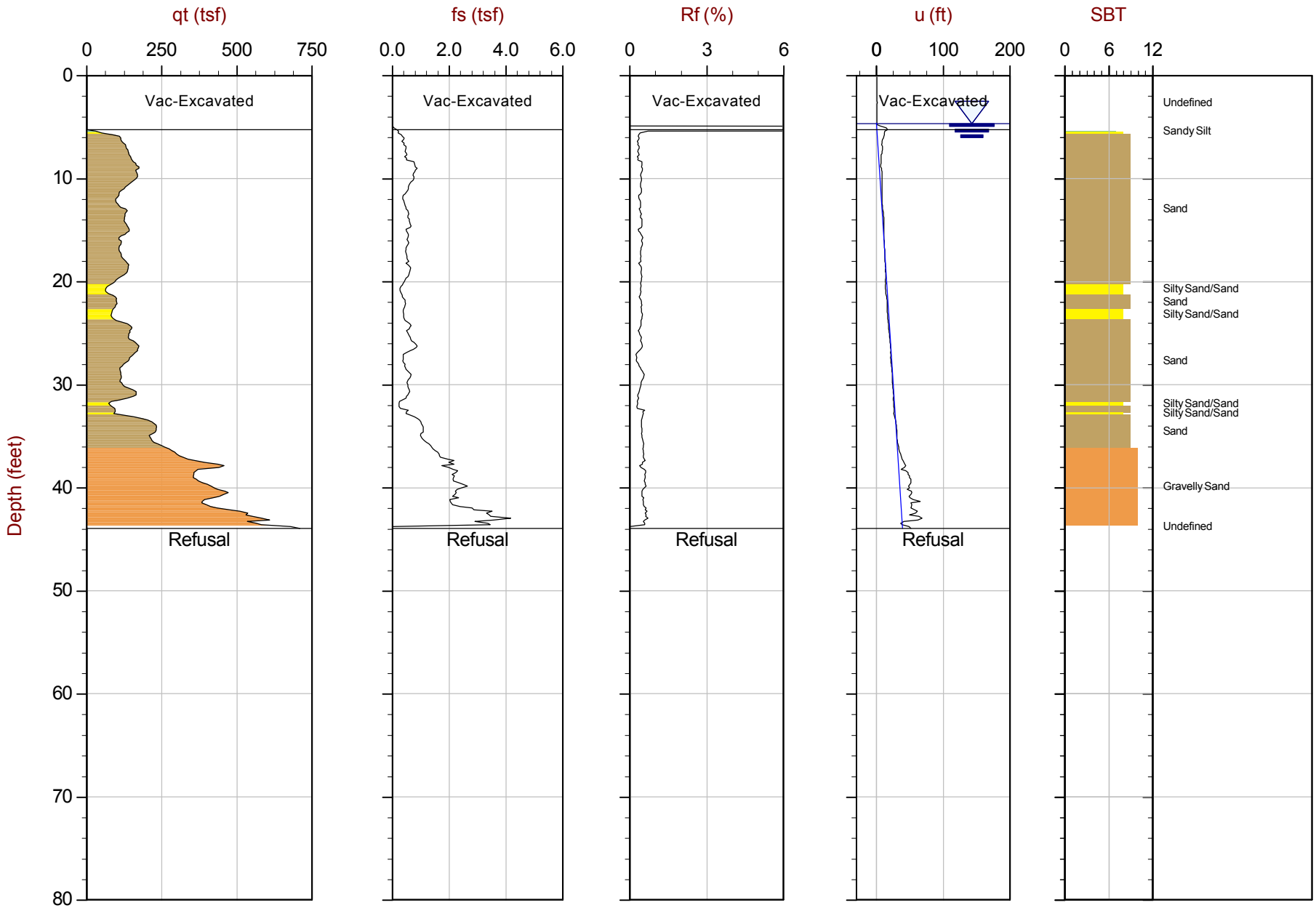
ConeTec

ARCADIS

Job No: 13-53065
Date: 10:14:13 11:29
Site: Bay Park STP

Sounding: CPTu-01
Cone: 206:T1500F15U500



Max Depth: 13.400 m / 43.96 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP01.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498984 E: 613106

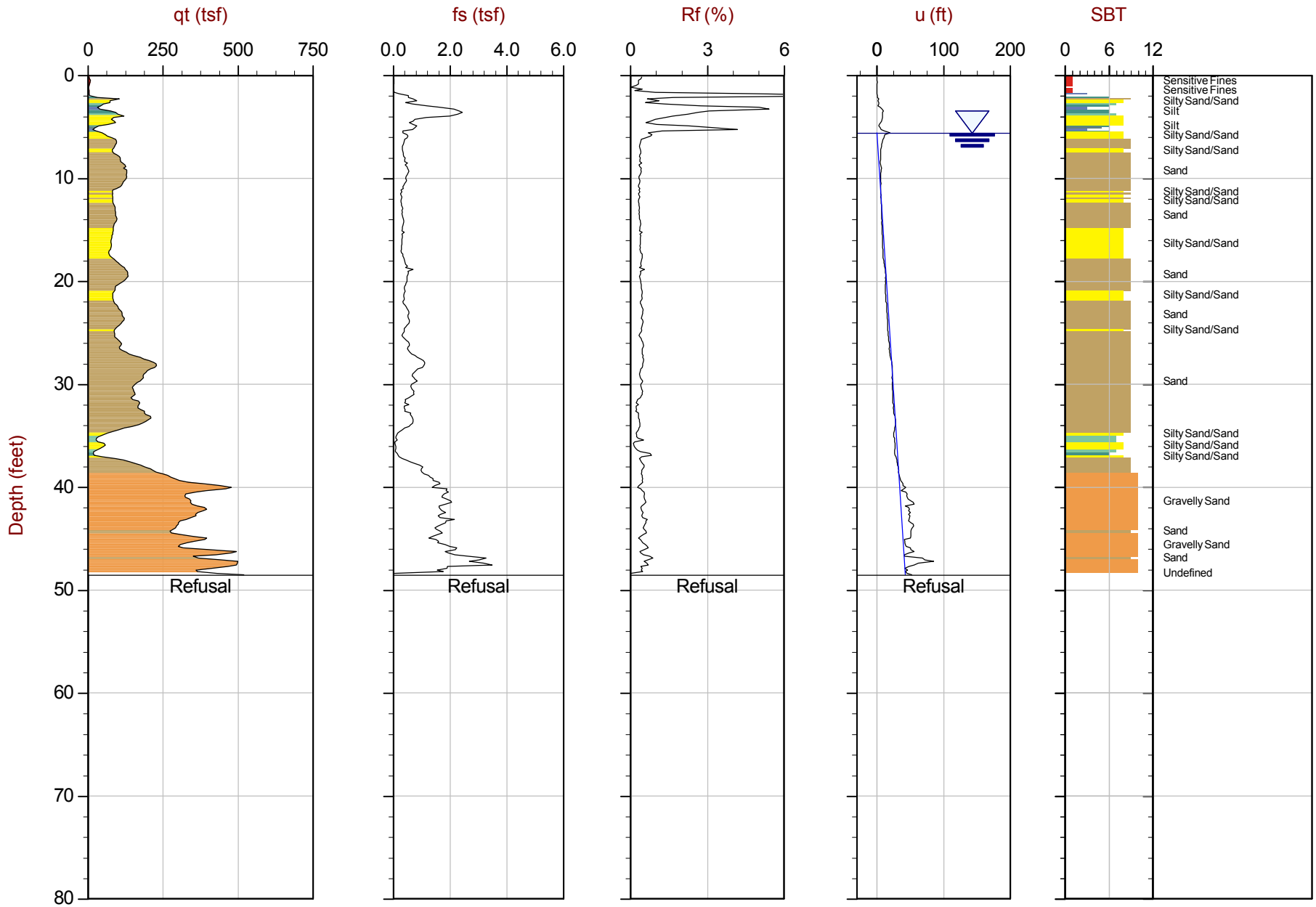
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:16:13 18:53
Site: Bay Park STP

Sounding: CPTu-02
Cone: 206:T1500F15U500



Max Depth: 14.800 m / 48.56 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP02.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498978 E: 613118

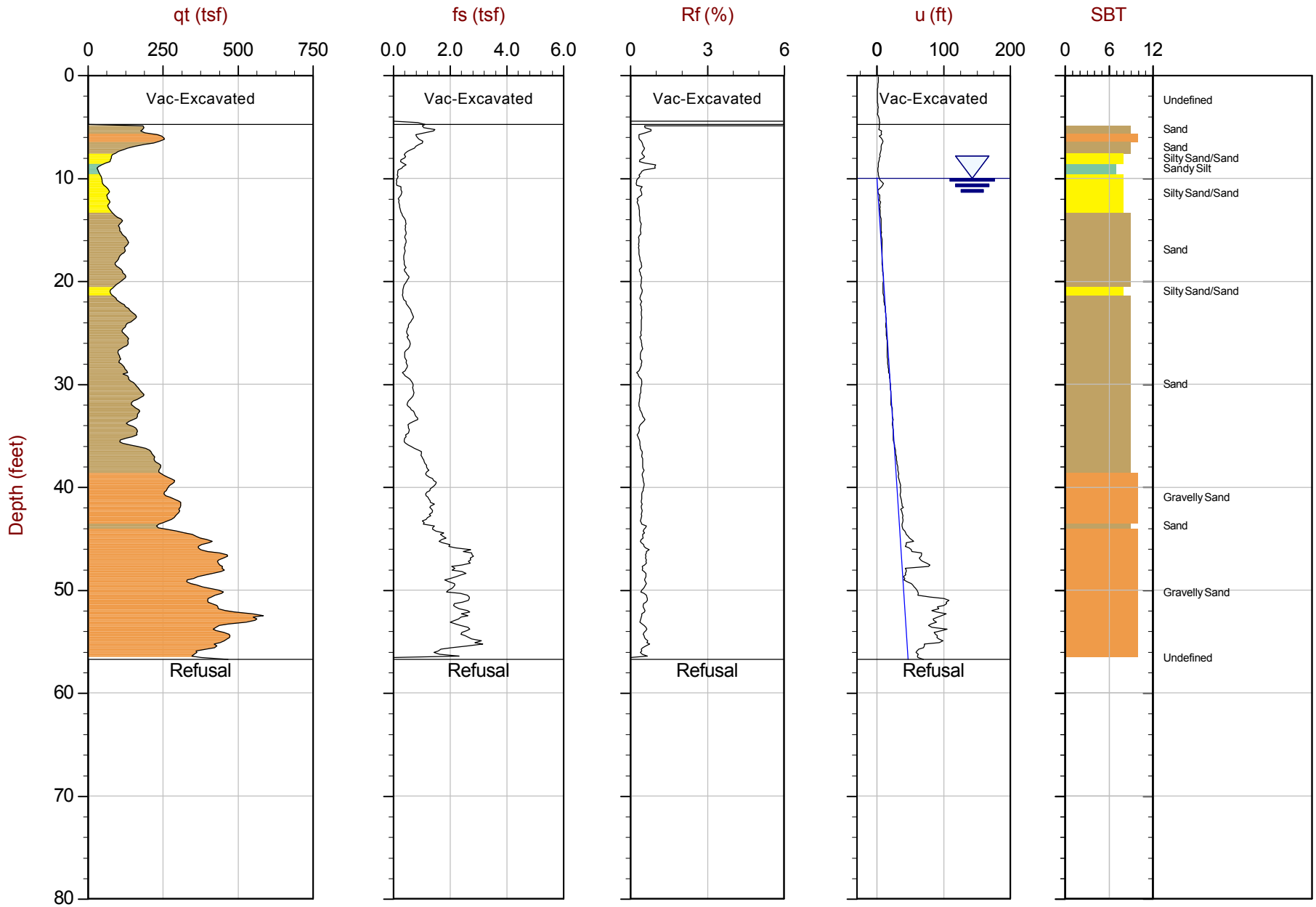
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:16:13 16:54
Site: Bay Park STP

Sounding: CPTu-03
Cone: 206:T1500F15U500



Max Depth: 17.300 m / 56.76 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP03.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498942 E: 613156

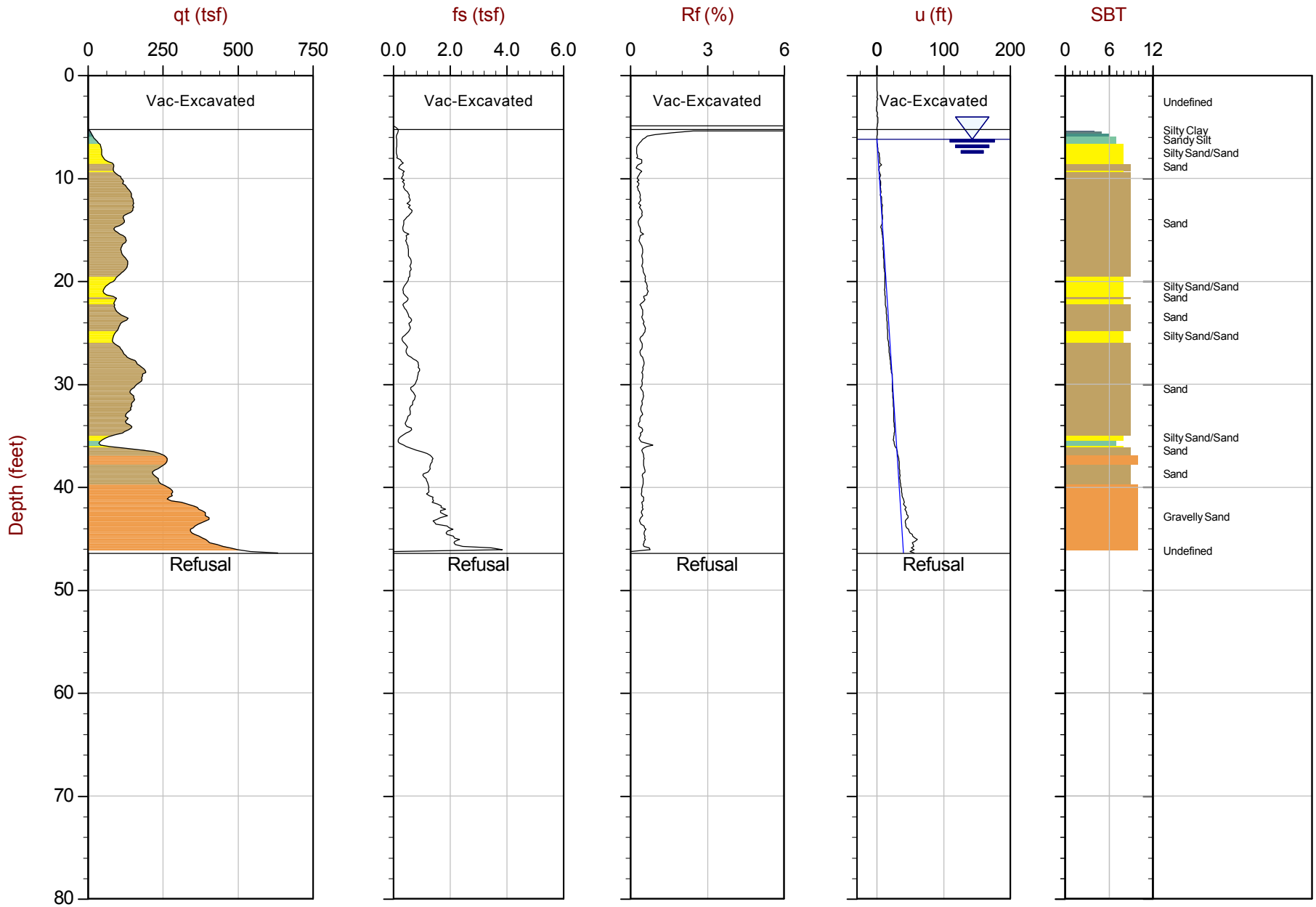
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:14:13 13:09
Site: Bay Park STP

Sounding: CPTu-04
Cone: 206:T1500F15U500



Max Depth: 14.150 m / 46.42 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP04.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498977 E: 613129

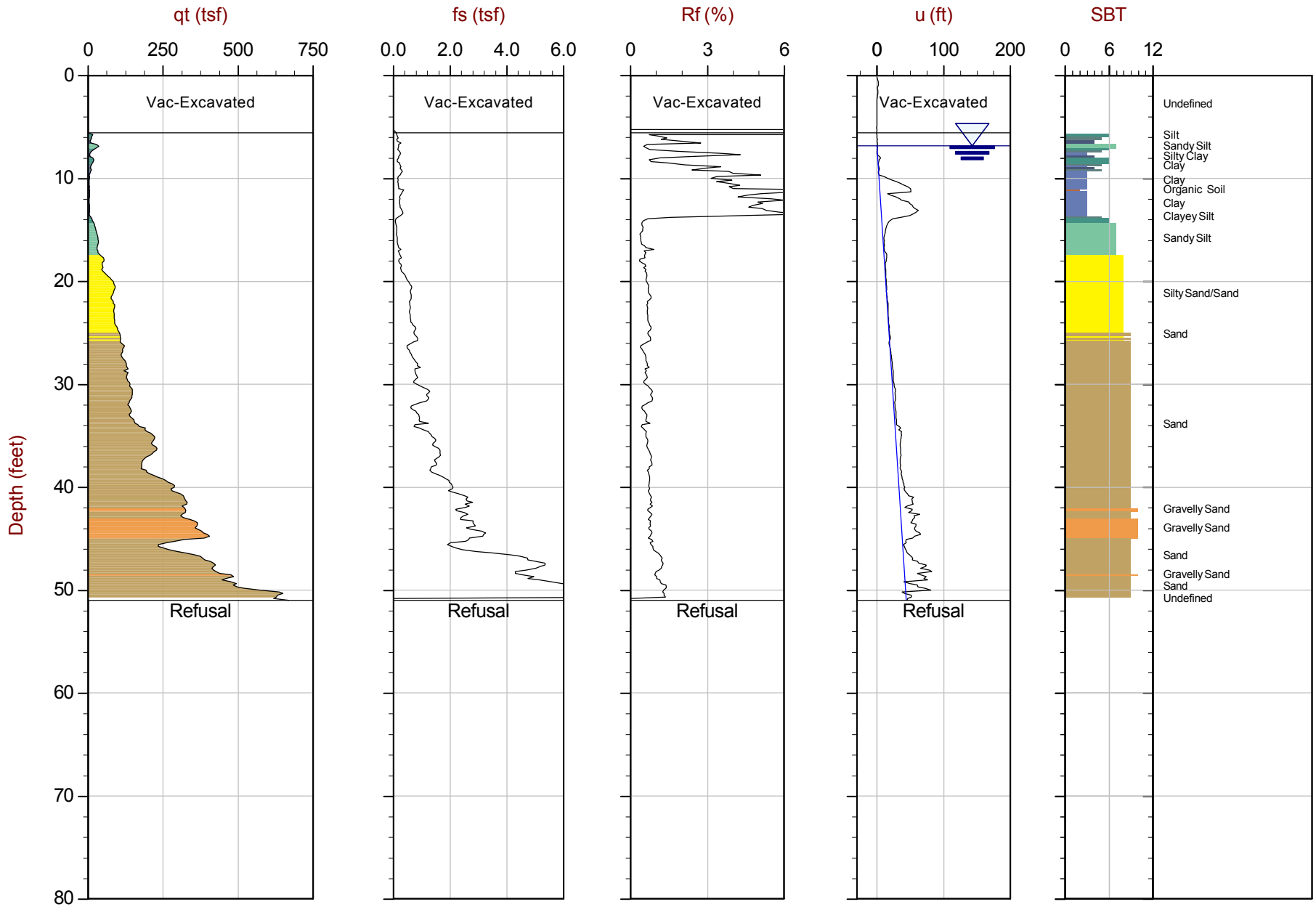
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:07:13 14:03
Site: Bay Park STP

Sounding: CPTu-05
Cone: 206:T1500F15U500



Max Depth: 15.550 m / 51.02 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP05.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498909 E: 613185

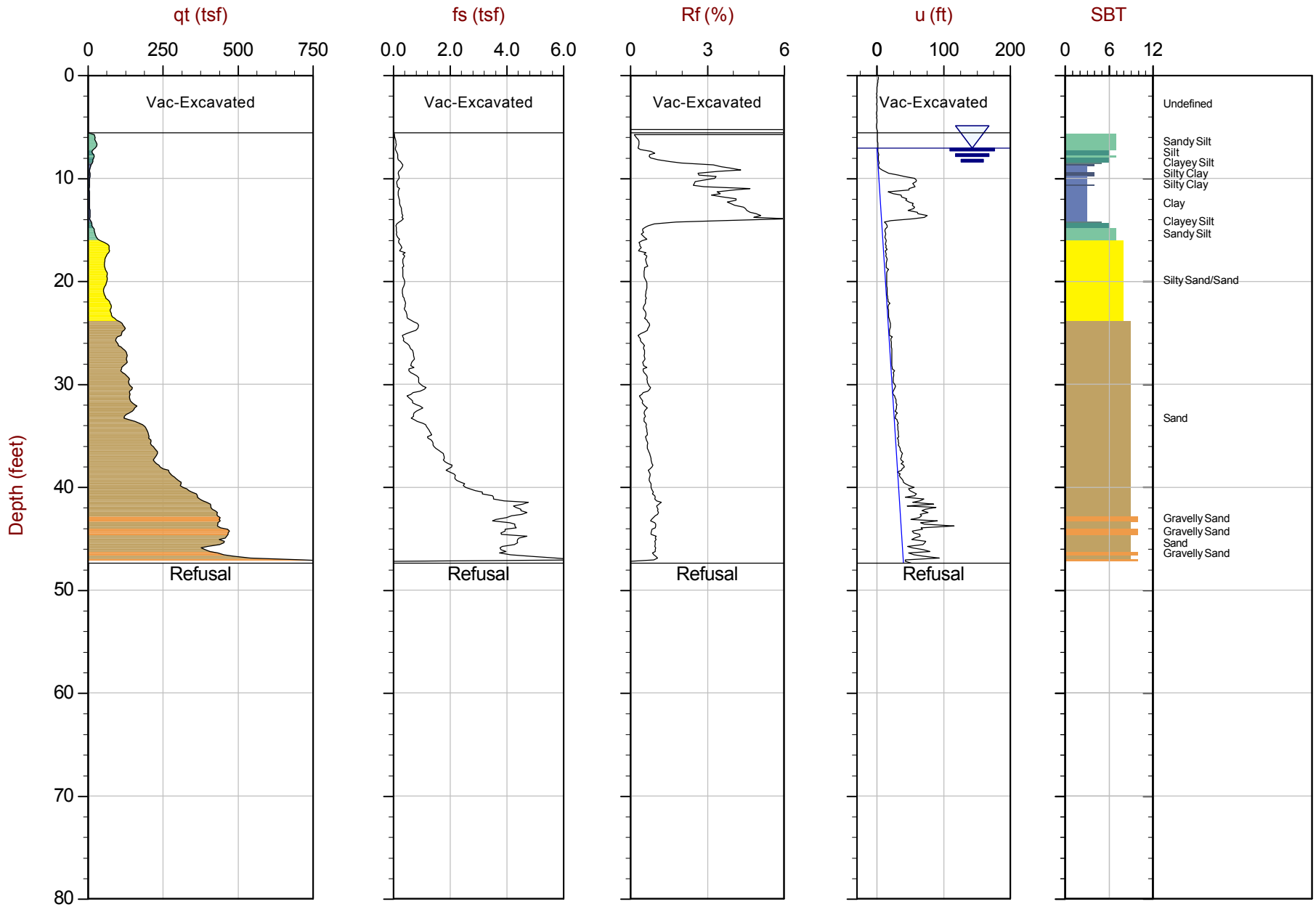
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:07:13 15:38
Site: Bay Park STP

Sounding: CPTu-06
Cone: 206:T1500F15U500



Max Depth: 14.450 m / 47.41 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP06.COR

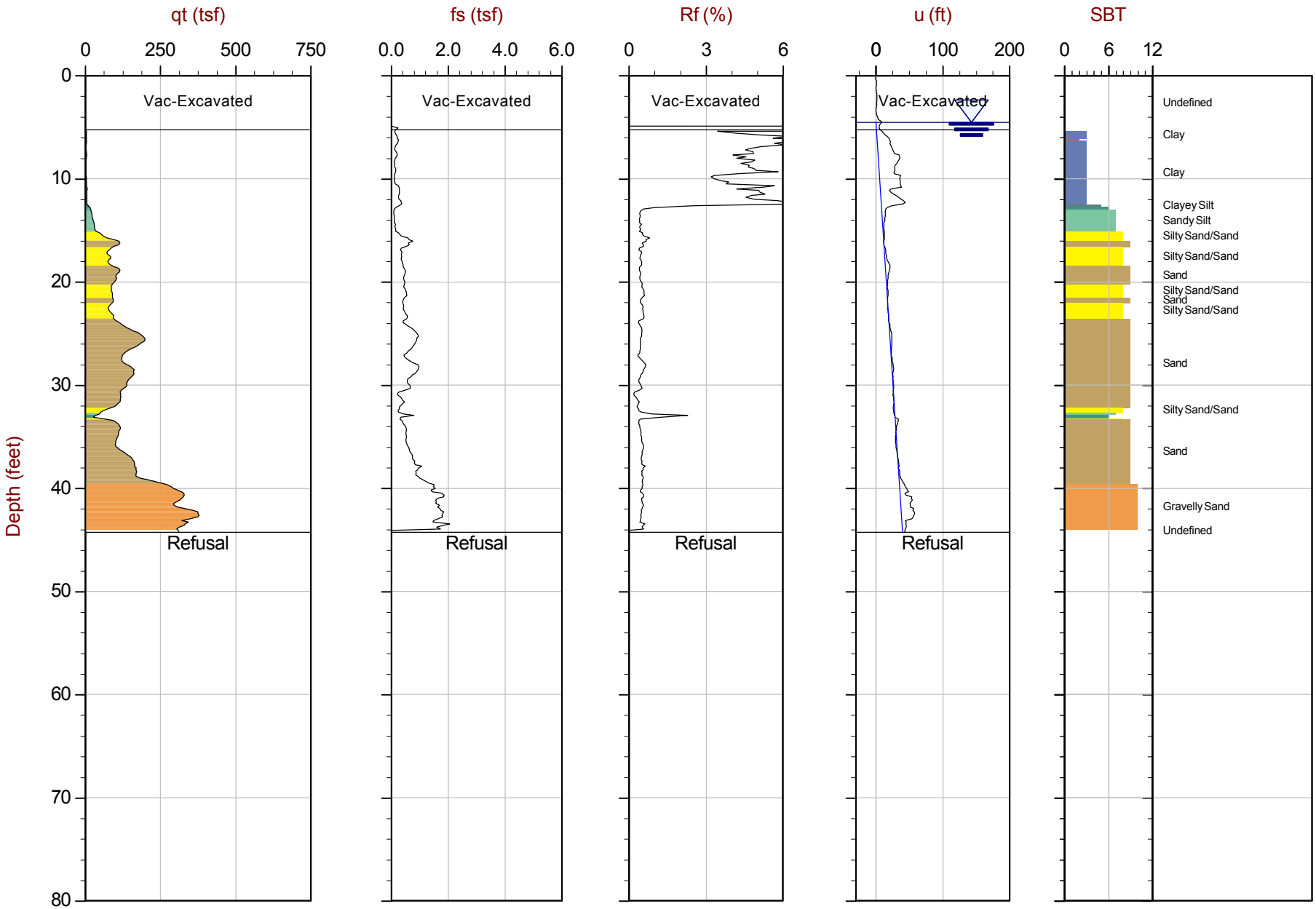
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498855 E: 613182

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:15:13 09:18
Site: Bay Park STP

Sounding: CPTu-07
Cone: 206:T1500F15U500



Max Depth: 13.500 m / 44.29 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP07.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498841 E: 613200

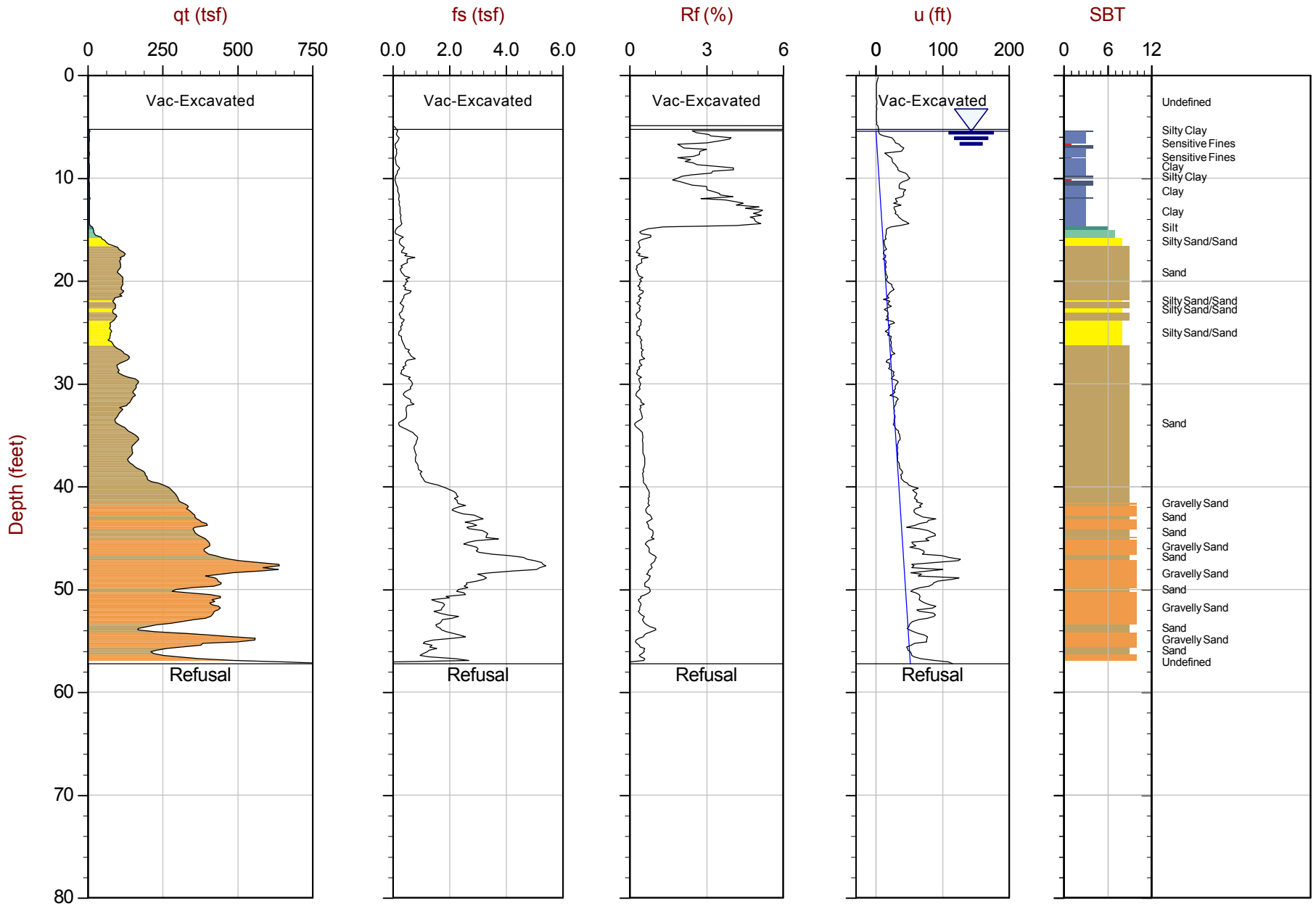
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 12:53
Site: Bay Park STP

Sounding: CPTu-08
Cone: 206:T1500F15U500



Max Depth: 17.450 m / 57.25 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP08.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498789 E: 613174

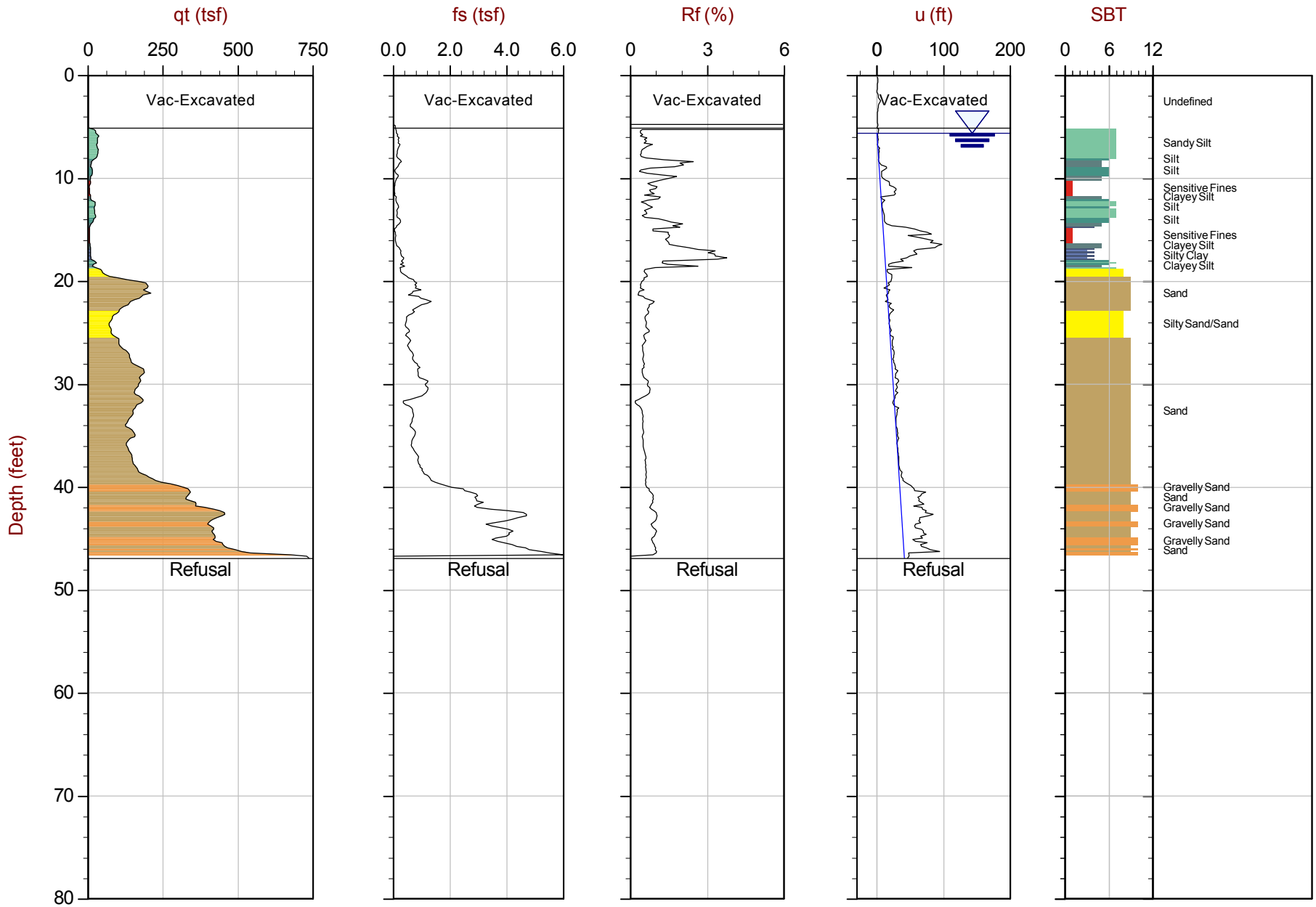
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 11:01
Site: Bay Park STP

Sounding: CPTu-09
Cone: 206:T1500F15U500



Max Depth: 14.300 m / 46.92 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP09.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498695 E: 613140

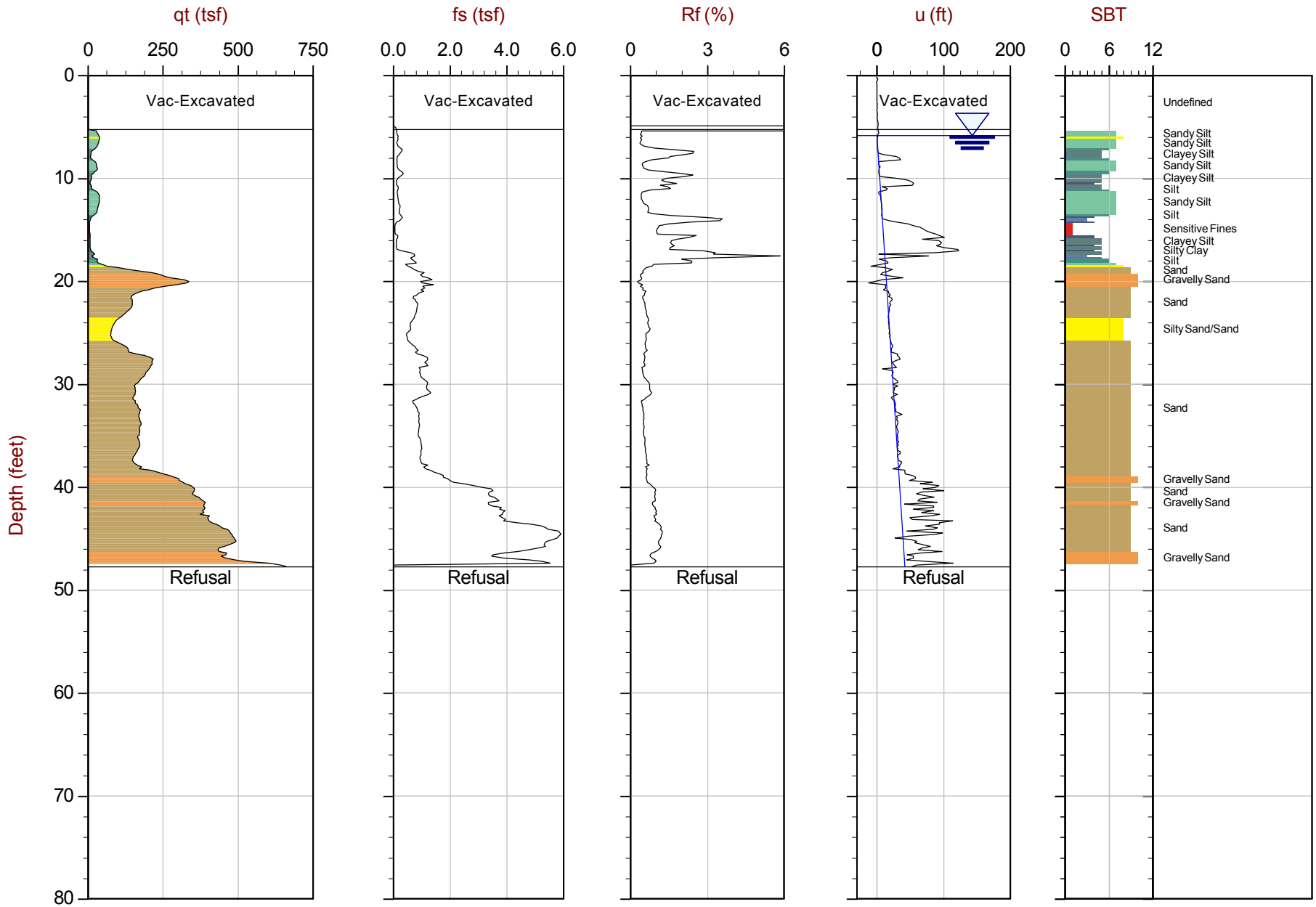
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500



Max Depth: 14.550 m / 47.74 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP10.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498649 E: 613120

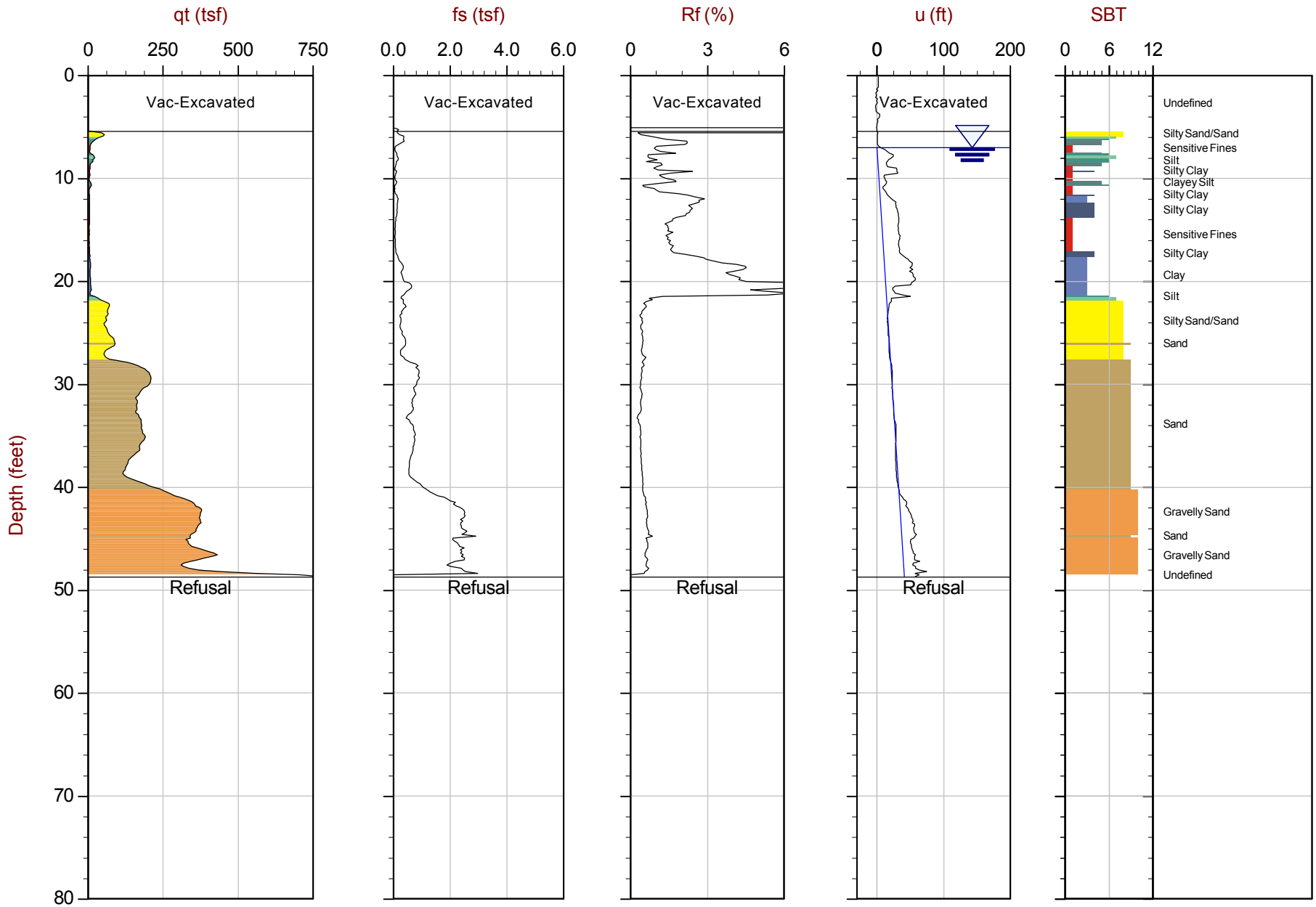
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 07:56
Site: Bay Park STP

Sounding: CPTu-11
Cone: 206:T1500F15U500



Max Depth: 14.850 m / 48.72 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP11.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498642 E: 613126

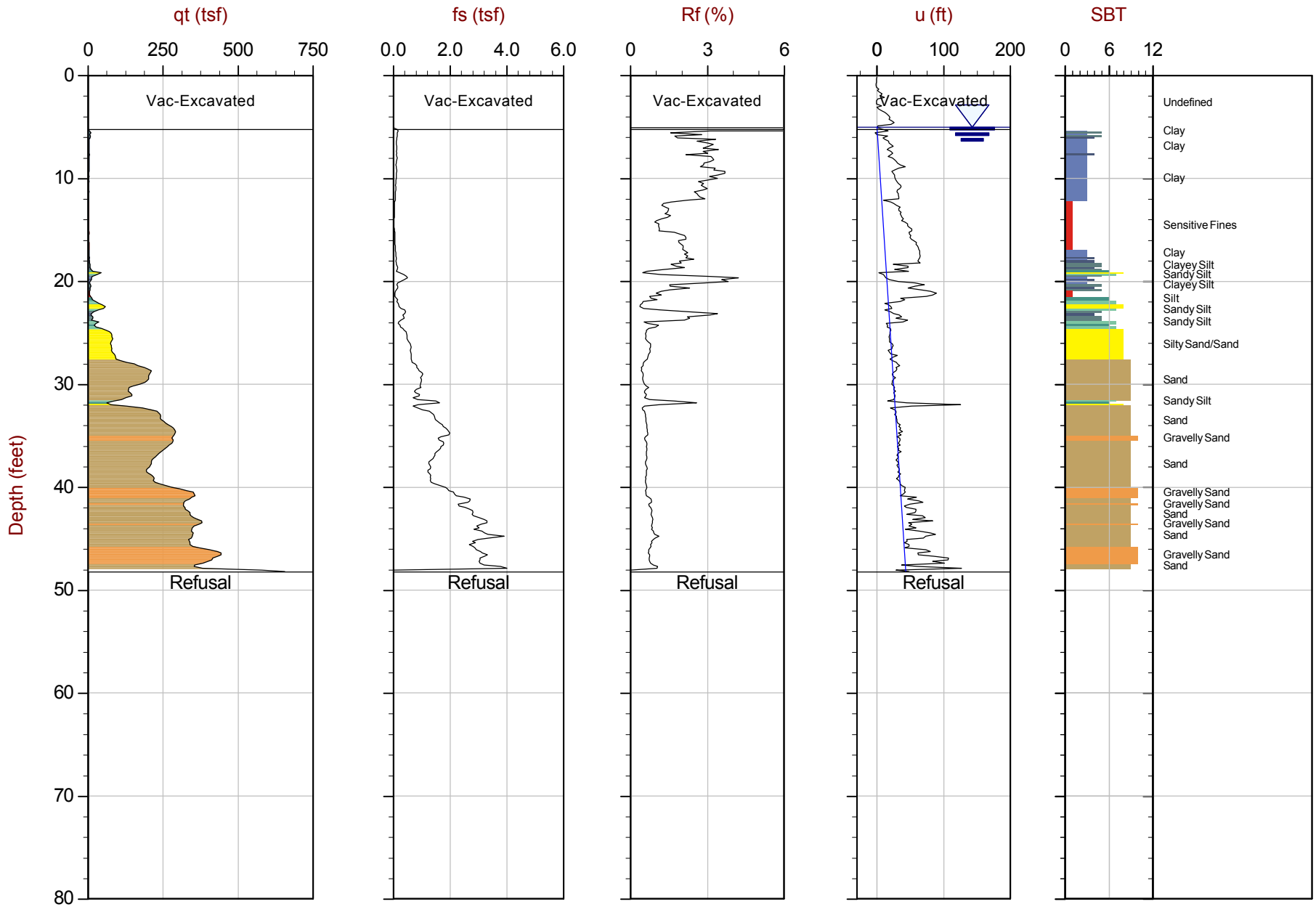
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 14:27
Site: Bay Park STP

Sounding: CPTu-12
Cone: 206:T1500F15U500



Max Depth: 14.700 m / 48.23 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP12.COR

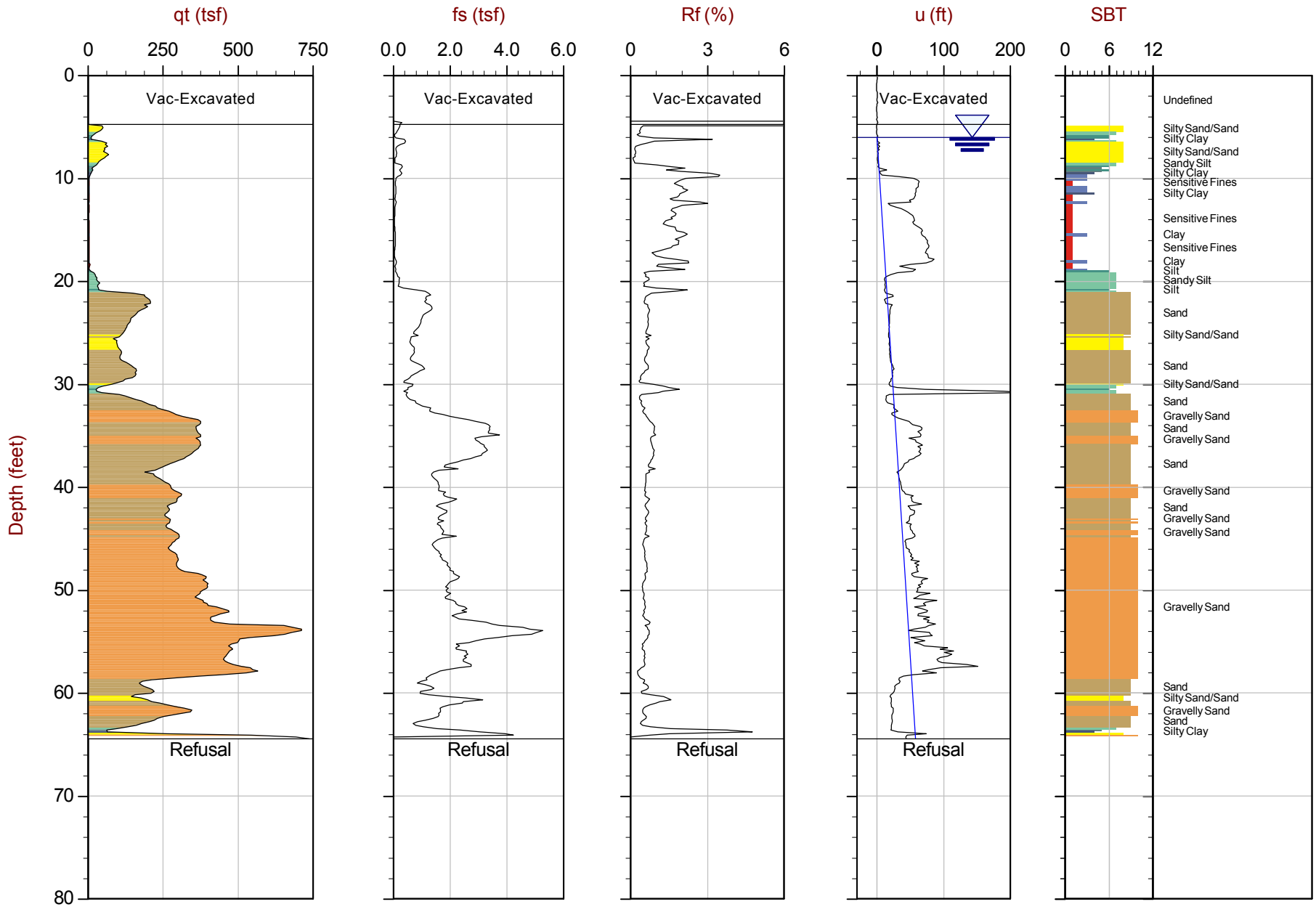
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498594 E: 613158

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:08:13 15:53
Site: Bay Park STP

Sounding: CPTu-13
Cone: 206:T1500F15U500



Max Depth: 19.650 m / 64.47 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP13.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498553 E: 613160

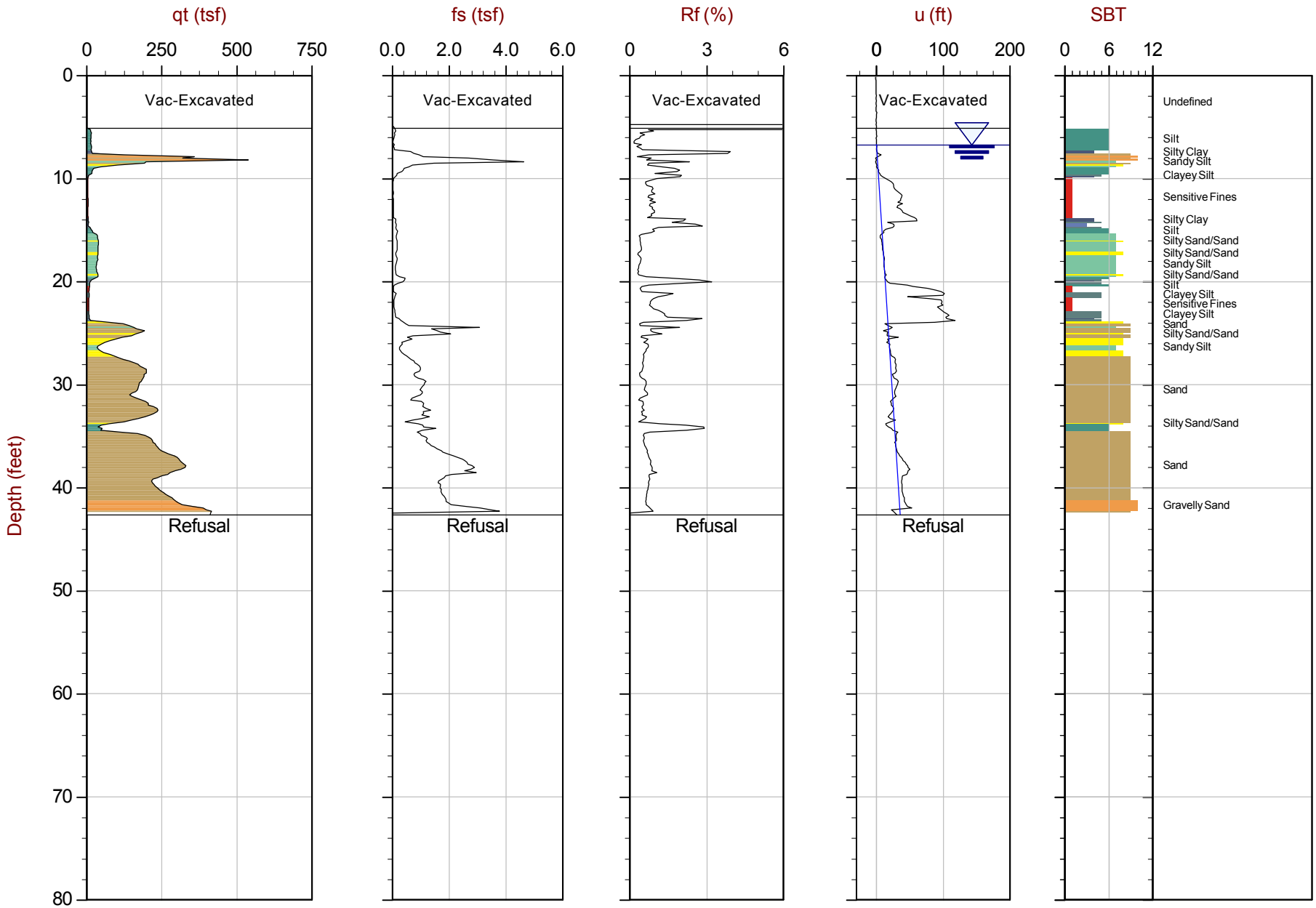
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 08:46
Site: Bay Park STP

Sounding: CPTu-14
Cone: 206:T1500F15U500



Max Depth: 13.000 m / 42.65 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP14.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498474 E: 613179

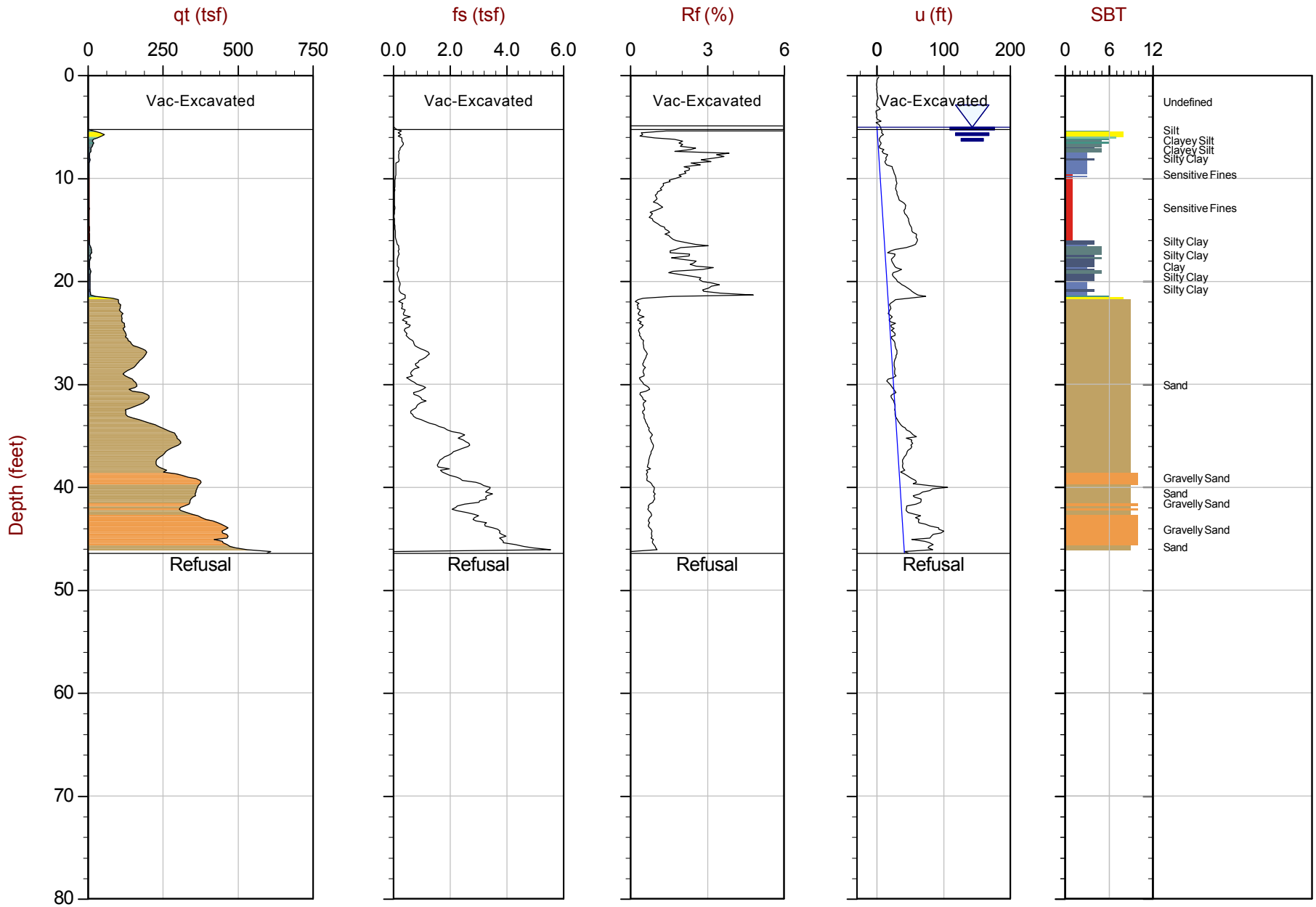
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 12:34
Site: Bay Park STP

Sounding: CPTu-15
Cone: 206:T1500F15U500



Max Depth: 14.150 m / 46.42 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP15.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498414 E: 613135

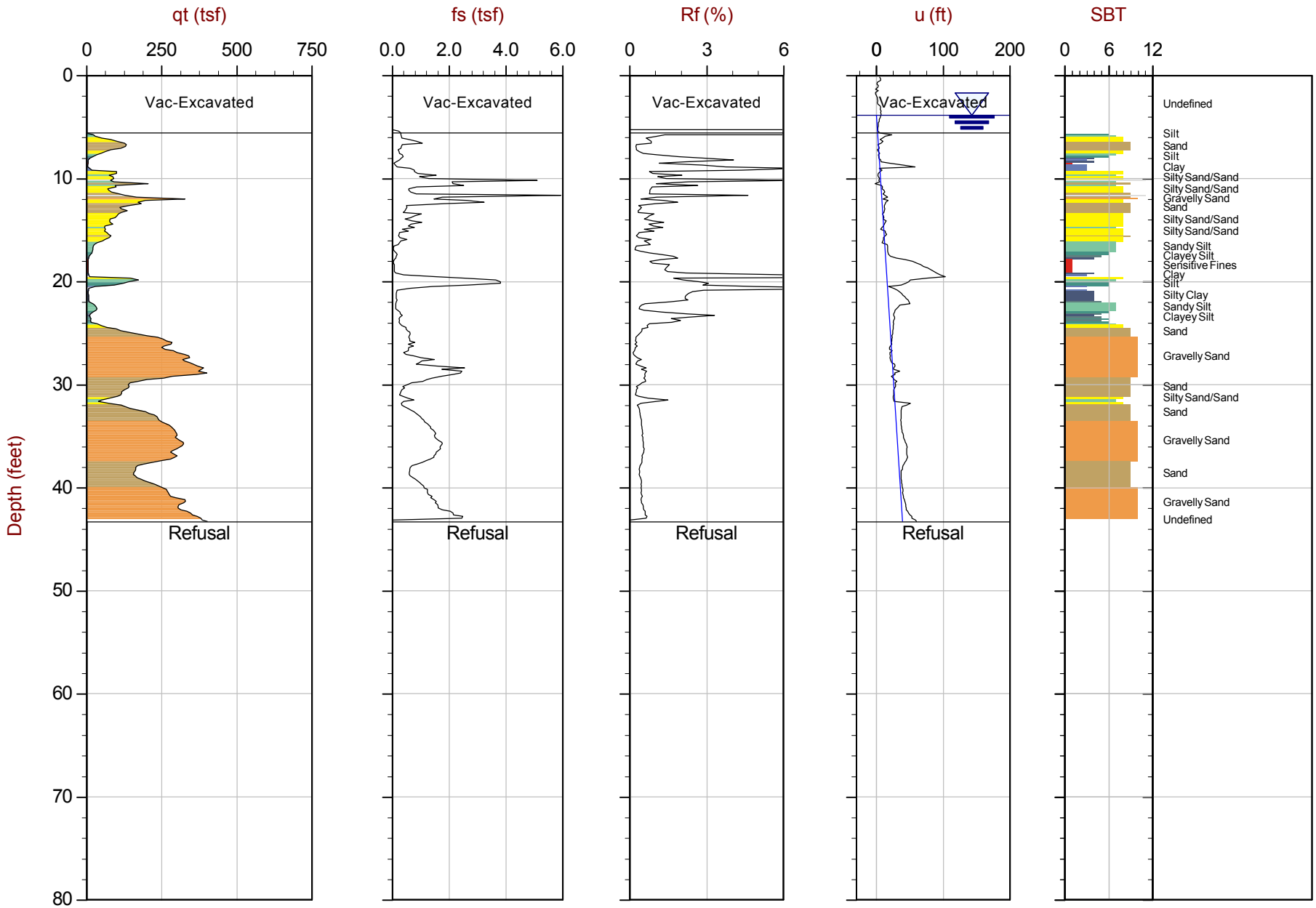
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 09:51
Site: Bay Park STP

Sounding: CPTu-16
Cone: 206:T1500F15U500



Max Depth: 13.200 m / 43.31 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP16.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498433 E: 613190

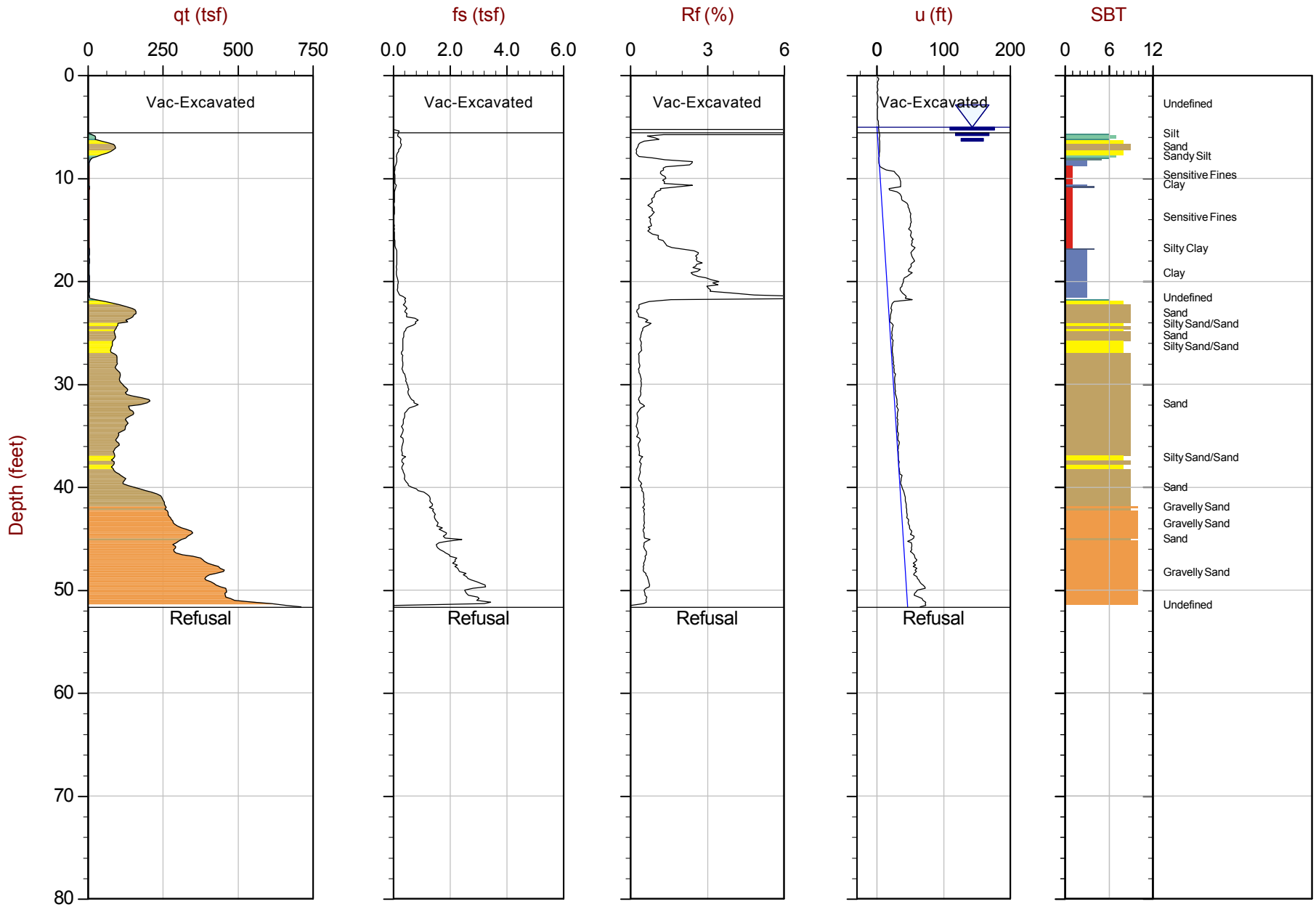
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:14:13 14:05
Site: Bay Park STP

Sounding: CPTu-17
Cone: 206:T1500F15U500



Max Depth: 15.750 m / 51.67 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP17.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498388 E: 613132

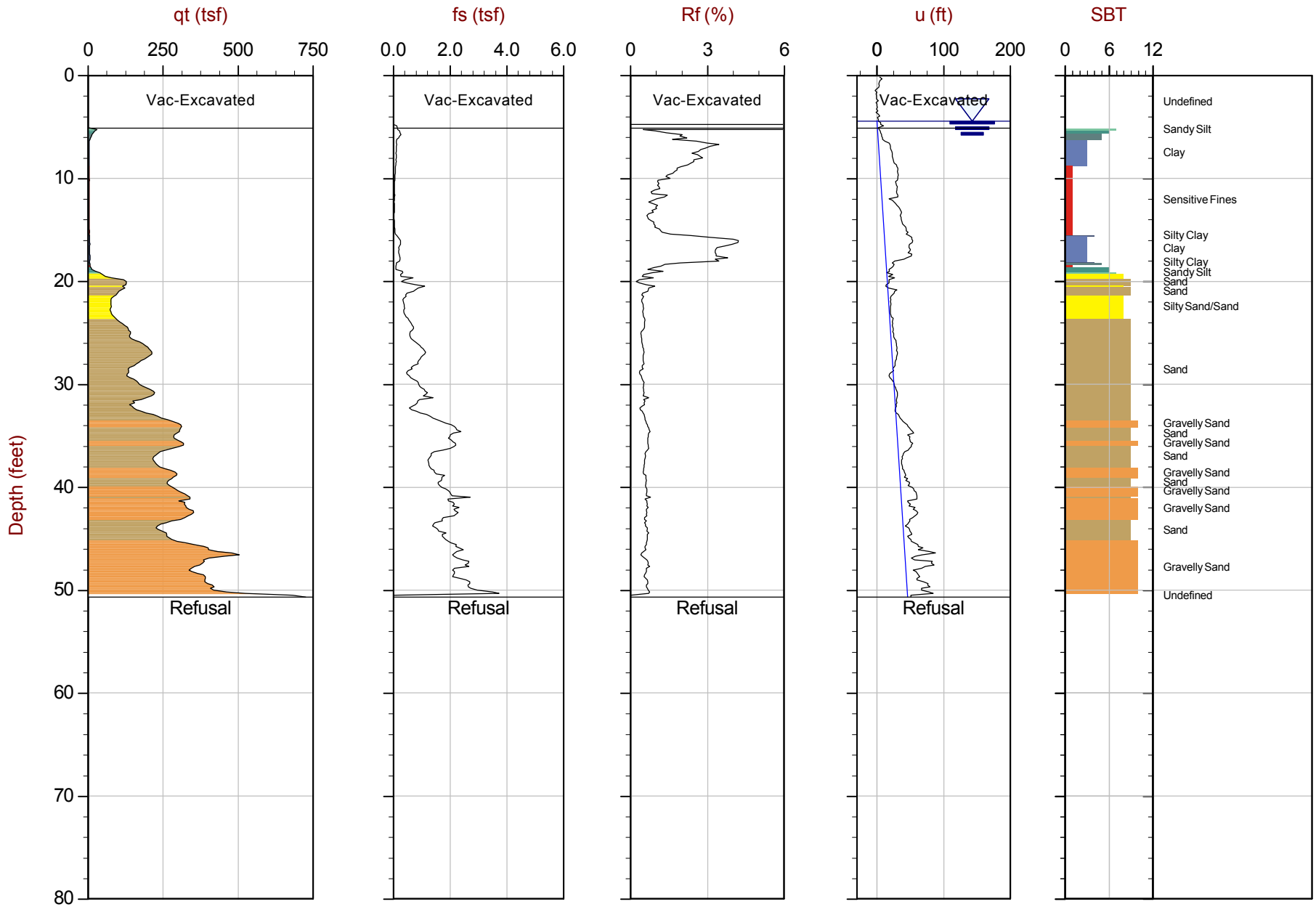
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 13:55
Site: Bay Park STP

Sounding: CPTu-18
Cone: 206:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP18.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498412 E: 613119

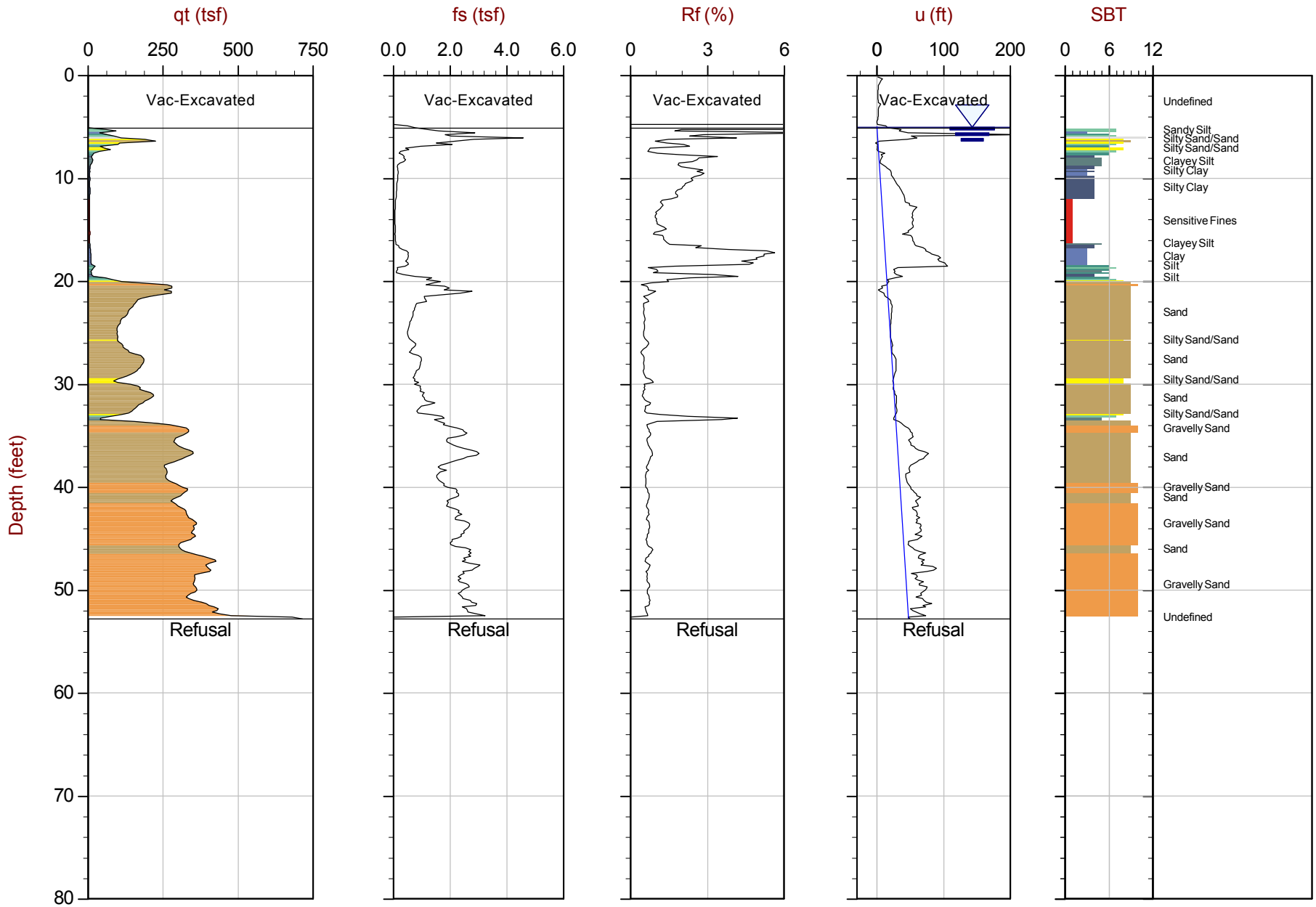
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 15:35
Site: Bay Park STP

Sounding: CPTu-19
Cone: 206:T1500F15U500



Max Depth: 16.100 m / 52.82 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP19.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498424 E: 613076

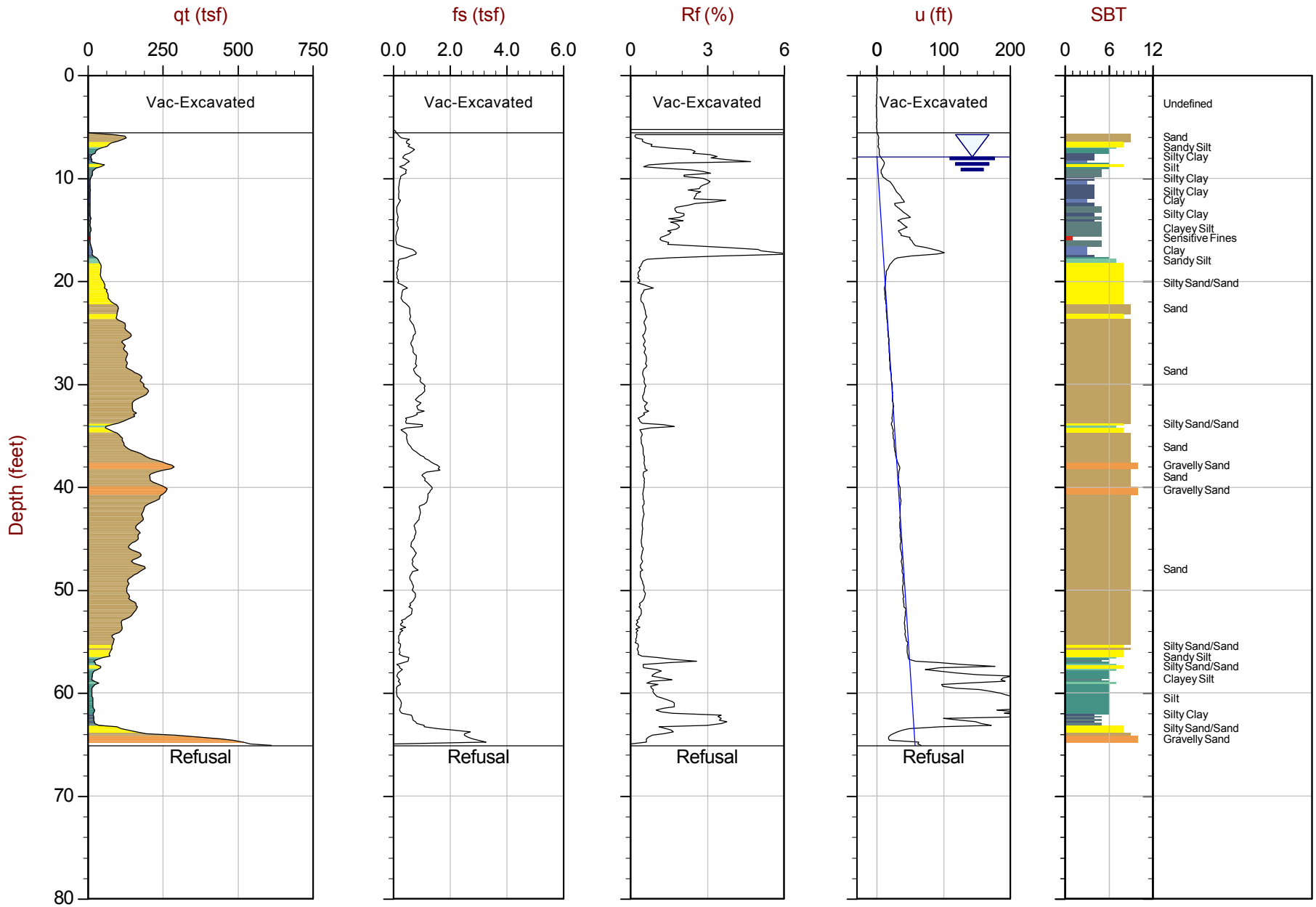
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 12:05
Site: Bay Park STP

Sounding: CPTu-20
Cone: 206:T1500F15U500



Max Depth: 19.850 m / 65.12 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP20.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498440 E: 612991

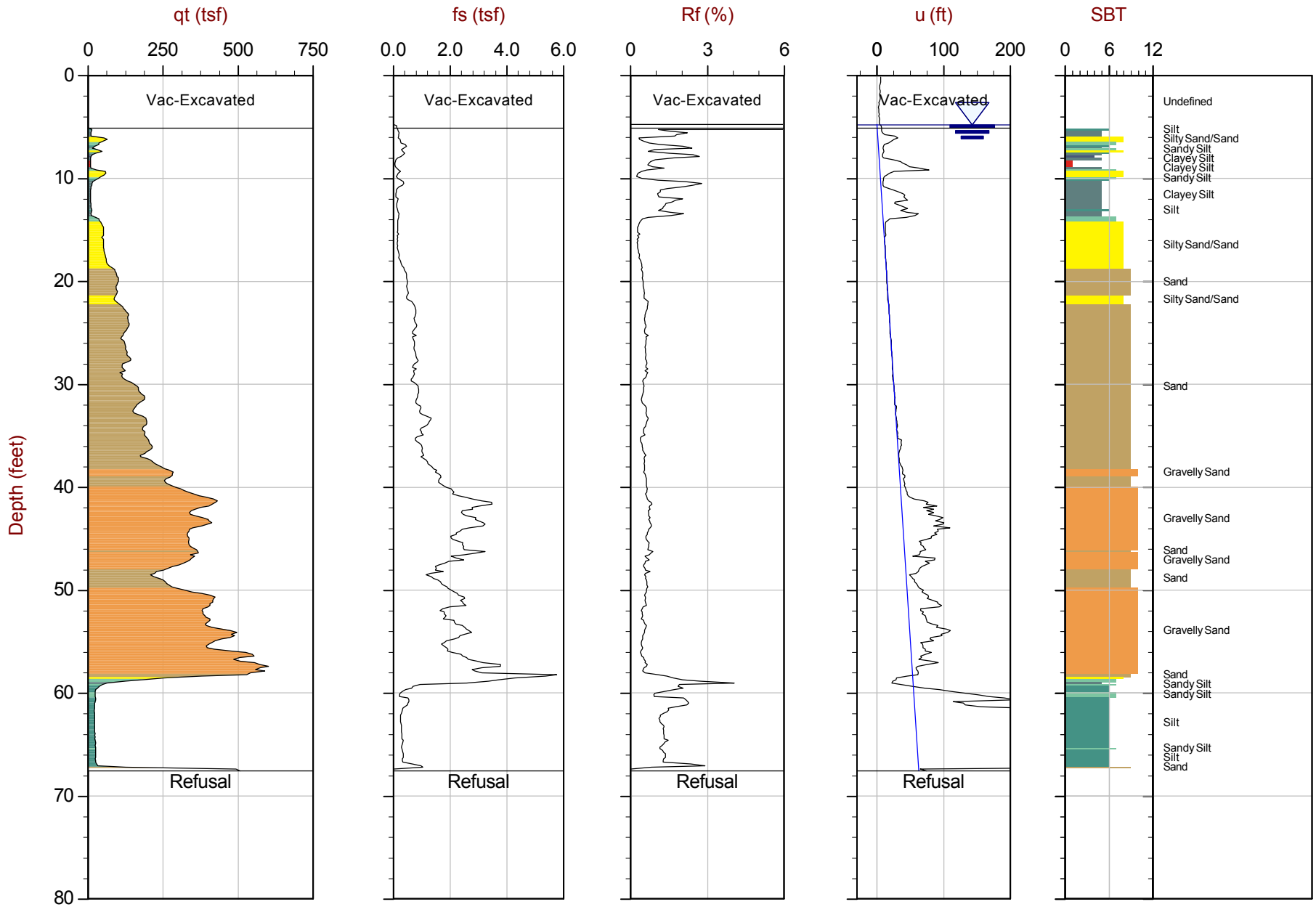
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 16:25
Site: Bay Park STP

Sounding: CPTu-21
Cone: 206:T1500F15U500



Max Depth: 20.600 m / 67.58 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP21.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498483 E: 612921

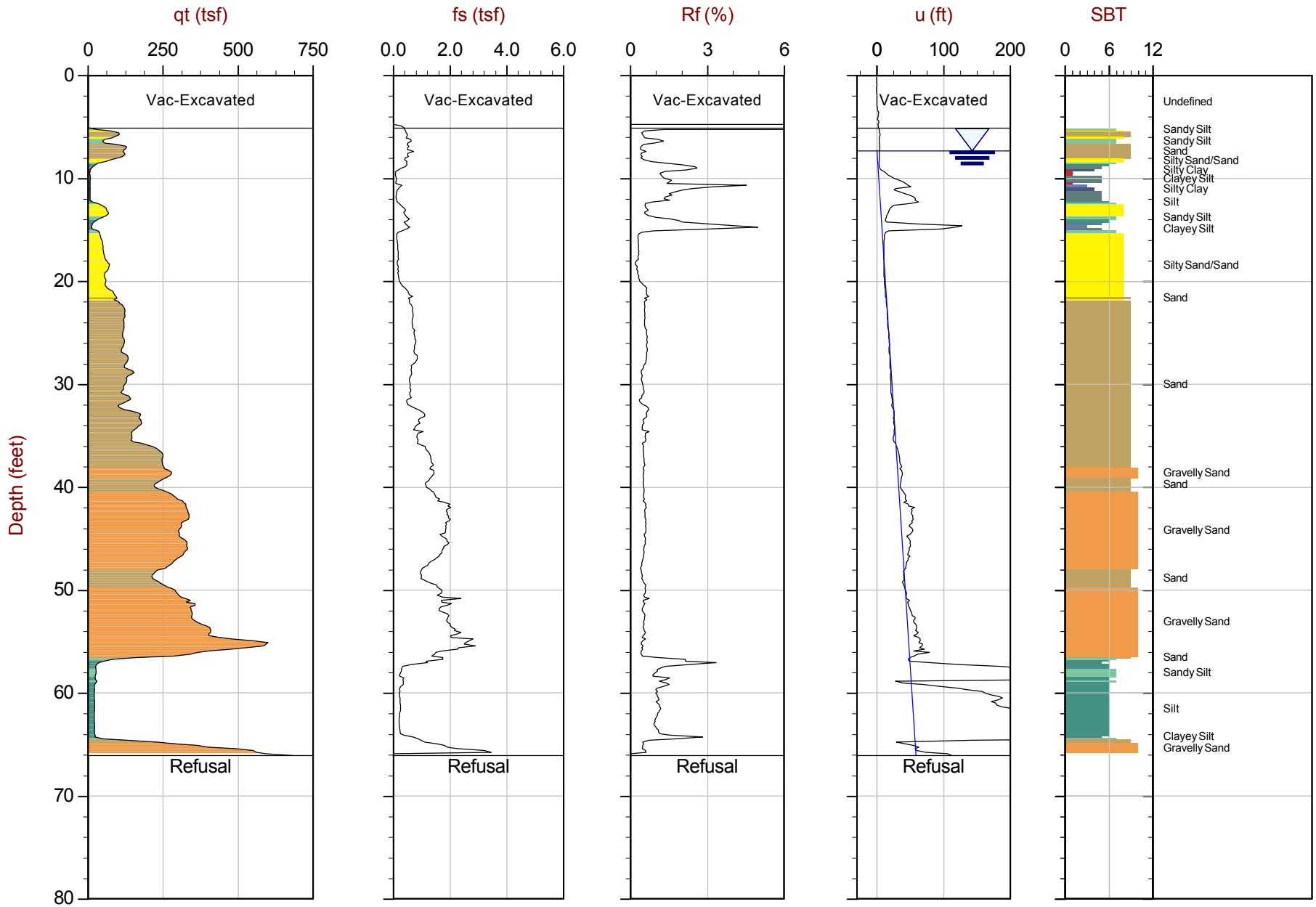
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 13:15
Site: Bay Park STP

Sounding: CPTu-22
Cone: 206:T1500F15U500



Max Depth: 20.150 m / 66.11 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP22.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498466 E: 612928

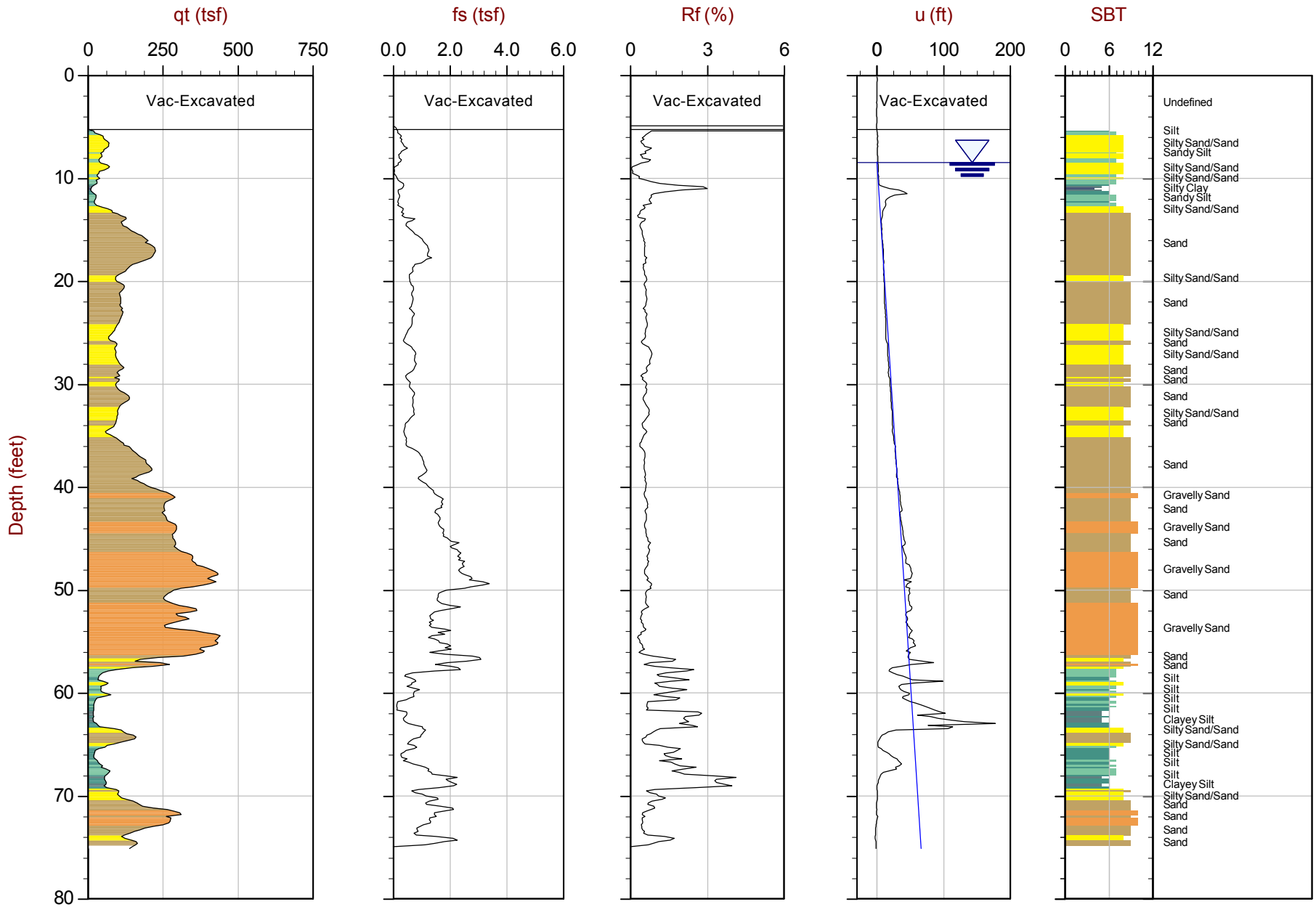
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:10:13 08:11
Site: Bay Park STP

Sounding: CPTu-23
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP23.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498512 E: 612857

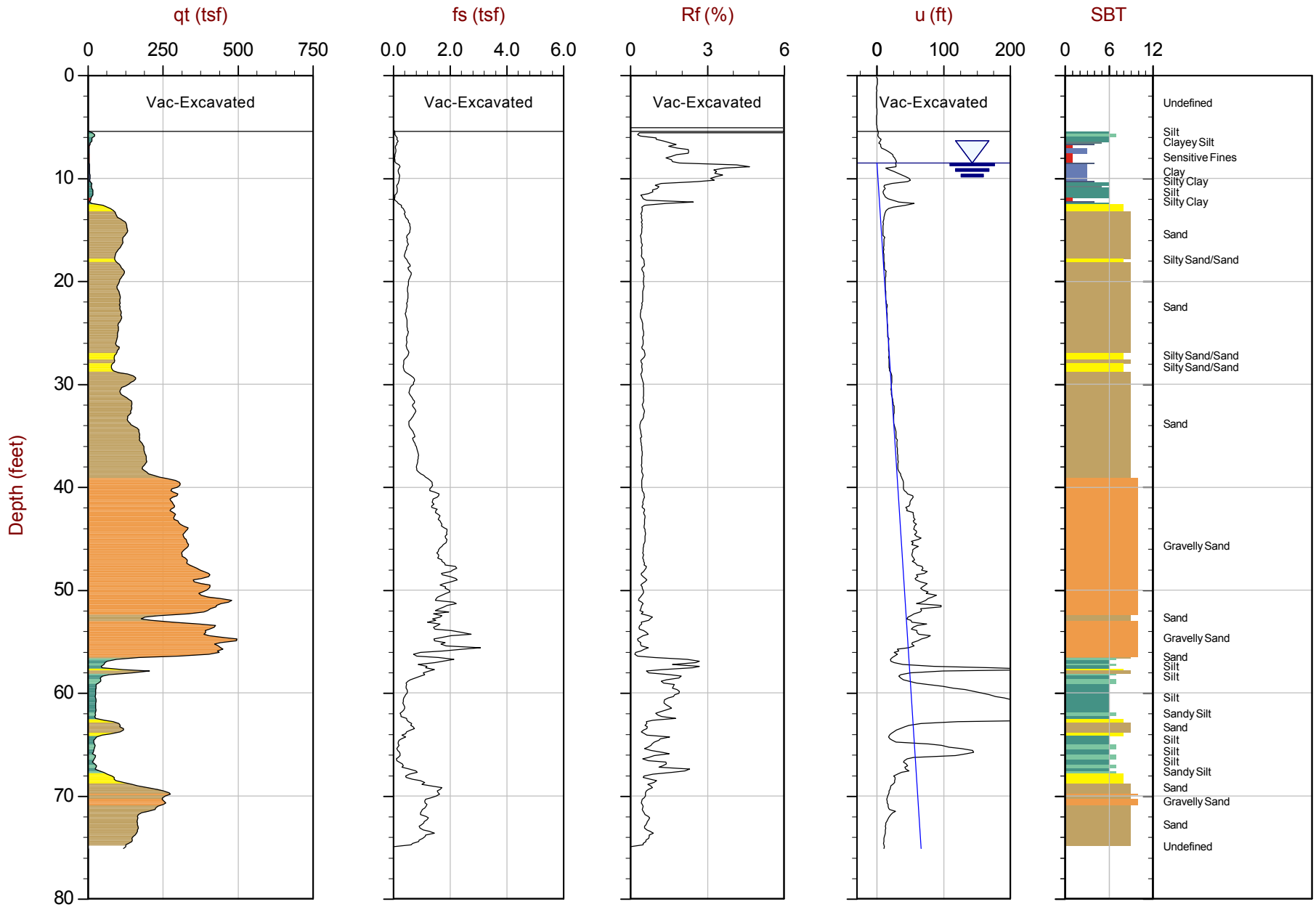
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 13:47
Site: Bay Park STP

Sounding: CPTu-24
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP24.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498513 E: 612822

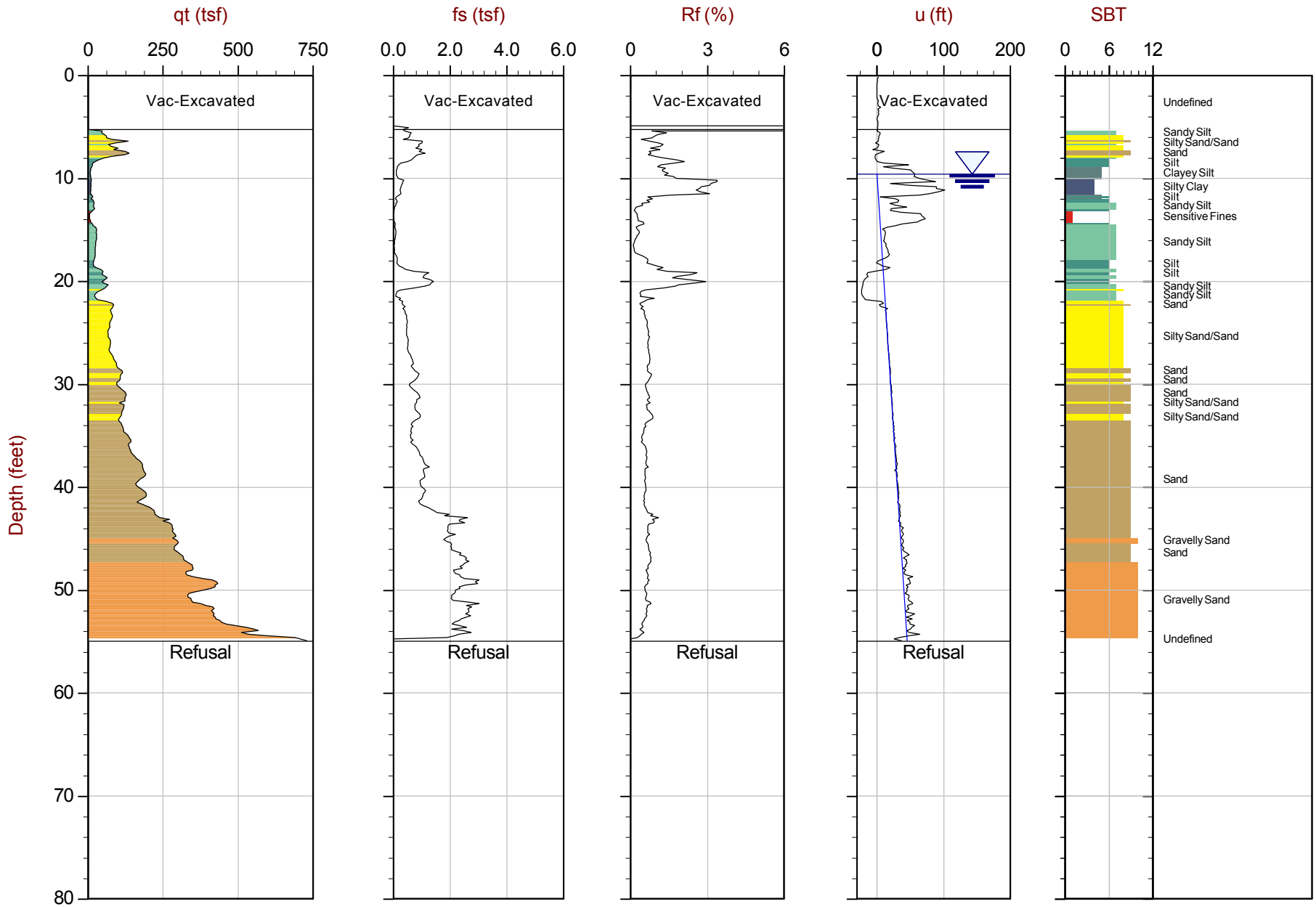
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 09:59
Site: Bay Park STP

Sounding: CPTu-25
Cone: 206:T1500F15U500



Max Depth: 16.750 m / 54.95 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP25.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498549 E: 612847

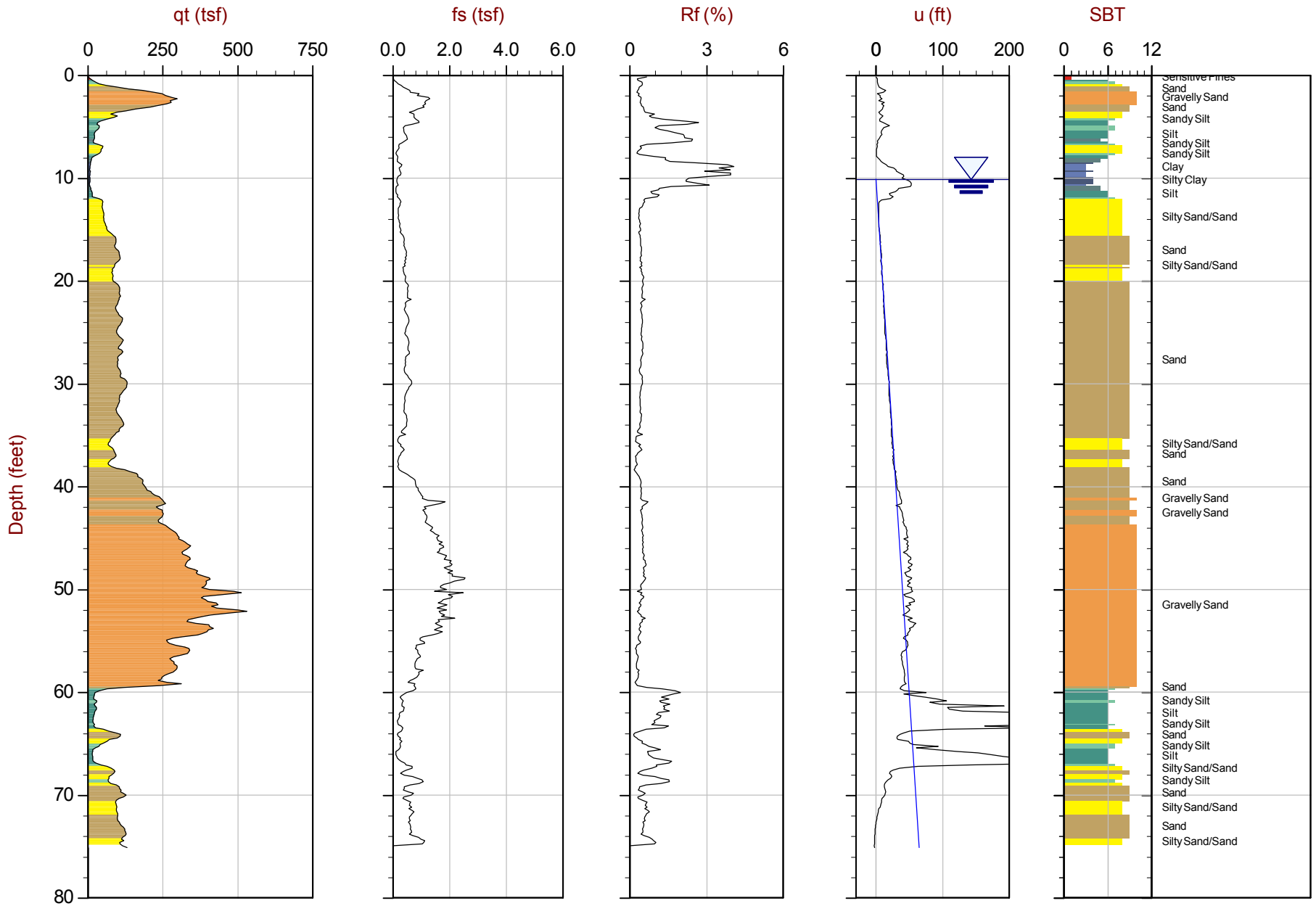
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 17:37
Site: Bay Park STP

Sounding: CPTu-26
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP26.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498602 E: 612811

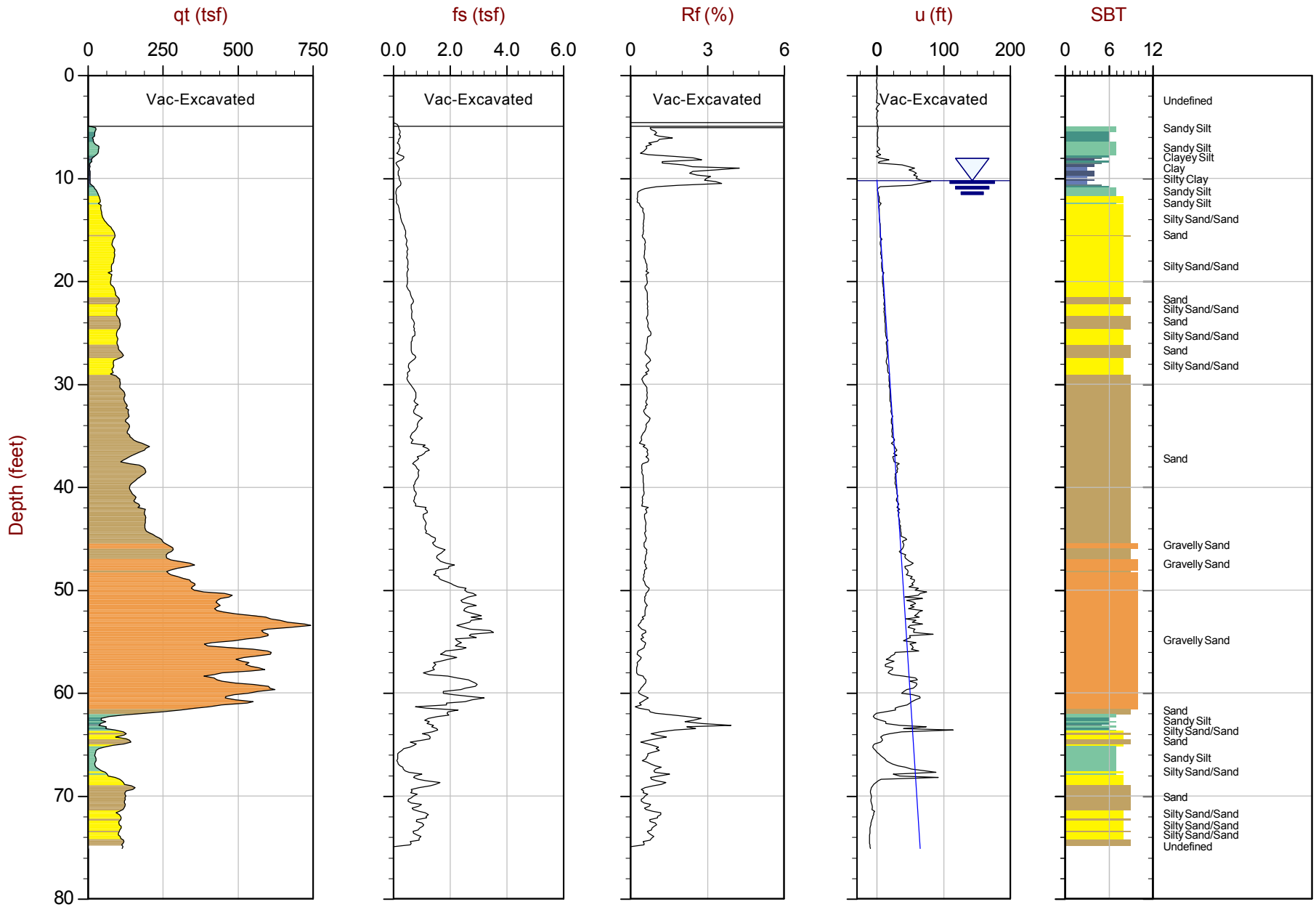
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:10:13 11:04
Site: Bay Park STP

Sounding: CPTu-27
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP27.COR

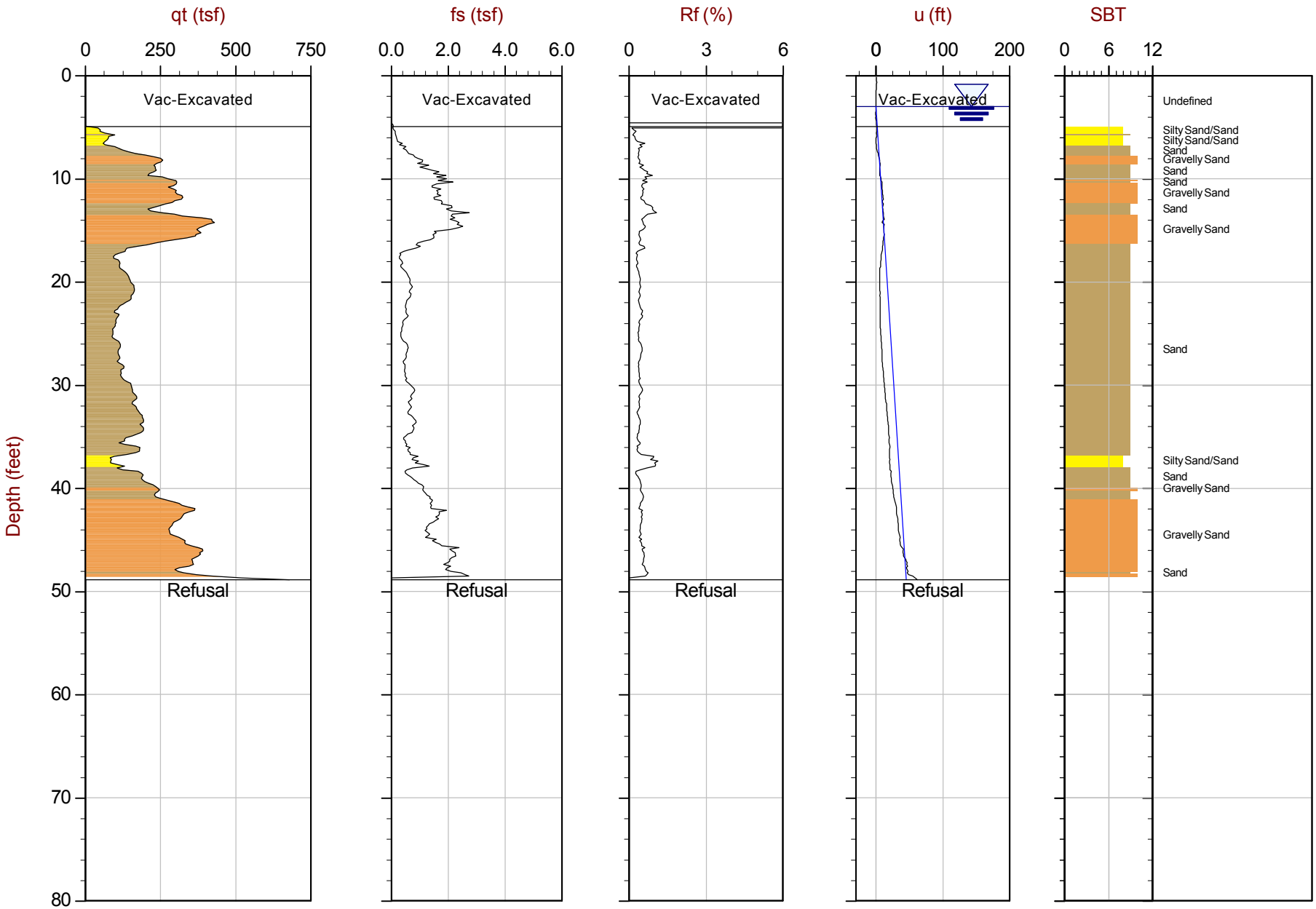
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498624 E: 612838

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:17:13 09:04
Site: Bay Park STP

Sounding: CPTu-28
Cone: 206:T1500F15U500



Max Depth: 14.900 m / 48.88 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP28.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498723 E: 612865

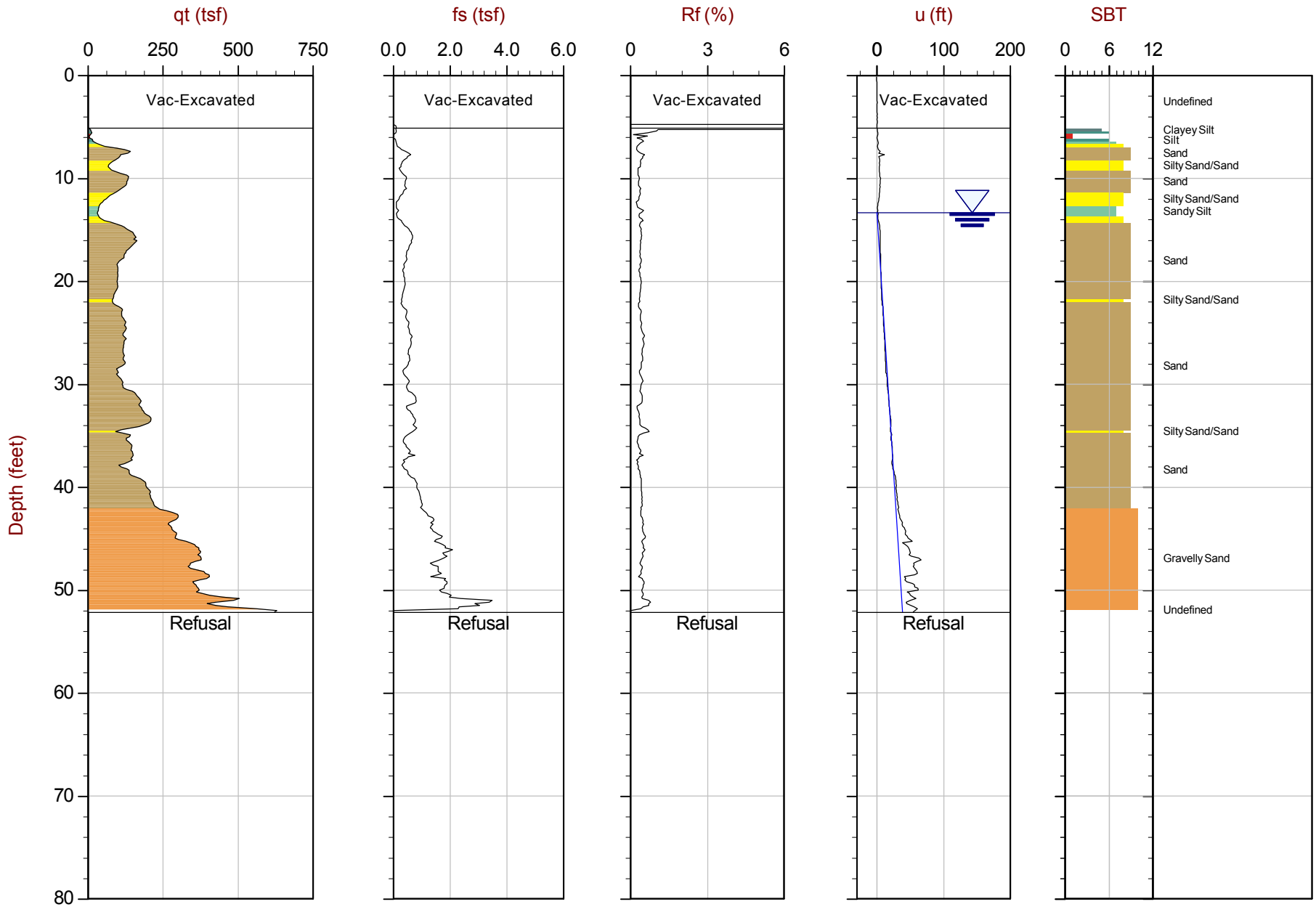
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 07:56
Site: Bay Park STP

Sounding: CPTu-29
Cone: 206:T1500F15U500



Max Depth: 15.900 m / 52.16 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP29.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498784 E: 612888

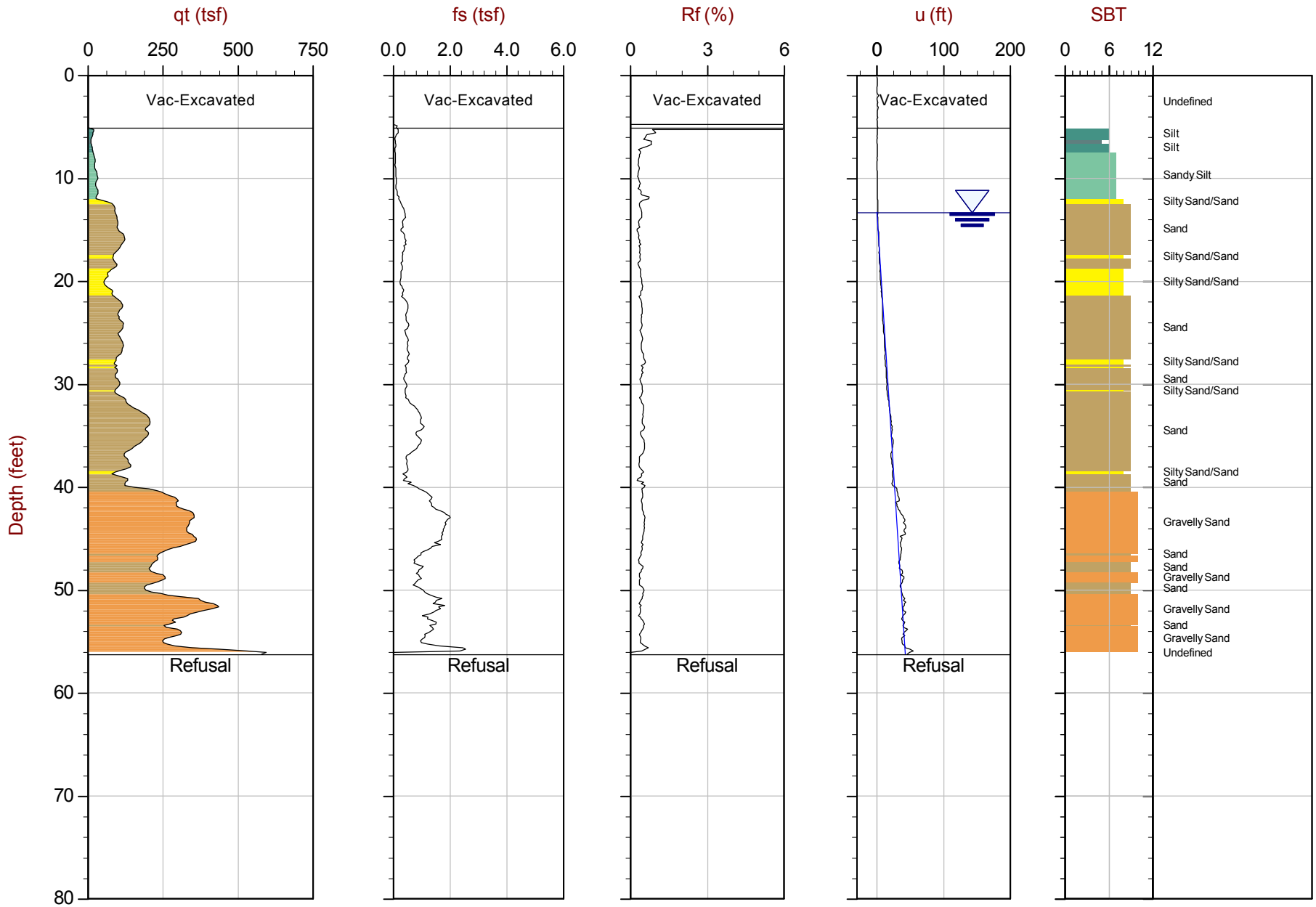
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:16:13 08:15
Site: Bay Park STP

Sounding: CPTu-30
Cone: 206:T1500F15U500



Max Depth: 17.150 m / 56.27 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP30.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498872 E: 612923

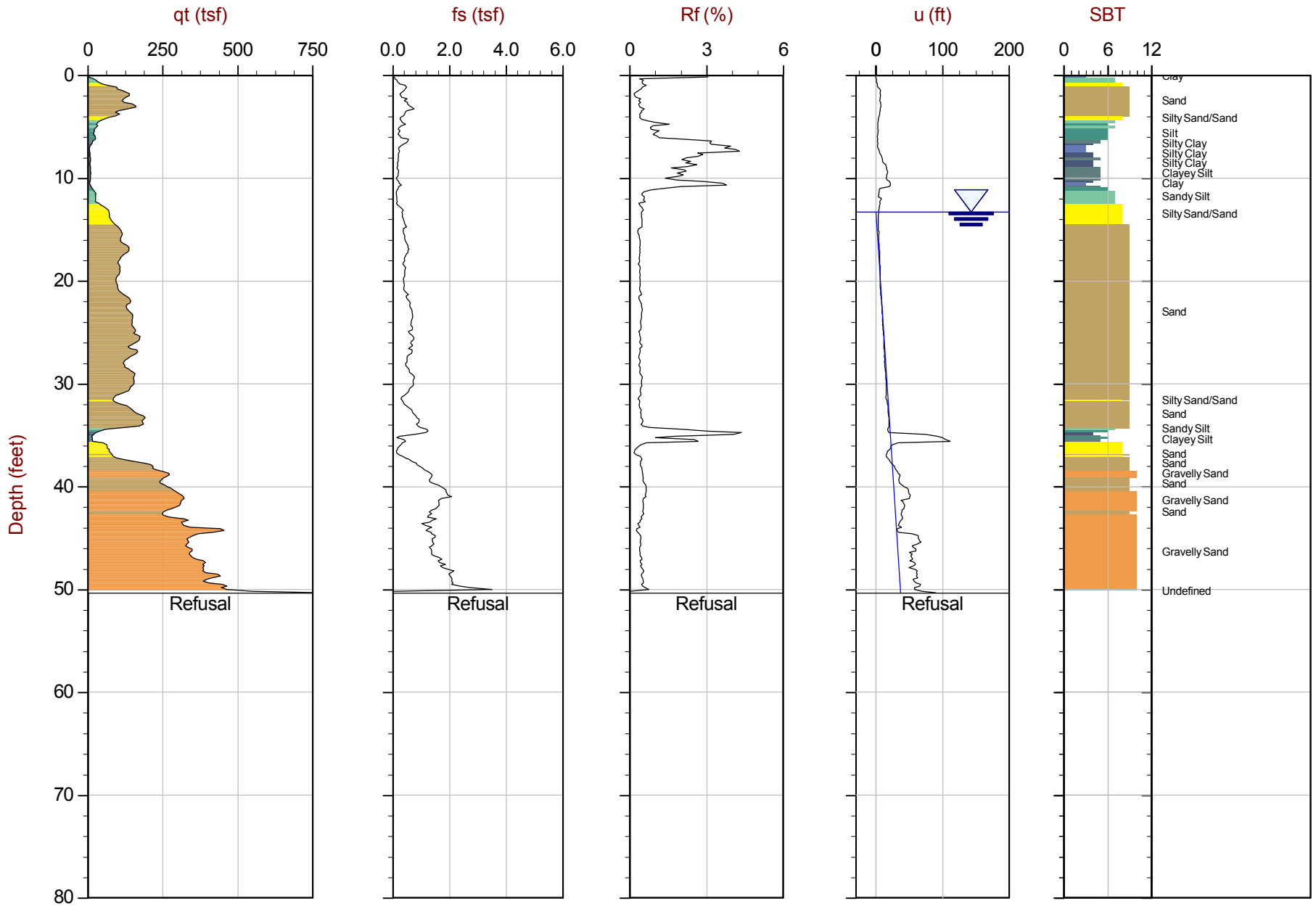
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 11:53
Site: Bay Park STP

Sounding: CPTu-31
Cone: 206:T1500F15U500



Max Depth: 15.350 m / 50.36 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP31.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498891 E: 612888

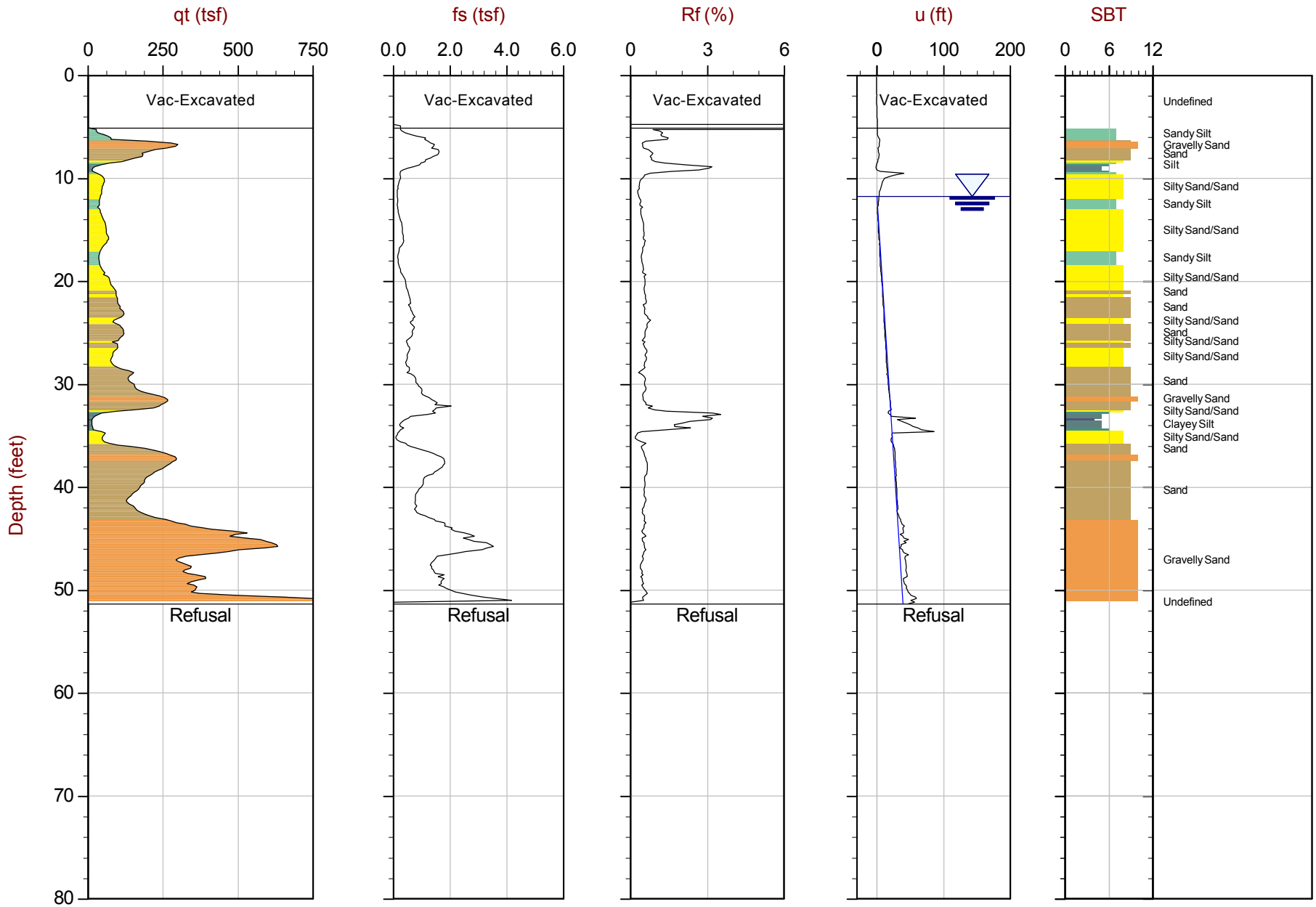
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 12:30
Site: Bay Park STP

Sounding: CPTu-32
Cone: 206:T1500F15U500



Max Depth: 15.650 m / 51.34 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP32.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498957 E: 612933

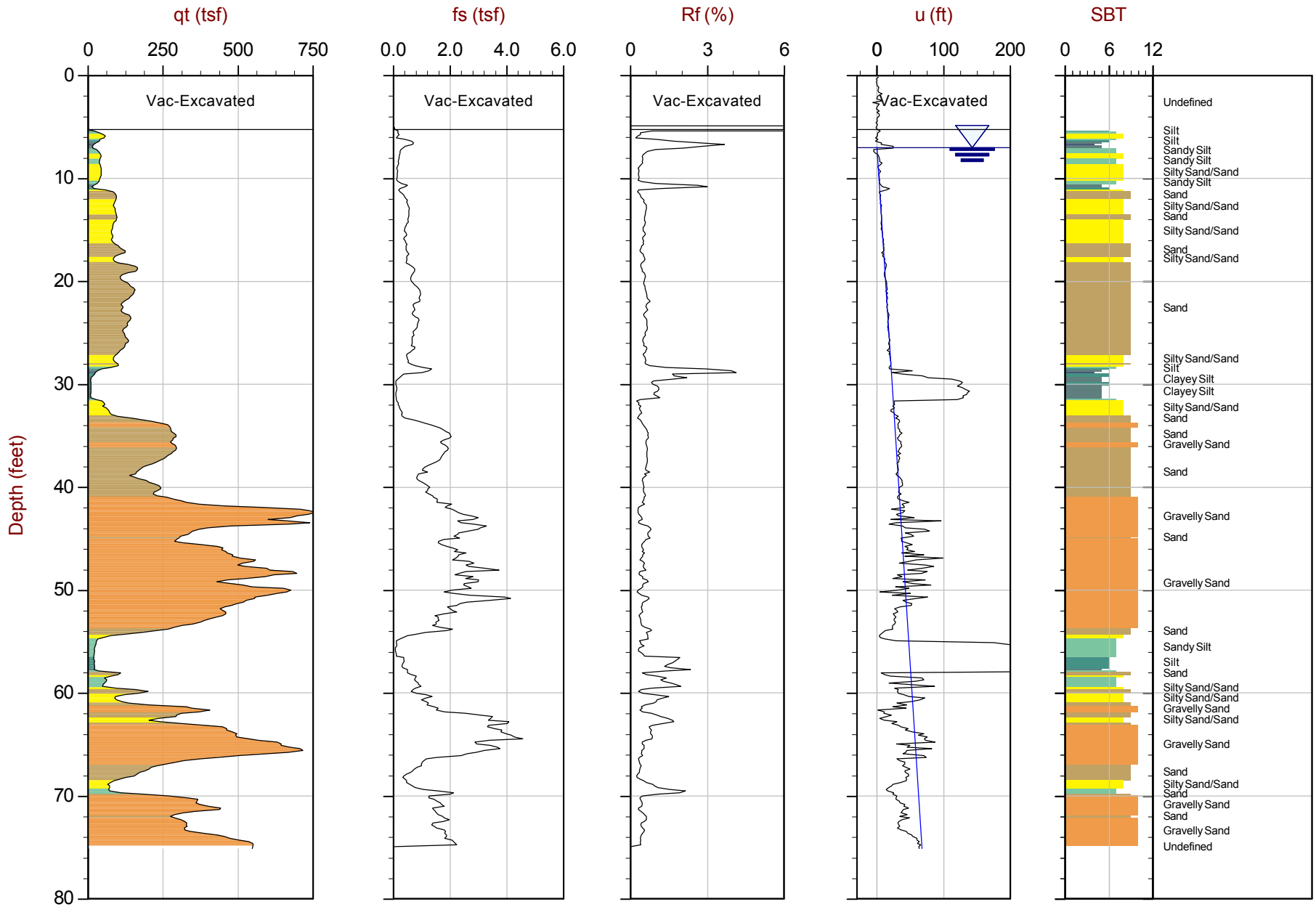
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 14:27
Site: Bay Park STP

Sounding: CPTu-33
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP33.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498987 E: 612874

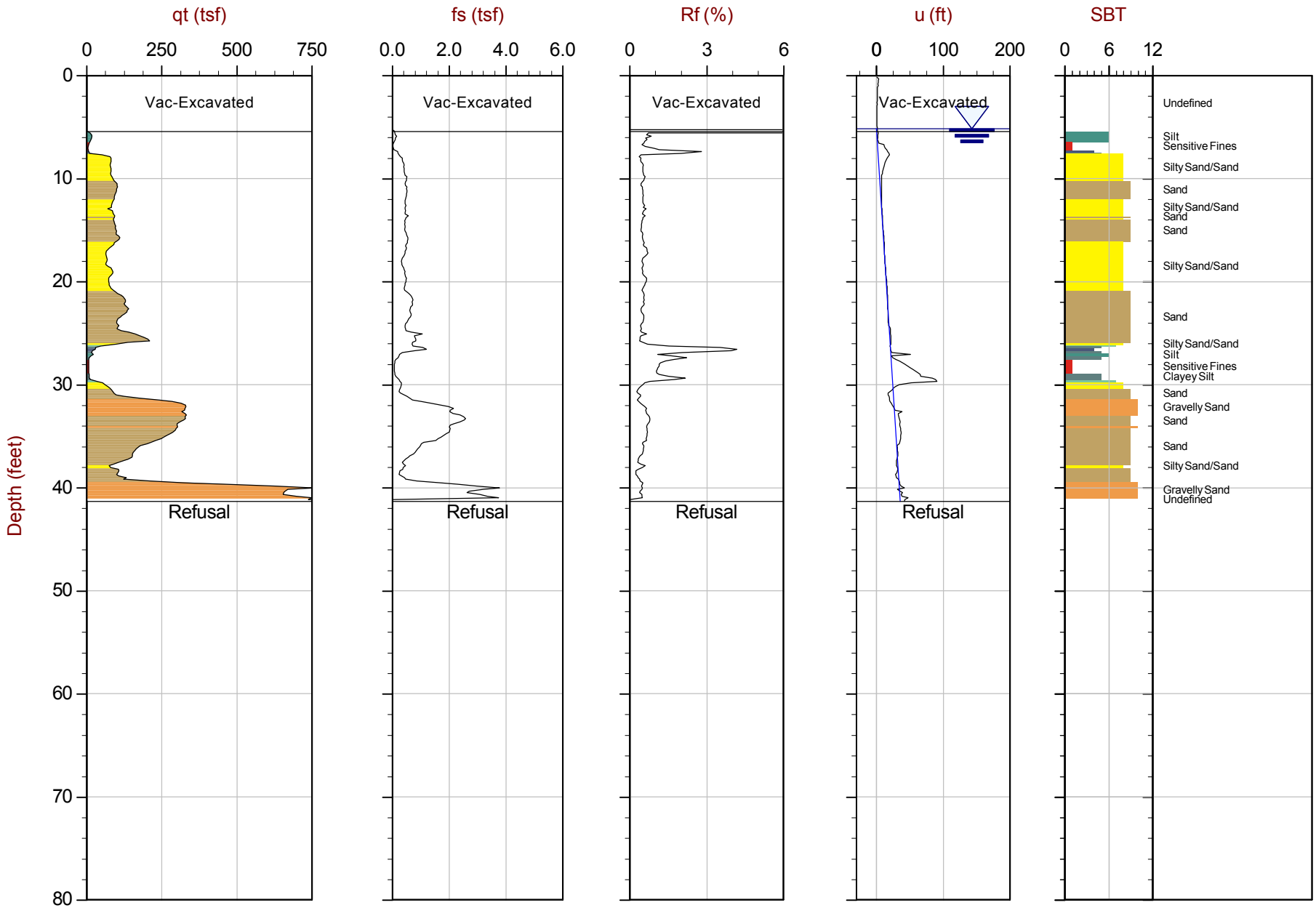
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 08:17
Site: Bay Park STP

Sounding: CPTu-34
Cone: 206:T1500F15U500



Max Depth: 12.600 m / 41.34 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP34.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499055 E: 612900

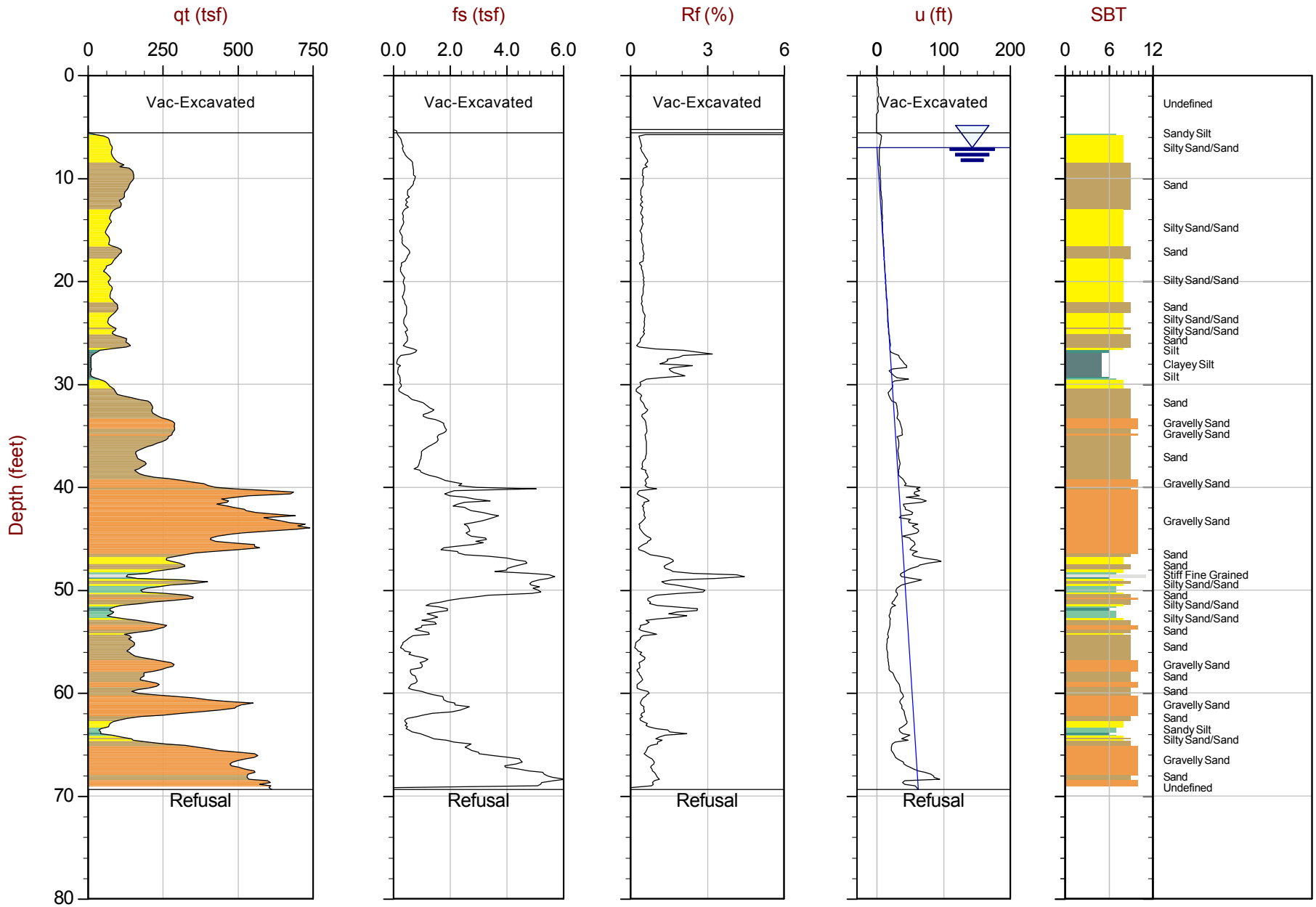
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 11:35
Site: Bay Park STP

Sounding: CPTu-35
Cone: 206:T1500F15U500



Max Depth: 21.150 m / 69.39 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP35.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499030 E: 612966

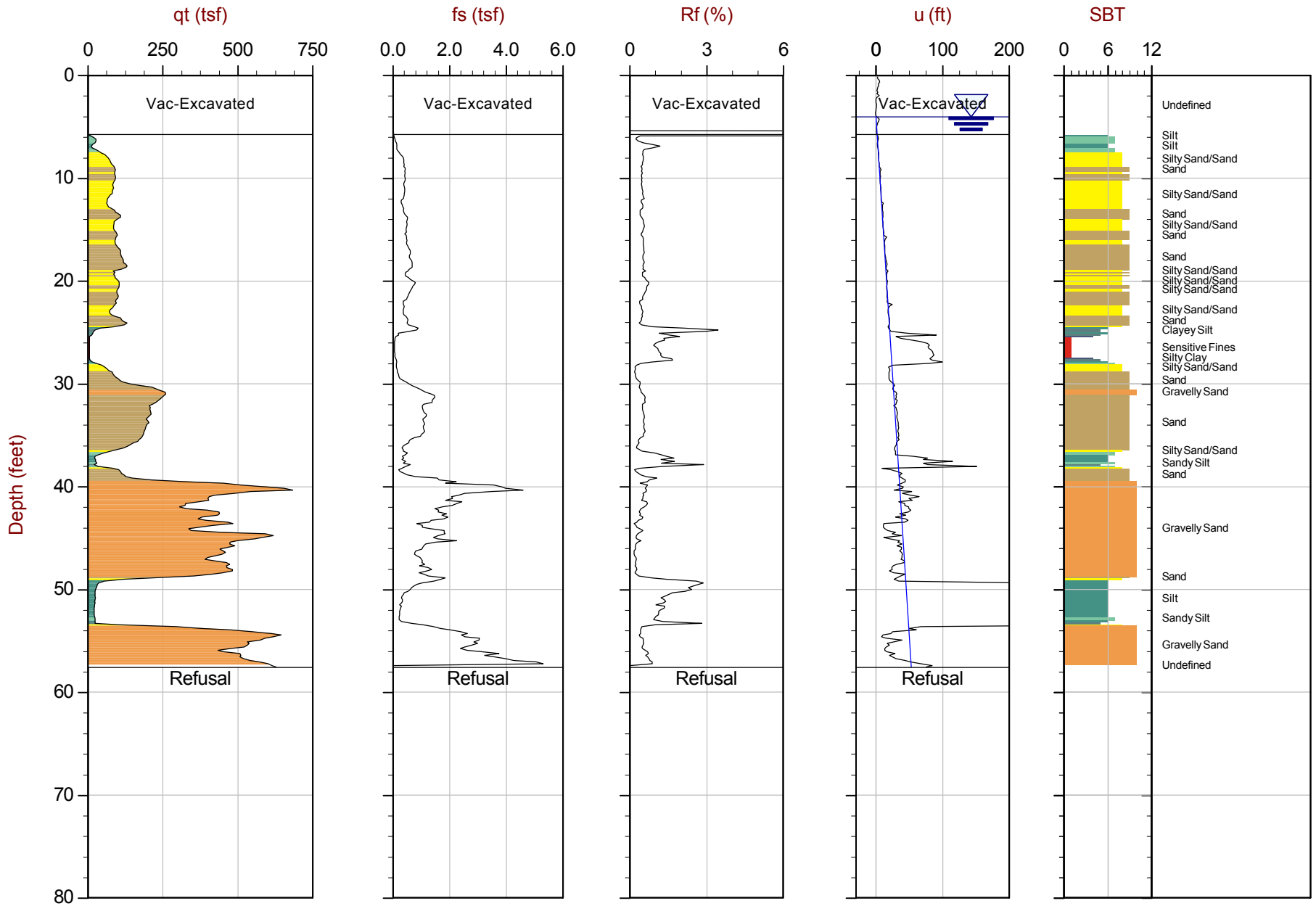
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 09:40
Site: Bay Park STP

Sounding: CPTu-37
Cone: 206:T1500F15U500



Max Depth: 17.550 m / 57.58 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP37.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499107 E: 612923

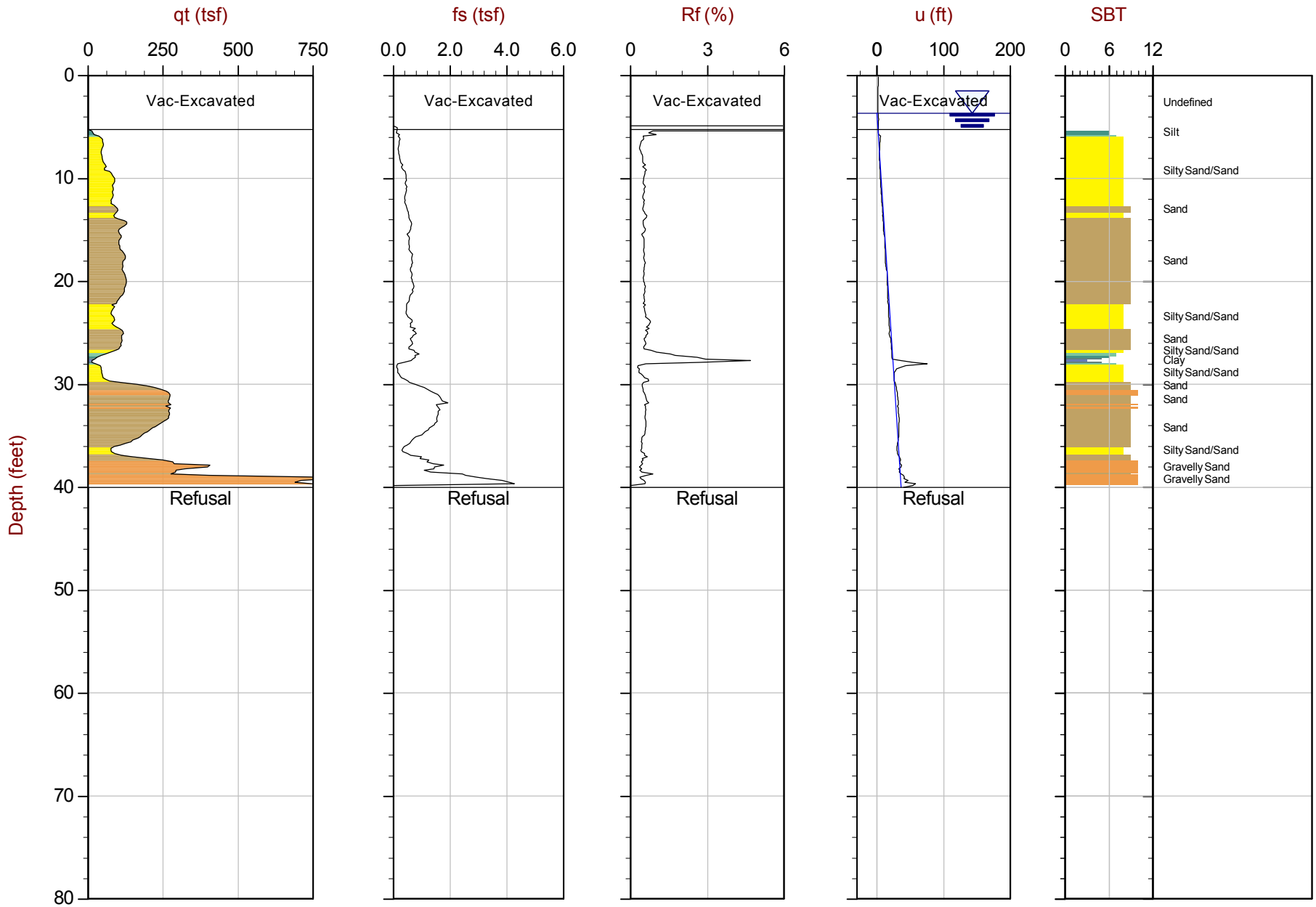
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 13:32
Site: Bay Park STP

Sounding: CPTu-38
Cone: 206:T1500F15U500



Max Depth: 12.200 m / 40.03 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP38.COR

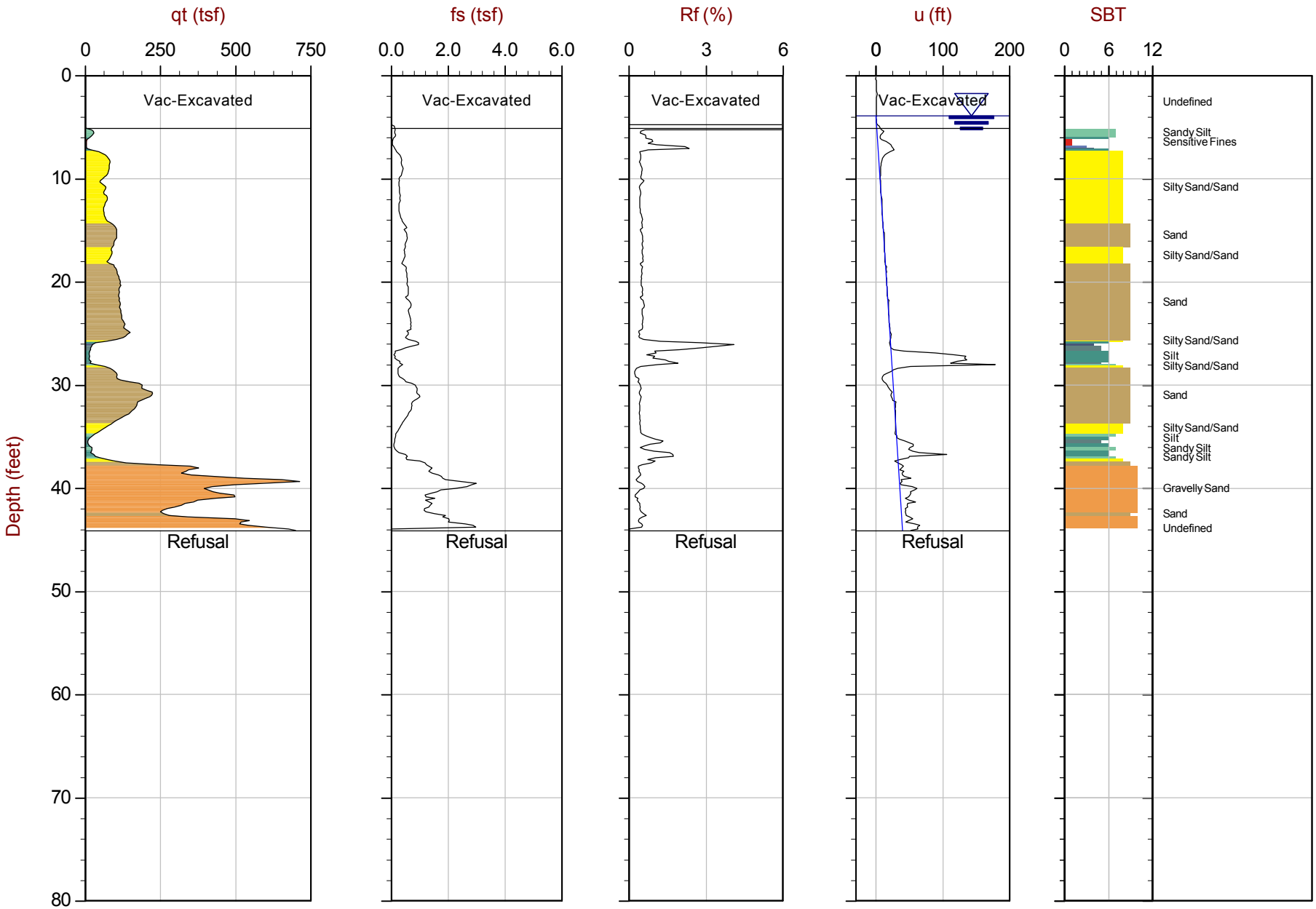
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499104 E: 612999

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:14:13 08:53
Site: Bay Park STP

Sounding: CPTu-39
Cone: 206:T1500F15U500



Max Depth: 13.450 m / 44.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP39.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499111 E: 613069

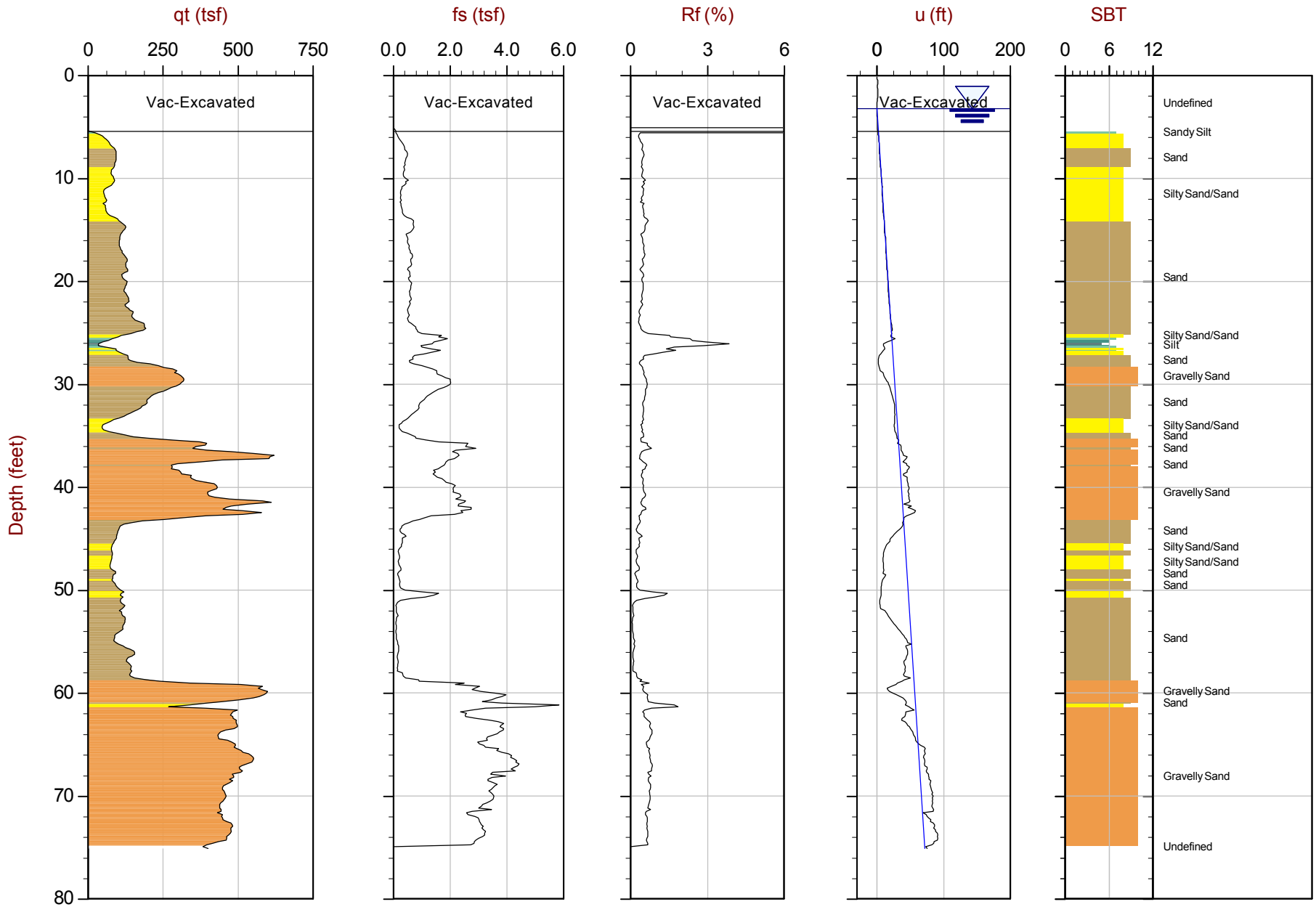
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:14:13 10:10
Site: Bay Park STP

Sounding: CPTu-40
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP40.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499072 E: 613107

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

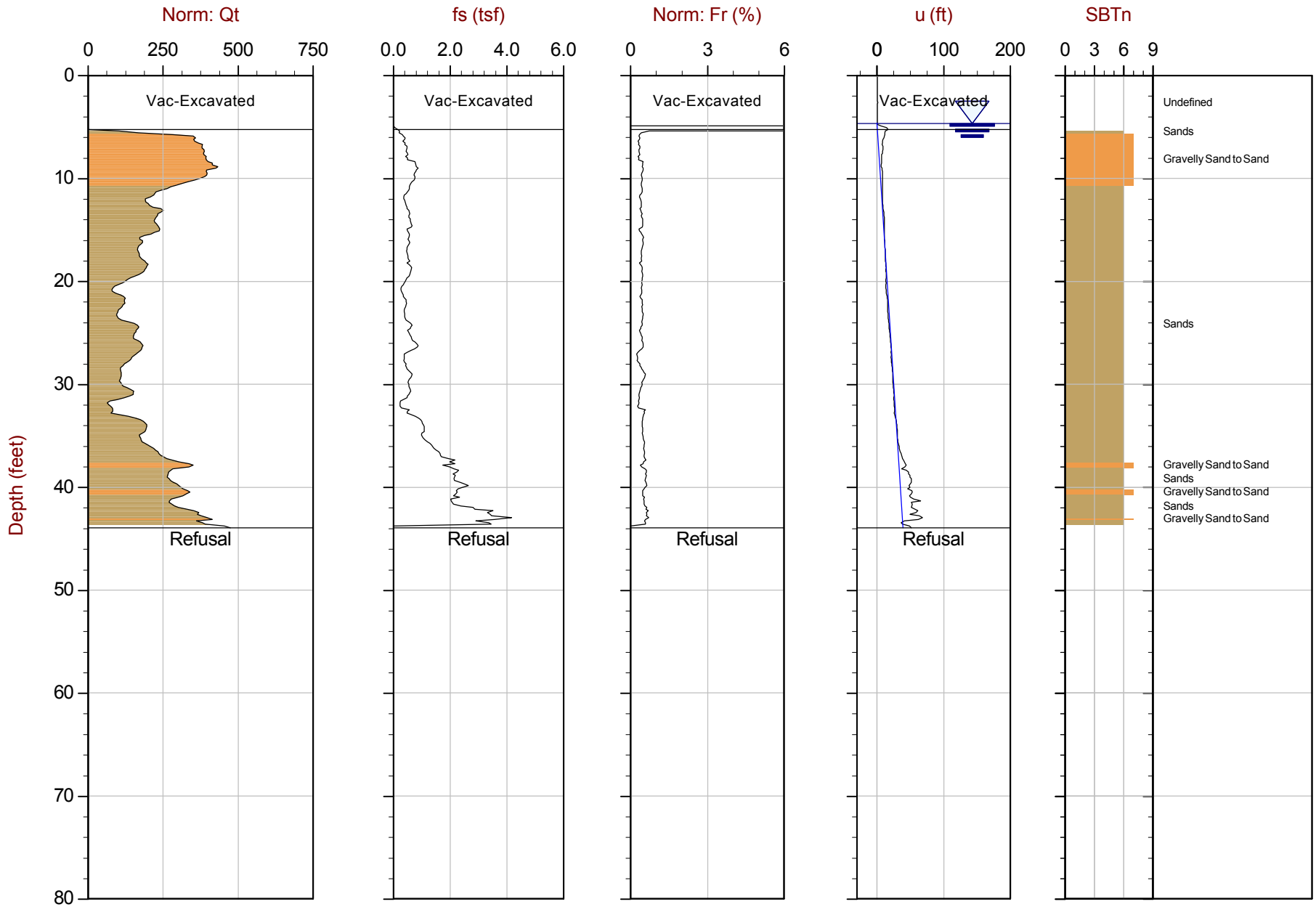
Normalized CPT Plots

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:14:13 11:29
Site: Bay Park STP

Sounding: CPTu-01
Cone: 206:T1500F15U500



Max Depth: 13.400 m / 43.96 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP01.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498984 E: 613106

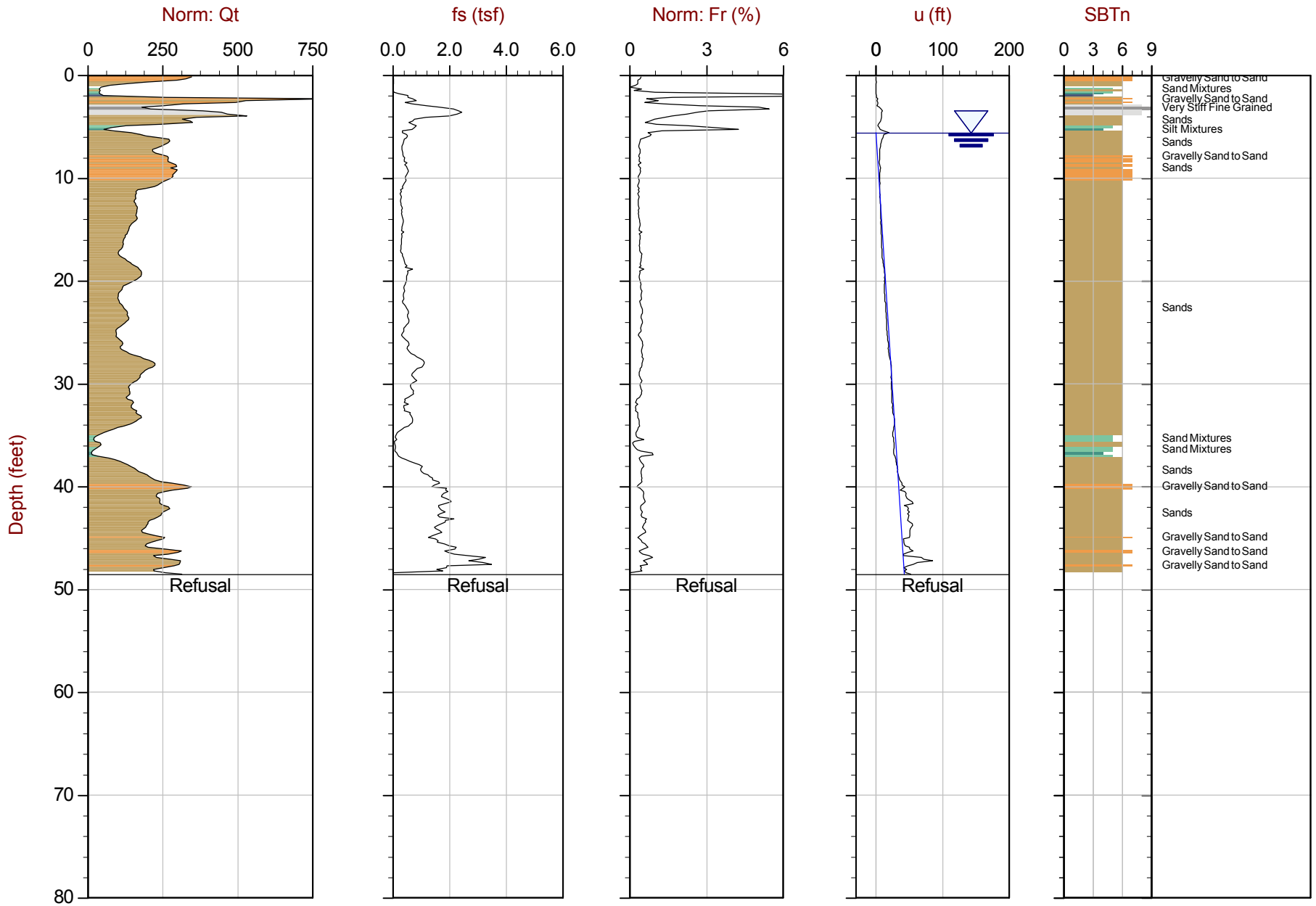
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:16:13 18:53
Site: Bay Park STP

Sounding: CPTu-02
Cone: 206:T1500F15U500



Max Depth: 14.800 m / 48.56 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP02.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498978 E: 613118

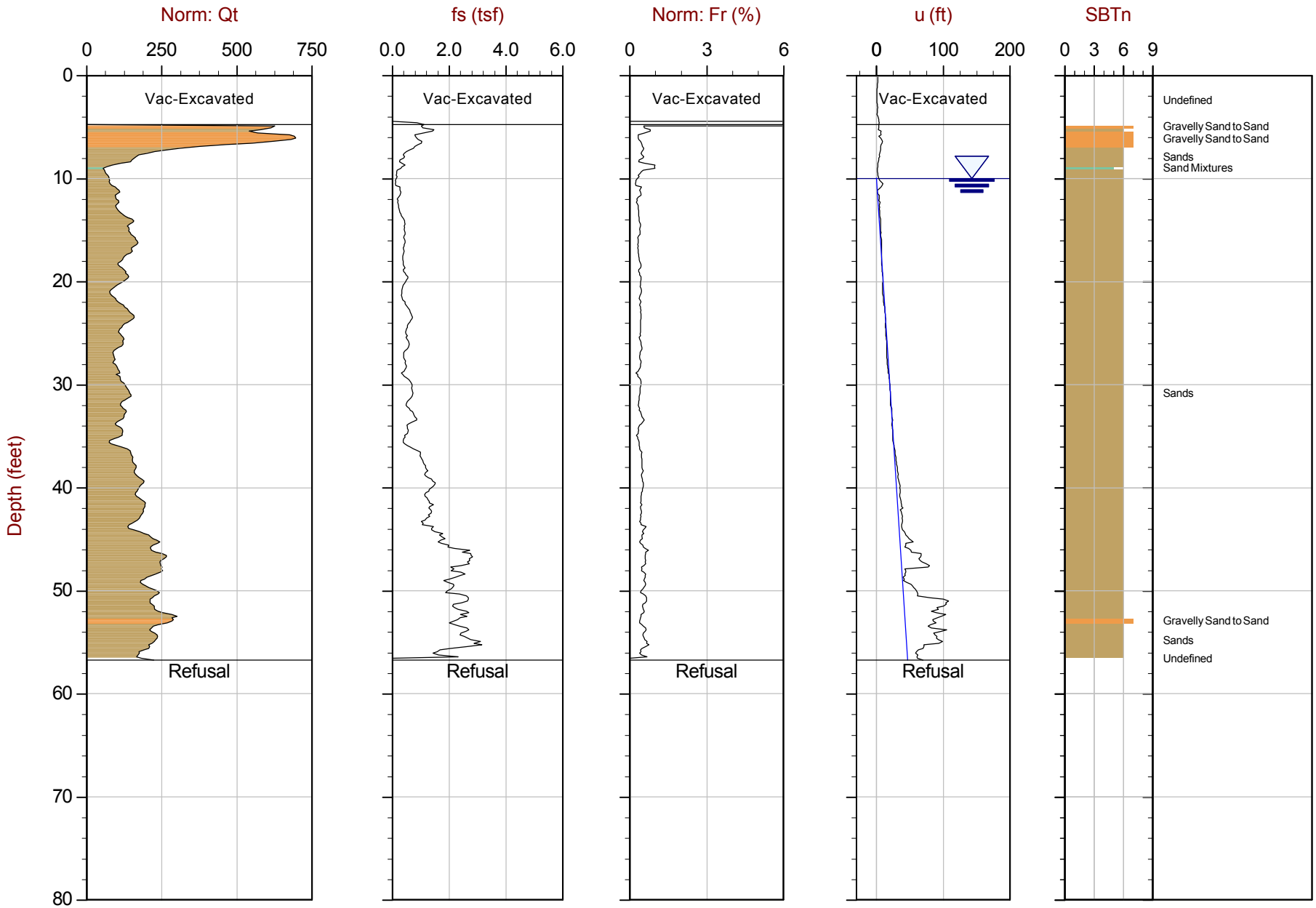
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:16:13 16:54
Site: Bay Park STP

Sounding: CPTu-03
Cone: 206:T1500F15U500



Max Depth: 17.300 m / 56.76 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP03.COR

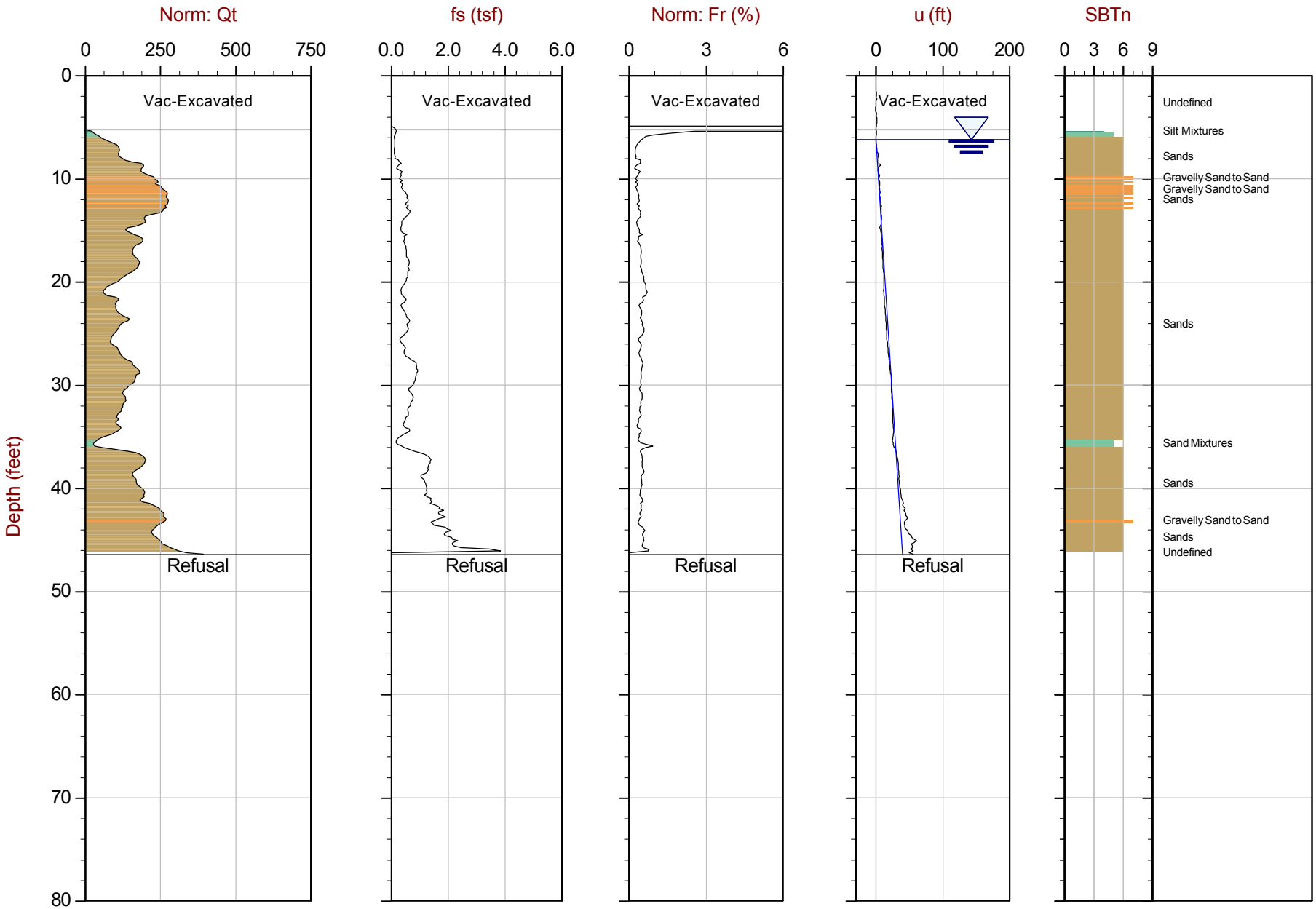
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498942 E: 613156

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:14:13 13:09
Site: Bay Park STP

Sounding: CPTu-04
Cone: 206:T1500F15U500



Max Depth: 14.150 m / 46.42 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP04.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498977 E: 613129

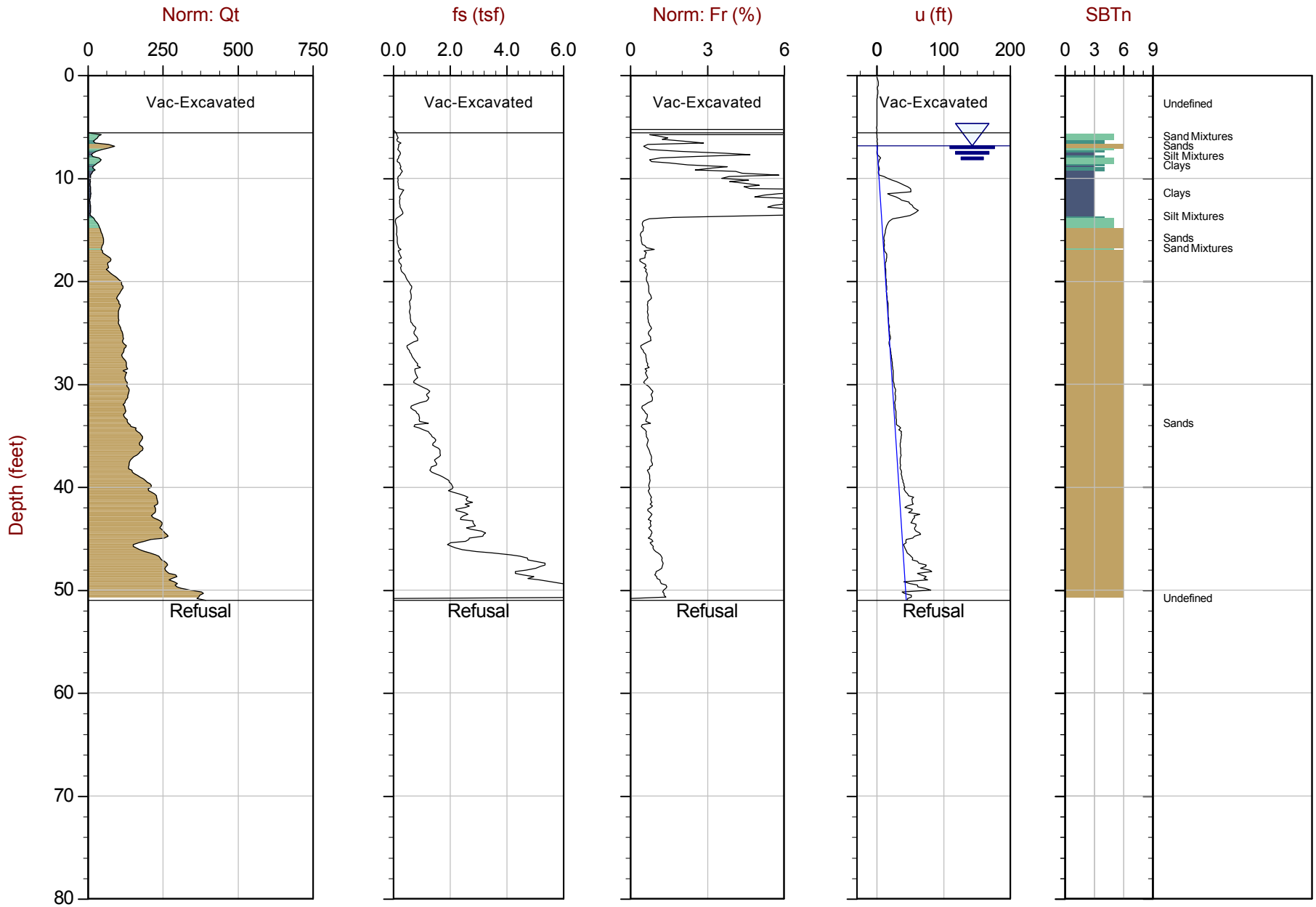
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:07:13 14:03
Site: Bay Park STP

Sounding: CPTu-05
Cone: 206:T1500F15U500



Max Depth: 15.550 m / 51.02 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP05.COR

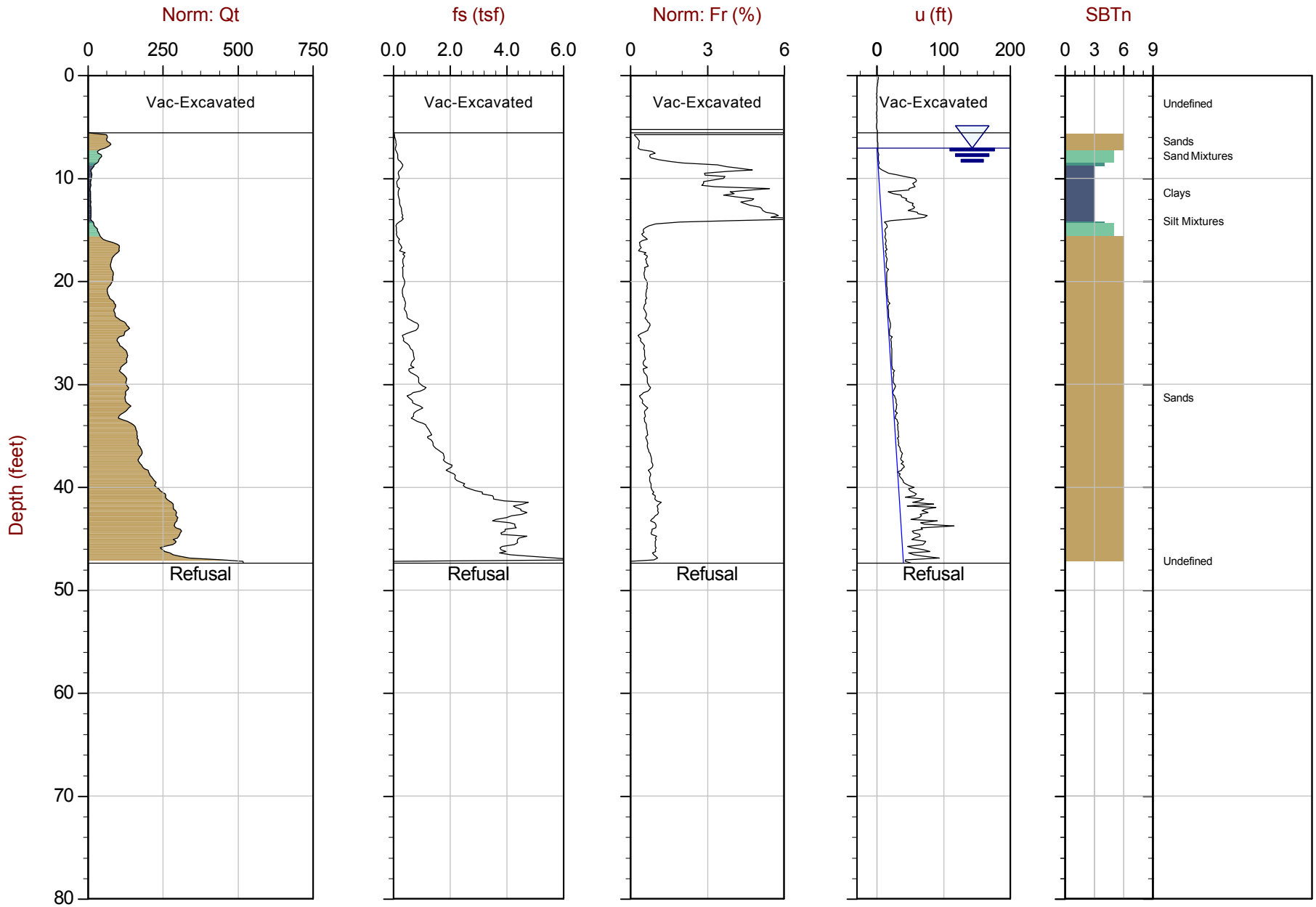
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498909 E: 613185

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:07:13 15:38
Site: Bay Park STP

Sounding: CPTu-06
Cone: 206:T1500F15U500



Max Depth: 14.450 m / 47.41 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP06.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498855 E: 613182

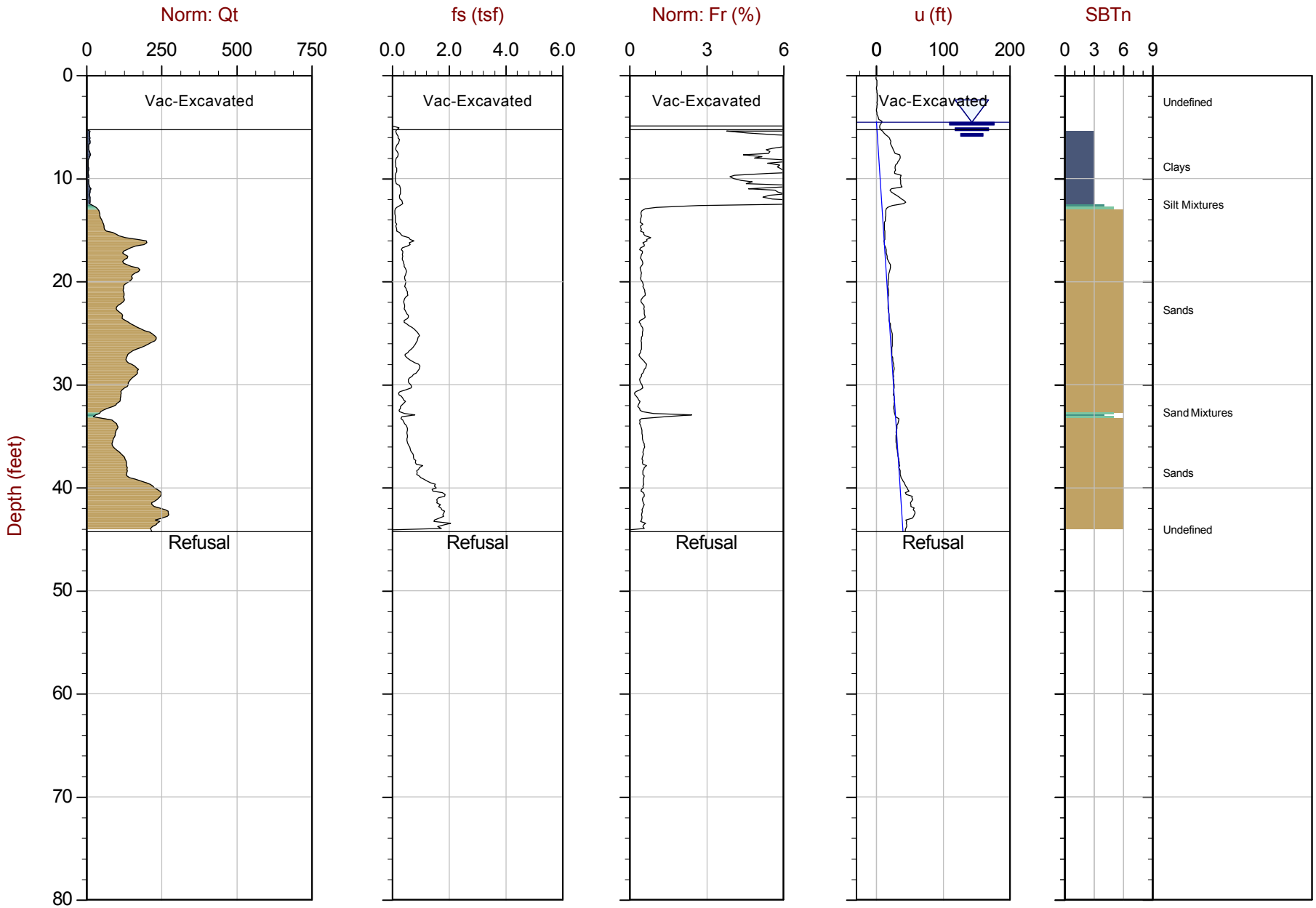
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 09:18
Site: Bay Park STP

Sounding: CPTu-07
Cone: 206:T1500F15U500



Max Depth: 13.500 m / 44.29 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP07.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498841 E: 613200

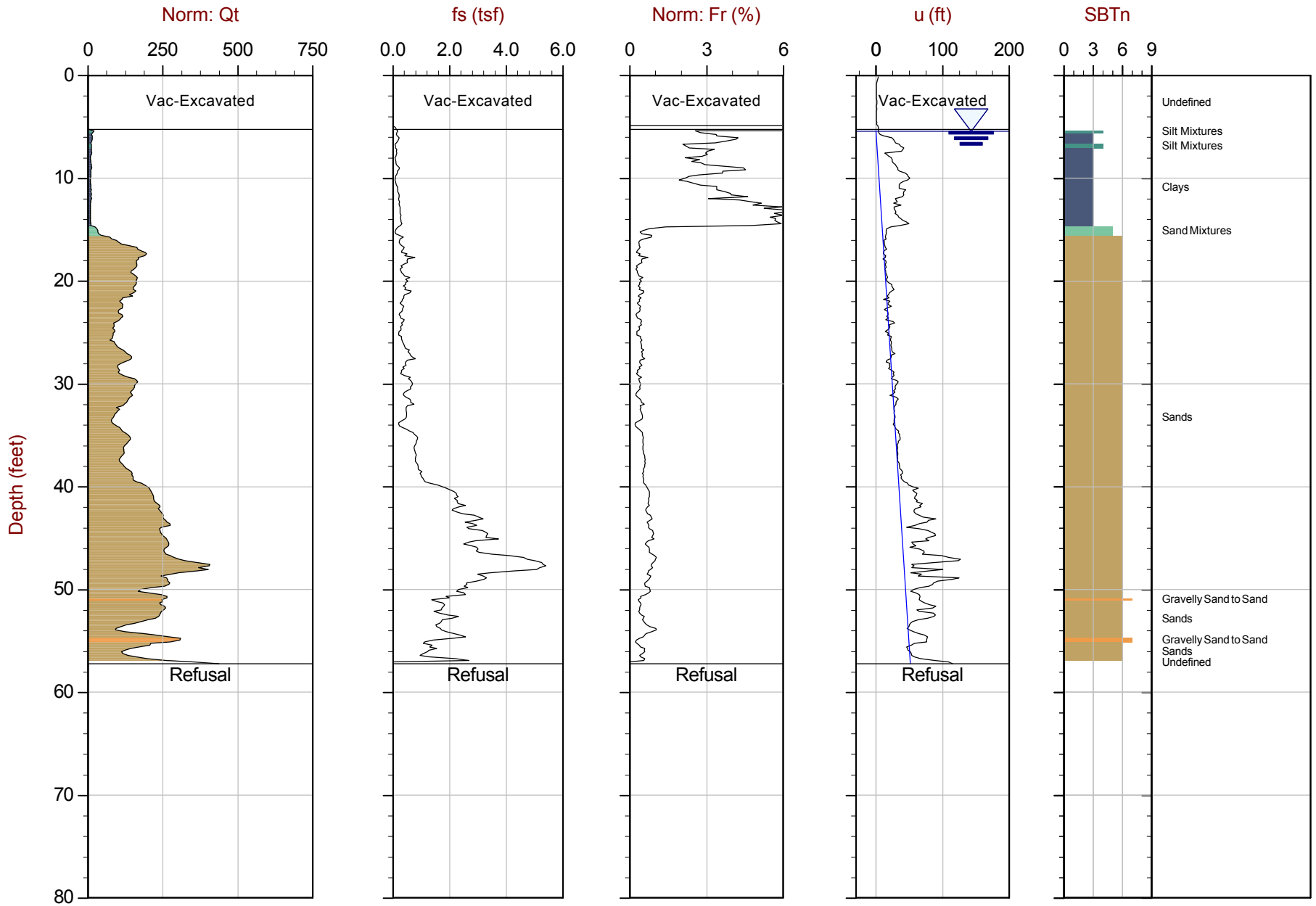
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 12:53
Site: Bay Park STP

Sounding: CPTu-08
Cone: 206:T1500F15U500



Max Depth: 17.450 m / 57.25 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP08.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498789 E: 613174

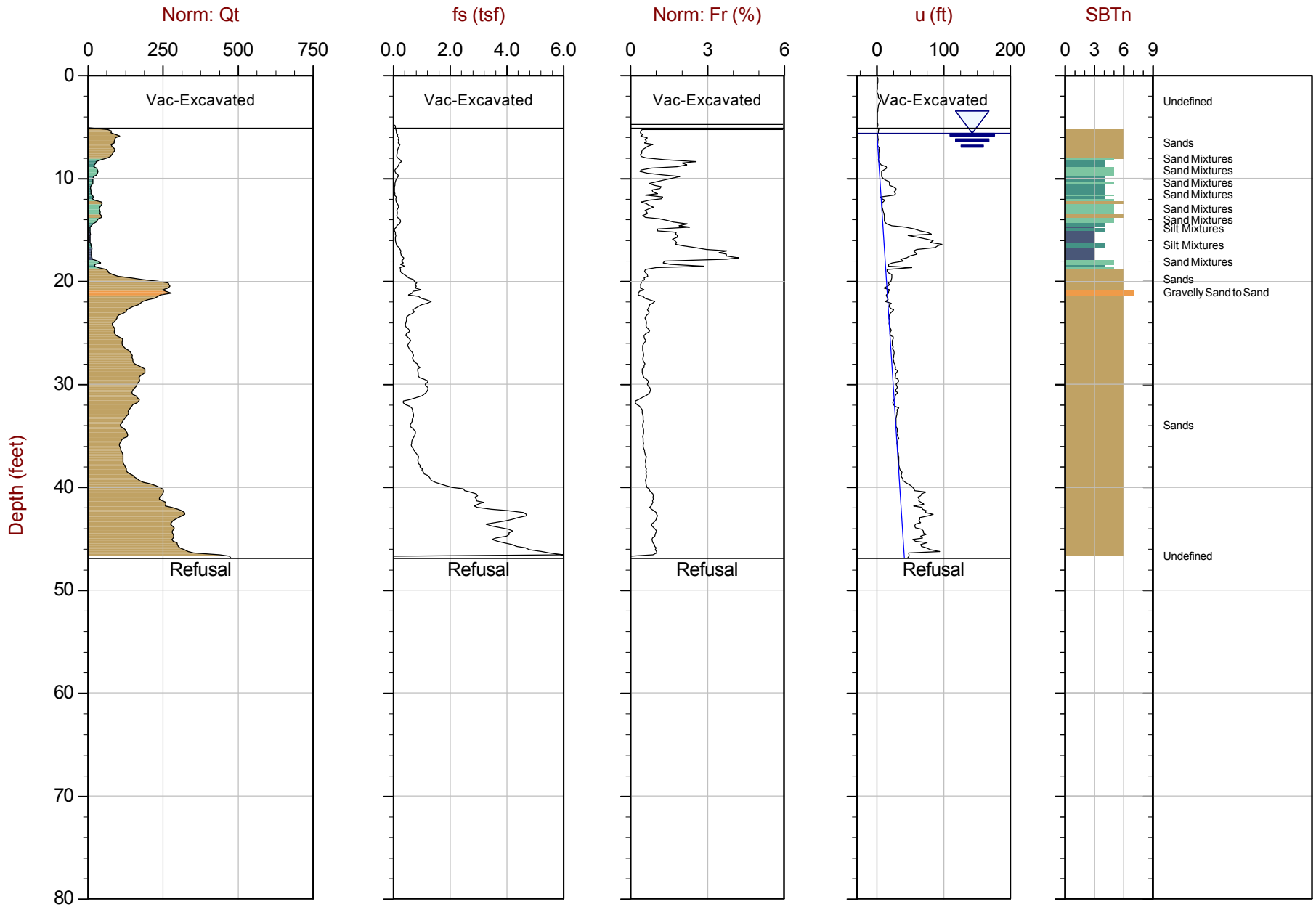
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 11:01
Site: Bay Park STP

Sounding: CPTu-09
Cone: 206:T1500F15U500



Max Depth: 14.300 m / 46.92 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP09.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498695 E: 613140

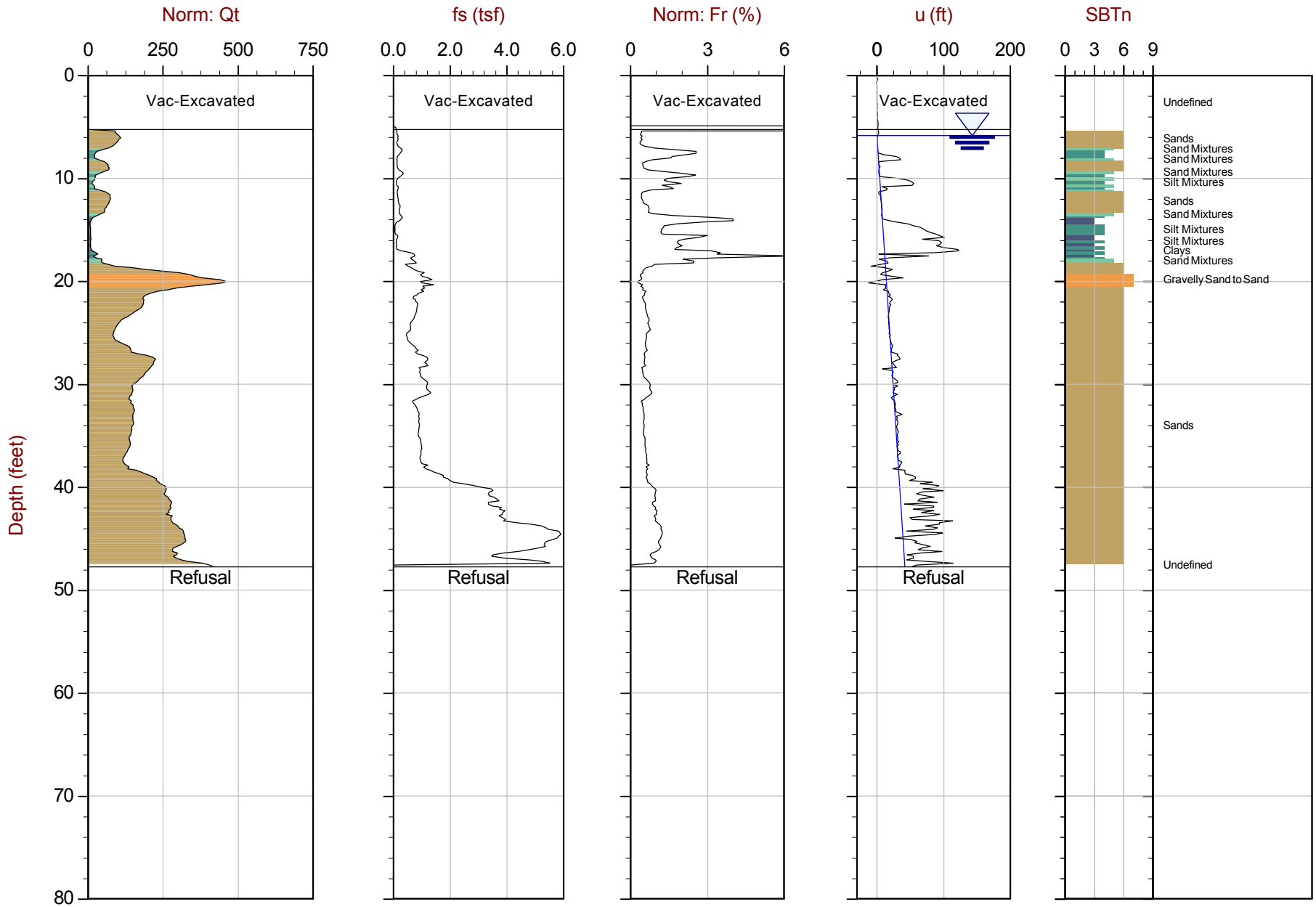
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500



Max Depth: 14.550 m / 47.74 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP10.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498649 E: 613120

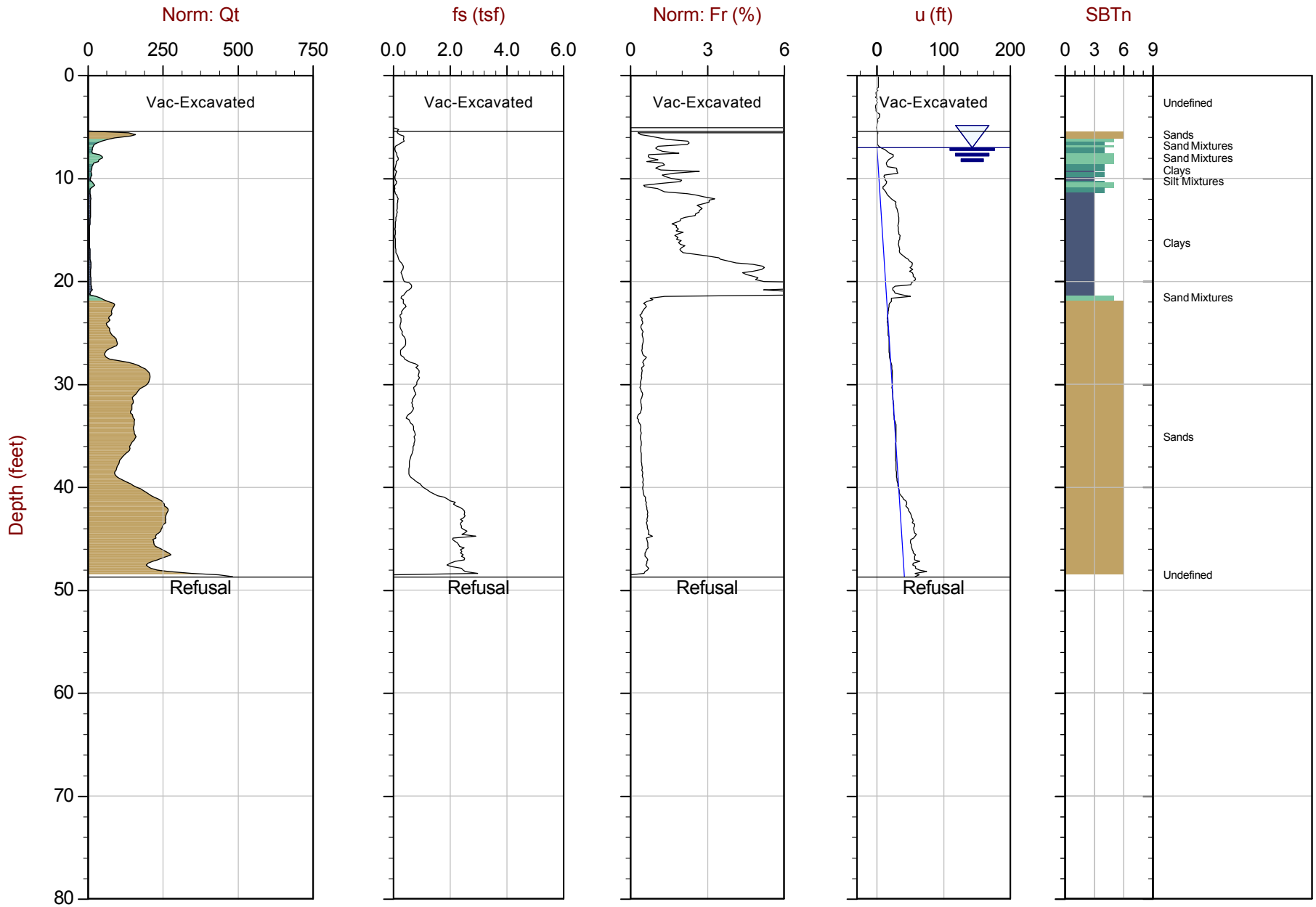
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 07:56
Site: Bay Park STP

Sounding: CPTu-11
Cone: 206:T1500F15U500



Max Depth: 14.850 m / 48.72 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP11.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498642 E: 613126

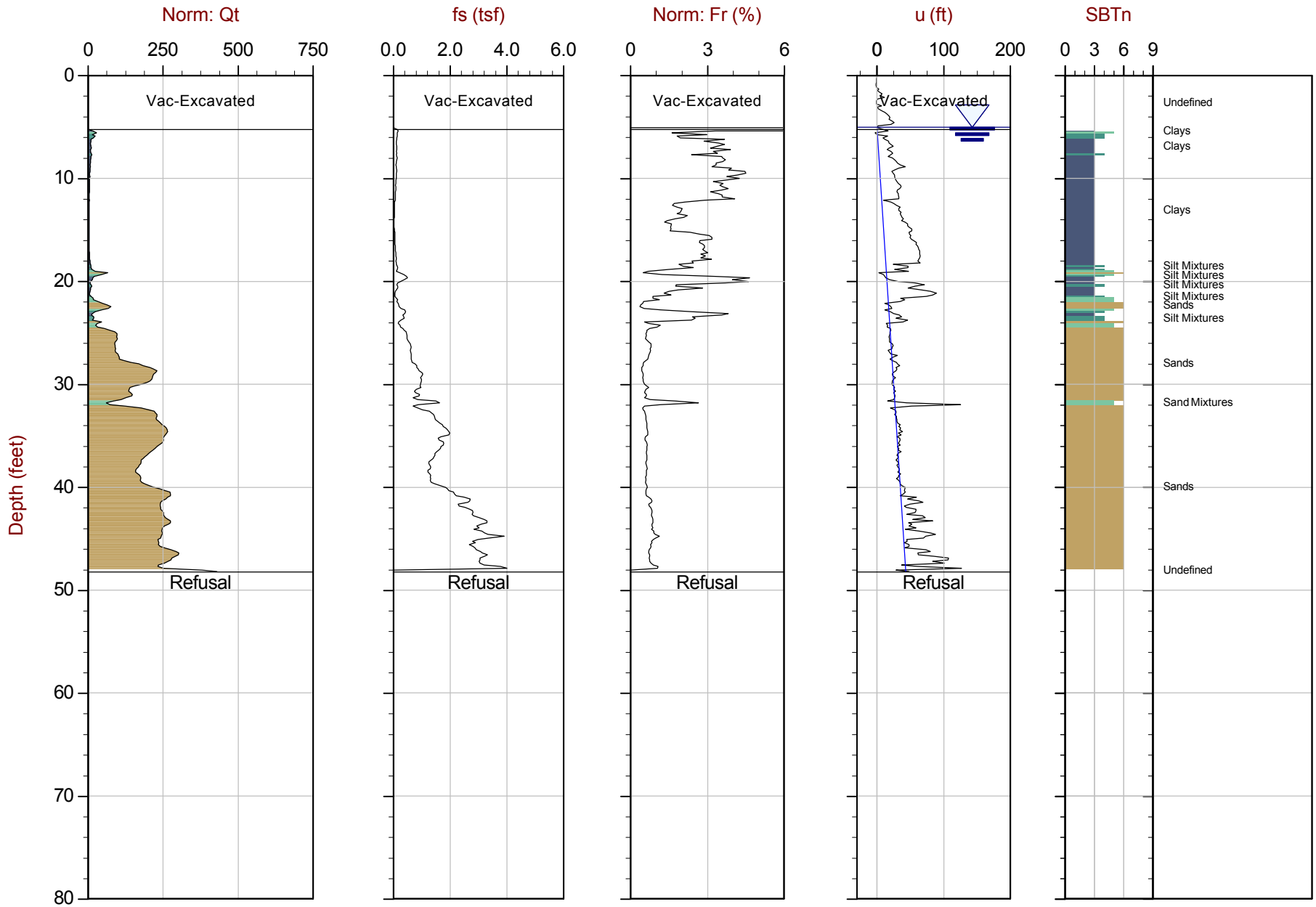
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 14:27
Site: Bay Park STP

Sounding: CPTu-12
Cone: 206:T1500F15U500



Max Depth: 14.700 m / 48.23 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP12.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498594 E: 613158

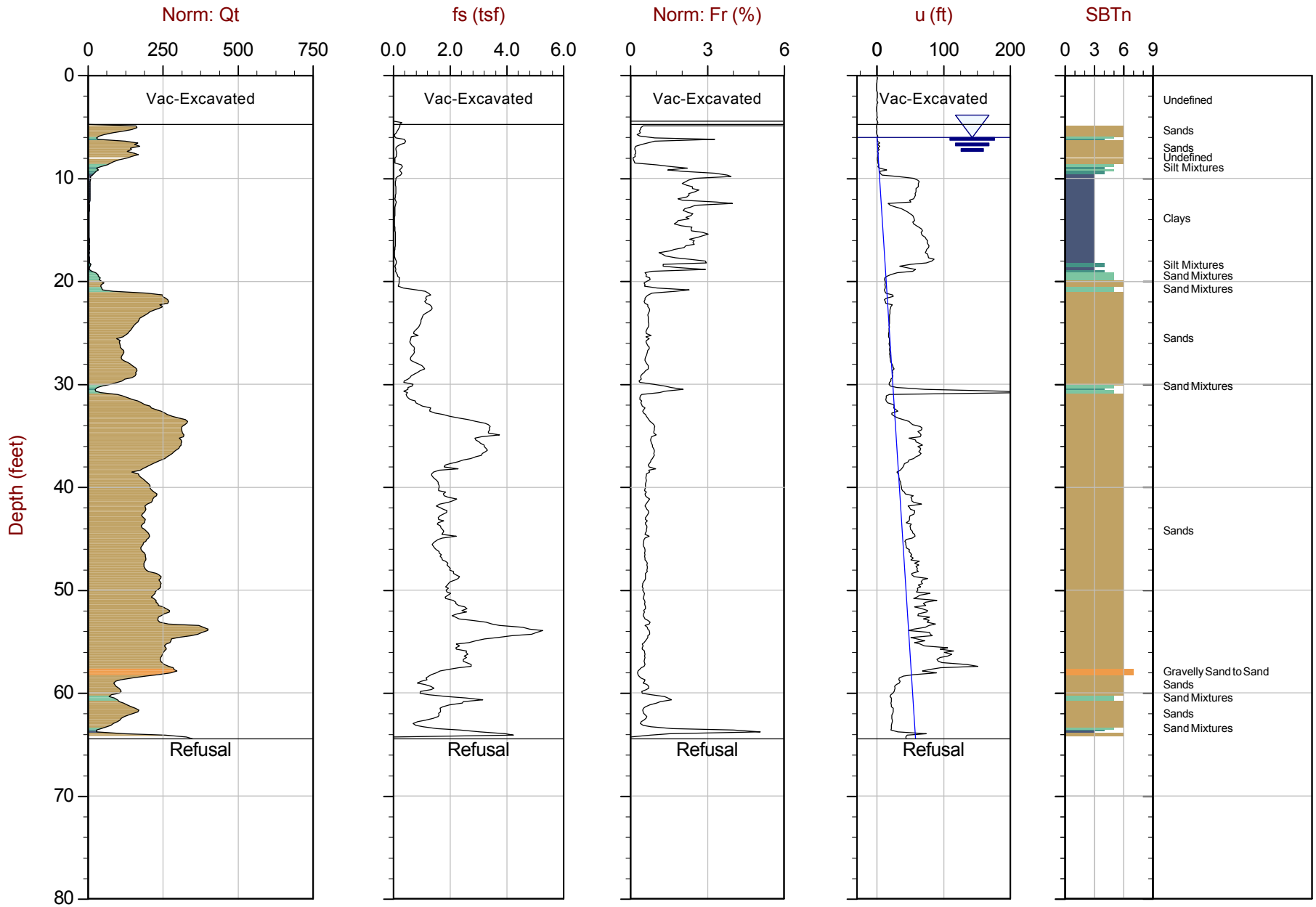
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:08:13 15:53
Site: Bay Park STP

Sounding: CPTu-13
Cone: 206:T1500F15U500



Max Depth: 19.650 m / 64.47 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP13.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498553 E: 613160

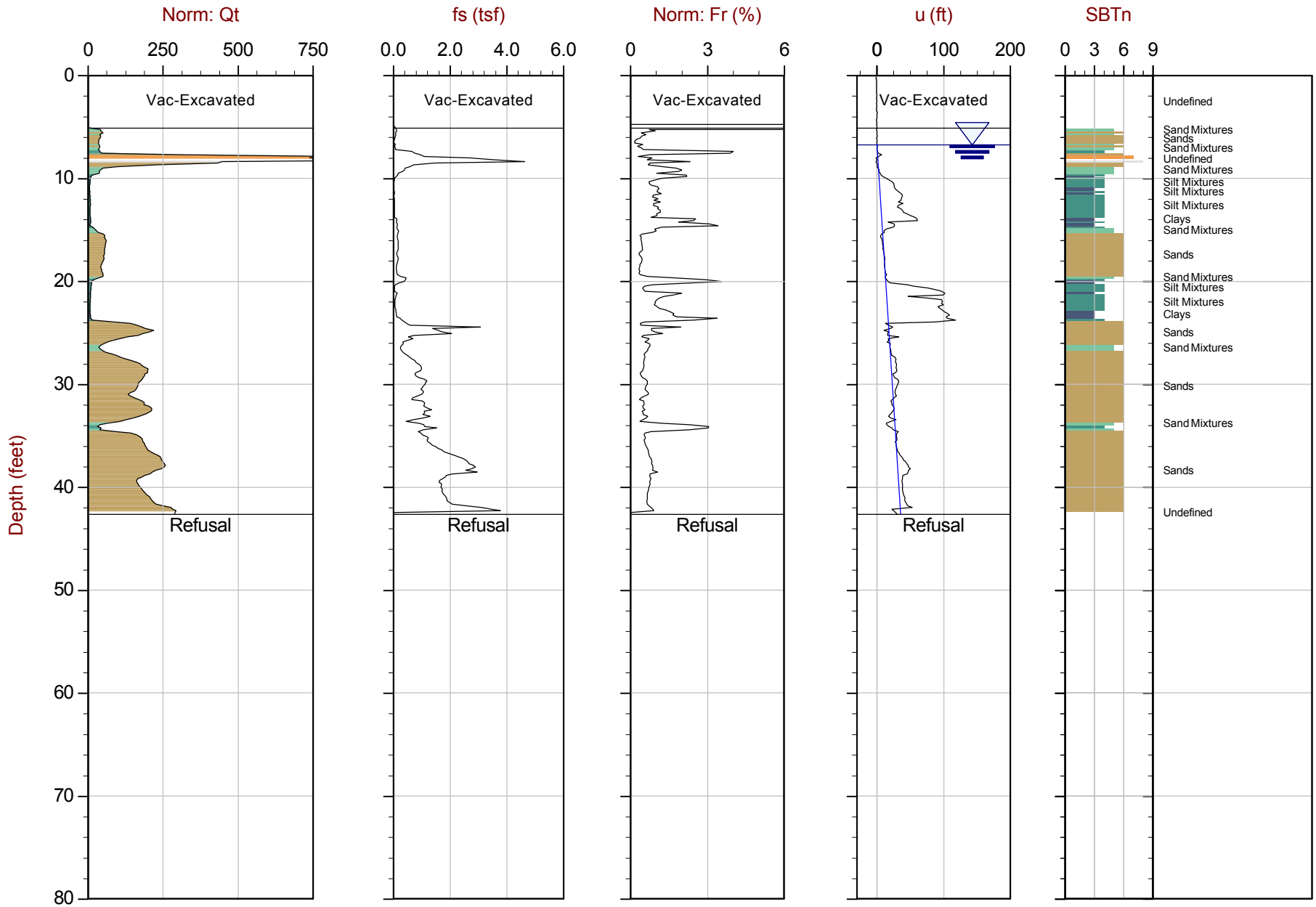
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 08:46
Site: Bay Park STP

Sounding: CPTu-14
Cone: 206:T1500F15U500



Max Depth: 13.000 m / 42.65 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP14.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498474 E: 613179

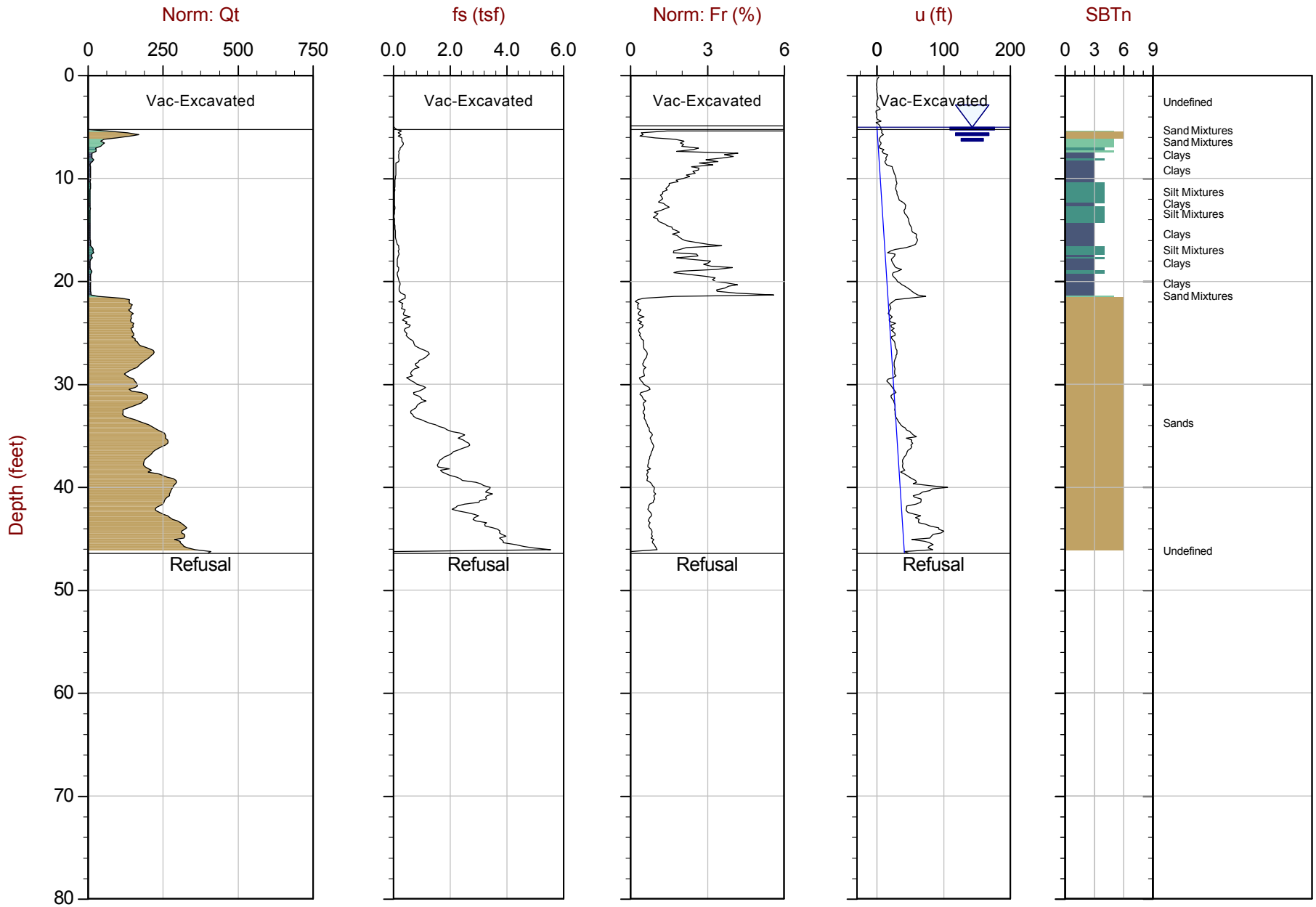
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 12:34
Site: Bay Park STP

Sounding: CPTu-15
Cone: 206:T1500F15U500



Max Depth: 14.150 m / 46.42 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP15.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498414 E: 613135

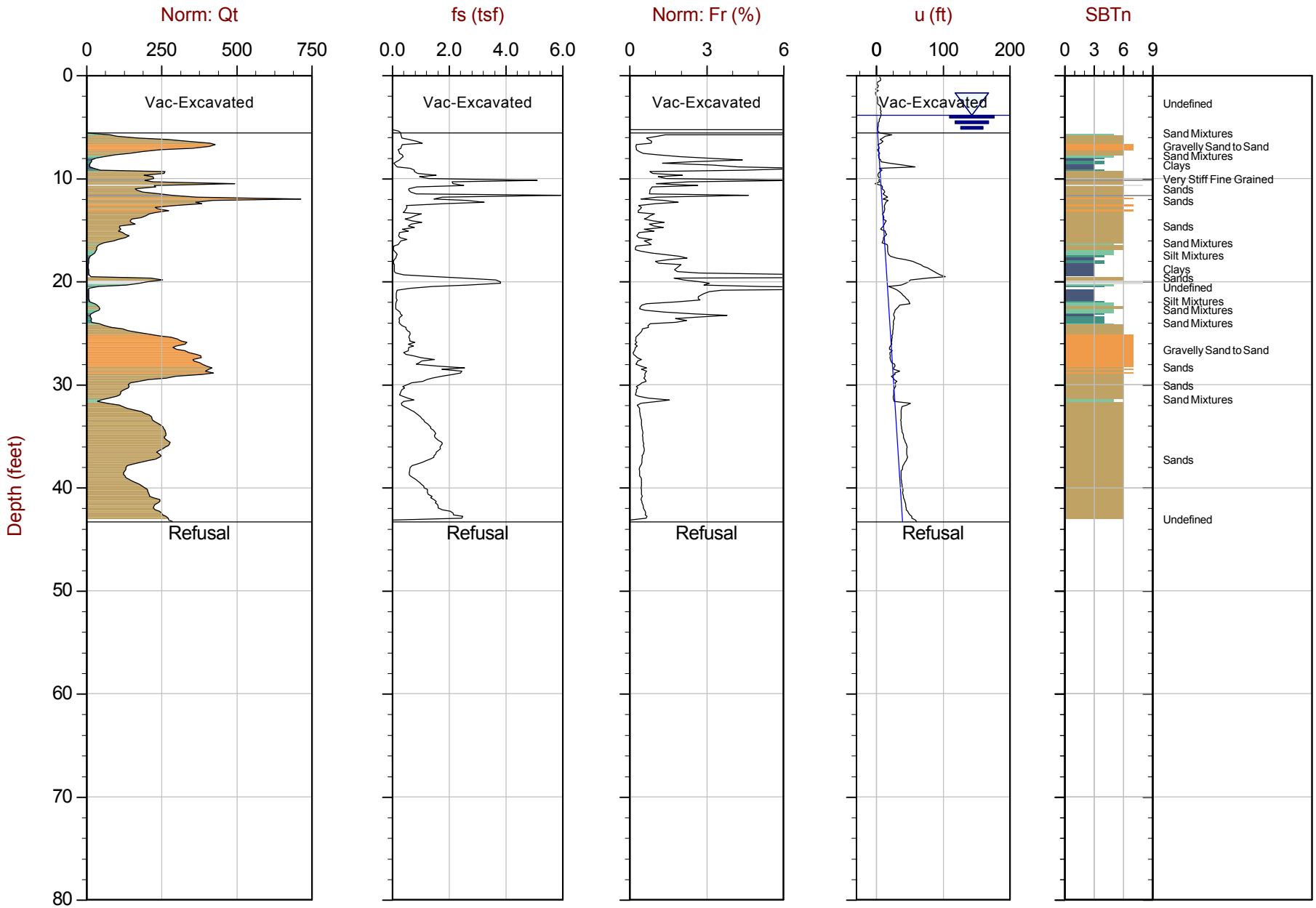
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 09:51
Site: Bay Park STP

Sounding: CPTu-16
Cone: 206:T1500F15U500



Max Depth: 13.200 m / 43.31 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP16.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498433 E: 613190

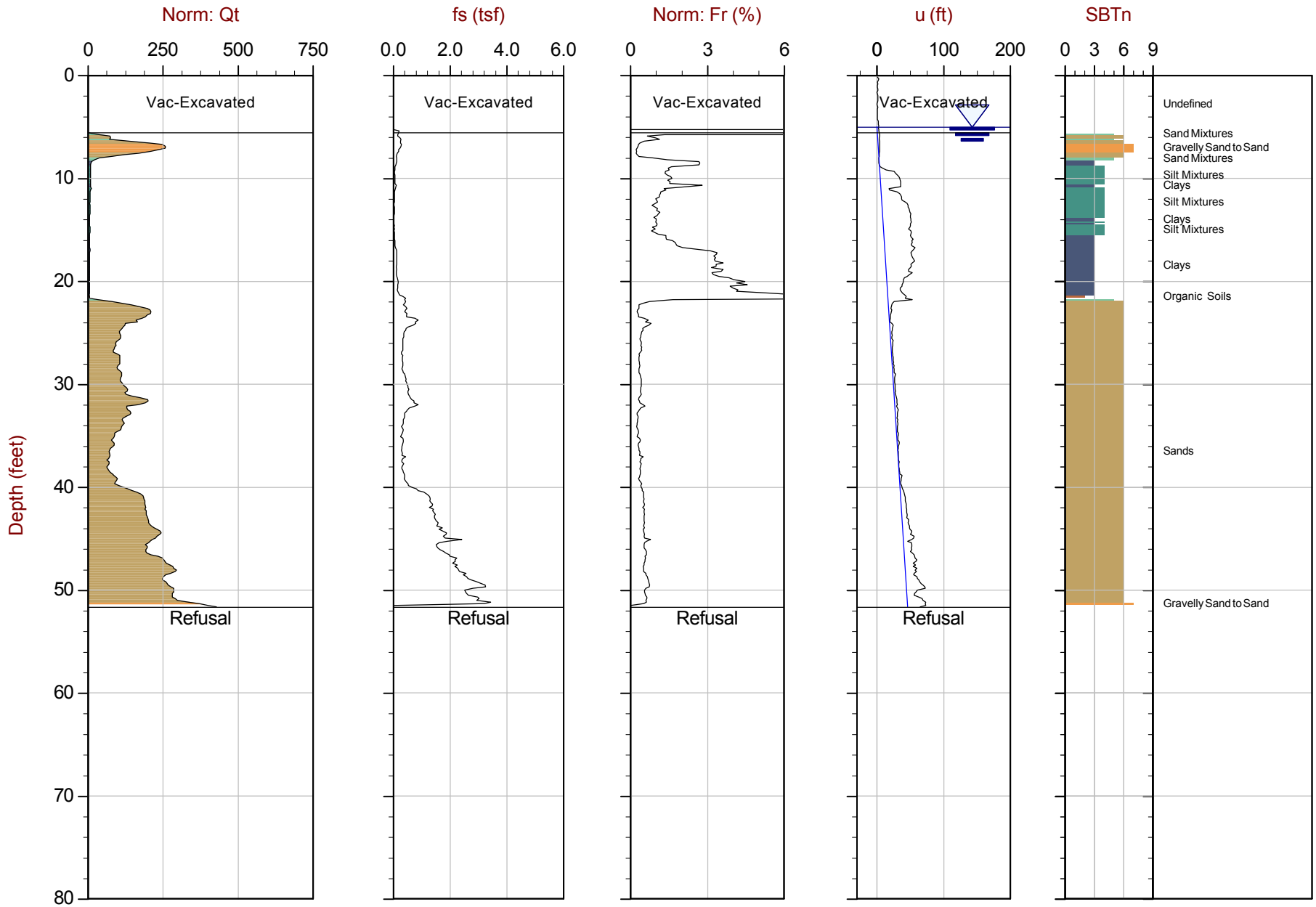
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:14:13 14:05
Site: Bay Park STP

Sounding: CPTu-17
Cone: 206:T1500F15U500



Max Depth: 15.750 m / 51.67 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP17.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498388 E: 613132

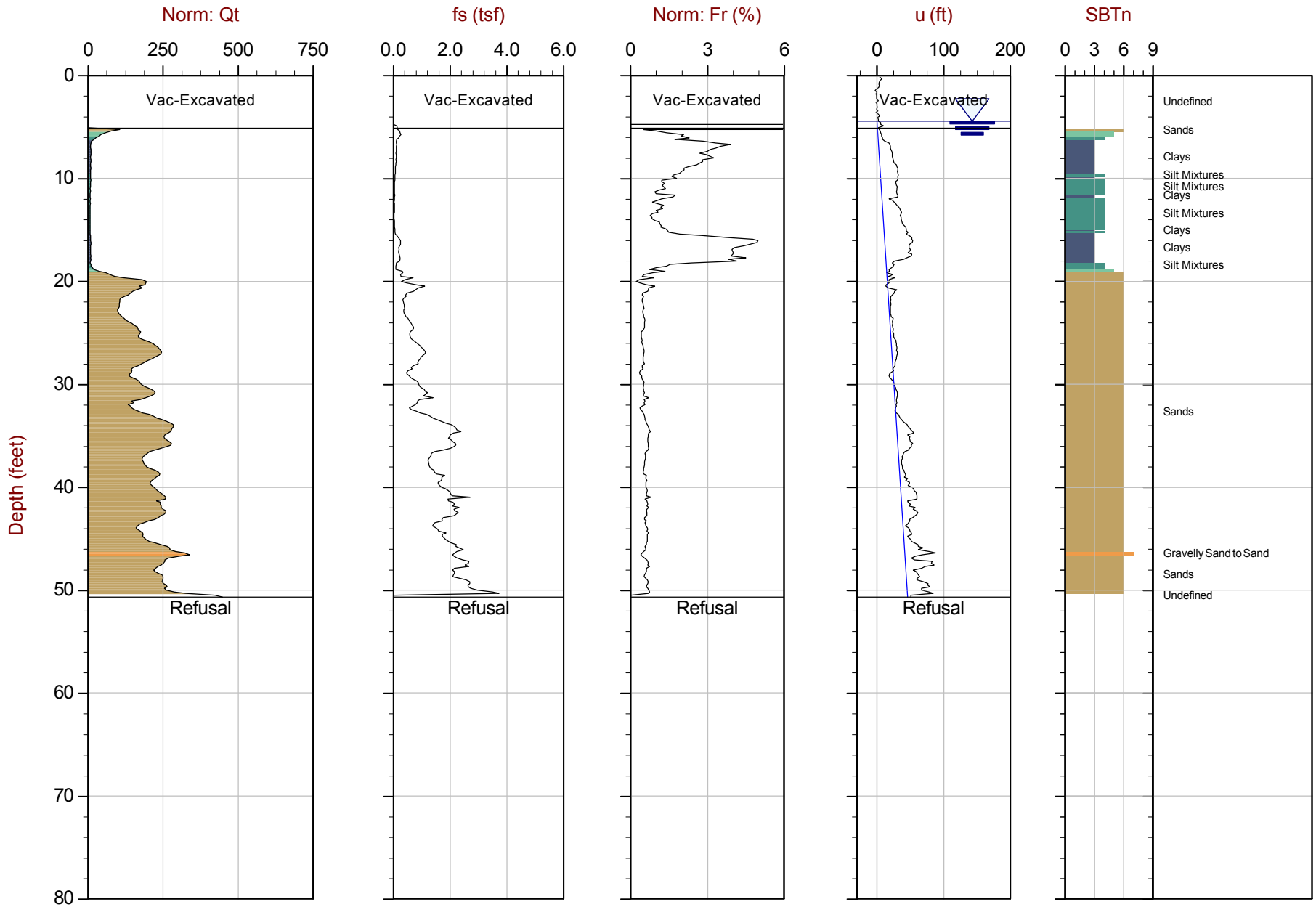
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 13:55
Site: Bay Park STP

Sounding: CPTu-18
Cone: 206:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP18.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498412 E: 613119

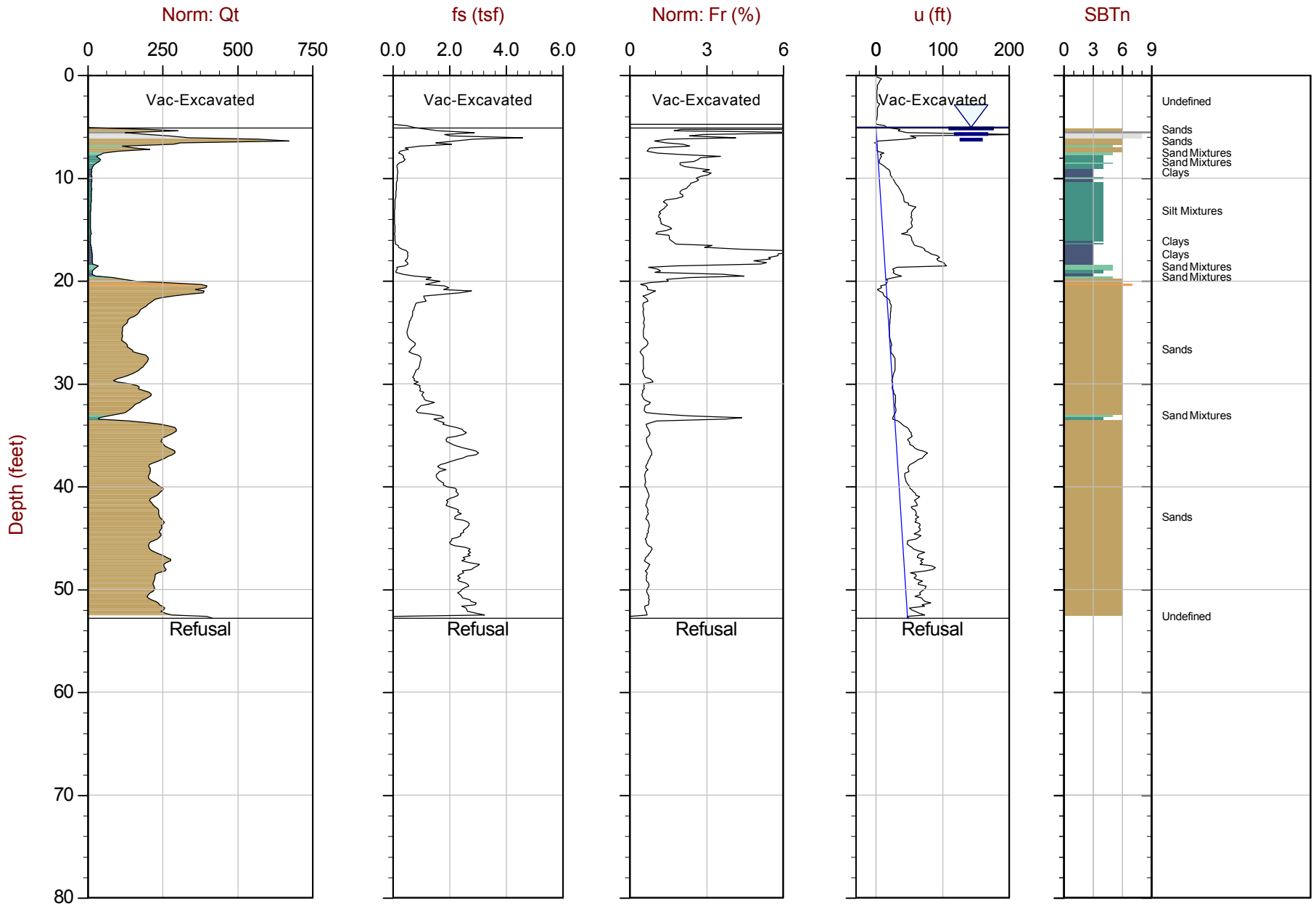
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 15:35
Site: Bay Park STP

Sounding: CPTu-19
Cone: 206:T1500F15U500



Max Depth: 16.100 m / 52.82 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP19.COR

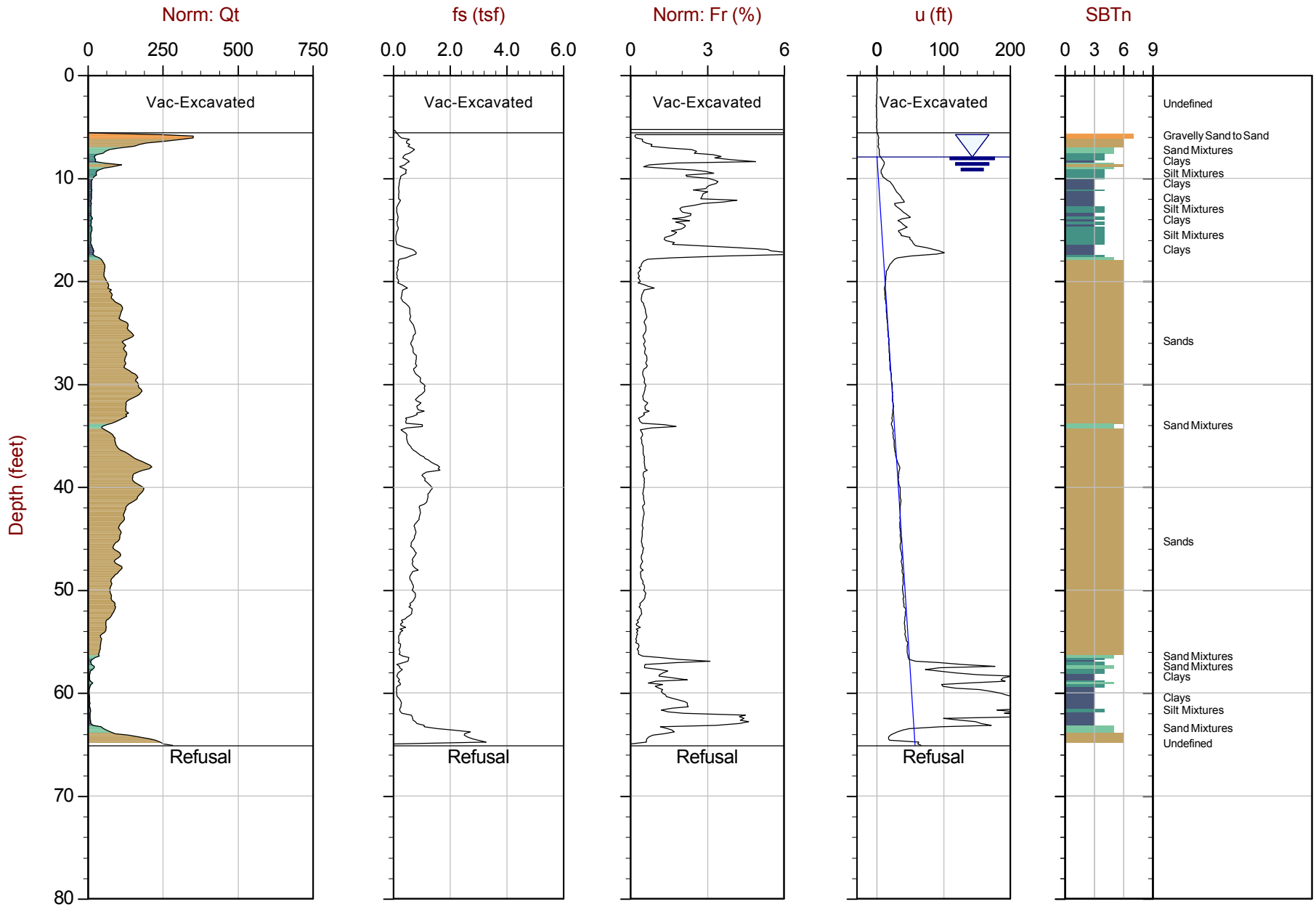
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498424 E: 613076

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:15:13 12:05
Site: Bay Park STP

Sounding: CPTu-20
Cone: 206:T1500F15U500



Max Depth: 19.850 m / 65.12 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP20.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498440 E: 612991

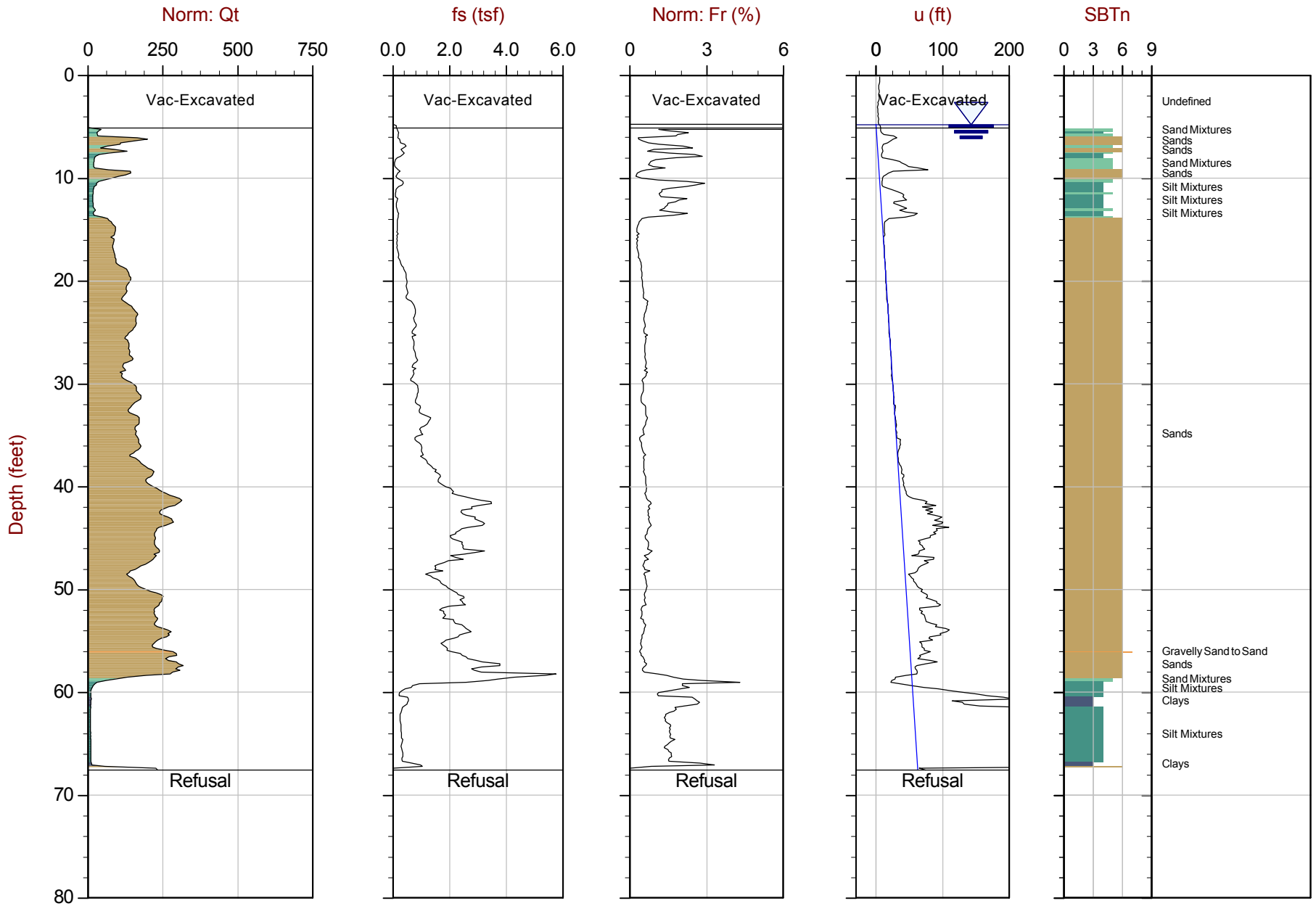
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:09:13 16:25
Site: Bay Park STP

Sounding: CPTu-21
Cone: 206:T1500F15U500



Max Depth: 20.600 m / 67.58 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP21.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498483 E: 612921

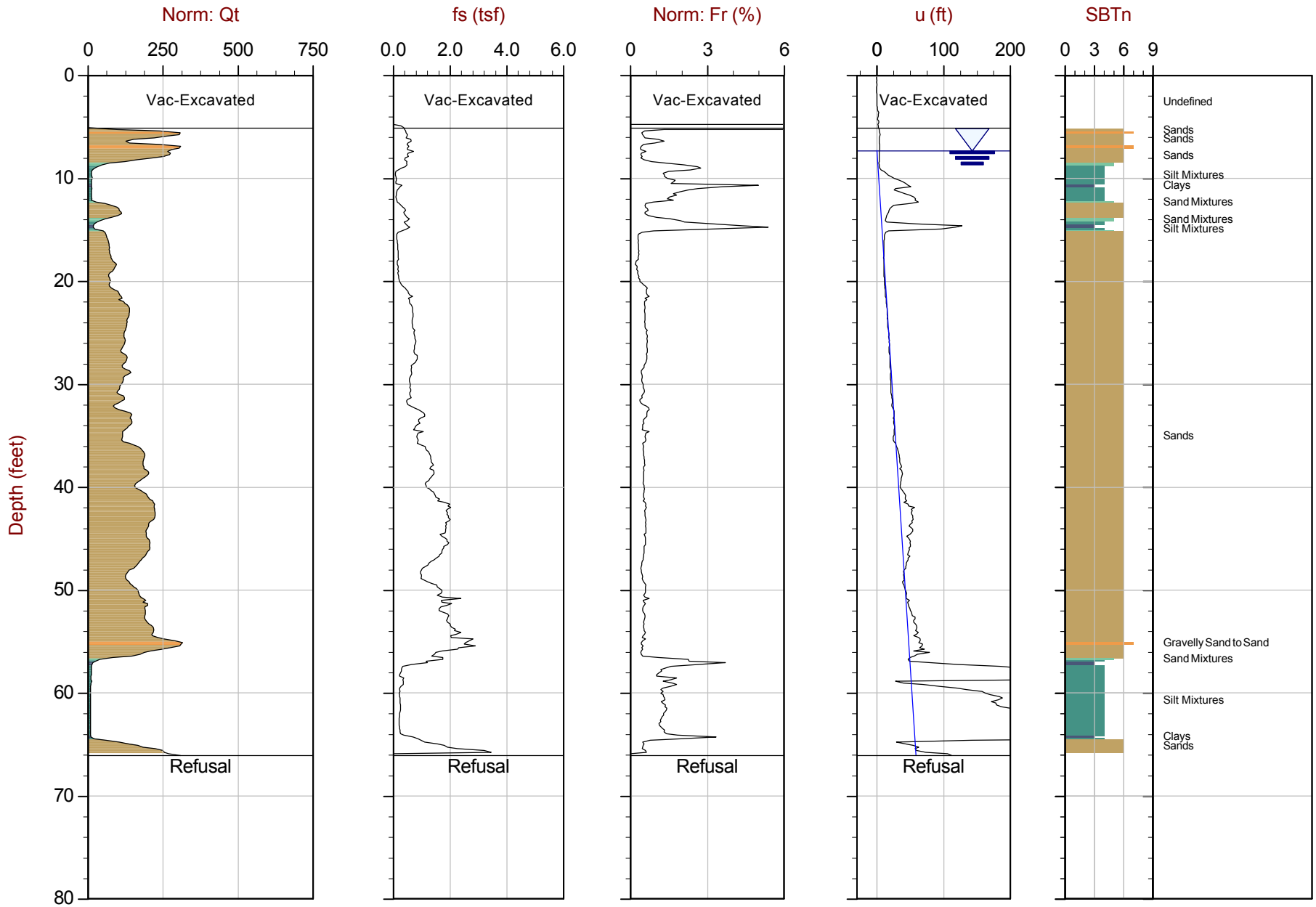
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 13:15
Site: Bay Park STP

Sounding: CPTu-22
Cone: 206:T1500F15U500



Max Depth: 20.150 m / 66.11 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP22.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498466 E: 612928

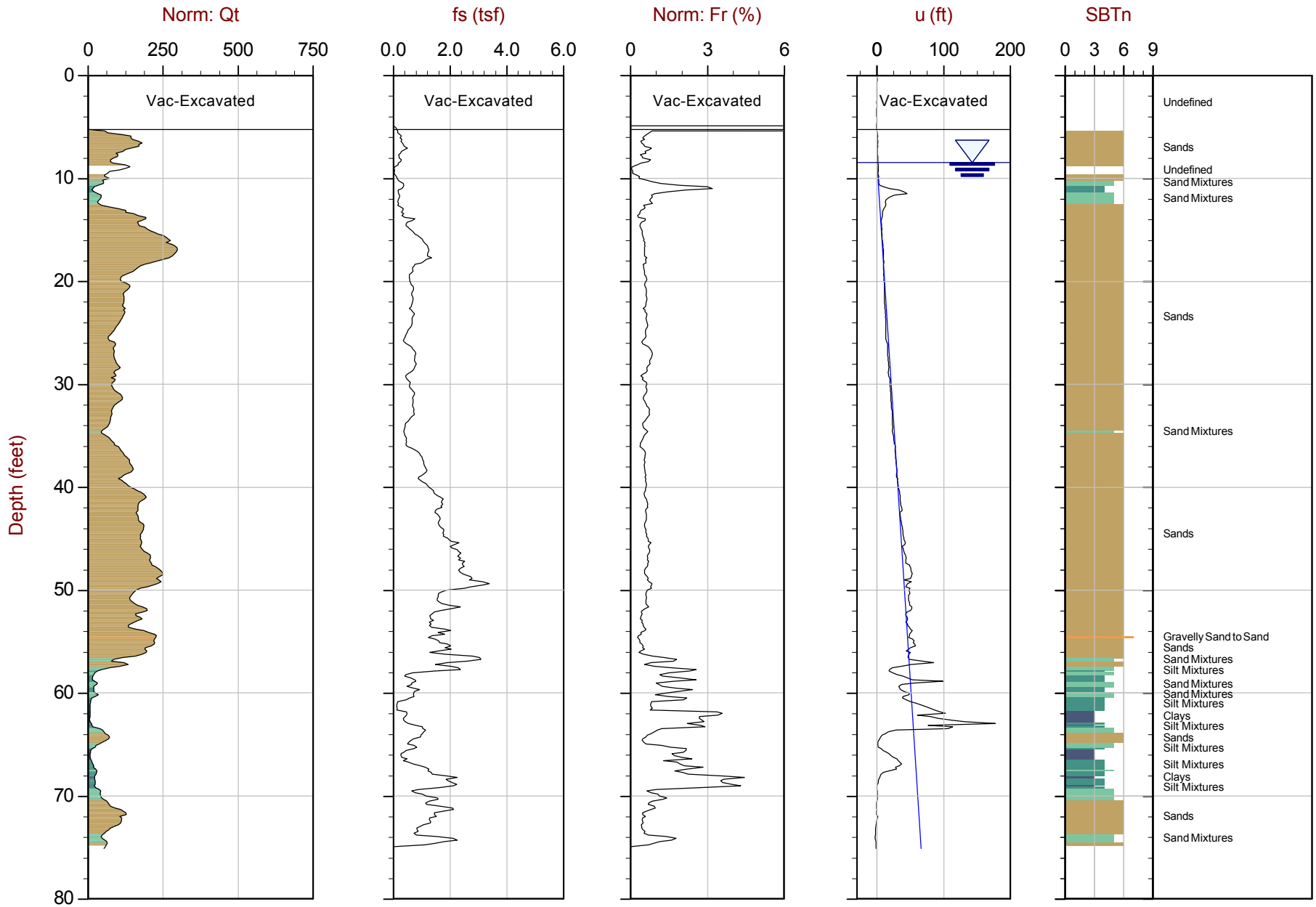
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:10:13 08:11
Site: Bay Park STP

Sounding: CPTu-23
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP23.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498512 E: 612857

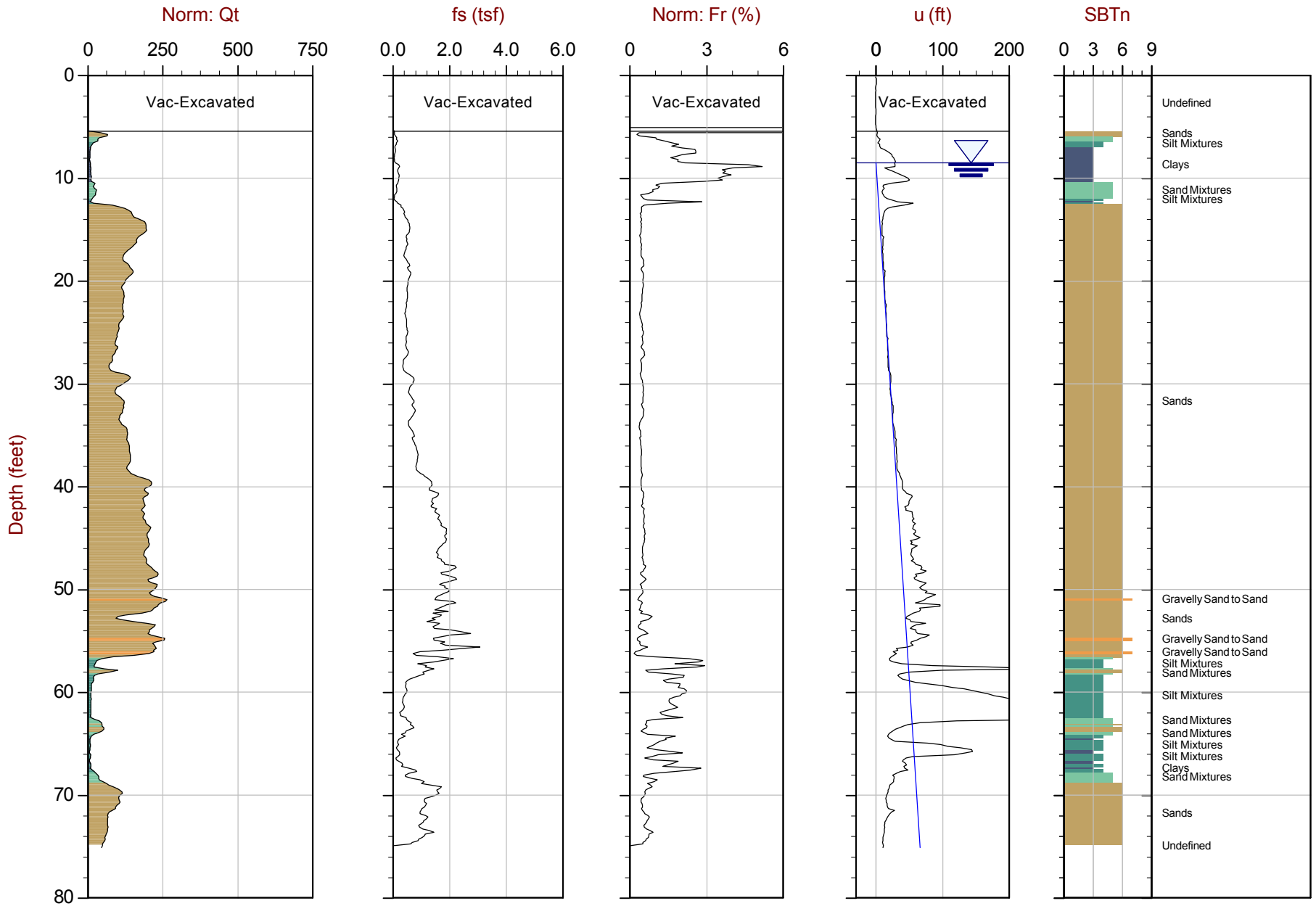
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:15:13 13:47
Site: Bay Park STP

Sounding: CPTu-24
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP24.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498513 E: 612822

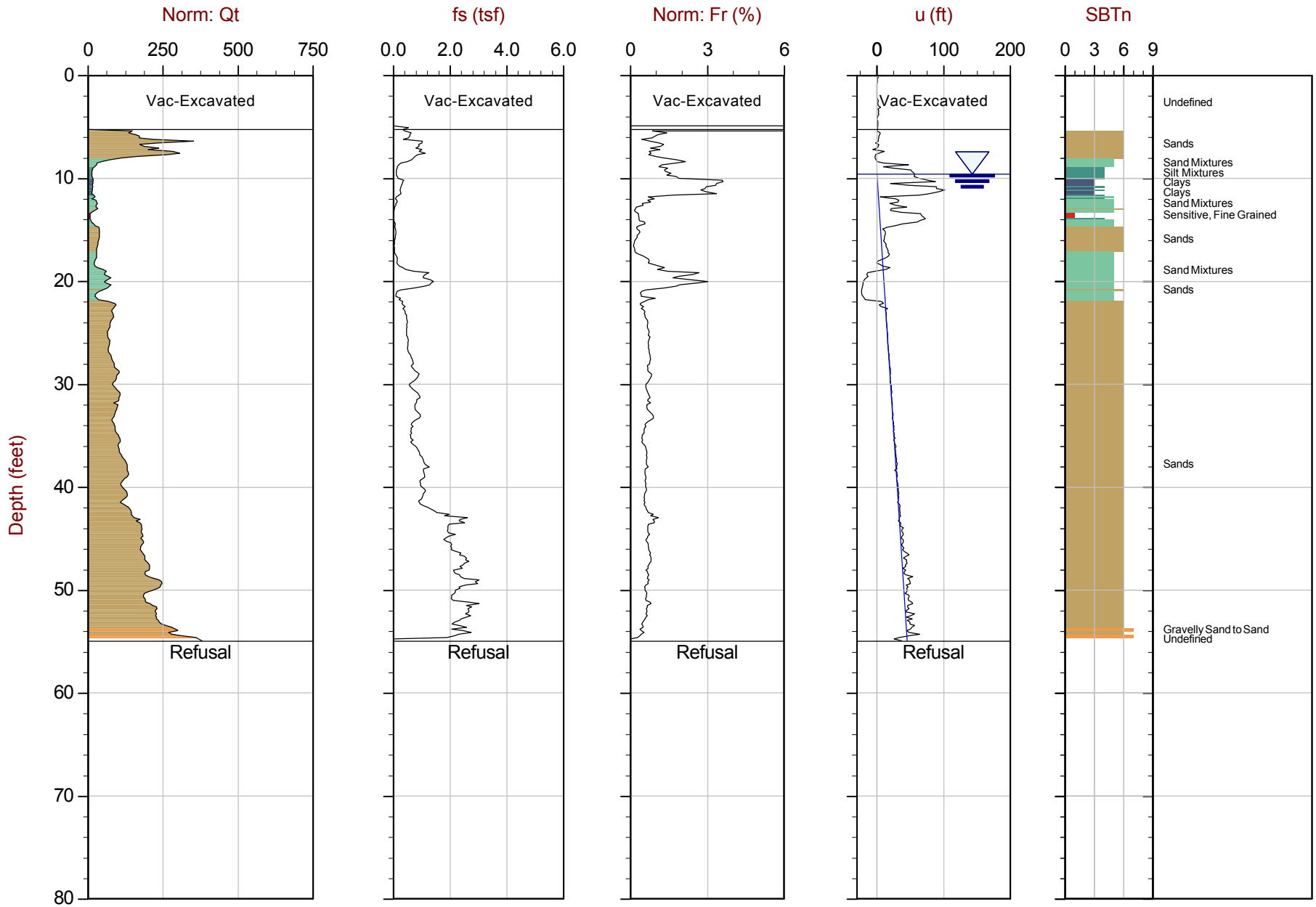
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 09:59
Site: Bay Park STP

Sounding: CPTu-25
Cone: 206:T1500F15U500



Max Depth: 16.750 m / 54.95 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP25.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498549 E: 612847

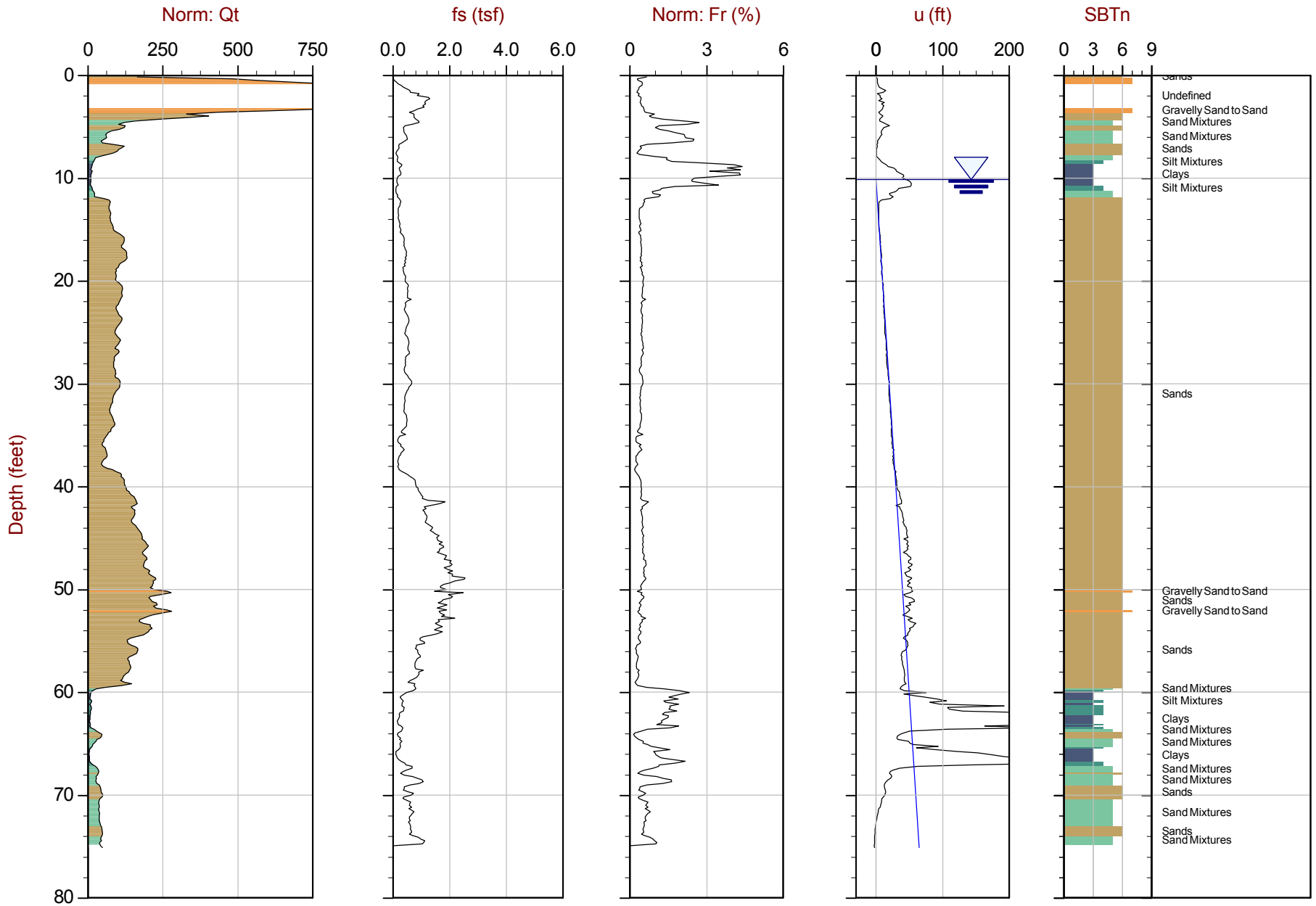
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:15:13 17:37
Site: Bay Park STP

Sounding: CPTu-26
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP26.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498602 E: 612811

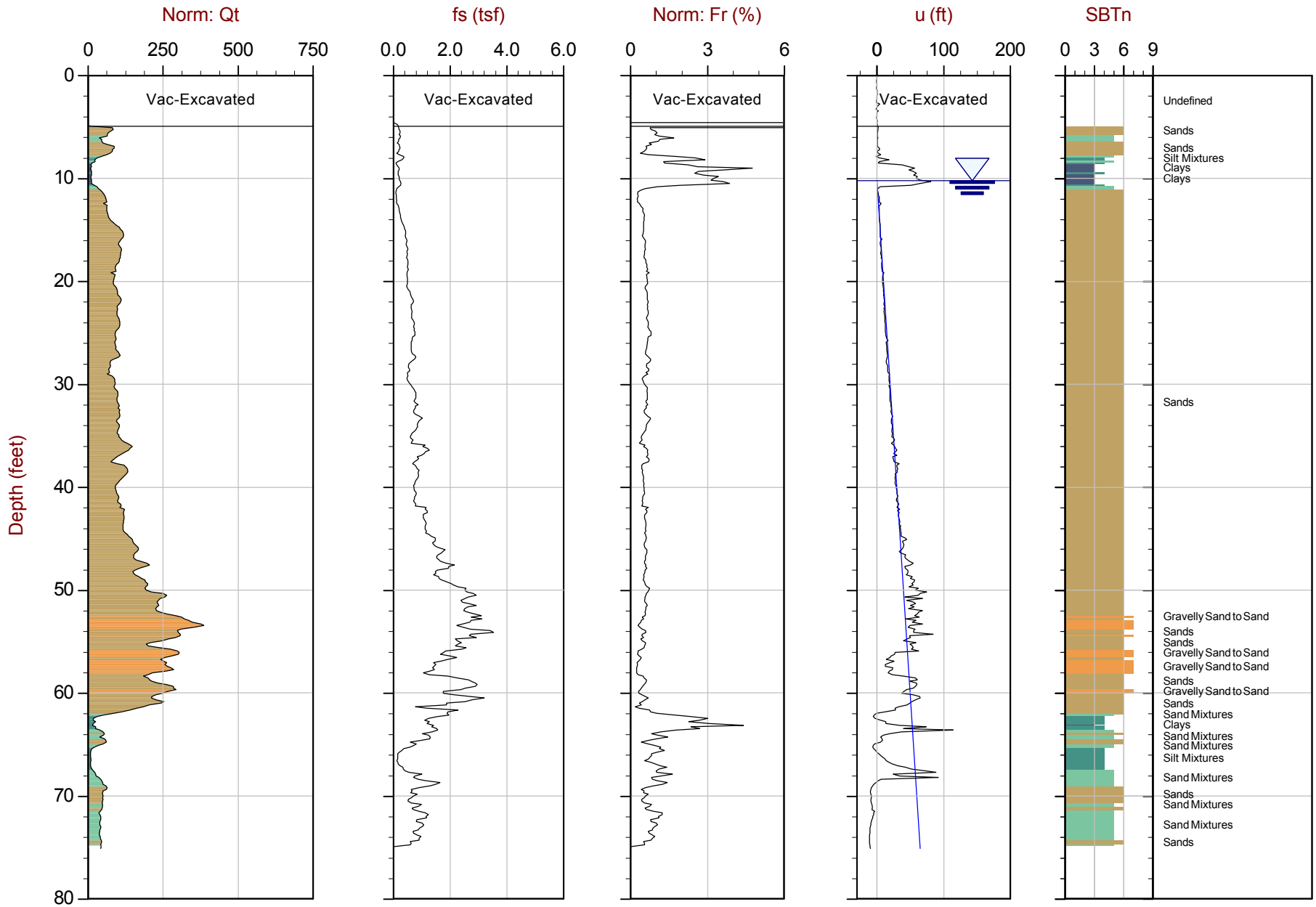
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 11:04
Site: Bay Park STP

Sounding: CPTu-27
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP27.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498624 E: 612838

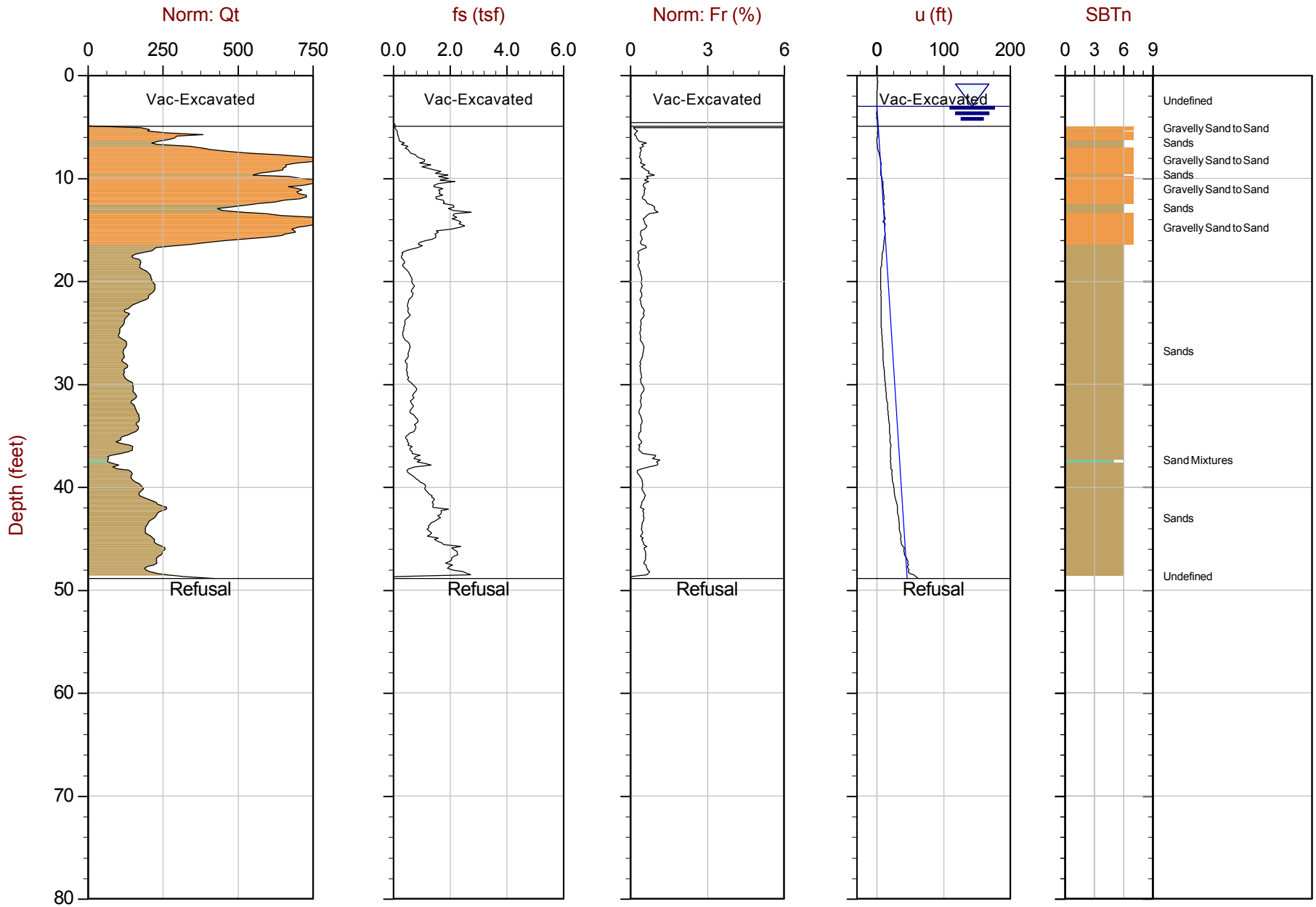
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 09:04
Site: Bay Park STP

Sounding: CPTu-28
Cone: 206:T1500F15U500



Max Depth: 14.900 m / 48.88 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP28.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498723 E: 612865

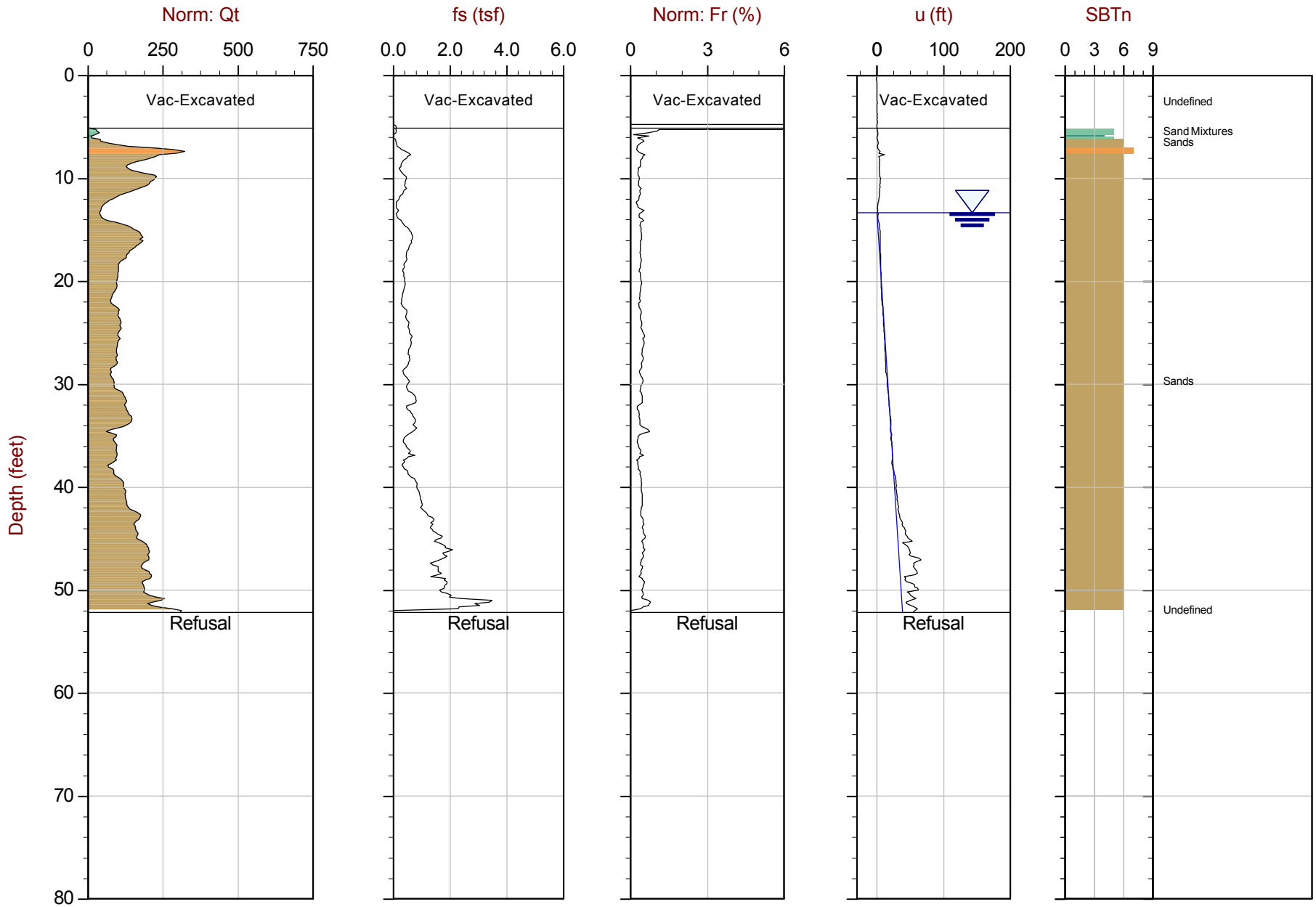
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 07:56
Site: Bay Park STP

Sounding: CPTu-29
Cone: 206:T1500F15U500



Max Depth: 15.900 m / 52.16 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP29.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498784 E: 612888

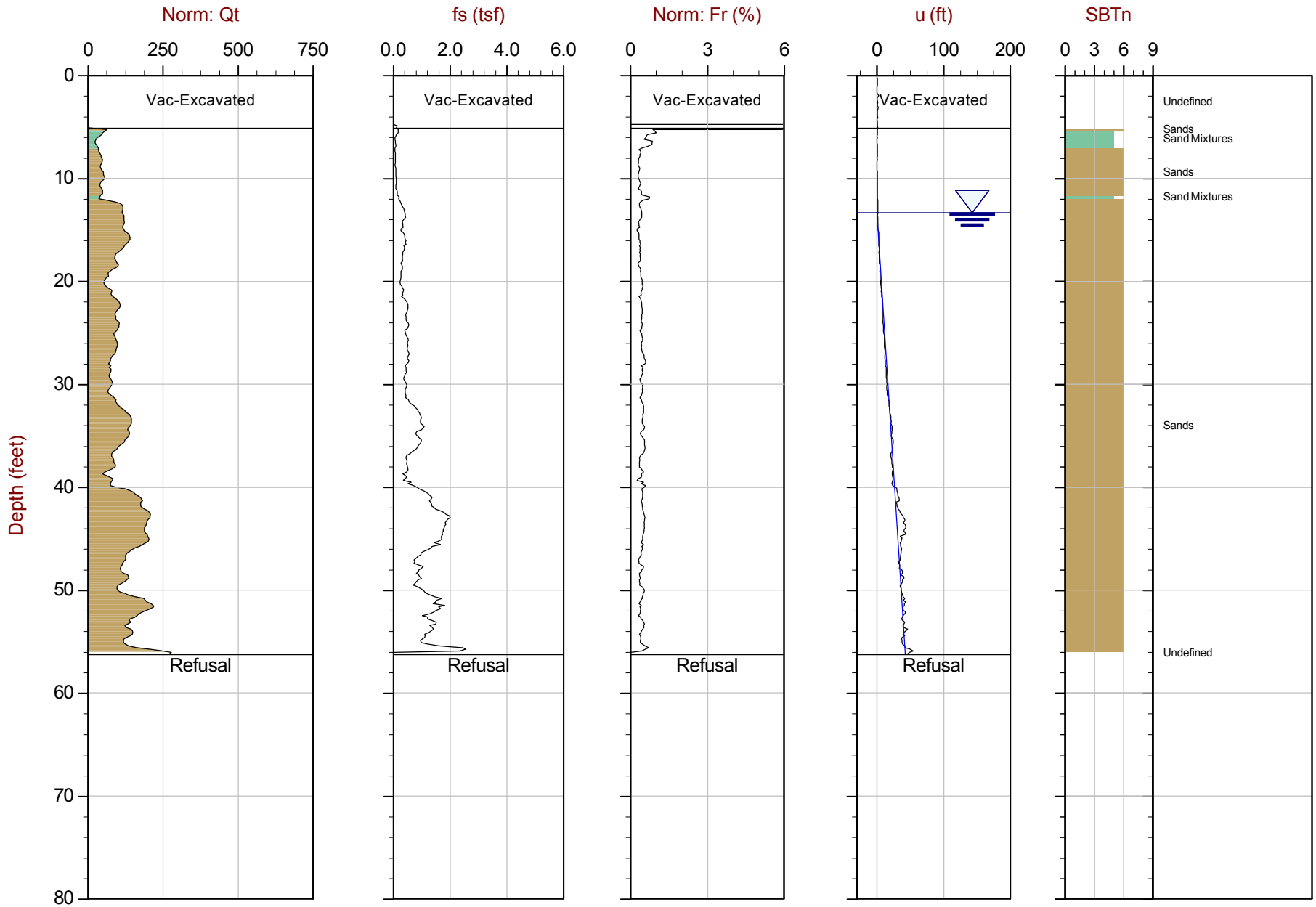
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ConeTec

ARCADIS

Job No: 13-53065
Date: 10:16:13 08:15
Site: Bay Park STP

Sounding: CPTu-30
Cone: 206:T1500F15U500



Max Depth: 17.150 m / 56.27 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP30.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498872 E: 612923

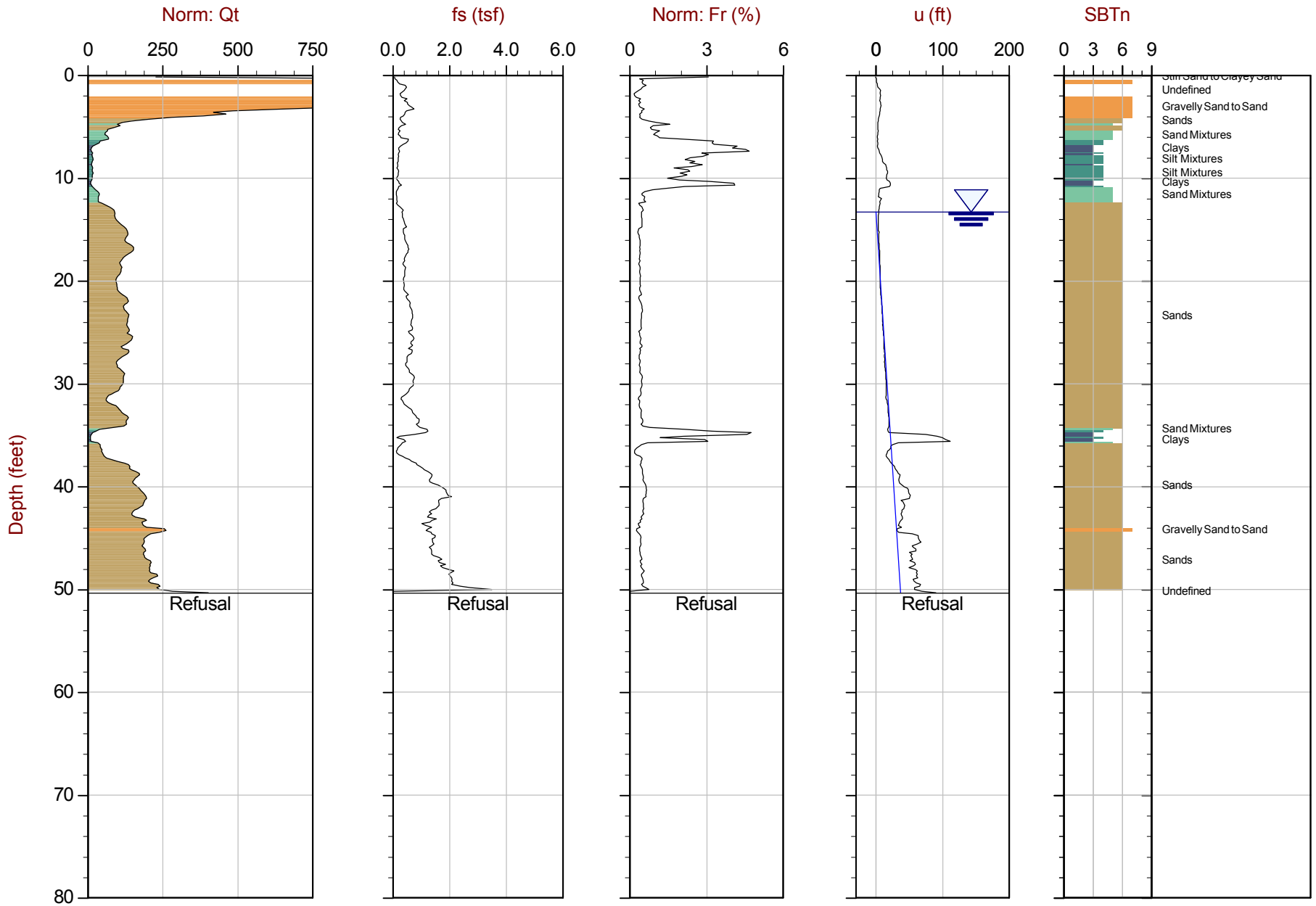
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:17:13 11:53
Site: Bay Park STP

Sounding: CPTu-31
Cone: 206:T1500F15U500



Max Depth: 15.350 m / 50.36 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP31.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498891 E: 612888

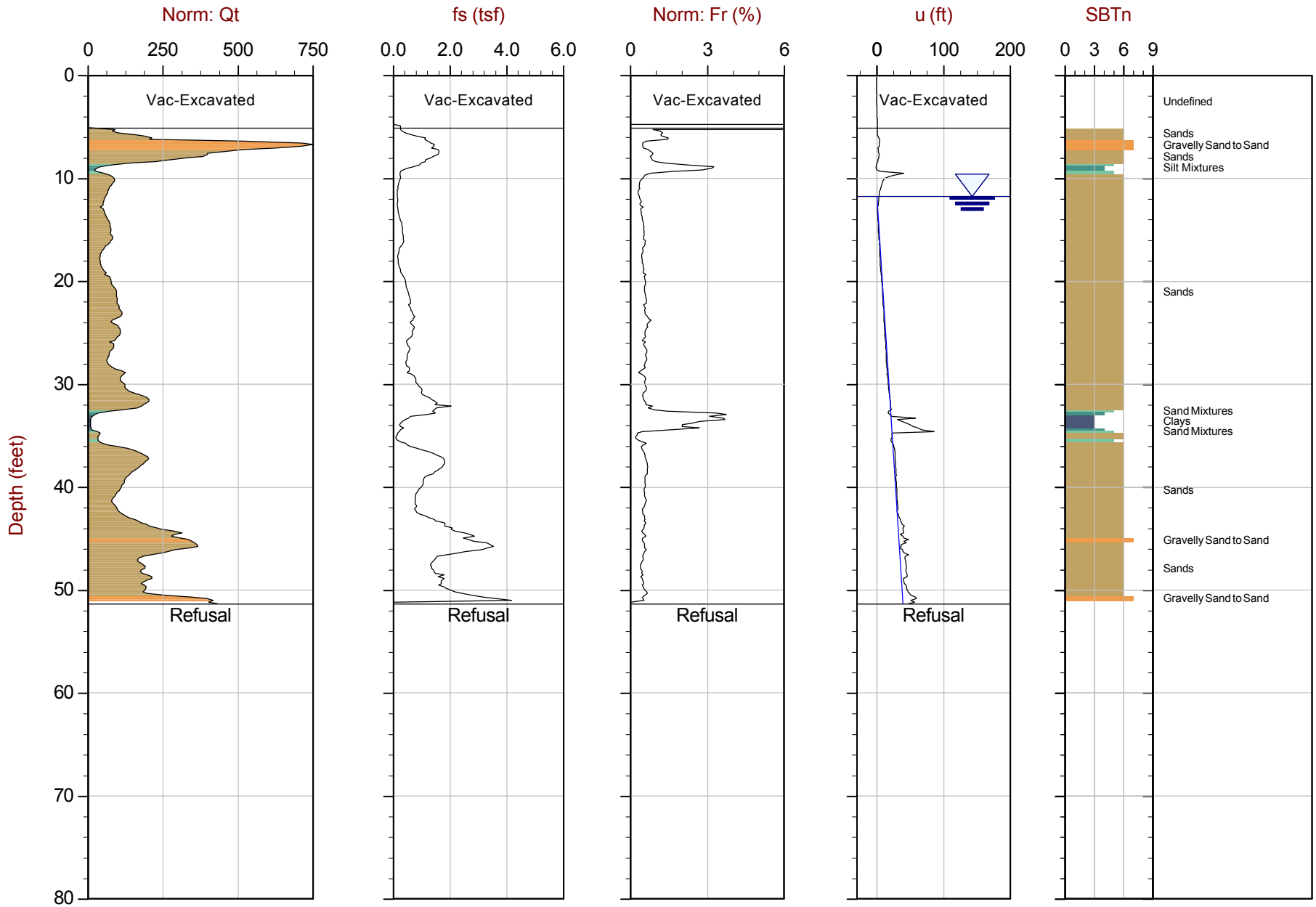
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 12:30
Site: Bay Park STP

Sounding: CPTu-32
Cone: 206:T1500F15U500



Max Depth: 15.650 m / 51.34 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP32.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498957 E: 612933

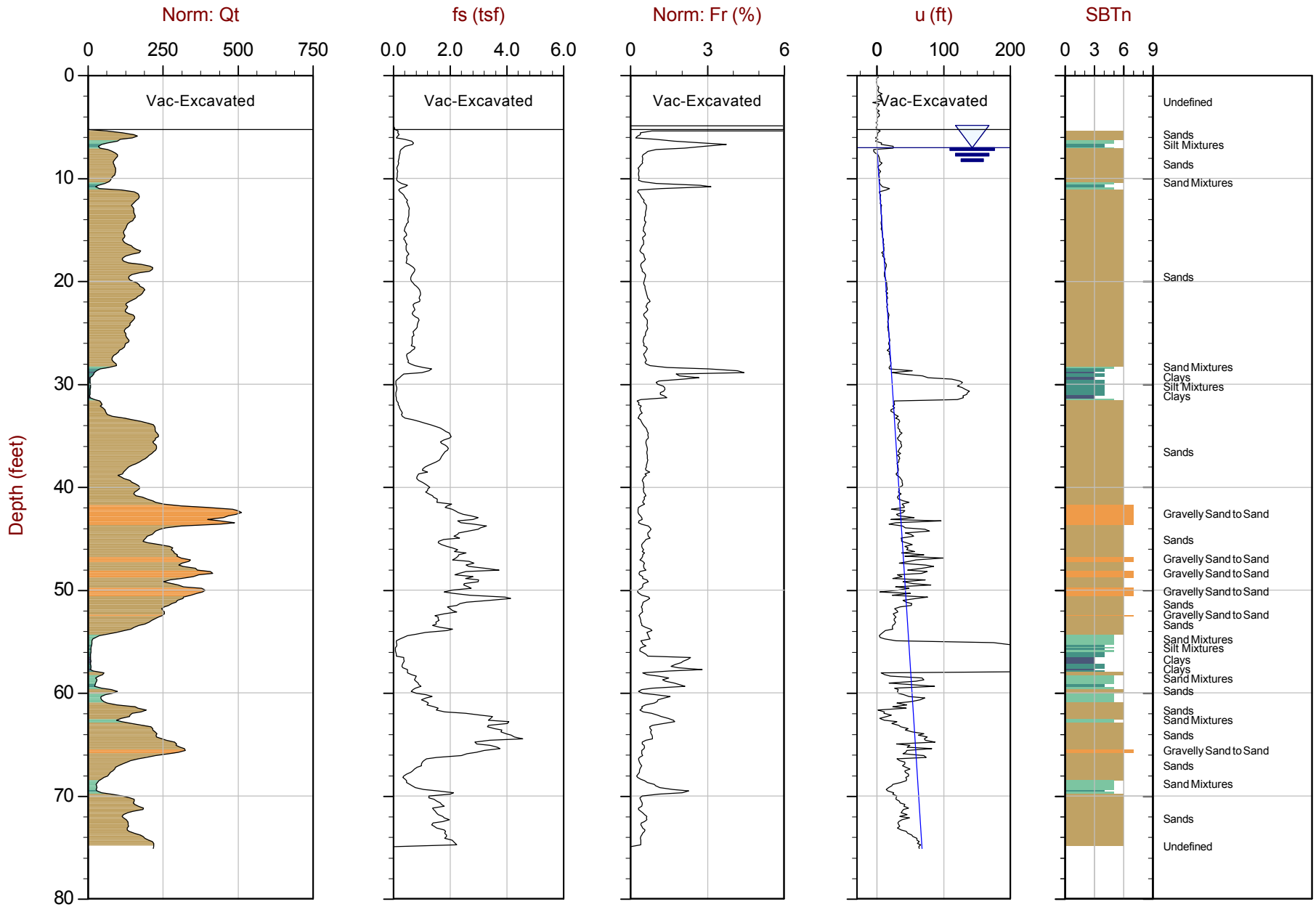
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:10:13 14:27
Site: Bay Park STP

Sounding: CPTu-33
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP33.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4498987 E: 612874

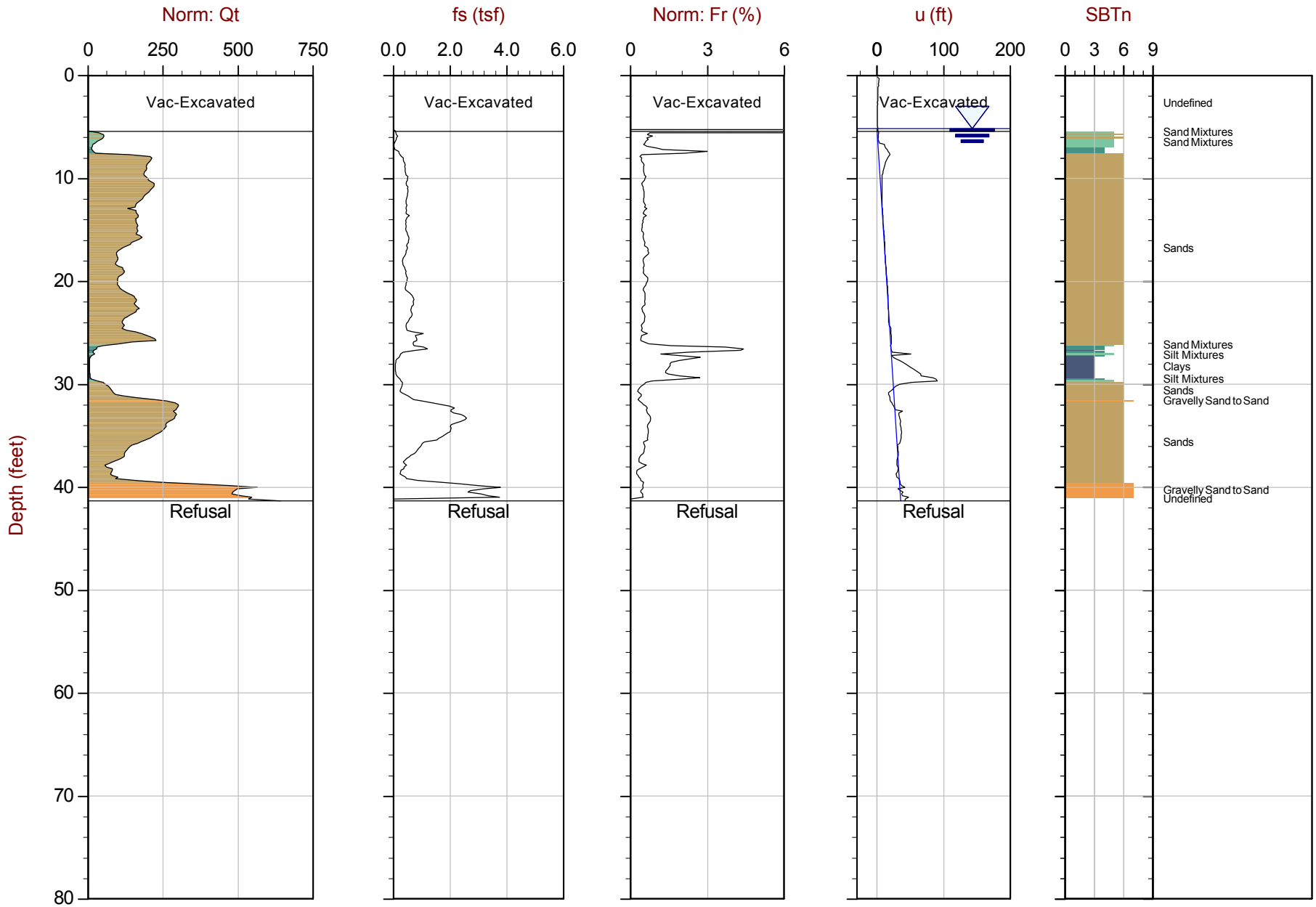
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 08:17
Site: Bay Park STP

Sounding: CPTu-34
Cone: 206:T1500F15U500



Max Depth: 12.600 m / 41.34 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP34.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499055 E: 612900

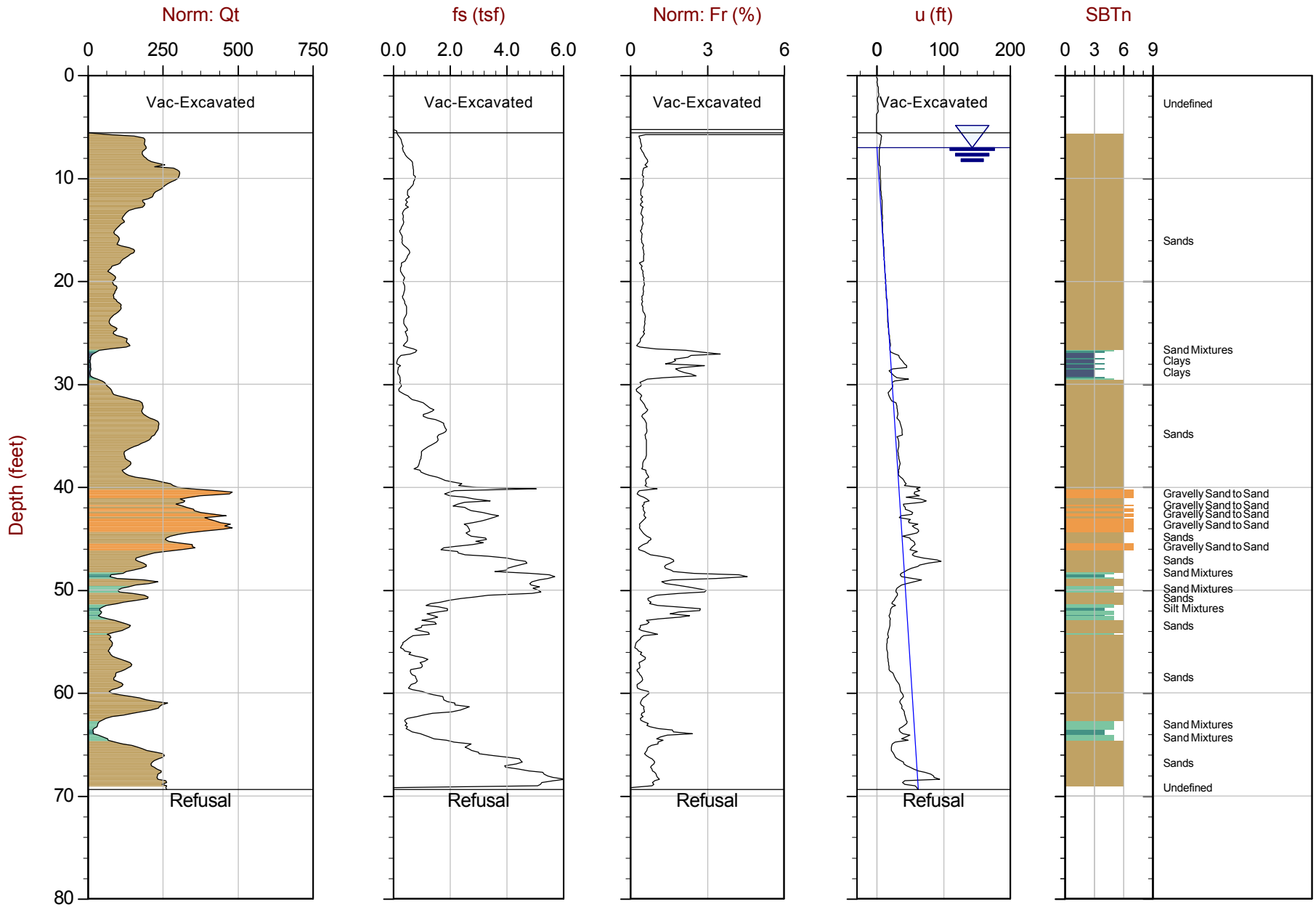
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 11:35
Site: Bay Park STP

Sounding: CPTu-35
Cone: 206:T1500F15U500



Max Depth: 21.150 m / 69.39 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP35.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499030 E: 612966

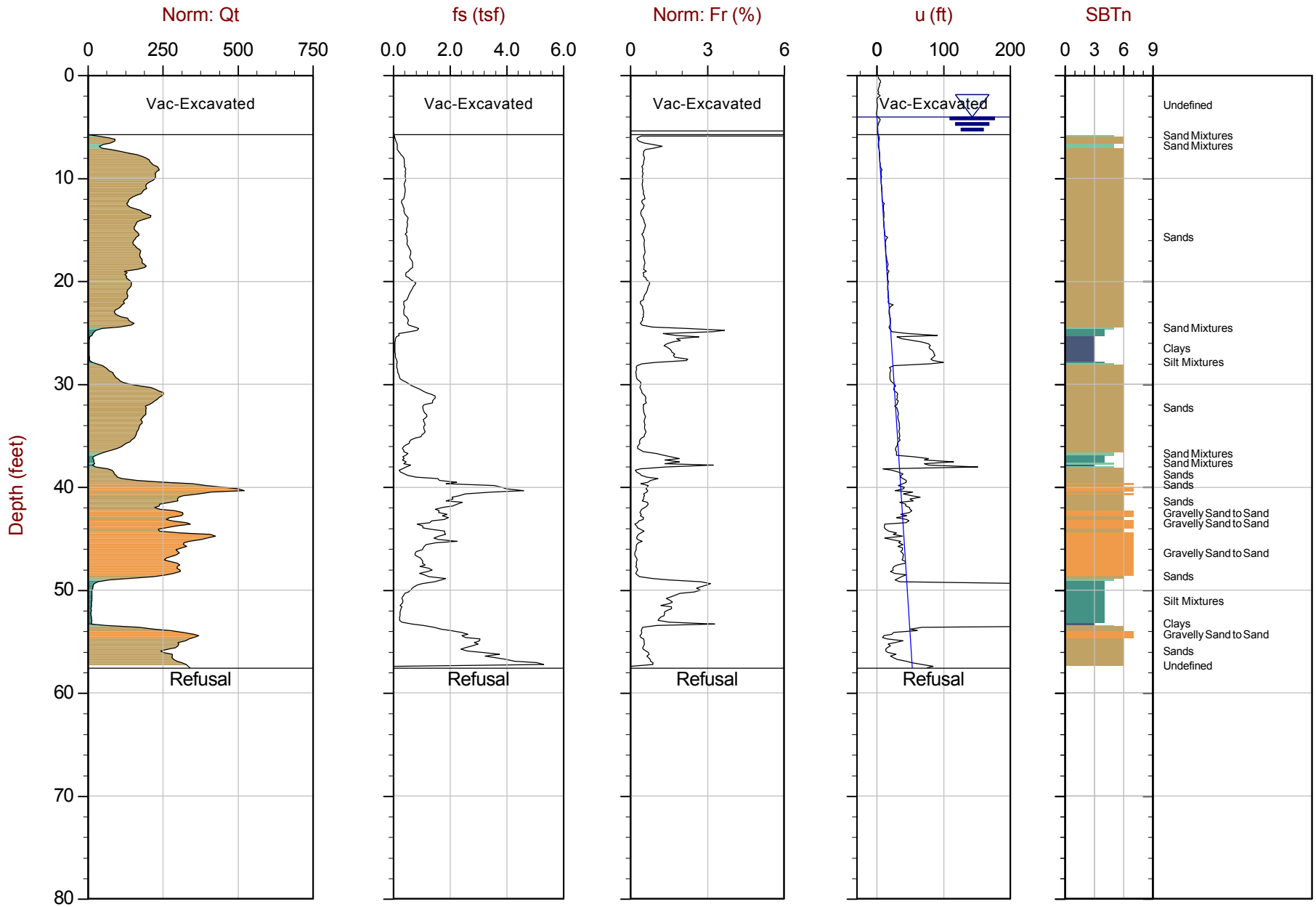
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 09:40
Site: Bay Park STP

Sounding: CPTu-37
Cone: 206:T1500F15U500



Max Depth: 17.550 m / 57.58 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP37.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499107 E: 612923

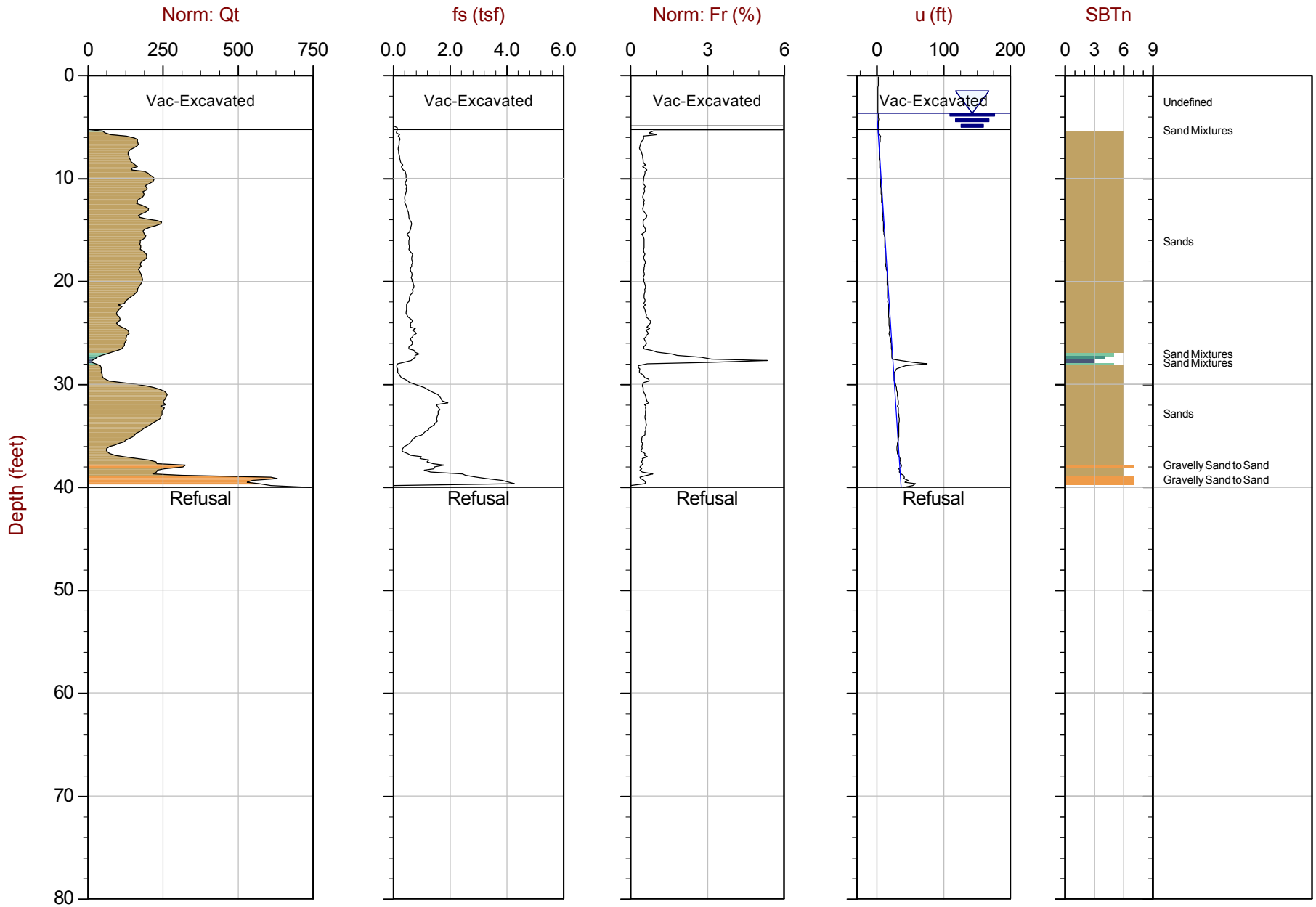
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:11:13 13:32
Site: Bay Park STP

Sounding: CPTu-38
Cone: 206:T1500F15U500



Max Depth: 12.200 m / 40.03 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP38.COR

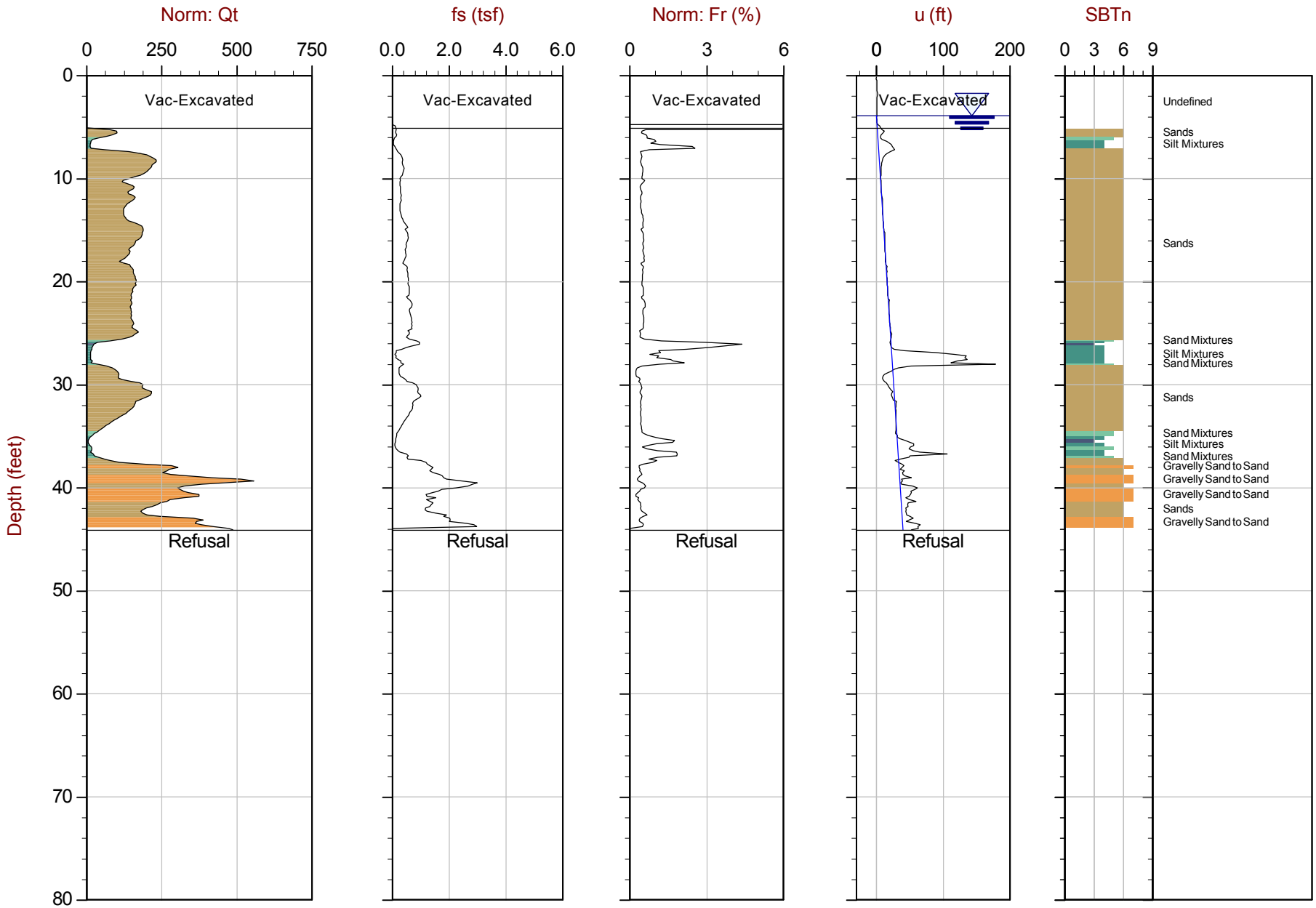
SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499104 E: 612999

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

ARCADIS

Job No: 13-53065
Date: 10:14:13 08:53
Site: Bay Park STP

Sounding: CPTu-39
Cone: 206:T1500F15U500



Max Depth: 13.450 m / 44.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP39.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499111 E: 613069

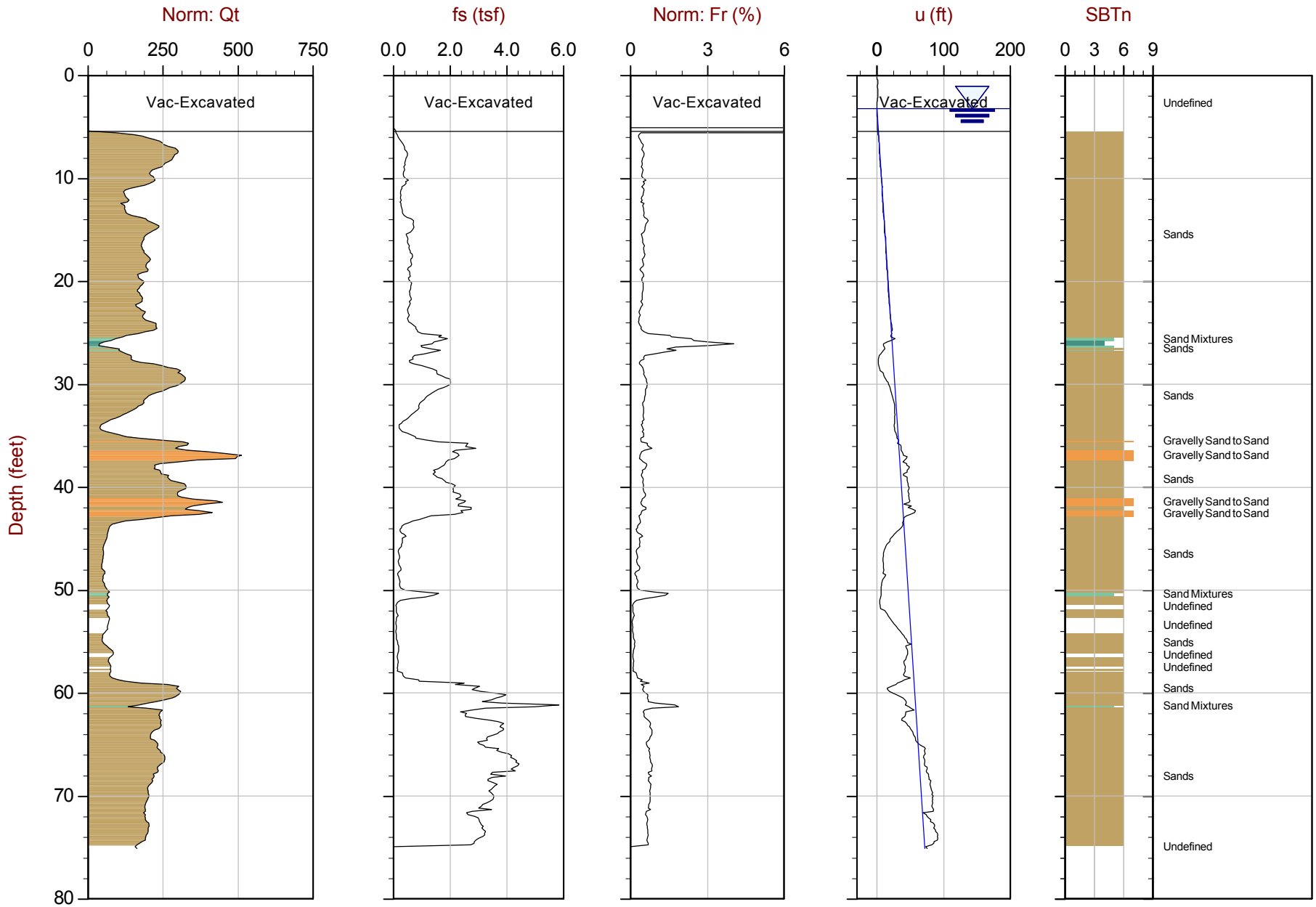
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

CONETEC

ARCADIS

Job No: 13-53065
Date: 10:14:13 10:10
Site: Bay Park STP

Sounding: CPTu-40
Cone: 206:T1500F15U500



Max Depth: 22.900 m / 75.13 ft
Depth Inc: 0.050 m / 0.164 ft

File: 13-53065_CP40.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 18 N: 4499072 E: 613107

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

Appendix B

CONETEC INTERPRETATION METHODS

A Detailed Description of the Methods Used in ConeTec's CPT Interpretation and Plotting Software

Revision SZW-Rev 05A
April 8, 2011

Prepared by Jim Greig

ConeTec Interpretations as of April 8, 2011

ConeTec's interpretation routine provides a tabular output of geotechnical parameters based on current published CPT correlations and is subject to change to reflect the current state of practice. The interpreted values are not considered valid for all soil types. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design. Reference to current literature is strongly recommended. ConeTec does not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the program and does not assume liability for any use of the results in any design or review. Representative hand calculations should be made for any parameter that is critical for design purposes. The end user of the interpreted output should also be fully aware of the techniques and the limitations of any method used in this program. The purpose of this document is to inform the user as to which methods were used and what the appropriate papers and/or publications are for further reference.

The CPT interpretations are based on values of tip, sleeve friction and pore pressure averaged over a user specified interval (e.g. 0.20m). Note that q_t is the tip resistance corrected for pore pressure effects and q_c is the recorded tip resistance. Since all ConeTec cones have equal end area friction sleeves, pore pressure corrections to sleeve friction, f_s, are not required.

The tip correction is: $q_t = q_c + (1-a) \cdot u_2$

where: q_t is the corrected tip resistance
q_c is the recorded tip resistance
u_2 is the recorded dynamic pore pressure behind the tip (u_2 position)
a is the Net Area Ratio for the cone (typically 0.80 for ConeTec cones)

The total stress calculations are based on soil unit weights that have been assigned to the Soil Behavior Type zones, from a user defined unit weight profile or by using a single value throughout the profile.

Effective vertical overburden stresses are calculated based on a hydrostatic distribution of equilibrium pore pressures below the water table or from a user defined equilibrium pore pressure profile (this can be obtained from CPT dissipation tests). For over water projects the effects of the column of water have been taken into account as has the appropriate unit weight of water. How this is done depends on where the instruments were zeroed (i.e. on deck or at mud line).

Details regarding the interpretation methods for all of the interpreted parameters are provided in Table 1. The appropriate references cited in Table 1 are listed in Table 2. Where methods are based on charts or techniques that are too complex to describe in this summary the user should refer to the cited material.

The Soil Behavior Type classification charts (normalized and non-normalized) shown in Figures 1 and 2 are based on the charts developed by Dr. Robertson and Dr. Campanella at the University of British Columbia. These charts appear in many publications, most notably: Robertson, Campanella, Gillespie and Greig (1986); Robertson (1990) and Lunne, Robertson and Powell (1997). The Bq classification charts shown in Figures 3a and 3b are based on those described in Robertson (1990) and Lunne, Robertson and Powell (1997). The Jefferies and Davies SBT chart shown in Figure 3c is based on that discussed in Jefferies and Davies, 1993.

Where the results of a calculation/interpretation are declared *'invalid'* the value will be represented by the text strings "-9999" or "-9999.0". In some cases the value 0 will be used. Invalid results will occur because of (and not limited to) one or a combination of:

1. Invalid or undefined CPT data (e.g. drilled out section or data gap).

2. Where the interpretation method is inappropriate, for example, drained parameters in an undrained material (and vice versa).

3. Where interpretation input values are beyond the range of the referenced charts or specified limitations of the interpretation method.

4. Where pre-requisite or intermediate interpretation calculations are invalid.

The parameters selected for output from the program are often specific to a particular project. As such, not all of the interpreted parameters listed in Table 1 may be included in the output files delivered with this report.

The output files are provided in Microsoft Excel XLS format. The ConeTec software has several options for output depending on the number or types of interpreted parameters desired. Each output file will be named using the original COR file basename followed by a three or four letter indicator of the interpretation set selected (e.g. BSC, TBL, NLI or IFI) and possibly followed by an operator selected suffix identifying the characteristics of the particular interpretation run.

Table 1
CPT Interpretation Methods

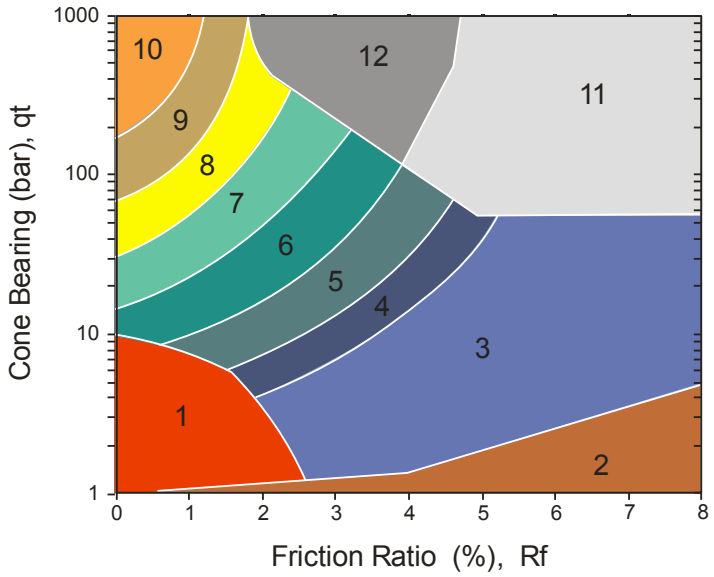
Interpreted Parameter	Description	Equation	Ref
Depth	Mid Layer Depth *(where interpretations are done at each point then Mid Layer Depth = Recorded Depth)*	*Depth (Layer Top) + Depth (Layer Bottom) / 2.0*	
Elevation	Elevation of Mid Layer based on sounding collar elevation supplied by client	Elevation = Collar Elevation - Depth	
Avgqc	Averaged recorded tip value (q_c)	$Avgqc = \frac{1}{n}\sum_{i=1}^{n} q_c$ *n=1 when interpretations are done at each point*	
Avgqt	Averaged corrected tip (q_t) where: $q_t = q_c + (1-a) \bullet u$	$Avgqt = \frac{1}{n}\sum_{i=1}^{n} q_t$ *n=1 when interpretations are done at each point*	
Avgfs	Averaged sleeve friction (f_s)	$Avgfs = \frac{1}{n}\sum_{i=1}^{n} fs$ *n=1 when interpretations are done at each point*	
AvgRf	Averaged friction ratio (Rf) where friction ratio is defined as: $Rf = 100\% \bullet \frac{fs}{qt}$	$AvgRf = 100\% \cdot \frac{Avgfs}{Avgqt}$ *n=1 when interpretations are done at each point*	
Avgu	Averaged dynamic pore pressure *(u)*	$Avgu = \frac{1}{n}\sum_{i=1}^{n} u_i$ *n=1 when interpretations are done at each point*	
AvgRes	Averaged Resistivity (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} RESISTIVITY_i$ *n=1 when interpretations are done at each point*	
AvgUVIF	Averaged UVIF ultra-violet induced fluorescence (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} UVIF_i$ *n=1 when interpretations are done at each point*	
AvgTemp	Averaged Temperature (this data is not always available since it is a specialized test)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} TEMPERATURE_i$ *n=1 when interpretations are done at each point*	

Interpreted Parameter	Description	Equation	Ref
AvgGamma	Averaged Gamma Counts (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} GAMMA_i$ *n=1 when interpretations are done at each point*	
SBT	Soil Behavior Type as defined by Robertson and Campanella	See Figure 1	2, 5
U.Wt.	Unit Weight of soil determined from one of the following user selectable options: 1) uniform value 2) value assigned to each SBT zone 3) user supplied unit weight profile	See references	5
T. Stress σ_v	Total vertical overburden stress at Mid Layer Depth. *A layer is defined as the averaging interval specified by the user. For data interpreted at each point the Mid Layer Depth is the same as the recorded depth.*	$TStress = \sum_{i=1}^{n} \gamma_i h_i$ *where* γ_i is layer unit weight h_i is layer thickness	
E. Stress σ_v'	Effective vertical overburden stress at Mid Layer Depth	*Estress = Tstress - u_{eq}*	
Ueq	Equilibrium pore pressure determined from one of the following user selectable options: 1) hydrostatic from water table depth 2) user supplied profile	For hydrostatic option: $u_{eq} = \gamma_w \cdot (D - D_{wt})$ where u_{eq} is equilibrium pore pressure γ_w is unit weight of water D is the current depth D_{wt} is the depth to the water table	
Cn	SPT N_{60} overburden correction factor	*$Cn=(\sigma_v')^{-0.5}$* where *σ_v' is in tsf* *$0.5 < C_n < 2.0$*	
N_{60}	SPT N value at 60% energy calculated from qt/N ratios assigned to each SBT zone. This method has abrupt N value changes at zone boundaries.	*See Figure 1*	4, 5
$(N_1)_{60}$	SPT N_{60} value corrected for overburden pressure	*$(N_1)_{60}$ = Cn • N_{60}*	4
$N_{60}Ic$	SPT N_{60} values based on the Ic parameter	(qt/pa)/ N_{60} = 8.5 (1 – Ic/4.6)	5
$(N_1)_{60}Ic$	SPT N_{60} value corrected for overburden pressure (using N_{60} $I_{c)}$. User has 2 options.	*1) $(N_1)_{60}Ic$= Cn • $(N_{60}$ Ic)* 2) q_{c1n}/ *$(N_1)_{60}Ic$* = 8.5 (1 – Ic/4.6)	4 5
$(N_1)_{60cs}Ic$	Clean sand equivalent SPT $(N_1)_{60}Ic$. User has 3 options.	1) $(N_1)_{60cs}Ic = \alpha + \beta((N_1)_{60}Ic)$ 2) $(N_1)_{60cs}Ic = K_{SPT} * ((N_1)_{60}Ic)$ 3) $q_{c1ncs})/ (N_1)_{60cs}Ic = 8.5 (1 – Ic/4.6)$ FC ≤ 5%: α = 0, β=1.0 FC ≥ 35% α = 5.0, β=1.2 5% < FC < 35% $\alpha = \exp[1.76 – (190/FC^2)]$ $\beta = [0.99 + (FC^{1.5}/1000)]$	10 10 5
Su	Undrained shear strength based on q_t Su factor N_{kt} is user selectable	$Su = \frac{qt - \sigma_v}{N_{kt}}$	1, 5
Su	Undrained shear strength based on pore pressure Su factor $N_{\Delta u}$ is user selectable	$Su = \frac{u_2 - u_{eq}}{N_{\Delta u}}$	1, 5
k	Coefficient of permeability (assigned to each SBT zone)		5

Interpreted Parameter	Description	Equation	Ref
Bq	Pore pressure parameter	$Bq = \frac{\Delta u}{qt - \sigma_v}$ *where:* $\Delta u = u - u_{eq}$ *and u = dynamic pore pressure* *u_{eq} = equilibrium pore pressure*	1, 5
Q_t	Normalized q_t for Soil Behavior Type classification as defined by Robertson, 1990	$Qt = \frac{qt - \sigma_v}{\sigma'_v}$	2, 5
F_r	Normalized Friction Ratio for Soil Behavior Type classification as defined by Robertson, 1990	$Fr = 100\% \cdot \frac{fs}{qt - \sigma_v}$	2, 5
Net qt	Net tip resistance	$qt - \sigma_v$	
qe	Effective tip resistance	$qt - u_2$	
qeNorm	Normalized effective tip resistance	$\frac{qt - u_2}{\sigma'_v}$	
SBTn	Normalized Soil Behavior Type as defined by Robertson and Campanella	See Figure 2	2, 5
SBT-BQ	Non-normalized Soil Behavior type based on the Bq parameter	See Figure 3	2, 5
SBT-BQn	Normalized Soil Behavior based on the Bq parameter	See Figure 3	2, 5
SBT-JandD	Soil Behaviour Type as defined by Jeffries and Davies	See Figure 3	7
SBT-BQn	Normalized Soil Behavior base on the Bq parameter	See Figure 3	2, 5
I_c	Soil index for estimating grain characteristics	$Ic = [(3.47 - \log_{10}Q)^2 + (\log_{10} Fr + 1.22)^2]^{0.5}$ *Where:* $Q = \left(\frac{qt - \sigma_v}{P_{a2}}\right)\left(\frac{P_a}{\sigma'_v}\right)^n$ *And Fr is in percent* *P_a = atmospheric pressure* *P_{a2} = atmospheric pressure* *n varies from 0.5 to 1.0 and is selected in an iterative manner based on the resulting I_c*	3, 8
FC	Apparent fines content (%)	*FC=1.75($Ic^{3.25}$) - 3.7* *FC=100 for Ic > 3.5* *FC=0 for Ic < 1.26* *FC = 5% if 1.64 < Ic < 2.6 AND F_r<0.5*	3
Ic Zone	This parameter is the Soil Behavior Type zone based on the Ic parameter (valid for zones 2 through 7 on SBTn chart)	Ic < 1.31 Zone = 7 1.31 < Ic < 2.05 Zone = 6 2.05 < Ic < 2.60 Zone = 5 2.60 < Ic < 2.95 Zone = 4 2.95 < Ic < 3.60 Zone = 3 Ic > 3.60 Zone = 2	3
PHI ϕ	Friction Angle determined from one of the following user selectable options: a) Campanella and Robertson b) Durgunoglu and Mitchel c) Janbu d) Kulhawy and Mayne	See reference	5 5 5 11

Interpreted Parameter	Description	Equation	Ref
Dr	Relative Density determined from one of the following user selectable options: a) Ticino Sand b) Hokksund Sand c) Schmertmann 1976 d) Jamiolkowski - All Sands	See reference	5
OCR	Over Consolidation Ratio	a) Based on Schmertmann's method involving a plot of $S_u/\sigma_v' / (S_u/\sigma_v')_{NC}$ and OCR where the Su/p' ratio for NC clay is user selectable	9
State Parameter	The state parameter is used to describe whether a soil is contractive (SP is positive) or dilative (SP is negative) at large strains based on the work by Been and Jefferies	See reference	8, 6, 5
Es/qt	Intermediate parameter for calculating Young's Modulus, E, in sands. It is the Y axis of the reference chart.	Based on Figure 5.59 in the reference	5
Young's Modulus E	Young's Modulus based on the work done in Italy. There are three types of sands considered in this technique. The user selects the appropriate type for the site from: a) OC Sands b) Aged NC Sands c) Recent NC Sands Each sand type has a family of curves that depend on mean normal stress. The program calculates mean normal stress and linearly interpolates between the two extremes provided in the Es/qt chart.	Mean normal stress is evaluated from: $\sigma_m' = \frac{1}{3}(\sigma_v' + \sigma_h' + \sigma_h')$ where σ_v'= vertical effective stress σ_h'= horizontal effective stress and $\sigma_h = K_o \cdot \sigma_v'$ with Ko assumed to be 0.5	5
q_{c1}	q_t normalized for overburden stress used for seismic analysis	$q_{c1} = q_t \cdot (Pa/\sigma_v')^{0.5}$ where: Pa = atm. Pressure q_t is in MPa	3
q_{c1n}	q_{c1} in dimensionless form used for seismic analysis	$q_{c1n} = (q_{c1} / Pa)(Pa/\sigma_v')^n$ where: Pa = atm. Pressure and n ranges from 0.5 to 0.75 based on Ic.	3
K_{SPT}	Equivalent clean sand factor for $(N_1)60$	$K_{SPT} = 1 + ((0.75/30) \cdot (FC - 5))$	10
K_{CPT}	Equivalent clean sand correction for q_{c1N}	$K_{cpt} = 1.0$ for $I_c \leq 1.64$ $K_{cpt} = f(I_c)$ for $I_c > 1.64$ (see reference)	10
q_{c1ncs}	Clean sand equivalent q_{c1n}	$q_{c1ncs} = q_{c1n} \cdot K_{cpt}$	3
CRR	Cyclic Resistance Ratio (for Magnitude 7.5)	$q_{c1ncs} < 50$: $CRR_{7.5} = 0.833 [(q_{c1ncs}/1000] + 0.05$ $50 \leq q_{c1ncs} < 160$: $CRR_{7.5} = 93 [(q_{c1ncs}/1000]^3 + 0.08$	10

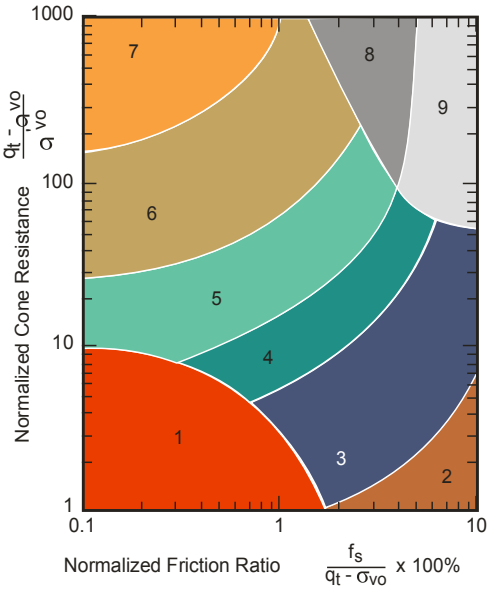
Interpreted Parameter	Description	Equation	Ref
CSR	Cyclic Stress Ratio	$CSR = (\tau_{av}/\sigma_v') = 0.65\ (a_{max} / g)\ (\sigma_v/ \sigma_v')\ r_d$ $r_d = 1.0 - 0.00765\ z$ $\quad z \leq 9.15m$ $r_d = 1.174 - 0.0267\ z$ $\quad 9.15 < z \leq 23m$ $r_d = 0.744 - 0.008\ z$ $\quad 23 < z \leq 30m$ $r_d = 0.50$ $\quad z > 30m$	10
MSF	Magnitude Scaling Factor	See Reference	10
FofS	Factor of Safety against Liquefaction	$FS = (CRR_{7.5} / CSR)\ MSF$	10
Liquefaction Status	Statement indicating possible liquefaction	Takes into account FofS and limitations based on I_c and q_{c1ncs}.	10
Cont/Dilat Tip	Contractive / Dilative qc1 Boundary based on $(N_1)_{60}$	$(\sigma_v')_{boundary} = 9.58 \times 10^{-4}\ [(N_1)_{60}]^{4.79}$ qc1 is calculated from specified qt(MPa)/N ratio	13
Cq	Normalizing Factor	$Cq = 1.8 / (0.8 + ((\sigma_v'/Pa))$	12
qc1 (Cq)	Normalized tip resistance based on Cq	$q_{c1} = C_q * q_t$ (some papers use q_c)	12
Su(Liq)/s'v	Liquefied Shear Strength Ratio	$\frac{Su(Liq)}{\sigma_v'} = 0.03 + 0.0143(q_{c1})$	13



Zone	qt / N	Soil Behavior Type
1	2	sensitive fine grained
2	1	organic material
3	1	clay
4	1.5	silty clay to clay
5	2	clayey silt to silty clay
6	2.5	sandy silt to clayey silt
7	3	silty sand to sandy silt
8	4	sand to silty sand
9	5	sand
10	6	gravelly sand to sand
11	1	very stiff fine grained *
12	2	sand to clayey sand *

* overconsolidated or cemented

Figure 1 Non-Normalized Behavior Type Classification Chart



Zone	Normalized Soil Behavior Type
1	sensitive fine grained
2	organic material
3	clay to silty clay
4	clayey silt to silty clay
5	silty sand to sandy silt
6	clean sands to silty sands
7	gravelly sand to sand
8	very stiff sand to clayey sand
9	very stiff fine grained

Figure 2 Normalized Behavior Type Classification Chart

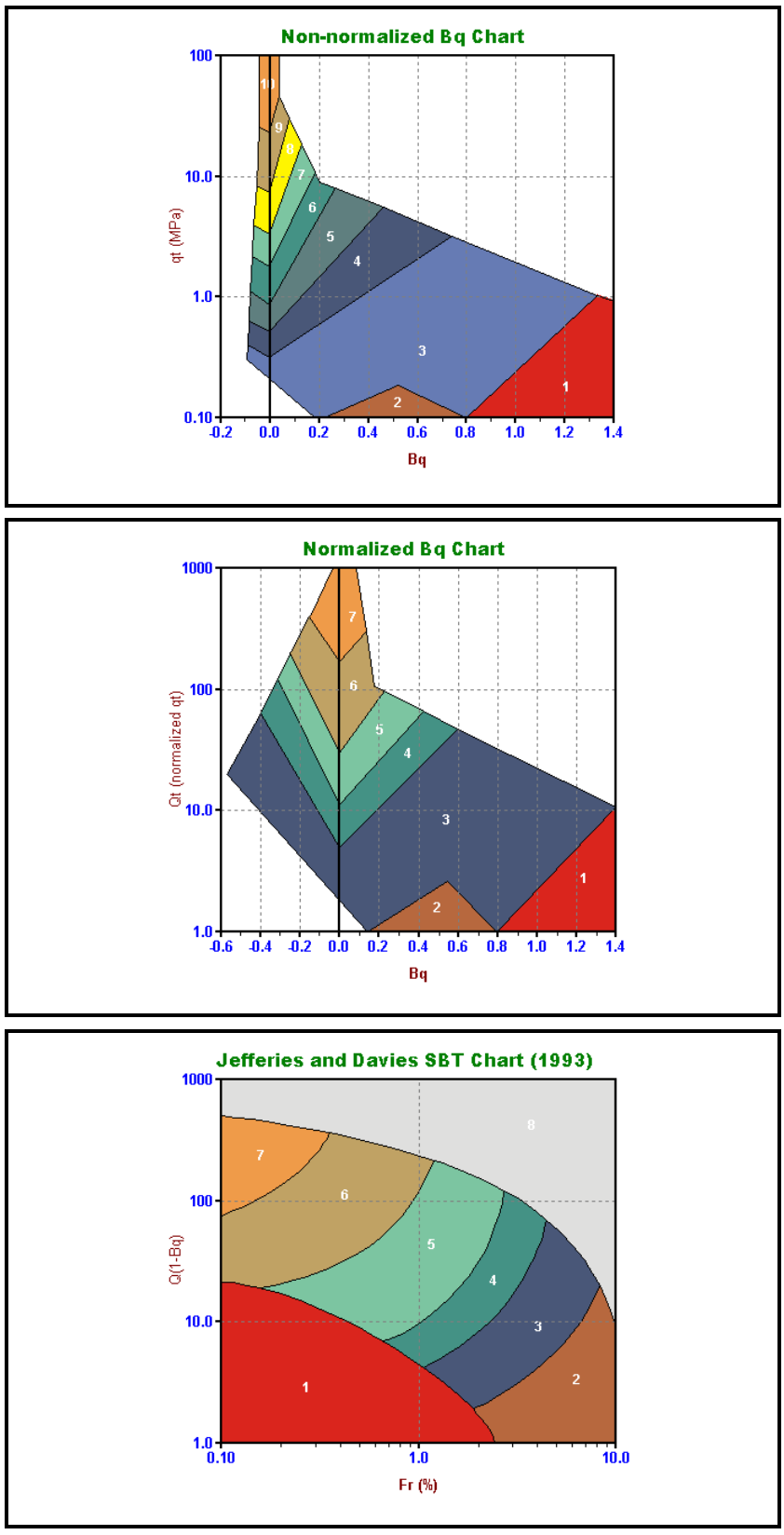


Figure 3 – Alternate Soil Behaviour Type Charts

Table 2 References

No.	References
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2	Robertson, P.K., 1990, "Soil Classification Using the Cone Penetration Test", Canadian Geotechnical Journal, Volume 27.
3	Robertson, P.K. and Fear, C.E., 1998, "Evaluating cyclic liquefaction potential using the cone penetration test", Canadian Geotechnical Journal, 35: 442-459.
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10	Proceedings of theNCEER Workshop on Evaluation of Liquefaction Resistance of Soils, Salt LakeCity, 1996. Chaired by Leslie Youd. 11
11	Kulhawy, F.H. and Mayne, P.W. ,1990, "Manual on Estimating Soil Properties for Foundation Design, *Report No. EL-6800"*, Electric Power Research Institute, Palo Alto, CA, August 1990, 306 p.
12	Olson, S.M. and Stark, T.D., 2002, "Liquefied strength ratio from liquefied flow filaure case histories", Canadian Geotechnical Journal, 39: 951-966.
13	Oslon, Scott M. and Stark, Timothy D., 2003, "Yield Strength Ratio and Liquefaction Analysis of Slopes and Embankments", Journal of Geotechnical and Geoenvironmental Engineering, ASCE, August 2003.

Appendix C

Job Number 13-53065
Client ARCADIS
Project Bay Park STP
Date Oct 7, 2013 to Oct 17, 2013

TABLE 2 Dissipation Trace Summary

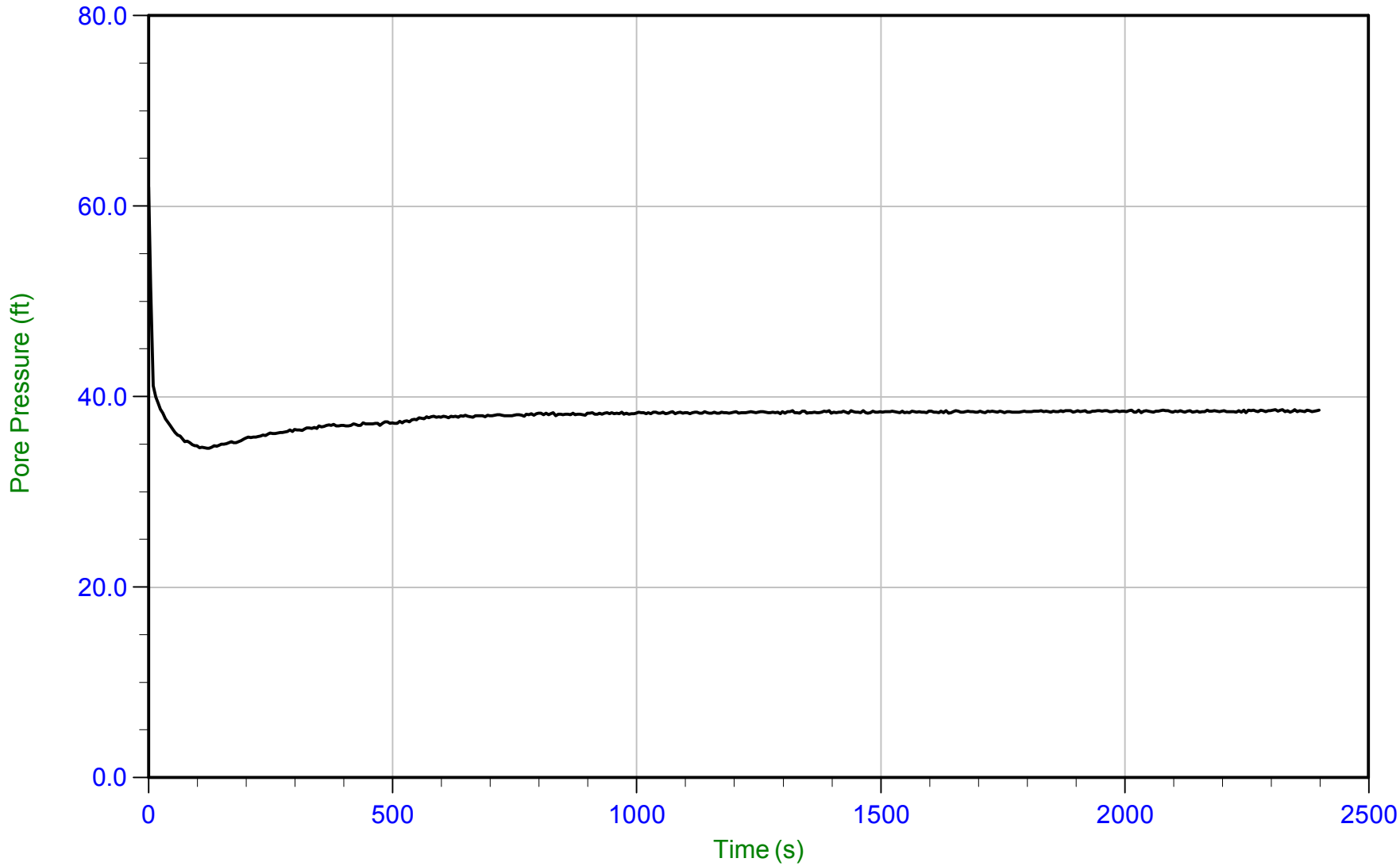
Sounding ID	Duration s	T at U50 s	T50 s	Ch cm^2/min	Depth ft	Calc. Phrea. Surface ft	Est. Phrea. Surface ft	Ueq ft
CPTu-01	2400.0				43.143	4.65		38.50
CPTu-03	900.0				47.736	9.98		37.76
CPTu-05	1900.0	253.7	248.7	2.82	11.319		6.83	4.49
CPTu-05	305.0				25.262	6.83		18.43
CPTu-05	305.0				45.439			
CPTu-06	5600.0	4239.3	4224.3	0.17	11.155		7.05	4.10
CPTu-06	200.0				38.385	7.05		31.33
CPTu-07	1800.0	1108.5	1073.5	0.65	10.827		4.50	6.33
CPTu-08	2100.0	450.5	450.5	1.56	7.382		5.44	1.94
CPTu-08	300.0				23.786	5.44		18.35
CPTu-09	800.0				11.647	5.60		6.04
CPTu-09	1900.0	681.0	676.0	1.04	15.420		5.60	9.82
CPTu-09	800.0				46.915	6.63		40.29
CPTu-10	600.0	25.0	25.0	28.03	10.663	5.81		4.86
CPTu-10	2400.0	380.2	375.2	1.87	15.748		5.81	9.94
CPTu-10	105.0				44.783	10.68		34.10
CPTu-10	175.0				47.736	10.51		37.23
CPTu-11	900.0	288.8	288.8	2.43	9.514		7.00	2.51
CPTu-11	1600.0	822.2	782.2	0.90	20.341		7.00	13.34
CPTu-12	1800.0	646.7	621.7	1.13	11.975		5.00	6.97
CPTu-12	400.0				48.228	9.66		38.57
CPTu-13	1800.0	393.3	388.3	1.81	12.303		5.00	7.30
CPTu-13	900.0	110.5	110.5	6.35	30.840		5.00	25.84
CPTu-14	1520.0				7.710	6.72		0.99
CPTu-14	3600.0	1085.3	1080.3	0.65	14.107		6.72	7.39
CPTu-14	6025.0	4164.6	4164.6	0.17	21.325		6.72	14.61
CPTu-16	4600.0	79.1	79.1	8.87	8.858	3.84		5.02
CPTu-17	3600.0	2243.2	2223.2	0.32	10.827		5.00	5.83
CPTu-18	2500.0	841.1	796.1	0.88	11.811		4.41	7.40
CPTu-18	900.0				50.688	4.41		46.28
CPTu-20	3000.0	2363.3	2243.3	0.31	12.303		7.90	4.40
CPTu-20	400.0	133.5	123.5	5.68	62.335		7.90	54.44
CPTu-21	2400.0	1171.7	1141.7	0.61	12.139		4.79	7.35
CPTu-21	1100.0	704.2	674.2	1.04	60.695		4.79	55.91
CPTu-21	145.0				67.584	4.79		62.80
CPTu-22	2250.0	1614.9	1599.9	0.44	10.827		7.30	3.53
CPTu-22	700.0	363.3	348.3	2.02	58.726		7.30	51.43
CPTu-23	505.0				42.322	9.83		32.49
CPTu-23	1200.0	742.2	632.2	1.11	62.007		8.44	53.57
CPTu-23	1200.0				75.130	8.44		66.69
CPTu-24	4400.0				8.858		8.50	0.36
CPTu-25	900.0	636.3	631.3	1.11	10.335		9.56	0.77
CPTu-25	300.0				54.953	9.56		45.39
CPTu-26	1300.0	466.5	436.5	1.61	60.039		10.10	49.94
CPTu-29	1300.0				50.032	13.33		36.70
CPTu-31	805.0	421.0	396.0	1.77	10.827		13.20	-2.37
CPTu-31	1350.0	192.2	177.2	3.96	35.597		13.20	22.40
CPTu-32	2700.0	681.4	586.4	1.20	33.300		11.76	21.55
CPTu-32	550.0				51.345	11.76		39.59
CPTu-33	600.0	86.5	76.5	9.17	7.054		7.00	0.05
CPTu-33	2400.0	694.4	684.4	1.03	29.199		7.00	22.20
CPTu-33	600.0	290.2	290.2	2.42	56.758		7.00	49.76
CPTu-34	400.0				24.278	5.16		19.11
CPTu-34	2000.0	102.8	97.8	7.18	27.067		5.17	21.90
CPTu-35	2715.0	506.8	371.8	1.89	28.379		7.00	21.38
CPTu-37	3600.0	695.2	675.2	1.04	25.262		4.00	21.26
CPTu-37	600.0	342.4	342.4	2.05	50.032		4.00	46.03
CPTu-38	215.0				39.862	5.05		34.81
CPTu-38	535.0				40.026	3.68		36.35
CPTu-39	1200.0	625.5	620.5	1.13	27.559		3.90	23.66
CPTu-40	900.0				67.749	4.68		63.07

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/14/2013 11:29
Site: Bay Park STP

Sounding: CPTu-01
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP01.PPD
Depth: 13.150 m / 43.143 ft
Duration: 2400.0 s

U Min: 34.6 ft
U Max: 62.0 ft

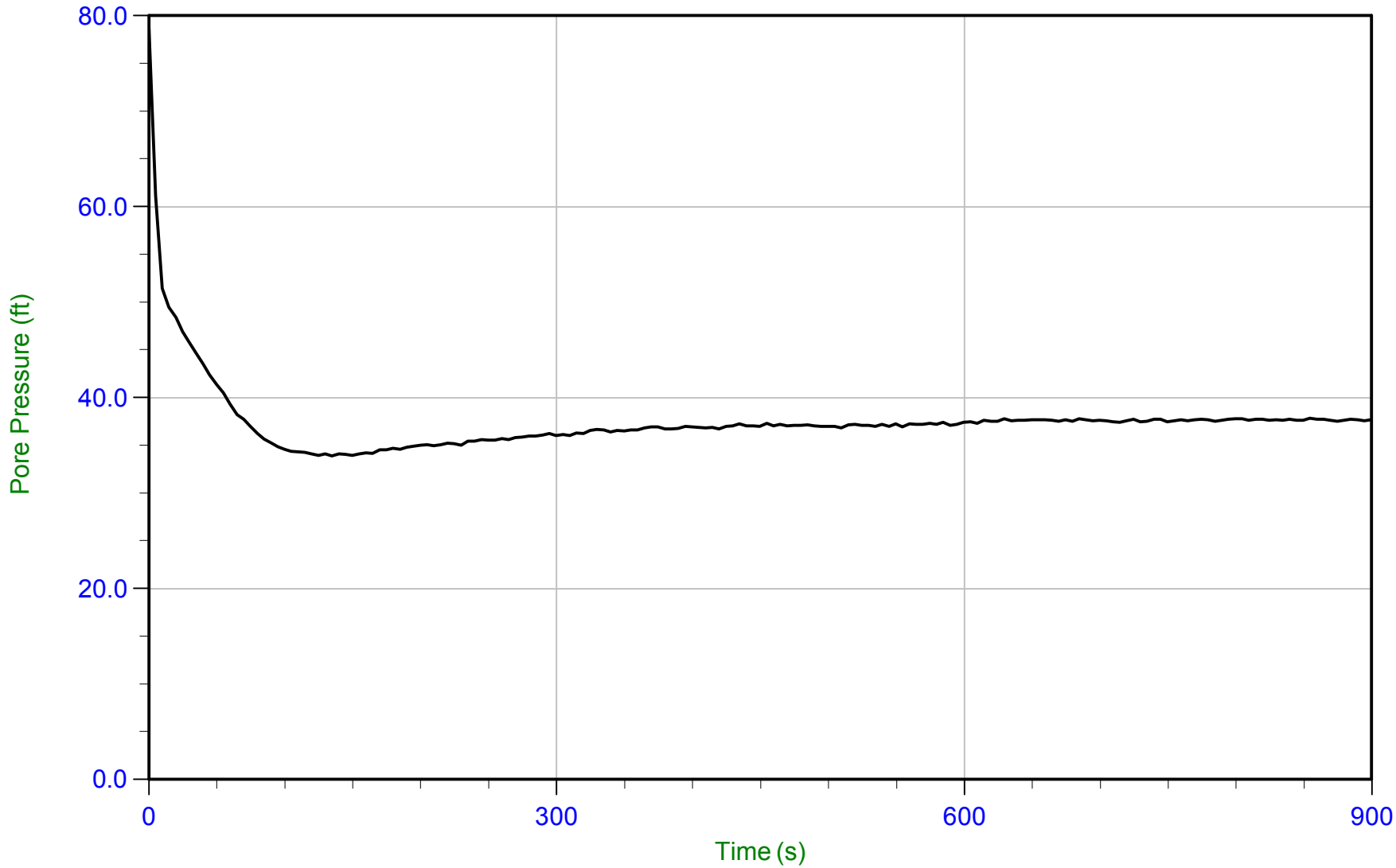
WT: 1.416 m / 4.646 ft
Ueq: 38.5 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/16/2013 16:54
Site: Bay Park STP

Sounding: CPTu-03
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



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Depth: 14.550 m / 47.736 ft
Duration: 900.0 s

U Min: 33.9 ft
U Max: 78.6 ft

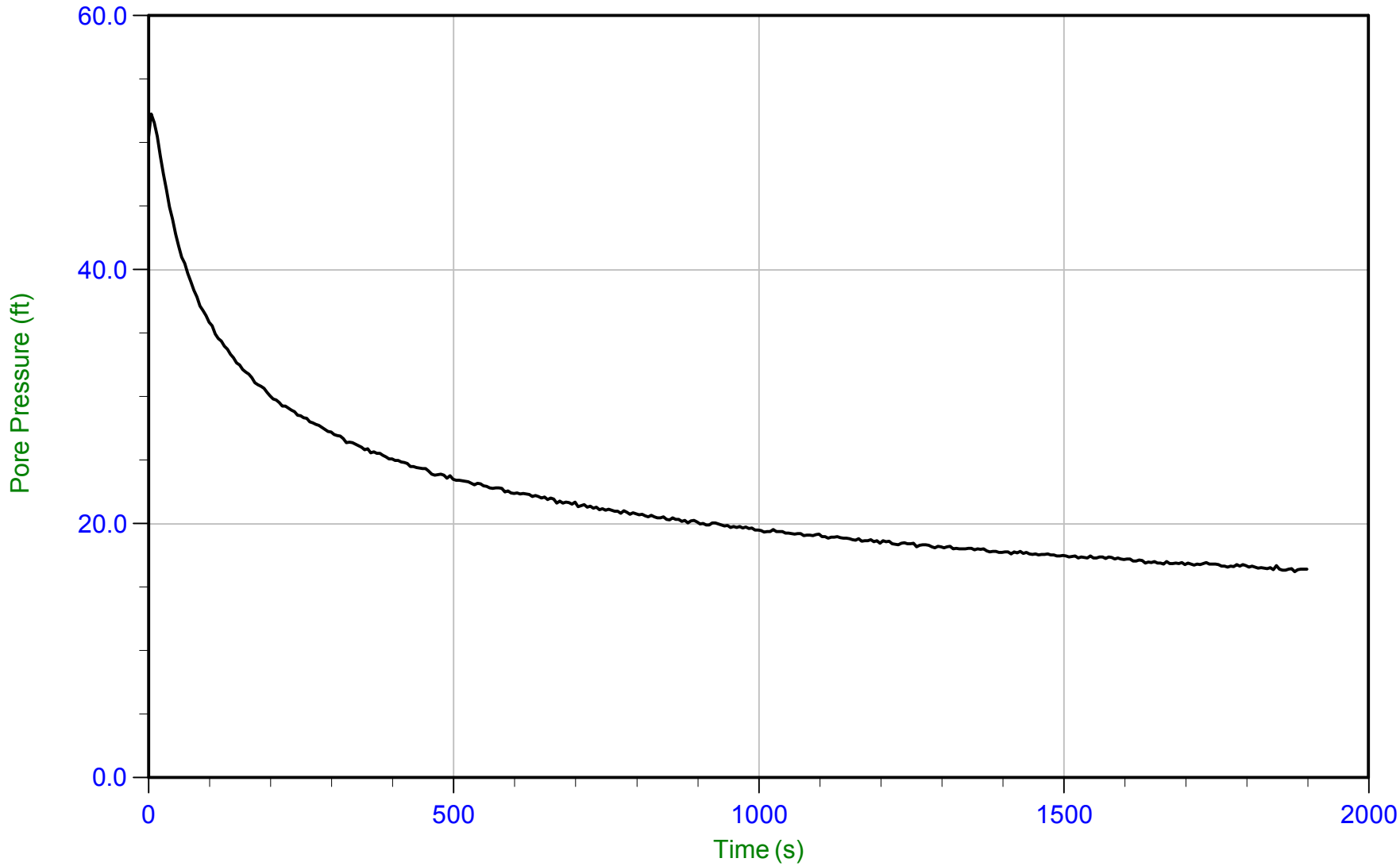
WT: 3.042 m / 9.980 ft
Ueq: 37.8 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/07/2013 14:03
Site: Bay Park STP

Sounding: CPTu-05
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP05.PPD
Depth: 3.450 m / 11.319 ft
Duration: 1900.0 s

U Min: 16.2 ft
U Max: 52.3 ft

WT: 2.082 m / 6.831 ft
Ueq: 4.5 ft
U(50): 28.38 ft

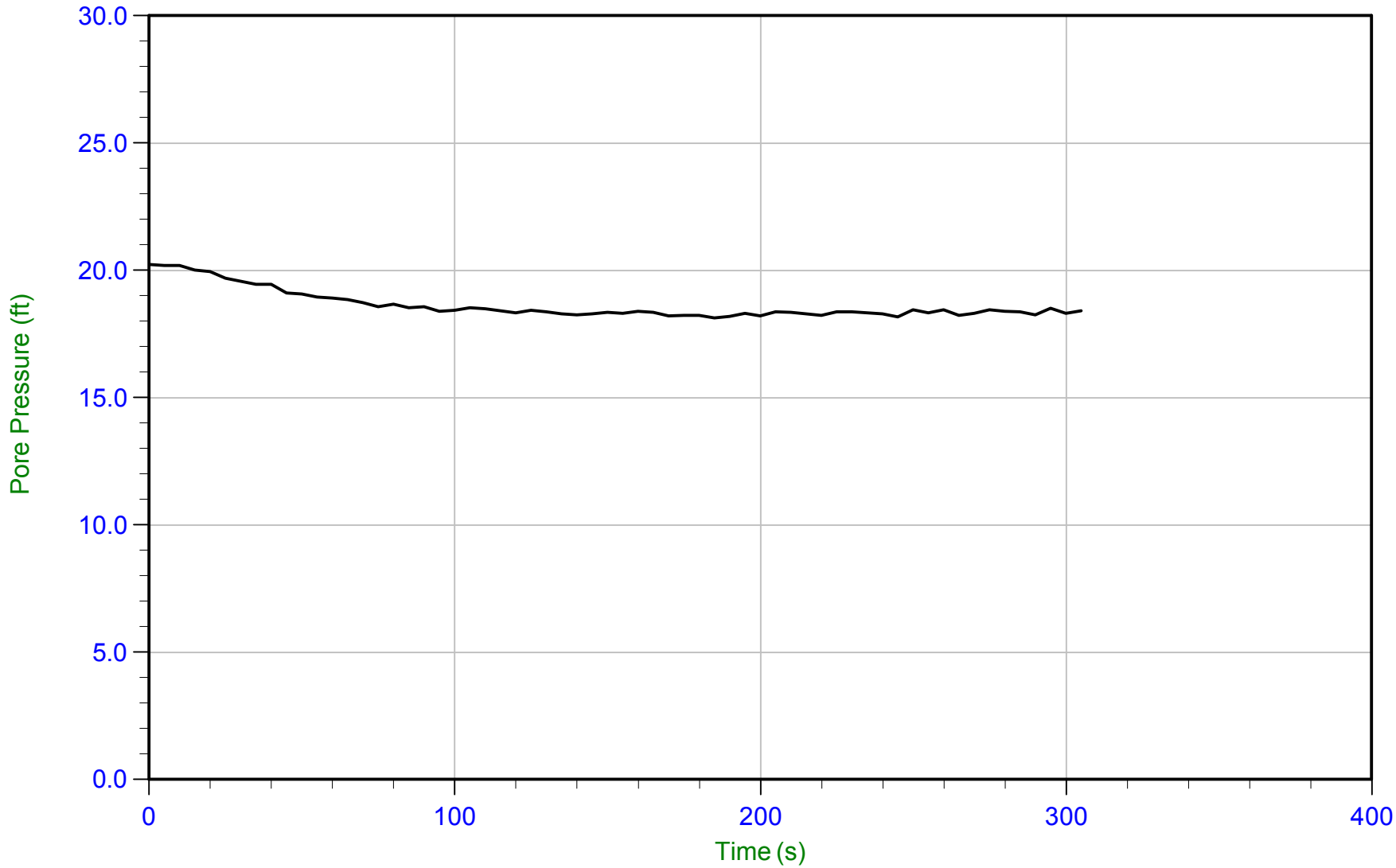
T(50): 248.7 s
Ir: 100
Ch: 2.8 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/07/2013 14:03
Site: Bay Park STP

Sounding: CPTu-05
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP05.PPD
Depth: 7.700 m / 25.262 ft
Duration: 305.0 s

U Min: 18.1 ft
U Max: 20.2 ft

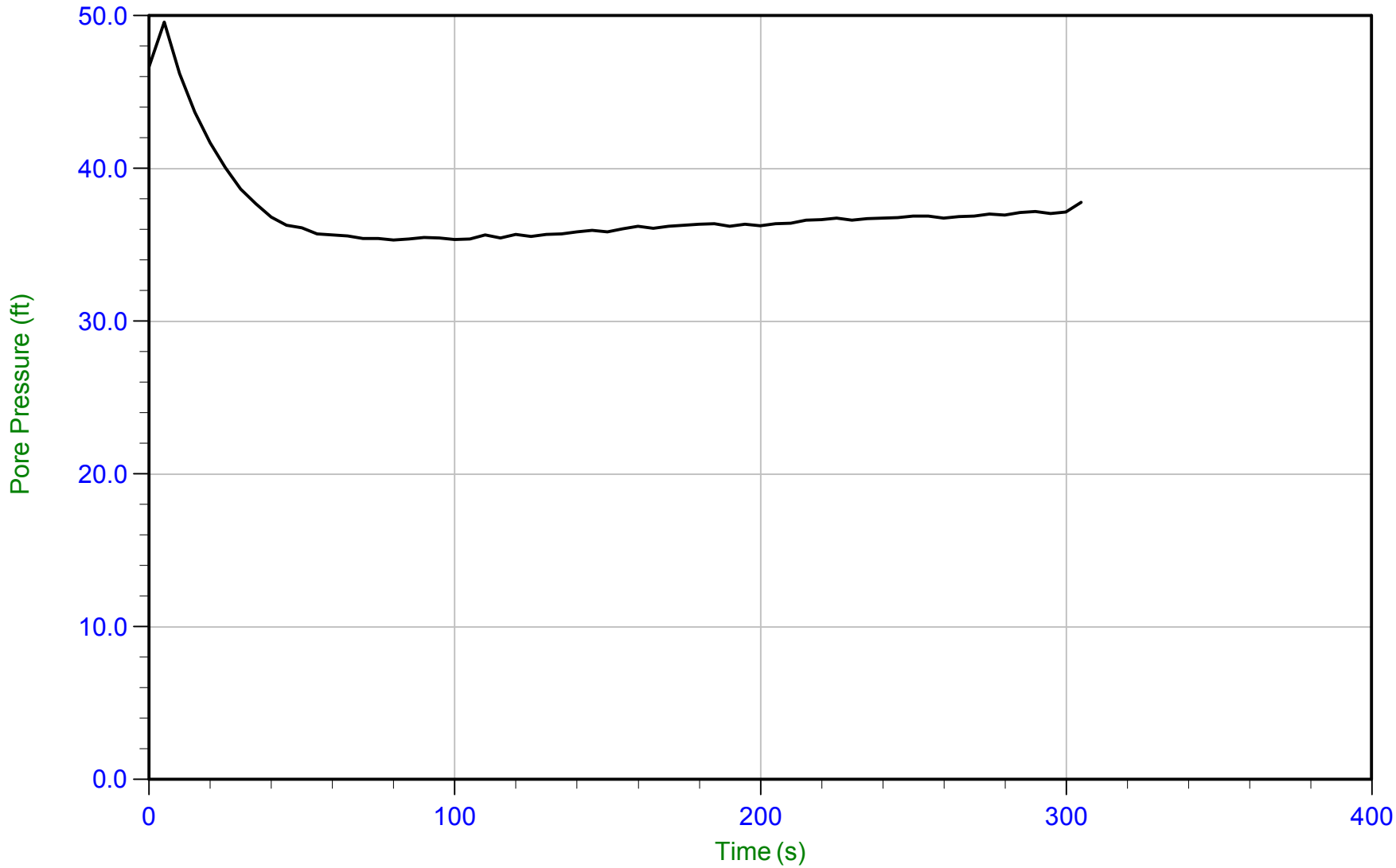
WT: 2.083 m / 6.834 ft
Ueq: 18.4 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/07/2013 14:03
Site: Bay Park STP

Sounding: CPTu-05
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP05.PPD
Depth: 13.850 m / 45.439 ft
Duration: 305.0 s

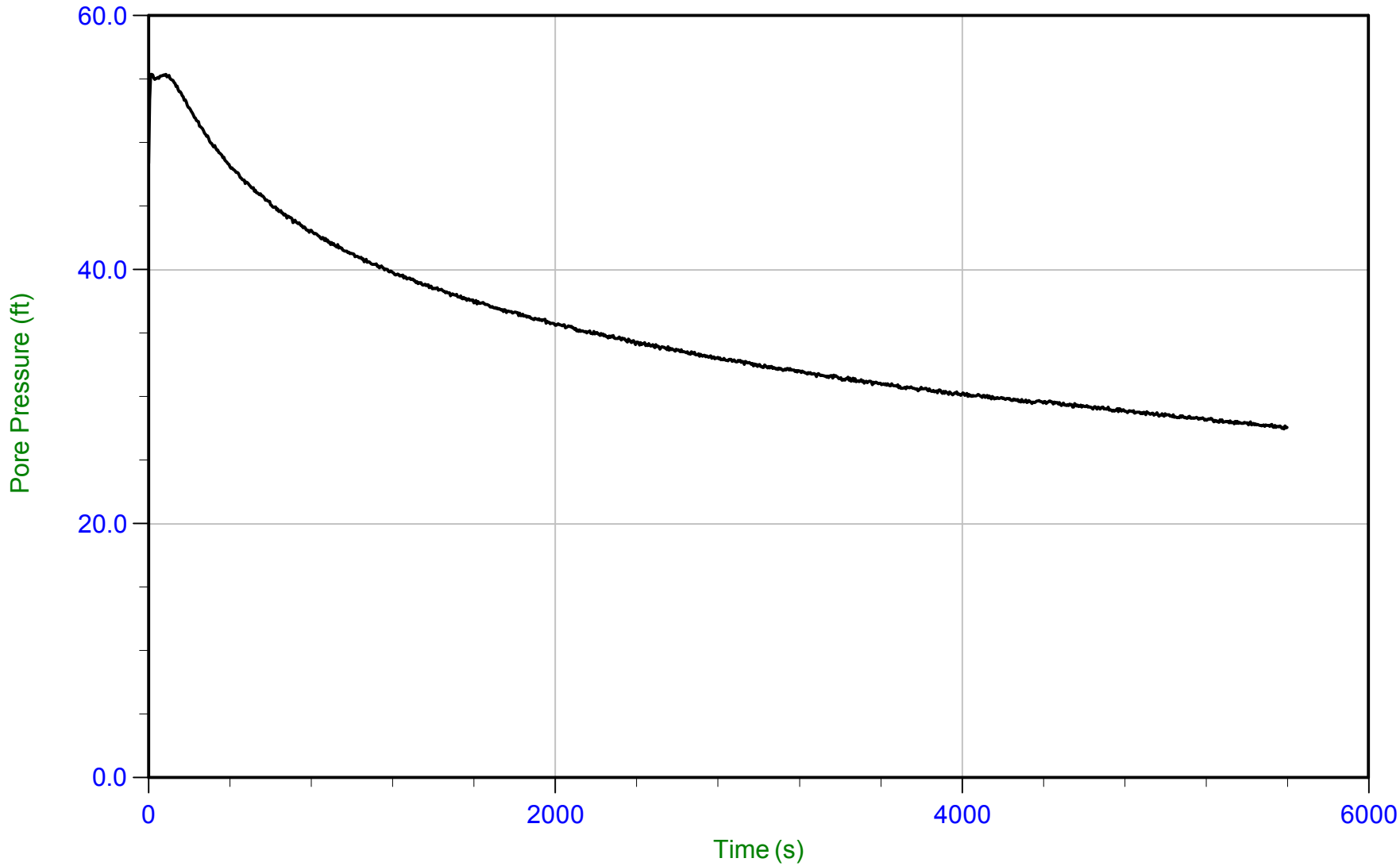
U Min: 35.3 ft
U Max: 49.6 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/07/2013 15:38
Site: Bay Park STP

Sounding: CPTu-06
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP06.PPD
Depth: 3.400 m / 11.155 ft
Duration: 5600.0 s

U Min: 27.5 ft
U Max: 55.4 ft

WT: 2.150 m / 7.054 ft
Ueq: 4.1 ft
U(50): 29.74 ft

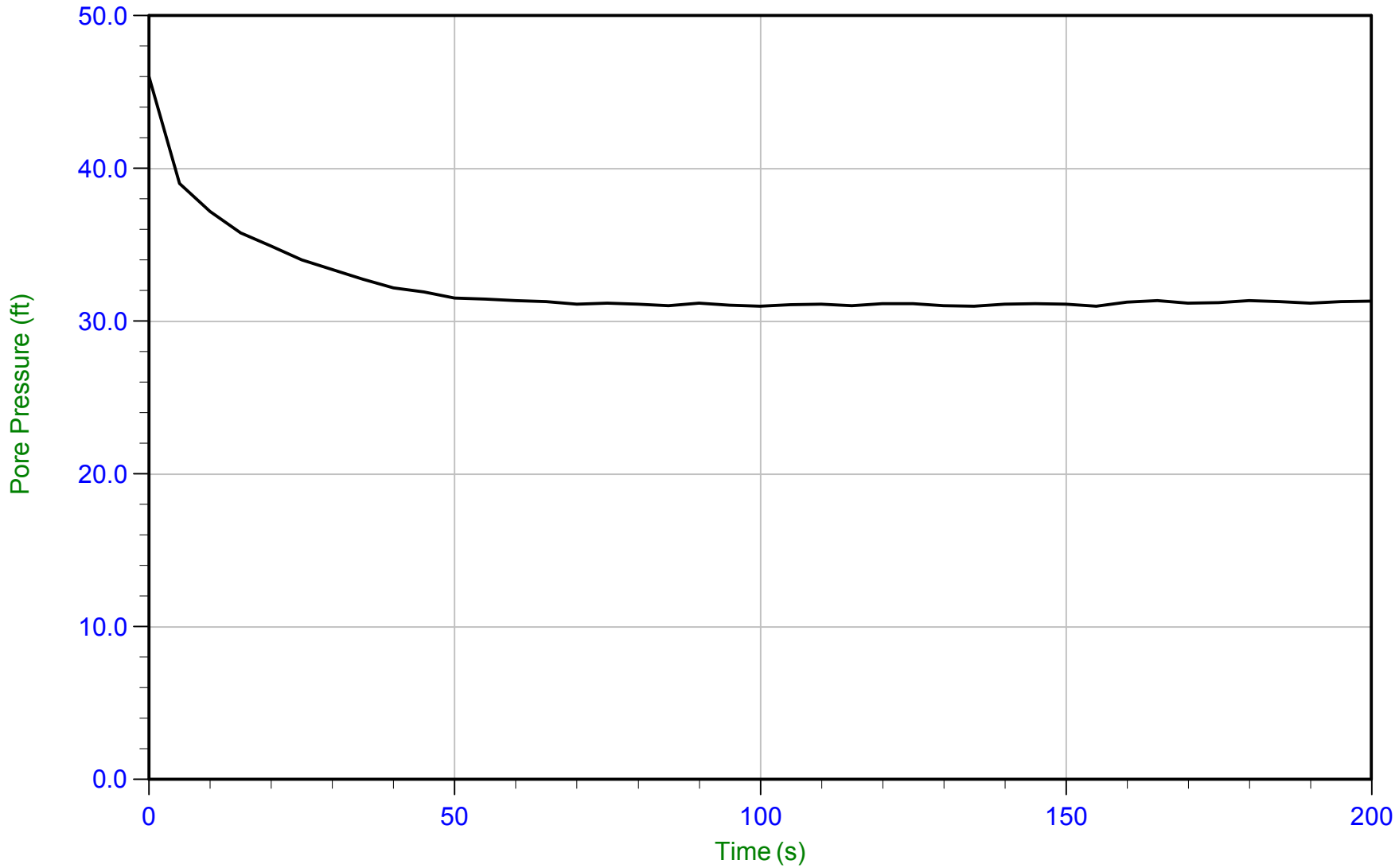
T(50): 4224.3 s
Ir: 100
Ch: 0.2 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/07/2013 15:38
Site: Bay Park STP

Sounding: CPTu-06
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP06.PPD
Depth: 11.700 m / 38.385 ft
Duration: 200.0 s

U Min: 31.0 ft
U Max: 46.0 ft

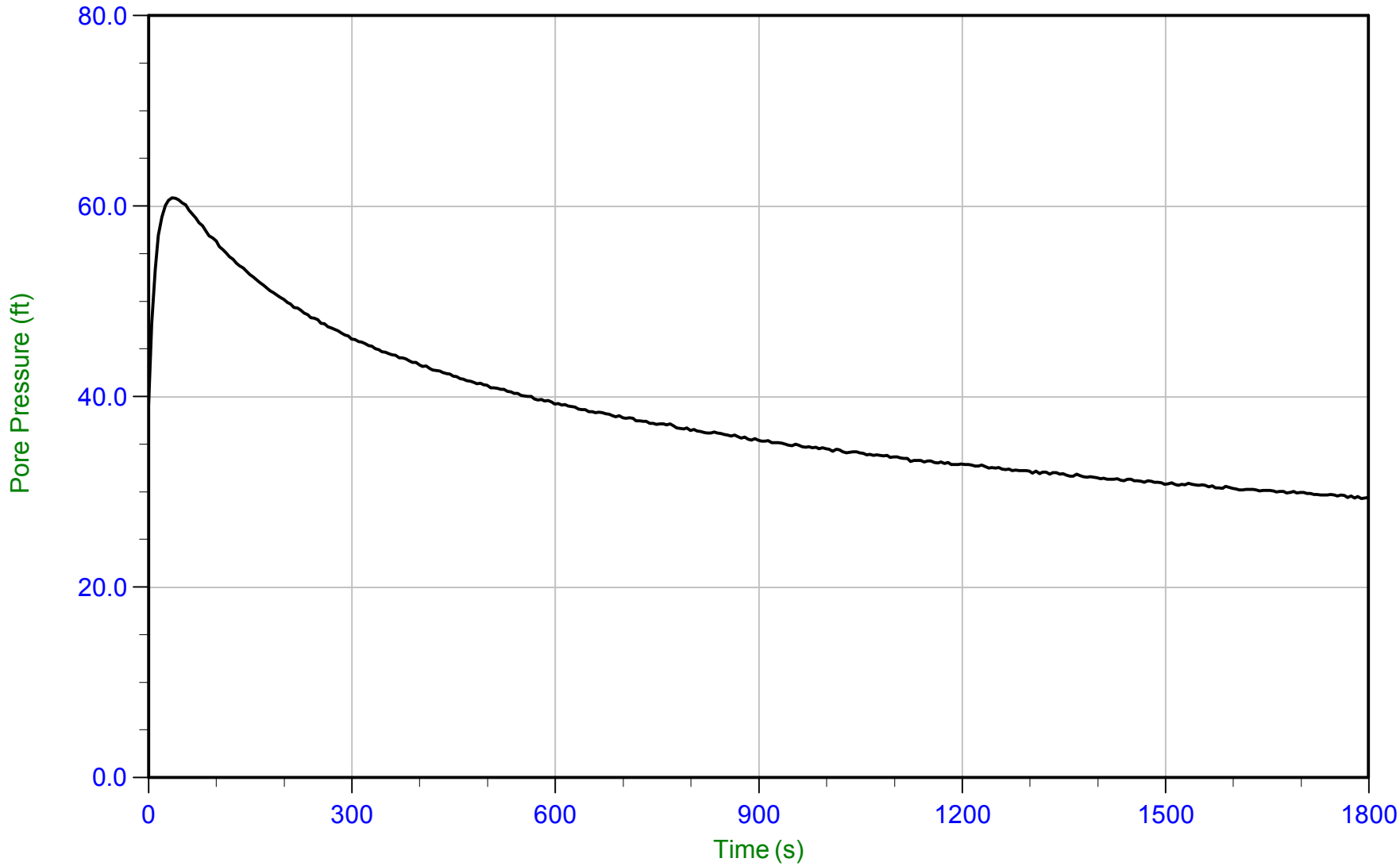
WT: 2.150 m / 7.054 ft
Ueq: 31.3 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 09:18
Site: Bay Park STP

Sounding: CPTu-07
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP07.PPD
Depth: 3.300 m / 10.827 ft
Duration: 1800.0 s

U Min: 29.3 ft
U Max: 60.9 ft

WT: 1.372 m / 4.501 ft
Ueq: 6.3 ft
U(50): 33.60 ft

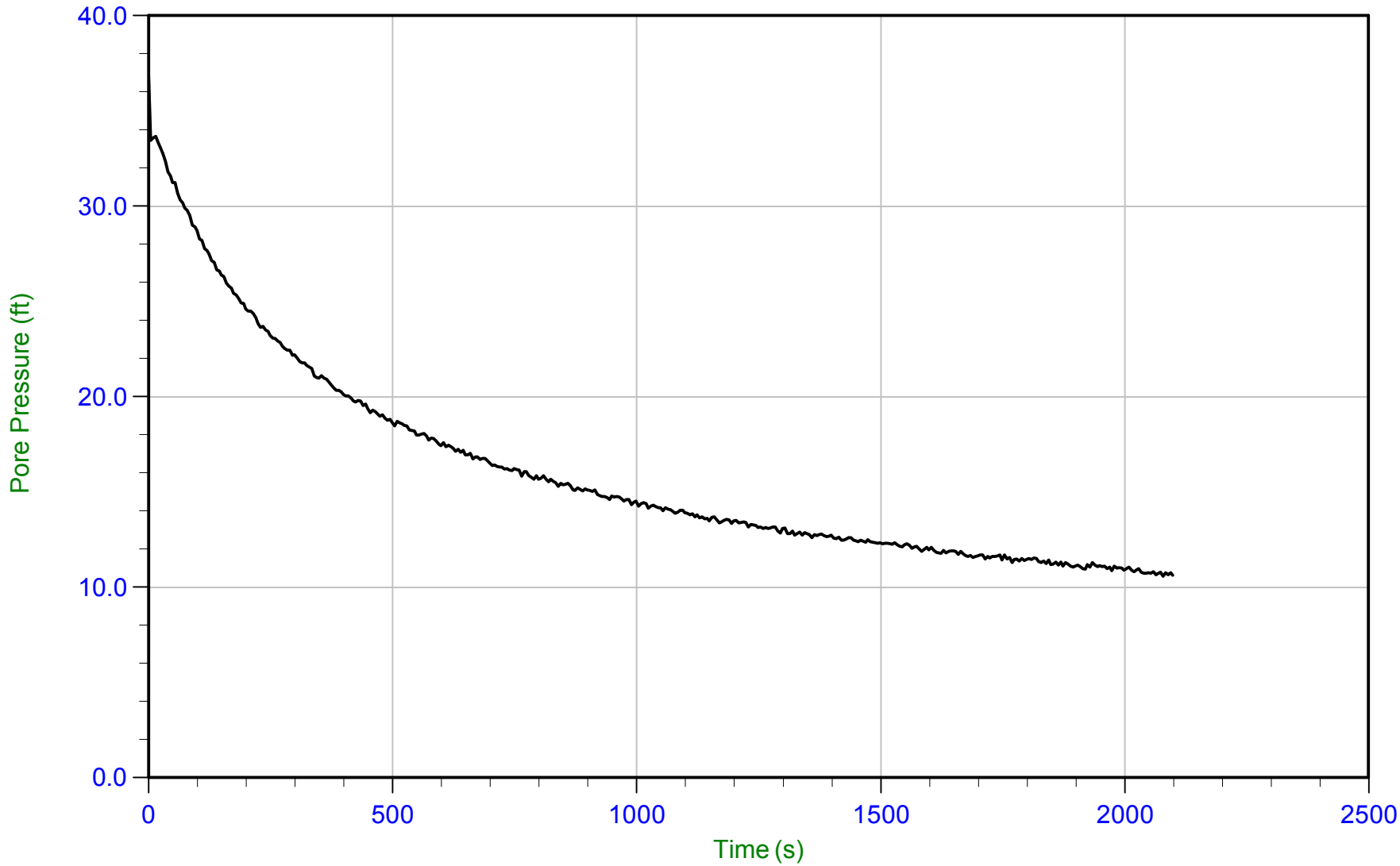
T(50): 1073.5 s
Ir: 100
Ch: 0.7 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 12:53
Site: Bay Park STP

Sounding: CPTu-08
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP08.PPD
Depth: 2.250 m / 7.382 ft
Duration: 2100.0 s

U Min: 10.6 ft
U Max: 36.8 ft

WT: 1.658 m / 5.440 ft
Ueq: 1.9 ft
U(50): 19.36 ft

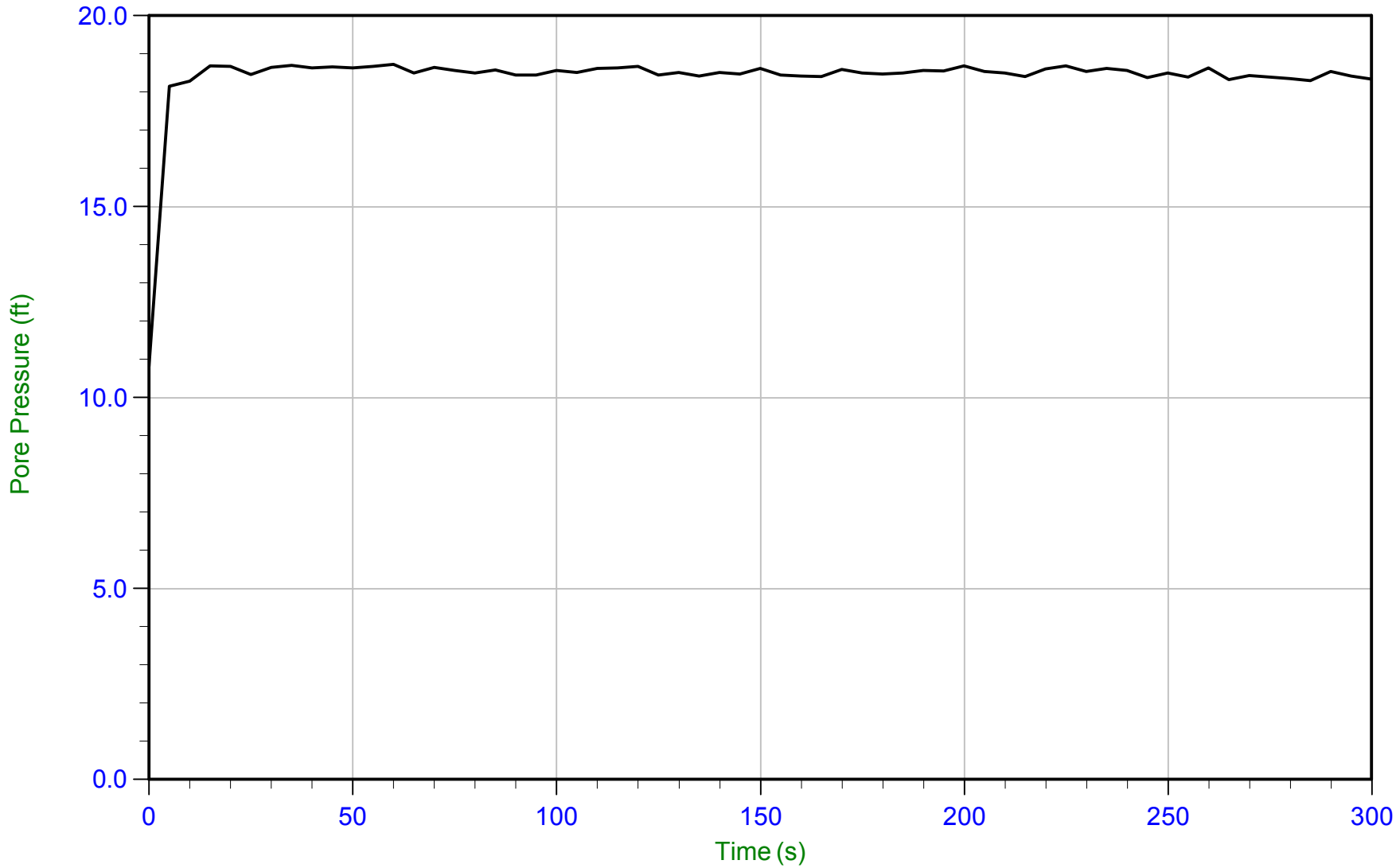
T(50): 450.5 s
Ir: 100
Ch: 1.6 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 12:53
Site: Bay Park STP

Sounding: CPTu-08
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP08.PPD
Depth: 7.250 m / 23.786 ft
Duration: 300.0 s

U Min: 10.8 ft
U Max: 18.7 ft

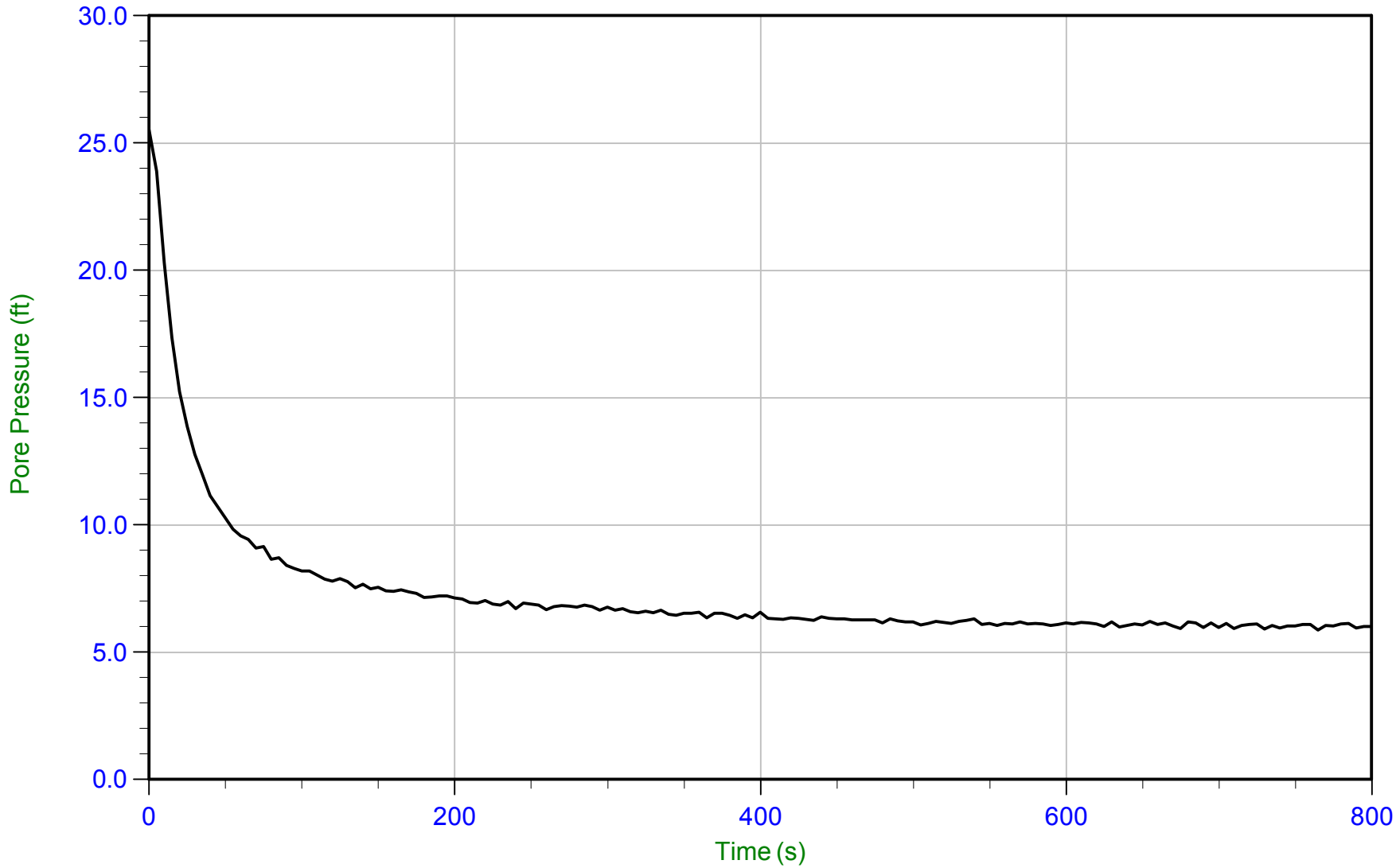
WT: 1.658 m / 5.440 ft
Ueq: 18.3 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 11:01
Site: Bay Park STP

Sounding: CPTu-09
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP09.PPD
Depth: 3.550 m / 11.647 ft
Duration: 800.0 s

U Min: 5.9 ft
U Max: 25.5 ft

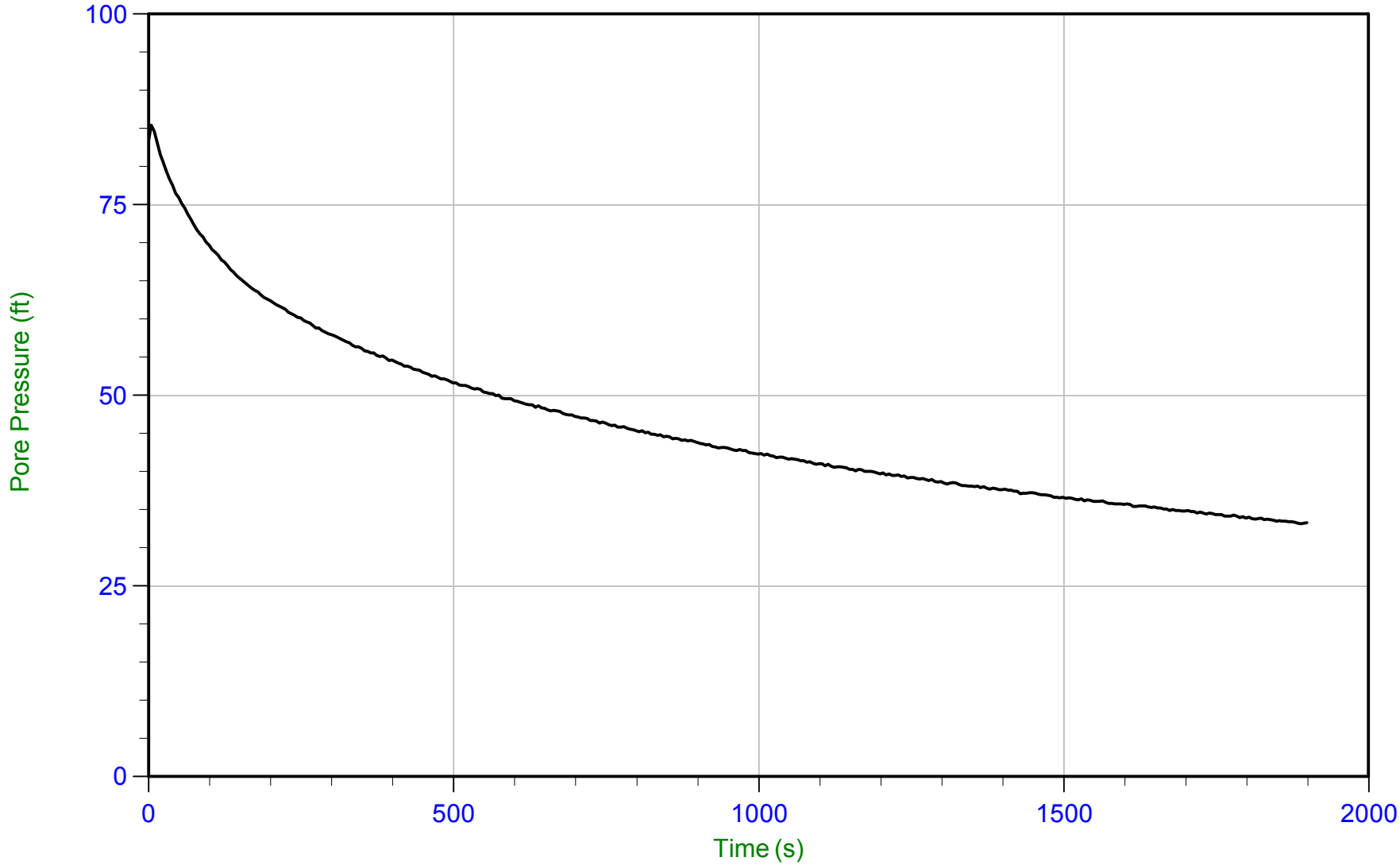
WT: 1.708 m / 5.604 ft
Ueq: 6.0 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 11:01
Site: Bay Park STP

Sounding: CPTu-09
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP09.PPD
Depth: 4.700 m / 15.420 ft
Duration: 1900.0 s

U Min: 33.2 ft
U Max: 85.4 ft

WT: 1.708 m / 5.604 ft
Ueq: 9.8 ft
U(50): 47.62 ft

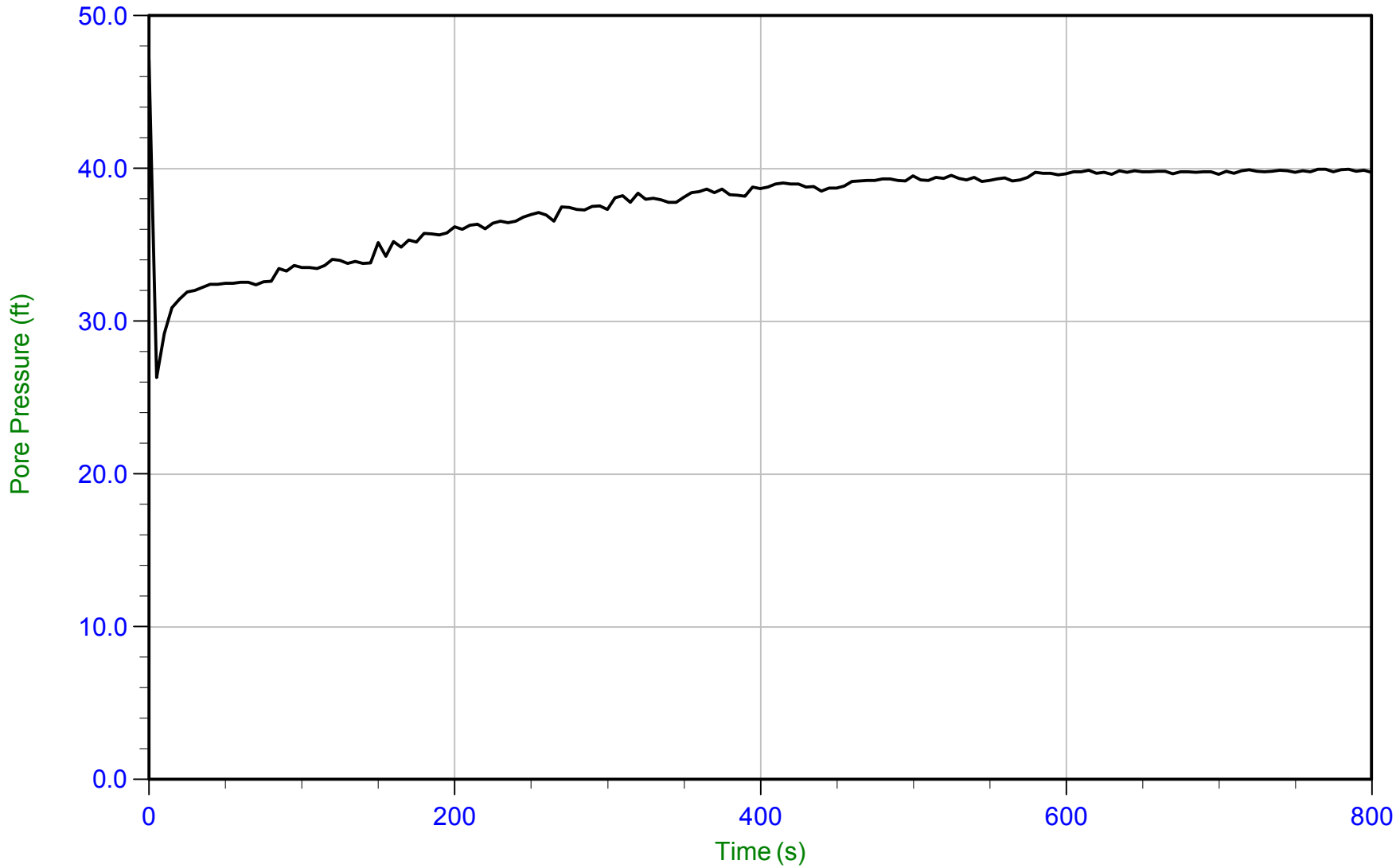
T(50): 676.0 s
Ir: 100
Ch: 1.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 11:01
Site: Bay Park STP

Sounding: CPTu-09
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP09.PPD
Depth: 14.300 m / 46.915 ft
Duration: 800.0 s

U Min: 26.3 ft
U Max: 47.1 ft

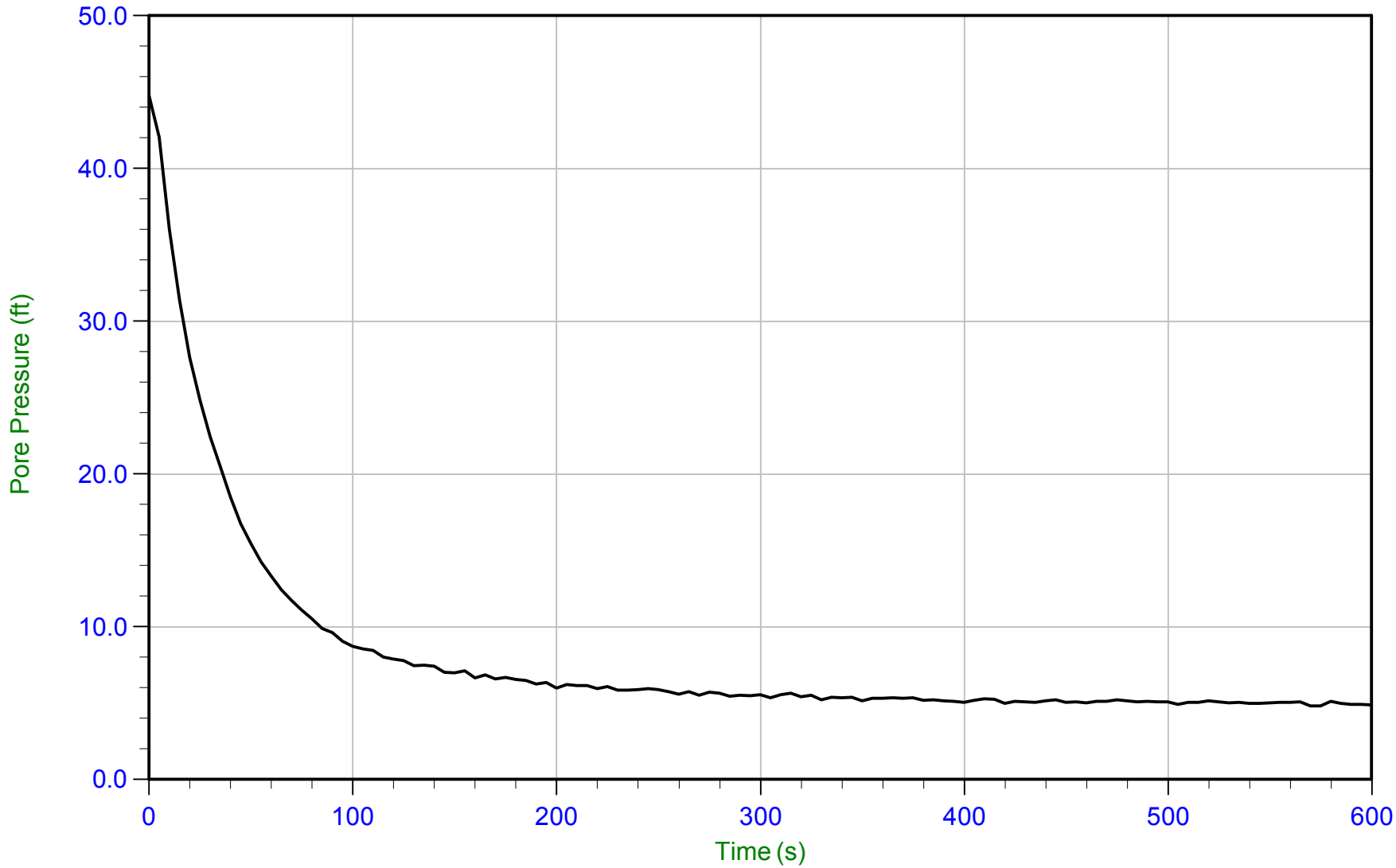
WT: 2.020 m / 6.627 ft
Ueq: 40.3 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP10.PPD
Depth: 3.250 m / 10.663 ft
Duration: 600.0 s

U Min: 4.8 ft
U Max: 44.8 ft

WT: 1.770 m / 5.807 ft
Ueq: 4.9 ft
U(50): 24.83 ft

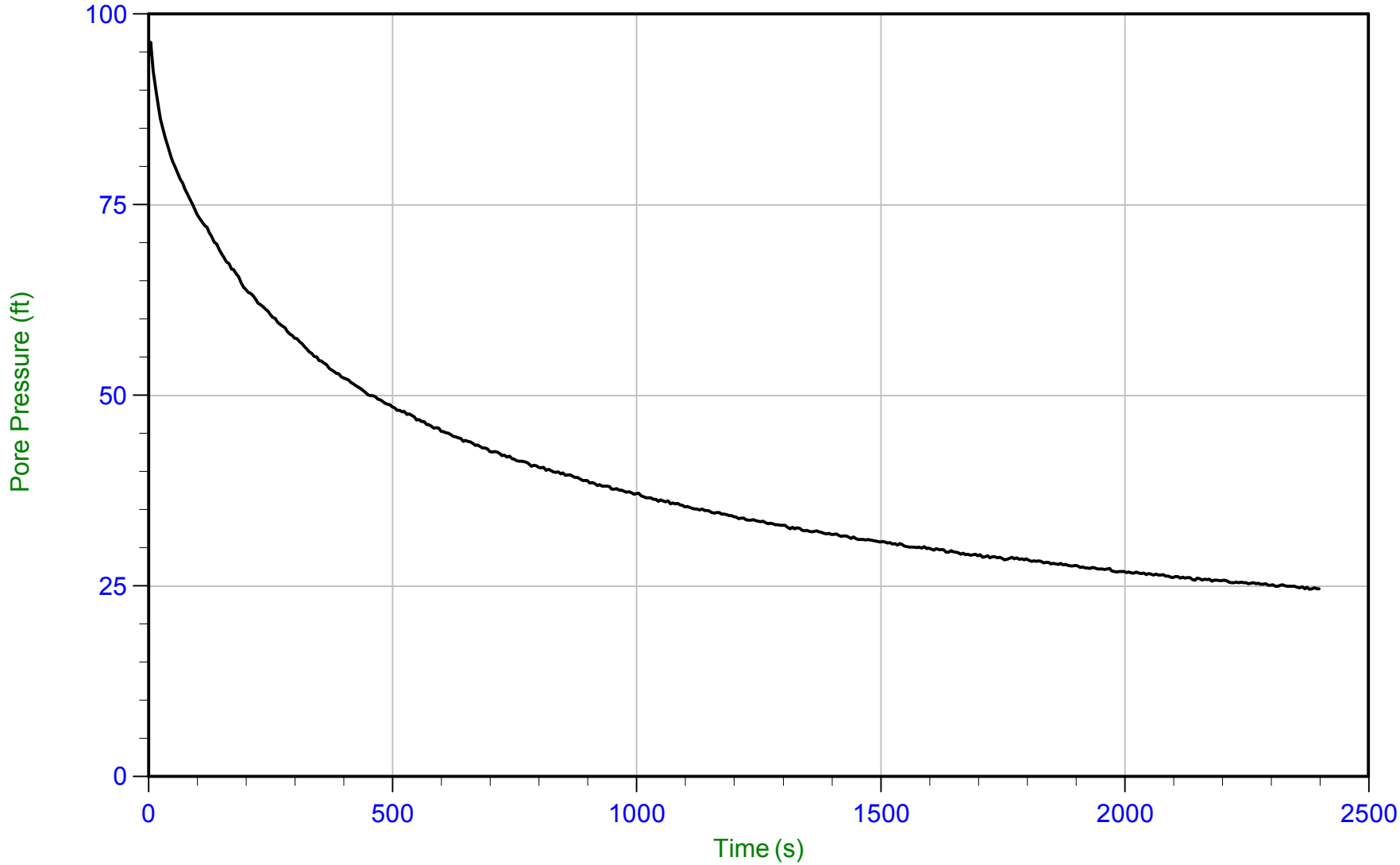
T(50): 25.0 s
Ir: 100
Ch: 28.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP10.PPD
Depth: 4.800 m / 15.748 ft
Duration: 2400.0 s

U Min: 24.5 ft
U Max: 96.3 ft

WT: 1.770 m / 5.807 ft
Ueq: 9.9 ft
U(50): 53.13 ft

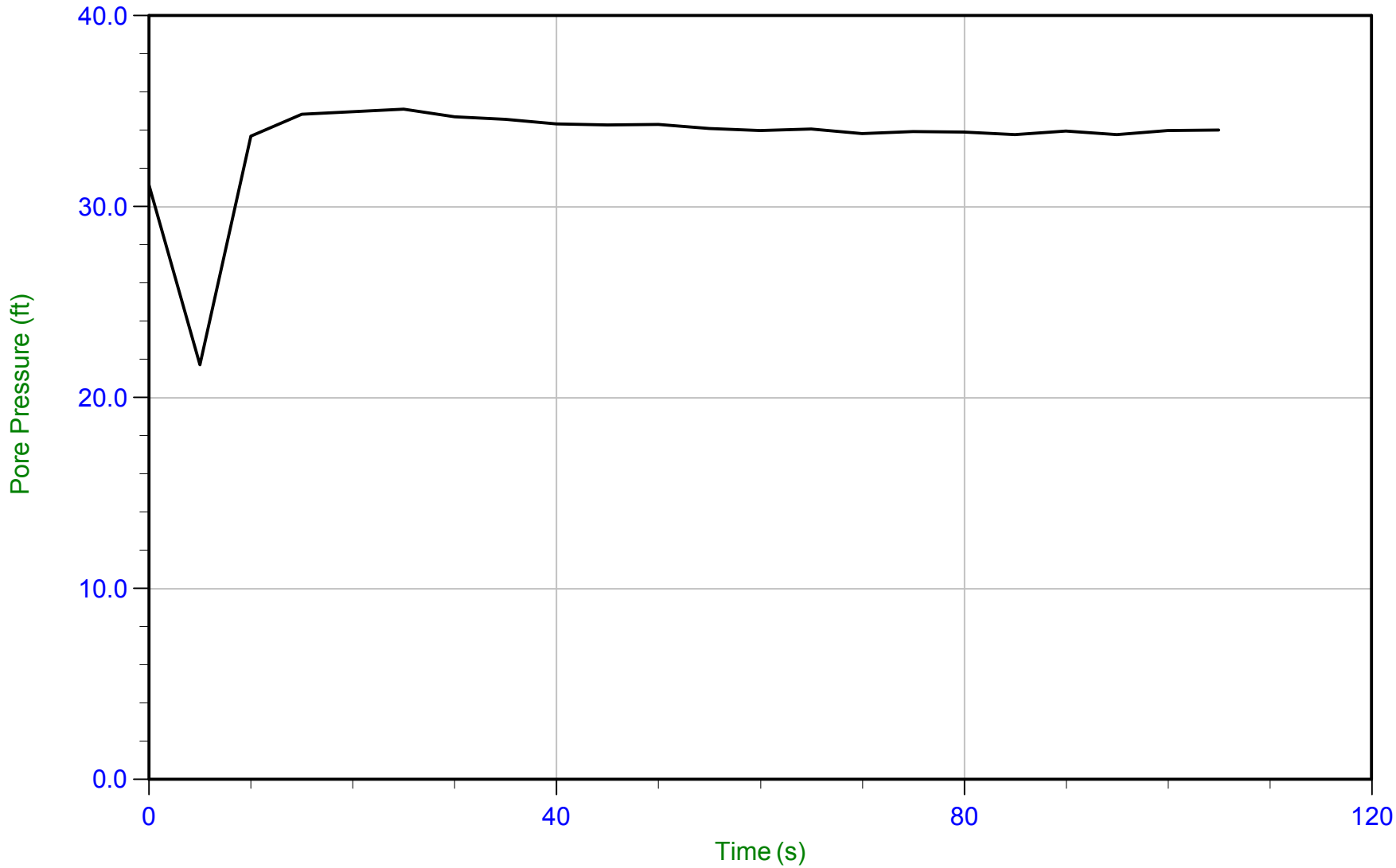
T(50): 375.2 s
Ir: 100
Ch: 1.9 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP10.PPD
Depth: 13.650 m / 44.783 ft
Duration: 105.0 s

U Min: 21.7 ft
U Max: 35.1 ft

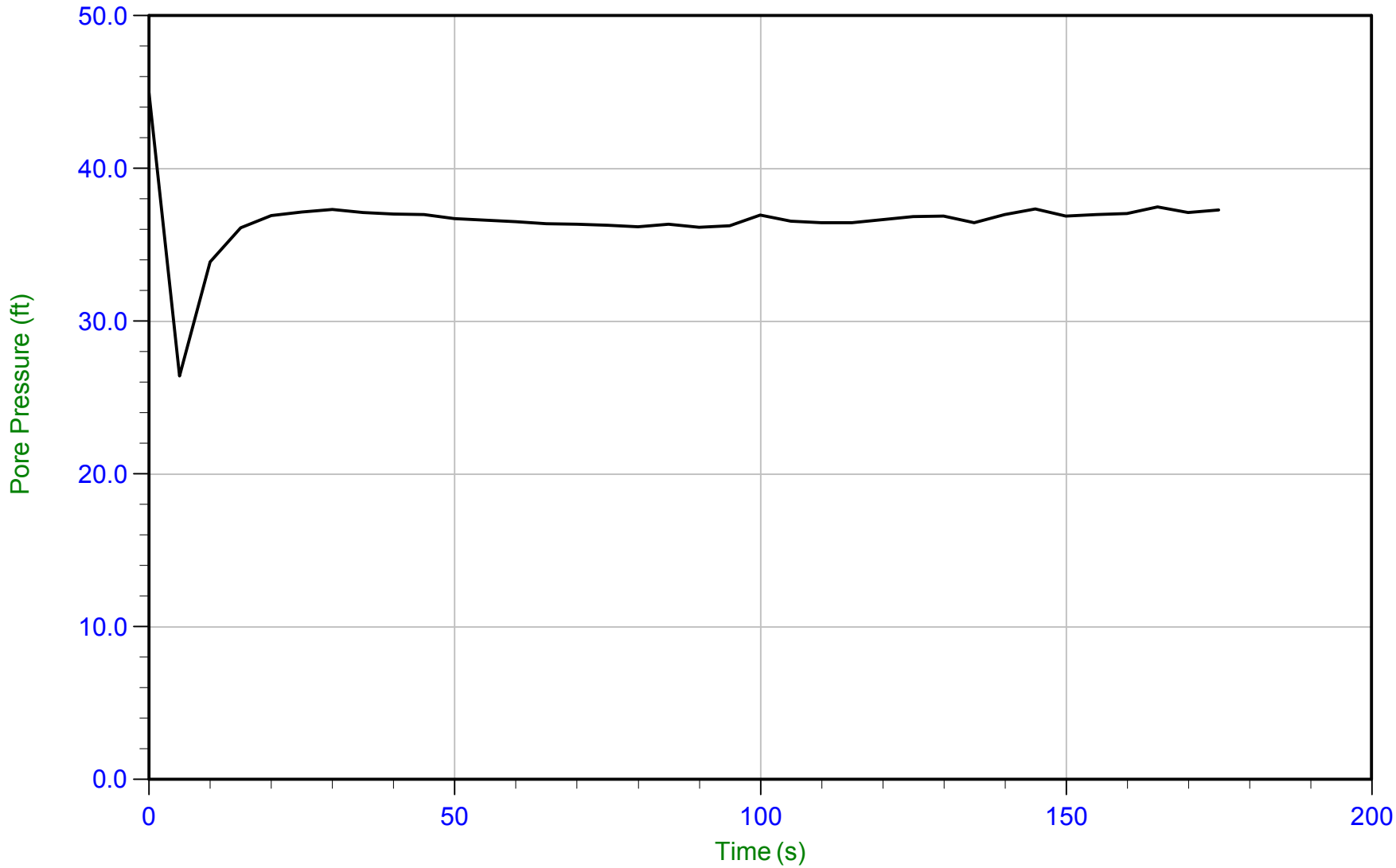
WT: 3.256 m / 10.682 ft
Ueq: 34.1 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 09:06
Site: Bay Park STP

Sounding: CPTu-10
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP10.PPD
Depth: 14.550 m / 47.736 ft
Duration: 175.0 s

U Min: 26.4 ft
U Max: 45.0 ft

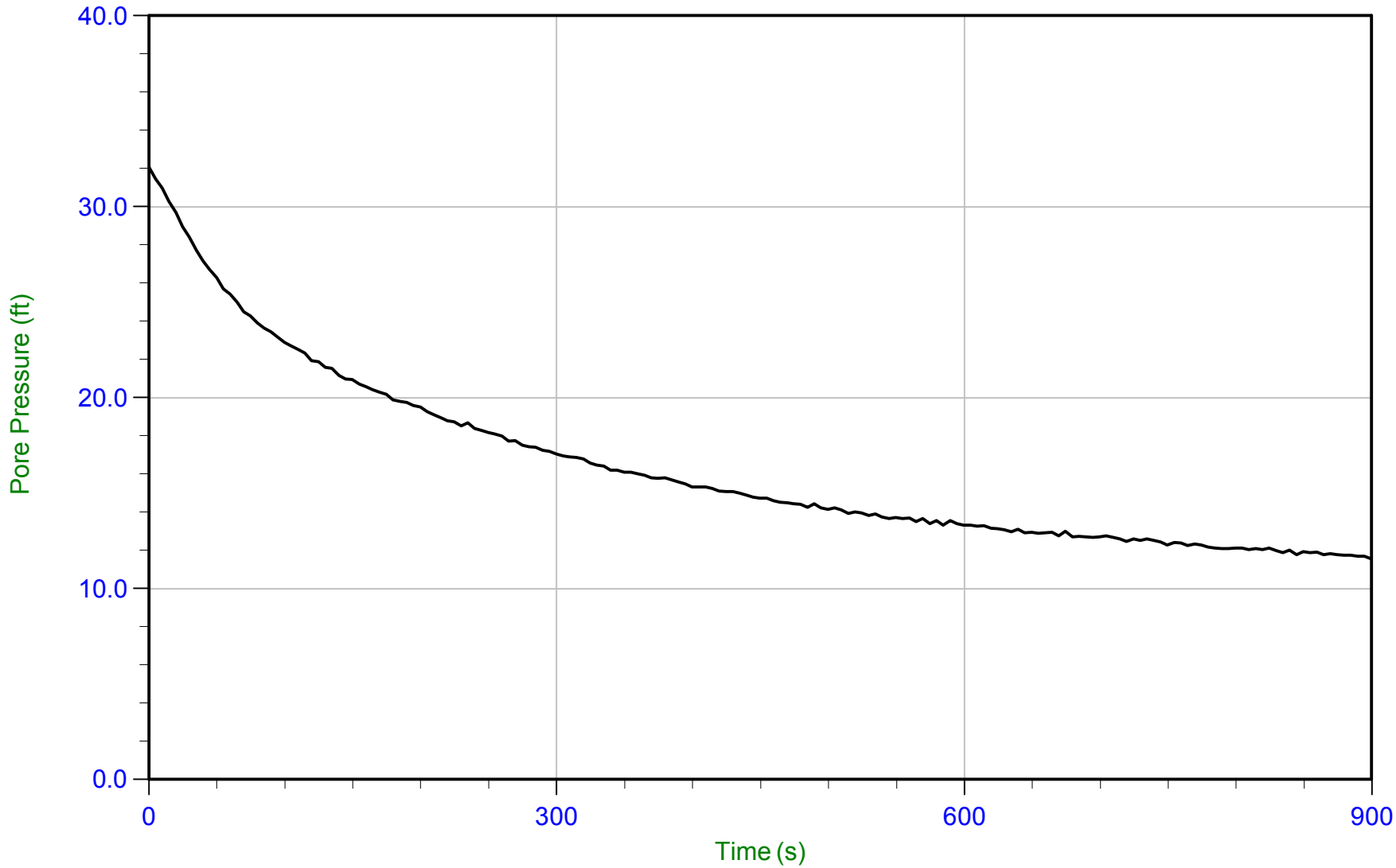
WT: 3.202 m / 10.505 ft
Ueq: 37.2 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 07:56
Site: Bay Park STP

Sounding: CPTu-11
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP11.PPD
Depth: 2.900 m / 9.514 ft
Duration: 900.0 s

U Min: 11.6 ft
U Max: 32.1 ft

WT: 2.134 m / 7.001 ft
Ueq: 2.5 ft
U(50): 17.29 ft

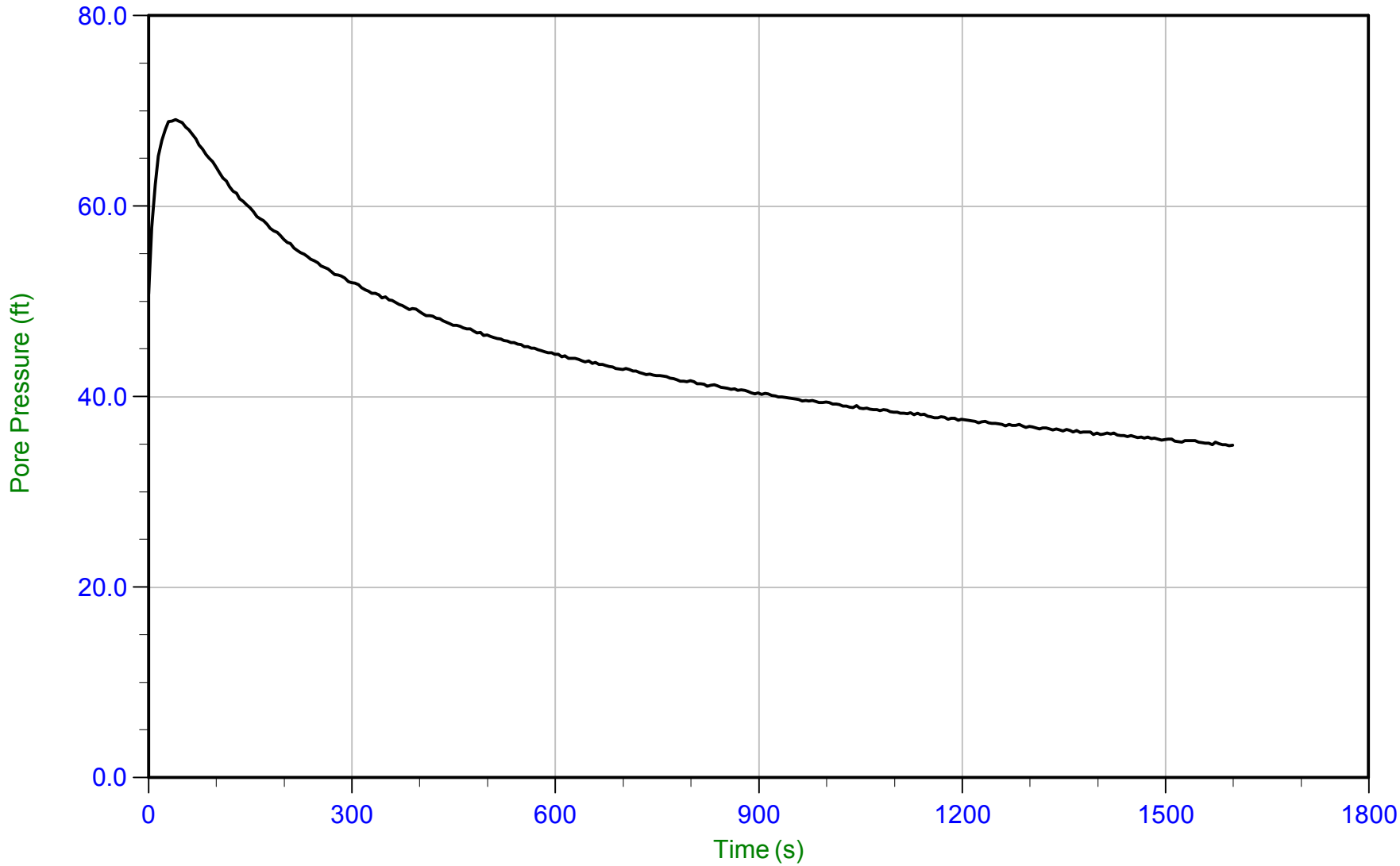
T(50): 288.8 s
Ir: 100
Ch: 2.4 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 07:56
Site: Bay Park STP

Sounding: CPTu-11
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP11.PPD
Depth: 6.200 m / 20.341 ft
Duration: 1600.0 s

U Min: 34.9 ft
U Max: 69.1 ft

WT: 2.134 m / 7.001 ft
Ueq: 13.3 ft
U(50): 41.22 ft

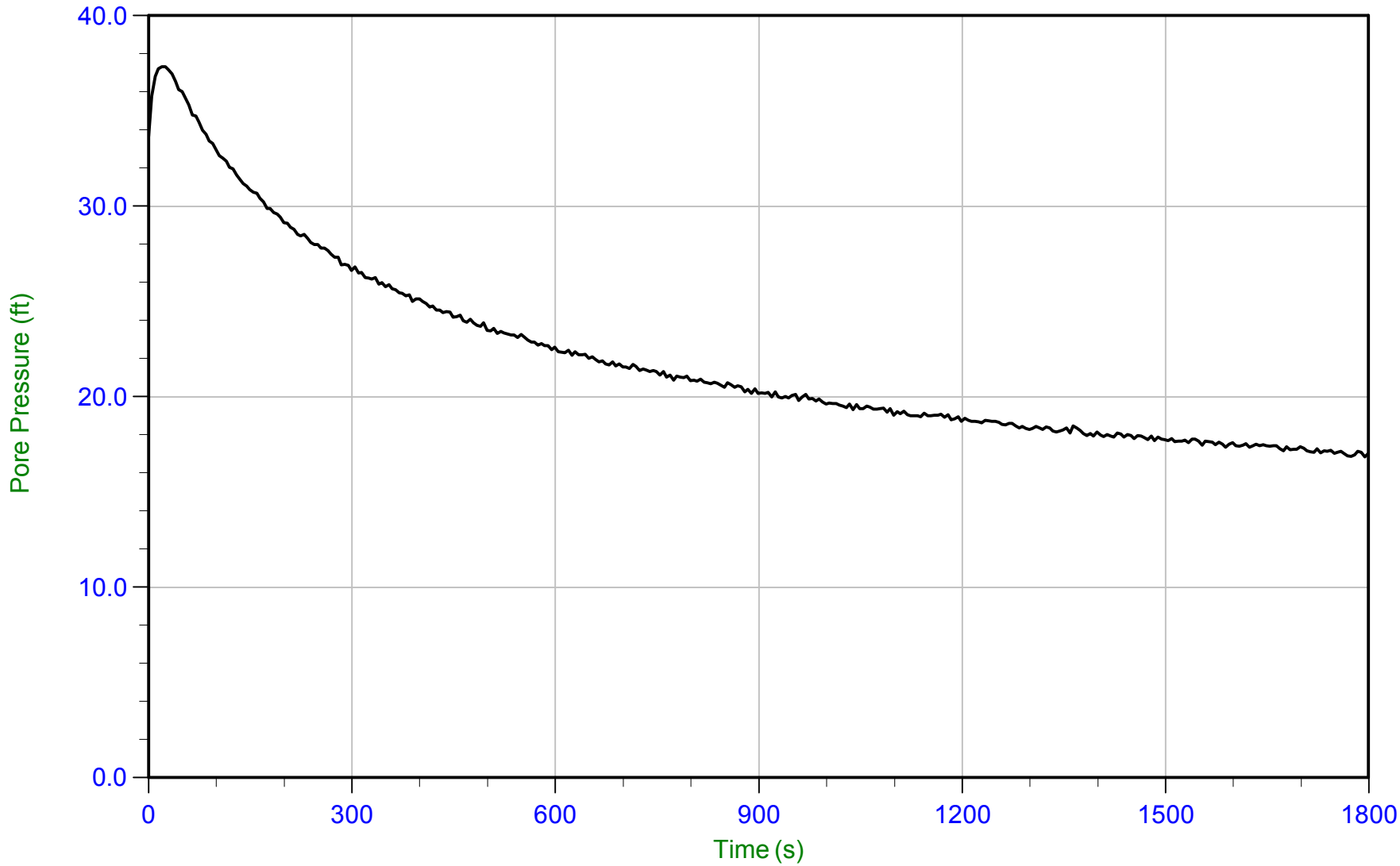
T(50): 782.2 s
Ir: 100
Ch: 0.9 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 14:27
Site: Bay Park STP

Sounding: CPTu-12
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP12.PPD
Depth: 3.650 m / 11.975 ft
Duration: 1800.0 s

U Min: 16.8 ft
U Max: 37.3 ft

WT: 1.524 m / 5.000 ft
Ueq: 7.0 ft
U(50): 22.15 ft

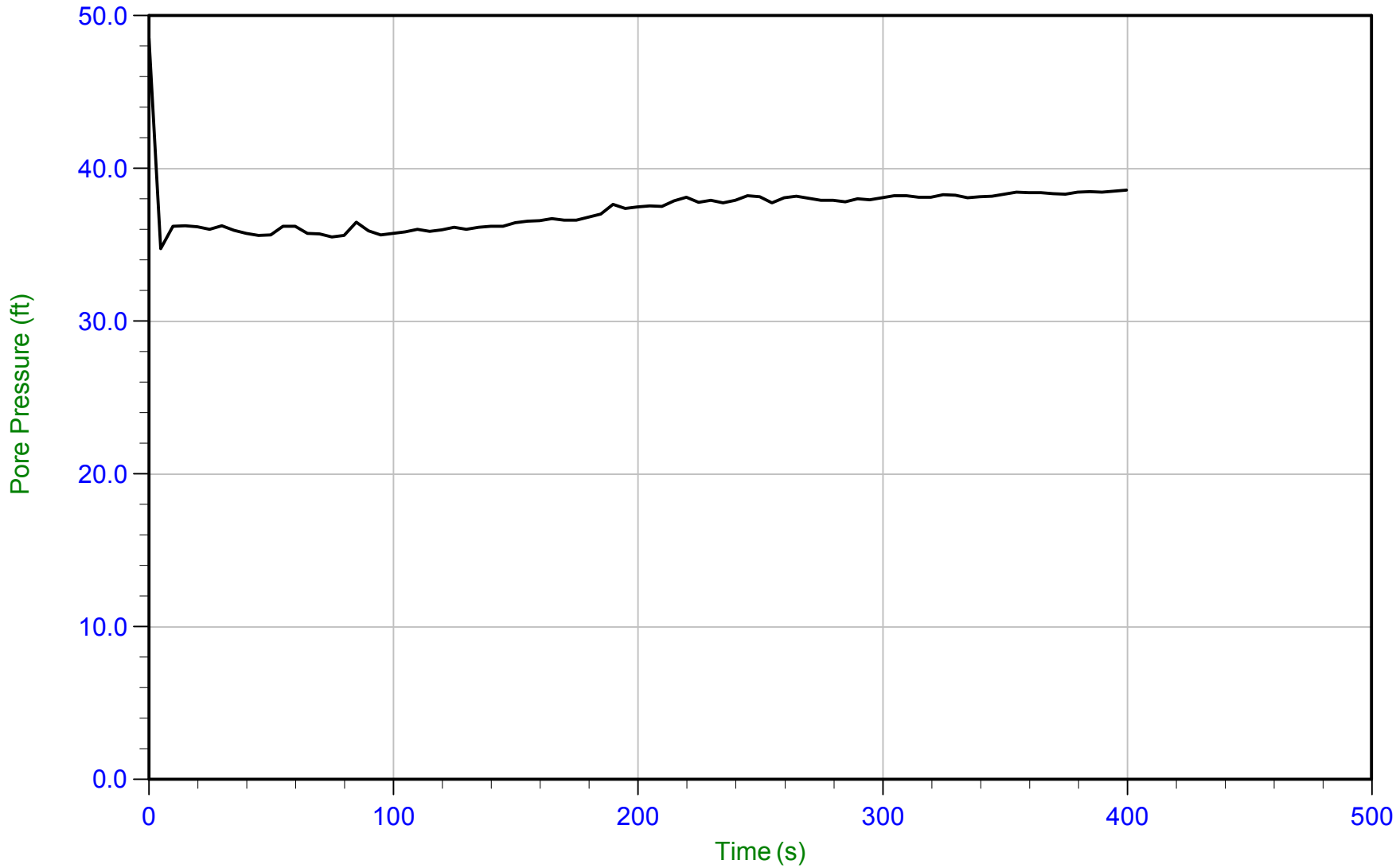
T(50): 621.7 s
Ir: 100
Ch: 1.1 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 14:27
Site: Bay Park STP

Sounding: CPTu-12
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP12.PPD
Depth: 14.700 m / 48.228 ft
Duration: 400.0 s

U Min: 34.8 ft
U Max: 48.5 ft

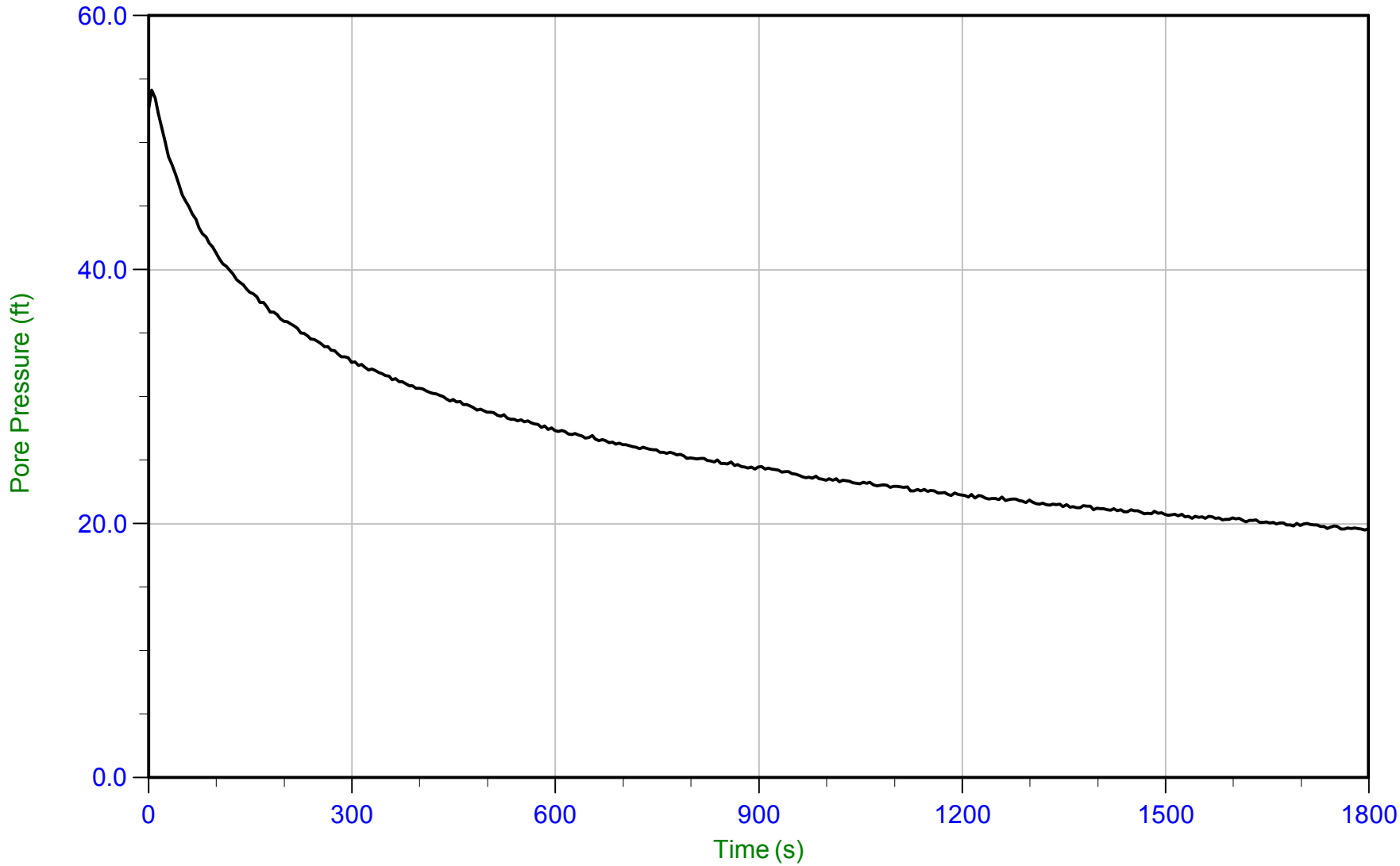
WT: 2.945 m / 9.662 ft
Ueq: 38.6 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 15:53
Site: Bay Park STP

Sounding: CPTu-13
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP13.PPD
Depth: 3.750 m / 12.303 ft
Duration: 1800.0 s

U Min: 19.5 ft
U Max: 54.2 ft

WT: 1.524 m / 5.000 ft
Ueq: 7.3 ft
U(50): 30.73 ft

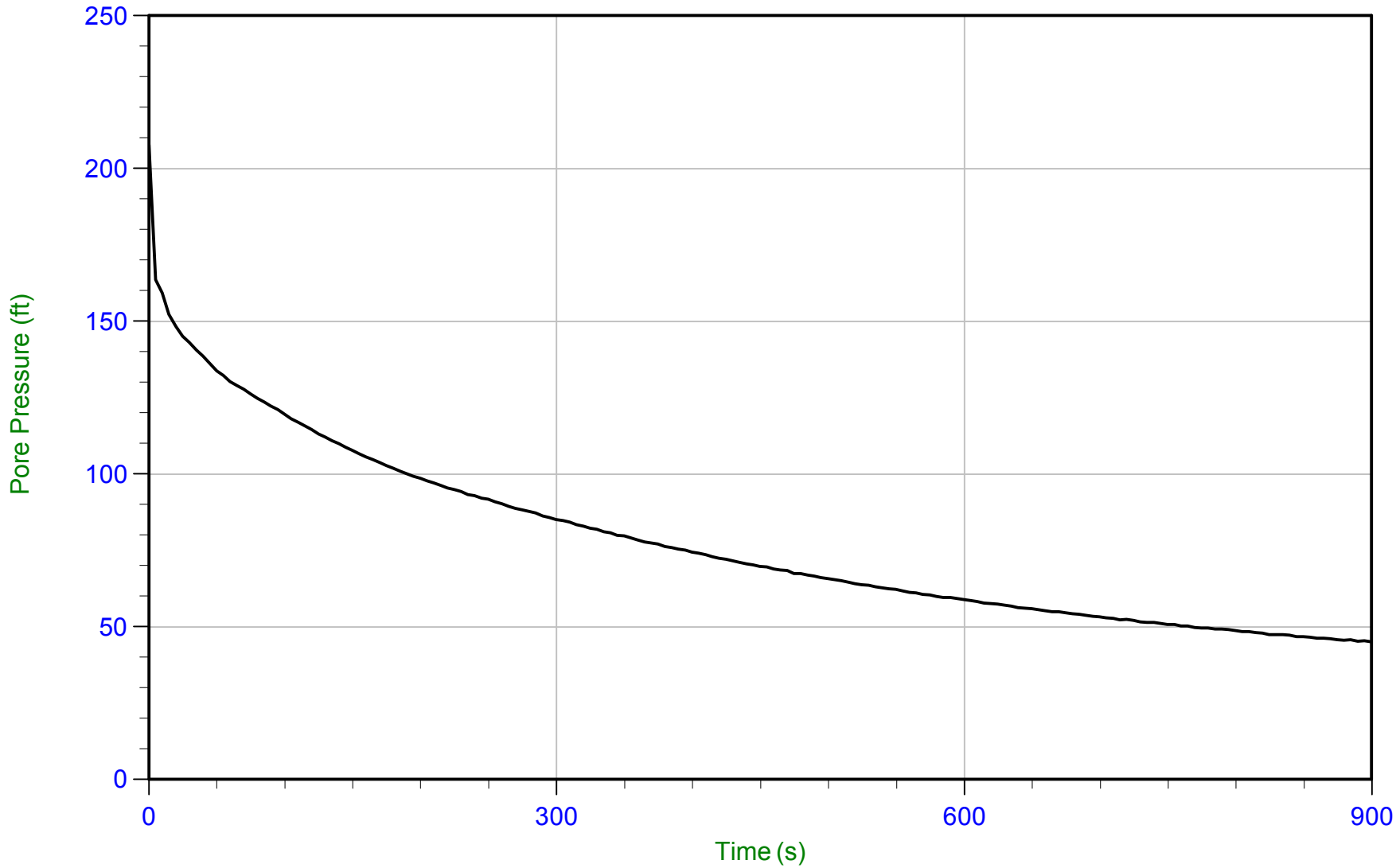
T(50): 388.3 s
Ir: 100
Ch: 1.8 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/08/2013 15:53
Site: Bay Park STP

Sounding: CPTu-13
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP13.PPD
Depth: 9.400 m / 30.840 ft
Duration: 900.0 s

U Min: 45.0 ft
U Max: 207.7 ft

WT: 1.524 m / 5.000 ft
Ueq: 25.8 ft
U(50): 116.78 ft

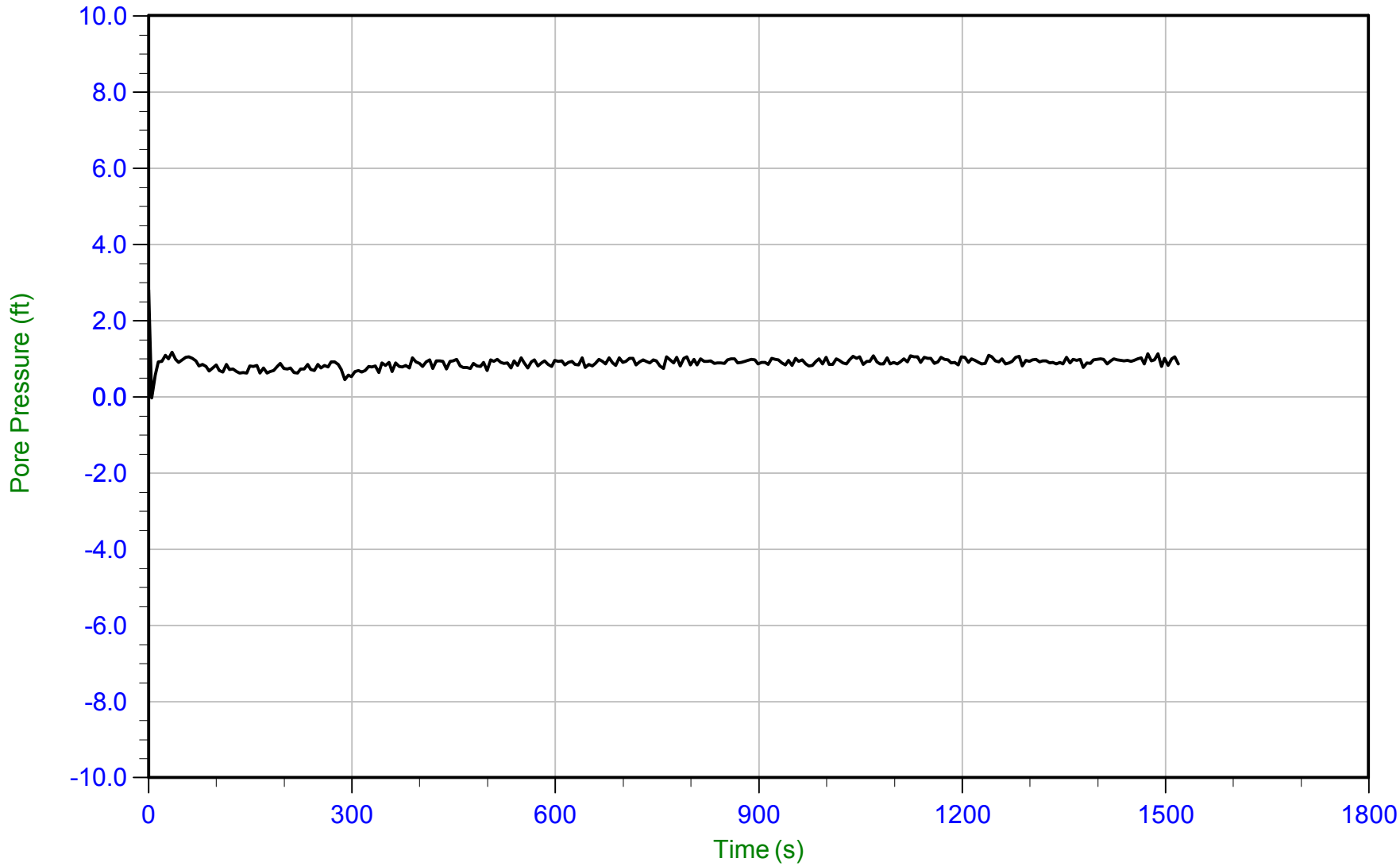
T(50): 110.5 s
Ir: 100
Ch: 6.4 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 08:46
Site: Bay Park STP

Sounding: CPTu-14
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP14.PPD
Depth: 2.350 m / 7.710 ft
Duration: 1520.0 s

U Min: -0.0 ft
U Max: 2.8 ft

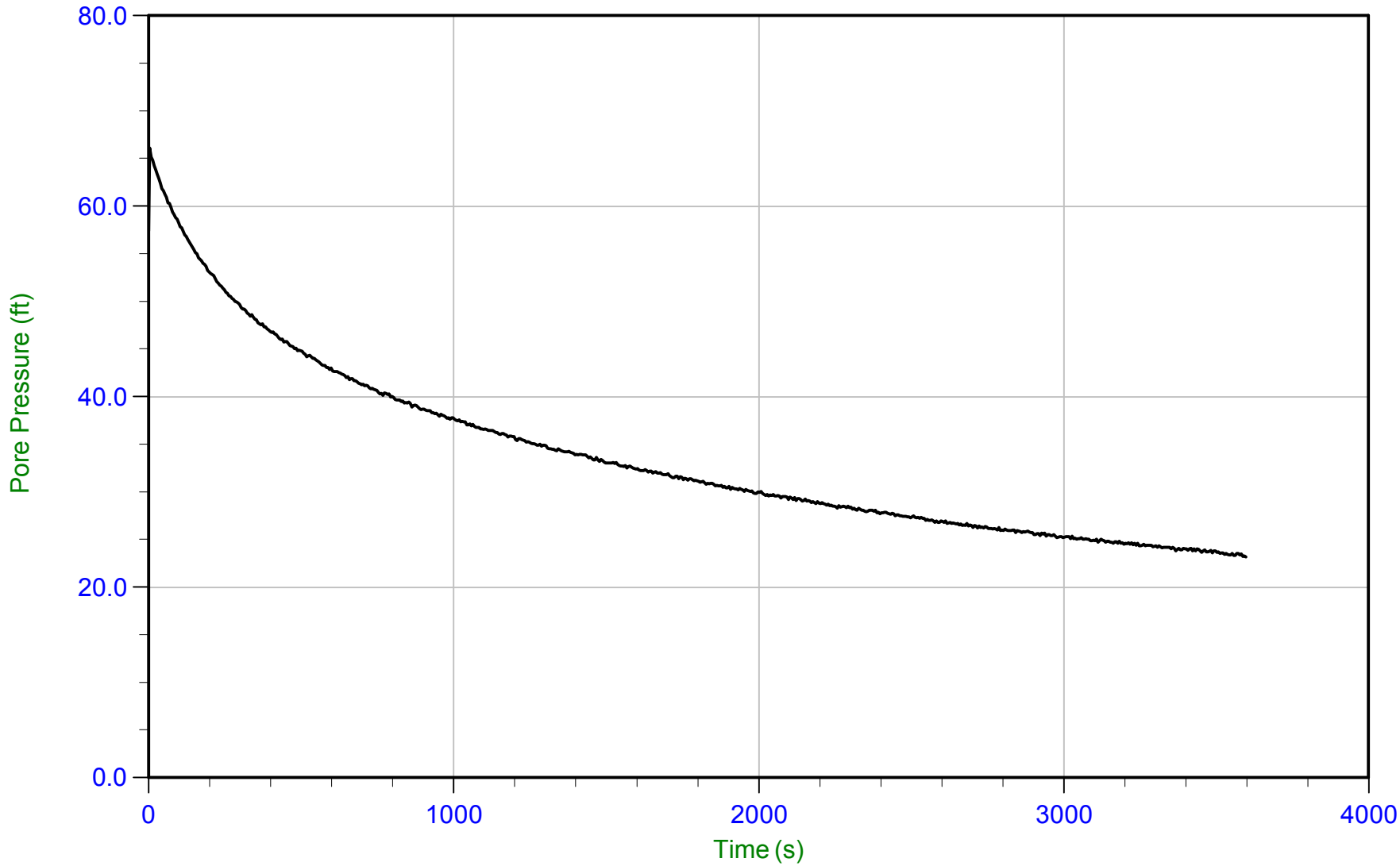
WT: 2.048 m / 6.719 ft
Ueq: 1.0 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 08:46
Site: Bay Park STP

Sounding: CPTu-14
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP14.PPD
Depth: 4.300 m / 14.107 ft
Duration: 3600.0 s

U Min: 23.2 ft
U Max: 66.1 ft

WT: 2.048 m / 6.719 ft
Ueq: 7.4 ft
U(50): 36.74 ft

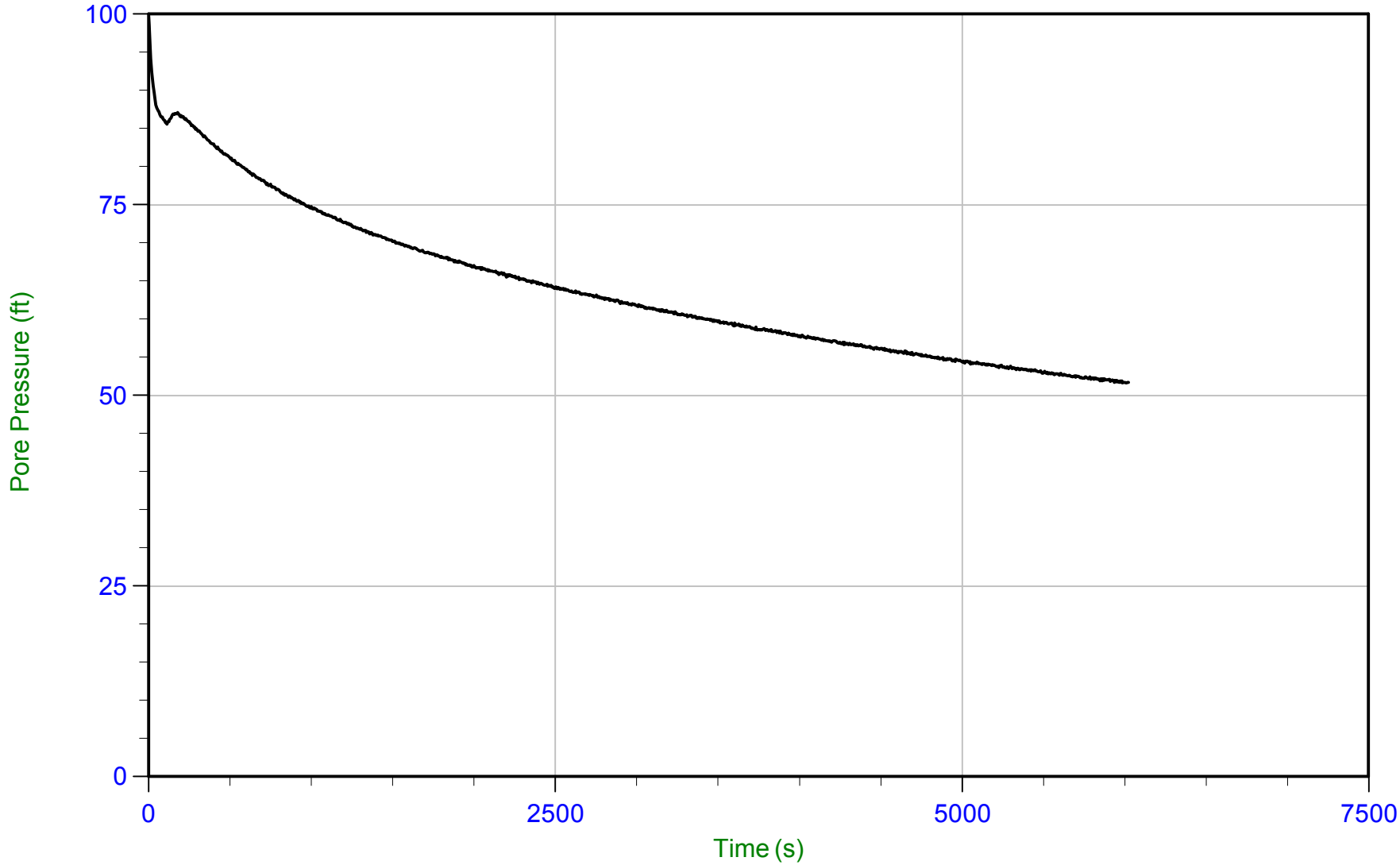
T(50): 1080.3 s
Ir: 100
Ch: 0.6 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 08:46
Site: Bay Park STP

Sounding: CPTu-14
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP14.PPD
Depth: 6.500 m / 21.325 ft
Duration: 6025.0 s

U Min: 51.6 ft
U Max: 99.7 ft

WT: 2.048 m / 6.719 ft
Ueq: 14.6 ft
U(50): 57.15 ft

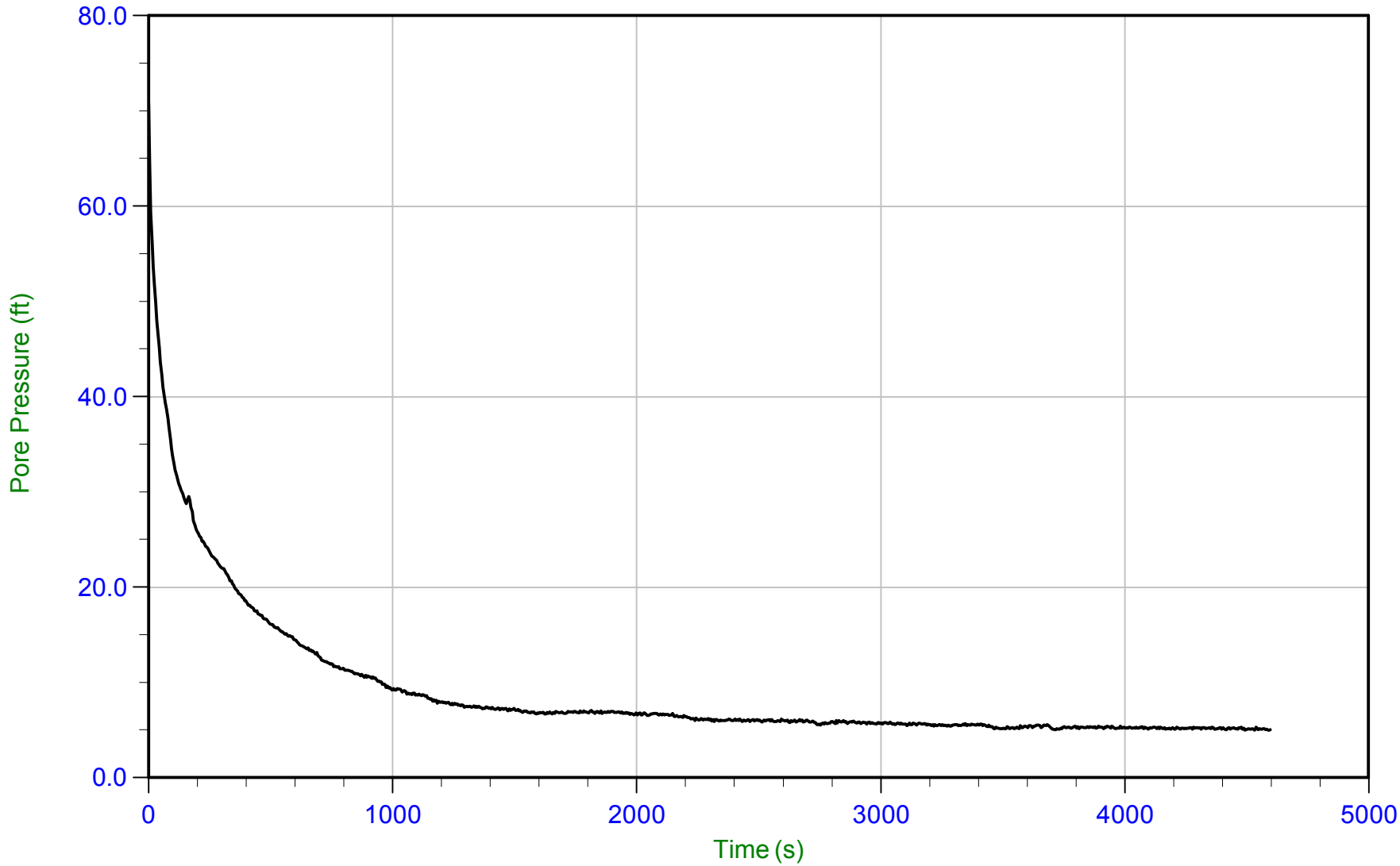
T(50): 4164.6 s
Ir: 100
Ch: 0.2 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 09:51
Site: Bay Park STP

Sounding: CPTu-16
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP16.PPD
Depth: 2.700 m / 8.858 ft
Duration: 4600.0 s

U Min: 5.0 ft
U Max: 70.8 ft

WT: 1.171 m / 3.842 ft
Ueq: 5.0 ft
U(50): 37.92 ft

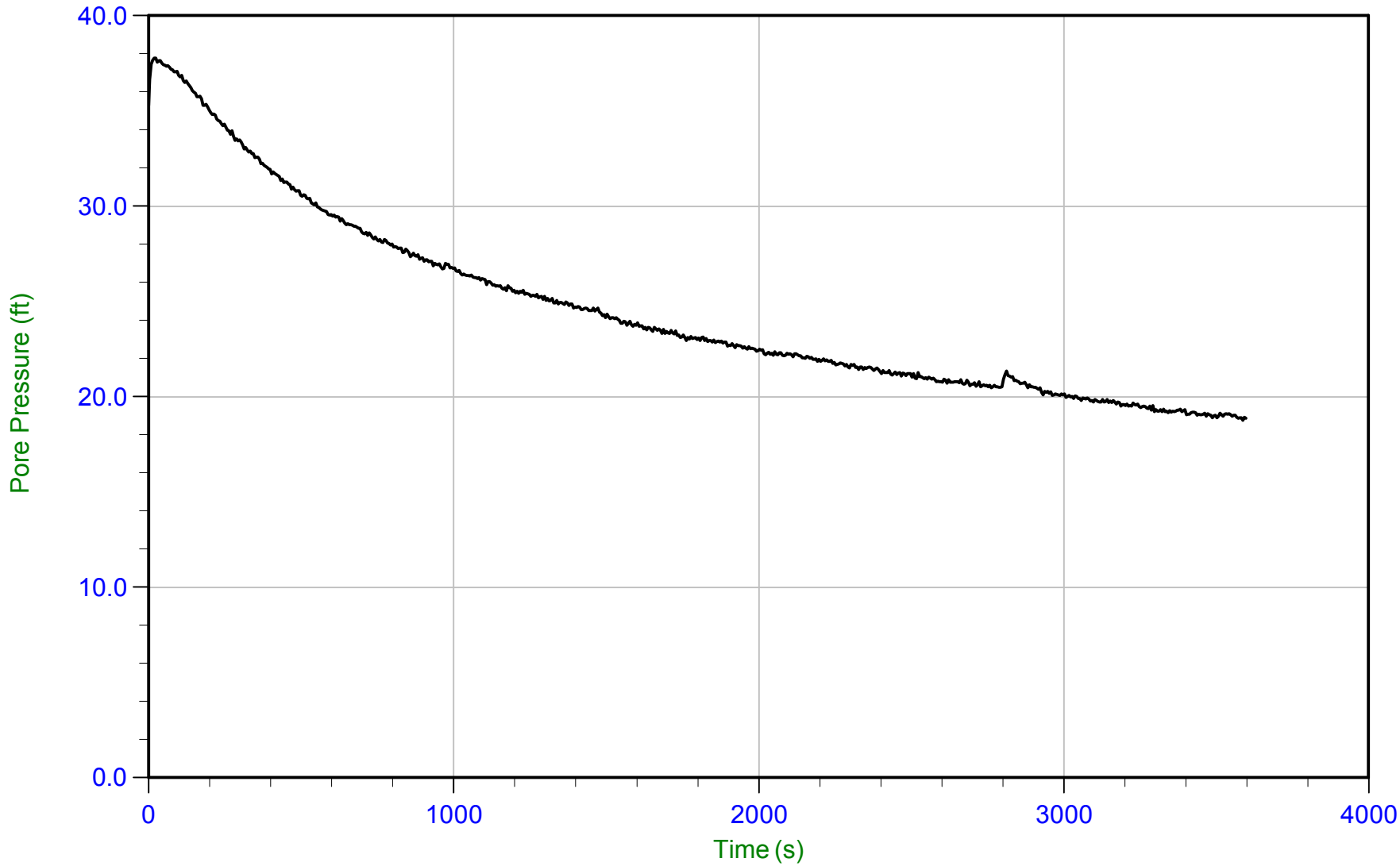
T(50): 79.1 s
Ir: 100
Ch: 8.9 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/14/2013 14:05
Site: Bay Park STP

Sounding: CPTu-17
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP17.PPD
Depth: 3.300 m / 10.827 ft
Duration: 3600.0 s

U Min: 18.8 ft
U Max: 37.8 ft

WT: 1.524 m / 5.000 ft
Ueq: 5.8 ft
U(50): 21.80 ft

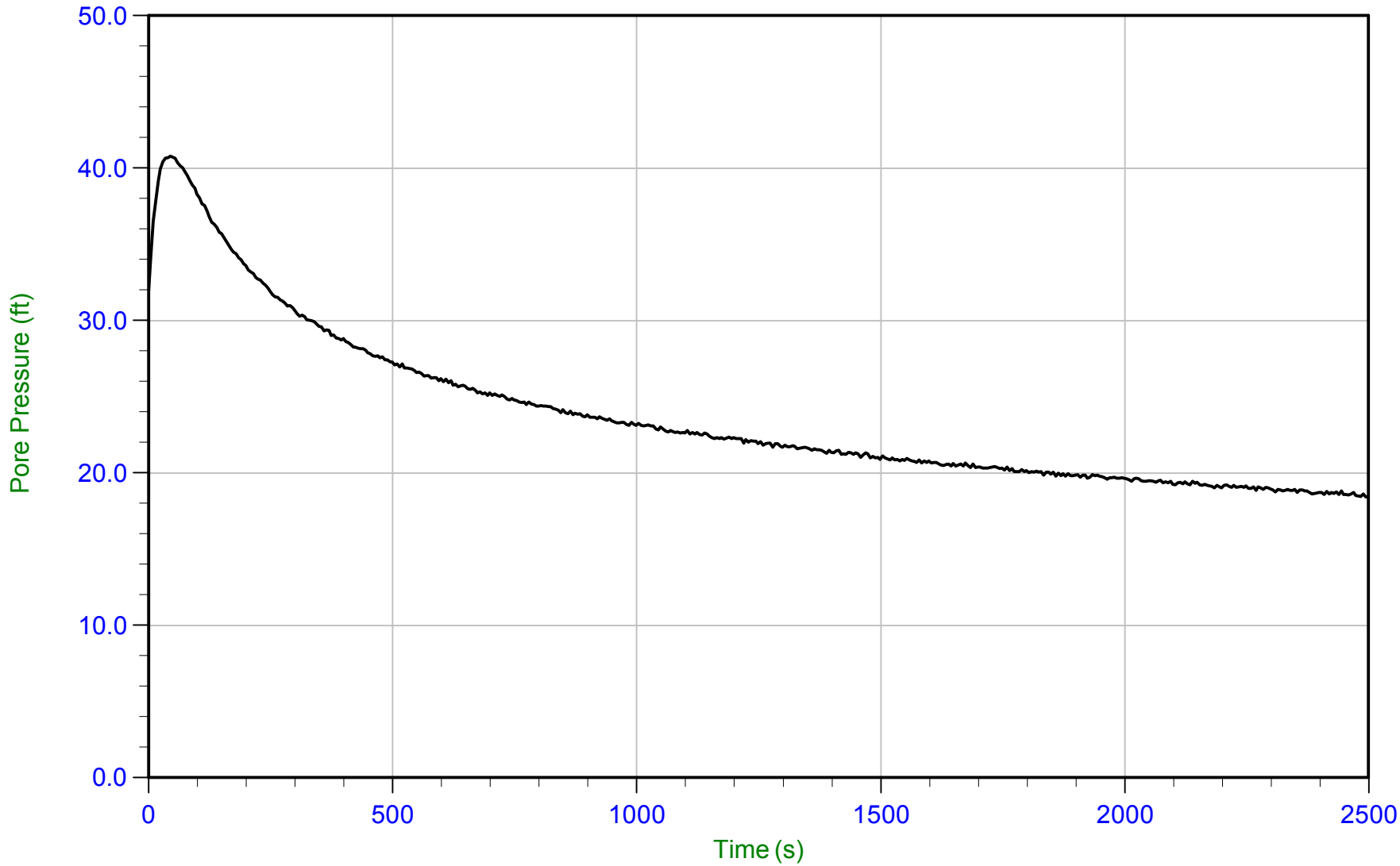
T(50): 2223.2 s
Ir: 100
Ch: 0.3 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 13:55
Site: Bay Park STP

Sounding: CPTu-18
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP18.PPD
Depth: 3.600 m / 11.811 ft
Duration: 2500.0 s

U Min: 18.4 ft
U Max: 40.8 ft

WT: 1.344 m / 4.409 ft
Ueq: 7.4 ft
U(50): 24.09 ft

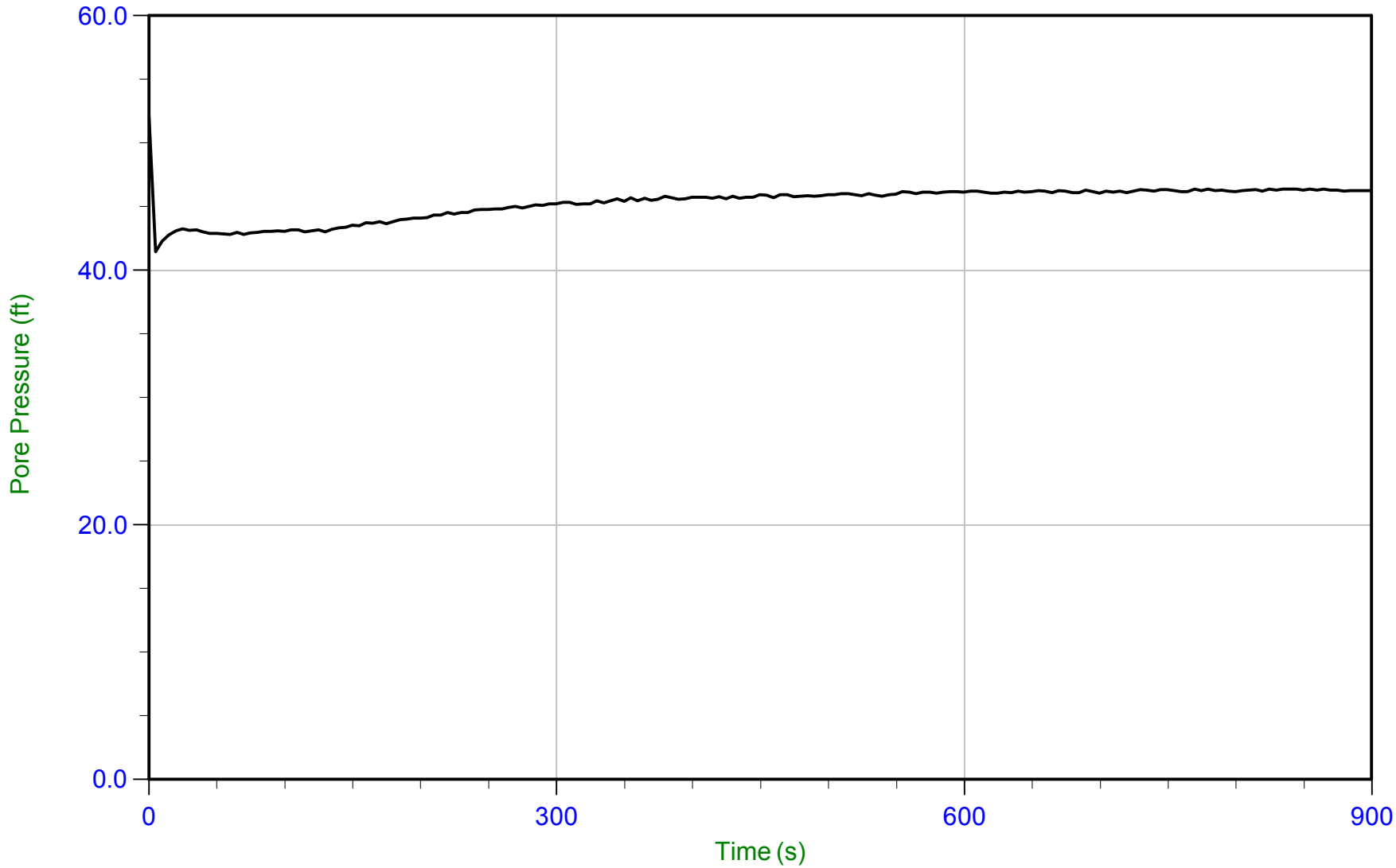
T(50): 796.1 s
Ir: 100
Ch: 0.9 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 13:55
Site: Bay Park STP

Sounding: CPTu-18
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP18.PPD
Depth: 15.450 m / 50.688 ft
Duration: 900.0 s

U Min: 41.4 ft
U Max: 52.1 ft

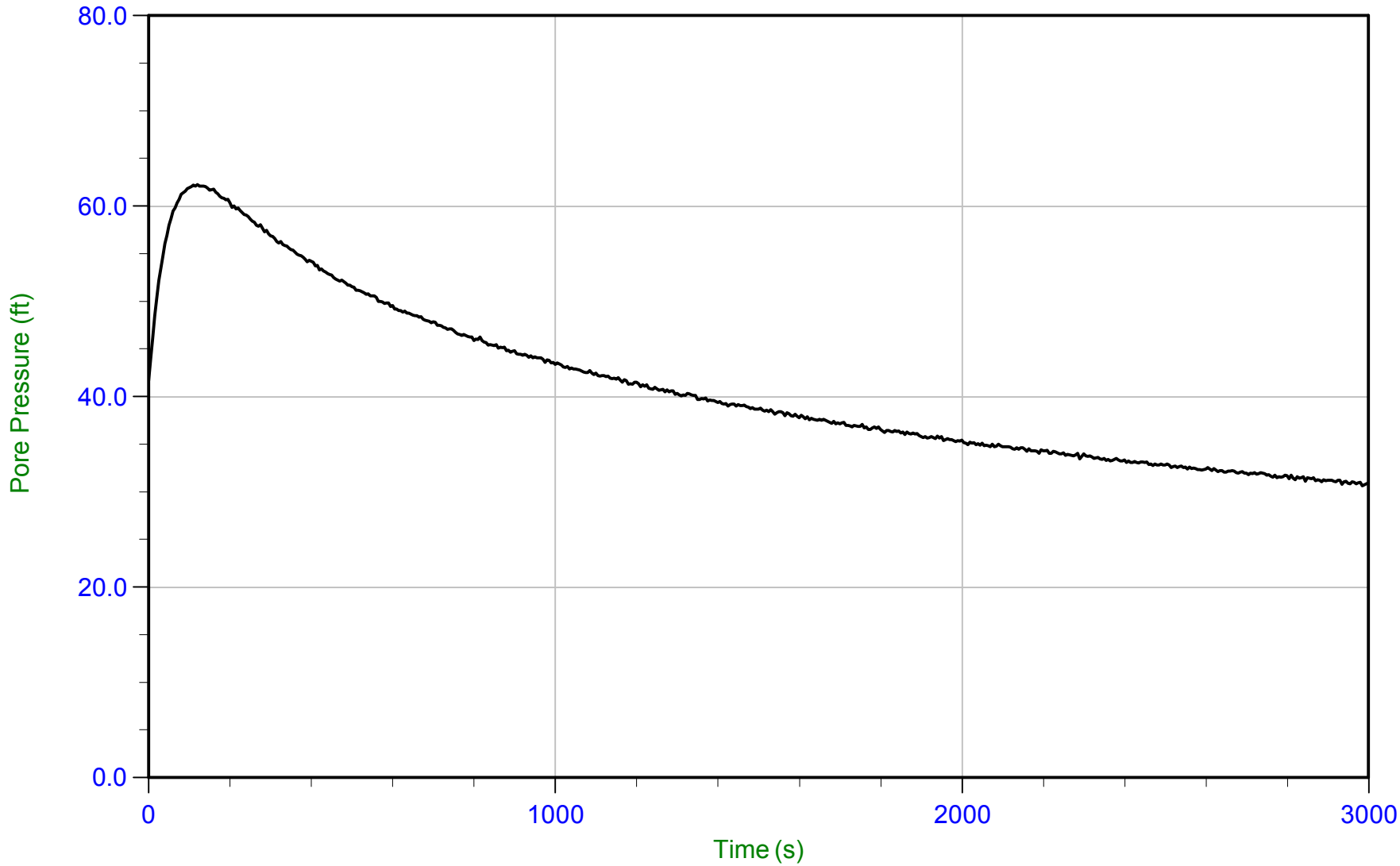
WT: 1.344 m / 4.409 ft
Ueq: 46.3 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 12:05
Site: Bay Park STP

Sounding: CPTu-20
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP20.PPD
Depth: 3.750 m / 12.303 ft
Duration: 3000.0 s

U Min: 30.6 ft
U Max: 62.2 ft

WT: 2.408 m / 7.900 ft
Ueq: 4.4 ft
U(50): 33.33 ft

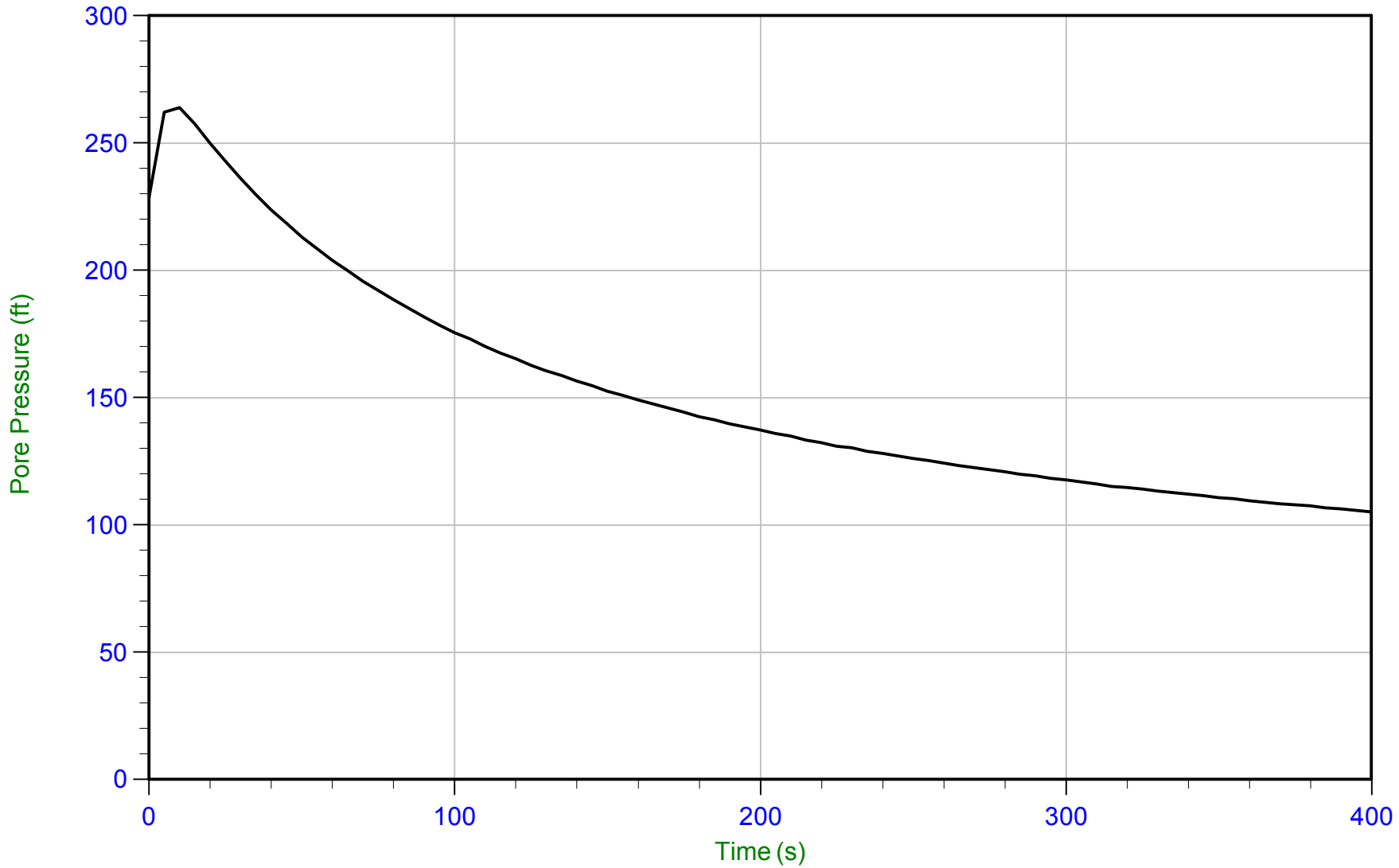
T(50): 2243.3 s
Ir: 100
Ch: 0.3 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 12:05
Site: Bay Park STP

Sounding: CPTu-20
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP20.PPD
Depth: 19.000 m / 62.335 ft
Duration: 400.0 s

U Min: 105.0 ft
U Max: 263.9 ft

WT: 2.408 m / 7.900 ft
Ueq: 54.4 ft
U(50): 159.19 ft

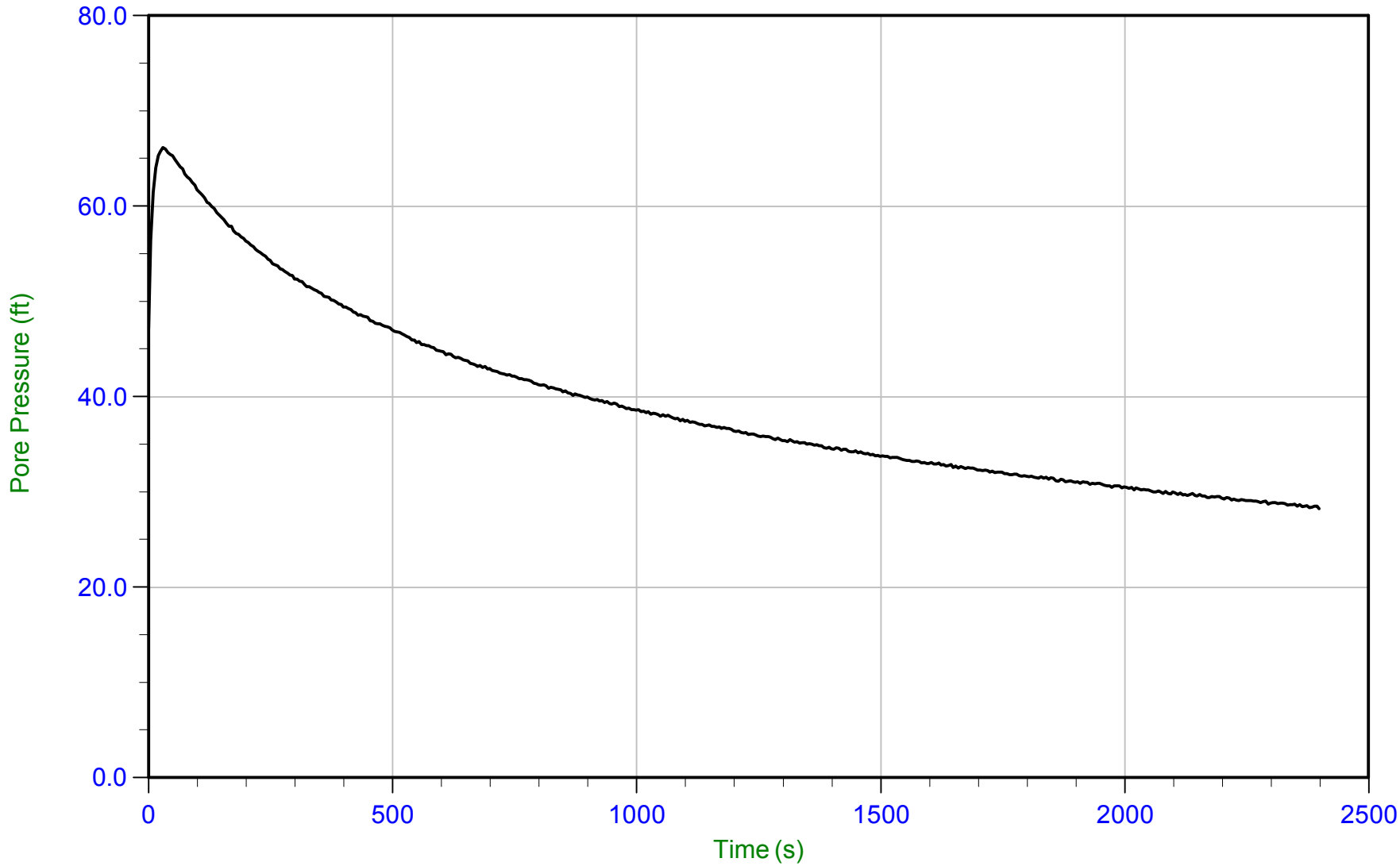
T(50): 123.5 s
Ir: 100
Ch: 5.7 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 16:25
Site: Bay Park STP

Sounding: CPTu-21
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP21.PPD
Depth: 3.700 m / 12.139 ft
Duration: 2400.0 s

U Min: 28.3 ft
U Max: 66.2 ft

WT: 1.459 m / 4.787 ft
Ueq: 7.4 ft
U(50): 36.76 ft

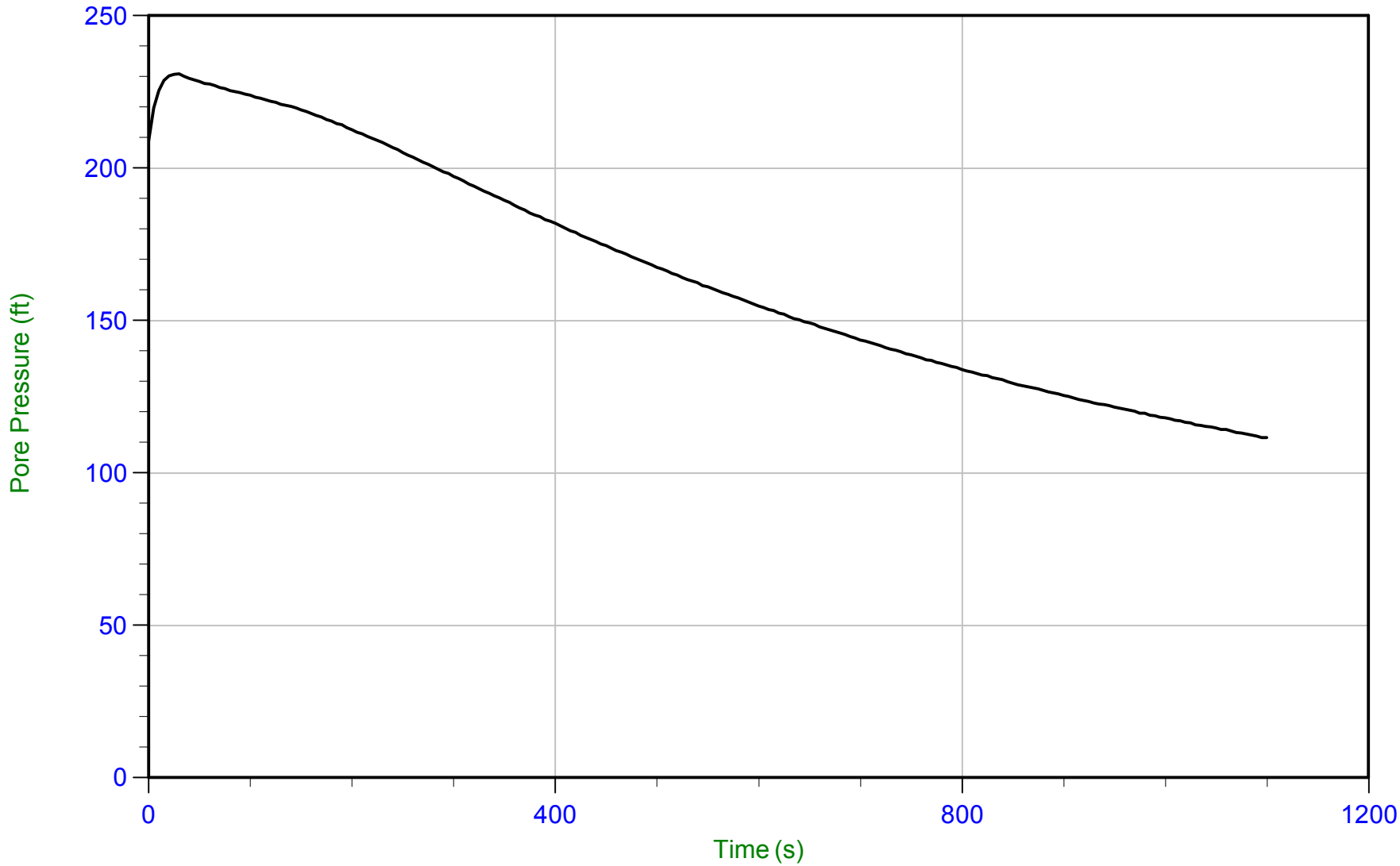
T(50): 1141.7 s
Ir: 100
Ch: 0.6 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 16:25
Site: Bay Park STP

Sounding: CPTu-21
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP21.PPD
Depth: 18.500 m / 60.695 ft
Duration: 1100.0 s

U Min: 111.6 ft
U Max: 230.9 ft

WT: 1.459 m / 4.787 ft
Ueq: 55.9 ft
U(50): 143.38 ft

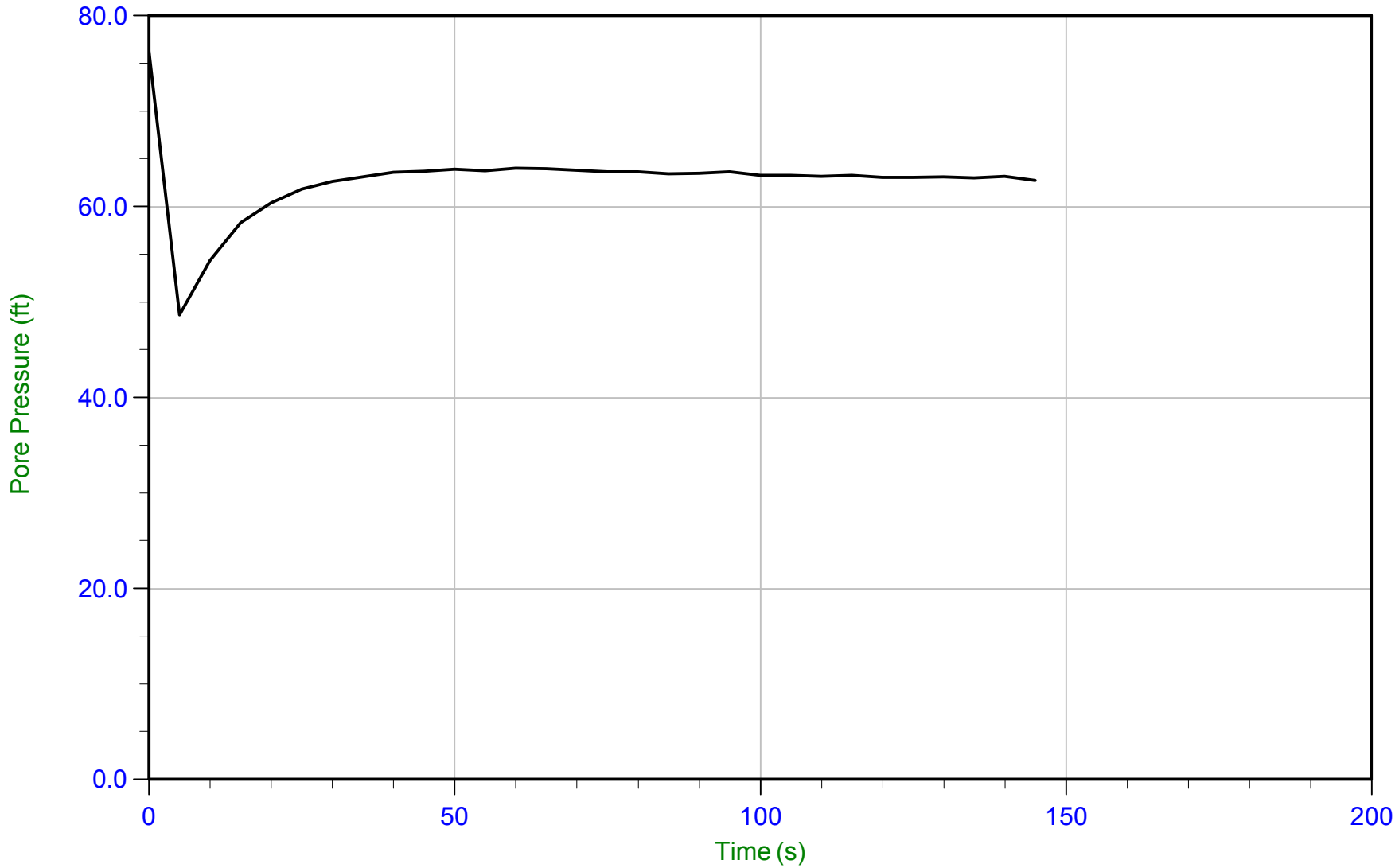
T(50): 674.2 s
Ir: 100
Ch: 1.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/09/2013 16:25
Site: Bay Park STP

Sounding: CPTu-21
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP21.PPD
Depth: 20.600 m / 67.584 ft
Duration: 145.0 s

U Min: 48.7 ft
U Max: 76.2 ft

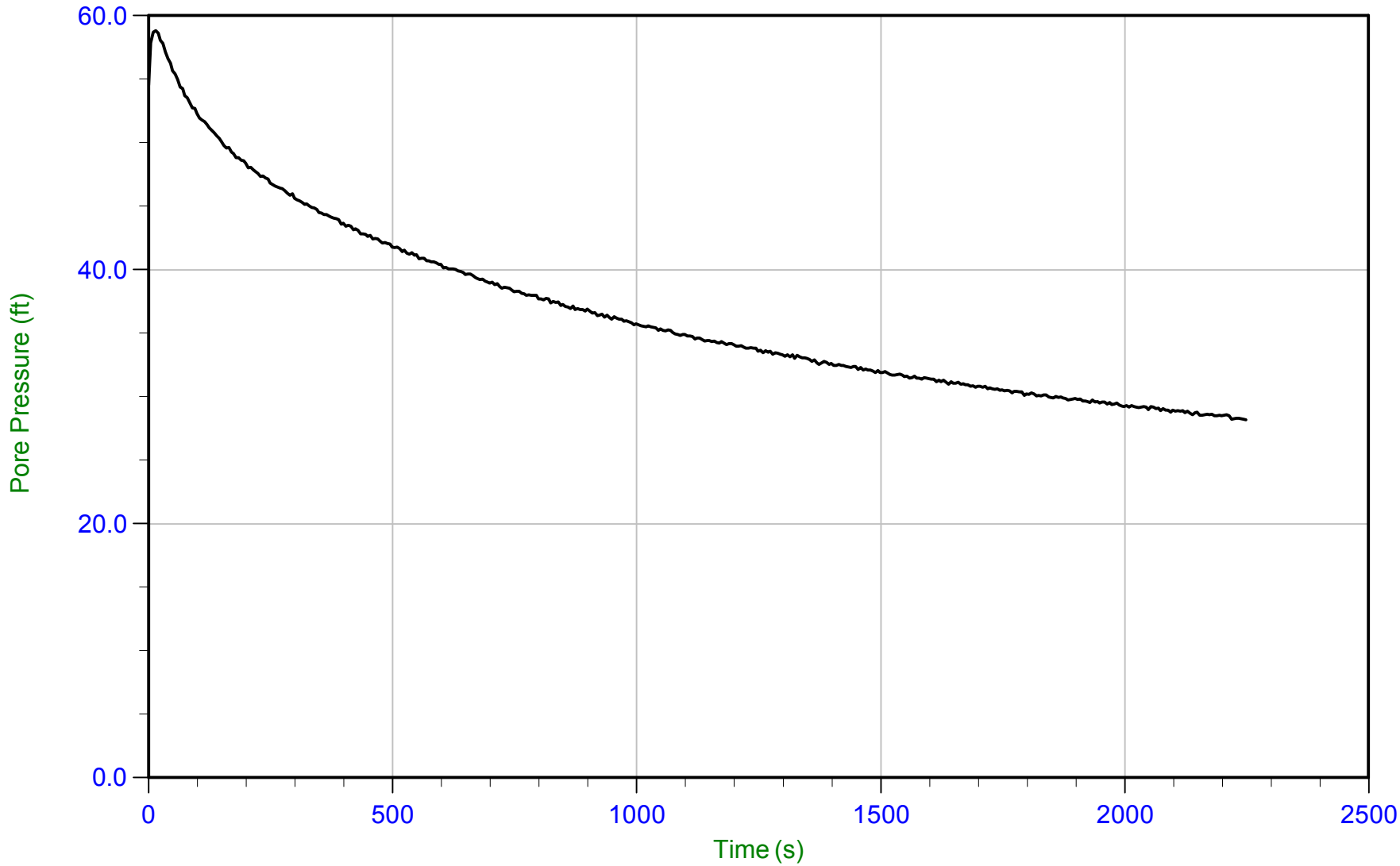
WT: 1.459 m / 4.787 ft
Ueq: 62.8 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 13:15
Site: Bay Park STP

Sounding: CPTu-22
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP22.PPD
Depth: 3.300 m / 10.827 ft
Duration: 2250.0 s

U Min: 28.2 ft
U Max: 58.8 ft

WT: 2.225 m / 7.300 ft
Ueq: 3.5 ft
U(50): 31.17 ft

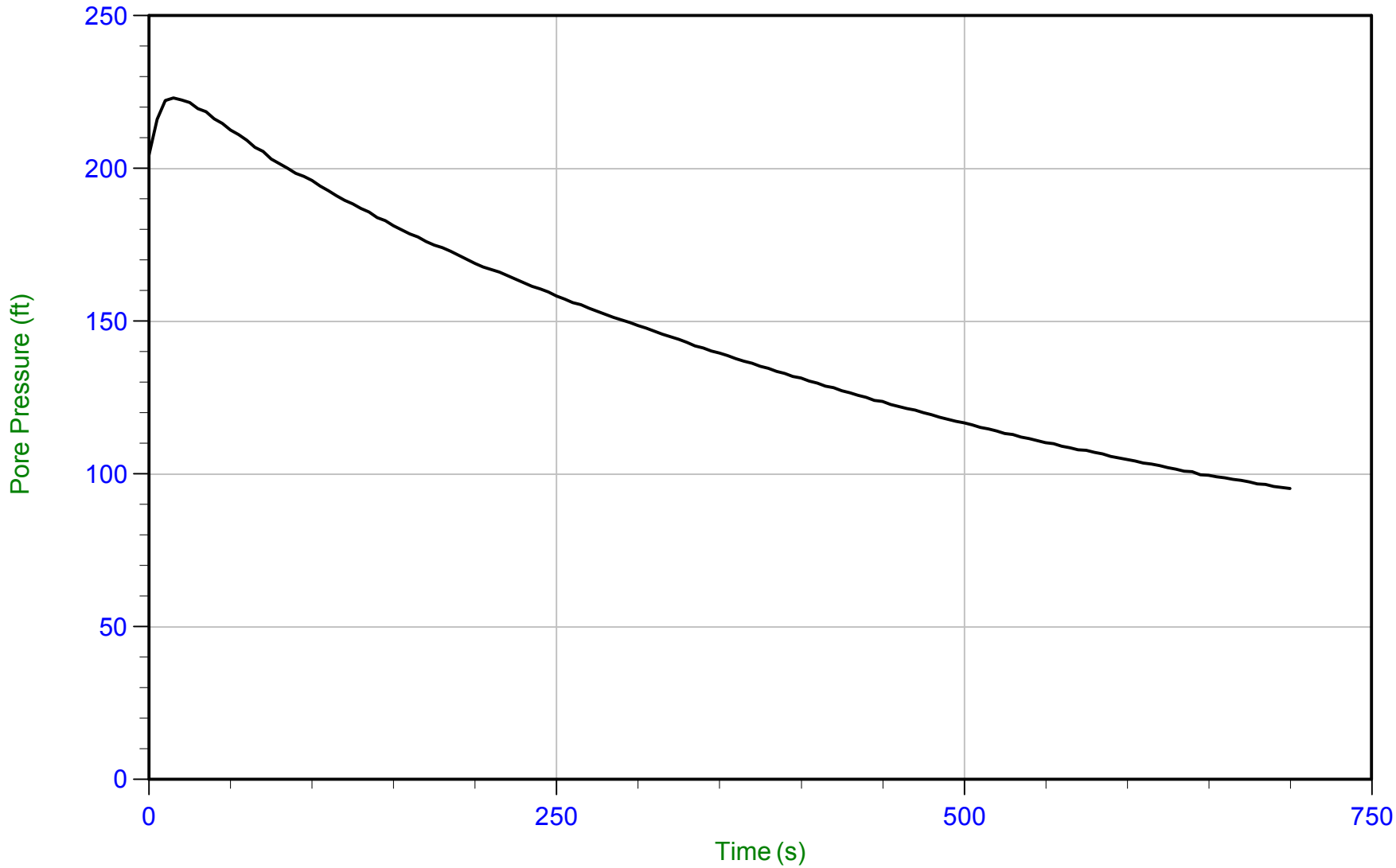
T(50): 1599.9 s
Ir: 100
Ch: 0.4 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 13:15
Site: Bay Park STP

Sounding: CPTu-22
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP22.PPD
Depth: 17.900 m / 58.726 ft
Duration: 700.0 s

U Min: 95.2 ft
U Max: 223.1 ft

WT: 2.225 m / 7.300 ft
Ueq: 51.4 ft
U(50): 137.24 ft

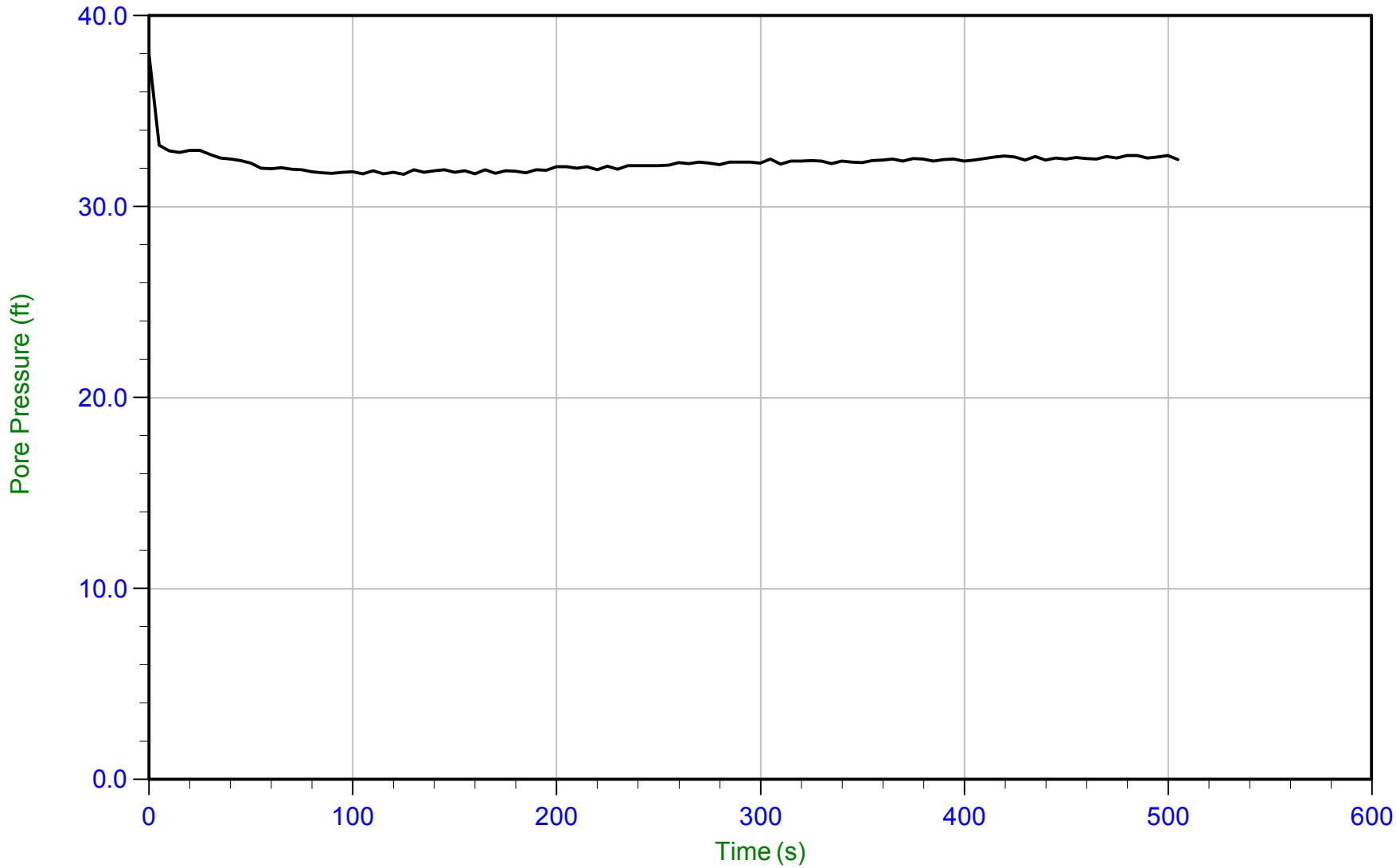
T(50): 348.3 s
Ir: 100
Ch: 2.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 08:11
Site: Bay Park STP

Sounding: CPTu-23
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP23.PPD
Depth: 12.900 m / 42.322 ft
Duration: 505.0 s

U Min: 31.7 ft
U Max: 38.0 ft

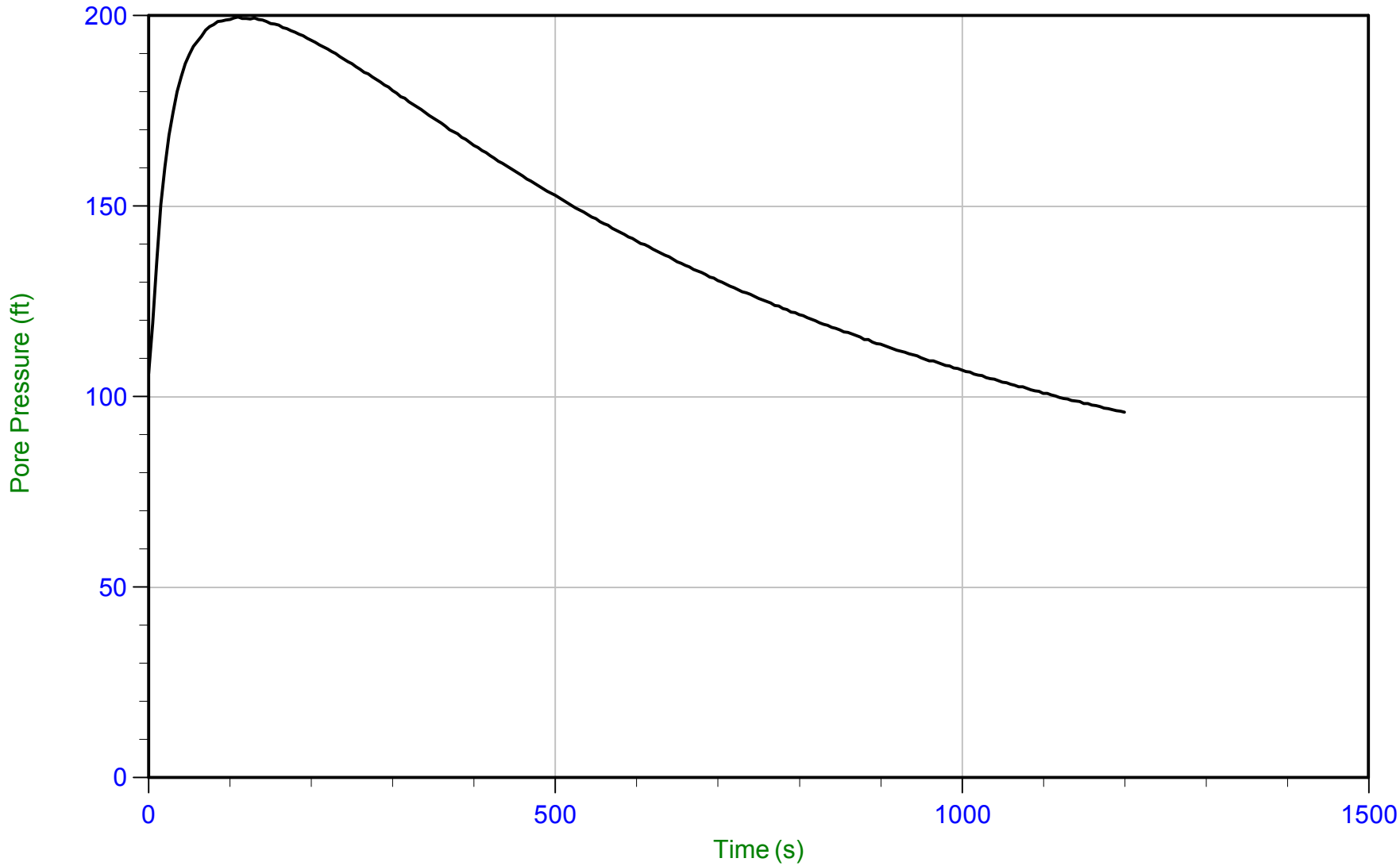
WT: 2.997 m / 9.833 ft
Ueq: 32.5 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 08:11
Site: Bay Park STP

Sounding: CPTu-23
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP23.PPD
Depth: 18.900 m / 62.007 ft
Duration: 1200.0 s

U Min: 95.9 ft
U Max: 199.7 ft

WT: 2.573 m / 8.441 ft
Ueq: 53.6 ft
U(50): 126.65 ft

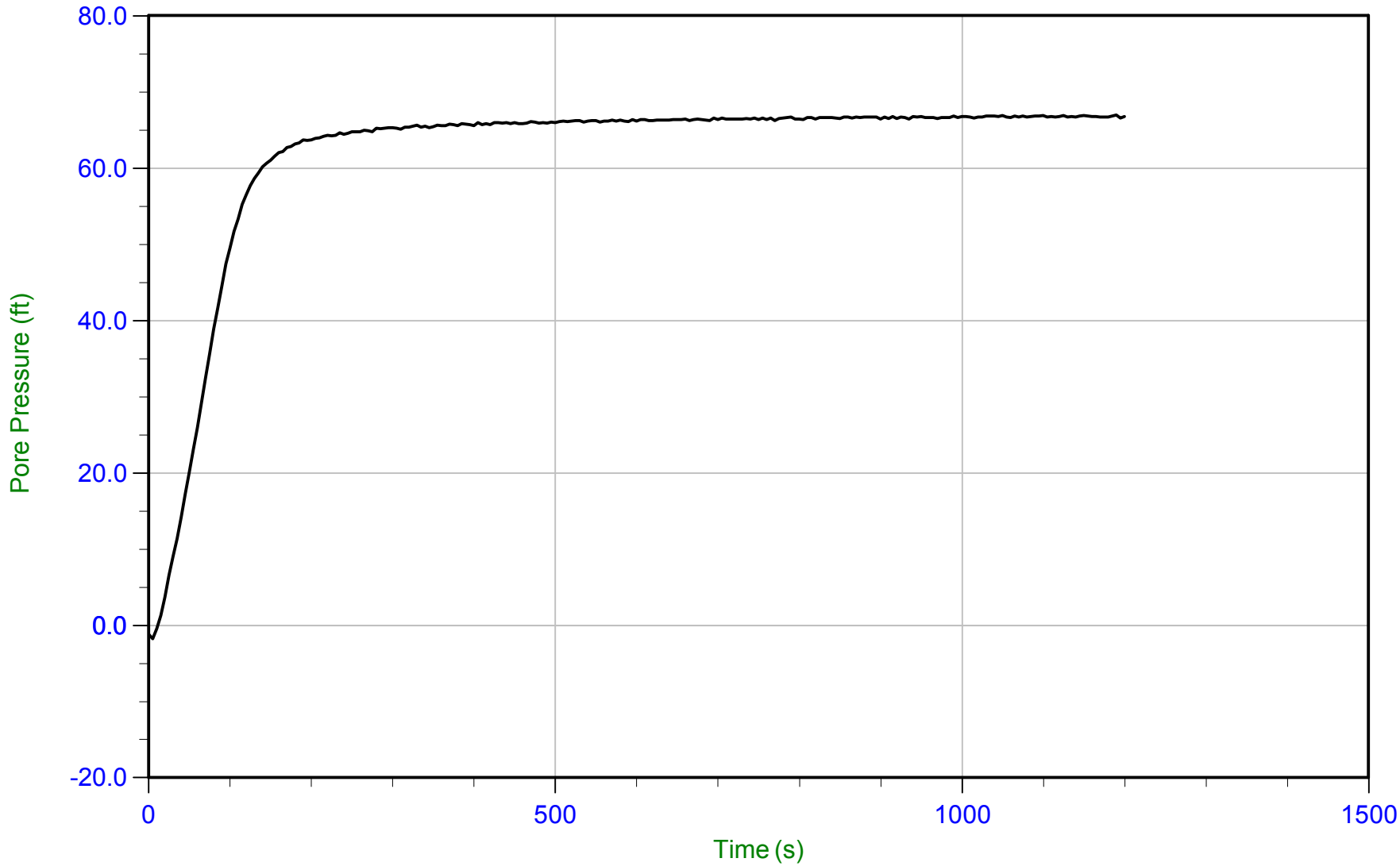
T(50): 632.2 s
Ir: 100
Ch: 1.1 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 08:11
Site: Bay Park STP

Sounding: CPTu-23
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP23.PPD
Depth: 22.900 m / 75.130 ft
Duration: 1200.0 s

U Min: -1.8 ft
U Max: 66.9 ft

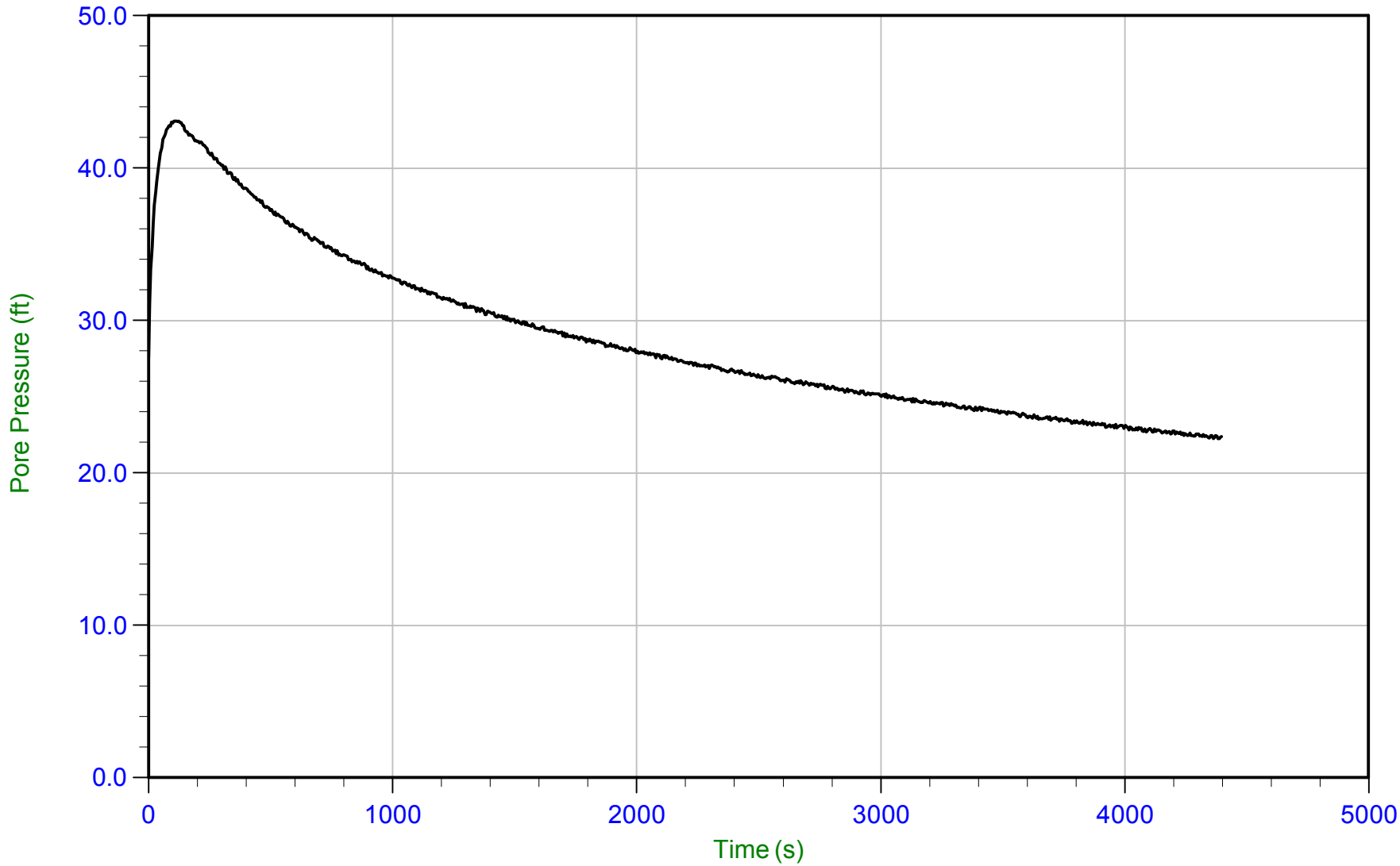
WT: 2.573 m / 8.441 ft
Ueq: 66.7 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 13:47
Site: Bay Park STP

Sounding: CPTu-24
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP24.PPD
Depth: 2.700 m / 8.858 ft
Duration: 4400.0 s

U Min: 22.2 ft
U Max: 43.1 ft

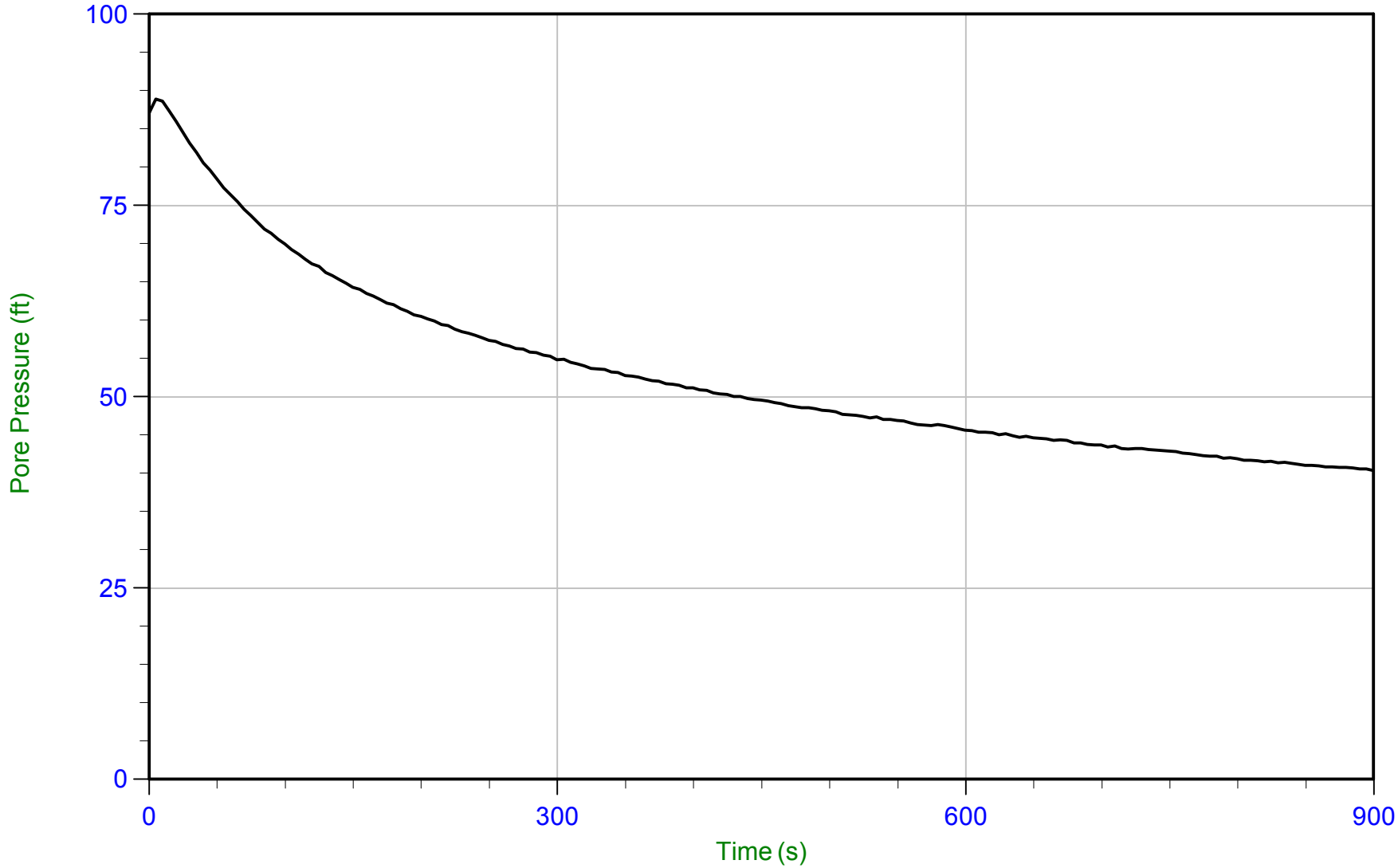
WT: 2.591 m / 8.501 ft
Ueq: 0.4 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 09:59
Site: Bay Park STP

Sounding: CPTu-25
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP25.PPD
Depth: 3.150 m / 10.335 ft
Duration: 900.0 s

U Min: 40.4 ft
U Max: 88.9 ft

WT: 2.914 m / 9.560 ft
Ueq: 0.8 ft
U(50): 44.84 ft

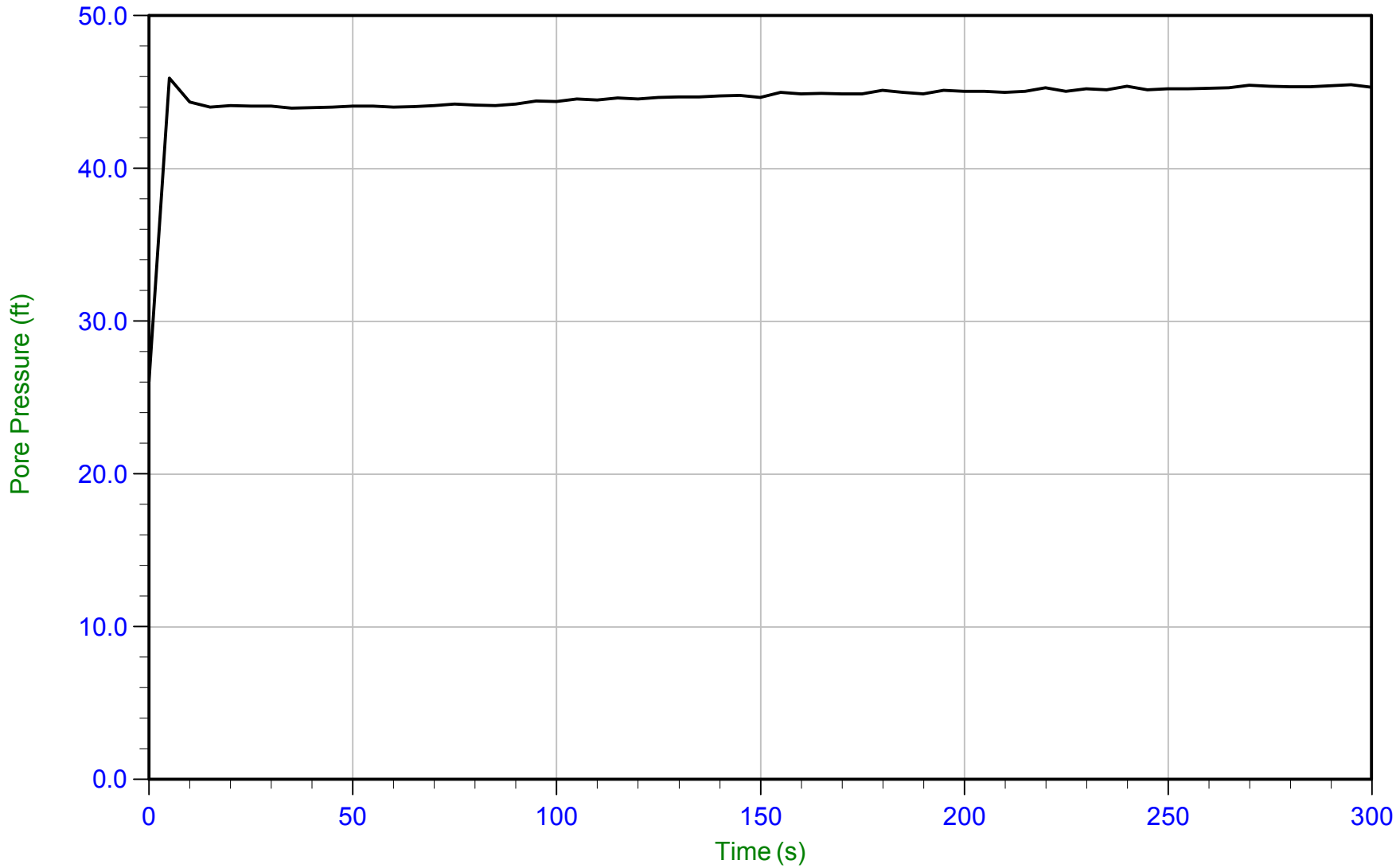
T(50): 631.3 s
Ir: 100
Ch: 1.1 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 09:59
Site: Bay Park STP

Sounding: CPTu-25
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP25.PPD
Depth: 16.750 m / 54.953 ft
Duration: 300.0 s

U Min: 26.1 ft
U Max: 45.9 ft

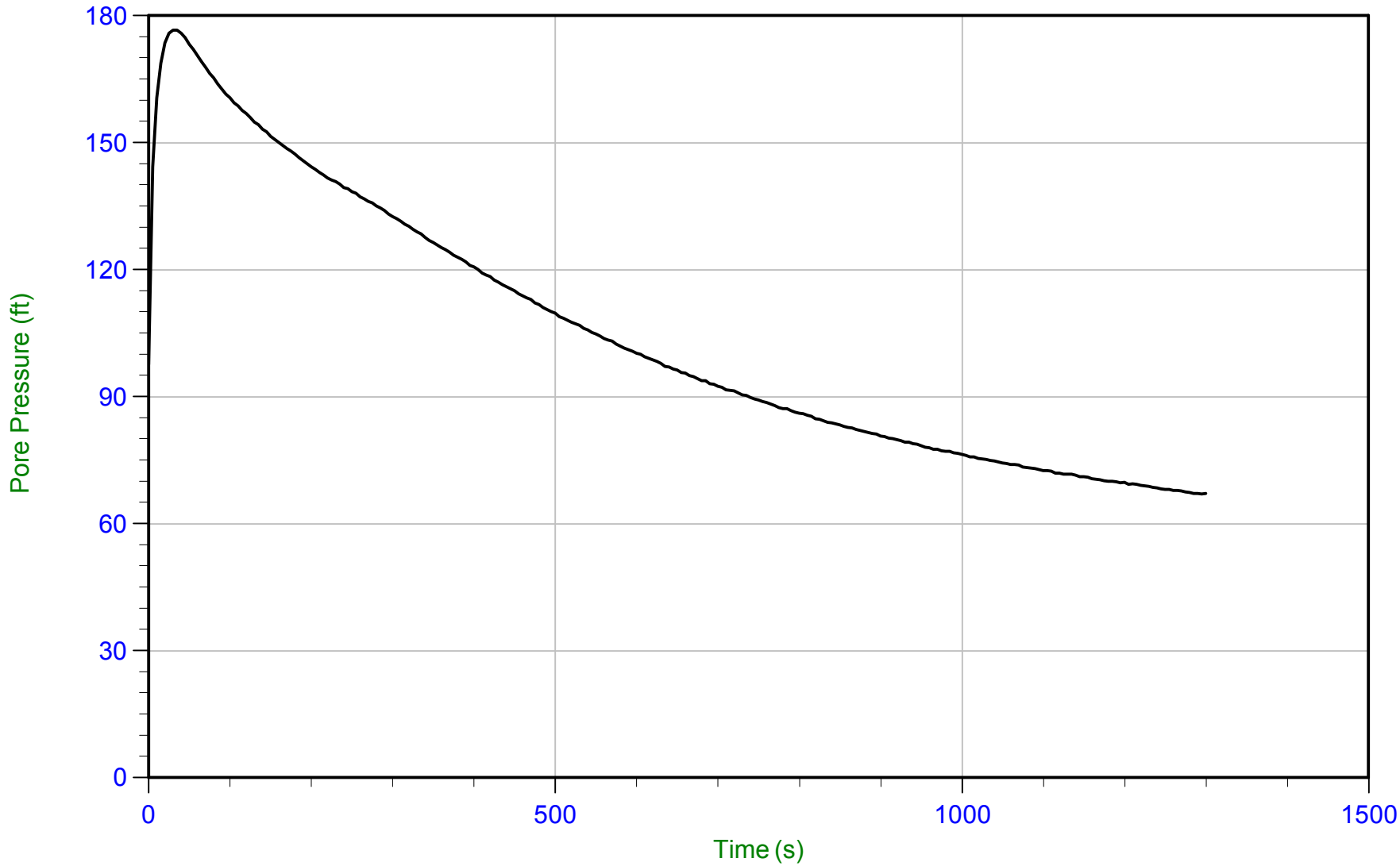
WT: 2.914 m / 9.560 ft
Ueq: 45.4 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/15/2013 17:37
Site: Bay Park STP

Sounding: CPTu-26
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP26.PPD
Depth: 18.300 m / 60.039 ft
Duration: 1300.0 s

U Min: 67.0 ft
U Max: 176.6 ft

WT: 3.078 m / 10.098 ft
Ueq: 49.9 ft
U(50): 113.26 ft

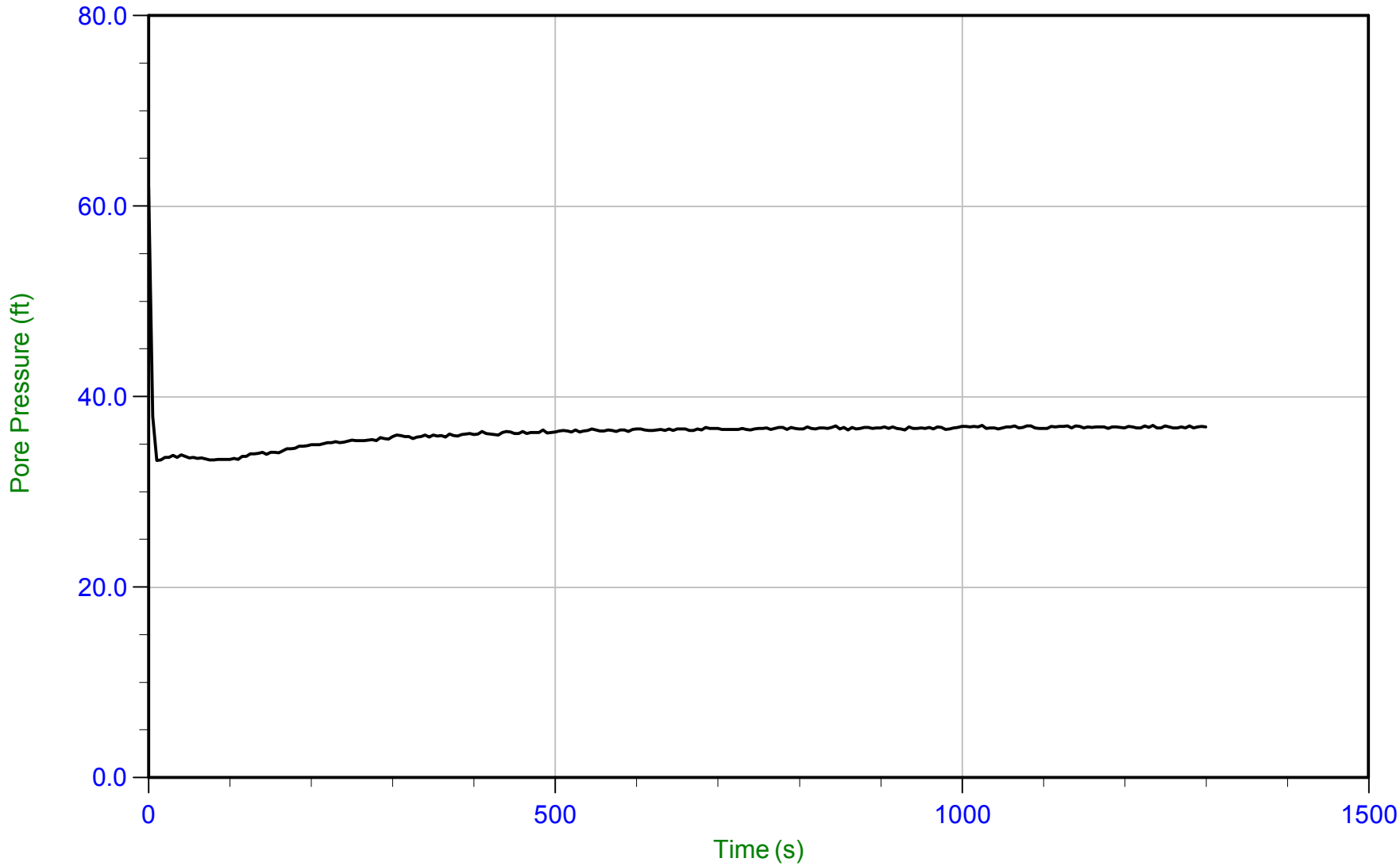
T(50): 436.5 s
Ir: 100
Ch: 1.6 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 07:56
Site: Bay Park STP

Sounding: CPTu-29
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP29.PPD
Depth: 15.250 m / 50.032 ft
Duration: 1300.0 s

U Min: 33.3 ft
U Max: 61.9 ft

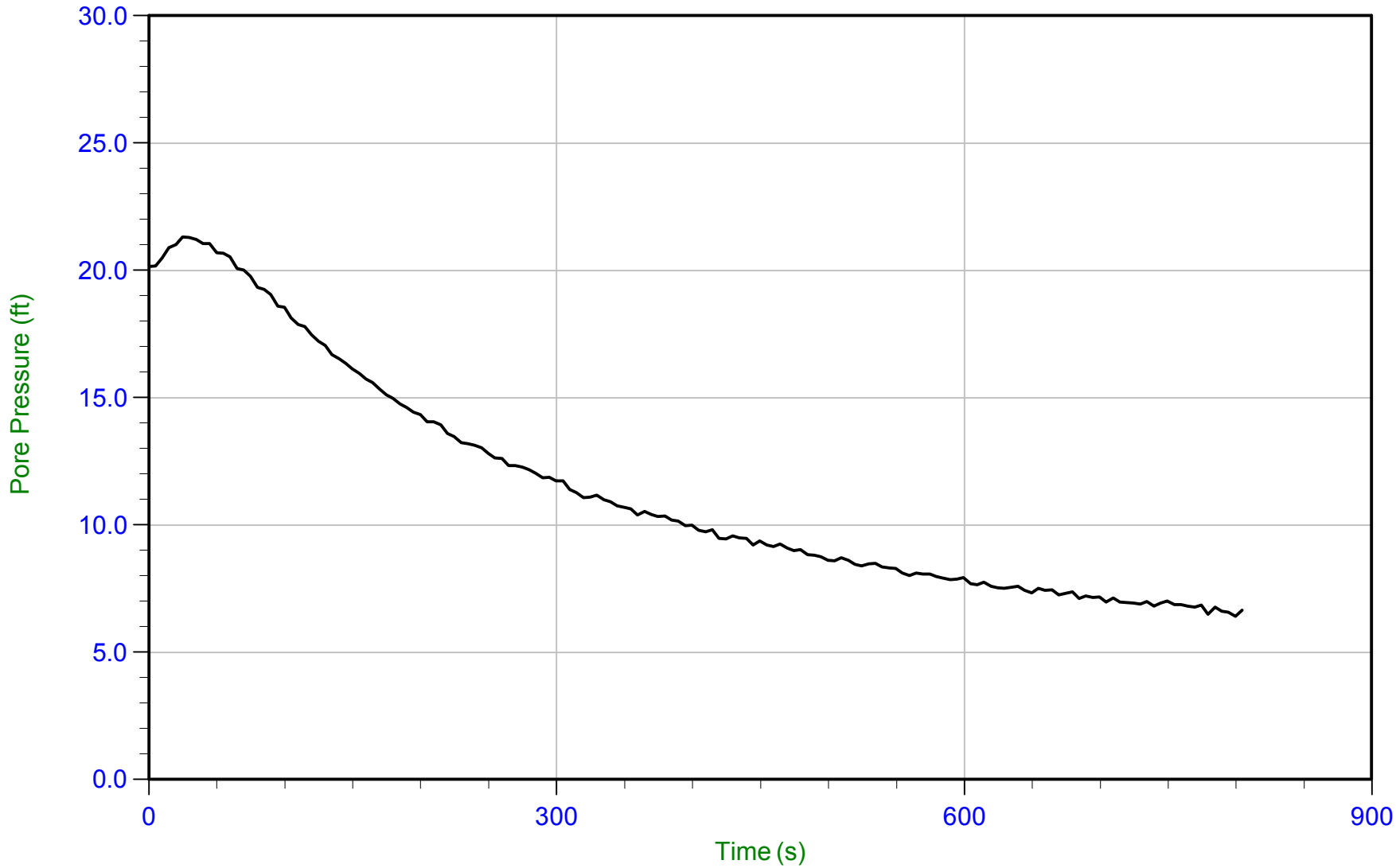
WT: 4.064 m / 13.333 ft
Ueq: 36.7 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 11:53
Site: Bay Park STP

Sounding: CPTu-31
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP31.PPD
Depth: 3.300 m / 10.827 ft
Duration: 805.0 s

U Min: 6.4 ft
U Max: 21.3 ft

WT: 4.023 m / 13.199 ft
Ueq: -2.4 ft
U(50): 9.47 ft

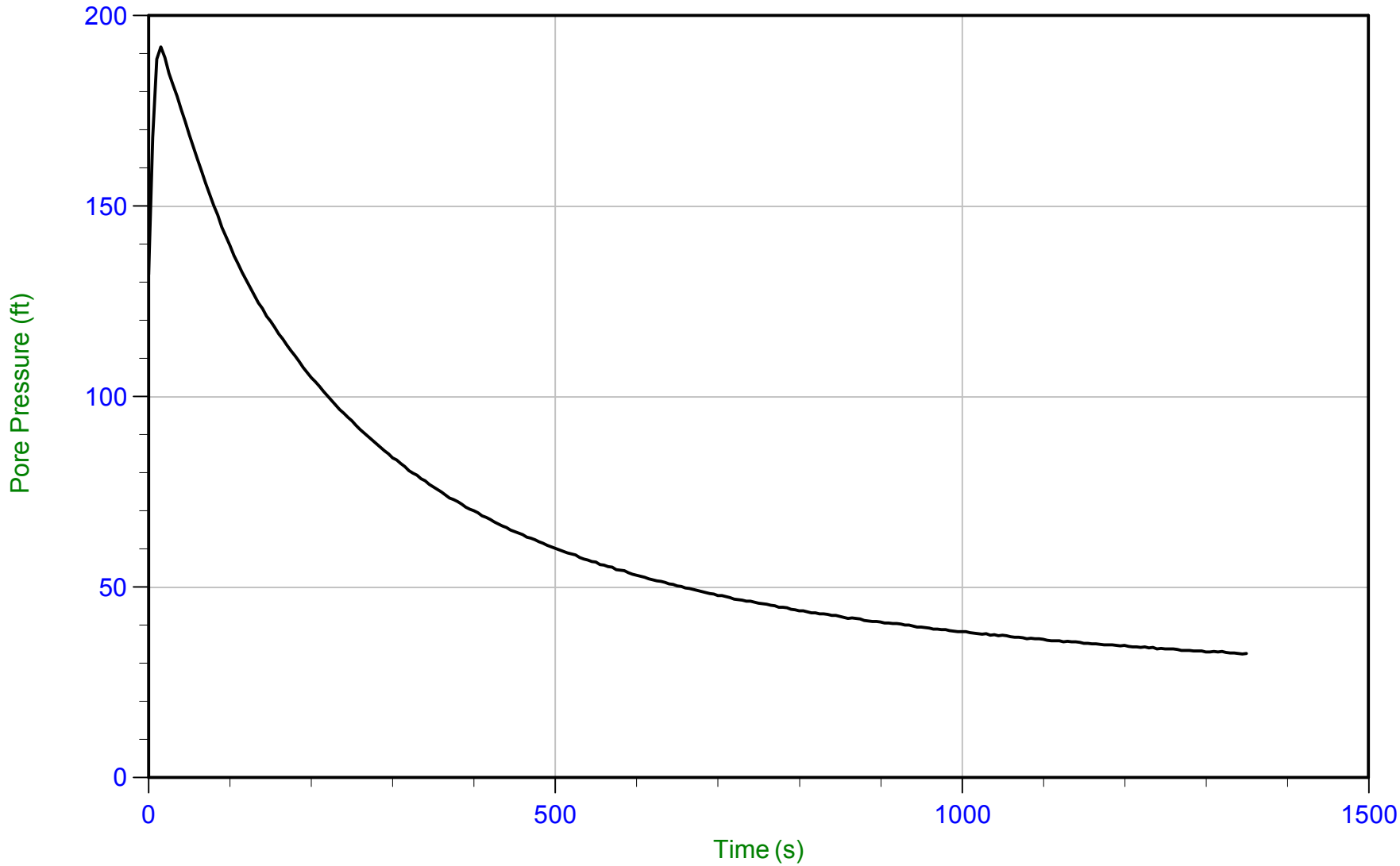
T(50): 396.0 s
Ir: 100
Ch: 1.8 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/17/2013 11:53
Site: Bay Park STP

Sounding: CPTu-31
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP31.PPD
Depth: 10.850 m / 35.597 ft
Duration: 1350.0 s

U Min: 32.5 ft
U Max: 191.8 ft

WT: 4.023 m / 13.199 ft
Ueq: 22.4 ft
U(50): 107.08 ft

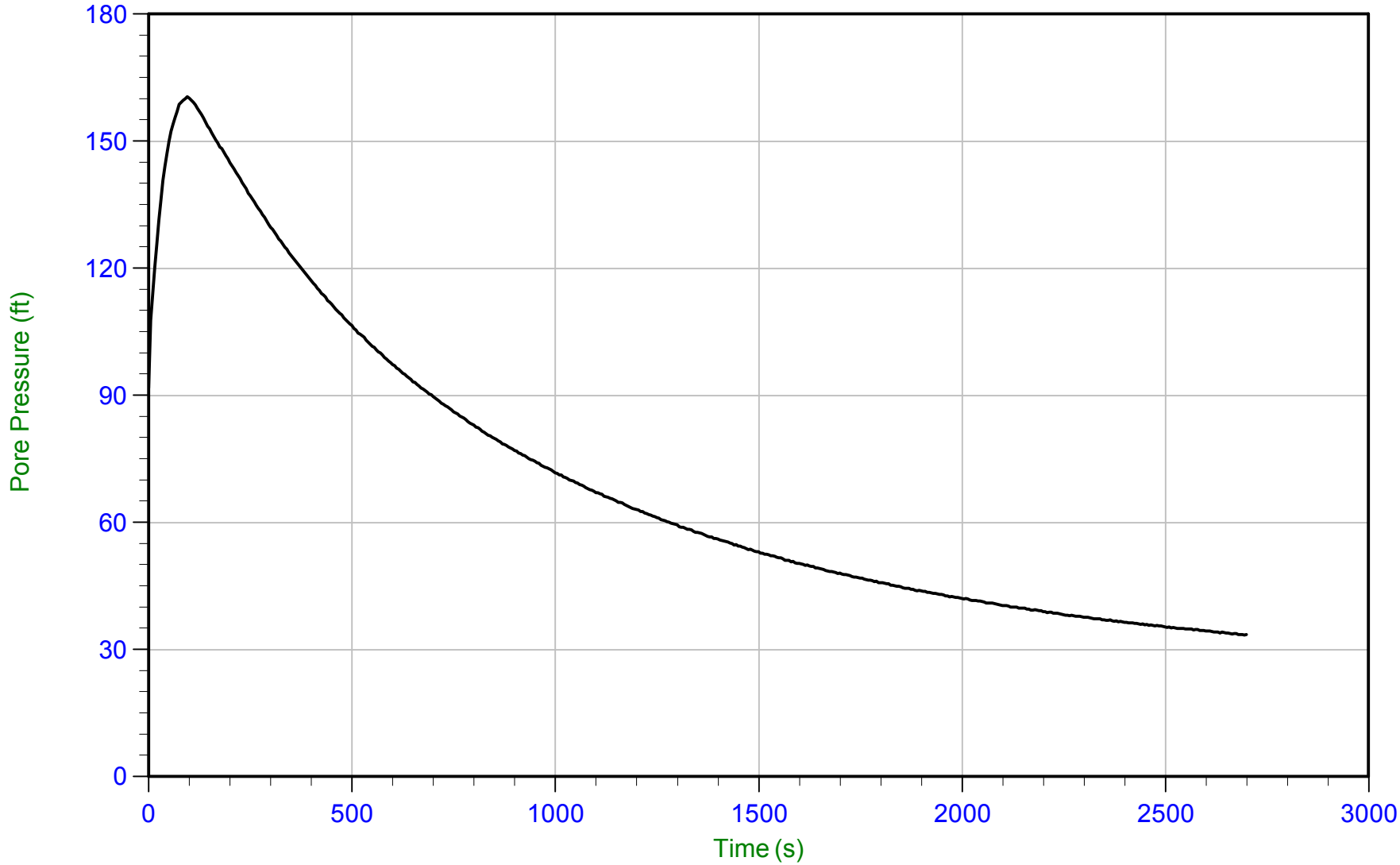
T(50): 177.2 s
Ir: 100
Ch: 4.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 12:30
Site: Bay Park STP

Sounding: CPTu-32
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP32.PPD
Depth: 10.150 m / 33.300 ft
Duration: 2700.0 s

U Min: 33.4 ft
U Max: 160.5 ft

WT: 3.583 m / 11.755 ft
Ueq: 21.5 ft
U(50): 91.04 ft

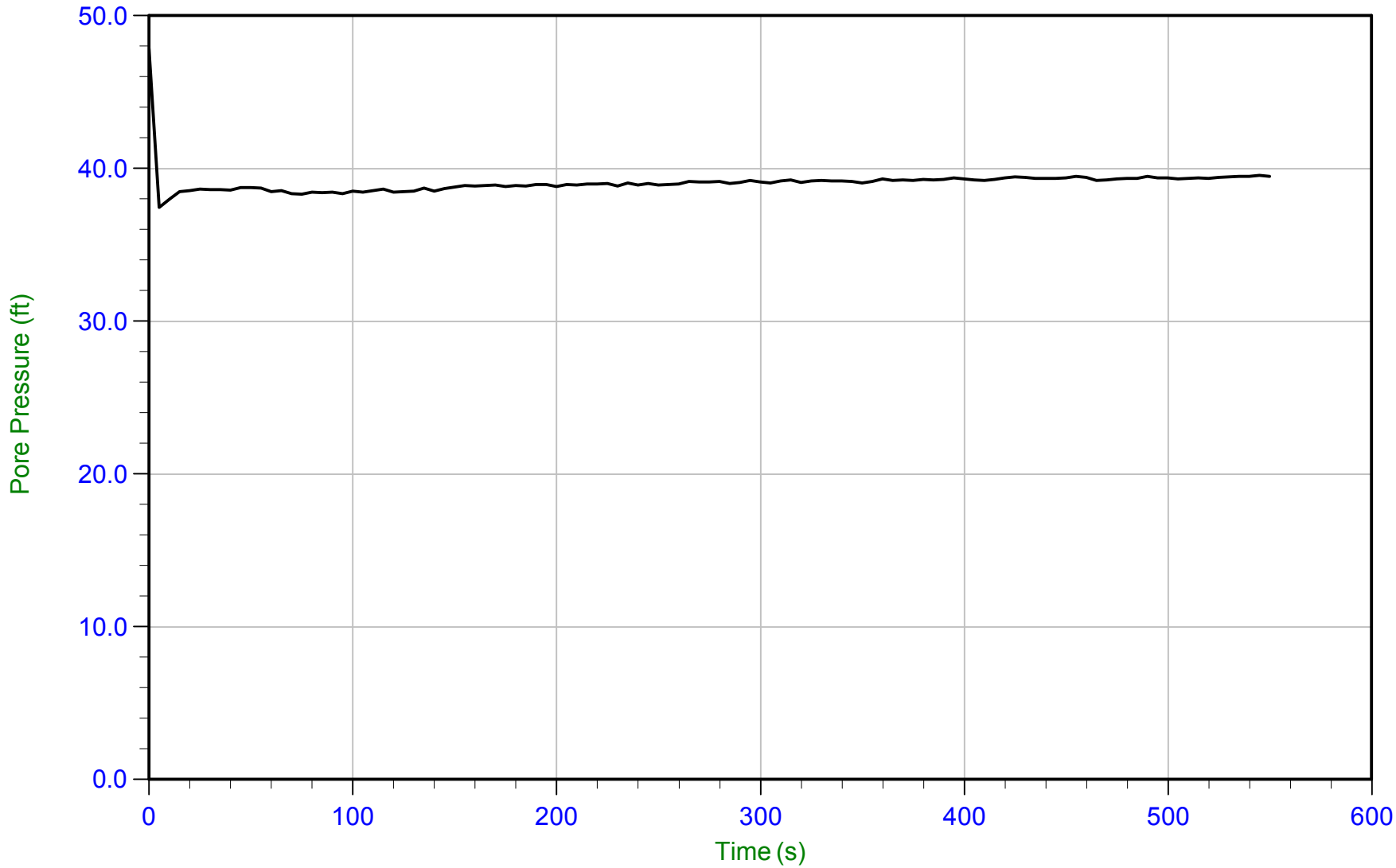
T(50): 586.4 s
Ir: 100
Ch: 1.2 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 12:30
Site: Bay Park STP

Sounding: CPTu-32
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP32.PPD
Depth: 15.650 m / 51.345 ft
Duration: 550.0 s

U Min: 37.5 ft
U Max: 47.9 ft

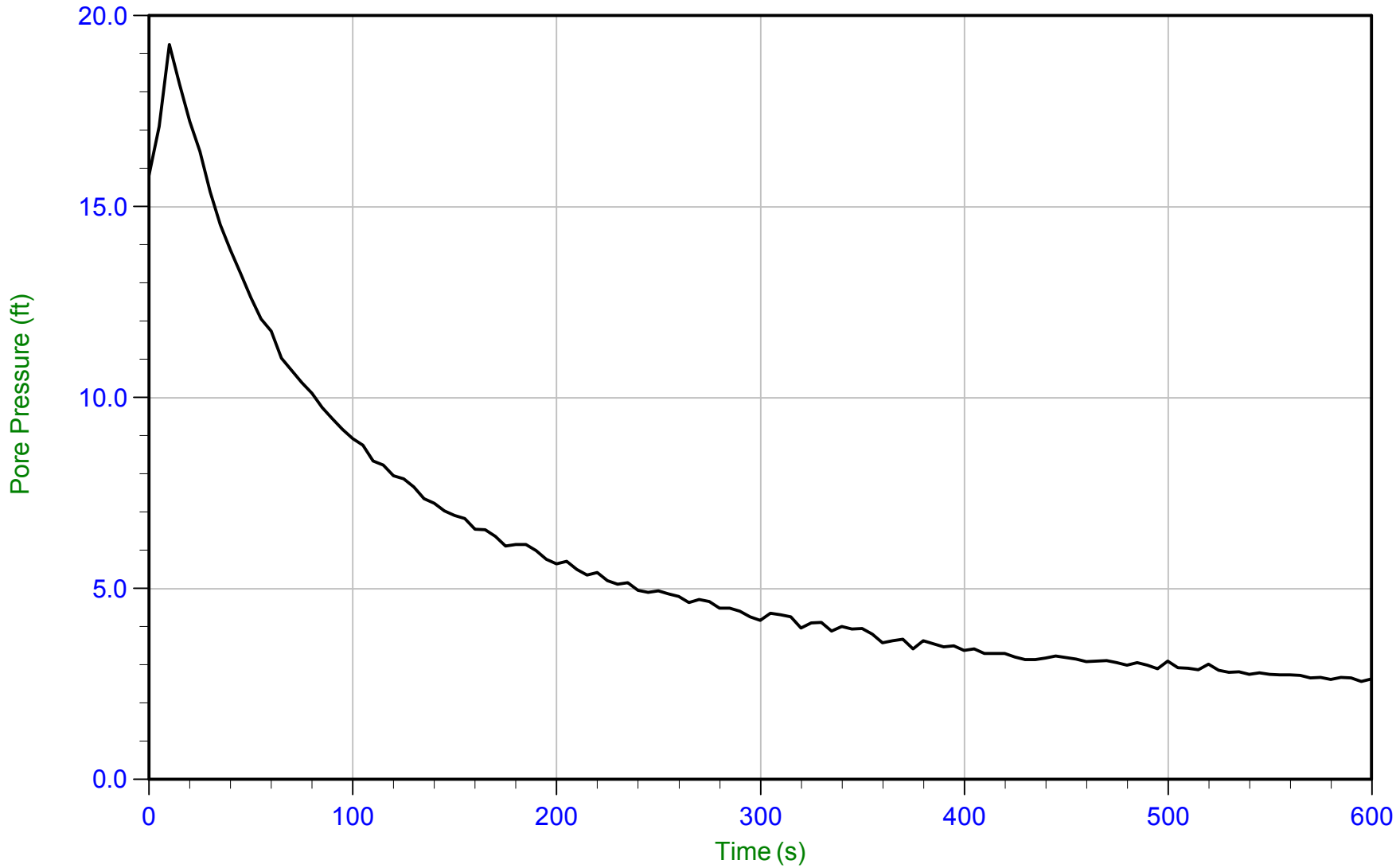
WT: 3.583 m / 11.755 ft
Ueq: 39.6 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 14:27
Site: Bay Park STP

Sounding: CPTu-33
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP33.PPD
Depth: 2.150 m / 7.054 ft
Duration: 600.0 s

U Min: 2.6 ft
U Max: 19.2 ft

WT: 2.134 m / 7.001 ft
Ueq: 0.1 ft
U(50): 9.65 ft

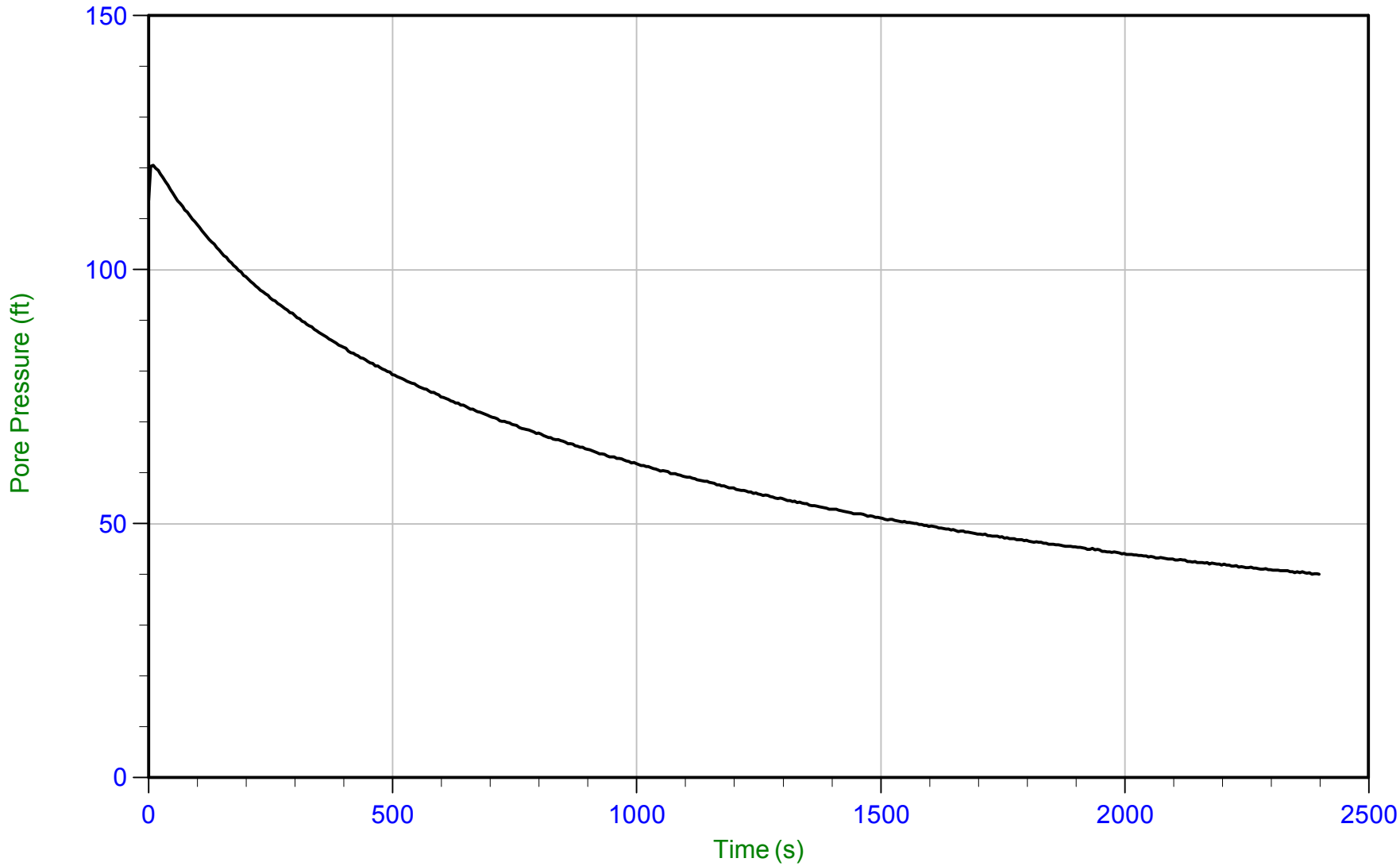
T(50): 76.5 s
Ir: 100
Ch: 9.2 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 14:27
Site: Bay Park STP

Sounding: CPTu-33
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP33.PPD
Depth: 8.900 m / 29.199 ft
Duration: 2400.0 s

U Min: 40.0 ft
U Max: 120.6 ft

WT: 2.134 m / 7.001 ft
Ueq: 22.2 ft
U(50): 71.39 ft

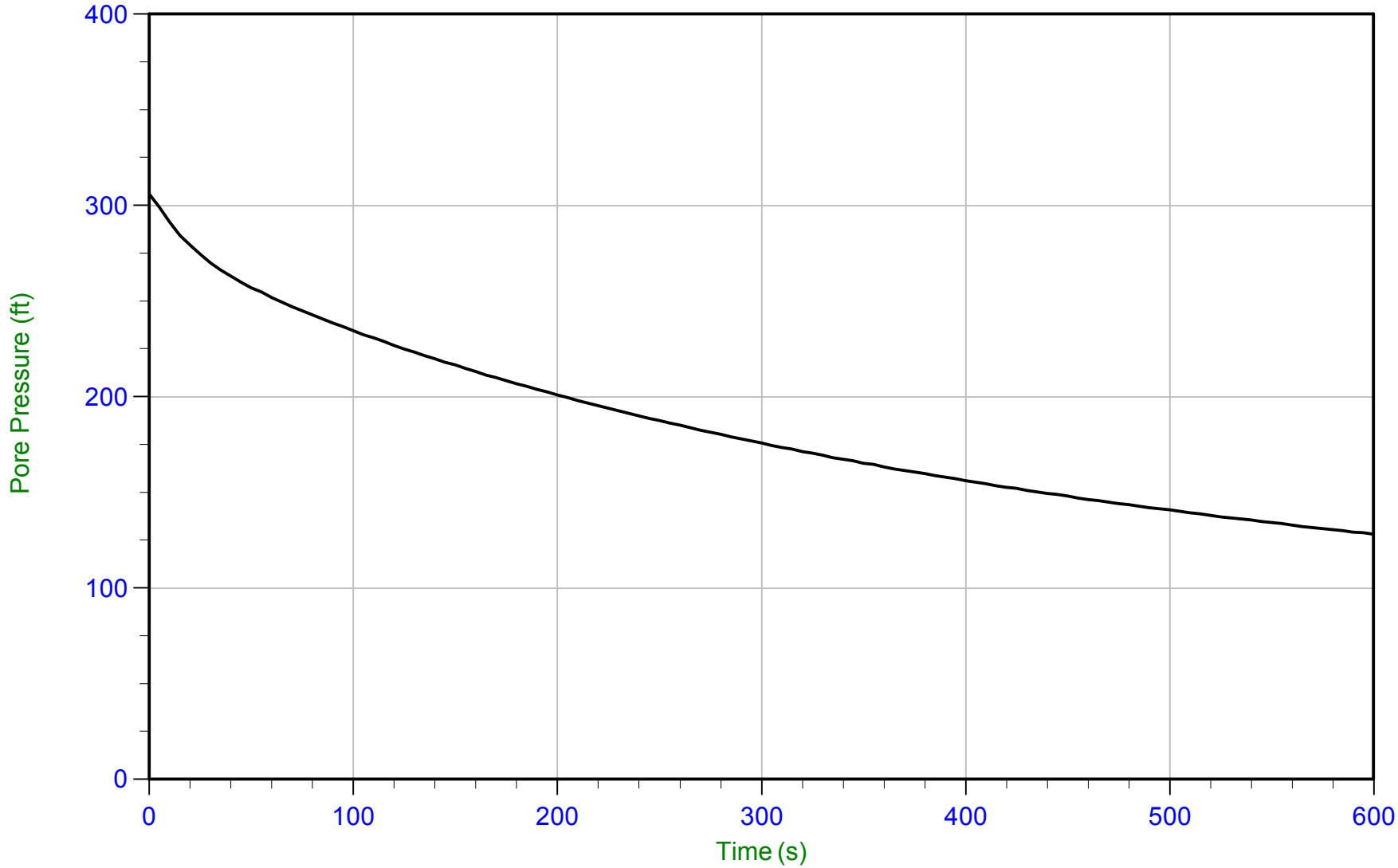
T(50): 684.4 s
Ir: 100
Ch: 1.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/10/2013 14:27
Site: Bay Park STP

Sounding: CPTu-33
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP33.PPD
Depth: 17.300 m / 56.758 ft
Duration: 600.0 s

U Min: 128.1 ft
U Max: 306.0 ft

WT: 2.134 m / 7.001 ft
Ueq: 49.8 ft
U(50): 177.89 ft

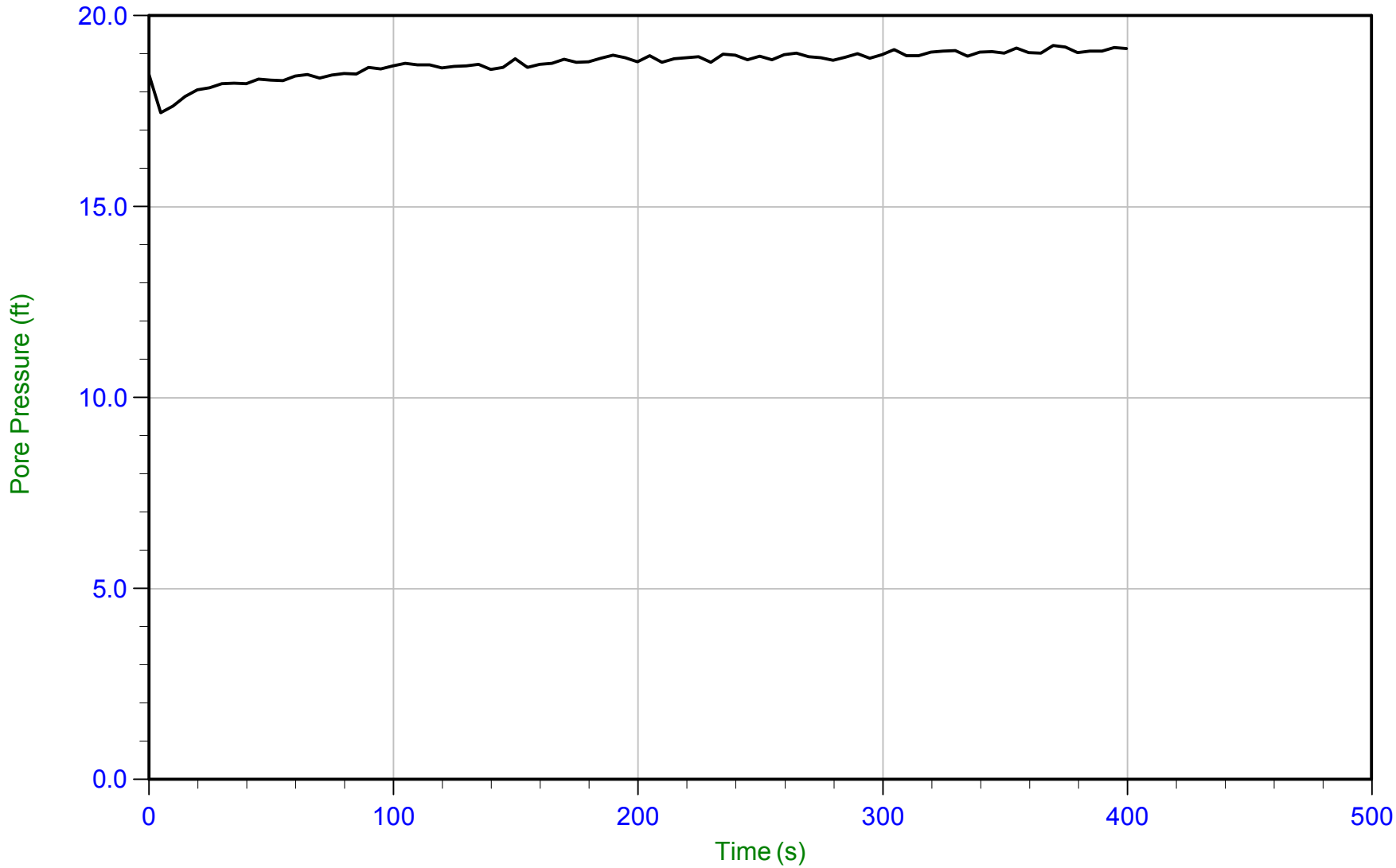
T(50): 290.2 s
Ir: 100
Ch: 2.4 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 08:17
Site: Bay Park STP

Sounding: CPTu-34
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP34.PPD
Depth: 7.400 m / 24.278 ft
Duration: 400.0 s

U Min: 17.5 ft
U Max: 19.2 ft

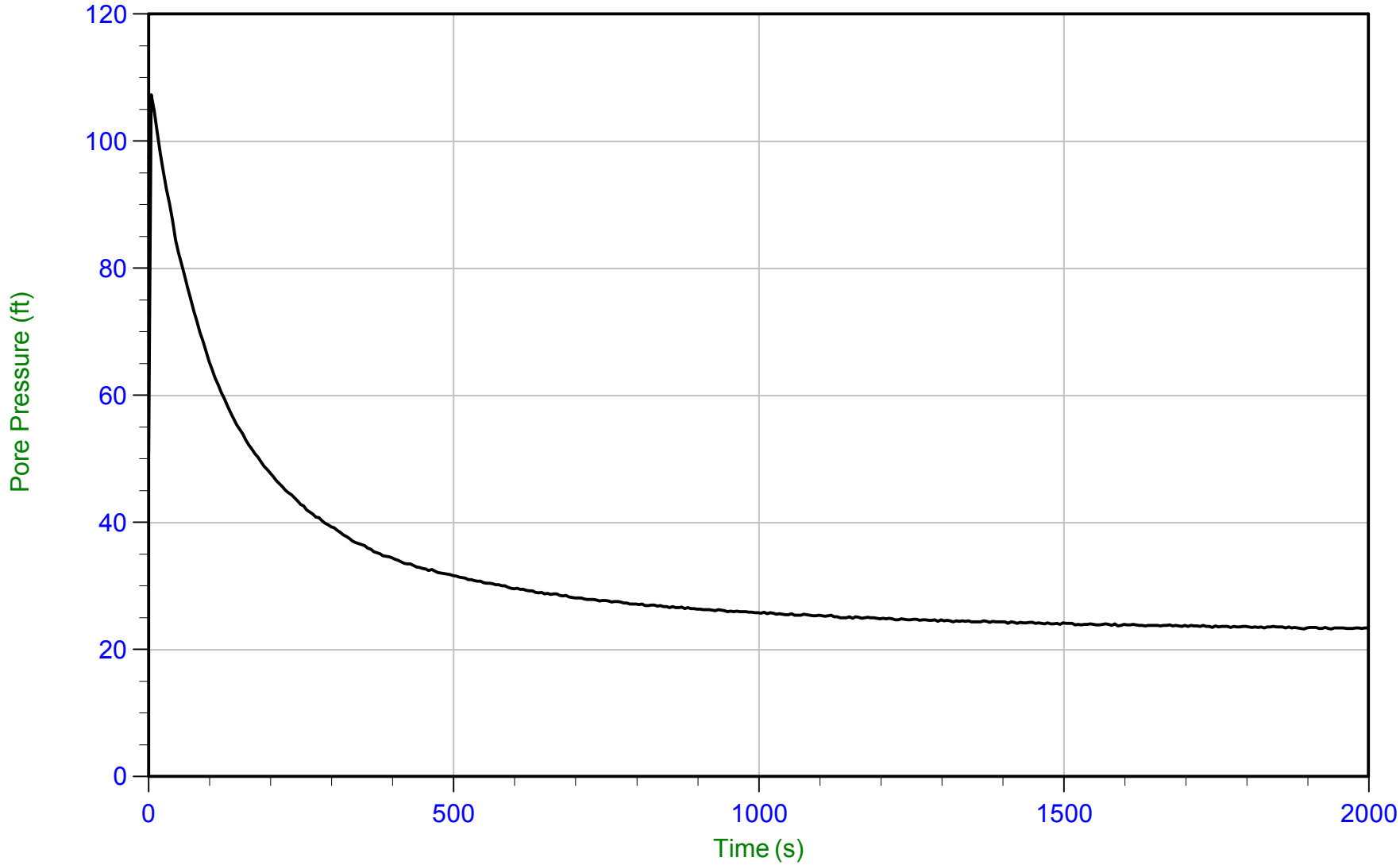
WT: 1.574 m / 5.164 ft
Ueq: 19.1 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 08:17
Site: Bay Park STP

Sounding: CPTu-34
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP34.PPD
Depth: 8.250 m / 27.067 ft
Duration: 2000.0 s

U Min: 23.2 ft
U Max: 107.3 ft

WT: 1.575 m / 5.167 ft
Ueq: 21.9 ft
U(50): 64.60 ft

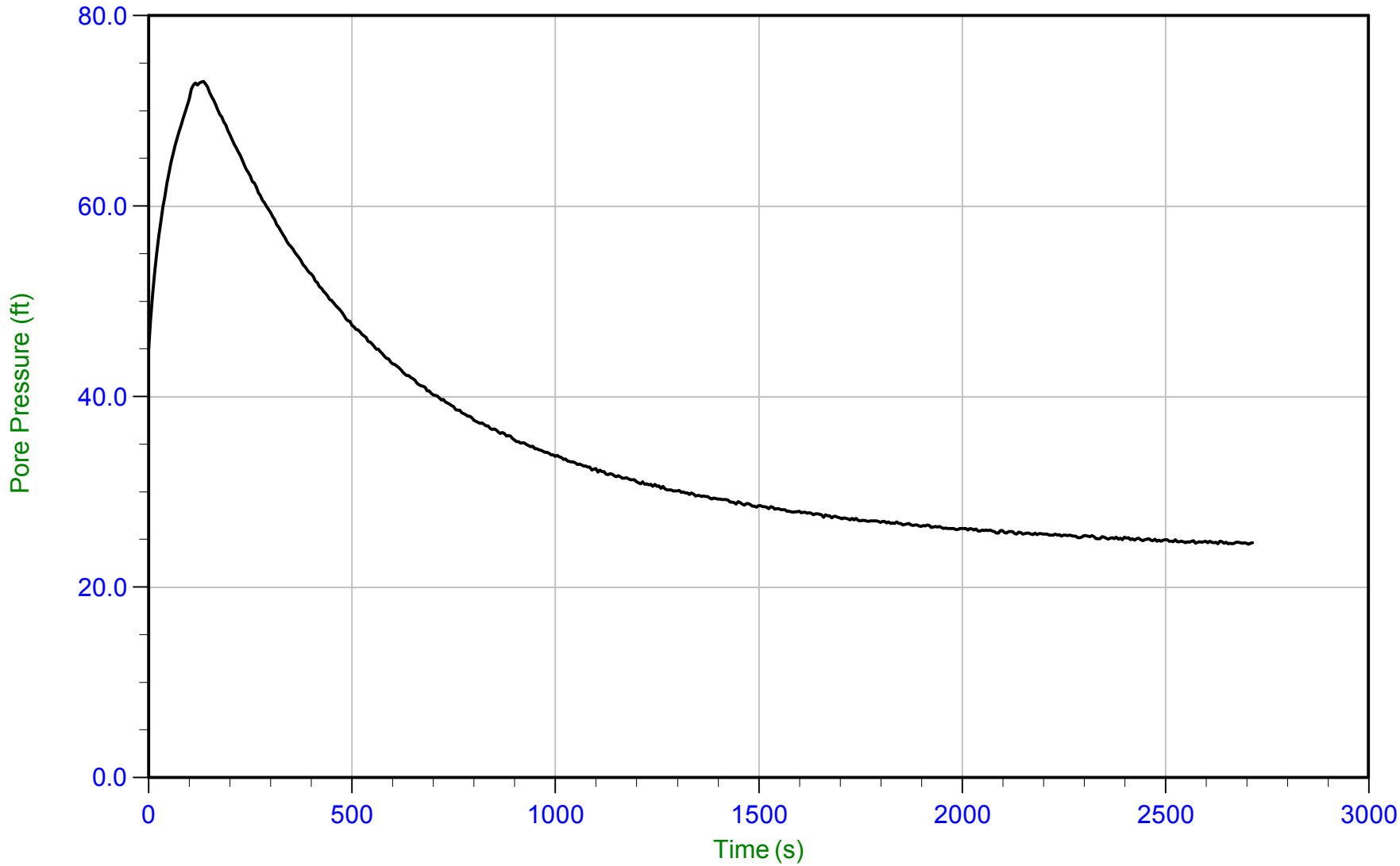
T(50): 97.8 s
Ir: 100
Ch: 7.2 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 11:35
Site: Bay Park STP

Sounding: CPTu-35
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP35.PPD
Depth: 8.650 m / 28.379 ft
Duration: 2715.0 s

U Min: 24.5 ft
U Max: 73.1 ft

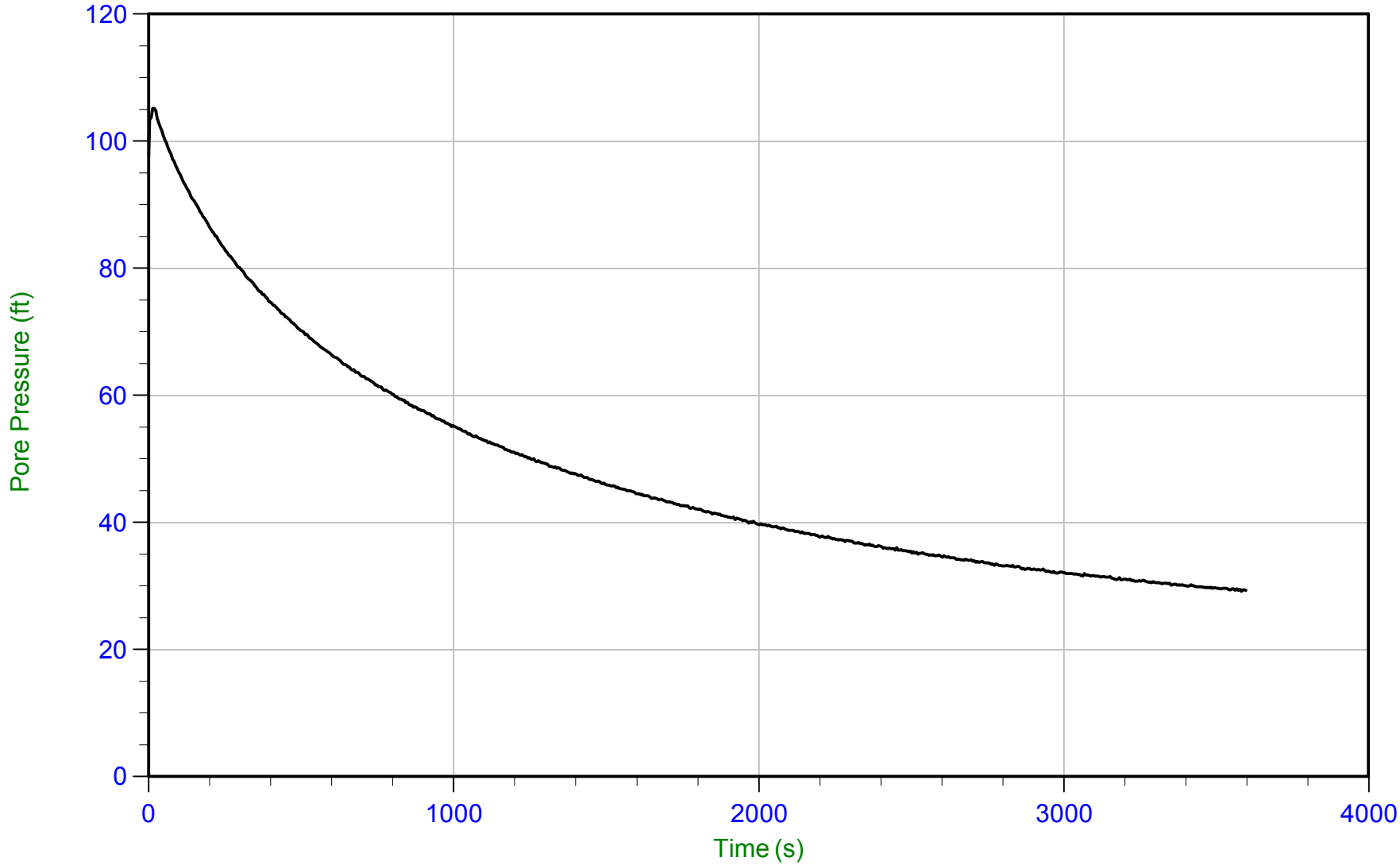
WT: 2.134 m / 7.001 ft
Ueq: 21.4 ft
U(50): 47.23 ft

T(50): 371.8 s
Ir: 100
Ch: 1.9 sq cm/min

ARCADIS

Job No: 13-53065
Date: 10/11/2013 09:40
Site: Bay Park STP

Sounding: CPTu-37
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP37.PPD
Depth: 7.700 m / 25.262 ft
Duration: 3600.0 s

U Min: 29.2 ft
U Max: 105.2 ft

WT: 1.219 m / 3.999 ft
Ueq: 21.3 ft
U(50): 63.23 ft

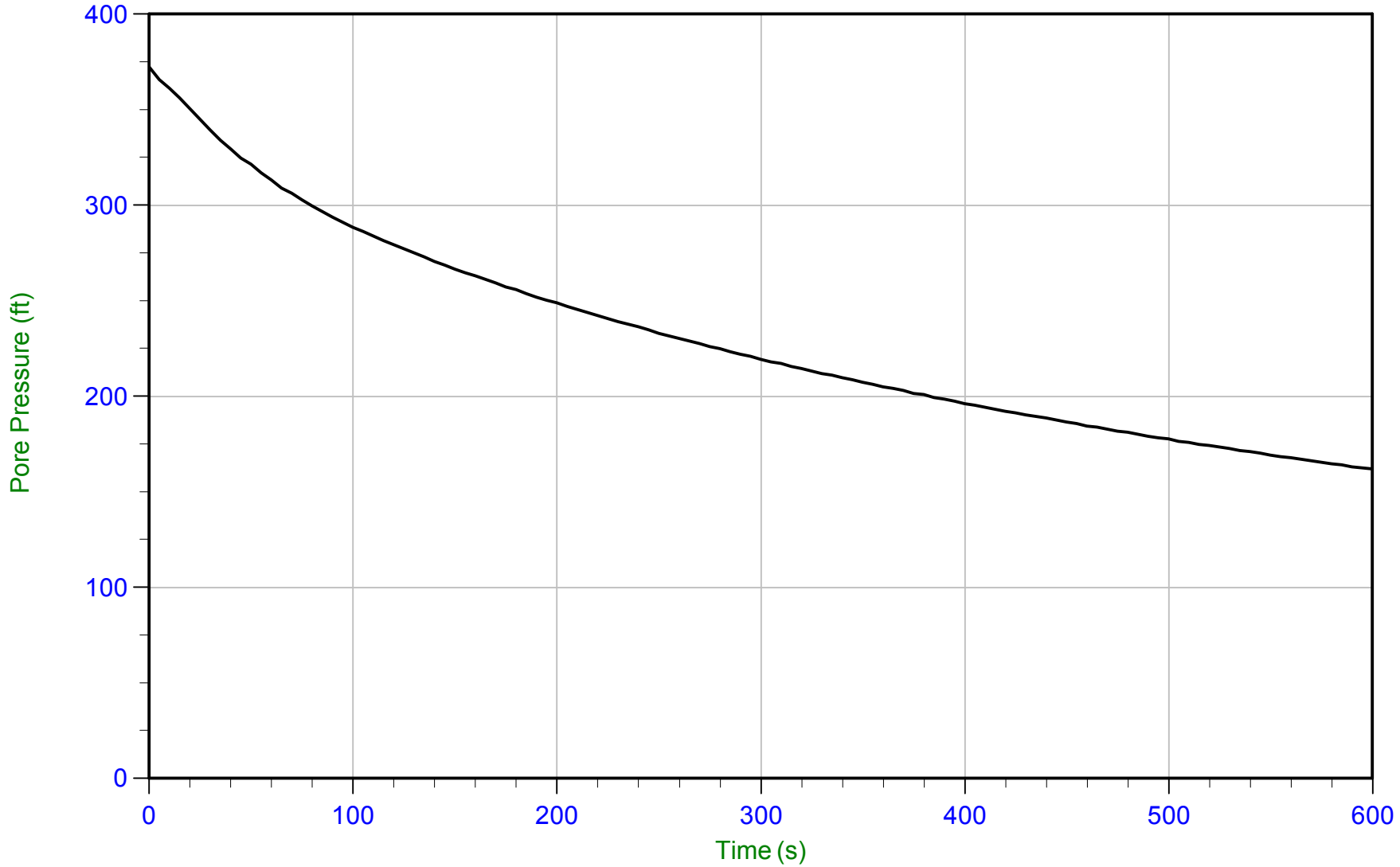
T(50): 675.2 s
Ir: 100
Ch: 1.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 09:40
Site: Bay Park STP

Sounding: CPTu-37
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP37.PPD
Depth: 15.250 m / 50.032 ft
Duration: 600.0 s

U Min: 161.9 ft
U Max: 372.5 ft

WT: 1.219 m / 3.999 ft
Ueq: 46.0 ft
U(50): 209.26 ft

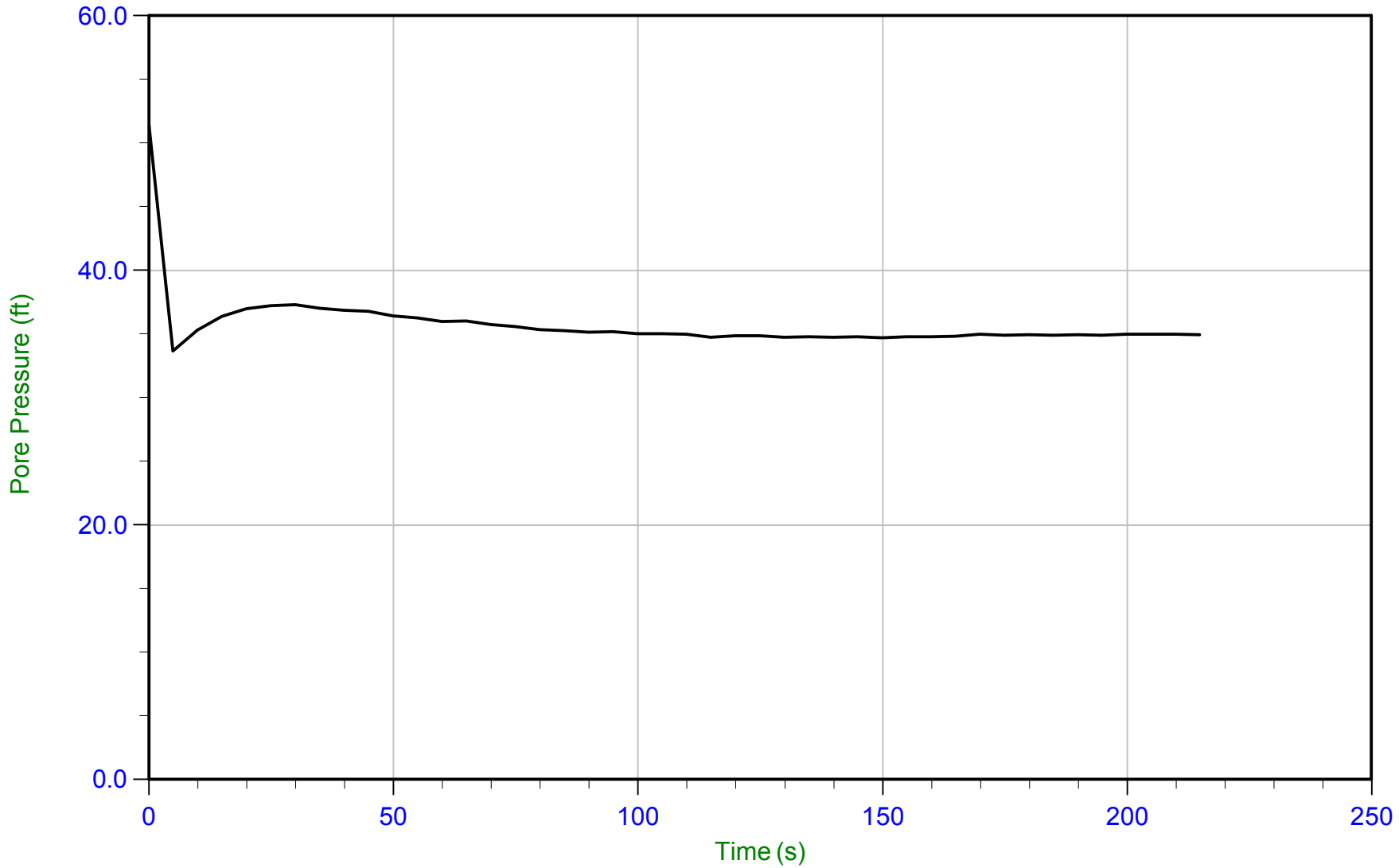
T(50): 342.4 s
Ir: 100
Ch: 2.0 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 13:32
Site: Bay Park STP

Sounding: CPTu-38
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP38.PPD
Depth: 12.150 m / 39.862 ft
Duration: 215.0 s

U Min: 33.7 ft
U Max: 51.4 ft

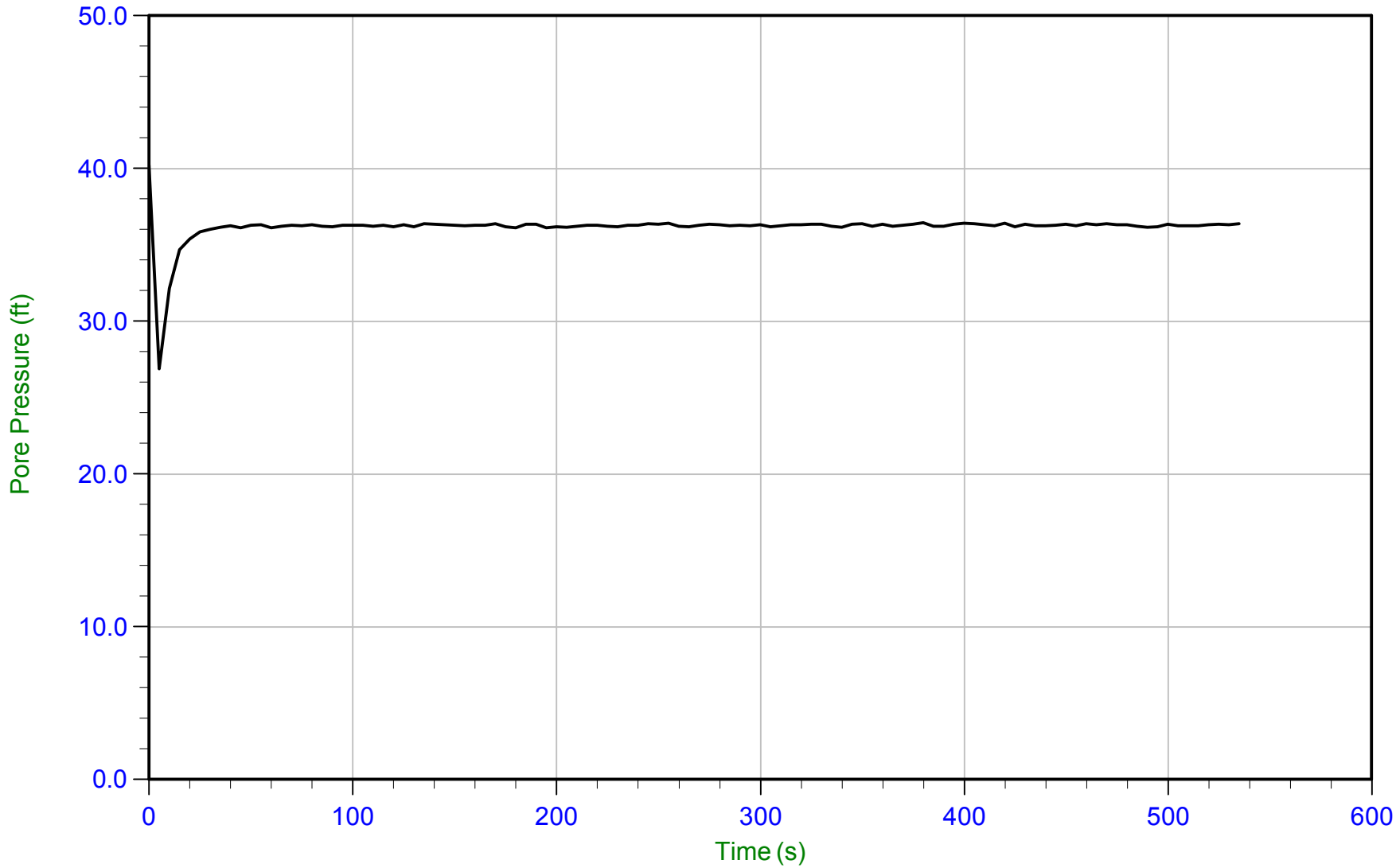
WT: 1.539 m / 5.049 ft
Ueq: 34.8 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/11/2013 13:32
Site: Bay Park STP

Sounding: CPTu-38
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP38.PPD
Depth: 12.200 m / 40.026 ft
Duration: 535.0 s

U Min: 26.9 ft
U Max: 40.2 ft

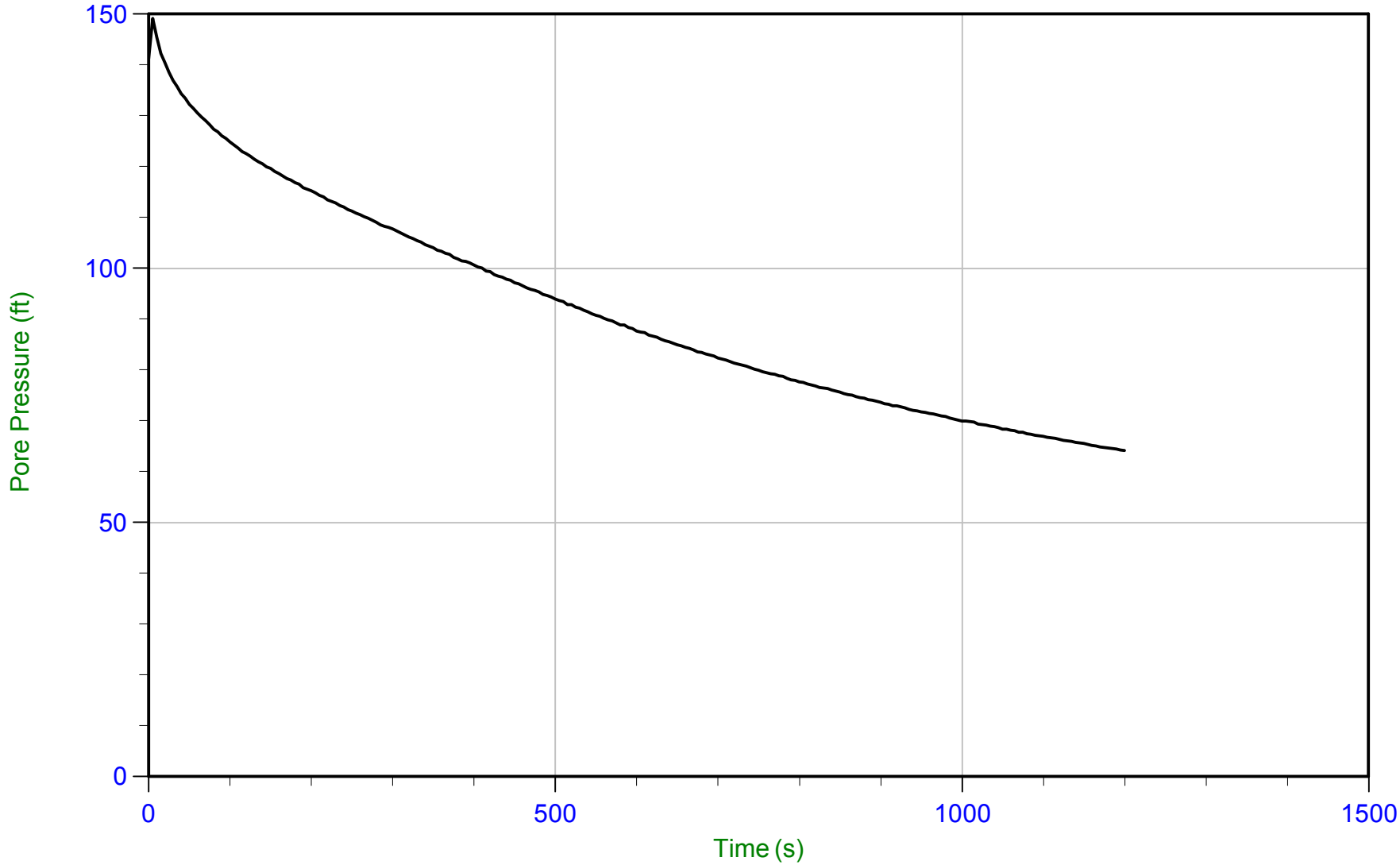
WT: 1.121 m / 3.678 ft
Ueq: 36.3 ft

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/14/2013 08:53
Site: Bay Park STP

Sounding: CPTu-39
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP39.PPD
Depth: 8.400 m / 27.559 ft
Duration: 1200.0 s

U Min: 64.2 ft
U Max: 149.2 ft

WT: 1.189 m / 3.901 ft
Ueq: 23.7 ft
U(50): 86.41 ft

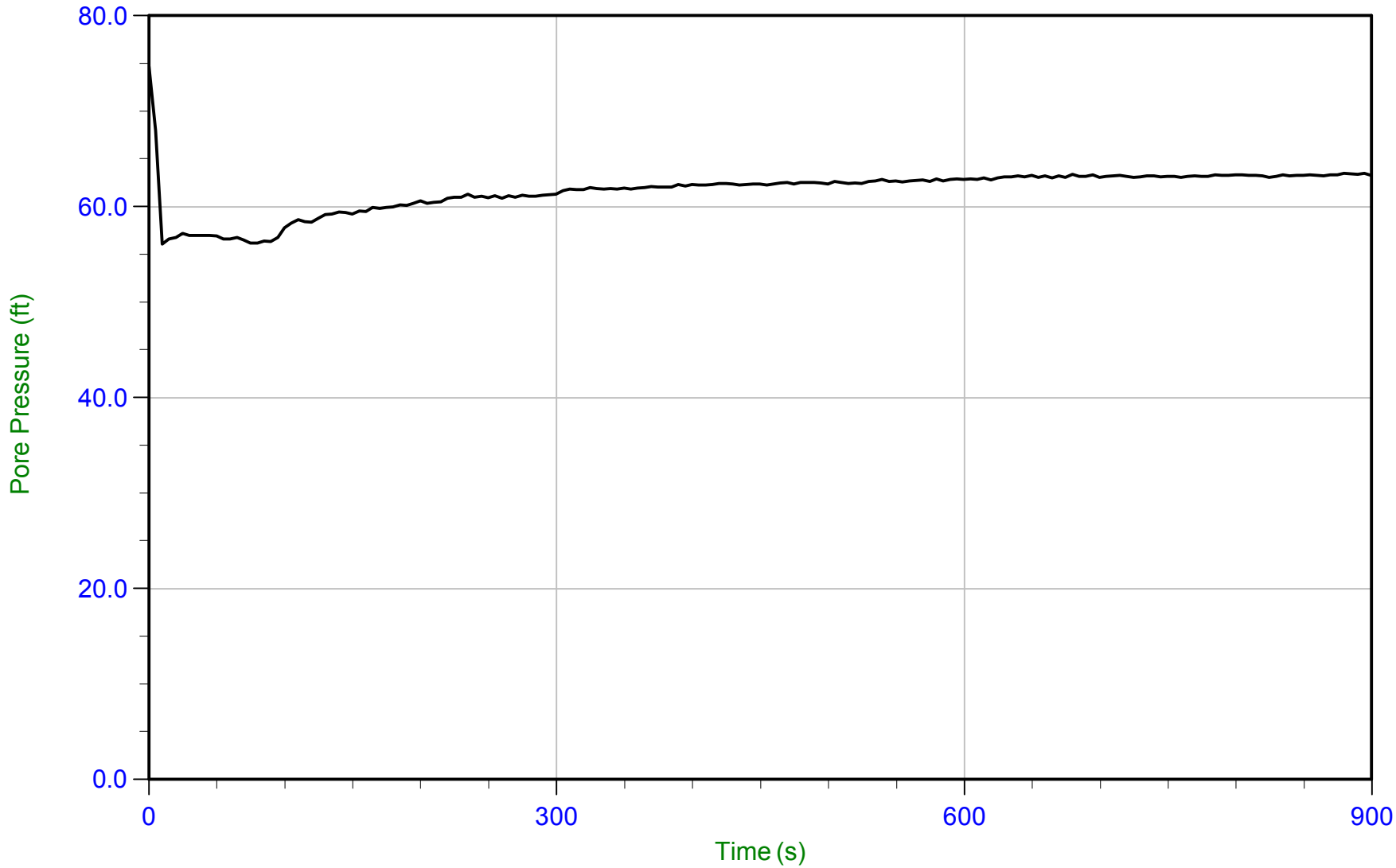
T(50): 620.5 s
Ir: 100
Ch: 1.1 sq cm/min

CONETEC

ARCADIS

Job No: 13-53065
Date: 10/14/2013 10:10
Site: Bay Park STP

Sounding: CPTu-40
Cone: 206:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-53065_CP40.PPD
Depth: 20.650 m / 67.749 ft
Duration: 900.0 s

U Min: 56.1 ft
U Max: 74.7 ft

WT: 1.426 m / 4.678 ft
Ueq: 63.1 ft

Appendix D

Electronic Data Files

The released data contains the following folders:

1. CPT Data - .cor files in ASCII format, and or .xls files.
2. Pore Pressure Dissipation Data - .ppd files in Excel format
3. CPT Plots - .pdf files
4. Data Interpretation - .xls files contain common engineering values

ConeTec Digital File Formats

CPT Data Files (COR Extension)

ConeTec data files are stored in ASCII text files that are readable by almost any text editor. ConeTec CPT data files are named such that the first 3 characters contain the job number, the next two characters are CP followed by two characters indicating the sounding number. The last 8th character position is reserved for the letters a, b, c, d etc to uniquely identify multiple soundings at the same location. The CPT sounding file has the extension COR, and pore pressure dissipation files have the extension PPD or PPF. As an example, for job number 06-127 the first sounding will have file names 127CP01.COR and 127CP01.PPD.

The sounding (COR) file consists of the following components:

1. Two lines of header information
2. Data records
3. End of data marker
4. Units information

Header Lines

Line 1: Columns 1-6 may be blank or may indicate the version number of the recording software
Columns 7-21 contain the sounding Date and Time
Columns 22-36 contain the sounding Operator

Line 2: Columns 1-16 contain the Job Location
Columns 17-31 contain the Cone ID
Columns 32-47 contain the sounding number

Data Records

The data records contain 4 or more columns of data in floating point format. A comma (and spaces) separates each data item:

Column 1: Sounding Depth (meters)
Column 2: Tip (q_c) data uncorrected for pore pressure effects. Recorded in units selected by the operator.
Column 3: Sleeve (f_s) data. Recorded in units selected by the operator
Column 4: Dynamic pore pressure readings. Recorded in units selected by the operator
Column 5: Empty, Resistivity, UVIF or Gamma data

End of Data Marker

After the last line of data there will be a line containing ASCII 26 (CTL-Z) and a newline (carriage return/ line feed) character. This is used to mark the end of data.

Units Information

The last section of the file contains information about the units that were selected for the sounding. A separator bar makes up the first line. The second line contains the type of units used for depth, q_c, f_s and u. The third line contains the conversion values required for ConeTec's software to convert the recorded data to an internal set of base units (bar for q_c, bar for f_s and meters for u).

CPT Dissipation Files (PPx Extension)

CPT Dissipation files have the same naming convention as the CPT sounding files and have the extension PPD, PPF or PPM. PPF (PPM and PPD) files consist of the following components:

1. Two lines of header information
2. Data records

Header Lines (same as COR file):

Line 1: Columns 1-6 may be blank or may indicate the version number of the recording software
Columns 7-21 contain the sounding Date and Time
Columns 22-36 contain the sounding Operator

Line 2: Columns 1-16 contain the Job Location
Columns 17-31 contain the Cone ID
Columns 32-47 contain the sounding number

Data Records

The data records immediately follow the header lines. Each data record can occupy several lines in the file and is a complete record of a dissipation test at a particular depth. Each data record starts with a line containing two values separated by spaces; the first value being an index number (not currently used by the Software) and the second being the dissipation test depth in meters. Following this line are the dissipation pore pressure values stored at 5 second intervals with a maximum of 12 entries per line. The last line of the dissipation record may not contain a full 12 entries. The data record is terminated with an ASCII 30 character (appears as a triangle in some editors).

This sequence is repeated for every dissipation test in the sounding. No marker is used to indicate end of file. Units information is not stored in this file. Users need to check the CPT file for the units that were used.

CPT Basic Interpretations (TBL Extension)

ConeTec's basic CPT interpretation output files are generally delivered in text files with a TBL extension. The root file name is the same as the COR files. A number of calculated geotechnical parameters are presented in these files. The files are stored as ASCII text files that can be viewed using any text editor such as Notepad or Wordpad. The files do not contain any page formatting. These files are not distributed if the enhanced interpretation files are provided.

CPT Enhanced Interpretations (IFI, IFP, XLS Extension)

ConeTec's enhanced CPT interpretation output files are delivered in several formats, each file type containing the exact same information but formatted slightly differently. The files typically have any of the following file extensions:

1. IFI — an importable TAB delimited ASCII text file containing approximately 47 data columns of geotechnical interpretations. The file is designed for easy import to Excel. A companion document describes the techniques used for the interpretations (usually reproduced at the beginning of the Interpretation Appendix). Text editors can be used to view the file contents, however, they may remove the tabs or replace the tabs with spaces upon saving the file destroying the feature that makes them easy to import into Excel.

   Because Excel imports the data as text and the sheet is protected two steps may be necessary to modify the data or use the values in certain Excel functions:

   a) Under Tools (Excel 2000) Select the Protection Option and then Unprotect the sheet
   b) Select the entire sheet, copy and then use Paste Special to paste as values to a second sheet.

   Future versions of our interpretation routine will address these inconveniences.

2. IFP — a printable ASCII text file containing the same 47 columns of geotechnical interpretations as the IFI file. This file type has been formatted as a multi-page document with up to 132 characters per line and up to 68 lines per page. Each page has been separated into multiple sections to accommodate all the data fields. Each physical page has a header section and a page/section number. The file is designed for direct printing to laser printers set into compressed font mode. This output is typically provided in the Interpretation Appendix.

   An abbreviated set of interpretations (containing 36 columns of output) may be generated instead. These files usually have the extensions NLI and NLP. XLS files can be generated from these as well.

3. XLS — an Excel format file that has been generated directly from the corresponding IFI file. IFI and IFP files are not distributed if the XLS files are generated. The XLS files may have been generated from abbreviated NLI interpretation files.

In each case root file name is the same as the COR files.

CPT Interpretations (Excel Format)

ConeTec's latest software (September 2007) outputs CPT interpretations directly to Excel format (XLS extension) without creating intermediate ASCII files. Because of the desires of various clients, there are several different configurations of output parameters in ConeTec's interpretation files. Since the Excel format file must have the XLS extension a suffix is used after the basename of the source CPT data file (COR) to identify the format of the file. The configurations still follow the formats described above and use the same extensions but now as suffixes. To allow for various runs (e.g. using a different water table, or user supplied equilibrium profile, or different methods for a particular parameter) of the same data an additional suffix may be specified by the engineer post processing the data to identify each particular run. This suffix will follow the one used to identify the format of the file.

For example:

If the selected format is ConeTec's TBL configuration and each run is identified by a run number. The resultant files generated for 278CP01.COR would be:

78CP01-TBL-RUN01.XLS
78CP01-TBL-RUN02.XLS
78CP01-TBL-RUN03.XLS

CPT Data in Excel Format

ConeTec can now provide the equivalent of the ASCII COR files in Excel Format. These files will have the same basename as the COR files and an XLS extension.

Pore Pressure Dissipation Data in Excel Format

ConeTec can now provide the equivalent of the ASCII PPD format files in Excel format. These files will contain each dissipation trace that exceeds a minimum duration (selected by the engineer during post-processing) in a particular Excel spreadsheet column. The first column (Column A) will contain the time in seconds and the second column (Column B) will contain the time in minutes. Subsequent columns will contain dissipation trace data. The time columns will extend to the longest trace of the data set.

Detailed header information is provided at the top of the spreadsheet. The test depth in meters and feet, the number of points in the trace and the particular units are identified at the top of each trace column.

The Excel format file names will have the same basename as the original PPD format file followed by the suffix -PPD and then followed by a second suffix that the engineer doing the post processing can specify. Because the engineer can select various types of units for the dissipation data output (which can be different from the units used in the original recording) the secondary suffix is often used to identify the units in the XLS file, however, the original recorded units and the output units are clearly identified within the XLS spreadsheet file.

Appendix Document B
Floodplain Memo - Hydraulic Analysis

Summary of Current Modeling Efforts

Model Setup

The ARCADIS team implemented the proposed Bay Park levee and floodwall ("project") into an extended version of the FEMA Region II SWAN + ADCIRC model. The model was extended based upon the work completed for the New York Special Initiative for Rebuilding and Resiliency (SIRR) model, which used the FEMA Region II model as a basis for its simulations. Model detail was added from Long Beach to regions north of Bay Park, as well as surrounding areas, and then project specific adjustments were made to include the Bay Park Wastewater Treatment Plant and adjacent terrain and neighboring areas. Figures 1a-e illustrates the model topography and the adjustments made for the project.

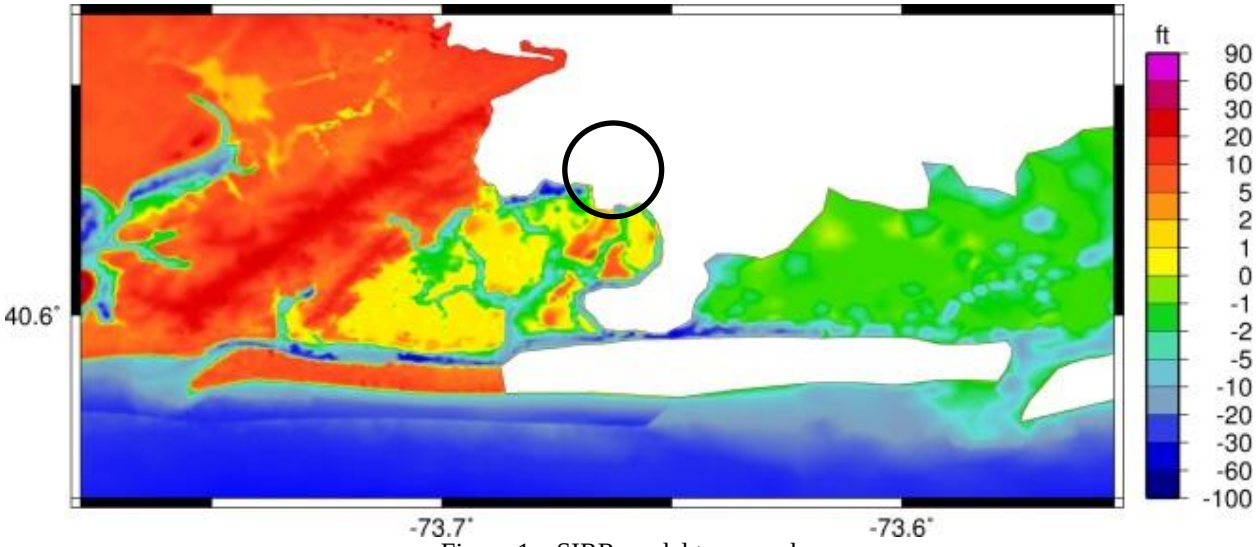


Figure 1a: SIRR model topography

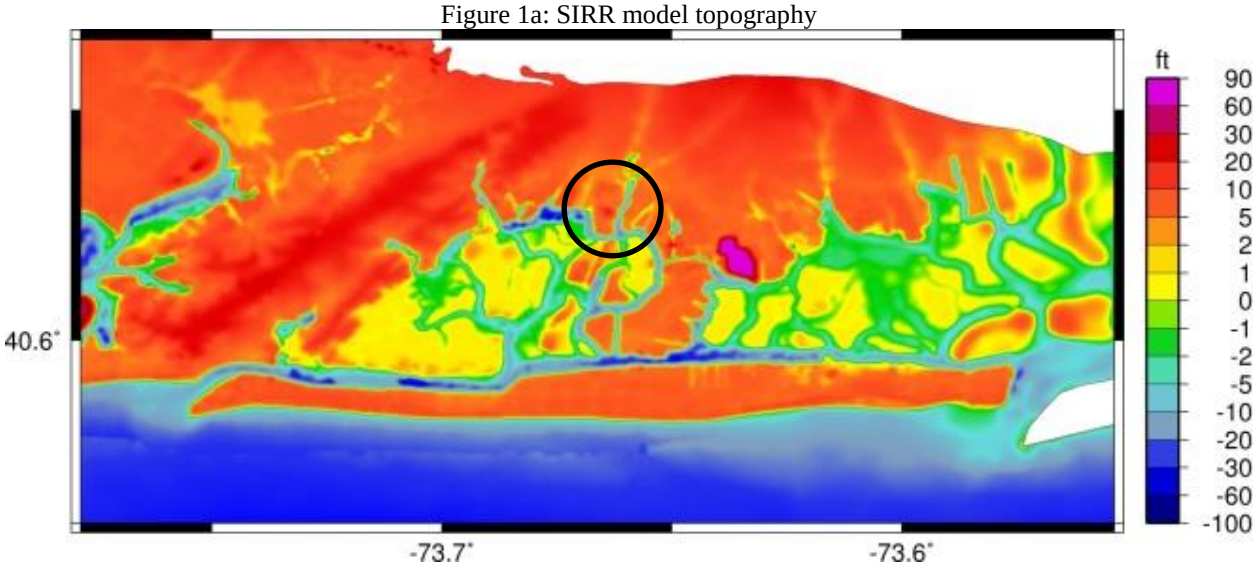


Figure 1b: Bay Park model topography without project

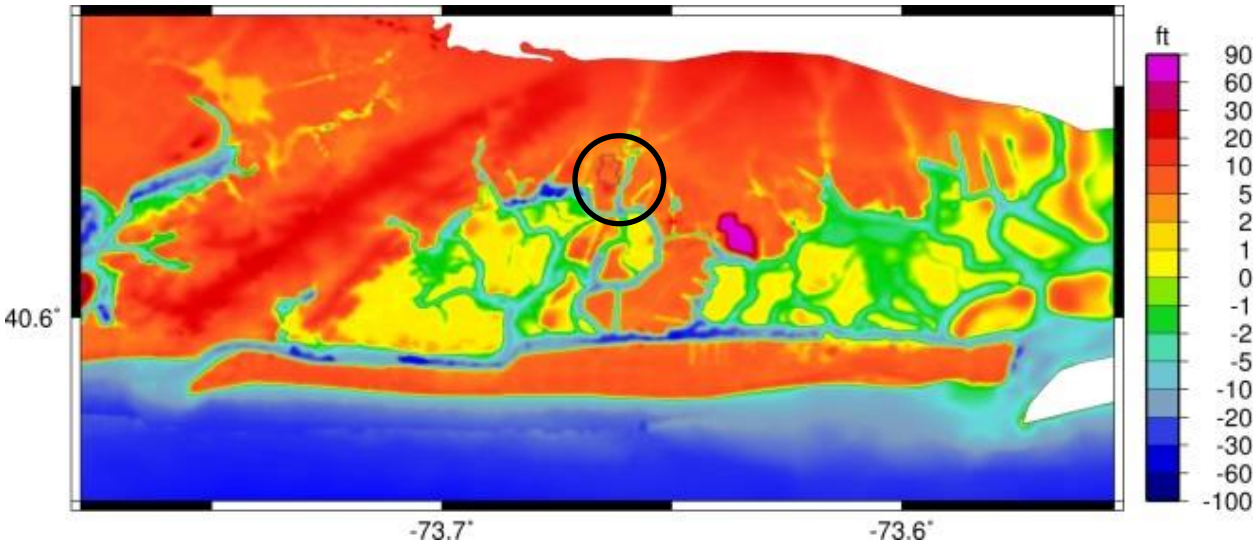


Figure 1c: Bay Park model topography with project

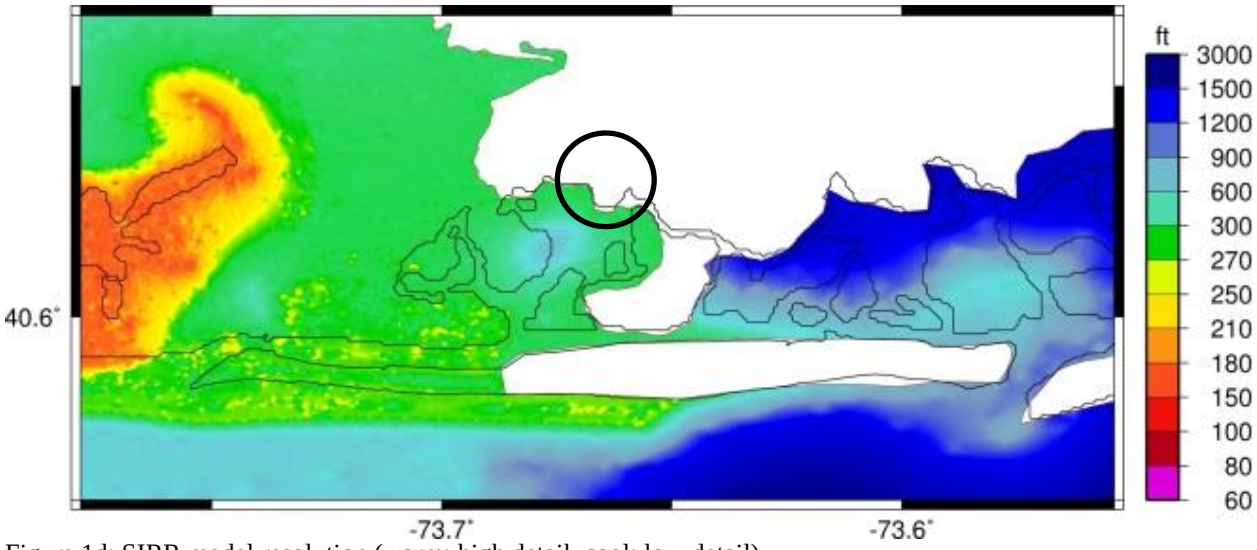


Figure 1d: SIRR model resolution (warm: high detail, cool: low detail)

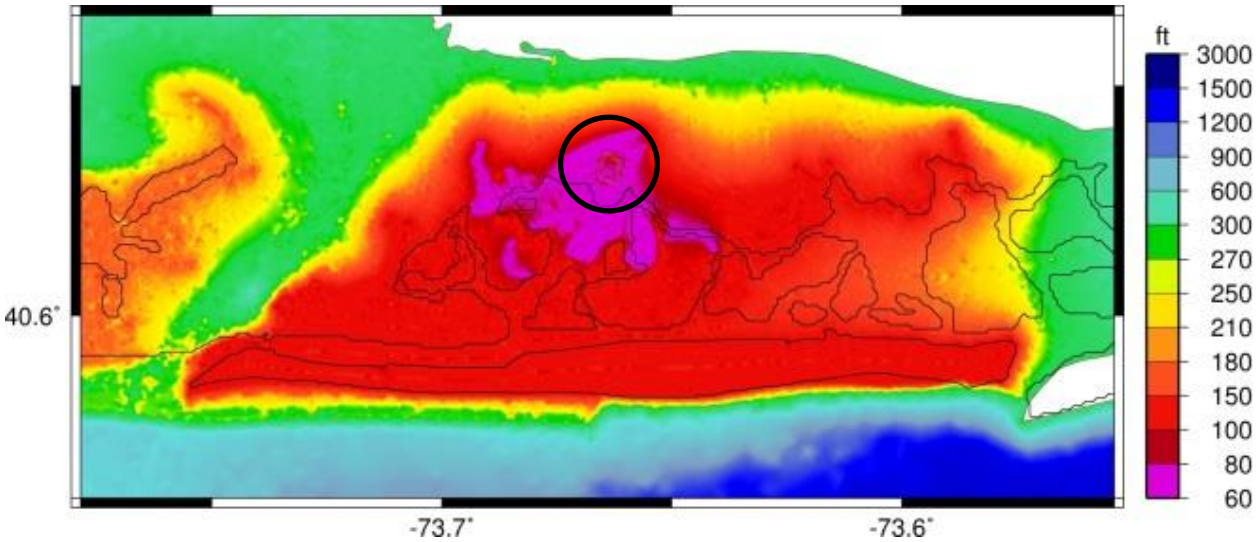


Figure 1e: Bay Park model resolution (warm: high detail, cool: low detail)

The ARCADIS team completed simulations for two storms in the areas from the FEMA Region II suite of tropical and extratropical storms (total of 159 storms distributed across 3 storm tracks for recent FEMA studies for the NYC and NJ FEMA region). As per the SIRR Study, the model began with an initial condition that approximates high tides for the area. As a result, the storms selected have the highest surge elevations in the FEMA Region II study area (11.6 feet and 11.0 feet NAVD88), and thus the greatest impact to the Bay Park Area.[1] The storms were simulated for both with and without the project.

Modeling efforts and results

The primary focus of the modeling efforts was in order to determine if there would be a change in water surface elevation (WSE) throughout the region or any rebound effect (i.e., high water levels in neighboring areas) as a result of the implementation of the project. Results indicated that there would be no noticeable change in WSE elevation throughout the region with the constructed project, as illustrated in Figures 2. There is little, if any, change in the surge conditions because the total storm surge displaced by the project is small relative to the total storm surge that moves inland. The storm surge redistributes over a very large area, thus illustrating no noticeable change in WSE.

[1] In comparison, the storm surge for Hurricane Sandy was 10.2 feet NAVD88, the 100 year surge is 9.6 feet NAVD88 and the 500 year surge is 13.3 feet NAVD88.

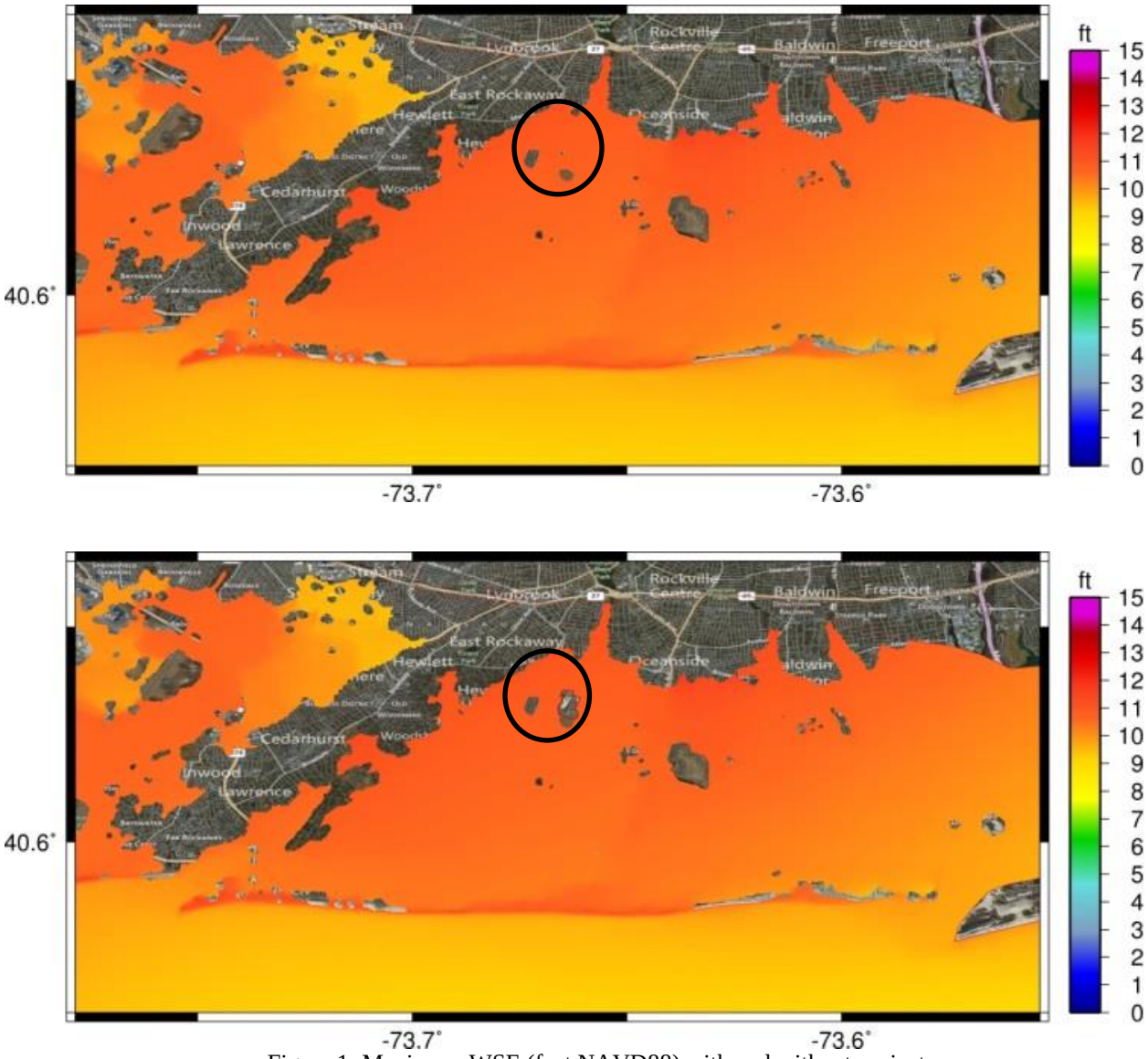


Figure 1: Maximum WSE (feet NAVD88) with and without project

In order to better understand any possible rebound effects, 4 locations ("stations") (Figure 3) were chosen near Bay Park and a hydraulic analysis was completed. At these 4 stations hydrographs for model simulations with and without the project were compared for changes in WSE, as illustrated in Figure 4.

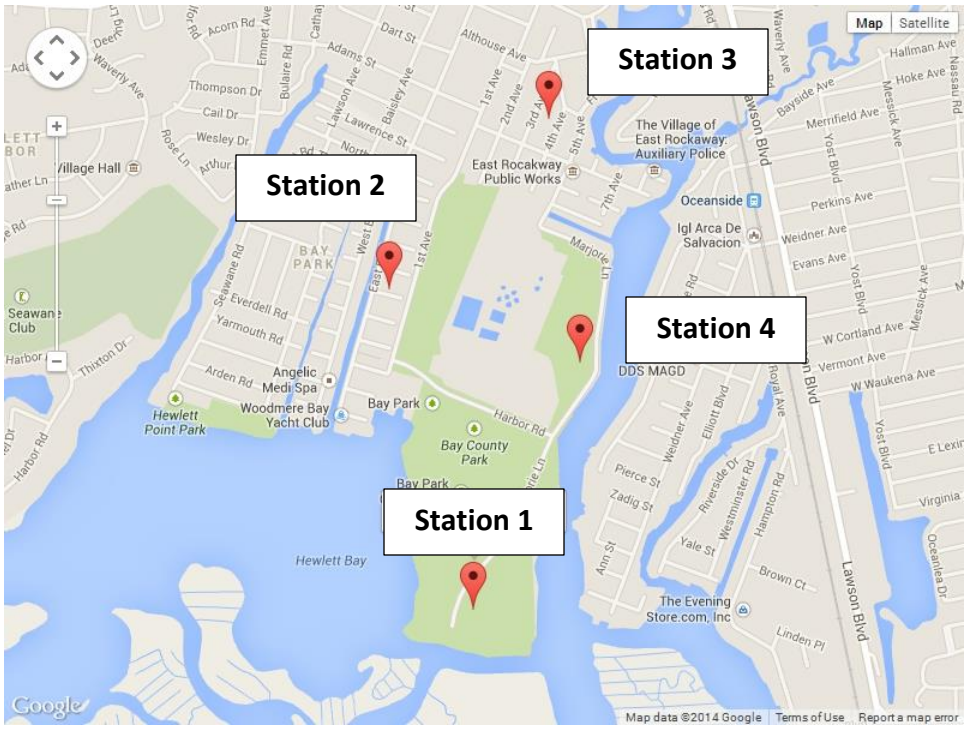


Figure 3: Station Locations near Bay Park

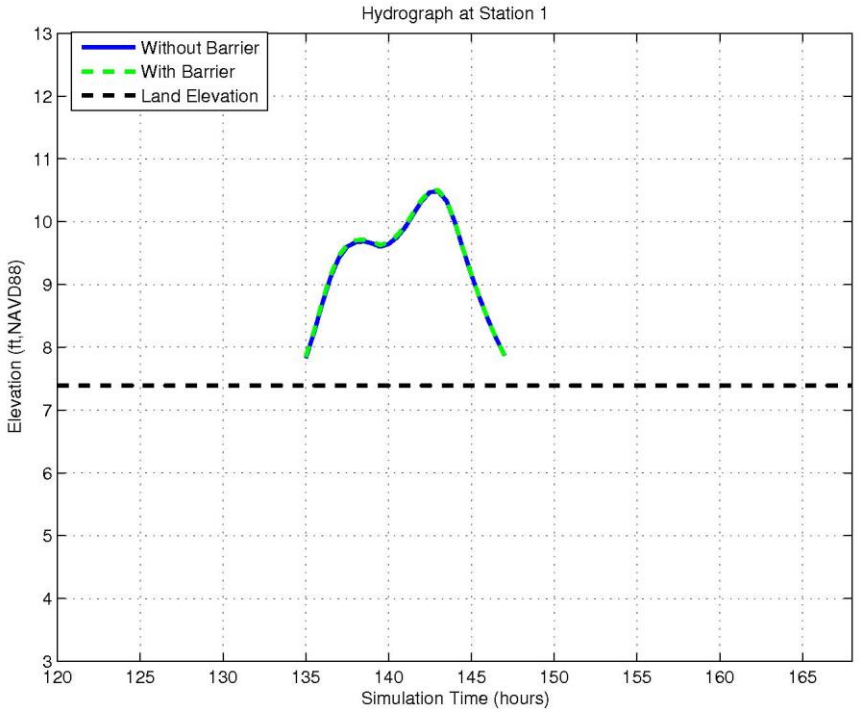


Figure 4: WSE (feet NAVD88) for with and without project at Station location 1

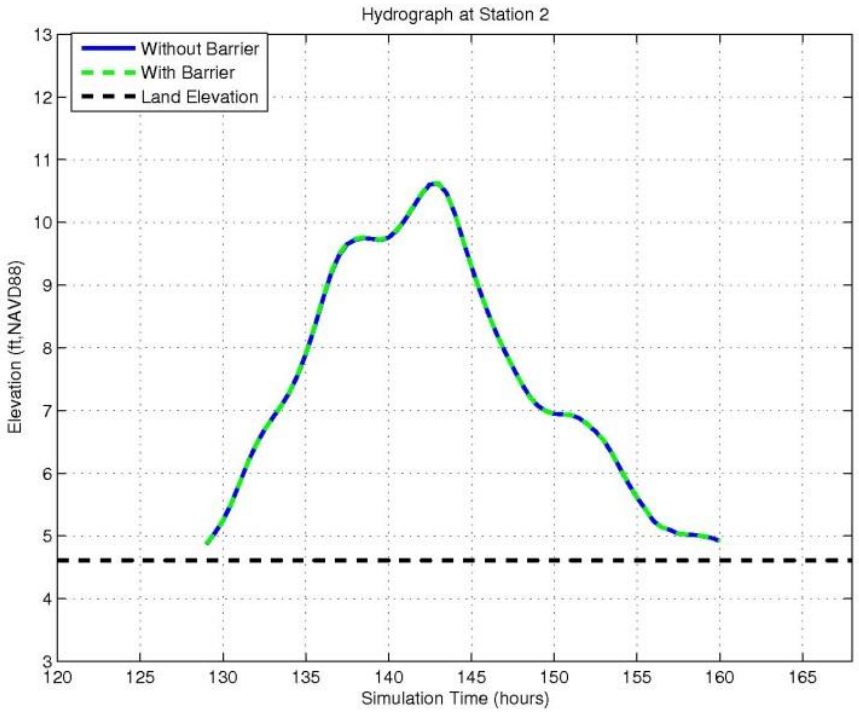


Figure 5: WSE (feet NAVD88) for with and without project at Station location 2

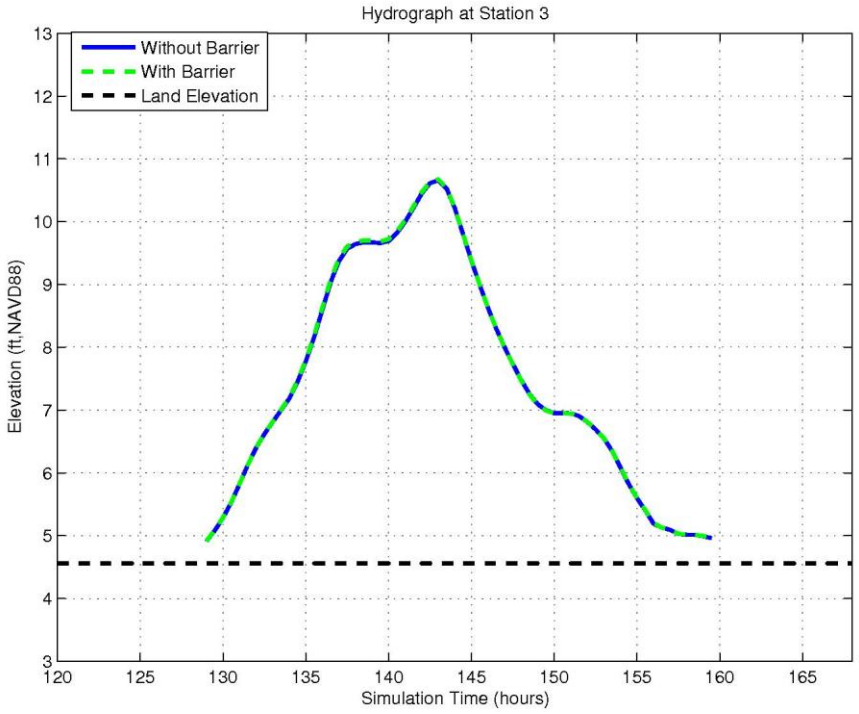


Figure 6: WSE (feet NAVD88) for with and without project at Station location 3

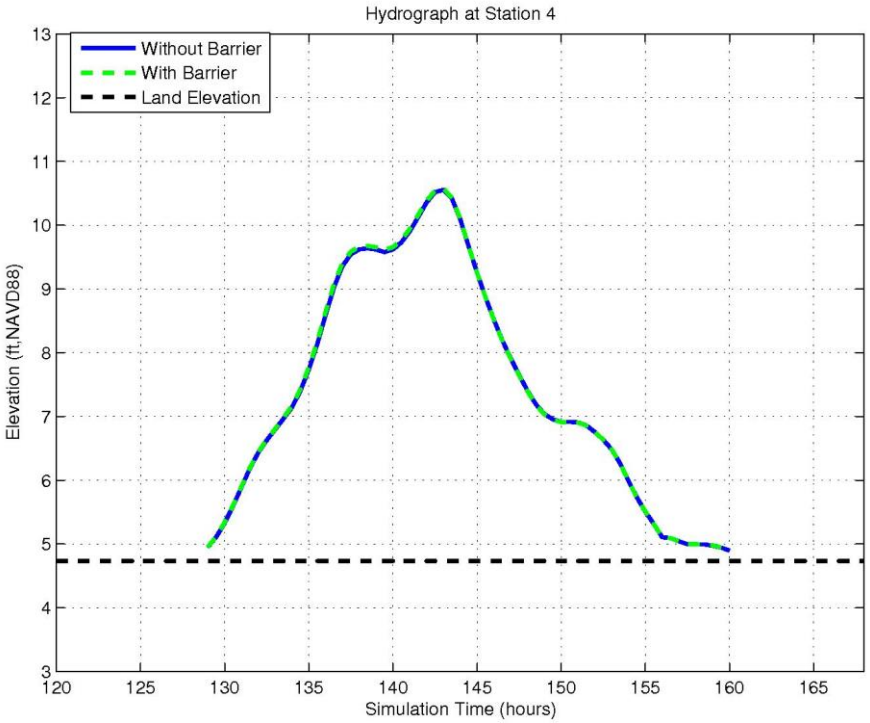


Figure 7: WSE (feet NAVD88) for with and without project at Station location 4

As illustrated in Figures 4-7, the rising limb, peak WSE, and falling limb for the hydrograph with and without the project match, which means that there is no noticeable change in WSE. As stated prior, there is no noticeable change because the total storm surge displaced by the project is small relative to the total storm surge that moves inland. The storm surge redistributes over a very large area.

Floodplain Analysis

The inclusion of the proposed project at the Bay Park Plant could impact the floodplain, which could result in changes to current floodplain maps and Flood Insurance Rate Maps (FIRMs). The modeling that has already been conducted is invaluable for FEMA as it reviews the floodplain as the model builds upon the FEMA Region II SWAN + ADCIRC model and adds higher level of detail and resolution. A near-shore assessment can then be performed using FEMA's Wave Height Analysis for Flood Insurance Studies (WHAFIS) on select transects, and new FIRMs can be generated from these transects.

Appendix Document C
Vibration and Noise Control Specifications

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. The work to be done under this Section includes, but is not limited to, conducting all activities on the project in such a manner that damage is prevented to adjacent pipes, structures, property and work, and such that construction noise, ground vibrations and ground and structure displacements are consistently maintained below the maximum levels specified in this Section.

2. Notifying the ENGINEER prior to conducting any noise and vibration producing construction activity, and conducting appropriate monitoring at nearby structures in accordance with the plan prepared by the CONTRACTOR'S independent specialist and approved by the ENGINEER.

3. The CONTRACTOR'S independent specialist shall provide, install, and set up engineering seismographs and sound level meters adjacent to or on structures, utilities or other potentially affected areas, as appropriate.

4. Protecting vibration and sound level monitoring equipment, and other monitoring equipment that exists or is installed as required by the Contract Documents.

5. Submitting noise and vibration monitoring reports.

6. Resolution of complaints, damage and exceedances of threshold and limit value criteria.

B. Related Sections:

1. Section 02050 Demolitions, Removals, and Modifications

2. Section 02200 Earthwork - General

1.02 REFERENCES

A. All construction noise and vibration control work shall be in accordance with:

1. FTA – Trans Noise and Vibration Impact Assessment

2. ANSI S1.4 Specification for Sound Level Meters

3. **ANSI S1.43 Specification for Integrating-Averaging Sound Level Meters**[1]

[1] **Changed by Addendum No. 1**

4. The State of New York

1.03 JOB CONDITIONS

A. The CONTRACTOR shall engage a qualified, independent specialist to install and monitor engineering seismographs adjacent to or on adjacent structures or utilities, for the purpose of monitoring and ensuring compliance with the noise and vibration specified herein. The CONTRACTOR'S independent specialist may also monitor related geotechnical instrumentation such as observation wells, piezometers and inclinometers.

B. Vibration and sound level monitoring shall be performed by the CONTRACTOR'S independent specialist using personnel experienced in the correct placement and monitoring of engineering seismographs and sound level meters.

C. Vibration and noise monitoring shall be performed continuously during all demolition and construction activities at the site.

1.04 SUBMITTALS

A. Submit qualifications for the independent specialist whose services have been selected by the CONTRACTOR for performing the noise and vibration monitoring work demonstrating at least 5 similar assignments completed successfully during the last 5 years.

B. Before beginning work that may cause noise or vibrations, submit a Construction Noise and Vibration Monitoring and Control Plan including:

1. Instrument specifications and calibrations.

2. Table of expected noise and vibration producing activities including: description of activity, location, and anticipated dates and times of activities.

3. Table of structures, utilities, levees and other noise and/or vibration sensitive receptors (including identification of historic structures and sites) that may be impacted by noise and vibration including: structure description, street address, name and address of OWNER, and names of occupants.

4. Proposed monitoring locations.

5. A Construction Vibration Assessment performed in accordance with the guidance in Chapter 12 of the FTA Transit Noise and Vibration Impact Assessment Manual (**May 2006**[2]) for construction activities.

[2] **Changed by Addendum No. 1**

6. A Construction Noise Assessment performed in accordance with the guidance in Chapter 12 of the FTA Transit Noise and Vibration Impact Assessment Manual (**May 2006**[3]) for construction activities.
7. Preliminary evaluation of structure susceptibility to vibration induced damage.
8. Monitoring program procedure including reporting procedures.
9. Noise and Vibration Mitigation Plan (including damage prevention).
10. Sample Noise and Vibration Data Report.
11. Plan to deal with and resolve complaints.

C. Before beginning work that may cause noise or vibrations, initiate a Construction Noise and Vibration Monitoring and Control Program. The CONTRACTOR shall perform the following actions:

1. Within 2 working days of receipt of each seismograph and noise meter at the site, submit copy of specifications, manual, factory calibration and manufacturer's test equipment certification.
2. Submit background noise and vibration data reports for each building, utility, levee or other sensitive receptor in accordance with Table **02228-B**[4] of this Section.
3. Submit weekly Noise and Vibration Data Reports, within 3 days of the end of each week.
4. Submit Noise and Vibration Data Reports within 1 working day of requests by the ENGINEER in response to complaints by adjacent property owners.

D. Submit pre-condition surveys of potentially impacted properties, at least two weeks before the start of vibration producing activities.

E. Submit post-condition surveys of potentially impacted properties, no later than four weeks after the completion of vibration producing activities.

F. The ENGINEER shall be notified immediately if any noise or vibration readings exceed the threshold or limiting values specified herein.

[3] **Changed by Addendum No. 1**
[4] **Changed by Addendum No. 1**

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Noise Meters: Provide and operate Type 1 or Type 2 sound level meters consistent with ANSI and ASTM requirements for monitoring noise levels from construction activities and equipment:

1. Noise level range: 40 to 120 db, or mid-scale.
2. Metric: Leq, 1-hour average.
3. A-weighted frequency response.
4. Response time: slow setting for continuous or intermittent noise; fast setting for impulsive noise (a momentary sound such as a horn).
5. Windscreen: place factory-supplied windscreen over microphone during all measurement periods.
6. Position: the meter microphone should be positioned at a height of 4 feet above ground level and at least 10 feet away from a reflecting surface (such as a wall). The microphone can be handheld or tripod mounted.
7. Data shall be collected either by manually reading and recording noise levels or by storing and downloading the data remotely depending on the capabilities of the meters used. The date, time, monitoring location and nature of construction activities shall be reported with the data.
8. Field calibration: Noise meters shall be field calibrated before and after each measurement, or at least once per hour, whichever is more frequent using a calibrator specified for use with the meter and the manufacturer’s instructions for calibration.

B. Seismographs: Provide portable seismographs for monitoring the velocities of ground vibrations resulting from construction activities, with the following minimum features:

1. Seismic range: 0.01 to 8 inches per second with an accuracy of 5% and no more than a 3 db roll off at the low frequency end.
2. Flat frequency response: 2 to 200 Hertz.
3. Three-component sensor.
4. Fourth channel for air blast monitoring.
5. Two power sources: Internal rechargeable battery and charger and 115 volts AC. Battery must be capable of supplying power to monitor vibrations continuously for at least 24 hours.
6. Direct writing to printer and to either 3.5-inch magnetic disk or CD.

7. Instruments must be capable of producing strip chart recordings of readings on site within one hour of obtaining the readings. Provide computer software to perform frequency analyses of data obtained on magnetic disks.

8. Continuous mode and histogram mode capabilities for recording vibrations.

9. **Histogram mode must include frequencies of each peak vibration.**[5]

10. Capability of downloading data remotely via telephone modem.

C. Factory calibration: Provide factory calibrations for each instrument. Perform seismograph calibrations using a shake table and a reference sensor traceable to the national institute of standards and technology. Perform noise meter calibrations using a calibrator traceable to the national institute of standards and technology. Recalibrate the instruments at least once every 12 months.

PART 3 EXECUTION

3.01 GENERAL

A. The CONTRACTOR shall prepare a Construction Noise and Vibration Monitoring and Control Plan. Preconstruction components of the Plan shall be completed prior to construction and submitted to the ENGINEER for approval at least two weeks prior to the onset of construction.

1. All noise and vibration monitoring instruments shall be installed in the presence of the ENGINEER. The CONTRACTOR shall allow access to the work area at all times for the purpose of observing instrumentation and obtaining data. The CONTRACTOR shall determine the elevation and location of all instrumentation a minimum of one week prior to excavation or demolition.

2. The CONTRACTOR shall be responsible for any and all damage incurred to utilities during instrumentation installation.

3. The CONTRACTOR shall protect and maintain instrumentation until the end of the Contract. Any instrumentation damaged or otherwise rendered non-functional shall be repaired or replaced with a new installation within five working days at no additional cost to the OWNER. Repair or replacement work shall conform to the requirements specified herein for the respective type of geotechnical instrumentation.

4. The CONTRACTOR shall provide and maintain well-delineated protection devices at the surface on all instrumentation.

[5] **Changed by Addendum No. 1**

5. The CONTRACTOR shall monitor construction activity noise for two one-hour periods each week when CONTRACTOR's activities are most noise intensive. The Monitoring Plan shall identify the one-hour daytime and one-hour nighttime monitoring periods to be used throughout the monitoring program.

6. The CONTRACTOR shall monitor construction activity noise at actual or representative sensitive receptor locations. Sensitive receptor locations that are adjacent to one another and would be expected to experience equivalent exposure to construction noise may be clustered by selecting a representative monitoring location. The monitoring locations shall have an unobstructed line of sight to the construction site. The selected monitoring locations and rationale for selection shall be identified in the Monitoring Plan and shall be used throughout the monitoring program.

7. When no construction activity occurs within 1000 feet of a monitoring location during any single week, no monitoring needs to be performed at that location during that week. The CONTRACTOR shall provide an explanation of that circumstance in the Noise and Vibration Data Report for that week.

B. The CONTRACTOR shall execute a Construction Noise and Vibration Monitoring and Control Program. The Program shall be performed consistent with the requirements and conditions specified in the Construction Noise and Vibration Monitoring and Control Plan.

C. The CONTRACTOR shall use every effort and every means possible to minimize noise caused by its operations. The CONTRACTOR shall provide working machinery and equipment designed to operate with the least possible noise, including the use of shields, soundproof housings, enclosures, or other physical barriers to restrict the transmission of noise. Compressors shall be equipped with silencers or mufflers on intake and exhaust lines. Wherever practicable, electricity shall be used for power to reduce noise. Where required by agencies having jurisdiction, certain noise producing work may have to be performed during other than regular working hours or at specified periods only.

D. If the need arises, the CONTRACTOR will be required to assist the ENGINEER and the OWNER with community coordination activities relative to public noise exposure.

3.02 GENERAL NOISE LEVEL RESTRICTIONS

A. CONTRACTOR shall comply with local noise ordinances.

B. As part of the Construction Noise and Vibration Monitoring and Control Plan, the CONTRACTOR shall prepare a Construction Noise Assessment in accordance with the guidance in Chapter 12 of the FTA Transit Noise and

Vibration Impact Assessment Manual for construction activities. The CONTRACTOR must determine the potential for construction noise impacts on noise sensitive receptors, develop a mitigation plan to prevent impacts to the maximum extent practicable, and develop a Monitoring Plan.

C. CONTRACTOR assumes all responsibility and liability for any noise impacts on sensitive receptors.

D. Ambient noise measurements will be taken and mitigation measures identified and utilized to ensure compliance with local noise ordinances.

E. Noise monitoring shall not be conducted during precipitation events or in winds greater than 12 miles per hour.

F. If a Maximum Acceptable Construction Noise Level is reached:

1. Immediately notify the ENGINEER.
2. Meet with the ENGINEER to discuss response action(s).
3. Submit an up-to-date report within 24 hours for all instruments for which the Maximum Level was reached, as well as on any other instruments requested by the ENGINEER.

G. In addition to the above steps, if a Maximum Acceptable Construction Noise Level is reached, initiate the following response actions, as directed by the ENGINEER.

1. Increase instrument monitoring frequencies.
2. Install and monitor additional instruments.
3. Modify construction procedures.
4. Implement Mitigation Measures specified in Article 3.**09**[6] of this Section or as identified in the Construction Noise and Vibration Monitoring and Control Plan, so that the Maximum Level is not exceeded.

H. If the Maximum Level is reached, the CONTRACTOR may be directed to suspend activities in the affected area with the exception of those actions necessary to avoid exceeding the Maximum Level.

I. If complaints about noise are received, the CONTRACTOR shall promptly conduct additional monitoring at additional times, locations and frequencies, as directed by ENGINEER, and immediately inform ENGINEER of the results of such monitoring, at no additional cost to the OWNER.

[6] **Changed by Addendum No. 1**

3.03 SPECIFIC NOISE LEVEL RESTRICTIONS

A. Noise levels at the construction site limits shall not exceed values provided in local ordinances.

B. The CONTRACTOR shall ensure that appropriate measures will be in place during construction to protect the sensitive receptors from noise impacts to the maximum extent practicable. These measures shall be identified within the Noise and Vibration Mitigation Plan.

3.04 GROUND VIBRATION LIMITS

A. As part of the Construction Noise and Vibration Monitoring and Control Plan, the CONTRACTOR shall prepare a Construction Vibration Assessment in accordance with the guidance in Chapter 12 of the FTA Transit Noise and Vibration Impact Assessment Manual for construction activities. The CONTRACTOR must determine the potential for construction vibration impacts on vibration sensitive receptors, develop a mitigation plan to prevent impacts to the maximum extent practicable, and monitor construction activity vibration as needed.

B. CONTRACTOR assumes all responsibility and liability for any vibration damage to surrounding buildings and structures as a result of the CONTRACTOR's activities if deemed the result of the fault of the CONTRACTOR.

C. Table 02228-A, located after "End of Section" designation, indicates Threshold and Limiting Values for seismographs. These values are defined collectively as Response Values. The actions associated with these Response Values are defined. Response Values are subject to adjustment by the ENGINEER as indicated by prevailing conditions or circumstances.

D. If a Threshold Value is reached:

1. Immediately notify the ENGINEER.

2. Meet with the ENGINEER to discuss response action(s).

3. Submit an up to date report within 24 hours for all instruments for which the Threshold Value was reached, as well as on any other instruments requested by the ENGINEER. Continue to submit daily reports until all instrument readings fall below the specified Threshold Values, or unless otherwise directed by the ENGINEER.

E. In addition to the above steps, if a Threshold Value is reached, initiate the following response actions, as directed by the ENGINEER.

1. Increase instrument monitoring frequencies.

2. Install and monitor additional instruments.

3. Modify construction procedures.

4. Implement Mitigation Measures as specified in Contract Documents and this Section or as identified in the approved Construction Noise and Vibration Monitoring and Control Plan, so that the Limiting Value is not exceeded.

F. If a Limiting Value is reached:

1. If limiting values of vibration are exceeded, all work by the CONTRACTOR in the vicinity of the exceedance shall stop until a meeting takes place between the CONTRACTOR and the ENGINEER to assess the cause of the exceedance.

2. Immediately notify the ENGINEER.

3. Meet with the ENGINEER to discuss response action(s).

4. Submit an up to date report within 24 hours for all instruments for which the Limiting Value was reached, as well as on any other instruments requested by the ENGINEER. Continue to submit daily reports until all instrument readings fall below the specified Threshold Values, or unless otherwise directed by the ENGINEER.

5. A submittal shall be prepared and submitted to the ENGINEER indicating what activity caused the excedance and what steps the CONTRACTOR will take to prevent further exceedances of the limits. No work in the vicinity of the exceedance shall be restarted until the submittal is reviewed and approved by the ENGINEER.

G. Implement Mitigation Measures as specified in Contract Documents or as identified in the approved Construction Noise and Vibration Monitoring and Control Plan, so that the Limiting Value is not exceeded.

H. If complaints about noise or vibrations are received, the CONTRACTOR shall promptly conduct additional monitoring at additional times, locations and frequencies, as directed by ENGINEER, and immediately inform ENGINEER of the results of such monitoring, at no additional cost to OWNER.

3.05 GROUND BORNE NOISE AND VIBRATION LEVEL RESTRICTIONS

A. The CONTRACTOR shall ensure that appropriate measures will be in place during construction to protect the sensitive receptors and historic structures from damage and foundation cracking to the maximum extent practicable. These measures shall be identified within the approved Construction Noise and Vibration Mitigation Plan.

3.06 SEISMOGRAPH INSTALLATON

A. Install seismographs in accordance with Manufacturer’s installation instructions.

B. Firmly mount seismographs on the surface slab of concrete or asphalt, firmly set them in undisturbed soil, or rigidly attach them to the structure of buildings.

3.07 PROTECTION OF INSTRUMENTS

A. Protect all instruments and appurtenant fixtures, leads, connections, and other components of instrumentation systems from damage due to construction operations, weather, traffic, and vandalism.

B. If an instrument is damaged, repair or replace the damaged instrument at no additional cost to the OWNER, including damage resulting from CONTRACTOR. CONTRACTOR's actions to instruments installed by others. The ENGINEER will be the sole judge of whether repair or replacement is required. The ENGINEER may impose a work stoppage in the vicinity of the damaged instrument until it is again operational, at no additional cost to the OWNER.

3.08 DATA COLLECTION

A. Comply with the schedule in Table 02228-2B, located after "'End of Section"' designation.

3.09 MITIGATION MEASURES

A. As part of the Construction Noise and Vibration Monitoring and Control Plan, the CONTRACTOR shall prepare a Noise and Vibration Mitigation Plan. The Plan shall identify potential noise and vibration impacts during construction activities, and the measures the CONTRACTOR will use to minimize those impacts.

B. Measures to minimize construction noise and vibration impacts must be evaluated for effectiveness by the CONTRACTOR. Such measures may include, but are not limited to:

1. Minimize the use of other loud construction equipment during nighttime hours.

2. Sequence operations, combining noisy events to occur at the same time on order to reduce the total length of the noise generating activity, and avoid nighttime construction.

3. Use alternative construction methods such as: drill pile instead of impact pile driving, using quieted equipment, and alternative demolition techniques.

4. Use shields, impervious fences or other physical barriers to inhibit the transmission of noise.

5. Use sound retardant housings or enclosures around noise producing equipment.

6. Use effective intake and exhaust mufflers on internal combustion engines and compressors.
7. Use electric instead of diesel powered equipment.
8. Use covered hoppers, storage bins, and chutes with sound deadening material.
9. Use hydraulic tools instead of pneumatic impact tools.
10. Minimize use of air or gasoline driven saws.
11. Conduct truck loading, unloading, and hauling operations so that noise and vibration are minimized.
12. Place operation limitations on machines and trucks.
13. Site stationary equipment to minimize noise and vibration impact on the community.
14. Plan noisier operations during times of highest ambient noise levels.
15. Keep noise levels relatively uniform, avoid peaks and impulse noises.
16. Turn off idling equipment.
17. Phase in startup and shutdown of equipment.

3.10 NOISE AND VIBRATION COMPLAINT RESOLUTION

A. As part of the Construction Noise and Vibration Monitoring and Control Plan, the CONTRACTOR shall prepare and implement a plan for responding to and resolving noise and vibration complaints that may arise during construction activities.

3.11 SCHEDULES

A. Schedules, listed below, following the "End of Section" designation, are part of this Specification Section:

1. Table 02228-A, Response Values
2. Table 02228-B, Monitoring Schedule

END OF SECTION

TABLE 02228-A, RESPONSE VALUES

INSTRUMENT	THRESHOLD VALUE	LIMITING VALUE
Seismographs at buildings: Continuous or Steady State Vibration (see Note 1)	Peak Particle Velocity: 0.3 in/sec for frequencies less than 30 Hz 0.4 in/sec for frequencies greater than 60 Hz	Peak Particle Velocity: 0.5 in/sec for frequencies less than 30 Hz 0.8 in/sec for frequencies greater than 60 Hz
Seismographs at buildings: Transient or Impact Vibration (see Note 2)	Peak Particle Velocity: 0.75 in/sec for frequencies less than 60 Hz 1 in/sec for frequencies greater than 90 Hz	Peak Particle Velocity: 1.5 in/sec for frequencies less than 60 Hz 2 in/sec for frequencies greater than 90 Hz
Special Response Values for Instruments at Historic Buildings	One-half the velocities listed above	One-half the velocities listed above
Special Response Values for Instruments at Buried Pipeline Utilities	Peak Particle Velocity = 2 in/sec	Peak Particle Velocity = 3 in/sec
Special Response Values for Instruments at Levees	Peak Particle Velocity = 1.5 in/sec	Peak Particle Velocity = 2 in/sec

Notes:

1. Response Values for Continuous or Steady State Vibrations apply to vibrations such as vibratory pile drivers, jack hammers, reciprocating pavement breakers, compactors, large pumps and compressors, bulldozers, trucks, cranes, and other large machinery. Use linear interpolation for frequencies between 30 Hz and 60 Hz.
2. Response Values for Transient or Impact Vibrations apply to vibrations such as blasting, drop chisels, clam shell buckets, impact pile drivers, wrecking balls, building demolition, gravity drop ground compactors and gravity drop pavement breakers. Use linear interpolation for frequencies between 60 Hz and 90 Hz.

TABLE 02228-B, MONITORING SCHEDULE

INSTRUMENT	SCHEDULE
Noise meters	Obtain noise measurements during the designated one-hour daytime monitoring period, in the Leq metric, and the designated one-hour nighttime monitoring period one week before construction begins at the selected noise monitoring locations to establish background noise levels. Obtain, obtain noise measurements during the designated one-hour daytime monitoring period, in the Leq metric, and the designated one-hour nighttime monitoring period each week during construction activities at the selected noise monitoring locations. Submit data reports weekly.
Seismographs	Continuously, in histogram mode (5 minute intervals), for one week before construction begins, to obtain background vibration levels. At the start of vibration-inducing construction activities, determine peak particle velocity and corresponding frequencies produced by single hammer blows or blasts or other vibration-producing activities to establish the maximum energy which can be used without surpassing acceptable vibration levels in nearby structures. Perform separate tests for each building. Continuously in histogram mode (5 minute intervals) during vibration-producing construction activities within 300 feet of seismograph location. Submit reports weekly.

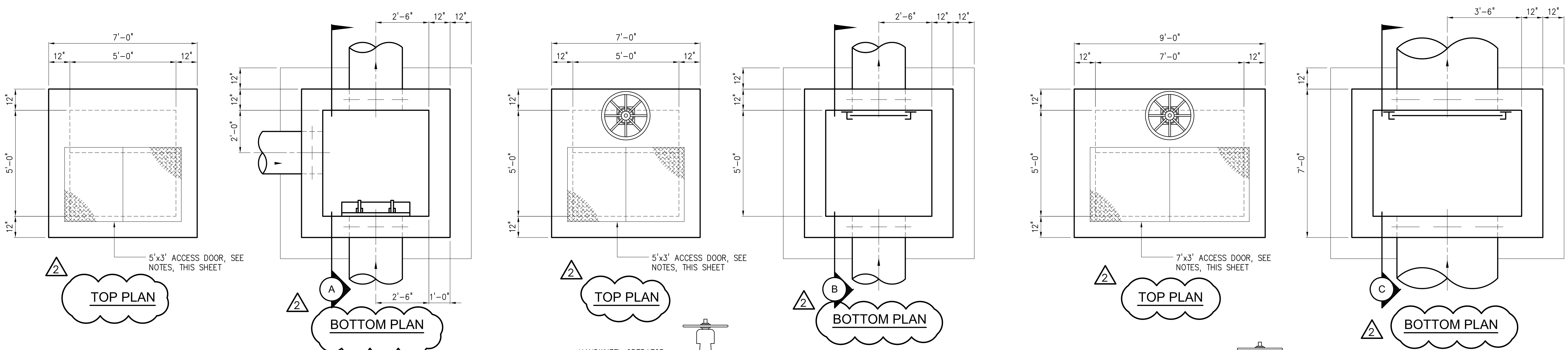
NO TEXT ON PAGE

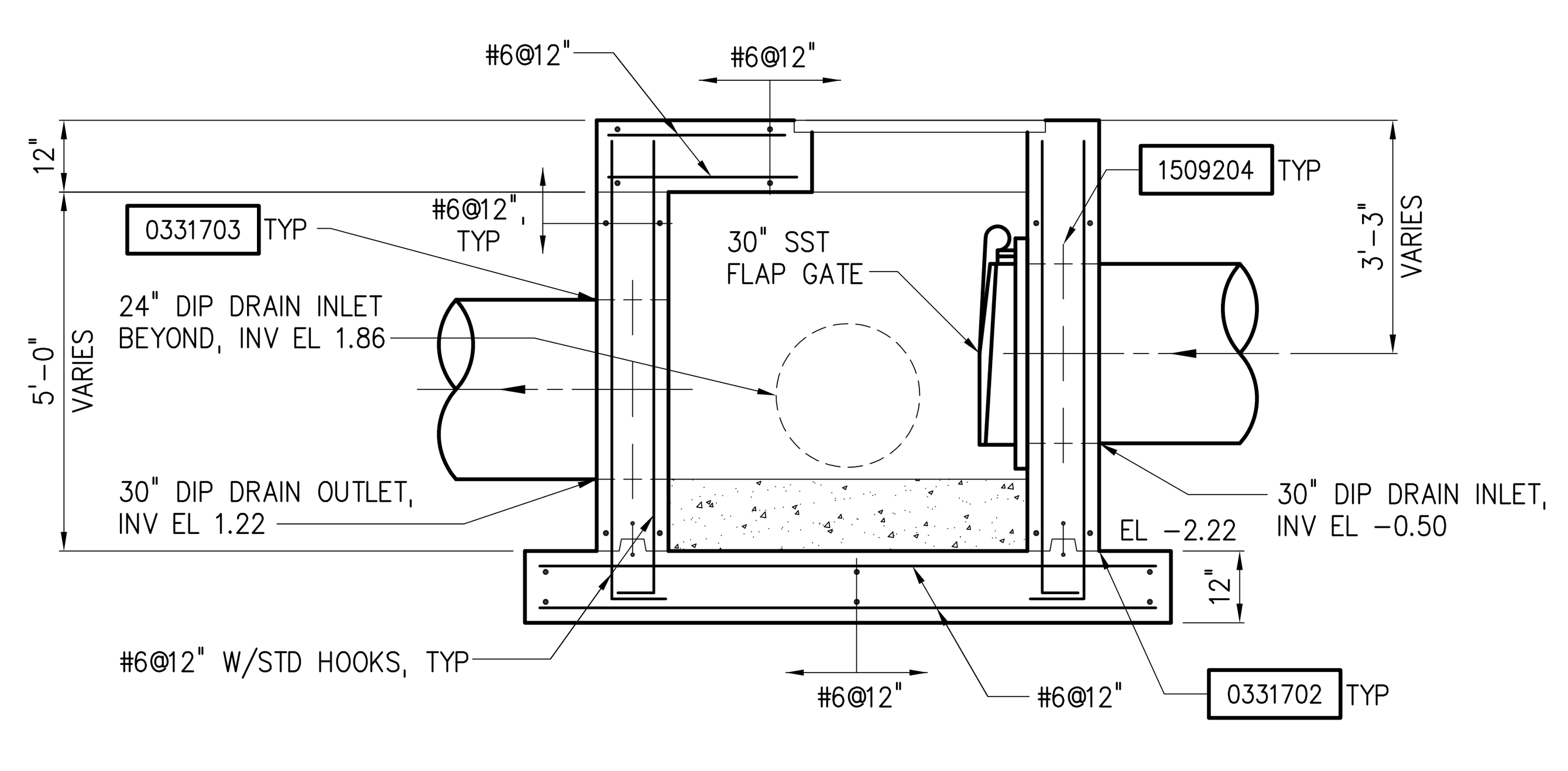
Appendix Document D
Drainage Plans
from SEQR Document

DOCUMENT F

ACCESS DOOR NOTES:

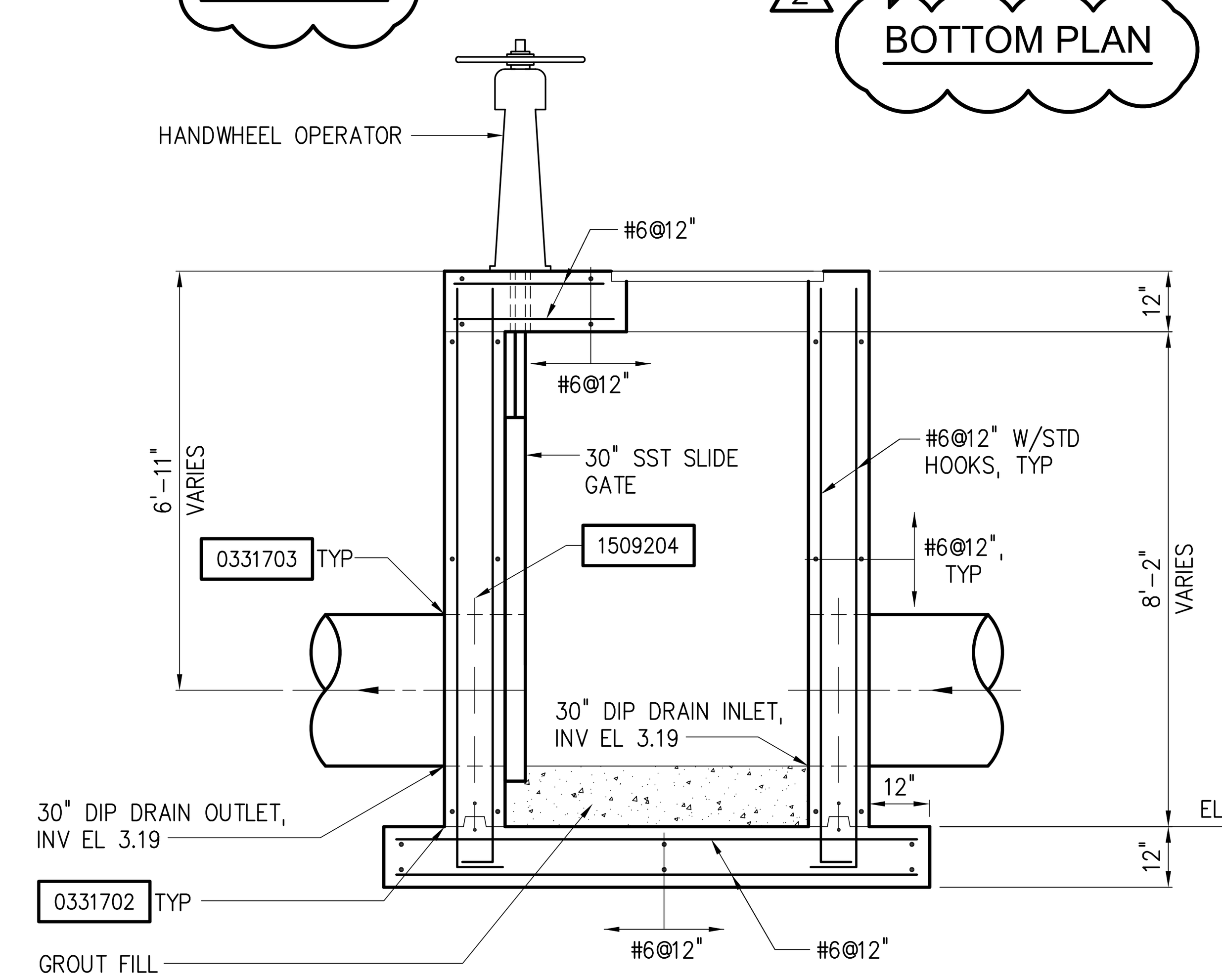
1. DOOR OPENING SIZES, NUMBER AND DIRECTION OF SWING OF DOOR LEAVES SHALL BE AS SHOWN ON THE DRAWINGS. THE DRAWINGS SHALL INDICATE THE CLEAR OPENING DIMENSIONS.
2. ALL DOORS SHALL BE ALUMINUM UNLESS OTHERWISE NOTED.
3. DOORS SHALL BE DESIGNED FOR FLUSH MOUNTING AND FOR EASY OPENING FROM BOTH INSIDE AND OUTSIDE.
4. ALL DOORS SHALL BE PROVIDED WITH AN AUTOMATIC HOLD-OPEN ARM WITH RELEASE HANDLE.
5. DOUBLE LEAF DOORS SHALL BE PROVIDED WITH SAFETY BARS TO GO ACROSS THE OPEN SIDES OF THE DOOR, WHEN IN THE OPEN POSITION. BRACKETS SHALL BE PROVIDED ON THE UNDERSIDE OF THE DOORS TO HOLD THE SAFETY BARS WHEN NOT IN USE.
6. ALL HARDWARE, INCLUDING BUT NOT LIMITED TO, ALL PARTS OF THE LATCH AND LIFTING MECHANISM ASSEMBLIES, HOLD OPEN ARMS AND GUIDES, BRACKETS, HINGES, SPRINGS, PINS, AND FASTENERS SHALL BE STAINLESS STEEL.
7. ALL DOORS SHALL BE WATERTIGHT WITH A CONTINUOUS GASKET.
8. DOOR FRAMES SHALL BE EXTRUDED AND EQUIPPED WITH A 1-1/2 INCH MINIMUM DRAIN PIPE LOCATED BY THE MANUFACTURER. THE DRAIN PIPE SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL EXTEND TO THE NEAREST POINT OF DISCHARGE ACCEPTABLE TO THE ENGINEER.
9. DOOR LEAVES SHALL BE 1/4 INCH, MINIMUM, DIAMOND PATTERN PLATE WITH AN APPROVED RAISED PATTERN, NON-SKID SURFACE. PLATE SHALL BE STIFFENED AS REQUIRED TO MAINTAIN ALLOWABLE STRESS AND DEFLECTION REQUIREMENTS. STIFFENERS SHALL CONSIST OF ANGLES OR BARS WELDED TO THE BOTTOM OF PLATE.
10. DOORS SHALL BE DESIGNED FOR H-20 TRAFFIC LOADING LIVE LOAD MINIMUM, UNLESS NOTED OTHERWISE.
11. ALL DOORS SHALL HAVE AN ENCLOSED COMPRESSION SPRING ASSIST AND OPEN TO 90 DEGREES.
12. DOORS SHALL BE "JDAL-HD" BY THE BILCO COMPANY, TYPE "H2C" BY HALLIDAY PRODUCTS, INC., OR TYPE "THD" BY U.S.F. FABRICATION INC.





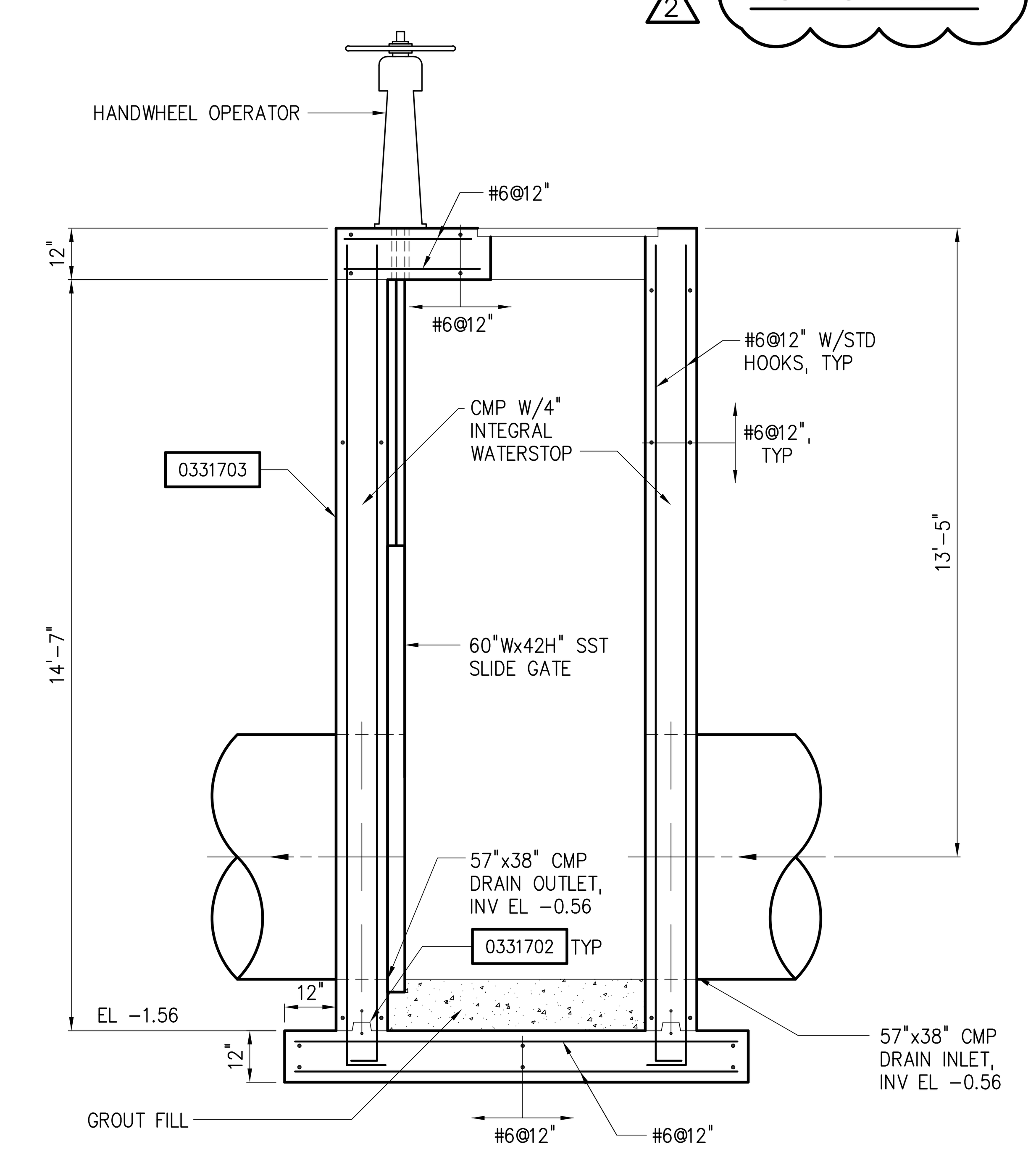
SECTION A
SCALE: 3/8"=1'-0"

30" FLAP GATE STRUCTURE (S-08) DETAIL



SECTION B
SCALE: 3/8"=1'-0"

30" SLIDE GATE STRUCTURE (S-09) DETAIL



SECTION C
SCALE: 3/8"=1'-0"

57"x38" CMP SLIDE GATE STRUCTURE (S-14) DETAIL

WARNING

IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

HAZEN AND SAWYER
Environmental Engineers & Scientists

LEGAL ENTITY: MALCOLM PIRNIE, INC.

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NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

NO.	DATE	ISSUED FOR	BY
1	2/14/14	ADDENDUM 1	BRC
2	2/24/14	ADDENDUM 2	JC

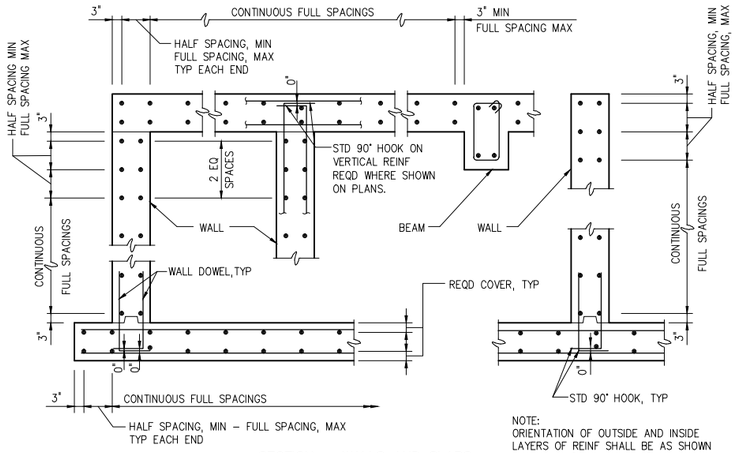
DATE: JANUARY 2014
PROJECT NO.: H&S 90500-000
FILE NAME: D-101
DESIGNED BY: JCE
DRAWN BY: BRC
CHECKED BY: JCE

SHEET TITLE

PROPOSED DRAINAGE STRUCTURES DETAILS

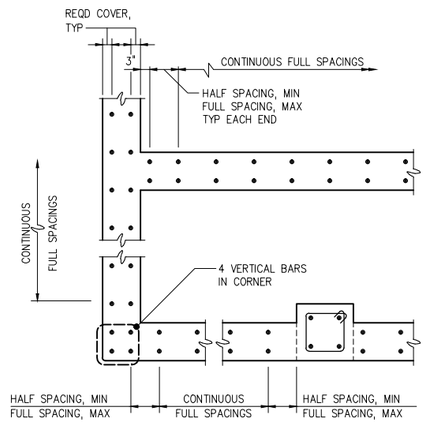
SCALE: 3/8"=1'-0"

D-101 1



SECTION – WALLS AND SLABS

NOTE:
ORIENTATION OF OUTSIDE AND INSIDE LAYERS OF REINF SHALL BE AS SHOWN ON PLANS. "FULL SPACING" IS BAR SPACING CALLED OUT ON PLANS.



PLAN – WALLS

TYPICAL BAR PLACEMENT
0331704

NOTES:

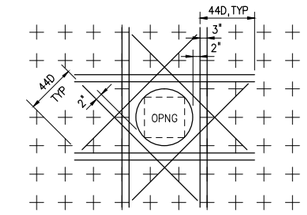
1 THIS DETAIL APPLIES FOR OPENINGS 8"ø AND LARGER. FOR SMALLER OPENINGS, BEND BARS OR ADJUST SPACING OF REINFORCEMENT TO AVOID OPENING.

2 PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENING. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS EXCEPT WHERE NOTED OTHERWISE.

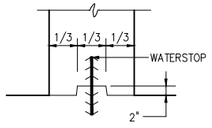
3 PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING WITH SIZE EQUAL TO MAIN REINFORCEMENT, TYPICAL EACH FACE.

4 WHERE INVERT OF OPENING IN WALL IS LESS THAN 44 BAR DIAMETERS FROM TOP OF SLAB, EXTRA REINFORCEMENT ON EACH SIDE SHALL INCLUDE DOWELS EMBEDDED INTO SLAB WITH STANDARD 90 DEGREE HOOKS TO SPLICE WITH EXTRA VERTICAL REINFORCEMENT. DOWELS SHALL ALSO STILL BE PROVIDED BELOW OPENING.

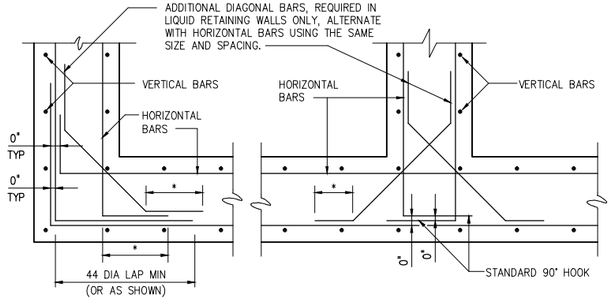
5 WHERE INVERT OF OPENING IN WALL OR SLAB IS CLOSER THAN 44 BAR DIAMETERS TO EDGE OF SLAB OR BOTTOM OF WALL, EXTRA DIAGONAL BARS MAY BE TERMINATED TWO INCHES FROM EDGE OF SLAB OR BOTTOM OF WALL. DOWELS DO NOT HAVE TO BE PROVIDED TO SPLICE WITH DIAGONAL BARS.



TYPICAL REINF AT OPENINGS
0331703

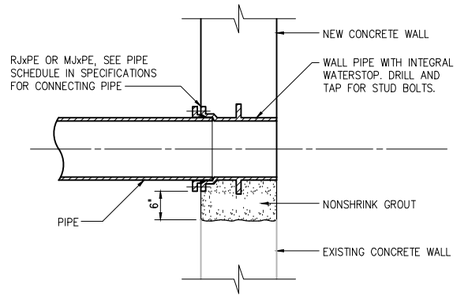


TYPICAL KEYWAY
0331702



CORNER * = STD 90° HOOK LENGTH INTERSECTION

TYPICAL WALL REINFORCING
0331700



1509204

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PLOT DATE: 2/13/2014 11:03 AM BY: MJOHNOW

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NASSAU COUNTY DPW

BAY PARK
FLOOD PROTECTION

NO.	DATE	ISSUED FOR	BY
1	2/14/14	ADDENDUM 1	BRC

DATE: JANUARY 2014
PROJECT NO.: H&S 90500-000
FILE NAME: D-102
DESIGNED BY: JCE
DRAWN BY: BRC
CHECKED BY: JCE

SHEET TITLE

PROPOSED DRAINAGE STRUCTURES DETAILS

SCALE: AS SHOWN

D-102 1

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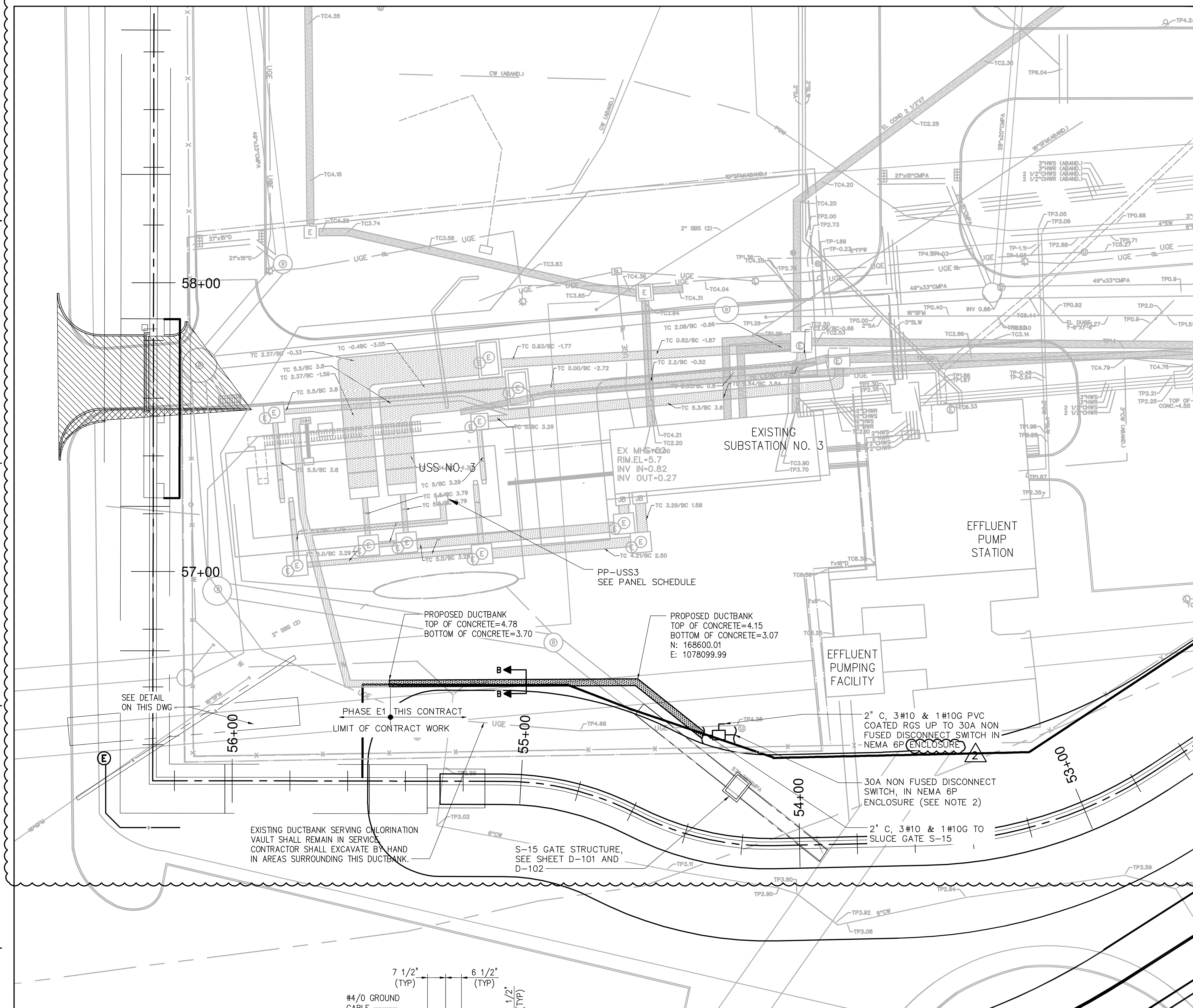
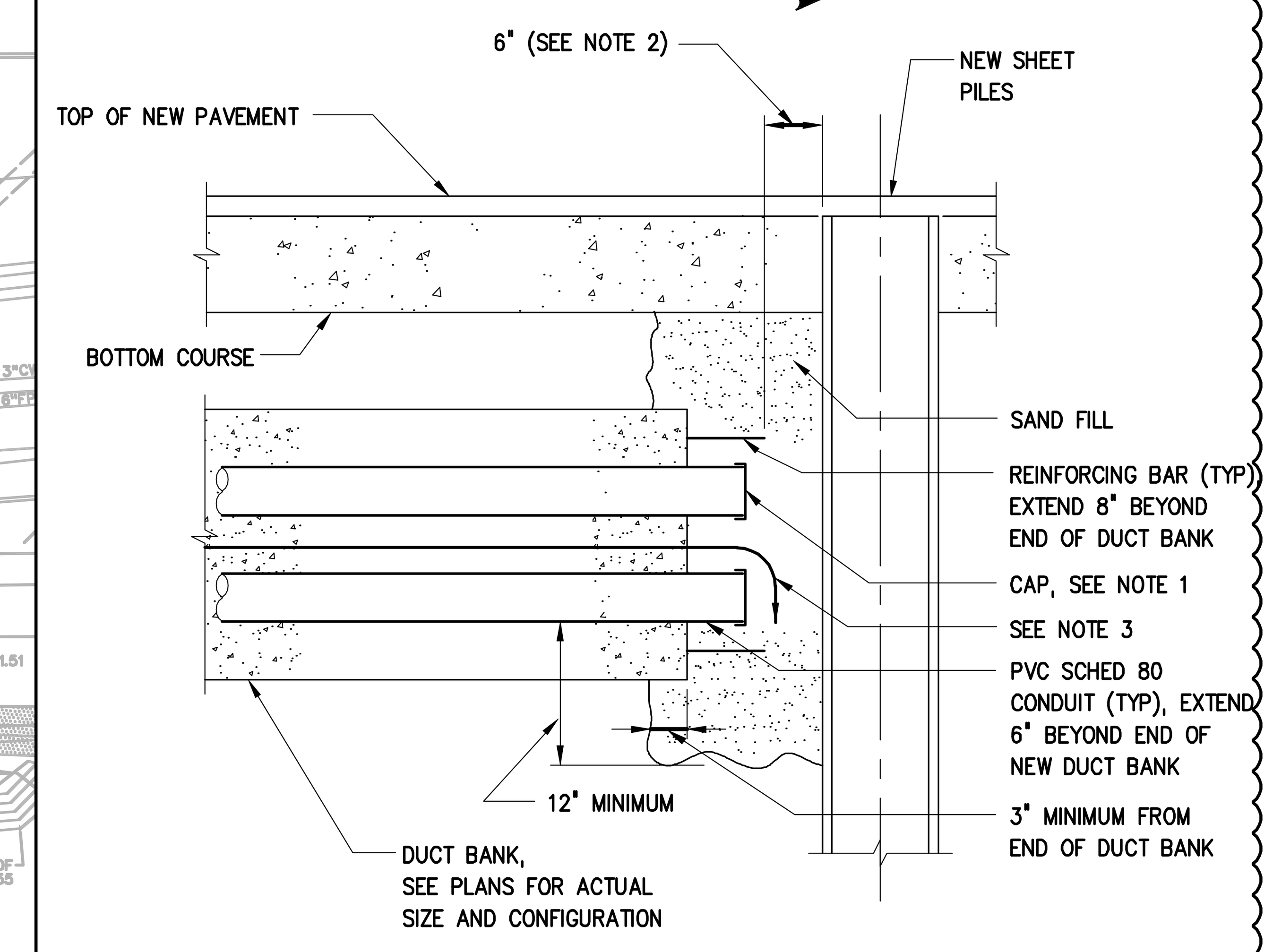


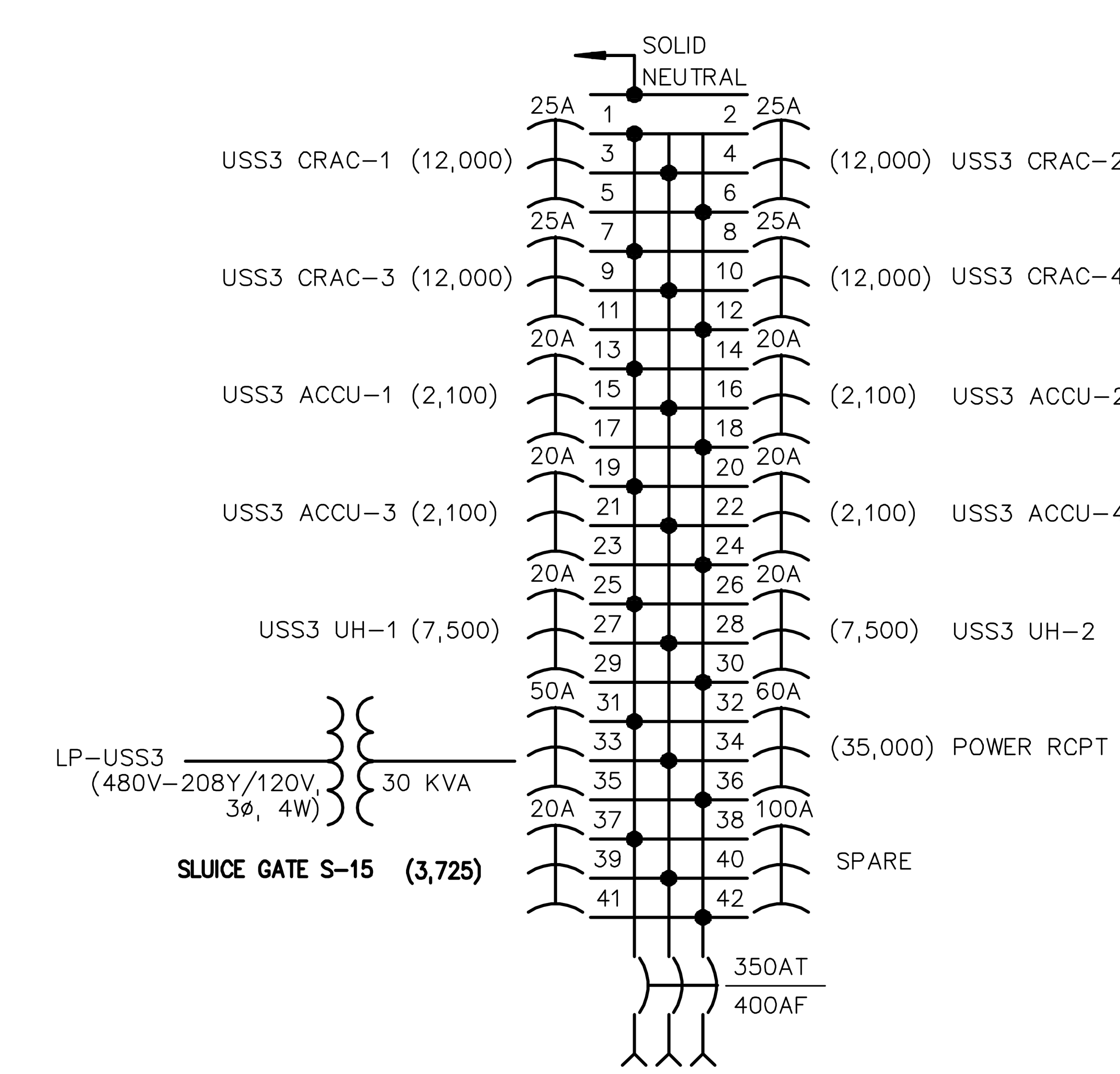


DUCT BANK TERMINATION IN SOIL DETAIL

NOT TO SCALE

NOTES:

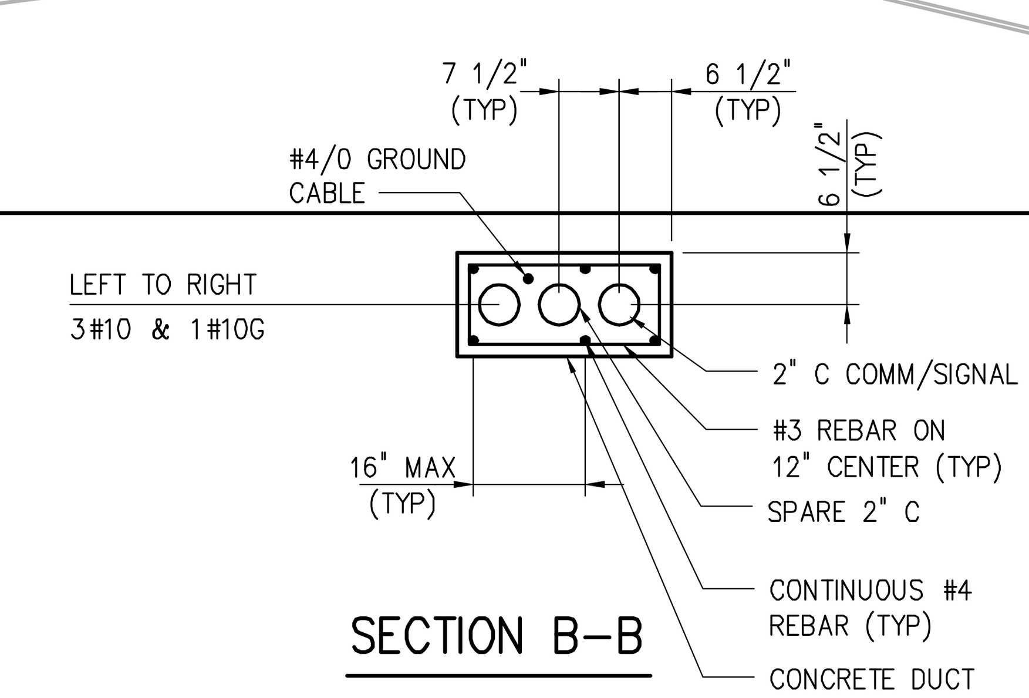
1. DRILL A 5/8" HOLE THROUGH END CAP NEAR THE CONDUIT INVERT ELEVATION TO ALLOW DRAINAGE. WRAP CAP WITH GEOSYNTHETIC FABRIC SIZED TO ALLOW DRAINAGE AND KEEP CONDUIT FREE OF SAND.
2. TO NEAREST REINFORCING BAR.
3. #4/0 DUCT BANK GROUND CABLE, CONNECT CABLE FROM EACH DUCT BANK TOGETHER



	LOAD-WATTS						
	AN	BN	CN	AB	BC	CA	3PHASE
SUB TOT							140,125
TOTAL							

EXISTING PANEL PP-USS 3

480V, 3PH, 60HZ, 3 WIRE



SECTION B-B

NTS

NOTES:
1. 30A NON FUSED DISCONNECT SWITCH TO ACTUATOR. SIZE ENCLOSURE PER NEC.
2. CONTRACTOR SHALL AVOID INTERFERENCE WITH EXISTING PIPING AND DUCTBANKS BETWEEN POWER PANEL AND SLUICE GATE

1"=20'-0"

20 10 0 20'

SEALS

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NASSAU COUNTY DPW

BAY PARK
FLOOD PROTECTION

NO.	DATE	ISSUED FOR	BY
1	2/14/14	ADDENDUM 1	BRC
2	2/24/14	ADDENDUM 2	BRC

DATE: JANUARY 2014
PROJECT NO.: H&S 90500-000
FILE NAME: D-201
DESIGNED BY: RC
DRAWN BY: GC
CHECKED BY: VT

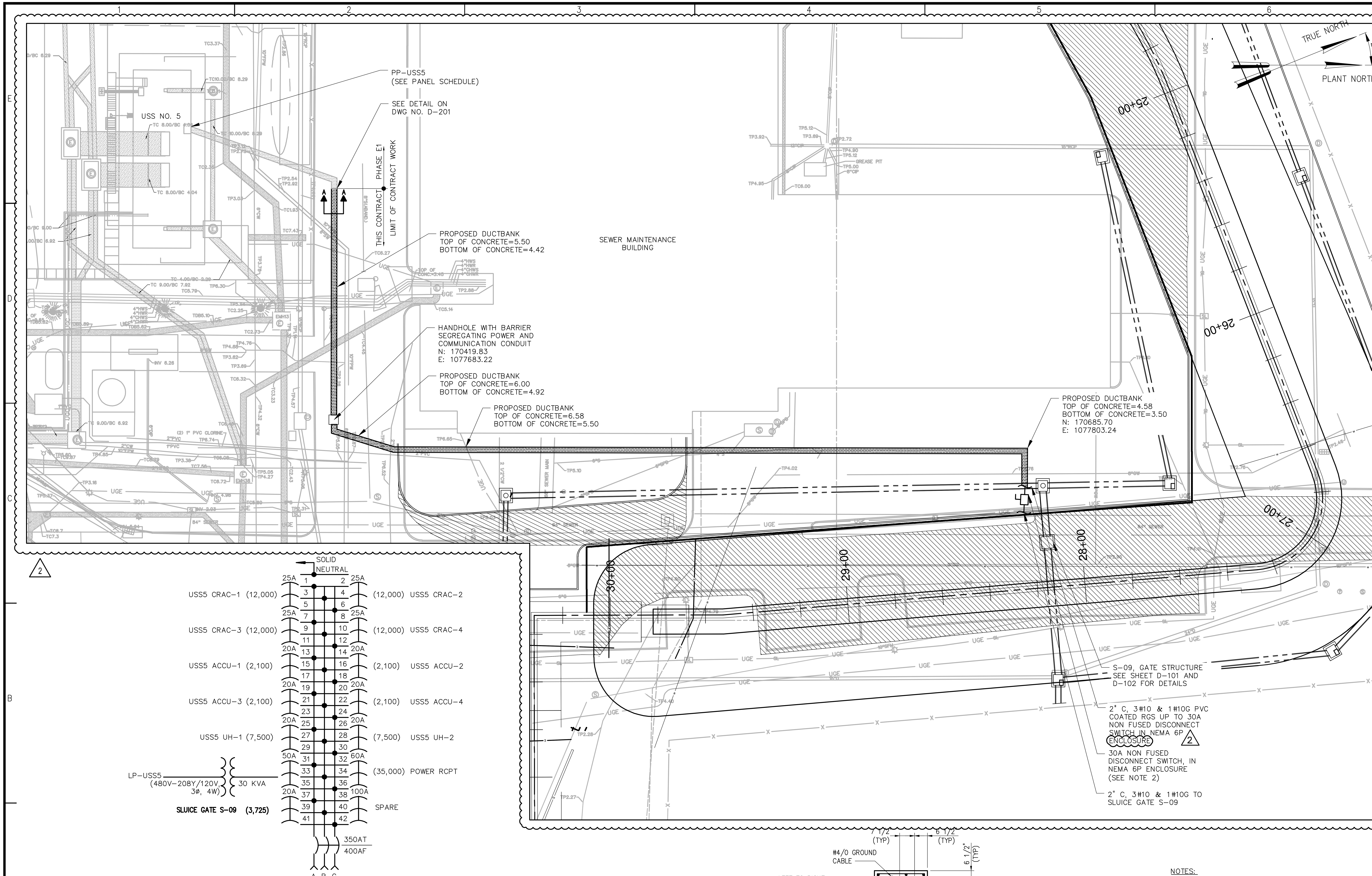
SHEET TITLE

ELECTRICAL

SLUICE GATE POWER PLAN – SHEET 1

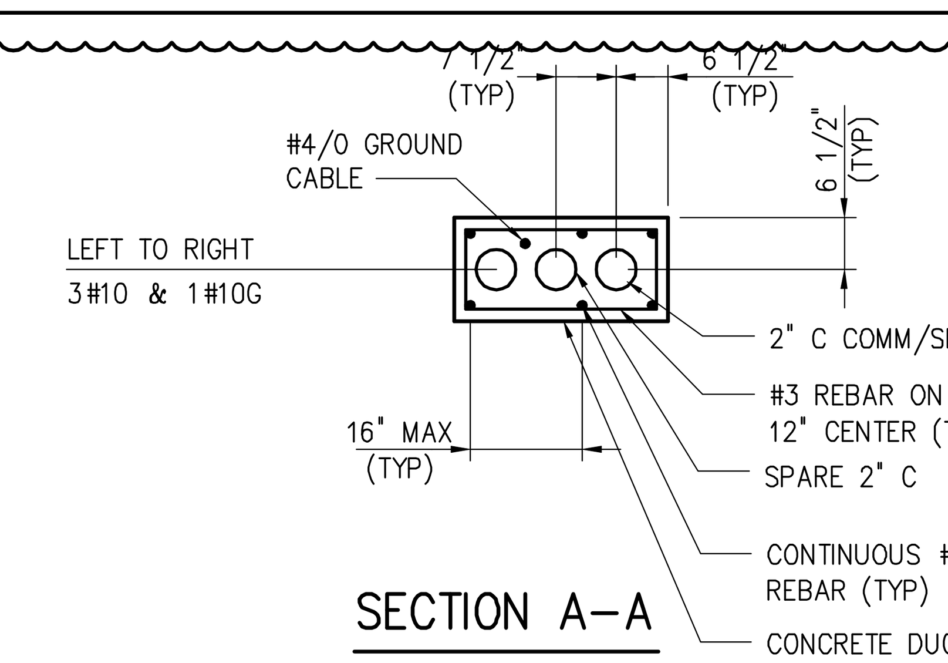
SCALE: 1"=20'-0"

D-201 1



	LOAD-WATTS						
	AN	BN	CN	AB	BC	CA	3PHASE
SUB TOT							140,125
TOTAL							

EXISTING PANEL PP-USS 5
480V, 3PH, 60HZ, 3 WIRE



SECTION A-A
NTS

NOTES:
1. SIZE HANDHOLE PER NEC
2. 30A NON FUSED DISCONNECT SWITCH TO ACTUATOR. SIZE ENCLOSURE PER NEC
3. CONTRACTOR SHALL AVOID INTERFERENCE WITH EXISTING PIPING AND DUCTBANKS BETWEEN POWER PANEL AND SLUICE GATE

1"=20'-0"

WARNING
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NASSAU COUNTY DPW

BAY PARK
FLOOD PROTECTION

NO.	DATE	ISSUED FOR	BY
1	2/14/14	ADDENDUM 1	BRC
2	2/24/14	ADDENDUM 2	BRC

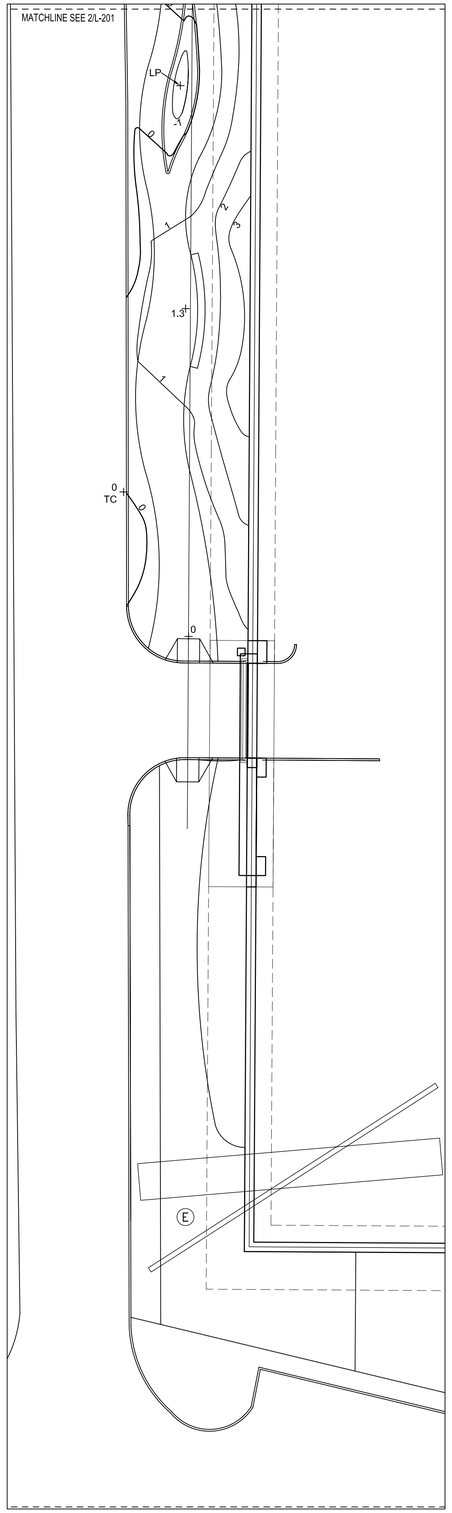
DATE: JANUARY 2014
PROJECT NO.: H&S 90500-000
FILE NAME: D-202
DESIGNED BY: RC
DRAWN BY: GC
CHECKED BY: VT

SHEET TITLE
ELECTRICAL

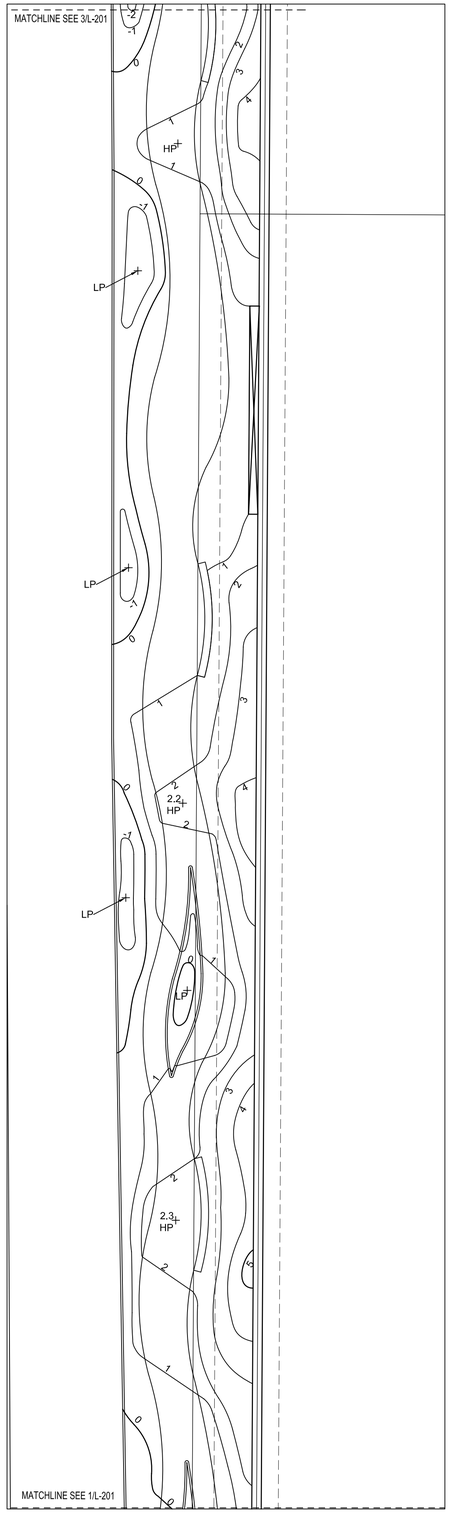
SLUICE GATE
POWER PLAN – SHEET 2

SCALE: 1"=20'-0"

D-202



1 GRADING PLAN
1"=20'



2 GRADING PLAN
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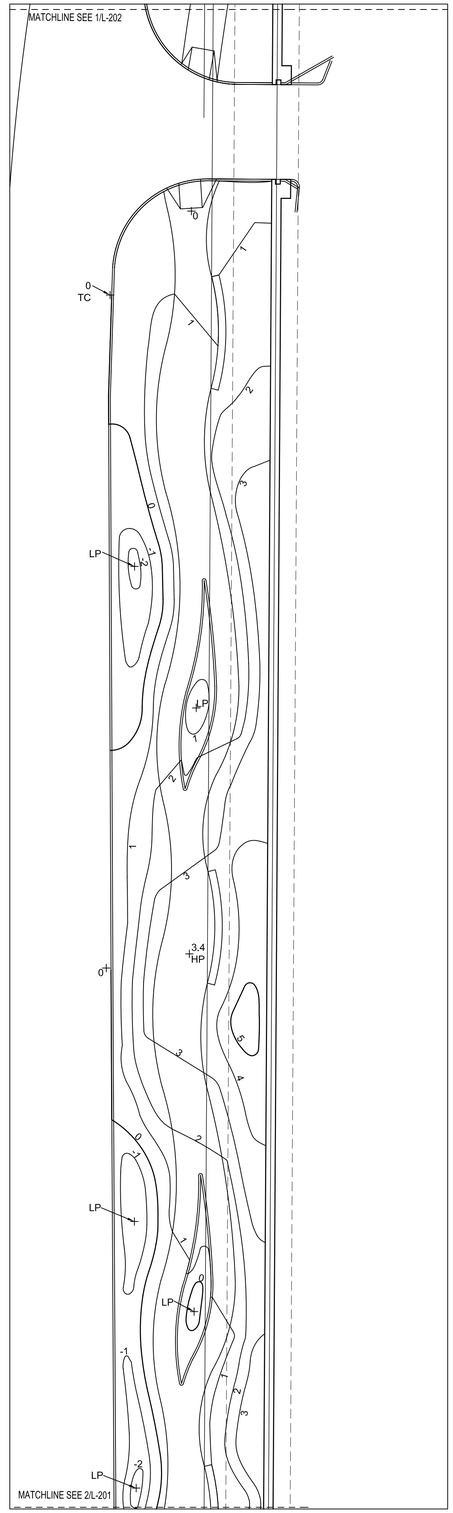

3 GRADING PLAN
1"=20'

PLAN NORTH

TIME:

FILE NAME:

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NASSAU COUNTY, NEW YORK
NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

00-13041.00

NO.	DATE	ISSUED FOR	BY
1	2/4/14	ADDENDUM 1	

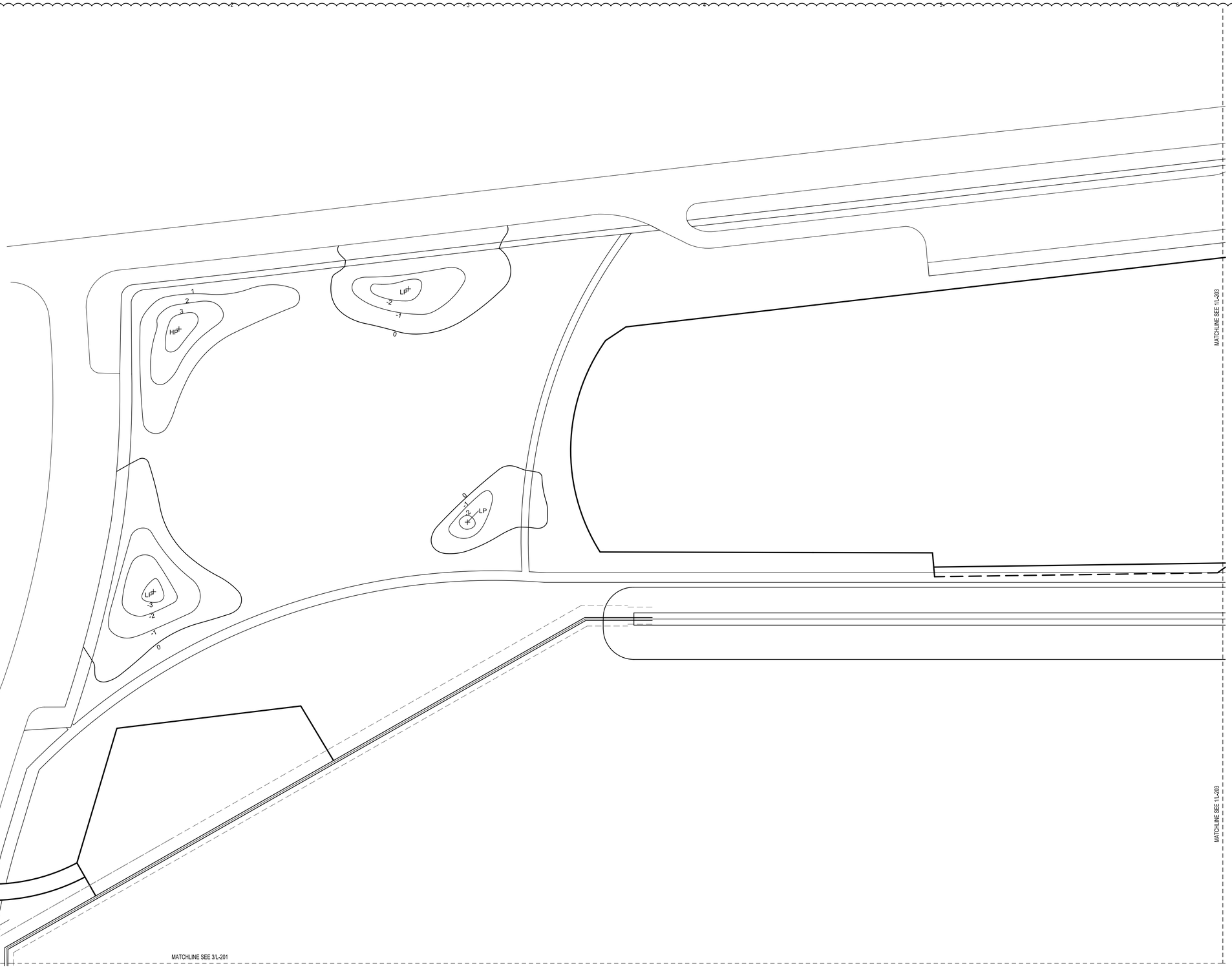
DATE: FEBRUARY 2014
PROJECT NO.: PROJECT NO.:
FILE NAME: MMA_NY Bay Park Flood Protection
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SHEET TITLE

GRADING PLAN
South Perimeter

SCALE: 0 10' 20' 40'

L-201



1 GRADING PLAN

1" = 40'

TIME:

FILE NAME:

HAZEN AND SAWYER
Environmental Engineers & Scientists

LEGAL ENTITY:
MALCOLM PIRNIE, INC.

ARCADIS
A JOINT VENTURE

SEALS

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NASSAU COUNTY, NEW YORK
NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

00-13041.00

NO.	DATE	ISSUED FOR	BY
1	2/4/14	ADDENDUM 1	

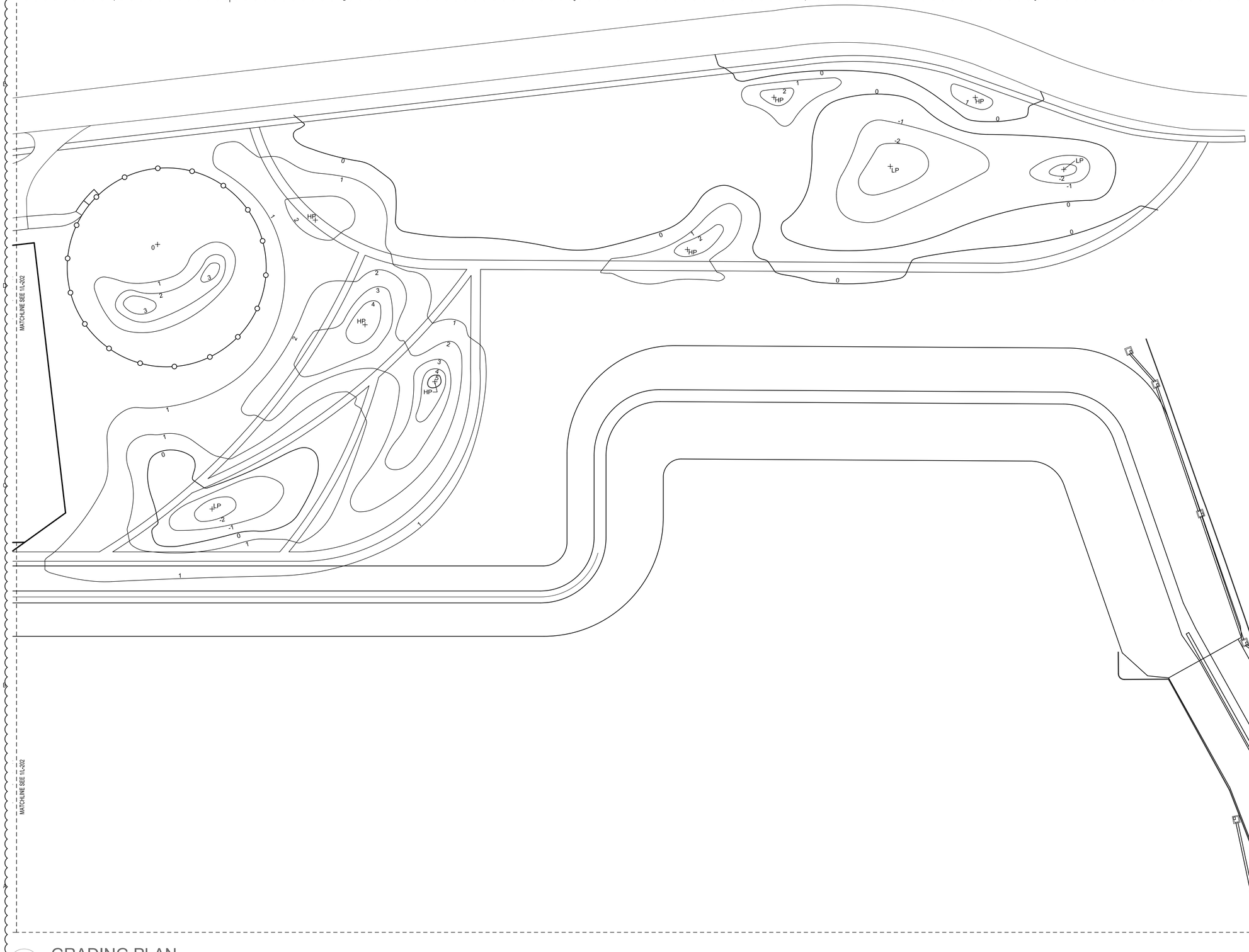
DATE: FEBRUARY 2014
PROJECT NO.: PROJECT NO.:
FILE NAME: MMA_NY Bay Park Flood Protection
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SHEET TITLE

GRADING PLAN
West Park

SCALE: 0 20' 40' 80'

L-202



1 GRADING PLAN
1" = 40'

TIME:
FILE NAME:

HAZEN AND SAWYER
Environmental Engineers & Scientists

LEGAL ENTITY:
MALCOLM PIRNIE, INC.

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NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

00-13041.00

NO.	DATE	ISSUED FOR	BY
1	2/4/14	ADDENDUM 1	

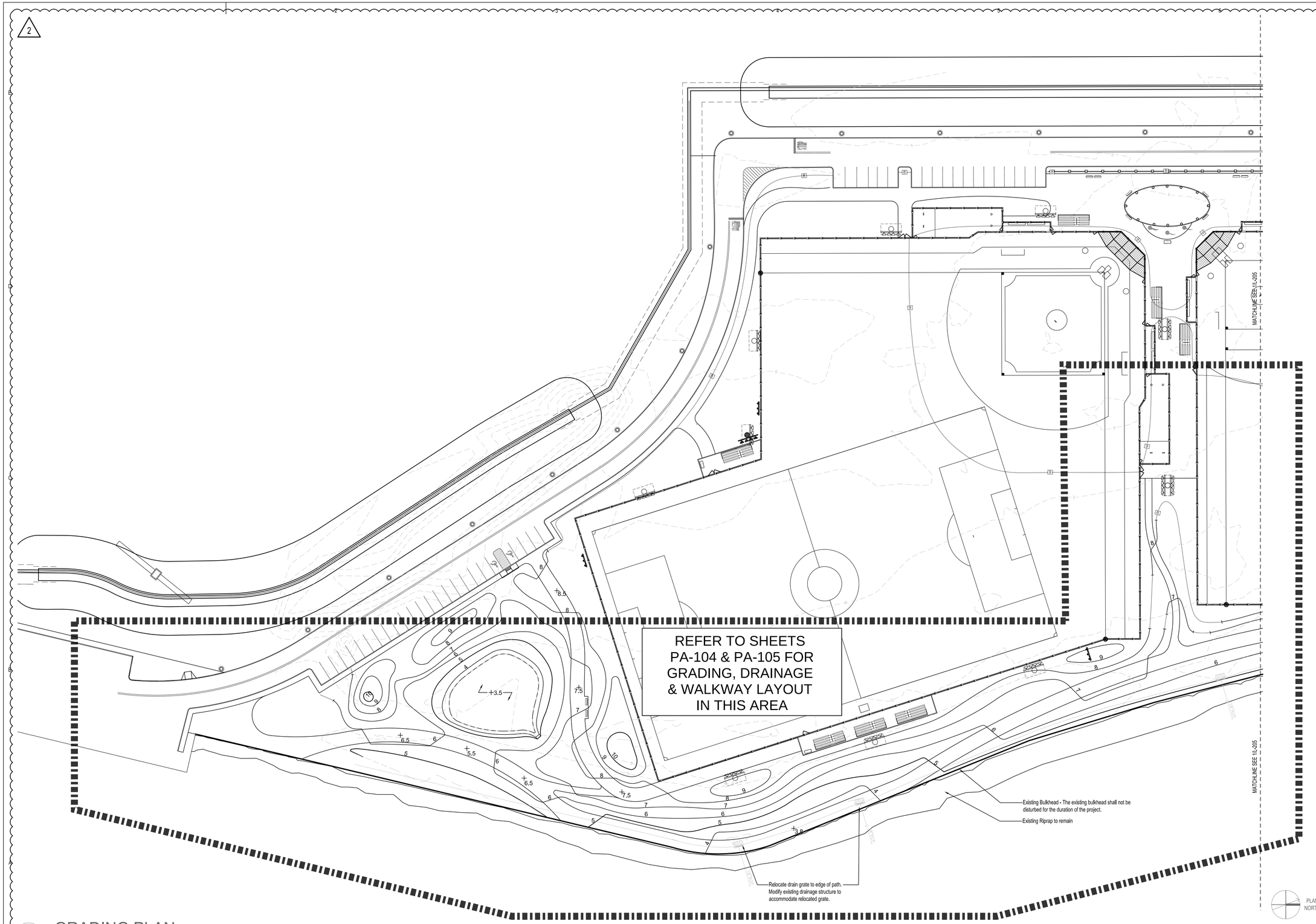
DATE: FEBRUARY 2014
PROJECT NO.: PROJECT NO.:
FILE NAME: ...MMA_NY Bay Park Flood Protection
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SHEET TITLE

GRADING PLAN
West Park

SCALE: 0 20' 40' 80'

L-203



1 GRADING PLAN
1" = 40'

TIME:
FILE NAME:

HAZEN AND SAWYER
Environmental Engineers & Scientists
LEGAL ENTITY:
MALCOLM PIRNIE, INC.
ARCADIS
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NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

00-13041.00

NO.	DATE	ISSUED FOR	BY
2	2/24/14	ADDENDUM 2	
1	2/4/14	ADDENDUM 1	

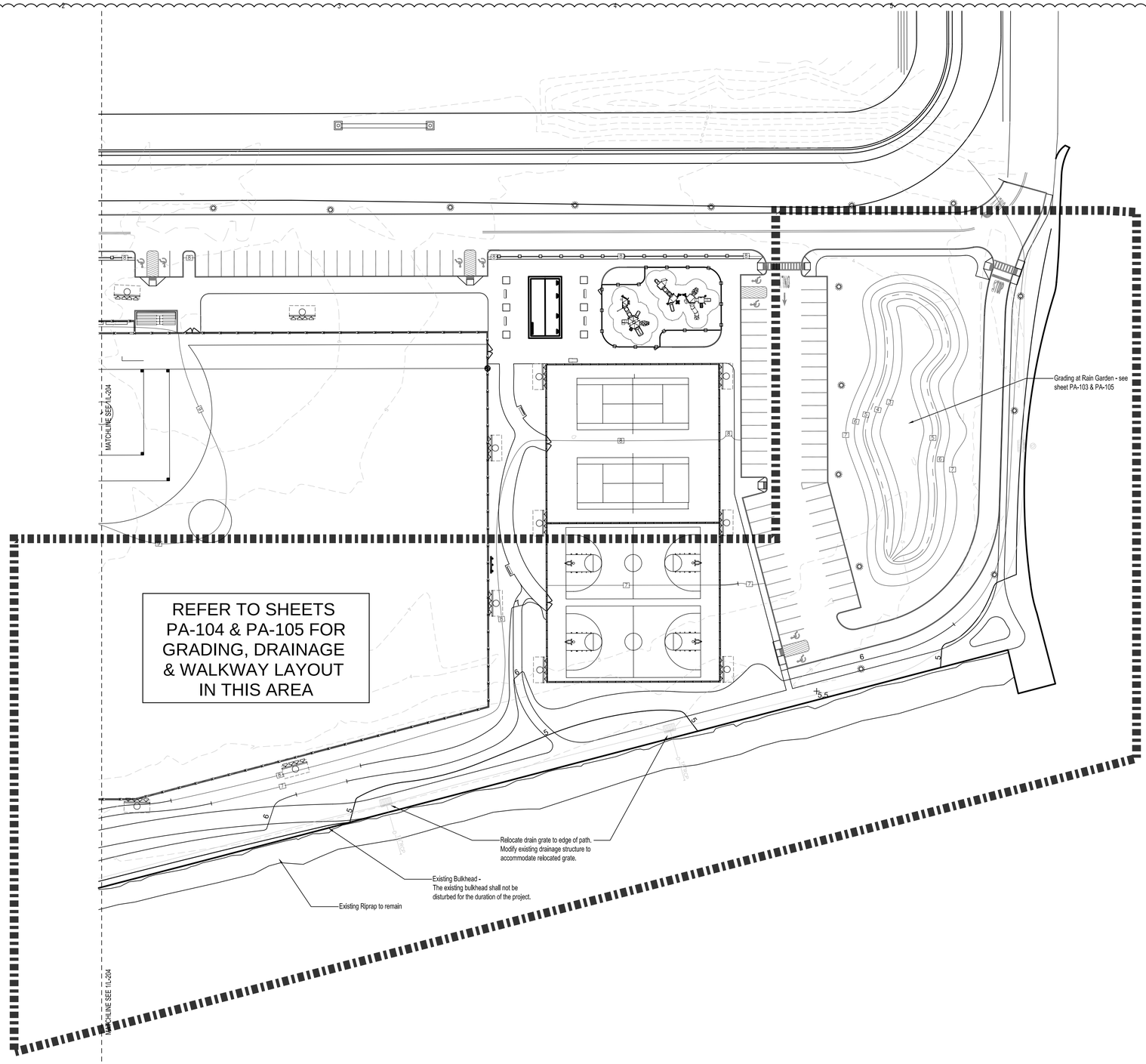
DATE: FEBRUARY 2014
PROJECT NO.: PROJECT NO.:
FILE NAME: MMA_NY Bay Park Flood Protection
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SHEET TITLE

GRADING PLAN
East Park

SCALE: 0 20' 40' 80'

L-204



1 GRADING PLAN
1" = 40'

PLAN NORTH

TIME:

FILE NAME:

HAZEN AND SAWYER
Environmental Engineers & Scientists

LEGAL ENTITY:
MALCOLM PIRNIE, INC.

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NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

00-13041.00

NO.	DATE	ISSUED FOR	BY
2	2/24/14	ADDENDUM 2	
1	2/4/14	ADDENDUM 1	

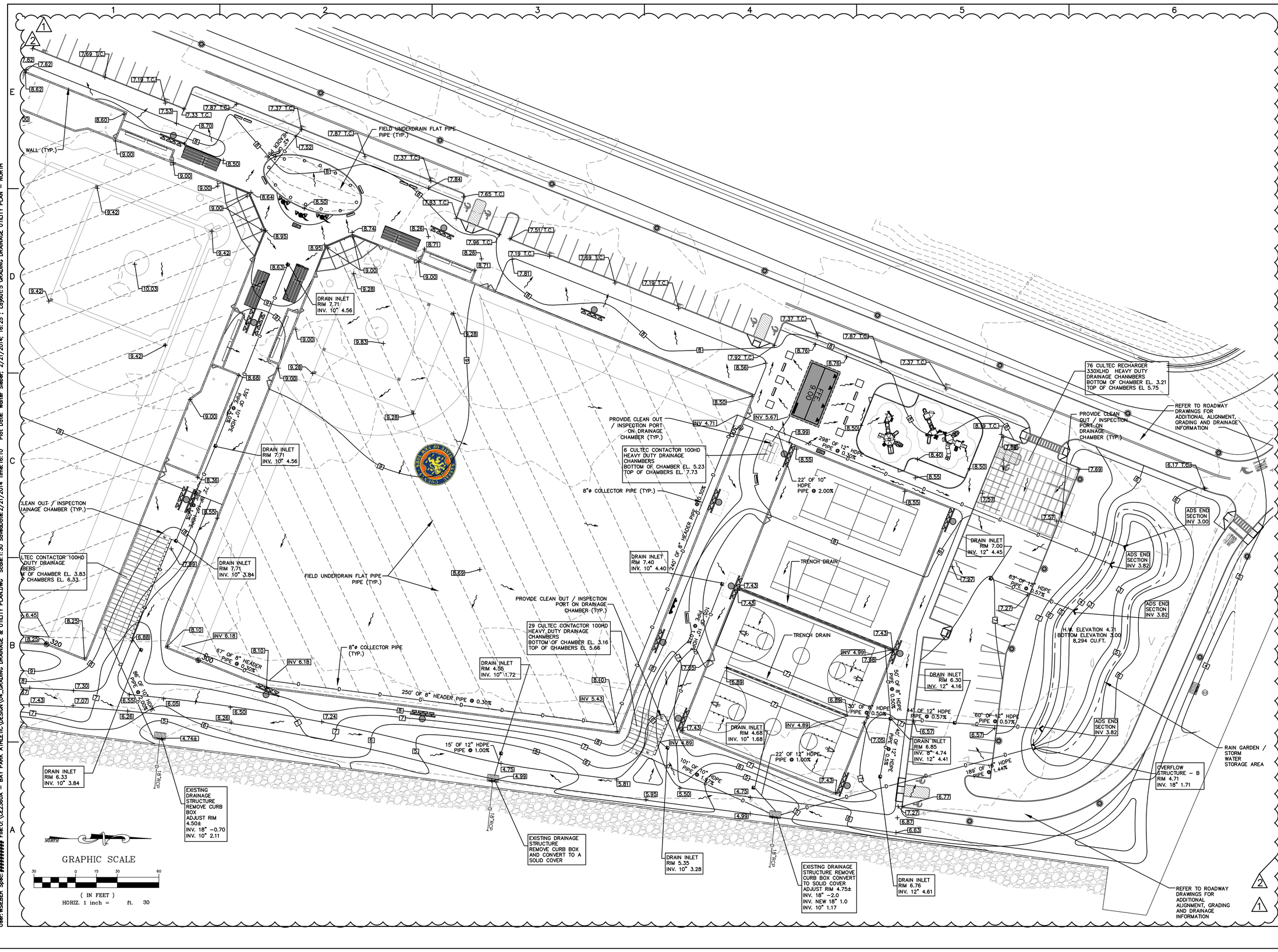
DATE: FEBRUARY 2014
PROJECT NO.: PROJECT NO.:
FILE NAME: MMA_NY Bay Park Flood Protection
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SHEET TITLE

GRADING PLAN
East Park

SCALE: 0 20' 40' 80'

L-205



HAZEN AND SAWYER
Environmental Engineers & Scientists
LEGAL ENTITY:
MALCOLM PIRNIE, INC.
ARCADIS
A JOINT VENTURE
CAMERON ENGINEERING & ASSOCIATES, LLP

SEALS

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NASSAU COUNTY, NEW YORK
NASSAU COUNTY DPW

BAY PARK FLOOD PROTECTION

NO.	DATE	ISSUED FOR	BY
2	02/24/14	ADDENDUM 2	CE&A
1	02/14/14	ADDENDUM 1	CE&A

DATE: JANUARY 2014
PROJECT NO.: 00726788.0000
FILE NAME:
DESIGNED BY: CAMERON ENGINEERING & ASSOCIATES, LLP
DRAWN BY: WCS
CHECKED BY: KMM

SHEET TITLE

PARK IMPROVEMENTS GRADING & DRAINAGE PLAN NORTH

SCALE: AS SHOWN

PA–104

User: WSIEBER Spec: ######## File:O:\CE2360A – BAY PARK ATHLETIC\DESIGN\04_GRADING DRAINAGE & UTILITY PLAN.DWG Scale:1:30 SaveDate:2/21/2014 Time:16:10 Plot Date: Walter Sieber, 2/21/2014, 16:25 : Layout:5 GRADING DRAINAGE UTILITY PLAN – NORTH