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Bay Geophysical Project No. 98-185

January, 1999

Purchase Order No. 0599602-024

FINAL REPORT

HIGH RESOLUTION SEISMIC SHEAR WAVE REFLECTION PROFILING FOR THE IDENTIFICATION OF FAULTS AT THE PRIVATE FUEL STORAGE FACILITY SKULL VALLEY, UTAH



Prepared for:

STONE & WEBSTER ENGINEERING CORPORATION

Englewood, Colorado

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Executive Summary

This report presents an interpretation of the data acquired at the Skull Valley, UT proposed Private Fuel Storage Facility. The reflection seismic data has been correlated against available geologic data that has been acquired concurrent to the final phase of geophysical data acquisition.

A number of faults have been identified on the attached sections. These faults are currently identified as block type faults. Several faults are interpreted as displacing the base of the Quaternary section.

**HIGH RESOLUTION SHEAR WAVE REFLECTION SEISMIC
PROFILING FOR THE IDENTIFICATION OF FAULTS AT
THE PRIVATE FUEL STORAGE FACILITY
SKULL VALLEY, UTAH**

1 INTRODUCTION

Bay Geophysical Associates, Inc. (Bay) in response to Stone and Webster's (SWEC) request for Proposal Number RFP-0599602-G002-071798 of July 8, 1998, proposed to conduct a comprehensive high-resolution reflection seismic survey at the proposed site for the Private Fuel Storage Facility in Skull Valley, Utah with a subsequent bid package released July 16, 1998. The contract was awarded on August 5, 1998, Release Order No.1, Purchase Order No. 0599602-024 and revised on August 24, 1998 with Release Order No. 2 (Letter No. S-V-22).). After the first data set was interpreted, a subsequent phase of data acquisition occurred in early November 1988. This report represents the interpretation of both sets of data.

This report summarizes all data acquisition and field methods used on this project. The data processing methods applied to date are also discussed. The interpretation incorporates information from recently processed commercial data to the north of the site. Prior to the submission of this report, the geophysical data and interpretations were reviewed with the staff of Geomatrix Consultants: SWEC's geological consultants on the project.

1.1 BACKGROUND INFORMATION

1.1.1 SITE DESCRIPTION

The seismic survey was located within Sections 5, 6 and 7 in Township 5 South, Range 8 West and Section 1 in Township 5 South, Range 9 West of Tooele County, Utah on the Skull Valley Band of Goshute Indian Reservation. Figures 1 and 2 depict the regional location of the site. A topographic map illustrating the geophysical survey line locations, including pilot study lines, is provided in Figure 3.

1.2 PURPOSE

The purpose of the study was to apply the high-resolution shear wave seismic reflection technique to the identification of features associated with faults and shallow stratigraphic features. Detailed resolution of features as shallow as 80 feet was required. The primary goal of the requested shearwave seismic survey was to image reflectors within the Quaternary section above Miocene age sediments containing a volcanic ash which is located approximately 85 feet below ground surface (BGS). A secondary purpose of the survey was to assess the continuity of the strata within the basin-fill deposits overlying Paleozoic bedrock. This was requested by Stone and Webster (SWEC) with the ancillary goal of confirming or refuting the interpreted bedrock faults identified in a previous P-wave reflection survey performed by others and completed in December of 1996.

2 PROJECT PERSONNEL

2.1 FIELD PERSONNEL

The following personnel conducted the survey in the field:

Geophysicist/Project Manager: J. Clark and Philip Van Hollebeke
Field Engineer/Observer: J. Mattison
Assistant Geophysicist: Ronald Carr
Mini-Vibrator Operator: Phil Filipiak
Geophysical Technicians: Jeff Barnes, Brian Zimla, Phil Buse, William Dings, and three contract employees

During the second phase of data acquisition, Bay's operations manager, Lee Kurtzweil, and field manager, John Reynolds and three additional Bay personnel were in the field to expedite the late - year operations.

3 FIELD ACTIVITIES-PILOT STUDY

On August 10, 1998, immediately after conducting the Quality Assurance and Quality Control, (QA/QC), protocol for project initiation, Bay conducted a pilot study, walk-away noise test at the project site. This test was performed to ascertain the viability of the shear wave seismic reflection technique to accomplish the stated scope of work. This test also established the most reliable solution parameters for the acquisition of seismic data.

3.1 INSTRUMENTATION AND EQUIPMENT

The following summarizes the hardware and software used in the field on the pilot study:

Energy source	Industrial Vehicles, Inc. MiniVib T-15000 Shear wave Vibrator 6,000 LB peak force, range 15Hz-550Hz
Geophones	164 each Geospace SMC 70, 40 Hertz horizontal geophones
Cables	9 each Mark Products 52-pair cables with 24 take outs per cable and 13 feet between take outs, 325 feet in length and 4 land cable jumpers
Vibrator Controls	IVI RTS/SIB System
Data Recorder	OYO DAS-1 A/D converter with 24 bit sigma-delta processor Analog signal/noise ratio: Less than minus 100 dB, 96 channel Min. Sample interval: 0.125 Maximum samples per channel: 32,000 Plotter: 6 inch 600 dpi internal
Correlator	Seisnet Software/ Pentium computer (Software Science)
CDP Roll-Along Switch Input Panel	RLS240 Mark Products Amphib Input Panel

3.1.1 EQUIPMENT TESTING

Field equipment was tested daily to insure proper functioning of ground and recording equipment. Specifically, these tests were:

Daily Recorder Tests: A suite of tests using a pre-calibrated oscillator to determine gain accuracy, harmonic distortion, DC offset, and A/D converter accuracy of the DAS data acquisition system and associated hardware. These tests were performed on a daily basis.

Seismic Line check: Meter check of geophone continuity and geophone to ground leakage. This test was performed as geophones were connected to the CDP land cables.

Random geophone impulsive response test: Geophones were tested with a Matrix Industries, Inc. "Bird Dog". This instrument is capable of storing the impulse response of a reference geophone in memory. The impulse response of the geophones on the ground was compared to that of the reference phone stored in memory. Ground geophones with responses deviating by more than 5% were replaced. This test was performed on all active geophones at the beginning of each workday.

Vibrator: The IVI mini-vibrator used was calibrated to insure consistency of performance for frequency versus ground force on a daily basis.

Minimum Dead Geophone Stations: The acquisition crew was prepared to stop acquisition operations if more than 10% of the active ground stations did not pass the above tests or were otherwise excessively noisy. All anomalous conditions were noted on the observer's log.

CDP Land Cables: All cables were fully checked for continuity prior to project start and replaced/repared in the field as needed.

3.2 QUALITY ASSURANCE

Bay Geophysical maintains a strong corporate commitment to quality. Bay adheres to a formal, documented Quality Assurance - Quality Control (QA/QC) program that defines policies and procedures to ensure that all work is of the highest technical quality and meets technical and regulatory requirements. The field staff attended training at the S&W office in Denver, Colorado prior to commencement of the fieldwork for the purpose of conducting this work under the S&W QA plan.

S&W auditors conducted a field audit on August 10, 1998 to ensure compliance with the QA program for this project. The S&W auditors did not communicate any QC/QA non-compliance issues in the course of the field audit.

3.3 DATA ACQUISITION: PHASE I – PILOT STUDY

Data acquisition occurred in two phases on this project. The first phase was the pilot study, which was conducted in accordance with Bay Geophysical's alternative proposal in response to the July 16, 1998 RFP. The primary purpose of this data acquisition phase was to ascertain the feasibility of obtaining high quality shearwave reflection seismic data in the Skull Valley Basin, and secondly to determine the areas where the quality of the reflection data may vary. Figure 4 delineates the locations of the three pilot profiles that were conducted.

The data profiles were acquired between the dates of August 10, and August 13, 1998. The raw data acquired from these profiles were sent to Sterling Seismic Processing of Denver, Colorado for expedient processing to a brute stack. The following were the data acquisition parameters utilized on each of the pilot profiles:

Shear wave reflection pilot study parameters (August 10-13, 1998)

Type of survey	Shear wave reflection (single component transverse to line direction)
Station interval	3 feet
Source	IVI MiniVib Shear wave Vibrator
Source interval	3 feet
Type of sweep	Linear
Sweep frequencies	20 Hz to 200 Hz 15 Hz to 160 Hz 20 Hz to 160 Hz 15 Hz to 160 Hz uncalibrated
Sweep drive	Tested at drive levels 4 and 6
Sweep taper	Start=0.4 sec and End=0.2 sec
Sweep length	6 seconds
Number of Sweeps	4
Record Length	8.0 seconds
Recording instrument	Oyo DAS-1 24 bit A/D resolution
Number of channels	96

Sample interval	1.0 millisecond
Data redundancy	48 fold
Geophones	Geospace SMC-70 40 Hz horizontal

Figure 5 is a schematic diagram of the source and receiver locations for the pilot profile layout configuration. Note that this source and receiver configuration allows for the collection of full fold data throughout the spread length of the pilot profile in addition to the off-end source data necessary to construct a standard walkaway profile. Figure 6 displays a walkaway profile constructed from the raw data contained in Test Profile PFSF-98-TS-1. Of particular interest and concern are the criss-crossing noise patterns, which are highlighted in yellow on the walkaway profile. These noise trains were interpreted in the field to be coherent source generated surface and direct waves that were reflected back toward the source at various points along the shot profiles. These waves were reflected both backward and forward, hence the criss-crossing appearance. Figure 7 illustrates a zoomed portion of the walkaway, which also exhibits the criss-crossing noise features highlighted. These noise trains have an apparent wavelength of approximately 6 feet. That is the repetitive nature of the noise trains occurs every 6 feet along the ground surface. Analysis of these noise trains indicates that spatial aliasing would be a severe problem if a five-foot receiver spacing was used for data acquisition. A five-foot receiver station spacing would provide only one sampling of this waveform per wavelength. A minimum of two samples of the waveform per wavelength is needed to accurately reconstruct the sampled waveform. Spatial aliasing is a sampling problem in which the spatial density of acquisition points are not sufficient to adequately reconstruct the direction or slope of the events evident on a raw shot record. Figure 8 schematically shows the problem with spatial sampling.

On this figure (Figure 8), samples were created such that only one sample per apparent wavelength was sampled. As indicated by this figure, a slope from the upper left to the lower right is just as valid when examining at the data as a slope from the upper right to the lower left. Simply put, this means if noise trains are spatially aliased they cannot be removed because it is impossible to identify the direction from which the noise trains emanate. As noise trains in both directions (dipping away and toward the shot) were present on the shot records, it was imperative to maintain adequate sampling density.

The brute stacks of profiles TS-1, TS-2, and TS-3 are shown as Figures 9, 10 and 11, respectively. The data quality on the northern most brute stack (PFSF-98-TS-1) indicated sufficient resolution and was deemed suitable for mapping low relief displacement within the sedimentary section. The profile at Test Location Two

(PFSF-98-TS-2) was also suitable. The data at Test Location Three (PFSF-98-TS-3) however, were severely degraded due to what was interpreted in the field as shallow bedrock dipping from the rock outcrop as shown on Figure 4.

3.4 DATA ACQUISITION: PHASE II – SEISMIC ACQUISITION (Lines A and B)

Data acquisition of the high-resolution production profile data began on August 14, 1998 for Line PFSF-98-A, and concluded on August 24, 1998. During this period, over 3,168 shot profiles were acquired over 4,336 receiver points. Photograph 1, Appendix B, shows shear wave receiver geophones laid out along Line PFSF-98-A. Note that the vegetation is cleared to provide maximum coupling for the leveled and directionally placed shearwave geophones. This clearing of vegetation was determined to be extremely beneficial to data quality after a source test was conducted comparing records with the source on and off of vegetation. Production data were acquired with the following parameters:

Shear wave reflection survey parameters Line PFSF-98-A (August 14-24, 1998)

Type of survey	Shear wave reflection (single component transverse to line direction)
Station interval	3 feet
Source	IVI. MiniVib Shear wave Vibrator
Source interval	3 feet Station 2164-3164 6 feet Station 101-2163; 3165-4436
Type of sweep	Linear
Sweep frequencies	20 to 160 Hz
Sweep Taper	Start=0.35 sec and End=0.1 sec
Sweep length	6 seconds
Source Offset (Pad)	6.5 ft. North
Record Length	7.5 seconds (6 sec sweep, 1.5 sec listen)
Recording instrument	Oyo DAS-1 24 bit A/D resolution
Number of channels	96
Instrument Gain	48 dB
Sample interval	1.0 millisecond
Data redundancy	24 fold (48 fold station 2164-3164)
Geophones	Geospace SMC-70 40 Hz horizontal

A decision was also made in the field by Bay Geophysical and Stone & Webster representatives to acquire a portion of the data at full fold. That is recording a vibroseis source at every station location as opposed to every other station location. This was done over the proposed facility and is shown as a dashed red line from station 2164 to 3164 on Line PFSF-98-A in Figure 12. Line PFSF-98-B data acquisition began on August 25, and concluded on August 30, 1998. During this time frame over 1321 profiles were acquired. Photograph 2, Appendix B, shows the shear wave vibrator as it traverses through surveyed source points. The following were the parameters established for data acquisition on Line PFSF-98-B:

Shear wave reflection survey parameters Line PFSF-98-B (August 25-30, 1998)

Type of survey	Shear wave reflection (single component transverse to line direction)
Station interval	3 feet
Source	IVI MiniVib Shear wave Vibrator
Source interval	6 feet
Type of sweep	Linear
Sweep frequencies	20 to 160 Hz
Sweep Taper	Start=0.35 sec and End=0.1 sec
Sweep length	6 seconds
Source Offset (Pad)	6.5 ft. North
Record Length	7.5 seconds
Recording instrument	Oyo DAS-1 24 bit A/D resolution
Number of channels	96
Instrument Gain	48 dB
Sample interval	1.0 millisecond
Data redundancy	24 Fold
Geophones	Geospace SMC-70 40 Hz horizontal

3.5 DATA ACQUISITION: PHASE III – SEISMIC ACQUISITION (Lines C and D)

After the preliminary interpretation of the Phase II data was rendered (Lines A and B), soil borings were drilled to the west of the site to confirm a low relief fault identified on Line A. The soil borings confirmed the existence of the fault. It was

decided that two additional profiles were needed to corroborate other subtle features that had been identified on Line A.

Two additional shearwave seismic lines were acquired between November 8, 1998 and November 14, 1998. The data acquisition parameters for these two lines were identical to those of line A between stations 2164 and 3164. That is, the data were acquired with 3-foot source and receiver intervals with a nominal fold of 48 (see Figure 12).

Additional field and management personnel were placed in the field to expedite data acquisition due to the narrow weather window available at this time of year.

4 SURVEY COORDINATES

Per the requested scope of work, Bay implemented survey controls over horizontal and vertical locations of the seismic lines source and receiver points. This control was established with a Topcon Total Station Survey System utilizing benchmarks (provided by SWEC) that were traversed for closure control to within .1 foot vertical and 3 feet horizontal. Surveying of the Phase I and Phase II data started on August 10, 1998 and concluded on August 31, 1998. Photograph 3, Appendix B, shows the station configuration of the pin flags as source/receiver location points. Surveying for the Phase III data began on November 5, 1998 and concluded on November 9, 1998. A survey location plot is provided in Figure 13. All surveying was conducted in the local SWEC site coordinate system.

5 DATA PROCESSING

Data processing was handled in a series of stages. Pilot study data processing was expedited from the field to the processing center for rapid turnaround. The brute stacks of the pilot profiles were e-mailed to the field geophysicists. Production data was shipped on a weekly basis to the processors. All data processing was performed by Sterling Seismic Services located in Denver, Colorado. The following is the final processing flow used on the data:

Reformat
Refraction Statics
Datum 4500 feet; Datum Correctional Velocity 1000 feet/sec
Geometry Assignment
Gain Correction
Surface Consistent Deconvolution

Operator: 80 ms
Spectral Balancing
20-24-156-160
Velocity Analysis
Automatic Residual Statics
Source Domain Noise Attenuation
Subtractive Mix +/- 780 feet/second
Spectral Shaping 20-160 Hertz
Subtractive Mix +/- 390 feet/second
Mute
Trim Statics
Receiver Domain 2D Spatial Filter
Inverse NMO Correction
Velocity Analysis
AGC 500 ms
Stack
Zero Phase Deconvolution
Random Noise Attenuation
Filter 40/6-120/18
AGC 800 ms

The reflection data was analyzed in Bay's office using General Microcomputer Applications 2D/3D workstation. This package allows for post stack automated picking, filtering, gain application, and attribute calculation. Data can be viewed in either wiggle trace or color formats and can be viewed at any horizontal and vertical scale.

6 INTERPRETATION

The results of the data processing for the lines acquired at the PFSF site are shown as Figures 14 Through 17 for lines PFSF-A, B, C, and D Respectively. Line GSI-UT-34 is show in Appendix D. *This figure cannot be reproduced in any form due to licensing restrictions on the data.* These figures display the data in a very high-density format: 600 traces per inch (600 tpi = 900 feet per inch). This type of display was used for several purposes:

- The high density allows noisy, otherwise rugose reflectors to be followed across a greater distance.
- Faults are more readily visible by changes in reflector character and reflector offset.

- This compressed format minimizes the effects of coherent dipping noise on the interpreter's vision.

Figures 20 through 23 show each of the profiles A through D, respectively, at an expanded scale of 80 tpi with a different color palette representing trace amplitudes. These figures can be referenced for a more detailed view of the data described in the following sections.

6.1 Identification of reflections

Subsurface shear wave velocity information (i.e. bore hole or cross-hole shear wave) was not available at this site. Two prominent reflectors on the entire data set were identified based on geologic information provided by Geomatrix Consultants. The following describe the criteria used to identify reflectors.

"Q_p" Reflector (Ref: Geomatrix): This reflector is interpreted to correspond to a disconformity between Lake Bonneville sediments and the pre-Bonneville Promontory soil. Factors that also aided in the identification of this event were:

- Q_p is a hard carbonate-cemented soil in gravel that commonly causes auger refusal (Karthryn Hanson, Geomatrix, personal correspondence). This interface should be a good reflector for both P- and S- waves.
- Q_p is the erosional boundary between the lacustrine sediments of Lake Bonneville and the pre-existing soils. The character of the reflections above Q_p are different than those below it. Those above Q_p are more prominent while those between Q_p and Q/T are more subtle.
- This reflection is relatively continuous across the seismic sections. Stratigraphically, this soil is thought to be relatively continuous across the site area.

Base of the Quaternary, "Q/T": In general, this reflection appears to be an unconformity as dipping reflectors below terminate against this reflection. This is the only other reflection that could be followed across the majority of the site. It is much more rugose than Q_p.

Faults. Faults were identified based on several criteria:

- Abrupt vertical offset of reflections.
- Abrupt change in dip of reflections along a pseudo linear path with depth.
- Lateral change in reflection character over a range of reflection times in the seismic section.

- Alignment of diffractions and / or termination of reflections.

6.2 Line by Line Interpretation

Line PFSF-98-A

Figure 14 shows line PFSF-98-A. Some artifacts of the reflected direct waves that were observed during the pilot profiles ("criss-crossing patterns", Figures 6 and 7) can still be observed as steeply dipping linear events on this section. The effect of this type of noise on normally coherent reflections is to make them "chatter", with the interference patterns between the noise and the reflection causing apparent offsets. The reflector quality of this seismic section ranged from good in the full fold portion of the profile to fair over the rest of the profile.

Three reflections have been identified on line PFSF-98-A: Q_p is the shallowest reflection identified and ranges from approximately 55 to 120 ms. On the time section (40 to 50 feet below ground surface or bgs).

The second reflection is below Q_p and is fairly rugged. This reflection extends across the seismic section, which exhibits a depth of approximately 70 feet bgs. This reflector is deeper in the center of the section than at the edges, providing the appearance of a bowl. This reflection was identified as Q/T or the base of the Quaternary section. Ref-3 is approximately 35 ms below Q/T. It was not possible to follow Ref-3 all the way across the seismic section. Ref-3 was not used in the interpretation of faults in the area because of the difficulty in following it.

Eight sets of faults have been identified as faults A through H on the seismic section. These faults are currently interpreted to comprise a series of en echelon block faults. Faults A, C, E, F and G also are interpreted to have splays that intersect reflector Q_p .

Line PFSF-98-B

Figure 15 shows line PFSF-98-B. The reflection quality, in terms of reflection coherence, is mediocre between shotpoints 101 and 1700 and very poor thereafter to the end of the line (geographically, this is the area where test profile PFSF-TS-3 is located). The three reflectors identified on line PFSF-98-A were identified on this line by comparing shotpoint 300 on line B to shotpoint 1600 of line A. The signatures of the reflections were matched at these points, as the two seismic lines do not intersect.

Two fault sets have been identified on Line B. These faults are labeled as D and E, respectively.

Line PFSF-98-C

Line "C" was acquired at full fold along its entirety and is of good quality. The reflection interpreted as the Promontory soil "Q_p" is weaker than the corresponding reflection on Line "A" but still relatively continuous. The base of the Quaternary "Q/T" was observable as the deepest continuous reflector on the section. This was also interpreted as the base of the Quaternary as it is indicated by the unconformable truncation of reflectors of varying dips along the section. Figure 16 is the compressed gray scale seismic section of this profile. Fault sets C, D, and E are shown on these sections. Figure 22 displays this section on an expanded scale of 80 traces per inch (tpi) with a different color palette representing wiggle trace amplitudes.

Line PFSF-98-D

Line D had very nearly the same quality of reflection character as did Line C: quite good, but diminished when compared to the high fold section of Line A. Figure 17 is the compressed gray scale seismic section of Line D. This section shows fault sets D, E, and F. Figure 23 is an expanded display showing the profile at a scale of 80 traces per inch.

Line GSI-UT-34

This was an industry line that was purchased for "regional" control of the major faults in the area. Figure D-1, appendix D shows the shaded gray scale version of this line. These data were acquired with very coarse parameters, hence, only the Paleozoic section can be interpreted.

Fault set "A" was identified at shot point 193. Fault set "F" was identified at shot point 227. The fault sets at shot points 193 and 227 were identified and correlated with fault sets "A" and "F", respectively because these faults are aligned with the corresponding fault sets observed on line PFSF-98-A in a manner which is parallel to the gravity contours in the area. The character of the faults on displays within the corresponding fault sets are similar as well. Additional faults on line GSI-UT-34 were identified at shotpoints 183, 260, and 280. These faults could not be correlated to any faults observed on line PFSF-98-A or on the other seismic lines in the area based on character or position.

Table 1 summarizes the location of all faults observed on the seismic data. This table also shows the shallowest horizon at which each fault was detected and provides an estimate of the displacement.

Figure 18 is a site map showing those faults that intersect the Promontory soil reflector, Q_p. To date, fault set "F" (F1/F3) has been confirmed with borings C12-C17 which were located on Line "A". The details of the geologic confirmation of this feature will be addressed in another report to be issued by Geomatrix Consultants.

Figure 19 is a site map displaying the location of all fault picks. The horizontal position of each fault is shown where either the fault crosses the "Q/T" boundary or at the highest point on the observed fault on each seismic line.

6.3 Resolution & Detection

Two terms need to be addressed in this section with respect to the ability of a seismic signal to:

1. Resolve a feature, that is, to determine with a degree of certainty the separation or thickness of a specified unit in the subsurface.
2. The ability of the seismic wavelet to *detect* a feature.

Detection would involve a feature in the subsurface causing an aberration in a waveform such that, the interpreter of the seismic data can determine that *something* has changed without necessarily having the ability to determine *what* has changed.

Both resolution and detectability are a function of wavelength (λ). Typically the limits of seismic vertical resolution is considered to be one quarter of a wavelength (λ) (Sheriff, 1985, pg. 119). In other words, a change of distance between two horizons such as the displacement of a horizontal reflector along a vertical fault is said to be one-quarter wavelength. This is the smallest vertical distance that can be *measured*. The determination of the wavelength, λ will be discussed below.

With respect to detectability there are a variety of opinions. Sheriff (1985) demonstrates that certain features can be detected as small as one sixteenth of a wavelength. However, the typically accepted concept of detectability is considered to be approximately one eighth of a wavelength.

Wavelength is a function of velocity and frequency with the following relationship:

$$v = f\lambda$$

Where:

v = velocity of propagation of the seismic wave.

f = frequency of the seismic wavelet.

λ = wave length of the seismic wavelet.

The objective of any high-resolution survey is to obtain a wavelength, which is as short as possible. The reason, in fact, that a shear wave survey was performed at the PFSF was because shear waves travel at one third to one eighth the velocity of P- waves in unconsolidated materials and generally one half the velocity of P waves in hard consolidated materials. The other objective of a high-resolution survey is to obtain frequencies as high as possible.

Based on stacking velocity measurements (which are accurate to about 20%), and on refraction shear waves seismic measurements independently acquired by Geosphere (1997). Shear wave velocities in the very near surface are on the order of 500 feet per second increasing to approximately 700 to 800 feet per second at the Promontory soil and increase to between 1000 and 1500 feet per second in the Quaternary section. Below the Quaternary we estimate the shear wave velocities to be on the order of 2000 feet per second. Based on spectral analysis of the shear wave seismic data, the peak frequency of reflections range from between 100 and 150 hertz. Table 2 summarizes the upper and lower limits of the resolution and detectability with respect to the seismic data acquired.

7 Summary and Acknowledgements

7.1 Summary

A total of eight fault sets have been interpreted on Line PFSF-98-A. Of these, one has been interpreted to lie on the industry line GSI-UT-34, which is fault "A." One of the faults observed on Line GSI-UT-34 was interpreted to lie to the west of the site and to the west of Line A. Relative to the site, three fault sets were observed on Lines PFSF-98-B and PFSF-98-C: D, E, and F. Of these, faults "F" and "D" appears to broach the "Q_p" and were confirmed with borings located along Line "A." Fault set "E" passes beneath the site but based on the seismic interpretation does not disrupt the Q/T reflector. Fault set "D" provided mixed dating interpretations depending on the line interpreted. "D" displaces "Q_p" on Lines "C" and "A". It appears to barely displace "Q/T" on Lines "B" and "D" to the south.

This report summarizes the location of faults interpreted on seismic data and presents them depth wise as they intersect or displace marker horizons *interpreted* to correlate with known geologic markers. No further interpretation of fault capability, activity, or age dating is expressed or implied, as these fault attributes will be determined by earthquake engineers and geologists familiar with the site geology.

7.2 Acknowledgements

Bay Geophysical Associates wishes to thank Kathryn Hanson, Bert Swan and John Luttinger of Geomatrix Consultants for their participation in the final phases of interpretation of seismic data. To some extent the interpretation of all geophysical

data involves subjective judgement. The geologic input of these people in conjunction with their geologic understanding of the region greatly reduced the ambiguities possible in the interpretation of this data set. Further, the integration of other geophysical data (refraction, seismic and gravity) provided by Geomatrix Consultants proved to be a great asset in the interpretation of the data.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John C. Clark", written over a horizontal line.

John C. Clark

President

TABLE 1

Summary of Fault Locations and Displacements

Survey Line		Datum and Amount of Displacement				Sense of Slip		Fault Designation	Comments
Line	Shot Point	Q/T (ms)	Calculated Vertical Disp. * (ft.)	Qp (ms)	Calculated Vertical Disp. ** (ft.)	Down-to-the-East	Down-to-the-West		
LINE A									
34	183	na		na		X		—	Unnamed fault pick. Upper part of section not imaged.
34	193	na		na			X	A	"East Fault." Upper part of section not imaged.
34	227	na		na			X	F	Upper part of section not imaged.
34	260	na		na		X		—	Unnamed fault pick. Upper part of section not imaged.
34	280	na		na			X	West Fault	Upper part of section not imaged.
LINE C									
C	357	4.3	2.4	N			X	C1	Fault appears to die out within the Salt Lake Group. Extends near surface.
C	418	N		N		X		C2	
C	820	4.8	2.6	4.8	1.9		X	D1	
C	930	N		N				E2	
C	1027	N		N		X		E1	Flexure at Q/T but fault does not appear to extend above Q/T horizon.
C	1178			N		X		E3	
LINE D									
A	151	>10	>5.5	?			X	?A7	Uncertain of Qp pick SP 101-700
A	452	>7	>3.8	?		X		?A6	?Qp and Q/T diverge on fault pick
A	607	?		?			X	?A5	?Qp and Q/T converge on fault pick
A	761	?		12.7	5.1		X	A1	Q/T reflector across faults is poorly defined.
A	855			3.5	1.4		X	A4	Displacement uncertain due to dip on Qp.
A	907	?		2.3	0.9	X		A2	
A	946	?		10.8	4.3		X	A3	Extends near surface.
A	1227	4.1?	2.3	2.7	1.1		X	B2	Poor data below Qp between faults B1 and B2.
A	1450			≤2	<1	X		B1	Questionable fault.
A	1745	4.8	2.6	N			X	C1	Highest point on fault is at 121 ms.
A	1852	4.4	2.4	N			X	C2	Possible flexure (change in dip) in Qp horizon.
A	2102	≤2.5		N				D3	Highest point on fault is at 143 ms.
A	2161	5.3	2.9	N			X	D2	Flexure in Q/T horizon; possible channels to west in Qp.
A	2352	2.6	1.4	2.3			X	D1	Possible small flexure in Qp.
A	2560	?					X	E2	Lateral uncertainty in location ~25 ft.
A	2669	?					X	E1	Flexure in Qp horizon ?
A	2810	N				X?		E3	
A	3138	<4	<2.2	5.5	2.2		X	F1	Highest point on fault is at 211 ms.
A	3168	<5	<2.8	3	1.2	X		F3	Extends near surface.
A	3304	<5	<2.8	4.5	1.8	X		F4	Extends near surface.
A	3329	<5	<2.8	3.5	1.4		X	F2	
A	3556	N					X	G2	
A	3602	<2?				X		G1	
A	3930	Y		Y		X		H1	Qp disrupted, but cannot tell amount of displacement.
A	3904	Y		N			X	H2	
LINE D									
D	197	3.2		3.6			X	F2	Extends near surface.
D	330	2.8		3.7		X		F3	
D	369	4.2		4.2			X	F1	
D	828	?		?		X?		—	Unnamed questionable fault.
D	949	?		?		?	?	—	Unnamed questionable fault.
D	1110	?		?				D1 ?	
LINE B									
B	283	≤5		N			X	—	
B	327	≤5.7		N		X		—	Questionable displacement of Q/T.
B	495	3		N			x	—	
B	766	?		N		?	?	—	Questionable fault. No apparent displacement of Qp.
B	885	?		?		?	?	—	Character change in Qp reflector; poor data to the west.
B	1020	?				?	?	—	Questionable fault.
Data SW of shotpoint 1000 are very poor quality.									

* Using Interval Velocity = 1100 ft./sec.

** Using Interval Velocity = 800 ft./sec.

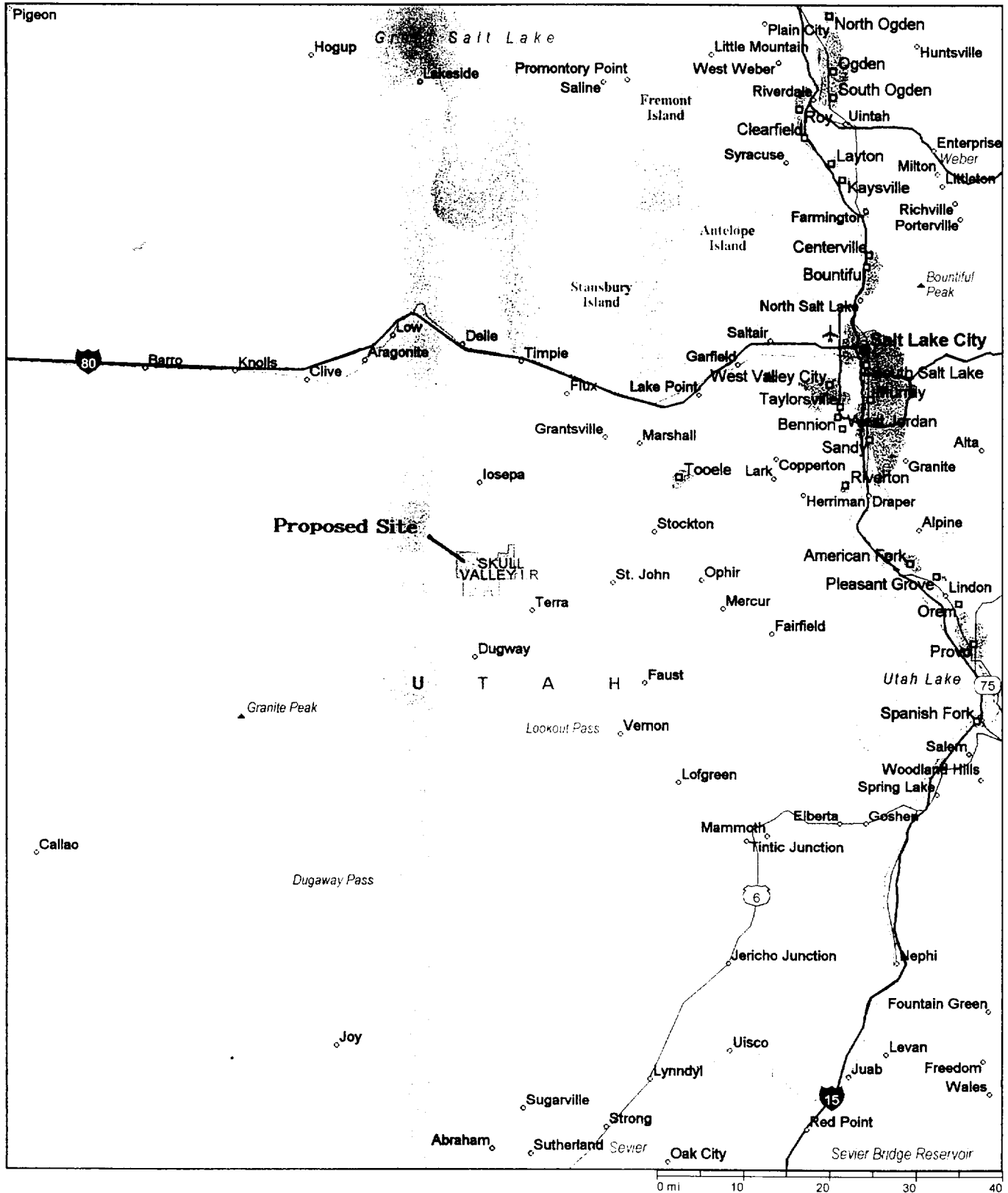
Table 2

Seismic Resolution and Detectability Given Various Parameters

Velocity, ft./sec	Frequency, Hz	Wavelength, ft.	Resolution 1/4 λ , ft.	Detection 1/8 λ , ft.
500	150	3.33	0.83	0.42
500	100	5.00	1.25	0.63
800	150	5.33	1.33	0.67
800	100	8.00	2.00	1.00
1000	150	6.67	1.67	0.83
1000	100	10.00	2.50	1.25

Figures

Private Fuel Storage Facility Skull Valley, Utah



Streets98

Figure 1
Site Location Map

ACAD 13 \98185\dfprt\figure1
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Contract No.
0586602-024

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AP

APPROVED BY
L.L.C.

P.A.V.
9-13-98

DRAWN BY

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				DRAWING	

Private Fuel Storage Facility Skull Valley, Utah

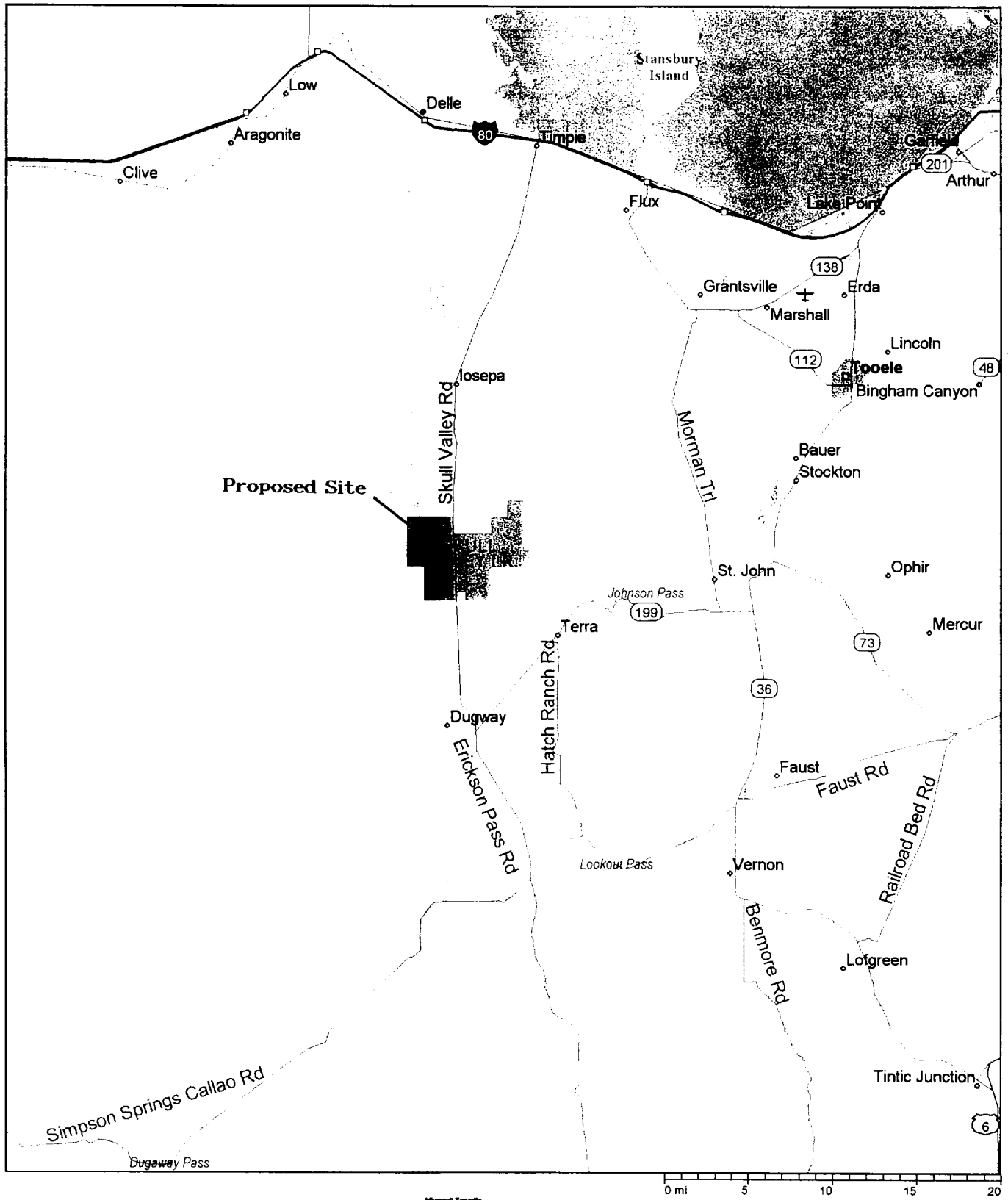


Figure 2
Site Location Map
Showing Accessibility

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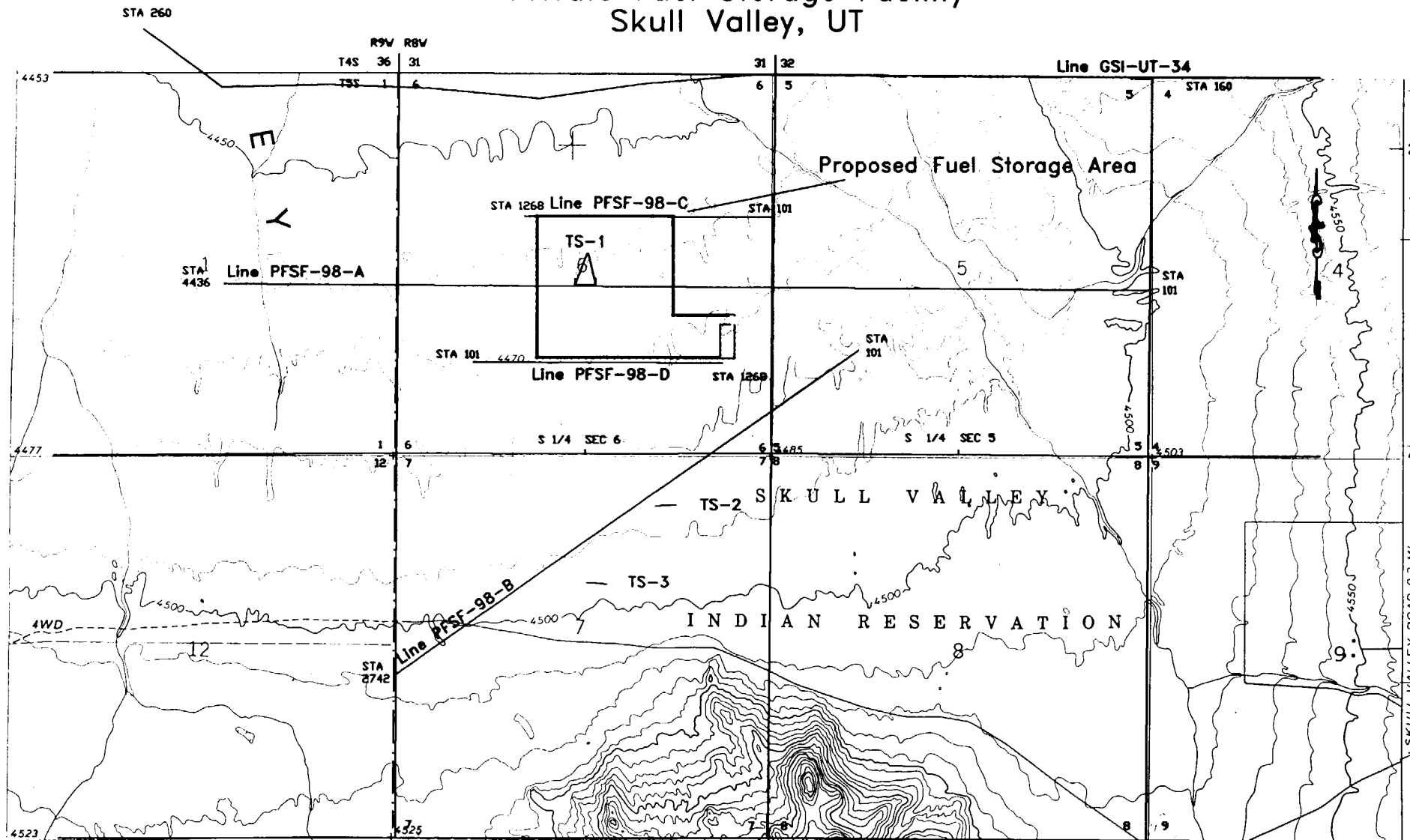


Figure 3
Site Location Map
Showing General Location
of Seismic Data

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		9-13-98	APPROVED BY	LEX	0596602-024	DRAWING \98185\fdp\figure4

Private Fuel Storage Facility Skull Valley, UT

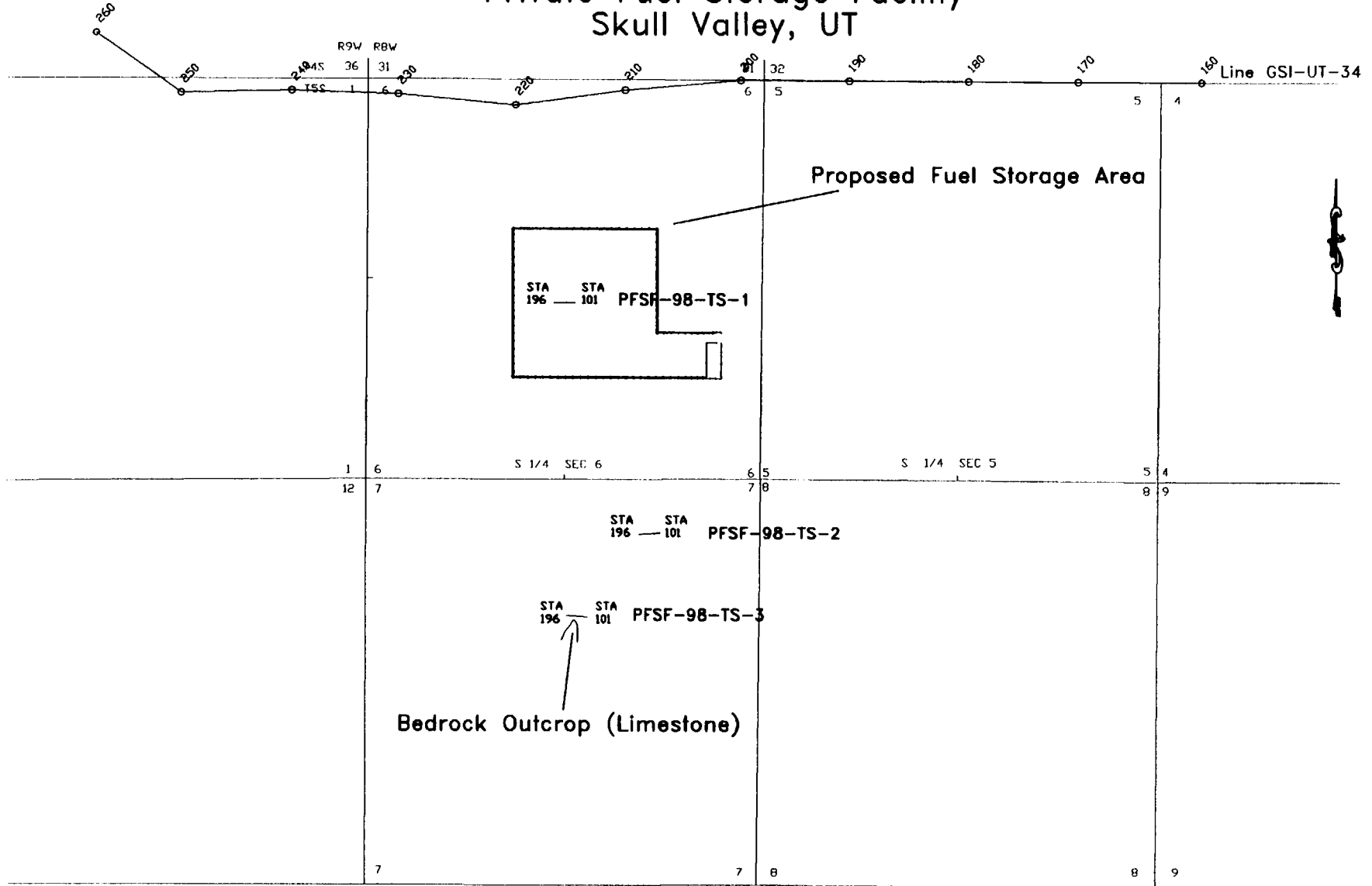


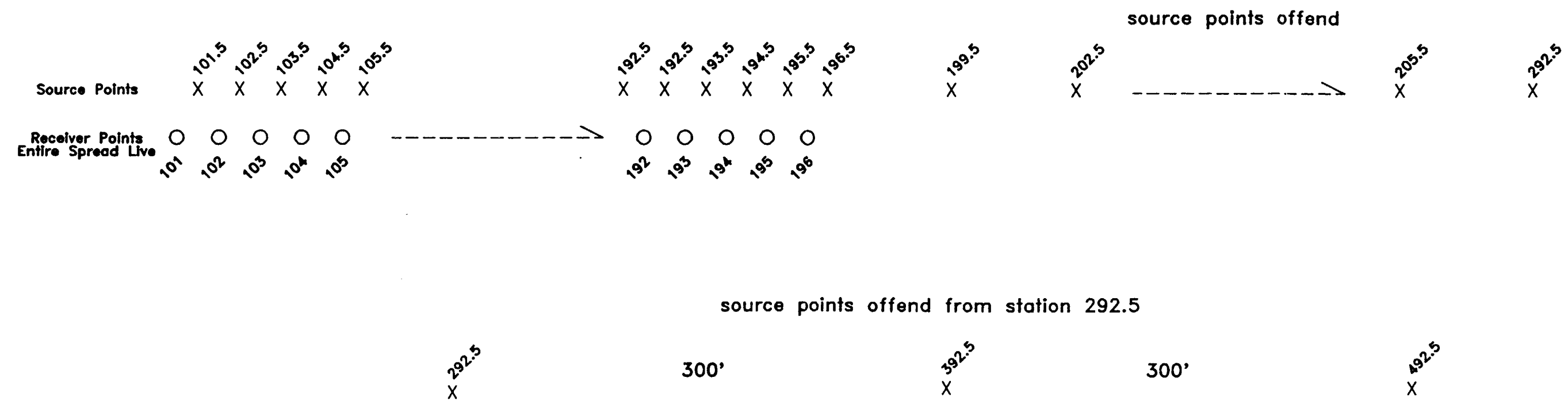
Figure 4
High Resolution Shear
Wave Reflection Test
Line Locations

Private Fuel Storage Facility

Skull Valley, Utah

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All 96 stations (101-196) are live
Distance between receivers = 3'
Distance between source points = 3'
Distance between source points offend (199.5 to 292.5) = 9'
Two offend source points located 300' and 600' from 292.5 (at 392.5 and 492.5)
Offline distance between receivers and source points = 6.5'

Note: Receiver points 106 to 191 and source points 208.5 to 289.5 could not be displayed

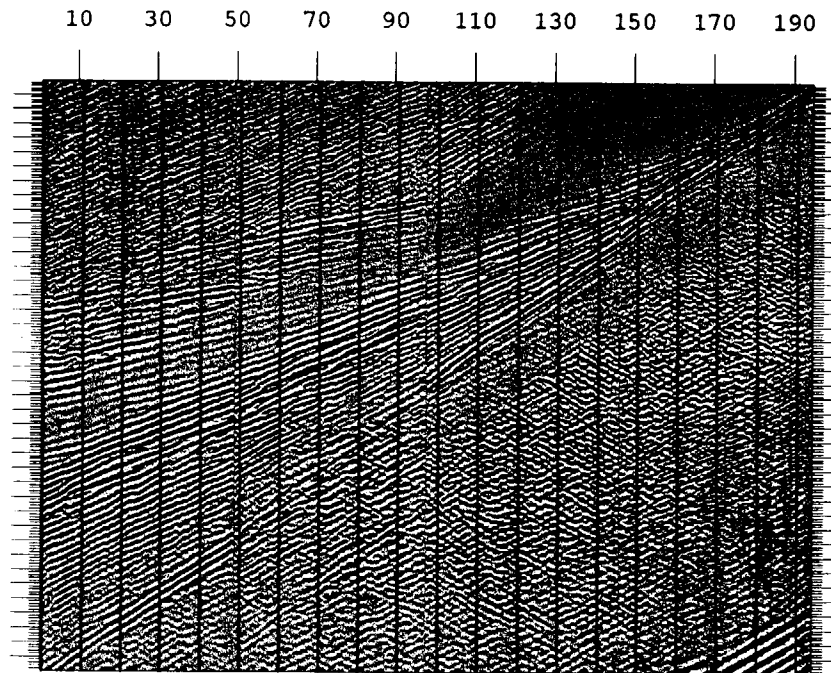
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Figure 5
Schematic of Shot and
Receiver Locations for the
Walkaway Test Lines

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Private Fuel Storage Facility Skull Valley, UT

Walkaway Survey constructed from shot records on test line PFSF-98-TS-1.
Criss-crossing patterns are highlighted in yellow



tlwlkawy (2D Line)

Figure 6
Walkaway Data Extracted
From Shot Data Test
Profile PFSF-98-TS-1
Source Point at Station 101

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Private Fuel Storage Facility Skull Valley, UT

Plot of shot record on test line PFSF-98-TS-1. Criss-crossing patterns are highlighted in yellow

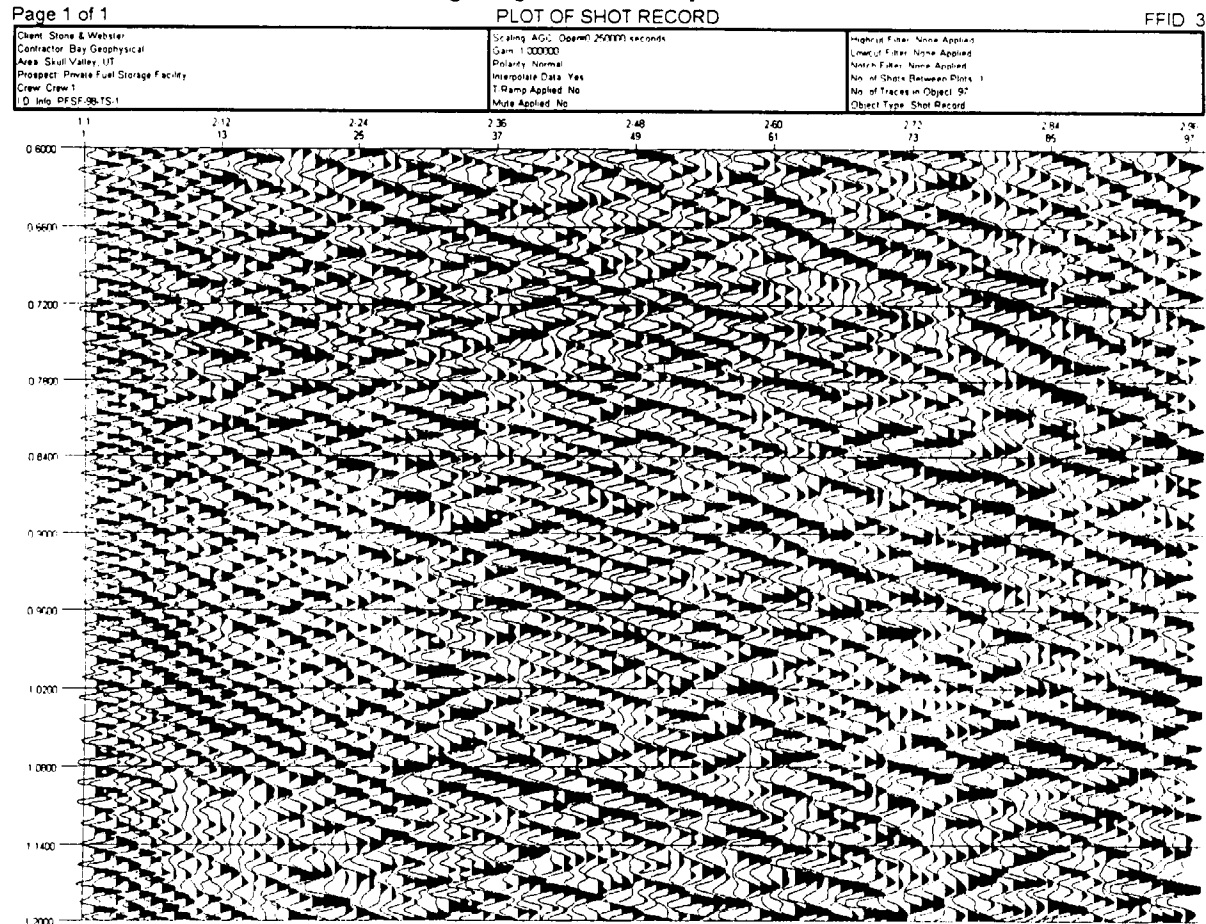
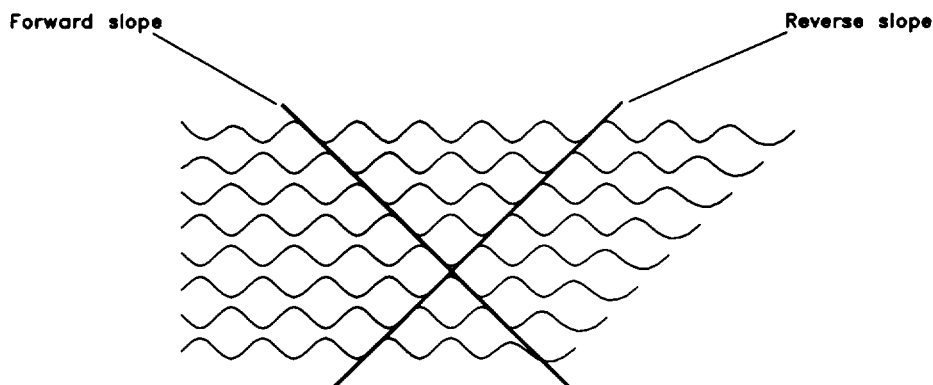
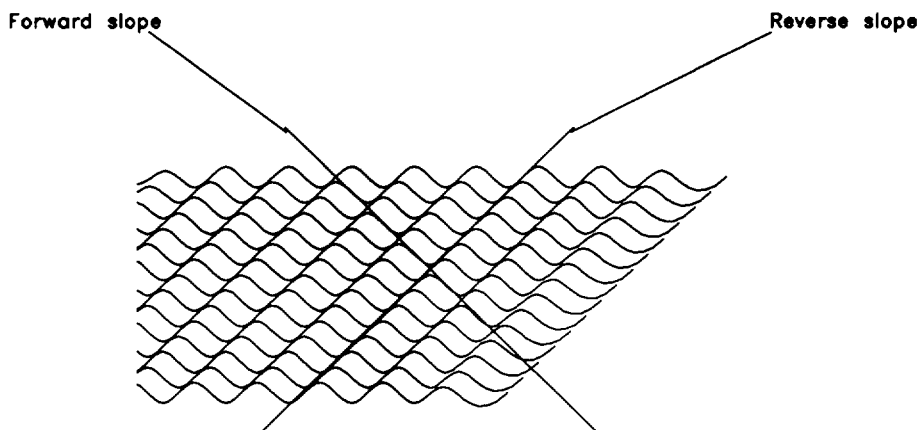


Figure 7
Zoomed Portion of Test
Profile PFSF-98-TS-1
Source Point at Station 101

Private Fuel Storage Facility Skull Valley, Utah



(A)
Wavelength = 6 feet
Sample = 6 feet



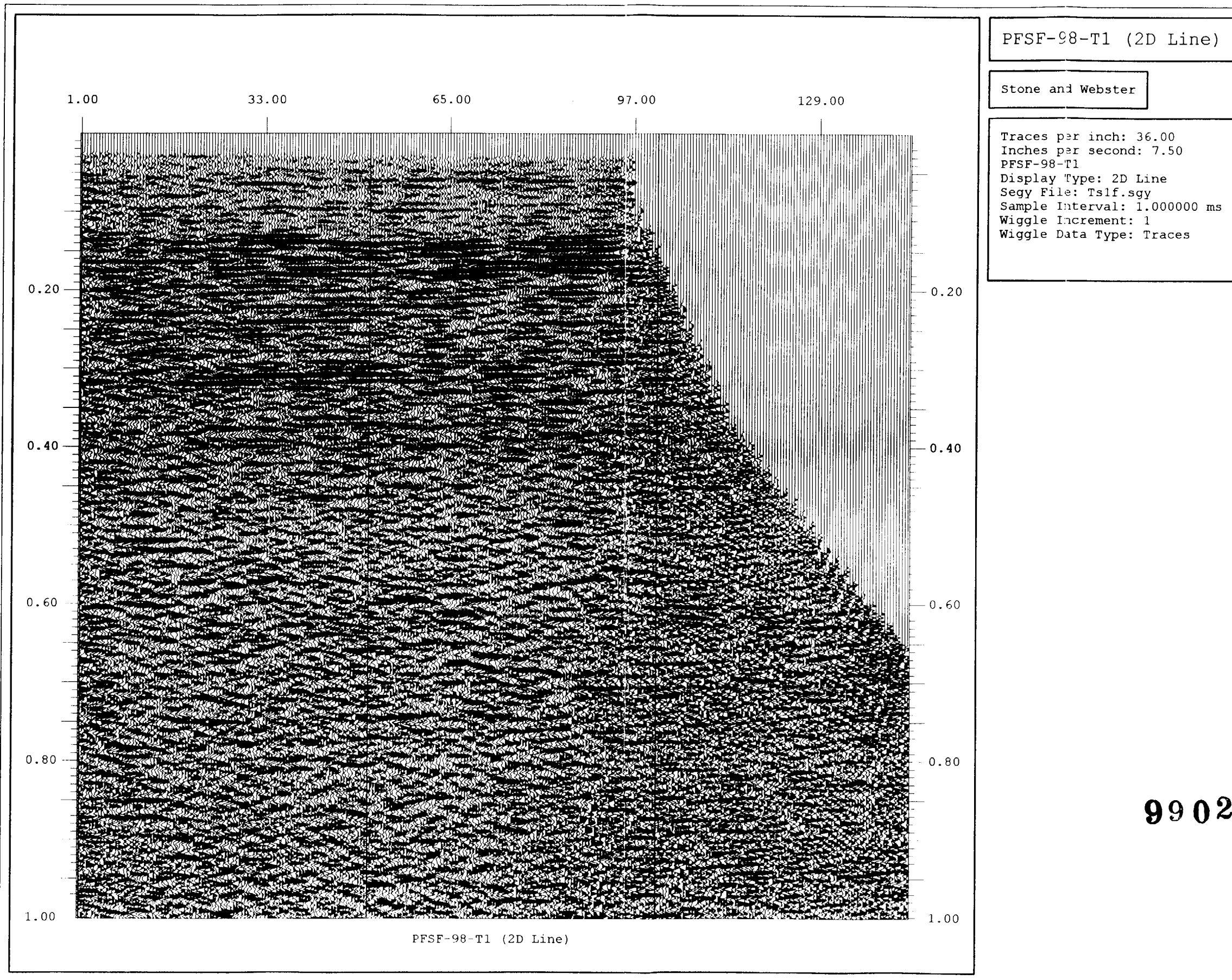
(B)
Wavelength = 6 feet
Sample = 3 feet

Demonstrated above, two sloping lines were drawn in (A) and align with the waveforms (surface wave). The slopes of these lines are exactly the inverse of each other. This is a clear example of spatial aliasing and is difficult to remove in processing because they have the same but opposite dip making them difficult to identify. In (B), however, the waveform is not spatially aliased. With a 3 foot sample (geophone) spacing and a 6 foot wavelength, the waveforms align in the reverse direction but not in the forward direction.

Figure 8
Schematic of Spatial
Sampling of Seismic Data

Private Fuel Storage Facility
Skull Valley, Utah

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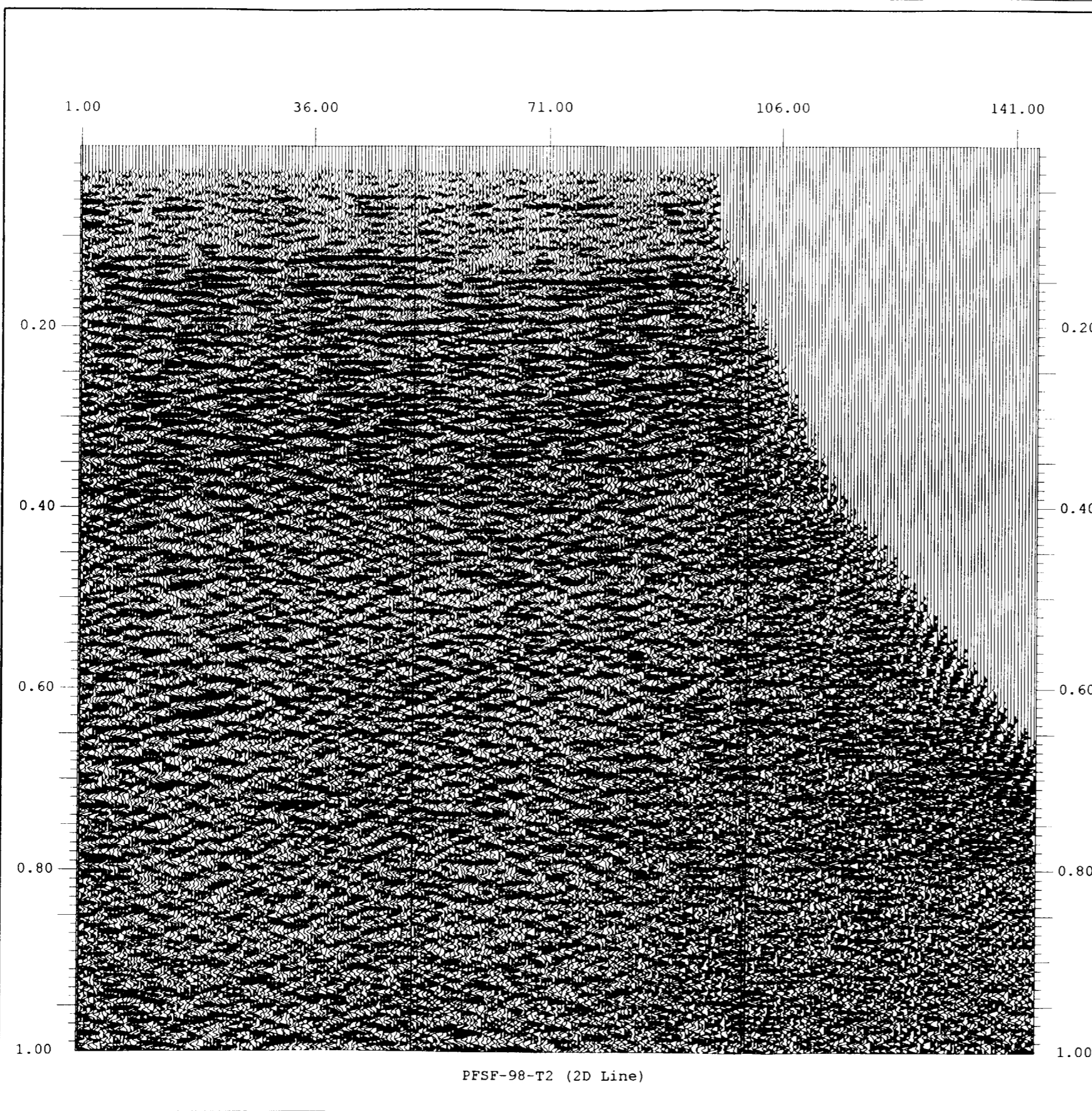
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Figure 9
Pilot Test Line
PFSF-98-TS-1

Private Fuel Storage Facility
Skull Valley, Utah

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PFSF-98-T2 (2D Line)

Stone and Webster

Traces per inch: 36.00
Inches per second: 7.50
PFSF-98-T2
Display Type: 2D Line
Segy File: Ts2f.sgy
Sample Interval: 1.000000 ms
Wiggle Increment: 1
Wiggle Data Type: Traces

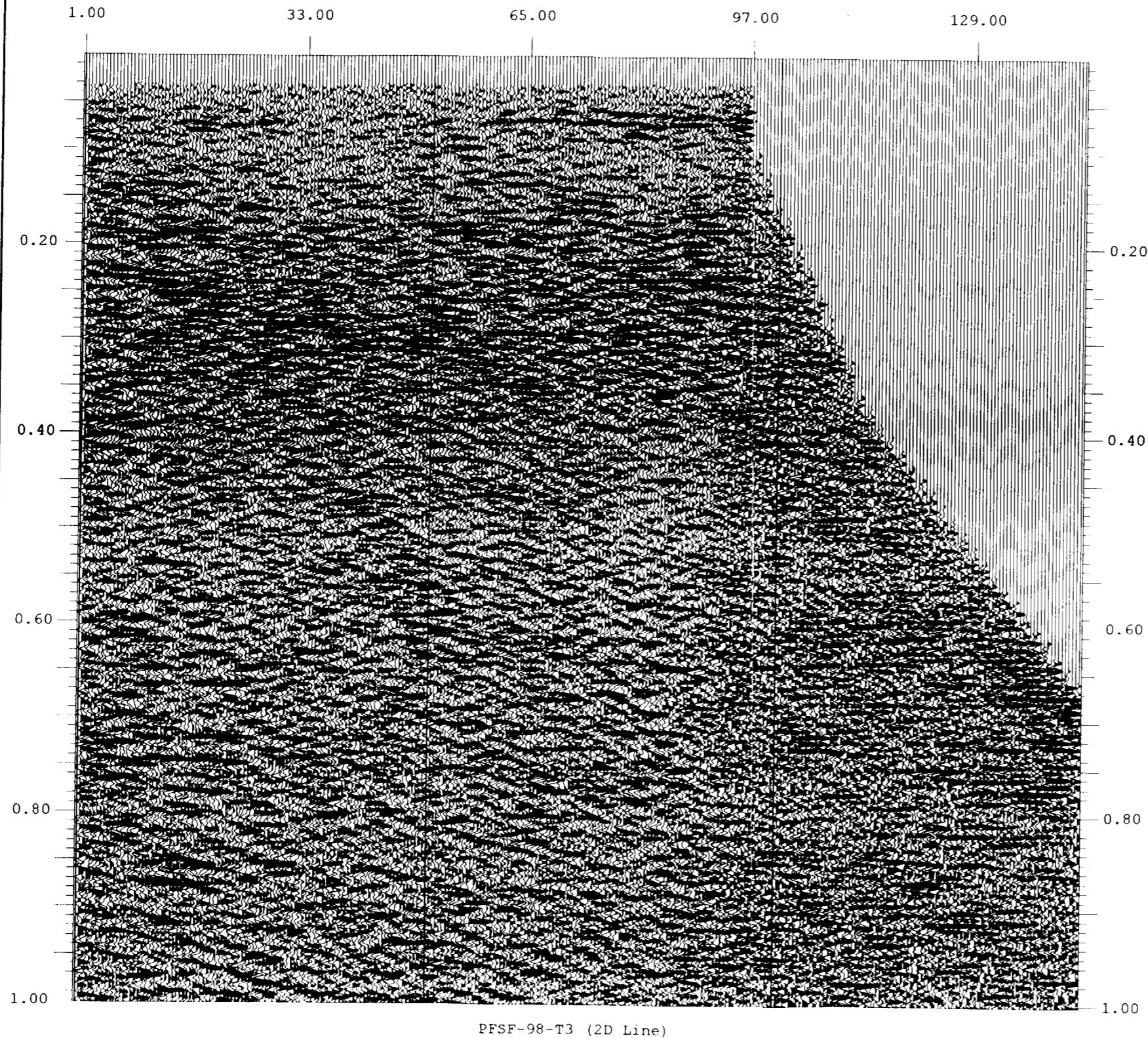
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Figure 10
Pilot Test Line
PFSF-98-TS-2

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Skull Valley, Utah

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A.V. 9-13-98
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PFSF-98-T3 (2D Line)

Stone and Webster

Traces per inch: 36.00
Inches per second: 7.50
PFSF-98-T3
Display Type: 2D Line
Segy File: Ts3f.sgy
Sample Interval: 1.000000 ms
Wiggle Increment: 1
Wiggle Data Type: Traces

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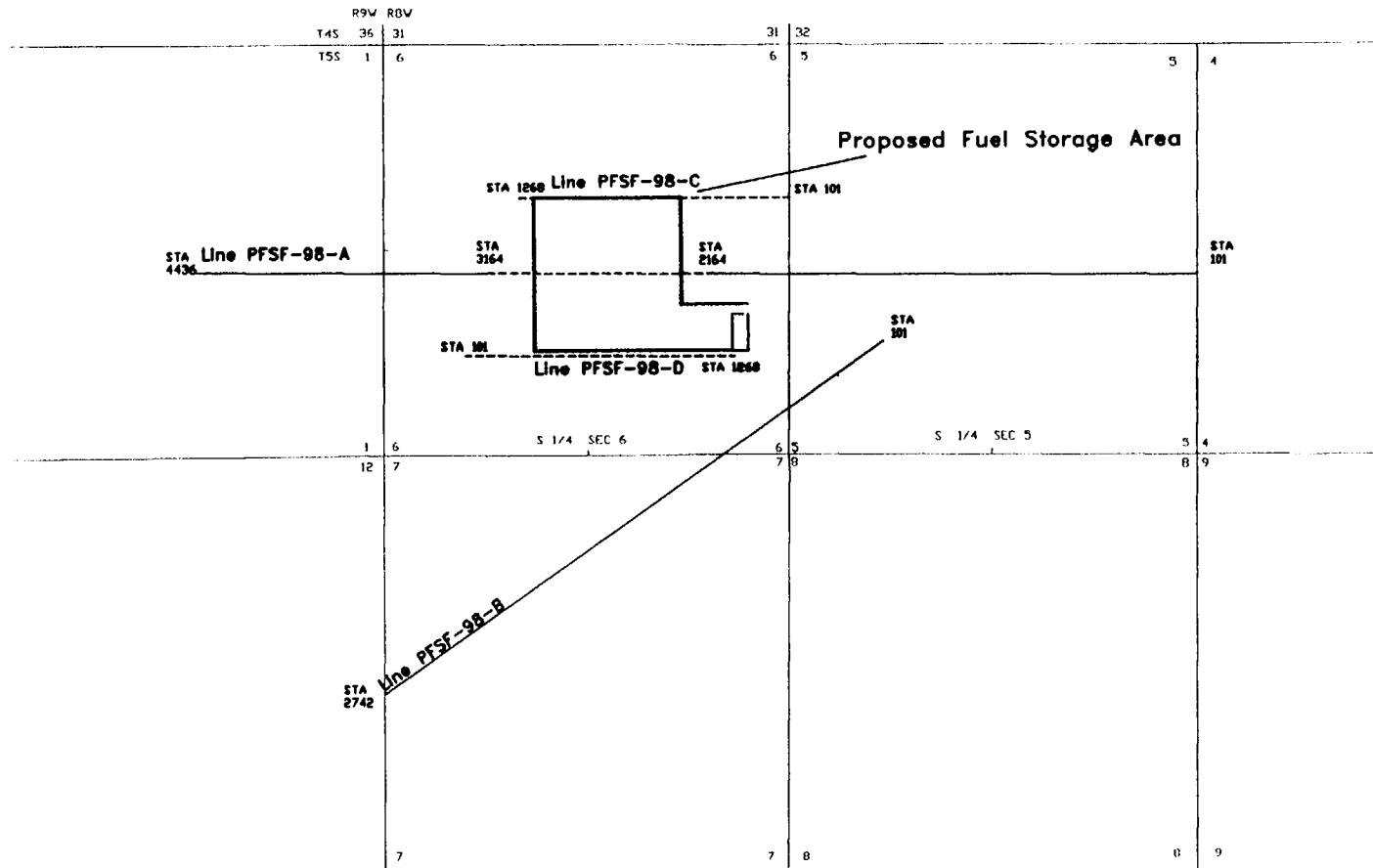
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Figure 11
Pilot Test Line
PFSF-98-TS-3

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			APPROVED BY	LRK	0596602-024	DRAWING \98185

.figure12

Private Fuel Storage Facility Skull Valley, UT



—— Half Fold
----- Full Fold



Figure 12
Map of Site Showing
Full and Half Fold
Seismic Data

Private Fuel Storage Facility Skull Valley, UT

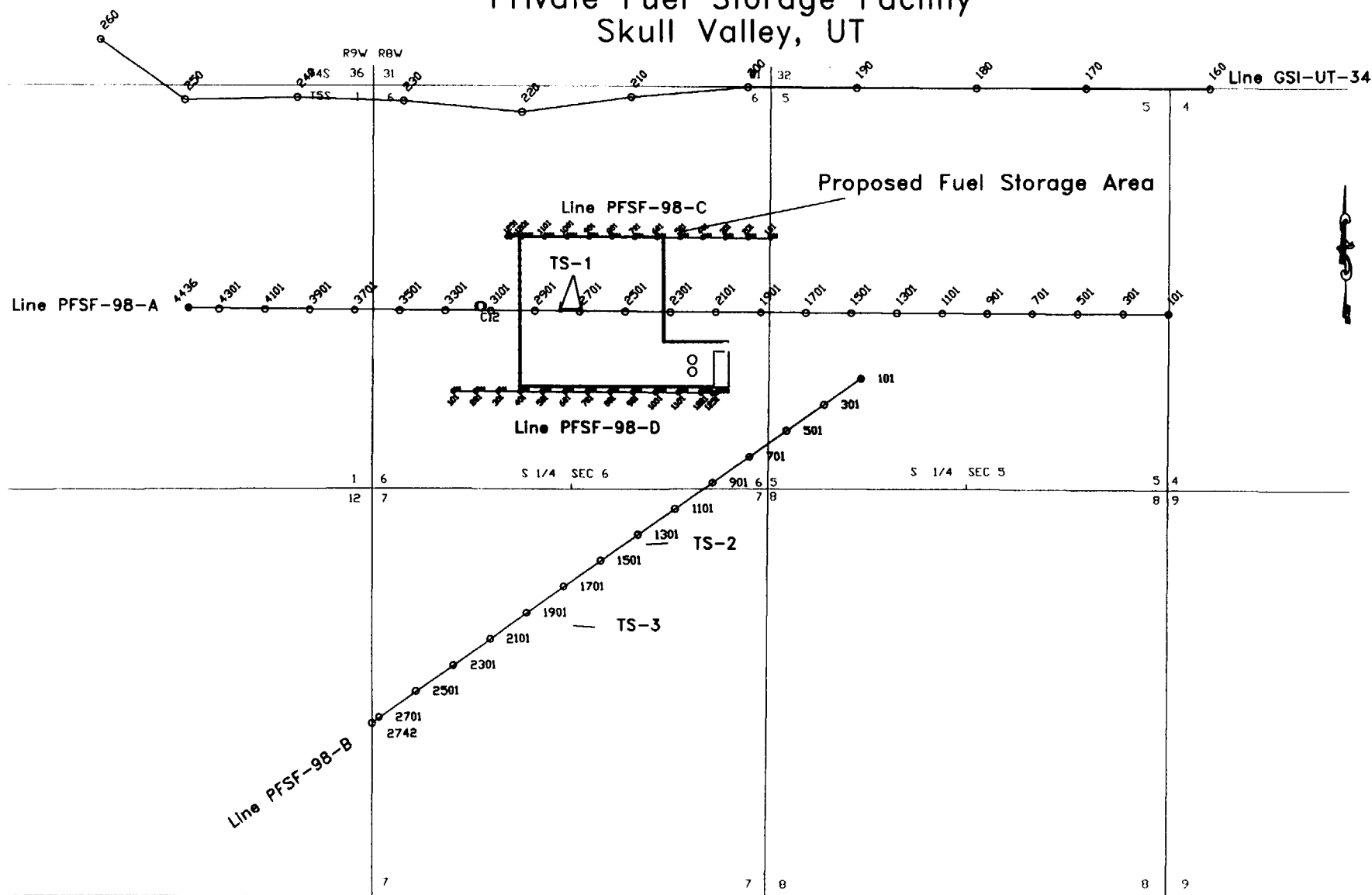


Figure 13
Site Location Map
Showing Surveyed Locations
of Seismic Data
(Shotpoint Map)

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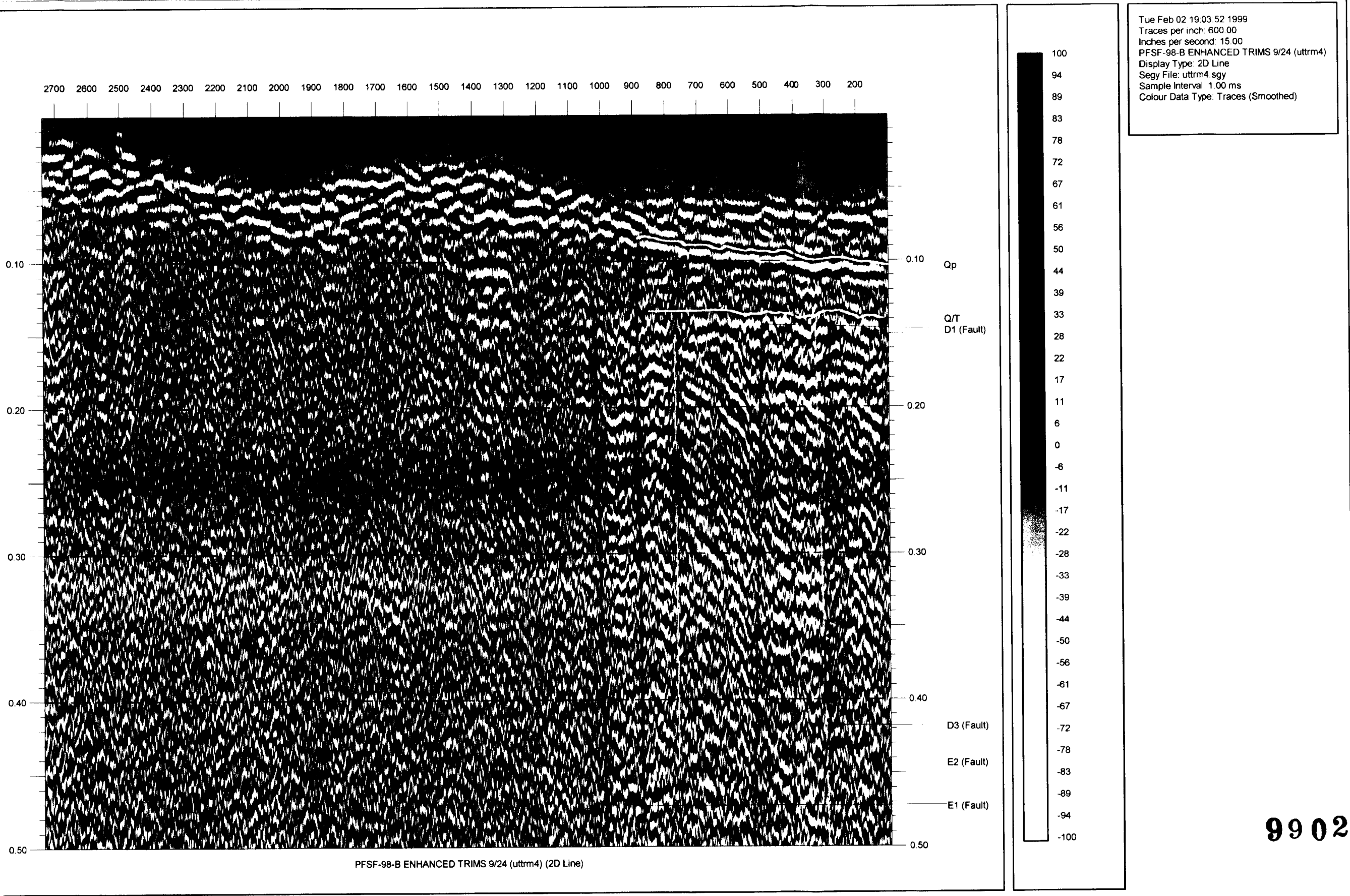
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**FIGURE 14 LINE PFSF-98-A
INTERPRETED TIME SECTION
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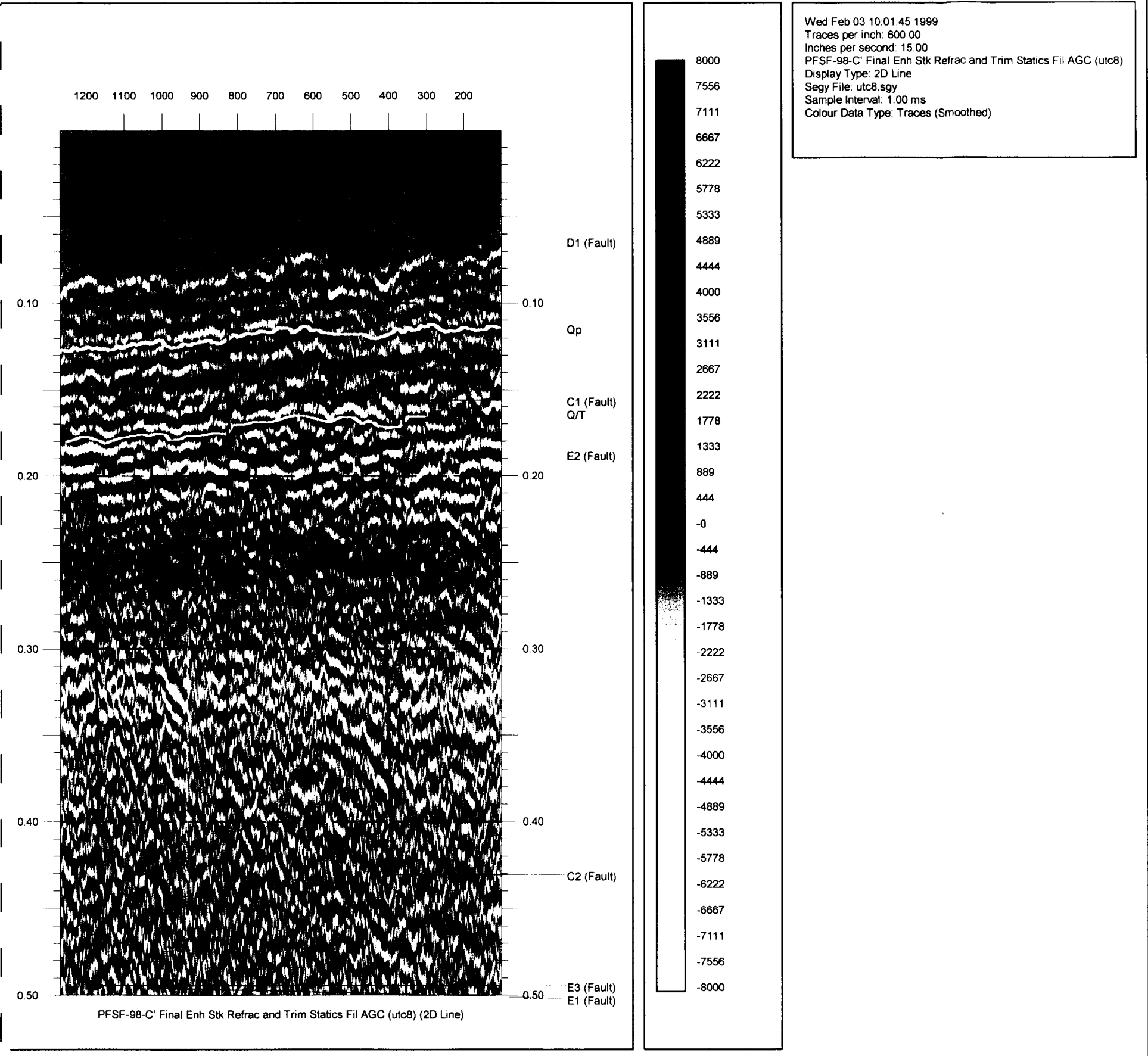
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Figure 15
Line PFSF-98-B
Interpreted Time Section
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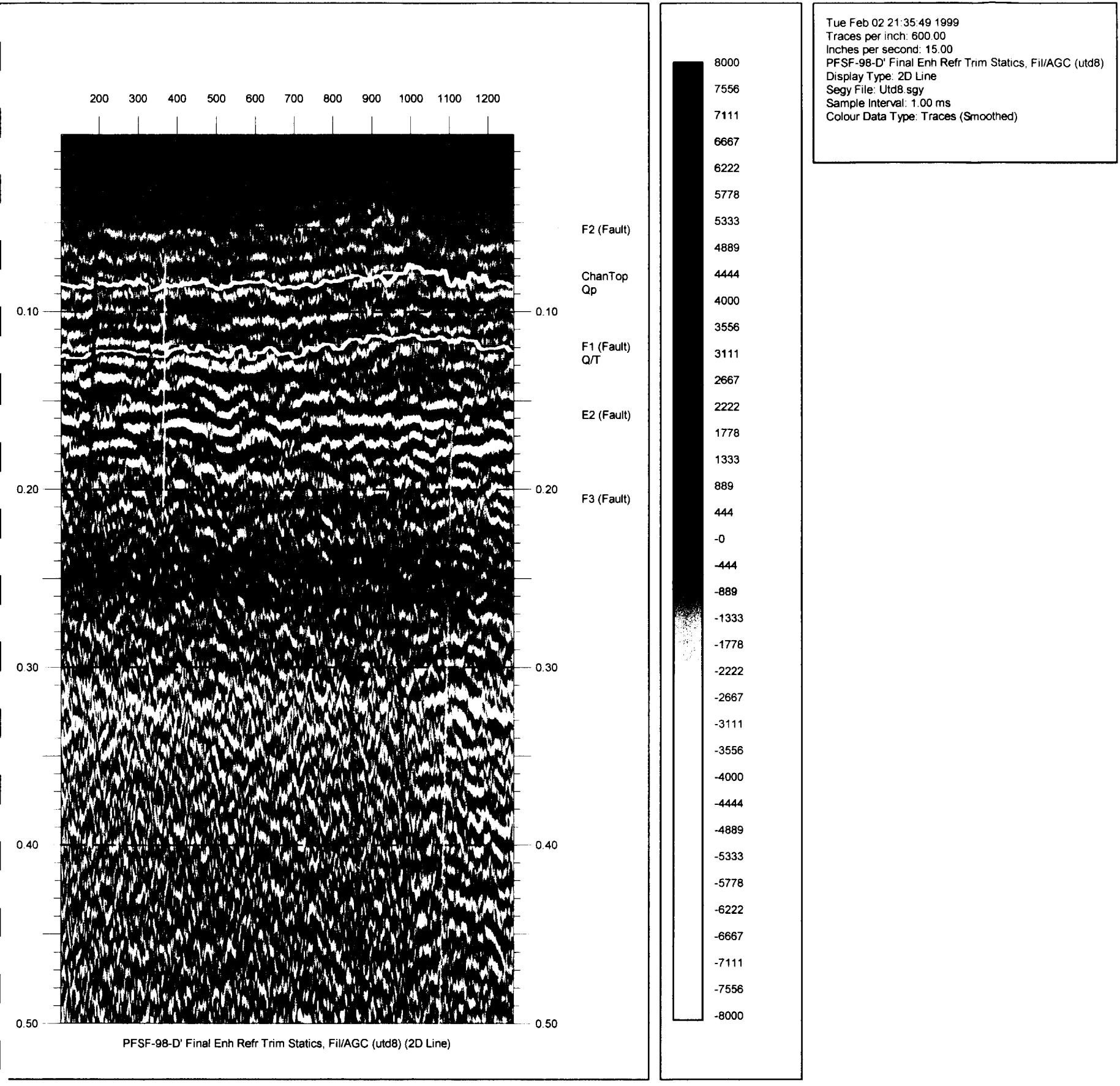


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Figure 16
Line PFSF-98-C
Interpreted Time Section
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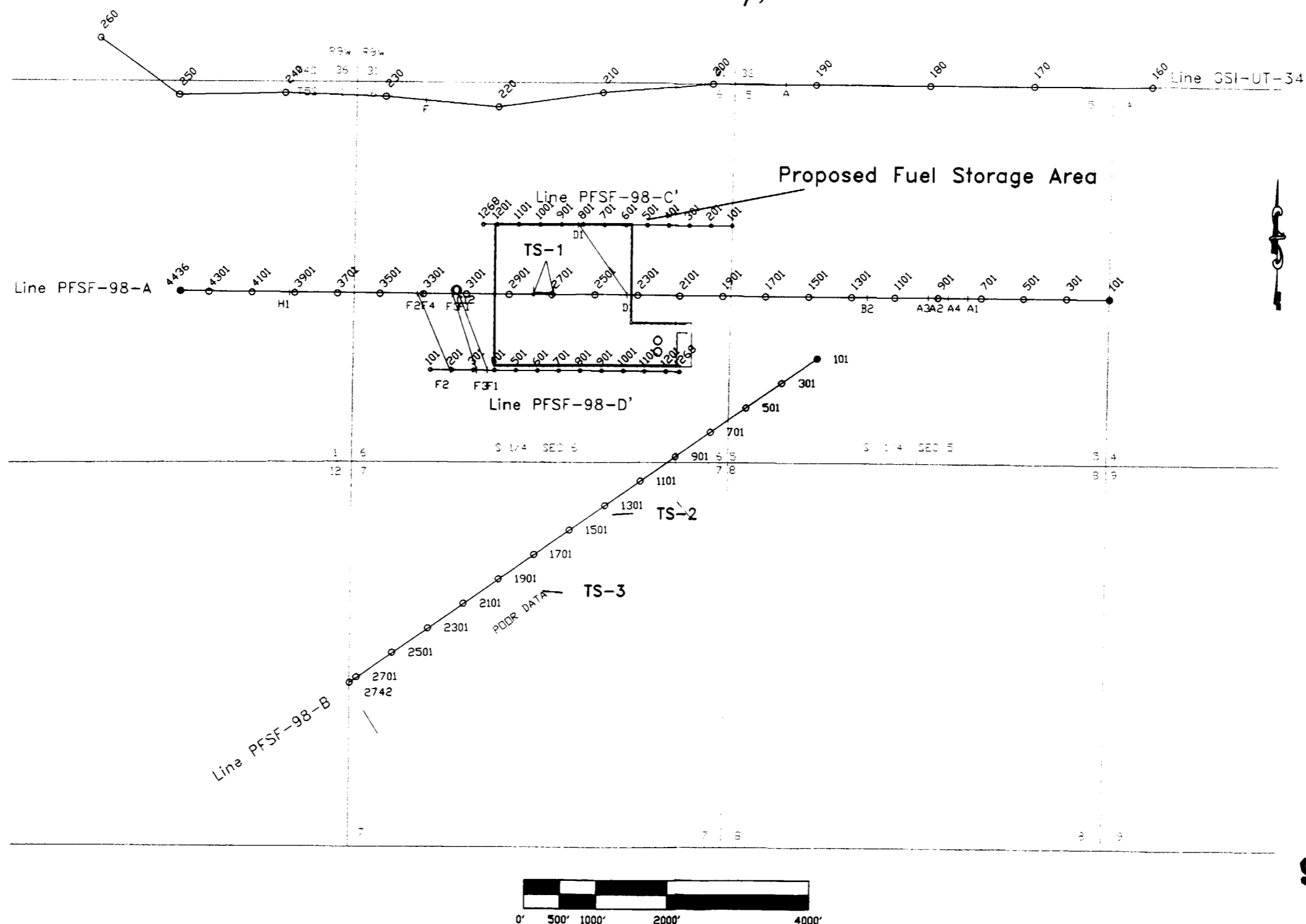
Figure 17
Line PFSF-98-D
Interpreted Time Section
600 tpi

ACAD 13: \98185\fdp\figure18
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 211014
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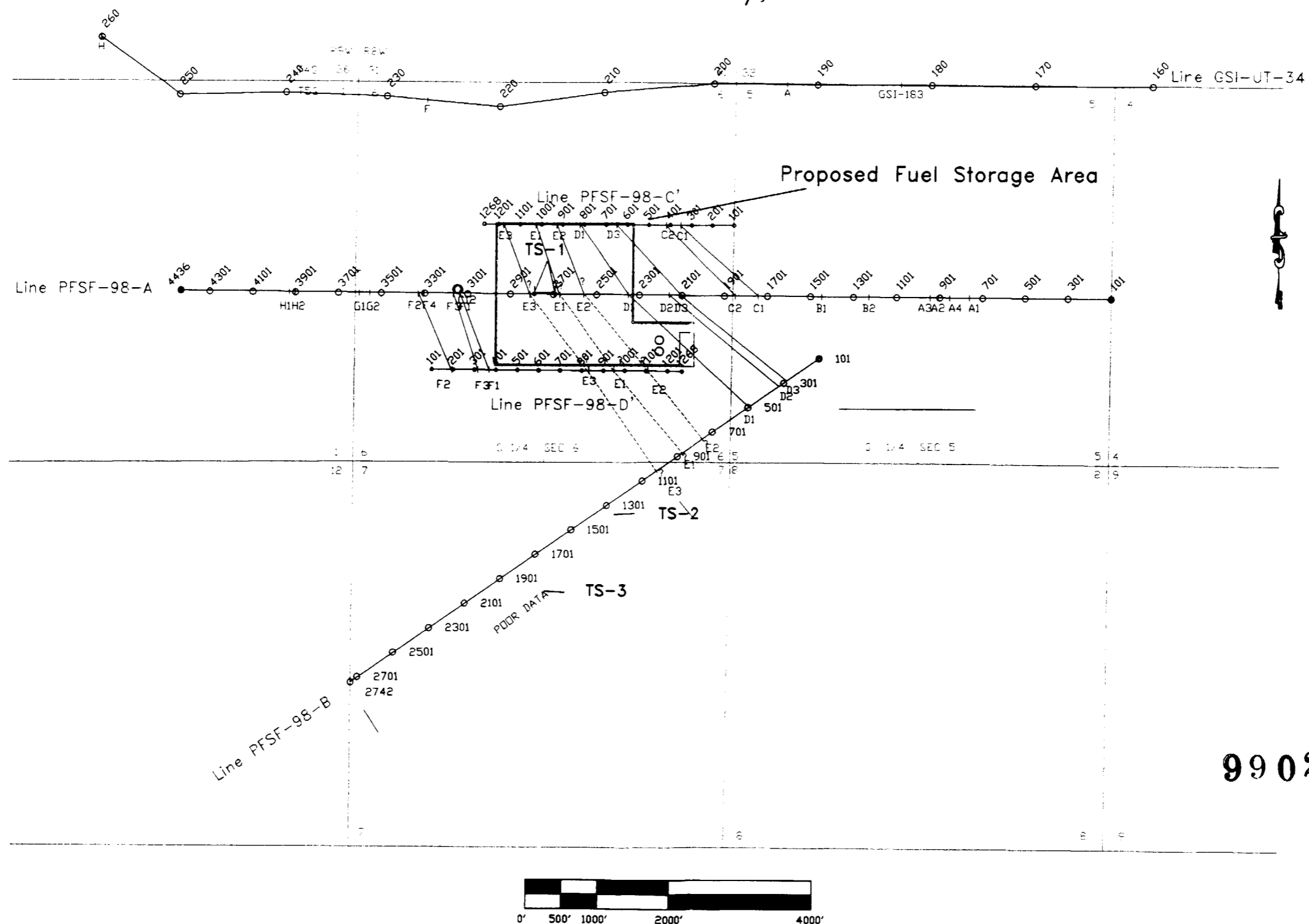
Figure 18
 Site Map Showing Faults
 Displacing Qp Or Shallower
 Horizons

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Figure 19
Site Map Showing All Faults
Interpreted As Intersecting With
Qt Or Terminating Below Qt

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**FIGURE 20 LINE PFSF-98-A
INTERPRETED TIME SECTION
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**FIGURE 21 LINE PFSF-98-B
INTERPRETED TIME SECTION
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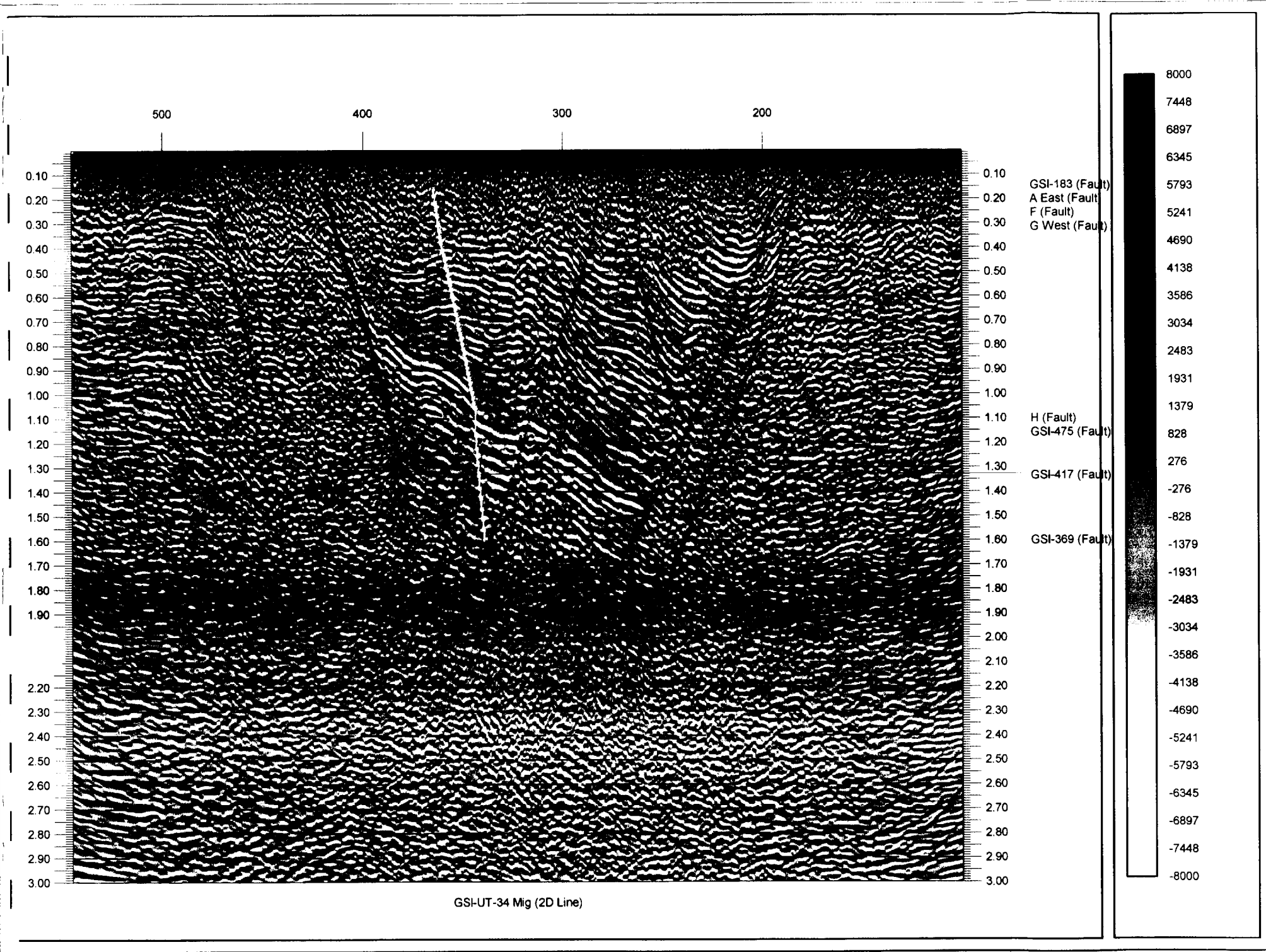
**FIGURE 22 LINE PFSF-98-C
INTERPRETED TIME SECTION
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**FIGURE 23 LINE PFSF-98-D
INTERPRETED TIME SECTION
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Figure D
Industrial Line GSI-UT-34
Interpreted Time Section

Appendix A

QA Protocols

Sample Logs

Bay Geophysical Associates, Inc.



868 Robinwood Ct. Traverse City, MI 49686

Tel: (616) 941-7660

Fax: (616) 941-7412

REFLECTION SEISMIC FIELD PROCEDURE

**TECHNICAL PROCEDURE
FOR
PRIVATE FUEL STORAGE FACILITY
SKULL VALLEY, UTAH**

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LIST of FIGURES

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Figure 2	Seismic Observer's Log
Figure 3	Field Daily Activity Log

1. GENERAL

1.1 Purpose

This procedure describes the reflection seismic geophysical method which will be used by Bay on this project, the responsibilities of project personnel and documentation. It is not possible to describe detailed field procedures, as each survey is designed for its specific purpose and then modified by the party chief in light of actual site conditions and initial results. What is important is that the geophysical survey be designed for the specific need, to include appropriate apparatus used by qualified personnel. Deviations from this procedure will be documented as discussed in later sections.

The purpose of this geophysical procedure is to summarize the activities required to collect reflection seismic data in order to provide geophysical information to aid in evaluating sites for low-level radioactive waste disposal facilities in conjunction with other data, such as geologic, hydrologic, and geotechnical data. This procedure is outlined to standardize data collection for this project and is intended to conform with the Stone & Webster Engineering Corporation (SWEC) Quality Assurance plan for this project.

1.2 Responsibilities

The overall administrative, technical, and quality responsibility lies with Bay's Project Manager. He is responsible to see that the work under his direction meets the Quality Assurance standards set forth in SWEC's Quality Assurance plan for the North Carolina Low-Level Radioactive Waste Disposal Facility Project, including qualification of personnel. SWEC's Geophysics Discipline Leader or his designated representative is responsible for technical control of work performed within the discipline and specifying types of surveys and initial parameters. Consultants may be called upon to perform specific activities for which they have expertise. SWEC's Technical Program Director (TPD) will approve the use of consultants. Data and conclusions generated by the consultants will be reviewed by Bay's Project Manager.

Geophysical staff personnel will have a degree in geophysics, geology or other related science. Personnel from other disciplines, such as geologists, geotechnical engineers, hydrologists, etc., may be involved with data interpretation and integration as necessary. Interpretation and processing procedures will be discussed in a separate document.

2. REFLECTION SEISMIC SURVEY

Seismic reflection data will be acquired by a field crew consisting at a minimum of an Observer/Field Engineer and three laborers or technicians. During the initial startup of a job, a Staff Geophysicist or the Project Manager may supervise the field operation.

2.1 Purpose

Reflection seismic surveys are used to generate a cross sectional acoustic image of subsurface strata. When tied to sufficient well control and with sufficient velocity control these acoustic images can be mapped into geologic cross sections.

2.2 Responsibilities

Bay's Project Manager will approve the apparatus used as well as determine the initial survey parameters and survey locations. A Staff Geophysicist or Observer/Field Engineer will conduct the survey. The reflection seismic data will be interpreted by the Project Manager, Staff Geophysicists, and selected consultants as approved by the SWEC TPD.

2.3 Prerequisites

2.3.1 Equipment and Materials

Reflection seismic equipment typically consists of the following:

- Seismograph: Oyo Geospace DAS-1 or Equivalent

- Roll switch

- Input panel or cable

- CDP spread cables

- Geophones

- Source (one of the following):

 - Hammer plus cylinder

 - Explosive

 - Oscillatory (vibrator)

Bay's Project Manager will approve all equipment to be used on the survey for the North Carolina Low Level Radioactive Waste Disposal Facility Project.

2.3.2 Calibration and Testing

Calibration of explosive sources and of the hammer /cylinder combination is not possible due to the nature of these sources. The following paragraphs describe tests and calibrations to be performed on the equipment components of the reflection seismic survey.

2.3.3 Geophones

Geophones are to be validated against a reference element (standard geophone) which is maintained at the Bay Geophysical electronics shop in Traverse City. A Matrix Industries Inc. Bird Dog geophone tester is to be used for the validation. This instrument

measures the relative response of the geophone to an electric impulse graphically against that of a reference geophone element. All geophones to be used on the survey are to be calibrated prior to use in the field. The validations are to be recorded on a Geophone Record of Validation form (Figure 1). At a minimum the following information is to be logged:

- Date of validation
- Calibrator's initials
- Name and serial number of test unit
- Geophone drive level
- Frequency scale

The geophone ID number and the status of coil resistance will be noted for geophone tested, and the response and polarity columns will be checked if the geophone passes the test.

2.3.4 Seismograph

Calibration of the engineering seismograph test module must be done at the factory. However, it is possible on a daily basis to ensure that the data channels are functioning properly relative to one another. This procedure describes the test for the OYO Geospace DAS-1. For other seismograph follow instruments the manufacturer's recommendations. Connect the oscillator/test cable to the channel inputs, aux inputs, and oscillator inputs as specified in the manual. On the diagnostic menu (F7), select "Test on Analog Data", then select "Performance Test Suite". The test module will generate a suite of self tests and print the results on the seismograph plotter. The output plot will be labeled with the date and time of the test, the seismic line number, the project number and is to be initialized by the observer or instrument operator. This plot also indicates a failure of any of the data channels.

In addition to this test the output from the precision oscillator is to be recorded as a data record. This will provide a digital recorder of A/D converter performance and will provide the data processor with an amplitude reference. To perform this test go to the Diagnostic Menu (F7) and select "Test on Analog Test Data", select the appropriate number of channels and select "Gain Accuracy Test". Set the amplitude to 90.909 percent with a test frequency of 100 Hz, press the Escape key to initialize the test and observe the message at the bottom of the seismograph screen. Press the Escape key immediately after the message "Synthetic TB Generated", press Escape again to go to the Acquisition Menu. Press Control A to Arm the system and Control T to trigger the system. Ensure that the sinusoids recorded have been written to tape and plot the data record. Inspect the plot for a smooth sinusoid on each channel. The peaks or troughs of the sinusoids will be separated by 10 milliseconds.

This test is to be performed daily prior to recording any data.

2.3.5 Vibrator

Vibrator calibration is not necessary due to the principals of the vibroseis technique (the autocorrelation of the vibrator sweep is used as the input signal). However, a periodic (i.e., daily) inspection of an uncorrelated record shall be performed to ensure that the vibrator is sweeping correctly. This inspection can be performed on any record that is acquired during production acquisition. To perform this test simply acquire a record with the sweep length, start and stop frequencies, drive level, and tapers that have been specified for the survey parameters, set the DAS-1 acquisition menu (F1) to raw mode and plot the entire record. Inspect the nearest traces to the source for the following:

- The beginning frequency at the beginning of the record
- The length of the sweep
- The ending frequency

Inspect the aux traces which typically record the pilot signal, the Mass accelerometer, and the baseplate accelerometer for the following:

- The start up taper
- The sweep frequencies and sweep lengths as described above
- The ending taper

The frequencies shall be calculated by measuring the length of time between adjacent peaks (the period) on the sinusoid and calculating a $1/X$ function on the period. If these parameters match those for survey design, the vibrator is functioning properly. The results of this inspection (pass or fail) shall be documented in the comments column of the seismic observer's log (section 2.4).

2.3.6 Walkaway Noise test

Geophones will be laid out at the interval prescribed by the job specification and hooked to the seismograph as described in section 2.4. The source is activated and recorded at the locations prescribed by the job specification (typically at the end of the spread and one spread length off the end of the spread). Analysis of the resulting records may vary from a visual identification of coherent noise such as the air blast and ground roll to a computer analysis of the records (i.e., filter panels) as is deemed appropriate for the job by the staff geophysicist or project manager.

2.4 Procedure

The survey is conducted by laying out a series of geophones (typically one geophone per station for high resolution surveys), connecting the geophones to the seismograph via the seismic spread cables, roll switch, and input cables, and advancing the spread along a profile as the seismic source is activated for each designated source position.

The seismic spread cables are connected via jumper cables to the input panels and to the roll switch. The roll switch is connected to the recording seismograph. Prior to the acquisition of any data, the geophones and connections are checked electrically through the roll switch by means of a VOM or DVM plugged into the roll switch. The continuity,

or DC resistance, for each station is manually verified to ensure that all geophones are connected and that electrically the DC resistance of the geophone coil is within specifications. Leakage between the electrical connection and earth ground is checked. Any station showing a DC resistance between a geophone and earth ground of less than 50 Kohms will be considered unsuitable and out of specification. The fact that this testing was performed (but not necessarily the values measured) will be noted in the comment area of the observer's log.

The roll switch is moved to the proper position such that the source is located at the center of the active channel spread. This can be verified by tapping on the geophones immediately adjacent to the source location and observing the deviations in the noise monitor on the seismograph screen. The source is activated and the record is written to disk or to 4 mm tape. The roll switch is advanced, the source is moved up and this procedure is repeated. After the source is advanced to the point where no new geophones are available at the end of the spread cable the seismograph and/or jumper cables must be moved to add new spread cables to the end of the profile. The geophone testing procedures and roll switch position tests are to be repeated for all new geophones added to the line. Source shots are repeated as described above. The Seismograph Operator/Seismic Observer is to record all pertinent data on a Bay Geophysical Seismic Observer's Log (Figure 2) for each seismic record that is recorded. At a minimum the header sheet will contain the following:

- Observer's initials
- Date
- Line location
- Line designation number
- Project number
- Instrument serial number
- Sample rate
- Geophone type
- Spread type
- Source type
- Source array (if used)
- A line diagram showing the general spread layout
- Data format of data written to tape

For each shot the following information is to be recorded:

- The source position (station ID)
- File number
- Station locations of traces 1, 48, 49, 96
- CDP switch setting
- Number of source repetitions
- Source in-line and perpendicular offsets from the intended source position
- The pilot sweep file number (IVI vibrator only)
- Vibrator drive level (if appropriate)

Any conditions such as noisy channels and their positions, changes in weather, changes in surface conditions (i.e., source or receiver coupling), and any other conditions that may affect noise levels or otherwise affect data quality should be noted in the comments section of the observer's log

2.4.1 Records

Two types of paper records will be maintained for this project: a seismic observer's report and a field daily activity log (Figure 3). Seismic data are recorded on magnetic tape. The Observer's Log as described in Section 2.4 will be maintained as each seismic record is recorded.

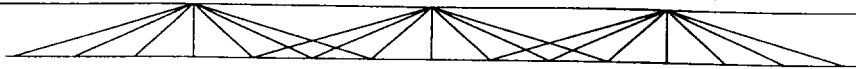
The daily activity log is to be maintained by the Staff geophysicist or by the Observer/Field Engineer in the field in accordance with the Bay QA manual. All records and calculations will be documented according to the Bay Quality Assurance plan including the use of appropriate data collection forms and the signatures required on these forms.

2.4.2 Record Maintenance

All records and calculations will be maintained according to the Bay Quality Assurance plan. Additionally, on a daily basis the following procedure is to be followed with respect to field records. A copy of the paper records will be made daily. One copy will be deposited at the site trailer no later than the day following their completion. Upon returning to the hotel the data tape is to be copied to the hard drive on Bay's site PC. A tape copy is to be made, and the copy is to be deposited at the SWEC QA trailer upon arrival at the site the next day. At least two copies of the data will be maintained at all times.

2.4.3 Non-conformity

Any variation from the approved procedure will be handled as outlined in Bay's Quality Assurance. Any non-conformities are to be immediately reported to the SWEC Field Representative and/or to the Technical Director for this project. The necessity of work stoppage and corrective actions will be determined by these individuals.



FIELD ACTIVITY DAILY LOG

DATE: 8/10/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: Proposed Fuel Storage Facility, Skull Valley

Project No.: 98-185

Field Activity Subject: S- Wave Reflection

Description of Daily Activities and Events:

545 Leave hotel for field

645 Arrive field, check geophone plantings. Vib here. Start calibrating vib. Surges – checking.

830 Finish checking Test Line. Phones OK.

915 Changed servo valve in Vib. Surges to a minimum. Run DAS daily test.

935 Ready to start sweep tests. Sweep 20-200 Hz, 6 sec sweep, .4 sec start and .2 end taper.

QA/QC team picks up geophone and DAS QA/QC info.

1130 Start production Test Profile TS-1

1200 Vib getting hot, pressuring down to cool fluid.

1230 Replacing LVDT. Mass slamming.

1310 Restarting production.

'5 Walking off spread.

1420 Finish line T1, move to T2

1700 Call day, stormy weather moving in, break lines.

1745 Leave site

1815 Arrive Hotel.

Visitors on Site: Greg Sauter, John Luttinger, Tom Iseman, Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny, 90 deg F

Important Telephone calls:

Personnel on Site: PAV, RRC, JAM, PF, JB, JC

Field Engineer: PAV

Bay Geophysical Associates, Inc.

868 Robinwood Court, Traverse City, MI 49686

FIELD ACTIVITY DAILY LOG

DATE: 8/11/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: Proposed Fuel Storage Facility, Skull Valley, UT

Project No.: 98-185

Field Activity Subject: S- Wave Reflection

Description of Daily Activities and Events:

600 Leave hotel

0700 Arrive site, hookup line, warm up vib and check force amplitude plots on test sweeps. Surveying Line 1, laying out equipment for test line TS-3. Run dailys.

800 Begin production TS-2.

1150 End production Line TS-2. Moving wire to TS-3.

1255 Start production TS-3. Checked phone plants, some loose due to rain last night then soil drying during the day. Will keep watch for more loose phones.

1410 Production calculated at 55 VPs per hour. Must watch vib for signs of overheating.

1530 End production Line TS-3. Picking up wire.

1700 Leave site

1800 Arrive hotel

tors on Site: John Luttinger, Dick Gillespie

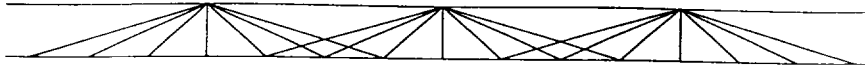
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions:

Important Telephone calls:

Personnel on Site: PAV, RRC, JAM, PF, JB

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/12/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: Proposed Fuel Storage Facility, Skull Valley, UT

Project No.: 98-185

Field Activity Subject: S- Wave Reflection

Description of Daily Activities and Events:

545 RRC and SM leave Hotel to survey Line 1.

1000 JB and PF leave to fix Vib and bring computer back to plot force plots.

1100 JAM and PAV get materials for Vib. JCC logistics with clients, JL and DG.

1545 Crew arrives back at hotel.

1900 PAV plots force amplitude examples taken on 8/10/98 for analysis.

Visitors on Site: John Luttinger, Dick Gillespie

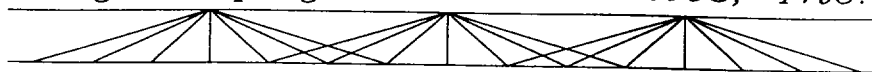
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny, 85 deg F

Important Telephone calls:

Personnel on Site: PAV, RRC, JAM, PF, JB, SM JC

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/13/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: Proposed Fuel Storage Facility, Skull Valley, UT

Project No.: 98-185

Field Activity Subject: S- Wave Reflection

Description of Daily Activities and Events:

0530 JC leave Hotel to survey Line 1.

0615 Rest of crew leaves hotel.

0715 Crew arrives field, put in fans, sun shield and fill Vib. Waiting for JC and RRC to arrive with location of Line PFSF-98-A. DAS daily test problems, run until pass.

0930 JC RRC arrive to show the way. Get to area by 1030 and start to lay out cables.

1130 Found bad banana pins on takeouts and geophones, replaced with new ones.

1230 Some test sweeps run to check Vib signal. Final sweep parameters to be determined by tests

1440 Start production PFSF-98-A.

1515 Mass slamming the cradle – checking. Called Industrial Vehicles International (IVI), said to check all solder connections, re-solder and apply silicon grease to internal wires.

1650 Marc Sterling calls (processor), getting spacial aliasing when knocking out (test lines TS-1, TS-2, TS-3) every other trace – processing data with 6 foot intervals.

1800 Vib fixed. Re-soldered servo connector, test sweep – OK.

1830 Leave field

1930 Arrive hotel.

Visitors on Site: John Luttinger, Dick Gillespie

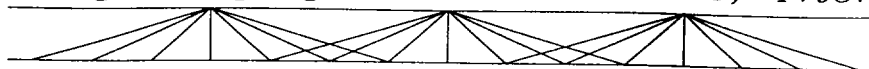
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny, 90 deg F

Important Telephone calls:

Personnel on Site: PAV, RRC, JAM, PF, JB, SM JC

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/14/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: Proposed Fuel Storage Facility, Skull Valley, UT

Project No.: 98-185

Field Activity Subject: S- Wave Reflection

Description of Daily Activities and Events:

600 JB leave hotel to meet Steve Bear in field to plow path for PFSF-98-A. Rest of crew will leave at 0700. Client verbally changed parameters to 3' stations and 6' VP interval. Line has to be moved back from 5' intervals to 3' first thing in the morning. Steve Bear shows up at 0930.

930 PV, JC, SM arrive site, start moving phones from 5' interval to 3 ft intervals. PF fix broken bolts on vib.

1000 Ran dailys. Problems with DC offset in DAS. Reconnected power supply connectors – passed.

1130 FINISH layout, begin production acq.

1230 K. Hanson, B. Swan (Geomatrix) Arrive, discuss location line 2.

1400 Shot to VP 242.5, moving jumpers

1500 Resume production 243.5

1735 Finish production for the day Line PSFS-98-A VP 434.5

20 Arrive hotel

Visitors on Site: John Luttinger, Dick Gillespie, Katherine Hanson, Bert Swan

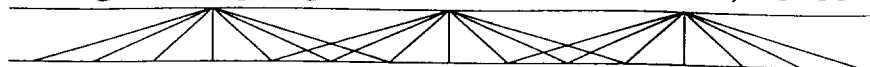
Changes from Plans and Specifications, and other special orders and important decisions: Change to 3 ft. Station spacing from 5ft. VPI= 6 ft. Approved by R Gillespie last night (confirmed this AM)

Weather Conditions: V. Hot, clear

Important Telephone calls:

Personnel on Site: PAV, RRC, JAM, PF, JB, JC, SM

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/15/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

630 Arrive Field. Move Doghouse, Run Jumpers & Wire.

730 Run Daily's On Das. Chan 6,8,18,35,40 Show Excess RMS Noise @ 24db Gain (.04,.04,.24,.24,.33 uV respectively). All chans pass @48dB gain. Will continue acq because we are running @ 48 DB; system not affected by the 24db Setting.

842 Begin Prod VP 436.5

1228 VP 686.5 Vib adding LF @ end of swp. Re-soldering LVDT leads.

1320 Reinstall LVDT. Begin shaking.

1525 Move up

1620 Resume production

1715 Sut down for day. Last VP 914.5. Total feet: 1425 Total spreads: 5 (285 feet per spread)

1750 RRC and JC remain until 2130 to survey, JAM remains to work on DAS.

J JAM arrive hotel.

2130 RRC and JC arrive hotel.

Visitors on Site: Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny, HOT

Important Telephone calls:

Personnel on Site: JC, PAV, JAM, RRC, SM, JB, PF

Field Engineer: PAV

FIELD ACTIVITY DAILY LOG

DATE: 8/16/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

650 Arrive Field. Move Doghouse, Run Jumpers & Wire

815 DAS Daily tests OK.

842 Begin Prod VP 916.5

1700 End production – Vib LVDT wires snapped. Moving wire for tomorrow. Last VP 1426.5. Total production = 1536 feet. JAM staying to fix one open in input panel.

Visitors on Site: Dick Gillespie

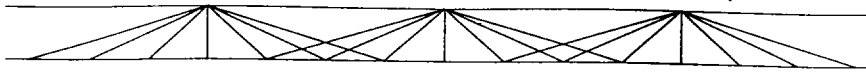
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny, HOT

Important Telephone calls:

Personnel on Site: JC, PAV, JAM, RRC, SM, JB, PF

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/17/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

630 JC and SM arrive field to survey elevations PFSF-98-A. RRC to Traverse City.

730 Arrive Field with two helpers.

730 Das diagnostics problems. Fixing.

930 Das fixed – diagnostics good. Begin production VP 1428.5. Phones pinged with Birddog from rollswitch in doghouse, all phones on ground checked good.

1400 Discuss survey w/ Gillespie: if proj needs absolute coords on processed SEGY headers will have to wait until line is shot & all coords are tied to abs. Site coords. If we can use line relative coords, can send data to processor much sooner. Call Luttinger. He says go ahead & use line relative coords to speed up processing.

1745 End of day. Last VP = 1970.5. Total production = 1626 feet.

1930 Arrive hotel.

Visitors on Site: Dick Gillespie

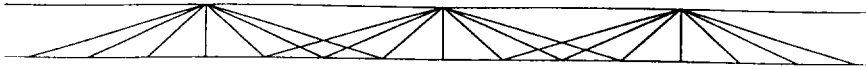
Changes from Plans and Specifications, and other special orders and important decisions: Checking phones from doghouse with Birddog. This procedure checks all phones in use rather than checking a few at random.

Weather Conditions: Sunny, HOT

Important Telephone calls: J. Luttinger: decide to use line relative coordinates for processing.

Personnel on Site: JC, PAV, JAM, SM, JB, PF

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/18/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

700 Arrive Field. Move wire. Survey elevations.

730 Checked continuity and leakage, DAS diagnostics, birddog phones - OK.

855 Start production PFSF-98-A VP 1972.5.

1050 Vib down. Fuel problems – shut down to repair.

1420 Vib fixed. Needed new fuel filter. Put in injector cleaner. Resume production.

1530 Overshot where VP spacing changes to 3 feet. Backed up 37 stations (to station 2165.5) to shoot every other odd half station to VP 2201.5. VP spacing is now 3 feet for 3000 feet.

1750 End production VP 2259.5. Feet coverage at 6' VP interval = 582 feet. Feet coverage at 3' interval = 285 feet.

1915 Arrive hotel.

Visitors on Site: Dick Gillespie, John Donnell

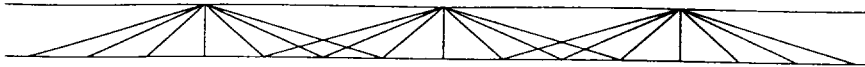
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Morning rain, cleared by afternoon. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: JC, PAV, JAM, JB, PF

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/19/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

700 Arrive Field. Move wire. Survey elevations.

730 Checked continuity and leakage and individual phone response with Birdog - OK.

745 DAS diagnostics problems - checking. Start production VP 2260.5.

1200 Vib down. Fuel problems - shut down to repair. Cleaned fuel strainer - OK.

1250 Vib repaired.

1800 End production VP 2547.5. Total production = 864 feet (3 feet VP interval).

2930 Arrive hotel.

Visitors on Site: Dick Gillespie

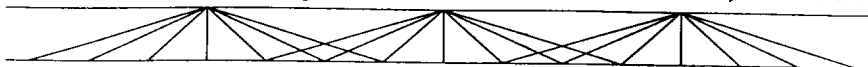
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: JC, PAV, JAM, JB, PF, SJ

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/20/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

730 Arrive Field. Move wire. Survey elevations. Run DAS diagnostics, Birddog phones, continuity – OK..

0939 Start production VP 2548.5 3 foot VPs.

1003 Wait for lightening, thunder, rain, and wind.

1030 Resume production.

1055 Bolt broke on Vib mass. Put new one in.

1107 Vib repaired.

1750 End production VP 2835.5. Total production = 864 feet.

1900 Arrive hotel.

Visitors on Site: Dick Gillespie

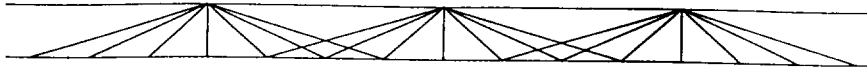
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Morning rain, cleared by afternoon. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: JC, PAV, JAM, JB, PF, SJ

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/21/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

700 Arrive Field. Move wire. Run DAS diagnostics, Birdog phones, continuity – OK..

0805 Start production VP 2836.5 3 foot VPs.

1145 End production VP 3027.5. Total production = 576 feet. End early to give crew some personal time.

1330 Arrive hotel.

1800 Talked with Steve Bear of Goshute Indian Reservation. Told Bay to cut fence and take out post where Line PFSF-98-A continues into BLM land. Steve also said he would repair after Bay was through.

Visitors on Site: Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Morning rain, cleared by afternoon. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, PF, SJ

Field Engineer: PAV

FIELD ACTIVITY DAILY LOG

DATE: 8/22/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

815 Arrive Field. Move wire. Run DAS diagnostics, Birdog phones, continuity – OK.

950 Start production VP 3028.5, 3 foot VPs.

1104 Vib broke down

1203 Vib fixed. Resume production. Started 6 foot VPs at station 3166.5. 3164.5 last 3 foot VP.

1635 Vib broke down.

1715 Vib fixed. Resume production.

1730 End production VP 3410.5. Total 3 foot production = 411 feet. Total 6 foot production = 735 feet.

1900 Arrive hotel.

Visitors on Site: Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/23/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

800 Arrive field.

830 Run DAS diagnostics, Birdog phones, continuity – OK.

915 Start production VP 3412.5, 6 foot VPs.

1038 Vib broke down

1135 Vib fixed. Resume production.

1700 End production VP 3890.5. Total 6 foot production = 1440 feet.

1815 Arrive hotel.

Visitors on Site: Dick Gillespie

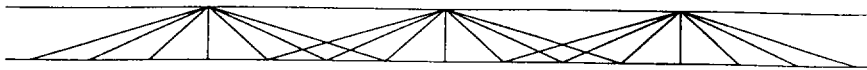
Changes from Plans and Specifications, and other special orders and important decisions: Dick Gillespie trimmed Line PFSF-98-A from 13200 feet to 13000 feet.

Weather Conditions: Sunny. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/24/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-A

Description of Daily Activities and Events:

700 PAV and JB arrive field to finish chaining PFSF-98-A to EOL.

800 Rest of crew arrives. Run DAS diagnostics, Birdog phones, continuity – OK.

954 Start production VP 3892.5, 6 foot VPs.

1632 Vib broke down

1700 Vib fixed. Resume production.

1723 End production VP 4436.5. Total 6 foot production = 1638 feet.

1845 Arrive hotel.

Visitors on Site: Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF

Field Engineer: PAV

FIELD ACTIVITY DAILY LOG

DATE: 8/25/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

800 Arrive field. Move equipment to next line.

900 Start chaining and laying out cable line PFSF-98-B. PAV and RRC lathe remainder of PFSF-98-B to check station numbers against distance down line. Check survey on line PFSF-98-A.

930 Run DAS diagnostics, Birdog phones, continuity – OK.

1125 Start production at VP 100.5.

1259 Vib problem – checking.

1330 Fixed airbag on Vib, resume production.

1355 Bolt sheared on mass (Vib) – repairing.

1519 Vib repaired.

1613 LVDT cable on Vib not functioning.

1627 Vib repaired.

8 Last VP for the day – 530.5. Total footage = 1290 feet.

1700 Vib fixed. Resume production.

2045 Arrive hotel.

Visitors on Site: Dick Gillespie

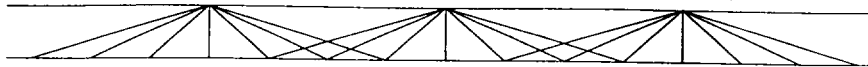
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85 deg. Windy with rain (thunderstorms) in the distance.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF, RRC, WD, BZ, PB

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/26/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

800 Crew arrives. Run DAS diagnostics, Birdog phones, continuity – OK.

920 Start production VP 532.5, 6 foot VPs.

1159 Recording system locked up. Rebooted system, inserted new tape – Reel 2A.

1210 Resume production.

1425 Stand by for lightening. Disconnected wire from recording system for safety.

1457 Resume production.

1630 Stand by again for lightening and rain with hail. Disconnected wire from recording system.

1658 Resume production.

1745 Vib stuck from rain – end production. Ground should be dry for tomorrow's production. Last VP 1024.5. Total production = 1482.**

1845 Arrive hotel.

** Final day footage not to be used for billing purposes.

Visitors on Site: Dick Gillespie

Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Cloudy, some rain and thunderstorms. Temperature ~85 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF, BD, BZ, PB

Field Engineer: PAV

FIELD ACTIVITY DAILY LOG

DATE: 8/27/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

815 Crew arrives. Run DAS diagnostics, Birdog phones, continuity – OK. Vib stuck in mud from day before. Try digging out while tractor is called in.

1125 Start production VP 1026.5, 6 foot VPs.

1403 Vib broke down, fixing LVDT wire.

1523 Resume production.

1536 Bolt broke on mass assembly.

1603 Resume production.

1715 Dick Gillespie would like to know the locations of the test lines and requested the endpoints be surveyed.

1816 Last VP for the day. VP 1394.5 Total production = 1110 feet.**

1915 Arrive hotel.

** Final day footage not to be used for billing purposes.

Visitors on Site: Dick Gillespie

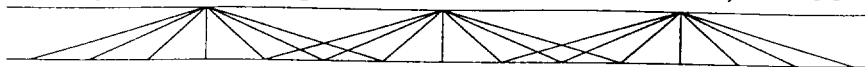
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85-90 deg.

Important Telephone calls: Called Mike Nelson at BLM. Left message and informed geophysics was finished and to call doghouse if wanted to meet and check BLM land where survey was performed.

Personnel on Site: PAV, JAM, JB, SJ, PF, BD, BZ, PB

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/28/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

800 Crew arrives. Run DAS diagnostics, Birdog phones, continuity – OK.

932 Start production VP 1396.5, 6 foot VPs.

1015 Vib broke down, fixing LVDT wire.

1110 Resume production.

1400 Bolt broke on mass assembly.

1410 Resume production.

1500 PAV leaves field to schedule Vib fixes and permits. Informed Dick Gillespie.

1805 Last VP for the day. VP 1924.5 Total production = 1590 feet.**

1915 Arrive hotel.

** Final day footage not to be used for billing purposes.

Visitors on Site: Dick Gillespie

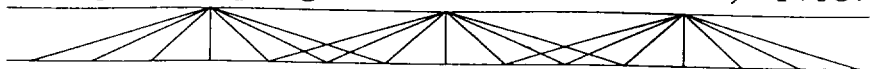
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85-90 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF, BD, BZ, PB

Field Engineer: PAV



FIELD ACTIVITY DAILY LOG

DATE: 8/29/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

800 Crew arrives. Run DAS diagnostics, Birddog phones, continuity – OK.
904 Start production VP 1926.5, 6 foot VPs.
922 Vib broke down, fixing LVDT wire.
930 Resume production.
1047 Vib problem.
1105 Vib repaired.
1403 Airbag blows on Vib.
1800 Last VP for the day. VP 2546.5 Total production = 1866 feet.** RRC and PAV stay to survey.
1900 Crew arrives hotel.
2100 RRC and PAV arrives hotel.

Final day footage not to be used for billing purposes.

Visitors on Site: Dick Gillespie

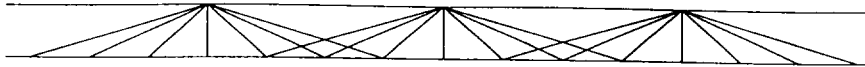
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85-90 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF, BD, BZ, PB

Field Engineer: PAV



868 Robinwood Court, Traverse City, MI 49686

FIELD ACTIVITY DAILY LOG

DATE: 8/30/98

Contract No: 0596602-024

SHEET 1 OF 1

Project Name: PFSF Stone & Webster

Project No.: 98-185

Field Activity Subject: Data Acquisition Line PFSF-98-B

Description of Daily Activities and Events:

800 Crew arrives. Run DAS diagnostics, Birdog phones, continuity – OK.

904 Start production VP 2548.5, 6 foot VPs.

1052 Last VP for the day, finish Line PFSF-98-B. VP 2740.5 Total production = 582 feet.** RRC, PAV, and PB stay to survey.

1345 Crew arrives hotel.

1745 RRC, PAV, and PB arrives hotel.

** Final day footage not to be used for billing purposes.

Visitors on Site: Dick Gillespie

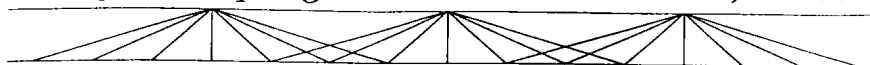
Changes from Plans and Specifications, and other special orders and important decisions:

Weather Conditions: Sunny. Temperature ~85-90 deg.

Important Telephone calls:

Personnel on Site: PAV, JAM, JB, SJ, PF, BD, BZ, PB

Field Engineer: PAV



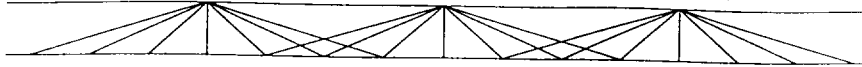
FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: RON CARR, NATE BUCKNER, AARON SMITH DEPART T.C. FOR UTAH 2200: STOPPED IN DES MOINES, IDAHO		
Visitors on Site:	Changes from Plans and Specifications, and other special orders and important decisions:	
Weather Conditions:	Important Telephone calls:	
Personnel on Site:		
Field Engineer:		Date:



FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOEELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: DEPART DES MOINES, IDAHO 2200: STOPPED IN RAWLINS, WY		
Visitors on Site:	Changes from Plans and Specifications, and other special orders and important decisions:	
Weather Conditions:	Important Telephone calls:	
Personnel on Site:RCC, NB, AS		
Field Engineer:		Date:

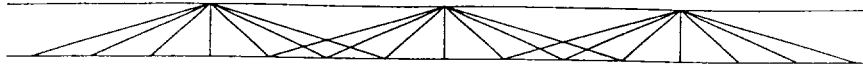


DATE: 11-5-98

SHEET 1 OF 1

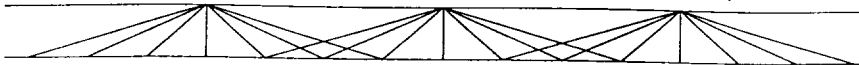
FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOEELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: DEPART RAWLINS, WY 1200: ARRIVE HOTEL IN TOOEELE, UTAH 1300: MET WITH DICK GILLISPIE, HEADED TO LINE, JUSTIN MODROO ARRIVED 1400: ARRIVE ON SITE, LOCATED END POINTS FOR LINE C 1530: RAINING, STOPPED FOR DAY HEADING TO HOTEL 0800: REST OF CREW DEPARTS T.C., JR,JAM,PF,PB,BD,BZ,JB 1900: STOPPED FOR THE NIGHT IN DAVENPORT, IOWA		
Visitors on Site: DICK GILLESPIE	Changes from Plans and Specifications, and other special orders and important decisions:	
Weather Conditions:	Important Telephone calls:	
Personnel on Site:RCC, NB, AS		
Field Engineer:		Date:



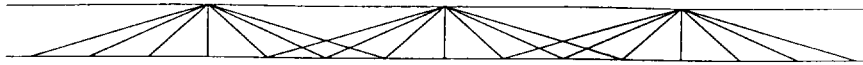
FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: DEPART HOTEL, HEADED FOR LINE, LOCATED END PTS AND CHAINED OUT LINES C&D 1730: DONE FOR DAY HEADING TO HOTEL 1830: ARRIVE HOTEL 0600: CREW DEPARTS DAVENPORT, IOWA 2030: STOPPED IN SIDNEY, NB FOR NIGHT		
Visitors on Site: DICK GILLESPIE		Changes from Plans and Specifications, and other special orders and important decisions:
Weather Conditions:		Important Telephone calls:
Personnel on Site:RCC, NB, AS, JM		
Field Engineer:		Date:



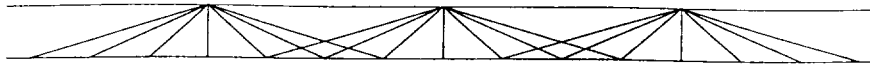
FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOEELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: DEPART HOTEL, SHOT IN ELEVATIONS & X,Y'S ON LINES C&D, LAID OUT ALL EQUIPMENT AND DUG 1000 HOLES FOR PHONES ON LINE C 1730: DONE FOR DAY HEADING FOR HOTEL 0600: CREW DEPARTS SIDNEY, NB 1730: CREW ARRIVES TOOEELE, UTAH 2130: LEE K. AND PAV ARRIVED TOOEELE, UTAH		
Visitors on Site: DICK GILLESPIE		Changes from Plans and Specifications, and other special orders and important decisions:
Weather Conditions:		Important Telephone calls:
Personnel on Site:RCC, NB, AS, JM, JR,JAM,BZ,BD,PF,PB,JB,PAV,LK		
Field Engineer:		Date:



FIELD ACTIVITY DAILY LOG

Project Name: STONE & WEBSTER, TOOEELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: STAND-BY AT HOTEL DUE TO WEATHER, JR,RC HEADING TO LINE TO CHECK CONDITIONS 0900: DEPART HOTEL HEADING FOR LINE 1000: ARRIVE ON SITE, SETTING UP LINE 1135: START SHAKING LINE C, VP 100.5-339.5 1225: VIB DOWN - BROKEN BOLT ON MANIFOLD 1240: VIB REPAIRED 1315: BROKEN WIRE ON LVDT 1400: VIB REPAIRED 1430: LOWERED DRIVE LEVEL ON VIB TO 40% 1735: LAST VP FOR DAY 339.5, HEADING TO HOTEL 1830: ARRIVE HOTEL		
Visitors on Site: DICK GILLESPIE	Changes from Plans and Specifications, and other special orders and important decisions: LOWERED DRIVE LEVEL TO 40 %	
Weather Conditions:OVERCAST, 35F, LT BREEZE	Important Telephone calls:	
Personnel on Site:RCC, NB, AS, JM, JR,JAM,BZ,BD,PF,PB,JB,PAV,LK		
Field Engineer:		Date:

**FIELD ACTIVITY DAILY LOG**

Project Name: STONE & WEBSTER, TOOELE, UT		Project No.:98-185
Field Activity Subject: PFSF, Shearwave Reflection Survey		
Description of Daily Activities and Events: 0700: DEPART HOTEL, VERY HEAVY SNOW IN TOOELE 0740: ARRIVE ON SITE- NO SNOW IN SKULL VALLEY 0820: START PROD STA 340.5 0945: VIB DOWN- BROKEN BOLT ON MANIFOLD 1010: VIB REPAIRED, START PROD AGAIN HAVING SOME TROUBLE WITH SEISNET-FORMAT CODE ERRORS APPLICATION ERROR- HARD DRIVE FULL-FIXED 1750: END OF DAY, LAST VP FOR DAY 723.5 1900: BACK TO HOTEL		
Visitors on Site: DICK GILLESPIE	Changes from Plans and Specifications, and other special orders and important decisions:	
Weather Conditions:OVERCAST, PT SUNNY,28F LT WIND	Important Telephone calls:	
Personnel on Site:RCC, NB, AS, JM, JR,JAM,BZ,BD,PF,PB,JB,PAV,LK		
Field Engineer:		Date:

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/10/98			
Serial Number	Pass/Fail			
81275	Pass			
59525	Pass			
81301	Pass			
81323	Pass			
81311	Pass			
509	Pass			
520	Pass			
523	Pass			
81333	Pass			
59513	Pass			
81288	Pass			
81298	Pass			
517	Pass			
59474	Pass			
59524	Pass			
81327	Pass			
548	Pass			
59518	Pass			
59516	Pass			
511	Pass			
59484	Pass			
59500	Pass			
59510	Pass			

Approved/Date  10/10/98

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/11/98			
Serial Number	Pass/Fail			
59507	Pass			
81312	Pass			
514	Pass			
533	Pass			
540	Pass			
81314	Pass			
81271	Pass			
81321	Pass			
59510	Pass			
516	Pass			
59517	Pass			
59484	Pass			
59486	Pass			
531	Pass			
59498	Pass			
59492	Pass			
50519	Pass			
81296	Pass			
81304	Pass			
81311	Pass			
545	Pass			
81331	Pass			
81322	Pass			

Approved/Date  8/11/98


Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/12/98			
Serial Number	Pass/Fail			
59525	Pass			
509	Pass			
81326	Pass			
81283	Pass			
81302	Pass			
81305	Pass			
81318	Pass			
539	Pass			
543	Pass			
81310	Pass			

Approved/Date  8/12/98

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/13/98			
Serial Number	Pass/Fail			
530	Pass			
81311	Pass			
81320	Pass			
81316	Pass			
544	Pass			
59525	Pass			
59499	Pass			
513	Pass			
81284	Pass			
516	Pass			

Approved/Date PA 8/13/98

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/14/98			
Serial Number	Pass/Fail			
59489	Pass			
59501	Pass			
81278	Pass			
508	Pass			
523	Pass			
81285	Pass			
59486	Pass			
59521	Pass			
546	Pass			
81326	Pass			

Approved/Date  1 8/14/98

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/15/98			
Serial Number	Pass/Fail			
504	Pass			
59492	Pass			
59504	Pass			
81288	Pass			
81301	Pass			
517	Pass			
522	Pass			
59506	Pass			
81302	Pass			
81325	Pass			

Approved/Date  8/15/98

Private Fuel Storage Facility, Skull Valley, Tooele, UT				
Contract No. 0596602-024				
Daily random S- Wave phone Birddog test				
Date:	08/16/98			
Serial Number	Pass/Fail			
59474	Pass			
512	Pass			
81306	Pass			
59525	Pass			
81272	Pass			
59484	Pass			
59509	Pass			
81299	Pass			
540	Pass			
543	Pass			

Approved/Date  1 8/16/98

Sample Daily Test On Seismic Recorder DAS-1 SN 15 and Expansion Module SN 27

A.V. 3-98 CHECKED BY *UK* Contract No. 0598602-024
APPROVED BY

SAMPLE INTERVAL: 2.000 GAIN: 125 mV INPUT FACT: 1.0000
FILTER: 125 Hz INPUT FACT: 1.0000
LOWER LIMIT: -0.1000V UPPER LIMIT: 0.1000V
AVERAGE GAIN: 15.000
DATE/TIME: 09/12/98 12:00:00

Ch #	CH/CS Error (dB)	Ch #	CH/CS Error (dB)
1	-0.0032	49	-0.0035
2	-0.0048	50	-0.0035
3	-0.0048	51	-0.0035
4	-0.0048	52	-0.0035
5	-0.0048	53	-0.0035
6	-0.0048	54	-0.0035
7	-0.0048	55	-0.0035
8	-0.0048	56	-0.0035
9	-0.0048	57	-0.0035
10	-0.0048	58	-0.0035
11	-0.0048	59	-0.0035
12	-0.0048	60	-0.0035
13	-0.0048	61	-0.0035
14	-0.0048	62	-0.0035
15	-0.0048	63	-0.0035
16	-0.0048	64	-0.0035
17	-0.0048	65	-0.0035
18	-0.0048	66	-0.0035
19	-0.0048	67	-0.0035
20	-0.0048	68	-0.0035
21	-0.0048	69	-0.0035
22	-0.0048	70	-0.0035
23	-0.0048	71	-0.0035
24	-0.0048	72	-0.0035
25	-0.0048	73	-0.0035
26	-0.0048	74	-0.0035
27	-0.0048	75	-0.0035
28	-0.0048	76	-0.0035
29	-0.0048	77	-0.0035
30	-0.0048	78	-0.0035
31	-0.0048	79	-0.0035
32	-0.0048	80	-0.0035
33	-0.0048	81	-0.0035
34	-0.0048	82	-0.0035
35	-0.0048	83	-0.0035
36	-0.0048	84	-0.0035
37	-0.0048	85	-0.0035
38	-0.0048	86	-0.0035
39	-0.0048	87	-0.0035
40	-0.0048	88	-0.0035
41	-0.0048	89	-0.0035
42	-0.0048	90	-0.0035
43	-0.0048	91	-0.0035
44	-0.0048	92	-0.0035
45	-0.0048	93	-0.0035
46	-0.0048	94	-0.0035
47	-0.0048	95	-0.0035
48	-0.0048	96	-0.0035

SAMPLE INTERVAL: 2.000 GAIN: 125 mV INPUT FACT: 1.0000
FILTER: 125 Hz INPUT FACT: 1.0000
LOWER LIMIT: -0.1000V UPPER LIMIT: 0.1000V
AVERAGE GAIN: 15.000
DATE/TIME: 09/12/98 12:00:00

Ch #	True Gain	Ch #	True Gain
1	15.0000	49	15.0000
2	15.0000	50	15.0000
3	15.0000	51	15.0000
4	15.0000	52	15.0000
5	15.0000	53	15.0000
6	15.0000	54	15.0000
7	15.0000	55	15.0000
8	15.0000	56	15.0000
9	15.0000	57	15.0000
10	15.0000	58	15.0000
11	15.0000	59	15.0000
12	15.0000	60	15.0000
13	15.0000	61	15.0000
14	15.0000	62	15.0000
15	15.0000	63	15.0000
16	15.0000	64	15.0000
17	15.0000	65	15.0000
18	15.0000	66	15.0000
19	15.0000	67	15.0000
20	15.0000	68	15.0000
21	15.0000	69	15.0000
22	15.0000	70	15.0000
23	15.0000	71	15.0000
24	15.0000	72	15.0000
25	15.0000	73	15.0000
26	15.0000	74	15.0000
27	15.0000	75	15.0000
28	15.0000	76	15.0000
29	15.0000	77	15.0000
30	15.0000	78	15.0000
31	15.0000	79	15.0000
32	15.0000	80	15.0000
33	15.0000	81	15.0000
34	15.0000	82	15.0000
35	15.0000	83	15.0000
36	15.0000	84	15.0000
37	15.0000	85	15.0000
38	15.0000	86	15.0000
39	15.0000	87	15.0000
40	15.0000	88	15.0000
41	15.0000	89	15.0000
42	15.0000	90	15.0000
43	15.0000	91	15.0000
44	15.0000	92	15.0000
45	15.0000	93	15.0000
46	15.0000	94	15.0000
47	15.0000	95	15.0000
48	15.0000	96	15.0000

SAMPLE INTERVAL: 2.000 GAIN: 125 mV INPUT FACT: 1.0000
FILTER: 125 Hz INPUT FACT: 1.0000
LOWER LIMIT: -0.1000V UPPER LIMIT: 0.1000V
AVERAGE GAIN: 15.000
DATE/TIME: 09/12/98 12:00:00

Ch #	RMSE (microvolts)	Ch #	RMSE (microvolts)
1	0.0000	49	0.0000
2	0.0000	50	0.0000
3	0.0000	51	0.0000
4	0.0000	52	0.0000
5	0.0000	53	0.0000
6	0.0000	54	0.0000
7	0.0000	55	0.0000
8	0.0000	56	0.0000
9	0.0000	57	0.0000
10	0.0000	58	0.0000
11	0.0000	59	0.0000
12	0.0000	60	0.0000
13	0.0000	61	0.0000
14	0.0000	62	0.0000
15	0.0000	63	0.0000
16	0.0000	64	0.0000
17	0.0000	65	0.0000
18	0.0000	66	0.0000
19	0.0000	67	0.0000
20	0.0000	68	0.0000
21	0.0000	69	0.0000
22	0.0000	70	0.0000
23	0.0000	71	0.0000
24	0.0000	72	0.0000
25	0.0000	73	0.0000
26	0.0000	74	0.0000
27	0.0000	75	0.0000
28	0.0000	76	0.0000
29	0.0000	77	0.0000
30	0.0000	78	0.0000
31	0.0000	79	0.0000
32	0.0000	80	0.0000
33	0.0000	81	0.0000
34	0.0000	82	0.0000
35	0.0000	83	0.0000
36	0.0000	84	0.0000
37	0.0000	85	0.0000
38	0.0000	86	0.0000
39	0.0000	87	0.0000
40	0.0000	88	0.0000
41	0.0000	89	0.0000
42	0.0000	90	0.0000
43	0.0000	91	0.0000
44	0.0000	92	0.0000
45	0.0000	93	0.0000
46	0.0000	94	0.0000
47	0.0000	95	0.0000
48	0.0000	96	0.0000

SAMPLE INTERVAL: 2.000 GAIN: 125 mV INPUT FACT: 1.0000
FILTER: 125 Hz INPUT FACT: 1.0000
LOWER LIMIT: -0.1000V UPPER LIMIT: 0.1000V
AVERAGE GAIN: 15.000
DATE/TIME: 09/12/98 12:00:00

Ch #	DC Offset (microvolts)	Ch #	DC Offset (microvolts)
1	0.0000	49	0.0000
2	0.0000	50	0.0000
3	0.0000	51	0.0000
4	0.0000	52	0.0000
5	0.0000	53	0.0000
6	0.0000	54	0.0000
7	0.0000	55	0.0000
8	0.0000	56	0.0000
9	0.0000	57	0.0000
10	0.0000	58	0.0000
11	0.0000	59	0.0000
12	0.0000	60	0.0000
13	0.0000	61	0.0000
14	0.0000	62	0.0000
15	0.0000	63	0.0000
16	0.0000	64	0.0000
17	0.0000	65	0.0000
18	0.0000	66	0.0000
19	0.0000	67	0.0000
20	0.0000	68	0.0000
21	0.0000	69	0.0000
22	0.0000	70	0.0000
23	0.0000	71	0.0000
24	0.0000	72	0.0000
25	0.0000	73	0.0000
26	0.0000	74	0.0000
27	0.0000	75	0.0000
28	0.0000	76	0.0000
29	0.0000	77	0.0000
30	0.0000	78	0.0000
31	0.0000	79	0.0000
32	0.0000	80	0.0000
33	0.0000	81	0.0000
34	0.0000	82	0.0000
35	0.0000	83	0.0000
36	0.0000	84	0.0000
37	0.0000	85	0.0000
38	0.0000	86	0.0000
39	0.0000	87	0.0000
40	0.0000	88	0.0000
41	0.0000	89	0.0000
42	0.0000	90	0.0000
43	0.0000	91	0.0000
44	0.0000	92	0.0000
45	0.0000	93	0.0000
46	0.0000	94	0.0000
47	0.0000	95	0.0000
48	0.0000	96	0.0000

SAMPLE INTERVAL: 2.000 GAIN: 125 mV INPUT FACT: 1.0000
FILTER: 125 Hz INPUT FACT: 1.0000
LOWER LIMIT: -0.1000V UPPER LIMIT: 0.1000V
AVERAGE GAIN: 15.000
DATE/TIME: 09/12/98 12:00:00

Ch #	RMSE (microvolts)	Ch #	RMSE (microvolts)
1	0.0000	49	0.0000
2	0.0000	50	0.0000
3	0.0000	51	0.0000
4	0.0000	52	0.0000
5	0.0000	53	0.0000
6	0.0000	54	0.0000
7	0.0000	55	0.0000
8	0.0000	56	0.0000
9	0.0000	57	0.0000
10	0.0000	58	0.0000
11	0.0000	59	0.0000
12	0.0000	60	0.0000
13	0.0000	61	0.0000
14	0.0000	62	0.0000
15	0.0000	63	0.0000
16	0.0000	64	0.0000
17	0.0000	65	0.0000
18	0.0000	66	0.0000
19	0.0000	67	0.0000
20	0.0000	68	0.0000
21	0.0000	69	0.0000
22	0.0000	70	0.0000
23	0.0000	71	0.0000
24	0.0000	72	0.0000
25	0.0000	73	0.0000
26	0.0000	74	0.0000
27	0.0000	75	0.0000
28	0.0000	76	0.0000
29	0.0000	77	0.0000
30	0.0000	78	0.0000
31	0.0000	79	0.0000
32	0.0000	80	0.0000
33	0.0000	81	0.0000
34	0.0000	82	0.0000
35	0.0000	83	0.0000
36	0.0000	84	0.0000
37	0.0000	85	0.0000
38	0.0000	86	0.0000
39	0.0000	87	0.0000
40	0.0000	88	0.0000
41	0.0000	89	0.0000
42	0.0000	90	0.0000
43	0.0000	91	0.0000
44	0.0000	92	0.0000
45	0.0000	93	0.0000
46	0.0000	94	0.0000
47	0.0000	95	0.0000
48	0.0000	96	0.0000

NO OFFSET TEST		2.000 GAIN		125 mV INPUT FACT		1.0000	
SAMPLE INTERVAL:		1		-0.1000V UPPER LIMIT		0.1000V	
FILTER:		1		DATE/TIME:		09/12/98 12:00:00	
LOWER LIMIT:		-0.1000V		UPPER LIMIT:		0.1000V	
AVERAGE GAIN:		15.000		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
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DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
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UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER LIMIT:		0.1000V		DATE/TIME:		09/12/98 12:00:00	
DATE/TIME:		09/12/98 12:00:00		UPPER LIMIT:		0.1000V	
UPPER							

Sample Daily Test On Seismic Recorder DAS-1 SN 15 and Expansion Module SN 27

A.V.	CHECKED BY	<i>PD</i>	Contract No.
13-98	APPROVED BY	<i>LKK</i>	0596602-024

CROSS FEED TEST		2.0ms		IMPORT FEED : 35.000000	
CROSS INTERVAL:		1200		EXPORT FEED : 100.000000	
CROSS LIMIT : -200.0000				EXPORT LIMIT : -100.000000	
DATE/TIME : 1.001370/60.12700163					
Cross	CrossRate (C/S)	C/S	CrossRate (C/S)	Cross	CrossRate (C/S)
1	-117.2735	49	-117.6613	1	-117.2735
2	-120.1920	50	-118.5657	2	-120.1920
3	-118.4323	51	-118.2626	3	-118.4323
4	-118.9382	52	-119.5382	4	-118.9382
5	-118.8722	53	-121.3206	5	-118.8722
6	-121.2627	54	-121.9172	6	-121.2627
7	-121.6082	55	-119.2032	7	-121.6082
8	-120.0749	56	-122.9047	8	-120.0749
9	-120.2951	57	-122.9047	9	-120.2951
10	-118.4323	58	-119.5276	10	-118.4323
11	-118.4323	59	-122.6047	11	-118.4323
12	-118.2248	60	-122.6047	12	-118.2248
13	-118.9627	61	-117.6613	13	-118.9627
14	-119.7610	62	-119.1215	14	-119.7610
15	-120.2142	63	-120.7810	15	-120.2142
16	-119.7610	64	-119.1215	16	-119.7610
17	-119.7610	65	-122.6047	17	-119.7610
18	-119.7610	66	-122.6047	18	-119.7610
19	-122.2146	67	-122.6047	19	-122.2146
20	-120.9171	68	-122.6047	20	-120.9171
21	-120.9171	69	-120.9171	21	-120.9171
22	-119.5042	70	-119.0037	22	-119.5042
23	-119.5042	71	-124.6046	23	-119.5042
24	-120.2146	72	-118.4323	24	-120.2146
25	-120.2146	73	-118.4323	25	-120.2146
26	-122.4047	74	-119.2032	26	-122.4047
27	-119.5042	75	-119.2032	27	-119.5042
28	-120.9171	76	-120.9171	28	-120.9171
29	-120.9171	77	-120.9171	29	-120.9171
30	-120.9171	78	-120.9171	30	-120.9171
31	-120.9171	79	-120.9171	31	-120.9171
32	-120.9171	80	-119.0037	32	-120.9171
33	-120.9171	81	-121.0036	33	-120.9171
34	-120.9171	82	-118.4323	34	-120.9171
35	-120.9171	83	-118.4323	35	-120.9171
36	-120.9171	84	-118.4323	36	-120.9171
37	-120.9171	85	-118.4323	37	-120.9171
38	-120.9171	86	-117.6613	38	-120.9171
39	-118.7365	87	-119.5276	39	-118.7365
40	-120.5265	88	-120.3102	40	-120.5265
41	-120.5265	89	-120.9299	41	-120.5265
42	-120.5265	90	-120.9299	42	-120.5265
43	-119.1979	91	-120.9299	43	-119.1979
44	-121.1661	92	-122.7231	44	-121.1661
45	-119.5703	93	-120.2815	45	-119.5703
46	-120.2920	94	-122.2638	46	-120.2920
47	-120.2920	95	-122.2638	47	-120.2920
48	-120.2920	96	-120.0749	48	-120.2920
49	-120.2920	97	-120.0749	49	-120.2920
50	-120.2920	98	-120.0749	50	-120.2920
51	-120.2920	99	-120.0749	51	-120.2920
52	-120.2920	100	-120.0749	52	-120.2920
53	-120.2920			53	-120.2920
54	-120.2920			54	-120.2920
55	-120.2920			55	-120.2920
56	-120.2920			56	-120.2920
57	-120.2920			57	-120.2920
58	-120.2920			58	-120.2920
59	-120.2920			59	-120.2920
60	-120.2920			60	-120.2920

[illegible]

GAIN ACCOUNT TEST:		2,000 GAIN		4,000 GAIN	
SAMPLE INTRINSIC:		12500		10000	
FILTER		12500		10000	
LOOKS LIMIT = 745,000		UPPER LIMIT = 75,000		UPPER LIMIT = 247,000	
DATERANGE = 1803/1700 - 12/04/15					
Ch	Year Gain	Ch	Year Gain	Ch	Year Gain
1	216,1592	48	251,1270		
2	205,0930	49	248,2173		
3	205,2003	50	245,1146		
4	205,0136	51	245,1146		
5	205,2172	52	246,2323		
6	205,2172	53	246,2313		
7	205,2279	54	246,1720		
8	205,2279	55	246,1720		
9	205,2025	56	246,1939		
10	205,2025	57	245,1045		
11	205,2172	58	246,1939		
12	205,2172	59	246,1939		
13	205,2006	60	246,2005		
14	205,2006	61	246,2005		
15	205,2006	62	246,2005		
16	205,2001	63	246,1172		
17	205,2001	64	246,2002		
18	205,2025	65	246,2002		
19	205,2002	66	246,2002		
20	205,2002	67	246,2002		
21	205,2002	68	246,2002		
22	205,2002	69	246,2002		
23	205,2002	70	246,2002		
24	205,2002	71	246,2002		
25	205,2002	72	246,2002		
26	205,2002	73	246,2002		
27	205,2002	74	246,2002		
28	205,2002	75	246,2002		
29	205,2002	76	246,2002		
30	205,2002	77	246,2002		
31	205,2002	78	246,2002		
32	205,2002	79	246,2002		
33	205,2002	80	246,2002		
34	205,2002	81	246,2002		
35	205,2002	82	246,2002		
36	205,2002	83	246,2002		
37	205,2002	84	246,2002		
38	205,2002	85	246,2002		
39	205,2002	86	246,2002		
40	205,2002	87	246,2002		
41	205,2002	88	246,2002		
42	205,2002	89	246,2002		
43	205,2002	90	246,2002		
44	205,2002	91	246,2002		
45	205,2002	92	246,2002		
46	205,2002	93	246,2002		
47	205,2002	94	246,2002		
48	205,2002	95	246,2002		
49	205,2002	96	246,2002		
50	205,2002	97	246,2002		
51	205,2002	98	246,2002		
52	205,2002	99	246,2002		
53	205,2002	100	246,2002		

```
SAMPLE INTERVAL : 2.0ms CAIN      , 2448
FILTER          , 175Hz INPUT FREQ , 35.01MHz
OVER LIMIT     , 0.0000 UPPER LIMIT, 0.0050
DATE/TIME      , 00/13/90 - 12:05:15
```

C ₁ , Å	TM ₁ (3)	C ₂ , Å	TM ₂ (3)
1	0.0007	49	0.0013
2	0.0010	50	0.0016
3	0.0010	51	0.0006
4	0.0007	52	0.0011
5	0.0007	53	0.0012
6	0.0007	54	0.0008
7	0.0008	55	0.0011
8	0.0008	56	0.0012
9	0.0009	57	0.0012
10	0.0008	58	0.0007
11	0.0008	59	0.0011
12	0.0009	60	0.0010
13	0.0008	61	0.0007
14	0.0007	62	0.0007
15	0.0009	63	0.0013
16	0.0007	64	0.0010
17	0.0009	65	0.0011
18	0.0007	66	0.0006
19	0.0008	67	0.0012
20	0.0009	68	0.0012
21	0.0009	69	0.0011
22	0.0008	70	0.0010
23	0.0008	71	0.0012
24	0.0011	72	0.0009
25	0.0011	73	0.0009
26	0.0011	74	0.0008
27	0.0015	75	0.0005
28	0.0015	76	0.0005
29	0.0010	77	0.0016
30	0.0008	78	0.0010
31	0.0019	79	0.0005
32	0.0006	80	0.0005
33	0.0007	81	0.0005
34	0.0007	82	0.0005
35	0.0011	83	0.0005
36	0.0007	84	0.0005
37	0.0007	85	0.0004
38	0.0004	86	0.0008
39	0.0004	87	0.0005
40	0.0002	88	0.0003
41	0.0003	89	0.0003
42	0.0004	90	0.0003
43	0.0003	91	0.0005
44	0.0003	92	0.0004
45	0.0004	93	0.0005
46	0.0005	94	0.0005
47	0.0005	95	0.0005
48	0.0009	96	0.0005

BAY GEOPHYSICAL ASSOCIATES, INC.
GUIDELINE:

GENERAL PROCEDURES FOR SEISMIC INTERPRETATION
(Structural and Stratigraphic)

INITIAL STAGE

1. Gather all information available including:
 - * What is the purpose / objective of the study?
 - * Related survey data: survey procedures and results, migrated and unmigrated seismic lines, synthetic seismograms, base maps, well logs, velocity information, information on local/regional geology . . . etc.
 - * Acquisition and processing information.
2. Review data quality:
 - * Acquisition, processing and plotting parameters.
 - * Mislabelled sections (shot points, intersections, scale, polarity).
 - * Navigation and base maps (line position and intersections, shot point numbers, line numbers and direction, well locations and labels, map projection, coordinates and scale, planimetric detail, ...).
 - * Identify data problems associated with complex geology, acquisition and processing.

INTERPRETATION STAGE

1. **INSPECT THE DATA:**
 - A. Determine the key lines for good reflector continuity and data quality in relation to features of interest and available well control.
 - B. Identify all areas where data quality is a problem. Plot the location and nature of each problem on a basemap. Problems could include the presence of faults, unconformities, salt, noise, and other feature across which reflector continuity or correlation is problematic. This **"Problematic Data Areas Map"** will be useful in subsequent operation.
2. **SELECT HORIZONS** to be mapped using criteria appropriate to the data, objectives of the project and/or available well control.

3. IDENTIFY MAJOR STRUCTURAL FEATURES in the study area.

MAJOR FEATURES MAP

- A. On a clean base map, mark the location and character of major structural features (highs, lows, major faults, . . .etc.).
- B. Make a rough **Major Features Map** showing location and nature of major geological features and structural trends in the survey area.

FAULT MAP(S)

- A. If available, take migrated data and find faults on dip lines to get a rough idea where faults cut the deepest horizon to be mapped. Mark the fault plane/zone on the section with a colored pencil and its position or shotpoint(s) on the basemap. Fault locations should be rough since many iterations may be needed to get faults in their final form and position on the seismic section and map.
- B. Use fault notations on the map to connect dip line faults for the deepest horizon.
- C. Find faults on strike lines that have not yet been mapped.
- D. Use dip lines to identify and connect strike line faults.
- E. Put results (steps A-D) on a map for the deepest horizon.
- F. Repeat steps A-E to construct a rough fault map for each horizon to be mapped; start with the deeper horizons and work with successively shallower horizons.
- G. On a light table, overlay the 'complete' fault map of a horizon onto the fault map of the underlying horizon. Check that faults are:
(1) properly positioned and connected, (2) have the same sense of displacement, (3) have been connected in a consistent manner, and (4) honor the data and make geologic sense.

4. PICK THE SECTION

"Pick the horizon" by marking the extent of the horizon's signature on the seismic line and extending the horizon as far as confidence will allow in both directions on each section. This process may be done (a) by hand on the paper sections or (b) on an interpretation workstation. In either case, the procedure will differ but the objective is the same.

The actual steps for picking, timing and mapping a horizon on a workstation will vary depending upon the software package being used. In general, the computerized procedure will be similar to the steps described below for picking, timing and mapping a seismic horizon by hand.

Picking the section by hand:

- A. Select a unique color to identify each horizon to be picked and decide where to begin (e.g., on a high quality line or at a well).
- B. On a dip line, color the event associated with the horizon being mapped and mark the extent of the event on the section.
- C. At each intersection, “tie” or transfer the picked horizon from the dip line to the crossing strike line. This is easily done by folding one section at the line intersection, laying it on the crossing profile at the intersection and transferring the seismic pick to the new line. Continue the process by picking the horizon on the new line and transferring the pick at the next crossing line until a loop is closed or tied back to the original section. The time values at this common intersecting point should be identical; if they are not, there is a mistie at the intersection.

A mistie usually indicates the interpreter has drifted off the original horizon being picked; the horizon picks in the loop should be reviewed and corrected. Misties can also result from navigation problems, errors on the basemap or an incorrect intersection label on the seismic section or migration problem.

Tying loops at the intersection assures that each horizon has been accurately identified and picked on each seismic line. The procedure produces an internally consistent interpretation of each horizon.

5. TIME THE SECTION

- A. The objective of timing is to determine the two way travel time (TWT) for a picked horizon at a shotpoint; the TWT values are then transferred or posted to the corresponding shotpoint positions on the basemap.

Three common ways of timing seismic data are:

- (1) to determine the TWT of a horizon **by hand**; this involves measuring the TWT at a shotpoint using a timing scale. Each measured value is posted at the corresponding shotpoint location on to the shotpoint map.

(2) **digitize** the picked horizons on each seismic section and merge the time values with a x/y navigation/shotpoint coordinate file. Data in the appropriate computer programs.

(3) use an interactive seismic interpretation **workstation** to pick, time, post and map the seismic horizon data; these functions, as well as data management capabilities are integrated in the modern computer workstation to facilitate the interpretation process.

6. INTEGRATE the Fault and Horizon Data

Make final fault maps for each horizon, checking that each is compatible with faults on the underlying horizon and correcting problems as you find them. Work from the deep horizons to the shallow ones. Post the TWT values for each horizon on: (a) the appropriate fault map or (2) a clean base map and add the final fault interpretation for the horizon.

7. MAP THE DATA

A. The procedure used to map the interpreted data will vary depending upon resources available.

- * Contour posted values for each time horizon by hand. Honor faults in the process.
- * Use computer software to map and contour values for each time horizon; results should honor faults.

* **QC all data at this step.**

B. Make isochron maps. Exercise caution in areas between faults where problems can include missing section, noise and horizons masked by a fault.

C. Convert time maps to depth and contour.

D. Make all other maps.

E. Check final maps carefully, including: map title, label, scale, coordinates, fault locations and displacement, contour values, consistency with other maps.

STRATIGRAPHIC INTERPRETATION OF SEISMIC DATA

Seismic stratigraphy deals with the study of stratigraphy and depositional facies as interpreted from seismic data. The purpose, methodology, terminology and examples of seismic stratigraphy have been described and expanded upon in numerous publications since first described in AAPG Memoir 26 (1977).

Two fundamental aspects of sequence stratigraphy are:

- (1) Seismic Sequence Analysis - the seismic identification and interpretation of depositional sequences.
- (2) Seismic Facies Analysis - the description and geologic interpretation of seismic reflection parameters.

In seismic sequence analysis, the seismic section is subdivided into packages of concordant reflections separated by surfaces of discontinuity. Each package is interpreted as a depositional sequence or stratigraphic units composed of a relatively conformable succession of genetically related strata whose upper and lower surfaces are bounded by unconformities.

The approach of seismic facies analysis is to study the changes in the seismic character of a given seismic sequence as it is traced laterally. Such changes in the geometry and character of the seismic reflections can be related to changes in the character and properties of the rocks and associated facies. Seismic facies analysis generally focuses on the recognition and analysis of changes in the character of:

- (1) reflections within a sequence, such as geometry, continuity, internal velocity, and the gross amplitude and frequency.
- (2) individual reflections, such as wave form, amplitude and frequency.

**PROCEDURAL OUTLINE
FOR
SEQUENCY STRATIGRAPHY INTERPRETATION**

1. Define reflection packages - seismic sequence analysis.

Identify depositional sequences; a relatively conformable succession of genetically related strata bounded at the top and bottom by unconformities or their correlative conformities.
2. Integrate geology from wells and outcrops with seismic data using synthetic seismograms if available.
3. Analyze reflections within packages - seismic facies analysis
 geometry
 continuity
 gross amplitude and frequency
 interval velocity
4. Analyze individual reflections - reflection character analysis
 wave form
 amplitude
 frequency
5. Final geologic interpretation (convert time horizons to depth) - prepare maps, reconstruct paleogeography and analyze geologic history.
6. Evaluate results - predict stratigraphy, depositional environment, lithology and rock properties.

REFERENCES IN SEISMIC INTERPRETATION AND
SEISMIC STRATIGRAPHY

PITFALLS IN SEISMIC INTERPRETATION (VOL. 2)
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SEISMIC INTERPRETATION: THE PHYSICAL ASPECTS
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DATA PROCESSING AND INTERPRETATION
R. SHERIFF & L. GELDART, 1983
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SEISMIC STRATIGRAPHY - APPLICATIONS TO HYDROCARBON EXPLORATION
CHARLES PAYTON (ED), 1977
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EXPLORATION

O.R. BERG and D. WOOLVERTON (EDS.) 1985

AAPG MEMOR 39¹

Appendix B

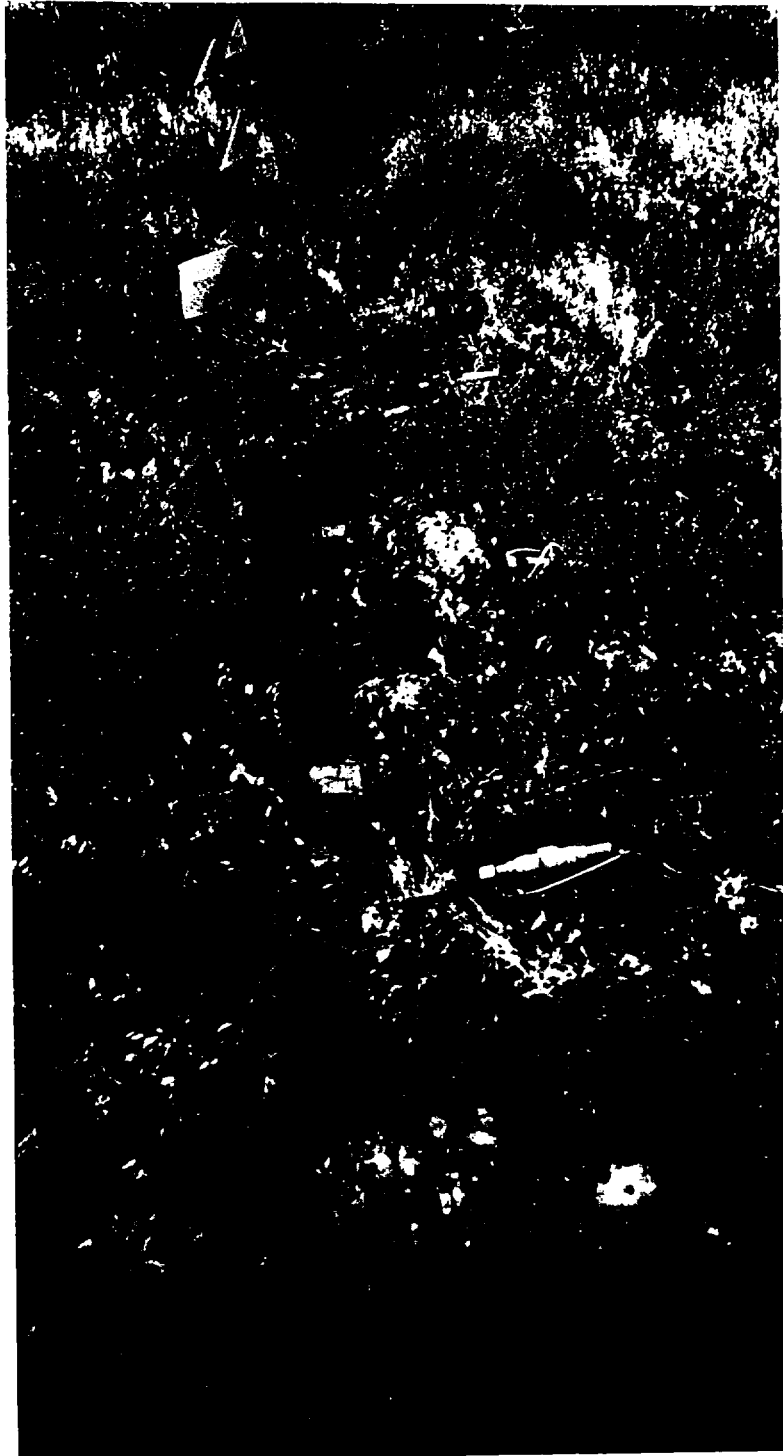
Photographs

Appendix B

List of Photographs

Photograph 1	Shear Wave Phones Placement Showing Vegetation Removed
Photograph 2	Shear Wave Vibrator At Source Point
Photograph 3	Pin Flags Denoting Receiver and Source Point Locations

DRAWN BY	..V.	CHECKED BY	Contract No.	ACAD 13	98185\DRAWING	r't\photo1
	9-13-98	APPROVED BY	0596602-024			



Photograph 1
Shear Wave Phones
Placement Showing Vegetation
Removed

	DRAWN	J.A.V.	CHECKED BY	<i>JP</i>	Contract No.	ACAD 13
	BY	9-13-98	APPROVED BY	<i>CRK</i>	0596602-024	DRAWING \98185\drpt\photo2

Private Fuel Storage Facility Skull Valley, Utah



Photograph 2
Shear Wave Vibrator
At Source Point

	DRAWN	V.	CHECKED BY	<i>PD</i>	Contract No.	ACAD 13	
	BY	9-13-98	APPROVED BY	<i>CRK</i>	0596602-024	DRAWING \98185\	photo3

Private Fuel Storage Facility Skull Valley, Utah



Photograph 3
Pin Flags Denote
Receiver Location, Source
Points Are Between Flags

Appendix C

Survey Notes

Profile "A" Station Coordinates

sta	north	east	elev
101	7320825.46	1288388.14	4499.78
102	7320825.63	1288385.09	4498.98
104	7320825.26	1288379.06	4498.97
106	7320825.19	1288373.06	4498.91
108	7320825.34	1288367.13	4499.18
110	7320825.62	1288361.23	4499.27
112	7320825.64	1288354.94	4498.96
114	7320824.81	1288348.45	4499.03
116	7320825.53	1288343.07	4499.27
118	7320825.50	1288337.03	4498.93
120	7320825.61	1288330.99	4498.83
122	7320825.78	1288324.91	4498.44
124	7320825.47	1288318.96	4498.74
126	7320825.22	1288312.94	4498.79
128	7320825.64	1288306.89	4498.80
130	7320825.28	1288300.99	4498.75
132	7320825.60	1288295.09	4498.68
134	7320825.57	1288289.08	4498.91
136	7320825.49	1288283.13	4498.83
138	7320825.68	1288276.99	4498.97
140	7320825.97	1288271.00	4498.70
142	7320825.72	1288265.30	4498.70
144	7320826.03	1288259.14	4498.69
146	7320825.48	1288253.08	4498.60
148	7320826.15	1288246.78	4498.76
150	7320826.07	1288241.14	4498.69
152	7320825.76	1288234.70	4498.86
154	7320825.88	1288228.93	4499.04
156	7320825.72	1288223.10	4498.87
158	7320825.90	1288217.01	4499.01
160	7320825.87	1288210.92	4498.66
162	7320826.11	1288205.45	4498.74
164	7320825.87	1288198.89	4498.55
166	7320825.62	1288192.98	4498.48
168	7320826.04	1288187.37	4498.51
170	7320826.75	1288181.20	4498.49
172	7320826.63	1288175.12	4498.49
174	7320826.44	1288169.31	4498.44
176	7320826.24	1288163.60	4498.40
178	7320826.41	1288157.32	4498.29
180	7320826.87	1288151.19	4498.14
182	7320826.70	1288145.11	4498.21
184	7320826.64	1288139.17	4498.16
186	7320826.76	1288133.31	4498.04
188	7320827.17	1288127.39	4498.07
190	7320827.10	1288121.31	4497.99
192	7320827.03	1288115.16	4498.03

Profile "A" Station Coordinates

sta	north	east	elev
194	7320827.03	1288109.39	4497.97
196	7320826.85	1288103.17	4497.89
198	7320826.89	1288097.24	4497.88
200	7320827.19	1288091.26	4497.72
202	7320827.52	1288085.21	4497.79
204	7320827.48	1288079.21	4497.78
206	7320827.28	1288073.27	4497.75
208	7320827.17	1288067.22	4497.66
210	7320827.52	1288061.03	4497.56
212	7320827.57	1288055.24	4497.45
214	7320827.45	1288049.19	4497.44
216	7320827.64	1288043.37	4497.54
218	7320827.80	1288037.16	4497.51
220	7320827.66	1288031.20	4497.34
222	7320828.14	1288025.15	4497.32
224	7320827.76	1288019.23	4497.17
226	7320827.41	1288014.13	4497.13
228	7320827.73	1288007.18	4497.18
230	7320827.99	1288001.13	4497.06
232	7320827.75	1287995.07	4496.97
234	7320827.99	1287989.17	4496.69
236	7320828.27	1287983.08	4496.17
238	7320828.36	1287977.11	4496.30
240	7320828.33	1287971.18	4496.17
242	7320827.85	1287964.77	4496.07
244	7320827.95	1287959.28	4496.04
246	7320828.08	1287953.84	4495.94
248	7320828.40	1287947.16	4495.87
250	7320828.21	1287941.19	4495.71
252	7320828.30	1287935.10	4495.74
254	7320827.84	1287929.16	4495.68
256	7320828.34	1287923.36	4495.71
258	7320828.42	1287917.15	4495.59
260	7320828.21	1287910.85	4495.54
262	7320828.36	1287905.07	4495.51
264	7320828.11	1287899.18	4495.59
266	7320828.54	1287892.85	4495.34
268	7320829.46	1287886.83	4495.39
270	7320828.98	1287880.74	4495.42
272	7320829.09	1287875.08	4495.44
274	7320828.87	1287868.87	4495.39
276	7320829.04	1287862.92	4495.23
278	7320829.11	1287856.91	4495.12
280	7320829.55	1287850.95	4495.13
282	7320829.67	1287844.73	4495.05
284	7320829.00	1287838.98	4494.96
286	7320829.16	1287832.93	4494.93

Profile "A" Station Coordinates

sta	north	east	elev
288	7320829.21	1287826.91	4494.83
290	7320829.31	1287820.55	4494.80
292	7320829.04	1287814.94	4494.74
294	7320829.33	1287809.11	4494.69
296	7320828.99	1287802.97	4494.56
298	7320829.25	1287797.16	4494.56
300	7320829.41	1287791.06	4494.53
302	7320828.79	1287785.07	4494.51
302	7320829.15	1287779.00	4494.54
304	7320829.66	1287773.05	4494.30
306	7320829.66	1287767.05	4494.33
308	7320829.17	1287761.29	4494.28
312	7320829.34	1287755.01	4494.29
314	7320829.48	1287749.04	4494.26
316	7320829.38	1287743.07	4494.39
318	7320829.48	1287737.05	4494.42
320	7320829.61	1287730.77	4494.23
322	7320829.81	1287725.06	4494.30
324	7320829.38	1287719.16	4494.40
326	7320829.73	1287713.28	4494.24
328	7320829.87	1287707.19	4494.25
330	7320829.78	1287701.27	4494.24
332	7320829.87	1287695.01	4494.10
334	7320829.95	1287689.23	4494.03
336	7320830.12	1287682.88	4493.93
338	7320830.21	1287676.93	4493.81
340	7320830.20	1287671.21	4493.84
342	7320830.06	1287665.28	4493.73
344	7320830.13	1287659.11	4493.62
346	7320829.93	1287653.21	4493.50
348	7320829.76	1287647.39	4493.38
350	7320830.13	1287640.79	4493.16
352	7320830.34	1287634.78	4493.01
354	7320830.54	1287628.94	4492.87
356	7320830.49	1287623.00	4492.72
358	7320830.22	1287617.36	4492.57
360	7320830.34	1287611.33	4492.51
362	7320830.40	1287604.96	4492.24
364	7320830.45	1287598.79	4492.24
366	7320831.26	1287593.49	4492.06
368	7320830.29	1287587.32	4491.85
368	7320830.30	1287587.12	4491.85
370	7320830.70	1287580.96	4491.74
372	7320830.78	1287575.37	4491.61
374	7320830.57	1287569.22	4491.51
376	7320830.72	1287562.87	4491.48
378	7320830.61	1287557.14	4491.17

Profile "A" Station Coordinates

sta	north	east	elev
380	7320830.87	1287551.02	4491.12
382	7320830.54	1287545.08	4491.05
384	7320830.61	1287539.08	4490.94
386	7320830.98	1287532.99	4490.87
388	7320830.62	1287526.94	4490.88
390	7320830.83	1287521.25	4490.67
392	7320830.25	1287515.12	4490.72
394	7320830.49	1287509.30	4490.61
396	7320830.28	1287503.41	4490.61
398	7320830.15	1287497.37	4490.55
400	7320830.11	1287491.09	4490.55
402	7320829.75	1287485.36	4490.61
404	7320829.77	1287479.42	4490.43
406	7320829.85	1287473.24	4490.34
408	7320830.10	1287467.36	4490.20
410	7320830.46	1287461.13	4489.98
412	7320830.38	1287455.40	4490.05
414	7320830.58	1287448.91	4489.97
416	7320830.72	1287443.34	4489.78
418	7320831.43	1287437.18	4489.44
420	7320830.70	1287431.03	4489.19
422	7320830.53	1287425.09	4489.13
424	7320830.55	1287419.00	4489.00
426	7320830.99	1287413.26	4488.75
428	7320830.87	1287406.96	4488.65
430	7320830.90	1287401.06	4488.70
432	7320830.61	1287395.24	4488.56
434	7320830.81	1287389.38	4488.46
438	7320830.21	1287377.10	4488.36
440	7320830.35	1287371.29	4488.17
442	7320830.75	1287365.05	4488.02
444	7320830.92	1287359.32	4487.88
446	7320830.73	1287353.29	4487.80
448	7320830.39	1287346.86	4487.74
450	7320830.38	1287341.43	4487.76
452	7320830.74	1287335.34	4487.44
453	7320830.94	1287332.05	4486.82
454	7320831.37	1287329.02	4486.35
455	7320830.86	1287326.01	4487.16
456	7320830.81	1287323.02	4487.19
458	7320832.03	1287317.17	4487.00
460	7320830.88	1287311.26	4487.15
462	7320831.61	1287305.29	4487.34
464	7320832.02	1287299.24	4487.08
466	7320833.18	1287293.17	4487.07
468	7320832.28	1287287.34	4487.01
470	7320832.27	1287281.22	4486.67

Profile "A" Station Coordinates

sta	north	east	elev
472	7320832.08	1287275.15	4487.06
474	7320832.32	1287269.02	4486.84
476	7320832.21	1287263.35	4486.69
478	7320831.96	1287257.31	4486.74
480	7320832.18	1287251.09	4486.76
482	7320831.93	1287245.40	4486.79
484	7320831.90	1287239.23	4486.61
486	7320831.75	1287233.02	4486.77
488	7320831.96	1287227.09	4486.66
490	7320832.04	1287221.38	4486.46
492	7320832.25	1287215.18	4486.37
494	7320832.14	1287209.24	4486.22
496	7320832.24	1287203.22	4486.25
498	7320832.26	1287197.43	4486.09
500	7320832.71	1287191.26	4486.09
502	7320832.65	1287185.20	4486.10
504	7320832.58	1287179.14	4485.81
506	7320832.41	1287173.25	4485.80
508	7320832.52	1287167.16	4485.77
510	7320832.40	1287161.10	4485.67
512	7320832.66	1287155.17	4485.48
514	7320832.64	1287149.19	4485.40
516	7320832.71	1287143.26	4485.34
518	7320832.62	1287137.28	4485.17
520	7320832.89	1287131.46	4485.22
522	7320832.73	1287125.31	4485.20
524	7320833.03	1287119.36	4485.07
526	7320832.95	1287113.27	4485.10
528	7320832.86	1287107.11	4484.98
530	7320833.02	1287101.38	4485.03
532	7320832.94	1287095.32	4484.80
534	7320832.99	1287089.25	4484.69
536	7320833.11	1287083.28	4484.73
538	7320833.09	1287077.21	4484.58
540	7320833.11	1287071.27	4484.50
542	7320833.12	1287065.29	4484.41
544	7320833.14	1287059.46	4484.32
546	7320832.96	1287053.48	4484.23
548	7320833.01	1287047.47	4484.16
550	7320833.10	1287041.08	4484.01
552	7320833.24	1287035.07	4483.95
554	7320833.01	1287029.53	4483.94
556	7320832.93	1287023.20	4483.88
558	7320833.10	1287017.18	4483.88
560	7320833.23	1287011.14	4483.81
562	7320833.35	1287005.20	4483.73
564	7320833.50	1286999.20	4483.60

Profile "A" Station Coordinates

sta	north	east	elev
566	7320833.35	1286993.23	4483.59
568	7320833.16	1286987.40	4483.68
570	7320833.36	1286981.43	4483.54
572	7320833.43	1286975.30	4483.62
574	7320833.83	1286969.64	4483.37
576	7320833.42	1286963.03	4483.33
578	7320833.48	1286957.36	4483.26
580	7320833.68	1286951.56	4483.36
582	7320833.48	1286945.60	4483.23
584	7320833.80	1286939.35	4483.14
586	7320833.64	1286933.31	4483.04
588	7320833.94	1286927.30	4482.94
590	7320834.19	1286921.42	4482.75
592	7320834.09	1286915.40	4482.66
594	7320833.98	1286909.63	4482.63
596	7320833.93	1286903.46	4482.61
598	7320834.09	1286897.60	4482.54
600	7320834.06	1286891.56	4482.62
602	7320833.93	1286885.71	4482.52
604	7320833.86	1286879.45	4482.42
606	7320834.11	1286873.22	4482.36
608	7320833.95	1286867.30	4482.21
610	7320833.81	1286861.34	4482.17
612	7320834.03	1286855.56	4482.13
614	7320834.18	1286849.24	4482.11
616	7320834.10	1286843.39	4481.99
618	7320834.04	1286837.25	4481.96
620	7320834.02	1286831.45	4481.86
622	7320834.15	1286825.59	4481.76
624	7320834.26	1286819.72	4481.80
626	7320834.42	1286813.10	4481.76
628	7320834.45	1286807.38	4481.74
630	7320834.73	1286801.75	4481.74
632	7320834.61	1286795.52	4481.59
634	7320834.72	1286789.06	4481.56
636	7320834.86	1286783.22	4481.41
638	7320834.80	1286777.12	4481.45
640	7320835.01	1286771.32	4481.29
642	7320835.32	1286765.72	4481.31
644	7320835.23	1286759.51	4481.20
646	7320835.13	1286753.58	4481.20
648	7320835.27	1286747.79	4481.22
650	7320835.24	1286741.69	4481.08
652	7320835.34	1286735.11	4480.95
654	7320835.14	1286729.59	4480.95
656	7320835.00	1286723.40	4480.93
658	7320835.17	1286717.23	4480.99

Profile "A" Station Coordinates

sta	north	east	elev
660	7320835.16	1286711.36	4480.84
664	7320835.16	1286699.49	4480.76
666	7320835.33	1286693.55	4480.59
668	7320835.39	1286687.58	4480.56
670	7320835.50	1286681.77	4480.54
671	7320835.51	1286678.47	4480.41
672	7320835.38	1286675.13	4480.58
674	7320835.58	1286669.90	4480.61
676	7320835.68	1286663.32	4480.47
678	7320835.67	1286657.72	4480.40
680	7320835.75	1286651.07	4480.24
682	7320835.77	1286645.17	4480.16
684	7320835.80	1286639.16	4480.07
686	7320835.87	1286633.69	4480.10
688	7320835.53	1286627.27	4480.09
690	7320835.69	1286621.41	4480.01
692	7320835.12	1286705.30	4480.83
692	7320835.82	1286615.66	4479.87
694	7320835.78	1286609.45	4479.88
696	7320836.05	1286603.77	4479.84
698	7320836.24	1286597.30	4479.50
700	7320836.29	1286591.17	4479.52
702	7320836.51	1286585.89	4479.65
704	7320836.57	1286579.21	4479.43
706	7320836.65	1286573.46	4479.16
708	7320836.75	1286567.51	4479.27
710	7320836.73	1286561.53	4479.33
712	7320836.75	1286555.68	4479.08
714	7320836.80	1286549.55	4479.33
716	7320836.83	1286543.90	4479.40
718	7320836.88	1286537.70	4479.48
720	7320837.13	1286531.58	4479.32
722	7320837.01	1286525.76	4479.25
724	7320837.05	1286519.67	4479.20
726	7320837.24	1286513.60	4479.32
728	7320837.46	1286507.43	4479.04
730	7320837.39	1286501.29	4479.18
732	7320837.66	1286495.13	4479.16
734	7320837.40	1286489.61	4479.33
736	7320837.55	1286483.76	4479.14
738	7320836.93	1286477.49	4479.37
740	7320837.07	1286471.35	4479.33
742	7320837.43	1286465.28	4479.43
744	7320837.16	1286459.47	4479.27
746	7320837.09	1286453.18	4479.49
748	7320837.36	1286447.41	4479.46
750	7320837.61	1286441.39	4479.52

Profile "A" Station Coordinates

sta	north	east	elev
752	7320837.53	1286435.28	4479.52
754	7320837.11	1286429.30	4479.60
756	7320837.36	1286423.29	4479.50
758	7320837.19	1286417.35	4479.68
760	7320837.36	1286411.32	4479.57
762	7320837.28	1286405.27	4479.53
764	7320837.33	1286399.49	4479.43
766	7320837.75	1286393.57	4479.53
768	7320837.57	1286387.45	4479.60
770	7320837.36	1286381.56	4479.32
772	7320837.35	1286375.37	4479.20
774	7320837.42	1286369.90	4479.03
776	7320837.34	1286363.45	4478.94
778	7320837.36	1286357.73	4478.88
780	7320837.42	1286351.69	4478.91
782	7320837.48	1286345.64	4478.82
784	7320837.50	1286339.48	4478.76
786	7320837.46	1286333.73	4478.64
788	7320837.46	1286327.64	4478.38
790	7320837.56	1286321.70	4478.10
792	7320837.47	1286315.80	4478.04
794	7320837.58	1286309.48	4477.93
796	7320837.84	1286303.79	4477.84
798	7320837.60	1286297.79	4477.93
800	7320837.85	1286291.78	4477.87
802	7320838.07	1286286.01	4477.71
804	7320837.86	1286279.38	4477.68
806	7320837.89	1286273.76	4477.66
808	7320838.04	1286267.90	4477.58
810	7320837.92	1286261.55	4477.59
812	7320838.20	1286255.89	4477.35
814	7320837.96	1286249.31	4477.44
816	7320837.95	1286243.73	4477.45
818	7320838.32	1286238.00	4477.31
820	7320838.04	1286231.75	4477.32
822	7320838.01	1286225.46	4477.39
824	7320837.96	1286219.64	4477.33
826	7320837.77	1286213.48	4477.40
828	7320838.01	1286207.61	4477.43
830	7320838.15	1286202.00	4477.33
832	7320838.26	1286195.53	4477.24
834	7320838.10	1286189.62	4477.15
836	7320838.13	1286183.54	4477.22
838	7320838.26	1286177.76	4477.25
840	7320838.03	1286171.68	4477.18
842	7320838.20	1286165.62	4477.17
844	7320838.18	1286159.39	4477.16

Profile "A" Station Coordinates

sta	north	east	elev
846	7320838.07	1286153.41	4477.13
848	7320838.04	1286147.39	4477.27
850	7320837.89	1286141.53	4477.23
852	7320837.97	1286135.52	4477.24
854	7320837.98	1286129.84	4477.12
856	7320838.11	1286123.25	4477.26
858	7320838.12	1286117.77	4477.34
860	7320838.09	1286111.77	4477.38
862	7320837.98	1286105.92	4477.49
864	7320837.96	1286099.52	4477.65
866	7320837.69	1286093.63	4477.78
868	7320838.13	1286087.56	4477.85
870	7320837.99	1286081.86	4477.77
872	7320837.93	1286075.82	4477.61
874	7320838.25	1286070.10	4477.35
876	7320838.42	1286063.79	4477.30
878	7320838.44	1286057.40	4476.85
880	7320838.35	1286051.57	4477.20
882	7320838.44	1286045.81	4477.28
884	7320838.39	1286039.46	4477.11
886	7320838.36	1286033.86	4476.79
888	7320838.45	1286027.67	4476.59
890	7320838.47	1286021.43	4476.61
892	7320838.56	1286015.65	4476.52
894	7320838.33	1286009.35	4476.44
896	7320838.29	1286003.39	4476.33
898	7320838.46	1285998.26	4476.28
900	7320839.33	1285992.02	4476.34
902	7320839.64	1285985.74	4476.21
904	7320839.72	1285979.54	4476.28
906	7320839.62	1285973.51	4476.12
908	7320839.66	1285967.55	4476.07
910	7320839.68	1285961.87	4476.18
912	7320839.51	1285955.57	4475.87
914	7320839.84	1285949.33	4475.74
916	7320839.73	1285943.64	4475.69
918	7320839.36	1285937.62	4475.58
920	7320839.79	1285931.77	4475.42
922	7320839.94	1285925.70	4475.40
924	7320839.99	1285919.78	4475.44
926	7320840.01	1285913.47	4475.56
928	7320840.12	1285907.51	4475.42
930	7320840.07	1285901.51	4475.17
932	7320840.12	1285895.80	4475.01
934	7320840.00	1285889.52	4475.04
936	7320840.15	1285883.46	4475.14
940	7320840.09	1285871.78	4474.88

Profile "A" Station Coordinates

sta	north	east	elev
942	7320840.16	1285865.64	4474.56
944	7320840.37	1285860.08	4474.54
946	7320840.40	1285853.80	4474.29
948	7320840.38	1285847.76	4474.20
950	7320840.23	1285842.08	4474.21
952	7320840.44	1285835.56	4473.97
954	7320840.62	1285829.82	4473.99
955	7320840.67	1285826.74	4474.53
957	7320840.78	1285820.63	4474.58
959	7320841.34	1285814.78	4474.36
961	7320840.79	1285808.48	4474.45
963	7320840.73	1285802.52	4474.54
964	7320840.93	1285799.74	4474.33
965	7320840.95	1285796.65	4473.57
968	7320841.01	1285787.84	4473.43
970	7320841.18	1285781.73	4473.04
973	7320841.03	1285772.73	4473.26
977	7320841.15	1285761.06	4472.76
978	7320841.27	1285757.75	4473.05
981	7320840.90	1285748.80	4472.78
984	7320841.00	1285739.88	4473.13
987	7320841.18	1285730.79	4473.10
990	7320840.87	1285721.81	4472.92
993	7320841.17	1285712.88	4472.20
994	7320840.88	1285710.16	4471.40
995	7320840.62	1285706.72	4471.37
997	7320840.91	1285701.49	4472.71
1000	7320841.17	1285691.91	4472.76
1003	7320841.39	1285682.40	4472.76
1006	7320841.61	1285673.71	4472.66
1009	7320841.50	1285664.61	4472.78
1012	7320841.75	1285655.67	4472.59
1014	7320841.39	1285646.79	4472.53
1017	7320841.66	1285640.84	4473.09
1020	7320841.61	1285632.08	4473.15
1023	7320841.79	1285622.77	4472.77
1025	7320841.82	1285616.78	4473.14
1026	7320841.51	1285613.73	4473.81
1030	7320841.75	1285601.88	4473.74
1034	7320841.93	1285589.76	4473.90
1037	7320841.82	1285581.03	4474.04
1040	7320841.62	1285571.61	4473.77
1043	7320842.01	1285562.94	4473.69
1046	7320841.84	1285553.82	4473.56
1053	7320841.56	1285532.60	4473.30
1056	7320841.28	1285523.77	4473.31
1059	7320841.59	1285514.75	4473.11

Profile "A" Station Coordinates

sta	north	east	elev
1062	7320841.08	1285505.67	4472.97
1065	7320841.56	1285496.68	4473.12
1068	7320841.69	1285487.98	4472.85
1071	7320841.65	1285478.59	4473.13
1074	7320841.89	1285469.71	4473.05
1077	7320841.96	1285460.72	4472.71
1080	7320841.89	1285451.70	4472.88
1083	7320842.05	1285442.58	4472.77
1086	7320841.99	1285433.46	4472.74
1089	7320842.17	1285424.58	4473.00
1092	7320842.19	1285415.58	4472.84
1095	7320842.17	1285406.55	4472.65
1098	7320842.47	1285397.63	4472.74
1106	7320842.55	1285378.83	4472.57
1107	7320842.28	1285370.07	4472.41
1110	7320842.41	1285361.19	4472.05
1113	7320842.38	1285352.10	4472.37
1116	7320842.60	1285343.48	4472.35
1119	7320842.56	1285334.33	4472.00
1122	7320842.66	1285325.39	4472.14
1125	7320842.87	1285316.43	4472.22
1128	7320842.89	1285307.43	4472.57
1131	7320842.97	1285298.64	4472.38
1134	7320842.97	1285289.74	4472.26
1137	7320843.02	1285280.54	4472.25
1140	7320842.84	1285271.53	4472.19
1143	7320842.88	1285262.53	4472.34
1146	7320842.83	1285253.78	4472.23
1149	7320842.99	1285244.91	4472.26
1152	7320843.18	1285235.72	4472.79
1155	7320843.30	1285227.05	4472.77
1158	7320843.28	1285217.91	4472.92
1161	7320843.01	1285209.01	4472.71
1164	7320843.48	1285200.15	4472.75
1167	7320843.40	1285191.58	4472.92
1169	7320843.53	1285185.83	4472.17
1171	7320843.64	1285179.39	4472.36
1172	7320843.65	1285176.55	4472.86
1173	7320843.73	1285173.34	4473.37
1174	7320843.63	1285170.54	4473.62
1175	7320843.53	1285167.47	4474.19
1177	7320843.57	1285161.59	4474.44
1180	7320843.66	1285152.59	4474.54
1183	7320843.62	1285143.38	4475.05
1186	7320843.58	1285134.26	4475.62
1189	7320843.36	1285125.57	4475.73
1192	7320843.67	1285116.35	4475.51

Profile "A" Station Coordinates

sta	north	east	elev
1195	7320843.28	1285107.29	4475.16
1197	7320843.11	1285101.30	4475.03
1200	7320843.36	1285092.78	4475.06
1203	7320843.41	1285083.64	4474.97
1206	7320843.68	1285074.17	4475.13
1209	7320843.94	1285065.27	4475.43
1210	7320843.81	1285062.16	4475.94
1212	7320843.89	1285056.05	4476.29
1214	7320843.85	1285050.24	4478.17
1215	7320843.79	1285047.21	4478.64
1218	7320844.00	1285038.77	4479.06
1218	7320844.02	1285038.35	4479.03
1221	7320844.20	1285031.65	4478.85
1224	7320844.26	1285022.08	4478.71
1227	7320844.69	1285012.95	4477.98
1230	7320844.88	1285003.61	4476.94
1233	7320844.80	1284994.07	4475.62
1235	7320845.11	1284988.19	4474.75
1238	7320844.22	1284978.77	4472.51
1240	7320844.16	1284972.87	4471.97
1243	7320844.41	1284963.48	4471.28
1246	7320844.54	1284954.62	4471.32
1249	7320844.26	1284945.78	4470.87
1252	7320844.50	1284936.70	4470.73
1255	7320844.37	1284927.38	4470.50
1258	7320844.78	1284918.73	4470.23
1261	7320844.44	1284909.44	4469.88
1264	7320844.55	1284900.06	4470.00
1267	7320844.90	1284891.28	4469.85
1270	7320844.68	1284882.48	4469.78
1273	7320845.01	1284873.52	4469.81
1276	7320845.14	1284864.55	4469.73
1279	7320845.21	1284855.10	4469.75
1283	7320844.91	1284846.59	4469.58
1285	7320845.19	1284837.46	4469.62
1288	7320845.51	1284828.80	4469.51
1291	7320845.39	1284819.31	4469.45
1294	7320845.16	1284810.39	4469.50
1297	7320845.73	1284801.37	4469.26
1300	7320846.09	1284792.36	4469.37
1303	7320845.82	1284783.47	4469.09
1306	7320846.00	1284774.69	4469.01
1309	7320846.16	1284765.49	4468.85
1312	7320846.42	1284756.58	4468.82
1315	7320846.23	1284747.51	4468.65
1318	7320846.32	1284738.58	4468.71
1321	7320846.27	1284729.63	4468.96

Profile "A" Station Coordinates

sta	north	east	elev
1324	7320846.26	1284720.40	4468.57
1327	7320846.40	1284711.33	4468.83
1330	7320846.60	1284702.29	4468.72
1333	7320846.51	1284693.64	4468.57
1336	7320846.43	1284684.48	4468.82
1338	7320846.99	1284675.72	4468.89
1342	7320847.43	1284666.81	4469.24
1345	7320847.12	1284657.71	4469.50
1348	7320846.98	1284649.06	4469.45
1351	7320846.62	1284639.75	4469.34
1354	7320847.20	1284631.03	4469.05
1357	7320847.15	1284622.07	4468.85
1360	7320847.38	1284613.06	4468.77
1363	7320847.15	1284604.16	4468.78
1366	7320847.13	1284594.77	4468.67
1368	7320847.42	1284588.20	4468.94
1371	7320847.06	1284579.94	4468.88
1374	7320847.34	1284570.79	4468.85
1377	7320847.80	1284562.30	4469.28
1380	7320847.68	1284553.00	4469.54
1383	7320847.52	1284543.96	4469.15
1386	7320847.50	1284535.32	4469.25
1389	7320847.55	1284526.24	4469.07
1392	7320847.37	1284516.83	4469.17
1395	7320847.27	1284508.21	4468.93
1398	7320847.72	1284498.98	4468.13
1401	7320847.60	1284490.29	4468.67
1404	7320847.65	1284481.51	4468.16
1407	7320847.57	1284472.56	4467.88
1408	7320847.79	1284469.38	4468.45
1409	7320847.71	1284466.58	4467.91
1411	7320847.71	1284460.28	4468.32
1414	7320847.71	1284451.63	4468.47
1417	7320847.71	1284442.80	4468.49
1420	7320847.87	1284433.94	4468.44
1423	7320848.09	1284425.07	4468.32
1426	7320848.09	1284415.83	4468.20
1429	7320848.22	1284406.84	4468.41
1431	7320848.38	1284401.30	4468.67
1434	7320847.89	1284392.09	4468.54
1438	7320850.77	1284371.84	4473.33
1441	7320850.48	1284363.07	4473.43
1444	7320850.64	1284354.40	4473.41
1447	7320850.55	1284345.29	4473.25
1450	7320850.75	1284336.42	4473.41
1453	7320851.27	1284327.80	4473.42
1455	7320850.62	1284321.92	4473.05

Profile "A" Station Coordinates

sta	north	east	elev
1458	7320850.25	1284313.20	4473.01
1461	7320850.03	1284304.04	4473.04
1464	7320850.57	1284295.10	4473.09
1466	7320850.59	1284289.57	4473.08
1469	7320850.62	1284280.85	4472.92
1472	7320850.77	1284272.01	4472.76
1475	7320850.40	1284263.30	4472.67
1478	7320850.81	1284254.20	4472.73
1481	7320850.44	1284244.75	4472.69
1484	7320850.51	1284236.36	4472.75
1487	7320850.64	1284227.38	4472.91
1490	7320850.52	1284218.75	4472.98
1493	7320851.04	1284207.06	4472.63
1496	7320851.22	1284201.44	4472.79
1499	7320851.16	1284192.92	4472.67
1502	7320851.05	1284183.90	4472.79
1505	7320850.89	1284175.18	4472.84
1508	7320851.00	1284166.20	4472.95
1511	7320851.06	1284157.29	4472.93
1514	7320850.80	1284148.59	4472.92
1520	7320850.91	1284131.20	4472.47
1523	7320850.73	1284122.20	4472.30
1526	7320850.72	1284113.34	4472.31
1529	7320850.80	1284104.56	4472.99
1532	7320851.14	1284095.80	4472.15
1535	7320851.19	1284086.98	4471.95
1538	7320850.90	1284078.36	4472.00
1541	7320850.88	1284069.04	4471.99
1544	7320850.51	1284060.84	4471.90
1547	7320851.08	1284051.75	4471.95
1550	7320850.61	1284043.08	4471.99
1553	7320850.58	1284034.16	4472.94
1556	7320850.57	1284025.25	4472.56
1559	7320850.66	1284016.54	4471.96
1562	7320850.44	1284007.88	4471.67
1565	7320850.81	1283999.18	4471.53
1568	7320850.59	1283990.11	4471.31
1571	7320850.50	1283981.28	4471.41
1574	7320851.45	1283980.56	4470.84
1577	7320851.47	1283971.95	4471.27
1580	7320851.38	1283962.57	4471.60
1583	7320851.72	1283953.19	4471.66
1586	7320850.80	1283944.21	4471.49
1589	7320850.99	1283934.95	4471.58
1592	7320851.19	1283925.86	4471.56
1595	7320851.30	1283916.67	4471.56
1598	7320851.39	1283907.43	4471.87

Profile "A" Station Coordinates

sta	north	east	elev
1601	7320851.11	1283898.58	4471.98
1604	7320851.10	1283889.05	4472.16
1607	7320851.19	1283880.35	4472.25
1611	7320851.25	1283868.23	4472.28
1614	7320851.35	1283859.11	4472.26
1617	7320851.04	1283850.07	4472.08
1620	7320851.25	1283840.90	4472.08
1623	7320851.11	1283831.92	4471.99
1626	7320851.12	1283822.32	4472.07
1629	7320852.28	1283813.61	4472.00
1632	7320851.51	1283804.30	4472.19
1635	7320851.69	1283795.18	4472.02
1638	7320851.18	1283785.93	4471.97
1641	7320851.72	1283777.01	4471.89
1644	7320851.68	1283767.39	4472.03
1647	7320851.76	1283759.08	4472.07
1650	7320851.62	1283749.82	4472.01
1653	7320851.65	1283740.80	4472.05
1656	7320851.98	1283731.30	4472.00
1659	7320851.79	1283722.43	4472.03
1662	7320851.52	1283713.28	4471.96
1665	7320851.87	1283704.40	4471.90
1667	7320851.89	1283698.08	4472.02
1670	7320851.81	1283688.72	4471.71
1673	7320852.09	1283679.74	4471.66
1676	7320851.92	1283670.64	4471.70
1679	7320851.94	1283661.43	4471.65
1682	7320851.67	1283652.26	4471.63
1685	7320852.57	1283643.26	4471.67
1688	7320852.22	1283633.57	4471.61
1691	7320852.27	1283624.70	4471.65
1694	7320852.16	1283616.19	4471.35
1697	7320851.94	1283606.62	4471.33
1700	7320852.28	1283597.63	4471.04
1703	7320851.97	1283588.34	4470.97
1706	7320851.55	1283579.29	4471.00
1709	7320852.32	1283570.59	4470.98
1712	7320852.28	1283561.62	4470.74
1715	7320852.58	1283552.14	4470.91
1718	7320852.45	1283542.84	4470.61
1721	7320853.10	1283534.10	4470.83
1724	7320852.43	1283524.61	4470.47
1727	7320852.55	1283515.63	4470.42
1730	7320854.70	1283506.27	4470.29
1731	7320854.17	1283503.58	4470.23
1732	7320853.36	1283500.74	4470.55
1735	7320852.64	1283491.65	4470.31

Profile "A" Station Coordinates

sta	north	east	elev
1738	7320853.45	1283482.91	4470.59
1741	7320852.85	1283473.39	4469.91
1744	7320852.96	1283463.70	4469.96
1747	7320852.89	1283455.11	4469.89
1750	7320854.17	1283446.07	4469.80
1753	7320854.43	1283437.00	4469.97
1756	7320853.28	1283427.56	4469.51
1759	7320853.52	1283418.59	4469.51
1762	7320853.75	1283409.49	4469.50
1765	7320853.76	1283400.47	4469.20
1768	7320853.92	1283391.31	4469.26
1768	7320854.35	1283388.21	4469.52
1772	7320853.81	1283379.15	4469.49
1775	7320853.98	1283370.24	4469.39
1778	7320854.17	1283361.34	4469.21
1781	7320854.29	1283352.21	4469.01
1784	7320854.16	1283343.21	4469.13
1787	7320853.96	1283334.01	4469.01
1790	7320854.27	1283325.42	4468.76
1793	7320854.54	1283316.51	4468.77
1796	7320854.46	1283307.62	4468.97
1799	7320854.47	1283298.44	4468.47
1802	7320854.96	1283289.62	4468.52
1805	7320854.67	1283280.70	4468.70
1808	7320855.00	1283271.63	4468.46
1811	7320854.87	1283262.68	4468.60
1814	7320855.13	1283253.70	4468.34
1817	7320855.06	1283244.63	4468.26
1820	7320855.32	1283235.70	4468.19
1823	7320855.51	1283226.86	4468.20
1826	7320855.54	1283214.66	4468.06
1830	7320855.54	1283205.87	4468.10
1833	7320855.41	1283196.83	4468.24
1836	7320855.37	1283187.89	4467.92
1839	7320855.60	1283178.89	4468.14
1842	7320855.69	1283169.90	4468.13
1845	7320855.89	1283161.00	4468.26
1848	7320855.92	1283152.01	4468.21
1851	7320855.70	1283143.08	4468.20
1854	7320855.67	1283134.03	4468.24
1857	7320855.99	1283125.22	4467.99
1860	7320856.33	1283116.12	4468.05
1863	7320856.37	1283107.25	4467.96
1866	7320856.43	1283098.31	4468.03
1869	7320856.19	1283089.30	4467.90
1872	7320856.50	1283080.36	4467.93
1875	7320856.43	1283071.25	4467.83

Profile "A" Station Coordinates

sta	north	east	elev
1878	7320856.46	1283062.49	4467.60
1881	7320856.41	1283053.51	4467.75
1884	7320856.28	1283044.45	4467.60
1887	7320856.37	1283035.53	4467.63
1890	7320855.96	1283026.83	4467.60
1892	7320856.36	1283020.71	4467.40
1893	7320857.87	1283017.52	4467.52
1894	7320856.46	1283014.74	4467.45
1896	7320856.35	1283008.80	4467.50
1899	7320856.70	1282999.88	4467.41
1902	7320856.59	1282990.72	4467.39
1905	7320856.52	1282981.86	4467.34
1908	7320857.05	1282973.67	4467.08
1911	7320856.78	1282964.72	4467.17
1914	7320856.80	1282955.72	4467.43
1919	7320856.94	1282940.57	4467.78
1922	7320856.99	1282931.44	4468.05
1925	7320857.30	1282922.46	4467.73
1928	7320857.29	1282913.33	4467.91
1931	7320857.25	1282904.41	4467.86
1935	7320857.30	1282892.28	4467.95
1938	7320857.38	1282883.31	4467.69
1941	7320857.44	1282874.23	4467.54
1945	7320857.24	1282862.08	4467.45
1948	7320857.43	1282853.05	4466.82
1951	7320857.41	1282843.97	4466.76
1955	7320857.28	1282832.08	4466.67
1958	7320857.44	1282822.98	4466.37
1961	7320857.49	1282814.13	4466.03
1965	7320857.34	1282801.98	4465.89
1968	7320857.37	1282792.98	4465.87
1971	7320857.28	1282783.87	4465.78
1975	7320857.40	1282771.80	4465.83
1978	7320857.40	1282762.81	4465.80
1981	7320857.59	1282753.92	4465.77
1985	7320857.61	1282741.85	4465.60
1988	7320857.46	1282732.60	4465.64
1991	7320857.49	1282723.50	4465.58
1995	7320857.77	1282711.47	4465.41
1998	7320857.81	1282702.37	4465.32
2001	7320857.67	1282693.39	4465.37
2005	7320857.72	1282681.32	4465.29
2015	7320858.18	1282651.12	4465.14
2018	7320858.46	1282642.22	4465.18
2021	7320858.75	1282633.12	4465.23
2025	7320858.78	1282621.11	4465.13
2028	7320858.71	1282611.99	4465.00

Profile "A" Station Coordinates

sta	north	east	elev
2031	7320858.80	1282602.92	4464.93
2034	7320858.96	1282593.85	4464.93
2035	7320859.53	1282590.95	4464.95
2039	7320859.00	1282578.85	4464.85
2042	7320858.97	1282569.96	4464.78
2045	7320859.10	1282561.01	4464.83
2049	7320859.26	1282548.96	4464.79
2051	7320859.50	1282542.99	4464.76
2052	7320860.38	1282540.18	4464.52
2053	7320859.14	1282536.92	4464.70
2055	7320859.38	1282531.07	4464.57
2058	7320859.34	1282522.02	4464.58
2059	7320860.43	1282519.15	4464.51
2060	7320859.39	1282515.99	4464.62
2062	7320859.48	1282509.98	4464.62
2065	7320859.09	1282501.01	4464.73
2069	7320859.09	1282489.01	4465.23
2072	7320859.45	1282480.06	4465.52
2075	7320859.61	1282471.23	4465.59
2079	7320859.73	1282459.22	4465.02
2082	7320859.81	1282450.10	4464.38
2085	7320859.77	1282441.14	4464.40
2089	7320859.67	1282429.25	4464.27
2092	7320859.89	1282420.28	4464.12
2095	7320859.91	1282411.21	4463.81
2099	7320859.82	1282399.30	4463.27
2102	7320859.74	1282390.30	4463.09
2105	7320859.88	1282381.33	4463.13
2109	7320859.93	1282369.23	4463.13
2112	7320860.19	1282360.23	4463.20
2115	7320860.12	1282351.33	4462.69
2119	7320860.13	1282339.14	4462.78
2120	7321359.13	1282337.86	4478.05
2122	7320860.23	1282330.26	4462.71
2125	7320860.46	1282321.32	4462.83
2129	7320860.28	1282309.33	4462.83
2132	7320860.34	1282300.37	4462.81
2135	7320860.05	1282291.34	4462.71
2139	7320860.19	1282279.31	4462.72
2142	7320860.26	1282270.33	4462.55
2145	7320860.15	1282261.33	4462.46
2149	7320860.30	1282249.33	4462.75
2152	7320860.57	1282240.42	4462.58
2155	7320860.75	1282231.41	4462.53
2159	7320860.93	1282219.44	4463.07
2162	7320860.69	1282210.46	4463.20
2165	7320860.64	1282201.50	4463.33

Profile "A" Station Coordinates

sta	north	east	elev
2169	7320860.52	1282189.39	4463.47
2172	7320860.79	1282180.43	4463.50
2175	7320860.85	1282171.41	4463.59
2178	7320860.63	1282162.44	4463.71
2181	7320860.46	1282153.43	4463.63
2183	7320860.86	1282147.49	4463.80
2184	7320861.57	1282144.57	4463.71
2185	7320861.12	1282141.39	4463.77
2188	7320861.12	1282132.54	4463.70
2191	7320861.24	1282123.40	4463.72
2194	7320861.37	1282114.55	4463.55
2197	7320861.30	1282105.55	4463.35
2201	7320860.98	1282093.50	4463.49
2204	7320861.37	1282084.45	4463.42
2207	7320861.55	1282075.45	4463.15
2211	7320861.16	1282063.54	4463.32
2214	7320861.38	1282054.51	4463.21
2217	7320861.33	1282045.46	4463.18
2221	7320861.50	1282033.50	4463.23
2224	7320861.71	1282024.43	4463.16
2227	7320862.00	1282015.49	4463.14
2231	7320862.03	1282003.50	4463.23
2234	7320862.14	1281994.51	4463.27
2237	7320862.19	1281985.58	4463.10
2241	7320861.87	1281973.58	4463.12
2244	7320861.86	1281964.70	4463.23
2247	7320862.02	1281955.65	4463.02
2251	7320861.84	1281943.69	4463.05
2254	7320862.30	1281934.66	4462.92
2257	7320862.87	1281925.84	4463.10
2260	7320863.14	1281916.92	4463.00
2263	7320863.15	1281907.67	4462.95
2266	7320863.14	1281898.74	4462.94
2269	7320863.19	1281889.58	4462.99
2273	7320863.12	1281877.74	4462.99
2275	7320863.13	1281871.66	4462.94
2278	7320863.24	1281862.83	4462.89
2281	7320863.27	1281853.75	4463.01
2284	7320863.05	1281844.52	4463.01
2287	7320863.46	1281835.60	4463.02
2290	7320863.75	1281826.54	4462.83
2293	7320863.92	1281817.61	4462.81
2296	7320863.80	1281808.82	4462.59
2299	7320863.82	1281799.29	4462.92
2302	7320863.92	1281790.78	4462.96
2305	7320864.22	1281781.67	4462.86
2308	7320864.27	1281772.72	4462.85

Profile "A" Station Coordinates

sta	north	east	elev
2311	7320864.44	1281763.79	4462.93
2314	7320864.22	1281754.57	4462.87
2317	7320864.22	1281745.59	4462.77
2320	7320864.30	1281736.73	4462.72
2323	7320864.43	1281727.69	4462.81
2326	7320864.53	1281718.88	4462.58
2329	7320864.33	1281709.76	4463.19
2332	7320864.28	1281700.54	4463.44
2335	7320864.27	1281691.53	4463.68
2338	7320864.72	1281682.63	4463.61
2341	7320864.74	1281673.39	4463.60
2344	7320864.49	1281664.79	4463.57
2347	7320864.69	1281655.76	4463.59
2350	7320864.59	1281646.75	4463.77
2353	7320864.91	1281637.83	4463.76
2356	7320865.05	1281628.73	4463.80
2359	7320865.02	1281619.54	4463.61
2362	7320865.30	1281610.83	4463.48
2365	7320865.28	1281601.53	4462.30
2368	7320865.51	1281592.48	4461.42
2371	7320865.65	1281583.59	4461.49
2374	7320865.74	1281575.13	4461.62
2377	7320865.86	1281565.71	4461.68
2380	7320865.54	1281556.44	4461.66
2383	7320865.82	1281547.74	4462.15
2386	7320865.95	1281538.86	4462.12
2389	7320865.95	1281530.02	4462.46
2392	7320866.50	1281521.13	4462.53
2395	7320866.57	1281511.89	4463.25
2398	7320867.69	1281502.75	4463.29
2401	7320866.58	1281493.97	4463.31
2404	7320866.85	1281484.97	4463.60
2407	7320867.07	1281475.85	4463.80
2410	7320866.97	1281466.97	4463.74
2413	7320867.30	1281458.08	4463.72
2416	7320867.23	1281448.91	4463.78
2419	7320867.08	1281439.90	4463.61
2422	7320867.04	1281430.91	4463.56
2425	7320866.52	1281421.77	4462.89
2428	7320866.74	1281413.10	4462.80
2431	7320866.75	1281403.92	4462.39
2434	7320866.93	1281395.12	4462.19
2437	7320866.75	1281385.95	4462.23
2440	7320866.73	1281377.00	4462.11
2443	7320866.69	1281367.89	4462.19
2446	7320866.81	1281359.07	4462.12
2449	7320866.81	1281350.11	4462.12

Profile "A" Station Coordinates

sta	north	east	elev
2452	7320866.88	1281341.02	4462.04
2455	7320866.95	1281332.12	4462.20
2458	7320866.94	1281323.01	4462.38
2461	7320867.03	1281313.81	4462.58
2464	7320866.82	1281304.94	4463.16
2467	7320867.05	1281296.11	4463.36
2470	7320866.99	1281286.94	4463.36
2473	7320867.28	1281278.14	4463.62
2476	7320867.22	1281269.13	4463.72
2479	7320867.23	1281260.13	4463.66
2482	7320867.18	1281251.21	4463.71
2485	7320867.28	1281242.00	4463.64
2488	7320867.00	1281233.12	4463.70
2491	7320867.32	1281224.14	4463.72
2494	7320867.35	1281215.11	4463.77
2497	7320867.38	1281206.16	4463.71
2500	7320867.51	1281197.21	4463.62
2503	7320867.39	1281188.16	4463.42
2506	7320867.81	1281179.34	4463.15
2509	7320867.77	1281170.38	4462.91
2512	7320867.98	1281161.32	4462.78
2515	7320867.89	1281152.16	4462.74
2518	7320867.50	1281143.10	4462.87
2521	7320867.88	1281134.51	4462.59
2524	7320867.68	1281125.25	4463.29
2527	7320867.85	1281116.51	4463.26
2530	7320868.14	1281107.28	4462.67
2533	7320868.23	1281098.15	4462.07
2536	7320868.28	1281089.13	4461.93
2539	7320868.59	1281080.25	4461.93
2542	7320868.54	1281071.17	4461.92
2545	7320868.55	1281062.25	4461.79
2548	7320868.66	1281053.11	4461.84
2551	7320868.59	1281044.25	4461.85
2554	7320868.69	1281035.29	4461.83
2557	7320868.66	1281026.23	4462.32
2560	7320868.79	1281017.19	4462.68
2563	7320868.66	1281008.43	4463.02
2566	7320868.79	1280999.25	4463.09
2569	7320868.77	1280990.37	4463.24
2572	7320868.71	1280981.32	4463.13
2575	7320868.96	1280972.33	4463.04
2578	7320868.56	1280963.29	4463.15
2581	7320868.71	1280954.27	4463.16
2584	7320868.74	1280945.46	4462.91
2587	7320868.79	1280936.40	4462.97
2590	7320868.82	1280927.35	4462.99

Profile "A" Station Coordinates

sta	north	east	elev
2593	7320868.75	1280918.55	4462.86
2596	7320868.86	1280909.54	4462.91
2599	7320868.72	1280900.46	4462.80
2602	7320868.71	1280891.27	4462.72
2605	7320868.88	1280882.23	4462.86
2608	7320868.75	1280873.29	4462.77
2611	7320868.78	1280864.22	4462.88
2614	7320868.83	1280855.07	4462.86
2617	7320868.87	1280846.12	4462.84
2620	7320868.84	1280837.28	4462.61
2623	7320868.75	1280828.23	4462.39
2626	7320869.07	1280819.37	4462.36
2629	7320868.99	1280810.43	4462.30
2632	7320868.80	1280801.28	4462.36
2635	7320869.22	1280792.44	4462.10
2638	7320869.46	1280783.31	4462.06
2641	7320869.43	1280774.32	4461.97
2644	7320869.37	1280765.41	4462.02
2647	7320869.80	1280756.20	4462.17
2650	7320869.92	1280747.34	4462.51
2653	7320870.07	1280738.54	4462.55
2656	7320869.89	1280729.50	4462.58
2659	7320870.05	1280720.59	4462.49
2662	7320870.13	1280711.36	4462.28
2665	7320870.15	1280702.48	4462.46
2668	7320870.36	1280693.42	4462.45
2671	7320870.15	1280684.36	4462.45
2674	7320870.34	1280675.33	4462.55
2677	7320870.26	1280666.45	4462.59
2680	7320870.77	1280657.38	4462.46
2683	7320870.35	1280648.27	4462.55
2686	7320870.32	1280639.49	4462.47
2689	7320870.60	1280630.32	4462.47
2692	7320870.51	1280621.35	4462.45
2695	7320870.56	1280612.36	4462.55
2698	7320870.67	1280603.44	4462.47
2701	7320870.60	1280594.42	4462.55
2704	7320870.67	1280585.39	4462.43
2707	7320870.84	1280576.60	4462.51
2710	7320871.09	1280567.51	4462.46
2713	7320871.14	1280558.36	4462.33
2716	7320871.27	1280549.64	4462.14
2719	7320871.40	1280540.49	4462.08
2722	7320871.31	1280531.52	4461.99
2725	7320871.36	1280522.55	4462.02
2728	7320871.36	1280513.62	4461.97
2731	7320871.30	1280504.49	4461.95

Profile "A" Station Coordinates

sta	north	east	elev
2734	7320871.52	1280495.62	4461.75
2737	7320871.54	1280486.61	4461.86
2740	7320871.26	1280477.57	4461.73
2743	7320871.44	1280468.74	4461.93
2746	7320871.38	1280459.72	4461.92
2749	7320871.33	1280450.74	4461.94
2752	7320871.27	1280441.58	4461.87
2755	7320871.53	1280432.81	4461.85
2758	7320871.81	1280423.78	4461.85
2761	7320871.94	1280414.77	4461.77
2764	7320871.94	1280405.81	4461.82
2767	7320871.74	1280396.82	4461.67
2770	7320871.67	1280387.74	4461.74
2773	7320871.71	1280378.71	4461.71
2776	7320871.97	1280369.45	4461.74
2779	7320871.87	1280360.71	4461.63
2782	7320871.95	1280351.72	4461.63
2785	7320872.47	1280342.51	4461.61
2788	7320872.35	1280333.56	4461.30
2791	7320872.57	1280324.68	4461.21
2794	7320872.52	1280315.52	4461.41
2797	7320872.77	1280306.76	4461.81
2800	7320872.91	1280297.76	4461.71
2803	7320873.05	1280288.44	4461.74
2806	7320872.98	1280279.49	4461.89
2809	7320873.05	1280270.51	4461.73
2812	7320873.03	1280261.68	4461.84
2815	7320872.92	1280252.31	4461.64
2818	7320873.09	1280243.52	4461.77
2821	7320873.43	1280234.45	4461.93
2824	7320873.44	1280225.52	4461.92
2827	7320873.40	1280216.56	4461.93
2830	7320873.45	1280207.38	4461.95
2833	7320873.51	1280198.73	4461.85
2836	7320873.67	1280189.31	4461.89
2839	7320873.58	1280180.43	4461.89
2842	7320873.38	1280171.56	4461.86
2845	7320873.68	1280162.56	4461.85
2848	7320873.55	1280153.54	4461.86
2851	7320873.49	1280144.53	4461.89
2854	7320873.27	1280135.62	4461.84
2857	7320873.79	1280126.60	4461.79
2860	7320873.81	1280117.57	4461.86
2863	7320873.86	1280108.57	4462.00
2866	7320873.62	1280099.32	4462.17
2869	7320873.74	1280090.56	4462.26
2872	7320873.70	1280081.50	4462.39

Profile "A" Station Coordinates

sta	north	east	elev
2875	7320873.86	1280072.37	4462.63
2878	7320873.77	1280063.26	4462.73
2881	7320873.90	1280054.50	4462.71
2884	7320873.87	1280045.59	4462.62
2887	7320874.17	1280036.44	4462.82
2890	7320874.14	1280027.81	4462.82
2893	7320874.28	1280018.58	4462.73
2896	7320874.13	1280009.42	4462.57
2899	7320874.19	1280000.61	4462.76
2902	7320874.44	1279991.39	4462.52
2905	7320874.56	1279982.52	4462.71
2908	7320874.56	1279973.49	4462.80
2911	7320874.57	1279964.58	4462.80
2914	7320874.55	1279955.64	4462.74
2917	7320874.57	1279946.42	4462.81
2920	7320874.61	1279937.46	4462.82
2923	7320874.84	1279928.67	4462.79
2926	7320874.94	1279919.51	4462.67
2929	7320874.85	1279910.54	4462.27
2932	7320875.08	1279901.46	4462.18
2935	7320875.36	1279892.64	4462.25
2938	7320875.39	1279883.62	4462.29
2941	7320875.19	1279874.77	4462.20
2944	7320875.53	1279865.67	4462.15
2947	7320875.24	1279856.68	4462.16
2950	7320875.51	1279847.72	4462.15
2953	7320875.49	1279838.73	4462.23
2956	7320875.45	1279829.76	4462.25
2959	7320875.88	1279820.72	4462.28
2962	7320875.69	1279811.75	4462.15
2965	7320875.92	1279802.63	4462.07
2968	7320875.78	1279793.57	4462.19
2971	7320875.94	1279784.85	4462.08
2974	7320875.96	1279775.92	4462.10
2977	7320875.96	1279766.88	4461.94
2980	7320875.79	1279757.74	4462.12
2983	7320875.43	1279748.86	4462.09
2986	7320875.94	1279739.85	4462.01
2989	7320876.22	1279730.73	4461.96
2992	7320875.96	1279721.96	4462.00
2995	7320876.00	1279713.07	4461.94
2998	7320875.95	1279703.93	4461.96
3001	7320876.24	1279695.07	4462.12
3004	7320876.53	1279686.04	4462.26
3007	7320876.56	1279676.99	4462.46
3010	7320876.48	1279668.16	4462.61
3013	7320876.48	1279659.06	4462.59

Profile "A" Station Coordinates

sta	north	east	elev
3016	7320876.38	1279650.07	4462.73
3019	7320876.44	1279641.11	4462.75
3022	7320876.35	1279631.94	4462.68
3025	7320876.49	1279623.10	4462.83
3028	7320876.63	1279614.01	4462.95
3031	7320876.74	1279604.98	4462.83
3034	7320876.46	1279596.30	4462.84
3037	7320876.77	1279587.13	4462.85
3040	7320876.72	1279578.19	4462.85
3043	7320876.76	1279569.21	4462.89
3046	7320876.57	1279560.26	4462.85
3049	7320876.68	1279551.18	4462.81
3052	7320876.66	1279542.39	4462.86
3055	7320876.92	1279533.28	4462.73
3055.5	7320880.88	1279531.11	4462.87
3058	7320876.74	1279524.53	4462.53
3061	7320877.04	1279515.64	4462.52
3064	7320877.09	1279506.71	4462.58
3067	7320877.15	1279497.20	4462.51
3070	7320876.97	1279488.28	4462.43
3073	7320877.35	1279479.13	4462.35
3076	7320877.32	1279470.14	4462.00
3079	7320877.39	1279461.11	4461.94
3082	7320877.27	1279452.26	4462.06
3085	7320877.67	1279443.17	4461.92
3088	7320877.71	1279433.98	4462.14
3091	7320877.45	1279425.23	4462.31
3094	7320877.58	1279416.14	4462.59
3097	7320877.60	1279407.57	4462.69
3100	7320877.73	1279398.28	4462.69
3103	7320877.83	1279389.45	4462.61
3106	7320877.69	1279380.38	4462.62
3109	7320877.76	1279371.06	4462.66
3112	7320877.71	1279362.33	4462.81
3115	7320877.86	1279353.10	4462.91
3118	7320878.06	1279344.13	4463.02
3121	7320877.81	1279335.15	4462.92
3124	7320878.09	1279326.08	4462.88
3127	7320877.85	1279317.13	4462.85
3130	7320878.11	1279308.06	4462.88
3133	7320878.18	1279299.11	4462.79
3136	7320878.05	1279290.17	4462.61
3139	7320878.16	1279281.15	4462.76
3142	7320878.40	1279272.15	4462.65
3145	7320878.20	1279263.01	4462.81
3148	7320878.20	1279254.23	4462.69
3151	7320878.41	1279245.29	4462.69

Profile "A" Station Coordinates

sta	north	east	elev
3154	7320878.50	1279236.28	4462.65
3157	7320878.51	1279227.26	4462.62
3160	7320878.43	1279218.01	4462.67
3163	7320878.65	1279208.98	4462.57
3166	7320878.70	1279200.02	4462.32
3169	7320878.71	1279191.02	4462.13
3172	7320878.59	1279182.13	4461.59
3175	7320878.95	1279172.79	4461.11
3178	7320879.14	1279164.15	4460.85
3181	7320879.25	1279155.07	4460.81
3184	7320879.41	1279145.76	4460.88
3187	7320879.47	1279136.70	4460.89
3190	7320879.44	1279127.77	4461.17
3193	7320879.18	1279118.74	4461.34
3196	7320879.10	1279109.64	4461.53
3199	7320879.28	1279100.77	4462.21
3202	7320878.75	1279092.00	4462.45
3205	7320879.50	1279083.01	4462.90
3208	7320879.58	1279073.72	4462.74
3211	7320879.55	1279064.67	4462.70
3214	7320879.49	1279055.75	4463.08
3217	7320879.37	1279047.11	4463.38
3220	7320879.58	1279037.95	4463.44
3223	7320879.83	1279029.04	4463.39
3226	7320879.94	1279020.01	4463.48
3229	7320879.77	1279010.89	4463.55
3232	7320879.96	1279002.11	4463.02
3235	7320880.06	1278992.90	4462.83
3238	7320880.32	1278983.82	4462.42
3241	7320880.44	1278974.71	4462.18
3244	7320880.83	1278965.90	4462.22
3247	7320880.69	1278956.97	4462.18
3250	7320880.89	1278948.03	4462.16
3253	7320881.20	1278938.98	4462.18
3256	7320881.30	1278929.84	4462.01
3259	7320881.22	1278921.01	4461.93
3262	7320881.29	1278911.94	4461.81
3265	7320881.42	1278903.13	4461.84
3268	7320881.33	1278894.00	4461.71
3271	7320881.25	1278884.81	4461.60
3274	7320881.45	1278875.72	4461.23
3277	7320881.40	1278866.89	4461.60
3280	7320881.57	1278857.86	4461.61
3283	7320881.54	1278848.74	4461.56
3286	7320881.72	1278839.78	4461.55
3289	7320881.68	1278830.78	4461.45
3292	7320881.71	1278821.61	4461.62

Profile "A" Station Coordinates

sta	north	east	elev
3295	7320881.62	1278812.74	4461.91
3298	7320881.66	1278803.60	4461.80
3301	7320881.64	1278794.56	4461.80
3304	7320881.80	1278785.62	4461.96
3307	7320882.06	1278776.56	4462.04
3310	7320882.07	1278767.85	4462.15
3313	7320882.52	1278758.29	4462.19
3316	7320882.47	1278749.54	4462.19
3319	7320882.44	1278740.71	4462.27
3322	7320882.56	1278731.89	4462.32
3325	7320882.69	1278722.74	4462.26
3328	7320882.83	1278713.79	4462.41
3331	7320882.89	1278704.73	4462.57
3334	7320882.74	1278695.72	4462.69
3337	7320882.69	1278686.52	4463.13
3340	7320882.74	1278677.61	4463.20
3343	7320882.58	1278668.49	4462.69
3346	7320882.72	1278659.53	4462.65
3349	7320882.66	1278650.56	4462.47
3353	7320882.82	1278641.62	4462.41
3356	7320882.61	1278632.57	4462.35
3359	7320882.49	1278623.44	4462.30
3361	7320882.57	1278614.51	4462.26
3364	7320882.53	1278605.42	4462.16
3367	7320882.61	1278596.46	4462.07
3370	7320882.90	1278586.99	4462.11
3373	7320883.22	1278578.02	4462.18
3376	7320883.19	1278569.01	4462.16
3379	7320883.26	1278559.73	4462.23
3382	7320883.29	1278550.97	4462.24
3385	7320883.20	1278541.89	4462.37
3388	7320883.34	1278533.02	4462.01
3391	7320883.43	1278523.96	4461.75
3394	7320883.19	1278514.95	4461.66
3397	7320883.40	1278506.05	4461.67
3400	7320883.22	1278497.05	4461.42
3403	7320883.49	1278487.98	4461.43
3406	7320883.76	1278478.85	4461.42
3409	7320883.83	1278469.89	4461.34
3412	7320884.13	1278461.02	4461.39
3415	7320884.14	1278452.28	4461.31
3418	7320884.19	1278443.01	4461.17
3421	7320884.25	1278433.96	4461.06
3424	7320884.61	1278424.99	4461.02
3427	7320884.44	1278415.98	4461.11
3430	7320884.17	1278406.70	4461.05
3433	7320884.24	1278398.02	4461.06

Profile "A" Station Coordinates

sta	north	east	elev
3436	7320883.76	1278388.92	4461.04
3439	7320884.42	1278379.62	4461.06
3442	7320884.19	1278370.84	4460.95
3445	7320884.39	1278361.79	4460.97
3448	7320884.42	1278352.82	4461.02
3451	7320884.51	1278343.91	4460.97
3454	7320884.70	1278334.79	4461.01
3457	7320884.80	1278325.88	4461.03
3460	7320884.90	1278316.80	4460.96
3463	7320884.67	1278307.79	4460.95
3466	7320884.66	1278298.85	4461.09
3469	7320884.57	1278289.67	4461.03
3472	7320884.78	1278280.66	4461.05
3475	7320885.10	1278271.77	4461.07
3478	7320885.19	1278262.84	4461.02
3481	7320885.20	1278253.85	4461.05
3484	7320885.57	1278244.74	4460.85
3487	7320885.21	1278235.94	4460.80
3490	7320885.25	1278226.88	4460.76
3493	7320885.24	1278217.96	4460.77
3496	7320885.55	1278208.74	4460.86
3499	7320885.37	1278199.92	4460.92
3502	7320885.41	1278190.74	4460.83
3505	7320885.82	1278181.44	4460.87
3508	7320886.34	1278172.63	4460.93
3511	7320886.31	1278163.81	4460.92
3514	7320886.17	1278154.60	4460.96
3517	7320886.43	1278145.92	4460.94
3520	7320886.19	1278136.54	4460.92
3523	7320886.13	1278127.70	4461.05
3526	7320886.18	1278118.79	4461.01
3529	7320886.05	1278109.71	4461.15
3532	7320886.12	1278100.83	4461.07
3535	7320885.96	1278091.68	4460.93
3538	7320886.03	1278082.90	4460.80
3541	7320885.94	1278073.68	4460.81
3544	7320886.08	1278064.77	4460.73
3547	7320885.97	1278055.67	4460.77
3550	7320886.11	1278046.78	4460.84
3553	7320885.93	1278038.22	4460.84
3556	7320886.20	1278028.59	4460.86
3559	7320886.39	1278019.82	4460.83
3562	7320886.52	1278010.62	4460.84
3565	7320886.24	1278001.08	4460.90
3568	7320886.29	1277992.26	4460.79
3571	7320886.26	1277983.47	4460.81
3574	7320886.18	1277974.51	4460.73

Profile "A" Station Coordinates

sta	north	east	elev
3577	7320885.91	1277965.58	4460.79
3580	7320886.16	1277956.37	4460.52
3583	7320886.03	1277947.64	4460.45
3586	7320886.04	1277938.76	4460.31
3589	7320886.15	1277929.45	4460.36
3592	7320886.29	1277920.48	4460.35
3595	7320886.38	1277911.34	4460.35
3598	7320886.62	1277902.40	4460.00
3601	7320886.71	1277893.22	4460.07
3604	7320886.58	1277884.48	4460.00
3607	7320886.44	1277875.18	4459.62
3610	7320886.86	1277866.23	4459.85
3613	7320886.82	1277857.42	4460.17
3616	7320887.00	1277848.26	4460.10
3619	7320887.05	1277839.30	4460.14
3622	7320887.31	1277830.31	4460.12
3625	7320887.25	1277821.28	4460.34
3628	7320887.82	1277812.28	4459.71
3631	7320887.64	1277803.15	4460.66
3634	7320887.42	1277794.47	4461.16
3637	7320887.41	1277785.51	4461.43
3640	7320887.36	1277776.51	4461.67
3643	7320887.54	1277767.58	4460.92
3646	7320887.30	1277758.50	4460.61
3649	7320887.67	1277749.69	4460.23
3652	7320887.81	1277740.59	4460.25
3655	7320887.88	1277731.44	4460.07
3658	7320888.19	1277722.48	4460.07
3661	7320888.26	1277713.36	4459.51
3664	7320888.23	1277704.33	4460.34
3667	7320888.01	1277695.13	4460.40
3670	7320888.37	1277686.12	4460.38
3673	7320888.35	1277677.21	4460.38
3676	7320888.27	1277668.26	4460.31
3679	7320888.45	1277659.32	4460.36
3682	7320888.46	1277650.32	4460.26
3685	7320888.58	1277641.21	4460.46
3688	7320888.46	1277632.10	4460.30
3691	7320888.42	1277623.36	4460.41
3694	7320888.57	1277614.18	4460.48
3697	7320888.46	1277605.06	4460.33
3700	7320888.31	1277596.29	4460.31
3703	7320888.55	1277587.17	4460.50
3706	7320888.75	1277578.04	4460.38
3709	7320888.63	1277569.36	4460.49
3712	7320889.21	1277561.03	4460.09
3715	7320888.52	1277551.20	4460.48

Profile "A" Station Coordinates

sta	north	east	elev
3718	7320889.03	1277542.27	4460.57
3721	7320888.89	1277533.37	4460.41
3724	7320889.21	1277524.32	4460.45
3727	7320888.89	1277515.36	4460.40
3730	7320889.00	1277506.27	4460.36
3733	7320888.88	1277497.29	4460.39
3736	7320888.90	1277488.17	4460.46
3739	7320888.88	1277479.26	4460.49
3742	7320888.98	1277470.05	4460.49
3745	7320888.87	1277461.34	4460.58
3748	7320889.19	1277452.16	4460.61
3751	7320889.00	1277443.23	4460.65
3754	7320889.44	1277434.15	4460.45
3757	7320889.42	1277425.15	4460.65
3760	7320889.68	1277415.91	4460.85
3763	7320889.47	1277406.83	4460.83
3766	7320889.95	1277398.15	4460.78
3769	7320889.50	1277389.02	4460.80
3772	7320890.00	1277380.04	4460.84
3775	7320890.09	1277371.09	4460.86
3778	7320890.02	1277362.07	4460.82
3781	7320889.71	1277353.14	4460.82
3784	7320889.86	1277344.29	4460.80
3787	7320889.78	1277335.22	4460.46
3790	7320889.68	1277326.00	4460.36
3793	7320889.72	1277316.81	4460.51
3796	7320889.80	1277307.97	4460.47
3799	7320889.82	1277299.27	4460.49
3802	7320890.10	1277289.95	4460.35
3805	7320889.92	1277281.12	4460.36
3808	7320890.33	1277271.97	4460.34
3811	7320890.11	1277263.07	4460.30
3814	7320890.34	1277254.08	4460.34
3817	7320890.42	1277245.20	4460.03
3820	7320890.88	1277236.08	4460.15
3823	7320890.69	1277227.72	4460.38
3826	7320890.81	1277218.06	4459.86
3829	7320890.69	1277209.01	4459.77
3832	7320890.66	1277199.88	4459.95
3835	7320890.96	1277190.81	4460.05
3838	7320890.89	1277181.83	4460.12
3841	7320890.71	1277172.95	4460.44
3844	7320890.90	1277164.04	4460.60
3847	7320890.92	1277155.09	4460.59
3850	7320890.98	1277145.98	4460.18
3853	7320891.05	1277136.90	4460.29
3856	7320890.93	1277128.43	4460.09

Profile "A" Station Coordinates

sta	north	east	elev
3859	7320891.26	1277119.00	4460.12
3862	7320891.43	1277109.93	4460.14
3865	7320891.67	1277101.01	4460.09
3868	7320891.26	1277091.82	4459.69
3871	7320891.79	1277082.90	4459.97
3874	7320891.53	1277073.77	4459.94
3877	7320891.30	1277064.82	4459.65
3880	7320891.56	1277056.20	4459.70
3883	7320891.52	1277046.88	4459.93
3886	7320891.86	1277037.84	4460.24
3889	7320891.86	1277029.00	4460.33
3892	7320892.01	1277019.76	4460.82
3895	7320892.38	1277010.50	4461.21
3898	7320892.71	1277002.03	4461.09
3901	7320892.05	1276992.72	4460.00
3904	7320892.07	1276983.76	4460.14
3907	7320892.37	1276974.76	4460.21
3910	7320892.65	1276965.78	4460.36
3913	7320892.75	1276956.74	4460.30
3916	7320892.93	1276947.63	4460.24
3919	7320892.83	1276938.85	4460.41
3922	7320893.16	1276929.81	4460.61
3925	7320893.35	1276920.90	4460.79
3928	7320893.54	1276911.75	4460.90
3931	7320893.44	1276902.75	4460.89
3934	7320893.52	1276893.70	4460.99
3937	7320893.71	1276884.82	4460.97
3940	7320893.70	1276875.75	4460.98
3943	7320893.62	1276866.71	4460.98
3946	7320893.86	1276857.56	4461.32
3949	7320893.62	1276848.46	4461.38
3952	7320894.00	1276839.66	4461.41
3955	7320894.05	1276830.71	4461.56
3958	7320893.99	1276821.79	4461.38
3961	7320894.01	1276812.63	4461.47
3964	7320893.89	1276803.72	4461.62
3967	7320893.75	1276794.75	4461.46
3970	7320893.62	1276785.70	4461.50
3973	7320893.59	1276776.71	4461.52
3976	7320893.39	1276767.85	4461.55
3979	7320893.40	1276758.60	4461.58
3982	7320893.74	1276749.69	4461.44
3985	7320893.42	1276740.57	4461.41
3988	7320893.13	1276731.68	4461.22
3991	7320893.39	1276722.61	4461.35
3994	7320893.27	1276713.63	4461.45
3997	7320893.54	1276704.81	4461.59

Profile "A" Station Coordinates

sta	north	east	elev
4000	7320893.59	1276695.51	4461.47
4003	7320893.66	1276686.79	4461.57
4006	7320893.75	1276677.71	4461.46
4009	7320893.53	1276668.69	4461.36
4012	7320893.87	1276659.51	4461.60
4015	7320893.33	1276650.60	4461.54
4018	7320893.51	1276641.59	4461.55
4021	7320894.04	1276632.50	4461.59
4024	7320893.86	1276623.42	4461.46
4027	7320894.21	1276614.54	4461.33
4030	7320894.54	1276605.22	4461.48
4033	7320894.65	1276596.55	4461.39
4036	7320894.43	1276587.62	4461.40
4039	7320894.86	1276578.56	4461.45
4042	7320894.59	1276569.60	4461.54
4045	7320895.10	1276560.26	4461.61
4048	7320894.60	1276551.48	4461.44
4051	7320895.04	1276542.59	4461.33
4054	7320895.01	1276533.50	4461.39
4057	7320895.24	1276524.49	4461.47
4060	7320895.25	1276515.51	4461.56
4063	7320894.97	1276506.39	4461.56
4066	7320895.23	1276497.50	4461.52
4069	7320895.43	1276488.60	4461.69
4072	7320895.39	1276479.63	4461.51
4075	7320895.21	1276470.51	4461.58
4078	7320895.32	1276461.54	4461.42
4081	7320895.12	1276452.50	4461.45
4084	7320895.66	1276443.71	4461.49
4087	7320895.60	1276434.75	4461.51
4090	7320895.79	1276425.69	4461.56
4093	7320895.74	1276416.61	4461.64
4096	7320895.94	1276407.43	4461.72
4099	7320895.96	1276398.67	4461.99
4102	7320896.11	1276389.68	4462.12
4105	7320895.82	1276380.73	4461.80
4108	7320895.80	1276371.70	4461.28
4111	7320895.80	1276362.61	4461.15
4114	7320896.00	1276353.68	4460.42
4117	7320895.96	1276344.64	4460.34
4120	7320896.21	1276335.68	4460.34
4123	7320896.20	1276326.80	4460.10
4126	7320896.34	1276317.68	4460.25
4129	7320896.22	1276308.93	4460.13
4132	7320896.29	1276299.64	4459.96
4135	7320896.54	1276290.63	4460.17
4138	7320896.36	1276281.78	4459.95

Profile "A" Station Coordinates

sta	north	east	elev
4141	7320896.67	1276272.58	4459.99
4144	7320896.40	1276263.73	4460.09
4147	7320896.64	1276254.90	4460.13
4150	7320896.80	1276245.66	4460.15
4153	7320896.88	1276236.65	4460.22
4156	7320896.99	1276227.70	4460.16
4159	7320896.86	1276218.71	4460.17
4162	7320896.84	1276209.69	4460.09
4165	7320896.57	1276200.35	4460.00
4168	7320896.77	1276191.63	4459.94
4171	7320896.48	1276182.75	4459.80
4174	7320896.86	1276173.78	4459.79
4177	7320897.11	1276164.66	4459.80
4180	7320897.22	1276155.89	4459.74
4183	7320897.17	1276146.63	4459.81
4186	7320897.33	1276137.68	4459.82
4189	7320897.30	1276128.70	4459.82
4192	7320897.63	1276119.82	4459.94
4195	7320897.55	1276110.86	4459.59
4198	7320897.86	1276101.60	4459.75
4201	7320897.74	1276092.56	4459.70
4204	7320897.87	1276083.63	4459.61
4207	7320897.85	1276074.80	4459.61
4210	7320898.03	1276065.63	4459.87
4213	7320898.56	1276056.91	4459.94
4216	7320898.59	1276047.86	4459.93
4219	7320898.57	1276038.67	4459.92
4222	7320898.51	1276029.62	4459.81
4225	7320898.04	1276020.92	4459.93
4228	7320898.57	1276011.96	4459.84
4231	7320898.43	1276002.90	4459.88
4234	7320898.38	1275994.06	4459.86
4237	7320898.23	1275984.91	4459.83
4240	7320898.53	1275975.98	4459.73
4243	7320898.97	1275966.92	4459.67
4246	7320898.83	1275957.90	4459.55
4249	7320898.72	1275948.99	4459.84
4252	7320898.70	1275939.81	4459.75
4255	7320899.06	1275931.02	4459.81
4258	7320899.09	1275921.58	4459.79
4261	7320898.65	1275912.87	4459.68
4264	7320899.13	1275903.96	4459.87
4267	7320899.05	1275895.05	4459.78
4270	7320899.09	1275886.00	4459.70
4273	7320899.17	1275876.65	4459.69
4276	7320899.50	1275867.92	4459.70
4279	7320899.20	1275859.01	4459.70

Profile "A" Station Coordinates

sta	north	east	elev
4282	7320899.14	1275849.95	4459.62
4285	7320899.01	1275840.94	4459.81
4288	7320899.05	1275831.95	4459.87
4291	7320899.28	1275822.73	4459.94
4294	7320899.17	1275813.88	4460.01
4297	7320899.10	1275805.03	4460.11
4300	7320899.06	1275795.88	4460.09
4303	7320898.65	1275787.05	4460.21
4306	7320899.25	1275777.85	4460.39
4309	7320899.45	1275769.13	4460.51
4312	7320899.52	1275760.06	4460.71
4315	7320899.70	1275751.14	4461.01
4318	7320899.60	1275742.18	4461.00
4321	7320899.85	1275733.20	4461.05
4324	7320900.03	1275724.28	4460.90
4327	7320899.80	1275715.12	4461.29
4330	7320899.87	1275706.15	4461.75
4333	7320900.14	1275697.22	4461.69
4336	7320899.90	1275688.23	4461.65
4339	7320899.94	1275679.31	4461.64
4342	7320900.15	1275670.42	4461.68
4345	7320900.13	1275661.44	4461.54
4348	7320900.16	1275652.50	4461.48
4351	7320899.95	1275643.38	4461.59
4354	7320900.04	1275634.65	4461.51
4357	7320900.40	1275625.44	4461.19
4360	7320900.36	1275616.39	4461.10
4363	7320900.46	1275607.41	4461.16
4366	7320900.32	1275598.28	4461.20
4369	7320900.31	1275589.30	4461.13
4372	7320900.50	1275580.39	4461.28
4375	7320900.42	1275571.33	4461.23
4378	7320900.30	1275562.37	4461.27
4381	7320900.42	1275553.31	4461.13
4384	7320900.48	1275544.31	4461.13
4387	7320900.78	1275535.38	4461.29
4390	7320900.79	1275526.39	4461.48
4393	7320901.08	1275517.48	4461.38
4396	7320900.88	1275508.41	4461.39
4399	7320901.00	1275499.50	4461.33
4402	7320901.30	1275490.51	4461.43
4405	7320901.36	1275481.48	4461.22
4408	7320901.31	1275472.56	4461.26
4411	7320901.02	1275463.56	4461.36
4414	7320901.21	1275454.54	4461.32
4417	7320901.21	1275445.39	4461.34
4420	7320901.26	1275436.53	4461.35

Profile "A" Station Coordinates

sta	north	east	elev
4423	7320901.12	1275427.49	4461.31
4426	7320901.34	1275418.52	4461.52
4429	7320901.39	1275409.50	4461.67
4432	7320901.38	1275400.41	4461.56
4435	7320901.44	1275391.37	4461.68
4436	7320901.57	1275388.61	4461.31

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
101	7319988.90	1284314.24	4477.651
102	7319986.85	1284312.09	4478.371
103	7319984.39	1284310.55	4479.474
104	7319982.93	1284308.11	4480.39
105	7319981.28	1284305.96	4481.439
106	7319979.33	1284303.82	4481.993
107	7319977.83	1284301.61	4482.803
108	7319976.11	1284299.08	4483.092
109	7319974.22	1284296.95	4483.159
110	7319972.02	1284294.63	4482.152
111	7319970.65	1284291.76	4481.963
112	7319969.10	1284289.62	4481.594
113	7319966.87	1284287.85	4480.662
114	7319965.17	1284285.17	4479.959
115	7319963.50	1284282.82	4479.691
116	7319961.75	1284280.27	4479.281
117	7319960.06	1284277.88	4479.021
118	7319958.53	1284275.41	4478.568
119	7319956.76	1284272.93	4478.266
120	7319955.07	1284270.46	4478.105
121	7319953.00	1284268.15	4478.009
122	7319951.28	1284265.78	4477.801
125	7319946.88	1284257.85	4476.815
128	7319942.22	1284250.06	4476.669
131	7319937.18	1284242.62	4476.571
134	7319931.98	1284235.24	4476.732
137	7319927.25	1284227.63	4476.507
140	7319922.09	1284220.34	4476.656
143	7319916.84	1284212.66	4476.6
146	7319911.62	1284205.20	4476.573
149	7319906.38	1284198.08	4476.664
152	7319901.44	1284190.43	4477.09
155	7319896.52	1284183.14	4476.996
158	7319891.24	1284175.71	4476.05
161	7319886.28	1284168.71	4476.237
164	7319881.06	1284160.85	4476.225
167	7319875.87	1284153.70	4476.115
170	7319870.59	1284146.23	4476.191
173	7319865.32	1284139.01	4475.68
176	7319859.90	1284131.72	4475.508
179	7319854.80	1284124.15	4475.475
182	7319849.74	1284116.98	4475.558
185	7319845.78	1284108.93	4475.46
188	7319839.81	1284101.76	4475.516
191	7319834.73	1284094.50	4475.48
194	7319830.40	1284086.48	4475.416
197	7319824.89	1284079.43	4475.53

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
200	7319819.70	1284072.06	4475.374
203	7319814.63	1284064.45	4475.413
206	7319809.63	1284057.23	4475.433
209	7319804.45	1284049.60	4475.338
212	7319799.34	1284042.33	4475.272
215	7319794.26	1284034.77	4475.448
218	7319788.95	1284027.32	4475.249
221	7319783.99	1284019.96	4475.269
224	7319778.79	1284012.57	4475.556
227	7319773.80	1284005.24	4475.347
230	7319768.71	1283997.82	4475.18
233	7319763.60	1283990.53	4475.618
236	7319758.26	1283983.07	4475.279
239	7319753.18	1283975.80	4475.598
242	7319748.16	1283968.04	4475.675
245	7319742.95	1283960.77	4475.722
248	7319737.83	1283953.56	4475.585
251	7319732.73	1283945.87	4475.737
254	7319727.44	1283938.85	4475.364
257	7319722.36	1283931.27	4475.525
260	7319716.09	1283925.06	4475.486
263	7319712.28	1283917.01	4475.824
266	7319706.84	1283909.40	4475.916
269	7319701.51	1283901.82	4475.795
272	7319696.21	1283894.42	4476.041
275	7319691.54	1283886.91	4476.258
278	7319686.35	1283879.82	4476.563
281	7319681.08	1283872.50	4476.916
284	7319676.07	1283864.91	4476.588
287	7319671.00	1283857.63	4476.416
290	7319665.86	1283850.36	4476.192
293	7319660.51	1283842.87	4476.327
296	7319655.80	1283835.34	4476.287
299	7319650.41	1283827.90	4476.452
302	7319645.47	1283820.49	4476.274
305	7319640.43	1283813.34	4476.295
308	7319635.45	1283805.54	4476.332
311	7319630.25	1283798.20	4476.563
314	7319625.18	1283790.41	4477.028
317	7319619.81	1283783.20	4476.621
320	7319614.73	1283775.94	4476.914
323	7319609.67	1283768.44	4476.775
326	7319604.46	1283760.90	4477.012
329	7319599.33	1283753.72	4476.666
332	7319594.05	1283746.31	4476.341
335	7319589.13	1283738.90	4476.289
338	7319583.94	1283731.63	4476.276

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
341	7319578.92	1283724.08	4476.342
344	7319573.85	1283716.59	4476.148
347	7319568.31	1283709.22	4476.223
350	7319563.49	1283702.20	4476.218
353	7319558.01	1283694.41	4476.227
356	7319553.12	1283687.09	4476.331
359	7319547.89	1283680.06	4476.522
362	7319543.53	1283671.25	4477.034
365	7319537.46	1283664.72	4477.043
368	7319532.06	1283658.23	4477.095
371	7319527.45	1283650.25	4476.995
374	7319522.60	1283642.93	4476.819
377	7319517.25	1283635.47	4476.911
380	7319512.18	1283627.80	4476.852
383	7319506.89	1283620.68	4476.936
386	7319501.88	1283613.29	4476.94
389	7319496.97	1283606.05	4476.895
392	7319491.82	1283598.37	4476.995
395	7319486.71	1283590.88	4477.338
398	7319481.77	1283583.41	4477.367
401	7319476.67	1283576.02	4477.295
404	7319471.30	1283568.82	4477.344
407	7319466.18	1283561.23	4477.434
410	7319461.10	1283553.62	4477.667
413	7319456.00	1283546.45	4477.619
416	7319450.92	1283539.00	4477.646
419	7319445.90	1283531.76	4477.876
422	7319440.63	1283524.54	4477.805
425	7319435.73	1283516.71	4477.91
428	7319430.47	1283509.41	4477.651
431	7319425.39	1283501.91	4477.785
434	7319420.25	1283494.88	4477.66
437	7319414.95	1283487.11	4477.548
440	7319410.01	1283480.20	4477.607
443	7319404.60	1283472.61	4477.928
446	7319399.61	1283465.18	4477.861
449	7319394.19	1283457.70	4477.693
452	7319389.47	1283450.53	4477.925
455	7319384.43	1283442.86	4478.043
458	7319379.19	1283435.62	4478.005
461	7319373.71	1283428.22	4477.841
464	7319368.67	1283420.83	4477.838
467	7319363.80	1283413.49	4477.939
470	7319358.71	1283405.70	4478.029
473	7319353.32	1283398.56	4477.992
476	7319348.27	1283391.03	4477.821
479	7319343.11	1283383.77	4477.944

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	482	7319337.82	1283376.01	4477.705
	485	7319333.06	1283368.47	4477.919
	488	7319327.88	1283361.04	4477.652
	491	7319323.20	1283353.72	4477.46
	494	7319317.84	1283346.36	4477.528
	497	7319312.73	1283339.04	4477.053
	500	7319307.36	1283331.82	4477.032
	503	7319302.55	1283324.70	4477.435
	506	7319297.81	1283316.79	4477.161
	509	7319292.28	1283309.34	4476.997
	512	7319287.20	1283301.75	4476.828
	515	7319282.36	1283294.42	4477.112
	518	7319277.15	1283286.89	4476.855
	521	7319271.84	1283279.55	4476.604
	524	7319266.81	1283272.16	4476.617
	527	7319261.57	1283264.93	4476.64
	530	7319256.58	1283257.22	4476.474
	533	7319251.90	1283249.84	4476.629
	536	7319246.97	1283242.26	4476.442
	539	7319241.71	1283235.04	4476.523
	542	7319236.44	1283227.68	4476.813
	545	7319231.00	1283220.75	4476.591
	548	7319225.41	1283213.65	4476.745
	551	7319220.67	1283205.93	4476.774
	554	7319215.51	1283198.43	4476.601
	557	7319210.27	1283191.07	4476.583
	560	7319205.75	1283183.35	4476.711
	563	7319200.91	1283175.90	4476.624
	566	7319195.46	1283168.69	4476.65
	569	7319190.50	1283161.25	4476.631
	572	7319185.14	1283153.95	4476.613
	575	7319179.83	1283146.91	4476.688
	578	7319175.29	1283139.52	4476.835
	581	7319169.77	1283132.14	4476.753
	584	7319164.79	1283124.52	4477.114
	587	7319159.62	1283117.02	4477.04
	590	7319154.61	1283109.61	4477.117
	593	7319149.64	1283102.03	4477.291
	596	7319143.87	1283094.66	4477.4
	599	7319139.00	1283087.19	4477.484
	602	7319133.80	1283080.08	4477.42
	605	7319128.63	1283072.59	4477.622
	608	7319123.63	1283065.09	4477.617
	611	7319118.58	1283057.69	4477.822
	614	7319113.55	1283050.26	4478.141
	617	7319108.13	1283042.94	4478.245
	620	7319103.03	1283035.63	4478.377

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	623	7319097.93	1283028.52	4478.491
	626	7319092.79	1283021.35	4478.521
	629	7319087.24	1283013.80	4478.638
	632	7319082.07	1283006.63	4478.519
	635	7319077.31	1282998.82	4478.78
	638	7319072.54	1282991.27	4478.656
	641	7319066.78	1282983.86	4478.681
	644	7319062.21	1282976.66	4478.553
	647	7319057.20	1282969.15	4478.53
	650	7319051.87	1282961.55	4478.69
	653	7319046.87	1282954.38	4478.787
	656	7319041.85	1282946.61	4478.629
	659	7319036.17	1282939.68	4478.663
	662	7319031.30	1282931.68	4478.455
	665	7319026.35	1282924.49	4478.382
	668	7319021.05	1282917.03	4478.325
	671	7319016.03	1282909.64	4478.253
	674	7319011.10	1282902.38	4478.155
	677	7319005.76	1282895.19	4477.898
	680	7319000.76	1282887.38	4478.088
	683	7318995.69	1282880.18	4478.229
	686	7318990.18	1282873.46	4477.971
	689	7318984.95	1282865.83	4478.074
	692	7318980.27	1282858.67	4477.913
	695	7318974.86	1282850.92	4477.934
	698	7318969.62	1282843.70	4478.036
	701	7318964.45	1282835.93	4477.983
	704	7318959.73	1282828.80	4477.989
	707	7318954.45	1282821.10	4478.016
	710	7318949.17	1282813.95	4478.037
	713	7318944.09	1282806.38	4478.185
	716	7318938.91	1282799.07	4478.173
	719	7318933.68	1282791.59	4478.244
	722	7318928.53	1282784.15	4478.33
	725	7318923.50	1282776.81	4478.312
	728	7318918.15	1282769.17	4478.474
	731	7318913.28	1282762.21	4478.556
	734	7318908.38	1282754.15	4478.737
	737	7318903.02	1282746.94	4478.762
	740	7318897.82	1282740.06	4478.739
	743	7318892.66	1282732.32	4478.945
	746	7318887.75	1282724.79	4479.298
	749	7318882.71	1282717.18	4479.565
	752	7318877.71	1282710.04	4480.391
	755	7318872.58	1282702.43	4480.896
	758	7318867.59	1282694.88	4481.559
	761	7318862.59	1282687.41	4482.114

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
764	7318857.49	1282680.13	4481.461
767	7318852.36	1282672.95	4480.679
770	7318847.46	1282665.35	4479.674
773	7318842.17	1282658.37	4479.114
776	7318836.88	1282650.84	4479.02
779	7318831.86	1282643.49	4478.848
782	7318826.27	1282636.43	4478.288
785	7318821.63	1282628.44	4478.037
788	7318816.42	1282621.40	4477.94
791	7318811.32	1282613.86	4477.816
794	7318806.21	1282606.49	4477.808
797	7318801.07	1282599.21	4477.839
800	7318796.07	1282591.63	4477.806
803	7318791.07	1282584.14	4477.999
806	7318785.86	1282576.66	4478.05
809	7318780.62	1282569.19	4478.094
812	7318775.79	1282561.87	4478.086
815	7318770.36	1282554.58	4478.268
818	7318765.50	1282546.98	4478.225
821	7318759.97	1282539.73	4478.244
824	7318755.25	1282532.42	4478.18
827	7318749.91	1282525.00	4478.157
830	7318745.06	1282517.74	4478.256
833	7318739.94	1282510.21	4478.349
836	7318734.53	1282502.74	4478.397
839	7318729.45	1282495.48	4478.504
842	7318724.41	1282488.01	4478.621
845	7318719.23	1282480.43	4478.677
848	7318713.88	1282473.35	4478.79
851	7318708.92	1282465.62	4478.651
854	7318703.79	1282458.22	4478.723
857	7318698.63	1282450.96	4478.656
860	7318693.51	1282443.46	4478.879
863	7318688.38	1282436.12	4479.115
866	7318683.28	1282428.87	4479.167
869	7318678.17	1282421.54	4479.234
872	7318673.13	1282413.95	4479.184
875	7318668.09	1282406.63	4479.248
878	7318663.21	1282398.98	4479.344
881	7318657.37	1282391.61	4479.311
884	7318652.72	1282384.60	4479.482
887	7318647.45	1282376.84	4479.966
890	7318642.59	1282369.68	4479.76
893	7318637.49	1282361.80	4479.749
896	7318632.62	1282354.64	4479.865
899	7318627.31	1282347.23	4479.822
902	7318622.21	1282339.88	4480.052

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	905	7318617.27	1282332.27	4479.941
	908	7318611.87	1282324.93	4480.023
	911	7318606.96	1282317.44	4479.889
	914	7318601.55	1282310.18	4479.751
	917	7318596.51	1282303.13	4479.669
	920	7318591.48	1282295.81	4479.879
	923	7318586.01	1282288.66	4479.786
	926	7318581.00	1282280.61	4479.677
	929	7318575.88	1282273.10	4479.891
	929	7318575.56	1282273.44	4479.777
	932	7318570.07	1282266.09	4479.591
	935	7318565.32	1282258.68	4480.049
	938	7318560.34	1282251.32	4480.002
	941	7318555.20	1282243.90	4479.897
	944	7318550.08	1282236.24	4479.859
	947	7318545.19	1282229.05	4479.911
	950	7318540.10	1282221.64	4479.956
	953	7318534.68	1282214.15	4479.986
	956	7318529.54	1282206.33	4480.087
	959	7318524.64	1282199.40	4480.029
	962	7318519.62	1282191.93	4480.552
	965	7318514.17	1282184.18	4480.371
	968	7318509.31	1282177.24	4480.609
	971	7318504.12	1282169.89	4480.329
	974	7318498.97	1282162.48	4480.459
	977	7318493.75	1282155.13	4480.567
	980	7318488.43	1282147.87	4480.747
	983	7318482.54	1282140.62	4480.78
	986	7318478.13	1282132.98	4480.777
	989	7318472.84	1282125.55	4480.777
	992	7318467.66	1282117.93	4481.255
	995	7318462.53	1282111.07	4481.377
	998	7318457.35	1282103.86	4481.148
	1001	7318451.82	1282096.29	4480.947
	1004	7318446.54	1282089.09	4480.112
	1007	7318442.13	1282081.30	4479.639
	1010	7318437.13	1282073.75	4479.952
	1013	7318431.89	1282066.34	4479.484
	1016	7318426.77	1282059.15	4479.307
	1019	7318421.48	1282051.30	4479.192
	1022	7318416.35	1282043.98	4479.181
	1025	7318411.24	1282036.85	4478.896
	1028	7318406.25	1282029.02	4478.971
	1031	7318401.05	1282021.91	4479.109
	1034	7318395.79	1282014.44	4479.167
	1037	7318390.96	1282006.97	4479.049
	1040	7318385.78	1281999.72	4479.074

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
1043	7318380.99	1281992.10	4479.191
1046	7318375.63	1281985.00	4479.203
1049	7318370.74	1281977.38	4479.15
1052	7318365.48	1281969.66	4479.134
1055	7318360.57	1281962.30	4479.057
1058	7318355.22	1281954.93	4479.346
1061	7318350.31	1281947.42	4479.27
1064	7318345.27	1281940.06	4479.416
1067	7318340.26	1281932.68	4479.332
1070	7318335.05	1281925.48	4479.304
1073	7318329.68	1281917.94	4479.365
1076	7318323.96	1281910.67	4479.757
1079	7318319.50	1281903.35	4479.597
1082	7318314.44	1281896.06	4479.689
1085	7318309.22	1281888.42	4479.897
1088	7318304.08	1281881.20	4479.909
1091	7318298.74	1281873.64	4479.774
1094	7318293.63	1281866.47	4480.576
1097	7318288.45	1281859.13	4480.509
1100	7318283.15	1281851.66	4480.24
1103	7318278.05	1281844.35	4480.43
1106	7318272.72	1281836.91	4480.226
1109	7318267.66	1281829.47	4480.465
1112	7318262.56	1281822.16	4480.603
1115	7318257.42	1281814.48	4480.784
1118	7318252.66	1281807.16	4480.978
1121	7318247.44	1281799.54	4481.512
1124	7318242.07	1281792.42	4481.325
1127	7318236.91	1281785.06	4480.785
1130	7318231.87	1281777.50	4480.889
1133	7318226.80	1281770.02	4481.127
1136	7318221.75	1281762.69	4481.046
1139	7318216.18	1281755.31	4481.248
1142	7318211.18	1281747.97	4481.377
1145	7318205.96	1281740.74	4481.3
1148	7318200.88	1281733.32	4481.339
1151	7318195.53	1281725.90	4481.246
1154	7318190.46	1281718.55	4481.242
1157	7318185.59	1281710.97	4481.319
1160	7318180.23	1281703.93	4481.305
1163	7318175.45	1281696.27	4481.47
1166	7318170.51	1281688.78	4481.35
1169	7318165.80	1281681.02	4481.422
1172	7318160.89	1281673.56	4481.43
1175	7318155.74	1281666.09	4481.406
1178	7318150.76	1281658.65	4481.47
1181	7318145.36	1281651.12	4481.538

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
1184	7318140.25	1281643.48	4481.431
1187	7318135.23	1281636.09	4481.467
1190	7318129.77	1281628.84	4481.598
1193	7318124.54	1281621.65	4481.347
1196	7318119.37	1281614.36	4481.865
1199	7318114.17	1281606.72	4481.192
1202	7318109.22	1281599.42	4481.206
1205	7318103.95	1281592.00	4481.342
1208	7318098.95	1281584.57	4481.214
1211	7318093.95	1281577.17	4481.254
1214	7318088.68	1281569.87	4481.443
1217	7318083.67	1281562.18	4481.425
1220	7318078.58	1281554.65	4481.478
1223	7318073.61	1281547.37	4481.556
1226	7318068.49	1281539.80	4481.748
1229	7318063.49	1281532.39	4481.772
1232	7318058.18	1281524.83	4481.889
1235	7318053.10	1281517.30	4482.053
1238	7318048.10	1281510.35	4482.177
1241	7318042.63	1281502.99	4482.632
1244	7318037.52	1281495.36	4483.383
1247	7318032.75	1281488.37	4484.997
1250	7318027.46	1281480.67	4485.698
1253	7318022.24	1281473.48	4486.112
1256	7318017.34	1281465.97	4485.883
1259	7318011.96	1281458.56	4485.532
1262	7318006.89	1281451.01	4485.651
1265	7318001.36	1281443.83	4485.581
1268	7317996.94	1281436.28	4485.702
1271	7317991.38	1281428.88	4485.54
1274	7317986.14	1281421.73	4485.699
1277	7317981.05	1281414.29	4485.726
1280	7317975.79	1281406.93	4485.838
1283	7317970.93	1281399.38	4485.861
1286	7317965.96	1281391.96	4485.999
1289	7317960.85	1281384.52	4485.936
1291	7317955.76	1281377.29	4485.939
1294	7317952.56	1281372.25	4485.969
1297	7317947.38	1281364.76	4485.962
1300	7317942.25	1281357.29	4486.101
1303	7317937.00	1281350.07	4486.078
1306	7317931.89	1281342.41	4486.067
1309	7317927.10	1281335.00	4486.003
1312	7317921.73	1281327.48	4486.261
1315	7317916.63	1281320.53	4486.147
1318	7317911.38	1281312.85	4486.331
1321	7317906.29	1281305.61	4486.273

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
1324	7317901.17	1281298.24	4486.189
1327	7317895.88	1281291.15	4486.187
1330	7317890.61	1281283.47	4486.263
1333	7317885.59	1281276.13	4486.307
1336	7317880.43	1281269.18	4486.222
1339	7317875.61	1281261.49	4486.415
1342	7317869.99	1281253.71	4486.367
1345	7317865.35	1281246.49	4486.563
1348	7317860.22	1281239.41	4486.395
1351	7317855.16	1281232.00	4486.405
1354	7317850.00	1281224.64	4486.435
1357	7317845.08	1281217.08	4486.513
1360	7317839.71	1281209.61	4486.514
1363	7317834.88	1281202.15	4486.614
1366	7317829.87	1281194.51	4486.673
1369	7317824.67	1281187.08	4486.609
1372	7317819.73	1281179.56	4486.752
1375	7317814.83	1281172.39	4486.637
1378	7317809.78	1281164.79	4486.753
1381	7317804.90	1281157.44	4486.789
1384	7317799.46	1281150.48	4486.513
1387	7317794.58	1281142.94	4486.68
1390	7317789.14	1281135.67	4486.666
1393	7317784.02	1281128.39	4486.649
1396	7317778.73	1281121.09	4486.703
1399	7317773.30	1281113.76	4486.673
1402	7317768.21	1281106.25	4486.57
1405	7317763.05	1281098.96	4486.763
1408	7317757.82	1281091.82	4486.741
1411	7317752.97	1281084.21	4486.82
1414	7317747.67	1281076.68	4486.602
1417	7317742.62	1281069.47	4486.712
1420	7317737.67	1281062.13	4486.686
1423	7317732.25	1281054.49	4486.681
1426	7317727.24	1281047.21	4486.615
1429	7317722.13	1281039.87	4486.829
1432	7317717.00	1281032.47	4486.872
1435	7317712.13	1281024.87	4486.926
1438	7317707.06	1281017.50	4486.897
1441	7317702.10	1281009.82	4487.074
1444	7317697.06	1281002.40	4487.027
1447	7317691.74	1280995.45	4487.146
1450	7317686.41	1280988.15	4487.106
1453	7317681.51	1280980.48	4487.26
1456	7317676.59	1280973.17	4487.149
1459	7317671.25	1280965.81	4487.09
1462	7317666.08	1280958.54	4487.289

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	1465	7317660.94	1280950.82	4487.413
	1468	7317655.45	1280943.56	4487.516
	1471	7317650.84	1280936.09	4487.323
	1474	7317645.71	1280928.60	4487.465
	1477	7317640.36	1280921.06	4487.576
	1480	7317635.17	1280914.02	4487.75
	1483	7317630.17	1280906.72	4487.722
	1486	7317624.92	1280899.25	4487.795
	1489	7317620.32	1280891.50	4487.797
	1492	7317615.63	1280884.60	4487.83
	1495	7317610.16	1280876.78	4487.789
	1498	7317604.85	1280869.33	4487.779
	1501	7317599.74	1280861.94	4487.745
	1504	7317594.79	1280854.79	4488.011
	1507	7317589.62	1280847.33	4487.764
	1510	7317584.87	1280839.83	4487.837
	1513	7317579.54	1280832.85	4487.934
	1516	7317573.97	1280825.57	4487.926
	1519	7317569.18	1280818.34	4487.956
	1522	7317563.94	1280810.94	4488.266
	1525	7317558.96	1280803.35	4487.932
	1528	7317553.52	1280796.10	4488.282
	1531	7317548.78	1280788.72	4488.165
	1534	7317543.37	1280781.18	4488.254
	1537	7317538.26	1280773.91	4488.329
	1540	7317533.15	1280766.11	4488.471
	1543	7317528.02	1280758.96	4488.474
	1546	7317523.23	1280751.58	4488.39
	1549	7317518.02	1280744.13	4488.461
	1552	7317512.78	1280737.10	4488.173
	1555	7317507.49	1280729.57	4488.002
	1558	7317502.60	1280722.52	4488.32
	1561	7317496.90	1280714.46	4487.834
	1564	7317492.40	1280707.45	4487.971
	1567	7317487.29	1280700.11	4487.88
	1570	7317482.08	1280692.66	4487.953
	1573	7317476.70	1280685.41	4488.257
	1576	7317471.96	1280678.57	4488.019
	1579	7317466.56	1280670.83	4488.219
	1582	7317461.69	1280663.27	4488.426
	1585	7317456.45	1280655.92	4488.024
	1588	7317451.18	1280648.39	4488.12
	1591	7317446.24	1280641.11	4488.165
	1594	7317441.26	1280633.73	4488.539
	1597	7317434.54	1280626.72	4488.657
	1600	7317430.66	1280618.99	4488.48
	1603	7317425.85	1280611.35	4488.303

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	1606	7317421.01	1280604.07	4488.726
	1609	7317415.45	1280596.70	4488.615
	1612	7317410.44	1280589.21	4488.778
	1615	7317405.15	1280581.96	4488.79
	1618	7317399.97	1280574.64	4488.746
	1621	7317394.99	1280567.05	4488.643
	1624	7317389.87	1280559.72	4488.524
	1627	7317385.16	1280552.09	4488.683
	1630	7317380.07	1280544.73	4488.569
	1633	7317374.96	1280537.42	4488.529
	1636	7317369.70	1280529.94	4489.047
	1639	7317364.63	1280522.62	4488.896
	1642	7317359.26	1280515.52	4489.163
	1645	7317353.90	1280507.55	4488.894
	1648	7317348.86	1280500.68	4488.834
	1651	7317343.43	1280493.63	4488.879
	1654	7317337.32	1280486.12	4488.963
	1657	7317333.21	1280478.81	4489.031
	1660	7317328.14	1280471.24	4489.083
	1663	7317323.08	1280463.86	4489.092
	1666	7317317.87	1280456.46	4488.996
	1669	7317313.03	1280449.06	4489.101
	1672	7317308.17	1280441.38	4489.005
	1675	7317302.68	1280434.22	4488.995
	1678	7317297.87	1280426.82	4489.204
	1681	7317292.45	1280419.75	4489.158
	1684	7317287.66	1280412.27	4489.087
	1687	7317282.40	1280404.86	4489.281
	1690	7317276.45	1280397.37	4489.228
	1693	7317272.47	1280389.63	4489.107
	1696	7317267.18	1280382.43	4489.117
	1699	7317262.29	1280374.47	4489.345
	1702	7317257.59	1280367.23	4489.302
	1705	7317252.58	1280359.78	4489.215
	1708	7317247.03	1280351.99	4489.255
	1711	7317241.97	1280344.74	4489.291
	1714	7317237.08	1280337.74	4489.392
	1717	7317232.06	1280330.40	4489.247
	1720	7317227.33	1280323.04	4489.423
	1723	7317222.61	1280315.51	4489.317
	1726	7317216.56	1280308.44	4489.534
	1729	7317211.62	1280301.19	4489.057
	1732	7317206.43	1280293.48	4488.955
	1735	7317201.35	1280286.09	4489.219
	1738	7317196.07	1280278.76	4488.942
	1741	7317191.41	1280271.17	4488.8
	1744	7317186.50	1280263.36	4489.979

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	1747	7317181.44	1280255.99	4490.177
	1750	7317176.21	1280248.97	4489.778
	1753	7317170.61	1280241.62	4489.759
	1756	7317165.47	1280234.42	4489.092
	1759	7317160.48	1280227.15	4489.166
	1762	7317155.45	1280219.87	4489.304
	1765	7317150.28	1280212.37	4489.313
	1768	7317145.30	1280204.92	4489.351
	1771	7317140.36	1280197.45	4489.267
	1774	7317134.69	1280189.73	4489.302
	1777	7317129.53	1280182.28	4489.218
	1780	7317124.28	1280174.86	4489.444
	1783	7317119.18	1280167.60	4489.169
	1786	7317114.10	1280160.24	4489.34
	1789	7317108.92	1280152.71	4489.53
	1792	7317103.65	1280145.58	4489.501
	1795	7317098.81	1280137.79	4489.281
	1798	7317093.26	1280130.83	4489.497
	1801	7317088.31	1280123.43	4489.612
	1804	7317082.49	1280115.54	4489.606
	1807	7317077.26	1280108.28	4489.47
	1810	7317072.31	1280101.03	4489.646
	1813	7317067.23	1280093.46	4489.513
	1816	7317062.17	1280086.39	4489.594
	1819	7317056.75	1280078.97	4489.543
	1822	7317051.72	1280071.62	4489.777
	1825	7317046.91	1280063.98	4489.663
	1828	7317041.83	1280056.31	4489.796
	1831	7317036.80	1280049.10	4489.717
	1834	7317031.87	1280041.46	4489.745
	1837	7317026.75	1280034.00	4489.826
	1840	7317021.35	1280026.57	4489.911
	1843	7317016.01	1280018.75	4489.849
	1843	7317015.95	1280018.98	4489.884
	1846	7317010.91	1280011.78	4489.855
	1849	7317005.73	1280004.26	4489.853
	1852	7317000.53	1279997.00	4490.008
	1855	7316995.95	1279989.26	4489.977
	1858	7316991.91	1279981.76	4489.865
	1861	7316985.52	1279974.68	4489.816
	1864	7316980.54	1279967.50	4489.901
	1867	7316975.49	1279959.97	4490.045
	1870	7316970.47	1279952.65	4490.257
	1873	7316964.65	1279945.44	4490.133
	1876	7316959.79	1279937.95	4489.982
	1879	7316954.75	1279930.65	4490.105
	1882	7316949.74	1279923.18	4490.011

Profile "B" Station Coordinates

	STATION	NORTH	EAST	ELEV
	1885	7316944.36	1279916.02	4490.118
	1888	7316939.47	1279908.50	4489.886
	1891	7316934.36	1279900.85	4489.934
	1894	7316929.16	1279893.36	4490.019
	1897	7316924.12	1279885.94	4490.017
	1900	7316919.03	1279878.38	4489.98
	1903	7316914.18	1279871.23	4490.033
	1906	7316908.74	1279863.22	4490.158
	1909	7316903.46	1279855.90	4490.362
	1912	7316898.02	1279848.42	4490.634
	1915	7316892.98	1279841.02	4491.108
	1918	7316888.08	1279833.77	4491.551
	1921	7316882.80	1279826.27	4491.419
	1924	7316877.68	1279818.99	4491.204
	1927	7316872.52	1279811.38	4491.371
	1930	7316867.52	1279803.89	4491.36
	1933	7316862.55	1279796.39	4491.242
	1936	7316857.40	1279788.97	4491.185
	1939	7316851.62	1279781.76	4491.365
	1942	7316846.71	1279774.65	4491.343
	1945	7316841.74	1279766.93	4491.303
	1948	7316836.57	1279759.59	4491.359
	1951	7316831.34	1279752.30	4491.498
	1954	7316826.45	1279744.93	4491.506
	1957	7316821.21	1279737.61	4491.566
	1960	7316816.32	1279730.25	4491.729
	1963	7316811.06	1279722.91	4491.606
	1966	7316806.01	1279715.66	4491.689
	1969	7316800.99	1279707.84	4491.789
	1972	7316795.55	1279700.37	4491.734
	1975	7316790.20	1279692.96	4491.873
	1978	7316785.13	1279685.48	4491.809
	1981	7316780.24	1279678.15	4491.749
	1984	7316775.14	1279670.74	4491.859
	1987	7316770.17	1279663.24	4491.91
	1990	7316765.04	1279655.95	4491.943
	1993	7316759.93	1279648.42	4492.121
	1996	7316754.74	1279641.13	4491.939
	1999	7316749.50	1279633.63	4492.065
	2002	7316744.27	1279625.89	4492.215
	2005	7316739.25	1279618.67	4491.908
	2008	7316733.86	1279611.40	4491.94
	2011	7316728.63	1279603.64	4492.314
	2014	7316723.62	1279596.40	4492.466
	2017	7316718.35	1279589.23	4492.364
	2020	7316713.41	1279581.81	4492.068
	2023	7316708.30	1279574.33	4492.215

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2026	7316703.29	1279566.80	4492.582
2029	7316698.17	1279559.34	4492.503
2032	7316693.03	1279551.80	4492.492
2035	7316687.93	1279544.44	4492.731
2038	7316682.52	1279536.72	4492.563
2041	7316677.12	1279529.68	4492.707
2044	7316671.98	1279522.43	4492.868
2047	7316667.04	1279514.68	4492.77
2050	7316661.90	1279507.40	4492.964
2053	7316656.70	1279500.14	4493.024
2056	7316651.75	1279492.91	4492.836
2059	7316646.51	1279485.03	4492.848
2062	7316641.20	1279477.63	4492.88
2065	7316636.23	1279470.24	4492.947
2068	7316631.40	1279462.93	4493.127
2071	7316626.11	1279455.28	4493.008
2074	7316620.84	1279447.91	4493.134
2077	7316615.58	1279440.50	4493.24
2080	7316610.60	1279432.99	4493.309
2083	7316605.60	1279425.71	4493.446
2086	7316600.55	1279418.14	4493.491
2089	7316595.31	1279410.95	4493.51
2092	7316590.13	1279403.40	4493.58
2095	7316585.10	1279396.04	4493.601
2098	7316579.75	1279388.34	4493.577
2101	7316574.76	1279381.28	4493.814
2104	7316569.61	1279373.37	4493.713
2107	7316564.40	1279365.87	4493.694
2110	7316558.86	1279358.65	4493.8
2113	7316553.72	1279351.32	4493.875
2116	7316548.72	1279344.09	4493.952
2119	7316543.28	1279337.10	4493.742
2122	7316538.41	1279329.28	4494.135
2125	7316533.32	1279322.11	4494.058
2128	7316528.23	1279314.58	4494.231
2131	7316523.18	1279306.79	4494.202
2134	7316518.56	1279299.25	4494.068
2137	7316513.25	1279291.69	4494.53
2140	7316508.00	1279284.37	4495
2143	7316502.85	1279277.05	4494.923
2146	7316497.72	1279269.60	4495.241
2149	7316492.45	1279262.24	4494.848
2152	7316487.60	1279254.92	4494.942
2155	7316482.67	1279247.31	4495.004
2158	7316477.59	1279239.90	4495.044
2161	7316472.45	1279232.51	4495.047
2164	7316467.51	1279224.98	4495.209

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2167	7316462.36	1279217.56	4495.162
2170	7316456.97	1279209.93	4495.228
2173	7316451.70	1279202.72	4495.298
2176	7316446.62	1279195.59	4495.405
2179	7316441.20	1279188.17	4495.428
2182	7316436.25	1279180.80	4495.626
2185	7316431.04	1279173.31	4495.8
2188	7316426.09	1279165.76	4496.092
2191	7316420.77	1279158.67	4496.172
2194	7316415.78	1279151.20	4495.752
2197	7316410.21	1279143.80	4495.607
2200	7316405.35	1279136.64	4495.655
2203	7316400.42	1279129.00	4496.299
2206	7316395.32	1279121.64	4496.281
2209	7316390.00	1279114.08	4496.314
2212	7316385.24	1279106.83	4496.406
2215	7316380.20	1279099.45	4496.359
2218	7316374.96	1279092.04	4496.56
2221	7316369.86	1279084.44	4496.633
2224	7316365.10	1279077.03	4496.664
2227	7316359.81	1279069.73	4496.73
2230	7316354.59	1279062.12	4496.757
2233	7316349.33	1279054.46	4496.815
2236	7316344.36	1279047.20	4497.052
2239	7316339.22	1279039.88	4496.855
2242	7316334.11	1279032.35	4496.957
2245	7316329.10	1279024.88	4497.21
2248	7316323.93	1279017.65	4497.378
2251	7316318.77	1279010.36	4497.658
2254	7316313.50	1279002.76	4497.764
2257	7316308.29	1278995.87	4497.898
2260	7316303.28	1278988.22	4497.859
2263	7316297.91	1278980.71	4497.939
2266	7316292.67	1278973.31	4498.033
2269	7316287.79	1278965.85	4497.971
2272	7316282.61	1278958.49	4498.038
2275	7316277.30	1278951.11	4498.217
2278	7316272.25	1278943.76	4498.284
2281	7316267.49	1278936.29	4498.404
2284	7316262.21	1278929.09	4498.408
2287	7316257.03	1278921.66	4498.524
2290	7316251.99	1278914.22	4498.653
2293	7316246.91	1278906.45	4498.707
2296	7316241.85	1278899.01	4498.538
2299	7316236.81	1278891.65	4498.772
2302	7316231.55	1278884.42	4498.918
2305	7316226.42	1278876.97	4499.168

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2308	7316221.55	1278869.52	4499.396
2311	7316216.22	1278862.00	4499.331
2314	7316211.27	1278854.32	4498.919
2317	7316206.33	1278847.05	4499.157
2320	7316201.31	1278839.72	4499.572
2323	7316196.05	1278832.22	4499.687
2326	7316191.02	1278824.65	4499.676
2329	7316185.66	1278817.31	4499.922
2332	7316180.29	1278810.06	4499.949
2335	7316175.11	1278802.99	4500.031
2338	7316169.87	1278795.58	4500.208
2341	7316164.89	1278788.05	4500.492
2344	7316159.61	1278780.48	4500.315
2347	7316154.87	1278773.04	4500.584
2350	7316149.66	1278765.74	4501.04
2353	7316144.67	1278758.50	4501.426
2356	7316139.57	1278750.74	4501.751
2359	7316134.69	1278743.47	4501.858
2362	7316129.09	1278735.87	4501.545
2365	7316123.98	1278728.63	4501.3
2368	7316118.71	1278721.10	4501.024
2371	7316113.84	1278713.70	4500.741
2374	7316108.55	1278706.53	4500.289
2377	7316103.31	1278699.28	4500.153
2380	7316098.32	1278691.62	4500.525
2383	7316092.79	1278684.32	4501.031
2386	7316087.76	1278676.88	4501.803
2389	7316082.64	1278669.39	4502.516
2392	7316077.91	1278662.16	4503.113
2395	7316072.54	1278654.51	4503.222
2398	7316067.31	1278646.92	4503.038
2401	7316062.23	1278639.65	4503.005
2404	7316057.04	1278632.28	4503.08
2407	7316052.04	1278625.02	4503.132
2410	7316046.81	1278617.59	4503.225
2413	7316041.86	1278610.02	4503.479
2416	7316036.68	1278602.76	4503.733
2419	7316031.41	1278595.41	4503.93
2422	7316026.32	1278587.89	4504.123
2425	7316021.35	1278580.61	4504.271
2428	7316016.31	1278573.16	4504.105
2431	7316011.30	1278565.84	4504.245
2434	7316006.00	1278558.50	4504.379
2437	7316000.92	1278550.82	4504.723
2440	7315995.92	1278543.46	4504.852
2443	7315990.93	1278536.07	4504.59
2446	7315985.95	1278528.59	4504.112

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2449	7315980.68	1278521.40	4503.266
2452	7315975.71	1278514.35	4501.96
2455	7315970.64	1278506.71	4501.031
2458	7315965.41	1278499.42	4500.912
2461	7315960.37	1278491.78	4500.857
2464	7315955.43	1278484.46	4500.671
2467	7315950.33	1278477.21	4500.333
2470	7315945.09	1278469.73	4500.564
2473	7315940.04	1278462.24	4501.394
2476	7315934.96	1278454.88	4502.471
2479	7315929.81	1278447.41	4502.926
2482	7315924.85	1278440.21	4503.442
2485	7315919.74	1278432.72	4503.799
2488	7315914.65	1278425.44	4504.278
2491	7315909.53	1278417.96	4504.634
2494	7315904.30	1278410.47	4504.625
2497	7315899.42	1278402.97	4504.581
2500	7315894.16	1278395.63	4504.583
2503	7315888.98	1278388.42	4504.543
2506	7315883.91	1278381.05	4504.574
2509	7315878.88	1278373.68	4504.593
2512	7315873.65	1278366.38	4504.766
2515	7315868.47	1278358.83	4505.535
2518	7315863.18	1278351.59	4506.134
2521	7315857.98	1278344.17	4506.144
2524	7315852.73	1278336.80	4505.848
2527	7315847.80	1278329.52	4506.099
2530	7315842.80	1278322.52	4505.756
2533	7315837.63	1278315.01	4505.784
2536	7315832.42	1278307.86	4505.659
2539	7315827.41	1278300.35	4505.416
2542	7315822.29	1278292.99	4505.384
2545	7315817.54	1278285.26	4505.488
2548	7315812.16	1278277.92	4505.385
2551	7315807.24	1278270.38	4505.507
2554	7315802.03	1278263.05	4505.4
2557	7315797.05	1278255.49	4505.428
2560	7315791.84	1278248.20	4505.289
2563	7315786.70	1278240.79	4505.343
2566	7315781.32	1278233.46	4505.353
2569	7315776.29	1278226.10	4505.25
2572	7315771.46	1278218.76	4505.303
2575	7315766.24	1278211.14	4505.303
2578	7315761.24	1278203.69	4505.249
2581	7315756.25	1278196.39	4505.469
2584	7315751.12	1278188.79	4505.995
2587	7315745.83	1278181.58	4505.848

Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2590	7315741.06	1278174.40	4505.759
2593	7315735.91	1278166.72	4505.925
2596	7315730.76	1278159.34	4505.993
2599	7315725.78	1278151.98	4506.175
2602	7315720.74	1278144.51	4506.362
2605	7315715.48	1278137.31	4506.403
2608	7315710.41	1278129.69	4506.319
2611	7315705.54	1278122.26	4506.441
2614	7315700.21	1278114.86	4506.392
2617	7315695.07	1278107.52	4506.576
2620	7315690.12	1278100.10	4506.568
2623	7315685.01	1278092.50	4506.448
2626	7315679.96	1278085.07	4506.268
2629	7315674.58	1278077.82	4506.346
2632	7315669.39	1278070.60	4506.274
2635	7315664.15	1278063.27	4506.286
2638	7315659.25	1278055.86	4506.212
2641	7315654.21	1278048.50	4506.171
2644	7315648.92	1278040.89	4506.023
2647	7315643.69	1278033.77	4506.126
2650	7315638.78	1278026.16	4506.524
2653	7315633.60	1278018.74	4506.855
2656	7315628.38	1278011.34	4506.924
2659	7315623.03	1278004.03	4507.01
2662	7315617.78	1277997.16	4506.846
2665	7315612.81	1277989.61	4507.185
2668	7315607.84	1277982.06	4507.187
2671	7315602.72	1277974.52	4507.092
2674	7315597.60	1277966.92	4507.242
2677	7315592.66	1277959.70	4507.175
2680	7315587.49	1277952.45	4507.505
2683	7315582.21	1277944.93	4507.521
2686	7315577.39	1277937.49	4507.493
2686	7315572.25	1277930.12	4507.631
2689	7315572.24	1277930.11	4507.631
2692	7315566.91	1277922.71	4507.689
2695	7315561.54	1277915.20	4507.831
2698	7315556.04	1277908.15	4507.895
2701	7315551.04	1277900.81	4507.944
2704	7315546.24	1277893.57	4508.231
2707	7315540.97	1277885.86	4508.111
2710	7315535.90	1277878.59	4508.294
2713	7315530.94	1277870.72	4508.345
2716	7315525.73	1277863.44	4508.329
2719	7315520.87	1277856.05	4508.398
2722	7315515.68	1277848.64	4508.349
2725	7315510.80	1277841.31	4508.502

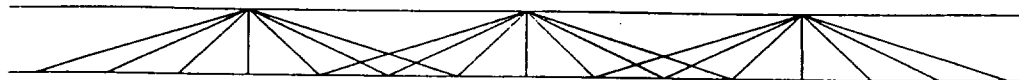
Profile "B" Station Coordinates

STATION	NORTH	EAST	ELEV
2728	7315505.58	1277834.07	4508.481
2731	7315500.09	1277826.83	4508.416
2734	7315494.88	1277819.57	4508.368
2737	7315489.66	1277811.93	4508.453
2740	7315484.75	1277804.49	4508.459
2741	7315483.14	1277801.86	4508.342

COORDS FOR CLOSURE LINE A

- 1 7317821.30 1281662.53 CP 16 FROM AERO METRIC
- 2 7320873.25 1280612.59 HUB 101 TESTLINE 1
- 3 7323794.75 1283134.88 NE COR SEC6 FENCE COR
- 5 7323809.70 1277842.80 NW COR SEC6 FENCE COR FROM AEROMETRIC
- 6 7320810.30 1283474.46 TP 13
- 7 7320785.56 1285048.74 TP 14
- 8 7320825.46 1288388.14 BOL A HUB
- 10 7320860.24 1280746.91 P21
- 11 7320868.93 1279699.36 P22
- 12 7320871.66 1278649.84 P23
- 13 7320882.60 1276543.75 P24
- 14 7320882.27 1277596.36 P25
- 15 7320889.98 1275617.61 P26
- 16 7323809.86 1277843.79 NW COR SEC6 FENCE COR
- 17 7320901.57 1275388.61 EOL LINE A HUB

Bay Geophysical Associates, Inc.



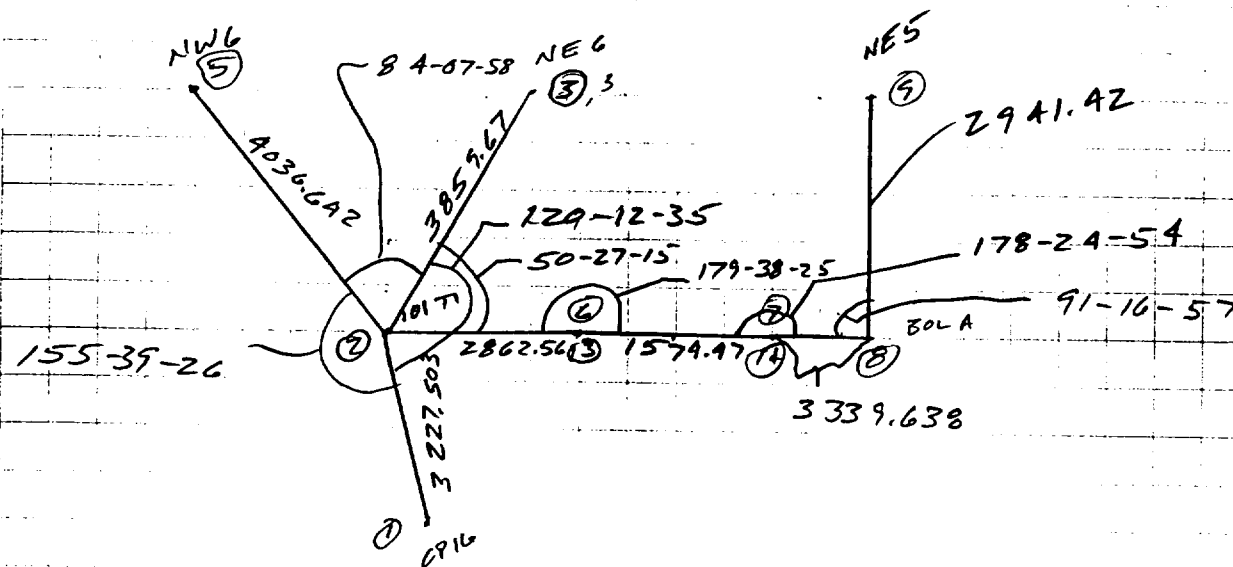
Sheet 1 of 1

By LRK Date

Chkd By LRK

Date AUG 28

Subject SKETCH LINE CONTROL Proj. No. 18-185



6

BOL A

P 26

P 21

Bay Geophysical Associates, Inc.

Sheet 1 of 2

By _____ Date _____

Chkd By L.R.K.

Date _____

Subject PT-3 F-72-A Proj. No. 98-785

OC	BS	FS	XIZ	DIST (H)
6	7	10	P21	180-08-55 2728.00
10	6	11	P22	179-25-35 1047.58
11	10	12	P23	179-40-25 1049.52
12	11	14	P25	180-25-41 1053.53
14	12	13	P24	179-26-27 1052.61
13	14	17	EOLM	180-55-22 1155.29
17	13	16	N46	309-15-49 3806.06

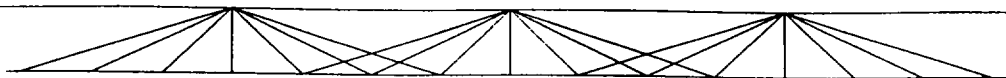
PT 16 NW6 7323809.86 N 1277843.79 E

PT 208 NW6 7323809.70 N 1277842.8 E

FROM AEROMETRIC

✓ < 3'

Bay Geophysical Associates, Inc.



Sheet 2 of 2

By RR Date

Chkd By LCK

Subject PFSF-98-B

Proj. No. 98-185

Date AUG 16 1998

OC	BS	FS	LR	DIST (M)
3	4	1. BOL 1	311-46-10	1083.59
3	4	5 BP1	310-49-20	1102.65
5	3	6 BP2	193-38-08	1036.07
6	5	7 BP3	182-40-36	920.186
7	6	8 BP4	174-03-24	723.77
8	7	9 BP5	186-26-12	1043.48
9	8	10 BP6	177-18-49	1047.28
10	9	11 BP7	179-06-45	898.76
11	10	12 BP8	179-53-56	1081.40
12	11	13 BP9	176-21-06	688.25
12	11	2 BOL B	179-31-00	1158.48
12	11	14 P25	291-38-21	4861.50

14 P25 7320882.45N 1277596.46E

LINE A P25 7320882.27N 1277596.36E
TRAVERS
✓ < 3'

COORDS FOR CLOSURE LINE B

1	7319988.90	1284314.24	HUB BOL B
2	7315483.18	1277800.87	HUB EOL B
3	7320785.56	1285048.74	TP 14
4	7320810.45	1283474.50	TP 13
5	7319962.64	1284314.82	BP1
6	7319371.79	1283463.74	BP2
7	7318882.90	1282684.17	BP3
8	7318436.94	1282114.11	BP4
9	7317890.18	1281225.35	BP5
10	7317300.22	1280360.05	BP6
11	7316782.48	1279625.39	BP7
12	7316157.97	1278742.54	BP8
13	7315725.56	1278207.09	BP9
14	7320882.45	1277596.46	P25
15	7320882.27	1277596.36	P25 FROM LINE A FOR CLOSURE

Bay Geophysical Associates, Inc.

Sheet 1 of 4

By ZRC Date

Chkd By LRL

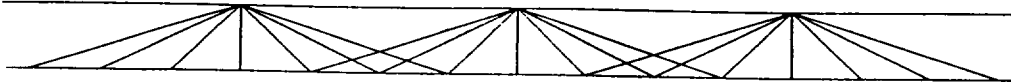
Date Aug 12

Subject ELEVATION CONTROL Proj. No. 98-185

STA	BS	HI	FS	ELEV.	COMMENT
Z	-0.54	4449.54	—	4449	EXT PIPE NW COR SEC
TP1	-1.49	4450.63	-0.4	4449.14	
TP2	-2.00	4454.22	1.59	4452.22	
TP3	-2.12	4457.52	1.18	4455.4	
TP4	-2.18	4464.00	4.3	4461.82	
TP5	-3.42	4471.47	4.05	4468.05	
TP6	-3.54	4477.23	2.22	4473.69	
TP7	-0.40	4481.34	3.71	4480.94	
TP8	-0.70	4480.92	-1.12	4480.22	
TP9	9.86	4479.60	8.54	4489.46	
BOL B	—	—	-1.95	4477.65	BOL PFSF B

BOL B	-8.72	4486.37	—	4477.65	BOL PFSF B
TP10	8.61	4480.85	3.09	4489.46	
TP11	0.15	4479.39	-1.31	4479.54	
TP12	3.24	4470.89	-5.26	4474.13	
TP13	0.45	4469.18	-1.26	4469.63	
TP14	-1.03	4469.08	-1.13	4468.05	
TP15	2.77	4464.51	-1.80	4467.28	
TP16	5.69	4457.76	-1.06	4463.45	
TP17	1.26	4454.50	-2.00	4455.76	
TP18	2.19	4452.08	-0.23	4454.27	
TP19	0.66	4449.53	-1.89	4450.19	
Z			-0.39	4449.14	EXT PIPE, NW COR C

Bay Geophysical Associates, Inc.



Sheet 2 of 4

By IRL Date _____

Chkd By LRK

Date MAR 12

Subject ELEVATION CONTROL Proj. No. 98-185

STA	BS	HI	FS	ELEV	COMMENT
EOL A	-0.95	4462.24	-	4461.29	EOL PSFS A
TP 1	-0.05	4462.46	0.11	4462.35	
TP 2	-2.49	4472.00	7.11	4469.51	
TP 3	-4.81	4479.11	2.30	4474.30	
TP 4	-3.92	4486.90	3.87	4482.98	
TP 5	-5.13	4490.71	-1.34	4485.56	
TP 6	-6.32	4503.40	6.37	4497.08	
EOL B	-	-	4.94	4508.34	EOL PSFS B
EOL B	2.58	4505.76	-	4508.34	EOL PSFS B
TP 7	4.78	4496.40	-4.58	4501.18	
TP 8	1.51	4485.81	-7.08	4487.32	
TP 9	3.89	4480.83	-1.09	4484.72	
TP 10	4.80	4472.86	-3.17	4477.66	
TP 11	3.575	4466.97	-2.31	4470.55	
TP 12	1.42	4462.40	-3.15	4463.82	
EOL A			-0.95	4461.45	EOL PSFS A

Bay Geophysical Associates, Inc.

Sheet 3 of 4

By LRK Date

Chkd By LRK

Date Aug 12

Subject ELEVATION CLOSURES Proj. No. 98-185

STA	BS	HI	FS	ELEV	COMMENT
NET	10.7	4521.30	-	4532	NE COR SECS 5
TP1	8.12	4504.89	-8.29	4513.01	
TP2	3.26	4498.67	-2.96	4501.93	
BOL A	-		1.12	4499.79	BOL PF5FA
BOL A	1.12	4498.67	-	4499.79	BOL PF5FA
TP3	-2.11	4506.59	5.81	4504.48	
TP4	-2.48	4514.68	5.61	4512.20	
TP5	-3.98	4525.74	7.08	4521.76	
1	-		6.33	4532.07	NE COR SECS 5

Bay Geophysical Associates, Inc.

Sheet 4 of 4

By ZRC Date _____

Chkd By ZRK

Date AUG 12

Subject EL ELEVATION CLIMB

Proj. No. 93-1815

STA	BS	HI	FS	ELEV.	COMMENT
Z	-0.83	4449.83	-	4449	EXT. PIPE NEAR NW COR 6
TP1	-1.46	4451.97	0.68	4450.51	
TP2	-1.43	4455.28	1.88	4453.85	
TP3	-1.68	4460.10	3.14	4458.42	
EOL A	-	-	1.19	4461.29	EOL PSFS A
EOL A	1.44	4459.85	-	4461.29	EOL PSFS A
TP4	2.40	4455.42	-2.03	4457.82	
TP5	1.84	4451.40	-2.18	4453.24	
TP6	054	4449.78	-1.08	4450.32	
Z			-0.79	4448.99	EXT. PIPE NEAR NW COR OF SECC

Bay Geophysical Associates, Inc.

Sheet 1 of 2

By RRC Date Nov 8, 98

Chkd By LRC

Date 8/6/98

Subject PHASE III CONTROLS Proj. No. 78-185

ALL CONTROL POINTS COORDS PROVIDED BY
STONE & WEBSTER FROM SURVEY PERFORMED
BY AEROMETRICS

POINT	NORTH	EAST	DESCRIPTION
1	7323809.7	1277842.8	NW COR SEC C

2	7323794.7	1283135.1	NE COR SEC C
---	-----------	-----------	--------------

3	7317821.3	1281662.53	CPIC (BRASS CAP)
---	-----------	------------	------------------

RESECTION BY 3 POINTS INFORMATION

OCCUPY POINT B & RESECTION TO ESTABLISH COORDS.

OCCUPY	BACK SIGHT	FORESIGHT	ANGLE RIGHT
B	1	2	83-49-15
B	2	3	108-09-05
B	3	1	168-01-50
			<u>360-00-10</u> ✓

HORIZONTAL DISTANCES MEASURED

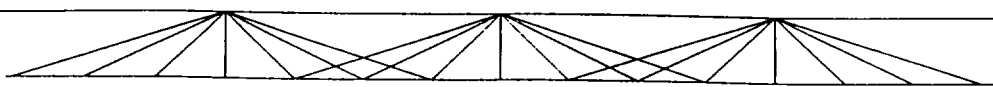
B-1	3735.335
B-2	4171.465
B-3	3405.16

HORIZONTAL DISTANCES CALCULATED	BY RESECTION PROGRAM
B-1 3736.35 ✓	DIFFERENCE = -1.015 .027%
B-2 4171.800 ✓	= .335 8x10 ⁻³ %
B-3 3405.414 ✓	= .254 7x10 ⁻³ %

SUBMETER COORDS FOR POINT B ARE:

7320875.06 N, 1280155.42 E

Bay Geophysical Associates, Inc.



Sheet 2 of 2
By RZL Date NOV 8, 98
Chkd By LRIL
Date 8/6/98

Subject PHASE III CONTROL Proj. No. 98-185

STAKE OUT COORDS FOR LINES C & D
ESTABLISHED FROM AUTO CAD DRAWING PROVIDED
BY DICK GILLESPIE

PFSF C BOL 7321829.02 N, 1283114.50 E

PFSF C EOL 7321836.3 N, 1279613.6 E

PFSF D BOL 7319821.78 N, 1278893.9 E

PFSF D EOL 7319805.33 N, 1282393.45 E

THESE POINTS WERE SET FROM POINT 8
BACKSIGHTING POINT 3 (CP16)

Bay Geophysical Associates, Inc.

Sheet 1 of 2
 By ERC Date NOV 8 '98
 Chkd By LRL
 Date 8/6/98

Subject PHASE III ELEV CONTROL Proj. No. 98-185

STA	BS	HI	FS	ELEV	COMMENT
BOL C	-1.86	4 467.55	—	4465.69	BOL PFSFL
TP 1	-2.02	4 471.915	2.345	4469.895	
TP 2	2.58	4 471.91	2.575	4474.49	EOL PFSFD
TP 3	2.025	4467.985	-1.90	4470.01	
BOL C	—	—	-2.335	4465.65	BOL PFSFL
EOL D	0.85	4473.64	—	4474.49	EOL PFSFD
PI	0.98	4472.33	-0.33	4473.31	
TP 2	0.49	4471.25	-0.59	4471.74	
TP 3	1.03	4471.01	0.79	4472.04	
TP 4	0.87	4467.87	-2.27	4468.74	
TP 5	0.05	4469.57	1.75	4469.62	
BOL D	1.87	4469.57	1.87	4471.44	BOL D
TP 6	-1.73	4471.63	0.33	4469.90	
TP 7	-0.85	4472.85	0.37	4472.00	
TP 8	-0.32	4473.84	0.67	4473.52	
TP 9	0.49	4473.71	0.36	4474.20	
EOL D	—	—	0.73	4474.44	EOL PFSFD

Bay Geophysical Associates, Inc.

Sheet 2 of 2

By _____ Date _____

Chkd By L.R.K.

Date 8/2/90

Subject PHASE II F CLOSURES Proj. No. 48-185

STA	BS	HI	FS	ELEV	COMMENT
3	-2.43	4459.43	—	4457	NE COR SEC 6
	-2.79	4461.825	-0.395	4459.035	
BOL C	—	—	3.865	4465.69	BOL PFSF C
BOL C	3.88	4461.81	—	4465.69	BOL PFSF C
	-0.545	4459.93	-2.425	4459.385	
	—	—	-2.87	4457.06	NE COR SEC 6
BOL C	1.52	4464.17	—	4465.69	BOL PFSF C
		4460.01			
TP1	2.35	4460.01	-1.81	4462.36	
TP2	0.56	4458.69	-0.76	4459.25	
TP3	0.28	4458.56	0.15	4458.84	
TP4	0.87	4458.05	0.36	4458.92	
EOL C	0.04	4458.05	0.04	4458.09	EOL C
TP5	-0.72	4458.61	-0.16	4457.89	
TP6	0.32	4459.52	1.23	4459.84	
TP7	-0.85	4461.40	1.03	4460.55	
TP8	-0.32	4462.84	1.12	4462.52	
TP9	-0.58	4463.78	0.36	4463.2	
BOL C	—	—	1.81	4465.59	BOL PFSF C

PFSF "C"

Sta	North	East	Elev
101	7321829.34	1283115.16	4465.69
104	7321828.94	1283106.14	4465.68
107	7321828.80	1283097.15	4465.62
110	7321828.83	1283088.09	4465.53
113	7321828.79	1283079.14	4465.49
116	7321828.87	1283070.06	4465.43
119	7321828.99	1283061.08	4465.42
122	7321828.94	1283052.13	4465.42
125	7321829.11	1283043.27	4465.43
128	7321829.14	1283034.20	4464.90
131	7321829.46	1283025.28	4464.04
134	7321829.48	1283016.28	4463.96
137	7321829.45	1283007.33	4463.95
140	7321829.44	1282998.24	4464.02
143	7321829.54	1282989.27	4463.95
146	7321829.51	1282980.31	4463.96
149	7321829.50	1282971.34	4464.03
152	7321829.55	1282962.28	4463.92
155	7321829.77	1282953.37	4463.80
158	7321829.58	1282944.33	4463.81
161	7321829.51	1282935.35	4463.66
164	7321829.47	1282926.42	4463.75
167	7321829.47	1282917.45	4463.73
170	7321829.56	1282908.43	4463.60
173	7321829.72	1282899.35	4463.57
176	7321829.95	1282890.45	4463.52
179	7321829.96	1282881.45	4463.88
182	7321830.13	1282872.48	4463.92
185	7321830.23	1282863.43	4464.06
188	7321830.23	1282854.42	4464.17
191	7321830.28	1282845.43	4464.14
194	7321830.40	1282836.44	4464.19
197	7321830.31	1282827.45	4463.93
200	7321830.28	1282818.53	4463.56
203	7321830.23	1282809.50	4463.32
206	7321830.38	1282800.49	4462.98
209	7321830.38	1282791.56	4463.03
212	7321830.48	1282782.47	4462.90
215	7321830.43	1282773.52	4462.96
218	7321830.40	1282764.49	4462.98
221	7321830.48	1282755.44	4462.98
224	7321830.55	1282746.49	4462.80
227	7321830.70	1282737.55	4462.67
230	7321830.67	1282728.57	4462.66
233	7321830.61	1282719.61	4462.56
236	7321830.00	1282710.65	4462.58
239	7321829.89	1282701.69	4462.59

242	7321829.89	1282692.61	4462.39
245	7321829.97	1282683.63	4462.70
248	7321830.05	1282674.66	4462.53
251	7321830.07	1282665.71	4462.58
254	7321830.05	1282656.71	4462.65
257	7321830.06	1282647.69	4462.34
260	7321829.98	1282638.81	4462.50
263	7321830.02	1282629.81	4462.39
266	7321830.03	1282620.90	4462.40
269	7321830.27	1282611.71	4462.40
272	7321830.23	1282602.66	4462.71
275	7321830.23	1282593.76	4463.05
278	7321830.32	1282584.71	4462.89
281	7321830.28	1282575.66	4462.87
284	7321830.36	1282566.83	4462.84
287	7321830.49	1282557.80	4462.79
290	7321830.52	1282548.79	4462.73
293	7321830.60	1282539.81	4462.58
296	7321830.61	1282530.77	4462.52
299	7321830.71	1282521.80	4462.50
305	7321830.64	1282503.80	4462.65
308	7321830.87	1282494.78	4462.26
311	7321831.27	1282485.82	4462.16
314	7321831.28	1282476.84	4462.04
317	7321831.28	1282467.79	4462.06
320	7321831.42	1282459.21	4461.99
323	7321831.66	1282449.91	4461.87
326	7321831.81	1282440.92	4461.86
329	7321831.68	1282432.06	4461.77
332	7321831.93	1282422.98	4461.70
335	7321831.71	1282413.90	4461.65
338	7321831.66	1282404.88	4461.64
341	7321831.74	1282395.91	4461.51
344	7321831.83	1282386.95	4461.45
347	7321831.91	1282377.98	4461.45
350	7321832.11	1282368.95	4461.42
353	7321831.89	1282360.02	4461.47
356	7321831.81	1282351.02	4461.38
359	7321831.98	1282342.07	4461.49
362	7321831.77	1282332.96	4461.55
365	7321831.67	1282324.04	4461.79
368	7321831.07	1282315.14	4461.46
371	7321831.29	1282306.09	4460.13
374	7321831.56	1282297.14	4459.72
377	7321831.56	1282288.18	4459.75
380	7321831.64	1282279.14	4459.71
383	7321831.76	1282270.15	4459.51
386	7321831.71	1282261.13	4459.52
389	7321831.85	1282252.19	4459.48

392	7321831.83	1282243.24	4459.51
395	7321831.94	1282234.20	4459.50
398	7321831.96	1282225.21	4459.48
401	7321832.08	1282216.24	4459.54
404	7321831.96	1282207.22	4459.56
407	7321832.25	1282198.23	4459.45
410	7321832.33	1282189.16	4459.42
413	7321832.31	1282180.21	4459.41
416	7321832.30	1282171.24	4459.41
419	7321832.18	1282162.34	4459.49
422	7321832.36	1282153.17	4459.55
425	7321832.31	1282144.21	4459.55
428	7321832.41	1282135.37	4459.57
431	7321832.66	1282126.23	4459.63
434	7321831.60	1282117.25	4459.61
437	7321831.95	1282108.28	4459.55
440	7321832.00	1282099.25	4459.56
443	7321831.98	1282090.31	4459.62
446	7321832.03	1282081.25	4459.63
449	7321832.06	1282072.27	4459.68
452	7321831.89	1282063.28	4459.61
455	7321832.15	1282054.31	4459.66
458	7321831.79	1282045.24	4459.62
461	7321831.88	1282036.20	4459.73
464	7321831.97	1282027.35	4459.69
467	7321831.84	1282018.26	4459.69
470	7321831.93	1282009.31	4459.68
473	7321832.00	1282000.41	4459.65
476	7321832.03	1281991.38	4460.12
479	7321832.23	1281982.33	4459.83
482	7321832.67	1281973.36	4459.77
485	7321832.54	1281964.42	4459.83
488	7321832.63	1281955.33	4459.79
491	7321832.80	1281946.34	4459.70
494	7321833.18	1281937.43	4459.78
497	7321832.96	1281928.42	4459.66
500	7321832.19	1281919.29	4459.50
503	7321832.11	1281910.30	4459.64
506	7321832.35	1281901.32	4459.53
509	7321832.35	1281892.26	4459.61
512	7321832.30	1281883.38	4459.58
515	7321832.58	1281874.40	4459.56
518	7321832.86	1281865.35	4459.54
521	7321833.06	1281856.39	4459.54
524	7321833.14	1281847.35	4459.46
527	7321833.40	1281838.46	4459.57
530	7321833.32	1281829.39	4459.52
533	7321833.40	1281820.35	4459.39
536	7321833.45	1281811.40	4459.45

539	7321833.34	1281802.44	4459.27
542	7321833.30	1281793.45	4459.24
545	7321833.16	1281784.58	4459.21
548	7321833.18	1281775.16	4459.21
551	7321833.09	1281766.27	4459.15
554	7321833.08	1281757.42	4459.15
557	7321833.17	1281748.33	4459.13
560	7321832.85	1281739.39	4459.41
563	7321832.63	1281730.51	4460.01
566	7321832.27	1281721.52	4460.72
569	7321832.41	1281712.44	4460.96
572	7321832.44	1281703.50	4461.47
575	7321832.49	1281694.47	4461.83
578	7321832.60	1281685.54	4462.15
581	7321832.79	1281676.50	4462.31
584	7321832.98	1281667.52	4462.44
587	7321832.94	1281658.63	4462.31
590	7321832.97	1281649.72	4462.28
593	7321832.98	1281640.56	4462.40
596	7321832.90	1281631.57	4462.32
599	7321832.68	1281622.72	4462.41
602	7321832.70	1281613.39	4462.42
605	7321832.98	1281604.61	4462.35
608	7321832.69	1281595.41	4462.24
611	7321832.68	1281586.58	4462.28
614	7321832.60	1281577.58	4462.36
617	7321832.77	1281568.51	4462.29
620	7321832.58	1281559.62	4462.30
623	7321832.49	1281550.54	4462.16
626	7321832.39	1281541.53	4462.24
629	7321832.46	1281532.62	4462.28
632	7321832.40	1281523.52	4462.16
635	7321832.48	1281514.62	4462.27
638	7321832.41	1281505.74	4462.07
641	7321832.63	1281496.60	4462.06
644	7321832.96	1281487.68	4461.86
647	7321833.11	1281478.49	4461.82
650	7321833.42	1281469.72	4461.76
653	7321833.37	1281460.55	4461.84
656	7321833.69	1281451.65	4461.78
659	7321833.72	1281442.75	4461.70
662	7321833.62	1281433.45	4461.61
665	7321833.70	1281424.70	4461.32
668	7321833.82	1281415.55	4460.93
671	7321833.94	1281406.73	4460.39
674	7321833.99	1281397.69	4460.22
677	7321833.77	1281388.57	4459.62
680	7321833.80	1281379.83	4459.46
683	7321833.60	1281370.62	4459.53

686	7321833.51	1281361.64	4460.10
689	7321833.18	1281352.78	4460.57
692	7321833.00	1281343.70	4460.79
695	7321832.81	1281334.83	4460.49
698	7321832.51	1281325.83	4460.66
704	7321832.90	1281307.83	4459.14
707	7321832.90	1281298.94	4459.14
710	7321833.10	1281289.81	4459.15
713	7321833.25	1281280.95	4458.92
716	7321833.46	1281271.93	4458.85
719	7321833.39	1281262.87	4459.08
722	7321833.24	1281253.72	4459.64
725	7321833.33	1281244.86	4460.09
728	7321833.24	1281235.85	4460.31
731	7321833.32	1281226.86	4460.36
734	7321833.08	1281217.97	4460.48
737	7321833.29	1281208.98	4460.35
740	7321833.21	1281200.06	4459.82
743	7321833.11	1281190.99	4459.51
746	7321833.05	1281181.82	4459.30
749	7321832.82	1281172.88	4459.21
752	7321832.98	1281163.94	4459.14
755	7321833.47	1281154.94	4459.21
758	7321833.41	1281145.96	4459.13
761	7321833.59	1281136.99	4459.12
764	7321833.33	1281128.11	4459.20
767	7321833.67	1281119.11	4459.07
770	7321833.94	1281110.09	4459.03
773	7321834.00	1281101.10	4458.94
776	7321833.96	1281092.01	4458.93
779	7321834.18	1281083.06	4458.88
782	7321834.40	1281074.10	4458.89
785	7321834.47	1281065.09	4458.85
788	7321834.65	1281056.00	4459.35
791	7321834.69	1281047.08	4459.47
794	7321834.72	1281038.06	4459.62
797	7321834.87	1281029.18	4459.63
800	7321835.21	1281020.15	4459.85
803	7321835.42	1281011.18	4459.89
806	7321835.44	1281002.09	4460.02
809	7321835.57	1280993.17	4459.91
812	7321835.70	1280984.16	4459.86
815	7321835.95	1280975.24	4459.67
818	7321836.19	1280966.22	4459.43
821	7321836.00	1280957.16	4459.41
824	7321836.06	1280948.20	4458.93
827	7321836.33	1280939.15	4458.79
830	7321835.52	1280930.29	4458.70
833	7321835.62	1280921.31	4458.66

836	7321835.52	1280912.20	4458.80
839	7321835.33	1280903.31	4458.81
842	7321835.37	1280894.32	4458.82
845	7321835.52	1280885.32	4458.79
848	7321835.56	1280876.27	4458.80
851	7321835.51	1280867.20	4458.84
854	7321835.56	1280858.27	4459.15
857	7321835.62	1280849.30	4459.31
860	7321835.64	1280840.29	4459.45
863	7321835.68	1280831.32	4459.42
866	7321835.85	1280822.26	4459.05
869	7321835.83	1280813.34	4458.81
872	7321835.87	1280804.31	4458.84
875	7321836.07	1280795.32	4458.68
878	7321836.12	1280786.30	4458.72
881	7321836.11	1280777.34	4458.86
884	7321836.16	1280768.33	4458.52
887	7321836.27	1280759.37	4458.58
890	7321836.32	1280750.35	4458.59
893	7321836.18	1280741.32	4458.76
896	7321835.58	1280732.32	4458.73
899	7321835.59	1280723.41	4458.71
902	7321835.81	1280714.28	4458.79
905	7321835.83	1280705.48	4458.90
908	7321836.05	1280696.41	4458.90
911	7321836.00	1280687.30	4458.94
914	7321835.83	1280678.26	4459.00
917	7321836.03	1280669.44	4459.01
920	7321836.08	1280660.39	4459.02
923	7321835.91	1280651.41	4459.01
926	7321835.88	1280642.35	4459.05
929	7321835.84	1280633.52	4458.99
932	7321835.74	1280624.37	4458.95
935	7321835.76	1280615.39	4458.87
938	7321835.86	1280606.37	4458.94
941	7321835.93	1280597.37	4458.78
944	7321836.10	1280588.42	4458.73
947	7321836.00	1280579.43	4458.56
950	7321836.02	1280570.54	4458.53
953	7321836.03	1280561.41	4458.48
956	7321835.97	1280552.46	4458.44
959	7321835.75	1280543.40	4458.37
962	7321835.80	1280534.54	4458.41
965	7321835.87	1280525.57	4458.36
968	7321835.60	1280516.51	4458.31
971	7321835.47	1280507.56	4458.28
974	7321835.31	1280498.49	4458.34
977	7321835.29	1280489.43	4458.36
980	7321835.89	1280480.52	4458.32

983	7321835.99	1280471.67	4458.25
986	7321835.97	1280462.48	4458.36
989	7321835.81	1280453.56	4458.48
992	7321835.79	1280444.50	4458.45
995	7321835.77	1280435.56	4458.90
998	7321835.86	1280426.54	4459.10
1001	7321835.82	1280417.56	4459.13
1004	7321835.89	1280408.62	4459.09
1007	7321836.03	1280399.78	4459.07
1010	7321835.86	1280390.60	4459.07
1013	7321835.93	1280381.47	4459.02
1016	7321835.96	1280372.61	4458.92
1019	7321835.92	1280363.69	4458.83
1022	7321835.91	1280354.55	4458.85
1025	7321836.01	1280345.63	4458.76
1028	7321836.15	1280336.61	4458.81
1031	7321836.31	1280327.65	4458.64
1034	7321836.44	1280318.46	4458.66
1037	7321836.39	1280309.51	4458.59
1040	7321836.68	1280300.63	4458.62
1043	7321836.58	1280291.72	4458.53
1046	7321836.59	1280282.62	4458.54
1049	7321836.76	1280273.59	4458.53
1052	7321836.76	1280264.69	4458.63
1055	7321836.83	1280255.58	4458.53
1058	7321836.93	1280246.69	4458.61
1061	7321837.02	1280237.51	4458.67
1064	7321837.12	1280228.57	4458.63
1067	7321837.07	1280219.50	4458.67
1070	7321836.92	1280210.62	4458.66
1073	7321836.88	1280201.59	4458.58
1076	7321836.88	1280192.73	4458.56
1079	7321836.81	1280183.68	4458.55
1082	7321836.91	1280174.63	4458.52
1085	7321837.17	1280165.59	4458.56
1088	7321836.91	1280156.63	4458.67
1091	7321836.51	1280147.65	4458.56
1094	7321836.34	1280138.61	4458.66
1097	7321836.31	1280129.73	4458.56
1100	7321836.56	1280120.68	4458.58
1106	7321836.57	1280102.61	4458.58
1109	7321836.60	1280093.54	4458.50
1112	7321836.49	1280084.62	4458.54
1115	7321836.57	1280075.68	4457.94
1118	7321836.42	1280066.60	4457.90
1121	7321836.47	1280057.58	4457.86
1124	7321836.69	1280048.66	4457.93
1127	7321836.70	1280039.72	4457.88
1130	7321836.71	1280030.64	4457.91

1133	7321836.80	1280021.62	4457.88
1136	7321837.16	1280012.66	4457.81
1139	7321837.26	1280003.66	4457.89
1142	7321837.01	1279994.56	4457.83
1145	7321837.22	1279985.64	4457.89
1148	7321837.30	1279976.67	4457.84
1151	7321837.33	1279967.67	4457.77
1154	7321837.32	1279958.69	4457.78
1157	7321837.30	1279949.78	4457.77
1160	7321837.33	1279940.79	4457.71
1163	7321837.61	1279931.74	4457.67
1166	7321837.38	1279922.81	4457.66
1169	7321837.41	1279913.76	4457.70
1172	7321837.20	1279904.80	4457.71
1175	7321837.10	1279895.72	4457.94
1178	7321837.32	1279886.70	4458.36
1181	7321837.18	1279877.86	4458.27
1184	7321837.34	1279868.73	4458.33
1187	7321837.60	1279859.78	4458.38
1190	7321837.67	1279850.76	4458.25
1193	7321837.80	1279841.87	4458.38
1196	7321837.56	1279832.82	4458.24
1199	7321837.42	1279823.90	4458.23
1202	7321837.48	1279814.92	4458.12
1205	7321837.62	1279805.83	4458.29
1208	7321837.35	1279796.88	4458.25
1211	7321837.18	1279787.94	4458.27
1214	7321837.28	1279778.92	4458.20
1217	7321837.26	1279770.02	4458.24
1220	7321837.50	1279761.02	4458.21
1223	7321836.91	1279751.97	4458.37
1226	7321837.11	1279742.99	4458.34
1229	7321837.72	1279733.92	4458.25
1232	7321837.74	1279725.03	4457.93
1235	7321837.76	1279716.02	4457.72
1238	7321837.88	1279707.02	4457.59
1241	7321837.82	1279698.07	4457.55
1244	7321837.70	1279689.05	4457.49
1247	7321837.89	1279680.04	4457.50
1250	7321837.76	1279670.97	4457.42
1253	7321837.92	1279662.10	4457.42
1256	7321837.90	1279653.04	4457.39
1259	7321838.08	1279644.01	4457.53
1262	7321838.10	1279635.26	4457.69
1265	7321838.05	1279626.13	4458.03
1268	7321838.15	1279617.07	4458.09

PFSF "D"

Sta	North	East	Elev
101	7319821.71	1278894.01	4471.44
104	7319821.98	1278902.75	4471.53
107	7319822.11	1278911.74	4471.15
110	7319821.93	1278920.73	4470.65
113	7319821.94	1278929.69	4470.58
116	7319821.90	1278938.69	4470.55
119	7319821.85	1278947.77	4470.69
122	7319821.80	1278956.65	4470.67
125	7319821.76	1278965.73	4470.69
128	7319821.71	1278974.80	4470.65
131	7319821.73	1278983.74	4470.70
134	7319821.62	1278992.84	4470.76
137	7319821.51	1279001.78	4470.74
140	7319821.37	1279010.67	4470.73
143	7319821.35	1279019.78	4470.79
146	7319821.19	1279028.80	4470.72
149	7319821.15	1279037.70	4470.71
152	7319821.07	1279046.74	4470.66
155	7319821.02	1279055.80	4470.66
158	7319820.74	1279064.83	4470.52
161	7319820.80	1279073.73	4470.96
164	7319820.76	1279082.79	4470.90
167	7319820.47	1279091.72	4470.96
170	7319820.38	1279100.62	4471.11
173	7319820.44	1279109.61	4471.54
176	7319820.30	1279118.67	4471.63
179	7319820.60	1279127.72	4471.59
182	7319820.52	1279136.59	4471.92
185	7319820.69	1279145.62	4471.88
188	7319820.72	1279154.58	4471.82
191	7319820.61	1279163.69	4471.78
194	7319820.43	1279172.56	4471.83
197	7319820.40	1279181.60	4471.79
200	7319820.52	1279190.57	4471.83
203	7319820.31	1279199.44	4471.76
206	7319820.28	1279208.52	4471.87
209	7319820.15	1279217.50	4471.94
212	7319820.13	1279226.54	4471.93
215	7319820.20	1279235.45	4471.99
218	7319820.12	1279244.47	4472.02
221	7319819.97	1279253.46	4471.97
224	7319819.98	1279262.55	4472.05
227	7319820.00	1279271.55	4471.90
230	7319819.85	1279280.53	4471.93
233	7319819.70	1279289.39	4471.84
236	7319819.47	1279298.57	4471.97
239	7319819.45	1279307.52	4471.96

242	7319819.23	1279316.50	4471.99
245	7319819.16	1279325.57	4471.87
248	7319818.99	1279334.39	4472.10
251	7319819.05	1279343.48	4471.95
254	7319819.10	1279352.40	4471.95
257	7319819.15	1279361.39	4471.93
260	7319819.04	1279370.36	4471.96
263	7319818.80	1279379.40	4471.99
266	7319819.06	1279388.40	4471.89
269	7319818.93	1279397.47	4471.88
272	7319818.91	1279406.39	4472.00
275	7319818.72	1279415.41	4472.00
278	7319819.08	1279424.30	4471.89
281	7319818.85	1279433.39	4471.88
284	7319818.91	1279442.50	4471.99
287	7319818.85	1279451.40	4472.07
290	7319818.63	1279460.29	4472.02
293	7319818.81	1279469.36	4472.10
296	7319818.79	1279478.54	4472.04
305	7319818.42	1279505.23	4472.09
308	7319818.25	1279514.18	4472.02
311	7319818.10	1279523.17	4472.06
314	7319818.04	1279532.15	4472.21
317	7319818.11	1279541.18	4472.21
320	7319818.09	1279550.19	4472.21
323	7319818.05	1279559.28	4472.17
326	7319817.91	1279568.20	4472.12
329	7319817.89	1279577.17	4472.08
332	7319817.66	1279586.30	4472.02
335	7319817.51	1279595.22	4472.10
338	7319817.68	1279604.08	4472.10
341	7319817.68	1279613.32	4472.14
344	7319817.71	1279622.20	4472.12
347	7319817.48	1279631.18	4472.00
350	7319817.49	1279640.12	4471.94
353	7319817.35	1279649.20	4471.84
356	7319817.16	1279658.25	4471.73
359	7319817.11	1279667.18	4471.56
362	7319817.08	1279676.18	4471.68
365	7319816.87	1279685.10	4471.77
368	7319816.56	1279694.23	4471.78
371	7319816.60	1279703.13	4471.77
374	7319816.72	1279712.20	4471.74
377	7319816.69	1279721.18	4471.74
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386	7319816.72	1279748.05	4471.89
389	7319816.84	1279757.02	4471.91
392	7319816.97	1279766.05	4471.98

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398	7319816.80	1279784.29	4471.97
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413	7319816.76	1279829.16	4472.05
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443	7319816.61	1279918.97	4472.46
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449	7319816.71	1279937.08	4472.08
452	7319816.32	1279945.91	4472.00
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461	7319816.28	1279972.89	4471.90
464	7319815.92	1279981.87	4471.85
467	7319816.09	1279990.97	4471.78
470	7319816.04	1279999.89	4471.89
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476	7319815.91	1280017.94	4471.78
479	7319815.82	1280026.93	4471.87
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497	7319815.92	1280080.89	4472.23
500	7319815.87	1280089.93	4472.22
503	7319815.75	1280098.95	4472.38
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521	7319815.58	1280152.79	4472.36
524	7319815.53	1280161.77	4472.38
527	7319815.16	1280170.67	4472.33
530	7319815.42	1280179.72	4472.33
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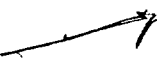
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554	7319815.33	1280251.78	4472.45
557	7319815.62	1280260.67	4472.44
560	7319815.98	1280269.65	4472.38
563	7319815.46	1280278.42	4472.45
566	7319815.13	1280287.31	4472.48
569	7319814.92	1280296.43	4472.47
572	7319814.90	1280305.39	4472.43
575	7319814.54	1280314.52	4472.49
578	7319814.51	1280323.32	4472.51
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593	7319814.07	1280368.34	4473.10
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608	7319814.00	1280413.41	4473.09
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614	7319814.13	1280431.29	4473.17
617	7319814.12	1280440.33	4473.04
620	7319814.10	1280449.26	4473.04
623	7319814.20	1280458.31	4472.90
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711	7319812.94	1280721.94	4473.46
714	7319812.84	1280731.07	4473.43
717	7319812.90	1280740.11	4473.43
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726	7319812.77	1280766.99	4473.44
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732	7319812.60	1280785.04	4473.58
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804	7319811.87	1281000.84	4473.88
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852	7319810.73	1281145.06	4473.76
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858	7319810.85	1281163.10	4473.72
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864	7319810.62	1281181.12	4473.78
867	7319810.57	1281190.02	4473.66
870	7319810.52	1281199.18	4473.84
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876	7319810.46	1281217.00	4473.91
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882	7319810.46	1281235.07	4474.17
885	7319810.42	1281244.05	4474.18
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891	7319810.19	1281261.81	4474.60
894	7319810.02	1281270.79	4474.69
897	7319810.07	1281279.91	4474.75
900	7319810.05	1281288.91	4474.86
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909	7319809.74	1281315.88	4475.02
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954	7319809.19	1281450.34	4475.27
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969	7319809.16	1281495.62	4473.44
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984	7319809.30	1281540.41	4473.98

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999	7319809.50	1281585.41	4474.06
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1056	7319808.46	1281756.10	4472.54
1059	7319808.34	1281765.06	4472.42
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1068	7319808.41	1281792.07	4472.59
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1129	7319807.04	1281975.03	4473.28
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1138	7319806.88	1282002.07	4473.53
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1153	7319806.35	1282047.00	4473.92
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1207	7319806.19	1282208.90	4474.08
1210	7319806.04	1282217.89	4474.05
1213	7319806.00	1282226.94	4474.01
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1219	7319805.17	1282244.57	4474.07
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1255	7319804.79	1282352.61	4474.46
1258	7319804.44	1282361.42	4474.45
1261	7319804.43	1282370.57	4474.44
1264	7319804.51	1282379.58	4474.52
1268	7319804.32	1282391.49	4474.49



Appendix D

Industrial Line

GSI-UT-34