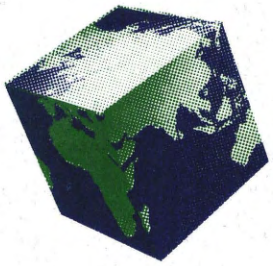

IGES

IGES Ingenieros, LLC
781 West 14600 South, Bluffdale, Utah 84065
Phone (801) 501-0583 | Fax (801) 501-0584

SURFACE FAULT RUPTURE HAZARD ASSESSMENT
2195 North Warm Springs Road
Salt Lake City, Utah

IGES Job No. 451-001

March 17, 2008

Prepared for:

Atlas Steel Fabrication
c/o Craig Dupaix

Prepared for:

Atlas Steel Fabrication
c/o Craig Dupaix
2211 N Warm Springs Road
Salt Lake City, Utah 84116

SURFACE FAULT RUPTURE HAZARD ASSESSMENT
2195 North Warm Springs Road
Salt Lake City, Utah

IGES Job No. 451-001

Prepared by:

Timothy J. Thompson, P.G.
Senior Geologist

Jessica Castleton
Staff Geologist

Reviewed By:

Hiram Alba, P.E., P.G.
General Manager

IGES Ingenieros, LLC
781 West 14600 South
Bluffdale, UT 84065
(801) 501-0583

March 17, 2008

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APPENDICES

1.0 EXECUTIVE SUMMARY

The purpose of this investigation and report is to assess the potential surface rupture fault hazard for the proposed Atlas Steel Fabrication building located at approximately 2195 North Warm Springs Road in Salt Lake City, Utah. At the time of our investigation the subject site consisted of a vacant lot being used as a stockyard.

Review of the "Surface Rupture and Liquefaction Potential Special Study Areas" map dated March 31, 1989 and published by Salt Lake County Public Works - Planning Division, as well as other published maps indicated that the site is located just west of the mapped location of a west-dipping splay of the Warm Springs fault in a surface fault rupture special study area.

The subsurface soil conditions were explored for the purpose of evaluating the presence or absence of active faults at the subject property by advancing 5 Cone Penetration Tests (CPT) to depths from 52 to 60 feet. The exploration locations were placed near the center of the property, extending west from Warm Springs Road and extending through and past the proposed building location for a total length of approximately 197.5 feet. Based on our observations of the CPT graphs no major west-dipping offset of subsurface sediment layers were observed. The sediments underlying the site and observed during our investigation were identified as Lake Bonneville sediments with an age greater than 10,000 years.

The standard of care requires that an active fault be assumed to be located at the end of each fault study exploration, within the special study area, for the purposes of determining setback recommendations. Following the setback procedures recommended by Salt Lake County, a setback of 32 feet from the mapped locations of CPT 1 and CPT 5 was calculated. From the calculated eastern setback it is 133.5 feet to the calculated western setback, therefore it is the opinion of IGES that the site planned for the location of the building, within the 133.5 foot area between the calculated setback zones is suitable for the proposed development.

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

The purpose of this investigation and report was to assess the potential surface rupture fault hazard at the subject site located at approximately 2195 North Warm Springs Road in Salt Lake City, Utah (Plate A-1 and A-2). The site is located just west of the mapped location of a major west-dipping splay of the Warm Springs fault (Surface rupture and liquefaction potential special study areas, Salt Lake County, Utah map, March 31, 1989; Plate A-3). Our services were performed in accordance with our proposal, dated January 8, 2008 and your signed authorization. Specifically, our scope of services included the following:

- Review of available references and maps of the area;
- Review and evaluation of aerial photographs covering the site area;
- Geologic reconnaissance of the site by an engineering geologist to observe and document pertinent surface features indicative of possible rupture hazards;
- Subsurface investigation consisting of a line of Cone Penetration Testing (CPT) tests, oriented approximately perpendicular to the mapped orientation of the nearby Warm Spring fault splay; and
- Evaluation of our observations combined with existing information and preparation of this written report with conclusions and recommendations regarding any possible surface rupture fault hazard affecting the site.

The recommendations contained in this report are subject to the limitations presented in the "Limitations" section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

The project, as planned, will consist of constructing a building and associated driveways, parking lots, and utilities. The project site is shown on the Site Vicinity Map and Aerial Photo included in Appendix A (Plates A-1 and A-2). Review of the "Surface Fault Rupture and Liquefaction Potential Special Study Areas" map dated March 31, 1989 (updated March 2002) and published by Salt Lake County Public Works - Planning Division, indicated that the site is located within a special study zone with faults know to be active immediately adjacent to the subject site. The

location of the project site on the Salt Lake County Planning and Development Services Department Special Study Map is included in Appendix A (Plate A-3). A Geologic Map is also included in Appendix A (Plate A-4).

3.0 METHODS OF STUDY

3.1 OFFICE INVESTIGATION

To prepare for the investigation, we reviewed pertinent literature and maps listed in the references section of this report, which provided background information on the local geologic history of the area and the locations of suspected or known faults. A detailed knowledge of the stratigraphic units expected in the area provided a useful time-stratigraphic framework for interpreting the units identified in the explorations for the study.

Stereographic aerial photograph interpretation was performed for the site using photographs provided to IGES by the USDA-FSA, Aerial Photography Field Office. The findings of the geologic investigation are presented in Sections 4.0 and 5.0 of this report.

3.2 GEOLOGIC INVESTIGATION

An engineering geologist investigated the geologic conditions within the general site area. A field geologic reconnaissance was conducted to observe existing geologic conditions and to evaluate any potential surface rupture fault hazard at the site. The findings of the geologic investigation are presented in Sections 4.0 and 5.0 of this report.

3.3 SUBSURFACE INVESTIGATION

The subject site is located on 8 to 10 feet of fill placed on the native ground surface due to the presence of surface water at the site. The native ground surface surrounding the subject site is comprised of marshy wetlands. Several inches to over a foot of standing water was observed in this marshy area at the time of the IGES field investigation conducted for this report. Due to the thickness of the fill at the subject site which reportedly contains large concrete debris and the presence of wetland water above the native ground surface, trenching the site to conduct a standard surface fault rupture hazard study would be impractical. As an alternative subsurface exploration method Cone Penetration Tests (CPT) were performed by ConeTec, Inc. with a truck mounted rig using a 20-ton compression type cone capable of recording soil parameters at 5 cm intervals. The locations of the CPT tests are shown on the Site Exploration Map (Plate A-5). The soil parameters of tip resistance, sleeve friction and dynamic pore pressure were displayed on an on-board computer while the cone was advanced. The data was stored for later use. The graph shown on the CPT Fence Diagram Map (Plate A-6) represents the tip resistance with depth. Due

to the depth of the fill material and marsh deposits at the site CPT tests were advanced to 60 feet depths to obtain data from native Bonneville silts and clays.

4.0 GEOLOGIC CONDITIONS

4.1 GEOLOGIC SETTING

The site is located, at an elevation of approximately 4220 feet, within the northern portion of the Salt Lake Valley. The Salt Lake Valley is a deep, sediment-filled structural basin of Cenozoic age flanked by two uplifted blocks, the Wasatch Range on the east and the Oquirrh Mountains to the west (Hintze, 1980). The northern portion of the Salt Lake Valley extends beyond the northern limits of the Oquirrh mountain range and is bordered on the west by the southeast shore of the Great Salt Lake. The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah.

The near-surface geology of the Salt Lake Valley is dominated by sediments, which were deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983; Personius and Scott, 1992). The lacustrine sediments near the mountain front consist mostly of gravel and sand. As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments generally follow a trend of fining towards the center of the valley where deeper water existed and greater distance from water sources provided more time for coarser sediment to deposit. Sediments toward the center of the valley are predominately deep-water deposits of clay, silt and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Lacustrine bedding typically dips towards the center of the valley at approximately 0° to 15°. Surface sediments at the project site are mapped as Holocene to upper-most Pleistocene Marsh and Lacustrine deposits consisting of silt, clay and minor sand deposited in shallow lakes and marshes after the regressive phase (of Lake Bonneville). Also mapped at the site is manmade fill (historic) (Personius and Scott, 1992; Plate A-4).

4.2 TECTONIC SETTING

The site is located just west of the Salt Lake Salient. The Salt Lake Salient marks the northern boundary of the Salt Lake City Segment of the Wasatch Fault. This salient is a bedrock spur which extends westward from the north-south trending Wasatch fault. Scarp heights resulting from post-Bonneville faulting events are reported to be 10 to 14 meters high along the Warm Springs fault east of the subject site and average net vertical tectonic displacement per event are reported to be 1.5 to 2.5 meters (Black and others, 1996; Personius and Scott, 1992).

4.3 SEISMICITY AND FAULTING

Review of the "Surface Rupture and Liquefaction Potential Special Study Areas" map dated March 31, 1989 and published by Salt Lake County Public Works - Planning Division, as well as other published maps indicated that a major west-dipping splay of the Warm Springs fault is located just east of the subject site (Personius and Scott, 1992; Black and others, 1996). The Warm Springs fault is one of three main splays of the Salt Lake City segment of the Wasatch fault zone. According to the "Surface Rupture and Liquefaction Potential Special Study Areas" map dated March 31, 1989 the site is located within approximately .26 miles west of a west-dipping splay of the Warm Springs fault. The Warm Springs fault trends generally in a north - south orientation and is located along the northeast margin of the Salt Lake Valley. Analyses of ground shaking hazards along the Wasatch Front suggest that the Wasatch fault zone is the single greatest contributor to the seismic hazard in the Salt Lake City region.

5.0 GENERALIZED SITE CONDITIONS

5.1 SURFACE CONDITIONS

The site is located at approximately 2211 North Warm Springs Road in Salt Lake City, Utah. At the time of our investigation the subject site consisted of a vacant lot being used as a stockyard. The subject site is raised 8 to 10 feet above the existing natural ground elevation with fill material comprised of undocumented concrete and imported soils. The subject site is bordered on the east by Warm Springs Road, on the south by 2180 North, and on the north and west by existing industrial and commercial buildings. Areas around the general site vicinity that are not filled with Historic fill comprise wetlands and marshy areas with standing surface water. The subject site is relatively flat with very minor sloping to the west overall.

5.2 SUBSURFACE CONDITIONS

The subsurface soil conditions were explored for the purpose of evaluating the presence or absence of active faults at the subject property by advancing Cone Penetration Tests (CPT) to depths from 52 to 60 feet. The exploration locations were aligned perpendicular to the mapped fault (Plate A-5) and oriented approximately east to west. CPT 3 encountered refusal at approximately 6 feet on a large concrete slab. A test pit was excavated at this location to retrieve the cone lost at refusal. This test pit was observed in the field by an engineering geologist and contained historic undocumented fill to depths of 10 feet with large concrete slabs at a depth between 5 to 10 feet. Groundwater was encountered in the test pit at 6.5 feet. CPT graphs are included on Plate A-6 and in Appendix B. A table of geologic hazards is included in appendix B (Plate B-1).

IGES interprets the sediment encountered by the CPT cone in the upper 10 feet of the subsurface soils to be comprised of historic, undocumented, man made fill (Plate A-6). The 10 to 12 feet of sediment directly underlying the fill is interpreted to consist of sensitive fines likely related to Holocene to upper Pleistocene marsh and lacustrine deposits comprised of silt, clay, and minor sand (Plate A-4; Personius and Scott, 1992). Below these marsh deposits the remainder of the sediments encountered by the CPT cone is interpreted to consist of upper Pleistocene lacustrine clay and silt deposits comprised of clay, silt, and minor fine sand and pebble gravel, locally bedded

(Personius and Scott, 1992). These Pleistocene lacustrine sediments are more than 11,000 years old and are therefore suitable for assessing the site for surface fault rupture hazards.

5.2.1 Groundwater

Pore pressure dissipation tests were performed using the cone penetration probe. The results of pore pressure dissipation tests indicate groundwater levels at 6 to 7 feet below the ground surface in boring 5 and 1 to 2 feet below the ground surface in boring 1, this water level may possibly indicate an artesian surface within a lense of coarser grained material. Tip resistance measured by advancing the CPT indicates more coarse material in CPT 1 than those encountered at the same depth in CPT 5. Groundwater was encountered at approximately 6.5 feet below the surface in the test pit located at CPT-3.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 SURFACE RUPTURE HAZARD

Direct observation of sediment layers cannot be made using Cone Penetration Tests (CPT); however, the data recorded by CPT shows individual soil profiles at each of the CPT locations. Individual sediment beds are represented on the CPT graphs as spikes or other patterns that are apparent on each CPT graph. The CPT graphs and the locations are included in Appendix A (Plate A-6). The CPT locations were located with a tape measure and Dave White Automatic Level with tripod to obtain precise elevations and locations, which are necessary to compare the continuity and natural dip of bedding across the length of the property. Observations of the CPT graphs did not identify major west dipping faults throughout the length of the line of CPT locations. Black and others (1996) report at least four surface rupture faulting events have occurred on the Salt Lake City segment of the Wasatch fault zone in the past 6000 years and the net vertical displacement per event for the Warm Springs fault is 1.5 to 2.5 meters. This would mean that a minimum offset of approximately 5 feet would be expected for sediment layers offset by the Warm Springs fault.

Review of the data results from our CPT exploration revealed no evidence of surface fault offset in the sediment layers that underlie the subject site. These sediment layers represent at least the past 10,000 (and perhaps more) years. The subsurface profile produced by correlating the CPT graphs shows a gentle dipping of sediment layers to the west with a nearly uniform pattern across the subject site. Personius and Scott, 1992 report that Bonneville Lake Cycle lacustrine sediment bedding typically dipping towards the valley center at approximately 0 to 15 degrees. No evidence of surface fault rupture during at least the past four surface-rupture earthquakes on the Warm Springs fault were observed in the sediment profile underlying the subject site constructed from the CPT graphs. The Warm Springs fault splay is likely located east of CPT 1.

It should be noted that the use of CPT graphs to construct a subsurface soil profile is not ideal for surface fault rupture hazard assessment and was only used in this investigation because trenching was precluded by the presence of shallow groundwater that extends into the fill that overlies the native soil at the subject site. Minor fault offset on synthetic and antithetic faults associated with en echelon faulting along the Warm Springs fault could potentially be missed by use of this method. However, this offset would be minor and localized to small grabens located between the CPT locations.

It is the standard of care that within a special study zone a fault location be assumed at the end of each exploration. For the purposes of determining setback recommendations IGES will assume faults are located just east of CPT 1 and just west of CPT 5. Following the setback procedures recommended by Salt Lake County and using the following formula, a setback for the site was calculated as follows.

S=U(2D)

Where:

- S is the setback
- U is a criticality factor of 2.0, and
- D is the maximum single event displacement expected on the Warm Springs fault.

It should be noted that the units of measure for distances must be similar for each number entered into the formula (feet, inches, meters, etc.). The maximum displacement per single rupture event is considered to be 8 feet for the Warm Springs fault (personal communication with Darlene Batatian, Salt Lake County Geologist; Black and others, 1996). The criticality factor for an industrial building, class F structure, as defined by IBC is 2.0. The setback for the subject site is calculated as follows:

S=2.0[2(8)]

S=32

The setback area for the site was plotted on the Setback Map by setting back 32 feet from the mapped locations of CPT 1 and CPT 5 (Plate A-7). It can be seen from Plate A-7 that the setback zone does not extend into the proposed building site on the west and borders the site on the east. The proposed building site mapped by IGES is roughly located on the map and was not surveyed. CPT 1 was located 34 feet west of the asphalt of Warm Springs Road. With the setback of 32 feet to the west of CPT 1 the eastern setback is 66 feet west of the current location of the asphalt of Warm Springs road. The western setback is 32 feet east of CPT 5. From the calculated eastern setback it is 133.5 feet to the calculated western setback, therefore it is the opinion of IGES that the site planned for the location of the building, within the 133.5 foot area between the calculated setback zones is suitable for the proposed development.

7.0 CLOSURE

7.1 LIMITATIONS

The conclusions and recommendations contained in this report which include professional opinions and judgments, are based on the information available to us at the time of our evaluation, the results of our field observations, our limited subsurface exploration and our understanding of the proposed site development. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist beyond the location of explorations. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed development changes from that described in this report, our firm should also be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No warranty, expressed or implied, is made. Development of property in the immediate vicinity of active faults involves a certain level of inherent risk. It is impossible to predict where ground rupture will occur during a seismic event. New faults may develop, existing faults may propagate beyond their current lengths, and displacement and ground shaking may be greater or less than that currently anticipated.

This report was written for the exclusive use of Mr. Craig Dupaix, and only for the proposed project described herein. It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. We are not responsible for the technical interpretations by others of the information described or documented in this report.

8.0 REFERENCES CITED

Black, B.D., Lund, W.R., Schwartz,m D.P., Gill, H.E., and Mayes, B.H., 1996, Paleoseismic investigations on the Salt Lake City segment of the wasatch fault zone at the South Fork Dry Creek and Dry Gulch sites, Salt Lake County, Utah: : Utah Geological and Mineral Survey Special Study 92, p. 22.

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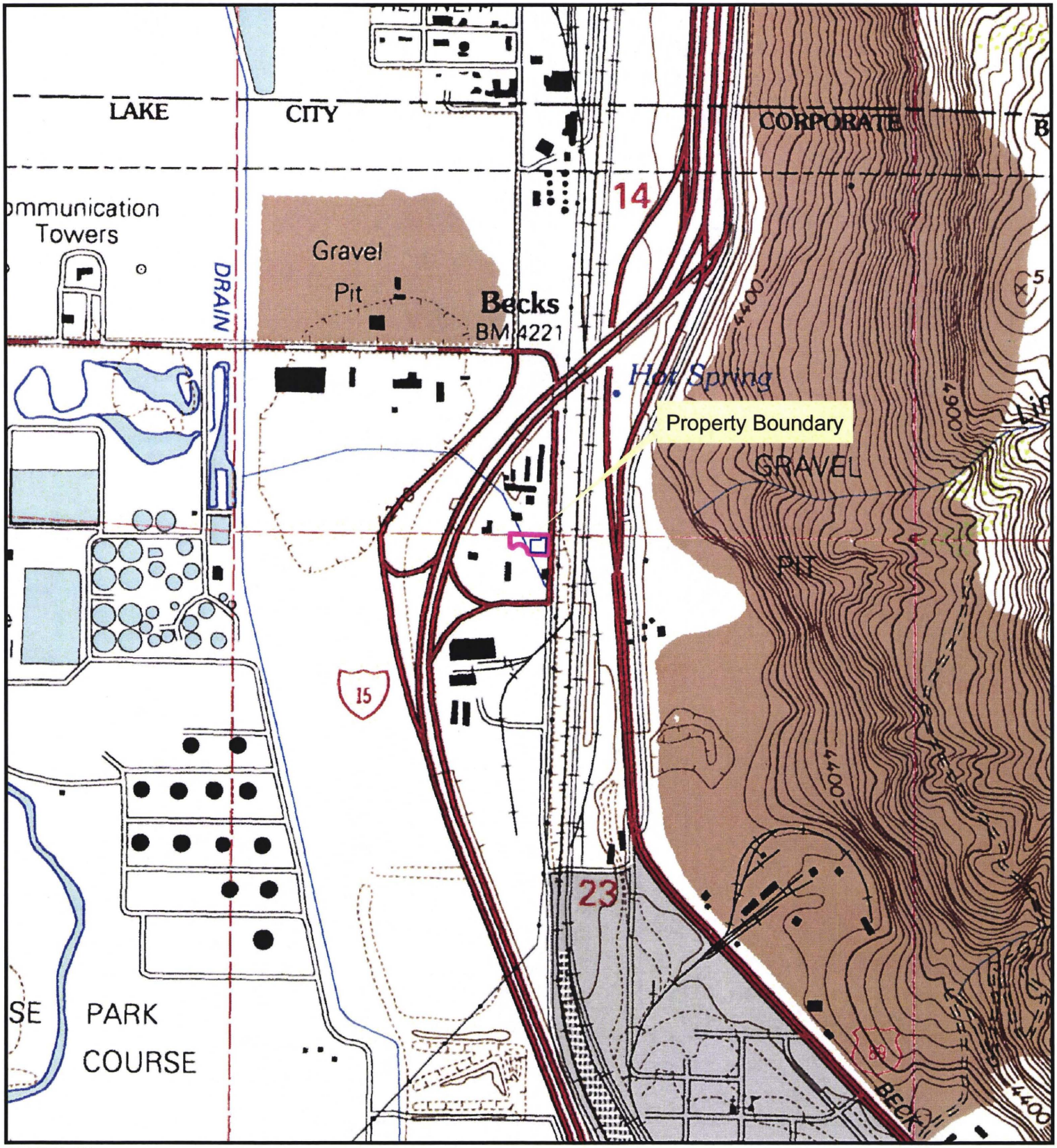
Hintze, L. F., 1980, Geologic Map of Utah: Utah Geological and Mineral Survey Map-A-1, scale 1:500,000.

Leyendecker, E.V., Frankel, A.D., and Rukstales, K.S., 2000, "Seismic Design Parameters for use with the 2000 International Building Code, 2000 International Residential Code, 1997 NEHRP Seismic Design Provisions and 1997 NEHRP Rehabilitation Guidelines" Seismic Design 3.01, February 2000.

Personius, S.F., and Scott, W.E., 1992, Surficial geologic map of the Salt Lake City segment of the Wasatch fault zone, Davis, Salt Lake, and Utah Counties, Utah: U.S. Geological Survey Miscellaneous Investigation Series Map I-2106, scale 1:50,000.

Salt Lake County Public Works-Planning Division, 1989, Surface Rupture and Liquefaction Potential Special Study Areas, Salt Lake County, Utah.

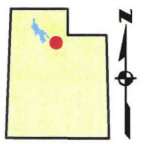
Scott, W.E., McCoy, W.D., Shorba, R.R., and Rubin, Meyer, 1983, Reinterpretation of the Exposed Record of the Last Two Cycles of Lake Bonneville, Western United States: Quaternary Research, v.20, p. 261-285.



BASE MAP:
Salt Lake City North
U.S.G.S. 7.5 Minute Quad

0 500 1,000 2,000 3,000 4,000 Feet

Scale 1:12,000



Legend
- Property Boundary
- Proposed Building

Surface Fault Rupture Investigation
Atlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

SITE VICINITY MAP

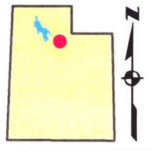
IGES ©

Plate A-1

BASE MAP:
Salt Lake City North
U.S.G.S. 2003 Color NAIP

0 250 500 1,000 1,500 2,000 Feet

Scale 1:6,000



Legend
- Property Boundary
- Proposed Building

Surface Fault Rupture Investigation
Atlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

AERIAL PHOTO

IGES ©

Plate A-2

SURFACE RUPTURE
LIQUEFACTION POTENTIAL
SPECIAL STUDY AREAS
SALT LAKE COUNTY, UTAH

Salt Lake County Planning and Development Services Division
2001 South State Street #N3600
Salt Lake City, Utah 84190-4050
For more information call: (801) 468-2070

Site Location Within Special Study Zone

NATURAL HAZARDS MAP SPECIAL STUDY AREA REPORT REQUIREMENTS

Is a Site Specific Natural Hazards Report Required Prior to Approval?

Land Use (Type of Facility)	Liquefaction Potential Special Study Area: HIGH & MODERATE	Liquefaction Potential Special Study Area: LOW & VERY LOW	Salt Lake Fault Rupture Special Study Area
Critical facilities (essential and hazardous facilities, and special occupancy structures, as defined in Section 19.75.050-E)	YES	YES	YES
Industrial & commercial buildings (>3 stories or >50,000 square feet)	YES	NO	YES
Multi-family residential structures (4 or more units per acre), and all other industrial & commercial	YES	NO	YES
Residential subdivisions	YES	NO	YES
Residential single lots and multi-family dwellings (less than 4 units per acre)	NO*	NO	NO*

* Although no special study is required, disclosure is required as described in Section 19.75.050 Ord. No. 77-38-ORD. EC. Date 6-21-77

MARCH 31, 1999 Revised July 1999

This map is a compilation of the most recent geologic information available. It is designed to provide the public with information on potential hazard areas, and to specify areas needing site-specific geologic study before being developed. These special study areas were delineated from mapping done at a regional scale, and although every effort was made to be as accurate as possible, this does not substitute for large-scale site-specific geologic information. This map will be updated as new information becomes available.

EXPLANATION

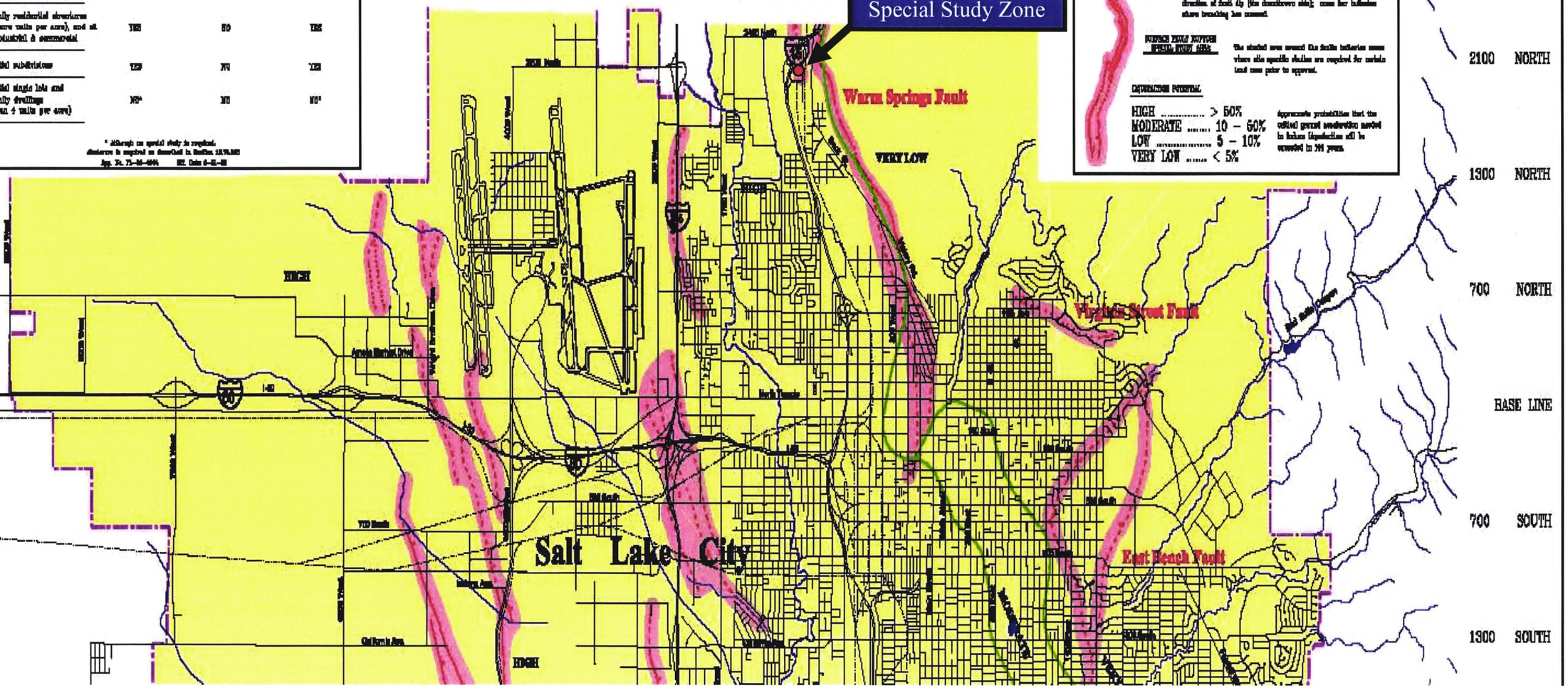
FAULTS — Represented by a solid line where the fault is known from scarps or trenching; dashed where approximately located or inferred; dotted lines concealed. The bar and ball symbol indicates the direction of fault dip (the downthrown side); cross bar indicates where trenching has occurred.

SURFACE FAULT RUPTURE SPECIAL STUDY AREA — The shaded area around the fault indicates areas where site specific studies are required for certain land uses prior to approval.

LIQUEFACTION POTENTIAL

HIGH	> 50%
MODERATE	10 - 50%
LOW	5 - 10%
VERY LOW	< 5%

Approximate probabilities that the critical ground acceleration needed to induce liquefaction will be exceeded in 100 years.

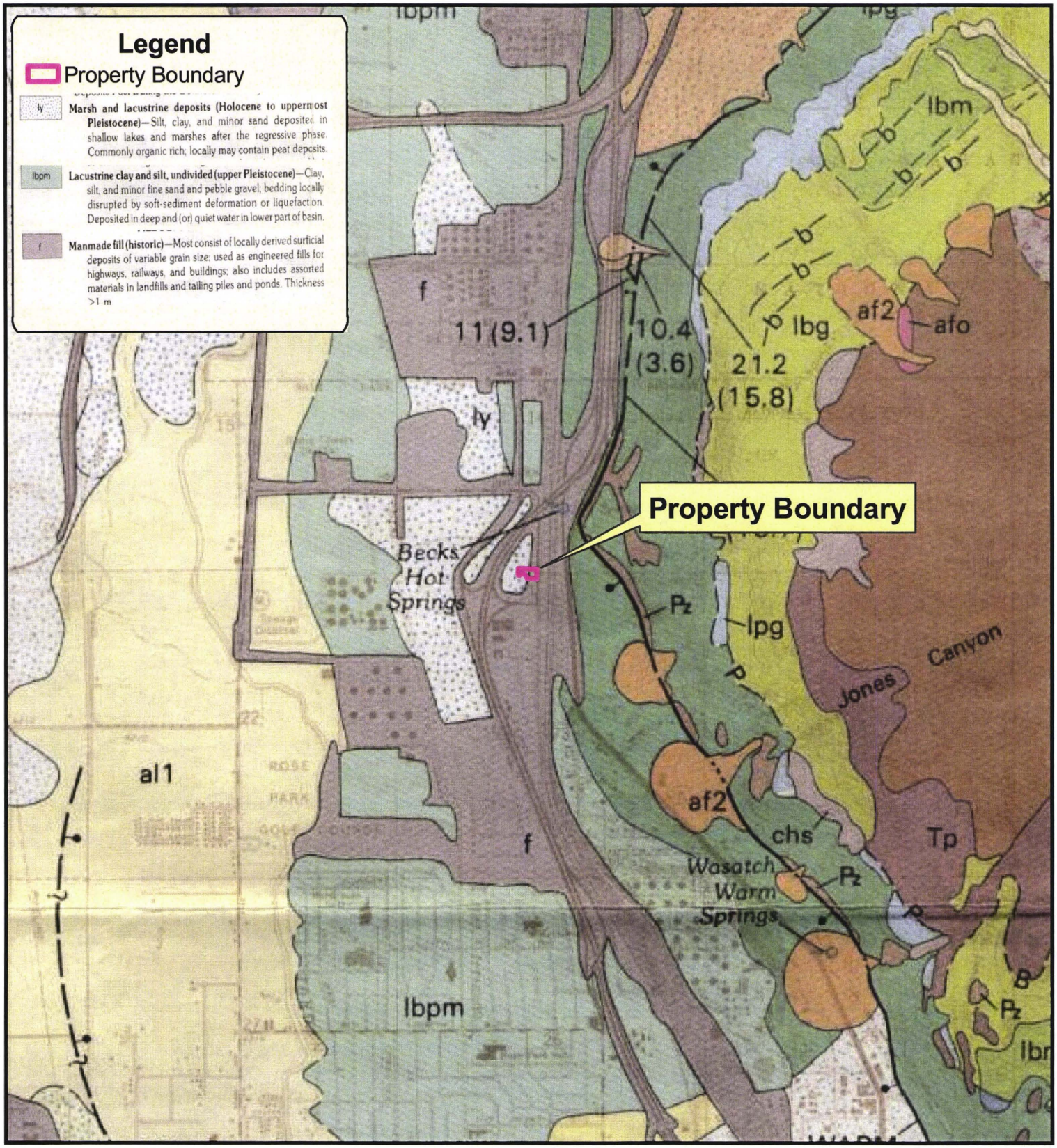


IGES

Surface Fault Rupture Investigation
Altlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

Salt Lake County Geologic Hazards Ordinance Special Study Zone

PLATE A-3



BASE MAP:
Surficial Geologic Map
of the Salt Lake City Segment
of the Wasatch Fault Zone
Davis, Salt Lake and Utah Counties
Utah: U.S.G.S. Map I-2106

0 1,000 2,000 4,000 6,000 8,000 Feet

Scale 1:24,000

Surface Fault Rupture Investigation
Atlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

GEOLOGIC MAP

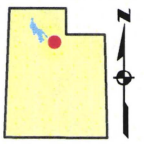
IGES

Plate A-4

BASE MAP:
Salt Lake City North
U.S.G.S. 2003 Color NAIP

0 50 100 200 300 400 Feet

Scale 1:1,200



Legend

- Property Boundary
- Proposed Building
- CPT Locations
- Test Pit

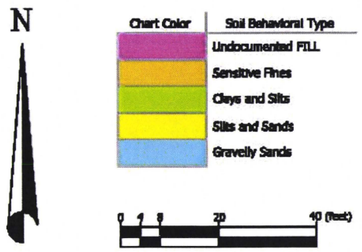
Surface Fault Rupture Investigation
Atlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

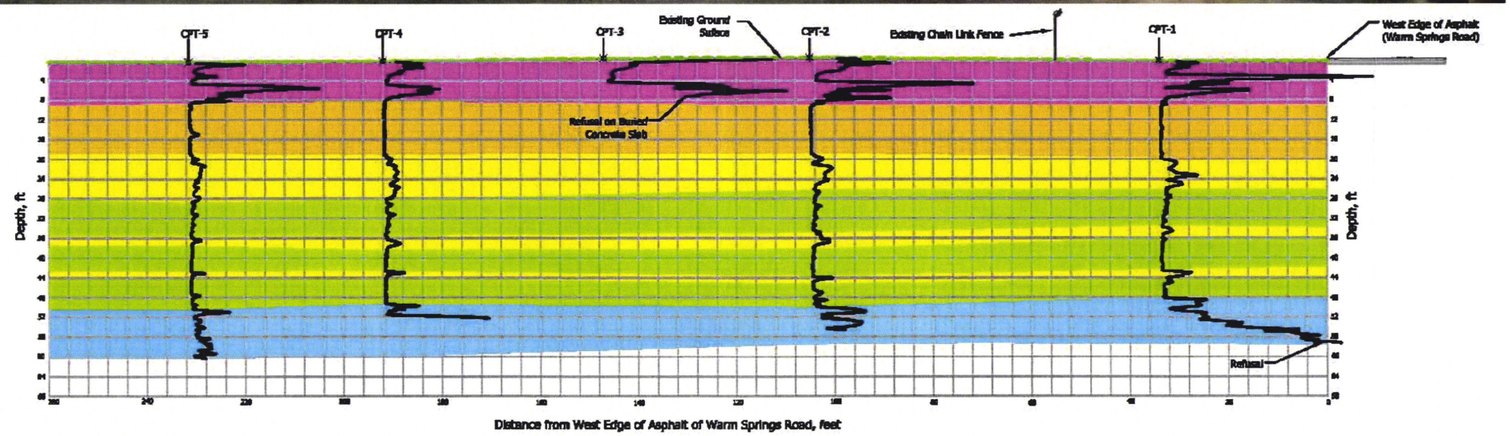
SITE EXPLORATION MAP

IGES ©

Plate A-5

BASEMAP: 2003 NAIP 1-foot Color Ortho Quad, Salt Lake City North





CONSULTANTS

IGES
ideas for a changing world
781 West 14600 South
Bluffdale, Utah 84065
(801) 501-0583 Fax: (801) 501-0584

MARK	DATE	DESCRIPTION

ISSUE:

PROJECT NO.:	451-001
CAD DWG FILE:	Dupaix Fault Study 451-001
DRAWN BY:	DWH
DESIGNED BY:	DWH
CHECKED BY:	T. THOMPSON
COPYRIGHT:	IGES 2008

SHEET TITLE

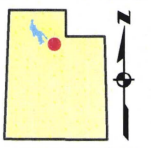
CRAIG DUPAIX
2180 NORTH WARM SPRINGS RD, NSL, UT
CONE PENETRATION FAULT STUDY
PROFILE FENCE DIAGRAM

SHEET
A- 6

BASE MAP:
Salt Lake City North
U.S.G.S. 2003 Color NAIP

0 50 100 200 300 400 Feet

Scale 1:1,200



Legend
- Property Boundary
- Proposed Building
- CPT Locations
- Test Pit
- 32 foot Setback

Surface Fault Rupture Investigation
Atlas Steel Fabrication
Salt Lake City, Utah
Project Number 451-001

SETBACK MAP

IGES

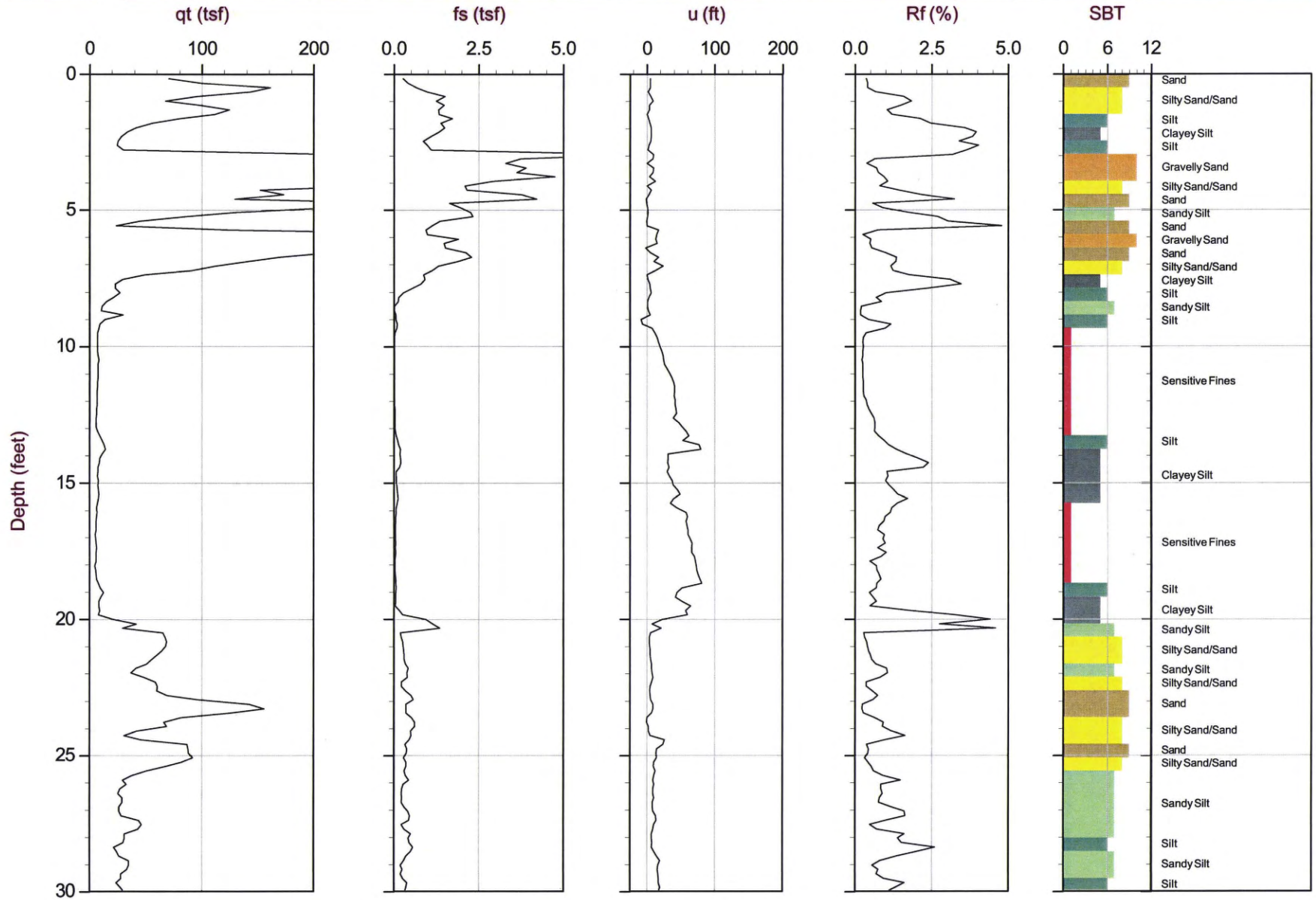
Plate A-7

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 09:21
Site: DUPAIX

Sounding: CPT-01
Cone: STD 20T AD183



Max Depth: 17.450 m / 57.25 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP01.COR

SBT: Lunne, Robertson and Powell, 1997

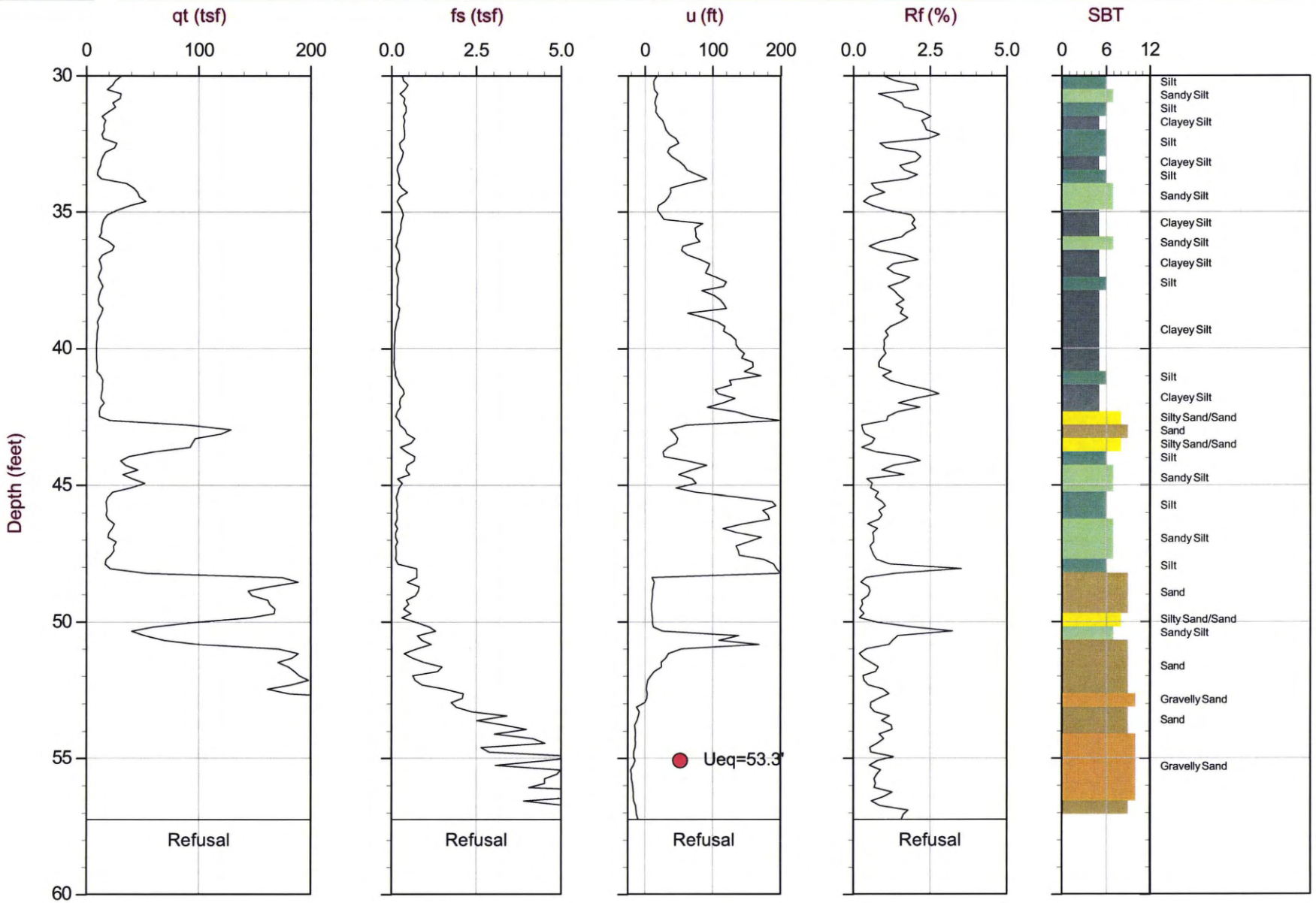
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 09:21
Site: DUPAIX

Sounding: CPT-01
Cone: STD 20T AD183



Max Depth: 17.450 m / 57.25 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP01.COR

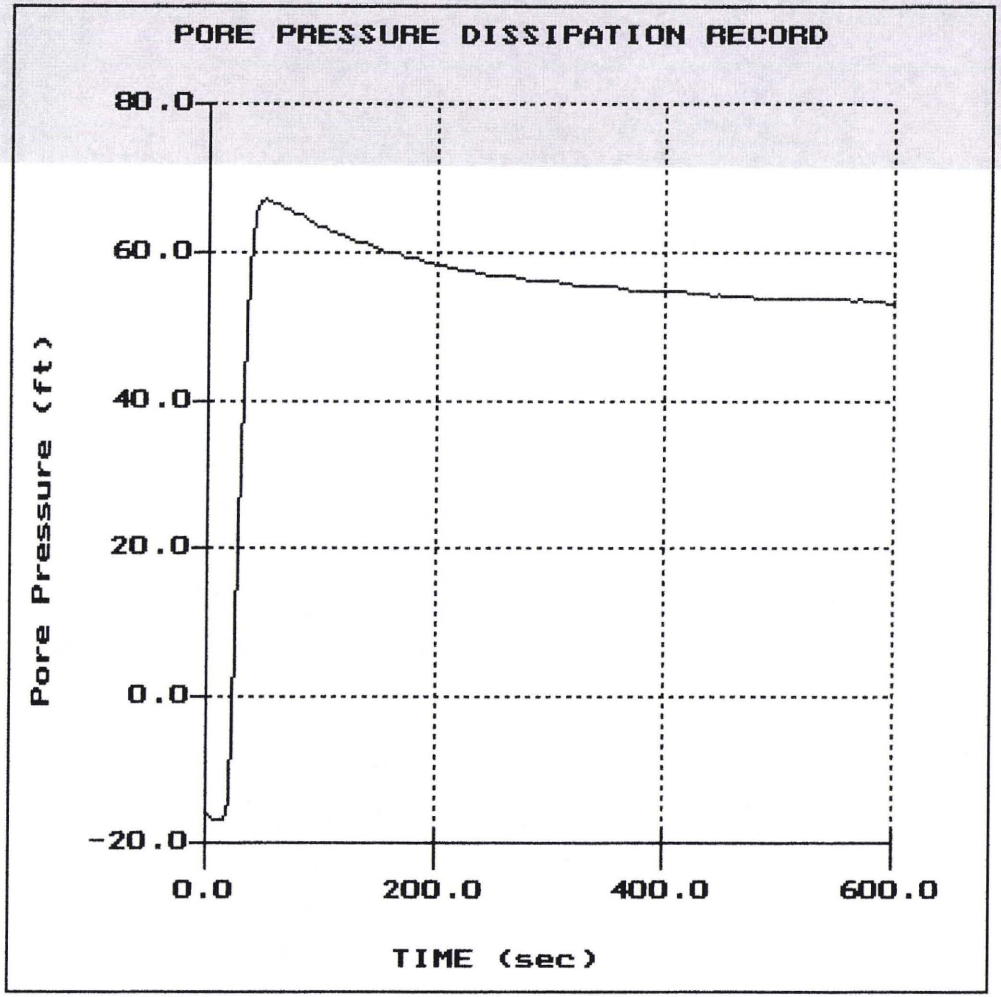
SBT: Lunne, Robertson and Powell, 1997

Equilibrium Pore Pressure from Dissipation

IGES LLC

Hole: CPT-01
Location:DUPAIX

Cone:STD 20T AD183
Date:02:01:08 09:21



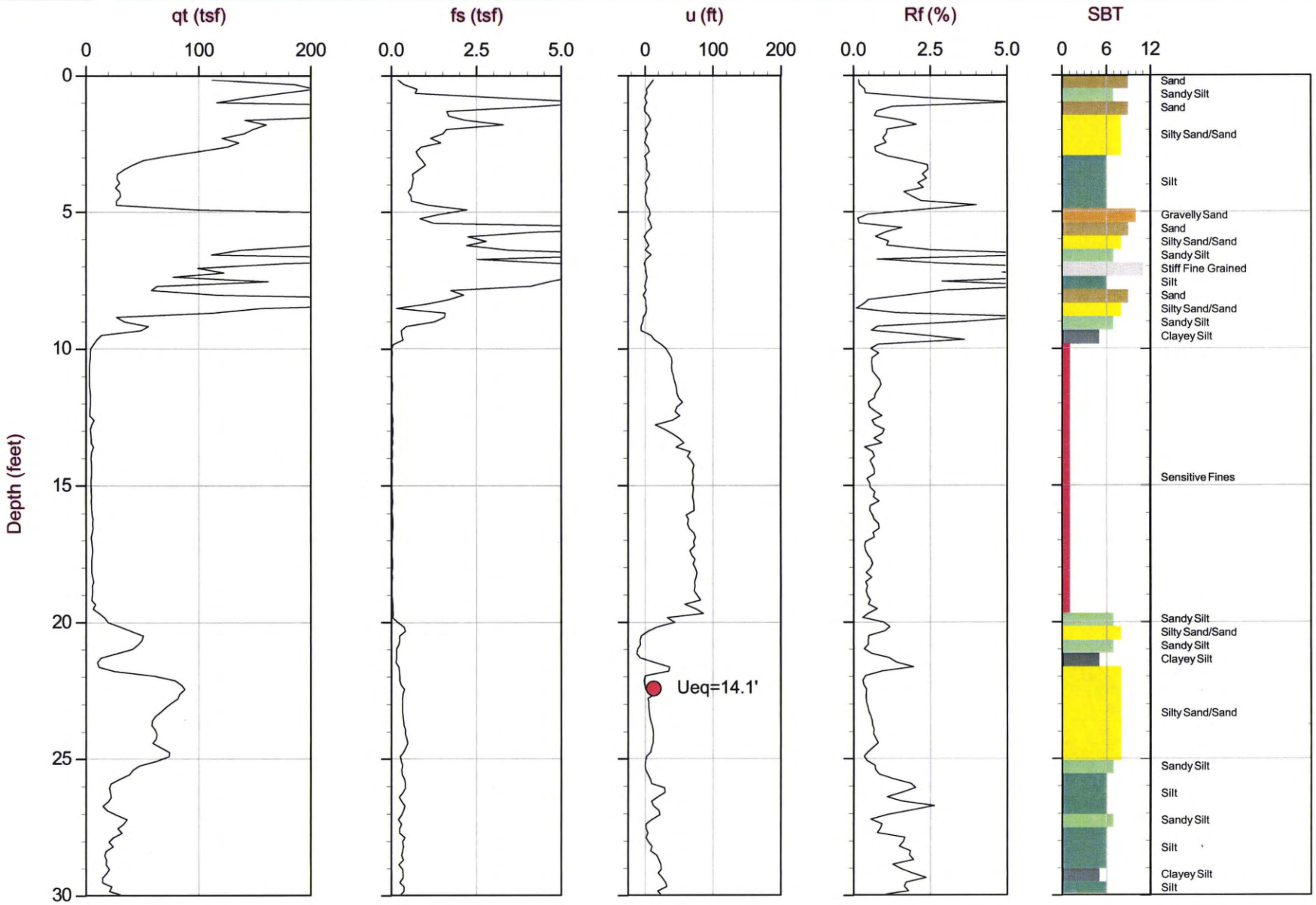
File: 318CP01.PPD
Depth (m): 16.80
(ft): 55.12
Duration : 600.0s
U-min: -16.89 15.0s
U-max: 67.01 50.0s

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 10:17
Site: DUPAIX

Sounding: CPT-02
Cone: STD 20T AD183



Max Depth: 16.850 m / 55.28 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP02.COR

SBT: Lunne, Robertson and Powell, 1997

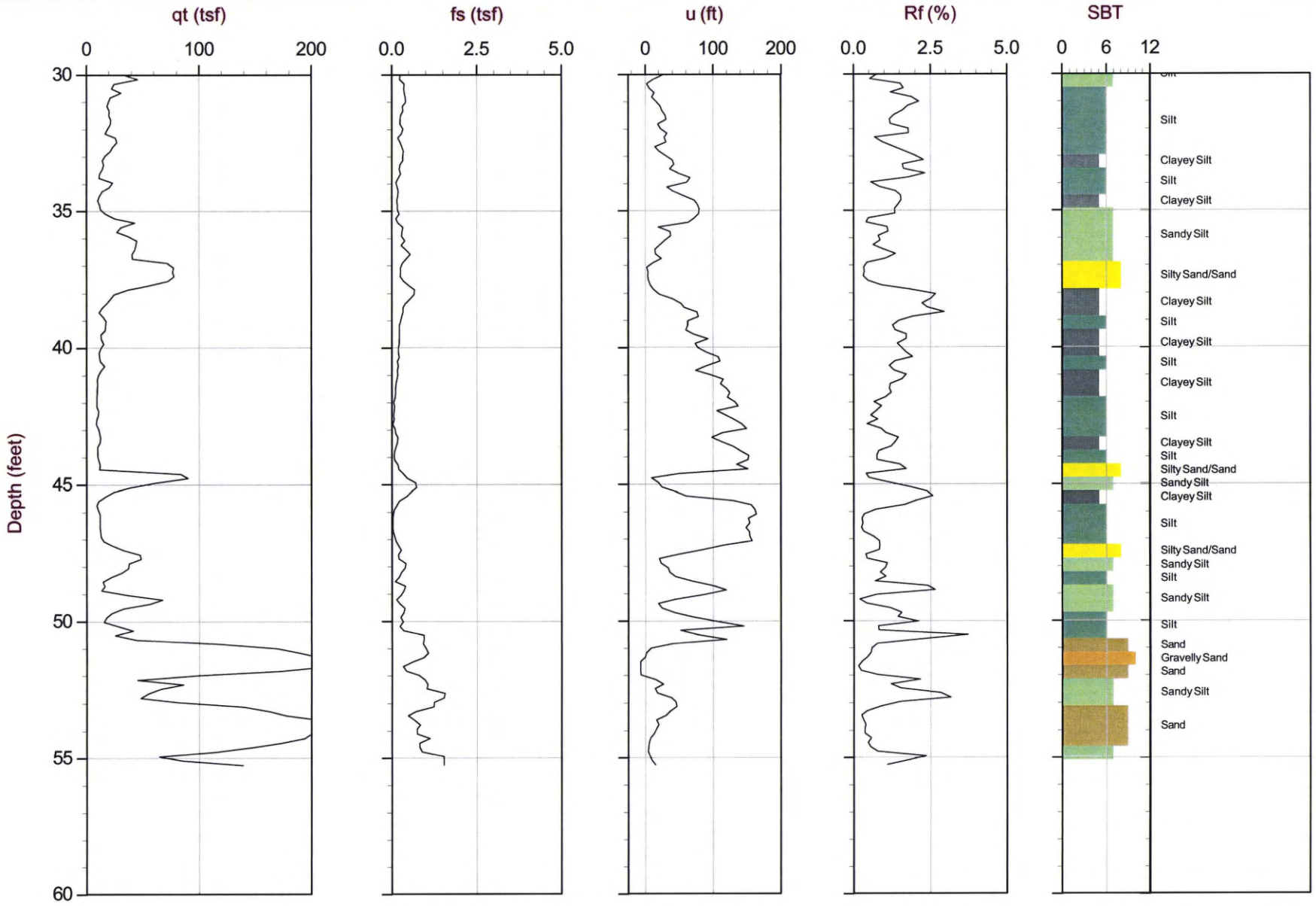
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 10:17
Site: DUPAIX

Sounding: CPT-02
Cone: STD 20T AD183



Max Depth: 16.850 m / 55.28 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP02.COR

SBT: Lunne, Robertson and Powell, 1997

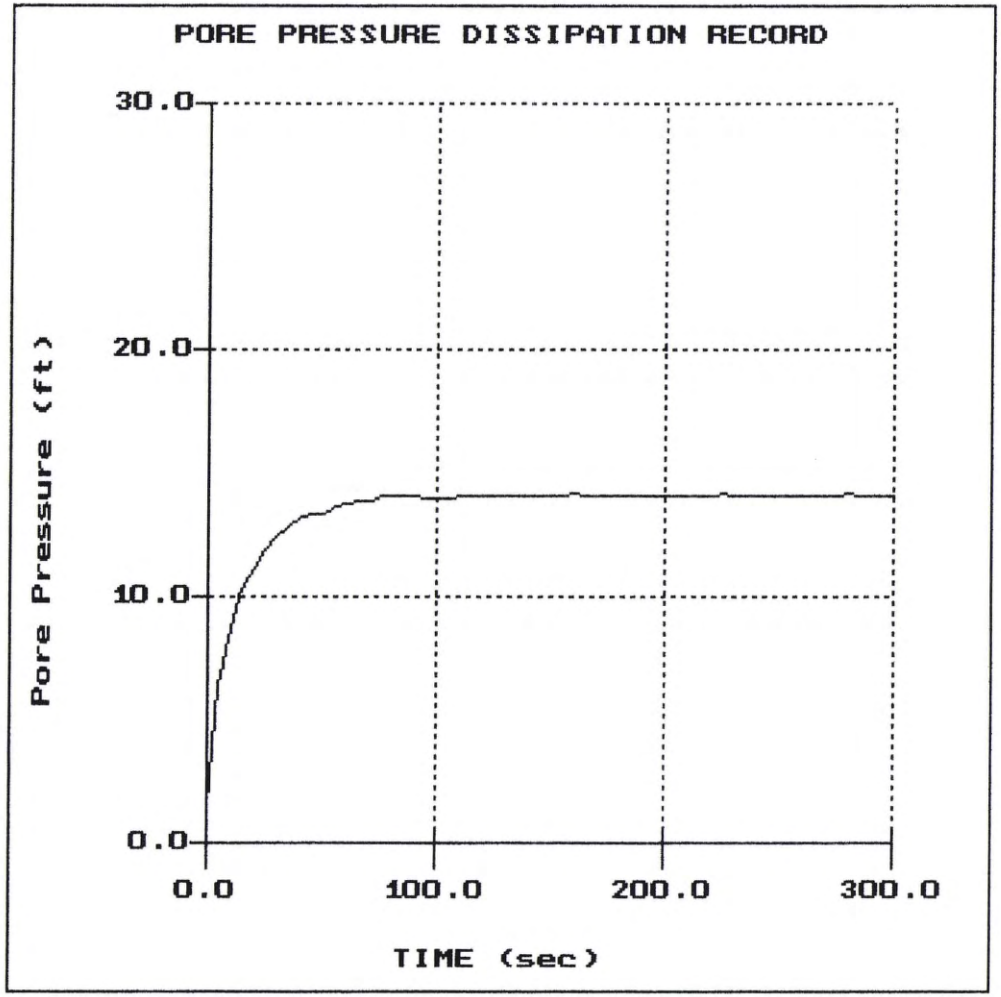
● Equilibrium Pore Pressure from Dissipation

IGES LLC

Hole: CPT-02
Location:DUPAIX

Cone:STD 20T AD183
Date:02:01:08 10:17

File: 318CP02.PPD
Depth (m): 6.85
(ft): 22.47
Duration : 300.0s
U-min: 1.31 0.0s
U-max: 14.17 160.0s

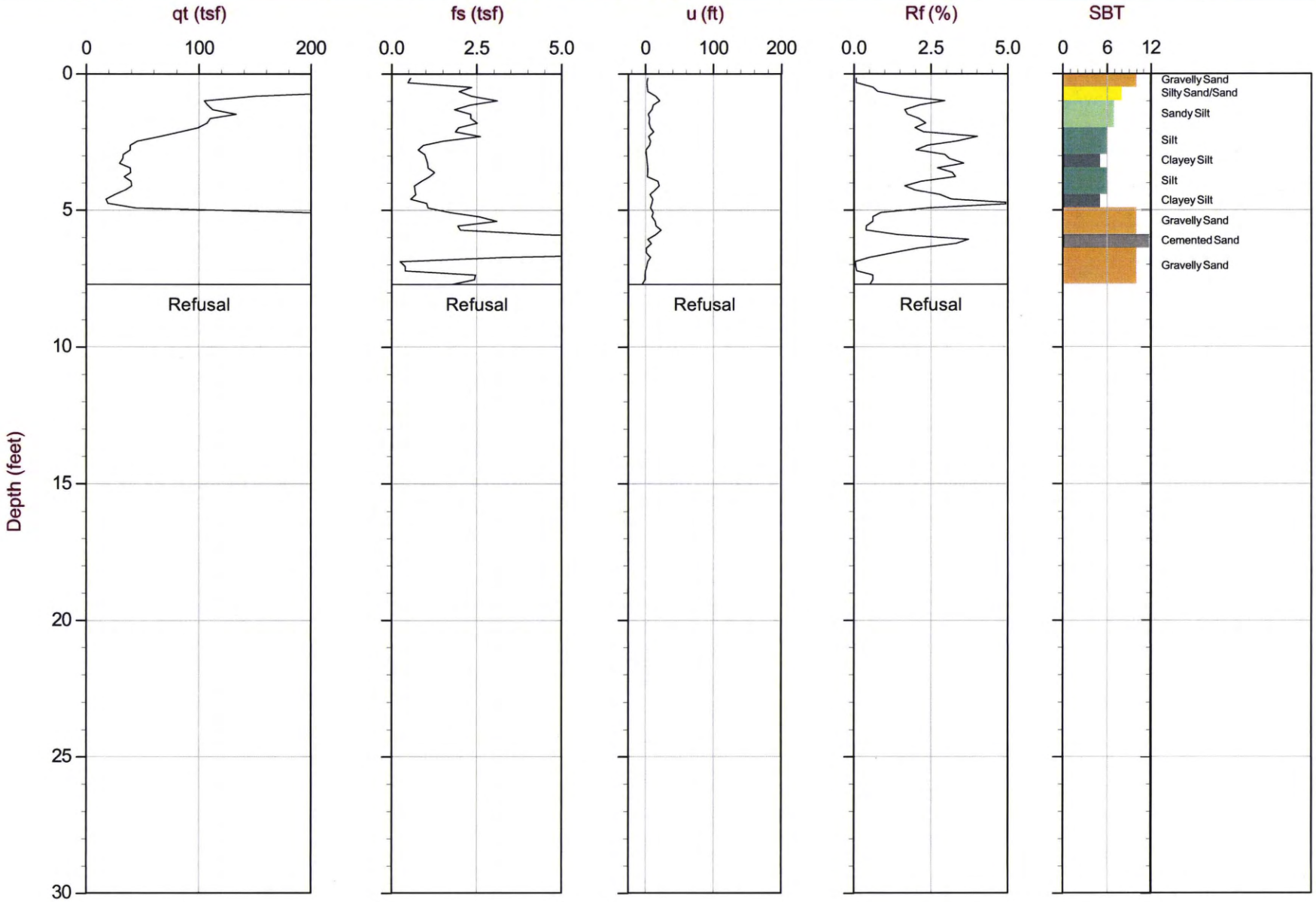


CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 11:06
Site: DUPAIX

Sounding: CPT-03
Cone: STD 20T AD183



Max Depth: 2.350 m / 7.71 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP03.COR

SBT: Lunne, Robertson and Powell, 1997

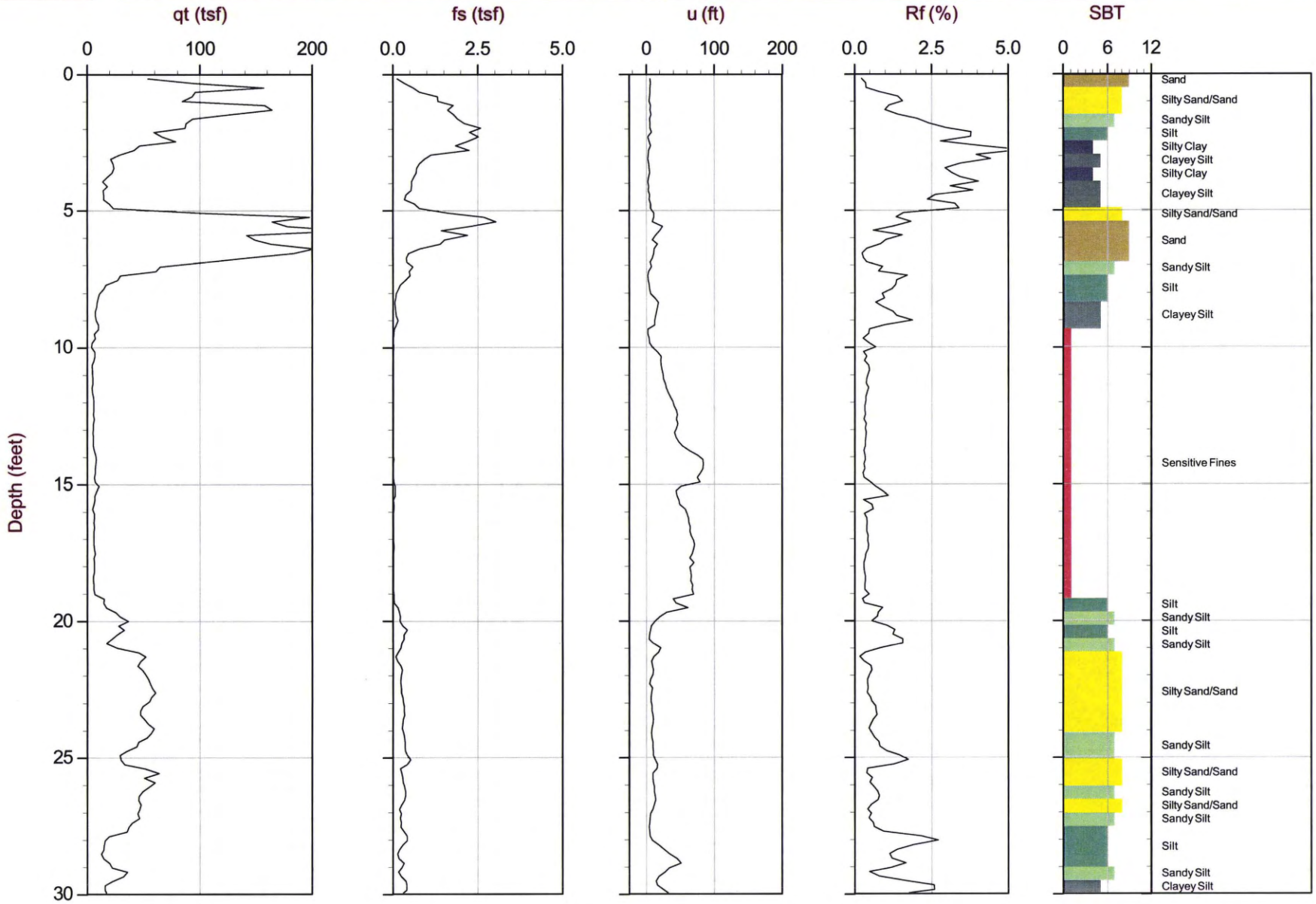
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 11:31
Site: DUPAIX

Sounding: CPT-04
Cone: STD 20T AD146



Max Depth: 15.900 m / 52.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP04.COR

SBT: Lunne, Robertson and Powell, 1997

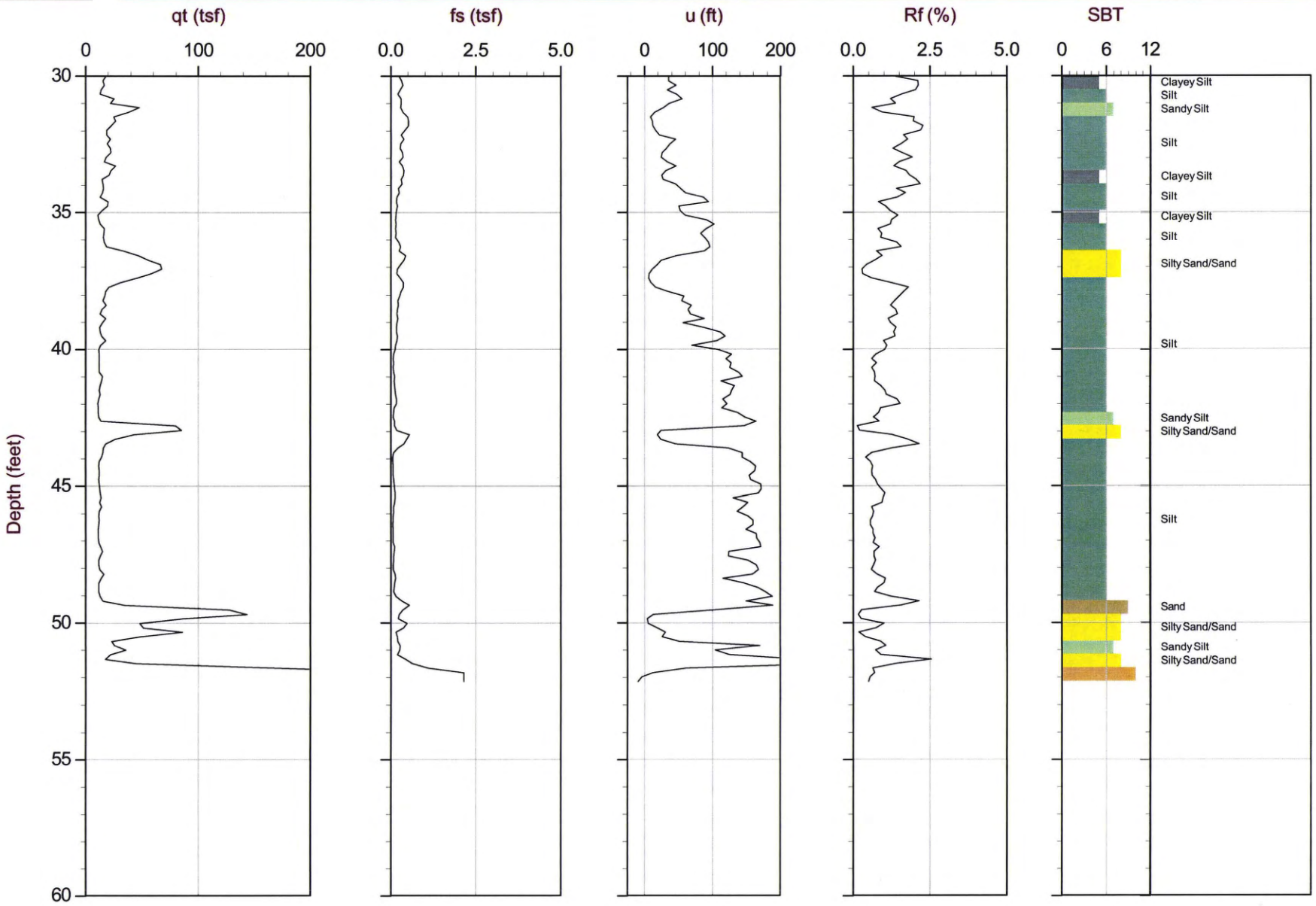
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 11:31
Site: DUPAIX

Sounding: CPT-04
Cone: STD 20T AD146



Max Depth: 15.900 m / 52.16 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP04.COR

SBT: Lunne, Robertson and Powell, 1997

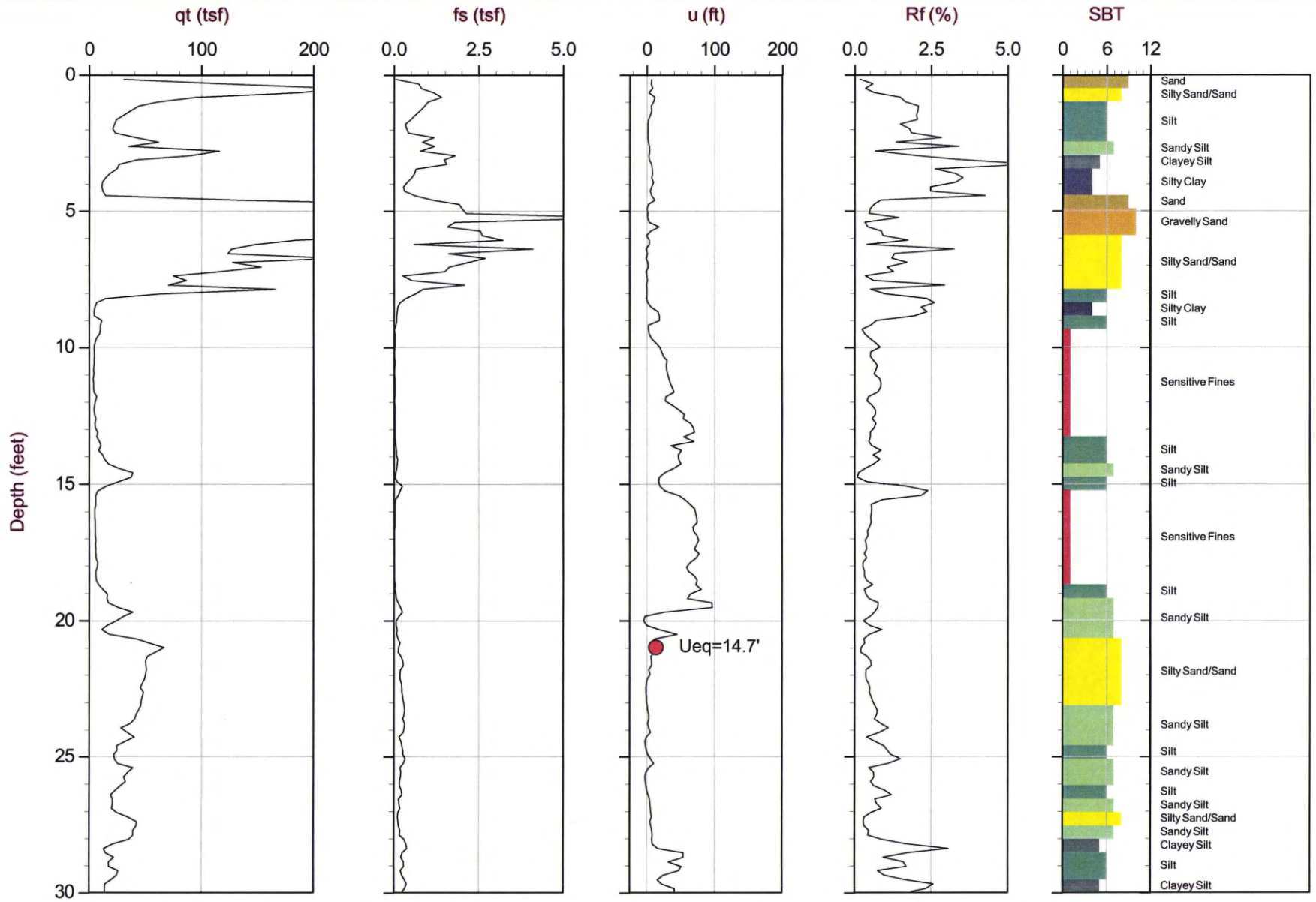
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 12:17
Site: DUPAIX

Sounding: CPT-05
Cone: STD 20T AD146



Max Depth: 18.300 m / 60.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP05.COR

SBT: Lunne, Robertson and Powell, 1997

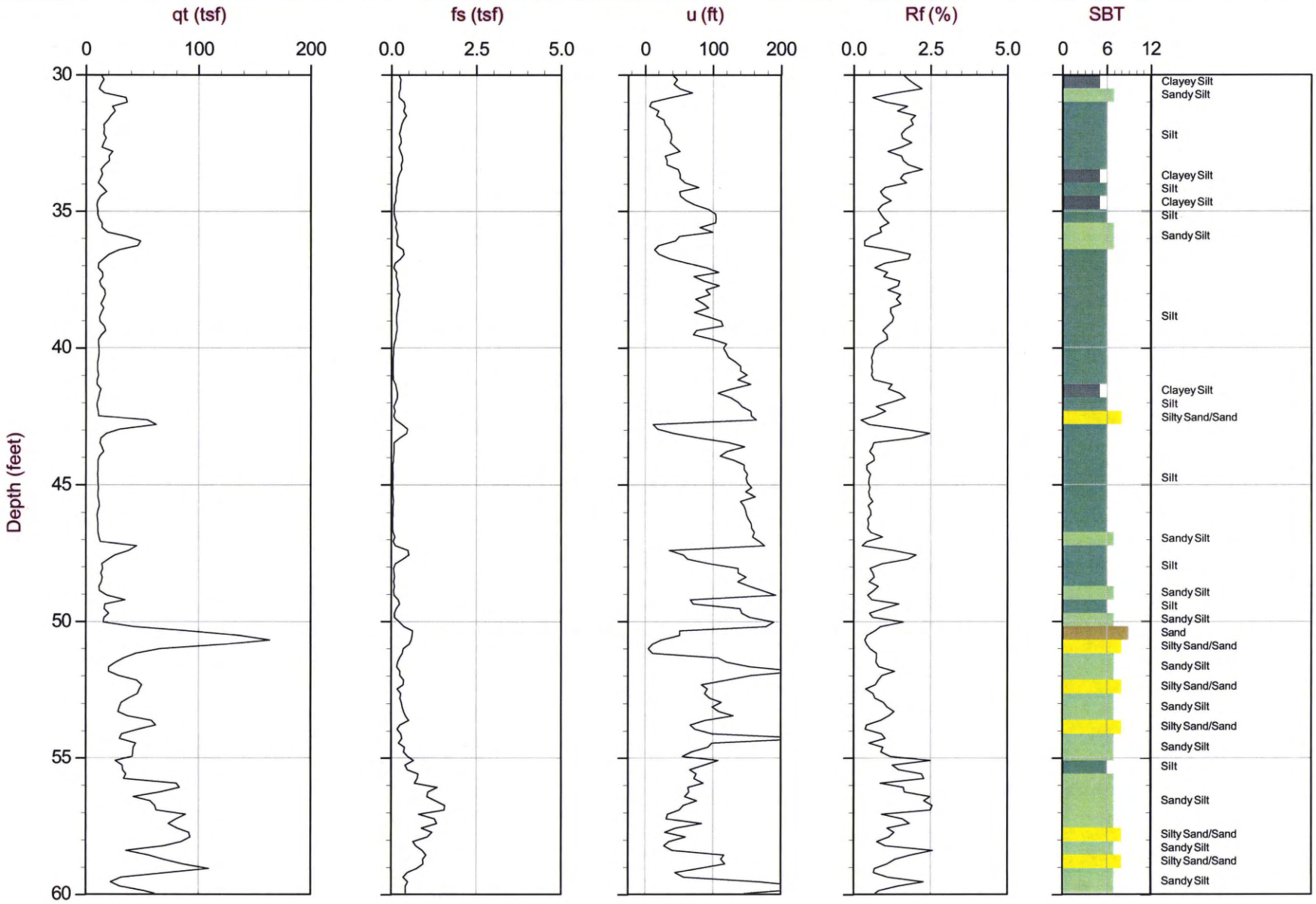
● Equilibrium Pore Pressure from Dissipation

CONETEC

IGES LLC

Job No: 08-318
Date: 02:01:08 12:17
Site: DUPAIX

Sounding: CPT-05
Cone: STD 20T AD146



Max Depth: 18.300 m / 60.04 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: 0.150 m

File: 318CP05.COR

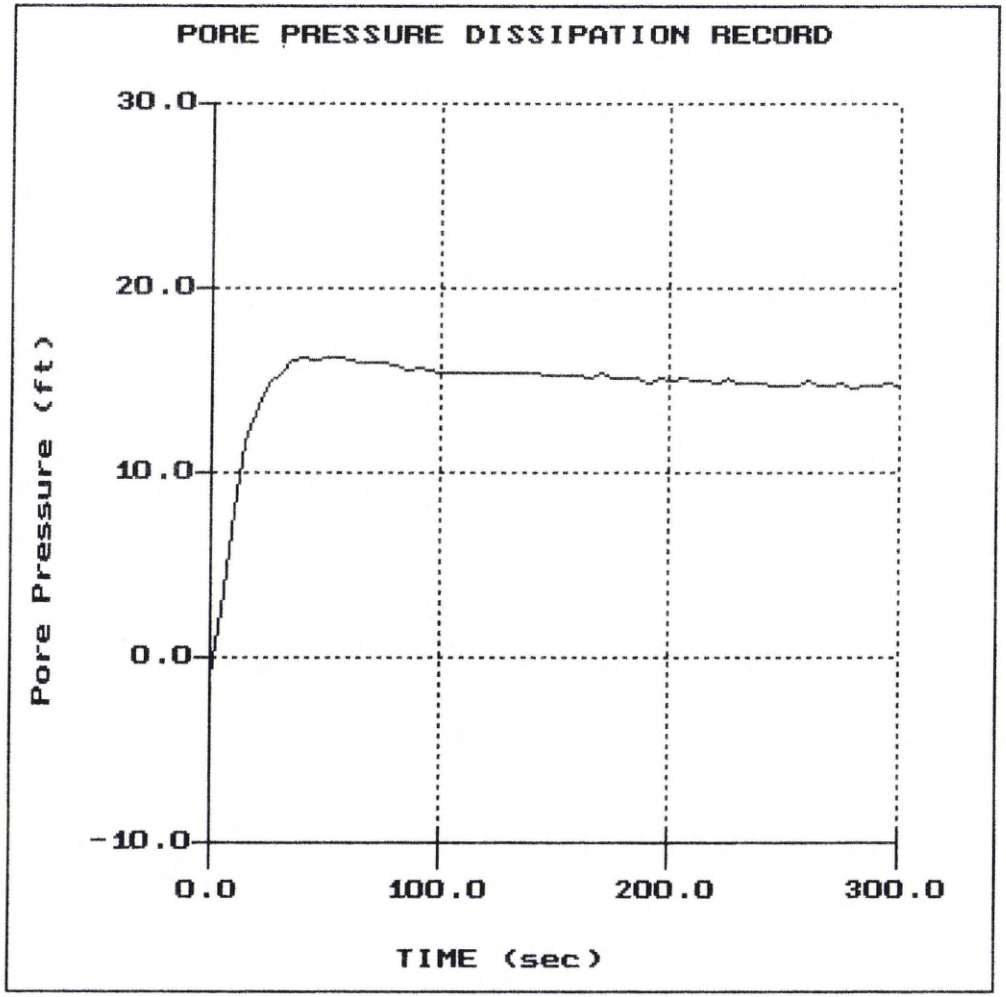
SBT: Lunne, Robertson and Powell, 1997

● Equilibrium Pore Pressure from Dissipation

IGES LLC

Hole: CPT-05
Location:DUPAIX

Cone:STD 20T AD146
Date:02:01:08 12:17



File: 318CP05.PPD
Depth (m): 6.40
(ft): 21.00
Duration : 300.0s
U-min: -1.08 0.0s
U-max: 16.19 55.0s