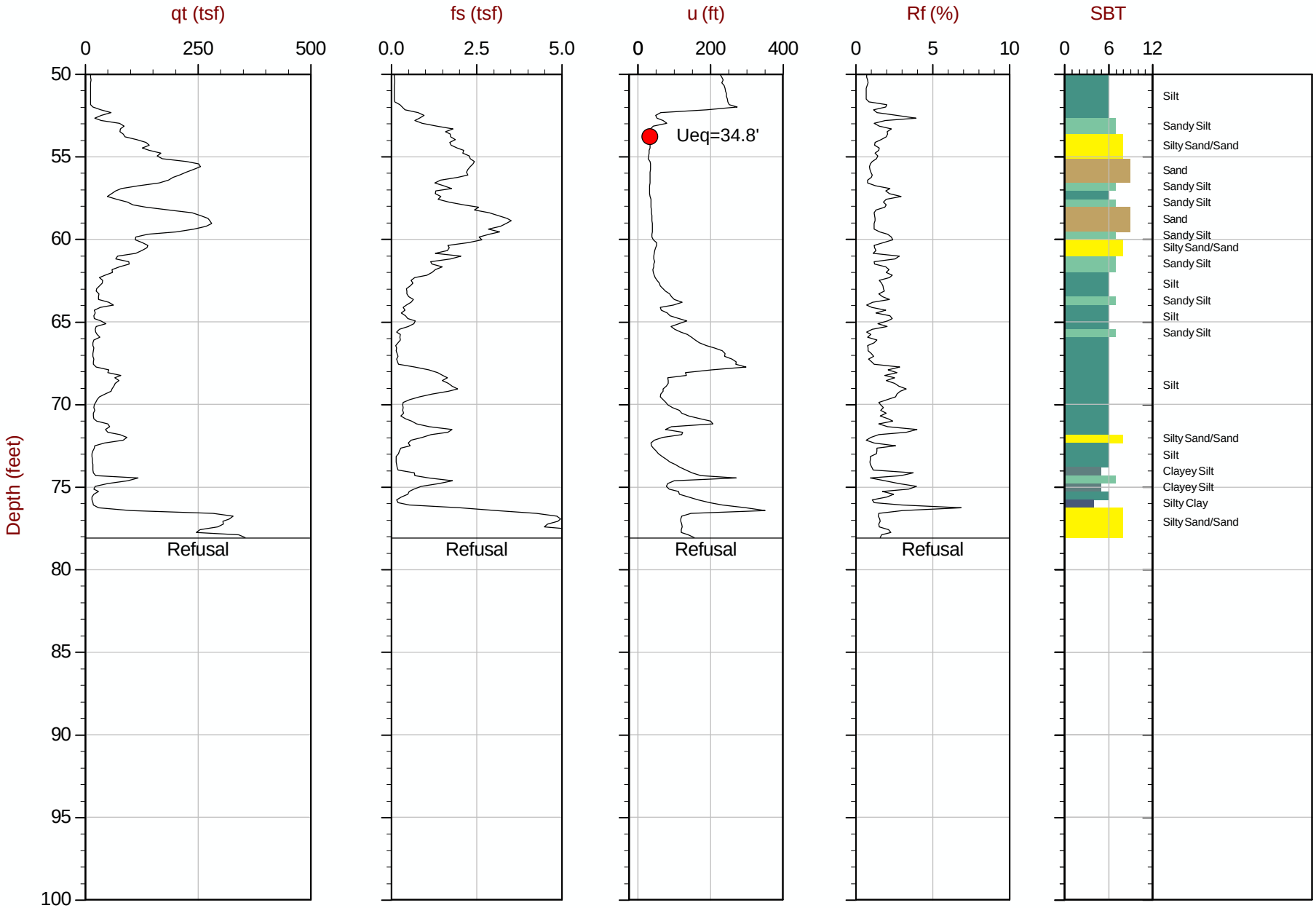
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23434° Long: W 111.68431°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 09:02
Site: I-15

Sounding: 08-P5-C1
Cone: STD 20T AD242



Max Depth: 23.800 m / 78.08 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP25.COR
Unit Wt: SBT Chart Soil Zones

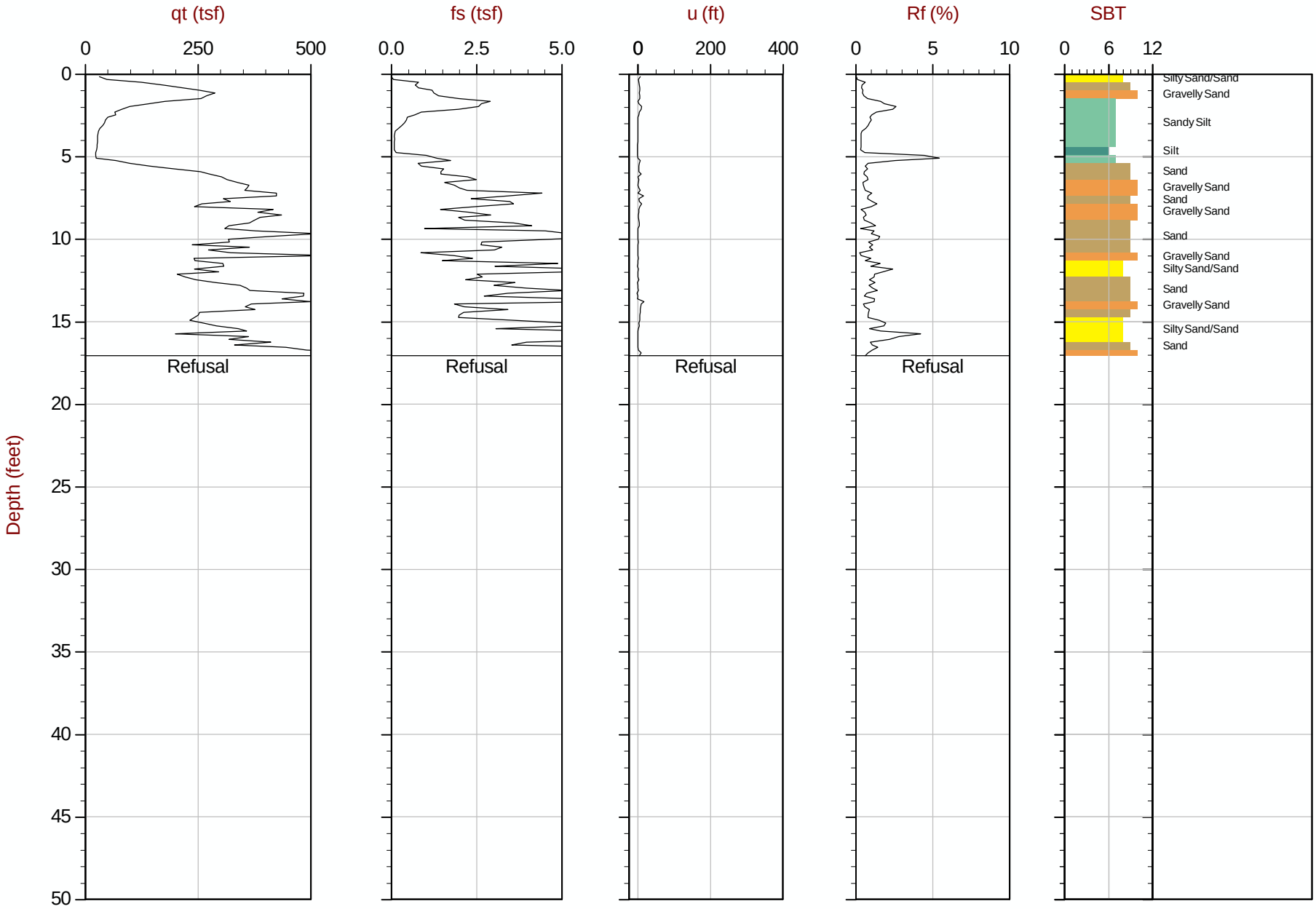
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23434° Long: W 111.68431°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 11:10
Site: I-15

Sounding: 08-P5-C2
Cone: STD 20T AD242



Max Depth: 5.200 m / 17.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP26.COR
Unit Wt: SBT Chart Soil Zones

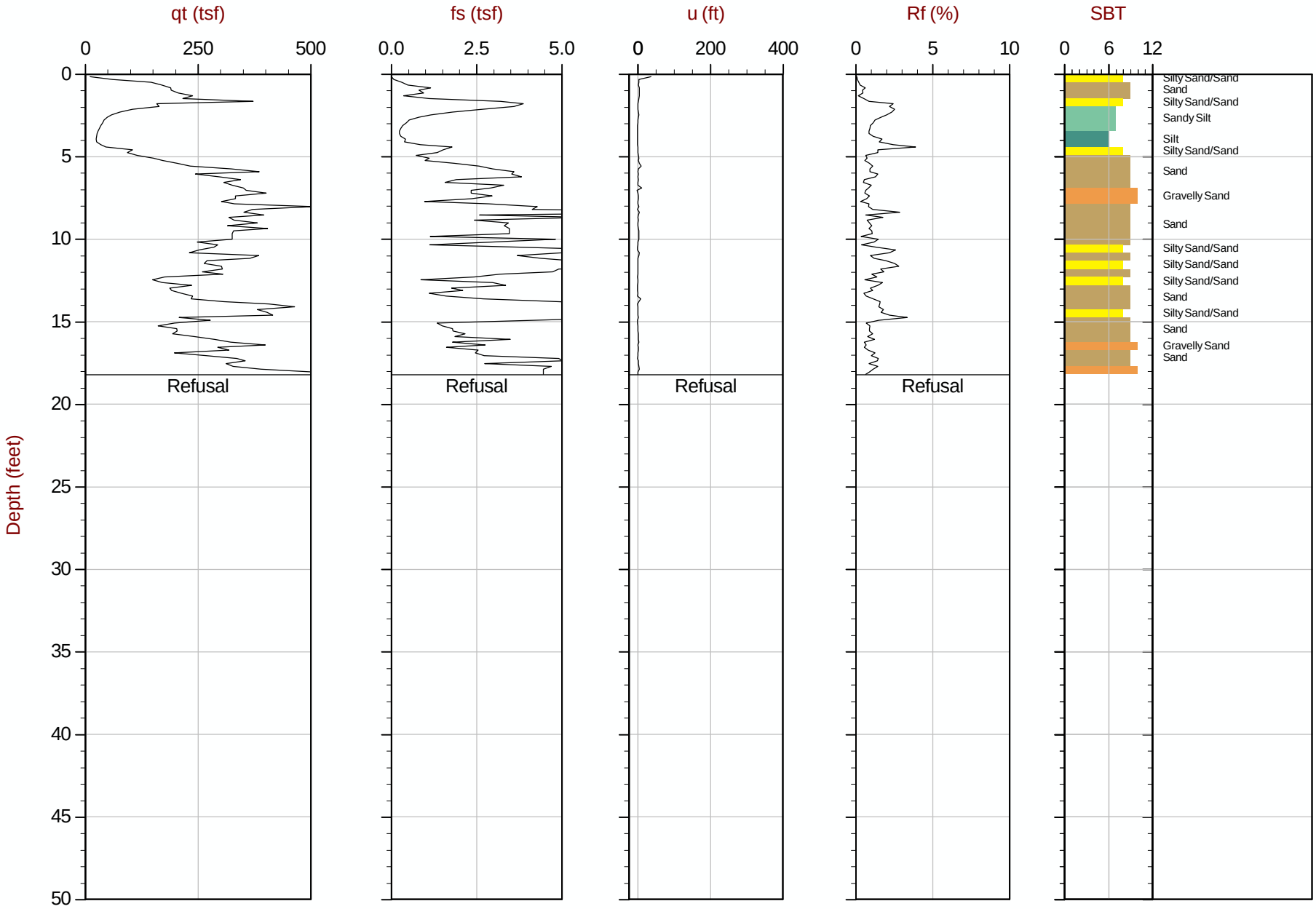
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 11:51
Site: I-15

Sounding: 08-P5-C2A
Cone: STD 20T AD242



Max Depth: 5.550 m / 18.21 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP26A.COR
Unit Wt: SBT Chart Soil Zones

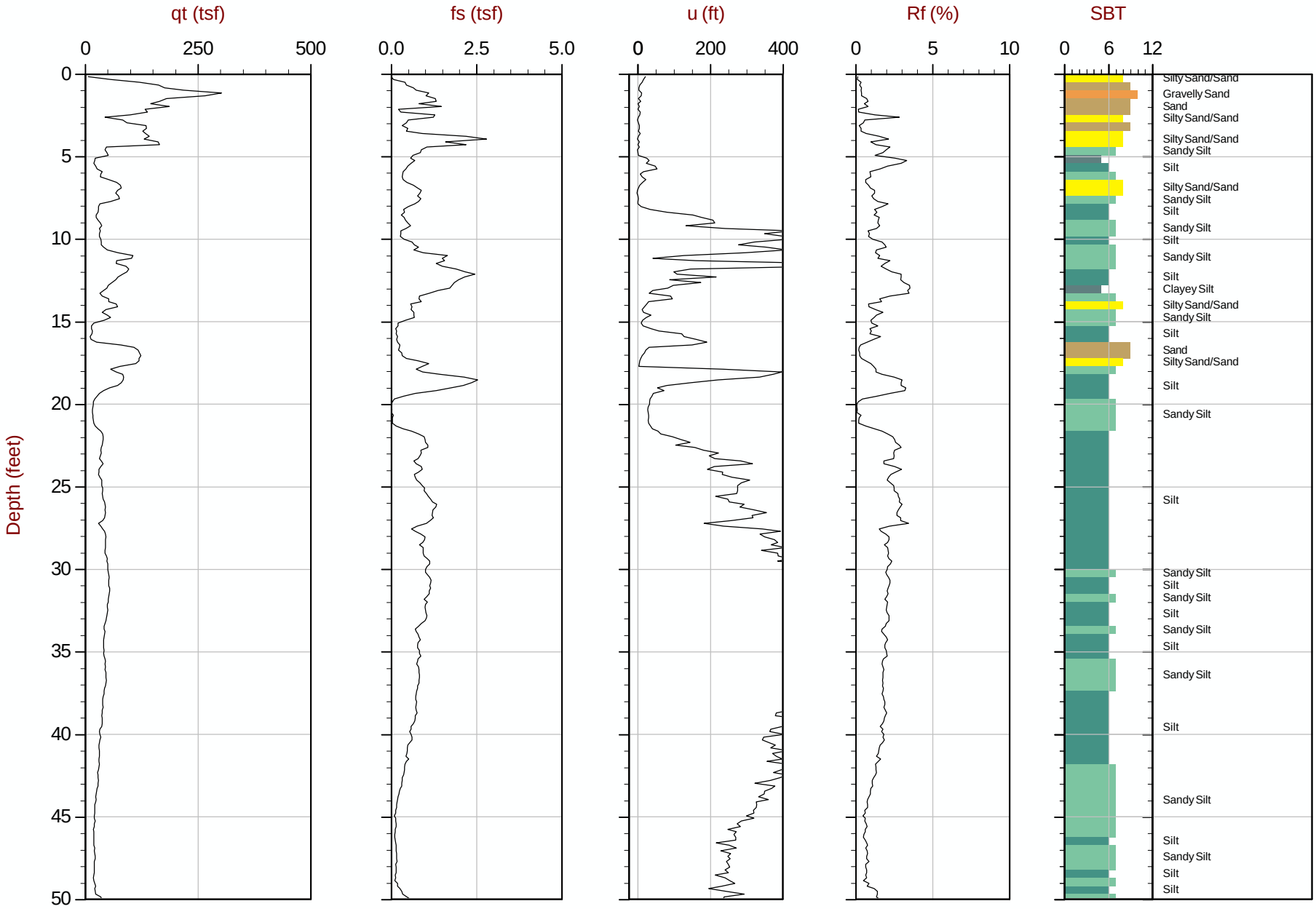
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

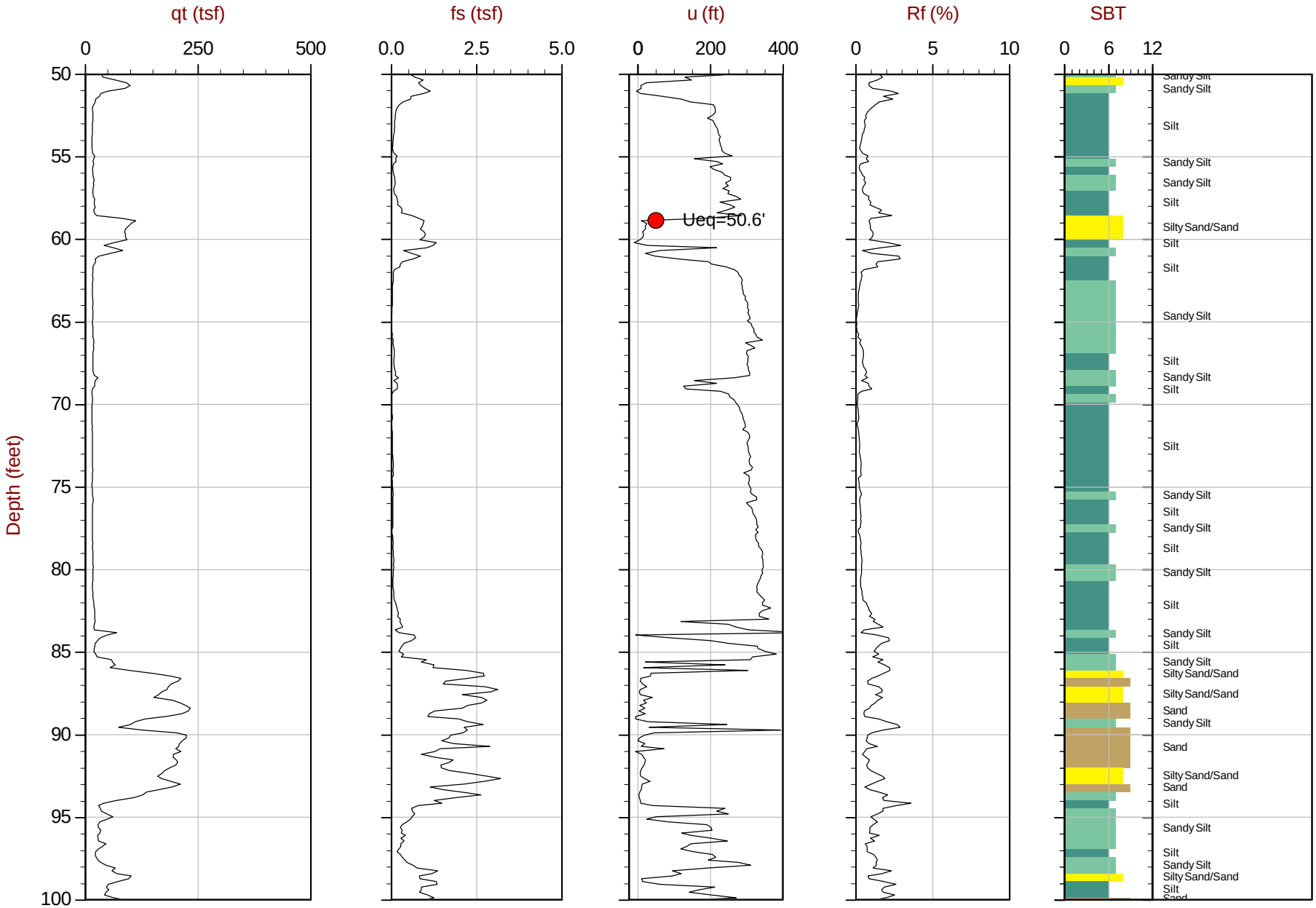
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

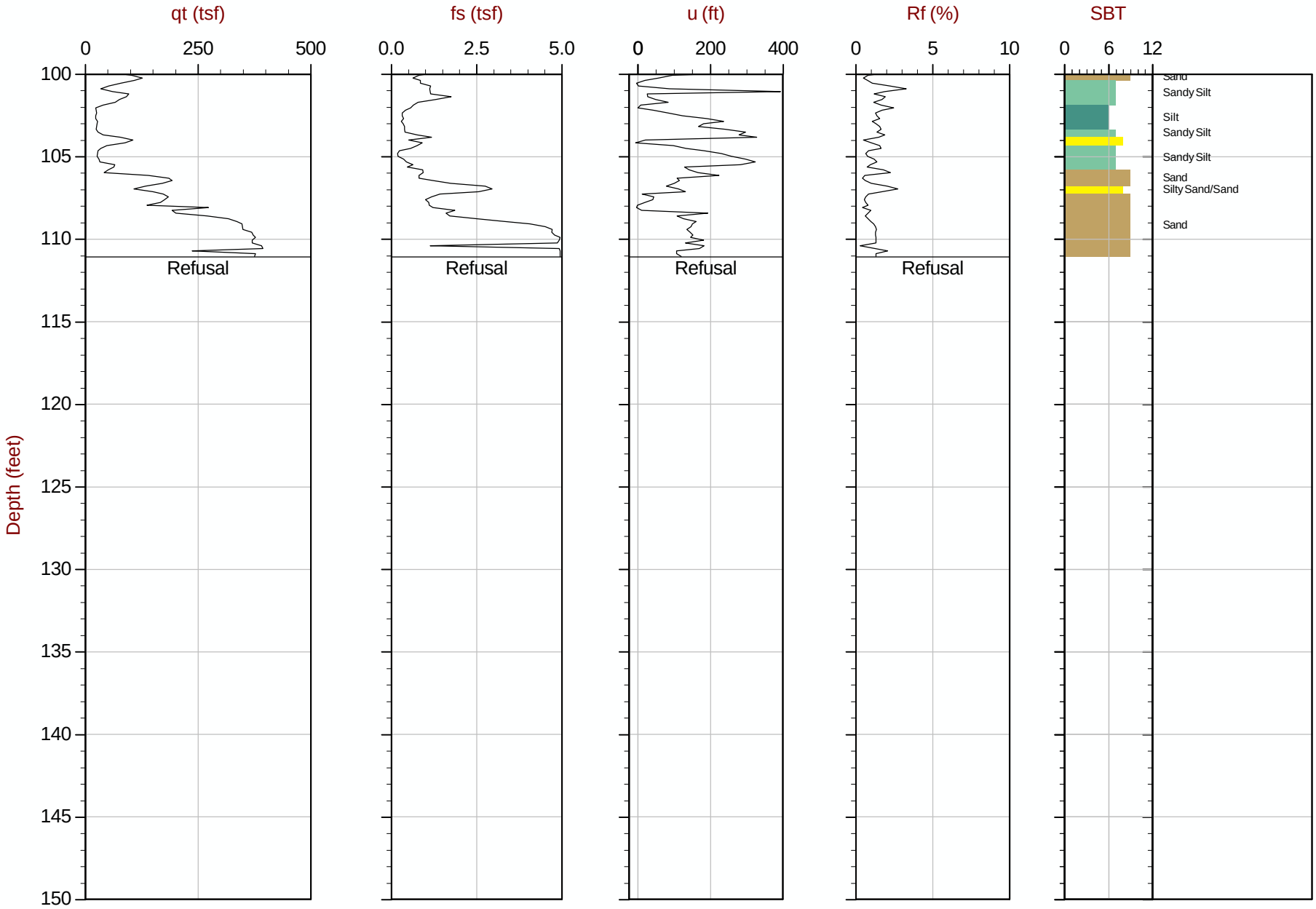
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

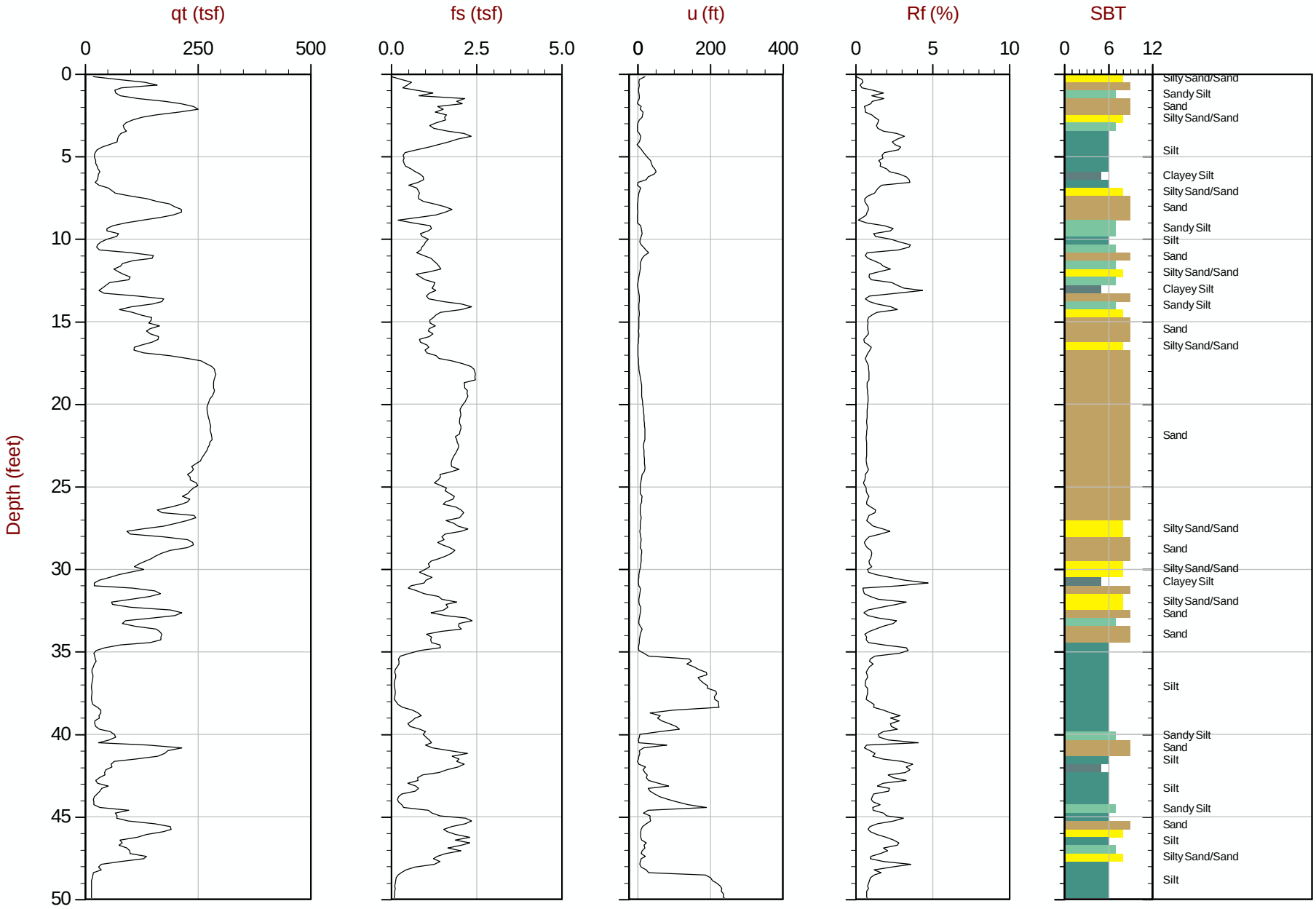
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 07:54
Site: I-15

Sounding: 08-L2-C1
Cone: STD 20T AD242



Max Depth: 33.750 m / 110.73 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP28.COR
Unit Wt: SBT Chart Soil Zones

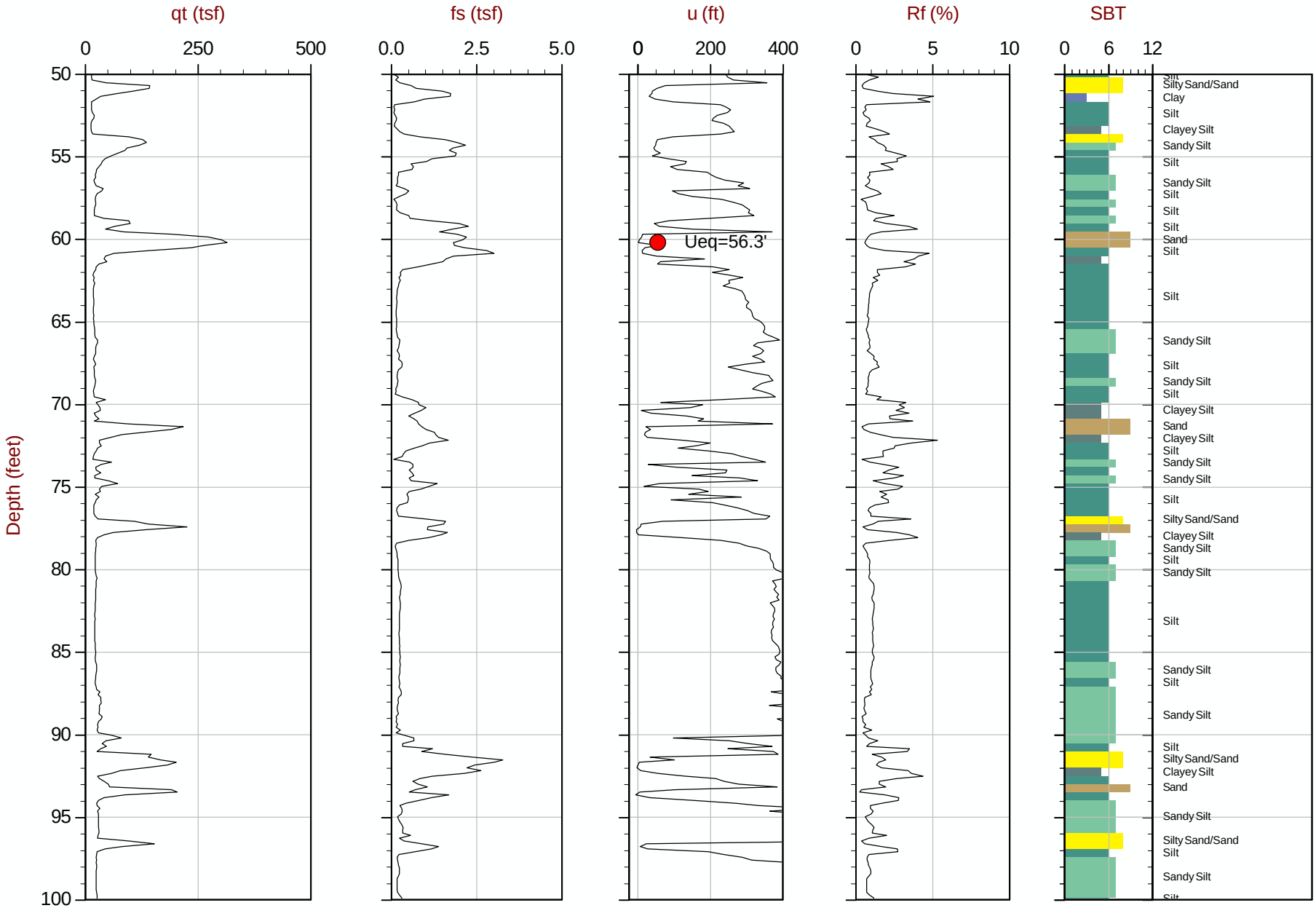
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33058° Long: W 111.73801°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 07:54
Site: I-15

Sounding: 08-L2-C1
Cone: STD 20T AD242



Max Depth: 33.750 m / 110.73 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP28.COR
Unit Wt: SBT Chart Soil Zones

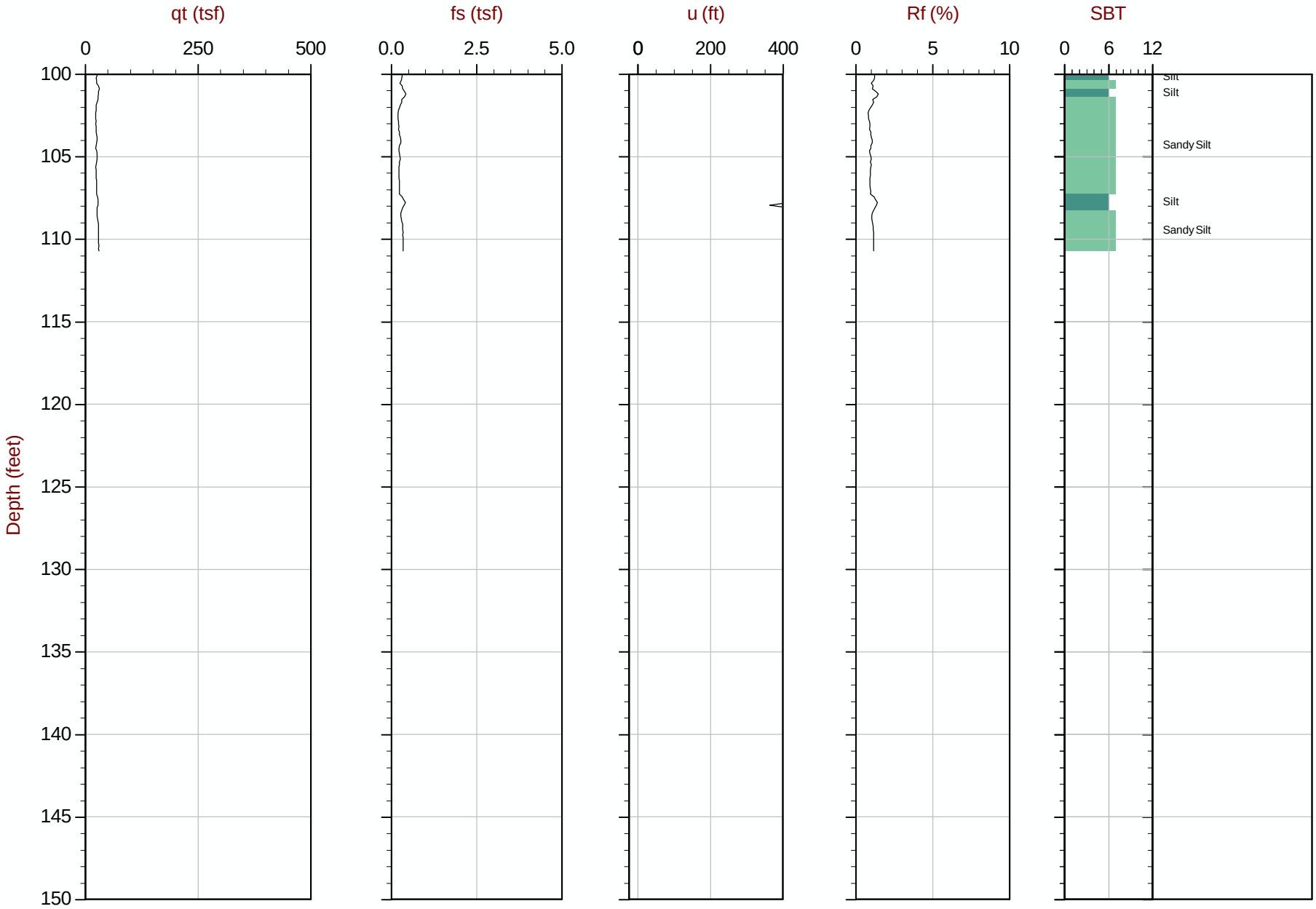
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33058° Long: W 111.73801°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 07:54
Site: I-15

Sounding: 08-L2-C1
Cone: STD 20T AD242



Max Depth: 33.750 m / 110.73 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP28.COR
Unit Wt: SBT Chart Soil Zones

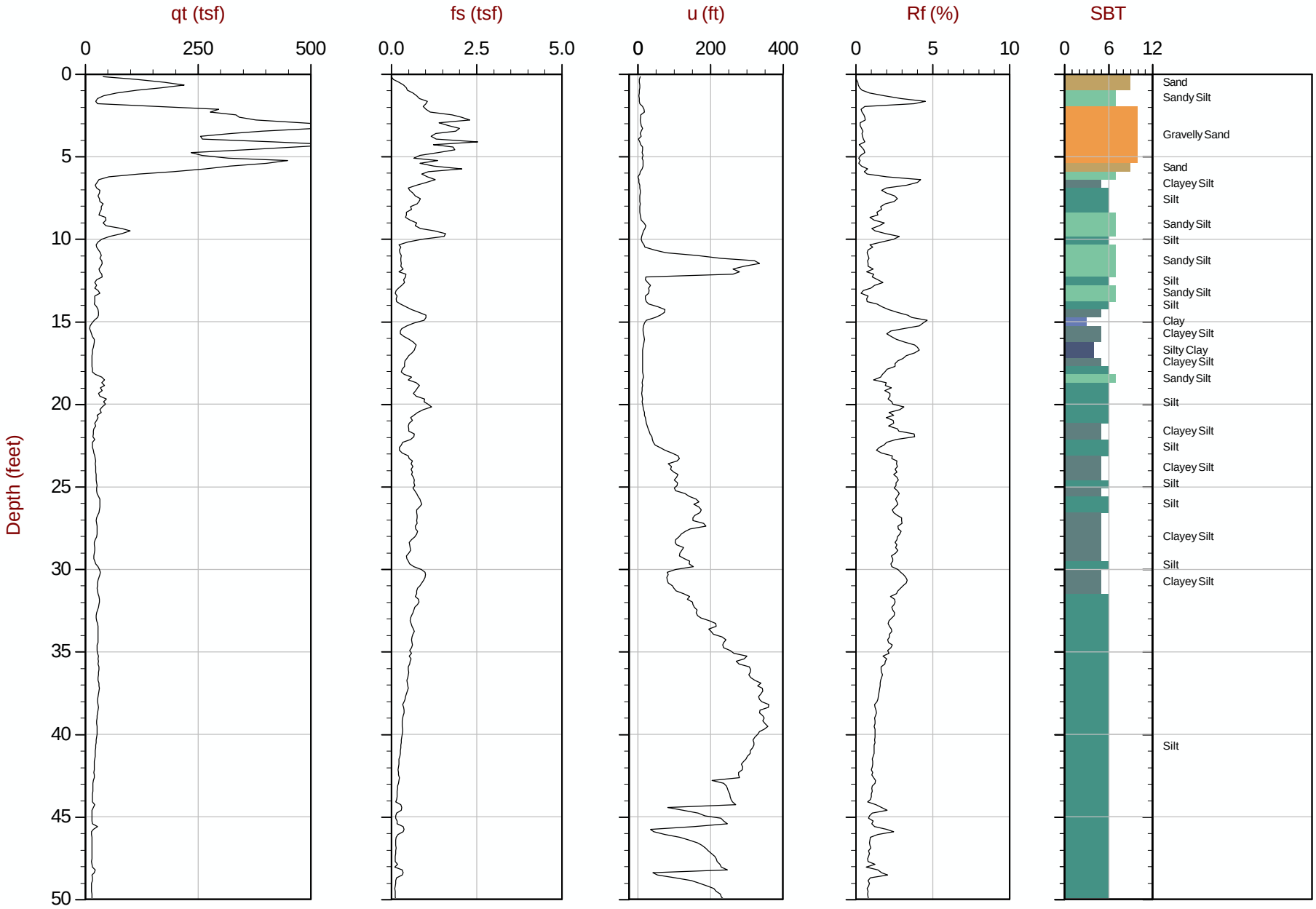
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33058° Long: W 111.73801°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 09:51
Site: I-15

Sounding: 08-S3-C2
Cone: STD 20T AD242



Max Depth: 35.100 m / 115.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP29.COR
Unit Wt: SBT Chart Soil Zones

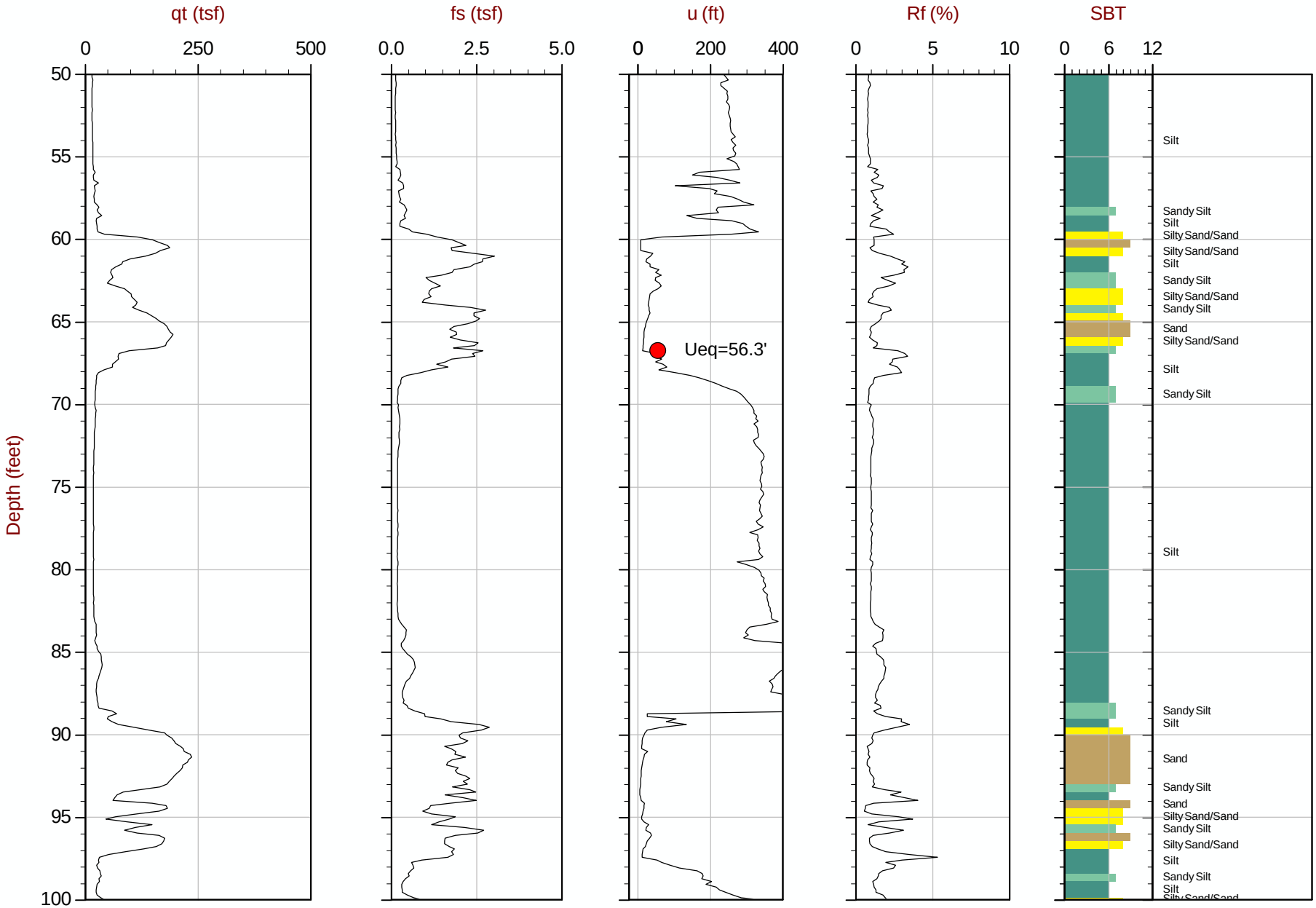
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14434° Long: W 111.64685°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 09:51
Site: I-15

Sounding: 08-S3-C2
Cone: STD 20T AD242



Max Depth: 35.100 m / 115.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP29.COR
Unit Wt: SBT Chart Soil Zones

SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14434° Long: W 111.64685°

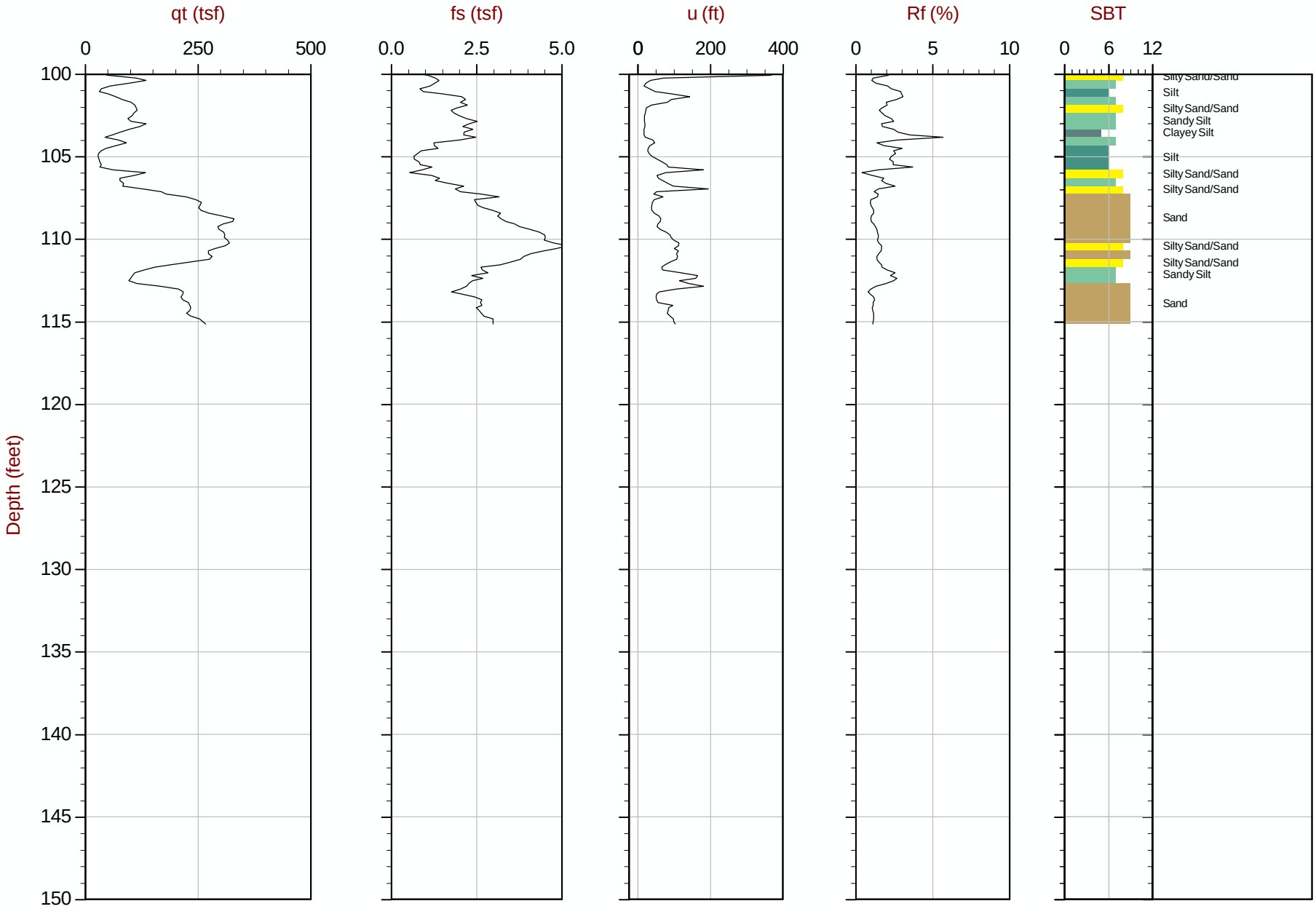
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:19:08 09:51
Site: I-15

Sounding: 08-S3-C2
Cone: STD 20T AD242



Max Depth: 35.100 m / 115.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP29.COR
Unit Wt: SBT Chart Soil Zones

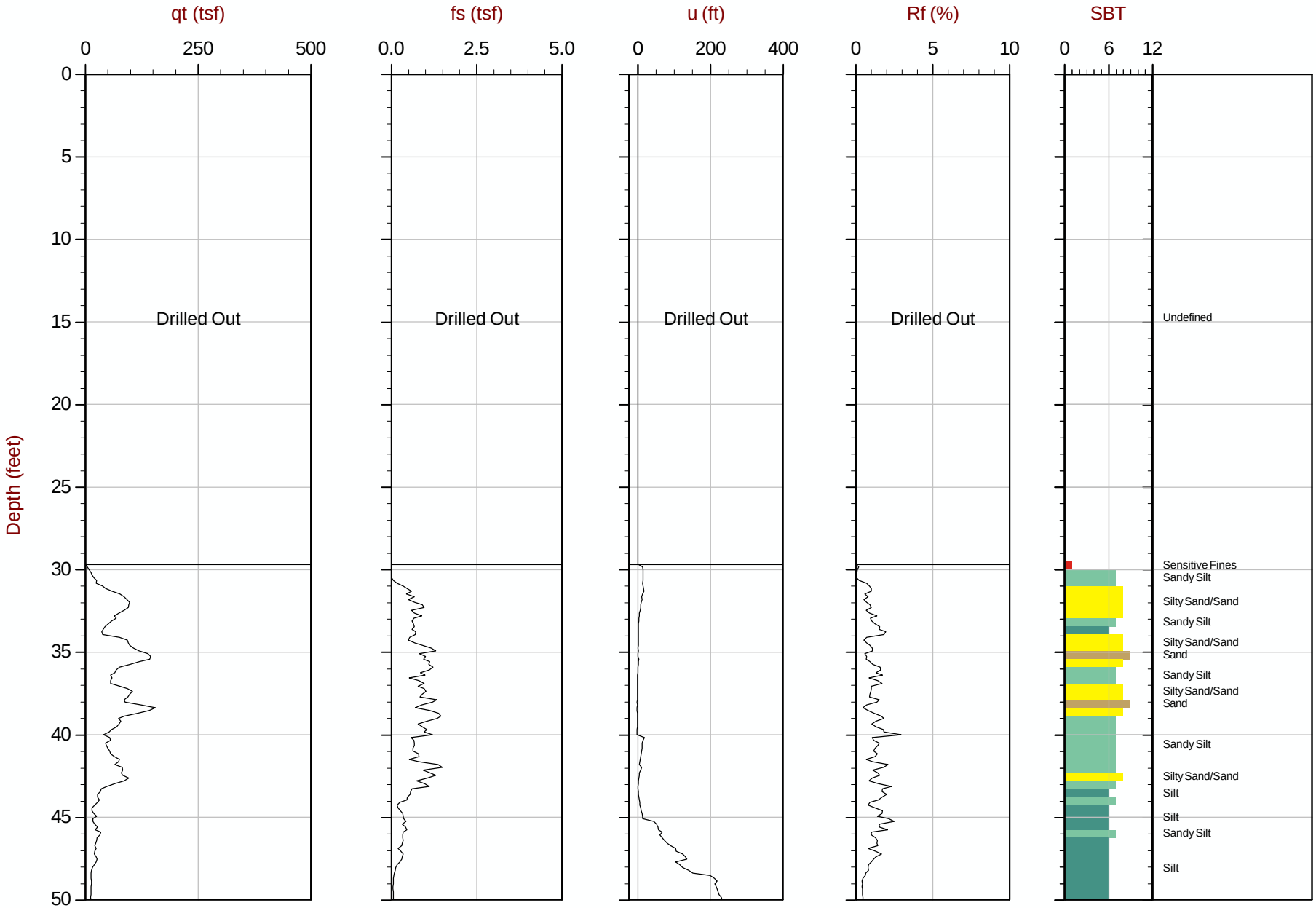
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14434° Long: W 111.64685°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 08:56
Site: I-15

Sounding: 08-P5-C2
Cone: STD 20T AD242



Max Depth: 23.300 m / 76.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP30.COR
Unit Wt: SBT Chart Soil Zones

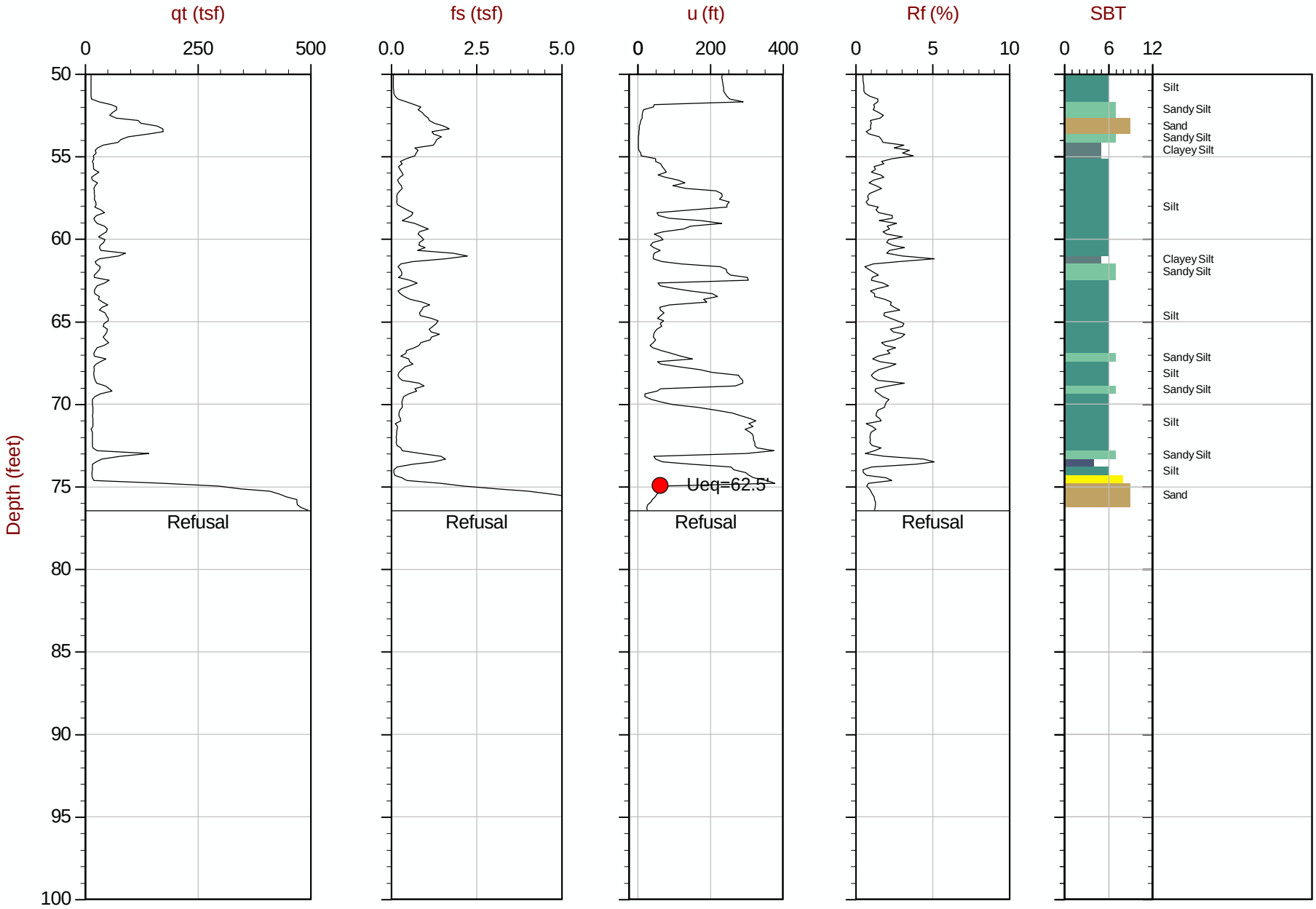
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 08:56
Site: I-15

Sounding: 08-P5-C2
Cone: STD 20T AD242



Max Depth: 23.300 m / 76.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP30.COR
Unit Wt: SBT Chart Soil Zones

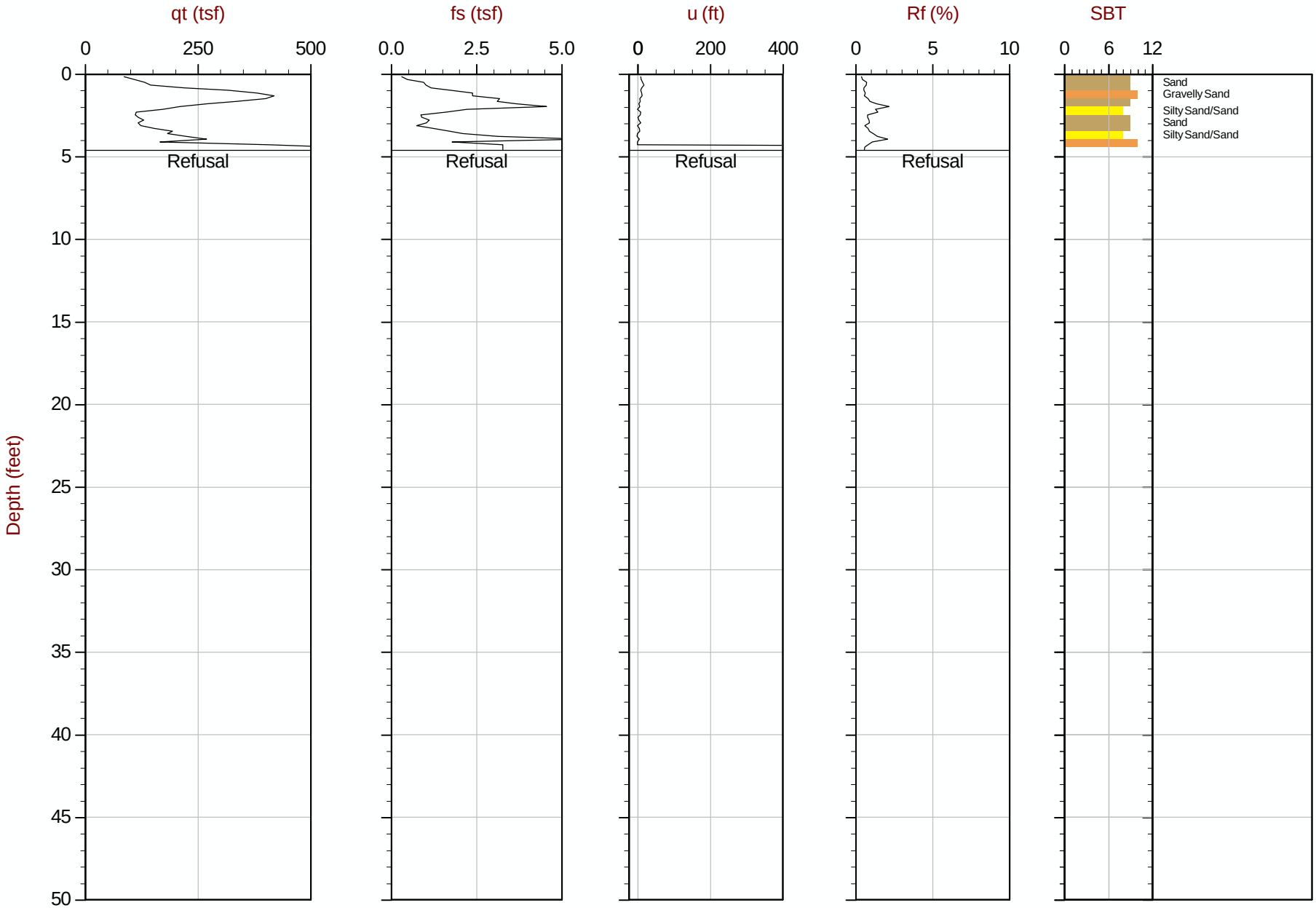
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 10:39
Site: I-15

Sounding: 08-P10-C1
Cone: STD 20T AD242



Max Depth: 1.400 m / 4.59 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP31.COR
Unit Wt: SBT Chart Soil Zones

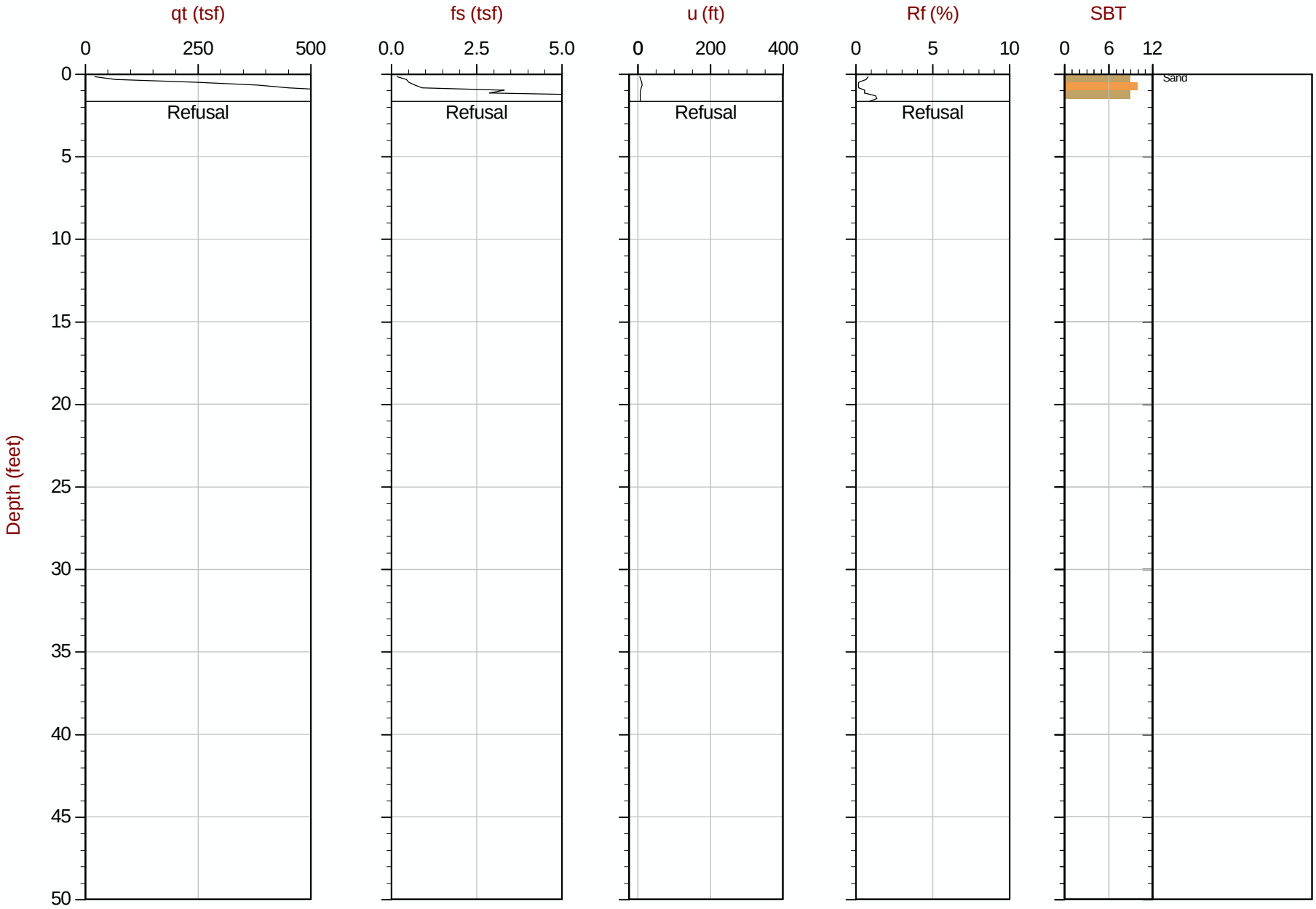
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.21752° Long: W 111.66747°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 10:59
Site: I-15

Sounding: 08-P10-C1
Cone: STD 20T AD122



Max Depth: 0.500 m / 1.64 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP31A.COR
Unit Wt: SBT Chart Soil Zones

SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.21752° Long: W 111.66747°
● Equilibrium Pore Pressure from Dissipation

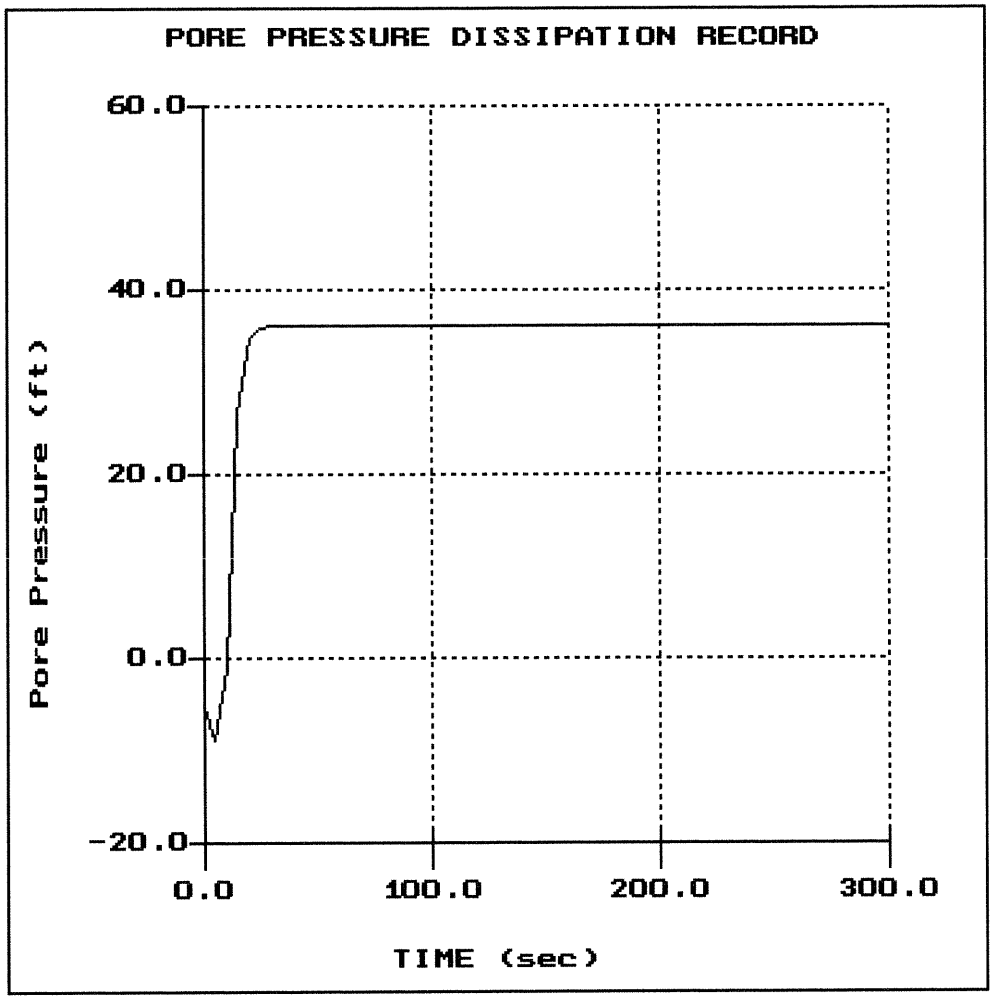
PPD Plots

CONETEC

IGES

Sounding: 08-AF5-C1
Site:I-15

Cone:STD 20T AD242
Date:08:04:08 13:32

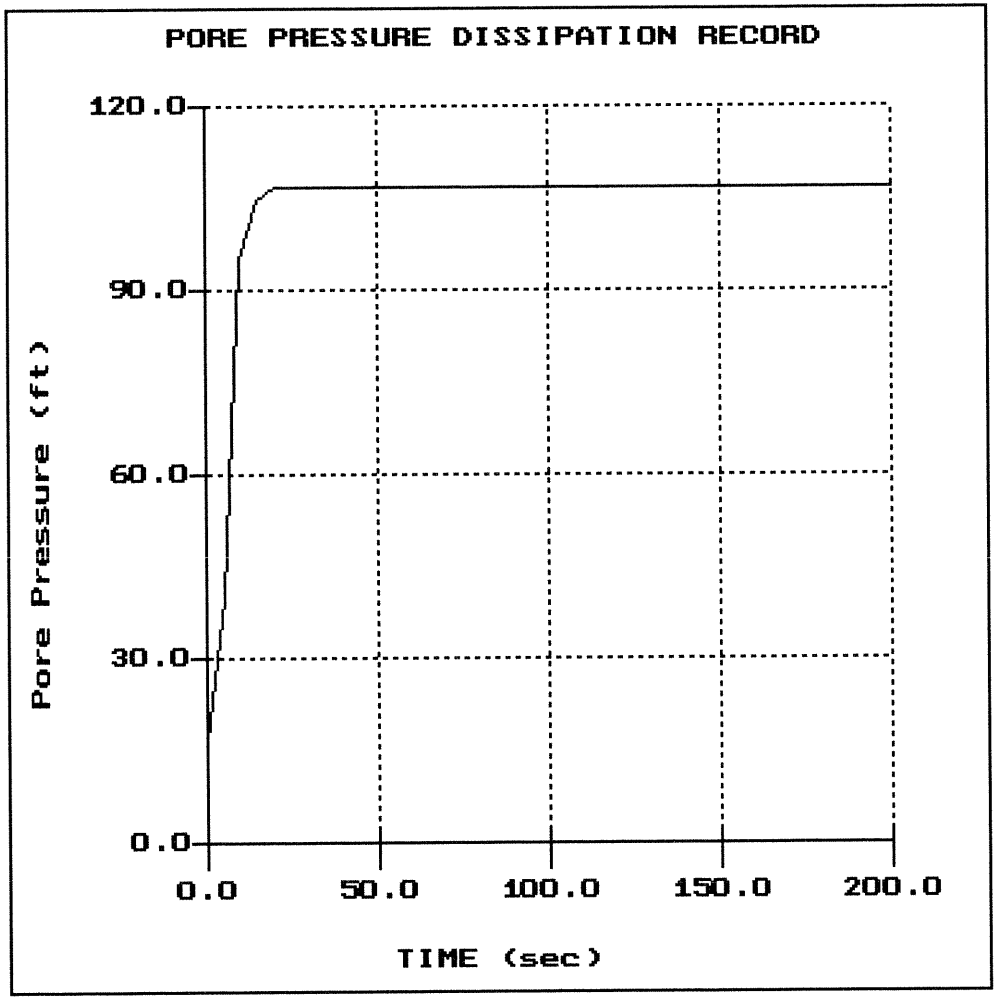


File: 419CP01.PPD
Depth (m): 11.75
(ft): 38.55
Duration : 300.0s
U-min: -8.96 5.0s
U-max: 36.09 290.0s

IGES

Sounding: 08-AF6-C1
Site:I-15

Cone:STD 20T AD242
Date:08:04:08 15:08

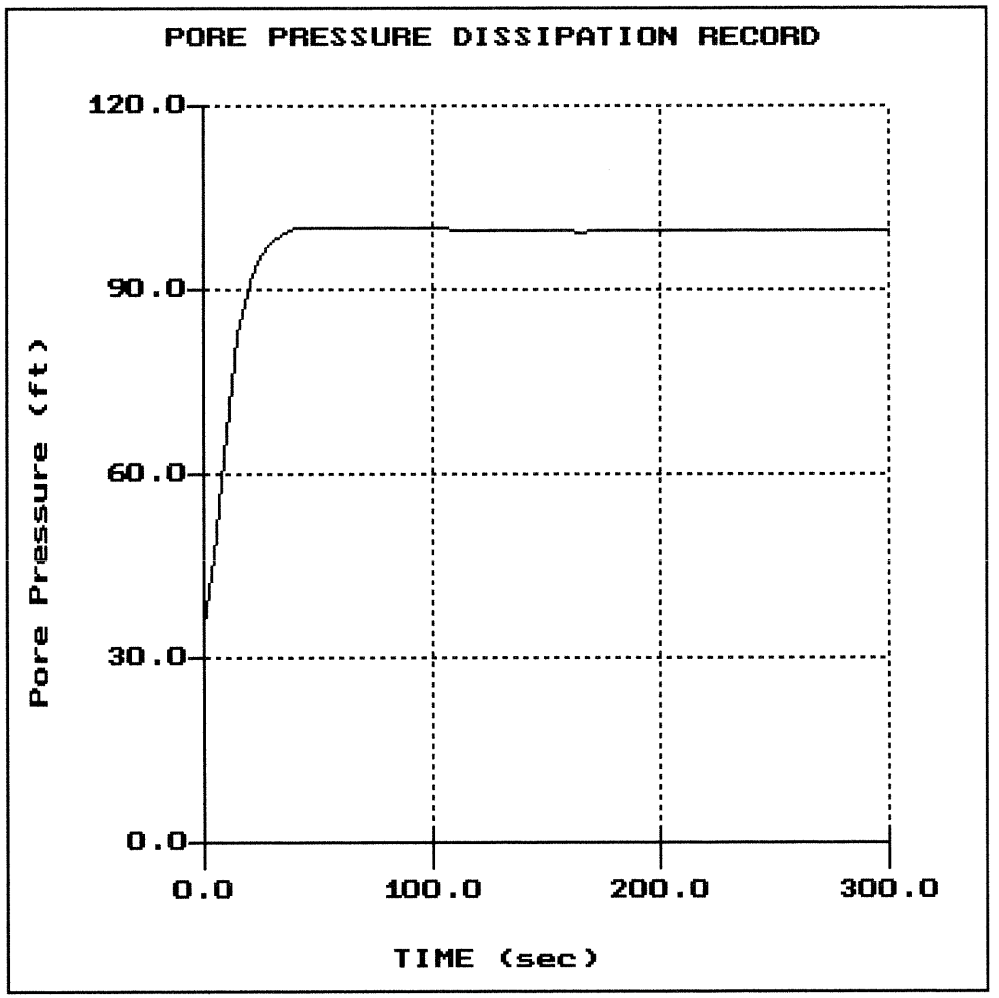


File: 419CP02.PPD
Depth (m): 27.35
(ft): 89.73
Duration : 200.0s
U-min: 16.71 0.0s
U-max: 106.86 200.0s

IGES

Sounding: 08-PG2-C2
Site:I-15

Cone:STD 20T AD242
Date:08:05:08 11:17

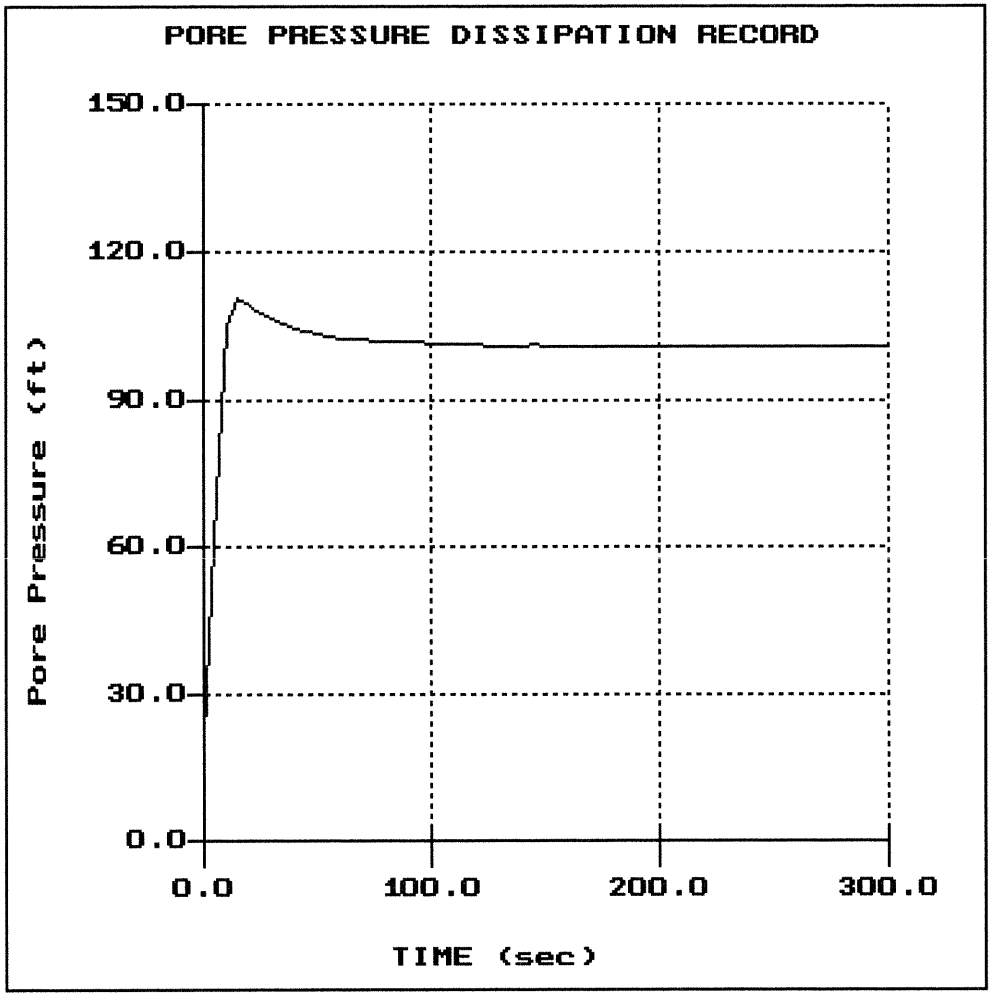


File: 419CP03.PPD
Depth (m): 25.35
(ft): 83.17
Duration : 300.0s
U-min: 35.10 0.0s
U-max: 100.14 45.0s

IGES

Sounding: 08-PG2-C1
Site:I-15

Cone:STD 20T AD242
Date:08:05:08 12:44

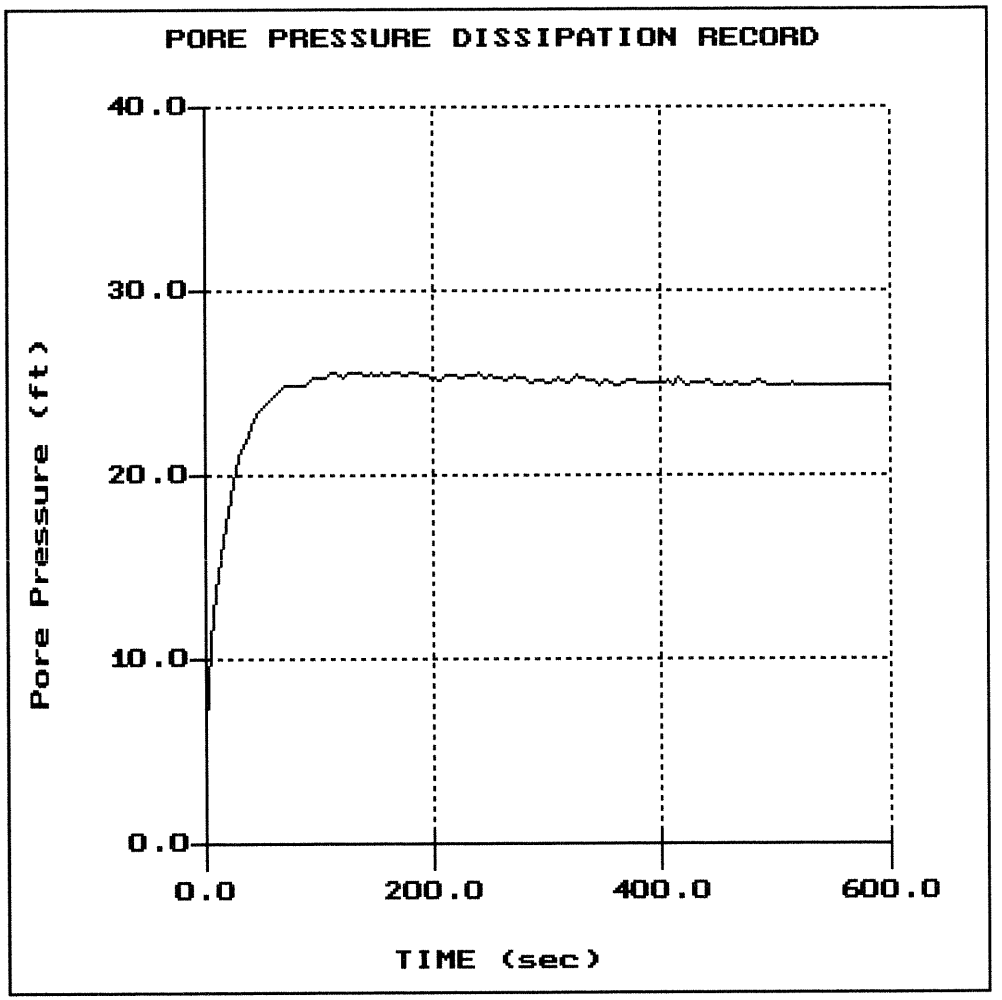


File: 419CP04.PPD
Depth (m): 25.10
(ft): 82.35
Duration : 300.0s
U-min: 20.08 0.0s
U-max: 110.33 15.0s

IGES

Sounding: 08-AF6-C2
Site:I-15

Cone:STD 20T AD242
Date:08:05:08 14:14



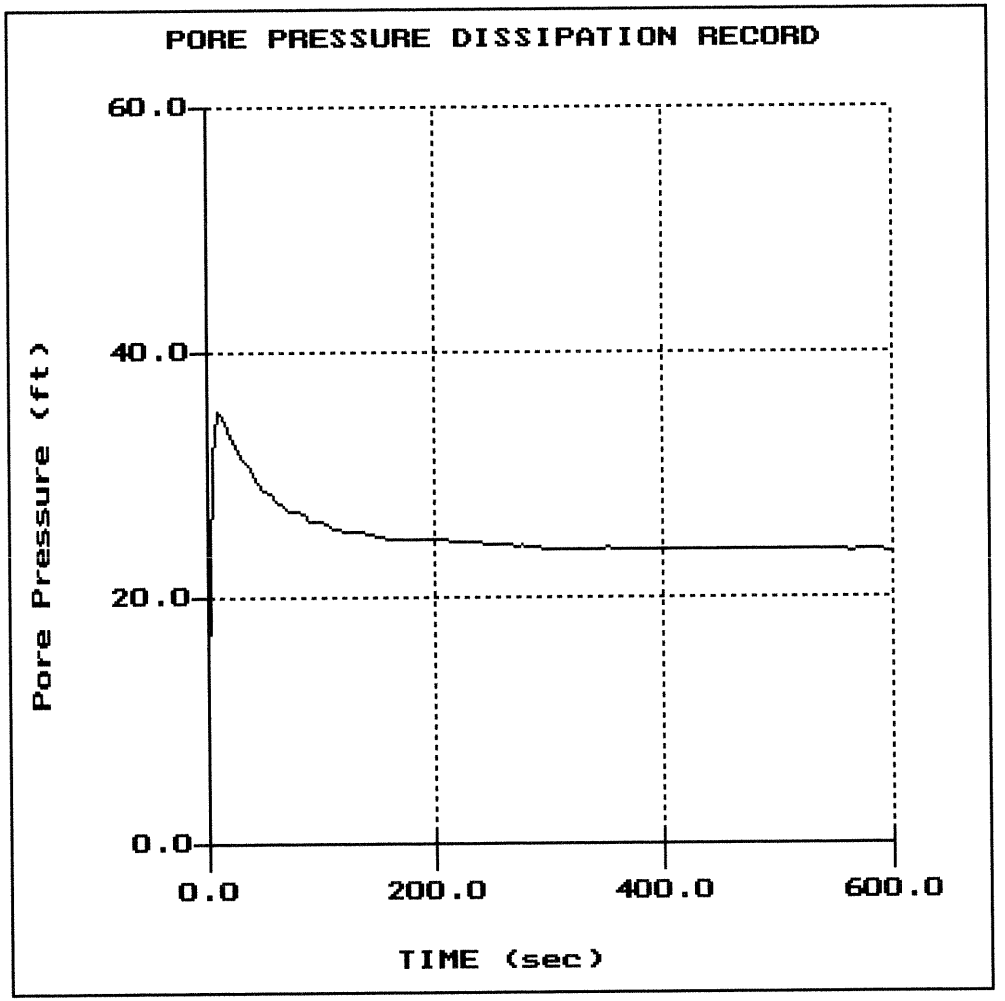
File: 419CP05.PPD
Depth (m): 9.20
(ft): 30.18
Duration : 600.0s
U-min: 6.05 0.0s
U-max: 25.58 185.0s

IGES

Sounding: 08-AF5-C2
Site:I-15

Cone:STD 20T AD242
Date:08:06:08 08:10

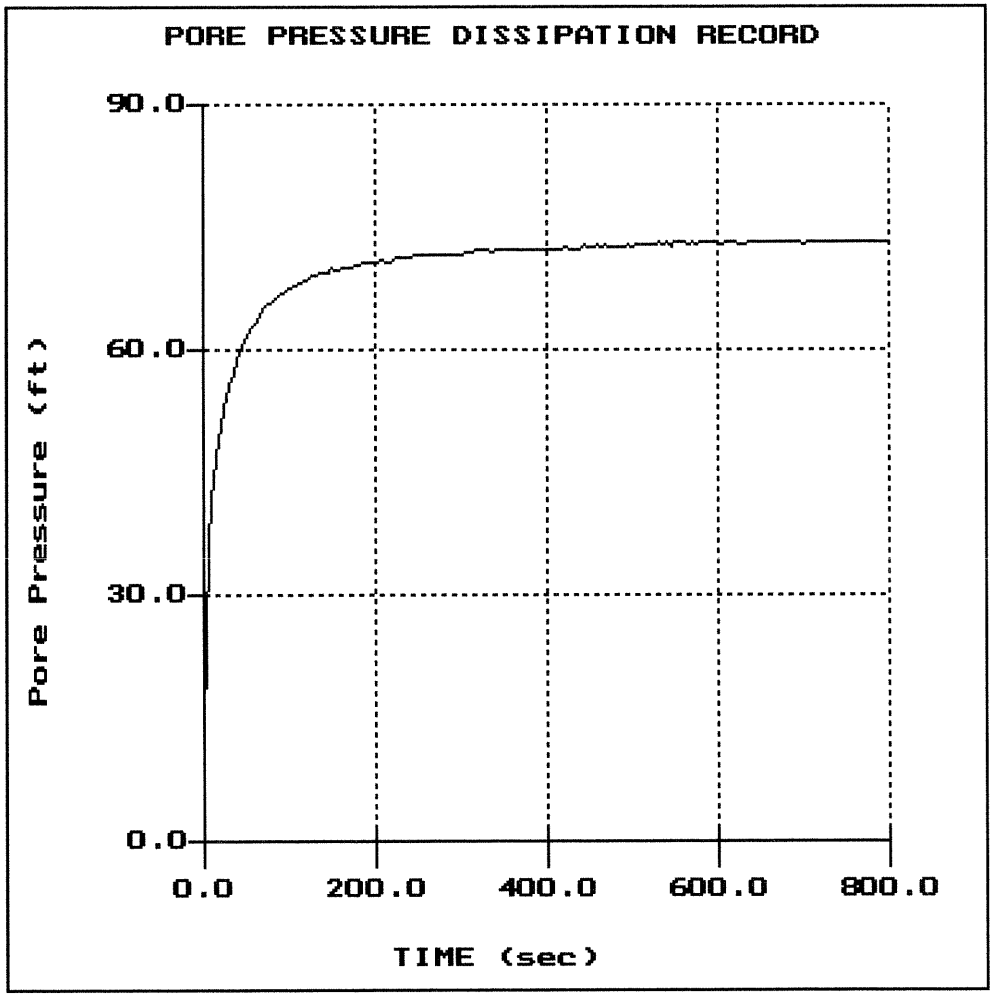
File: 419CP06.PPD
Depth (m): 8.05
(ft): 26.41
Duration : 600.0s
U-min: 12.01 0.0s
U-max: 35.20 10.0s



IGES

Sounding: 08-L1-C1
Site:I-15

Cone:STD 20T AD242
Date:08:06:08 11:13

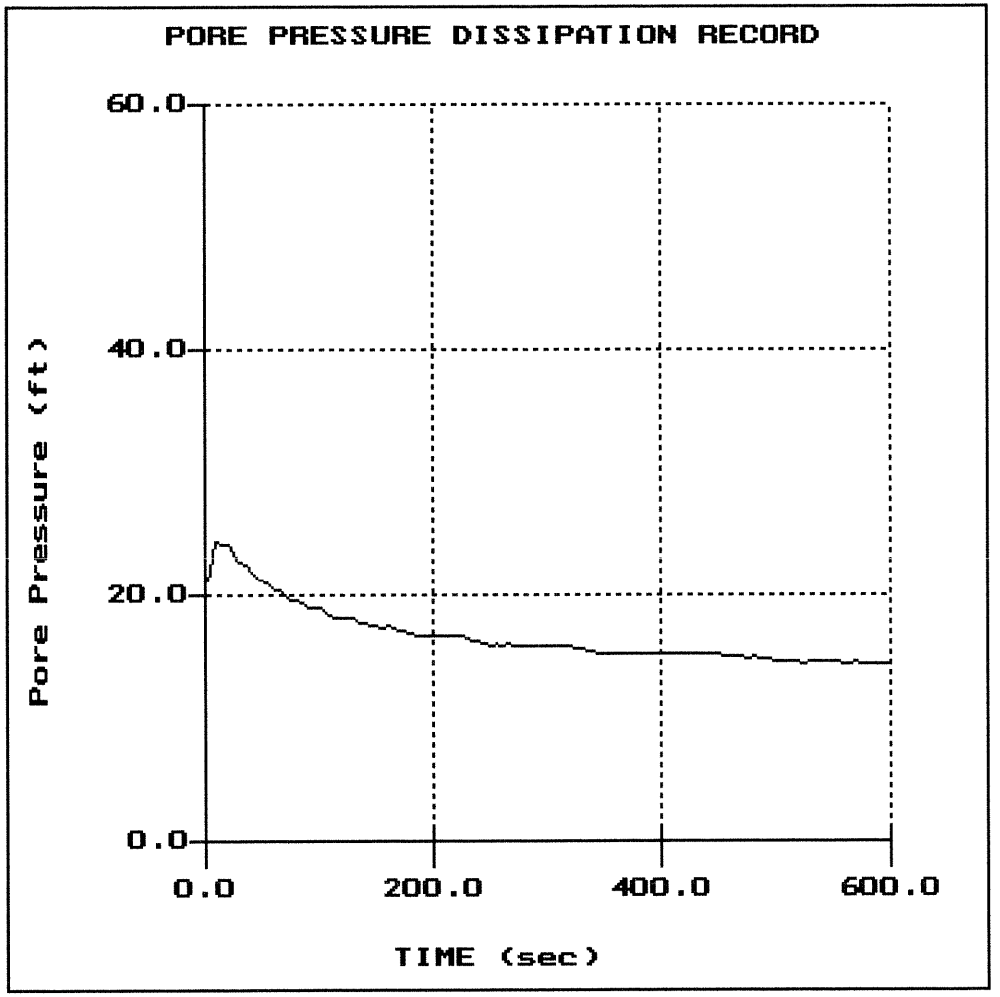


File: 419CP07.PPD
Depth (m): 23.70
(ft): 77.76
Duration : 800.0s
U-min: 12.95 0.0s
U-max: 73.11 770.0s

IGES

Sounding: 08-OR2-C2
Site:I-15

Cone:STD 20T AD242
Date:08:07:08 11:44



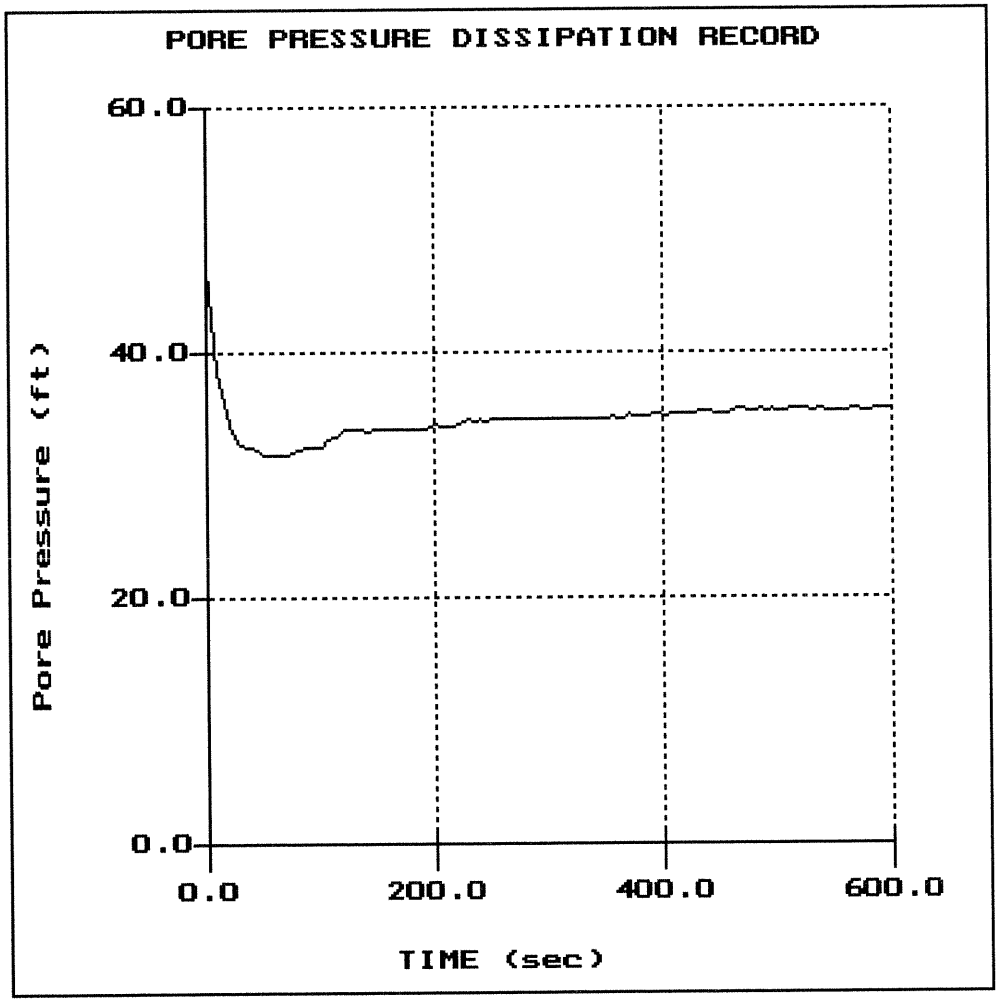
File: 419CP09.PPD
Depth (m): 12.20
(ft): 40.03
Duration : 600.0s
U-min: 14.41 595.0s
U-max: 24.36 10.0s

IGES

Sounding: 08-OR2-C1
Site:I-15

Cone:STD 20T AD242
Date:08:07:08 13:05

File: 419CP10.PPD
Depth (m): 17.85
(ft): 58.56
Duration : 600.0s
U-min: 31.58 60.0s
U-max: 46.79 0.0s

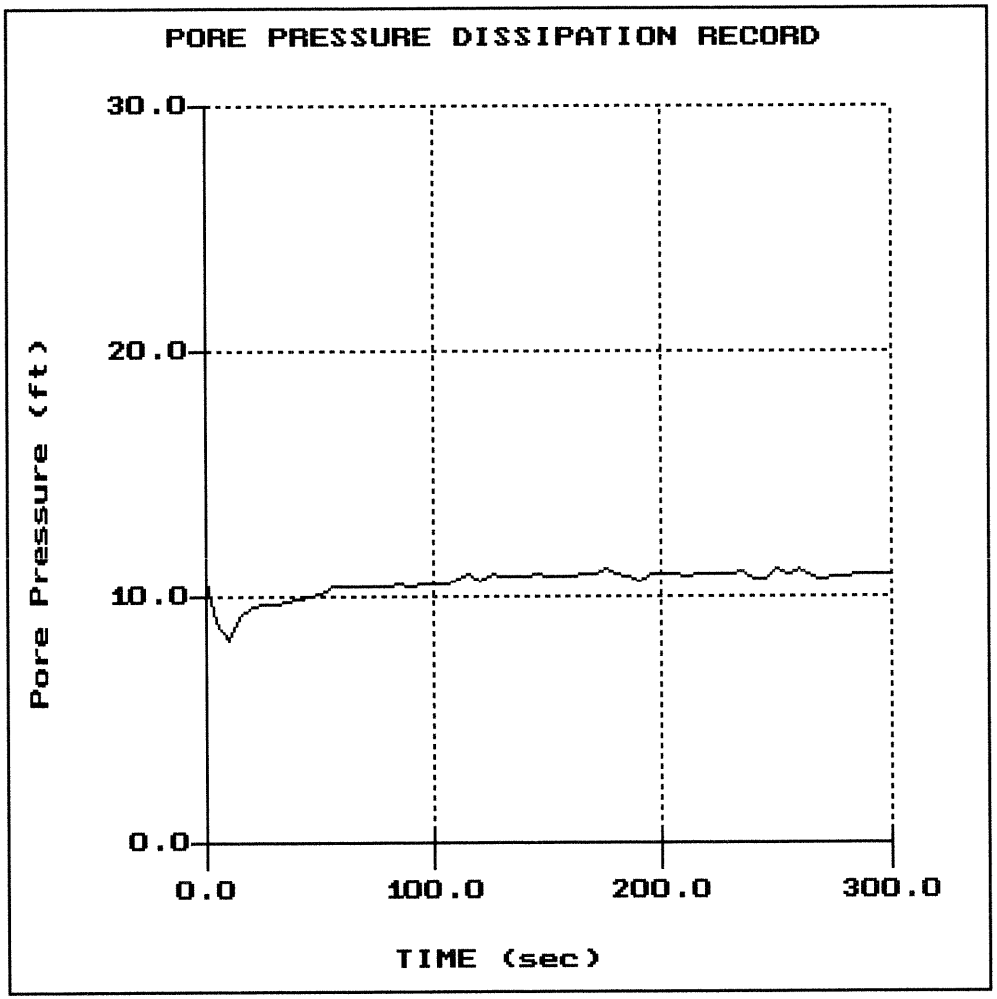


IGES

Sounding: 08-OR1-C2
Site:I-15

Cone:STD 20T AD242
Date:08:11:08 08:06

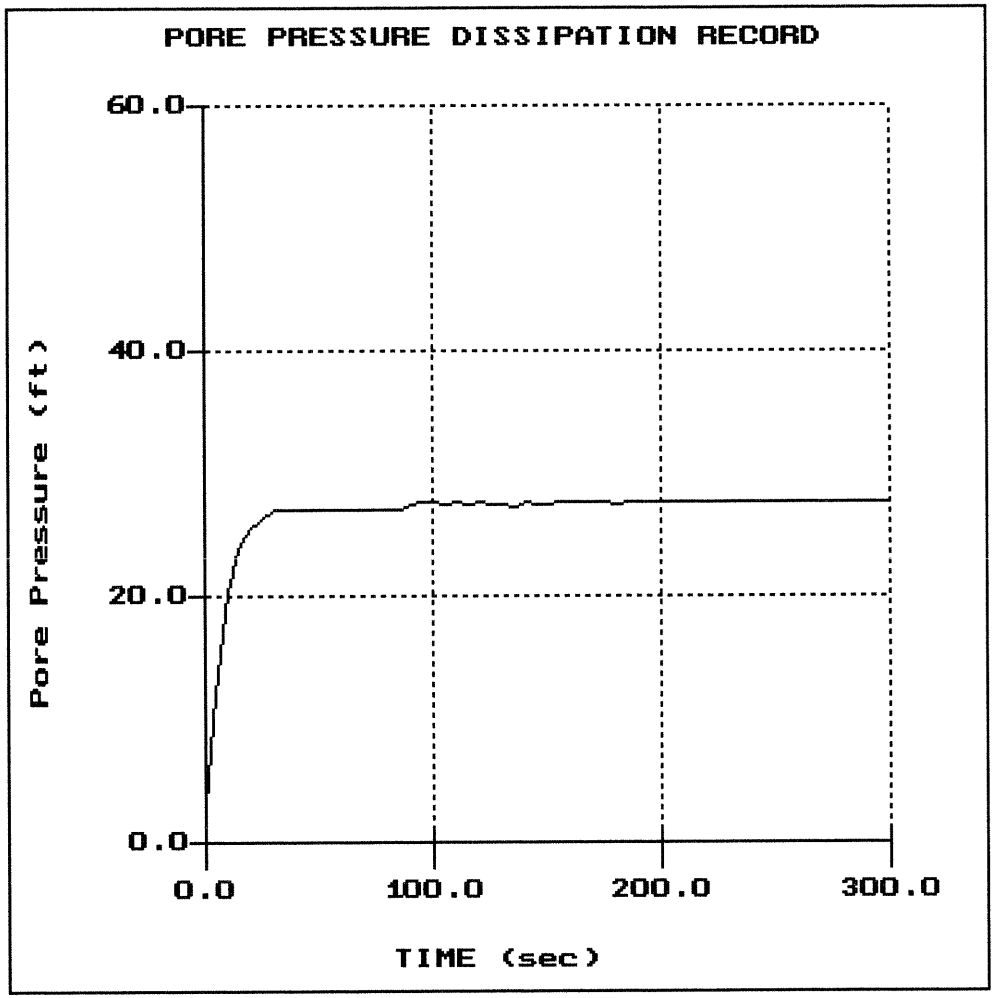
File: 419CP11.PPD
Depth (m): 6.95
(ft): 22.80
Duration : 300.0s
U-min: 8.26 10.0s
U-max: 11.17 175.0s



IGES

Sounding: 08-AF4-C1
Site:I-15

Cone:STD 20T AD242
Date:08:11:08 10:21

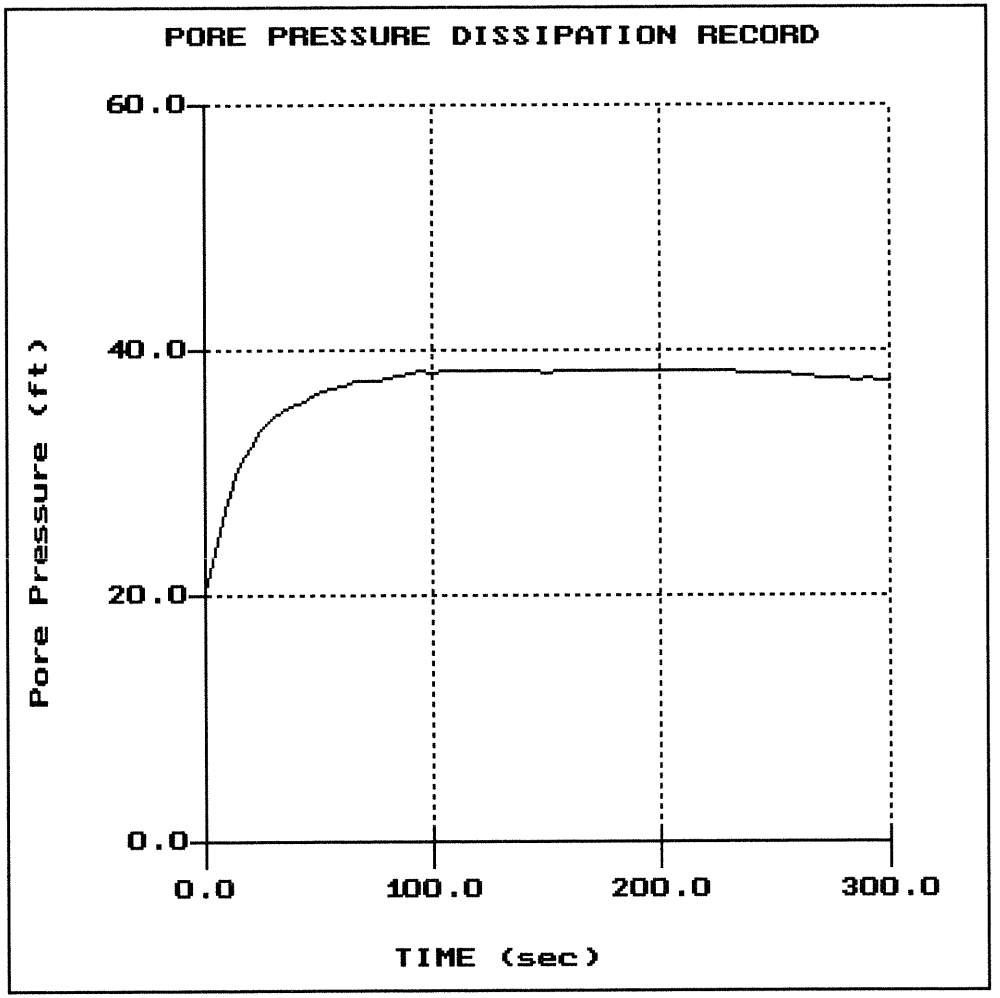


File: 419CP12.PPD
Depth (m): 10.80
(ft): 35.43
Duration : 300.0s
U-min: 3.00 0.0s
U-max: 27.78 295.0s

IGES

Sounding: 08-AF2-C2
Site:I-15

Cone:STD 20T AD242
Date:08:11:08 11:53



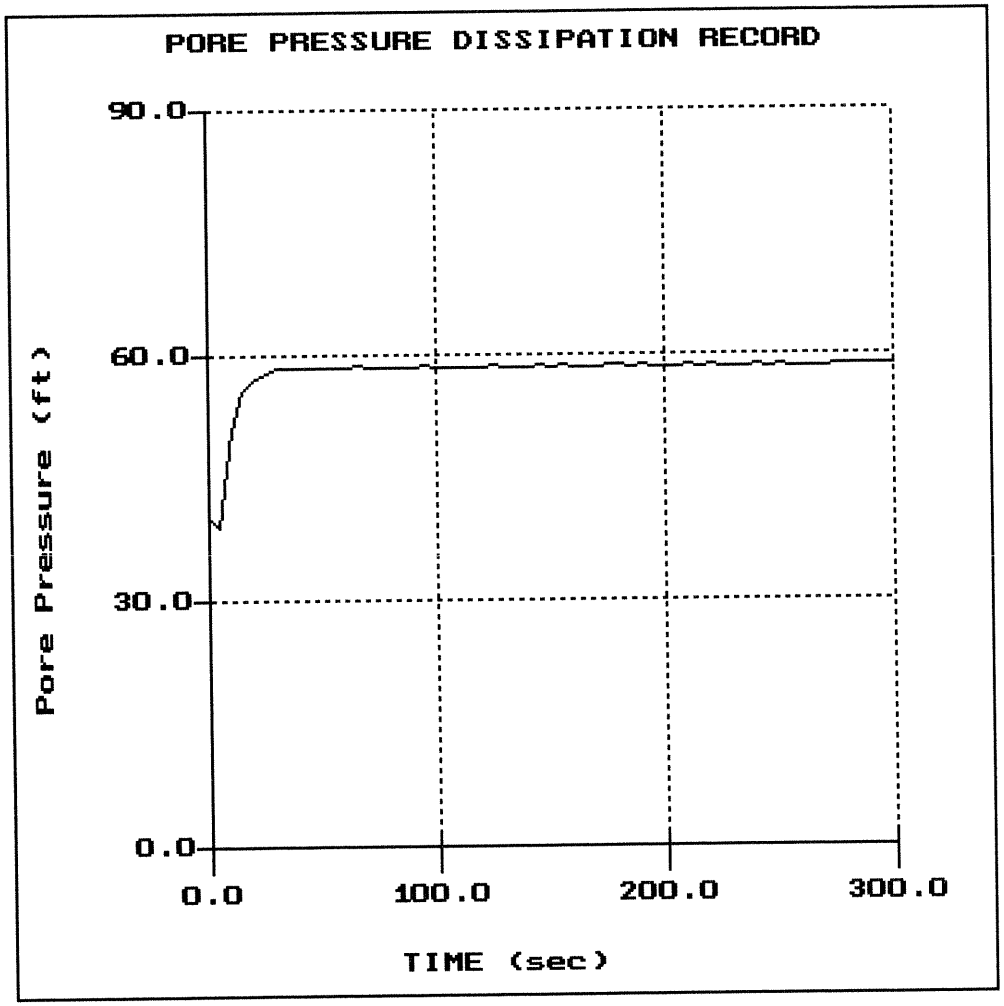
File: 419CP13.PPD
Depth (m): 18.75
(ft): 61.52
Duration : 300.0s
U-min: 20.27 0.0s
U-max: 38.29 230.0s

IGES

Sounding: 08-AF2-C1
Site:I-15

Cone:STD 20T AD242
Date:08:11:08 13:11

File: 419CP14.PPD
Depth (m): 25.25
(ft): 82.84
Duration : 300.0s
U-min: 39.04 5.0s
U-max: 58.71 250.0s

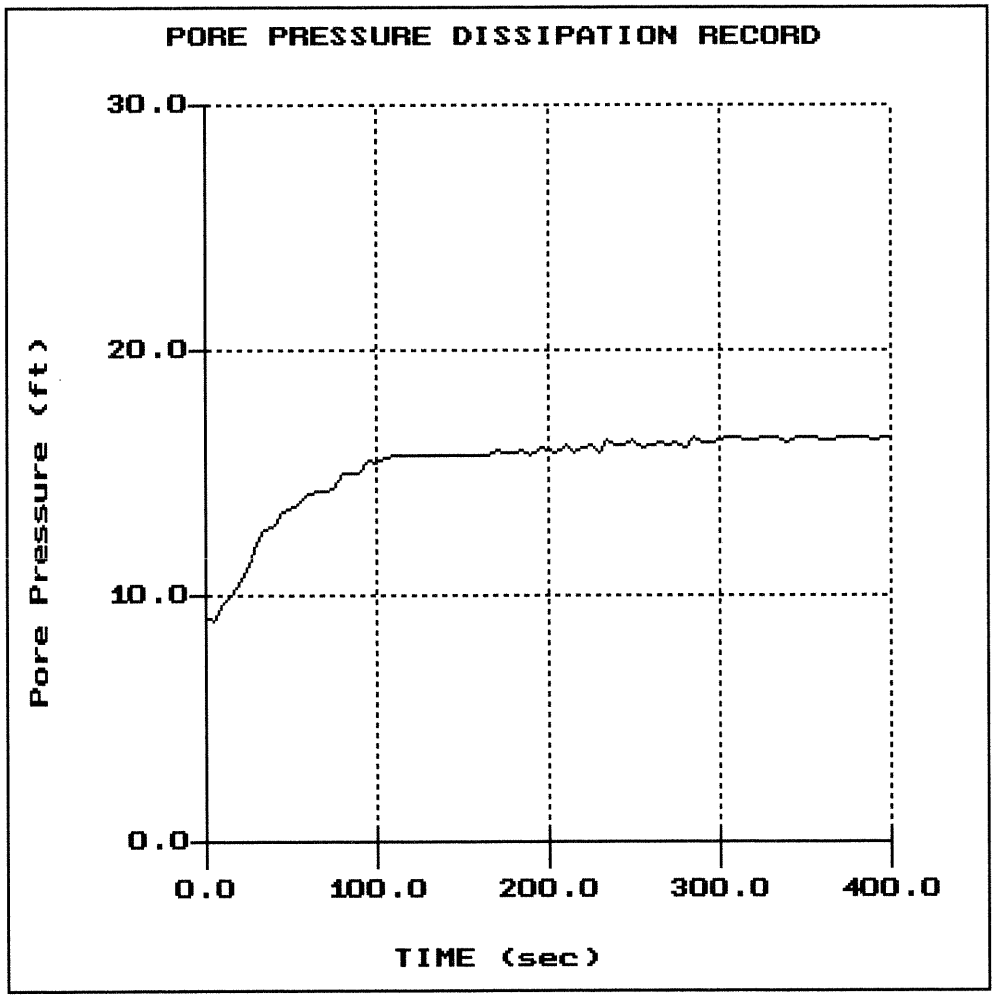


IGES

Sounding: 08-OR3-C2
Site:I-15

Cone:STD 20T AD242
Date:08:12:08 08:32

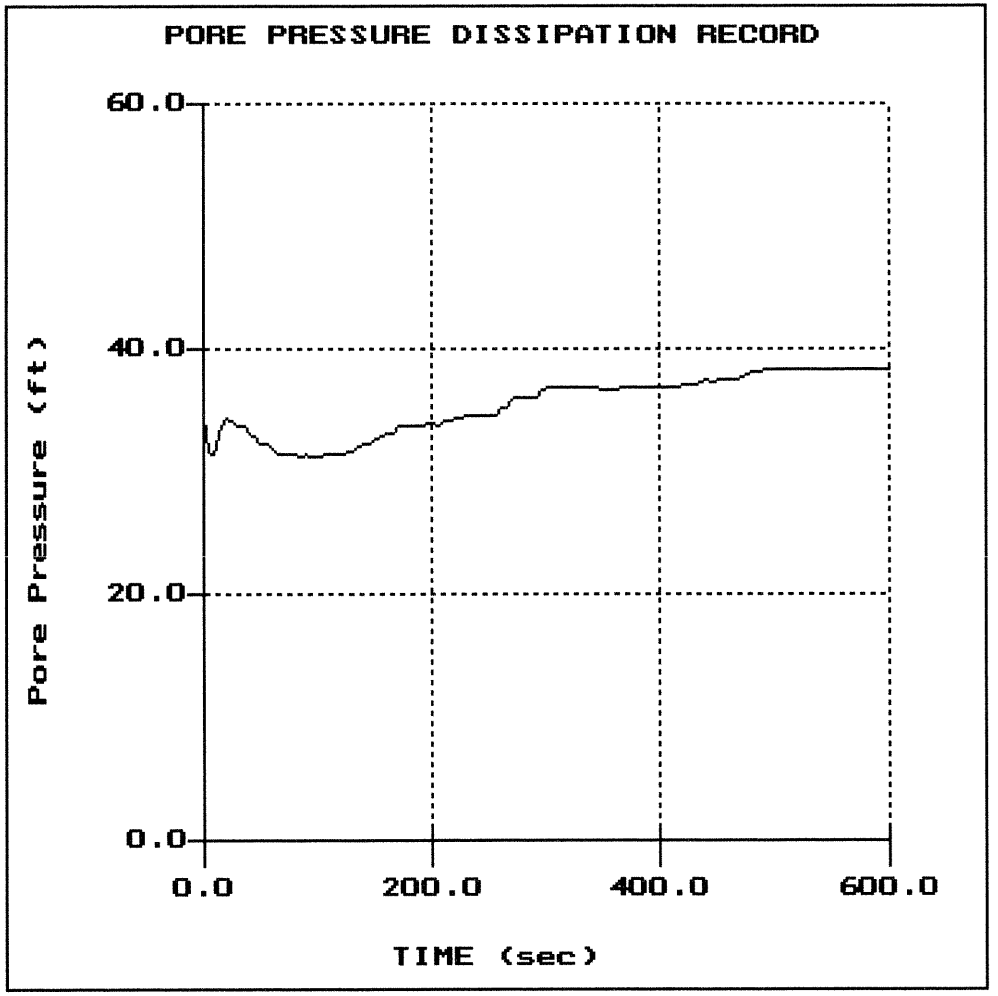
File: 419CP15.PPD
Depth (m): 15.80
(ft): 51.84
Duration : 400.0s
U-min: 8.96 5.0s
U-max: 16.47 400.0s



IGES

Sounding: 08-OR3-C1
Site:I-15

Cone:STD 20T AD242
Date:08:12:08 10:39

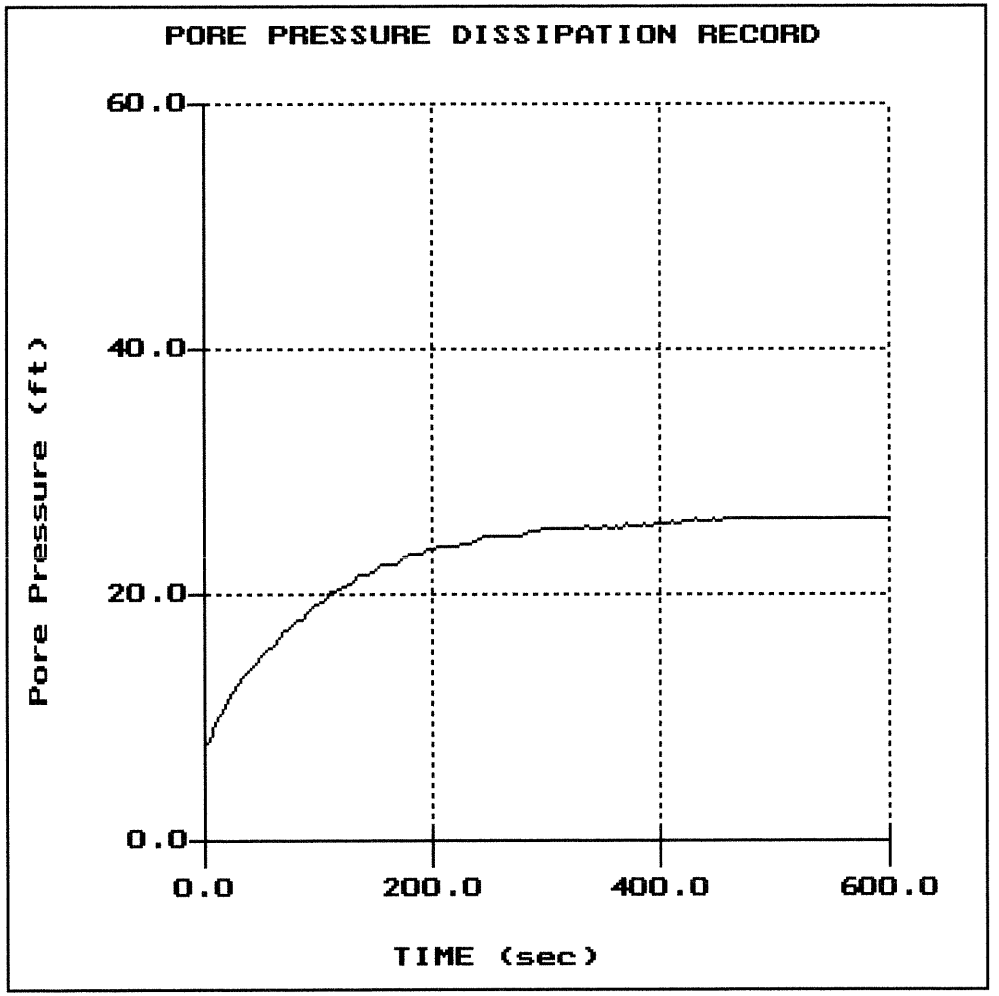


File: 419CP16.PPD
Depth (m): 27.35
(ft): 89.73
Duration : 600.0s
U-min: 31.25 85.0s
U-max: 38.34 515.0s

IGES

Sounding: 08-L2-C2
Site:I-15

Cone:STD 20T AD242
Date:08:13:08 09:43



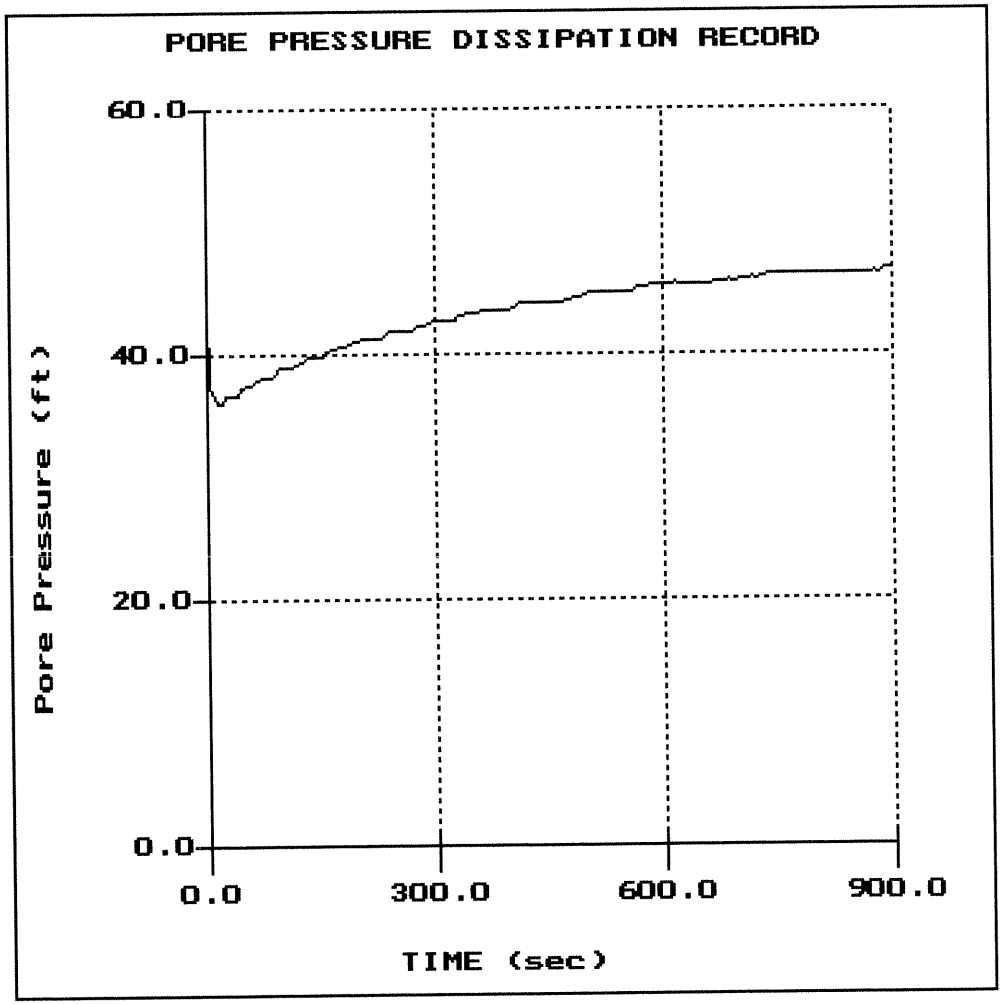
File: 419CP18.PPD
Depth (m): 9.60
(ft): 31.50
Duration : 600.0s
U-min: 7.93 0.0s
U-max: 26.23 600.0s

IGES

Sounding: 08-OR5-C2
Site:I-15

Cone:STD 20T AD242
Date:08:13:08 11:34

File: 419CP19.PPD
Depth (m): 23.65
(ft): 77.59
Duration : 900.0s
U-min: 35.99 20.0s
U-max: 46.88 895.0s

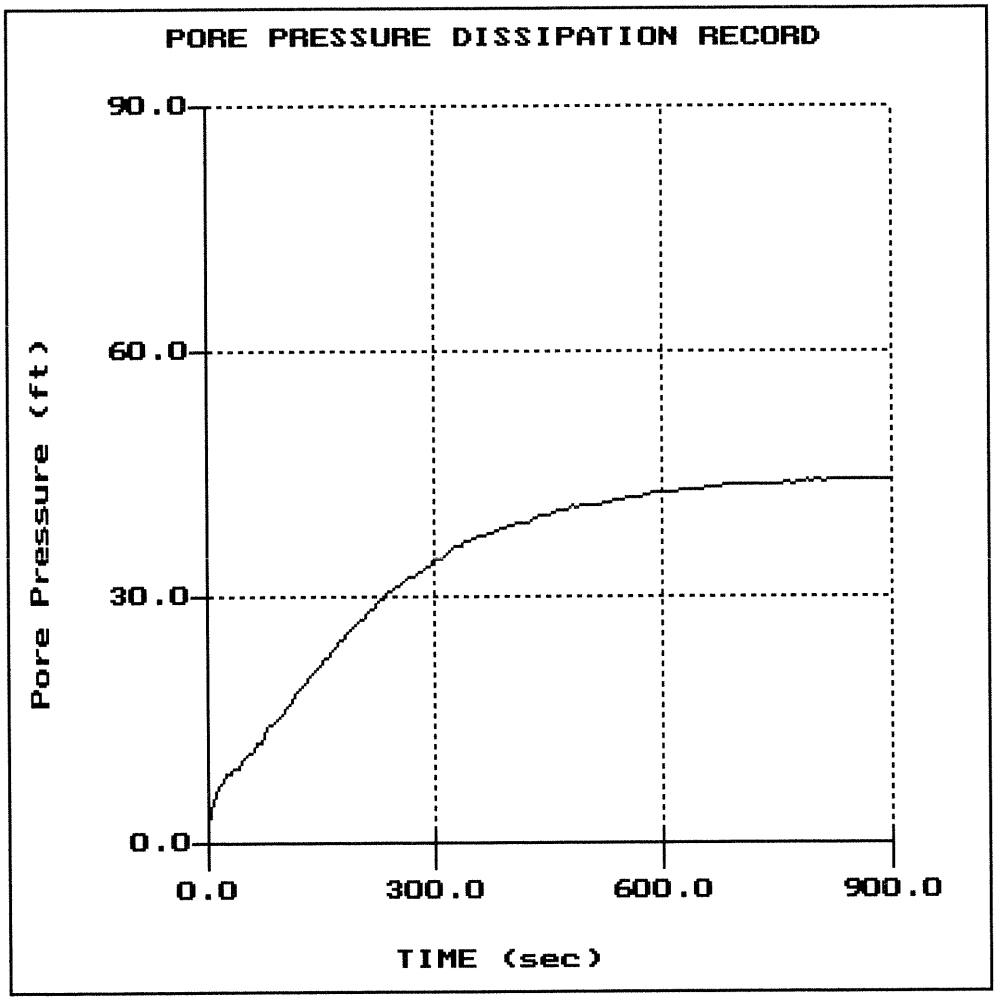


IGES

Sounding: 08-OR6-C1
Site:I-15

Cone:STD 20T AD242
Date:08:13:08 13:30

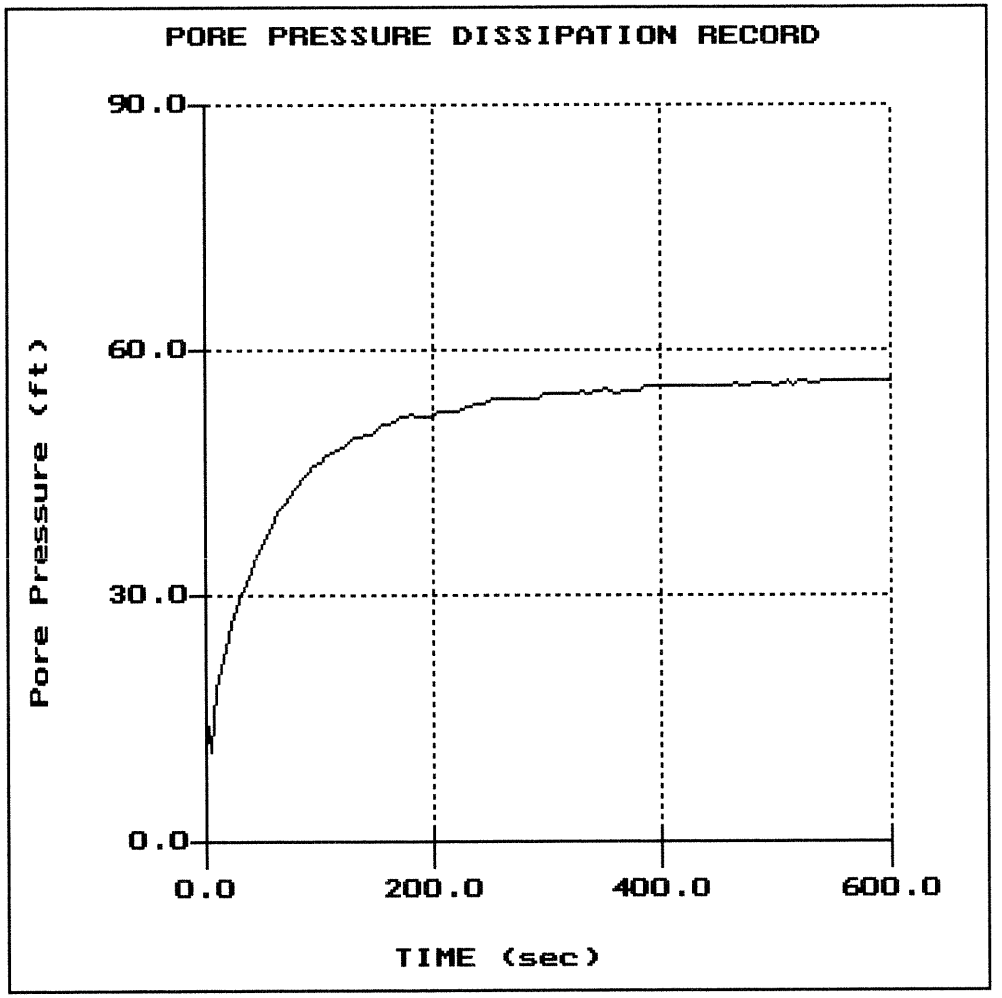
File: 419CP20.PPD
Depth (m): 17.35
(ft): 56.92
Duration : 900.0s
U-min: 1.60 0.0s
U-max: 44.39 900.0s



IGES

Sounding: 08-OR6-C2
Site:I-15

Cone:STD 20T AD242
Date:08:13:08 15:42

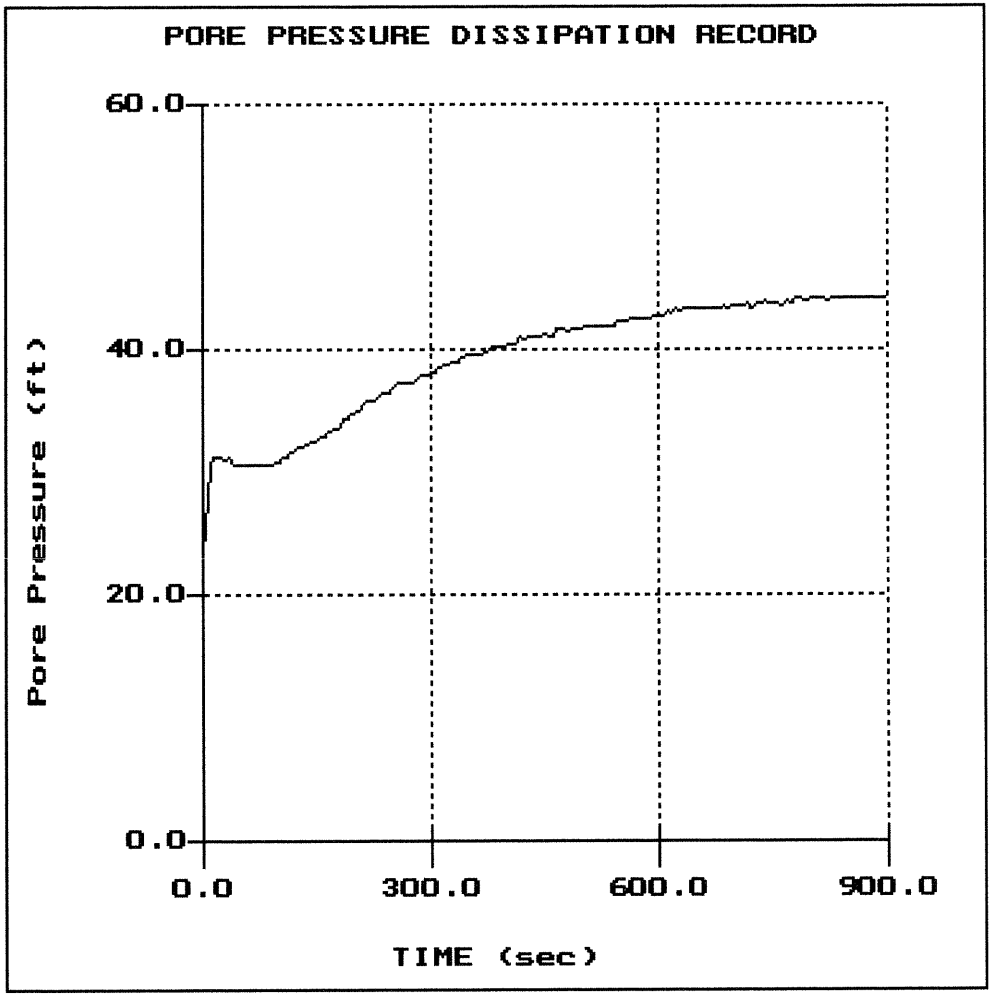


File: 419CP21.PPD
Depth (m): 20.15
(ft): 66.11
Duration : 600.0s
U-min: 10.98 5.0s
U-max: 56.31 600.0s

IGES

Sounding: 08-OR8-C1
Site:I-15

Cone:STD 20T AD242
Date:08:14:08 09:09



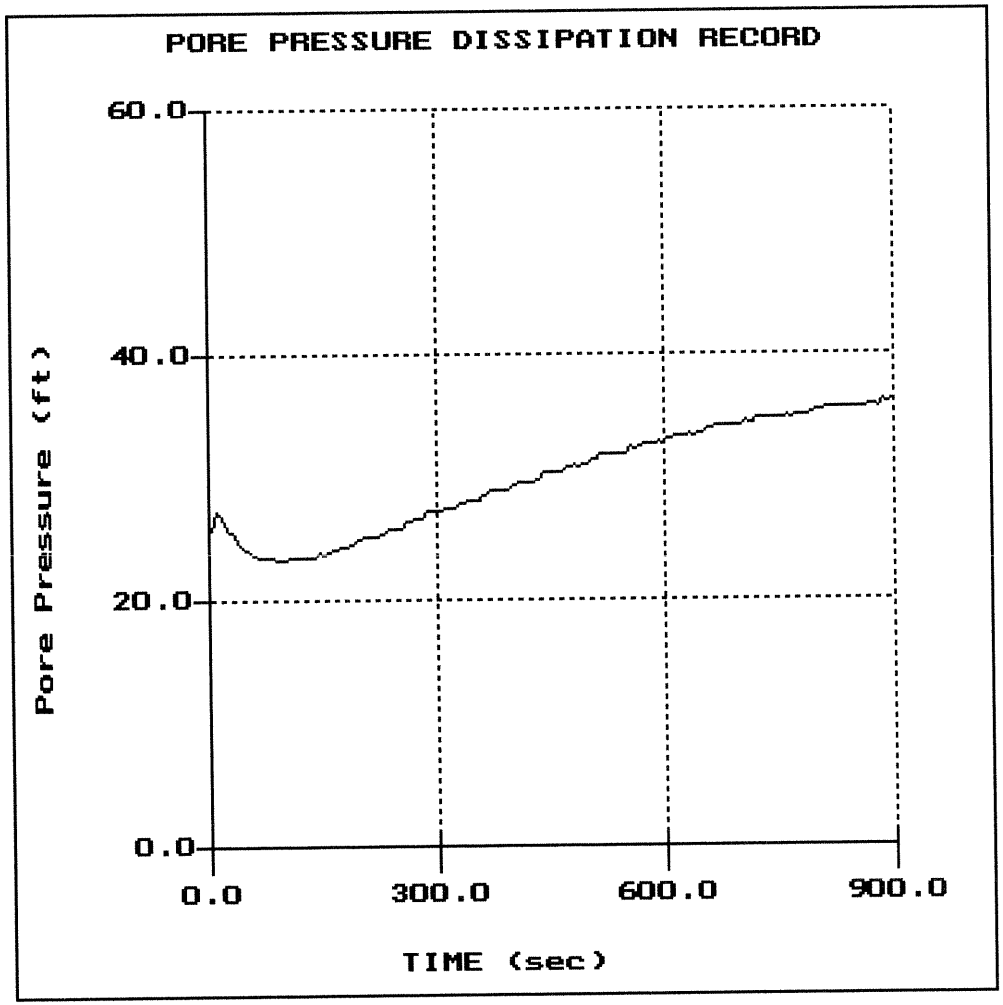
File: 419CP22.PPD
Depth (m): 14.30
(ft): 46.92
Duration : 900.0s
U-min: 23.28 0.0s
U-max: 44.30 900.0s

IGES

Sounding: 08-OR5-C1
Site:I-15

Cone:STD 20T AD242
Date:08:14:08 11:01

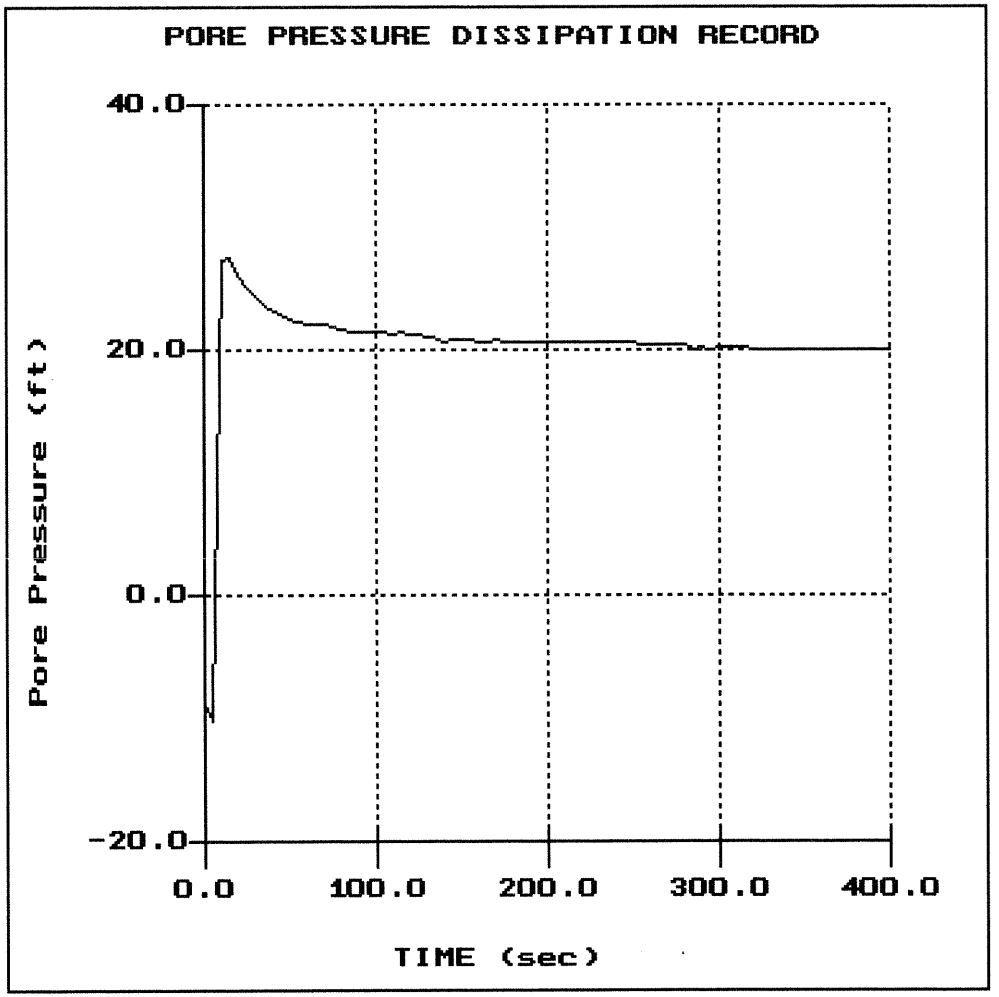
File: 419CP23.PPD
Depth (m): 16.50
(ft): 54.13
Duration : 900.0s
U-min: 23.32 95.0s
U-max: 36.32 900.0s



IGES

Sounding: 08-AF4-C2
Site:I-15

Cone:STD 20T AD242
Date:08:14:08 13:05

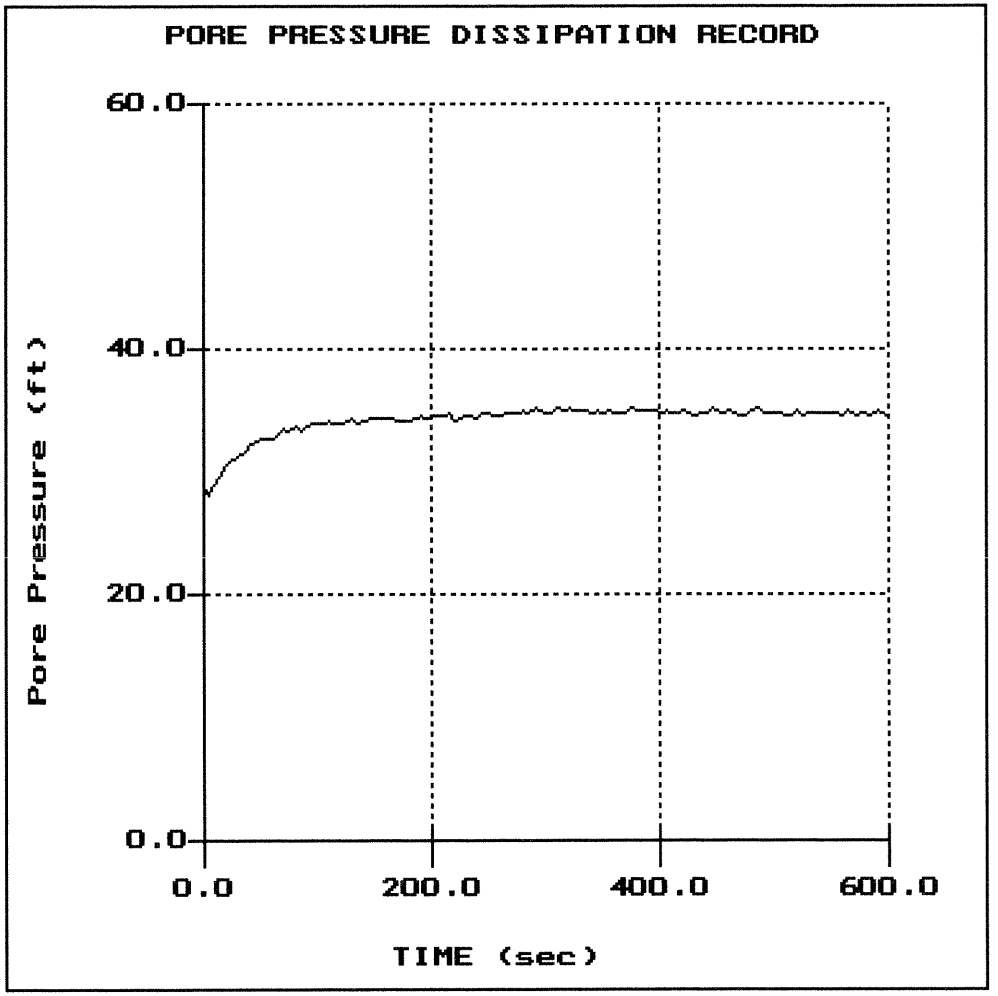


File: 419CP24.PPD
Depth (m): 7.55
(ft): 24.77
Duration : 400.0s
U-min: -10.14 5.0s
U-max: 27.45 15.0s

IGES

Sounding: 08-P5-C1
Site:I-15

Cone:STD 20T AD242
Date:08:15:08 09:02

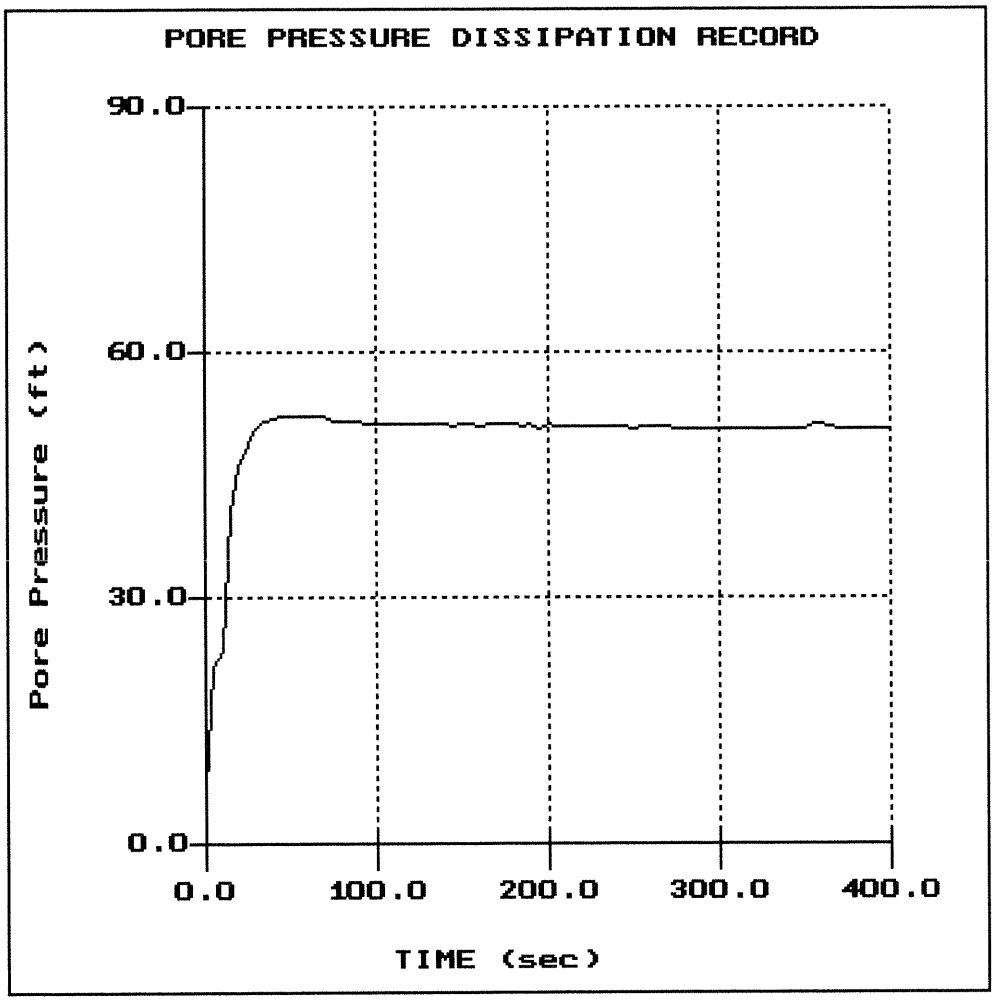


File: 419CP25.PPD
Depth (m): 16.40
(ft): 53.81
Duration : 600.0s
U-min: 28.06 5.0s
U-max: 35.29 290.0s

IGES

Sounding: 08-S3-C1
Site:I-15

Cone:STD 20T AD242
Date:08:15:08 13:29



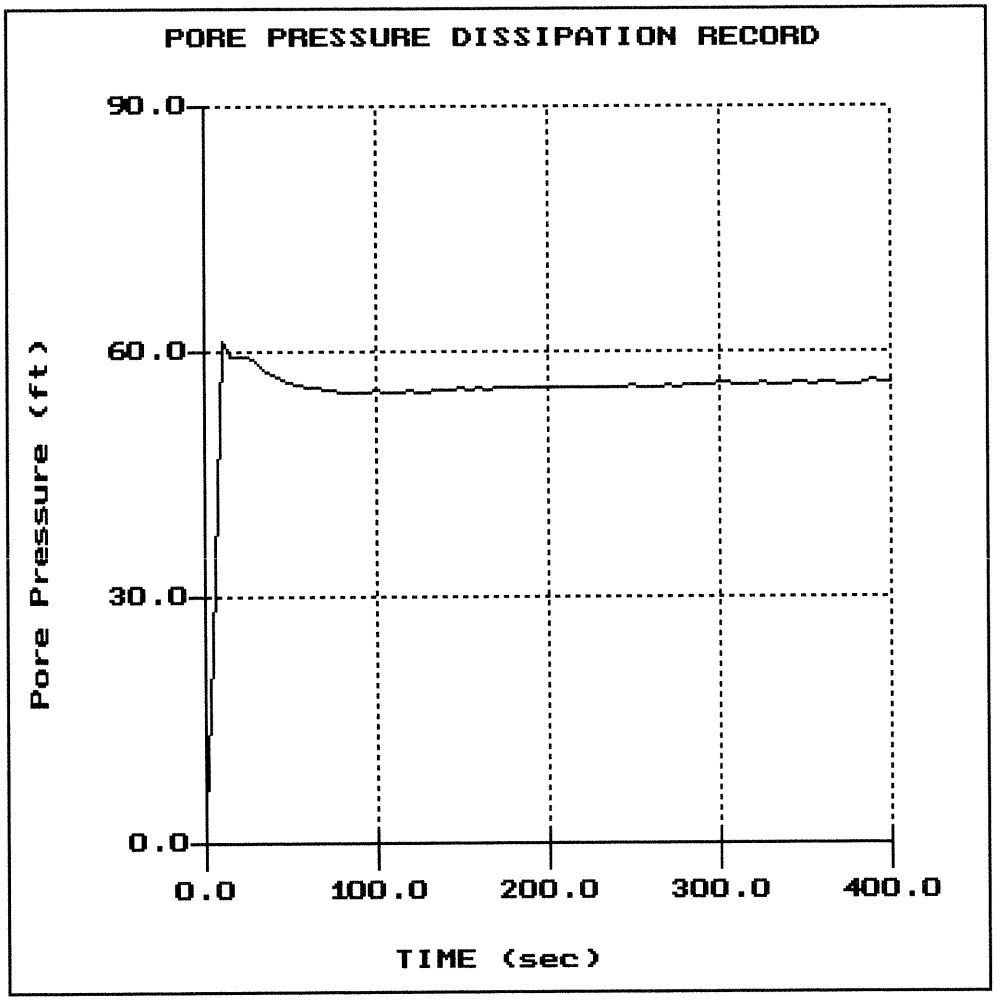
File: 419CP27.PPD
Depth (m): 17.95
(ft): 58.89
Duration : 400.0s
U-min: 6.34 0.0s
U-max: 52.14 55.0s

IGES

Sounding: 08-L2-C1
Site:I-15

Cone:STD 20T AD242
Date:08:19:08 07:54

File: 419CP28.PPD
Depth (m): 18.35
(ft): 60.20
Duration : 400.0s
U-min: 3.05 0.0s
U-max: 61.10 10.0s

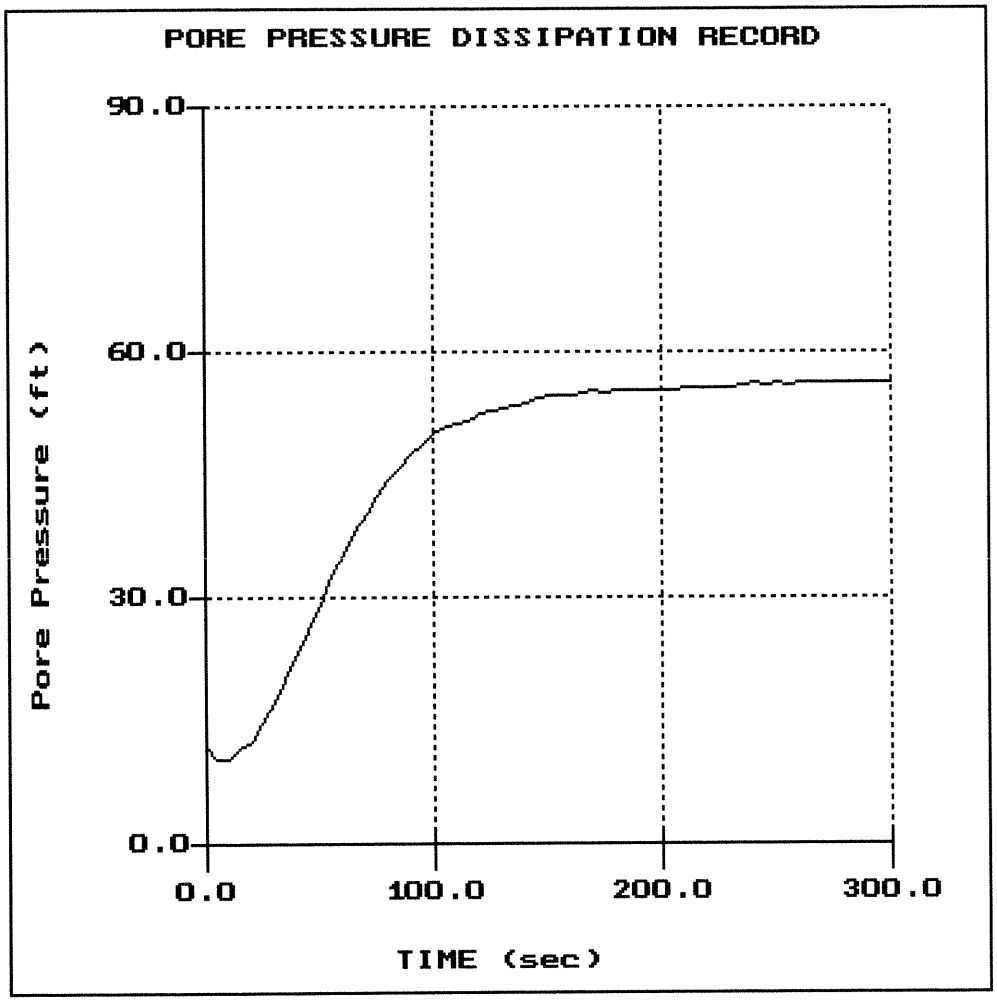


IGES

Sounding: 08-S3-C2
Site:I-15

Cone:STD 20T AD242
Date:08:19:08 09:51

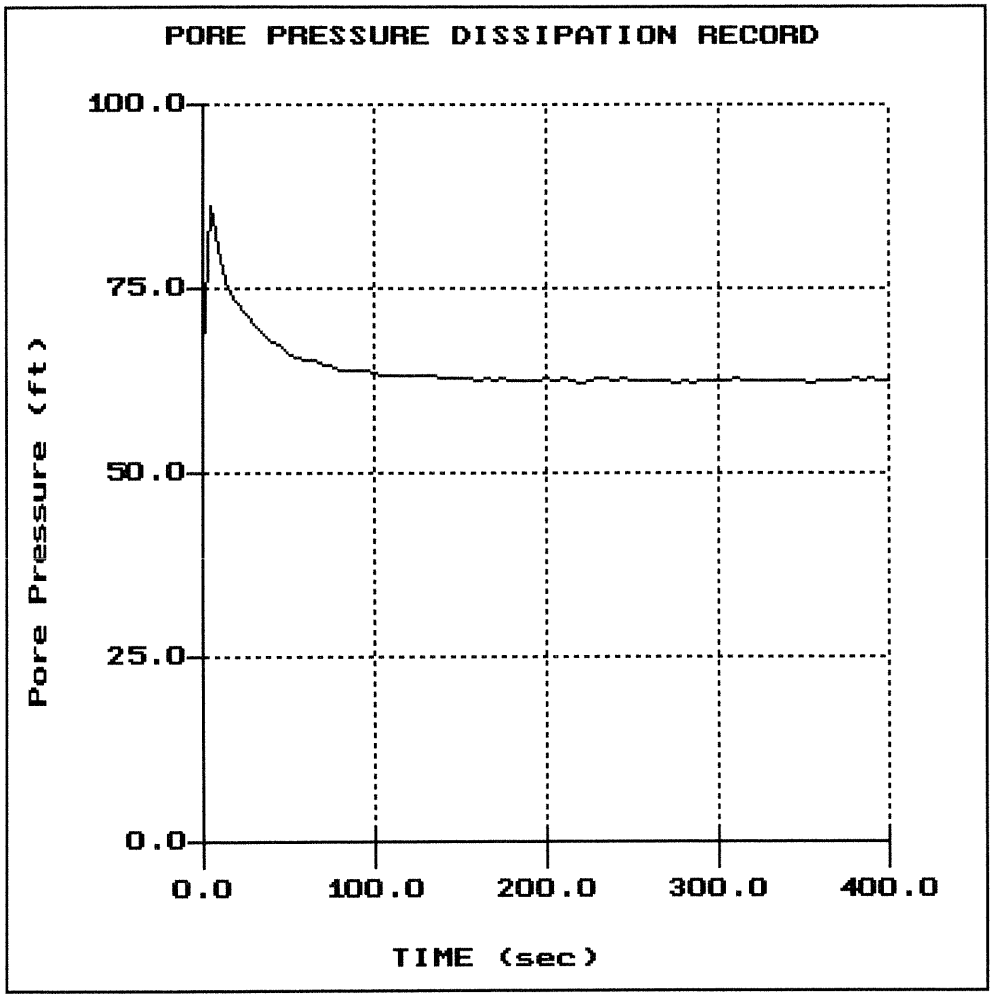
File: 419CP29.PPD
Depth (m): 20.35
(ft): 66.77
Duration : 300.0s
U-min: 10.32 5.0s
U-max: 56.17 300.0s



IGES

Sounding: 08-P5-C2
Site:I-15

Cone:STD 20T AD242
Date:08:27:08 08:56



File: 419CP30.PPD
Depth (m): 22.85
(ft): 74.97
Duration : 400.0s
U-min: 62.32 355.0s
U-max: 86.07 5.0s

V_s Calculations

CONETEC

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-AF5-C1
CPT File: 419CP01.COR
Location I-15 - Utah County
Date: 8/4/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
30.50	30.30	30.30	18.29	75.84	241	21.15	791	69.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-AF6-C1
CPT File: 419CP02.COR
Location I-15 - Utah County
Date: 8/4/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
27.80	27.60	27.60	15.60	74.33	210	19.80	688	64.9

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-PG2-C1
CPT File: 419CP04.COR
Location I-15 - Utah County
Date: 8/4/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
30.50	30.30	30.30	18.29	91.28	200	21.15	657	69.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-L1-C1
CPT File: 419CP07.COR
Location I-15 - Utah County
Date: 8/6/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
33.70	33.50	33.50	21.49	93.12	231	22.75	757	74.6

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR2-C2
CPT File: 419CP09.COR
Location I-15 - Utah County
Date: 8/7/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
22.70	22.50	22.50	10.50	42.11	249	17.25	818	56.6

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR1-C2
CPT File: 419CP11.COR
Location I-15 - Utah County
Date: 8/11/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
32.60	32.40	32.40	20.39	79.53	256	22.20	841	72.8

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-AF4-C1
CPT File: 419CP12.COR
Location I-15 - Utah County
Date: 8/11/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.80	12.60	12.61						
29.70	29.50	29.50	16.90	61.24	276	21.05	905	69.0

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-AF2-C1
CPT File: 419CP14.COR
Location I-15 - Utah County
Date: 8/11/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
25.20	25.00	25.00	13.00	53.02	245	18.50	804	60.7

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR3-C2
CPT File: 419CP15.COR
Location I-15 - Utah County
Date: 8/12/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
22.30	22.10	22.10	10.10	39.43	256	17.05	840	55.9

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-L2-C2
CPT File: 419CP18.COR
Location I-15 - Utah County
Date: 8/13/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
34.15	33.95	33.95	21.94	93.63	234	22.98	769	75.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR5-C2
CPT File: 419CP19.COR
Location I-15 - Utah County
Date: 8/13/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
25.80	25.60	25.60	13.60	46.64	291	18.80	956	61.7

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR6-C1
CPT File: 419CP20.COR
Location I-15 - Utah County
Date: 8/13/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.25	12.05	12.06						
34.80	34.60	34.60	22.54	82.34	274	23.33	898	76.5

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-OR8-C1
CPT File: 419CP22.COR
Location I-15 - Utah County
Date: 8/14/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
30.50	30.30	30.30	18.29	69.30	264	21.15	866	69.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-P5-C1
CPT File: 419CP25.COR
Location I-15 - Utah County
Date: 8/15/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
23.80	23.60	23.60	11.60	52.19	222	17.80	729	58.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-S3-C1
CPT File: 419CP27.COR
Location I-15 - Utah County
Date: 8/15/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
30.50	30.30	30.30	18.29	81.38	225	21.15	737	69.4

Shear Wave Velocity Calculations

Job No.: 08-419
Client: IGES, Inc.
CPT No.: 08-P5-C2
CPT File: 419CP30.COR
Location I-15 - Utah County
Date: 8/27/08

Geophone Offset (m): 0.20
Source Offset (18") (m): 0.46

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
12.20	12.00	12.01						
23.30	23.10	23.10	11.10	48.66	228	17.55	748	57.6

V_s Plots

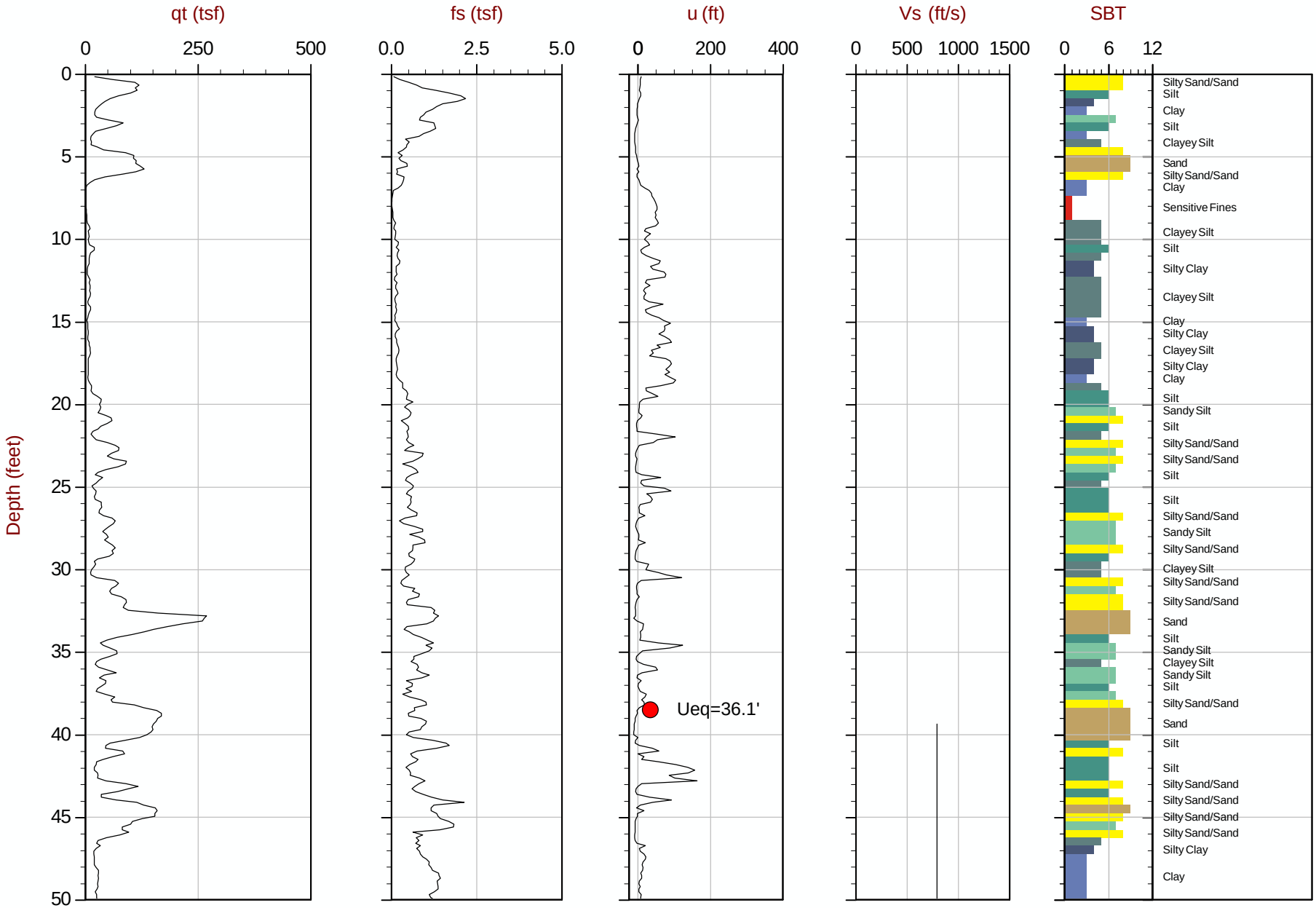
CONETEC

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP01.COR
Unit Wt: SBT Chart Soil Zones

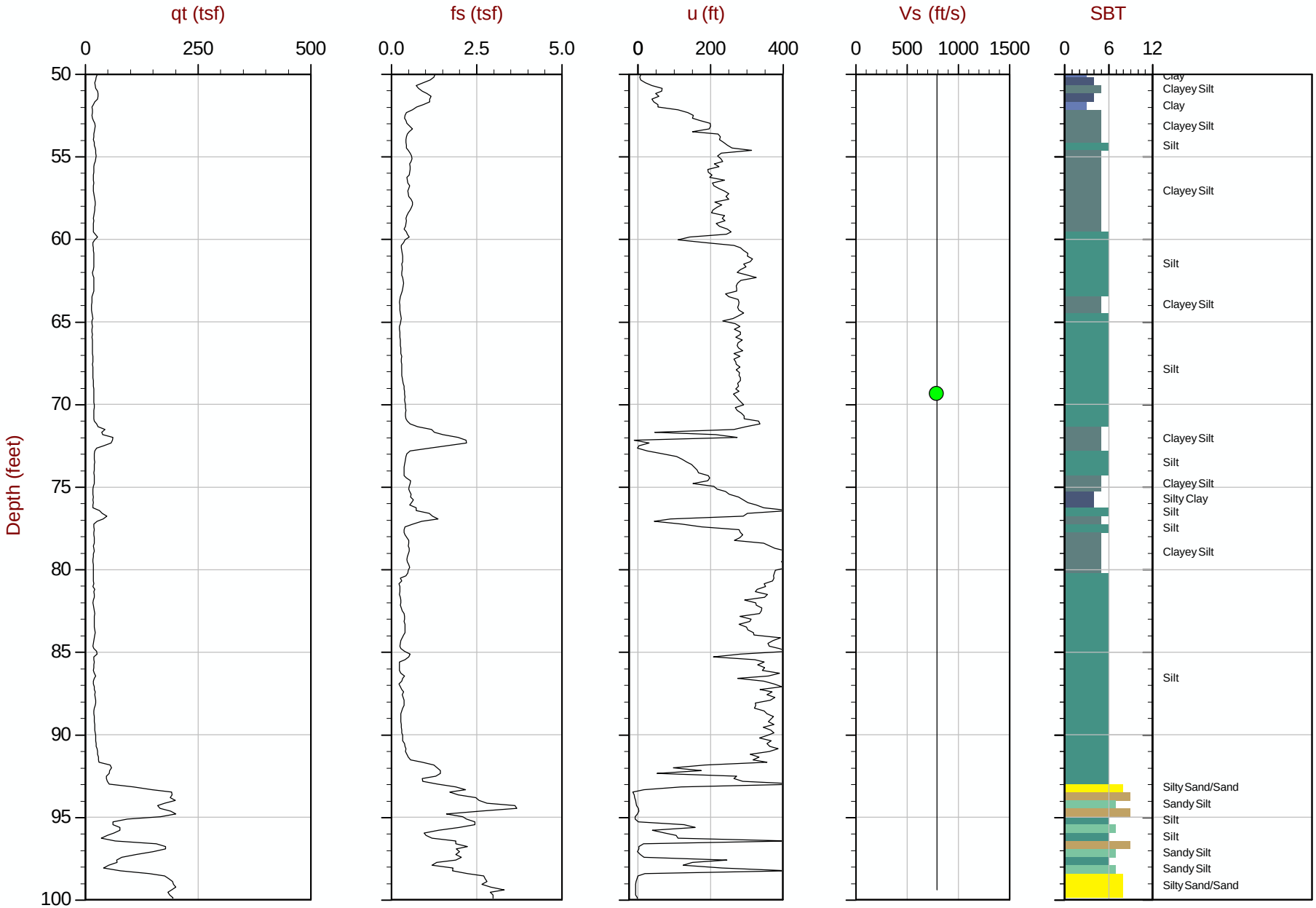
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36002° Long: W 111.78509°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP01.COR
Unit Wt: SBT Chart Soil Zones

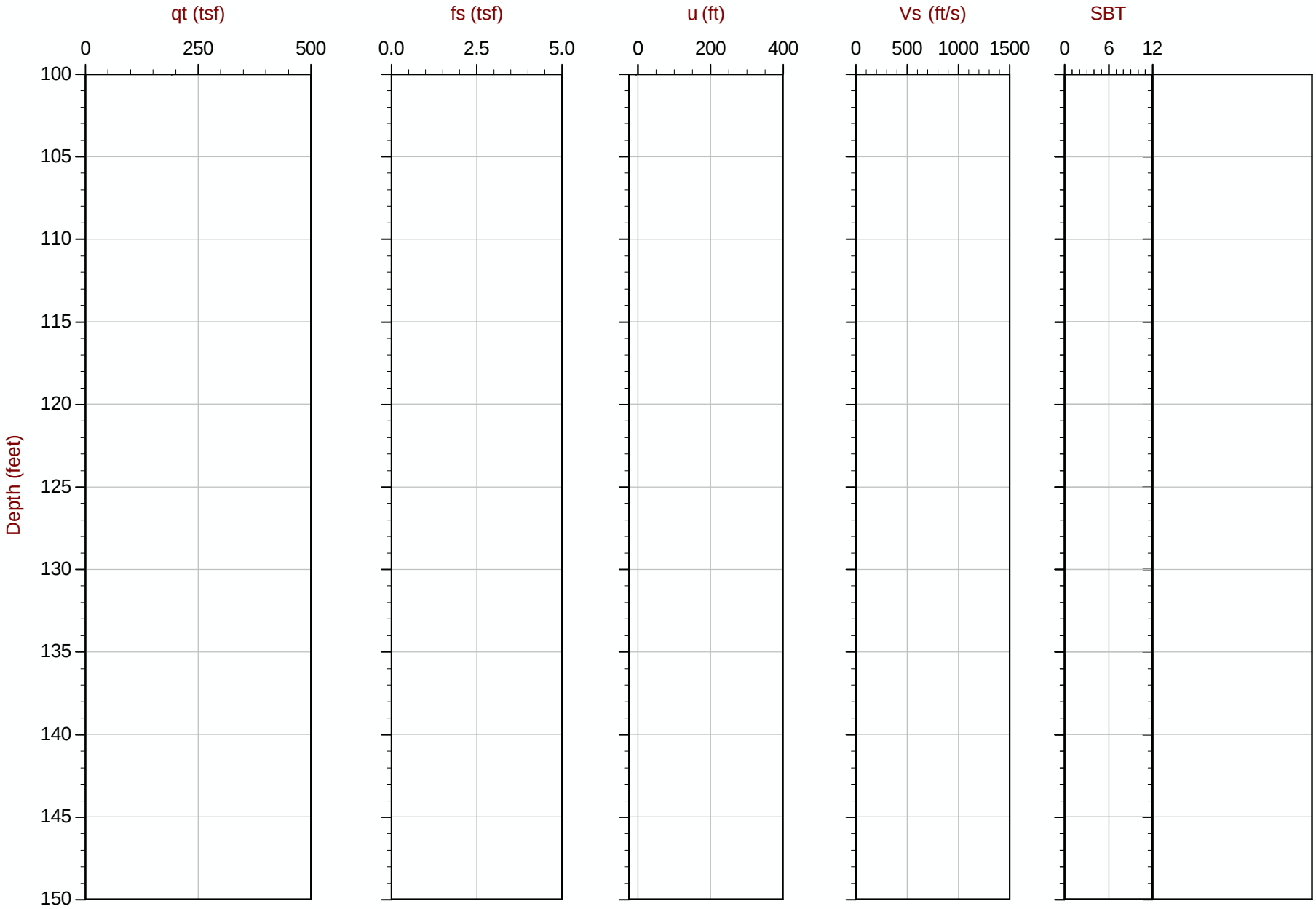
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36002° Long: W 111.78509°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 13:32
Site: I-15

Sounding: 08-AF5-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP01.COR
Unit Wt: SBT Chart Soil Zones

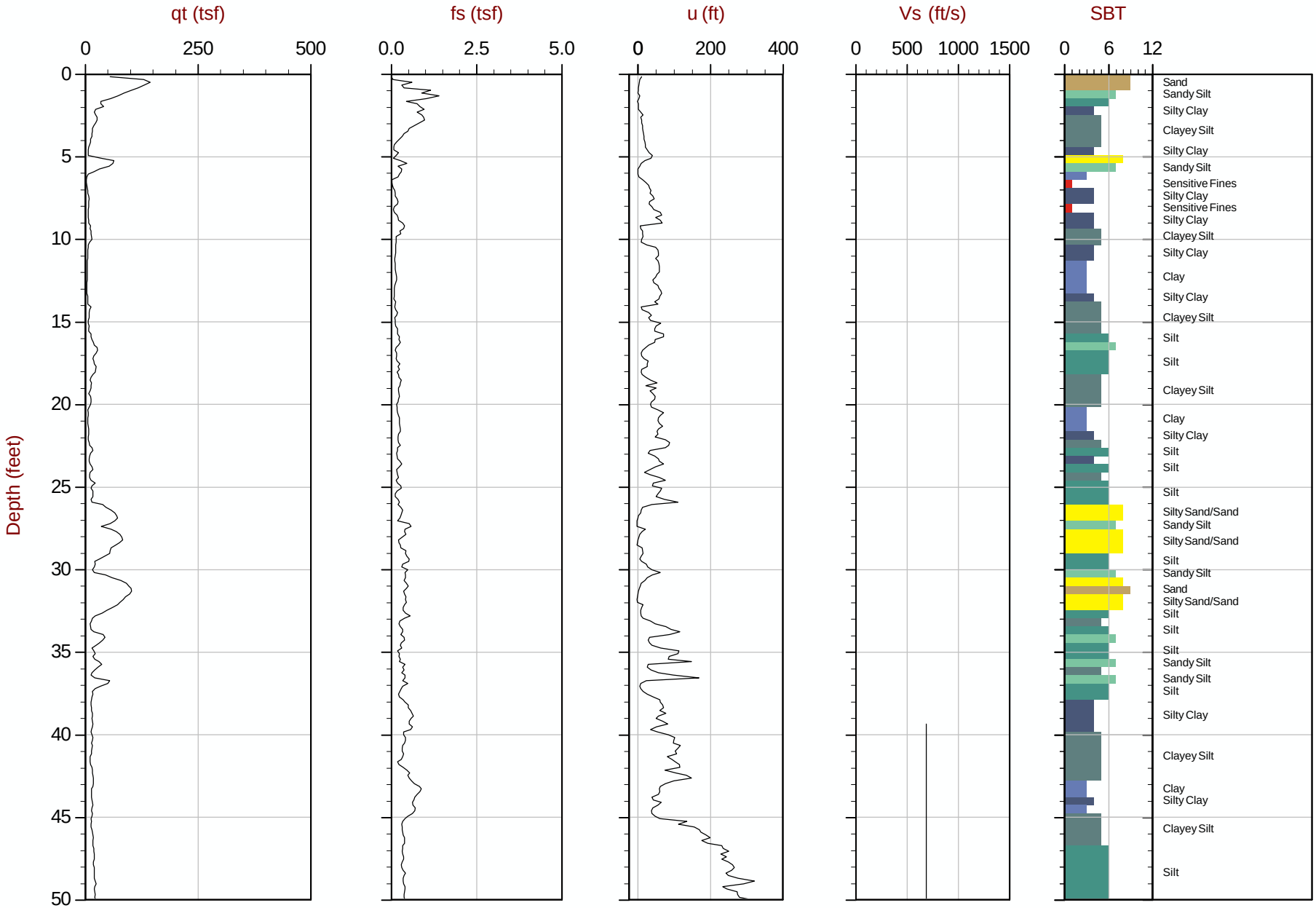
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36002° Long: W 111.78509°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 15:08
Site: I-15

Sounding: 08-AF6-C1
Cone: STD 20T AD242



Max Depth: 27.800 m / 91.21 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP02.COR
Unit Wt: SBT Chart Soil Zones

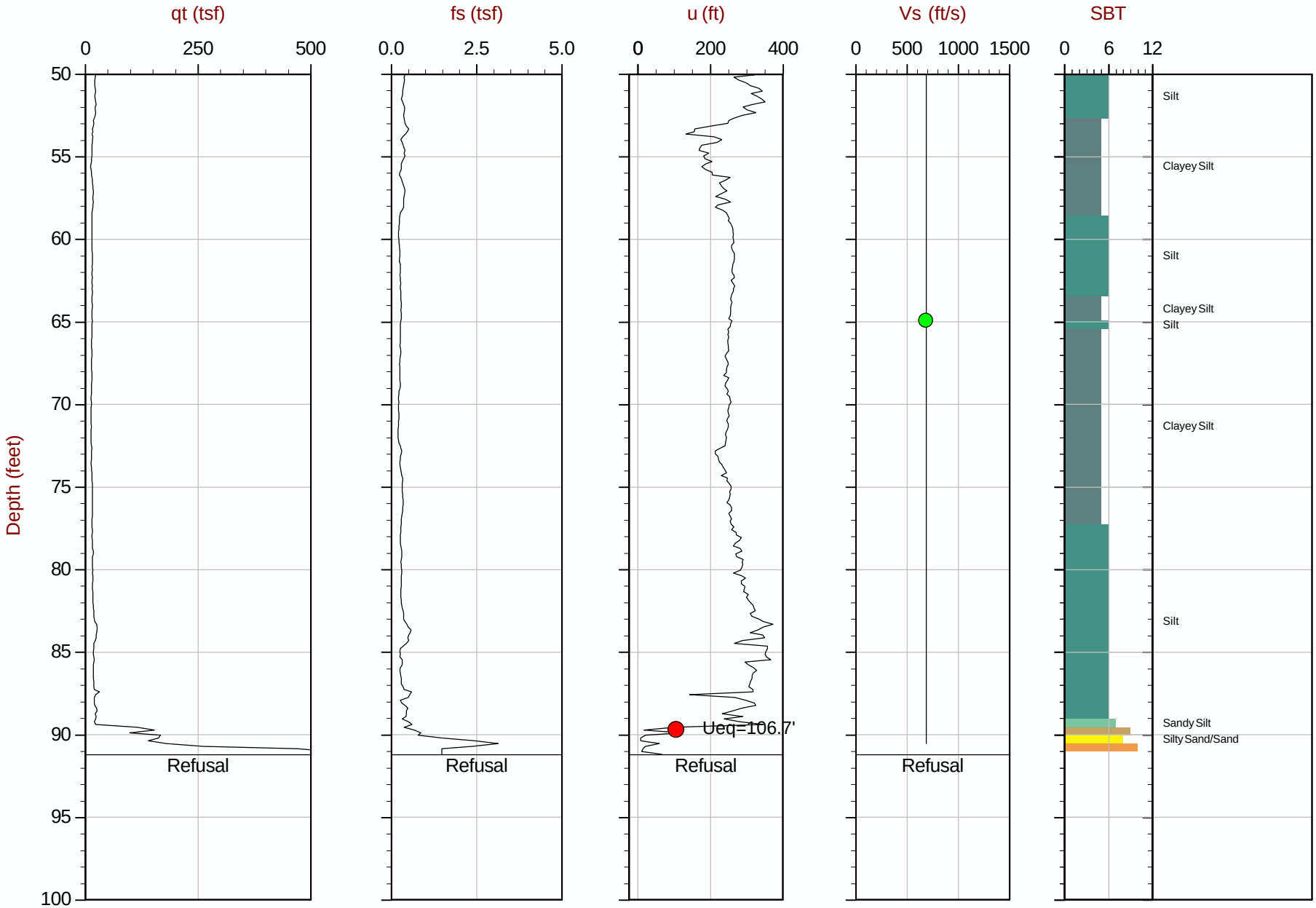
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35493° Long: W 111.77753°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:04:08 15:08
Site: I-15

Sounding: 08-AF6-C1
Cone: STD 20T AD242



Max Depth: 27.800 m / 91.21 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP02.COR
Unit Wt: SBT Chart Soil Zones

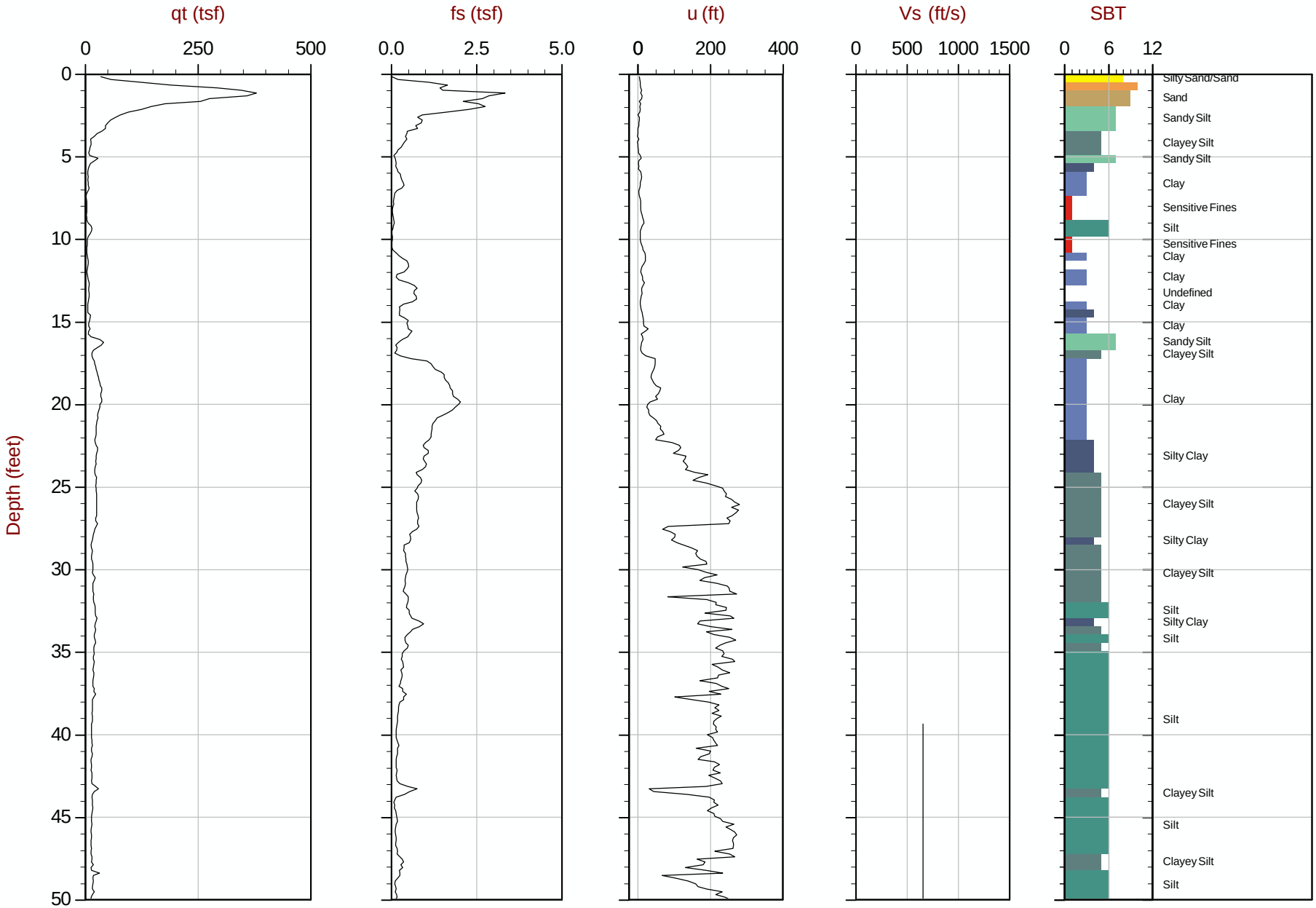
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.35493° Long: W 111.77753°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

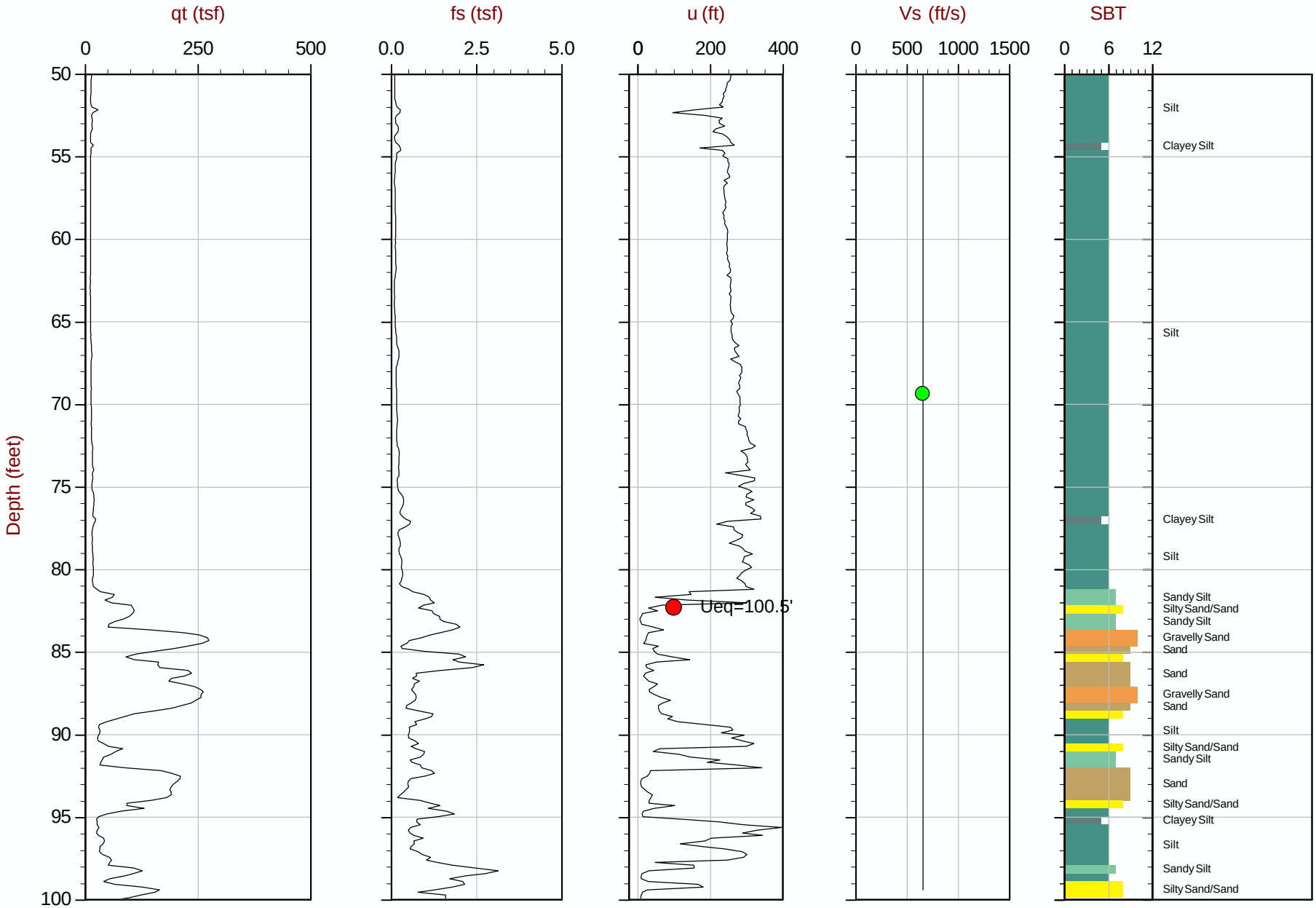
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

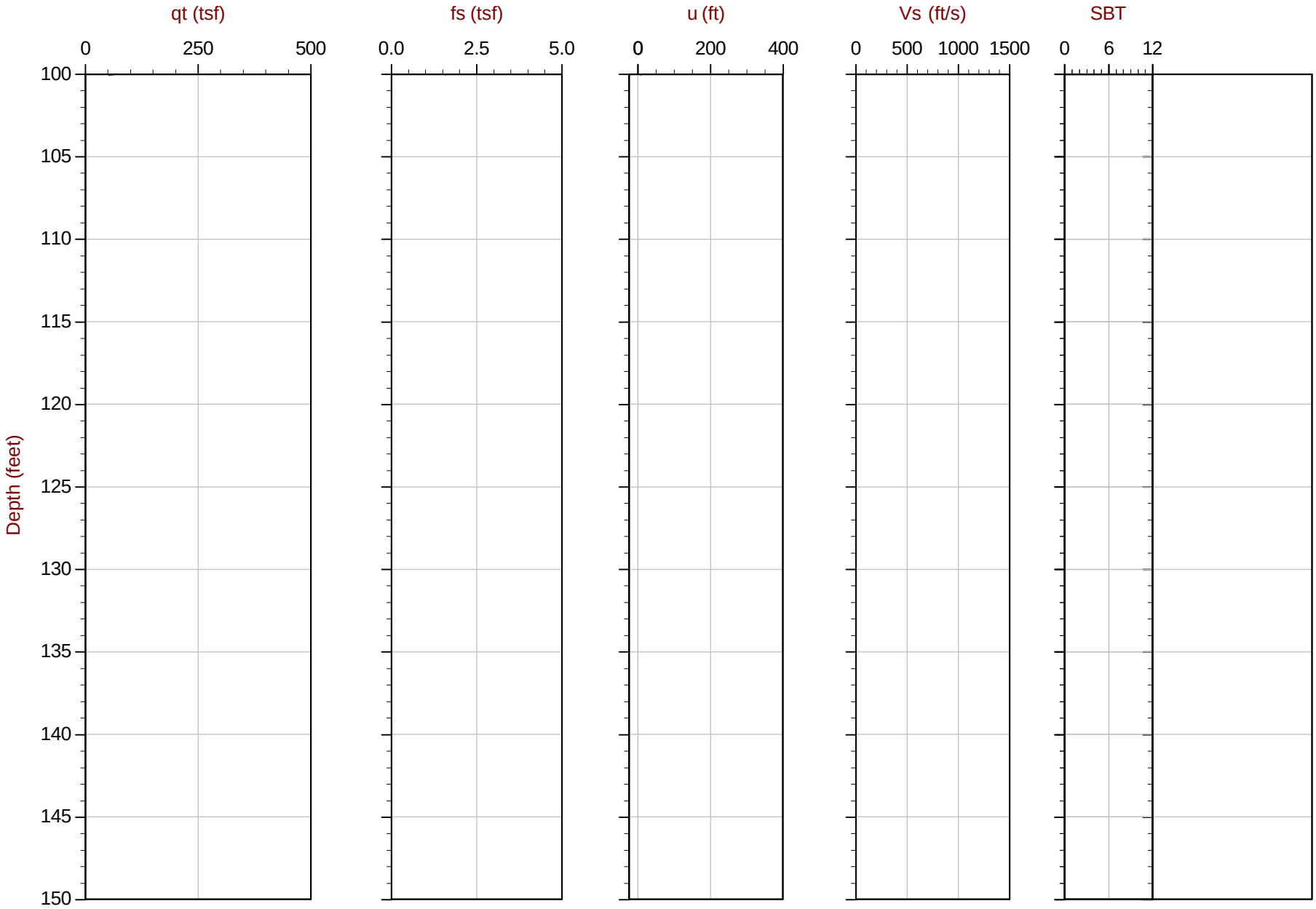
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:05:08 12:44
Site: I-15

Sounding: 08-PG2-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP04.COR
Unit Wt: SBT Chart Soil Zones

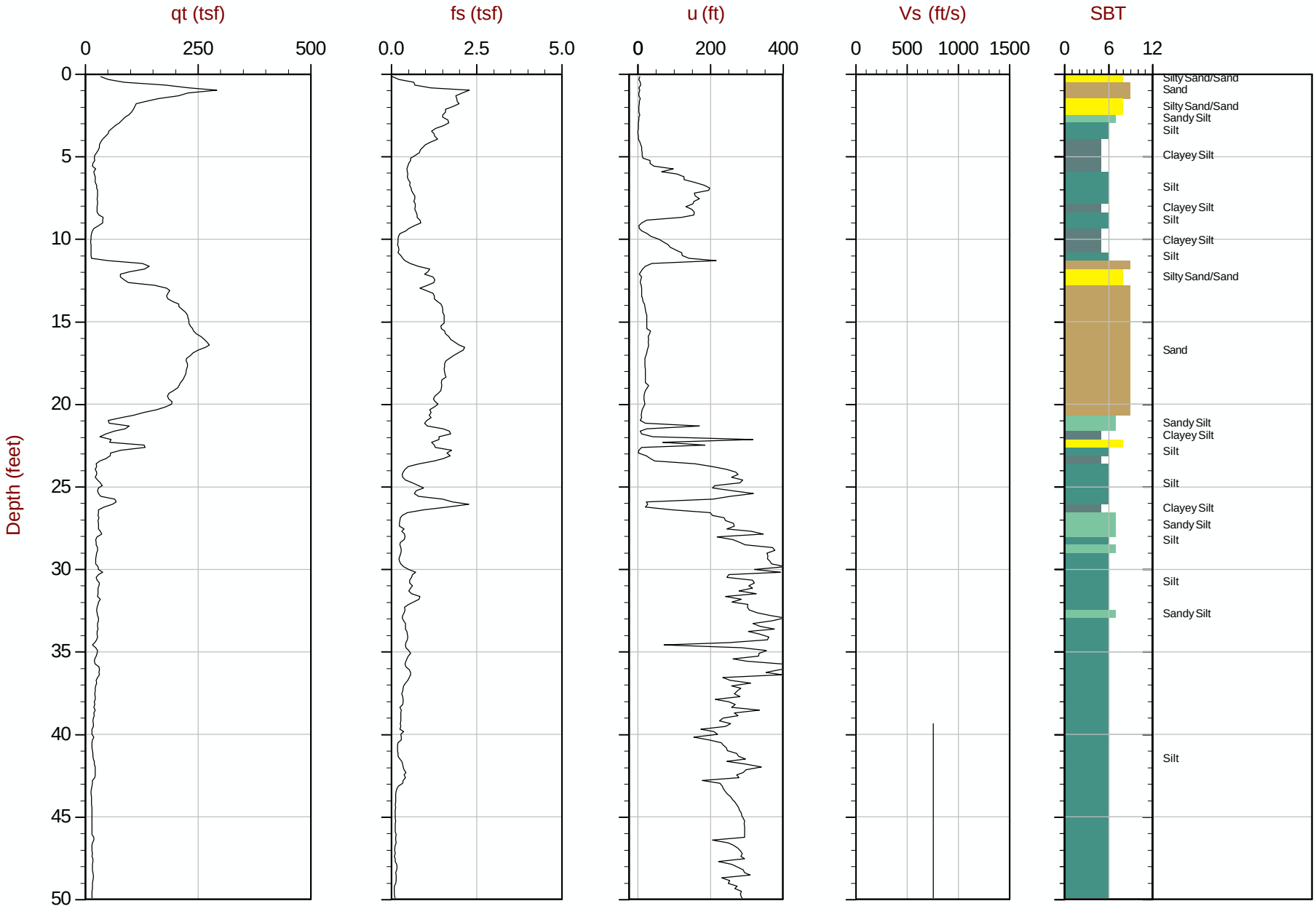
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.34490° Long: W 111.75999°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

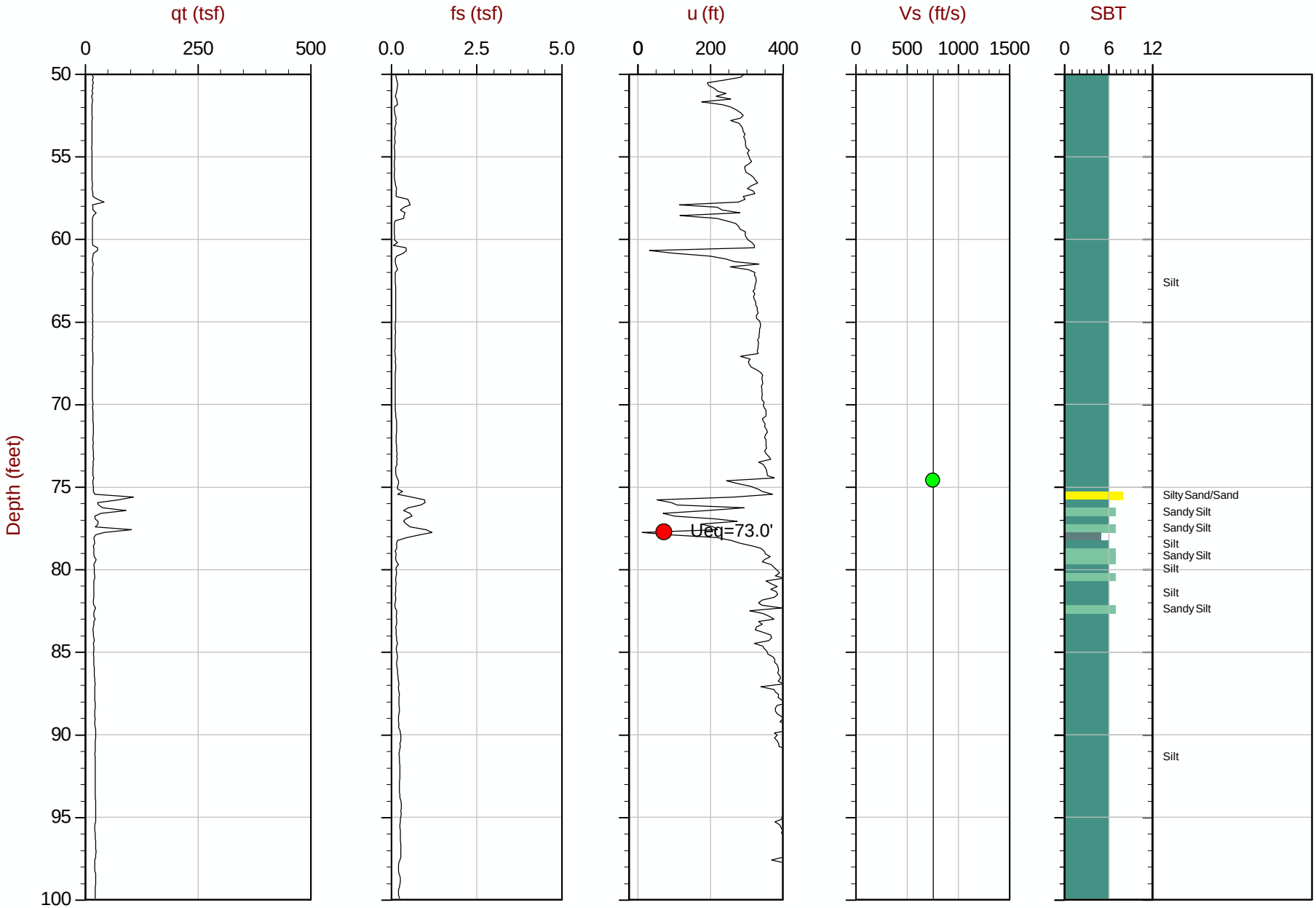
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

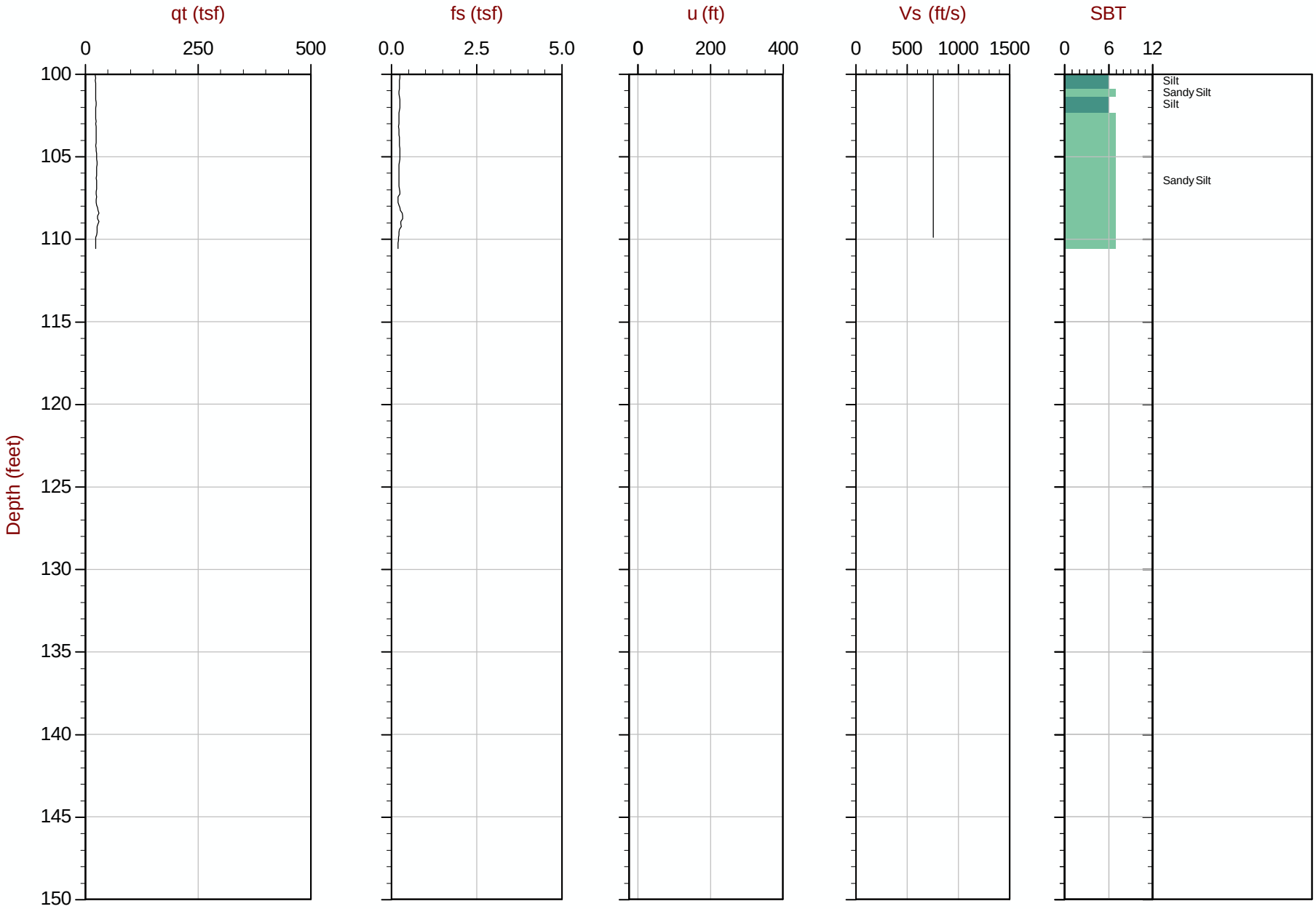
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:06:08 11:13
Site: I-15

Sounding: 08-L1-C1
Cone: STD 20T AD242



Max Depth: 33.700 m / 110.56 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP07.COR
Unit Wt: SBT Chart Soil Zones

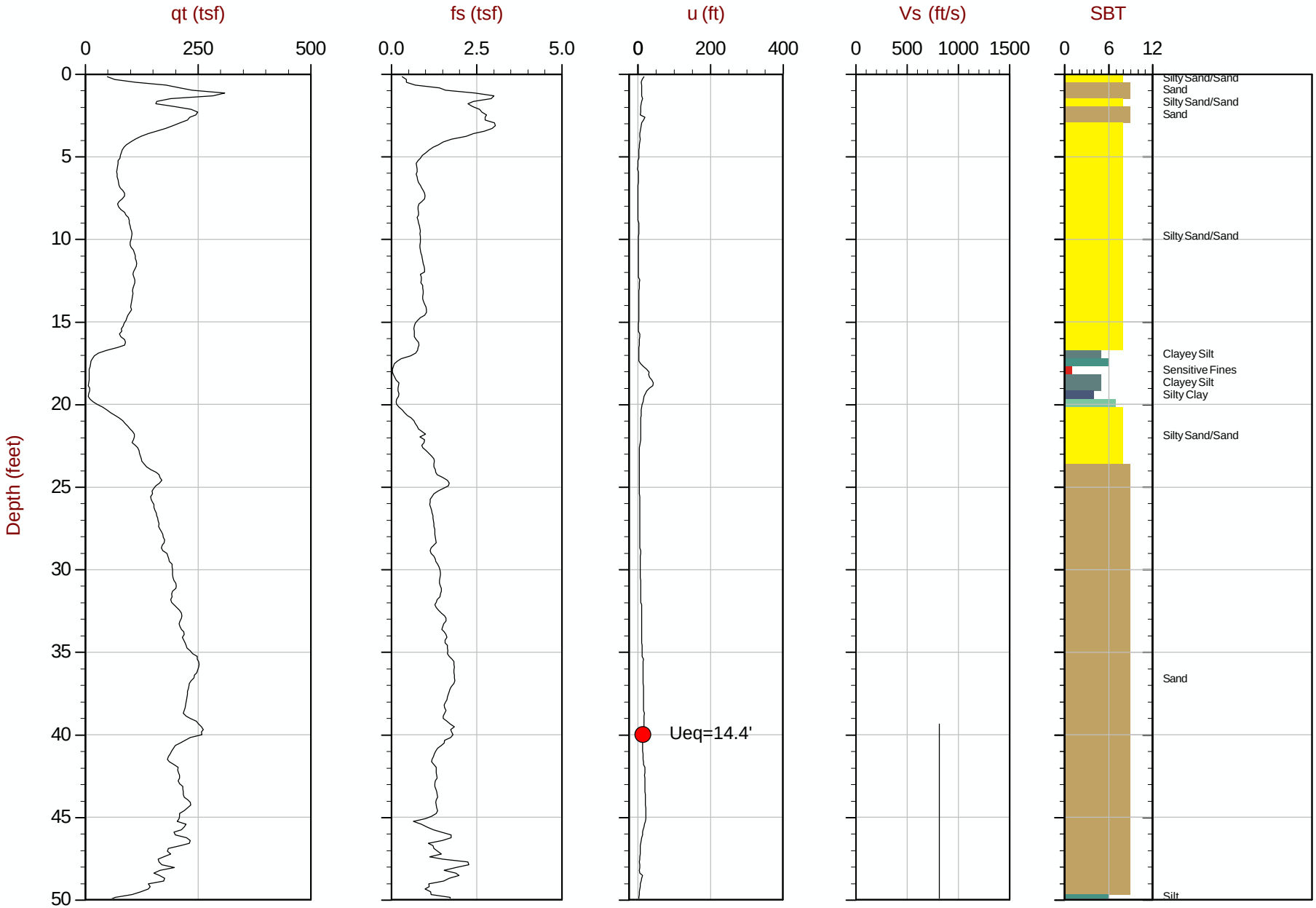
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.33343° Long: W 111.74216°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 11:44
Site: I-15

Sounding: 08-OR2-C2
Cone: STD 20T AD242



Max Depth: 22.700 m / 74.47 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP09.COR
Unit Wt: SBT Chart Soil Zones

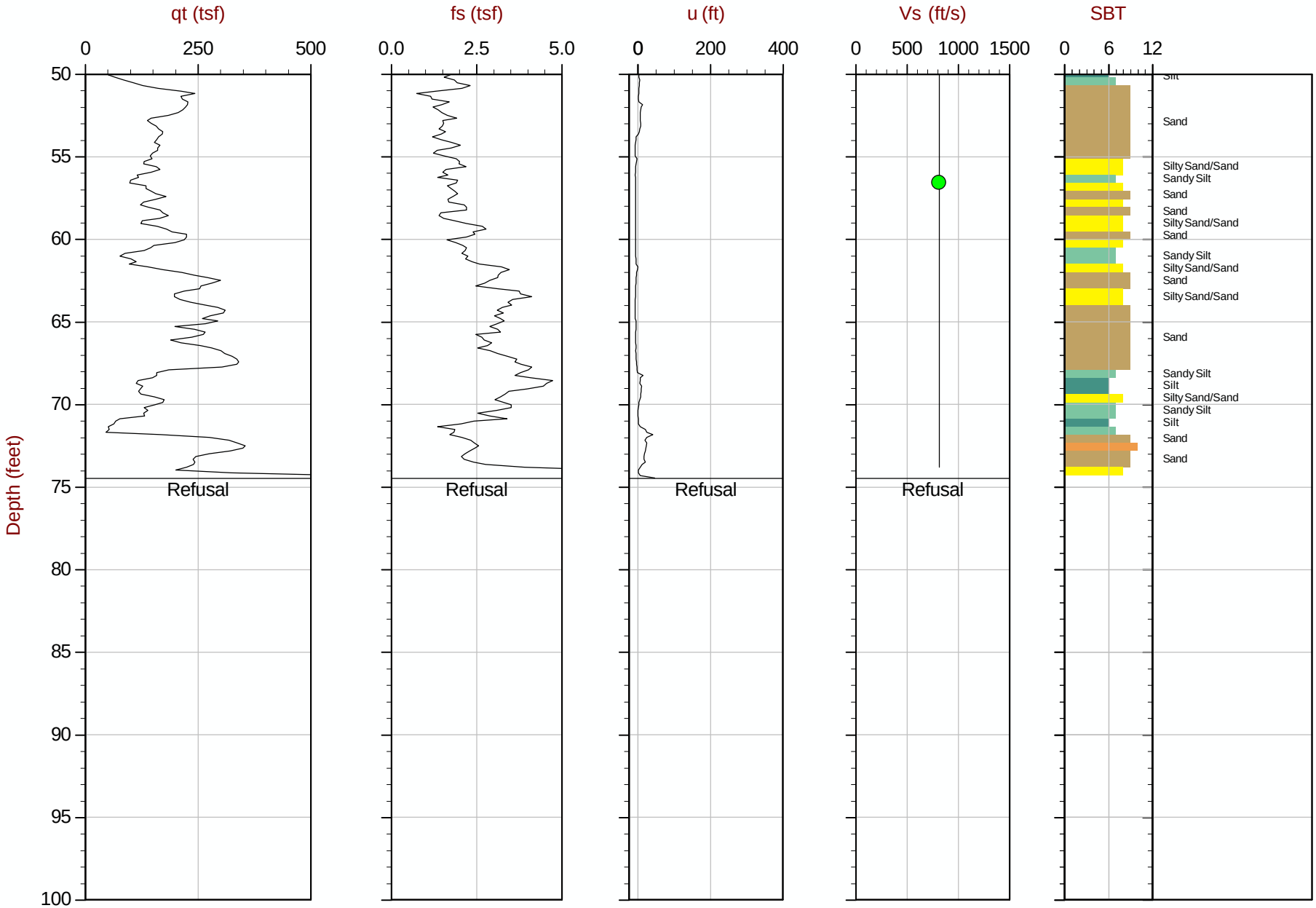
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31910° Long: W 111.72668°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:07:08 11:44
Site: I-15

Sounding: 08-OR2-C2
Cone: STD 20T AD242



Max Depth: 22.700 m / 74.47 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP09.COR
Unit Wt: SBT Chart Soil Zones

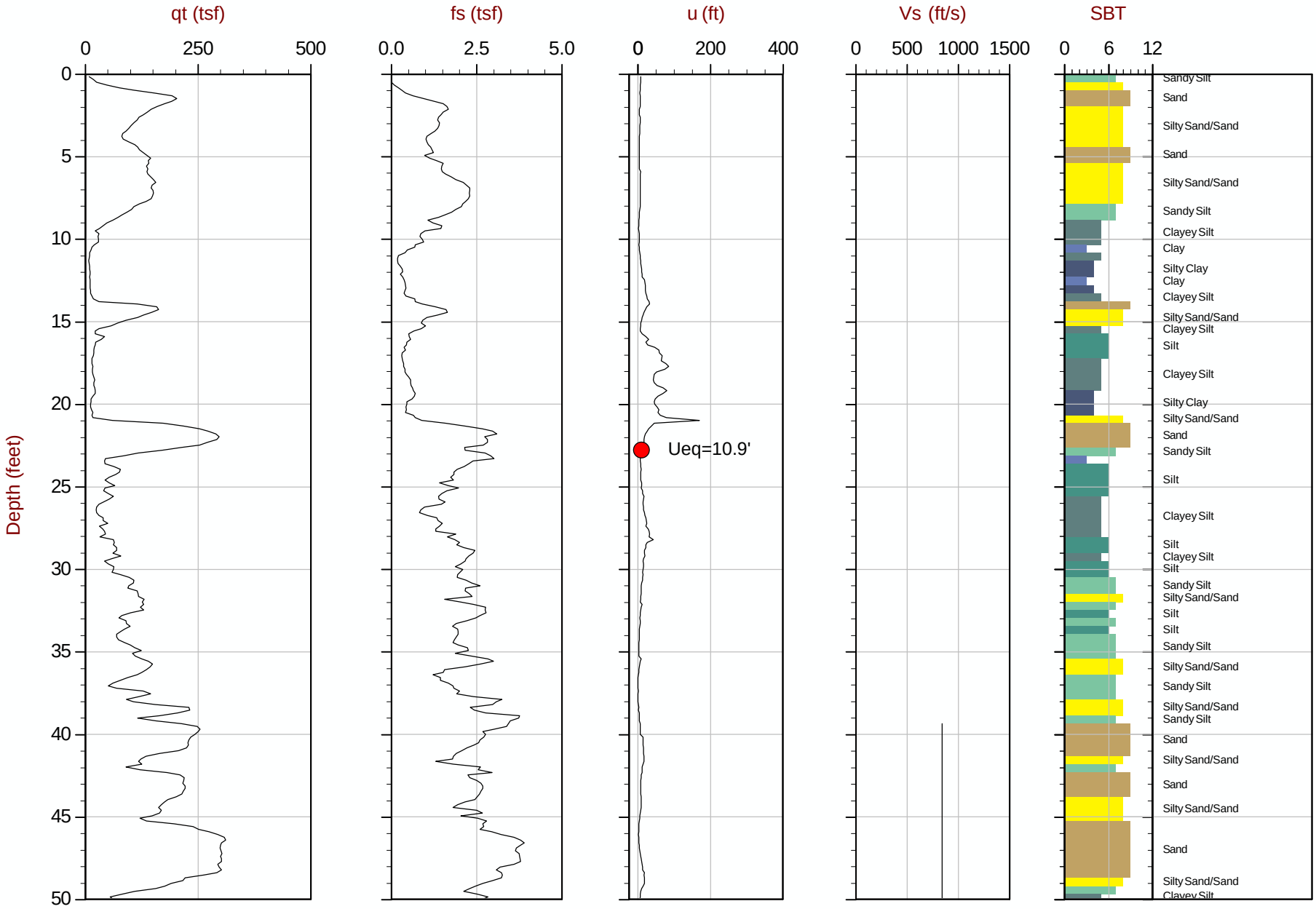
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31910° Long: W 111.72668°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

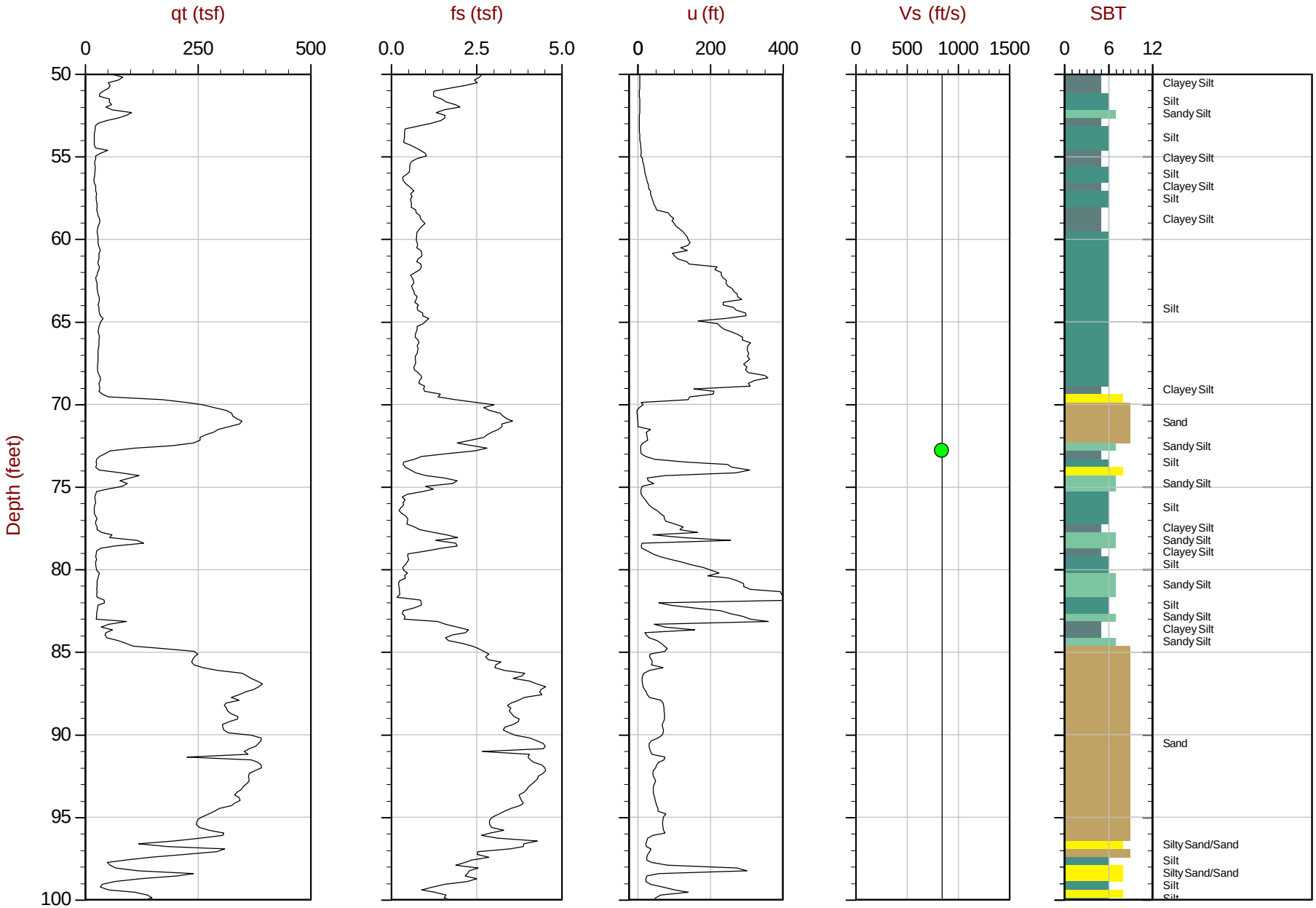
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

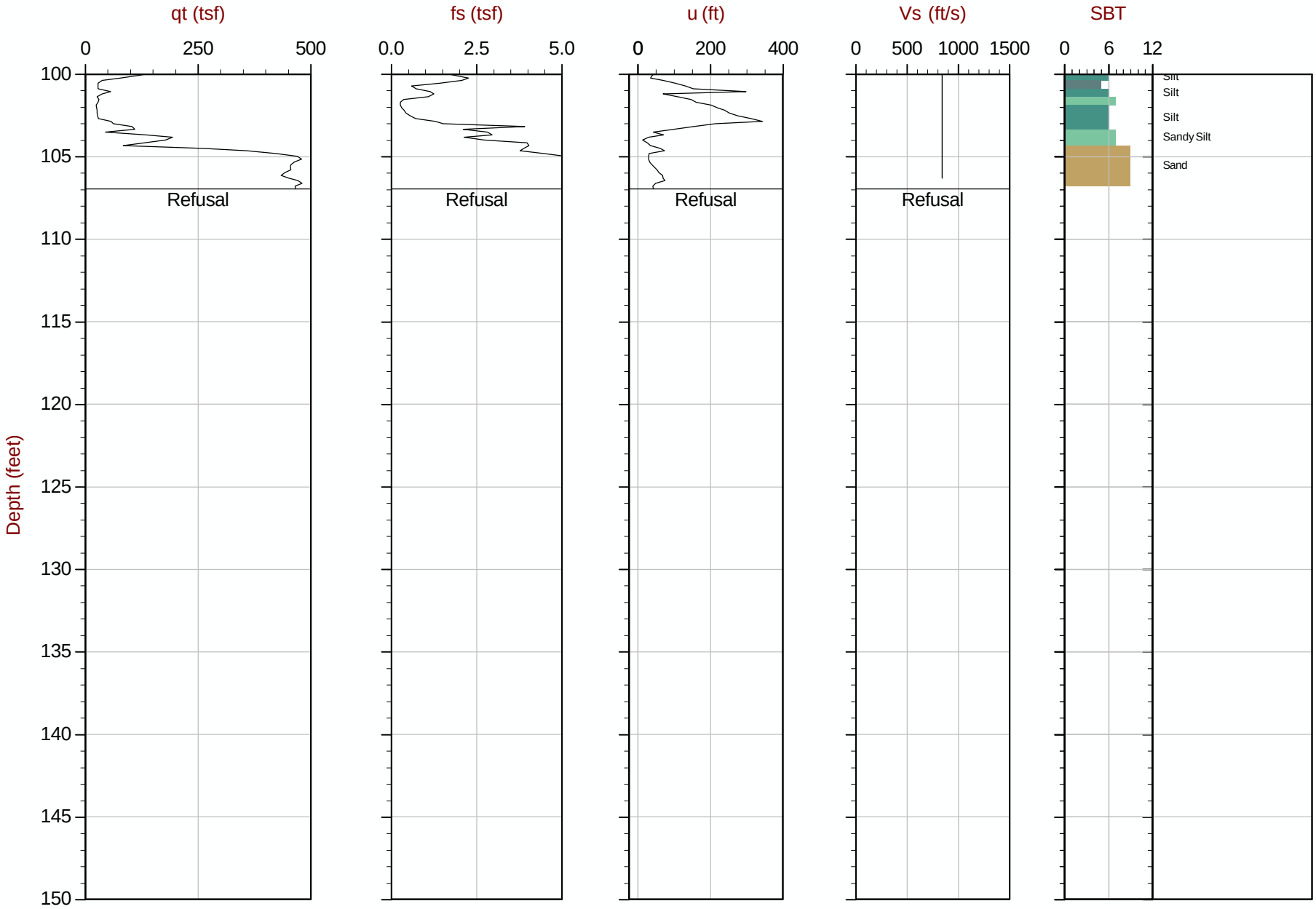
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 08:06
Site: I-15

Sounding: 08-OR1-C2
Cone: STD 20T AD242



Max Depth: 32.600 m / 106.95 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP11.COR
Unit Wt: SBT Chart Soil Zones

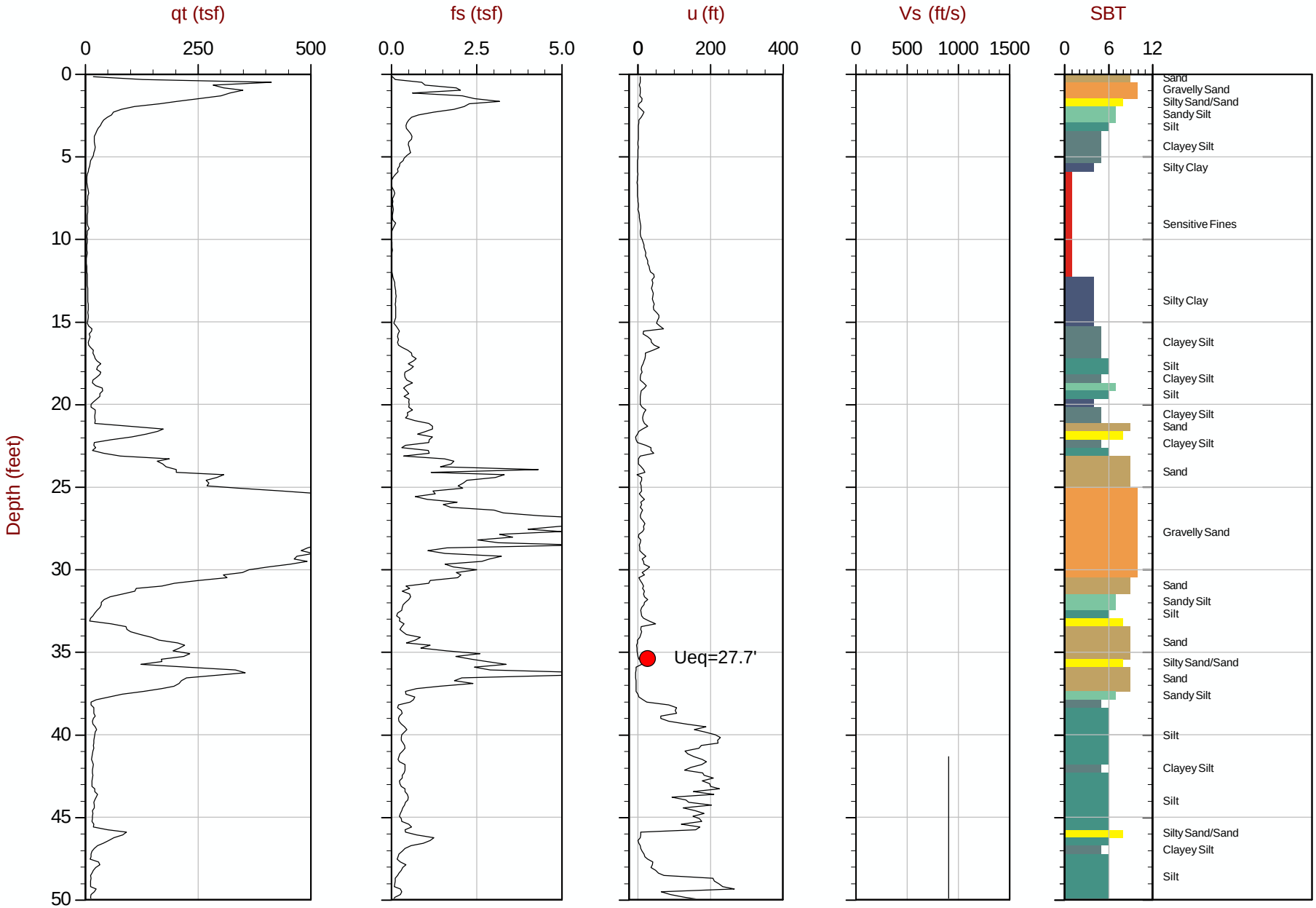
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32677° Long: W 111.73110°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 10:21
Site: I-15

Sounding: 08-AF4-C1
Cone: STD 20T AD242



Max Depth: 29.700 m / 97.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP12.COR
Unit Wt: SBT Chart Soil Zones

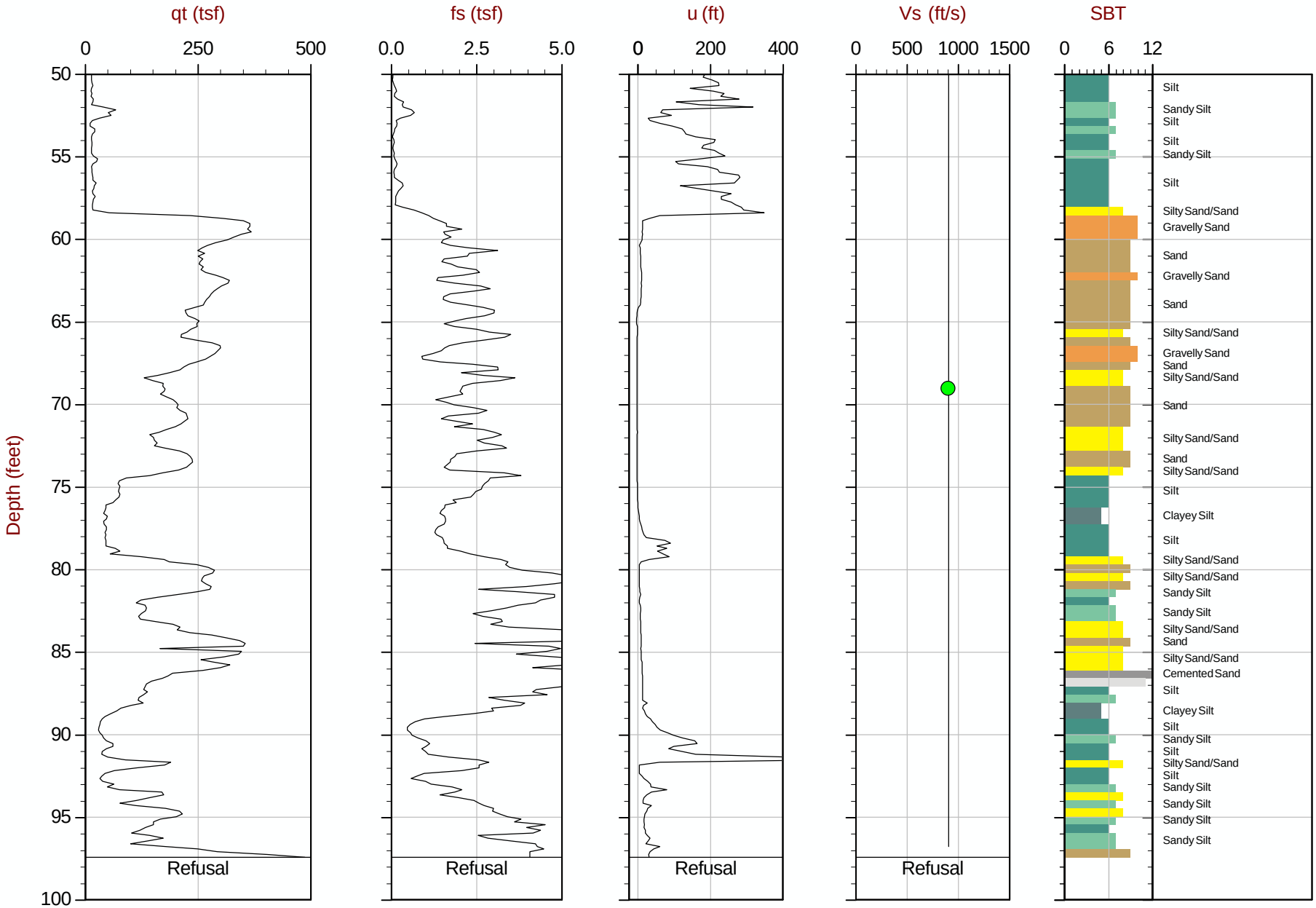
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36735° Long: W 111.79491°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 10:21
Site: I-15

Sounding: 08-AF4-C1
Cone: STD 20T AD242



Max Depth: 29.700 m / 97.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP12.COR
Unit Wt: SBT Chart Soil Zones

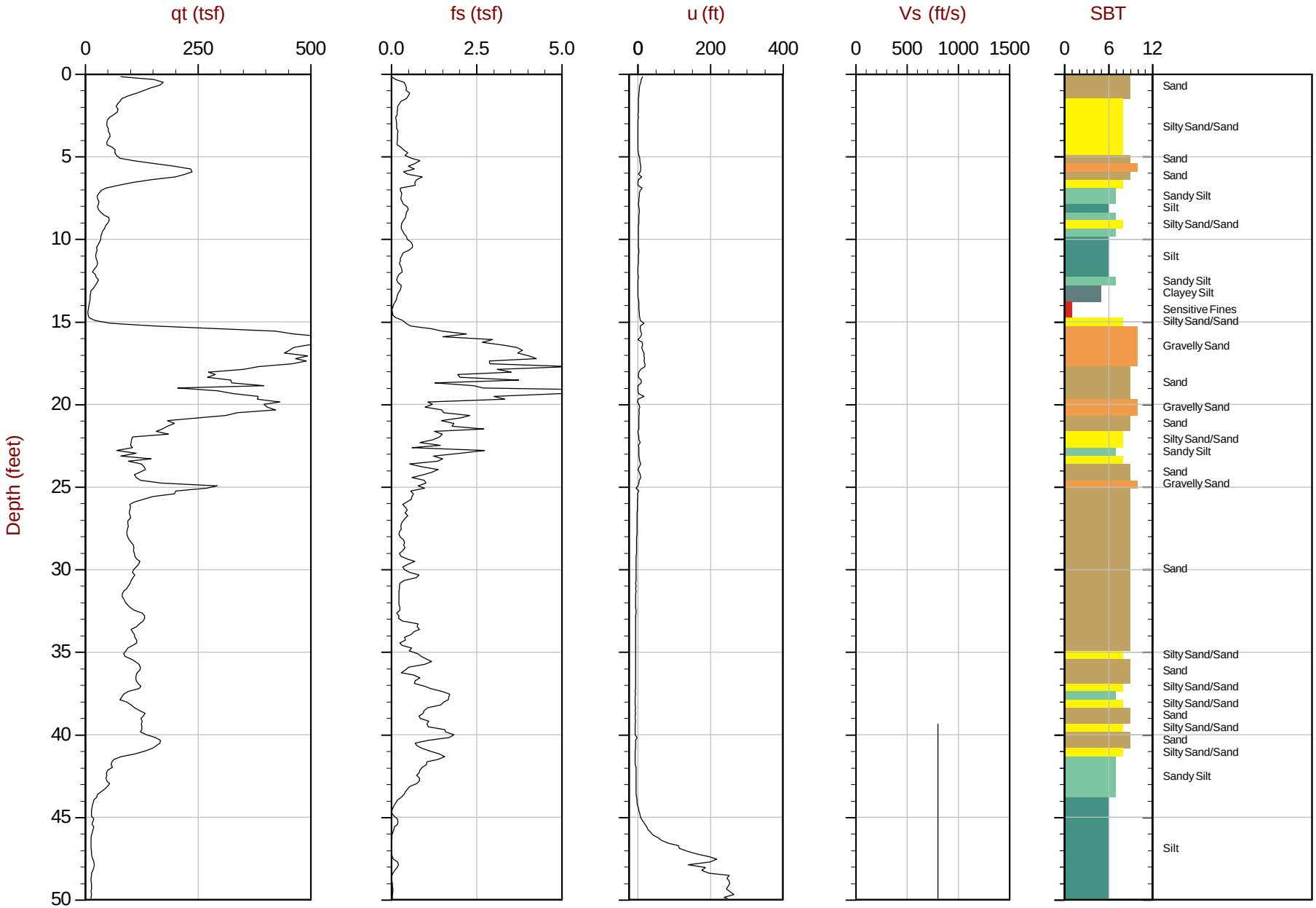
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.36735° Long: W 111.79491°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 13:11
Site: I-15

Sounding: 08-AF2-C1
Cone: STD 20T AD242



Max Depth: 25.250 m / 82.84 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP14.COR
Unit Wt: SBT Chart Soil Zones

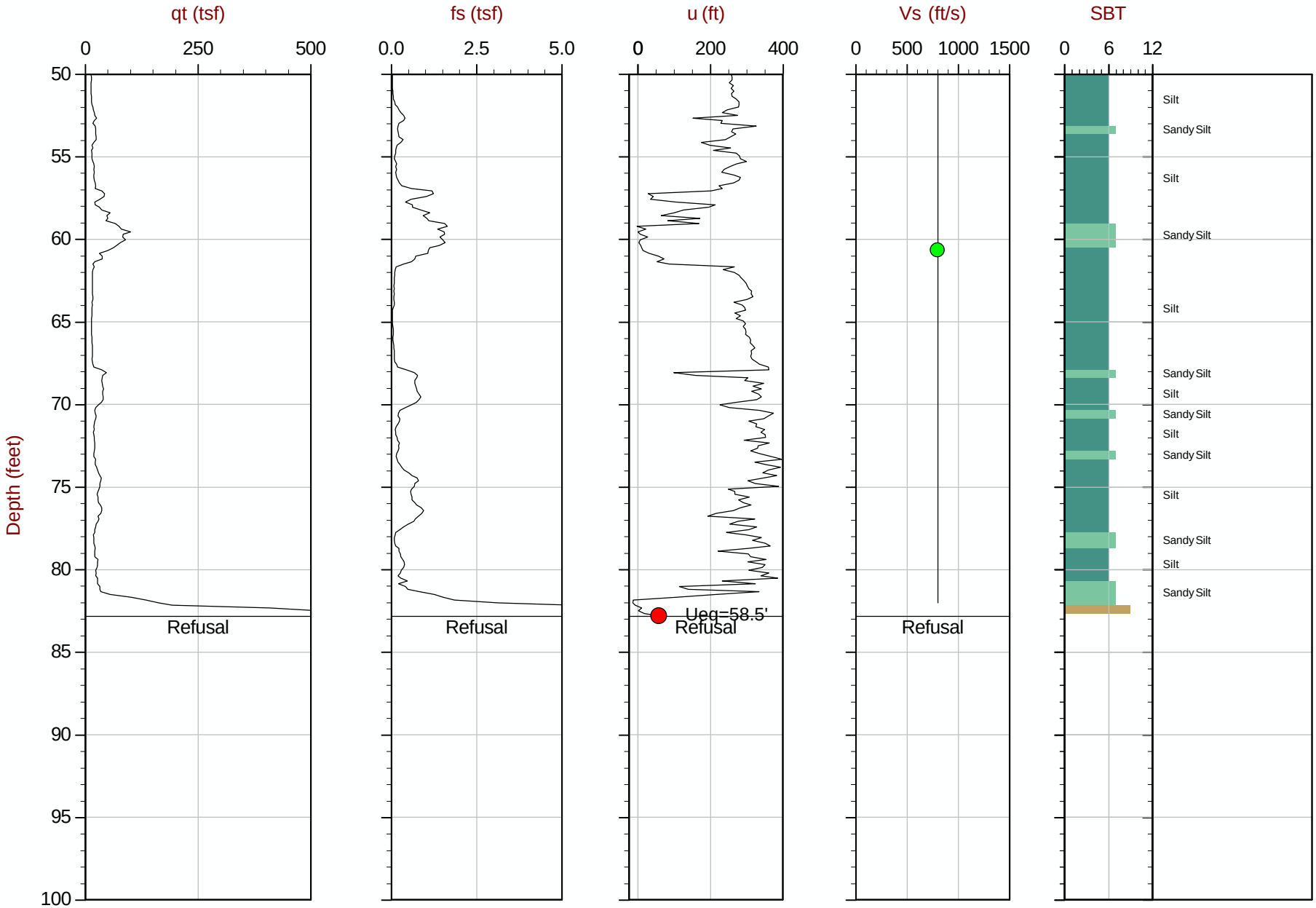
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37255° Long: W 111.80731°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:11:08 13:11
Site: I-15

Sounding: 08-AF2-C1
Cone: STD 20T AD242



Max Depth: 25.250 m / 82.84 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP14.COR
Unit Wt: SBT Chart Soil Zones

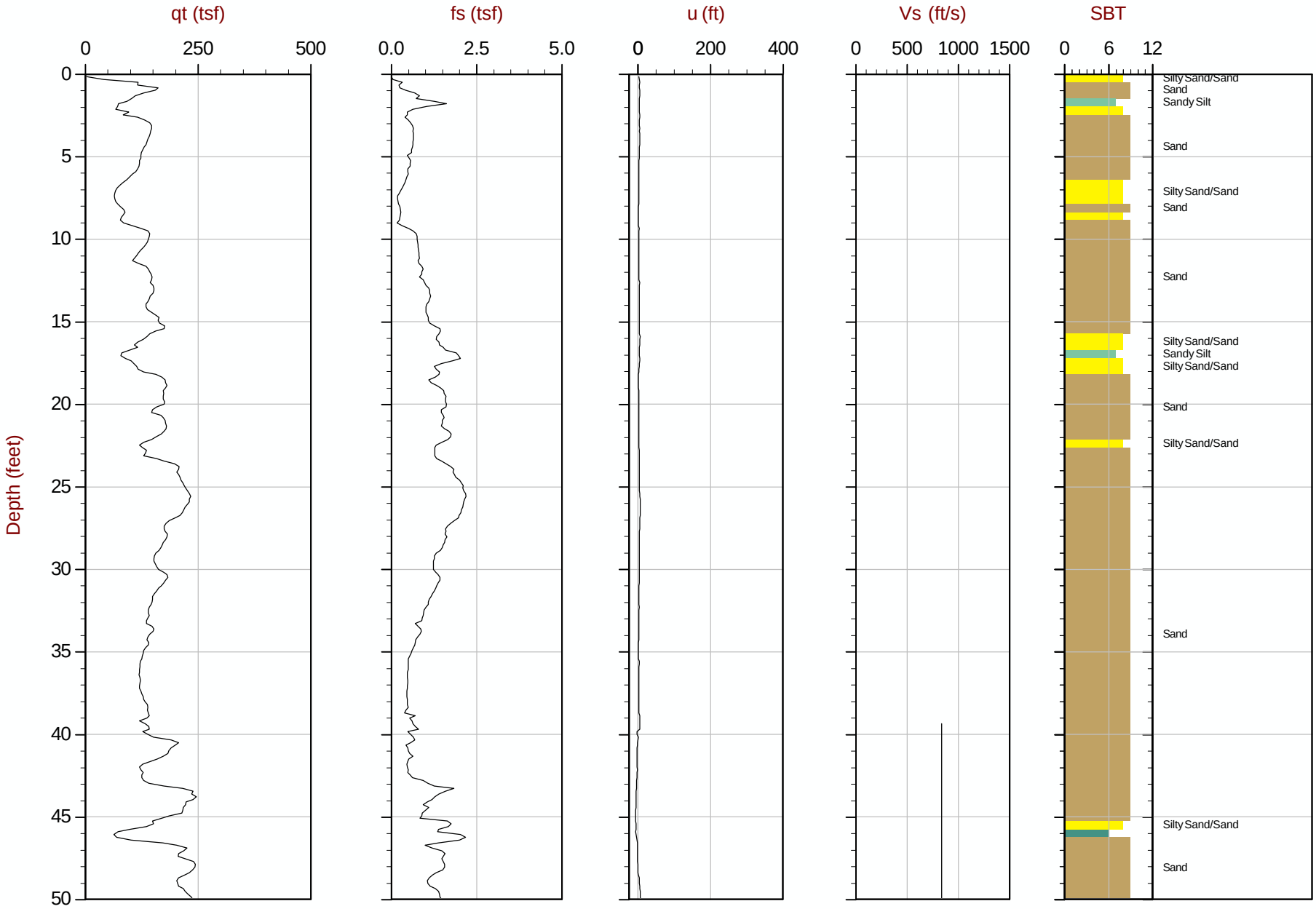
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.37255° Long: W 111.80731°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 08:32
Site: I-15

Sounding: 08-OR3-C2
Cone: STD 20T AD242



Max Depth: 22.300 m / 73.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP15.COR
Unit Wt: SBT Chart Soil Zones

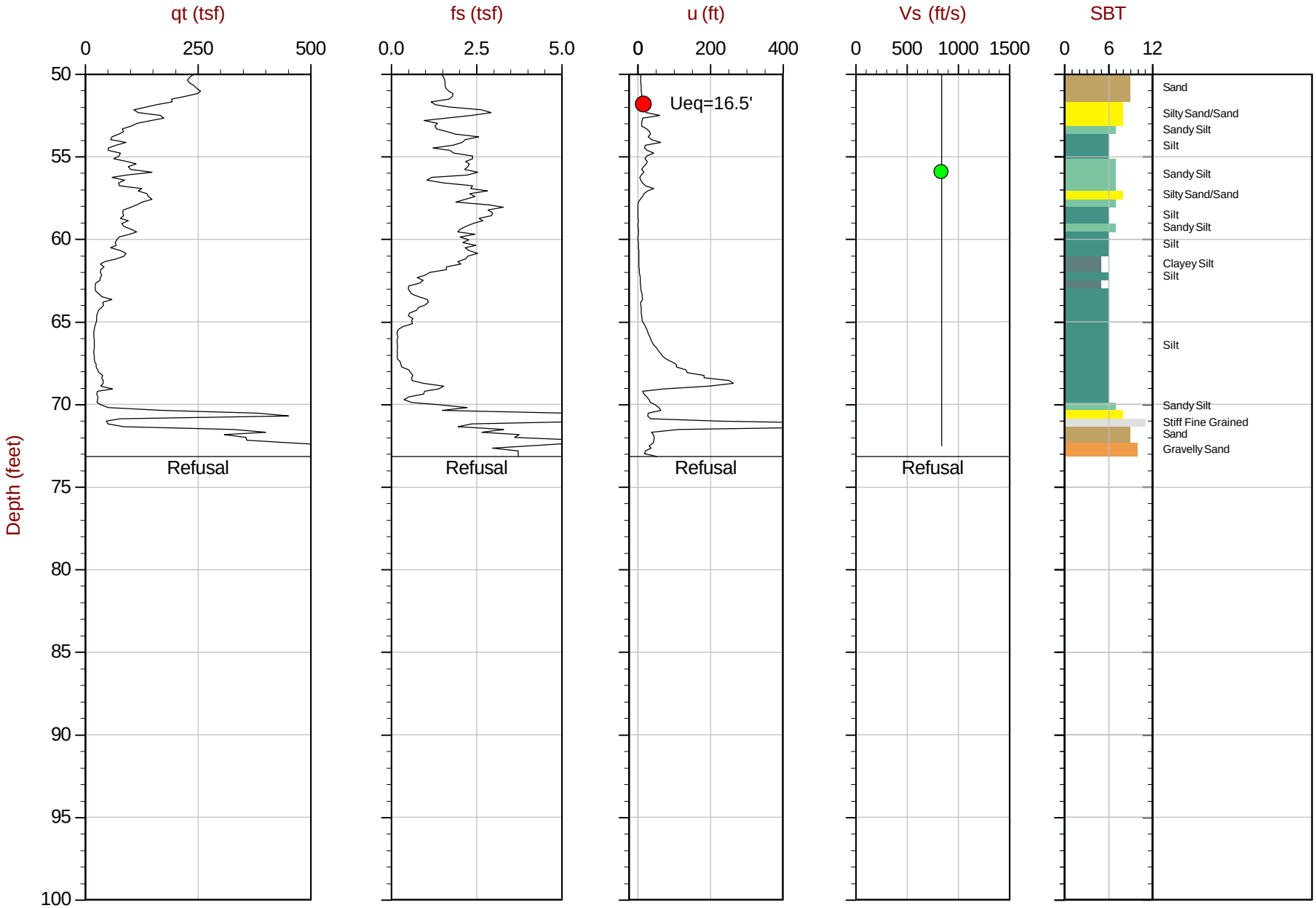
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31252° Long: W 111.72525°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:12:08 08:32
Site: I-15

Sounding: 08-OR3-C2
Cone: STD 20T AD242



Max Depth: 22.300 m / 73.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP15.COR
Unit Wt: SBT Chart Soil Zones

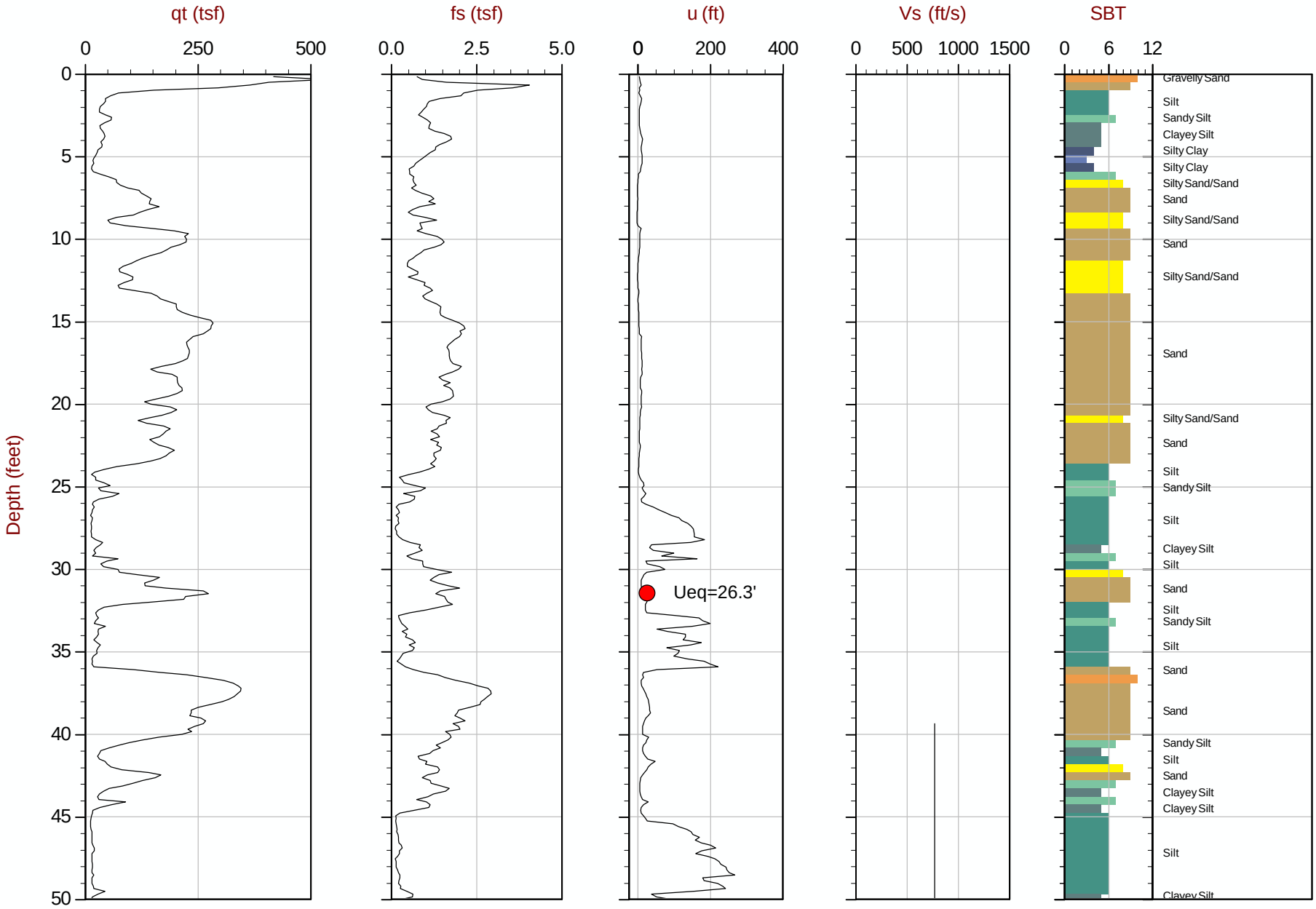
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.31252° Long: W 111.72525°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

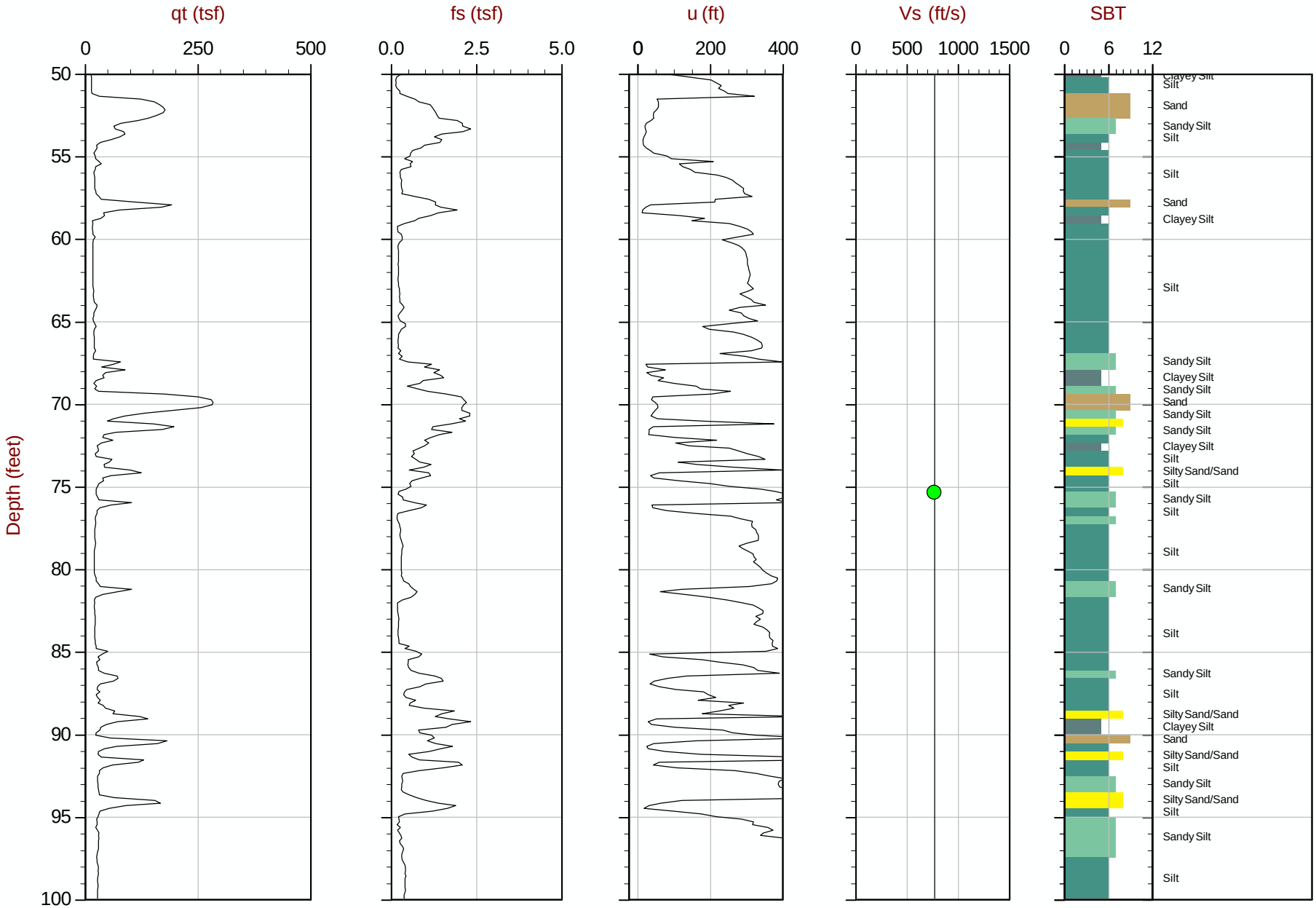
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

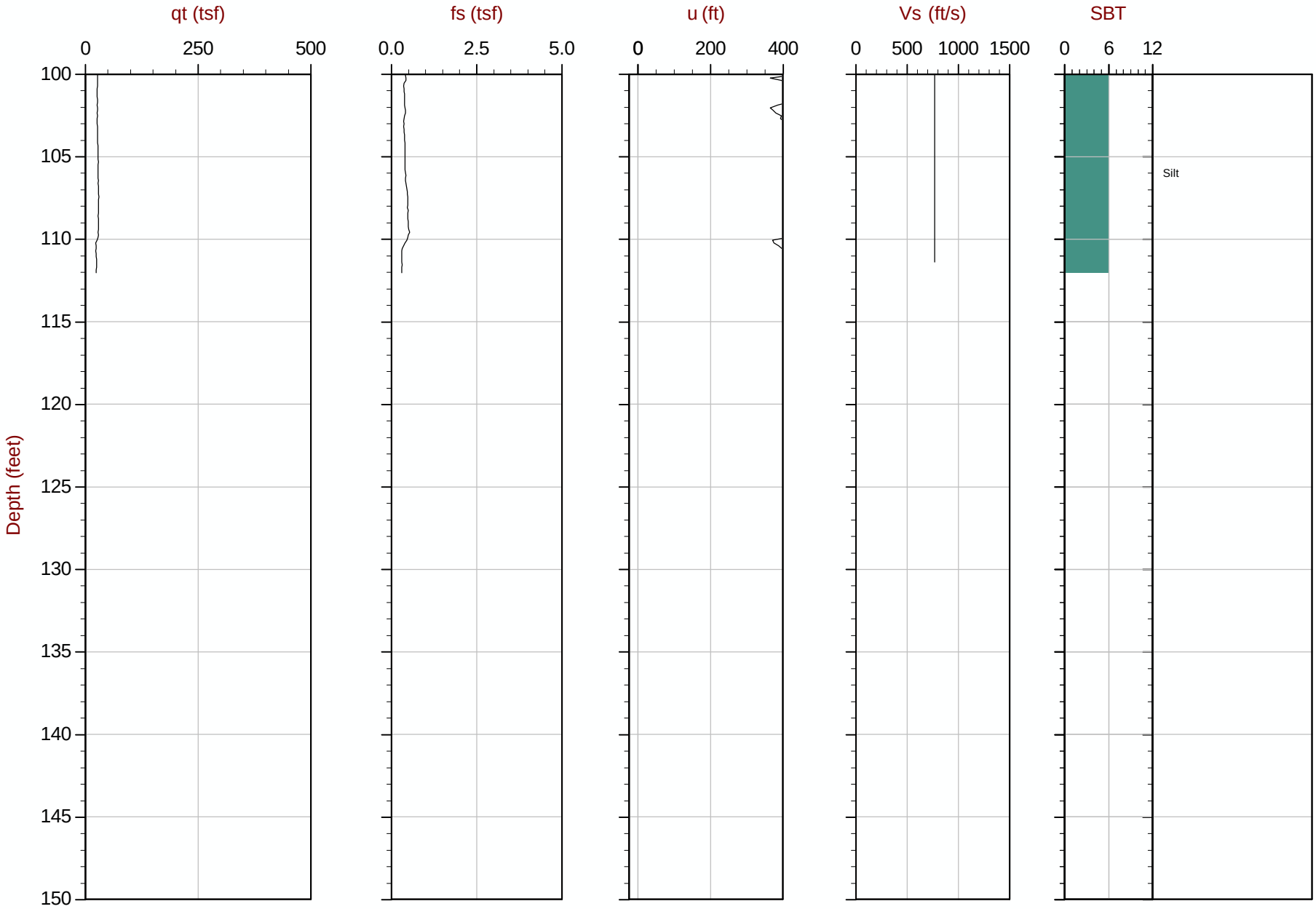
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 09:43
Site: I-15

Sounding: 08-L2-C2
Cone: STD 20T AD242



Max Depth: 34.150 m / 112.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP18.COR
Unit Wt: SBT Chart Soil Zones

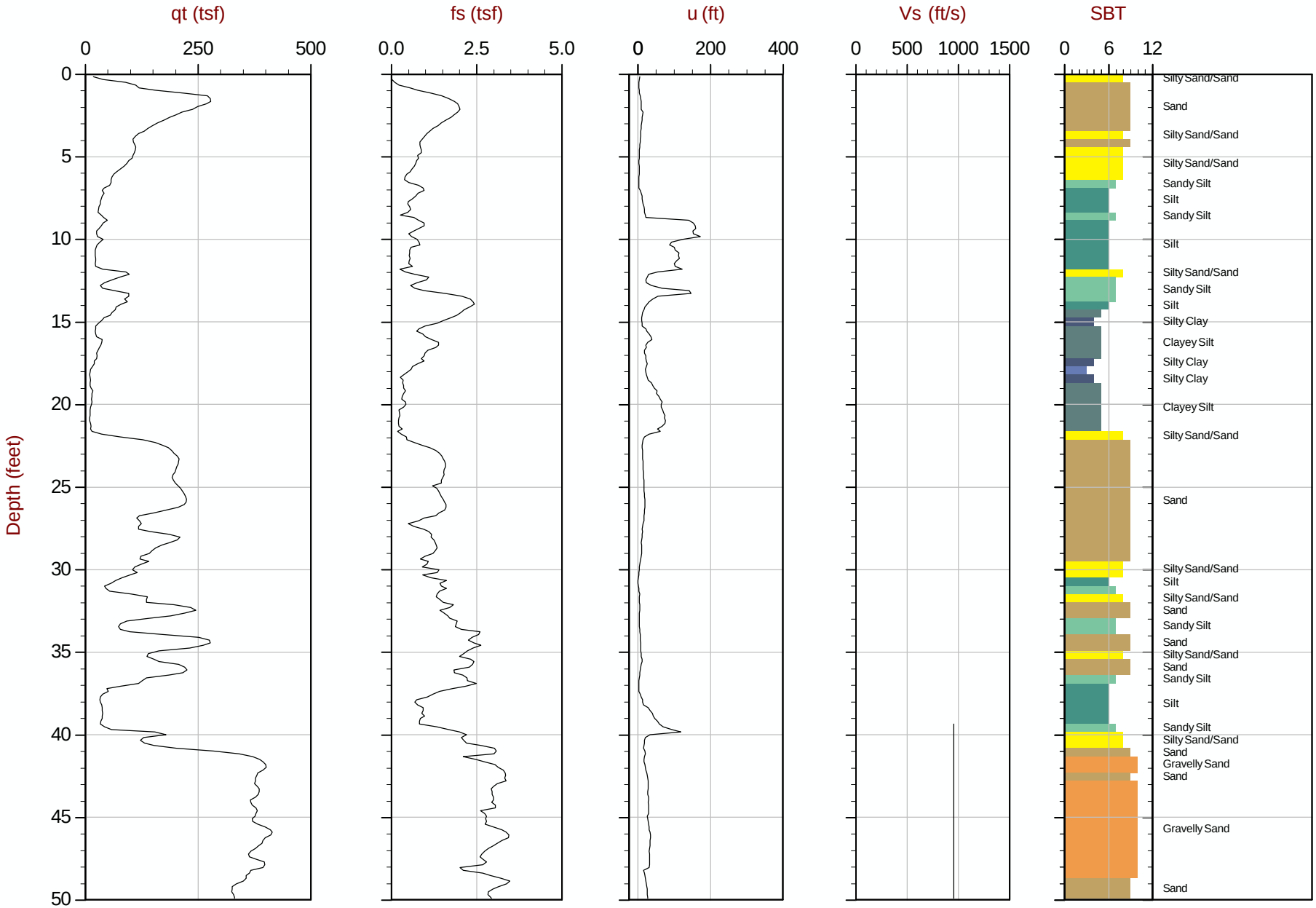
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.32992° Long: W 111.73815°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 11:34
Site: I-15

Sounding: 08-OR5-C2
Cone: STD 20T AD242



Max Depth: 25.800 m / 84.64 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP19.COR
Unit Wt: SBT Chart Soil Zones

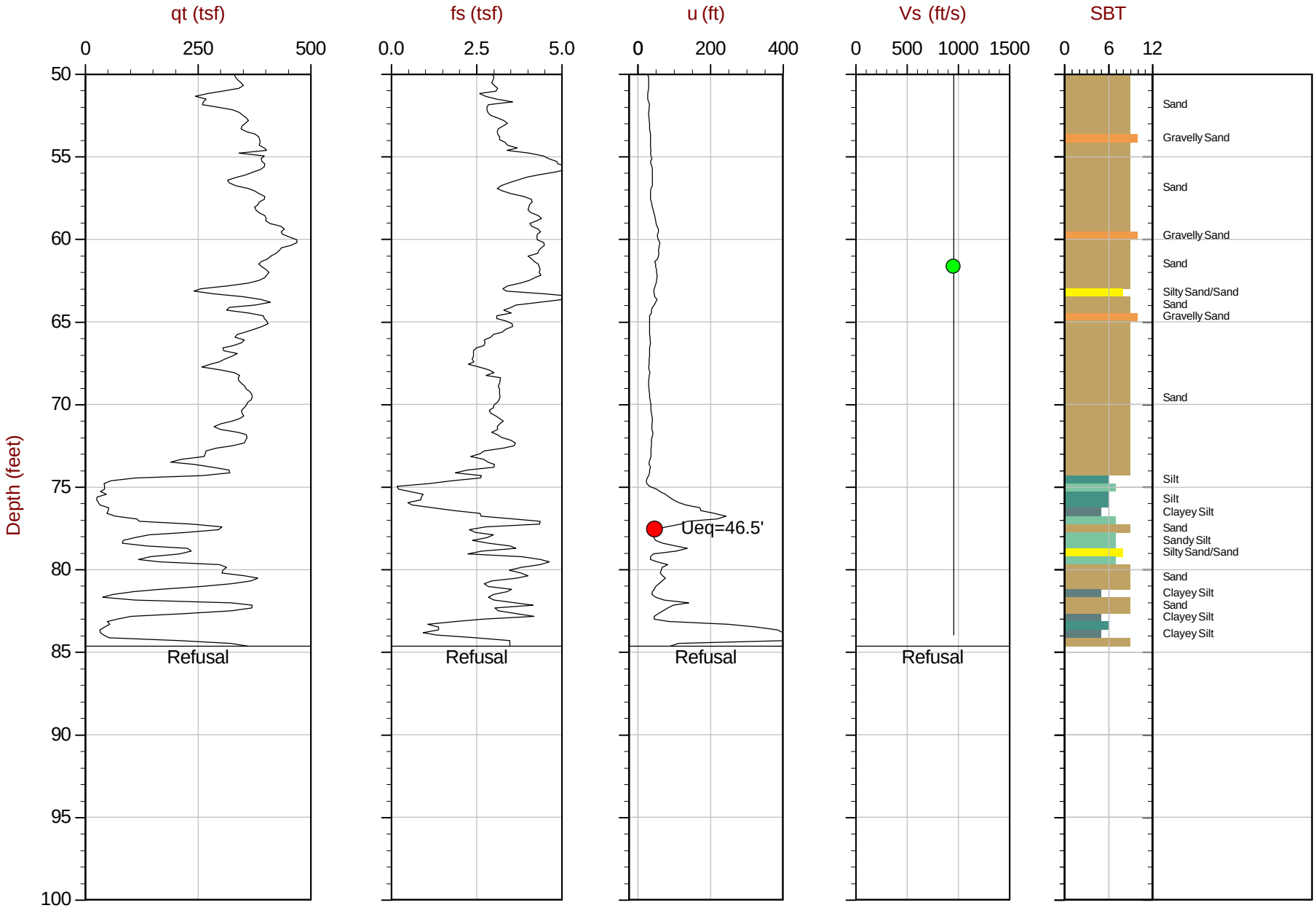
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29667° Long: W 111.72604°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 11:34
Site: I-15

Sounding: 08-OR5-C2
Cone: STD 20T AD242



Max Depth: 25.800 m / 84.64 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP19.COR
Unit Wt: SBT Chart Soil Zones

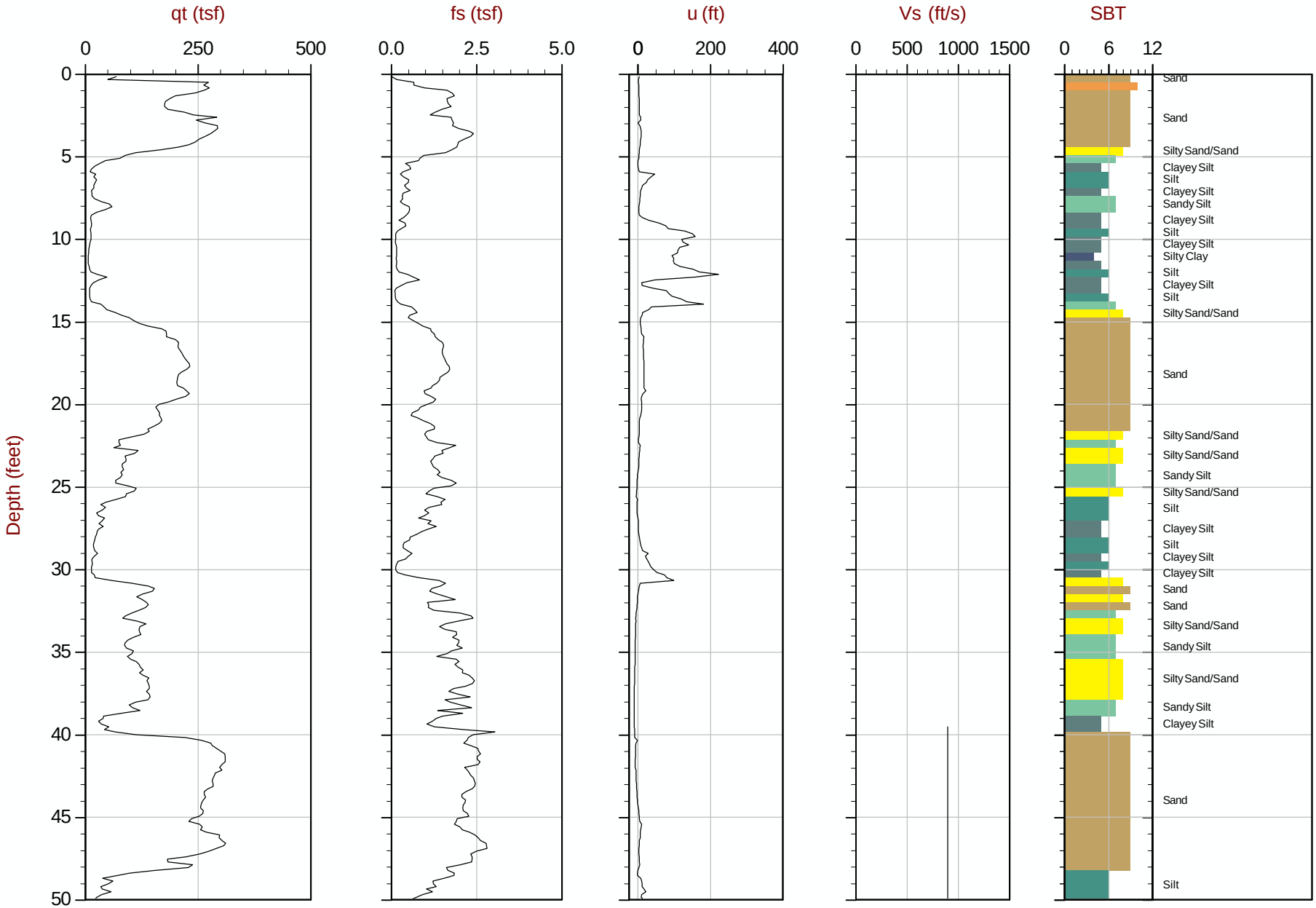
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.29667° Long: W 111.72604°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

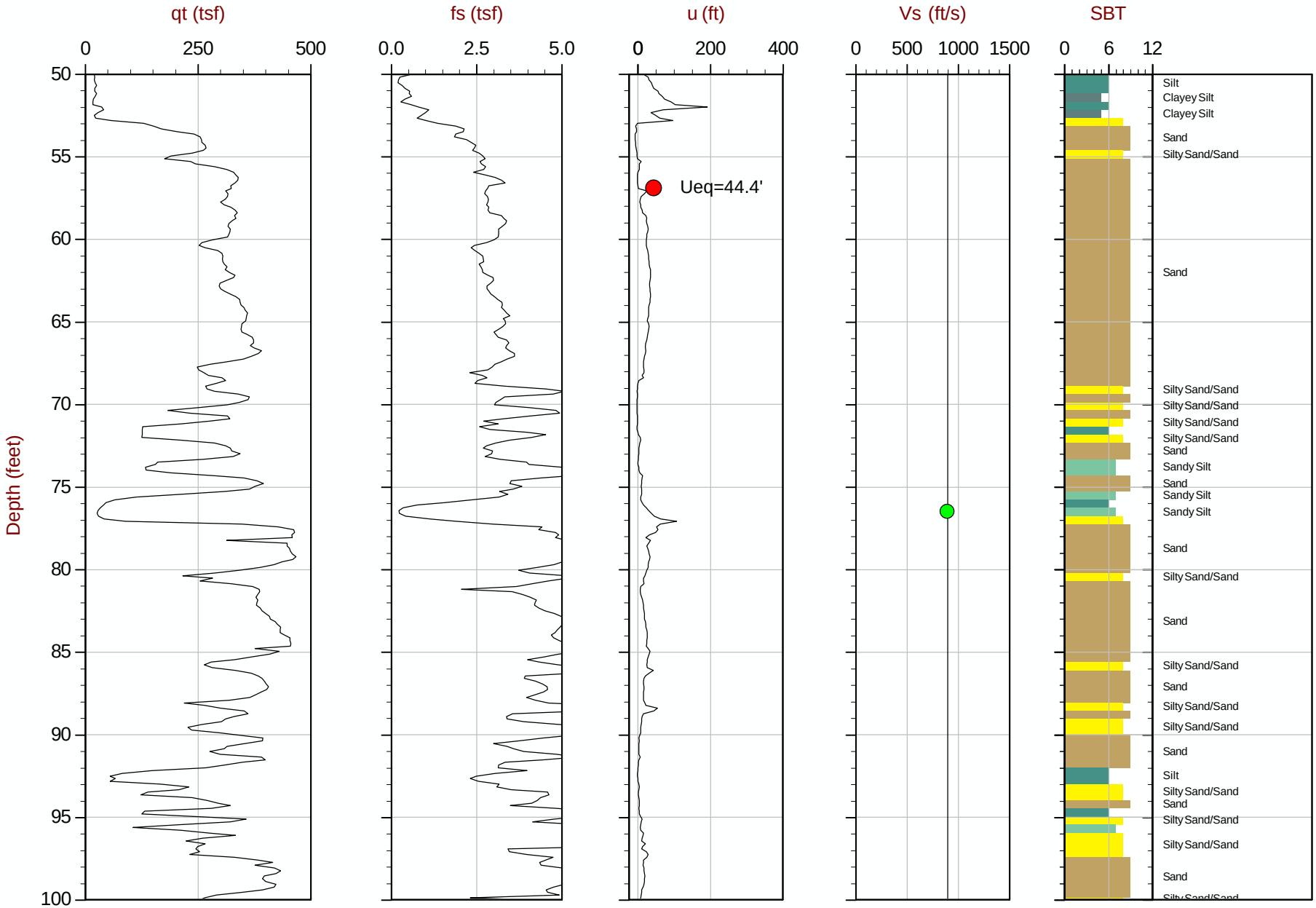
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

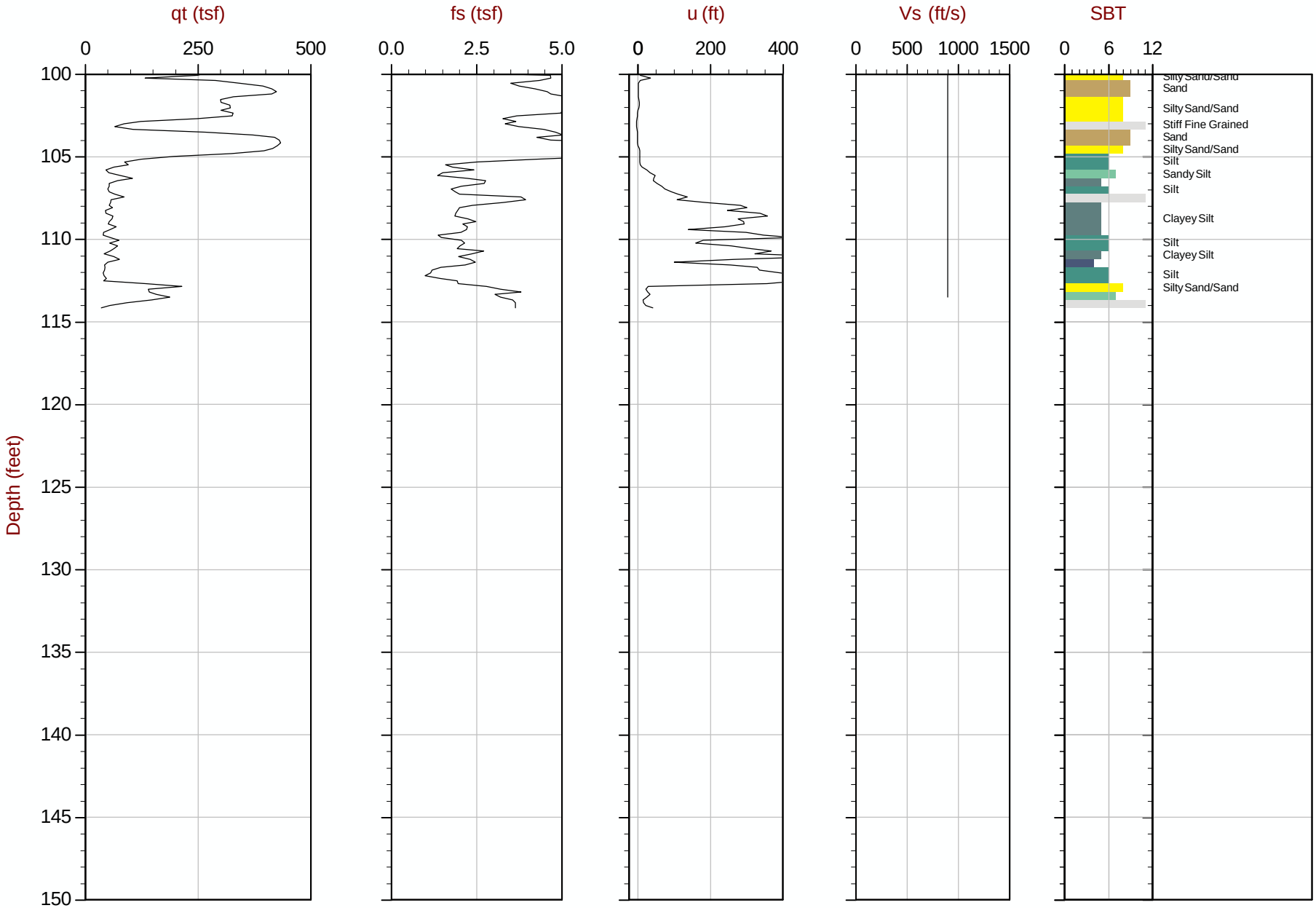
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:13:08 13:30
Site: I-15

Sounding: 08-OR6-C1
Cone: STD 20T AD242



Max Depth: 34.800 m / 114.17 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP20.COR
Unit Wt: SBT Chart Soil Zones

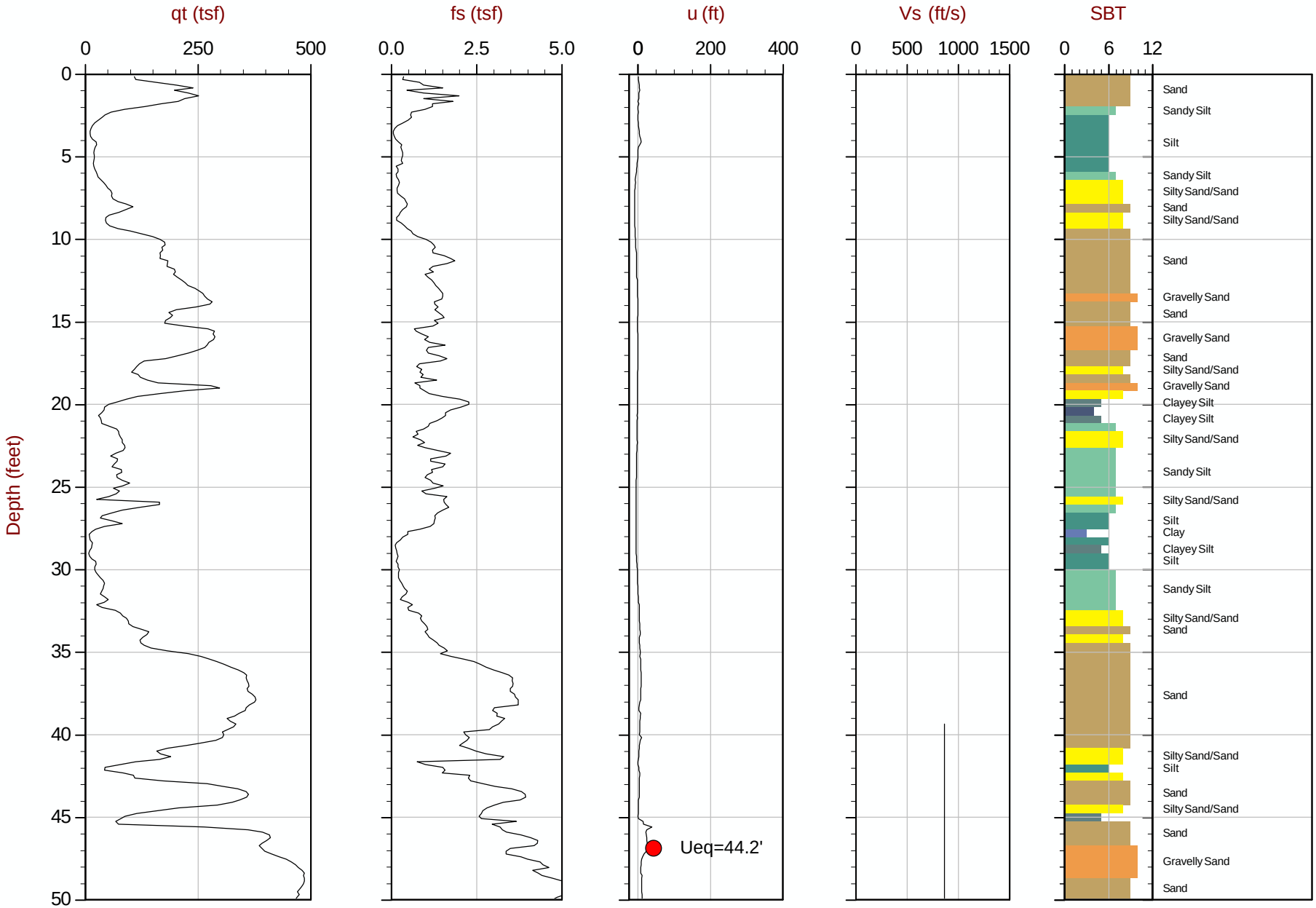
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.28989° Long: W 111.72526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

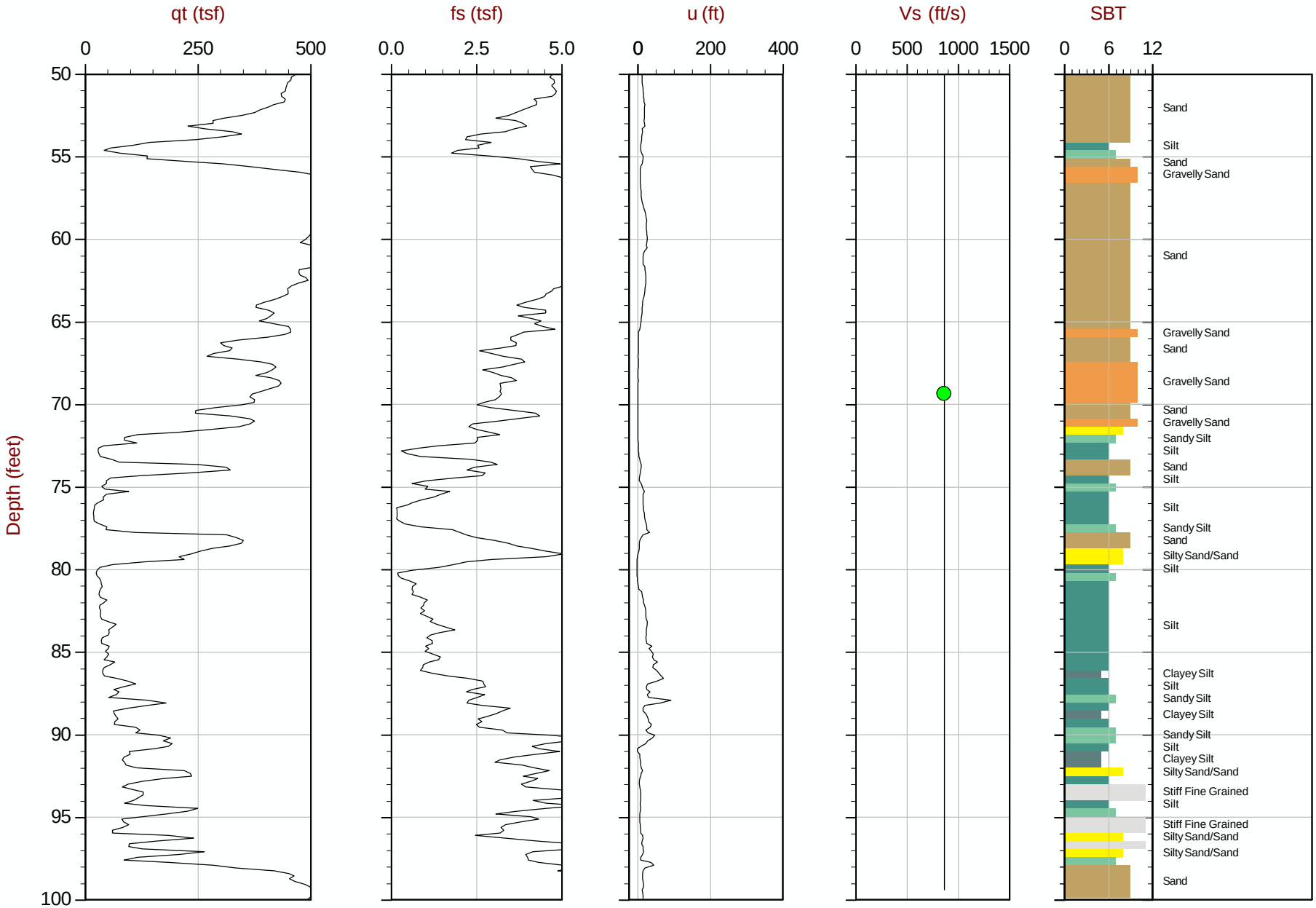
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

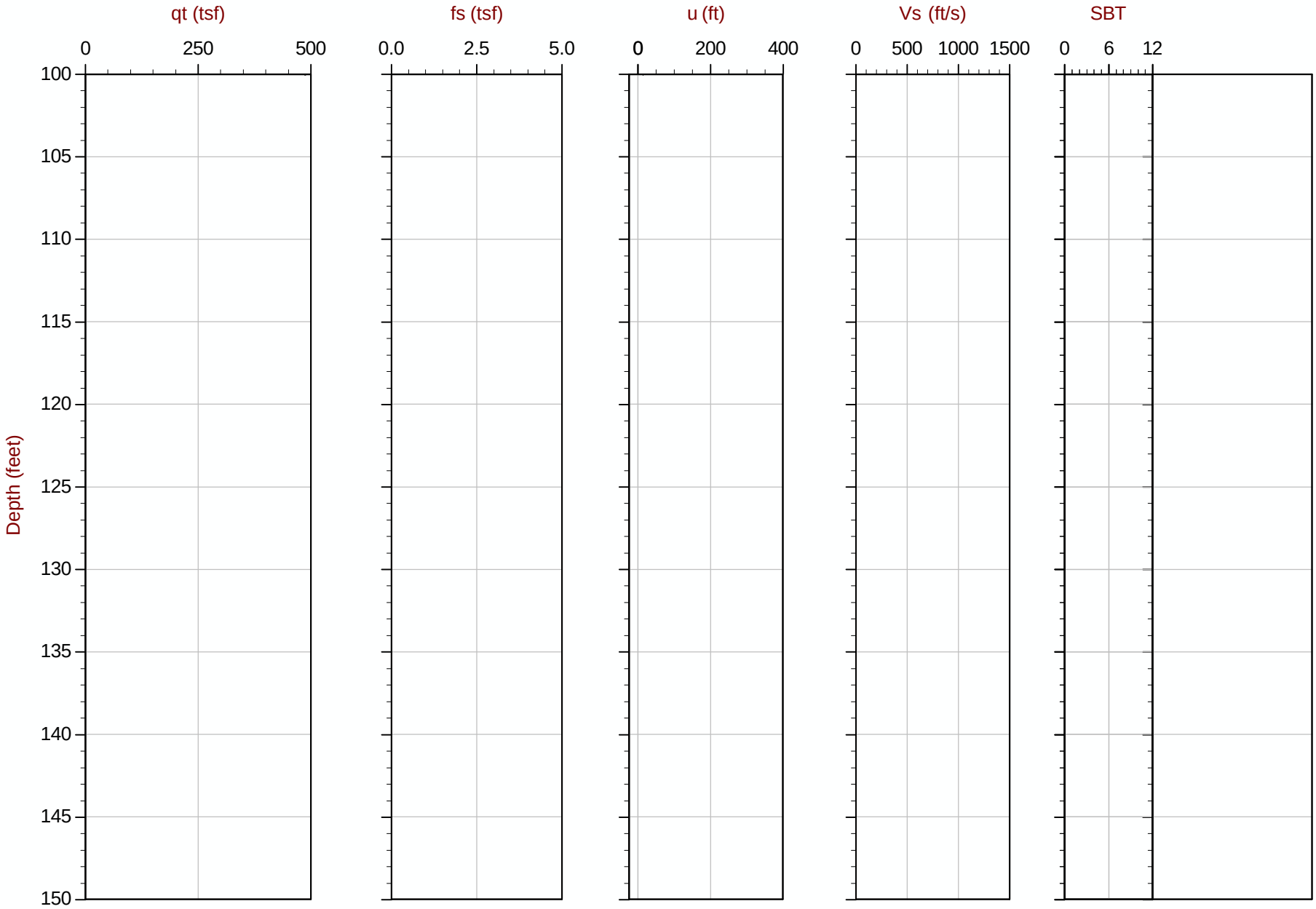
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:14:08 09:09
Site: I-15

Sounding: 08-OR8-C1
Cone: STD 20T AD242



Max Depth: 30.500 m / 100.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP22.COR
Unit Wt: SBT Chart Soil Zones

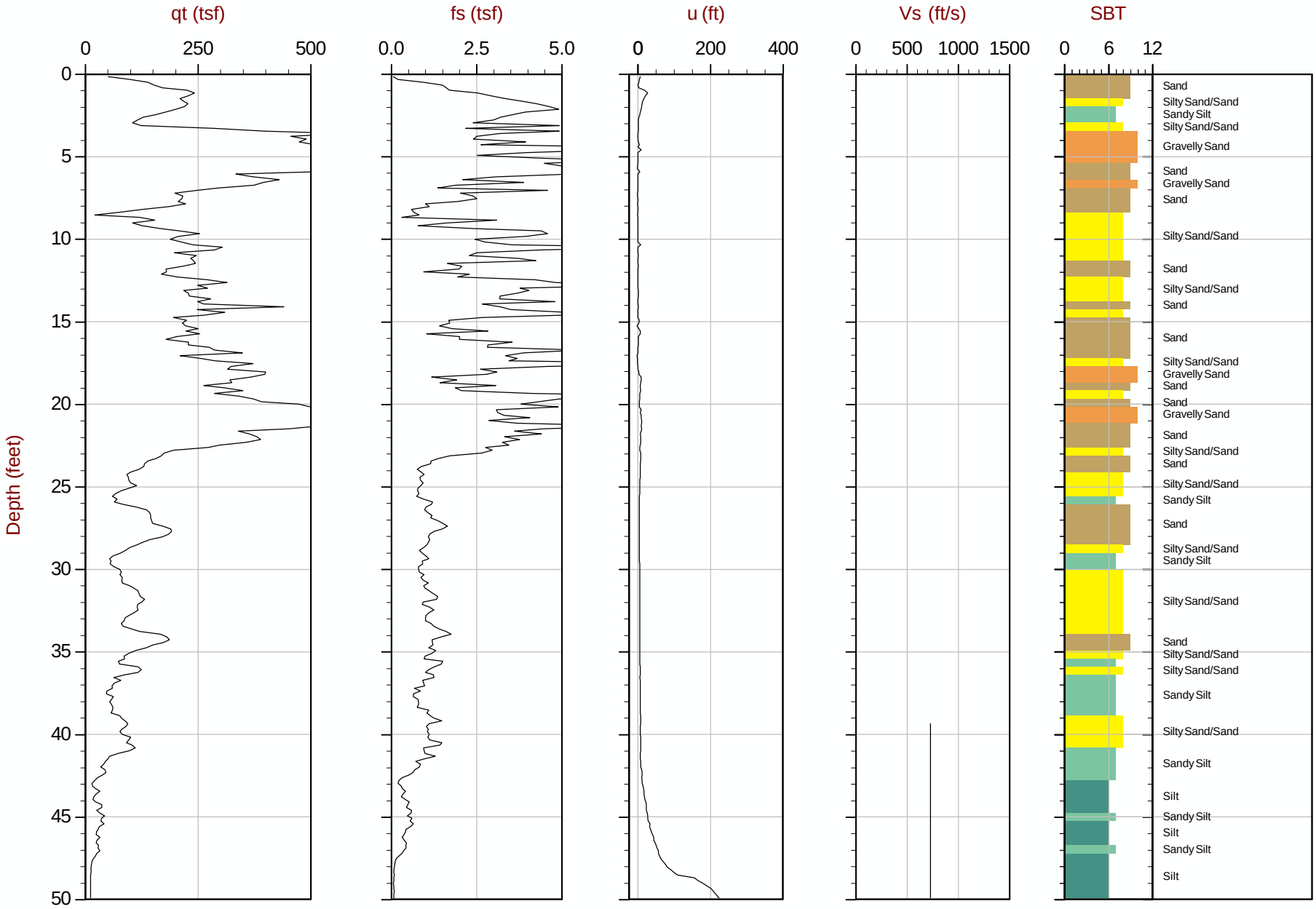
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.26065° Long: W 111.70515°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 09:02
Site: I-15

Sounding: 08-P5-C1
Cone: STD 20T AD242



Max Depth: 23.800 m / 78.08 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP25.COR
Unit Wt: SBT Chart Soil Zones

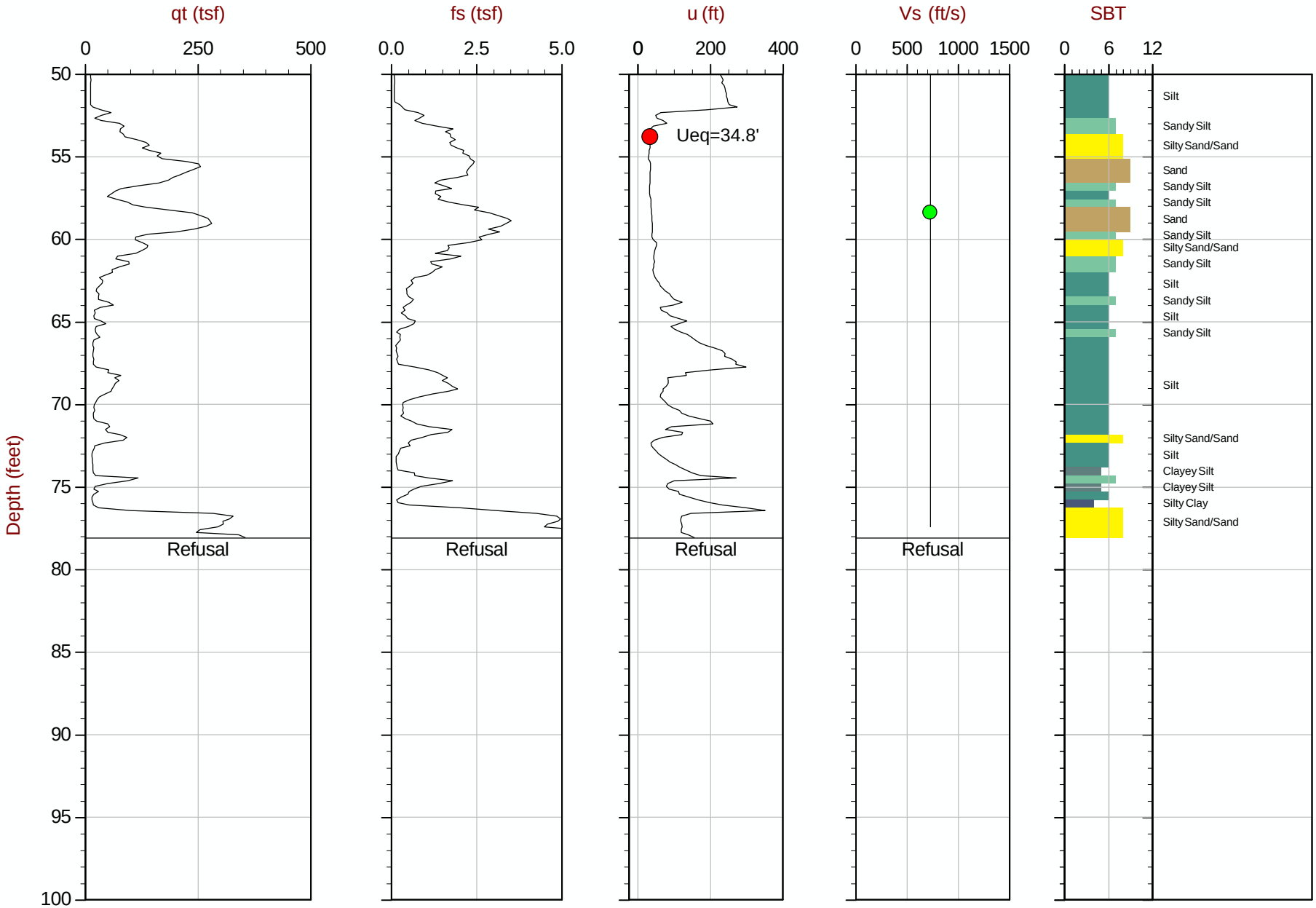
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23434° Long: W 111.68431°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 09:02
Site: I-15

Sounding: 08-P5-C1
Cone: STD 20T AD242



Max Depth: 23.800 m / 78.08 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP25.COR
Unit Wt: SBT Chart Soil Zones

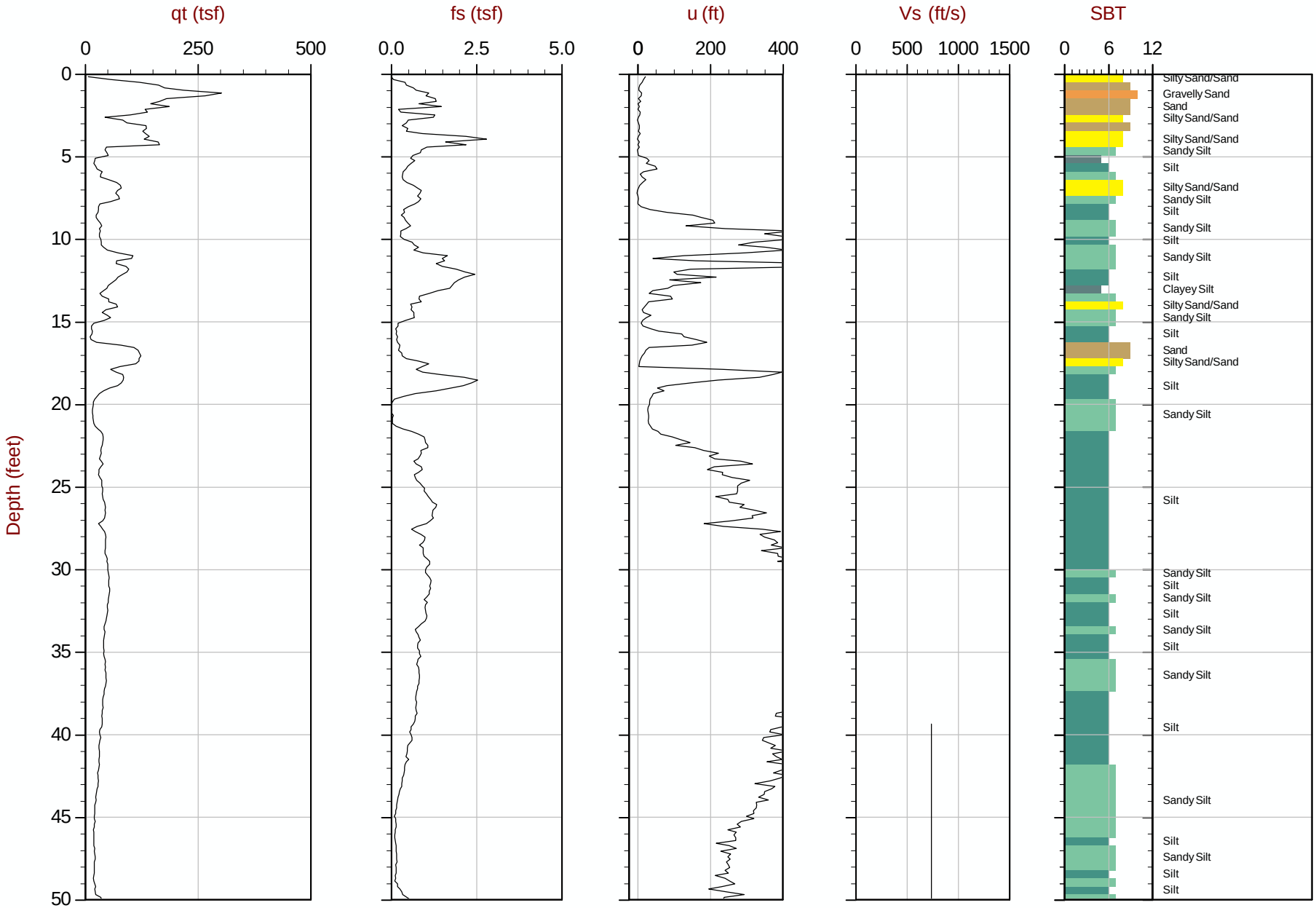
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23434° Long: W 111.68431°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

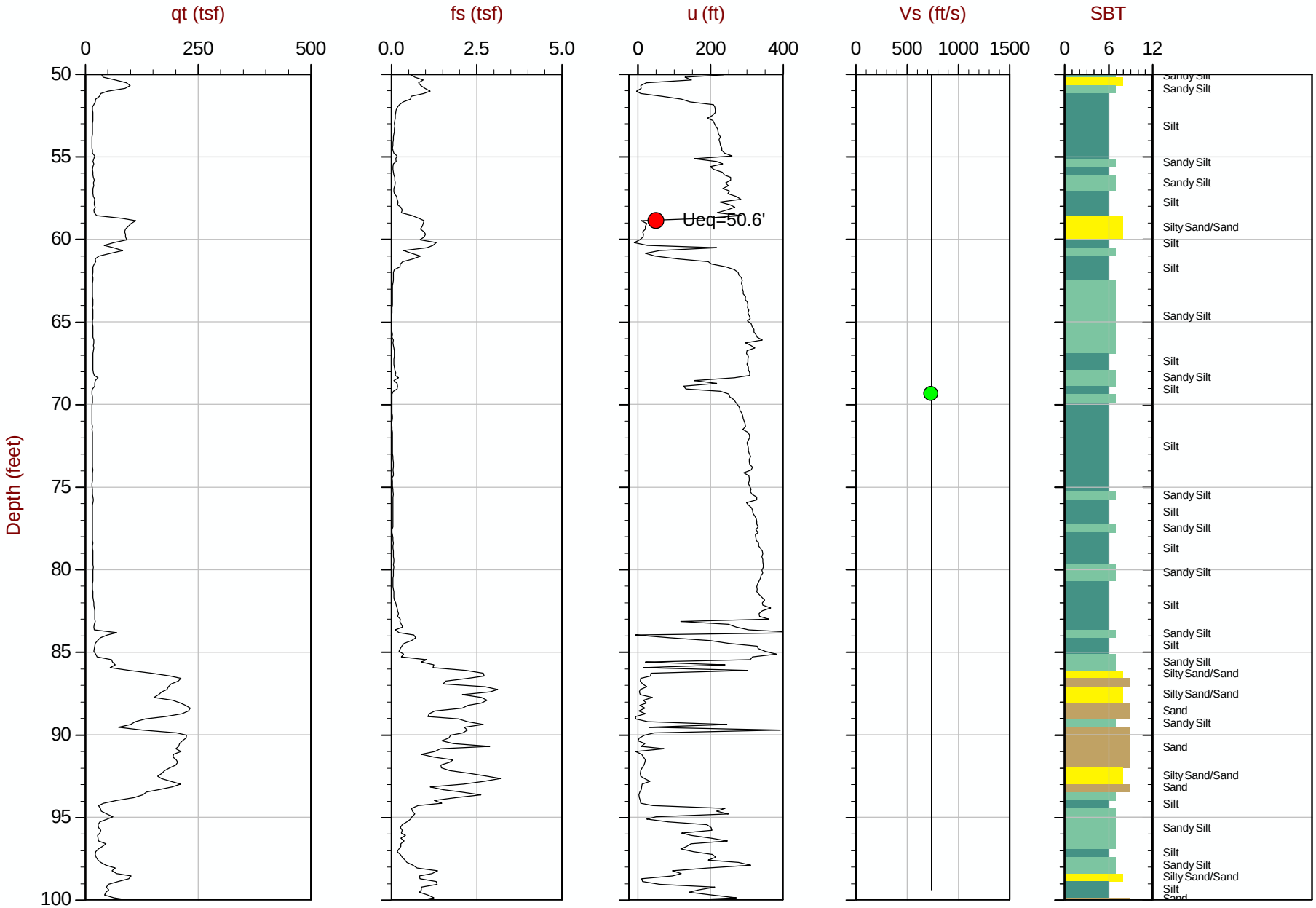
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

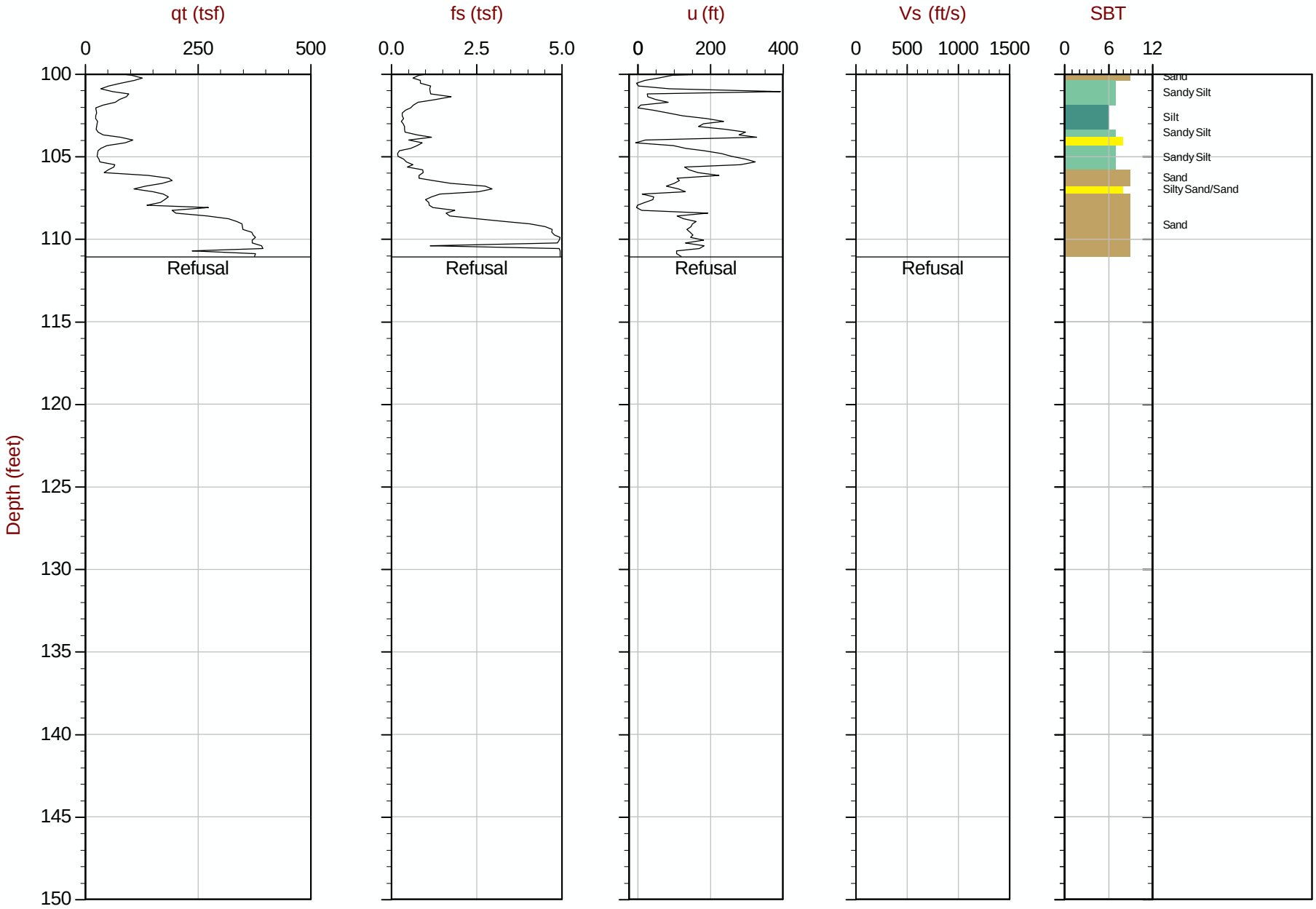
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:15:08 13:29
Site: I-15

Sounding: 08-S3-C1
Cone: STD 20T AD242



Max Depth: 33.850 m / 111.06 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP27.COR
Unit Wt: SBT Chart Soil Zones

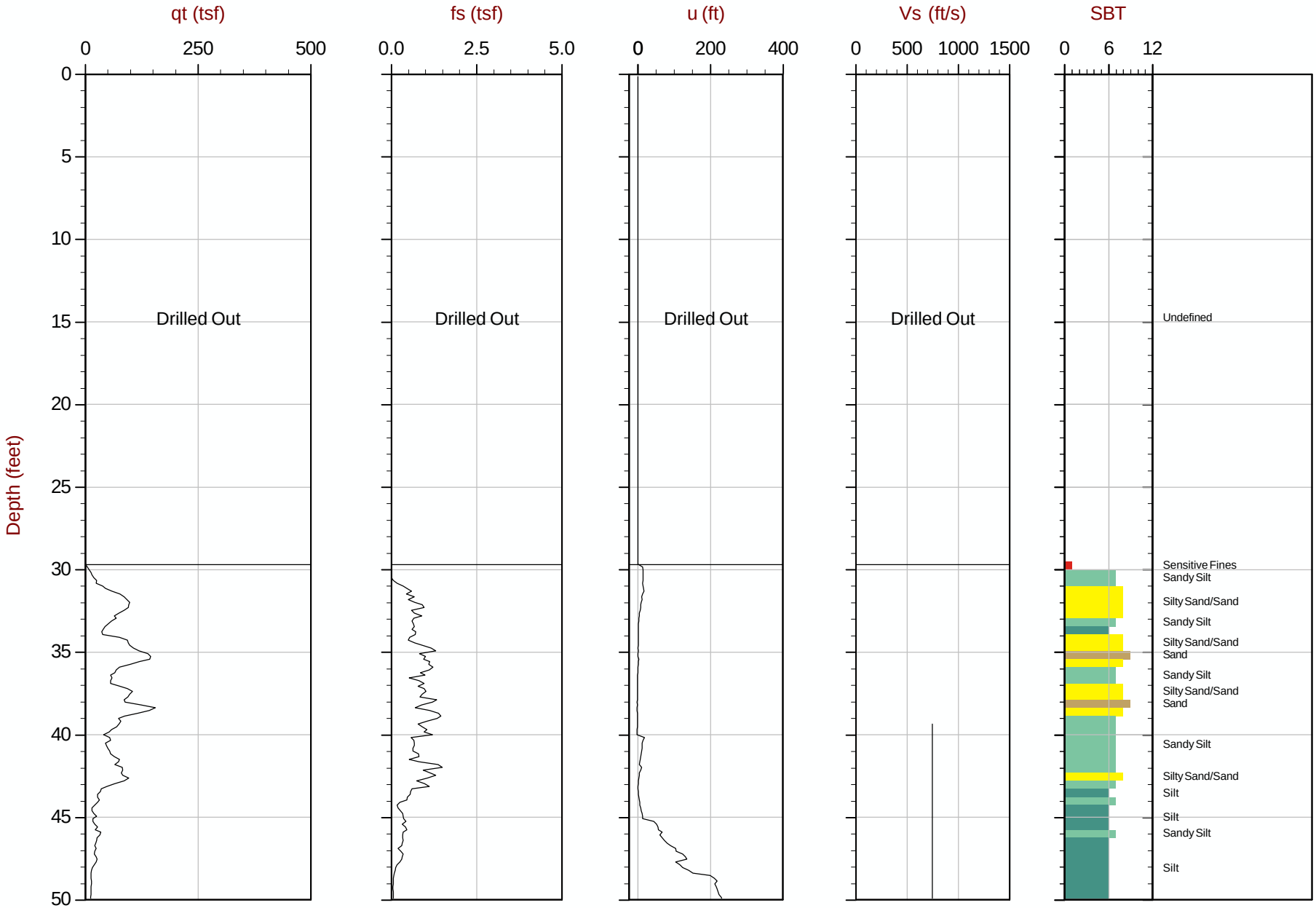
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.14465° Long: W 111.64644°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 08:56
Site: I-15

Sounding: 08-P5-C2
Cone: STD 20T AD242



Max Depth: 23.300 m / 76.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP30.COR
Unit Wt: SBT Chart Soil Zones

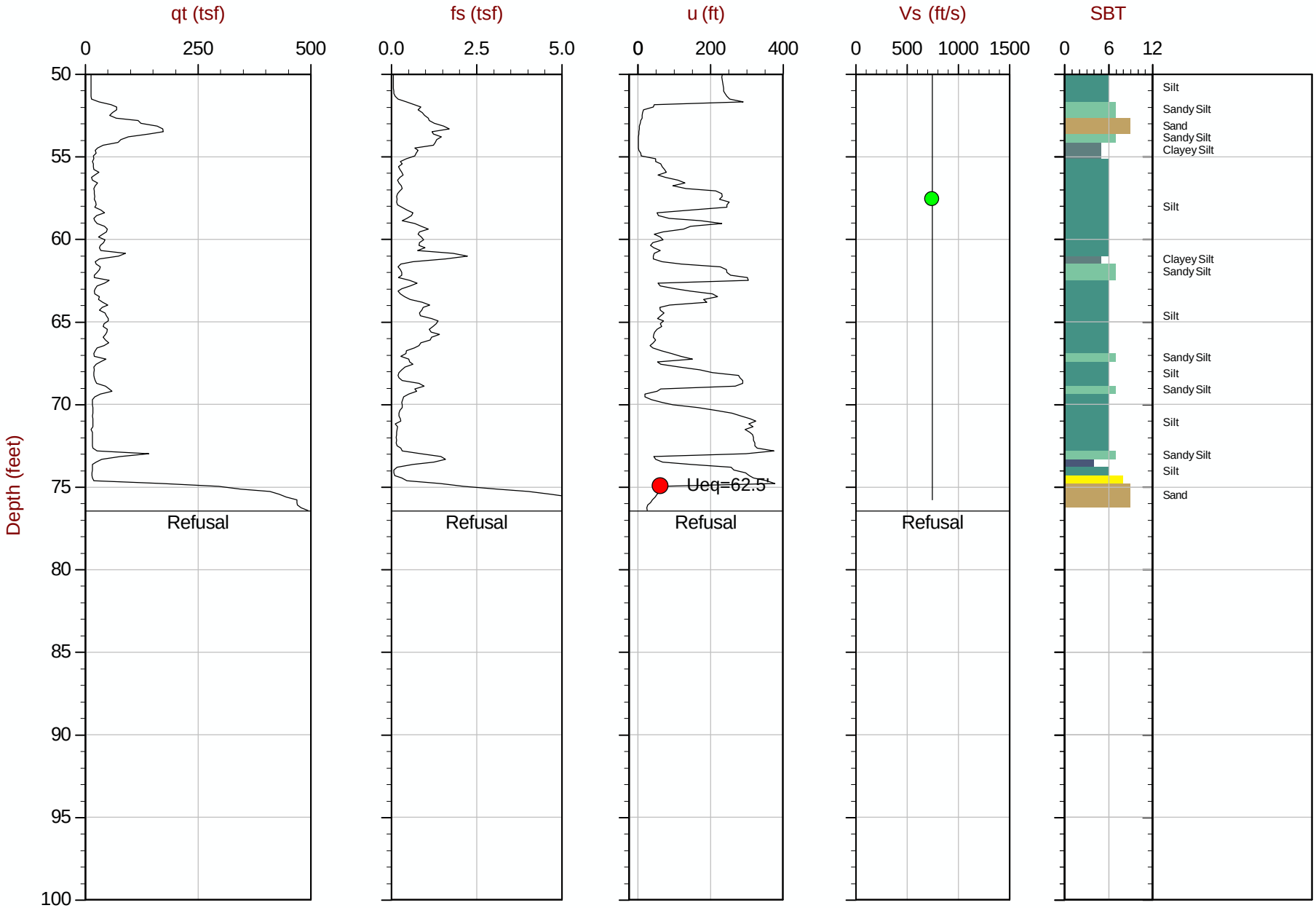
SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES

Job No: 08-419
Date: 08:27:08 08:56
Site: I-15

Sounding: 08-P5-C2
Cone: STD 20T AD242



Max Depth: 23.300 m / 76.44 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 419CP30.COR
Unit Wt: SBT Chart Soil Zones

SBT: Lunne, Robertson and Powell, 1997
Coords: Lat: N 40.23388° Long: W 111.68526°
● Equilibrium Pore Pressure from Dissipation

References

CONETEC

Cone Penetration Tests (CPTU)

The cone penetration tests (CPTU) with pore pressure measurement were carried out by ConeTec using an integrated electronic cone system.

A 20 ton compression type cone (refer to Figure CPTU) was used for all of the soundings. This cone has a tip area of 15 sq. cm. and a friction sleeve area of 225 sq. cm. The compression cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.85. A porewater pressure filter was located directly behind the cone tip. The filter was made of porous plastic and was 5.0 mm thick. Each of the porewater pressure filters was saturated under vacuum pressure prior to penetration. Porewater pressure dissipation data was recorded at 5-second intervals during pauses in penetration as directed by the field representative.

The cone was capable of recording the following parameters at varying depth intervals:

Tip Resistance (q_c)
Sleeve Friction (f_s)
Dynamic Pore Pressure (u)
Temperature (T)
Cone Inclination (I)

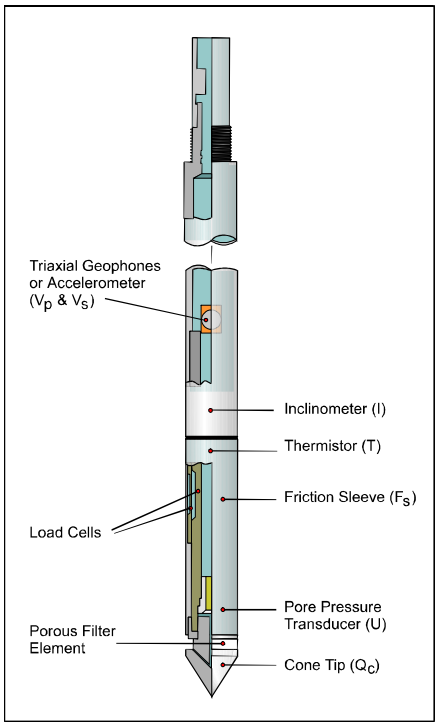


Figure - CPTU

Selected parameters were printed simultaneously on a printer and stored on a floppy disk for future analysis and reference. All cone penetration testing was carried out in accordance with ASTM D-5778-95.

A complete set of baseline readings was taken prior to and at the completion of each sounding to determine temperature shifts and any zero load offsets. Corrections for temperature shifts and zero load offsets can be extremely important, especially when the recorded loads are relatively small. In sandy soils, however, these corrections are generally negligible. Graphical plots of all CPT data are presented in Appendix CPTU.

The inferred stratigraphic profile at each CPT test location is included with this report. The stratigraphic interpretations are based on relationships between cone bearing, q_t, sleeve friction, f_s, and dynamic pore pressure, u. The friction ratio, R_f (100 x f_s/q_t), is a calculated parameter which is used to identify the type of soil and hence gives an indication of its behavior. Generally, soft cohesive soils have high friction ratios, low cone bearing pressures and generate large porewater pressures during penetration. Cohesionless soils have lower friction ratios, high cone bearing pressures and generate little in the way of excess porewater pressure during penetration. The classification of soils is based on correlations summarized by Robertson (1990), as shown in Figure SBT. It is not always possible to clearly identify a soil type based on q_t and f_s alone. Experience, judgment and analyses of porewater pressure generation during penetration and subsequent dissipation tests should be used in arriving at the soil type in these ambiguous situations.

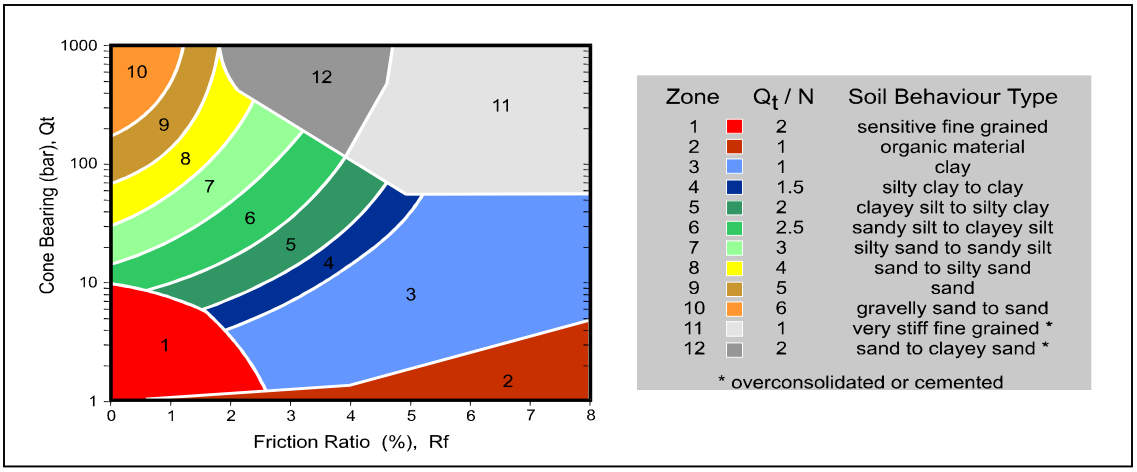


Figure SBT – Non-Normalized Soil Behavior Type Chart, Robertson (1990)

It should be noted that stratigraphic interpretation using CPTU data can also be carried out using a normalized (stress corrected) soil behavior type chart (Robertson, 1990). The Robertson publication emphasizes when normalized stratigraphic interpretation is appropriate.

Pore Pressure Dissipation Testing (PPD)

The penetration of the piezocone was halted at specific depths to carry out pore pressure dissipation tests as directed by the field representative. The variation of the penetration pore pressure (u) with time was measured and recorded. All pore pressure data was recorded immediately behind the cone tip at the u_2 location (refer to Figure PTL).

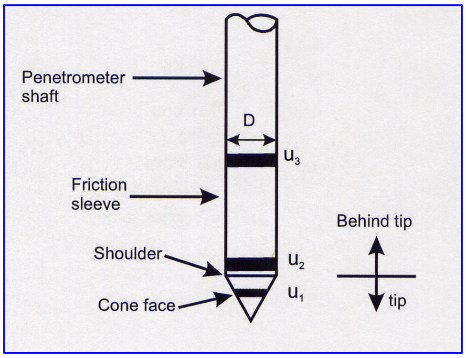


Figure – PTL

Pore pressure dissipation data can be interpreted to provide estimates of:

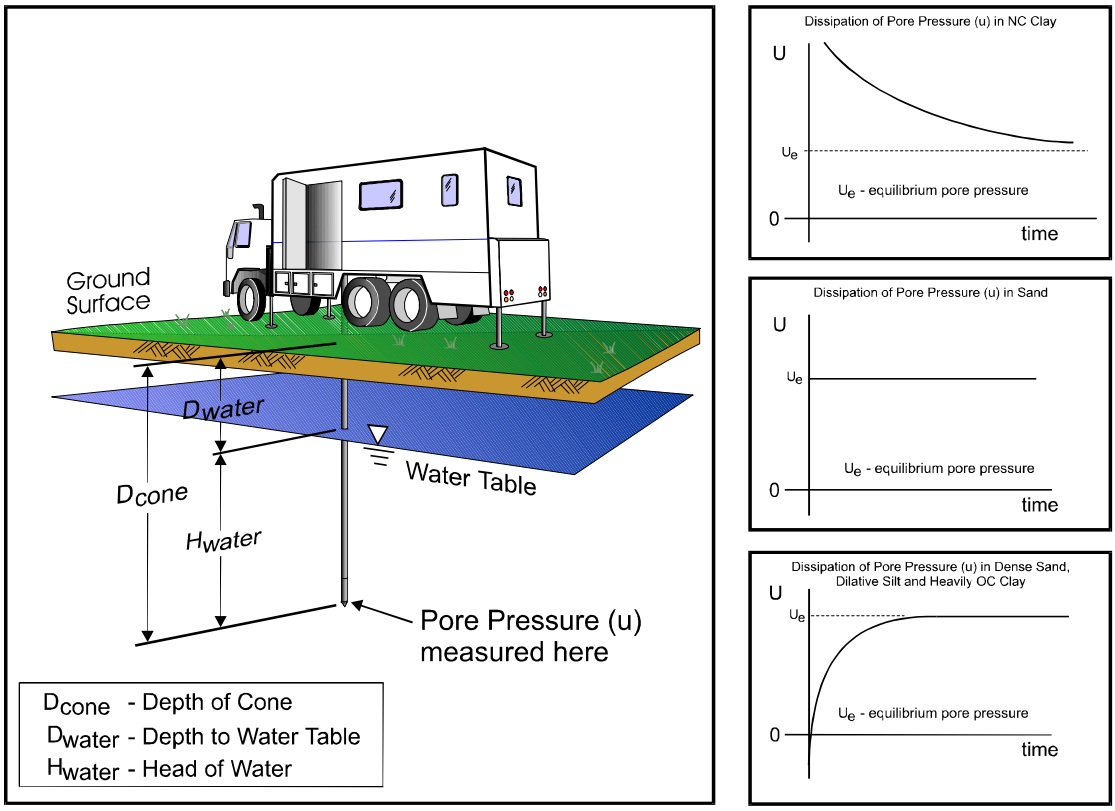
- equilibrium piezometric pressure
- phreatic surface
- in situ horizontal coefficient of consolidation, c_h
- in situ horizontal coefficient of permeability, k_h

In order to interpret the equilibrium piezometric pressure and/or the phreatic surface, the pore pressure must be monitored until such time as there is no variation in pore pressure with time (refer to Figure PPD). This time is commonly referred to as t_{100}, the point at which 100% of the excess pore pressure has dissipated.

Interpretation of both ch and k_h from dissipation results can be most easily achieved using either of two analytical approaches: cavity-expansion theory or the strain-path approach. Comparisons of the available solutions and results from field studies suggest that the cavity-expansion method of Torstensson (1977) and the strain-path approaches of Levadous (1980) and Teh (1987) all provide similar predications of consolidation parameters from CPTU dissipation data (Gillespie 1981; Kabir and Lutenegger 1990; Robertson et al. 1991). Robertson et al. (1991) have shown that these methods, although developed for normally consolidated soils, can be equally applied to overconsolidated soils. Furthermore, comparisons of field and laboratory data indicate that the trends in the measured (laboratory) and predicated (CPTU) data

are consistent provided the micro fabric and nature of the soils being tested are taken into consideration (Danziger 1990; Robertson et al. 1991).

A complete reference on pore pressure dissipation tests is presented by Robertson et al. 1991.



Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

Useful Conversion Factors:

1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

Figure - PPD

Seismic Cone Penetration Testing (SCPTU)

Seismic wave velocity measurements were conducted at regular intervals during the cone penetration test. Seismic wave velocity measurements were made according to the procedures described by Robertson et.al. (1986). Before taking wave velocity measurements, the rods were decoupled from the CPT rig to avoid transmission of energy down the rods.

The seismic waves were generated using a hammer striking a steel beam that was coupled to the ground by a hydraulic cylinder under the CPT rig (refer to Figure S). The sledgehammer striking the beam acts as an electrical contact trigger, initiating the recording of the seismic wave traces. The offset of the beam from the cone was taken into account during calculation of the seismic wave velocities.

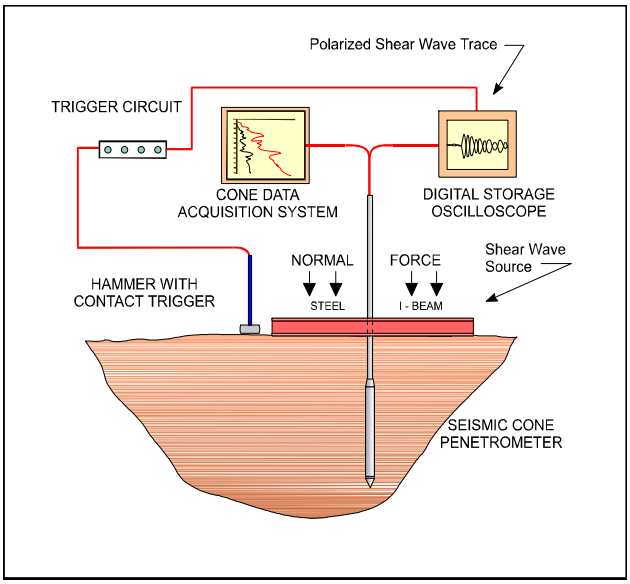


Figure S – Layout of Downhole Seismic Cone System

At each test depth, at least two waves were recorded. Multiple waves are recorded at each end of the beam to enable the operator to check the consistency of the waveforms. The seismic wave receiver used was a horizontally active geophone located in the body of the cone penetrometer. The geophone is located approximately 0.2 meters behind the cone tip. This offset is accounted for in all calculations. Data was sampled at a frequency of 20 kHz (i.e. 20,000 samples per second) with a total of 5000 points being recorded per wave trace. To maintain the desired signal resolution, the input sensitivity (gain) of the receiver was increased with depth.