INNOVATIVE METHODOLOGY FOR DETECTION OF FRACTURE-CONTROLLED SWEET SPOTS IN THE NORTHERN APPALACHIAN BASIN

SEMI-ANNUAL TECHNICAL PROGRESS REPORT

May 31, 2000-November 30, 2000

Dr. Robert Jacobi, Principal Author

February 28, 2001

DE-AC26-00NT40698

CONTRACTOR:
Research Foundation of State University of New York
P. O. Box 9
Albany, New York 12201
on behalf of:
University at Buffalo
The State University of New York
Suite 211, The UB Commons
520 Lee Entrance
Amherst, New York 14228

Dr. Robert Jacobi, Project Director
Dr. John Fountain, Co-Principal Investigator

Mr. Stuart Loewenstein, President, Subcontractor
Quest Energy, Inc.
63 Kenmore Ave.
Amherst, NY 14226

Dr. Edward deRidder, Subcontractor
Pearson, deRidder and Johnson, Inc.
12640 West Cedar Drive, Suite 100
Lakewood, CO 80228

DISCLAIMER

ABSTRACT

In the structure task, we completed a N-S transect east of Seneca Lake that indicated a N-striking fault near the southeastern shore of Seneca Lake, and also indicated NE and ENE-trending FIDs and faults north of Valois. The orientation and existence of the NE-striking FIDs and faults are thought to be controlled by basement faults, rather than thrust ramps above the Salina salt controlled only by a far-field Alleghanian stress field. Structure contour maps based on well log analyses have been constructed but not interpreted. Soil gas data displayed a number of ethane-charged soil gas "spikes" on a N-S transect from Ovid south to near Valois. The soil gas team found a larger number of spikes in the northern half of the survey, suggesting more open fractures (and faults) in the northern half of the survey. Seismic data has been purchased and reprocessed. Several grabens observed in the Trenton reflector are consistent with surface structure, soil gas, and aeromagnetic anomalies. The aeromagnetic survey is completed and the data is processed. Prominent magnetic anomalies suggest that faults in the Precambrian basement are located beneath regions where grabens in the Trenton are located.

TABLE OF CONTENTS

LIST OF GRAPHICAL MATERIALS

INTRODUCTION

3-D seismic analysis is unquestionably one of the premier methods for obtaining information concerning deep structure, including predictions of enhanced fracture porosity in reservoirs. However, the high cost of 3-D seismic makes it economically unfeasible in many basins with *perceived* marginal gas reserves. However, without some advanced technology like 3-D seismic, the deep structure in many basins (like the Appalachian Basin of New York State) cannot be critically evaluated because available seismic reflection profiles and deep well logs provide insufficient control.

This research project demonstrates a cost-effective alternative to 3-D seismic. The project demonstration is a combination of low-cost, innovative technologies that, when integrated, yield near-3-D quality on a regional scale for identification of fractured reservoir prospects. The study area covers about 760 sq. miles, an area that would cost about $22 million for 3-D seismic coverage alone; our proposal is a fraction of that cost.

The basic premise is that highly productive zones in tight reservoirs are associated with discrete zones of intense fracturing, termed "fracture intensification domains" (FIDs, Jacobi and Fountain, 1996, Jacobi and Xu, 1998). These zones can be identified by integration of surface geology, lineaments, well log data, seismic data and soil gas anomalies. FIDs in the northern Appalachian Basin have been shown to be indicative of fault zones at depth (Jacobi and Fountain, 1996, Jacobi and Xu, 1998). Thus, by identifying and tracing FIDs, we can predict the location of zones of increased fractures in the subsurface.

Because large gas discoveries (estimated 3 bcf/well) have been made recently along fault zones in the New York State portion of the Appalachian Basin, it is important to be able to recognize FIDs. Because of vegetation and surficial deposits, the FIDs cannot be traced continuously in outcrop. In order to trace the FIDs, we have developed an integrated program that involves:

1. surface structure,
2. soil gas analyses,
3. remotely-sensed lineaments,
4. existing (2-D) seismics, and
5. aeromagnetics.

Structural studies on outcrops allow identification of FIDs; then lineaments from aeromagnetic and remotely-sensed data are used to trace the FIDs between outcrops. Soil gas anomalies can confirm that the lineaments are associated with fracturing. Existing well log and seismic data are used to confirm the interpretations. Many of the fault systems in the northern Appalachian basin can be traced with aeromagnetics because the surface faults are reactivated deep faults that are located in the Precambrian basement.

The study area is located in the northern Appalachian Basin in the Finger Lakes region of central New York State, primarily between Seneca and Cayuga lakes (Figure 1). The target is the Ordovician Trenton/Black River groups, although fractured tight sands above the Trenton also occur in this area. The most prolific gas play in New York State today is the Glodes Corners Road Field, an Ordovician Trenton/Black River play that is located west of Keuka Lake. This field was developed by Columbia Natural Resources (CNR), who estimates that the yield/well is

1.3 bcf. The east-northeast trend of the Glodes Corners Road Field suggests that the Glodes Corners Road Field is located along faults that are reactivated structures related to the older Cambrian Rome Trough, which is assumed to trend approximately east-northeast in regions south of the play (Jacobi et al., 1999). Well logs from the Glodes Corners Road Field indicate a narrow fault zone that increases in stratigraphic offset upsection, increasing to 6 m in the Trenton.

On seismic reflection profiles, The Trenton plays occur along fault zones that appear as narrow (~ 2000') grabens with small regional offset. These grabens are thought to be a result of a combination of

1. solution collapse,
2. reverse flower structures (along strike-slip faults), and
3. pull down from the lower velocities associated with dissolution and fault brecciation.

In order to procure and analyze the data necessary for the demonstration project, the integrated research project was divided into seven tasks. These tasks include:

1. Traditional and innovative analyses of fractures (Jacobi),
2. Stratigraphy/well log analyses (Jacobi and Loewenstein),
3. Lineaments (Jacobi),
4. Soil Gas Analyses (Fountain),
5. Seismic Data Acquisition and Interpretation (Loewenstein and Jacobi),
6. Advanced Seismic Analyses (Hart), and
7. Aeromagnetic Survey and Analyses (deRidder).

During the first reporting period, we made significant progress in all tasks, as outlined in the "Results and Discussion" section.

EXPERIMENTAL

1) FRACTURE ANALYSES SUBTASK

Jacobi and assistants used two different methods to collect outcrop structural data during the first field season. They collected most of the structural data along scanlines and a relatively small amount by an abbreviated methodology described below. In the scanline methodology, which is detailed in Jacobi and Zhao (1996a,b) and Jacobi and Fountain (1996), Jacobi and assistants laid out the scanline in a direction to “capture” as many fractures as possible. They then constructed a sketch map in their field notebooks that showed the location of the scanline and the nail marking the end of the scanline in relation to the pertinent geographical features. They indicated the general site location in the field by tying an annotated ribbon to an overhead tree. The sketch map of the site also includes sufficient geographical markers to be able to identify the site location on the topographic base. They annotated the site of the scanline on the enlarged topographic map base. Jacobi and students then measured the orientation of the scanline and collected data on nine attributes of every fracture that crossed the scanline, including:

1. Distance along the scanline where the fracture intersects,
2. Strike and dip of the fracture,
3. Exposed length of the fracture,
4. Exposed height of the fracture,
5. Abutting relationships (with other fractures),
6. Top and basal abutting relationships (primarily abutting some sedimentary unit),
7. Character of fracture trace (e.g., straight, curvy),
8. Decorations on the fracture face, and
9. Offset along the fracture.

Jacobi and assistants entered all the site data and the fractures data in Excel data spreadsheets (Appendix 1 for sites, Appendix 2 for fracture data). For each site, the next step is to separate the fractures into different fracture sets on the basis of the orientation, character and abutting relationships of the individual fractures. After separating the fracture sets, they plan to calculate the fracture frequency for each set from the fracture intercepts on the scanline. As most fractures are very steeply dipping (80^{o}+), modified rose diagrams can be used to portray the results. In these rose diagrams, fracture frequency is displayed in the top half of the diagram. We generally show three orders of magnitude on the diagram as successively larger concentric circles, with the inner circle representing 0.01 fractures/m, the middle ring representing 0.1 fracture/m, and the outer ring representing 1 fracture/m. Thus, long petals indicate a relatively high number of fractures, as did the old rose diagrams. The advantage of this modified diagram is that it does not promulgate a potential sampling bias where a scanline is parallel to a fracture set. In the traditional rose diagrams, the raw number of fractures would be underrepresented for the set that paralleled the scanline. We use the lower half of the rose diagram to indicate other features of the fracture sets, commonly either abutting relationships, or length (which is a proxy for abutting relationships). The longest petals in the lower half indicate the master set; the next longest petals indicate the set that abuts the master set, but that is itself master to another fracture set, which is portrayed by even shorter petals.

Advanced analysis techniques, including fractal analysis and geostatistics (see Jacobi et al., 2001, for a review) will be carried out where these techniques will add to the understanding of the fracture development and significance of fractures for identifying deep structure. However, from the first field season, the fracture data look to be very robust, so these techniques may not be necessary. The extent of outcrop was far greater than we had expected, and so the need for these special techniques that we developed especially for areas with limited outcrop, may not be necessary.

Jacobi and assistants also used an abbreviated method to collect structure data at a few sites. At these sites, Jacobi and assistants identified the fracture sets in the outcrop, and measured the spacing among a minimum of three fractures for each systematic fracture set. They also collected abutting and length/height information. These data were also portrayed on the same modified rose diagrams.

STRATIGRAPHY/WELL LOG ANALYSES SUBTASK

Jacobi and Loewenstein will provide the project with 1) structure contours on bedrock marker beds that outcrop in the study area, and 2) subsurface structure contour maps based on distinctive units identified in well logs. Such maps shall aid in determining fault locations and offset. The construction of these maps is funded by an ongoing NYSERDA project. The contouring will be accomplished by a subroutine package in Geographix. The stratigraphic tops picked from well logs will follow the industry practice for recognizing each unit top; van Tyne and Foster's (1979) study illustrates such picks.

Jacobi and assistants will provide geological cross-sections across prominent surface structure where outcrops of marker units allow such constructions. The elevations of the marker units will be determined from topographic maps, and/or from altimeters, and/or from surveying from a known elevation.

LINEAMENTS SUBTASK

Jacobi and Loewenstein will combine lineaments recognized in Landsat images and in 7.5' topographic quadrangle maps. They will integrate Earthsat's (1997) pick of Landsat lineaments in the demonstration area with a reanalyzed Landsat data set via ENVI. They will also analyze 7.5' topographic maps for lineaments following Jacobi and Fountain's (1996) methodology.

Pearson, deRidder and Johnson, Inc. will contribute an analysis of digital elevation data available from USGS for the study area. This analysis will include edited topography, a high-pass of the topography, and a horizontal gradient of the high-pass of the topography. We will compare lineaments observed in these gradient maps to those lineaments observed on the Landsat and 7.5' quadrangle maps.

The resulting series of maps of the demonstration area will include 1) Earthsat's Landsat lineament map, 2) our interpretation of lineaments from the Landsat data, 3) lineaments from 7.5' topographic quadrangle maps, 4) lineaments from gradient maps of Pearson, deRidder and Johnson, Inc. and 5) a map integrating all 4 data sets. We will compare the lineaments with the preliminary FID map. Where coincidence occurs between lineaments and FIDs observed in outcrop, we will extend the observed FID along the lineament. After the first iteration, we will compare the lineament/FID map with the soil gas analyses discussed below.

SOIL GAS ANALYSES

Soil gas surveys will be conducted along primarily north-south profiles, following existing seismic lines, and the general techniques and rationale of Jacobi and Fountain (1996) and Fountain and Jacobi (2000). In this research plan, traverses are conducted along the edge of roads and samples are collected at a distance of 3 to 10 meters from the road, depending on road construction, to avoid the roadbed fill material.

Samples are obtained by driving a stainless steel probe to a depth of 60 cm using a hand-held sledge hammer. Twenty cubic centimeters of air, slightly more than one probe volume, is withdrawn from the probe and discarded with an air tight syringe to purge atmospheric air from the probe. An additional 60 cc of air is then withdrawn with the syringe and injected directly into a gas chromatograph (GC) equipped with a flame ionization detector for analysis (a Century OVA 128 GC). Gas enters the probe through an array of holes approximately 5 cm above the tip; the holes are covered by a loose sliding collar that minimizes plugging during insertion.

Samples are collected at 10 m intervals. This distance is somewhat arbitrary; however, the results of over 10,000 analyses established that most anomalies are more than 10 m wide (Fountain and Jacobi, 2000), confirming that a 10 m spacing will detect most anomalies.

Linear response of the gas chromatograph is determined by analysis of standard gasses at the start of each day, after four hours of analyses, and at the end of each day. Samples are analyzed in duplicate every 10 samples.

All samples with 10 ppm or greater total organic vapor content are returned to the laboratory for analysis on a laboratory gas chromatograph to determine ethane/methane ratios. The GC is calibrated daily for response and elution times using standard gas mixtures.

SEISMIC DATA ACQUISITION, REPROCESSING, AND INTERPRETATION

Loewenstein will purchase available seismic lines and subcontract with seismic processors to reprocess the records where necessary. He will evaluate the reprocessing effort and be especially cognizant of statics problems. If such problems appear to exist, he will request that the processor reprocess any section that may exhibit such problems. Loewenstein and Jacobi will interpret the seismic lines for prominent stratigraphic reflectors and faults. Where recognizable, they will pick the reflectors that represent the Tully, Onondaga, Trenton, Black River and Precambrian/Cambrian contacts. They will use accepted industry practices for the reflector recognition (e.g., Jacobi and Fountain, 1996; Jacobi et al., 2000). The interpretation of the 2-D seismic will be displayed along the seismic line in depth (time) sections that show potential faults. These depth displays will be integrated with the surficial FID/soil gas/lineament maps in two ways: 1) the location of surficial FIDs/soil gas anomalies and lineaments will be shown above the depth section for ease in spatial correlation, and 2) the locations of deep structure (faults) as interpreted from the seismic line, will be entered in Geographix so that their locations can be compared in map view with the locations of the surficial FIDs/soil gas anomalies and lineaments.

ADVANCED SEISMIC ANALYSES

The seismic expression of faults is a function of several variables, including the fault offset and the frequency content of the seismic data. On migrated seismic lines, faults are most easily recognized by reflection offsets, changes in dip, changes in amplitude, etc. Subtle faults are most easily detected in 3-D seismic volumes by deriving and analyzing “horizon” attributes, such as dip, edge detection and azimuth, or “coherency” attributes (e.g., Hart et al., 1996). Additionally, complex trace attributes (e.g., instantaneous frequency, reflection strength) can be useful for fault detection. In the manner described above, Hart will analyze critical sections of the seismic profiles procured in the preceding subtask.

AEROMAGNETIC SURVEY AND ANALYSES

Aeromagnetic prospecting is a powerful methodology that can define the basement fault block patterns with detail on a basinal scale. Pearson, deRidder and Johnson, Inc. will acquire, process, and interpret an aeromagnetic survey of the study area. Using both widely available techniques and proprietary methods, Pearson, deRidder and Johnson, Inc. and Jacobi will delineate basement-related structural elements that serve as bounding structures on intra-basement lithology blocks, supra-basement structural relief, and zones of strike-slip faulting that may be associated with fracture swarm development. In addition, the proprietary profile data interpretation tool, STARMAG, licensed by Texaco exclusively to Pearson, deRidder and Johnson, Inc., will be amended, using local constraints, to allow for improved models of magnetic lineaments related to fracture swarms.

Specifications shall be as follows:

Survey area:	710 square miles
Line spacing:	1/3- mile N-S x 1-mile E-W
Line mileage:	3,600 line miles
Ground clearance:	500' above ground level, or as to be decided
Acquisition subcontractor:	Airmag Surveys, Inc., Philadelphia, PA

The data will be processed using an equivalent source method, which compensates for elevation differences at line intersections, taking into account anomalous vertical magnetic gradients. Both profile and grid based interpretation methodologies will be employed to derive the maximum information content of the data set. The resulting maps can be used to infer lineaments related to faults in the basement, and can, in some cases, be used to determine approximate amount of offset on basement. Jacobi and Loewenstein will integrate the aeromagnetic lineaments with the FID/lineament/soil gas maps and seismic attribute studies. Spatial coincidence among aeromagnetic lineaments and the FID/lineament/soil gas/seismic line fractures (seismic attribute) maps will be taken as defining probable fault systems that affected the entire sedimentary section, including the Ordovician targets.

RESULTS AND DISCUSSION

FRACTURE ANALYSES SUBTASK

Jacobi and assistants measured the nine characteristics of over 2300 fractures at 149 sites this past field season. The site log is displayed in Appendix 1. All the structure data is entered into the Excel data spreadsheet (Appendix 2). Jacobi and assistants are presently separating the scanline data into fracture sets. The next step will be to calculate the fracture spacing for each set and construct modified rose diagrams that display the fracture frequency and the abutting relationships.

Jacobi and associates measured fractures in a N-S transect along the eastern shore of Seneca Lake (Figure 2). Soil gas analyses and a N-S seismic line in the same transect will allow full integration of the various methodologies. Jacobi and associates found that the eastern shore of Seneca lake can be divided into two regions. The area south of Valois exhibits primarily NNW-striking master fractures and FIDs, as exemplified by the fractures displayed in a long roadcut east of Watkins Glen (see rose diagram in Figure 3). In contrast, in the region north of Valois, the master fractures and FIDs commonly strike ENE, as displayed in a field picture (Figure 4) and in the rose diagrams (Figures 5, 6). This contrast suggests that along the Seneca eastern shore, the ENE-trending structures, such as the Iapetan reactivated faults, occur in the region from Valois northward. In the region south of Valois, N- to NNW-striking CSD-related faulting is probable.

The creek south of Highland Road (Figure 6) displays several additional characteristics of the northern part of the transect. In addition to the ENE-striking master fractures, NNW-striking cross-strike master fractures are observed, as well as a N-striking set of fractures. The N-striking set is not ubiquitous; rather it is found only in certain zones. At several of the sites, the N-striking fractures exhibited right lateral strike slip motion, displacing the ENE-striking fractures a few cm. Similarly, NW-striking fractures at some sites also exhibit fault motion. The most prominent is at site 62, where NW-striking faults are located where hydrocarbon and water has seeped out of a road cut for the past 20+ years. It is thus probable that in this area, N-striking faults, as well as ENE-striking and NW-striking faults occur at depth.

In the far northern part of the study area, near Ovid, Jacobi and assistants found NE-striking master fractures and thrust faults. These trends were surprising, since Engelder and Geiser (1980) had shown generally ENE-striking “strike-parallel” fractures. However, some of the prominent magnetic gradients in the study area strike as northerly as N45E (see aeromagnetic task). Thus, this NE-striking FID and fracture set may not be the predicted ENE-striking Alleghanian strike-parallel fractures that are related to a far-field Alleghanian stress field. Rather, the orientation and location of these NE-striking faults, FIDs, and master fractures may be controlled, in part, by reactivated fault systems in the Precambrian basement that give rise to the aeromagnetic anomalies. In such a case, a local stress field, “set up” by the reactivated faults, controls the location and trend of the FIDs. Elsewhere, faults in the Precambrian basement were reactivated in the Trenton/Black River, and resulted in the porosity zones that are presently targets in NYS. If such is the case here, the NE-striking FIDs indicate the presence of Trenton structures at depth.

STRATIGRAPHY/WELL LOG ANALYSES SUBTASK

The subcontractor, Quest Energy, has begun construction of a database for deep well logs in the Finger Lakes region. All of the wells with at least location information contained in the database are shown in Appendix 3. Also shown in the database are several of the formation picks. Data entry and data quality control are ongoing. We anticipate completion of all log analysis and quality control in June, 2001.

The subcontractor, Quest Energy, constructed several preliminary structure contour and isopach maps. These proprietary maps include structure contour maps of the Onondaga, Lockport and Trenton formations and isopach maps of the Onondaga to Lockport interval, the Lockport to the Trenton interval, and the Onondaga to Trenton interval (Proprietary Figures A-F in Appendix 4).

The preliminary Onondaga structure contour maps shows a structural high over the E-W field in Tyrone Township between Keuka and Seneca lakes (Figure A in Appendix 4), and a structural low to the north in Barrington Township. A structural low occurs along the CNR discovery field (Glodes Corners) in Pulteney and Prattsburg townships. This structural low is consistent with the graben model for the Trenton. In this case, the low Onondaga suggests that dissolution and faulting is not restricted to the Trenton/Black River, but also occurs higher in the section. A structural high occurs at the southern end of Seneca Lake. The Lockport structure contour map (Figure B in Appendix 4) is fairly structurally featureless, except that one well in the Glodes Corners Field displays a structurally low Lockport. The Trenton structure contour map (Figure C in Appendix 4) also displays a low along part of the Glodes Corners Filed, consistent with the seismic and well log data that suggest that the field is located in a dissolution/dolomitized, fault brecciated graben.

Jacobi and Smith identified and measured the stratigraphy and elevation of stratigraphic markers in the Upper Devonian outcrops in a N-S transect along the eastern shore region of Seneca Lake. Although they attempted a detailed stratigraphy in the turbidities, they found that the individual sandstones, and even the sandstone packets, appear to lens and change character locally from south to north. The consequent lack of recognition of markers over relatively long distances precluded detailed structural control from detailed stratigraphic correlations in the southern part of the transect. Jacobi and Smith did measure the dip of turbidite beds exposed in extensive outcrops, especially along the lakeshore, where outcrops of 50 m or more are not uncommon.

In the northern part of the transect the Tully Formation crops out, and forms a distinct marker that changes character relatively little compared to the turbidites. In the northernmost part of the study area, the Tully outcrops at distinctly higher elevations in the south than in the north. Because the entire Devonian section exhibits a regionally southward dip, the higher elevations in the south are anomalous. In order to determine whether the anomalous elevations are the result of faulting or folding, and to determine the character and trend of the anomalous dips, Jacobi and Smith ran a survey line (scanline) along the Seneca lakeshore in the northern-most part of the transect (Figure 7). They located the Tully outcrops with respect to the distance along the scanline and then surveyed the elevation of the Tully with respect to the lake level (Figure 8). They also measured the dip of the Tully beds in outcrop with both 48” long levels and with elevation differences between the two ends of the outcrops. From Figure 8 it appears that the dip of the Tully measured in outcrops is sufficiently high to account for the entire elevation difference observed along the scanline and in regions to the south. Thus, the dip could be an indication of a hammerhead (rollover) fold associated with a south-dipping (north-direct) ramping Alleghanian thrust. Alternatively, the northward dip is also consistent with a drape fold hypothesis wherein the southern boundary fault of a solution graben in the Trenton is located in the area. Only in the southernmost part of the cross-section (between sites RDJ-52 and RDJ-59) is the dip and elevation such that a fault model is possible. Note that even here, however, a fold is possible.

Detailed inspection of the outcrops in the area of the Tully anomalous dip also revealed NE-striking FIDs and northwestward-directed thrusts (Figure 8) with minor offset (each on the order of a few cm or less). These thrusts are consistent with either hypothesis, although the rollover fold/ramping thrust is possibly more compatible with the minor observed thrusts. In either case, the local thrusts do indicate that the fold/northward dip is a fault-modified structure.

LINEAMENTS SUBTASK

Jacobi integrated Earthsat's (1997) Landsat lineaments with published magnetics and gravity (Jacobi, in press).

SOIL GAS ANALYSES

Fountain and assistants collected soil gas samples every ~9.3 m along a 11.3 km (7 mi.) N-S traverse east of Seneca Lake this past field season (Figures 9, 10; Appendix 5). They had planned to extend the traverse south to the Watkins Glen area, but soggy ground this summer prevented completion of the traverse. They found a large number of ethane-charged soil gas anomalies in the northern half of the traverse between Ovid and just south of Lodi (Figure 10). South of Skinner Rd. the number of spikes decreases significantly.

SEISMIC DATA ACQUISITION, REPROCESSING, AND INTERPRETATION

Seismic Data Acquisition and Processing

The subcontractor, Quest, has licensed lines EGI-004-00, Geodata Line 1C, Geodata Line 6, and Geodata Line 7 (Figure 11). The Geodata lines are 1980's vintage data. Data quality is good and the field acquisition parameters were as follows:

Source:

Type:	Vibroseis
Interval:	220 ft.
Pattern:	4 over 110'
Sweep:	21-110 Hz.
No. of Sweeps:	8

Instruments:

Recorder:	MDS-10
Gain:	48 Db
Filter:	18-128 Gate/Notch In
Record Length:	3 sec.
Sample Rate:	2 ms.

Receiver:

Geophone Type:	Mark L10B (8Hz)
Group Interval:	110 ft.
Pattern:	24 over 220 ft.
Coverage:	2400%
Spread: Trace:	1------------ 48 X 49 ------------96
	5720' 550' 550' 5720'

The Geodata lines were reprocessed by Elite Seismic Processing, Inc. in October, 2000. Preliminary interpretation of the reprocessed data has been accomplished.

Line EGI-004-00 was shot in January 2001 as part of a group shoot. The data quality is good and the field acquisition parameters were as follows:

Source:

Type:	Vibroseis
Interval:	220 ft.
Pattern:	2 over 110'
Sweep:	15-120 Hz.
No. of Sweeps:	8

Instruments:

Recorder:	OYO DAS-1
Filter:	Out/Notch Out
Record Length:	3 sec.
Sample Rate:	2 ms.

Receiver:

Geophone Type:	Mark L10A (10Hz)
Group Interval:	110 ft.
Pattern:	12 over 110 ft.
Coverage:	3000%
Spread: Trace:	1------------ 60 X 61 ------------120
	6655'' 165' 165' 6655'

Line EGI-004-00 was processed by Sterling Seismic Services, Ltd., in January, 2001. Preliminary interpretation of this line has begun.

ADVANCED SEISMIC ANALYSES

After the award of the grant, Dr. Hart moved to McGill University. The subcontract had to be renegotiated between McGill and SUNY at Buffalo. The contract is expected to be signed in the next few weeks. As a result, however, Hart has not begun advanced processing of the data.

AEROMAGNETIC SURVEY AND ANALYSES

Pearson, deRidder and Johnson, Inc. acquired and processed an aeromagnetic survey of the study area. The flight lines used to acquire the aeromagnetic data are shown in Figure 12. Pearson, deRidder and Johnson, Inc. have processed the data, and have produced the following maps of the study area:

1. Total Magnetic Intensity with the IGRF removed (Figure 13)
2. Total Magnetic Intensity with the IGRF removed, Reduced to Pole (Figure G in Proprietary Appendix 4)

The second map is not displayed in the main report because of its proprietary nature. Suffice it to say that on the reduced-to-pole map the locations of prominent, easterly striking magnetics anomalies are significantly shifted.

The magnetic gradients displayed in these two maps are prominent, and are in agreement in general with older data sets. The distinctive N-S trend in the western part of the survey area indicates the tend of a major fault in the Precambrian basement. Lesser N-striking gradients border both sides of Seneca Lake, supporting the contention from our structure data that an approximately N-striking fault follows the southeastern shore of Seneca Lake. Similarly, the NE-striking gradients support the hypothesis proposed in the structure section that the NE-striking FIDs indicate basement structure. One of the prominent NE to ENE-striking gradients occurs where the structure data indicate a relatively large number of ENE to NE-striking FIDs.

Pearson, deRidder and Johnson, Inc. also acquired and processed an aeromagnetic survey of western New York State that was flown and reduced by the Geological Survey of Canada. Pearson, deRidder and Johnson, Inc. have processed the data, and have produced the following maps of western New York State:

1. Total Magnetic Intensity with the IGRF removed Reduced to Pole (Figure H in Proprietary Appendix 4)
2. Total Magnetic Intensity with the IGRF removed, Horizontal Gradient (Figure I in Proprietary Appendix 4)

These maps are not displayed herein because of their proprietary nature.

CONCLUSIONS

During the first six-month reporting period, we collected data necessary to keep the project on schedule. In structure, we completed a N-S transect east of Seneca Lake that indicated a N-striking fault near the southeastern shore of Seneca Lake, and indicated NE and ENE-trending FIDs and faults north of Valois. The NE-striking FIDs and faults are thought to be controlled by basement faults. Structure contour maps based on well log analyses have been constructed but not interpreted. Soil gas data displayed a number of ethane-charged soil gas “spikes” on a N-S transect from Ovid south to near Valois. The soil gas team found a larger number of spikes in the northern half of the survey, suggesting more open fractures (and faults) in the northern half of the survey. Seismic data have been purchased and reprocessed. Several grabens observed in the Trenton reflector are consistent with surface structure, soil gas, and aeromagnetic anomalies. The aeromagnetic survey is completed and the data are processed. Prominent magnetic anomalies suggest that faults in the Precambrian basement are located beneath regions where grabens in the Trenton are located.

REFERENCES

EARTHSAT (Earth Satellite Corportation), 1997, Remote sensing and fracture analysis for petroleum exploration of Ordovician to Devonian fractures reservoirs in New York State: *New York State Energy Research and Development Authority (Albany, New York), 35p.*

Engelder, T. and Geiser, P.A., 1980, On the use of regional Joint sets as trajectories of paleo-stress fields during the development of the Appalachian Plateau, New York: *Journal of Geophysical Research, 85, 6319-6341*.

Fountain, J.C., and Jacobi, R.D., 2000, Detection of buried faults and fractures using soil gas analyses: *Environmental and Engineering Geosciences, 6, 201-208.*

Hart, B., Copely, D., and Lowenstein, S., 1996, Forging partnerships, chasing the Rose Run Play with 3-D seismic in the Empire State: *Oil and Gas Journal , 94, 88-91.*

Jacobi, R.D., 2001, Basement faults and seismicity in the Appalachian Basin of New York State: is there a spatial relationship?: *Tectonophysics*, *in press.*

Jacobi, R.D., Eastler, T.E., and Xu, J., 2001, Methodology for remote characterization of fracture systems in enemy bedrock underground facilities: *in,* Harmon, R., and Ehlen, J., (eds.), The Environmental Legacy of Military Operations: Geological Society of America Engineering Geology Division, Special Paper, *in press.*

Jacobi, R.D. and Fountain, J.C., 1996, Determination of the seismic potential of the Clarendon-Linden fault system in Allegany County, Final Report: *NYSERDA, Albany,* New York, 2106p.

Jacobi, R.D., Loewenstein, S., Mitchell, C., and Forsyth, D., 1999, Magnetics, gravity, Landsat lineaments and extensional faults in New York State: Geological Society of America, Abstracts with Program, 31, p. A-25.

Jacobi, R.D., Smith, G. J., Cruz, K., and Billman, D., 2000, Geologic investigation of the gas potential in the Otsego County region, eastern New York State, Final Phase One Report, Millenium Natural Resources Development, *New York State Energy Resouce and Development Authority, Albany.*

Jacobi, R.D. and Xu, J., 1998, Fracture intensification domains as fault indicators: Geological Society of America, Abstracts with Programs, 30, p. A63.

Jacobi, R.D. and Zhao, M., 1996 a, Rapid and Rigorous outcrop fracture trace mapping and analysis: *Part IV of a Short Course on Contaminant Hydrogeology of Fractured Bedrock, Northeastern Section of the Geological Society of America, IV1-IV19.*

Jacobi, R.D. and Zhao, M., 1996 b, Digital imaging and analyses of fractures: evidence for Appalachian style tectonics in the Appalachian Plateau of western New York: *Geologic Society of America, Abstracts with Programs, 28, p. 67.*

Van Tyne, A.M., and Foster, B.T., 1979, Inventory and analysis of the oil and gas resources of Allegheny and Cattaraugus counties, New York: *Alfred Oil and Gas Office, Geological Survey, New York State Museum.*

FIGURE CAPTIONS

FIGURE 1. Location map of study area.
FIGURE 2. Location map for the year 2000 field campaign.
FIGURE 3. Modified rose diagram for fractures that crop out in a road cut at the south end of Seneca Lake at Watkins Glen. The upper half of the diagram displays fracture frequency for the various fracture sets, and the lower half displays abutting relationships.
FIGURE 4. A ENE trending FID near Rhodes Rd. The fracture spacing is generally about 5 cm. The white bar is a 24" (~0.61 m) measuring stick, of which about 2/3's is visible in the picture.
FIGURE 5. Location map for the rose diagrams along Highland Rd. creek, displayed in Figure 6. Note Ovid in the upper right corner.
FIGURE 6. Modified rose diagrams of fractures along Highland Rd. creek. The upper half of the diagram displays fracture frequency for the various fracture sets, and the lower half displays abutting relationships. See Figure 5 for location.
FIGURE 7. Location map for the geologic cross-section in Figure 8. Note Ovid in the upper right corner.
FIGURE 8. Geologic cross section of the Tully Formation. Figures 8C and 8D show two alternatives that satisfy the data. Figure 8C is a fold interpretation and 8D is a fault interpretation. See Figure 7 for location and text for discussion.
FIGURE 9. Location map for the soil gas analyses in Figure 10. Note Ovid in the upper part of Figure.
FIGURE 10. Soil gas analyses along the N-S traverse. Amount of soil gas shown as spikes along the traverse. Spike length is proportional to the soil gas concentration measured at that location. High concentrations show up as bars orthogonal to the traverse.
FIGURE 11. Location map of seismic lines discussed in text.
FIGURE 12. Flight lines for the aeromagnetic survey flown across the study area.
FIGURE 13. The total magnetic intensity (with the IGRF removed) map of the study area.

APPENDICES

APPENDIX 1. Structure Site Log.
APPENDIX 2. Fracture Data
APPENDIX 3. Well Log Data
PROPRIETARY APPENDIX 4. Structure Contour, Isopach, and Aeromagnetic Maps
- FIGURE A. Onondaga Structure Contour Map
- FIGURE B. Lockport Structure Contour Map
- FIGURE C. Trenton Structure Contour Map
- FIGURE D. Onondaga to Lockport Isopach Map
- FIGURE E. Lockport to Trenton Isopach Map
- FIGURE F. Onondaga to Trenton Isopach Map
- FIGURE G. Total Magnetic Intensity, reduced to pole, Map for the Study Area
- FIGURE H. Total Magnetic Intensity, reduced to pole, Map for western NYS
- FIGURE I. Horizontal Gradient of the reduced to pole Map for western NYS

APPENDIX 5. Soil Gas Data

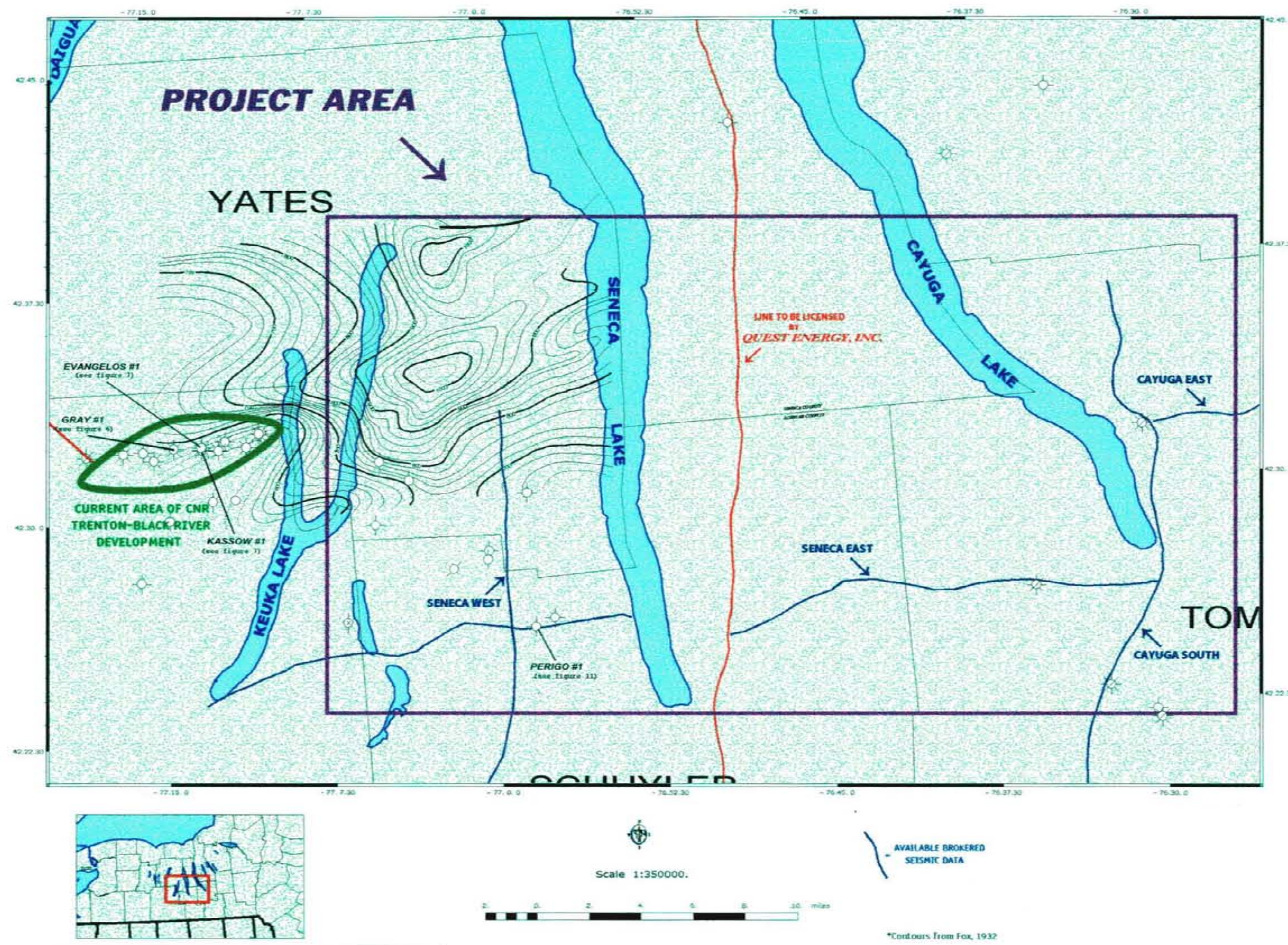

PROJECT AREA
YATES
SENECA LAKE
CAYUGA LAKE
KEUKA LAKE
LINE TO BE LICENSED BY QUEST ENERGY, INC.
EVANGELOS #1 (see figure 7)
GRAY #1 (see figure 6)
KASSOW #1 (see figure 7)
CURRENT AREA OF CNR TRENTON-BLACK RIVER DEVELOPMENT
SENECA WEST
SENECA EAST
CAYUGA EAST
CAYUGA SOUTH
PERIGO #1 (see figure 11)
TOM
Scale 1:350000.
AVAILABLE BROKERED SEISMIC DATA
*Contours from Fox, 1932

FIGURE 1

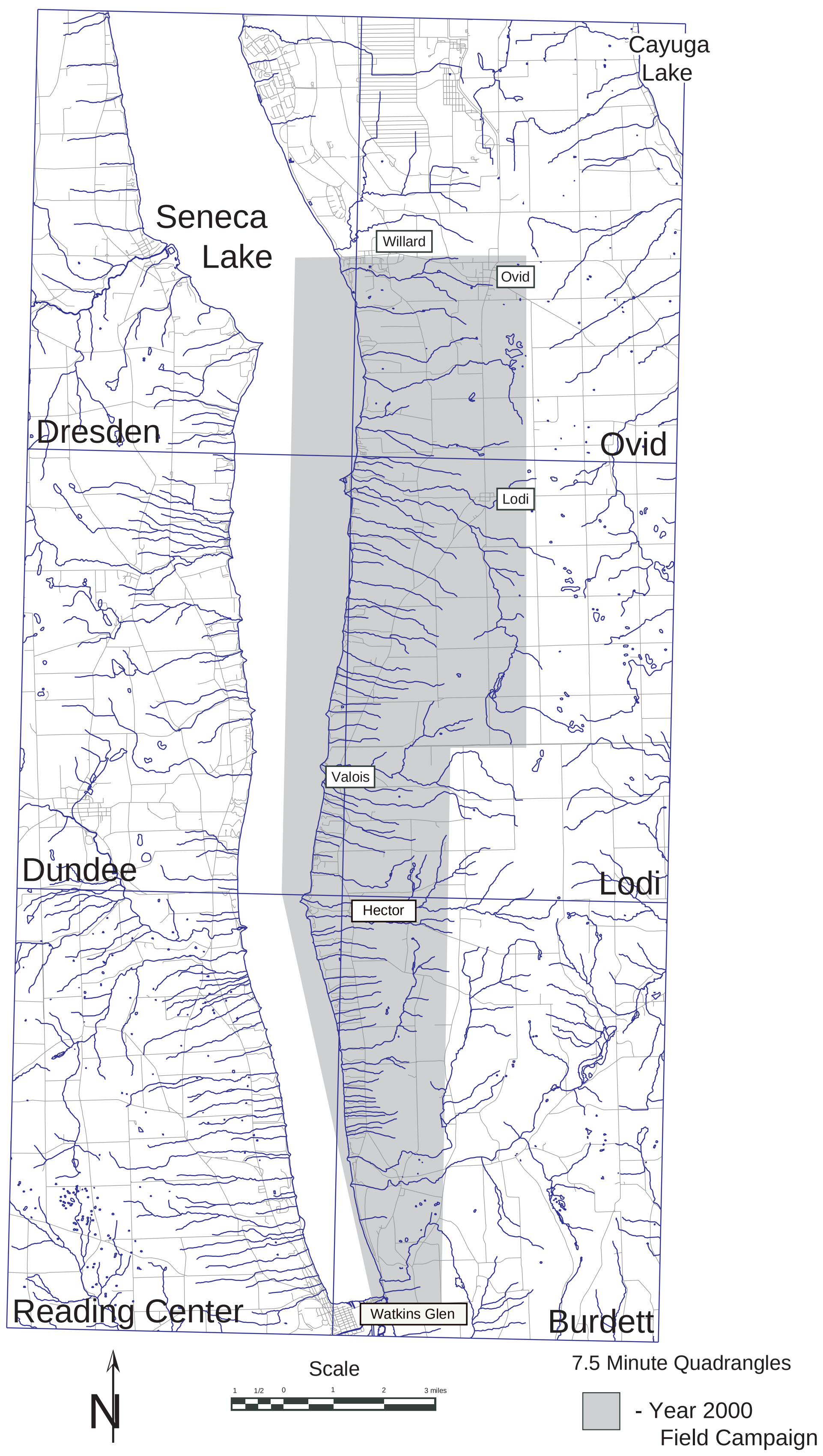
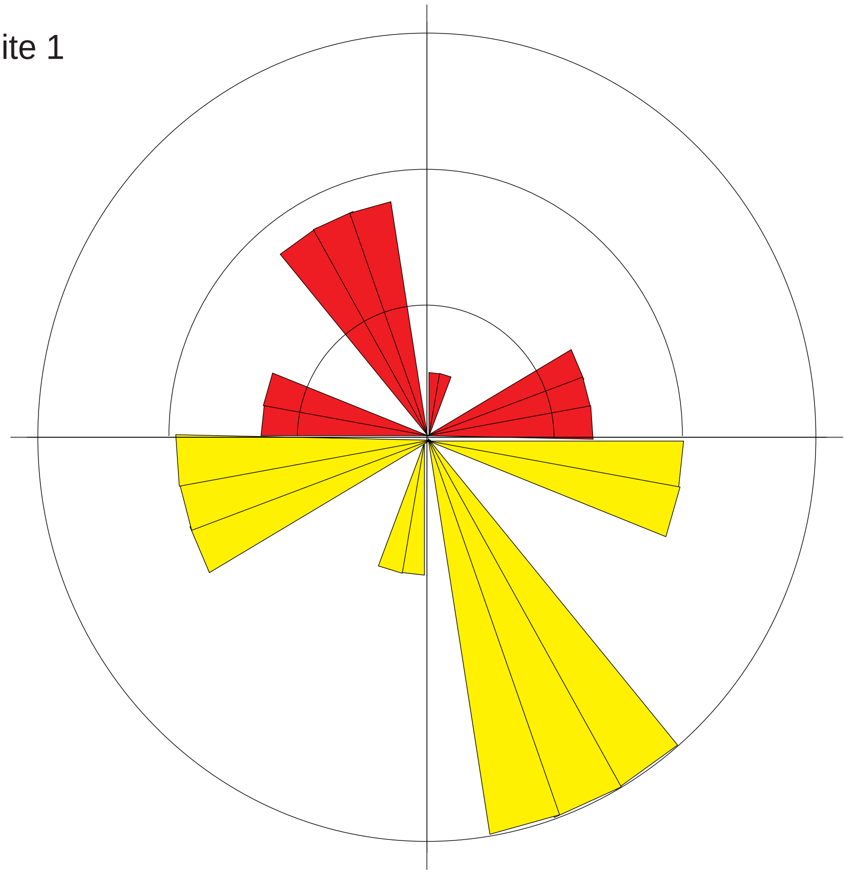

Cayuga
Lake
Seneca
Lake
Willard
Ovid
Dresden
Ovid
Lodi
Valois
Dundee
Lodi
Hector
Reading Center
Watkins Glen
Burdett
N
Scale
1 1/2 0 1 2 3 miles
7.5 Minute Quadrangles
- Year 2000
Field Campaign

FIGURE 2

Site 1



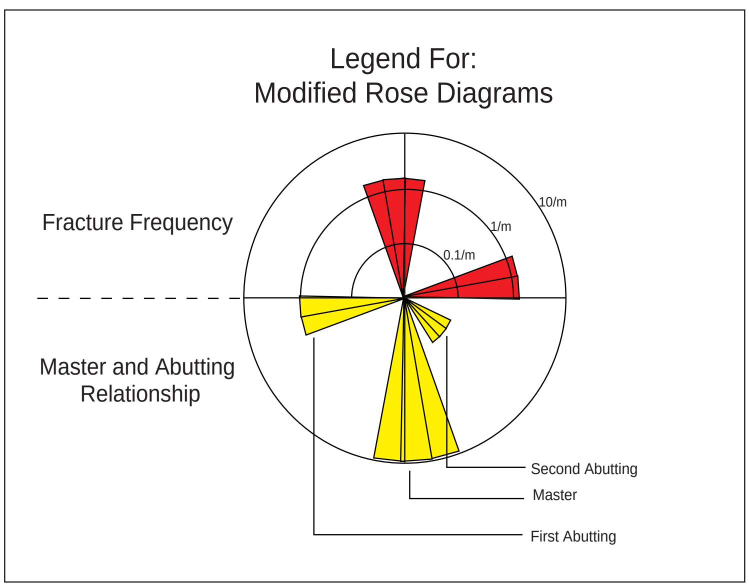


FIGURE 3

Highland Road Creek Reference Map

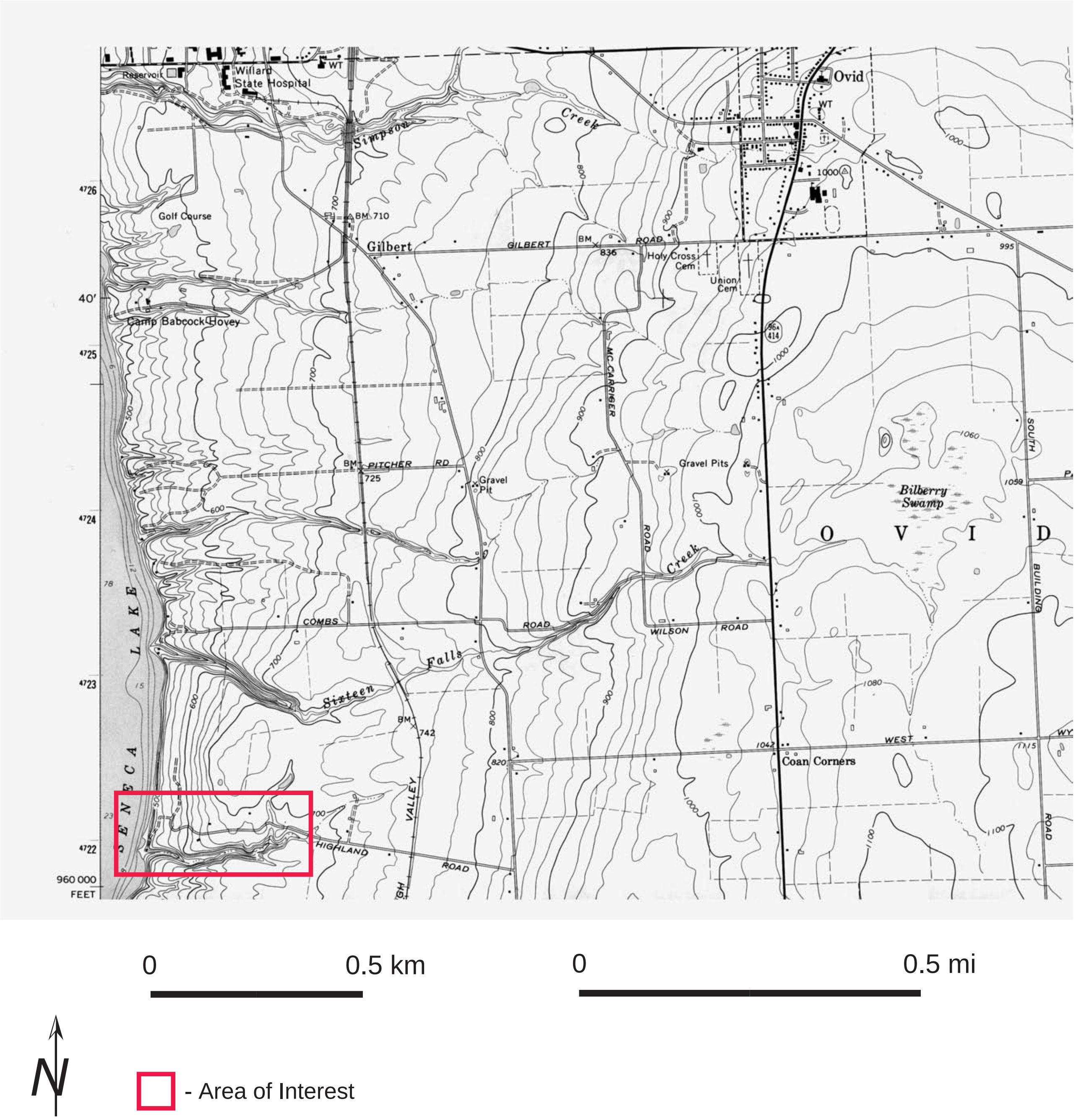


FIGURE 5

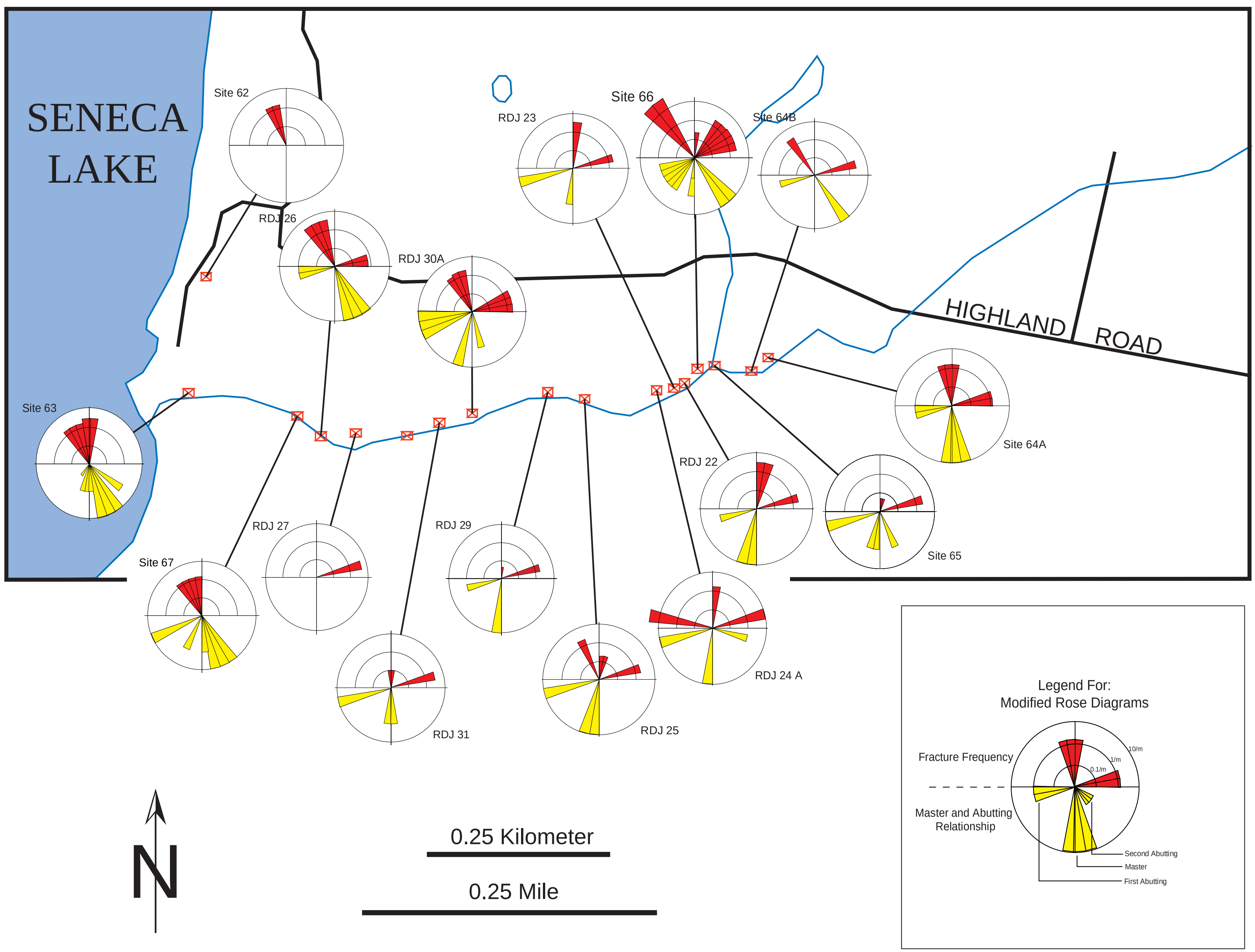

SENECA
LAKE
Site 62
RDJ 26
RDJ 30A
RDJ 23
Site 66
Site 64B
HIGHLAND ROAD
Site 63
Site 67
RDJ 27
RDJ 31
RDJ 29
RDJ 25
RDJ 24 A
RDJ 22
Site 65
Site 64A
N
0.25 Kilometer
0.25 Mile
Legend For:
Modified Rose Diagrams
Fracture Frequency
Master and Abutting
Relationship
10/m
1/m
0.1/m
Second Abutting
Master
First Abutting

FIGURE 6

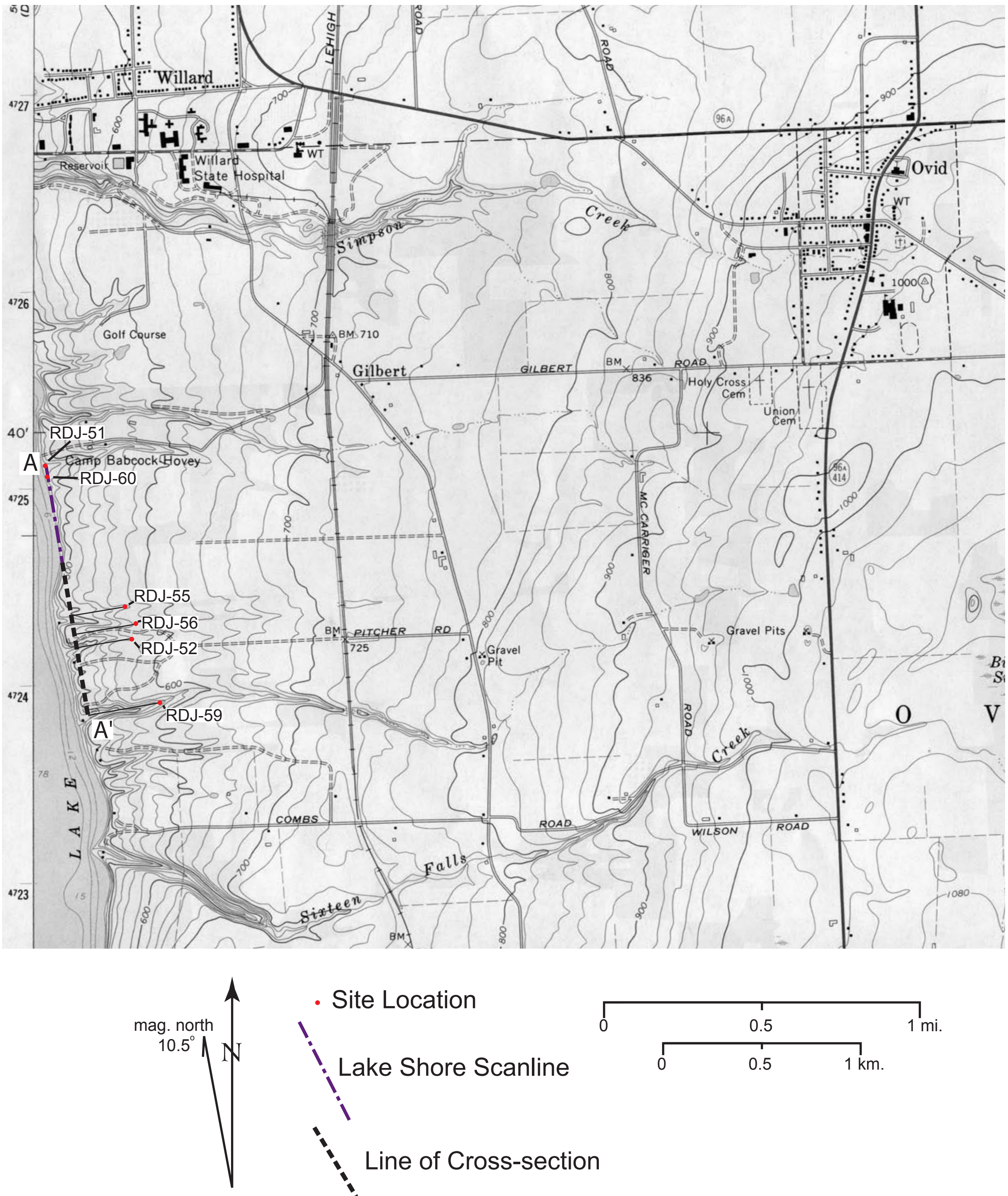

Willard
Willard State Hospital
Reservoir
LEHIGH
Simpson
Creek
Ovid
WT
Golf Course
BM 710
Gilbert
GILBERT
ROAD
BM 836
Holy Cross Cem
Union Cem
RDJ-51
A
Camp Babcock Hovey
RDJ-60
MC CARRIGER
RDJ-55
RDJ-56
RDJ-52
RDJ-59
A'
PITCHER RD
BM 725
Gravel Pit
Gravel Pits
O
V
Creek
COMBS
ROAD
WILSON
ROAD
L A K E
Falls
Sixteen
4727
4726
40'
4725
4724
4723
700
600
800
900
1000
1080
mag. north
10.5°
N
Site Location
Lake Shore Scanline
Line of Cross-section
0
0.5
1 mi.
0
0.5
1 km.

FIGURE 7

N-S cross-section of the Tully Formation based on outcrops along the eastern shore of Seneca Lake

Line of cross-section = 350.5°

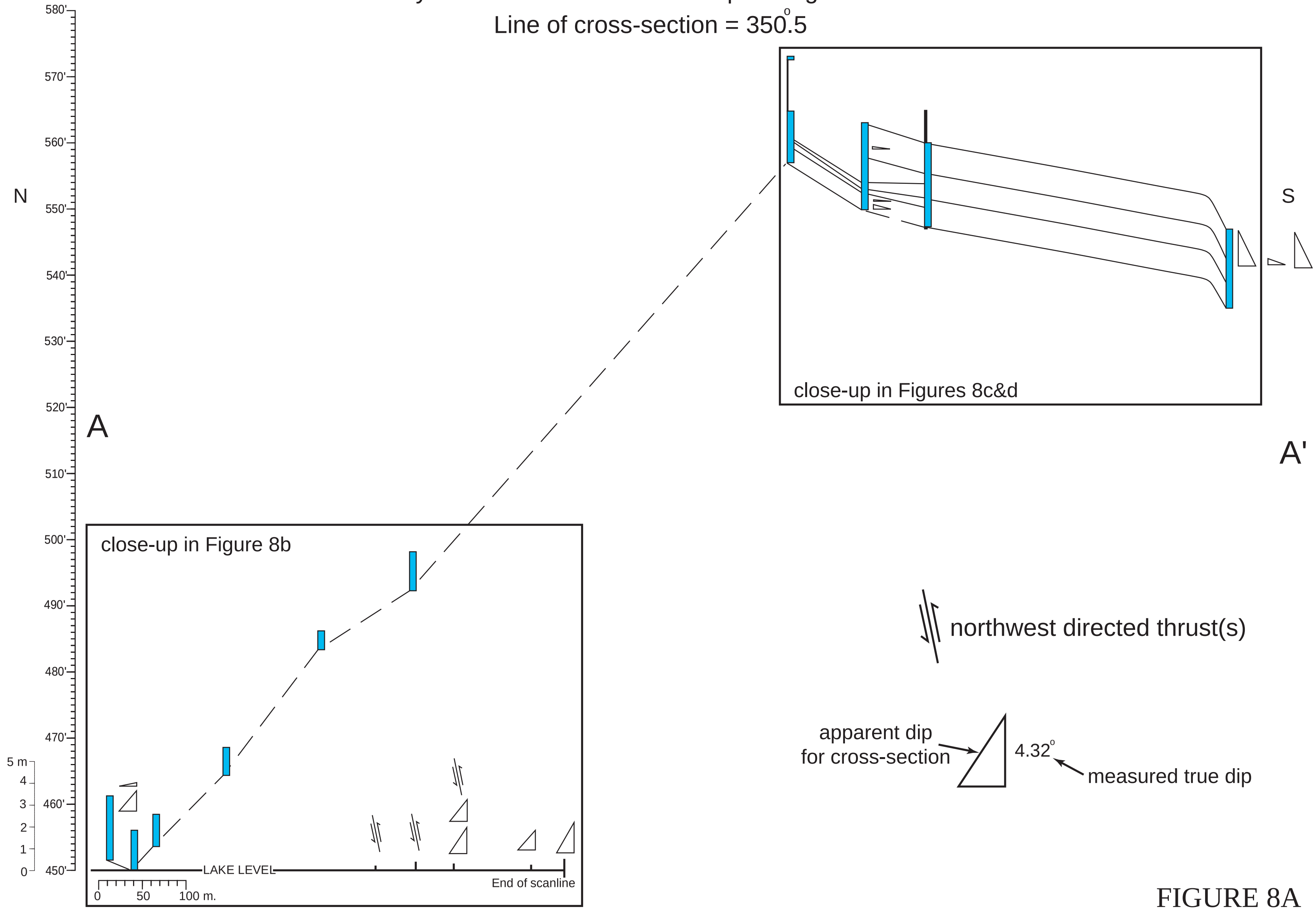


FIGURE 8A

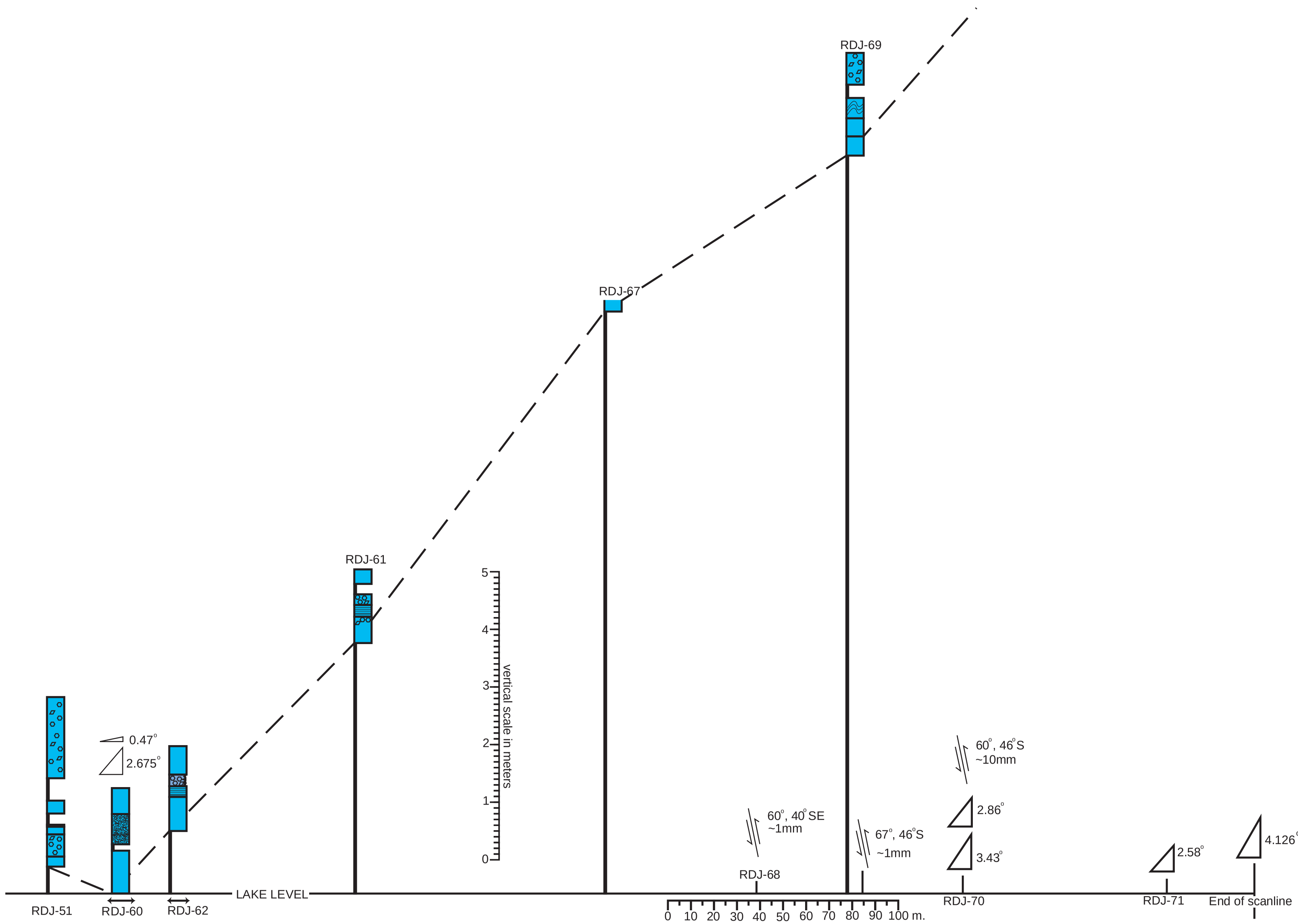

RDJ-69
RDJ-67
RDJ-61
vertical scale in meters
0
1
2
3
4
5
0.47°
2.675°
RDJ-51
RDJ-60
RDJ-62
LAKE LEVEL
60°, 40°SE
~1mm
RDJ-68
67°, 46°S
~1mm
0 10 20 30 40 50 60 70 80 90 100 m.
60°, 46°S
~10mm
2.86°
3.43°
RDJ-70
2.58°
RDJ-71
4.126°
End of scanline

FIGURE 8B

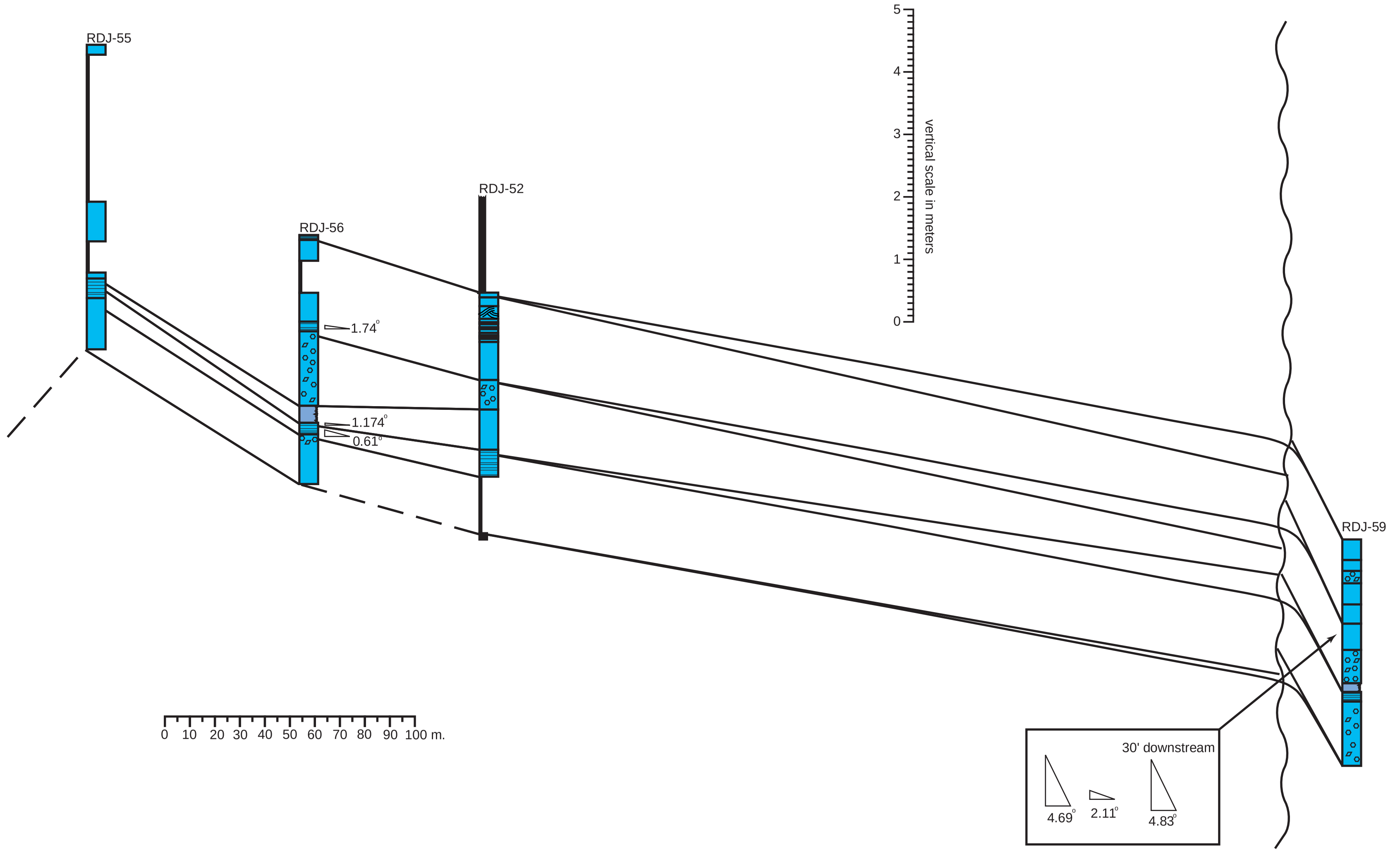
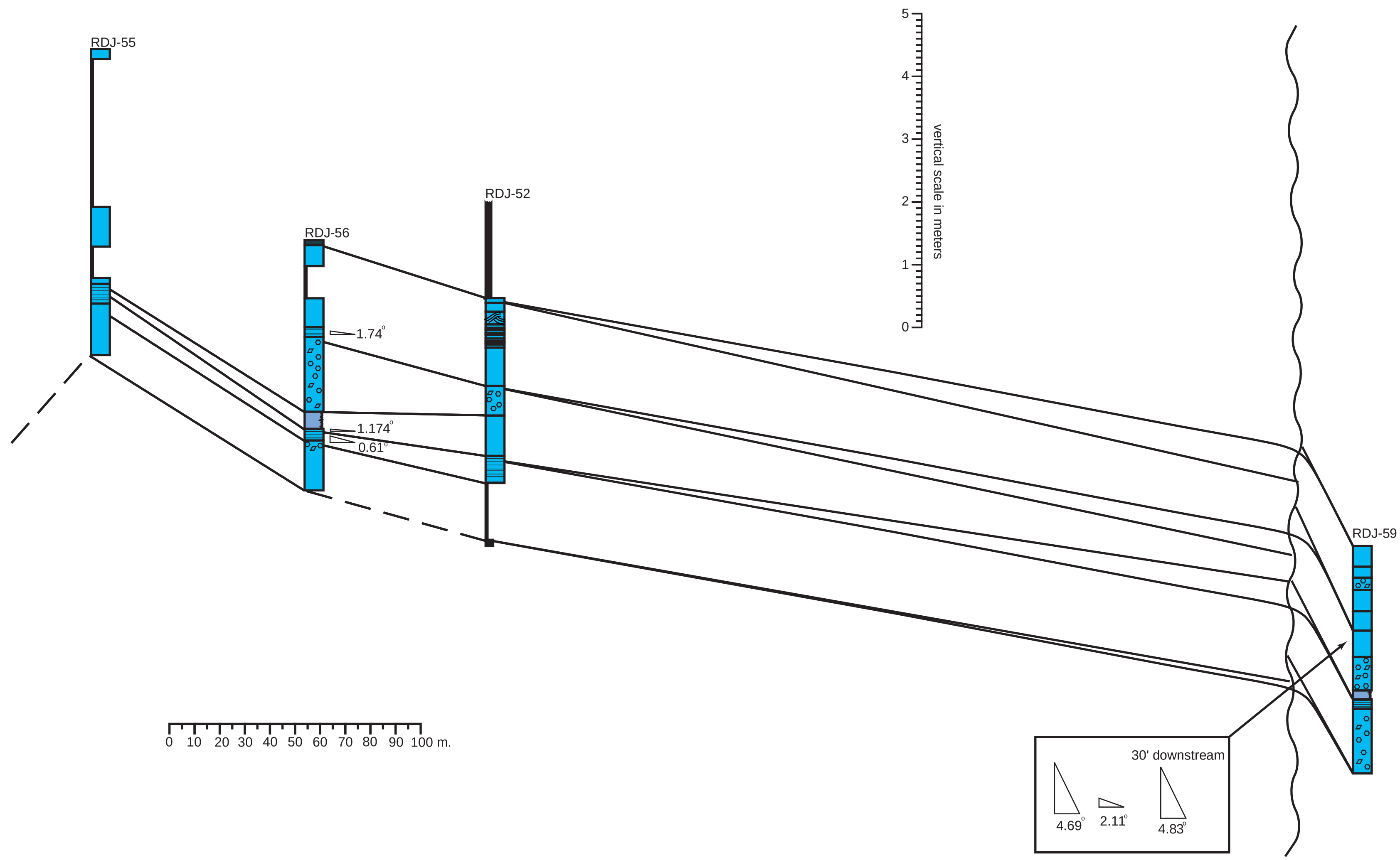

RDJ-55
RDJ-56
RDJ-52
RDJ-59
1.74°
1.174°
0.61°
5
4
3
2
1
0
vertical scale in meters
0 10 20 30 40 50 60 70 80 90 100 m.
30' downstream
4.69°
2.11°
4.83°

FIGURE 8C



RDJ-55
RDJ-56
RDJ-52
RDJ-59
1.74°
1.174°
0.61°
vertical scale in meters
0 1 2 3 4 5
0 10 20 30 40 50 60 70 80 90 100 m.
30' downstream
4.69°
2.11°
4.83°

FIGURE 8D

Summer 2000 Soil Gas Traverse

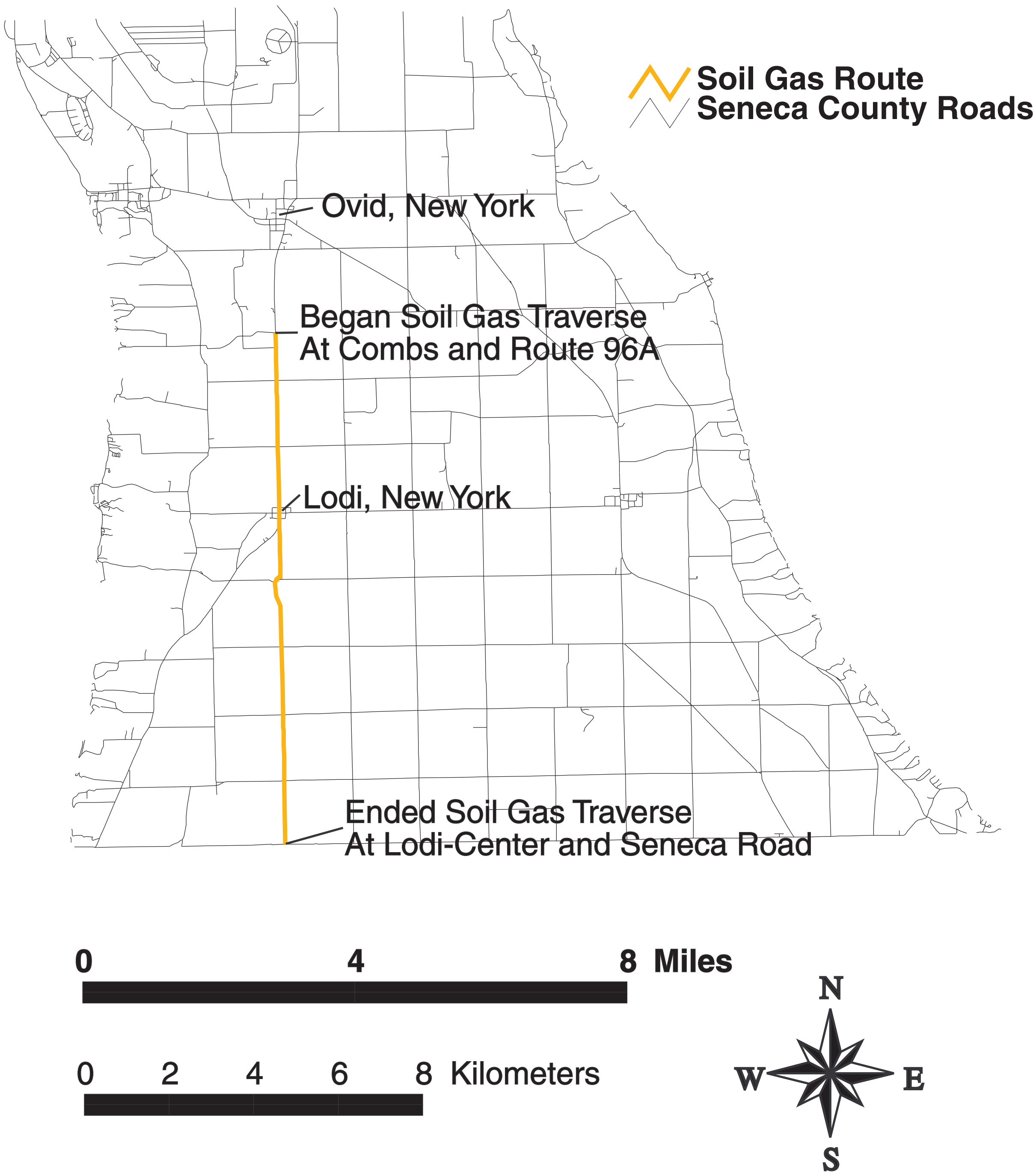


FIGURE 9

Summer 2000 Soil Gas Survey Results

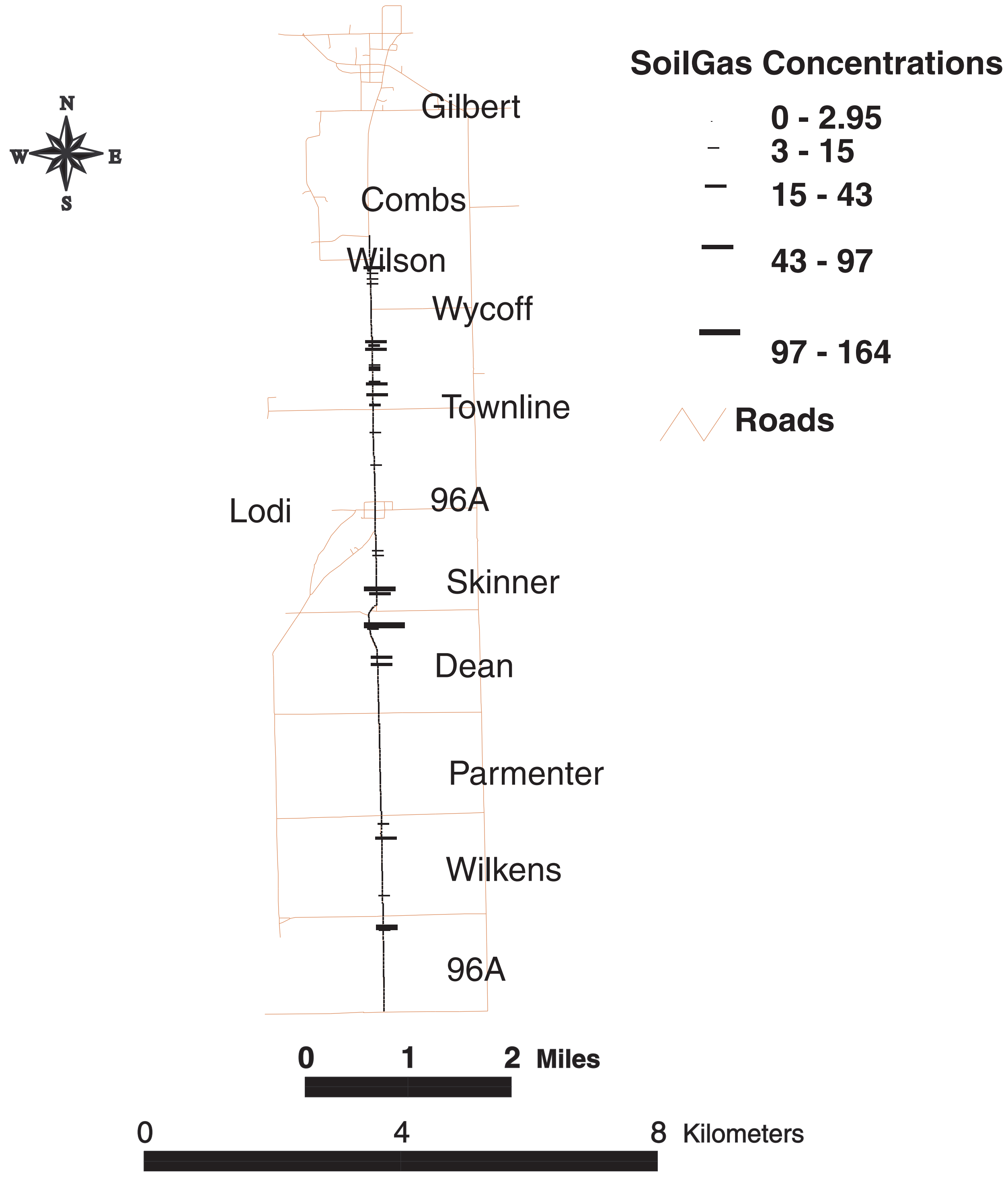
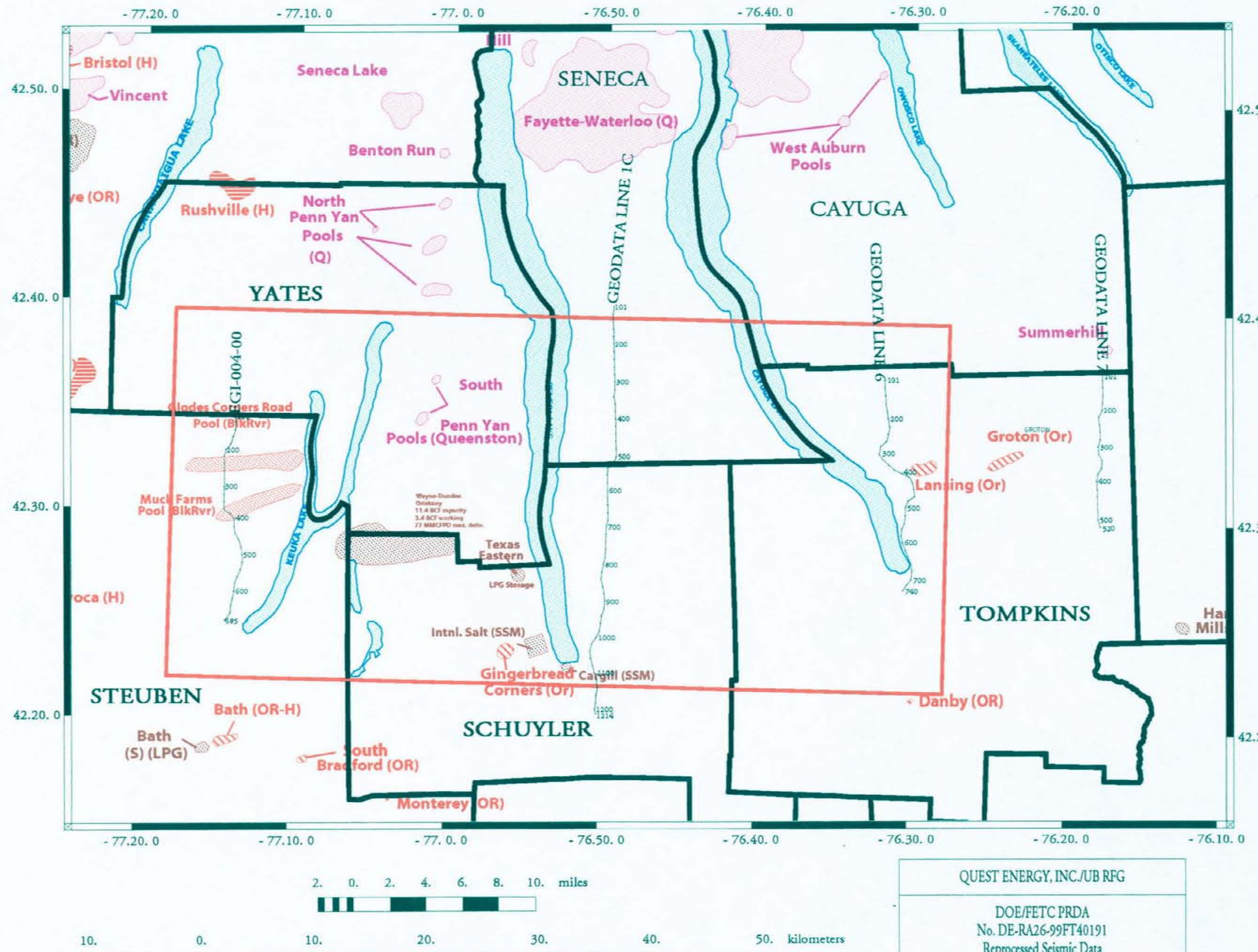
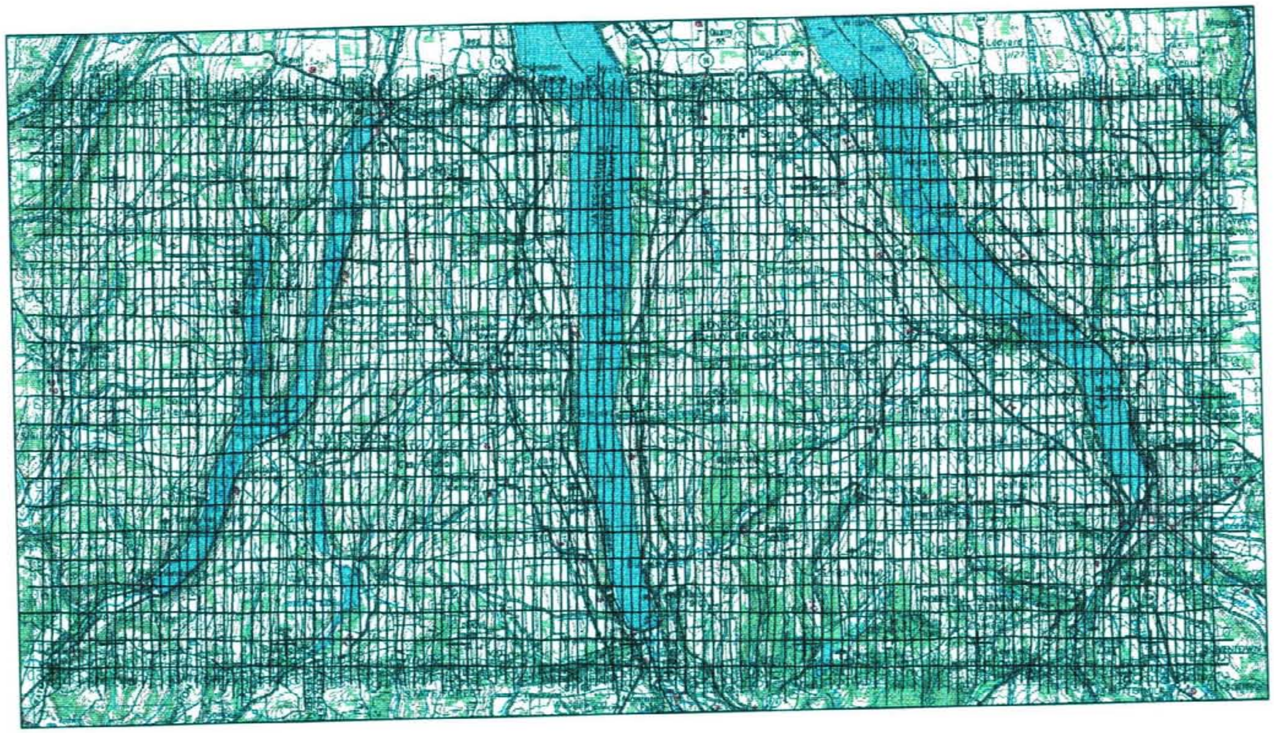


FIGURE 10



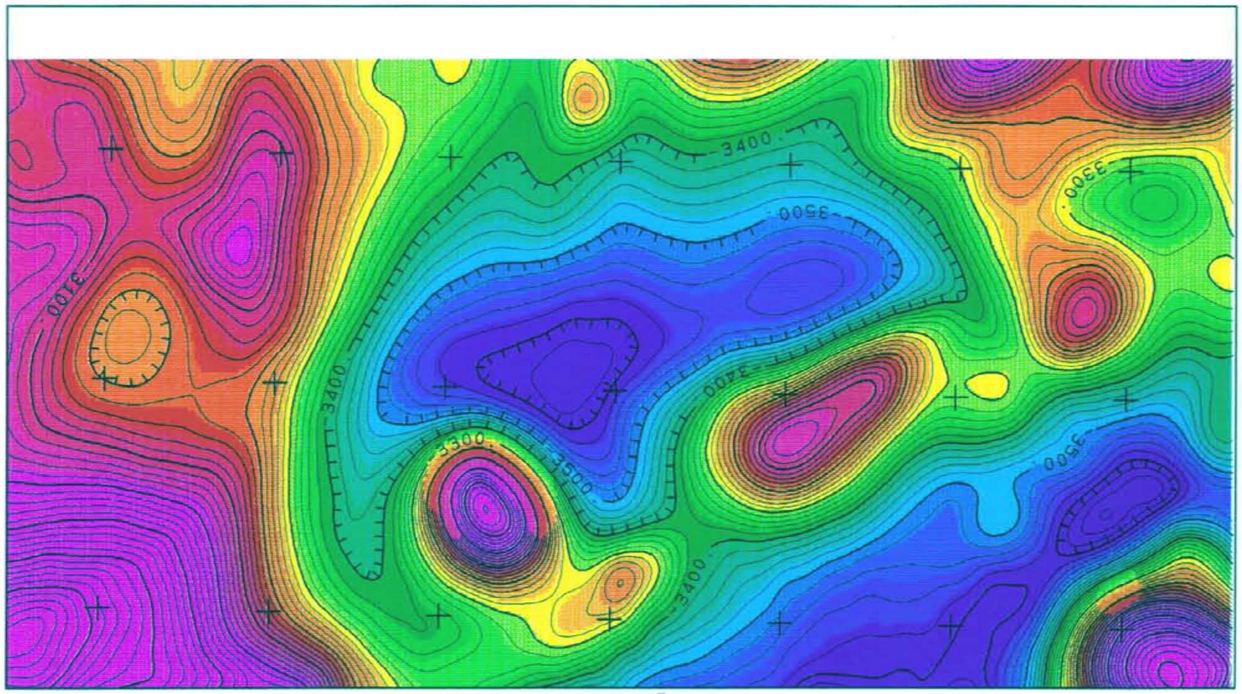
QUEST ENERGY, INC./UB RFG		
DOE/FETC PRDA No. DE-RA26-99FT40191 Reprocessed Seismic Data		
Scale 1:500000.	doeseis.gsf	03/02/2001

FIGURE 11



Flight Line Locations

FIGURE 12



Total Magnetic Intensity
(IGRF Removed)

FIGURE 13

SITE LOG

As of 3-3-01

Site	RDJ	Page	Book	Date	Quad	Location	Data Type	Structure	Observations	Data Entry	HIST	Sep. Sets Orient.	M/A Rela.	Spac Calc	SL Plot	Rose	Spac Hist
1		5	cl1	7-5-00, 7-6-0(	Burdett	Along Rte 414	SL			x	x	x					
1		10	kw	7/6/2004			SL			x							
2		17	cl1	7-6-00	Burdett	Excelsior Glen	SL			x							
2		18	kw	7/7/2004			SL			x							
3		20	cl1	7/7/2004	Burdett	Hector Falls	SL			x							
3		20	kw	7/7/2004			SL			x							
4		24	cl1	7-7-00	Burdett	Seneca Lake Inlet	c-notes			x							
4		25	kw	7/8/2004			c-notes			x							
5		30	cl1	7-7-00	Burdett	NJ House	SL			x							
5		28	kw	7/8/2004			SL			x							
6		40	c1l	7-11-00	Burdett	Warner Rd	QD			x							
6		34	kw	07.11.00			QD			x							
7		40	cl1	7/12/2004	Burdett	Warner Rd	SL&QD			x							
7		34	kw	07.11.00			SL&QD			x							
8		44	cl1	7-12-00	Lodi	San Faliz Hotel	SL			x							
8		36	kw	07.12.00			SL			x							
9		45	cl1	7-12-00	Lodi	Valios	SL			x							
9		38	kw	07.12.00			SL			x							
10		50	cl1	7-12-00	Lodi	Valios	SL			x							
10		40	kw	07.12.00			SL			x							
11		56	cl1	7-13-00	Lodi	Breakneck Creek	SL			x							
11		46	kw	07.13.00			SL			x							
12		62	cl1	7-13-00		Camping Meeting House, Ellison Hou	QD			x							
12		48	kw	07.13.00	Lodi		QD			x							
13		50	kw	07.13.00	Lodi	mping Meeting House, Ellison Hou	QD			x							
14		76	cl1	7-13-00	Lodi	mping Meeting House, Ellison Hou	QD			x							
14		50	kw	07.13.00			QD			x							
15		80	cl1	7-14-00	Burdett	Sawmill Creek	QD			x							
15		52	kw	07.14.00			QD			x							
16		82	cl1	7-14-01	Burdett	Sawmill Creek	SL			x							
16		56	kw	07.14.00			SL			x							
17		88	cl1	7-17-00	Burdett	len Eldridge Hallow, Sam's proper	SL	FID		x							
17		62	kw	07.17.00			SL			x							
18		89	cl1	7-17-00	Burdett	len Eldridge Hallow, Sam's proper	SL			x							
18		63	kw	07.17.00			SL			x							
19A		94	cl1	7-17-00	Burdett	Bullhorn Creek	SL			x							
19		65	kw	07.18.00	Burdett	Bullhorn Creek	SL			x							
20		97	cl1	7-18-00	Dundee	ver thread Winery, Town of Caywo	SL			x							
20		69	kw	07.18.00	Dundee		SL			x							
21		98	cl1	7-18-00	Dundee	ver thread Winery, Town of Caywo	QD	FID		x							
21		71	kw	07.18.00	Dundee		QD			x							
22		101	cl1	7-18-00	Dundee	ver thread Winery, Town of Caywo	SL			x							
22		73	kw	07.18.00	Dundee		SL			x							
23		77	kw	07.19.00	Lodi	Silverthread	SL			x							
24		106	cl1	7-19-00	Lodi	Mill Creek, Lodi Cemetery	SL			x							
25		79	kw	07.19.00	Lodi	Shaw Rd. & Lehigh RR	SL			x							
26		112	cl1	7-19-00	Lodi	Shaw Rd., Courtright Property	QD	FID		x							
27		83	kw	07.20.00	Lodi	Mill Creek S. of Lodi	SL			x							
28		116	cl1	7-20-00	Lodi	Mill Creek S. of Lodi	SL	FID		x							
29		88	kw	07.20.00	Lodi	Rhodes Rd. Creek	SL			x							
30		123	cl1	7-20-00	Lodi	Silverthread Falls	SL			x							
31		130	cl1	7-24-00	Lodi	Seneca Club	SL			x							
31		92	kw	07.24.00			SL			x							
32		93	kw	07.24.00	Burdett	Saw Mill @Logan Rd	SL			x							
33		132	cl1	7-24-00	Burdett	Saw Mill @Logan Rd	SL			x							
34		137	cl1	7-25-00	Lodi	Rhodes Rd Creek	SL			x							
34		99	kw	07.24.00			SL			x							
34B		140	cl1	7-25-00	Lodi	Rhodes Rd Creek	SL			x							
35		101	kw	07.25.00	Lodi	Shaw Rd.	SL			x							
35		140	cl1	7-25-00			SL	N-S FID		x							
36		105	kw	07.26.00	Lodi	Silverthread	SL			x							
37		145	cl1	7-26-00	Lodi	Sherry Burrow's, Silverthread Falls	SL	335 FID		x							
38		107	kw	07.26.00	Lodi	Sherry Burrow's, Mill Creek	SL			x							
39	4	150	cl1	7-26-00	Lodi	Sherry Burrow's, Mill Creek	SL			x							
39	4	111	kw	07.26.00			SL			x							

40		156	cl1	7-26-00	Lodi	Shaw Rd, Gravel Pit	c-notes			x							
41	7	4	cl2	7-27-00	Lodi	Shaw Rd Creek 2	QD			x							
42	5	115	kw	07.27.00	Lodi	Mill Creek	SL			x							
43	8	8	cl2	7-27-00	Lodi	Shaw Rd Creek 2	SL			x							
44k	6	117	kw	07.27.00	Lodi	Shaw Rd	SL	fid e-w		x							
45k		121	kw	07.27.00	Lodi	Shaw Rd.	SL	twist		x							
44c	10	15	cl2	8-2-00	Lodi	Lodi Pt.	SL			x							
45c	11	23	cl2	8-2-00	Lodi	Lodi Pt.	SL	Fracture Cleavage		x							
46c	13A	33	cl2	8-3-00	Lodi	Lodi Pt.	SL			x							
47	13	37	cl2	8-3-00	Lodi	Lodi Pt.	SL	FID		x							
48	9	43	cl2	8-3-00	Lodi	Lodi Pt.	SL		need to go back for MA relationsh	x							
49	12	127	kw	8-3-00	Lodi	Lodi Pt.	Notes	pencil clev.		none							
50	12	130	kw	8-3-00	Lodi	Lodi Pt.	Notes	pencil clev.		none							
51	2	44	cl2	8-3-00	Lodi	Shaw Rd Creek 1	SL			x							
51	2	133	kw	08.03.00			SL	pencil clv.&FID		x							
52		135	kw	08.04.00	Ovid	Sixteen Falls Creek	SL			x							
53c		54	cl2	8-4-00	Ovid	Sixteen Falls Creek	SL			x							
54c	53A	57	cl2	8-8-00	Ovid	Sixteen Falls Creek	SL	acture Cleavage, no offset		x							
55	19	~84	RDJ1	8-9-00	Ovid	Sixteen Falls Creek	SL	80 FID		x							
55	19	61	cl2	8-9-00	Ovid		SL			x							
56c	18	59	cl2	8-8-00	Ovid	Sixteen Falls Creek	SL			x							
56a	18	66	cl2	8-9-00	Ovid	Sixteen Falls Creek	SL			x							
57	16	68	cl2	8-9-00	Ovid	Sixteen Falls Creek	SL	330 fid		x	x	x		x			
58	near 17	76	cl2	8-9-00	Ovid	Sixteen Falls Creek	SL	330 FID		x	x	x					
59a		79	cl	8/10/2004	Ovid	Sixteen Falls Creek	QD					x					
59	15b	82	cl2	8-9-00	Ovid	Sixteen Falls Creek	SL			x		x					
60	15a	86	cl2	8-9-01	Ovid	Sixteen Falls Creek	QD			x		x					
61	15a	87	cl2	8-9-02	Ovid	Sixteen Falls Creek	QD			x		x					
62		88	cl2	8-9-00	Ovid	Highland Rd Cut	SL	Fault in Tully		x		x		x	x		
64a	21	94	cl2	8-15-00	Ovid	Highland Rd Creek	QD			x		x		x	x		
	21	~110	RDJ	8-16-00	Ovid	Highland Rd Creek	QD			x	x	x		x			
64b		96	cl2	8-15-00	Ovid	Highland Rd Creek	QD			x		x		x	x		
65		~100	RDJ1	8-15-00	Ovid	Highland Rd Creek	QD			x	x	x		x	x		
66		~100	RDJ1	8-15-00	Ovid	Highland Rd Creek	SL	Fault w/ undesturbed till		x		x		x			
63		101	cl2	8-16-00	Ovid	Highland Rd Creek	SL			x		x		x			
63		~100	RDJ1	8/16/2004	Ovid		Notes			None							
67	26?	104	cl2	8-16-00	Ovid	Highland Rd Creek	SL			x	x	x		x			
	20	~105	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x		x		x			
	22	~110	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x	x	x		x	x		
	23	~115	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x	x	x		x	x		
	24	~115	RDJ1	8-16-00	Ovid	Highland Rd Creek	notes			None							
	24a	~115	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x		x		x			
	25	~120	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x		x		x			
	26	~120	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD	Top of Tully		x		x		x	x		
	27	~125	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x		x		x			
	28	~125	RDJ1	8-16-00	Ovid	Highland Rd Creek	Notes			None							
	29	~125	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD			x		x		x	x		
	30	~130	RDJ1	8-16-00	Ovid	Highland Rd Creek	Notes			None							
	30a	~130	RDJ1	8-16-00	Ovid	Highland Rd Creek	SL	RL offseet		x		x		x			
	31	~130	RDJ1	8-16-00	Ovid	Highland Rd Creek	QD	L.L.Offset		x		x		x			
	32	~135	RDJ1	8-16-00	Ovid	Highland Rd Creek	Notes			None							
	33	109	cl2	8-16-00	Ovid	Tommy Creek	SL			x		x					
	33	~135	RDJ1	8-16-00	Ovid		SL			x							
	34	~135	RDJ1	8-16-00	Ovid	Tommy Creek	SL			x		x					
	34	114	cl2	8-17-00	Ovid		SL			x							
	32		RDJ1	8-17-00	ovid	Tommy Creek	Notes		top of tully	None							
	32	119	cl2	8-17-00	Ovid		SL			x							
	36	123	cl2	8-17-00	Ovid	Tommy Creek	Drawing			?							
	36	~140	RDJ1	8-17-00	Ovid		Notes			None							
	35	~140	RDJ1	8-17-00	Ovid	Tommy Creek	Notes			None							
	37	~140	RDJ1	8-17-00	Ovid	Tommy Creek	Notes			None							
	37	124,145	cl2	8-17-00	Ovid		QD			x							
	38	125,139	cl2	8-17-00	Ovid	Tommy Creek	SL			x							
	38	~140	RDJ1	8-17-00	Ovid		Notes			None							
	39	~140	RDJ1	8-17-00	Ovid	Tommy Creek	Notes			None							
	39	125,143	cl2	8-17-00	Ovid		QD	80FID		x							
	40	~140	RDJ1	8-17-00	Ovid	Tommy Creek	Notes	Conjugate Shear ?		None							
	40	126	cl2	8-17-00	Ovid		QD			x							
	41	129	cl2	8-17-00	Ovid	Tommy Creek	QD			x							
	41	~140	RDJ1	8-17-00	Ovid		Notes			None							

	42	131	cl2	8-17-00	Ovid	Tommy Creek	QD			x		
	42	~145	RDJ1	8-17-00	Ovid		Notes			None		
	43	133	cl2	8-17-00	Ovid	Tommy Creek	QD			x		
	43	~145	RDJ 1	8-17-00	Ovid		Notes			None		
	44	134	cl2	8-17-00	Ovid	Tommy Creek	QD			x		
	44	~145	RDJ1	8-17-00	Ovid		Notes	80 FID		None		
	45		RDJ1	8-17-00	Ovid	Tommy Creek	Notes	76,85 FID		None		
	45	136	cl2	8-17-00	Ovid		QD	80FID		x		
	46	137	cl2	8-17-00	Ovid	Tommy Creek	QD			x		
	47	~145	RDJ1	8-17-00	Ovid	Tommy Creek	QD	Fault		x		
	47	139	cl2	8-17-00	Ovid		Notes			none?		
	47A	~145	RDJ1	8-17-00	Ovid	Tommy Creek	QD			x		
	47b	~145	RDJ1	8-17-00	Ovid	Tommy Creek	QD			x		
	48	~150	RDJ1	8-17-00	Ovid	Tommy Creek	QD	80 FID		x		
	49	~150	RDJ1	8-17-00	Ovid	Camp Babcock Hovey	Notes		cliff	None		
	49	146	cl2	8-18-00	Ovid		QD	L.L.Offset		x		
	50	147	cl2	8-18-00	Ovid	Camp Babcock Hovey	SL			x		
	50	~150	RDJ1	8-18-00	Ovid		Strat.			Strat		
	51	150, 1	RDJ 1&2	10-17-00	Ovid	Camp Babcock Hovey	QD,Strat.			x		
	52	150,2	RDJ 1&2	10-17-00	Ovid	?	QD			x		
	53	5	RDJ 2	10-17-00	Ovid	Pitcher Rd	QD	Thrust,breccia		?		Dr J's an KW don't match
	53	139	kw	10.17.00	Ovid		QD	No EW no Fault		x		??????
	54	5	RDJ2	10/18/2004	Ovid	creek 2 to the N. ?	Notes			none		
	54	141	kw	10.17.00	Ovid	p's mouth	QD			x		
	55	6	RDJ2	10-18-00	Ovid	Pitcher Rd	Strat, QD			x		
	56	143	kw	10.18.00	Ovid	Pitcher Rd	QD			x		
	56	~5	RDJ2	10/19/2004	Ovid	Ratcliffes	Strat.			None		
	57	145	kw	10.18.00	Ovid	Pitcher Rd	QD			x		
	58	10	RDJ 2	10.18.00	Ovid	klondike	QD	Thrust in crk to N.		x		
	59	12	RDJ2	10.18.00	Ovid	klondike	Strat,QD			x		
	60	RDJ2	14	10/19/2004	Ovid	boyscouts	Notes			None		
	60	146	kw	10.18.00	Ovid	boyscouts	QD			x		
	60	?	gerry	10-16-00	Ovid	boyscouts	Strat			none		
	61	~10	RDJ2	10-16-01	Ovid		Site drawing			none		
	61	146	kw	10.18.00	Ovid ?	boyscouts	QD			x		
	62	147	kw	10.18.00	Ovid ?	boyscouts	QD			x		
	63	~20	RDJ2	1/19/2004	Ovid	boyscouts	QD			x		
	63	147	kw	10.18.00	Ovid ?	boyscouts	QD			x		
?	66		rdj	10.18.00	Ovid	Highland Rd				none		
	65	~20	rdj	10.18.00	Ovid	boyscouts	Notes			none		
	64		rdj	10.18.00	Ovid?	boyscouts	Notes			none		
?	67		rdj	10.18.00	?	?				none		
	68	~20	rdj	10.18.00	?	?	Notes	L.L.offset		none		
	69	~20	rdj	10.18.00	?	?	Strat.	Fault?		none		
	70	~20	rdj	10.18.00	?	?	Notes			none		
	71	~25	rdj	10/19/2004	Burdett	butler's bed&brkfst	QD			x		
	72	~25	rdj	10/20/2004	Burdett	Habers' cellar	Strat.			Strat.		
	73a	148	kw	10.19.00	Burdett	Haber"s	QD			x		
	73b	149	kw	10.19.00	Burdett	Haber"s	QD			x		
	73A	~25	RDJ2	10/20/2004	Burdett	Haber"s	Notes			none		
	73B	~25	RDJ2	10/20/2004	Burdett	Haber"s	Notes			none		
	73	150	kw	10.19.00	Burdett	Haber"s	QD			x		
	74A&B	~25	RDJ2	10/20/2004	Burdett	Smith's	Strat.			none		
	74b	150	kw	10.19.00	Burdett	Nipantuck	QD			x		
	74	151	kw	10.19.00	Burdett	Nipantuck	QD			x		
	75	~30	RDJ2	10/21/2004	Burdett	Sunset Shores	Strat.			none		
	75	153	kw	10.19.00	Burdett	Sunset Shores	QD			x		
	76	~30	RDJ2	10/21/2004	Burdett	Bullhorn Cr.	Notes			none		
	76	154	kw	10.19.00		Bullhorn Cr.	QD			x		
	77	~35	RDJ2	10/21/2004	Burdett	Bullhorn Cr.	Strat.			none		
	78	155	kw	10.20.00	Lodi	Camp Meeting House	QD			x		
cml1		1	cl3	10-21-00	Lodi	Cnty Rte 1	QD			x		
cml2		4	cl4	10-21-00	Lodi	Cnty Rte 1	QD			x		
cml3		8	cl5	10-21-00	Lodi	Cnty Rte 1	QD			x		
cml4		11	cl6	10-21-00	Lodi	Cnty Rte 1	Notes	pop-up		x		
cml5		12	cl7	10-21-00	Lodi	Cnty Rte 1	Notes	pop-up		x		

APPENDIX 2 — **Summer 2000 Field Campaign**

FRACTURE DATA — Data

Date-Site	#	Intersect (m)	Strike	Dip	Dip Dir	Height (m)	Length (m)	M/A	T/ B abut	Sed. Char.	Comments	Frac. Char.	Group
Site 1	1	0	7	90		4.5+	8.3+	M		thick sand <= .9m	Mn oxidized	pl	RDJ,CL
7-5-00-1	2	3.5	335	85	ENE	4.5+		A(1)		interbedded sand & shale	Dies into sh & starts again in sand		RDJ,CL
Along Rte 414	3	20.9	331	89	E	4.5+	8.5+	A(1)		sos (1)		pl	RDJ,CL
	4	19.46	68	88	S	0.37	.1+	NA	top abutt in sh.	Restricted to S.S. thickness .14-.22m	Mn	pl-cl	RDJ,CL
7-6-00-1	5	20.75	79	79-87	N	.11+	.03+	NA		S.S.		pl-cl	RDJ,CL
	6	22.5	72	87-82	N	0.16	.07+	NA	top abutt in sh.	S.S.		cl	RDJ,CL
	7	22.3	72-77	88	S	0.12	21	NA		in sand .21m		cl	RDJ,CL
	8	23.24	85	82	S	0.8	0.4	NA		interbedded sand & shale, sands <= .4m			RDJ,CL
	9	24.64	77.5	79	N	21	4+	na	t-st,b-ss	.5m sand		p	kw
	10	25.89	76	77	N	.58+	11+	na		is		c	kw
	11	35	332	90		4	7+	M		is		p	kw
	12	39.1	76.5	89	S	.22+	8+	na		cs		c/p	kw
	13	41.7	75	41	S	22+	4+	na		cs		c	kw
	14a	45.35	334	87	E	1.40+	2.5	M(14b)	t-sh	cs		p	kw
	14b	42.25	65	71	N	0.46	8	a(14a)				c	kw
	15	44.72	273	89	S	3	0.6	a(16)				p	kw
	16	48.1	340	84	E	3+	0.5	M(15)	t-sh, b-sh	cs,.5mss		p	kw
	17	45.29	69	81	S	19	0.04	na	t-sh, b-sh			c	kw
	18	45.42	60	86	S	22	10+	na		cs		p	kw
	19	50.5	336.5	86	E	2.25+	0.83	na		cs		p	kw
	20	48.81	271.5	89	N	24	1.75	na	b-cs			c/p	kw
	21	48.96	90	89	S	0.15+	0.24	NA		ss & shss, ss thickness .24m		pl-cl	DJ,C
	22	49.14	90	87	N	0.17	.03+	NA		SOS (21)		pl	DJ,C
	23	49.9	272	88	S	0.23	0.22	NA		SOS (21)			DJ,C
	24	50.29	275	82	N	.73+	0.75	NA		Shale & Sand,sand thickness .5m		PL but not smooth	DJ,C
	25	52.9	78	74	N	0.19	.32+	A(34)		one .32m thick sand		cl, bumpy	DJ,C
	26	51.2	11	71	N	.11-.2	1.09	A(29)		SOS (21)		cl, bumpy	DJ,C
								A(34)					
	27	53.4	88	76	N	.28+	.63+	A(34)		SOS (21)		pl	DJ,C
	28	53.65	78	75	N	0.09	.82+	M(26)		SOS (21)		pl, bumpy	DJ,C
								A(34)					
	29	54.45	82	84-87	S	0.07	.85+	M(26)		SOS (21)		pl, wig	DJ,C
	30	55.15	79	76	N	.05-2.0+	.86-1.5+	A(37)	TA sh	Mostly shale <= .15m	2m high jumps .2m & then continues 1.5m	pl	DJ,C
			90	88	S								
	31	55.72	88	86	N	0.56	0.0158	NA		SOS (21)		cl	DJ,C
	32	55.9	88	83	N	.09+	.39+	NA		SOS (21)			DJ,C
	33	56.03	78	68	N	.11+	.31+	M(38)		SOS (21)		pl	DJ,C
	34	56.97	333	89	W	1.01	3	M		SOS (21) & thickness .51m	Main Master, Mn,in wall	cl	DJ,C
	35	56.67	74			.05+	0.42	A(38)		SOS (21)		pl	DJ,C
	36	57.82	86	88	N	.08+	.46+			SOS (21)			DJ,C
	37	59.9	336	86	E	.43+	0.61	A(34)	TA shaley S.S.	Sand .49m thick		pl	DJ,C
								M(30)					
	38	60.45	334	90		.46+	1.56+	A(33)		Thick Sand overlying Shaley Sand, SOS (37)	Mn, Plumose Structures	cl	DJ,C
								M(35)					
	39	63.25	334	90		.07+	0.21	NA		SOS (37)	Cuts through the center of a borehole		DJ,C
	40	67.9	335	84	E	94	4.6	na	rstrt. Sh	sh		p	kw
	41	64.39	331	90		.21+	2+	na	rstrt. Sh	sh		p	kw
	42	69.61	276	89	N	1.21+	.24+	na	rstrt. Sh	sh		p	kw
	43	70.9	70	88	S	0.9	0.25	na	rstrt. Sh	sh		p	kw
	44	71.6	70.5	89	S	0.74	20.5+	na				p	kw
	45	72.44	328	90		5+		na		is		p	kw
	46	72.9	86.5	86	S	41	5+	na				p	kw
	47	72.93	85	84.5	S	41+	7+	na		is		p	kw
	48	70	330	87.5	E	6+	3	na		is		p	kw
	49	82.92	74	90		.10+	0.41	a(50)		is,10 cm s		p	kw
	50	89.3	329.5	90		4+	13+	M(49)		27cm sh		p	kw
Still site 1 working back form N end													

	n1	110	346	45	E	0.7	2	NA		Shaley Sand, <= .08m sand		cl	F,C
	n2	98.25	333	86	E	3.5	14.05	NA		Sand	2-2b shows clkws rot.	pl	F,C
	n2a	98.25	331	89	E	1.21	14.25	NA		Interbedded Sand & Shale	assuming that sand broke first	pl	F,C
	2b	98.25	329	86	E	0.81	14.25	NA		Thick Sand, <= .23m		pl	F,C
	n3	97.8	75	89	S	0.27	0.11	NA		Shaley Sand		pl	F,C
	n4	97.1	281	89	S	0.08	0.17	NA		SOS (3)		pl	F,C
	n5	91.2	285	86	N	.46+	.02+	NA		Shaley Sand		cl	F,C
	n6	91.24	279	89	S	0.87	.05+	NA		SOS (5)		cl	F,C
	n7	43.2	335	90		1.3+	3.0+	NA	TA sand	SOS (5)		pl	F,C
	n8	88.23	74	80	N	0.14	.03+	NA	TA & BA sh	SOS (5), w/ sands <= .14		pl	F,C
Site 2	a1	1.1	16	72	W	2.0+	10.0+	NA		Thick sands <= .78m		pl-cl	F,C
7-6-00-2	a2	3.55	15	75	W	2.0+	7.0+	NA	TA SS	SOS (a1)		pl	F,C
Excelsior Glen	a3	5	6	87	W	0.04	4.5	NA		Thick sands	Junky (Poorly Developed), questionably an errosional feature	cl	F,C
junky	a4	5.29	84	80	S	2.26+	9	I (b7)	TA .2m sand	SOS (a1)		pl	F,C
								M(B8) *			*But offset .02cm		
junky	a5	4.59	15	73	W	0.04	0.22	NA		Sand .04m thick	Junky, questionably an errosional feature	pl	F,C
	0	-0.09	10	?				NA			Only for spacing from the end of scanline #2		
07/06/00-2	b1	24.25	49	86	E	.11+	1.5+	na		is	4cm	p	kw
excel. Glen	b2	21.67	89	84.5		1	6.2+	M(b3)		is	6cm st	p	kw
			89	89s									rj
	b3	48 see	304	80n		0.18	1.44	a (b2)				c	kw
	b4	19.81	88	83s		1.06+	9.5	M(b6)	t- 6cm st			p	kw
				85n									
	b5	17.15	70	82nw		.10+	1.11	na		st	7cm	c/p	kw
	b6	19.62	330	88e		0.07	18	a b4				p	kw
	b7	15.18	339	90		0.4	10+	A(b4), I(a4)				p	kw
	b8	9.79	338	88e		0.76	19+	A(a4) I(b4)				p	kw
Site 3	a1	0.04	31	90		.37+	1.47	I(A2)		Carbonate rich sand, <=.27m		cl	F,C
7-6-00-3	a2	0.55	335	90		1.2	4	I(A1)		SOS (1)	Ctrclkws hackles	pl	F,C
Hector Falls								I(A3)					
	a3	0.8	10	88	W	1.57	5.4	I(A2)		SOS (1)	Composite fract. That w/ several small jumps crosses the entire creek, 15m	pl	F,C
A1-A7 possible FID								M(A5)					
								A(A6)					
								A(A7)					
	a4	0.86	338	90		3.0+	4.26	NA			see diagram curves into A2 but not Abutt	pl-cl	F,C
	a5	1.1	335	86	W	0.53	1.91	A(A3)	TA sand	SOS (1)		pl	F,C
	a6	1.45	334	90		0.44	16.6	M(A3)		SOS (1)		pl	F,C
	a7	1.6	335	89	E	.86+	2.9+	A(A3)		SOS (1)	mutually abutts A3	pl	F,C
7/06/00-3	b1	10.59	333	85e		3.8	8+			cs	9cm	p	kw
Hector	b2	10.75	0	88e		0.34	3+	na				p	kw
	b3	10.8	5	90		0.34	.18+	na				p	kw
	b4	10.2	356	85e		0.07	2.9	A(b6)				p	rj
	b5	8.79	356			.03+	6.2	A(b6)					rj
	b6	6.85	67	86nw		1.65	9+	M(b4,b5)	A a7	limey ss		p	rj
	b7	8.81	354	88w		0.26	4.67	I(b6)			b- shale	p-c	rj
	b8	3.62	354.5	88e		0.06	1.83	A(b6)				c- b6	rj
	b9	1.635	336	87e		126	5.5	A(3), I(b6)	t-15cm lim			p	rj
	c4	2.68	86	84	S	0.23	.54+	NA		SOS (c1)		pl	F,C
	c5	3.16	78	84	S	0.23	.58+	NA		SOS (c1)		cl	F,C
	c6	3.9	76	80	S	0.23	.60+	NA		SOS (c1)		pl	F,C
	d1	0.68	86	84	S	0.31	.02+	NA	Dies into .1m sand at top, TA .06m sand	.31m sh		pl	F,C
	d2	0.96	83	80	S	0.31	.25+	NA	TA .06m sand *, Bot. Dies out half way through a .1 m sand (SOS (d1))	SOS (d1)	* TA sand .03 m thick sand then jumps .03m to a sand and continues .16m in sh until it reaches .08m sand which it TA		F,C
	d3	1.19	84	84	S	0.31	.21+	NA	dies I a .06m sand at top	SOS (d1)			F,C
	d4	1.53	79	89	S	0.31	.40+	NA	SOS (d3)				F,C
	d5	2.09	84	79	S	0.31	.30+	NA	TA .06m sand *, Bot. Dies out in sand		* can be seen in shale above with no offset		F,C
7/07/00-4	1a	0	338	86e		1	2+	M?		ss	13cm	p	kw
s. lake inlet	2a	0.2	332	89e		0.38	.43+	M?		ss	13cm	p	kw
	3a	0.44	348	76e		0.15	.47+			ss	15cm	p	kw

	4a	0.69	348	82e		0.31	.31+	na	b-sh	ss	15cm	p	kw
	5a	0.88	4	82w		.05+	.71+			ss	15cm	p	kw
	6a	1.31	337	84e		3	2+			rest. Sh		p	kw
	7a	1.64	335	88w,85e		0.11	0.81			ss	2 10cm	p	kw
	8a	2.09	345.34			0.1	0.87		t-sh	ss	13cm	p	kw
	9a	2.29	350	81e		0.1	1+			ss	13cm	p	kw
	10a	2.56	350	78e		0.13	0.36	M x-jnt.		ss	13cm	p	rj
	a11	2.68	347	72e		0.13	.30+	M x-jnt.		ss	13cm	p	rj
	a12	3.11	352	85w		20	1.5			ss		p	rj
	a13	3.68	351	72w		1.41	1.5+			ss	21cm	p	kw
	a14	4.68	342	86w		0.22	0.25			ss	20cm	p	kw
	a15	5.27	342	86w						ss	20cm	p	kw
	a16	4.95	345	72e		.12+	.22+			sh	12cm	p	kw
	a17	5.11	346	82w		0.36	1+	M(a18)		ss		p,cl	kw
	a18	c-note	76	80n		.17+	1+	A(a17)		ss	17cm		kw
	a19	5.42	335			4	.87+			sh			kw
	a20	5.19	337	86e		5	.56+	M		sh		cl	kw
	a21	6	333	72w		8+	.59+			sh			kw
Site 4	b1	0	356	80	E	0.07	1.51+	NA		SS		cl	F,C
7-7-00-4	b2	0.4	355	55	W	0.08	1.83+	NA		SOS (b1), next sand up		cl	F,C
Seneca Lake inlet	b3	1.34	342	82	E	0.07	1.42+	NA		SS		cl	F,C
	c1	0	81	81	S	0.23	.5+	NA		Sandy shale, .23m thick, good marker, above massive ss.72m thick, below bedded SS .42+mthick	The entire c set is contained within a .23m sandy	pl	F,C
	c2	1.2	80	83	S	0.23	.66+	NA		SOS (c1)	shale unit and al 6 fractures	pl	F,C
	c3	1.89	82	80	S	0.23	.66+	NA		SOS (c1)	abutt the sands above and below.	pl	F,C
	c4	2.68	86	84	S	0.23	.54+	NA		SOS (c1)		pl	F,C
	c5	3.16	78	84	S	0.23	.58+	NA		SOS (c1)		cl	F,C
	c6	3.9	76	80	S	0.23	.60+	NA		SOS (c1)		pl	F,C
	d1	0.68	86	84	S	0.31	.02+	NA	Dies into .1m sand at top, TA .06m sand	.31m sh		pl	F,C
	d2	0.96	83	80	S	0.31	.25+	NA	TA .06m sand *, Bot. Dies out half way through a .1 m sand (SOS (d1))	SOS (d1)	* TA sand .03 m thick sand then jumps .03m to a sand and continues .16m in sh until it reaches .08m sand which it TA		F,C
	d3	1.19	84	84	S	0.31	.21+	NA	dies I a .06m sand at top	SOS (d1)			F,C
	d4	1.53	79	89	S	0.31	.40+	NA	SOS (d3)				F,C
	d5	2.09	84	79	S	0.31	.30+	NA	TA .06m sand *, Bot. Dies out in sand		* can be seen in shale above with no offset		F,C
Site 5	a1	3.16	333	87	E	C8.5	C28	NA	BA sh	Thick Sands*, .25m-.41m Thick		pl	DJ,C
7-7-00-5	a2	3.24	331	86	E	.39+	3+	NA		Shaley sands b/t sands of (a1)and waterfall		pl	DJ,C
N.J. People's House	a3	3.36	331			.93+	18+	NA		SOS (a1)		pl	DJ,C
	a4	14.32	332	84	E		19.5+	M(A4A)		SOS (a1)		pl	DJ,C
	a4a	off line	70	86	S	5	2.5+	A(A4)		sh inbetween 2 thick sands		pl	RDJ
	a5	14.84	331	87	E			NA			b/t a5&a6 cross jts	pl	RDJ
	a6	14.92	330	89	E	.04-.5+	9+	A(A4)				pl	RDJ
	a7	15.21	328	89	E	.04-.5+	19.5+	NA				pl	RDJ
	a7a	15.26	327			.04-.5+	19.5+	NA				pl	RDJ
	a8	13.35	339	79	W	0.5	1.5+	A(50^{0})	BA in sh			pl	RDJ
	a9	15.94	327	90		0.5	19.5+	NA		SS above 2nd salvage		pl	RDJ
	a10	15.99	333	83	W	2.5	19.5+	NA	Makes it across all ss and sh		Composite height 6m	pl	RDJ
	a11	25.87	12			.16+	1.5+	NA				cl	RDJ
	a12	28.8	338	19	W	.1+	6+	NA				cl irregular	RDJ
	a13	29	333	19	W	0.13	1	NA		In SS above salvage SS		cl	RDJ
	a14	28.3	333	25	W	0.21	.25+	NA		SS above salvage SS		pl	RDJ
	a15	28.1	329	27	W	0.21	.43+	NA				pl	RDJ
	a16	27.05	72	85	S	0.45	1.22+	M*A(B8)	TA .17m SS, BA .25m SS	Shale	off scan line, in side wall,*M=Mutually	pl	RDJ
	a17	21	71	89	S	0.42	1.8	NA		Shale restricted		pl	RDJ
7/07/00-5	b2	38.25	340	73e		1.25+	10+	na	b-st	sh	20cm	p	kw
N.J. Hse	b3	36.85	340	81e		1.40+	0.15	M		sh,ss			kw
	b4	35.1	335	90		1.75+	12+	M		sh,st		p	kw
	b5	34.32	334	85e		1+	14+	M				p	kw

	b6	32.35	349	90		2.56+	15					p	kw
	b7	31.89	348	90		0.85						cl	kw
	b8	30.23	337	90		0.51	10+			ss	16cm	cl	kw
	c1	0.13	74	90		0.1	0.89	A(b8)				p	kw
	c2	1.07	75	79s		0.03	1.3			ss		p	kw
	c3	1.95	333	89e		0.18	0.73	M(c3), A(c2)				p	kw
	c4	30.5	74	84n		0.13	1	A(b8), M(c2)		ss		p	kw
	c5		332	84w		0.55	1.06	M(c2), I(b7)				p/cl	kw
	d1	c-note	76	82n		0.51	1	na	t-sh,b-ss	ss			kw
	d2		72	75s		0.44	0.62		t-sh,b-ss	ss,sh			kw
	d3		337	67w		.73+	1.70+					cl	kw
Site 6													
7-11-00-6	1	0.38	338	88	E	C1.7		NA		thick sands, .15m thick			C
Warner rd. 1			348	72	W								
QD	2	0.2	334.5	86	E	0.15	0.6	M(3)		IS w/ sands <=.05-.07			C
	3	0.26	76	80	N	0.15	0.45	A(2)		SOS (1)			C
		0.5											C
Site 7	a1	0.62	350	90		7+	1.22	na	t-sh			p	kw
7-11-00-7	a0	0.42	351	80e		6+	22+	na		sos,a1		p	kw
Warner rd 2	a2	0.83	355	86e		10+	2.20+	na				p	kw
	a3	1.41	352	78w		.20+	2.75m	M	t-sh			p	kw
	a4		95	90		1+	.38+	A(a3)	t-sh			p	kw
	a5	1.85	354	87w		16	2+	M	t-sh			p	rj
	a6		92	77s		5	0.43	A(a5)				p	rj
	a7	2.19	350	64w		4+	.35+	na				cl	rj
	a8	2.59	351	72w		6	.60+	A				cl	kw
	a9	2.9	350	68w		.15+	1.20+	na				p	kw
	a10	3.95	354	64w		.49+	3.65+	M(a11)				p!	kw
	a11		84	85s		3+	0.73	A(a10)				cl	kw
	a12		84	90		8+	0.71					cl	kw
	a13	4.74	351	60w		0.36	2.8+	intersct.		st	10cm	p	rj
	a14	6.89	346	89e		0.01	2+	M		st	10cm	p,cl	rj
	a15		345	90		0.01	0.34	A(14)		st	10cm		rj
	a16	6.97	345	90		.01+	0.69			st	10cm	cl	rj
	a17	7.09	338	90		.01+	1.05+			st	10cm		rj
	a18	7.45	345	90		0+	2		t-sh, b-ss	st	10cm	cl	rj
	a19	7.71	340	85e		0.09	0.78			sos,a14-19		cl	rj
	a20	8.68	349	75e		.12+	1.5					p	rj
	a21	9	84	85e		0.02	1.25			sh	2cm	p	rj
	a22	9.73	345	75e		17+	3+	M(a21)				p	rj
	b1	26.5	340	87	W	0.4	3.75	NA	TA SS	SS <=.1m		pl	C
	b2	25.25	338	90		1.0+	4.6+	NA		SOS (b1)	poss. clkws twist hackles	pl-cl	C
	b3	21.68	335	87	W	.07+	0.46	A(B4)		SOS (b1)	very small	pl	C
	b4	21.65	0	?				M(B3)		SOS (b1)	Composite L=1.5m+, H=.15m+	pl	C
	b5	17.37	339	90		.13+	3.65+	M(C1)		SOS (b1)		pl	C
								M(*)					
	c1	offline@17.37	275	74	N	0.09	2.5	A(B5)		SOS (b1)		cl	C
	b6	14.61	351	75	W	0.08	1.65+	M(*,80^0)		SOS (b1)		cl	C
	b7	11.42	351	89	W	0.1	1.1	NA		Sandy sh		pl	C
	b8	10.74	353	79		.08+	1.05	NA		SOS (b7)		pl	C
	b9	5.4	345	85	E	1.1+	4.8+	M(B10)		All sands *		pl	F
								M(B11)					
	b10	started using spacing	83	89	N	.06+	0.4	A(B9)		New sand		pl	F
	b11	0.78	84	80	S	0.15	2	A(B9)		BAsal.27 m sands		pl	F
	b12	(b9-b12) 1.5	343	88	W	1.0+	5.85+	M(B10)	TA .27m sand	SOS (b10)			F
	b13	1.65	sosb12	sosb12				SOS (B12)		Basal 1.6m sand			F
7-12-00-8	a1	0.36	330	90		0.38+	.94+	na		sh		p	kw
Valois	a2	1.7	30	89w		80+	2.4+					p	kw
	a3	30cm off	90	85s		0.04	0.4	A(a5)				p	kw
	a4	46 cm off	96	86s		0.15	20+	A(a5)				p	kw
	a5	27 cm off	21	75w		0.33	0.44	I				p/cl	kw
	a6		330	90		0.32	0.54	I				p	kw
	a7	2.48	339	87w		0.75	1	na		sh. Int. ss		p	fi
	a8	off line 2.8	355	90		0.28	0.17	na	t-sh	lim. To sh		p	fi
	a9	3.7	332	90		1+	1.90+			ext. all beds		p	fi
	a10	5.25	335	90		1.5	2+	na				p	fi
	a11	5.64	336	89w		1.5	2+	na				p	fi
	a12	6.4	332	90		1.5	3.51+						fi
	a13	6.59	336	89e		0.45	1.5	curves t. a12	t-sh,			c	fi

	a14	8.3	334	89w			3.0+					p	fi
Site 8	b1	18.52	337	78	W	C.84+	3.18+	M(B2)		Mostly Sh w/ some thicker sands, carbonate, sands <=.04m, sh <=.12m		PL-CL WIG	C
7-12-00-8	b2	offline	87	?		.09+	.49+	A(B1)		SOS (B1)		WIG	C
Valios In creek N. of San Faliz Hotel	b3	15.89	34	?		.27+	1.06+	M(LB)	TA sh	SOS (B1)		PL	C
	b4	offline	65	?		?	0.12			Basal .005m SS	looks like laterback, w/ LB spacing = .21	PL	C
	b5	15.79	335	87	W	C.41	C1.45+	M(B4)		SOS (B1)	Composite	PL	C
	b6	15.61	335	87.5	W	.84+	1.04+	NA		SOS (B1)		PL	C
	b7	15.27	342	90		.80+	1.22	NA		SOS (B1)		PL	C
	b8	15.17	335	?		.80+	2.8+	NA		SOS (B1)	poss. ctrclkws twist hackles	CL	C
			330	?				NA					
	b9	14.5	336	84	E	C.70+	C1.22+	NA	BA sh as a hook	SOS (B1)	composite	PL	C
	b10	13.84	337	88.5	W	C1.06+	C1.22+	M(B11)		SOS (B1)	composite	PL	C
			342.5	72	W								
	b11	offline	70	90		.11+	0.63	A(B10)		SOS (B1), controled by upper .05m sand		CL	C
								A(9)					
	b12	13.65	336	82	W	.24+	.70+	NA		SOS (B1)		PL	C
	b13	13.6	335	89	W	0.7	1	NA		SOS (B1)		PL	C
	b14	13.51	334	88	E	0.31	1.52+	NA				PL	C
	b15	10.96	335	86	W	C.96+	?	NA				PL	C
	b16	9.66	339	87	E	?	C1.88+	NA		SOS (B1)		PL	C
	b17	9.51	334	86	E	.70+	3.05+	NA		SOS (B1)		PL	C
	b18	9.5	341	84	E	.61+	1.36+	NA		SOS (B1)		PL	C
				77				NA					C
	b19	9.4	338	?		.17+	.39+	NA				PL	C
	b20	9.375	335	89	W	0.24	1.0+	NA				PL	C
	b21	9.25	344	85	W	0.64	1.0+	NA				PL	C
	b22	9.02	336.5	90		1.13+	4.0+	NA		SOS (B1)	en echelon	PL	C
	b23	8.98	335	86	E	C.77+	1.72+	A(B22) in hook		SOS (B1)		PL	C
				89	W								
7-12-00-9	a1	0	67	87s		.09+	1.17					p	kw
Valois	a2	0	90	63n		15+	0.98	na				p	kw
	a3	0.77	76	81nw		31+	1.64+		b-ss, 15cm	ext. all beds			kw
	a4	1.83	22	85se		6+	0.95	na				c	kw
	a5	2.39	16	90		.06+	.24+		t-sh,			c	kw
	a6	3.3	17	86w		0.09	.86+	na	sb-sh	rest. Ss		c	kw
	a7	1.13	80	70w		.05+	.30+	na	t-ss	rest. sh		p	kw
	a8	1.29	81			.02+	.20+	na		sos		p	kw
Site 9	B1	5.35	339	90		.18+	1.09+	M(B2)	Bedded sand stone <= .18m thick			PL	RDJ
7-12-00-9	B2	6.67	271	80	S	C.44	C1.21+	A(B1)	SOS (B1)			CL	RDJ
Creek N. of San Feliz Hotel	B3	4.81	76	67	S	C.20+	1.90+		SOS (B1)			PL-Cl	RDJ
	B4	4.15	90	?		C.10	C1.21				composite	CL	RDJ
	B5	3.9	293	?		0.05	.5+	A(B5)				CL	RDJ
								M(B4)					RDJ
Site 10	A1	0.2	61	77	S	.13+	.21+	A(A2)	TA sand	Interbeded sand and shale, Sh<=.33m, Sand<=.08m	composite	PL-CL	C
7-12-00-10	A2	0.1	62	84	S	.33+	0.15	M(A2)				PL	C
Break neck Creek	A3	0.41	62	77	S	0.08	0.4	A(A6)	TA shale	Basal sand .08m*	composite	PL	C
W est en of RR culvert	A4	0.33	60	82	S	0.08	.23+	A(A6)		SOS (A3)	Right stepping en echelon	PL-CL	C
	A5	0.05	60	82	S	0.08	.36+	NA		SOS (A3)		PL-CL	C
	A6	0	76	88	S	0.67	2.40+	M(A1)		Basal Sh		PL	C
								M(A2)					
								M(A3)					
								M(A4)					C
								I(A12)					
	A7	0.5	72	89	S	0.6	1.5+	I(A12)	TA upper sand	Basal sh, basal sand and into upper sand.26m		CL	C
	A8	0.87	66	88	S	0.36	0.38	NA		Upper sh & upper sand		PL	C
	A9	0.98	54	80	S	0.2	0.4	NA		SOS (A8)	ctrclkws rotation from shale to sand	PL	C
	A10	1.1	68	90		.38+	.53+	NA		SOS (A8)		PL	C
	A11	1.12	77	90		0.4	.8+	NA		SOS (A8)		PL	C
	A12	1.97	5	86	E	1.2+	1.05+	I(A6)		Entire section		PL	C
								I(A7)					

	A13	1.75	74	90		0.2	0.34	A(A12)	BA lowest sand , TA w/in basal sand	Basal sand	ctrclkws twist hackles	PL	C
	A14	2.2	75	88	N	0.56	0.46	A(A12)		Upper sh, basal sand, basal sh	en echelon	PL	C
	A15	2.49	341	90		0.54	.85+	A(A17)		Basal sand, uppersh, upper sand		PL	C
	A16	3.35	80	87	N	.28+	0.94	A(A17)		Basal Sand , upper sh		PL	C
	A17	3.3	68	86	N	0.22	0.37	I(B18)	TA upper sand	Upper Sh		CL	C
	A18	2.6	3	86	NW	0.48	0.77	M(A16)		Entire Section		PL	C
								M(A15)					
	A19	offline from A18 .07m	56	?		0.04	0.19	A(B18)		Upper sh		PL-CL	C
	A20	3.53	60	89	N	0.16	0.4	M(A19)		Upper sh		PL	C
	A21	3.65	647	81	N	0.2	.58+	M(B18)		Upper sh		PL	C
	A22	3.95	341	90		0.26	0.61	A(B15)	TA basal sand	Basal sh		PL	C
								A(A23)					C
	A23	3.47	72	88	N	.56+	1.18	M(A22)	TA basal sand	Lowest sand		PL	C
	A24	4.4	344	89	W	0.32	.08+	A(B15)	TA basal sand	Lowest sand		CL	C
	A25	4.78	350	83	W	0.65	.86+	A(B15)	BA lowest sand , TA upper sand	Upper sh, basal sand, basal sh		CL	C
	A26	8.12	359	87	W	1.21+	1.74+	NA		Entire section		PL	C
7-12-00-10	b1	5.04	358	90		1.63	1.6+	na		35cm ss		p	rj
Valois	b2	5.06	41	87se		0.15	12+	A(b3)		ext. all beds		p	rj
	b3	4.94	350	88e		0.15	16+	M(b3)		rest. ss		c	rj
	b4	4.97	50	85se		0.57	0.38	na				p	rj
	b5	4.83	46	78nw		.15+	0.15	M		rest.ss		p,c	rj
	b6	4.53	357	75w		0.15	0.18					c	rj
	b7	4.7	62.5	89s		0.33	.33+		t-sh, b-st	ext. all beds			rj
	b8	4.42	330	75ne		0.13	.13+	A(b7)				c	rj
	b9	4.55	52	89s		0.27	0.23		b-ss, t-sh				rj
	b10	4.55	58	87s		0.15	14+	A(b14)				p	rj
	b11	4.61	52			0.01	9+					p	rj
	b12	4.28	12	73w		0.25	0.5	A(b13)				c	rj
	b13	4.48	65	85w		.33+	8+	M(b12)				p	rj
	b14	4.4	345	72w		.84+	1.5	M(b10)		rest. sh		c	rj
	b15	3.77	62	79nw		0.15		M				p	rj
	b15a	sh below	66	86s		0.25	2+			sh below		p	rj
	b15b	sand	64	87s		0.07						p	rj
	b15c	sh	73	87se		.30+	2+	M(b16)				p	rj
	b16	2.91	0	68w		0.15	0.15	A(b15)				p	rj
	b17	3.7	62	82w		0.15	1.4	na				p	rj
	b18	2.74	346	87w		0.15		A(b17)				p	rj
	b19	0	56	85se		0.15	29			15 cm ss		p	kw
	b20	0.12	56	86se		0.15	.04+	M(b21)		sos		p	kw
	b21	0.2	57	83se		0.15	.18+	A(b21)		sos		p w/hook	kw
	b22	0.31	54	90		0.15	.11+	A(b23)		sos		sos	kw
	b23	0.385	54.5	88nw		0.15	.31+	M(b22)A(b25)		sos		p	kw
	b24	0.48	53	90		0.15	.14+	A(b25)				p	kw
	b25	0.52	53	90		0.15	.23+	M(b23,b24)				p	kw
	b26	0.58	53	83se		0.15	.23+	na				p	kw
	b27	0.66	51.5	74se		0.15	.35+	na				p	kw
	b28	0.77	53.5	82se		0.15	.38+	M(b29)				p	kw
	b29	0.75	70.5			0.15	.37+					wiggly	kw
	b30	0.86	49	78se		0.15	.20+					p	kw
	b31	0.88	55	70se		0.15	.40+					wiggly	kw
	b32	0.86	75	90		0.51	1.32+					p	kw
	b33	0.94	3.5	90		0.93	1.1+					p	kw
	b34	0.94	50	89nw		0.15	0.38					p	rj
	b35	1.01	52	73se		0.3	0.19	A(b34)				p	rj
	b36	1.06	55	86se		0.33	0.59					p	rj
	b37	1.14	52	87se		0.15	14	A(b36), hook				p	rj
	b38	1.21	49	90		0.15				rest. ss		p	rj
	b39	1.8	60	88		0.15	0.2	na				p	rj
	b40	1.89	60	88se		0.15	0.11					p	rj
	b41	1.91	52	83se		.44+	0.1					p	rj
	b42	1.95	61	87se		0.15	0.25	na				p	rj
	b43	1.98	3	88se		0.75	0.77	M(b43,b45)		in ss,sh			rj
	b44	2.17	73	83n		0.2	0.47	A(b43)	t-ss	in sh only			rj
	b45	2.2	55	na		0.15	.21+	A(b43)					rj
	b46	2.26	50	84se		0.15	.16+			in ss only			rj
	b47	2.34	54	na		0.15	0.24			sos			rj

	b48	2.48	54	88se		0.15	na						rj
	b49	2.39	72	90		1.22	1.7	A(b33)		sh			rj
	b50	2.17	342.5	85ne		0.83	1.00+	A(b49)					rj
	b51	3.38	62	90		0.29	.59+	A(a17,a18)					rj
	b52	3.14	43									p	rj
	b53	3.16	40									p	rj
	b54	3.38	60									p	rj
	b55	3.44	60	80nw								p	rj
	b56	4.8	70	87n			2.15						rj
	b56	3.79	75	90		18	0.68					p	rj
	b57	5.5	74	88nw				M, x-frac				p	rj
Site 11	A1	0.75	330	84	E	.74+	4.2+	NA		IT			RDJ
7-13-00-11	A2	1.93	334	90		.92+	7.0+	M(A3)		A&B		PL	RDJ
Breakneck Creek	A3	off line	60	86	SE	.08+	.13+	A(A2)		B	Spacing to next in set =.41m (not to A4), then .21m	PL	RDJ
West end of RR tunnel	A4	2.7	85	?		.28+	2.44+	A(A5)		B&C1		CL	RDJ
Don Guthrie			281	?								PL-CL	
	A5	4.62	332	84	E	.42+	6.5+	M(A4)		B&C1	Calcite filled	PL	RDJ
	A6	4.79	330	83	E	1.62+	8.0+	NA		A,B&C1	Calcite filled,veins parallel to A6, veins swing away from A6*	PL	RDJ
	A7	7.97	329	90		SOS (A6)	SOS (A6)	NA		SOS A6		PL	RDJ
	A8	5.77	330	84	E	.23+	4.5	NA		SOS A6		PL	RDJ
	A9	6.06	326	86	E	.85+	5.6+	NA	BA C2	SOS A6		PL	RDJ
	A10	Offline @ 5.93	327	?		0.05	0.99+	NA		C1	Carbonate filled	PL	RDJ
	A11	Offline @ 5.89	330	85	E	0.15	1.11	NA	TA C1	C1,C2		PL	RDJ
	A12	7.29	334	90		0.02	2.18	May A(A8)	TA C1	C2		PL	C
								M(A14)				PL	
	A13	7.31	331	84	E	0.72	2.5	NA		C1,C2&B		PL	C
	A14	N. .5m offline @ A12	276	?			C7.2	A(A12) hook		C1,C2&B		CL	C
	A15	10.86	9	88	W	3+	2.73	A(A14)		C2, C3		CL	C
								A(B12)					
7-13-00-11	b1	37.8	342	90		2.05	3+	na		in sh		p	kw
breakneck	b2	36.9	342	90		1.30+	2.76+	na		in sh		p	kw
	b3	36.18	72	90		0.19	1	A(b4)	t- sh	in sh		p	kw
	b4	35.42	334	90		3.5	1.5	M(b3)				p	kw
	b5	35.25	334	89e		3.4	1.5	na		in sh		p	kw
	b6	35.2	336	82e		2.26	5+	hooks(b2)					kw
	b7	30	90	82s		0.01	8	na				c	kw
	b8	24.69	90	90		0.54	14	M				p,c	kw
	b9	21.09	353	82e		0.07	1.56	A(b8)				p	kw
	b10	15.75	96	65e		0.04	12	A(a330@west)				c	kw
	b11	14.14	90	85s		0.02	2.6					c	kw
	b12	off line	95	80s		0.35	5	M(a15)				p	kw
7-13-00-12	a1	0.28	350	80s		6	21					p	kw
	a2	0.55	0	na		na	1.1					c	kw
	a3	1.17	62	72s		0.21	1.26	I(a4)				p	kw
	a4	1.6	1	82e		0.95	3	I(a3)				p	kw
	a5	1.91	4	82e		0.45	4.8					p,c	kw
"Q&D"	a6	2.12	2	88e									kw
	a7	2.21	0	80e									kw
	a8	2.4	1.5	90									kw
	a9	2.46	4	86									kw
	a10	2.55	3.5	na									kw
	a11	2.66	2	85e								c	kw
	a12	2.71	3	86e								c	kw
	a13	2.82	2	83n								c	kw
	a14	2.86	358	76w								c	kw
	a15	3.01	2	63w								c	kw
	a16	1.12	330	90		0.18	3	M(a5)					kw
	a17	off line	330	90		0.1	3.6	A(b10)					kw
Site 12:	B1	5.49	351	80	E	C3.13+	2.48					CL	C
7-13-00-12	B2	5.07	0	75	E	1.1+	1.8		BA IT	IT			C
Ellison House Creek	B3	4.75	0	80	E	0.94	1.7	A(B4)	TA 3, BA IT				C
FID	B4	4.45	354	79	E	3.14	14.79	NA				PL-CL	C
	B5	4.45	340	77	E	.4+	1.4	A(B4)		IT	Parallel abut	CL	RDJ
								A(B7)					
	B6	4.34	250	?		.09+	.4+	A(B7)		IT	Parallel abut	CL	RDJ
	B7	4.22	353	82.5	E	1.79+	9.0+	M(B6)		IT		CL	RDJ

								M(B5)					
	B8	4.16	350	89	E	SOS(B7)	3.5	A(B9)*			Hooks the same as B3, abuts B9 at both ends	CL	RDJ
								A(B9)					
	B9	4.13	355	86	E	3.0+	20+	M(B8)			Master to B8 twice	CL	RDJ
	B10	3.76	354	86	E	1.2+	10+	M(A17)	BA IT		Strange intersection w/ B11 S. of line	Map view PL	RDJ
	B11	3.69	350	86	E	2.0+	13+	M(B12)	TA in IT		Left stepping	Ragged	RDJ
	B12	3.63	357.5	86	E	2	11	A(B11)		IT	Parallel abut, 11m to the S. abuts a fracture 330/80W which is a master	CL	RDJ
	B13	3.48	350	73	E	.28+	1.13+	A(B12) hook to S.		IT		CL, Wiggley	RDJ
	B14	3.25	355	?		0.46	4.0+	A(A17)	BA IT	IT		CL-PL	RDJ
			350	87	E					IT			
	B15	3.16	350	?		.87+	0.1+	Poss. A(B16)		IT		CL	RDJ
	B16	3.13	355	87	E	0.81	1.0+	Poss. M(B15)	BA IT, TA in a sand in the IT	IT		PL	RDJ
	B17	3.06	359	85	E	0.19	3.0+	NA	BA IT, TA in a sand in the IT	Controling Sand .045m		PL	RDJ
qd	D-2	8m w/ no frac	355	40	W	0.12	.24+		TA & BA in sand w/in IT	IS		PL	RDJ
	D-1	0.3	340	32	W	0.12	0.07+		TA & BA in sand w/in IT	IS		PL	RDJ
	D0	0.32	350	50	W	0.11	0.14		TA & BA in sand w/in IT	IS		PL	RDJ
May be diff set	D1	0.41	356	86	W	0.15	0.86+		TA .3 m sand	IS		PL	RDJ
	D2	0.085	0	87	W	0.15	0.41		SOS (D1)	IS		PL	RDJ
	D3	0.15	355	90		0.06	0.82+		SOS (D1), BA IS	Insand that D1 & D2 abut		PL	RDJ
	D4	0.42	355	88	E	0.14	1.11+		SOS (D3)	IS		PL	RDJ
	D5	0.335	352	88	W	0.78	2.2+		SOS (D3)	IS		PL	RDJ
	D6	0.27	355	80	W	0.41	1.45+		BA .18m sand, TA IS	IS		PL	RDJ
	D7	0.14	347	81	W	0.15	0.61+		TA & BA in middle of IS	IS		CL	RDJ
	D8	0.045	355	85	W	0.27	0.56+		SOS (D7)	IS		CL	RDJ
	D9	0.085	353	81	W	0.4	0.95+		SOS (D4)	IS		PL	RDJ
	D10	0.07	357	70	W	0.12	0.31+		SOS (D7)	IS		PL	RDJ
	D11	0.15	0	82	E	0.06	0.15+		SOS (D7)	IS		PL	RDJ
	D12	0.29	355	87	E	1.0+	9.0+			IS		CL	RDJ
	D13	0.185	355	88	W	1+	3.42+			IS		CL	C
	D14	0.195	356	?		0.22	0.43+			IS		PL	C
	D15	0.12	0	?		0.22	0.62+			IS		CL	C
	D16	0.09	356	?		0.2	0.31+			IS		CL	C
7-13-00-13	b1		354	84								c	kw
ellison hse	c3	0.16	350	79								c	kw
"Q&D"	c4	0.07	355	90									kw
	c5	0.04	358	86e									kw
	c6	0.04	358	80w									kw
	c7	0.2	358	84e									kw
	c8	0.16	10	77e									kw
	c9	0.06	0	89e				hks into 10					kw
	c10	0.07	0	76e				hks into 11	t-ss,				kw
	c11	0.05	355	89e					t-ss,				kw
	c12	0.2	355	84e				hks into 11					kw
	c13	0.29	0	90									kw
	c14	0.67	4	84e									kw
Site 14													
7-13-00-14		Spacing											
Camp Meeting Point	A1		340	89	E	10+	9+			Is<= .13m	Entire exposure at this site has no cross joints	PL	RDJ
Elison House Creek 2	A2	0.37	334	88	W	7.5+	3+		TA in IS	IS		PL	RDJ
	A3	0.345	336	88	W	10+	5+			Sand 0.12 m thick		PL	RDJ
Quik and Dirty													
	B1		334	89	W	8.5+	1.5	A (20^0)	BA in IS	Entire Section		PL	RDJ
?/??????	B1.5	0.67	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)	I (20^0)	SOS (B1.5)	SOS (B1.5)		SOS (B1.5)	RDJ
	B2	0.7	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)	SOS (B1.5)		SOS (B1.5)	SOS (B1.5)		SOS (B1.5)	RDJ
7-13-00-14	1b	1.23	336	90				M(1.2m 90)					kw
ellison hse	2b	1	345	90									kw

Site15		Spacing											
7-15-00-15	A0		88	78	S	<= A5	<= A6	NA	BA Shale	X-bedded sand <= .06m max	A abuts B, Babuts C		RDJ
Sawmill Creek	A1	0.3	86	73	S	<= A5	<= A6	NA	SOS (A0)	SOS (A0)			RDJ
Near Peach Orchard , Hector	A2	0.6	83	70	S	<= A5	<= A6	NA	SOS (A0)	SOS (A0)			RDJ
East End of RR tunnel	A3	0.322	82.5	59	S	<= A5	<= A6	NA	SOS (A0)	SOS (A0)			RDJ
	A4	0.265	75	75	S	<= A5	<= A6	Hoohks into 335°	SOS (A0)	SOS (A0)	hooking		RDJ
Q&D			83	?				NA					RDJ
	A5	0.075	90	83	S	0.06	1.12		SOS (A0)	SOS (A0)	hooking		RDJ
			277	?									
			72	?									
	A6	0.58	80	79	S	<= A5	<= A6		SOS (A0)	SOS (A0)	hooking		RDJ
	A7	0.65	75	76	NW	.15+	3.0+		SOS (A0)	Through sand and underlying shale	hooking		RDJ
			90	?				Hoohks into 335°					
	B1		329	85	SW	1.11+	15.0+			Cuts entire section , Thickest 0.10 m Sand	hooking		RDJ
	B2	2.14	336	80	NE			A (B3)		SOS (B1)			RDJ
								M(75°)					
	B3	0.27*	335	81	NE			M(B2)		SOS (B1)	*At least 2 m until next fracture		RDJ
								A(C1)					
	C1		68	90				M(B3)					RDJ
	C2	1.4	67	88	N	.37+	2.0+			Sand and Shale			RDJ
	C3	8.1	64	? Variable						SOS (C1)			RDJ
										SOS (C1)			
	D1		351	?				M(90°)				CL	RDJ
	D2		353	86	W			M(90°)				CL	RDJ
	D3		5	?				M(90°)				CL	RDJ
7-14-00-15	a0		88	68s						rstr. 4cm	sh		fi
Sawmill	a1	0.29	82	62s									fi
"Q&D"	a2	0.23	90	65s									fi
	a3	0.18	90	60s									fi
	a4	0.2	79	na									fi
	a5	0.35	82	78s									fi
	a6	0.2	79	90									fi
	a7	0.27	81	77s									fi
	a8	0.26	88	84s									fi
	a9	0.26	87	85n									fi
	a10	0.43	81	90									fi
	a11	0.43	78	82s									fi
	a12	0.4	75	83s									fi
	a13	0.43	85	82n									fi
	a14	0.28	83.5	69s									fi
	a15	0.19	89	76s									fi
	a16	0.31	89	73s									fi
	a17	0.21	89	75s									fi
	c1	0	281	na									fi
	c2	0.12	89	81s									fi
	c3	0.11	80	89s									fi
	c4	0.11	82	76n									fi
	c5	0.22	84	90									fi
	c6	0.15	88	90									fi
	c7	0.12	90	81n									fi
	c8	0.12	90	80s									fi
	c9	0.13	85	82s									fi
	c10	0.13	65	na									fi
	c11	0.51	75	na									fi
	c12	0.14	85	na									fi
	c13	0.12	82	na									fi
7-14-00-16	a1	0.39	334	90		0.26	2.5+	M(off-ln 90)				p	rj
sawmill RR	a2	0.71	330	80w		0.32	1.23	A(a5)					rj
	a3	1.27	334	84w		0.32	1.23	A(a5)	t-ss, b-ss		13cm ss		rj
	a4	1.38	3	na		0.32	6.5+	sos					rj
	a5	1.54	5	na		0.32	6.5+				carbonate		rj
	a6	2.25	0	85e		0.32	6.5+	sos					rj
	a6	7.53	2	90		.02+	6.5+	M(330's)					rj

	a7	9.98	5	na									rj
	a8	10.95	335	na		0.01	1.6+	M(a9)					rj
	a9	11.18	65	na		na	1.9					c	rj
	10	12.73	355	na		na	1.6+					c	rj
	a11	13.33	340	na		na	2.3					hook	rj
	a12	14.85	5	na		na	3.4						rj
	a13	17.62	71	88s		.44+	5.9	A(a17)	t-ss			p	kw
	a14	18.8	70	88n		sos	sos	A(a17)				p	kw
	a15	20.17	71	88n		sos	sos	A(a17)				p	kw
	a16	20.9	70	88ne		.40+	3.8+					p	kw
	a17	21.7	344	74e		0.12		M(a13-16)				c	kw
			8	90				A(a18)					kw
	a18	23.93	73	90		0.92		M(a17)				c,p	kw
			70	90		0.92	21+	M(a19)					kw
	a19	24.36	355	84w		.05+	0.45	A(a18,20)				c	kw
	a20	25.3	89	72s		.09+	6.5	A(a18,b11)				c,p	kw
	a21	25.5	87	76s		.13+	2.2+	A(a18)					kw
Site 16	B1	39.8	5	?		2.5+	C11+	NA		Lower IS = 1.3m , lower sand = 0.04 m	CTR CLWS Twists	PL-CL	C
7-15-00-16	B2	B1 0.69 Offline	69	86	S	.3+	5+	NA				PL	C
Sawmill Creek	B3	35.59	351	45	W	0.2	1.15	A (B4)*			Cross Jt.*	CL	C
								A (B6)*					
West end of RR tunnel	B4	34.4	69	87	S	0.42	3	NA	TA Sand			PL	C
	B5	34.3	72	85	S	.48+	7+	M (B3)	Dies into Sand			PL	C
	B6	36.45	70	90		.48+	7.8	M (B3)		IS and Sand		PL in IS, Cl in sand	C
	B7	32.7	70	?		0.6	7.5	M (351° crs jt)	TA in IS			PL	C
	B8	perp. offline @32.37	70	?		.70+	6+	NA		Cuts through upper sand	CTR CLWS Twists in upper sand	PL	C
	B9	31.29	70	89	S	0.2	3+	NA	SOS (B5)			PL	C
	B10	31.12	72	90		0.55	8.5+	NA	TA upper sand			PL	C
	B11	28.81	68	?		.16+	5+	M(A20)	Dies in upper IS			PL	C
	B12	26.57	356	?		0.11	.38+	A(B13)		in upper IS		CL	C
	B13	26.41	78	?		.11+	2.78	M(B12)				CL	C
Site 17	A1		352	82	W	10+	12+						
7-17-00-17	A2	3.87	326.7	88	E	3+	2.4+	A(A3)		Sandy Shale			
Sam's Property	A3	0.41	345	87	E	2.5+	12+	M(A2)			Clkws twists		
Glen Eledrige Hollow	A4	0.04	349	89	W	10+	2+						
Carpenter Rd.													
Q&D													
N-S FID													
GPS = N42°25'19.3, w076°51'25.6													
Site 18	A1	0.61	333	82	E	4+	5+	M(A2)		Cuts entire sectrion, thickest sand .31m	Small	PL	C
7-17-00-19	A2	1.03m offline @A1	61	90		.18+	0.63	A(A1)		IS		PL	C
Glen Eldridge 2	A3	0.79	332	89	E	2.3+	2.5+	A(A1)	BA in IS	Cuts marker sand	Vertical Hook	PL	C
	A4	0.99	331	90		.3910+	0.57	NA		IS		PL	C
~N-S FID	A5	1.32	333	87	NE	0.39	1.2+	A(335°)		Cuts entire sectrion	Hook	PL except where hooks	C
	A6	1.87	332	89	NE	.02+	.07+	NA		IS		PL	C
	A7	2.57	334	90		0.44	1	NA		IS		PL	C
	A8	2.33	334	90		2.5	5+	NA		Cuts marker sand		PL	C
	A9	2.78	330	85	SW	0.28	0.96	A(A11)		IS		PL	C
	A10	2.84	335	80	E	.4+	1.7	A(A11)		IS		PL	C
	A11	2.96	335	90		10+	5+	M(A9)		SOS (A12)		PL	C
								M(A10)					C
	A12	3.56	355	81	E	SOS (A11)	SOS (A11)	NA		SOS (A11)		PL	C
Site 19	1	0	331	90		1.1+	7.4+	NA		IS		PL	C
7-17-00-19	2	0.49	328	90		.53+	SOS(1)	NA		IS		PL	C
Bullhorn Creek-2	3	0.73	331	90		.87+	3.5+	M(5)		IS		PL	C
	4	1.7	332	78	W	.71+	13+	M(5)		IS		PL	C
SL	5	Offline .4m alomg (4)	73	75	S	0.76	0.93	A(3)		Sand 2	Hook	PL	C
								A(4)					
	6	2.08	334	90		1.75+	13+	MA(6)		C and 3		PL	C
	7	2.43	15	80	NW	0.11	1.21	MA(7)		Only 3	May be a cross joint b/t 6&8	PL	C

								A(8)					
	8	3.15	335	87	W	1.5+	3.5+	M(7)		C, 3 and Bottom of B		PL	C
	9	4.51	329	89	E	3.5+	7.0+	NA		3, B, 2, A, 1 and Top of C		PL	C
	10	4.62	329	87	W	2.5+	7.0+	NA	TA 3	C		PL	C
	11	5.72	335	90		6.0+	13+	NA		Entire section		PL	C
	12	5.9	330	84	E	0.06	20+	NA	TA B	B		PL	C
							.66+						
7-18-00-19	b1	17.28	328	90		.38+	5+	M(70 offline)		thru m.ss		p	kw
Buckhorn	b2	15.47	330	90		.25+	5.25+	I(b3)		thru m.ss		p	kw
	b3	14.63	6	89w		0.03	4	I(b2)		in m.ss		p	kw
	b4	14.08	336	86e		0.11	6+	na		only m ss		p	kw
	b5	13.82	332	84w		1.5	3	na		dies inss		p	kw
	b6	13.55	334	82w		0.6	8+	na		thru m.ss		p	kw
	b7	13.4	334	86w		2.5+	2.5+	na		thru m.ss		p	kw
	b8	10.36	336	86e		1+	5	na		only lwr sh		p	kw
	b9	10.1	330	88w		1	4.5+	na		only lwr sh		p	kw
	b10	9.42	335	89w		0.6	3+	I(b11)		only lwr sh		p	kw
	b11	8.54	35	85s		0.25	2	I(b11,b12)		only lwr sh		p	kw
	b12	8.1	11	90		2	5+	I(b11)		thru all		p	kw
	b13	7.19	333	86w		0.33	3.5	M(b11)		in m ss,sh		p	kw
	b14	7	330	90		2+	7+			thru all		p	kw
	b15	6.56	70	88n		0.13	0.64			in lwr m ss		p	kw
	b16	6.27	336	90		.20+	5+	M(b15) I(b17)		dies in sh		p	kw
	b17	6.1	4	90		1.5+	4+	I(b16)		in lwr m ss		p	kw
	b18	5.19	334	88w		2.5+	5.5+	I(b17)		in lwr m ss		p	kw
	b19	3.68	330	90		1.13	5+	na		in lwr m ss		p	kw
	b20	0.5	6	82w		2	4+	na		ext. gr. Sh		p	kw
7-18-00-20	a1	0.3	145	87s		.75+	4.5+	I(a5)		up to m ss		c	kw
Caywood	a2	0.49	330	90		0.06	4+	na				c	kw
	a3	0.55	332	89w		0.03	0.28	na		in lwr m ss		c	kw
	a4	0.6	332	89w		0.16	2	na		in lwr m ss		c	kw
	a5	1.6	74	78s		0.73	7	I(a1,a6)		in lwr m ss		p	kw
	a6	1.81	9	89w		0.49	4.5+	A(b20)		in lwr m ss		p	kw
	a7	2.47	334	82w		0.67	3+	I(a5), A(b3)				p	kw
Site 20	B1	3.7	332	82	E	.71+	5.0+	M(B3)		Cuts entire section		PL	C
7-17-00-20								M(A5)					
Bullhorn Creek	B2	3.08	337	?		SOS(B1)	SOS(B1)	M(B3)		SOS(B1)		PL	C
								M(A6)					
								I(B4)					
	B3	3.18	76	85	N	1.5+	.10+	A(B1)		C		PL	C
								A(B2)					
								A(B4)					
								A(B5)					
								A(B6)					
								A(B7)					
	B4	?	10	85	N	SOS(B1)	SOS(B1)	I(B2)		SOS(B1)		PL	C
Site 21	a1	0	79	88s						in sh		p	kw
7-18-00-21	a2	0.14	79	87n						in sh		p	kw
Fake Caywood	a3	0.34	79	90						sos		p	kw
	a4	0.14	80	87n						sos		p	kw
FID	a5	0.57	79.5	90						sos		p	kw
QD	a6	0.54	81	86s						sos		p	kw
	a7	0.62	80	84n						sos		p	kw
	a8	0.43	95	90						sos		p	kw
	a9	0.45	95							sos		p	kw
	a10	0.33	105							sos		p	kw
	a11	0.22	352	87w						sos		p	kw
	a12	0.22	75	85n						sos		p	kw
	a12a	0.22	76	85n						sos		p	kw
	a13	0.04	75	90						sos		p	kw
	a14	0.56	76	90						sos		p	kw
	B1		338			6.0+	4.0+			Shale			
	B2	2.9	335			SOS (B1)	SOS (B1)			Shale			
	B3	1	334			SOS (B1)	SOS (B1)			Shale			C
	B4	1.43	335			SOS (B1)	SOS (B1)			Shale			C
	B5	4.27	335			SOS (B1)	SOS (B1)			Shale			C
	B6	0.85	0			SOS (B1)	SOS (B1)	A(A's)		Shale			C
	B7	0.67	5			SOS (B1)	SOS (B1)	A(A's)		Shale			C

	B8	1.21	335			SOS (B1)	SOS (B1)			Shale			C
													C
7-18-00-22	a0	0	75	85s	2	0.62	A(a1)			thru all sh		p	kw
Caywood, wl	a1	0.55	332	89e	1.5	1.1	M(a0)			sos		p	kw
	a2	2.1	35	89e	1	1.21+	M(a3)			sos		p	kw
	a3	1.76	75	85n	4+	2.5+	A(a2)			sos		p	kw
	a4	2.87	75	89n	0.23	0.79	na			sos		p	kw
	a5	2.91	75	90	1	1.75	A(330) e of line			sos		p	kw
	a6	5.1	335	89e	0.77	0.77						p	kw
	a7	3.76	72.5	89n	0.56	0.53	M(a5)					p	kw
	a8	3.69	74	90	5+	0.1						p	kw
	a9	3.98	72	89s	5+	0.1	na					p	kw
	a10	4.12	71	90	5+	0.15	na					p	kw
	a11	4.18	72	90	5+	0.15	na					p	kw
	a12	4.55	75	86s	4.5+	0.25	na					p	kw
	a13	5.5	75	89s	4.5+	0.65						p	kw
	a14	6.06	333	89w	1.5	3+	M to last 6					p	kw
	a15	6.38	76	90	5+	2.6+	M(b17)					p	kw
Site 22	a16	3.2	74	90	5+	2.5+	can't tell					p	kw
7-18-00-22	B1	11.5	330	88	W	1.75+	2+	I(B5)		Shale		PL	
Fake Caywood 2	B2	10.9	70	85	S	5	1	NA		SOSB1		PL	
	B3	10.4	338	86	W	.41+	0.87	MA(B4)		SOSB2		PL	
	B4	10.1	13	75	E	.17+	0.45	MA(B3)		SOSB3		PL	
								A(B5)					
	B5	9.73	70	90		5+	2+	M(B6)		SOSB4		PL	
								M(B4)					
								I(B1)					
	B6	9.68	75	90		.30+	.35+	A(B5)		SOSB5	Hook	PL	
	B7	9.75	331	90		.45+	.54+	M(B9)		SOSB6		PL	
	B8	9.54	65	87	S	.23+	.50+	NA		SOSB7		PL	
	B9	9.36	69	87	S	0.09	0.36	A(B7)		SOSB8	Hook	PL	
	B10	9.28	331	90		5+	2+	M(A15)		SOSB9		PL	
	B11	9.1	335	90		SOS B10	SOS B10	I(A15)		SOSB10		PL	
	B12	8.75	330	90		0.8	.92+	A(15)		SOSB11		PL	
	B13	7.49	79	90		.32+	0.18	A(B10)		SOSB12		PL	
								A(B11)					
	B14	7.25	74	89	S	5	1.5	I(B10)		SOSB13		PL	C
								I(B11)					C
								I(B12)					C
	B15	6.89	77	86	S	5	1.5	I(B12)		SOSB14		PL	C
								I(B13)					C
								I(B14)					
	B16	6.74	76	85	S	5	1.5	A(B10)		SOSB15		PL	C
								I(A11)					C
								I(A12)					C
	B17	6.7	75	86	S	5	0.2	A(B10)		SOSB16		PL	C
7-19-00-23								A(B11)					C
Silverthread	a1	0.25	338	90	0.02	0.03	A(a2)			2cm	p	kw	C
	a2	0.4	75	86w	0.16	2+	A(330 off line)				p	kw	C
	a3	0.5	80	87w	0.16	3+	A(a4)				p	kw	
	a4	1.62	340	87w	1.8	19+	I(a5)				p	kw	C
	a5	1.62	4	90	1.55	26+	I(a4)				p	kw	C
	a6	7.73	20			3					p,c	kw	C
	a7	11.04	10	90	0.11	9+	M(n-s offline)				p	kw	
	a8	11.61	0	84e	0.8	14+					p	kw	C
	a9	12.85	335	90	0.15	6					p	kw	
	a10	15.4	342	86w	.87+	15+	I(a11)				p	kw	C
	a11	16.04	70	85s	1+	11+	I(a10)				p	kw	C
Site 24	A1	1.09	335	?		.23+	7.6+					PL	
7-19-00-24	A2	2.29	5	90		1.5+	16.5+					PL	
Mill Creek	A3	2.68	80	90		19+	10+					PL	
Near Lodi Cemetary	A4	3.62	75	80	E	.18+	.18+					PL	C
	A5	3.97	75	84	E	0.29	0.29					PL	C
	A6	5.1	339	90		0.19	0.19					PL	C
	A7	6.64	336	?		.31+	.31+					PL	C
	A8	6.715	340	85	W	.31+	.31+					PL	C
	A9	7.7	340	83	W	0.71	.71+					PL	C
	A10	8.56	80	?		?	?					CL	C

	A11	9.36	335	?		.05+	.05+					PL	C
	A12	9.65	338	90		2	14					PL	C
	A13	11.6	75	?		0.08	2.6					CL	C
	A14	13.85	78	?		0.08	2.6					CL	
	A15	14.38	335	90		.2+	5					PL	C
	A16	14.97	332	89	W	.31+	10+					PL	C
	A17	15.24	337	90		2+	20+					PL	C
	A18	18.28	70	81	S	2+	15+					PL	C
7-19-00-25	b1	12.27	79	84se		1.5+	9+	M				p	kw
Lihigh RR	b2	11.8	74	84se		0.05	0.58	A(b2)				p	kw
	b3	9.2	20	75w		1+	4.5+	M(b4)				p	kw
	b4	8.75	73	82ne		1+	3+					p	kw
	b5	7.09	79	85nw		0.04	3+					p	kw
	b6	6.83	78	84nw		.04+	7+			rstr. 4cm ss		p	kw
	b7	5.45	77.5	84nw		0.35	5+			rstr.45cm ss		p	kw
	b8	3.57	78	84se		0.09	2+			rstr. 9cm		p	kw
	b9	3.2	86	89se		0.08	.21+					p	kw
	b10	3.18	86	90		0.04	.26+					p	kw
	b11	3.1	336.5	84nw		3+	9.5+	M(b9,10,12)				p	kw
	b12	2.7	81	90		0.05	0.08					p	kw
	b13	1.21	20	86nw		1.5	3.6	A(b14)				p	kw
	b14	0.31	72	84nw		1.2	6+					p	kw
	b15	0	74	86nw		1.2	6+					p	kw
													C
Site 26	A1		338	90		2.0+	5.0+	M(B's)		IS Thickest sand <= .15+ m	A's came before B's		C
7-19-00-26	A2	1.15	340	70	W	SOS(A1)	SOS(A1)	M(B's)		SOS(A1)			C
Shaw Rd. at Rail Rd	A3	0.43	340	90		SOS(A1)	SOS(A1)	M(B's)		SOS(A1)			C
Near Courtright's House	A4	0.74	340	90		SOS(A1)	SOS(A1)	M(B's)		SOS(A1)			C
QD	A5	0.74	340	85	W	SOS(A1)	SOS(A1)	M(B's)		SOS(A1)			C
													C
FID	B1		72	?	?	2.0+	2.5+	A(A's)		IS Tickest sand <= .12 m			
	B2	0.625	75	80	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			
	B3	0.8	72	85	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			
	B4	1.715	70	84	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)	Tuffa Covered		
	B5	0.355	75	85	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			
	B6	0.59	75	87	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			C
	B7	0.35	74	83	N	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			C
	B8	1.5	72	?	?	SOS(B1)	SOS(B1)	A(A's)		SOS(B1)			C
7-20-00-27	a1	1.05	65	82n		0.3	1.47	A(a3)		30cm ss		p	kw
Lodi,Mill Crk	a2	2	66	84n		0.3	7.2					p	kw
	a3	3.91	328	90		0.12	8.5		t-12cm st			p	kw
	a4	6.65	0	na		na	1.34			top 2cm st		p	kw
	a5	6.76	78	na		na	1.68			sos		p	kw
	a6	6.99	76	90		0.12	3	I(a3)	t-7.5cm st			p	kw
	a7	9.47	10	76s		0.07	1.5			rstr. 7cm st		p,c	kw
	a8	10.23	100	90		0.07	1.6+	A(a9)		sos		p	kw
	a9	10.5	100	90		0.07	2.05			sos		c	kw
	a10	11.8	335	90		0.07	3.5					p	kw
	a11	12.21	15	na		na	3.25			sos		p	kw
	a12	14.07	20	80n		0.07	1.9+	I(a14)		sos		p	kw
	a13	15.36	75	90		0.12	2.1	I(a15)		sos		p	kw
	a14	15.5	77	87.5s		0.12	3.45+	A(a15)		sos		p	kw
	a15	19.4	330	88s		0.12	5.5			sos		c	kw
	a16	19.78	333	90		0.12	7+	M(a17)				p	kw
	a17	19.78	70	85n		0.12	1.7			sos		p	kw
	a18	20.42	78	84s		.92+	10+	I(a16)				p	kw
	a19	20.85	78	na		0.02	2+	A(a20)				p	kw
	a20	22.48	76	84n		0.04	3.3+					p	kw
	a21	22.7	234	88n		0.05	6.6					p	kw
	a22	25.5	75	86nw		0.6	9.25+	I(a21)				p	kw
	a23	27.34	17	90		0.2	1.7					p	kw
	a24	28.29	335	98s		0.34	26+					p	kw
	a25	28.43	14	na		0.19	2					p,c	kw
	a26	28.53	14	na		0.06	2						kw
	a27	32.77	74	89n		0.74	8+	I(a24)		ext. sh-t			kw
	a28	36.34	75	90		0.74	8+	int. a32		ext. sh-t			kw
	a29	36.85	75	90		0.74	8+						kw
	a30	37.68	77	80e		0.74	8.5+						kw
	a31	38.35	75	85s		0.74	9+						kw

	a32	40.4	330			.25+	22+						kw
Site 28	A1	0.44	66	89	N	.32+	5.5	A (A32 on line 27 Karen)		Shale		PL	C
7-20-00-28	A2	0.76	75	82	SE	0.02	0.4	M (A3)		Shale		PL	C
Upper Mill Creek S. Branch	A3	offline @A2 .16m to the east	330	80	N	0.04	0.84	A(A2)		Shale	Cross Joint	PL	
								A(A4)			Cross Joint		C
	A4	1.61	76	78	N	.45+	6.81	M (A3)		Shale		PL	C
								I(A6)		Shale			C
FID	A5	1.78	75	85	N	.05+	1.87	NA		Shale		PL	C
Right Lateral Offset	A6	offline 1m east along A4	330	90		.32+ C	10+ C	I(A4)		Shale	Clockwise twist Hackles, composite	PL	C
								I (A7)					C
								I (A8)					
								I (A13)					C
								M (A12)					
	A7	3.44	75	81	N	.30+	6.5+	I(A6)		Shale		PL	
	A8	4.44	75	83	N	0.25	5.5+	I(A6)		Shale		PL	
	A9	5.36	76	?	?	0.01	2	NA		Shale		PL	
	A10	5.91	85	?	?	?	1.3	NA		Shale		CL Jagged	
	A11	6.205	85	?	?	?	1.3	NA		Shale		CL Jagged	
	A12	6.89	76	84	N	0.01	2.58	A(A6)		Shale		PL	
	A13	8.85	75	?		.35+	8+	I (A6)		Shale		Cl Junky	
	A14	10.015	75	86	N	SOS (A13)	SOS (A13)	NA		Shale		PL	
	A15	12.03	75	84	N	.35+	8+	M(A16)		Shale		PL	C
	A16	12.7	355	71	E	0.08	1	A (A15)		Shale	Cross Joint, spacing to next 1.1m	Cl	C
								A(A18)					C
	A17	12.66	55	?	?	0.08	1.1	NA		Shale		Cl	C
	A18	13.05	76	84	N	.31+	6.5+	M(A16)		Shale		PL	C
	A19	14.115	74	90		.31+	8+	M (*cj)		Shale	* Master to several cross joints offline w/ strike of 10,10 and 0	PL	C
	A20	15.87	75	90		0.015	8+	I(A27)		Shale		PL	C
	A21	16.06	76	81	N	0.04	8+	I(A27)		Shale		PL	
	A22	17.475	75	85	N	.08+	8+	M(A27)		Shale	Right Lateral Offset	PL	C
	A23	18.6	79	?	?	.31+	8+	M(A27)		Shale	Right Lateral Offset	PL	C
	A24	19.11	75	84	N	SOS (A23)	SOS (A23)	M(A27)		Shale	Right Lateral Offset	PL	C
	A25	19.57	73	85	N	SOS (A23)	SOS (A23)	M(A27)		Shale	Right Lateral Offset	PL	C
	A26	20.18	71	83	N	SOS (A23)	SOS (A23)	M(A27)		Shale	Right Lateral Offset	PL	C
	A27	20.24	15	74	E	2.5+	15+	I(A28))		Shale	Right Lateral Offset	PL	C
								I(A20)					C
								I(A21)					
								A(A29)					C
								A(A30)					
								A(A26)					C
	A28	20.99	76	83	N	.31+	8+	I(A27)		Shale		PL	
	A29	21.99	76	90		SOS(A28)	SOS(A28)	M(A27)		Shale		PL	C
	A30	22.35	78	84	N	0.12	7.5	M(A27)	TA shale	Shale		PL	
7-20-00-29	a1	0.81	80	89n		1.5	5					p	kw
Rhodes Rd.	a2	1.18	80	86s		0.1	1.25	A(offline10)				p	kw
	a3	1.39	80	90		0.06	1	sos				p	kw
	a4	1.48	80	90		na	0.37	sos				p	kw
	a5	1.55	80	86s		na	1					p	kw
	a6	1.91	80	86s		0.05	0.66	hooks a7				p	kw
	a7	2.05	80	86s		0.11	1.6	M(10@w)			11cm	p	kw
	a8	2.34	80	86s		1.25	5+					p	kw
	a9	3.25	82	88s		1.5	4.5+			ext. sh-t		p	kw
	a10	3.56	82	82s		15+	3+					p	kw
	a11	3.77	82	88s		1.25+	3+					p	kw
	a12	4.16	81	89s		0.44	3.3+					p	kw
	a13	4.4	81	90		.25+	3+					p	kw
	a14	4.49	10	80e		1+	5.5+	I(a5-13,15-23)				p	kw
	a15	4.69	82	87s		0.04	1.5+					p	kw
	a16	4.8	80	84s		.36+	4.25+					p	kw
	a17	5.35	82	85s		0.1	3+	I(offline10w)				p	kw
	a18	5.5	80	86s		0.46	2.5+					p	kw
	a19	6.6	78	90		0.24	4.5+					p	kw
	a20	7.05	80	87s		.39+	4+			ext. sh-t		p	kw
	a21	7.46	82	90		0.02	1.58+					p	kw
	a22	7.6	80	90		.52+	3.64+					p	kw

	a23	7.86	80	90		0.4+	4+					p	kw
	a24	8.05	82	90		0.09	1.7+				9cm	p	kw
	a25	8.8	10	87w		0.09	1					p	kw
	a26	8.88	80	90		.09+	4+	I(a25)				p	kw
	a27	9.28	80	90		1+	35			ext. sh-t		p	kw
	a28	9.66	80	89s		1+	2.75					p	kw
	a29	9.05	80	90		1+	2.75					p	kw
	a30	10.17	334	90		.30+	1.2+	I(a27-29)				p	kw
													C
Site 30	A1	0	81	80	N	0.2	2+	M(A2)		Black Shale		PL	
7-20-00-30	A2	0.34	341	90		0.2	0.32	A(A1)		SOS (A1)	Cross joints	Cl Junky	
								A(A3)					C
Rhodes Rd	A3	0.44	85	?	?	.18+	2+	M(A2)		SOS (A1)		PL	
	A4	0.52	82	89	N	.18+	0.25	NA		SOS (A1)		PL	C
	A5	1	83	90		.18+	1.21	M(cj b/t 4&5)		SOS (A1)		PL	
	A6	1.08	85	90		.24+	1.75+	I(A10)		SOS (A1)		PL	C
	A7	1.34	85	80	S	.36+	1.5+	A(cj 355°)		SOS (A1)		PL	
	A8	1.42	82	78	S	1.7	9+	M(A7		SOS (A1)		PL	C
								I(A10)					
	A9	1.67	79	89	N	SOS (A8)	SOS (A8)	I(A10)		SOS (A1)		PL	C
	A9.5	2.25	10	85	NW	SOS (A10)	SOS (A10)	M(A6)		SOS (A1)	Composite	PL	
								M(A7)					C
								M(A8)					C
								M(A11)					C
								M(A12)					
								M(A13)					C
								M(A14)					
								M(A15)					C
								M(A16)					C
	A10	4.25	12	89	W	.39+	4+			SOS (A1)		PL weathered	
	A11	2.5	85	89	S	4+	9+			SOS (A1)		PL	C
	A12	3.05	86	?	?	.65+	2.5+			SOS (A1)		PL	
	A13	3.41	79	?	?	4+	9+			SOS (A1)		PL	RDJ
	A14	4.33	87	80	S	4+	9+			SOS (A1)		PL	RDJ
	A15	4.6	85	78	S	SOS (A14)	SOS (A14)			SOS (A1)		PL	
	A16	5	90	82	S	SOS (A14)	SOS (A14)			SOS (A1)		PL	RDJ
07-24-00-31	a1	0	330	90		6+	4.75+	na		flag.sh		p	kw
Sawmill	a2	0.31	330	90		6+	4.75+	na		sos		p	kw
	a3	0.65	335	90		2	2.5	na		sos		p	kw
	a4	1.61	333	88w		6+	4.5	na		sos		p	kw
	a5	1.66	333	85w		0.05	0.41	na	t-10cm ss			p	kw
	a6	1.97	332	87w		6+	4.5+	na		sos		p	kw
	a7	2.62	333	90		1.64	3	na	t-sh			p	kw
	a8	3.15	335	90		0.75	3.5	M(75 offline,s)		sos		p	kw
	a9	3.46	334.5	85e		4	4+	M(75 offln,s)				p	kw
Site 31	B1	10.8	335	89	W	3+	5+	NA		IS sands <= .08m		PL	RDJ
7-24-00-31	B2	10.1	335	87	W	3.5+	2+	NA		SOS(B1)		PL	
Sebeca Club	B3	9.73	335	90		SOS (B1)	SOS (B1)	NA		SOS(B1)		PL	
	B4	8.3	330	88	W	.63+	3.5+	NA		SOS(B1)		PL	RDJ
	B5	6.5	349	86	W	C 3.0+	C 3.5+	NA		SOS(B1)	Composite	PL	RDJ
	B6	5.35	334	89	W	3.0+	4.0+	NA		SOS(B1)		PL	RDJ
	B7	5.18	330	85	E	3.0+	4.0+	NA		SOS(B1)		PL	
07-24-00-32	a1	0.35	275	na		0.24	1.9	I(a2)	b-sh	24cm ss		c	rj
Sawmill	a2	1.42	86	na		0.24	1.83					c	rj
	a3	2.83	277	na		0.24	0.62					c	rj
	a4	3.44	80	90		0.24	1.2					c	rj
	a5	4	329	na		0.24	0.4					c	rj
	a6	6.3	54	na		0.24	0.52					c	rj
	a7	6.83	64	na		0.24	0.58					c	rj
	a8	7.74	89	na		0.24	0.89					c	rj
	a9	8.69	84	90		0.24	0.79					c	rj
	a10	8.68	332	90		0.24	0.24					c	rj
	a11	10.13	78	90		0.24	0.55					c	rj
	a12	10.48	86	90		0.24	1.3					c	rj
	a13	11.87	80	90		0.24	3.5					c	rj
	a14	14.54	80	90		0.24	0.61					c	rj
	a15	15.79	86	90		0.24	0.8					c	rj
	a16	16.4	334	na		0.24	0.9					c	rj

	a17	17.56	275	90		0.24	0.94					c	rj
	a18	22.53	276	90		0.24	na					c	rj
Site 33	A1	0.39	75	?	?	.06+	5	A (A4)		IS sands <= .02 m		CL	RDJ
7-24-00-33								M(A2)					RDJ
Logan Rd	A2	Offline at 1.78	311	82	E	?	0.45	A (A1)		SOS(A1)	Cross Joint	CL	
								A (A3)					RDJ
	A3	1.78	74	?	?	.14+	1.0+	M(A2)	BA .02m sand	SOS(A1)		CL	RDJ
								A(A4)					RDJ
	A4	2.15	333	89	W	.89+	6.0+	M(A1)	BA .02m sand	SOS(A1)		PL	
								M(A3)					C
								M(A5)					C
	A5	2.26	335	90		.12+	2.0+	M(A6)		SOS(A1)	Cross Joint	PL	
								A(A4)					
	A6	3.7	85	?	?	.05+	2.5	A(A5)		SOS(A1)		CL	C
								A(A7)					C
	A7	5.34	331	86	W	.44+	2.5+	M(A6)		SOS(A1)		PL	
								M(A8)					C
	A8	6.5	78	?	?	.04+	2.3	A(A7)		SOS(A1)		CL	C
								A(A9)					C
	A9	8.09	327	89	W	1.5+	3.5+	M(A8)		SOS(A1)	Ctrclkws Twist Hackles	PL	
								M(A10)					C
	A10	8.3	334	85	W	.70+	2.5+	A(A9)		SOS(A1)		PL	
	A11	10.5	325	90		1.3+	4.0+	M(A12)		SOS(A1)		PL	C
	A12	10.65	80	?	?	?	2.17	A(A11)		SOS(A1)		CL	
								A(A13)					C
	A13	13.17	331	90		1.3+	8.5+	M(A12)		SOS(A1)		PL	
								M(A14)					C
	A14	13.85	330	86	W	.07+	2.0+	A(A13)		SOS(A1)	Hook	PL	C
	A15	15.15	75	?	?	.04+	1.4+	A(A14)		SOS(A1)		CL	C
								A(A16)					
	A16	15.73	331	89	W	.35+	8.5+	M(A15)		SOS(A1)	Moss covered	PL	C
													C
Site 34	A1	0	80	86	S	.21+	0.98	M(A2)		Black Shale		PL	C
7-25-00-33	A2	0.33	10	66	W	.23+	C .92	A(A1)		SOS (A1)	*cj .15m long, .33 W of line along A3	PL-CL	C
Rhodes Rd Creek								A(A3)					C
	A3	0.53	75	90		.27+	2.0+	M(A2)			* SOS (A2)		
								M(cj 330^{0})*					
	A4	0.66	80	89	S		2.0+	M(cj 330^{0})*					
	A5	0.68	80	89	S		1.25+	A(A4) *		hook to west			
								M(A2)					C
	A6	0.79	80	85	S		1.7	I (A2)					C
	A7	1.05	81	?	?		2.53+	M(A2)					
	A8	1.125	80.5	89	S		2.0+	I (cj 4^{0}) *			* cj .42m W of line along A8		
	a9	1.25	0	88e		0.95	na	I(a9)					kw
	a10	2	82	88s		3.75+	na						kw
	a11	2.25	80	84s		3+	na						kw
	a12	2.65	82	89s		3+	na						kw
		1.13											
													C
Site 34B	B1	3.005	81	89	S	Entire Section	4.0+	M(10^{0})*		Black Shale	* Fracture offline .08m		C
7-25-00-34B	B2	2.9	79	90		SOS(B1)	SOS(B1)	A(B3)*		Black Shale	*SOS(B1)		
Rhodes Rd	B3	2.88	80	88	N	SOS(B1)	SOS(B1)	M(B2)		Black Shale			C
								I(10o)*			*SOS(B1)		
	B4	2.67	80	86	N	SOS(B1)	SOS(B1)	M(10o)*		Black Shale	*SOS(B1)		
	B5	2.64	79	82	N	SOS(B1)	SOS(B1)	M(*)			** Composite continuation of * in B1		
07-25-00-35	a1	0	85	72w		0.06	1.25+	na				c	kw
Shaw Rd. C	a2	0.17	81	72nw		0.06	1.25	na				c	kw
	a3	0.45	89	90		0.08	3.41	na				p,c	kw
	a4	0.68	85	90		0.02	1	A(a6) hk	t-ss			c	kw
	a5	0.88	98	90		0.04	0.45	A(a6) hk				c	kw
	a6	1.09	95	80sw		0.05	1.5+	M(a4,a5)				c	kw
	a7	1.27	84	75nw		0.04	4+	M				p	kw
	a8	1.47	89	80nw		0.13	1.24	A(a7)hk				c	kw
	a9	1.55	90	84nw		0.14	1.09	A(a10) hk				c	kw
	a10	1.85	86	77se		0.11	2.25	M(a9)				p	kw
	a11	2.15	97			0.02	1	A(a12) hk				c	kw
	a12	2.38	82	90		0.04	2+	M(a11,a13)				p,c	kw

	a13	2.4	95	90		0.04	1+	A(a12) hk				c	kw
	a14	2.51	80	60mw		0.06	1	na				c	kw
	a15	2.65	78	65nw		0.04	1.5	M				c	kw
	a16	2.76	105	74nw		0.05	0.6	A				c	kw
	a17	3.03	85	84nw		0.02	1	M				p	kw
	a18	3.24	84	89nw		0.11	2.75+	na				c	kw
	a19	3.35	86	80nw		0.05	.80+	M(a20)				c	kw
	a20	3.37	90	90		0.04	2.2+	A(a19)				c	kw
Site 35	B1	7.59	86	?	?	.20+	3.5+	A(B2)*		.19m Sand	*Hook	CL	
7-25-00-35	B2	7.13	37	80	W	.33+	3+	M(B1)		SOS(B1)		PL	
Shaw Rd								M(B3)					C
N-S FID								M(B4)					
	B3	6.77	93	?	?	.02+	1.1	A(B2)		.06m Sand		PL	C
	B4	6.43	84	90		.08+	1.45	A(B2)		.05m sand &.06m sand with parting surface in-between	* offline fracture,hook	PL-CL	
								A(*)					
	B5	6.19	87	?	?	.02+	1.3+	M(B6)		.35m sand		CL	
	B6	6.14	85	?	?	.02+	1.4	A(B5)*		SOS(B5)	*Hook	PL	
	B7	5.425	76	83	N	.40+	1.4	A(340°)*		.35m sand w/ parting surfaces	* offline fracture 1m to west	PL	
								M(B8)					C
	B8	5.28	70	84	N	.06+	1.9	A(340°)*		.11 sand	* offline fracture 1m to west	CL	
								A(B7)**			** Hook		
	B9	5.15	81	75	W	.21+	1.6	A(340°)*		Sand < .11	* offline fracture 1m to west	CL	C
								A(B8)**			**Hook		
	B10	5.1	80	?	?	.06+	1.1	A(340°)*		.06 Sand	* offline fracture 1m to west	CL	
								A(B9)**			**Hook		
	B11	4.93	84	?	?	.21+	2.5+	NA		Sand<= .07		PL	C
	B12	4.81	78	?	?	.06+	1.4	A(340°)*		.08 Sand	* offline fracture 1m to west	PL	
	B13	4.615	80	?	?	.12+	4.0+	M(B14)		SOS (B12)		PL	
								A(*)			* offline fracture		
	B14	4.39	93	90		.02+	1.2+	A(B13)*		SOS (B12)	Clckws Twist Hackles, *Hook	PL	
	B15	4.17	92	?	?	.30+	1.3+	NA		Sand <= .02m		CL	C
	B16	3.96	72	?	?	.10+	2.0+	M(B18)		SOS(B15)		CL	C
	B17	3.75	79	?	?	.03+	1.0+	NA		.08m Sand	Dies out to the east	PL	C
	B18	3.7	87	?	?	0.08	1	A(B16)*		SOS(B16)	*Hook	CL	C
07-26-00-36	a1	0.13	78	86s		0.71	1.17	M(a2,a7)	t-is, b-sh			p	kw
Silverthread	a2	0.13	335	88s		,71	2+	A(a1)	sos a1			p	kw
	a3	0.3	79	88s		0.02	1.35	A(335)		12 cm ss		p	kw
	a4	0.88	80	90		0.01	1.21	I(a7),A(sos a3)		rst. 1cm sh		p	kw
	a5	0.98	78			0.01	1.35	A(sos a3), I(a7)		sos a4		p	kw
	a6	1.5	76	82s		,05	1.35	M(a7),A(sos a3)		in bot ss,sh		p	kw
	a7	off	332	90		0.51	0.85	I(a4,5) A(a1,6)	b-1cm sh			p	kw
	a8	1.32	75	90		1.85	4+	M(a9,10) A(sos a3)	b-ss,t-sh			p	kw
	a9	4.21	330	85w		.03+	4.83	A(a8,12) M(a11)		in bot ss,sh		p	kw
	a10	5.54	338	85w		0.2	4	A(a8,a11)		in bot ss,sh		c,p	kw
	a11	6	275	84n		0.05	1.13	M(a9,a10) A(a9)				p	kw
	a12	6.78	75	90		1+	8+					p	kw
	a13	7.1	76	89s		0.06	3+					p	kw
	a14	9.8	78	86n		0.02	2.2	M(a22) I(a15)				p	kw
	a15	7.9	334	89w		0.63	5+	M(a17,18,20)				p	kw
	a16	10.52	78	90		0.84	7.35	I(a15)				p	kw
	a17	11.12	76	89n		0.35	2	A(a15)				p	kw
	a18	11.27	87	89n		0.38	2.1	M(a22)I(a15)				p	fi
	a19	12.42	333	90		0.3	1.8	I(a17)				p	fi
	a20	12.52 off	244	89n		0.6	2	A(a15)				p	fi
	a21	12.67	79	90		0.6	2	A(a14)				p	fi
	a22	10.1	332	90		0.38	1.5	A(a14,a18)				c,p	fi
	a23	14	76	90		4+	15+					p	fi
													C
Site 37	1	0	75	83	S	2.5+	13.0+			IS, Sands <=.05m	*Eroded	PL*	C
7-26-00-37	2	2.6	75	86	S	.41+	40.0+			SOS(1)	*En Echelon	PL*	
Sherry Burrows	3	2.73	80	?		.41+	40.0+			SOS(1)	*En Echelon	PL*	
Eastern Axcess to Silverthread Falls	4	3.34	4	90		.23+	6.0+	NA		SOS(1)	*Curving into Parallelism w/8	PL*	
	5	3.05	72	84	S	.20+	1.5+	I(8)		SOS(1)		PL	
								I(10)					C
								I(12)					C
								A(14)					C

335° FID	6	5.14	334	?		.10+	0.9	A(5)*		.05m Sand	*Hook	PL	
	7	5.42	71	90		.08+	1.05	A(4)		.08m Sand		PL	C
								A(8)					
	8	5.49	335	86	E	.45+	6.0+	I(2)		SOS(1)		PL	
								I(3)					
								I(9)					
								I(11)					
								I(13)					
								M(5)					
								M(7)					
	9	5.63	70	?		?	1.4	A(4)		SOS(1)		PL	C
								A(8)					C
	10	5.74	342	?		.45+	6.0+	I(2)		SOS(1)		PL	C
								I(9)					
								I(13)					C
								I(18)					
								I(10)					C
								M(5)					
	11	6.42	75	84	SE	.20+	3.0+	I(8)		SOS(1)	Cntrclkws Twist Hackles	PL	C
								A(4)					
								MA(12					C
	12	6.65	349	85	SE	.45+	6.0+	I(2)		SOS(1)	*Curving Into Parallelism w/14&10	*	
								I(3)					C
								I(13)					
								MA(11)					
	13	7.43	65	90		0.23	40.0+	I(4)		.25m Sand w/ Parting Surface at .15m	Cntrclkws Twist Hackles	PL	
								I(8)					
								I(10)					
								I(12)					
								A(14)					
	14	9.35	335	?		2.0+ *	6.5+			IS, Sands <=.15m	FID,Composite height of FID = entire section (10m)	PL	
	15	8.38	334	?		SOS(14)	SOS(14)			SOS(14)	FID	SOS(14)	
	16	8.4	336	?		SOS(14)	SOS(14)			SOS(14)	FID	SOS(14)	
	17	8.45	340	89	S	SOS(14)	SOS(14)			SOS(14)	FID	SOS(14)	
	18	8.55	345	89	S	SOS(14)	SOS(14)	I(10)		SOS(14)	FID	SOS(14)	
	19	8.96	95	85	S	1.0+	40.0+	I(FID)		SOS(1)		PL	C
								I(12)					
								I(10)					
								I(8)					
								I(4)					C
	20	9.96	75	90		.27+	40.0+	A(FID)		IS		PL	
	21	12.18	75	90		.12+	40.0+			IS		PL	
	22	12.27	75	85	S	3.0+	40.0+			IS		PL	C
07-26-00-38	a1	0.67	340	90		0.93+	3+	M(off line 75)				p	fi
Silverthread	a2	1.07	75	90		0.36	13.63	I(a1),A(b1)				p	fi
	a3	1.65	338	90		0.2	2.5+	I(a4)	t-2cm ss	ss,sh		p	fi
	a4	1.83	335	86w		0.05	2.25+		t-sh			p	fi
	a5	2.16	330	90		0.08	2.1	I(a7)		ss		p	fi
	a6	2.18	74	84s		0.12	13.5	I(a1,a3,a4,a5,a7)				p	fi
	a7	2.34	334	88		0.02	1.5	I(a8),A(a2),M(a7)				p	fi
	a8	2.61	75	81		0.06	2					p	fi
	a9	2.97	341	90		1	4+	M(a8)				p	fi
	a10	3.07	340	90		2	15+					p	fi
	a11	4.03	75	90		0.15	15+	A(b1)				p	fi
	a12	4.34	75	90		0.15	15					p	fi
	a13	5.55	81	59n		0.1	7.5	I(a7)		ss		c,p	fi
07-26-00-39	a1	0	335	86w		0.19	1.05	I(a1,a8)		blk sh,ss		p	kw
Silverthread	a2	0.3	80	84s		0.06	0.95	I(a2,a3)		tan ss		p	kw
	a3	0.37	332	86w		0.06	0.52	I(a2,a4)		tan ss		p	kw
	a4	0.5	78	90		0.04	3+	M(a3,a5,a6)A(a7)				p	kw
	a5	0.61	330	na		0.03	0.2	A(a4),I(a6)		ss		p	kw
	a6	0.94	330	90		0.2	1.5	I(a5,a7)A(a4)		blk sh		p	kw
	a7	1.06	79	90		0.08	2	M(a4)I(a6)		blk sh		p	kw
	a8	1.08	334	90		0.25	2	I(a1,a4,a6,a12)		blk sh		p	kw
	a9	1.12	335	87w		0.17	0.79	I(a4,a6,a12)		blk sh		p	kw
	a10	1.6	328	90		0.12	1+	I(a12)		blk sh		p	kw
	a11	1.84	332	86e		0.08	1.21	I(a12)		blk sh		p	kw

	a12	2.13	76	90		0.09	2.5	I(a3,a5,a6 a8-a11)		sos		p	kw
	a13	2.55	80	87.5		0.1	1.25	I(a12,a14,a15)		ss		p	kw
	a14	2.95	326	na		0.04	0.12	I(a13)		ss		c	kw
	a15	3.3	332	86n		0.35	3	I(a13)		sh		p	kw
	a16	4.9	335	64n		0.25	0.49	I(a17)A(a22)		sh only		p	kw
	a17	4.9	76	85s		0.1	2	I(a16)A(a9,a18,a20)		ss,sh		p	kw
	a18	5.38	331	84e		0.12	1.75	M(a19)I(a17)		ss,sh		p	kw
	a19	5.41	334	80e		0.02	0.39	I(a17,a22)A(a18)		sh only		c	kw
	a20	5.68	334	90		0.31	1+	I(a17,a22)				p	kw
	a21	5.68	77	90		0.25	1.67	I(a20,a19)		sh only		p	kw
	a22	6.27	75	88n		1	5.5	M(a16),I(a19,a20,a23)		sh only		p	kw
Site 39	B1	17.33	8	89	W	2.0+	12.0+	M(A2)		IS, Sands<=.18m		PL	
7-26-00-39								M(B2)					
Sherry Burrow's Property								M(B4)					
Mill Creek								M(B10)					
								M(B11)					
								M(B13)					
								M(B14)					
								A(B3)					
								M(B7)					
	B2	17.07	75	?	?	.05+	10.0+	M(B1)	TA a .07 m Sand	SOS(B1)		PL	
	B3	15.62	74	90		.05+	10.0+	M(B1)		SOS(B1)		PL	
	B4	14.61	74	?	?	?	10.0+	A(B1)		SOS(B1)		PL	
								I(B9)					
	B5	13.63	71	?	?	?	10.0+	A(B1)		SOS(B1)		PL	
								I(B9)					
	B6	12.94	75	?	?	?	10.0+	A(B1)		SOS(B1)		PL	
								I(B9)					
	B7	12.26	75	?	?	?	10.0+	A(B1)		SOS(B1)		PL	
								I(B9)					
	B8	12.12	76	?	?	?	10.0+	A(B1)		SOS(B1)		PL	
								I(B9)					
	B9	10.16	336	90		.75+	12.0+	I(B4)		IS		PL	
								I(B5)					
								I(B6)					
								I(B7)					C
								I(B8)					C
								I(B10)					C
								I(B11)					C
								I(B13)					C
								I(B14)					C
								I(B15)					C
								I(B16)					C
								I(B17)					C
								I(B18)					C
	B10	10.1	73	?	?	?	10.0+	I(B9)		SOS(B1)		PL	C
								I(B1)					C
								I(B12)					
								A(B1)					CL & J
	B11	10.04	75	?	?	?	10.0+	I(B9)		SOS(B1)		PL	
								I(B12)					CL & J
								A(B1)					
	B12	9.94	338	?	?	?	12.0+	I(B10)		IS		PL	CL & J
								I(B11)					CL & J
								I(B13)					
								I(B14)					
								I(B15)					CL & J
								I(B17)					
								I(B16)					CL & J
								I(B18)					
													CL & J
Site 40	1	0.25	335							Black Shale			
7-26-00-40	2	4.25	335							Black Shale			
Gravel Pit	3	5.75	327							Black Shale			CL & J
Shaw Rd	4	6.45	332							Black Shale			
	5	8.35	325							Black Shale			CL & J
grass lines	6	11.7	330							Black Shale			
	7	12.75	335							Black Shale			
	8	14.4	330							Black Shale			CL & J

	9	15.35	330							Black Shale			
	10	19.75	335							Black Shale			CL & J
	11	22.75	335							Black Shale			
	12	23.4	330							Black Shale			CL & J
	13	26.5	325							Black Shale			
													CL & J
7-27-00-41	A1		74	90		2.5	3		*	Black Sh.w/ petro smell	*These two sets are mutually abutting in some areas it seems as if the 0's are the masters an then vise versa.	PL	CL & J
Shaw Rd Creek 2	A2	0.6	75	90		SOS(A1)	SOS(A1)	M (C1)		SOS(A1)		SOS(A1)	
RDJ 7	A3	0.2	75	89	S	SOS(A1)	SOS(A1)			SOS(A1)		SOS(A1)	
	A4	0.31	74	89	N	SOS(A1)	SOS(A1)			SOS(A1)		SOS(A1)	
Q&D	A5	0.37	74	90		SOS(A1)	SOS(A1)			SOS(A1)		SOS(A1)	
	A6	0.6	74	90		SOS(A1)	SOS(A1)			SOS(A1)		SOS(A1)	
	A7	0.45	75	89	N	SOS(A1)	SOS(A1)			SOS(A1)		SOS(A1)	
	B1		5	80	E	2.5	1			Black Shale SOS(A1)		PL	
	B2	0.65	358	85	E	SOS(B1)	SOS(B1)			SOS(B1)		SOS(B1)	
	B3	0.96	3	90		SOS(B1)	SOS(B1)			SOS(B1)		SOS(B1)	
	B4	0.73	358	86	W	SOS(B1)	SOS(B1)			SOS(B1)		SOS(B1)	
	C1		330	57	W	0.5	1	A(A2)		Black Shale	Low Dipping, Cuts a Concretion	Cl	
07-27-00-42	a1	1.81	82	90		0.15	0.59	A(a3)		sh	120cm	p	kw
Shaw Rd. C	a2	2.07	78	90		0.45	0.92	sos a1		sos a1		p	kw
	a3	2.32	76	90		1.25+	2+	M(a6,322,336)		sos a1		p	kw
	a4	2.6	76	86n		0.7	0.92	na		sos a1		p	kw
	a5	2.89	75	86n		1+	1.03	M(a6)		sos a1		p	kw
	a6	2.58	11	68e		0.26	0.63	A(a3,a5)		sos a1		p	kw
	a7	3.19	80	90		0.66	0.77	na				p	kw
	a8	3.3	75	89s		0.35	0.32	na		sos a1		p	kw
	a9	3.38	76	84s		0.54	0.62	na		sh		p	kw
	a10	3.51	76	90		0.8+	0.65	A(a13)		sh		p	kw
	a11	4.06	76	na		.51+	0.76	M(a11.a12)A(a10)		sh only		p	kw
	a12	4.25	79	90		0.25	0.65	A(a13)		sh		p	kw
	a13	5.43	10	90		0.7	1.5	M(a10,a11,a12,a15)		sos a1		p	kw
	a14	4.75	76	90		0.06	0.56	A(a13)		lower sh		p	kw
	a15	5	77	85n		1	0.84	A(a15)M(a16)		sos a1		p	kw
	a16	5.4	350	64e		0.15	0.55	A(a15,17)		lower sh		p	kw
	a17	5.57	76	90		1.25	1.5	M(a16)		top ls		p	kw
7-27-00-43	1	0	76	90		5+	10.0+	I(14)		Shale		PL	
Shaw Rd Creek 2								I(17)					
RDJ 8	2	0.22	79	90		8.6+	25.0+	I(14)		SOS (1)		PL	
								I(17)					CL & J
	3	0.64	77	85	N	0.35	4	A(4) *		SOS (1)	* As a Hook	PL	
	4	0.69	77	82	S	8.6+	25+	M(14)		SOS (1)		PL	
								M(3)*			*As a Hook		CL & J
								I(17)					
	5	1.8	76	?	?	8.6+	25+	I(14)		SOS (1)		PL	
								I(17)					CL & J
	6	1.28	77	85	S	8.6+	25+	I(14)		SOS (1)		PL	
								I(17)					
	7	1.41	76	84	S	8.6+	25+	M(8)		SOS (1)		PL	
								I(14)					
								I(17)					
	8	1.54	350	75	W	.02+	0.25	A(7)		SOS (1)	Cross joint	PL-CL	CL & J
								A(9)					
	9	1.855	78	90		8.6+	25+	M(8)		SOS (1)		PL	CL & J
								I(14)					
								I(17)					
	10	1.95	78	89	N	1.0+	10+	I(14)		SOS (1)		PL	CL & J
								I(17)					
	11	2.11	78	90		8.6+	25+	I(14)		SOS (1)		PL	
								I(17)					CL & J
	12	2.31	77	90		8.6+	25+	M(13)		SOS (1)		PL	
								I(14)					
								I(17)					CL & J
	13	2.39	76	79	N	0.15	2	A(14)		SOS (1)		PL	
								A(17)					CL & J

								A(12)*			*As a hook		
	14	2.83	356	85	E	C7.5+	C6.0+	I(1)		SOS (1)	14 maybe the composite of a x-joint (see diagram and 17)	PL	
								I(2)					CL & J
								I(5)					
								I(6)					CL & J
								I(7)					
								I(9)					CL&N
								I(10)					
								I(11)					
								I(12)					CL&N
								I(13)					
								I(16)					CL&N
								I(18)					CL&N
								I(19)					
								I(21)					CL&N
								I(22)					CL&N
								I(23)					
	15	3.16	79	90		.11+	3	A(16)*		SOS (1)	*Hook at both ends	PL	CL&N
								A(17)					
								M(20					CL&N
	16	3.28	76	80	N	8.6+	25+	M(15)		SOS (1)		PL	
								I(14)					
								I(17)					
	17	3.43	5	89	E	7.5+	6.0+	M(15)		SOS (1)	17 is very PL and therefore a true fracture, this being the case its relationship with 14 shows cntrclkws rotation (see diagram)	PL	
								M(18)					
								M(21)					
								M(22)					CL&N
								M(23)					
								M(25)					CL&N
	18	3.72	77	85	S	1.0+	10.0+	A(17)		SOS (1)		PL	CL&N
								A(14)					CL&N
	19	4.35	79	86	S	1.0+	7.0+	A(20)*		SOS (1)	*As a hook	PL	
								I(14)					CL&N
								I(17)					
	20	4.9	350	86	W	8.6+	25+	M(19)		SOS (1)		CL	CL&N
								A(21)					
								A(15)					CL&N
	21	5.22	74	88	S	.07+	1.7	M(20)		SOS (1)		PL	
								A(17)					CL&N
								I(14)					
	22	6.2	77	85	S	8.6+	25+	A(17)		SOS (1)		PL	CL&N
								I(14)					CL&N
	23	7.12	76	90		8.6+	25+	M(24)		SOS (1)		PL	CL&N
								A(17)					CL&N
								I(14)					CL&N
	24	7.54	70	40	S	.13+	4.5	A(23)*		SOS (1)	* As a Hook	CL	
								I(17)					CL&N
	25	8.4	76	89	S	8.6+	25+	A(17)		SOS (1)		PL	
07-27-00-44k	a1	0.55	77	90		0.01	1.5	A(343w)		blk ss		p	fi
Shaw Rd. C	a2	0.69	76	90		0.02	2+			blk ss		p	fi
FID	a3	1.13	76	90		0.05	3+	hks(343)		blk ss		p	fi
see notebook	a4	1.39	76	90		0.05	3+			blk ss		p	fi
	a5	1.46	76	90		0.16	3+			na		p	fi
	a6	I.72	76	90		0.15	3			blk ss		p	fi
	a7	off 12cm	314	64e		0.16	27			blk ss		p	fi
	a8	1.96	76	90		0.16	3+	M(a7)		blk ss		p	fi
	a9	2.18	76	90		0.16	3+					p	fi
	a10	2.48	76	90		0.06	2+					p	fi
	a11	2.67	75	90		0.08	3+					p	fi
	a12	2.95	76	90		0.08	3.5+					p	fi
	a13	3.02	76	90		0.08	3.5+					p	fi
	a14	3.23	76	90		0.06	3.5+					p	fi
	a15	3.42	75	90		0.06	3.5+					p	fi
	a16	4.33	75	90		0.06	3.5+					p	fi
	a17	4.46	76	90		0.06	3.5+					p	fi

	a18	4.73	76	90		0.06	3.5+					p	fi
		inches				**Inches**	**Inches**						CL&N
8-2-00-44c	1	0 in	9	90		10+ in	180+ in	I(2)		Black Shale		PL	CL&N
Creek at the N. end of Lodi Point								I(6)					
RDJ 10								I(8)					
	2	13 in	306	?	?	1.5	30	I(1)		SOS (1)	x-joint	CL	CL&N
								A(6)*			*As a hook		
	3	32 in	357	56	W	4.5	23	A(6)		SOS (1)	x-joint	CL	
	4	35	22	82	W	3	42	A(8)		SOS (1)	x-joint	CL	
								I(6)					
used tape measure and ruler	5	48.75	1	65	W	0.5	22	A(6)		SOS (1)	x-joint	CL	
	6	72	45	83	N	4.5+	198	I(9)		SOS (1)		PL	
								A(11)					
	7	79.25	0	82	E	1+	3	A(6)		SOS (1)	x-joint	CL	
								A(8)					
	8	90	80	89	N	7+	252	M(7)		SOS (1)		PL	CL&N
								M(10)					CL&N
								M(11)					
								M(13)					CL&N
								A(14)					CL&N
								I(14)					CL&N
								I(9)					
	9	113.5	9	90		10+	315	I(6)		SOS (1)		PL	CL&N
								I(8)					
	10	121.5	20	80	E	3+	22	A(8)		SOS (1)	x-joint	CL	CL&N
	11	136	23	90		1.5	22	A(8)		SOS (1)		CL	
	12	164.5	336	76	W	18+	324	M(6)		SOS (1)		PL	
								I(8)					CL&N
	13	183.5	325	85	W	8+	52	A(8)		SOS (1)		PL	CL&N
								I(14)					CL&N
	14	202	9	88	E	7+	252+	M(8)		SOS (1)		PL	
								I(13)					CL & N
	15	205.25	11	83	E	7+	252+	I(25)		SOS (1)		PL	CL & N
								I(13)					CL & N
	16	210.25	26	87	W	7+	315	I(25)		SOS (1)		PL	CL & N
								A(15*			*As a hook		CL & N
	17	217.5	3	52	W	2.5	10	A(25)		SOS (1)	x-joint	PL	CL & N
	18	220.5	330	88	E	7+	108	I(25)		SOS (1)		PL	CL & N
	19	225	10	82	W	5+	315	I(25)		SOS (1)		PL	CL & N
	20	229.5	342	89	W	4+	108+	A(25)		SOS (1)		PL	CL & N
	21	231.5	334	90		6+	108	A(20)		SOS (1)		PL	CL & N
								I(25)					CL & N
	22	235	333	?	?	12+	288+	A(20)		SOS (1)		PL	CL & N
								I(25)					CL & N
	23	238.25	335	90		12+	288+	M(25)		SOS (1)		PL	CL & N
	24	252.25	30	?	?	3.5	20	A(22)		SOS (1)	x-joint	CL	CL & N
								A(25)					CL & N
								I(23)					CL & N
	25	254	88	86	N	10+	360+	M(24)		SOS (1)		PL	CL & N
								A(23)					CL & N
								I(20)					CL & N
								I(21)					CL & N
								I(19)					CL & N
								I(12)					CL & N
								I(13)					CL & N
								I(14)					CL & N
								I(26)					CL & N
								I(27)					CL & N
	26	255	330	85	W	1.5+	108+	I(25)		SOS (1)		PL	CL & N
	27	263.5	26	90		3	31	A(26)		SOS (1)		PL	CL & N
								I(25)					CL & N
	28	270.25	11	84	E	1+	36	I(25)		SOS (1)		PL	CL & N
	29	276.5	333	?	?	1+	108	A(27)		SOS (1)		PL	CL & N
	30	281.25	45	75	W	1+	108	I(25)		SOS (1)		PL	CL & N
								I(28)					CL & N
	31	282.5	329	90	?	1+	108	I(25)		SOS (1)		PL	CL & N
								I(28)					CL & N

	32	289	334	?	W	0.5	18	A(34)		SOS (1)		CL	CL & N
								A(31)*			*As a hook		CL & N
								I (25)					CL & N
	33	295.75	349	74	W	1.5+	36+	A(25)		SOS (1)		PL	CL & N
	34	308	15	78	E	2+	36	A (31)		SOS (1)		CL	CL & N
	35	309.75	9	75	E	1+	36+	NA		SOS (1)		CL	CL & N
07-27-00-45k	a1	0	9	89e		0.05	0.04	I(all 80,s)				p	kw
twist, Shaw	a2	0.62	1	81e		0.09	2.5+	M(80s)				p	kw
	a3	4.06	210	84w		0.03	0.17	I(80n)				p	kw
	a4	4.71	4	49w		0.05	0.23	sos a3				p	kw
	a5	5.08	5,325	69,90		0.07	0.3	sos a3				cl	kw
	a6	5.29	328	69w		0.18	1.14	I(a9)M(a7)				cl	kw
	a7	5.33	325	90		0.03	0.2	A(A6)hook				cl	kw
	a8	5.49	56	90		0.06	0.6	I(a6)A(a11)M(a7,a10)				p	kw
	a9	5.74	53	90		0.06	0.44	I(a6)A(a11)M(a10)				p	kw
	a10	5.75	325	88w		0.02	0.1	A(a9,a8)				p	kw
	a11	5.81	9.5	88w		0.11	4.5	M(a8,a9,a12)				p	kw
	a12	5.83	78	90		0.11	0.9	A(a11)				p	kw
	a13	7.1	350	90		0.04	1.15	I(80's,n)				cl	kw
8-2-00-45c	1	0	76	89	S	1.37	6.4			Black Shale		PL	CL & N
Creek at the N. end of Lodi Pt	2	.095	275	25	SW					SOS (1)			CL & N
RDJ 11	3	.101	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
	4	.108	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
	5	.133	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
ash layer allowed slip	6	.165	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
to the SW	7	.178	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
causing intense	8	.187	SOS(2)	SOS(2)	SOS(2)					SOS (1)			CL & N
fracture cleavge	9	.191	74	84	N	SOS (1)	SOS (1)			SOS (1)		PL	CL & N
isolated to certain beds	10	.279								SOS (1)			
	11	.292								SOS (1)			
any fracture w/o	12	.305								SOS (1)			
a orientation is	13	.321								SOS (1)			
considered to be w/in	14	.33	295	24	SW					SOS (1)			
the fracture cleavage	15	.346								SOS (1)			
which is aproximately	16	.356								SOS (1)			
290-325°	17	.371								SOS (1)			
	18	.387								SOS (1)			
	19	.406								SOS (1)			
	20	.419								SOS (1)			
	21	.438								SOS (1)			
	22	.448								SOS (1)			
	23	.451								SOS (1)			
	24	.483	75	81	N	SOS (1)	SOS (1)			SOS (1)		PL	
	25	.610	79	86	N	SOS (1)	SOS (1)			SOS (1)		PL	
	26	.686	80	90		SOS (1)	SOS (1)			SOS (1)			
	27	.749	296	35	SW					SOS (1)			
	28	.826								SOS (1)			
	29	.838								SOS (1)			
	30	.864								SOS (1)			
	31	.933								SOS (1)			
	32	.978								SOS (1)			
	33	.997	305	45	SW					SOS (1)			
	34	1.029								SOS (1)			
	35	1.041								SOS (1)			CL & F
	36	1.067								SOS (1)			CL & F
	37	1.092								SOS (1)			CL & F
	38	1.105								SOS (1)			CL & F
	39	1.118								SOS (1)			
	40	1.113								SOS (1)			
	41	1.143								SOS (1)			
	42	1.168								SOS (1)			CL & F
	43	1.175								SOS (1)			
	44	1.245	320	44	SW					SOS (1)			
	45	1.257								SOS (1)			
	46	1.295								SOS (1)			
	47	1.308								SOS (1)			
	48	1.441	325	45	SW					SOS (1)			CL & F
	49	1.499								SOS (1)			

	50	1.594	72	90		SOS (1)	SOS (1)		*	SOS (1)	*Master to fracture cleavage striking 290-320^{o}		CL & F
	51	2.019	72	90		SOS (1)	SOS (1)			SOS (1)			CL & F
	52	2.057	73	90						SOS (1)			
8-3-00-46	A1	0.01	81	82	S	1.5+	4+	M(A2)	dies into sh above & below	Shale		PL	
Creek at the N. end of Lodi Pt								M(A3)					
RDJ 13A	A2	0.29	324	75	W	.06+	0.23	A(A2)		SOS (A1)	X-joint	CL	CL & F
								A(A3)					
	A3	0.34	71	64	S	.56+	0.95	M(A2)		SOS (A1)		PL	
								A(A1)					
	A4	0.49	74	69.5	S	.32+	1.75	A(*)		SOS (A1)	*off line fracture orientation 350/86 W	PL	CL & F
	A5	0.54	79	80	S	0.7	1.9+	M(*)		SOS (A1)	* offline at A4	PL-CL	
	A6	0.92	72	80	S	.75+	5+	NA		SOS (A1)		PL	
	A7	1.43	76	80	S	.90+	5+	NA		SOS (A1)		PL-CL	
	A8	1.65	77	76	S	0.1	2	NA		SOS (A1)		PL	
	A9	1.70	75	80	S	.90+	7+	NA		SOS (A1)		PL	
	A10	1.99	73	61	S	.16+	2	A(A11)		SOS (A1)		PL	
	A11	2.05	76	69	S	0.1	3	M(A10)		SOS (A1)		PL	
	A12	2.37	76	75	S	.75+	8+	NA		SOS (A1)		PL	
	A13	2.49	77	79	S	SOS (A12)	SOS (A12)	NA		SOS (A1)		PL	
	A14	2.84	74	74	S	0.2	3	NA		SOS (A1)		PL	CL & F
	A15	2.965	74	80	S	0.02	0.58	A(*)		SOS (A1)	*Abuts a x-joint off line striking 339	PL	
	A16	3.06	77	79	S	.50+	8+	M(A17)		SOS (A1)		PL	
	A17	3.14	11	39	W	0.29	0.3	A(A16)		SOS (A1)	* cntrclws twists in the horizonal plane, x-joint	PL*	
								A(A18)					CL & F
	A18	3.42	79	68	S	0.4	0.81	M(A17)		SOS (A1)		PL	
	A19	3.72	75	84	S	.75+	8	NA		SOS (A1)		PL	
8-3-00-47	A1	0	329	86	E	0.23	5+	NA		Shale		PL	CL & F
Creek at N. end of Lodi Pt.	A2	0.35	330	86	E	0.03	1.2	NA	BA in Shale	SOS (A1)		PL	
RDJ 13	A3	.38	329	90		.09+	3	NA		SOS (A1)		PL	
	A4	.485	327	85	E	SOS (A3)	SOS (A3)	A(A21)		SOS (A1)		PL	
FID								A(A22)					CL & F
								I(A10)					
								I(A17)					
	A5	.52	328	80	E	SOS (A3)	SOS (A3)	M(A6)		SOS (A1)		PL	
								M(A8)					CL & F
								I(A10)					
								I(A17)					
								I(A21)					
								I(A22)					CL & F
	A6	.55	330	85	E	.10+	4+	A(A5)*		SOS (A1)	*Hook	PL*	
								M(A9)					CL & F
	A7	.575	318	85	E	.03+	0.55	A(A17)		SOS (A1)		PL	
	A8	.62	328	85	E	.04+	1	I(A10)		SOS (A1)		PL*	
								I(A17)					
								I(A21)					
								I(A22)					
								A(A5)*			*Hook		
	A9	.65	325	85	E	.11+	2	A(A6)*		SOS (A1)	*Hook	PL*	CL & F
								I(A17)					
								I(A21)					CL & F
								I(A22)					
	A10	.70	74	80	S	0.03	1.55	I(A4)		SOS (A1)		PL	CL & F
								I(A5)					
								I(A8)					CL & F
								I(A9)					
								I(A11)					
								I(A15)					
								M(A14)					
								M(A16)					
								M(A12)					CL & F
								A(A13)					
	A11	.755	330	?	?	0.05	1.09	I(A10)		SOS (A1)		PL	
								I(A17)					

								I(A8)					CL & F
								I(A9)					
	A12	.765	329	?	?	0.05	0.56	A(A10)		SOS (A1)		PL	
								A(A22)					
								I(A17)					CL & N
								I(A21)					CL & N
	A13	.81	328	84	E	.08+	2	A(A10)*		SOS (A1)	*As a hook	PL	CL & N
								I(A17)					CL & N
								I(A21)					CL & N
								I(A23)					CL & N
	A14	.93	328	?	?	0.1	2.1	A(A10)		SOS (A1)	x-joint	PL	CL & N
								I(A17)					CL & N
								I(A21)					CL & N
								I(A23)					CL & N
	A15	.985	326	85	E	0.1	2	I(A17)		SOS (A1)		PL	
								I(A10)					
								I(A21)					
								I(A22)					
	A16	1.22	328	?	?	0.02	0.16	A(A10)		SOS (A1)	x-joint	CL	
								I(A17)*			*Perpendicular abut		
	A17	1.27	77	90		.04+	2.2+	M(A7)		SOS (A1)		PL	
								M(A16)					
								M(A18)					
								M(A19)					
								I(A4)					
								I(A5)					
								I(A8)					
	A18	1.54	355	?	?	0.02	0.175	A(A17)		SOS (A1)	x-joint	CL (sigmoidal)	
								A(A21)					
	A19	1.715	332	60	W	.04+	0.18	A(A21)		SOS (A1)		CL	
								A(A17)					
	A20	1.755	332	84	N	.03+	0.44	I(A17)		SOS (A1)		CL	
								I(A21)					
	A21	1.88	79	90		.06+	3+	I(A4)		SOS (A1)	* Hook	PL*	
								I(A5)					
								I(A8)					
								M(A18)					
								M(A19)					C & N
								A(A23)					
	A22	2.49	79	84	S	0.05	3+	I(A4)		SOS (A1)		PL	
								I(A5)					
								I(A8)					
								A(A23)*			*As a Hook		C & N
	A23	2.76	8	85	N	0.2	6+	M(A21)		SOS (A1)		PL	
								M(A17)					C & N
								M(A22)					
08-03-00-48k	a1	0	65	90		0.15	.70+	na		blk sh		p	kw
RDJ 14 lodi	a2	0.05	69	90		0.03	0.38	curves into a1, west				p	kw
	a3	0.2	71	84n		0.05	1+	na				p	kw
	a4	0.31	73	90		0.04	0.61	na	upper 4cm			p	kw
	a5	0.365	70	85n		0.78	3+	na				p	kw
	a6	0.46	70	88n		0.84	3	na				p	kw
	a7	0.7	66	89n		1	6	A(340w)				p	kw
	a8	0.95	70	90		1+	7.25+					p	kw
	a9	1.09	68.5	90		1.04+	3.5	A(330w)				p	kw
	a10	1.34	68	69s		0.1	0.73					p	kw
	a11	1.365	70	72s		0.87	2+					p	kw
	a12	off	1	69w		0.14	0.57	A(a11,a13)				p	kw
	a13	1.845	70	89n		1.12+	11++	M(a12,a15)				p	kw
	a14	2.19	70	90		1.04+	5	M(a15)			lim upper sh	p	kw
	a15a	2.2	348	67w		0.15	0.18	A(a13)				p	kw
	a15b	2.2	319	58sw		0.14	0.56	I(a14)A(a16)				p	kw
	a16	2.55	68	89n		1.09	9.21++					p	kw
	a17	2.85	68	90		1.21	10.21++					p	kw
	a18	3.41	72	na		0.45	0.26	A(a20)				p	kw
	a19	3.8	70	89w		0.73	7.75					p	kw
	a20	3.88	69	9		0.73	8+					p	kw

	a21	4.49	71	88n		0.54	5+					p	kw
	a22	6.29	68	89n		0.04	2					p	kw
	a23	6.58	69	87n		0.06	4.5+					p	kw
	a24	7.03	68	87n		0.11	4.75+	I(350w)				p	kw
	a25	7.43	69.5	90		.32+	6+	I(350w)				p	kw
	a26	7.75	68	90		.25+	2+					p	kw
	a27	7.95	68	90		0.12	2.2					p	kw
	a28	8.22	70	87s		0.27	6.75					p	kw
	a29	8.55	70	89n		0.4	5+					p	kw
	a30	8.7	70	89s		.09+	3.9+					p	kw
	a31	8.8	68	90		0.25	4.21+					p	kw
	a32	8.92	69	90		0.04	1.93					p	kw
	a33	9	68	na		0.25	2.26					p	kw
	a34	9.15	70	84		0.25	3					p	kw
	a35	9.6	92	89ne		0.03	0.2					p	kw
	a36	9.62	70	90		3+	6.21++	M				p	kw
	a37	9.98	70	90		0.4	5					p	kw
	a38	10.2	68	na		0.12	3					p	kw
	a39	10.43	70	90		0.15	2					p	kw
	a40	10.66	70	90		0.2	1					p	kw
	a41	11.04	68	90		0.11	0.85					p	kw
	a42	11.12	70	90		0.3	2					p	kw
	a43	11.36	70	89s		0.28	0.75					p	kw
	a44	11.44	70	90		0.3	2					p	kw
	a45	11.63	70	89s		0.32	2					p	kw
	a46	11.96	70	90		0.4	2+					p	kw
	a47	12.7	69	88s		.33+	1.5+					p	kw
8-3-00-48c	A1		23	?	?					Limestone			C & N
Creek At N. end if Lodi pt.	A2	1.75	19	?	?					SOS (A1)			
RDJ 9	A3	1.30	19	87	W					SOS (A1)			
Q&D	A4	1.30	21	89	W					SOS (A1)			C & N
Poor Outcrop	A5	1.10	10	?	?					SOS (A1)			
	A6	0.30	10	?	?					SOS (A1)			C & N
need to go back	A7	0.70	19	?	?					SOS (A1)			
to get MA relationship	B1		75	86	S							CL	C & N
	B2	0.35	75	?	?								
	B3	1.0	90	?	?								
49& 50????													
8-3-00-51	A1	.14	78	85	N	0.07	5+	I(A13)		Black Shale		PL	
Shaw Rd Creek #1	A2	.335	82	90		0.1	1	M(A4)	*	SOS (A1)	Hook	PL*	
								A(A3)*			*As A hook		
RDJ 2	A3	.37	79	81	N	0.1	2+	M(A2)		SOS (A1)		PL	
								I(A9)					
	A4	.82	335	66	E	.03+	0.25	A(A2)		SOS (A1)	x-joint	PL	
	A5	.85	76	?	?	0.01	1	NA		SOS (A1)		PL	
	A6	1.08	81	?	?	0.07	0.17	NA		SOS (A1)		PL	C & N
	A7	1.28	81	?	?	0.07	.8+	A(A8)		SOS (A1)		PL	C & N
	A8	1.315	11	90		0.1	1.2+	M(A7)		SOS (A1)		PL	
								M(A10)					C & N
	A9	1.465	8	89	W	0.03	0.6	I(A10)		SOS (A1)		PL	
								I(A11)					C & N
	A10	1.61	80	80	S	.03+	1.2	A(A8)		SOS (A1)		PL	
	A11	1.78	80	85	S	0.15	5	I (A9)		SOS (A1)		PL	C & N
								I(A13)					
	A12	2.77	80	?	?	.3+	10+	I(A13)		SOS (A1)		PL	
	A13	2.82	5	?	?	.15+	4+	I(A1)		SOS (A1)		PL	
								I(A11)					
								I(A12)					C & N
								(one on Karen's)					
08-03-00-51	b1	6	81	86s		0.03	1.54					p	kw
pencil cleavage	b2	5.26	78	84s		6	1.7	I(x-joint,w)				p	kw
	b3	5.15	79	90		0.03	1.21	I(x-joint,w)				p	kw
	b4	5.1	78	76s		0.05	2+	M(x-joint b5)				p	kw
	b5	5.08	4	70e		0.04	0.1	A(b4,b6)				p	kw
	b6	4.96	80	85s		0.06	0.9	I(x-joint,w)				p	kw
	b7	4.44	15	79nw		0.05	0.44	A(b4,b8)				p	kw
	b8	4.41	76	85s		0.17	1.12	M(b7)				p	kw

	b9	4.34	345	75w		0.17	0.23	A(b10)				p	kw
	b10	4.34	82	80s		0.17	1	M(b9)				p	kw
	b11	3.67	79	90		0.13	3.92		b-slt			p	kw
	b12	3.5	76	89s		0.13	1.7					p	kw
	b13	2.98	76	86s		0.2	11.25					p	kw
08-04-00-52	a1	0.931	81	86e		.70+	4.34	M (offline)		in blk sh		p	kw
16 falls crk	a2	1.15	75	87w		0.32	3	M(offline)	t-drk sh	in blk sh		p	kw
	a3	1.4	80	71w		0.63	1.75	M(x-joint,359)		in blk sh		p	kw
	a4	1.85	78	82w		0.8	3+	M(x-joint,354)		in blk sh		p	kw
	a5	2.37	385	58se		0.1	0.87	A(a6)		in blk sh		p	kw
	a6	2.54	79	90		1	3.5+	M(a5)		in blk sh		p	kw
	a7	2.92	80	89w		1	2+			in blk sh		p	kw
	a8	3.06	79	90		1	2			in blk sh		p	kw
	a9	3.66	72	82w		0.4	0.4	M(a10)		in blk sh		p	kw
	a10	3.8	0	49n		0.4	0.12	A(a9,a11)		in blk sh		cp	kw
	a11	3.82	82	80w		0.7	0.64	M(a10)A(a12)hook		in blk sh		cp	kw
	a12	3.9	75	85w		0.74	2+	M(a11)		in blk sh		c	kw
	a13	4.07	280	80se		,42	0.7			in blk sh		p	kw
	a14	4.2	85	90		0.12	0.2	na		in blk sh		c	kw
	a15	4.6	80	90		0.74	1.9	M(a16)		in blk sh		p	kw
	a16	4.8	345	84n		0.07	0.45	A(a15,a17)		in blk sh		p	kw
	a17	5.07	80	85w		0.6	1.6	M(a16,18)		in blk sh		p	kw
	a18	5.3	340	75n		0.21	0.4	A(a17)		in blk sh		p	kw
	a19	5.49	80	90		0.21	3.35	M(a20)		in blk sh		p	kw
	a20	5.75	4	70s		0.1	0.61	A(a19)		in blk sh		cl	kw
	a21	6.15	82	76e		1.10+	2.75	M(a20)		in blk sh		p	kw
	a22	7.43	79	60w		3.5	4.5	M(offline330)		in blk sh		cl	kw
	a22b	8.15	340	90		4+	7+			in blk sh		cl	kw
	a23	8.57	78	90		7	17+			in blk sh		p	kw
8-4-00-53	1	0	85	82	S	0.8	7	M(2)		Black Shale		PL	
Sixteen Falls Creek								M(9)					C & N
								I(3)					
								I(7)					
								A(3)*			*As a hook		
	2	.145	355	45	E	0.02	0.2	A(1)		SOS (1)	x-joint	PL	C & N
								A(3)					
	3	.36	78	90		0.8	16+	M(1)		SOS (1)		PL	
								M(2)					
								I(7)					
	4	1.85	81	85	S	0.4	9+	I(7)		SOS (1)		PL	
								M(5)					
								A(19)					C & N
	5	2.21	6	76	W	0.01	0.23	A(4)		SOS (1)		PL	
								A(6)					
	6	2.26	82	82	S	0.4	10+	M(5)		SOS (1)	x-joint	PL	
								I(7)					C & N
	7	2.55	9	90		0.4	4.5+	M(8)		SOS (1)		PL	
								I(9)					
								I(10)					
								I(12)					C & N
								I(13)					C & N
								I(15)					
								I(16)					
								I(17)					
								I(1)					
								I(3)					
								I(4)					
	8	2.57	79	82	S	0.4	8+	A(7) *		SOS (1)	*As a Hook	PL	
	9	2.96	76	89	S	0.4	8+	I (7)		SOS (1)		PL	
								A(10)*			*As a Hook		
	10	3.32	79	90		0.4	8+	I(7)		SOS (1)		PL	
								M(11)					C & N
	11	3.38	5	84	W	.04+	0.1	A(10)		SOS (1)	x-joint	CL	
								A(12)					
	12	3.6	80	85	S	0.4	13+	M(11)		SOS (1)		PL	
								I(18)					C & N
								I(19)					
								I(15)					

								I(7)					
	13	3.885	76	90		0.4	13+	I(18)		SOS (1)		PL	
								I(19)					C & N
								I(15)					
								I(7)					C & N
	14	4.34	81	90		0.4	13+	I(18)		SOS (1)		PL	
								I(19)					JD & CL
								I(15)					JD & CL
								I(7)					JD & CL
	15	4.37	8	85	W	.05+	1.5	A(20)		SOS (1)		CL	JD & CL
								I(16)					JD & CL
								I(17)					JD & CL
								I(14)					JD & CL
								I(13)					JD & CL
								I(12)					JD & CL
								I(10)					JD & CL
	16	4.6	81	86	S	0.4	13+	I(15)		SOS (1)		PL	JD & CL
								I(18)					JD & CL
								I(19)					JD & CL
								I(7)					JD & CL
	17	4.63	80	?	?	0.4	13+	I(15)		SOS (1)		PL	JD & CL
								I(18)					JD & CL
								I(19)					JD & CL
								I(7)					JD & CL
	18	4.8	12	87	E	.05+	2	A(19)*		SOS (1)	*As a hook,Jagged	PL	JD & CL
	19	4.975	8	87	W	.25+	5+	M(18)		SOS (1)		PL	JD & CL
								I(4)					JD & CL
								I(3)					JD & CL
								I(1)					JD & CL
								I(16)					JD & CL
								I(17)					JD & CL
								I(14)					
								I(13)					RDJ
								I(12)					
								I(10)					RDJ
								I(20)					
	20	5.10	81	89	S	0.4	13+	I(18)		SOS (1)		PL	RDJ
								I(19)					
								I(7)					RDJ
								M(15)					RDJ
	21	5.89	335	?	?	.12+	1.6	I(20)		SOS (1)		PL	RDJ
								I(16)					RDJ
								I(14)					RDJ
								I(13)					RDJ
								I(12)					RDJ
	22	6.99	79	90		0.2	4.5	I(19)	TA & BA in Shale	SOS (1)		PL	RDJ
								M(18)					RDJ
	23	7.43	81	86	S	.16+	4+	I(19)		SOS (1)	Hooks into next 80 striking fx off line	PL	RDJ
8-8-00-54c	0	0	0	35.5	E					Shale with dip of 64m/1km higher than normal 75ft/mile	Fracture Cleavage		
Sixteen Falls Creek	1	2.5								SOS (0)	SOS (0)		RDJ
RDJ 53A	2	7								SOS (0)	SOS (0)		RDJ
	3	14								SOS (0)	SOS (0)		RDJ
Fracture Cleavage	4	17								SOS (0)	SOS (0)		
no offset	5	20								SOS (0)	SOS (0)		
	6	24								SOS (0)	SOS (0)		
	7	24.7								SOS (0)	SOS (0)		
	8	27								SOS (0)	SOS (0)		
	9	28.8								SOS (0)	SOS (0)		
	10	32.8	5	32	E					SOS (0)	SOS (0)		
	11	33.4								SOS (0)	SOS (0)		
	12	34.4								SOS (0)	SOS (0)		
	13	34.8								SOS (0)	SOS (0)		
	14	37.8								SOS (0)	SOS (0)		
	15	43								SOS (0)	SOS (0)		
	16	49								SOS (0)	SOS (0)		
	17	54.4								SOS (0)	SOS (0)		
	18	59	0.5	39	E					SOS (0)	SOS (0)		
	19	67								SOS (0)	SOS (0)		

	20	74.4								SOS (0)	SOS (0)		
	21	75.6								SOS (0)	SOS (0)		
	22	79.9								SOS (0)	SOS (0)		
	23	88.8								SOS (0)	SOS (0)		
	24	98								SOS (0)	SOS (0)		
8-9-00-55	1	0	79	89	N	1+		M(x-joint)				pl	RDJ
RDJ 19	2	.25	81	86	N			M(x-joint)				pl	RDJ
	3	.435	80	90				M(x-joint)				pl	RDJ
	4	.5	80	90			24+	M(x-joint)				pl	RDJ
	5	.69	79	87.5	N			M(x-joint)				pl	RDJ
	6	.72	78	75	N			M(x-joint)				pl	RDJ
	7	.745	79	74	N			M(x-joint)				pl	RDJ
	8	.87	79	73.5	N								RDJ
	9	1.075	79	88	N								RDJ
	10	1.22	79	?	?			A(latter back)					RDJ
	11	1.335	79	88	N								RDJ
	12	1.51	79	90									RDJ
	13	1.81	79	88	N								RDJ
	14	1.94	80	88	N		12+	A(13)					RDJ
	15	2.05	330	70	N			A(14,16)			x-joint		RDJ
	16	2.12	80	88	N								RDJ
	17	2.19	20	67	NW		0.26	A(16)			x-joint	cl	RDJ
	18	2.31	10	76	W		0.23	A(16)			x-joint	cl	RDJ
	19	2.35	28	85	NW			A(16)			x-joint		RDJ
	20	2.71	78	83	N								RDJ
	21	2.80	79	87.5	N								RDJ
	22	3.0	20	55	NW		0.26	A(21,23)			x-joint		RDJ
	23	3.035	78	88	N								RDJ
	24	3.15	15	76	NW		0.44				x-joint	cl	RDJ
	25	3.4	79	89	N								RDJ
8-9-00-55	B1	0.76	8	89	W		6.5	I(80's)		Black Shale			
								A(80's curving)					
	B2	.88	8	88	E		SOS (B1)	A(a late 80)		SOS (B1)			
								That 80 abuts other 80's					
	B3	.98	12	88	E		SOS (B1)	I(same 80 from B2)		SOS (B1)			
								Mostly I(80's)					
		crosses many x-joints of variable lengths								SOS (B1)			
	B4	3.3	290	?	?					SOS (B1)	x-joint		
	B5	7.24	48							SOS (B1)	x-joint, curving perp. W/ sigmoid	CL	
	B6	7.48	10	83	W					SOS (B1)	x-joint		
	B7	8.5	337	?	?					SOS (B1)	x-joint, curving perp. W/ sigmoid		
	B8	8.23	345	88	E					SOS (B1)	x-joint		
	B9	8.32	325	65	W					SOS (B1)	x-joint, curving perp. W/ sigmoid		
	B10	8.48	240							SOS (B1)	x-joint, curving perp. W/ sigmoid		
	B11	11.65	8	90			SOS (B1)	I(80's)		SOS (B1)			
	B12	11.8	9	89	E		SOS (B1)	M(80's)		SOS (B1)	L.L. offset =1.2,1.3,1.3cm		
	B13	12.4	11	?	?		very long	I(80's in one spot)		SOS (B1)	cntrclkws twist hackles @5^o		
								M(80's)					
	B14	12.43	11	89	E					SOS (B1)	L.L. offset =.5cm		
	B15	14.99	9	89	E		SOS (B1)			SOS (B1)	L.L. offset = 1cm		
	B16	18.82	9	88	W			I(80's)		SOS (B1)	no offset		
8-8-00-56c	1	0	79	88.5	N	.21+	2.5+	M(*)		Black shale	*Master to a x-joint offline (strike=348^o),** hooks into a fx 1.5m offline to the east striking 70^o	PL	
Sixteen Falls Creek								A(**)					
RDJ 18	2	.081	79	85	N	.65+	5+	I(12)		SOS (1)		PL	
	3	.098	79	84	N	SOS (2)*	SOS (2)*	NA		SOS (1)	*When considered as a composite has the same h/l as (2)	PL	
	4	1.16	77	89	N	SOS (2)	SOS (2)	M(12)		SOS (1)		PL	
								M(6)					
	5	1.23	78	89	N	.55+	2+	I(12)		SOS (1)		PL	
	6	1.31	78	86.5	N	0.55	2.5	I(12)		SOS (1)		PL	
								A(4)*			*As a hook		
	7	1.70	275	51	N	.09+	1.3	A(12)		SOS (1)		CL	
								A(6)					
	8	2.025	81	87	N	.75+	5+	I(12)		SOS (1)		PL	

	9	2.075	79	87	N	SOS (8)	SOS (8)	I(12)		SOS (1)		PL	
	10	2.12	79	90		.25+	3	M(12)		SOS (1)		PL	
	11	2.265	79	85	N	.25+	3+	A(10)*		SOS (1)	*As a Hook	PL	
								I(12)					
	12	2.69	10	86	W	.75+	4+	I(12)		SOS (1)		PL	
	13	2.95	77	90		SOS(12)	SOS(12)	I(12)		SOS (1)			RDJ
	14	3.45	78	90		SOS(12)	SOS(12)	I(12)		SOS (1)			
	15	3.295	78	86	N	SOS(12)	SOS(12)	I(12)		SOS (1)			RDJ
	16	3.525	78	90		SOS(12)	SOS(12)	I(12)		SOS (1)			
	17	3.62	78	90		SOS(12)	SOS(12)	I(12)		SOS (1)			
	18	3.715	78	88.5	N	SOS(12)	SOS(12)	I(12)		SOS (1)			RDJ
								A(17)					RDJ
	19	4.095	77	89	N	SOS(12)	SOS(12)	I(12)		SOS (1)			RDJ
	20	4.23	78	89	N	SOS(12)	SOS(12)	I(12)		SOS (1)			
	21	4.505	78	86	N	SOS(12)	SOS(12)	I(12)		SOS (1)			
	22	4.67	77	86	N	SOS(12)	SOS(12)	?		SOS (1)			RDJ
	23	4.76	78	89	N	SOS(12)	SOS(12)	NA		SOS (1)			RDJ
	24	4.91	77	89	N	SOS(12)	SOS(12)	NA		SOS (1)			
	25	5.01	78	88.5	N	SOS(12)	SOS(12)	NA		SOS (1)			RDJ
8-9-00-56A	1	0	8.5	90				M(2)					RDJ
Sixteen Falls Creek								m(4)					
	2	.09	329	88	E		0.35	A(1)*			*Curves to perpendicular		
								A(8)					
	3	.165	331	88	W		1.72	A(1)*					RDJ
								I(8)					
	4	.295	42	81	NW		0.09	A(6)			x-joint		
								A(3)					RDJ
	5	.33	15	73	SE		.79+	A(8)			curving		RDJ
								A(9)					RDJ
								I(6)					RDJ
no # 7	6	.36	332	87	W		1.68	M(9)					
								I(8)					RDJ
	8	.476	75	88	S		3.0+	M(5)					
								M(2)					
								I(3)					
								I(9)					RDJ
	9	.52	333	90			0.95	M(5)					RDJ
								I(8)					
								A(6)*			*As a hook		
	10	.87	74	88	N		2.0+	M(6)					
								FA(13)*			*FA= Fault abut w/ offset		RDJ
	11	1.152	75	88	S		3.0+	M(3)					
								FA(13)*			*FA= Fault abut w/ offset		RDJ
								I(6)					
	12	1.195	74	90			0.76	FA(13)*			*FA= Fault abut w/ offset		RDJ
	13	1.52	337	90			7.0+	FM (80's, 10-12)*			* FM= Fault master		
8-9-00-57c	1	14.65	336	73	W		8.0+	M(70's offline)				PL	RDJ
Sixteen Falls Creek								M(4)					
RDJ 16	2	14.51	335	80	W		5.5+	M(80's x-joints)				PL	
330 FID								A(another 330 offline)					RDJ
								M(4)					
		covered											
	3	13.7	335	84	E		0.87	A(4)				PL	RDJ
	4	13.56	69	80			1.09	A(1)			x-joint	PL	
								A(2)					RDJ
								I(8)					RDJ
	5	13.13	50/55	?/57	?/SE		0.68	I(8)			x-joint	CL	CL
	6	12.9	0	62	W		0.68	A(8)*			*curves perpendicular	PL	
								A(x-joint offline)					
	7	12.84	350	?	?		0.52	A(8)*			x-joint,* curves perpendicular	PL	
								A(x-joint offline)					CL
	8	12.59	335	80	W		7.0+	M(7)					
								M(6)					
								I(4)					
								I(5)					
	9	12.42	337	86	W		7.0+	FM(18)			Cntrclkws Twist hackles @325^{o}	PL	CL
								FM(14)					
								M(20)					CL

	10	12.2	337	?	?		0.89	A(x-joint offline at both ends					
	11	12.11	335	?	?		2.0+	A(x-joint offline)					
	12	12.03	337	80	W			A(x-joint offline)					CL
	13	11.84	333	80	W		2	A(x-joint offline)					
								FM(14)*			*L.L. Offset =.2cm		CL
	14	11.77	77	86	N		4.0+				L.L. Offset	PL	CL
													CL
	15	11.61	70	?	?		0.15	NA			x-joint	PL	
	16	11.39	332	82	W		3.2	FA(9)*			*Rt Lateral offset	PL	
								FM(13)			**L.L. Offset = .01		
								FM(17)					
								FM(16)					
	17	11.34	333	83	W		3.2	FA(14)*				PL	CL
								I(18)					
	18	11.18	78	89	N		1	FA(9)*			* Rt. Lateral offset = .01m	PL	
								I(19)					CL
	19	11.12	333	79	W		7.5+	I(18)				PL	
								I(20)					
								FA(21)					
	20	10.53	75	82	?		3.3+	A(9)				PL	
								I(19)					CL
								A(24)					
	21	9.92	77	86	N		5.0+	I(22)				PL	
								FM(19)			offset = .01?		CL
								I(24)					
	22	9.54	335	?	?		7.0+	I(21)			rt stepping, cntrclkws twist hackles @	PL	CL
								M(x-joint offline)					
	23	9.43	330	85	W		1.1	A(x-joint offline @ #22, bothends)				CL	CL
	24	9.1	334	86	W		9.0+4+	A(x-joint offline @#22)				PL	
	25	8.69	77	90			4+	A(26)*			*As a hook	PL	
								M(27)					CL
								I(23)					
								I(24)					
	26	8.65	76	85	S		0.47	M(25)				PL	CL
								I(24)					
								I(23)					CL
								I(27)					
								A(9)					
	27	8.44	330	?	?		10+	A(25)			x-joint	PL	CL
								A(28)					
	28	8.09	77	90			5.5+	M(27)			*Maybe a FA rt lateral	PL	CL
								A(24)					
								I(22)					
	29	7.74	11	89	E			I(27)				PL	CL
								I(325°/335°)					
	30	7.6	12	86	E			A(325°/335°)				PL	
	31	7.58	81	89	N		2	A(x-joint)				wiggley-PL	
								I(34)					CL
								I(29)					CL
	32	7.37	77	89	N		5	I(33)				PL	CL
								I(34)					CL
								I(29)					CL
								I(30)					
								A(xjoint at end)					RDJ
								A(330° at end)					
	33	7.2	340	90			0.68	A(34)				PL	RDJ
								I(32)					
								M(31)					RDJ
	34	7.19	10	90			2.2	M(33)				PL	
								I(32)					
								I(310					RDJ
								A(28)					
								A(24 end)					RDJ
	35	6.92	74	89	N		10+	I(34)				PL	

								I(23)					RDJ
								I(24)					
	36	6.65	72	?	?		0.49	A(38)			x-joint	PL	
								M(37)					RDJ
	37	6.55	95	?	?		0.27	A(36)			x-joint	PL	RDJ
								A(38)					
	38	6.36	349	89	E		0.84	A(39)			x-joint	PL	RDJ
								A(35)					
								A(41)					
	39	6.235	76/76	90/80	?/N		4+	M(38)				PL	
								I(24)					
								A(330^o)					
	40	5.87	84	?	?		0.48	A(x-joint =0)				PL	
								A(38)					
	41	5.735	84	?	?		1+	M(38)				PL	
								M(42)					
								M(x-joint= 0)					
	42	5.56	354	86	W		5.59	A(41)			x-joint	PL	
								A(43)					
	43	5.00	76	88	N		3+	M(42)				PL	
								M(330's)					
								I(330's)A(43)					
	44	4.59	342	VAR	VAR		0.56	A(47)			x-joint	PL	
								I(45)					
								I(46)					
								A(43)					
	45	4.48	76	88	N		2.2+	I(44)				PL	
	46	4.38	77	89	S		2.2+	I(44)				PL	
	47	4.265	75	89	S		3+	M(44)				PL	
	48	3.98	77	90			3+	I(330 x-joint)				PL	
	49	3.37	77	89	N		0.71	A(330^o)			x-joint	Sigmoidal	
								A(50)					
	50	2.93	343	89	?		1.11	M(49)				PL	
								M(51)					
	51	2.9	78	?	W		.66+	A(50A)*			*50A is Parallel to 50 but shorter	PL	
								M(x-joint b/t 51& 52)					
	52	2.77	74	88	N		3.0+	M(50A)*			one of three composite fractures, froming a very dominant fracture	PL	
								M(335 offline)			*SOS (51)		
								M(330^o)					
	53	1.85	338	87	?		0.76	A(52)			x-joint	Sigmoidal	
								A(54)					
Hook Zone	54	1.8	75	87	E		2.5	M(53)				PL	
								I(55)					
	55	1.38	342	78	E		2	I(54)				CL	
								A(56)					
								A(58)					
	56	1.34	75	89	S		4.5	M(55)			sometimes is a double .002m apart	PL	
	57	.96	355	88	E		0.79	A(56)			x-joint	PL	
								A(58)					
	58	0.35	78	88	S			M(57)				PL	
								M(55)					
8-9-00-58	1	0	78	77	N								
Sixteen Falls Creek	2	hidden but same direction											
near RDJ 17	3	hidden but same direction											
	4	.02	6	?	?			A(10)			x-joint	Sigmoidal	
	5	.72	6	?	?			A(10)			x-joint	Sigmoidal	
	6	.89	358	?	?			A(10)			x-joint	Sigmoidal	
	7	1.23			?			M(0'S)				Wiggly Sigmoidal	
								A(0's)					
	8	1.35	352	?	?			A(7)					
	9	1.62	4	?	?								
	10	1.81	77	90			6.0+	M(all x-joints)					
	11	2.21	76	?	?								
	12	2.265	74	?	?		2.5+						

	13	2.305	77	70	S		6.0+						
	14	2.74	359	?	?						x-joint		
	15	3.375	75	?	?		2+						
	16	3.52	78	90									
	17	3.86	355	?	?						x-joint		
	18	3.99	77	?	?		3.5+						
	19	4.39	76	?	?		2.0+						
	20	4.65	75	?	?								
	21	5.01	80	?	?								
	22	5.79	335	?	?						x-joint		
	23	5.85	75	?	?								
	24	6.15	75	?	?								
	25	6.35	75	?	?								
	26	6.58	76	?	?			*			*curving perp.		RDJ,CL
	27	6.63	8	?	?		3.0+						RDJ,CL
	28	6.8	325	?	?						Rt. Lateral offset = .075m		RDJ,CL
													RDJ,CL
													RDJ,CL
													RDJ,CL
	29	7.13	72	?	?								RDJ,CL
	30	7.19	74	?	?								RDJ,CL
	31	7.63	75	82	S		9.0+						
	32	7.81	7	?	?						x-joint	sigmiodal	RDJ,CL
													RDJ,CL
	33	8.025	74	83.5	S		9.0+						RDJ,CL
													RDJ,CL
	34	8.5	335	?	?						x-joint	CL, sigmoidal	RDJ,CL
													RDJ,CL
	35	8.69	75	?	?		9.0+						RDJ,CL
	36	9.04	44	?	?			*			*curving perp. To 37	CL	RDJ,CL
	37	9.12	76	85	S		3.5+						RDJ,CL
	38	9.24	75	?	?		9.0+						
	39	9.51	74	?	?								
	40	9.85	75	?	?		9.0+						
	41	10.2	77	?	?						L.L. offset = .02m		
	42	10.55	10	90							L.L. offset = .02m		
	43	10.8	20	?	?						x-joint		
	44	10.98	22	?	?						x-joint		
	45	11.13	40	?	?						x-joint		
	46	11.38	77	88	S		9.0+						
	47	11.68	73	?	?		7.0+						
	48	11.84	0	?	?						x-joint		
	49	11.96	76	?	?		11.0+						
	50	12.02	75	?	?								
	51	12.32	75	?	?		11.0+						
	52	12.54	76	?	?		1.0+						
	53	12.73	75	?	?		11.0+						
8-9-00-59A	A's	**75/90**								Black Shale			
Sixteen Falls Creek	1									SOS A1			
	2	0.72								SOS A1			
Q&D	3	0.66								SOS A1			
	4	0.6								SOS A1			
	5	0.55								SOS A1			
	6	0.83								SOS A1			
	7	0.53								SOS A1			

		Gap w/ no data, edge of FID											
		father to the south											
	8	0.98								SOS A1			
	9	1								SOS A1			
	B's	**335'S**								SOS A1			
	1									SOS A1			
	2	0.34								SOS A1			
	3	0.29								SOS A1			
	4	0.68								SOS A1			
	5	1.08								SOS A1			
	6	0.56								SOS A1			
8-9-00-59b	1	0	70										
Sixteen Falls Creek	2	0.658	71										
SL	3	1.04	59										
RDJ 15b	4	1.46	70										
	5	1.65	69										
	6	1.75	70										
	7	1.83	72										
	8	2.43	75										
	9	2.7	80										
	10	2.9	74										
	11	3.05	80										
	12	3.3	90										
	13	3.34	76.5										
	14	3.51	85										
	15	3.8	75										
	16	4.3	75										
	17	4.49	80										
	18	4.85	78										
	19	5	79										
	20	5.1	76										
	21	5.3	80										
	22	5.82	80										
		covered											
	23	8.11	333										
	24	8.22	335										
	25	8.29	335										
	26	8.62	75										
	27*	8.48	337										
	28*	8.66											
		at 12m 80's disappear											
	28A	17.5	0										
	29	19.3	7										
	*	At 8.5m 330's, spacing (80's are spaced normally)											
		0.14											
		0.16											
		0.07											
		0.16											
		At 9.6m 330's, spacing (80's are spaced normally)											
		0.05											
		0.04											
		0.08											
		0.04											
		0.08											
		0.02											
		0.02											
		At 20m (spacing of below)	330's					A(80's)			At 20m 330's abutt 80's and curve perp. with a 0^o fracture at 17.5m		
		0.3											

		At 22.7m (spacing below)	330's										
		0.3											
		27.1	75's					M (Fracture cleavage)					
		At 27-29m (spacings below)	333's	37	SW			A(above fracture)			fracture cleavage	CL	
		0.07											
		0.06											
		0.06											
		0.07											
		0.07											
		At 30.6 (spacing below)	75's										
		0.47											
		0.47											
		(spacing below)	330's										
		0.33											
		0.35											CL,J
													CL,J
		At 38m (spacing below)	75's										CL,J
		0.135											CL,J
		0.3											CL,J
		0.24											CL,J
		gone	335's								at 38m 335's gone		CL,J
													CL,J
8-9-00-60c		Set A (spacing and orientations don't match)								Tully L.S.	May be ratated 10's, cntrclkws rotation		CL,FI
Sixteen Falls Creek		1.45	335										
Rdj 15A		0.52	353										CL,FI
		0.12	355										
Q&D		0.36											CL,FI
		0.11											CL,FI
		0.9											CL,FI
		1.04											
		Set B (spacing and orientations don't match)								Tully L.S.	May be ratated 80's, cntrclkws rotation		CL,FI
		1	95										
		1.03											CL,FI
8-9-00-61c		Set A (spacing and orientations don't match)						M					CL,FI
Sixteen Falls Creek		0.55	72										CL,FI
Q&D		0.85											CL,FI
		1.66											CL,FI
SW FID		0.53											CL,FI
Ash layer		Set B (spacing and orientations don't match)											CL,FI
		Spacing from SW FID											CL,FI
		1.17	338	88	W			A		Discontinuity maybe and ash layer .5m up from creek bed			
		0.28											CL,FI
		0.51											
		1											CL,FI
		0.35											
		0.19											
		0.19											
		0.23											CL,FI
		0.19											
		0.1											
		0.17											

		0.15											
		0.2											
		0.14											
8-9-00-62, 8-16-00-62	1	0.135	339	85	NE	3.5+	1+	There is another set 70-80's but I think they are from balasting for the road, they abut the 330's in all cases		Tully L.S., all 5 layer #1 for sure (Sed drawing pg 2-98)		PL,JAGGED	CL,FI
Highland Rd Cut	2	0.78	340	85	NE	1.5+	1+			layer1,2,3 and possible 4and 5		CL, JAGGED	
Top of Tully where rd turns N	3	1.12	333	89	SW	.75+	.07+			layers 2 and 3		PL	CL,FI
	4	1.69	350	90		2	.75+			layers 2,3 and 4		CL, JAGGED	
possible fault in Tully	5	3	332	?	?	1.6	.75+			layers 1,2,3 and 4		CL	CL,FI
	6	3.2	334	86	NE	1.95	.5+			layers 1,2,3 and4		PL	CL,FI
	7	3.74	335	90		4+	1+			All 5 layers	**Fracture 7 maybe a fault showing offset of layers2&3 (8cm), 3&4(?), 4&5(?)	PL	
	8	5.36	336	89	NE	4+	1.5+			All 5 layers		PL,JAGGED	CL,FI
10-18-00	2	0	46							Friable shale			
boyscouts	3	0.17	72										kw
RDJ 63	4	0.14	46										kw
	5	0.05	75										kw
	6	0.02	59										kw
	7	0.02	75										kw
	8	0.51	90										kw
	9	0.46	70	68	S								kw
	10	0.02	68										kw
	11	0.04	64										kw
	12	0.17	70										kw
	13	0.06	68										kw
													CL,FI
8-15-00-64A	A1		5	74	E		3.5+	I(B1)				PL	CL,FI
Highland Rd Creek								I(B3)					CL,FI
Above waterfall	A2	0.73	345	60	E		3	A(B3)			*As a hook	PL-CL	
								I(B1)					CL,FI
	A3	0.79	350	?	?		6+	M(B2)				CL, JAGGED	CL,FI
Q&D	A4	0.62	4	?	?		4+	M(B2)				CL, JAGGED	CL,FI
	A5	0.25	358	?	?		1+	I(B2)				CL	CL,FI
								I(B3)					
	A6	0.73	3	?	?		3+	I(B2)				CL	CL,JZ
								I(B3)					
	A7	0.21	2	?	?		1+	I(B3)				CL	
								I(B2)					CL,JZ
	A8	0.79	6	?	?		1+	M(B3)				CL	
	A9	0.5	346	77	E		2+	NA				PL	CL,JZ
	A10	0.86	350	?	?		3+	NA				PL	
	A11	0.8	351	70	E		1+	NA				PL	CL,JZ
	A12	0.13	352	74	E		2+	NA			Up1m has cntrclkws twists @ 20/90^o	PL	CL,JZ
	A13	0.26	350	70	E		0.75	A(A14)*			*As a hook,Up 1m has cntrclkws twists @ 20/90^o	PL	CL,JZ
	A14	0.14	350	76	E		3+	M(a13)			Up1m has cntrclkws twists @ 20/90^o	PL	CL,JZ
	B1		74	85	N		3.5+	I(A1)				PL	
								I(A2)					
	B2	0.12	75	74	S		2+	M(A9)				PL	CL,JZ
								A(A4)					CL,JZ
								I(A5)					
								I(A6)					
	B3	0.74	82	80	S		8+	M(A2)				PL	
								A(A3)					CL,JZ
								A(A8)					CL,JZ
								I(A1)					CL,JZ
								I(A5)					

								I(A6)					
								I(A7)					CL,JZ
		possible covered fracture in here											CL,JZ
	B4	4.25	74	87	S		4+	I(A set)				PL	CL,JZ
RDJ 21	A1		7	82	E		4+	FM (B7, B6, B8)		IST			
8-16-00	A2	1.4	7	88	E		4+	FM (B4, B5)		IST			
	A3	2.74	7	87	E		4+			IST			
QD													
	B1		71	90				M(c1)		IST, Thickest bed = 3cm			
	B2	1.36	73	?	?					SOS b1			
	B3	0.19	74	86	S					SOS b1			
	B4	0.225	76	86	S			FA (A2)*		SOS b1	* LL offset = 1cm		
	B5	0.27	74	85	S			FA(A2)*		SOS b1	* LL offset = 1cm		
	B6	0.16	74	87	S			FA (A1)*		SOS b1	* LL offset = 2cm		
	B7	0.23	74	90				FA (A1)*		SOS b1	* LL offset = 2cm		
	B8	0.515	75	?	?			FA (A1)*		SOS b1	* LL offset = 2cm		
	C1		307	86	W		2+	A(A1), M(B set)					
	C2	2.9	305	?			.4+	A(5^o)					
													CL,JZ
8-15-00-64B	A1		330	90			1+	M(75's)				PL	CL,JZ
Highland Rd Creek								I(75's)					CL,JZ
Below Waterfall	A2	0.3	329	90			1+	MA*(75's)			*MA=mutually abutting	PL	CL,JZ
Q&D	A3	0.17	326	89	W		1+	NA				PL	CL,JZ
													CL,JZ
	B1		75	90			4+	I(330's)				PL	
	B2	0.43	75	?	?		4+	I(330's)				PL	
	B3	0.12	76	85	N		4+	I(330's)				PL	CL,JZ
	B4	0.07	74	86	N		4+	I(330's)				PL	
								FA(330's)*			*Rt Lateral offset = 1.5cm on all, B4-B8 all Fa the same 330		CL,JZ
	B5	0.32	74	87	N		4+	FA(330's)*				PL	CL,JZ
	B6	0.16	75	?	?		4+	FA(330's)*				PL	
	B7	0.31	76	?	?		4+	FA(330's)*				PL	CL,JZ
	B8	0.36	74	89	N		4+	FA(330's)*				PL	
													CL,JZ
8-16-00-63	1	0.18	10	70	E	.6+	.5+	NA		Black Shale below Tully		PL	
Highland Rd Creek		B/t 1& 2 there are 5fractures	5	65									CL,JZ
		spacing= .03,.03,.015,.01,.03								SOS (1)			
	2	0.265	342	84	E	.7+	1.3+	A(3)Vertically*			*As a hook	PL	CL,JZ
								M(3)Horizontally					CL,JZ
	3	0.39	342	84	E	.75+	.6+	A(2)Horizontally		SOS (1)		PL	CL,JZ
								M(2)Vertically*			*As a hook		CL,JZ
	4	0.54	355	?	?	0.6	.6+	NA		SOS (1)		PL	CL,JZ
	5	0.69	351	?	?	.5+	1+	NA		SOS (1)		CL	CL,JZ
	6	0.86	332	?	?	0.04	0.24	NA		SOS (1)		CL	CL,JZ
	7	1.16	337	90		.75+	1.3+	M(8)		SOS (1)	Cntrclkws twist hackles	PL	
	8	1.43	14	84	W	.5+	.75+	A(7)*		SOS (1)	*As a hook		CL,JZ
								M(9)					CL,JZ
								M(10)					CL,JZ
	9	1.62	330	85	W	0.06	0.13	A(8)*		SOS (1)	*As a hook	PL	
	10	1.65	305	69	NE	.25+	.68+	A(8)		SOS (1)		CL	CL,JZ
								M(11)					
								M(12)					
								M(13)					
	11	1.67	340	?	?	.21+	.5+	A(10)		SOS (1)		CL	CL,JZ
	12	1.69	352	74	E	.15+	0.35	A(10)		SOS (1)		PL	CL,JZ
	13	1.88	356	?		.05+	0.22	M(14)		SOS (1)		PL	
								A(10)					
								A(300^o offline)					
	14	1.94	58	54		.02+	0.12	A(13)*		SOS (1)	*As a hook,X-joint		CL,JZ
	15	2.13	345	85		.38+	1.2+	NA		SOS (1)		PL	CL,JZ
	16	2.48	328	85		.75+	1.09+	NA		SOS (1)		CL	
	17	2.96	328	84		.7+	1+	NA		SOS (1)		CL	
	18	3.77	64	76		.2+	2+	NA		SOS (1)		PL	CL,JZ

	19	3.81	334	?		.28+	.48+	NA		SOS (1)		CL	
	20	3.83	31	40		.26+	.43+	A(21)		SOS (1)		PL	
	21	4.66	329	86		.21+	.53+	M(20)		SOS (1)		PL	
	22	4.76	345	70		.72+	.84+	NA		SOS (1)		CL	CL,JZ
		B/t 22&23 there are 4 x-joints	30-65										
		spacing = .1,.1,.11											CL,JZ
	23	5.29	340	90		.57+	.60+	NA		SOS (1)		PL	
		A set											
8-15-00-65	A1		79	80	S			Mutually intersecting B set		Blk. Shale			RDJ
Highland Creek	A2	0.17	78	80	S			SOS A1		Blk. Shale			RDJ
	A3	0.17	78	79	S			SOS A1		Blk. Shale			RDJ
	A4	0.37	77	81	S			M(B1)*		Blk. Shale	*B1 is offset 2cm		RDJ
	A5	0.09	77	76	S			SOS A1		Blk. Shale			RDJ
	A6	0.17	76	75	S			SOS A4		Blk. Shale			RDJ
	A7	0.25	76	77	S			SOS A1		Blk. Shale			RDJ
	A8	0.09	78					SOS A1		Blk. Shale			RDJ
	A9	0.27	78	75	S			SOS A1		Blk. Shale			RDJ
	A10	0.56	78	81	S			SOS A1		Blk. Shale			RDJ
	A11	0.09	78					SOS A1		Blk. Shale			RDJ
	A12	0.045	77.5	77.5	S			SOS A1		Blk. Shale			RDJ
	A13	0.52	79					SOS A1		Blk. Shale			RDJ
		B set											
	B1		2	87	W			Intersect A set except for A4&A6		SOS (A)			RDJ
	B2	1.5	15	67	W			Int. A set A(70°) we didn't measure		SOS (A)			RDJ
		C set											
	C1		337	80	SE			Abuts an intersection of A & B		SOS (A)			RDJ
8-15-00-66	1	0.415	76	90			3	A(x-joint @ 325°)				PL	RDJ
Highland Creek	2	0.555	76	90			7+	I(5)				PL	RDJ
SL	3	0.62	76	90			7+	I(5)				PL	RDJ
	4	0.88	78	90			7+	I(5)				PL	RDJ
	5	0.88	316	78	SW		2+	I(1-4), M(3), A(offline 80°)					RDJ
	6	1.2	77	77	S		0.61	A(5)					RDJ
	7	1.82	75	88	S		2.5+	I(10° offline)					RDJ
	8	2.59	77	90			3.5+	I(10° offline), FA (Hair)*			*.005m Rt Lateral		RDJ
	9	3.91	65	73	S		0.75	A(10° offline), A(Hairs)				CL	RDJ
	10	4.74	58	42	S		0.9	SOS (9)					RDJ
	11	5.49	75				2.5	A(14), I(10° offline)				PL	RDJ
	12	5.57	75				4.5+	I(10° offline), I (14)					RDJ
	13	5.76	77	85	N		3.5+	I(10° offline), I (14)					RDJ
	13.5	offline	70	77	N								RDJ
	14	6.03	352	87	N		2.2	I (all following fractures), A(22)				CL	RDJ
	15	6.065	73	80	N		3.5+	M(14), I(0° to S.)					RDJ
	16	6.39	75	85	N		4+	A(10° to N. curv. Perp.), I(10° to S.)					RDJ
	17	6.69	75	85	N		3.5+	I(10° to N. and 10° to S.)					RDJ
	18	6.75	75	85	N			A(19 curv. Perp.)					RDJ
	19	6.767	77					SOS(18)]					RDJ
	20	6.9	75	86	N		4+	I(10° to N. and 10° to S.)					RDJ
	21	6.95	73	80	N		SOS(21)	FA(10o to N.)*, I (10° to the S.)			* Rt laterally		RDJ
	22	7.1	74	88	N		SOS(21)	FA(10o to N.)*, I (10o to the S.)					RDJ
	23	7.152	77				0.8	A((22) *			*As a Hook		RDJ
	24	7.205	76	83	N			FA (10° to N.), I(10° to S.), M(14)					RDJ
	25	7.225	335				0.4	A(24, 27)			x-joint		RDJ
	26	7.6	340	77	NE		0.42	A(24, 27)			x-joint		RDJ
	27	7.66	75				2.5+	FA(10o to N.)*, I (10o to the S.)*, A (ladderback to S. offline)			*Rt Lateral		RDJ
	28	7.79	74	88	N		4+	I(10o to N. and 10o to S.)					RDJ

	29	7.825	75	88	N		SOS	I(10o to N. and 10o to S.)					RDJ
	30	8.017	75	81	NE			FA (10o to N.), I(10o to S.)*			* Rt lateral		RDJ
	31	8.085	75					FA (10o to N.), I(10o to S.)*			* Rt lateral offset= .01m		RDJ
	32	8.245	75					FA (10o to N.), I(10o to S.)*			* Rt lateral offset= .01m		RDJ
	33	8.965	75	87.5	N			A(ladderback)					RDJ
	34	9.11	71					I(10^o to the S.)					RDJ
QD		B Set											
	1		8	89									RDJ
	2	1.55	8	86									RDJ
		only 2 N/S for atleast 4m going upstream											RDJ
		C Set											
	1		42	42				I(some 80's), A(some other 80's)					RDJ
	2	0.19	38	40									RDJ
	3	0.19	40	47									RDJ
	4	0.49	40	40									RDJ
		D Set (Hairs)											RDJ
		Spacing not near fault	330	86	W						Till undesturbed over tail of fracture/fault		RDJ
		0.02											RDJ
		0.032											RDJ
		0.035											RDJ
		0.01											RDJ
		0.03											RDJ
		0.04											RDJ
		0.02											RDJ
		Spacing w/in 2cm of fault											RDJ
		0.006											RDJ
		0.005											RDJ
		0.008											RDJ
		0.002											RDJ
		0.007											RDJ
		0.006											RDJ
		0.022											RDJ
		0.006											RDJ
		0.022											RDJ
		0.006											RDJ
		0.01											RDJ
		0.008											RDJ
		0.006											RDJ
8-16-00-67	1	0	339	85	E	.89+	1.6+	NA				PL	CL,JZ
Highland Rd creek	2	0.47	334	90		2.5+	8+	I(65^o offline)			clws twist hackles	PL	CL,JZ
								M(3)					CL,JZ
	3	1.06	357	50	W	1+	2	A(2)*			*As a hook	Sigmoidal	CL,JZ
								A(4)*			*As a hook		
	4	1.15	338	82	E	1+	3+	M(3)				PL	CL,JZ
								A(5)					
	5	1.26	329	90		2.5+	8+	M(4)				PL	CL,JZ
								I(SOS 2)					CL,JZ
	6	2.36	355	?	?	0.31	1.32	A(80^o offline)				CL	CL,JZ
	7	2.56	353	84	E	SOS (6)	SOS (6)	SOS (6)				PL	CL,JZ
	8	3.02	344	84	E	1.7+	4.5+	NA				PL	CL,JZ
	9	4.56	336	89	E	0.3	1.4	NA				CL	CL,JZ
	10	4.74	336	84	W	0.3	0.84	NA				PL	CL,JZ
	11	6.61	61	82	S	.2+	1.38+	M(12)				PL	CL,JZ
	12	6.97	21	76	N	.28+	5+	A(11)				PL	CL,JZ
		A Set											
RDJ 20	A1	3+ to next	8	88	E		17	FM (B's)*			* LL offset of B's = .06m,.065m, .05m		RDJ
8-16-00		B Set											RDJ
QD	B1		69	86	N			FA (A1)					RDJ
Highland Rd creek	B2	0.7	71	86	S			SOS(B1)					RDJ
	B3	0.54	71	90				SOS(B1)					RDJ
	B4	0.4	70	88	S			SOS(B1)					RDJ

	B5	1.04	58	86	N			A(C4)					RDJ
	B6	0.66	70	90				A(C4)					RDJ
		C Set											
	C1		333	88	NE								RDJ
	C2	0.76	335	86	NE								RDJ
	C3	4.09	335	86	E								RDJ
	C4	0.37	330	88	W			M(B5, B6)					RDJ
	C5	1.05	332	90									RDJ
	C6	2.18	326	86	W						*curves perp.		RDJ
	C7	0.095	329	89	W								RDJ
		D Set (Spacings don't align w/ orientations)											
		Spacing 2cm from fault= .01m, .015	326	?									RDJ
		0.03, .022, .005, .017, .02, .015, .025, .04, .015	327	87	E								RDJ
		Spacing 15cm fram fault = .1, .065, .09, .09, .075	326	88	W								RDJ
		0.055	326	87	E								RDJ
RDJ 21		A Set											
8-16-00	A1		7	82	E		4+	FM (B6, B7, B8)		IST			RDJ
QD	A2	1.4	7	88	E		4+	FM(B4, B5)		SOS A1			RDJ
Highland Rd creek	A3	2.74	5	87	E		4+			SOS A1			RDJ
		B Set											RDJ
	B1		71	90				M(C1)					RDJ
	B2	1.36	73	?									RDJ
	B3	0.19	74	86	S								RDJ
	B4	0.225	76	86	S			FA (A2)*			*LL offset = .01m		RDJ
	B5	0.27	74	85	S			FA (A2)*			*LL offset = .01m		RDJ
	B6	0.16	74	87	S			FA(A1)*			*LL offset = .02m		RDJ
	B7	0.23	74	90				FA(A1)*			*LL offset = .02m		RDJ
	B8	0.515	75	?				FA(A1)*			*LL offset = .02m		RDJ
		C Set											RDJ
	C1		307	86	SW		2+	A(A1), M(B set)		IST			RDJ
	C2	2.9	305	?			.40+	A(5^{o})		SOS(c1)			RDJ
RDJ 22		A Set											RDJ
8-16-00	A1		2	?									RDJ
QD	A2	0.215	10	88				A(A3)*			* Hooks curv. Perp.	CL	RDJ
Highland Rd creek	A3	0.06	11*					M(A2)				CL	RDJ
	A4	0.3	9*								*Twist orientation= 13^{o}	PL	RDJ
		B Set (A&I A4)									*Twist orientation= 23^{o}	PL	RDJ
	B1		75	79	S								RDJ
	B2	0.135	75	74	S			FA(N-S 0's)*			*LL offset = .01m		RDJ
	B3	0.15	73	77	S			SOS (B2)					RDJ
	B4	0.38	77	?									RDJ
	B5	0.68	74	?									RDJ
		A Set											RDJ
RDJ 23	A1		3	74	E			A(B1, B6, B7) I(B2, B3, B4), M(B6)					RDJ
8-16-00	A2	0.215	3	76	E								RDJ
Highland Rd creek	A3	0.06	2	77	E								RDJ
QD	A4	0.3	5	85	E			SOS (A1)					RDJ
		B Set											
	B1		76	89	N			M(A Set)					RDJ
	B2	0.6	77	?				I(A Set)					RDJ
	B3	0.215	77	?				I(A Set)					RDJ
	B4	0.34	76	89	N			I(A Set)					RDJ
	B5	0.41	79	90				I & M (Aset)					RDJ
	B6	0.285	77	90				A& M (A set)					RDJ
	B7	0.78	79	87	S			M(A Set)					RDJ
RDJ 24 A		A Set											RDJ
8-16-00	A1	.38, .35m	75	85				I(B Set)					RDJ
Highland Rd creek		B Set											
QD	B1		5	87	S			I(A set)					RDJ
	B2	0.22	2	90				SOS (B1)					RDJ
	B3	0.5											RDJ

		C Set											RDJ
	C1	.01, .015, .015, .02, .03, .02	282	39	S								RDJ
		A Set											
RDJ 25	A1		12	86	W			FM (B Set)*			* LL offset = .02m		RDJ
8-16-00	A2	3.51	5	88	W			I (B's)					RDJ
Highland Creek		B Set											
QD	B1		76	?				FA (A1)					RDJ
	B2	0.36	76	82				SOS (B1)					RDJ
	B3	0.47	74	85				SOS (B1)					RDJ
	B4	0.25	75	87				SOS (B1)					RDJ
	B5	0.1	75	82				SOS (B1)					RDJ
	B6	0.255						SOS (B1)					RDJ
		C Set											
	C1		335	?									RDJ
	C2	1.025	335	?									RDJ
	C3	0.06	335	88	W								RDJ
	C4	0.24											RDJ
	C5	1											RDJ
		D Set (10cm away from slip surface)											RDJ
	D1	.07, .06, .05, .07, .07	340	45	W				TA Ash				RDJ
RDJ 26		A set											RDJ
8-16-00	A1		330-333	75	E			M(B set)					RDJ
Highland Rd Creek	A2	1.85	338	82	E			M(B set)					RDJ
Qd	A3	0.97	345	?;				M(B set)					RDJ
top of waterfall		B Set											RDJ
	B1		85	90				A(A set)					RDJ
	B2	1.32	73	83	S			?					RDJ
	B3	1.04						A(A set)					RDJ
													RDJ
RDJ 27	A1		74	87	S								RDJ
Highland rd	A2	0.13	72	81	N			Mutually Abut					RDJ
QD	A3	0.215	76	?									RDJ
		A Set											
RDJ 29	A1		10	89	W		4	I(b's)		Cuts concretions		PL	RDJ
Highland rd Creek	A2	0.12	5	?			4	M(B's)					RDJ
8-16-00	A3	3.07	9	89	W			I(b's)			no offset		RDJ
QD		B Set											
	B1		77	90									RDJ
	B2	0.51	71	83	N			A(curv. Parallel to A2), I(a1)					RDJ
	B3	0.4	75	82	N								RDJ
	B4	0.06	77	81	N						splay		RDJ
	B5	0.94	76	?									RDJ
RDJ 30a	1	0.62	82	?				A(2), I(4)				PL	RDJ
Highland rd Creek	2	0.66	350	?				M(1)				CL	RDJ
8-16-00	3	0.76	80	86	S			I(4)					RDJ
SL	4	0.84	345	75	E			I(3), I(1)					RDJ
	5	0.97	79	85	S								RDJ
	6	1.04	79	82	S								RDJ
	7	1.535	79	83	S			M(x-joint)*			* offline ^{340o}/55E		RDJ
	8	2.12	343	?				I(7), A(10)			composite	CL	RDJ
	9	2.48	332	88	E			FM(10,11,12)			*Rt Lateral .015		RDJ
	10	2.51	80	85	S			M(8), FM (9)					RDJ
	11	2.73	80	84	S			FA (9)					RDJ
	12	2.83	82	84	S			FA (9)					RDJ
	13	3.11	79	86	S			A(*)			* x-joint offline 0^{0}/?		RDJ
	14	3.54	81	88	S								RDJ
	15	3.86	336	83	W						x-joint	sigmoidal	RDJ
	16	4.09	78	83	S								RDJ
	17	4.145	80	88	S								RDJ
	18	4.48	80	?	S								RDJ
	19	4.78	80	77				M(20)					RDJ
	20	4.88	13	85	E			A(19), I(21), A(22)*			* x-joint abuts w/ hook	sigmoidal	RDJ
	21	4.91	80	84	S			I(20)					RDJ
	22	5.15	81	?	S			M(20)					RDJ

	23	5.22	79	90				M(24)					RDJ
	24	5.79	327	86	S			A(23, 25)			x-joint	sigmoidal	RDJ
	25	5.92	79	?				M(24)					RDJ
	26	6.05	80	83	S								RDJ
	27	6.26	79	?									RDJ
	28	6.45	80	?									RDJ
	29	6.72	80	82	S								RDJ
	30	7.21	80	?									RDJ
	31	7.42	80	?									RDJ
	32	8.18	80	83	S								RDJ
	33	8.5	81	?									RDJ
	34	9.92	83	83	S								RDJ
	35	10.05	82	80	S								RDJ
	36	10.84	0	?							x-joint		RDJ
	37	11.3	80	?									RDJ
	38	11.55	327	?				FM(80's), FM (39, 40)			* Rt lateral offset = .075m		RDJ
	39	12.17	82	?				FA(38)					RDJ
	40	12.28	80	?				FA(38)					RDJ
	41	12.98	82	82	S			I(43)					RDJ
	42	13.16	80	86	S								RDJ
	43	13.15	330	90				I(41), FM(80 offline), FM(44)*			*Rt lateral offset = .075m		RDJ
	44	13.72	80	?				FA(43)*			*Rt lateral offset = .075m		RDJ
	45	14.15	15	?				M(46)			Some of the 80's curving perp. To this one		RDJ
	46	14.3	65	?				A(45)					RDJ
	47	~15	80	?									RDJ
RDJ 31		A set											
Highland Rd Creek	A1		7.5	81	E			FM(B set 80's)					RDJ
8-16-00	A2	1.48	8	89	W			FM(B set 80's)					RDJ
QD	A3	1.27	3	90				A(B set)		not through going		Wiggley	RDJ
	A4	0.33	355	86	E			A(some of B set), I (some of the 80's)		not through going			RDJ
		B set											
	b	.1, .125, .228, .11, .15, .11, .59	79	88	S			FA(A1, A2), M(A3, A4)					RDJ
8-16-00	A1	0	76	89	N	.8+	1.53+	M(4)				PL	CL,FI
Tommy Creek	A2	0.3	76	?		1.3+	.46+	I(4)				PL	CL,FI
RDJ 33	A3	0.425	75	87	N	SOS (A2)		M(4)				PL	CL,FI
								A(9)*			*abuts but continues		CL,FI
	A4	0.63	1	75	W	.43+	0.28	A(1)			X-joint		CL,FI
								A(3)					CL,FI
								I(2)					CL,FI
								M(6)					CL,FI
	A5	0.63	74	?	?	.3+	1.2+	A(6) *			*As a hook	PL	CL,FI
	A6	0.88	354	?	?	.1+	0.55	M(5)				CL	CL,FI
								A(4)					CL,FI
								I(7)					CL,FI
								I(8)					CL,FI
	A7	1.02	76	?	?	0.45	0.76	I(6)	BA in Shale			PL	CL,FI
	A8	1.14	72	89	S	.26+	1.55	I(6)				PL	CL,FI
								I(9)					CL,FI
								A(11)					CL,FI
	A9	1.25	6	73	E	1.9+	1.57+	I(7)				CL	CL,FI
								I(8)					CL,FI
								M(10)					CL,FI
								M(3)					CL,FI
	A10	1.36	314	80	NE	.06+	1.33+	A(9)*			*As a hook	CL	
								M(11)					CL,FI
	A11	1.55	354	81	E	.35+	.28+	M(8)				CL	CL,FI
								A(10)*			*As a hook		CL,FI
	A12	2.52	348	77	W	0.58	.75+	NA				PL	CL,FI
	A13	2.55	0	45	E	.21+	.41+	A(14)*			*As a hook	CL	CL,FI
	A14	2.61	5	79	E	3.5+	1.5+	M(13)				CL	CL,FI
	A15	2.68	4	68	E	.4+	.53+	NA				PL	CL,FI
	A16	2.81	79	80	S	1.9+	2.3+	I(17)				PL	
								I(18)					RDJ, CL

								I(B20)					RDJ, CL
								M(19)					
	A17	2.88	8	71	E	.65+	1.1+	I(16)				PL	RDJ, CL
	A18	3.05	5	77	E	1.5+	2+	I(16)				PL	RDJ, CL
	A19	3.79	355	?	?	.12+	3+	A(16)				PL	RDJ, CL
								M(B21)					RDJ, CL
								M(B18)					RDJ, CL
		From 0.0m backward.											RDJ, CL
	A20	-0.47	68	?	?								RDJ, CL
	A21	-0.52	2	55	E	1.2+	2+				Composite		RDJ, CL
	A22	-1.37	9	50	E	1+	1+						RDJ, CL
	B1	11.16	0	?	?		11+	I(80 offline)		Limey Shale w/ shell marker			RDJ
	B2	10.81	5	?	?		9	A(80 offline)					RDJ
	B3	10.67	6	?	?			A(80 offline)					RDJ
	B4	10.44	0	86	E		3.5	A(80 offline), I(5), A(7)					RDJ
	B5	9.5	74	90				I(4),FM(6)			right lateral offset = .05m		RDJ
	B6	9.45	3	89	E			FA(5),A(7)					RDJ
	B7	9.2	72	88	E			M(6),M(4)		cuts 3cm thick carbonate w/ brachiopods			RDJ
	B8	9.05	4	?			1.5	A(80 offline to N.), A(80 offline to S.)					RDJ
	B9	8.66	7.5	?			14+	FA(10)			right lateral offset = 2cm		RDJ
	B10	8.38	75	89	S			FM(9),M(13),I(11)	TA 3cm carbonate w/ brachiopods		Right lateral offset		RDJ
	B11	7.9	3	90			3.5	I(10)			hooks both to N & S		RDJ
	B12	7.64	74	90						cuts 3cm thick carbonate w/ brachiopods			RDJ
	B13	7.5	2	88	W			FA(10),A(80 offline to N.			right lateral offset		RDJ
	B14	7.34	75	88	S			M(N-S offline)		doesn't cut 3cm carbonate			RDJ
	B15	7.03	78	?				M(N-S offline), M(16)		cuts 3cm thick carbonate w/ brachiopods			RDJ
	B16	6.94	357	?				A(15)					RDJ
	B17	5.955	75	88	N								RDJ
	B18	5.27	71	85	N			M(20)		composite			RDJ
	B19	4.88	10	?									RDJ
	B20	4.6	357	?				A(18),I(21)					RDJ
	B21	4.56	74	90				I(20)					RDJ
													RDJ, CL
8-17-00-?	A1	0.63	72	79	S	0.16	1+			Black Shale (containing a 2cm limey silt with death assemblage-lag w/ critters)	Fractures are possible glacial unloading fractures as glacier retreated to the north within Lake Seneca (Site close to Lake)	PL	
RDJ 34	A2	0.97	50	55	SE	.34+	1.2			SOS (A1)	SOS (A1)	PL,jagged	RDJ, CL
Tommy Creek	A3	0.97	2	54	W	0.2	0.5			SOS (A1)	SOS (A1)	CL	
	A4	2.38	62	71	S	.35+	1.45+			SOS (A1)	SOS (A1)	PL	RDJ, CL
	A5	3.1	59	86	S	.04+	.40+			SOS (A1)	SOS (A1)	CL	RDJ, CL
	A6	3.59	321	90		.06+	0.56			SOS (A1)	SOS (A1)	PL	
	A7	4	336	90		.33+	0.45			SOS (A1)	SOS (A1)	PL	
	A8	4.27	333	86	W	.44+	1.2			SOS (A1)	SOS (A1)	PL	RDJ, CL
	A9	4.26	20	57	E	0.14	0.26			SOS (A1)	x-joint	Sigmoidal	
	A10	4.48	335	78	W	.30+	.66+			SOS (A1)	SOS (A1)	PL	
	A11	4.72	60	90		.04+	.49+			SOS (A1)	SOS (A1)	CL	
	A12	5.01	356	84	W	.21+	.50+			SOS (A1)	SOS (A1)	PL	
	A13	5.095	341	76	W	.31+	.69+			SOS (A1)	SOS (A1)	CL	RDJ, CL
	A14	5.93	47	?	?	.20+	.45+			SOS (A1)	SOS (A1), eroded	PL,jagged	
	A15	6.18	335	?	?	.41+	.77+			SOS (A1)	SOS (A1)	CL	
	A16	6.24	73	81	S	.51+	3+			SOS (A1)	SOS (A1), swings to the N.	PL	
	A17	6.34	339	66	W	0.17	0.4			SOS (A1)	SOS (A1),* offline fracture 20^{o}	PL	
	A18	6.58	350	90		.23+	1+			SOS (A1)	SOS (A1)	CL	
	A19	6.72	350	?	?	0.1	0.27			SOS (A1)	SOS (A1)	PL	
	A20	7.15	356	?	?	.20+	.83+			SOS (A1), zoophycus nearA20	SOS (A1)	CL, jagged	RDJ, CL
	A21	7.22	358	?	?	.17+	.65+			SOS (A1)	SOS (A1)	CL	RDJ, CL
	B1	14.68	345	78	W		.91+	A(b4)?		2cm limey silt		CL	RDJ
	B2	14.56	358	55	E		.5+	I(b4) or A(b4)?		SOS (b1)		CL	RDJ
	B3	14.46	4	40	E		2+	A(b4)		SOS (b1)		CL	RDJ
	B4	14.2	50	76	NW		.5+	A or FA (330 0r 340 offline)		SOS (b1)	curves Parallel to B4	PL	RDJ
	B5	14.4	33	55	SE			A(b4)*		SOS (b1)		CL	RDJ

		coverd until 13.63								SOS (b1)			RDJ
	B6	13.62	5	63	E		.8+	Curving parallel to a splay of b4		SOS (b1)		CL	RDJ
	B7	12.88	340	68	W		1.1+	Curving perp.to b9, A(splay of b9)		SOS (b1)		CL	RDJ
	B8	12.63	60	31	NW		.6+	A(b7), M(splay b9)		SOS (b1)		PL	RDJ
	B9	12.32	5	82	W		1.3+	I(b7)		SOS (b1)		PL	RDJ
	B10	12.15	4	29	E		.64+	A(b12)	TA 2cm limey silt	SOS (b1)		PL	RDJ
	B11	11.62	350	87	W		.75+	A(b12), M(b13)		SOS (b1)		Wiggley	RDJ
	B12	11.05	71	78	S		1.9+	M(b11), M(b10)		SOS (b1)		PL	RDJ
	B13	11.03	350	74	E		0.99	I(b12), Curving perp. To b11		SOS (b1)		PL	RDJ
	B14	10.6	335				.39+	A(b15a)		SOS (b1)	x-joint		RDJ
	B15	9.97	68	86	S		2+			SOS (b1)		PL	RDJ
	B15A	10.12	SOS(B15)	SOS(B15)			.71+	M(b14)		SOS (b1)		PL	RDJ
	B16	10.03	5	60	W		0.84	A(b15), A(b18)		SOS (b1)	x-joint	SIGMOIDAL	RDJ
	B17	9.7	348	60	W		.54+	A(b18)		SOS (b1)	x-joint	PL	RDJ
	B18	8.47	70	82	S		3.2+	M(b16), M(b17), M(b19)		SOS (b1)		PL	RDJ
	B19	8.5	12	31	SE		.61+	A(b18)		SOS (b1)		Wiggley, PL (locally)	RDJ
	B20	8.15	348	68	W		1.2			SOS (b1)		PL	RDJ
	B21	7.9	350	83	E		.90+	A(A16)		SOS (b1)		ST	RDJ
	B22	7.695	340	89	E		.65+	A(A16)		SOS (b1)		ST	RDJ
	B23	7.43	330					A(A16)		SOS (b1)			RDJ
													RDJ, CL
8-17-00-?	B1	25.9 (offline diagram p 2-121	326	?	?	?	9+			Tully L.S.		PL, wiggley	RDJ, CL
RDJ 32	B2	25.87	12	?	?	?	6+			Tully L.S.		CL	RDJ, CL
Tommy Creek	B3	23.13	4	?	?	?	3			Tully L.S.		CL	RDJ, CL
	5	21.3	88	?	?	?	6+			Tully L.S.	RT. Lateral Offset 10 cm	PL, jagged	
	B5	19.8	345	?	?	?	2.7			Tully L.S.		CL	RDJ, CL
	B6	17.6	46	?	?	?	7+			Tully L.S.	possible vert. Offset up to the south =2"	CL	
	B7	14.22	4	?	?	?	1			Tully L.S.		PL	RDJ, CL
													RDJ, CL
8-17-00-?	A1		7	90		12.0+		M		Black or drk grey shale w/ concretions			RDJ, CL
RDJ 40	A2	4.83	5	90		SOS A1		M		SOS A1			RDJ, CL
Tommy Creek just below Rail rd													RDJ, CL
	B1		75	90						SOS A1	Left lateral Offset =.02, .028,.06,.07,.085m		RDJ, CL
QD	B2	0.92								SOS A1			RDJ, CL
	B3	0.99								SOS A1			
look at drawing p 2-127	B4	0.78								SOS A1			RDJ, CL
conjugate shear	B5	0.375								SOS A1			RDJ, CL
	B6	0.99								SOS A1			RDJ, CL
	B7	0.26								SOS A1			RDJ, CL
	B8	0.3								SOS A1			RDJ, CL
	B9	0.39								SOS A1			RDJ, CL
	B10	1.16											RDJ, CL
													RDJ, CL
	C1		337	88	W			Some FA(A's)*		SOS A1	*Left lateral		RDJ, CL
								Some A(A's)					RDJ, CL
	C2	0.54	335	88	W			A(B's)		SOS A1			RDJ, CL
	C3	0.66	337	90						SOS A1			RDJ, CL
								FM (Bset)*			*rt lateral 1cm		RDJ, CL
8-17-00-?		A set 330's (spacing below)											RDJ, CL
RDJ41		3	332	90									
Tommy Creek		2.85											RDJ, CL
		1											RDJ, CL
QD		1.2											
		1.75											

		1.5	335	89	W								
		1.9											
		B set 80's (spacing below)						FA(A set)*			*rt lateral		
		0.11											
		0.12											
		0.33											
		0.71											
		0.07	73	89	S								
		0.72											RDJ,CL
		0.31	73	86	S								RDJ,CL
		C set 20's (Spacing below)											RDJ,CL
		0.82	5	74	W								RDJ,CL
		1.27	10	59	W								RDJ,CL
													RDJ,CL
8-17-00-?	A1		2	?	?					Shale- concoidal, dark gray & .04m silt	clws twist hackles @15/72 NW		RDJ,CL
RDJ 42													RDJ,CL
Tommy Creek	B1		328								clws twist hackles @ 322/?, not as nice as A1		RDJ,CL
	B2	3.2	331										RDJ,CL
QD	B3	1.47						FM (75's)					RDJ,CL
	B4	1.53											RDJ,CL
	B5	2.25											RDJ,CL
	B6	0.73											RDJ,CL
	B7	0.54											RDJ,CL
													RDJ,CL
	C1		75	88	S			FA(330's)					RDJ,CL
	C2	0.57											RDJ,CL
	C3	0.12											RDJ,CL
	C4	0.63											RDJ,CL
	C5	1.74											RDJ,CL
	C6	0.16											RDJ,CL
	C7	0.62											RDJ,CL
	C8	0.38	76	89	S								RDJ,CL
	C9	0.43											RDJ,CL
	C10	1.01											RDJ,CL
	C11	0.8											RDJ,CL
	C12	0.26											RDJ,CL
	C13	0.12											RDJ,CL
	C14	1.42											RDJ,CL
8-17-00-?		A Set	327	?								PL	CL,FI
RDJ 43		B Set	5	90								wiggley	
Tommy Creek													CL,FI
													CL,FI
8-17-00-?	A1	A Set	9	80	E			M(330's)					CL,FI
RDJ 44								I(80's)					CL,FI
Tommy Creek													CL,FI
QD		B set	329	85	E								CL,FI
			327	79	E								CL,FI
can't read notes look at original			333	86	W								CL,FI
													CL,FI
8-17-00-?			76	85			5+						
RDJ 45		0.56											
Tommy Creek		0.28											
QD		0.16											
		0.23											
80 FID		0.07											
		0.2											
		0.42											
		covered											
		0.8											CL,FI
		0.48											CL,FI
		1.4											CL,FI
		0.31											CL,FI

		0.33											CL,FI
		0.07											CL,FI
		0.48											CL,FI
		0.3											CL,FI
		0.36											CL,FI
		0.25											CL,FI
		0.29											CL,FI
		0.1											CL,FI
		0.17											CL,FI
		0.15											CL,FI
		0.17											CL,FI
		0.31											CL,FI
		0.31											CL,FI
		0.38											CL,FI
		0.05											CL,FI
		0.12											CL,FI
		0.06											CL,FI
													CL,FI
8-17-00	A1		10	90				FM(80's)*			*L.L. offset =.05m		CL,FI
RDJ 46													CL,FI
Tommy Creek	B1		335	90									CL,FI
QD	B2	0.1	337	90									CL,FI
	B3	0.1											CL,FI
	B4	0.11											CL,FI
	B5	0.08											CL,FI
	B6	0.08											CL,FI
	B7	0.1											CL,FI
	B8	0.17											CL,FI
													CL,FI
	C1	1	330	85	W						clws twist		CL,FI
		1.13	336	90									
		0.73											
		0.46											
8-17-00		**A Set**											
RDJ 47	Fault 1	N end	10	87	E					Carbonate Sh., 42cm thick, phacoidal parting			
Tommy Creek	Fault 2	S end	11	87	W					SOS (Fault 1)			
in RDJ's notes										SOS (Fault 1)			
	A1	0.32								SOS (Fault 1)			
	A2	0.22								SOS (Fault 1)			
	A3	0.8						A(B Set)		SOS (Fault 1)			
	A4	0.51						SOS (A3)		SOS (Fault 1)			
	A5	0.08						SOS (A3)		SOS (Fault 1)			
	A6	0.14						SOS (A3)		SOS (Fault 1)			
	A7	0.83								SOS (Fault 1)			
	A8	1.42								SOS (Fault 1)			
	A9	1.35								SOS (Fault 1)			
	A10	1.08								SOS (Fault 1)			
		B Set											
	B1	0.41	333	86	W			M (A set)		Same bed as A set			
	B2	0.52						SOS (b1)		SOS (A set)			
	B3	1.2						SOS (b1)		SOS (A set)			
		C Set											
	C1	0.77						Curving Parallel to (A set)		SOS (A set)			
	C2	0.81	68	80	S					SOS (A set)			
	C3	0.38	68	76	SE					SOS (A set)			
	C4	0.45								SOS (A set)			
8-17-00		**A Set**											
RDJ 47A	A1	0.42	75	85	S			A(N-S)					
Tommy Creek	A2	0.05											
in RDJ's notes	A3	0.065											
	A4	0.14											
	A5	0.41											
	A6	0.015											
	A7	0.21											
	A8	0.055											
	A9	0.12											

	A10	0.19											
	A11	0.39											
	A12	0.085											
	A13	0.35											
	A14	0.055											
	A15	0.035											
	A16	0.05											
	A17	0.175											
	A18	0.045											
	A19	0.015											
	A20	0.24											
	A21	0.105											
	A22	0.035											
	A23	0.12											
	A24	0.04											
	A25	0.85											
		B Set											
	B1	0.32	10					M(80's)					
	B2	1.8											
	B3	0.035											
	B4	0.105											
	B5	0.11											
RDJ 47b	1	0.44	72	85	S								
Tommy Creek	2	0.28											
in RDJ's notes	3	0.59											
	4	0.5											
halfway b/t 47 & 47A	5	0.39											
	6	0.12											
	7	0.09											
	8	0.28											
RDJ 48	1	SET A	77	83	S								
8-17-00	2	0.075											
Tommy Creek	3	0.11											
QD	4	0.26											
	5	0.64											
	6	0.29											
	7	0.15											
	8	0.13											
	9	0.3											
	10	0.475											
	11	0.93											
	12	0.09											
	13	0.58	75	84	S								
	14	0.11											
	15	0.34											
	16	0.09											
	17	0.85											
	18	0.65											
	19	0.02											
	20	0.045											
	21	0.13											
		SET B											
	1		8	90				FM (A SET)*			L.L. offset = .25-.5 cm		
		7.1											
8-17-00	A1	0.25?	76	88	N		4+			Black Shale		PL	
RDJ 38	A2	0.5?								SOS (A1)			
Tommy Creek	A3	0.59?								SOS (A1)			
QD	A4	0.78?								SOS (A1)			
	A5	0.28?								SOS (A1)			
	A6	1.53								SOS (A1)			
	A7	2.98	75	88	N					SOS (A1)			
	A8	3.49								SOS (A1)			
	A9	4.41								SOS (A1)			
	A10	4.67								SOS (A1)			
	A11	4.7								SOS (A1)			

	A12	4.91								SOS (A1)			
	A13	5.46	76	88	N					SOS (A1)			
	A14	5.98								SOS (A1)			
	A15	6.1								SOS (A1)			
	A16	6.55						FA(A27)*		SOS (A1)	*L.L.offset		
	A17	7.57						FA(A27)*		SOS (A1)	*L.L.offset		
	A18	7.84						FA(A27)*		SOS (A1)	*L.L.offset		
	A19	7.88						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A20	8.14						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A21	8.3						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A22	8.32						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A23	8.69	79	85	S			FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A24	9.05						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A25	9.11						FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A26	9.55	76		84	S		FA(A27)*		SOS (A1)	*L.L.offset		RDJ,CL
	A27	9.3	14		90		7+	FM(A16-A27, 75's)		SOS (A1)	*L.L.offset=.01m	PL	RDJ,CL
	A28	9.8	10		90		7+	FM(A16-A27, 75's)		SOS (A1)	*L.L.offset=.01m	PL	RDJ,CL
	A29	9.94								SOS (A1)			RDJ,CL
	A30	10.5	75	89	N					SOS (A1)			RDJ,CL
	A31	11.44								SOS (A1)			RDJ,CL
	A32	11.52								SOS (A1)			RDJ,CL
	A33	12.67								SOS (A1)			RDJ,CL
	A34	12.84	10	90				FM (75's)		SOS (A1)	*L.L. offset=.005m		RDJ,CL
													RDJ,CL
8-17-00-?		A Set Spacings (Don't match w/ oreintation)											RDJ,CL
RDJ 39		0.29	75	83	S								
Tommy Creek		0.26	75	85	S								
QD		0.21	76	74	S								
		0.09											
		0.19											
		0.17											
		0.02											
		0.12											
		0.14											
		0.09											
		0.17											
		0.25											
		0.38											
		0.16											
		0.19											
		0.18											
		0.18											
		0.35											
		0.07											
		0.31											CL,FI
		B set											CL,FI
B Set Spacings (Don't match w/ oreintation)													
		8.47	0	?									CL,FI
		11.6+ (w/o any fractures to the W)	5	?									
													CL,FI
8-17-00-?		A Set Spacings (Don't match w/ oreintation)	77	80	N			M(C's)					
RDJ 37		0.23											CL,FI
Tommy Creek		0.12											
QD		0.135											CL,FI
		0.18											CL,FI
		B Set Spacings (Don't match w/ oreintation)											
		0.05	15	79	W								
		0.1	5	?									
		0.17	10	?									
		0.785											
		0.13											

		1.6											
		C Set Spacings (Don't match w/ oreintation)											
		0.1	318	54	W			A(80's)			Low angle dip may have slipped along 80's		
		D Set (Horizontal) Spacings (Don't match w/ oreintation)	20	30				A(80's)	BA		Late stage		
		0.55											
		0.41											
		0.14											
8-18-00-?		Set A								Gray shale w/ concretions	L.L. offset 9cm		
RDJ 49	A1		74	82	N			FA(330's)		SOS A1			
Camp Babcock Hovey	A2	0.15	74	86	N			FA(330's)		SOS A1			
QD	A3	1.3						FA(330's)		SOS A1			
	A4	1.1						FA(330's)		SOS A1			
	A5	1.31						FA(330's)		SOS A1			
	A6	0.45						FA(330's)		SOS A1			
	A7	0.48	73	81	N			FA(330's)		SOS A1			
	A8	0.94						FA(330's)		SOS A1			
		Set B											
	B1		350	85	E			FM(80's)		SOS A1			
	B2	0.63						FM(80's)		SOS A1			
	B3	1.69						FM(80's)		SOS A1			
	B4	,74	350	79	E			FM(80's)		SOS A1			
8-18-00?	A1	0.16	3	?	?	.75+	2.4+	M(A2)		Tully L.S.		CL	
RDJ 50	A2	0.5	85	?	?	?	1	M(A1)		Tully L.S.		CL	
Camp Babcock Hovey								A(A3)					
	A3	1.4	347	?	?	.8+	3.2+	M(A2)		Tully L.S.		CL	
								M(A4)					
	A4	2.43	275	?	?	?	1.47	A(A3)		Tully L.S.		PL	
								A(A5)					
	A5	2.92	19	?	?	?	2+	M(A4)		Tully L.S.		CL	
								A(A6)					
	A6	2.96	335	?	?	0.85	3+	M(A5)		Tully L.S.		CL	
	A7	4.84	71	77	N	.45+	.45+	NA		Tully L.S.		CL	
RDJ 51	1		324	75									
10-17-00	2	0.15	330	77				A(4)				PL-Cl	
Camp Babcock Hovey	3	0.35										PL-Cl	
	4	0.6	40	89				M(2)				PL-Cl	
	5	0.08										PL-Cl	
		.6 to next										PL-Cl	
RDJ 52		A set											
10-17-00	1		337	?	?			Intersect and Master to other set		Immediately below Tully LS		PL	RDJ
QD	2	1.69	335	87	NE					SOS (1)		PL	RDJ
	3	0.11	335	?	?					SOS (1)			RDJ
	4	0.06	332	70	E					SOS (1)			RDJ
	5	1.24	335	85	NE					SOS (1)		PL	RDJ
	5a		1	88	E					SOS (1)			RDJ
		B set											
	6		75	89	S			I(2), A(4)					RDJ
	7	0.13	74	86	S			SOS (6)					RDJ
	8	0.64	77	?				I(2)			Right lateral offset		RDJ
	9	0.22	75	?									RDJ
	10	0.185	72	83.5	S								RDJ
	11	0.69	74	68	N								RDJ
	12	0.06	75	86	N						Right lateral offset = .005m		RDJ
10-17-00-rdj53	a1	0	350	77e				A(b1)				c	RDJ
peanut's	a2	0.07	352	85e				A(b6)				c	RDJ
Q & D	a3	0.07	353	89e				A(b6)				c	RDJ
	a4	0.14	340	89e				A(b6)				c	RDJ

	a5	0.17	362	88e				M(b2)				c	RDJ
d	a6	0.37	335	75w				A(b3)				p	RDJ
	a7	0.75	344	82e				A(b9,b4A)				cp	RDJ
	a8	0.37	340	90				na				cp	RDJ
	a9	0.13	350	87e				na				p	RDJ
	a10	0.8	342	87e				na				p	RDJ
	b01	0	82	75e				M(a1,a2,a3)				p	RDJ
	b2	0.4	84	75e				A(a5)				p	RDJ
	b3	0	78	87s								p	RDJ
	b4	0.6	67	90				A(a5)				c	RDJ
	b4a	0.04	72	80s				A(a5)				c	RDJ
	b5	0.05	75	80s				I(A1)				c	RDJ
	b6	0	67	85n				na				p	RDJ
	b7	0.45	82	65s								p	RDJ
10-17-00	a1	0	325	62w				M(b1,b2)				p	RDJ
RDJ 54	a2	0.14	330	59w				M(b3)				p	RDJ
Q & D	a3	0.47	325	58w				M(b1)				p	kw
	a4	0.61	326	90				M(b2)				p	kw
	b1	0	70	82s				A(a3)				p	kw
	b2	0.9	70	82s				A(a1,a2)				p	kw
	b3	150	68	90								p	kw
	c1		350	89s				I(c1)				p	kw
	c2		300	62w				I(c2)				p	kw
		A set											
RDJ 55	1	sp = .03-.15m	355	78	W								RDJ
10-17-00	2		352	83	W								RDJ
QD		A set											
	A1	sp = .26-.51m	65	90				I (B2), looks like in one spot A master to B				PL	RDJ
		B set											
	B2	sp = .65m	325	89	NE								RDJ
10-18-00-rdj56k	a1	0	335						thru LS	Tully ls			kw
Pitcher rd.	a2	0.77	325						thru LS	Tully ls			kw
	a3	0.15	320						thru LS	Tully ls			kw
	a4	0.15	320						thru LS	Tully ls			kw
	a5	0.56	332						thru LS	Tully ls			kw
	a6	0.62	340						thru LS	Tully ls			kw
	b1a1	0							thru LS	Tully ls			kw
	b2	0.65							thru LS	Tully ls			kw
	b3	2.4							thru LS	Tully ls			kw
10-18-00	a1	0	358						thru LS	Tully ls			kw
RDJ 57	a2	0.21	0						thru LS	Tully ls			kw
Pitcher rd.	a3	0.055	359						thru LS	Tully ls			kw
Q & D	a4	0.06	4						thru LS	Tully ls			kw
	a5	0.11	359						thru LS	Tully ls			kw
	a6	0.36	359						thru LS	Tully ls			kw
	a7	0.02	357						thru LS	Tully ls			kw
	a8	0.06	356						thru LS	Tully ls			kw
	a9	0.16	0						thru LS	Tully ls			kw
	a10	0.16	358										kw
	b1	0	70										kw
	b2	0.08	80										kw
	b3	0.08	76										kw
	b4	0.04	81.5										kw
	b5	0.3	64										kw
	c1	0	330					M(a,s)					kw
	c2	0.03	324.5										kw
		A set											
RDJ 58	1		327	75	E			A(b's)					
10-18-00	2	0.41	335	89	W			M(b's)					
QD	3	0.66	335	90									
Klondike	4	0.4	332										
	5	0.09	327	89	NE								
	6	0.3	330	89	NE								
		B set											
	7		74	88	NE								
	8	0.95	72	79	S								
	9	#7-#9 = .44	70	90									
	10	0.51	62	67	S			A(A's)					

	11	0.15	60	66	S								
	12	1.14	70	90									
RDJ 59	1		5	?				A (a ladderback)					
10-18-00	2		277	60									
QD	3	0.93	87	82									
Klondike	4		5	88									
poor notes for site	5		9	65									
	6	0.06	15	75									
	7	0.05	12	90									
	8	0.11	15	?									
	9	0.75	15	?									
	10	0.11	8	?									
	11		22	?									
			330	75									
			90										
10-18-00-rdj60k	a1		68							Tully ls			kw
boyscouts	a2	0.66	75							Tully ls			kw
QD	a3	1.11	55							Tully ls			kw
	a4	1.11	76							Tully ls			kw
	a5	0.66	78							Tully ls			kw
10-18-00-rdj61k	a1	0	73							Tully ls			kw
boyscouts	b1	0	342							Tully ls			kw
10-19-00-rdj73a	a1	2.55	334										kw
Habers'	a2	0	333										kw
	a3	0.08	328										kw
	a4	0.08	328										kw
	a5	0.39	352										kw
	a6	0.46	3										kw
RDJ 63	1	0.02	80	65									RDJ
10-18-00	2	0.07	65	65									RDJ
	3	0.11	71	60									RDJ
	4	0.05	75	64									RDJ
	5	0.43	60	70									RDJ
		0.04 to next											RDJ
RDJ 71		Set A											
10-18-00	1	sp = .26, .13,.52, 1.3	347	88	E			M(Set B)					
		Set B											
	2	sp=.27, .05, .24,.3,1.3	77	82	N			A (Set A)					
	3	0.31	70	82	N								
10-19-00	a1		36							friable sh			kw
RDJ 73b	a2	1	30							friable sh			kw
Habers'	a3	0.45	32							friable sh			kw
QD	a4	0.5	32							friable sh			kw
	b1		95							30cm red sh			kw
	b2	0.51	94							30cm red sh			kw
	b3	0.2	82							30cm red sh			kw
	b4	0.16	82							30cm red sh			kw
	b5	0.08	96							30cm red sh			kw
	b6	0.1	81							30cm red sh			kw
	b7	0.2	80							30cm red sh			kw
	b8	0.91	78							30cm red sh			kw
	c1		93							12cm ss	ss only		kw
	c2	1.6	95							12cm ss	ss only		kw
	c3	28	105							12cm ss	ss only		kw
10-19-00-RDJ73	a1	0	342								a's;all beds		kw
Habers' drive	a2	0.19	342								sos		kw
	a3	0.26	340								sos		kw
	a4	0.6	340								sos		kw
	a5	0.25	340								sos		kw
	a6	0.11	338								sos		kw
	b1	0.1	336						only	b's; chatter	frac. Sh		kw

	b2	0.04	335								conf.to sh		kw
	b3	0.04	334								conf.to sh		kw
	b3a	0.05	334								conf.to sh		kw
	b4	0.04	332								conf.to sh		kw
	b5	0.09	335								conf.to sh		kw
	a7	.31*	338	*from a6							cuts all		kw
	a8	0.14	341								cuts all		kw
	a9	0.12	341								cuts all		kw
	a10	0.14	341								cuts all		kw
	a11	0.22	340								cuts all		kw
	a12	0.66	340								cuts all		kw
	b6	0	334								sh only		kw
	b7	0.03	334								sh only		kw
	b8	0.05	336								sh only		kw
	b9	0.02	336								sh only		kw
10-19-00-RDJ74b	a1	0	332										kw
top,Nipantuk	a2	0.11	334										kw
	a3	0.22	335										kw
	a4	0.6	338										kw
	a5	0.16	332										kw
	a6	0.76	332										kw
	b1	0	86										kw
	b2	2.1	85										kw
	c1	0	4										kw
	c2	0.2	9										kw
	c3	0.08	13										kw
10-19-00-rdj74	a1	0	335					I(b's,below)					kw
Nipantuk Cr.	a2	0.42	336										kw
	a3	0.21	334										kw
	a4	0.49	324										kw
	a5	0.34	329										kw
	a6	0.76	330										kw
	a7	1.1	335										kw
	a8	1.11	335										kw
	a9	1	339										kw
	a10	1.25	342										kw
	a11	1.25	339					M(b2)					kw
	a12	1.17	350										kw
	b1	0	78										kw
	b2	3	50										kw
	b3	1.85	74										kw
10-20-00-rdj75	a1	0	1	90									kw
sunset point	a2	.20-.54	25	90									kw
	a3	7	86	86w									kw
	a4	.53+	88	88w									kw
	b1	0	84	84s									kw
	b2		71	60sw									kw
	c1	0	327	90									kw
	c2	0.4	372	87w									kw
	c3	0.6	326	85w									kw
10-20-00-rdj76	a0	3.70e,a1	335										kw
Bullhorn Cr u	a1	0	331										kw
	a2	1.2	334										kw
	a3	1.04	335										kw
	a4	0.8	336										kw
	a5	1	339										kw
	a6	1.8	335										kw
	b1	0	9										kw
	b2	0.6	7										kw
	b3	0.46	2										kw
	b4	1.8	6										kw
	b5	1.74	2										kw
	b6	1	6										kw
	b7	1.3	2										kw
10-20-00-rdj78	a1	0	333	90									kw
Campmeetin	a2	1	334	88ne									kw
	a3	1.02	333	90									kw
	a4	0	340	90									kw
	a5	1.3	340	87n									kw

	a6	2	340										kw
	a7	1.3	337										kw
	a8	1.6	337										kw
	a9	2	340										kw
	b1	0	70										kw
	b2	1.5	71										kw
CML 1	1	0.4 to next offline	334				30+	only one set		Drk grey shale			CL
10-21-00	2	0.6	330				SOS 1			SOS 1			CL
Creek N. of Cnty Rd 1	3	0.2	333				SOS 1			SOS 1			CL
	4	1.5	330				SOS 1			SOS 1	enechelon ^{325o}		CL
	5	1	331				SOS 1			SOS 1			CL
	6	1.21	331				SOS 1			SOS 1			CL
	7	1.8	332				SOS 1			SOS 1			CL
	8	1.5	333				SOS 1			SOS 1			CL
	9	1.5	329				SOS 1			SOS 1			CL
	10	0.7	327				SOS 1			SOS 1			CL
	11	1.2	330				SOS 1			SOS 1			CL
	12	0.9	327				SOS 1			SOS 1			
CML 2	a1		326	90				M(80's)		Drk grey shale	same 330's as CML 1	pl	
10-21-00	a2	5	336	90				M(80's)		sos a1		pl	
Creek N. of Cnty Rd 1													
	b1		82	90				A(330's)		sos a1	possible x-joints	pl	
	b2	0.43	85	85	n			A(330's)		sos a1	possible x-joints	pl	
	b3	1.3	75	60	s			A(330's)		sos a1	possible x-joints	pl	
	b4	0.7	86	78	s			A(330's)		sos a1	possible x-joints	pl	
	b5	0.55	85	?	?			A(330's)		sos a1	possible x-joints	pl	
	b6	1.05	80	?	?			A(330's)		sos a1	possible x-joints	pl	
												pl	
CML 3	A1		333	90		10+	50+	M(80's)		Interbedded sand and shale			
10-21-00	A2	1.4	332	90		SOSA1	SOSA1	SOSA1		SOS A1			
Creek N. of Cnty Rd 1	A3	4	332	89	w	SOSA1	SOSA1	SOSA1		SOS A1			
	A4	1.2	329	90		SOSA1	SOSA1	SOSA1		SOS A1			
	b1		70	90		0.1	9	A(330's)		SOS A1			
CML 4		pop-up											
10-21-00													
Creek N. of Cnty Rd 1													
CML 5		pop-up											
10-21-00													
Creek N. of Cnty Rd 1													

APPENDIX 3 WELL LOG DATA

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31097002690000	TYRONE	COLUMBIA GAS TRANS C	LITTEER 2 [H078]	2039	ONONDAGA	1958				
31097003000000	TYRONE	COLUMBIA GAS TRANS C	DEMING 3 [H085]	2096	ONONDAGA	2006				
31101003230000	PRATTSBURG	SAWYER-ROBINSON	DALTRY 1	2504						
31101003250000		MAYER; ET AL	ABBOTT ESTATE	2780						
31101003260000	URBANA	JACKLES ET AL	WOOD 1	2059						
31101003270000	URBANA	HUNGIVILLE DEVELOPME	PUTNAM 1	3150						
31101003280000	URBANA	DIAMOND CRYSTAL SALT	CHAMPLIN 1	2471						
31101003290000	URBANA	DIAMOND CRYSTAL SALT	CHAMPLIN 2	4507						
31101003310000	PULTENEY	BELMONT QUADRANGLE D	KILBURY 1	1947						
31101003320000	WAYNE	HOME GAS COMPANY	CANFIELD 1	1548						
31101003330000	WAYNE	TRI STATE	EARNEST 2	1666						
31101003340000	WAYNE	HANLEY & BIRD	SLEEVE 1	2447						
31097003720000	TYRONE	COLUMBIA GAS TRANS C	LITTEER [H081]	1943						
31097003730000	TYRONE	COLUMBIA GAS TRANS C	DEMING 2 [H082]	2072						
31097003780000	TYRONE	COLUMBIA GAS TRANS C	LOSEY 2 [H080]	1935						
31123004170000	MILO	SANDERSON; ET AL	SANDERSON 1	1760						
31123004180000	MILO	SANDERSON; ET AL	SANDERSON 2	3305						
31123004190000	MILO	CARPENTER; J.	COOK 1	1569						
31123004210000	BARRINGTON	BELMONT QUADRANGLE D	BLOSS 1	1747						
31123004220000	MILO	BELMONT QUADRANGLE D	VANGELDER 1	1859						
31123004230000	BARRINGTON	WILLIAMSPORT NATURAL	MCDOWELL 1	2299						
31123004240000	BARRINGTON	MID HUDSON NATURAL G	THAYER 1	1766						
31123004250000	BARRINGTON	PENTAGA OIL & GAS	STOUTENBERG 1	1410						
31123004260000	JERUSALEM	HODGES; ET AL	HODGES 1	2203						
31123004270000	MILO	CUNNINGHAM NATURAL G	WARD 1	1504						
31123004280000	JERUSALEM	NONE SPECIFIED	SMITH C	1915						
31123004290000	BARRINGTON	EASTERN STATES GAS	MILLARD 1	1978						
31123004300000	BARRINGTON	ORISKANY DRILLING	BEYEA 1	2100						
31123004310000	JERUSALEM	BELMONT QUADRANGLE D	RUSSELL	3506						
31097004480000	TYRONE	COLUMBIA GAS TRANS C	LITTEER 4 [H084]	1999						
31097004490000	TYRONE	COLUMBIA GAS TRANS C	SPROUL [H079]	1992						
31097004500000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H083]	2010						
31097004800000	HECTOR	BELMONT QUADRANGLE D	GARDONER 1	2187						
31097005180000	MONTOUR	SOUTHWESTERN DEVELOP	SHEARER 1	2340						
31097005210000	HECTOR	BELMONT QUADRANGLE D	BERRY 1	2488						
31097005220000	HECTOR	CARPENTER; J.	SHEARER 1	2308						
31097005230000	DIX	BELMONT QUADRANGLE D	WAUGH 1	933						
31097005240000	READING	BELMONT QUADRANGLE D	WHALEN 1	2431						
31097005250000	HECTOR	CARPENTER; J.	HOUSEWORTH 1	2646						
31097005270000	READING	GLEN NATURAL GAS	PHILLIPS 1	2443						
31097005280000	READING	AKZO NOBEL SALT INC.	INTERNATIONAL 10	2038	ONONDAGA	1464				
31097005290000	HECTOR	HECTOR VALOIS OIL &	MCNETTON 1	2150						
31097005310000	DIX	NONE SPECIFIED	WATKINS FAIR GROUNDS	1715						
31097005320000	HECTOR	BURDETT OIL & GAS	KELLOGG 1	3043						
31097005340000	ORANGE	ATLAS DRILLING COMPA	WEBB 1	3002						
31123005350000	STARKEY	BRADFORD PIPE & SUPP	HALL 1	2106						
31123005360000	STARKEY	PEELE; J.W.	PEELE 1	3403						
31097005370000	READING	ALLEGANY OIL	KRESS 1	3470						
31097005380000	TYRONE	COLUMBIA GAS TRANS C	PRICE [H179]	2208						
31097005400000	TYRONE	COLUMBIA GAS TRANS C	LOSEY 2 [H075]	2153	ONONDAGA	2078				
31097005410000	TYRONE	COLUMBIA GAS TRANS C	KELLY [H218]	2129						
31097005420000	HECTOR	BELMONT QUADRANGLE D	ALLEN 1	2422						
31099005430000	OVID	BELMONT QUADRANGLE D	CHAPMAN 1	3406						
31097005440000	HECTOR	ADAMS; E.H. ET AL	COLLINS 1	1710						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31123005450000	STARKEY	NELSON HUFF	SENECA FARMS 1	1822						
31123005460000	STARKEY	NELSON HUFF	SENECA FARMS 2	1830						
31123005470000	MILO	CUNNINGHAM NATURAL G	NORRIS 1	1250						
31097005480000	HECTOR	SCHUYLER NATURAL GAS	DEAN 1	2442						
31097005490000	HECTOR	HECTOR VALOIS OIL &	ADAMS	1710						
31123005500000	MILO	MORTON SALT DIV./THI	MORTON SALT CO 1	0						
31123005510000	MILO	MORTON SALT DIV./THI	MORTON SALT CO 3	0						
31123005520000	MILO	MORTON SALT DIV./THI	MORTON SALT CO 3	1269						
31123005530000	STARKEY	STANTON ET AL	ANDRUS 1	1831						
31097005590000	TYRONE	COLUMBIA GAS TRANS C	DEMING 1 [H065]	2093						
31097005600000	TYRONE	COLUMBIA GAS TRANS C	BEST 1 [H123]	1826						
31097005610000	TYRONE	COLUMBIA GAS TRANS C	BEST 2 [H122]	4459						
31097005620000	TYRONE	COLUMBIA GAS TRANS C	BEYEA [H076]	2070						
31097005630000	TYRONE	HOME GAS COMPANY	BANNACH [H177]	1833						
31097005640000	TYRONE	COLUMBIA GAS TRANS C	ARDREY [H063]	1845						
31097005650000	TYRONE	COLUMBIA GAS TRANS C	DECENBERG [H060]	1833						
31123005670000	BARRINGTON	COLUMBIA GAS TRANS C	LYMAN [H144]	1869	ONONDAGA	1790				
31101005680000	WAYNE	HOME GAS COMPANY	BLISS 2 [H160]	1650						
31101005690000	WAYNE	COLUMBIA GAS TRANS C	DAY [H154]	1736	ONONDAGA	1656				
31097005710000	TYRONE	HOME GAS COMPANY	ANDREWS 1	1685	ONONDAGA	1602				
31097005720000	TYRONE	COLUMBIA GAS TRANS C	ALLEN 2 [H070]	2119						
31097005730000	TYRONE	HOME GAS COMPANY	DAY [H233]	1739						
31097005740000	TYRONE	HOME GAS COMPANY	BAPTIST CHURCH LOT [	1736						
31101005750000	WAYNE	COLUMBIA GAS TRANS C	JURCZAK [H166]	1760	ONONDAGA	1670				
31101005760000	WAYNE	COLUMBIA GAS TRANS C	JURCZAK [H172]	1739	ONONDAGA	1655				
31101005770000	WAYNE	COLUMBIA GAS TRANS C	JURCZAK [H173]	1747	ONONDAGA	1670				
31101005780000	WAYNE	COLUMBIA GAS TRANS C	JURCZAK [H174]	1759	ONONDAGA	1682				
31097005800000	TYRONE	HOME GAS COMPANY	BROWN [H116]	1726						
31101005810000	WAYNE	HOME GAS COMPANY	BOYCE F-33346	1733						
31097005830000	TYRONE	COLUMBIA GAS TRANS C	HARRISON [H163]	1713						
31101005840000	WAYNE	HOME GAS COMPANY	BAPTIST CEM. F-33325	1695						
31097005850000	TYRONE	HOME GAS COMPANY	METHODIST CH LOT F-3	1739						
31097005860000	TYRONE	COLUMBIA GAS TRANS C	CLARK [H178]	1734	ONONDAGA	1642				
31101005880000	WAYNE	HOME GAS COMPANY	CORYGILL F-33328	1745						
31097005890000	TYRONE	HOME GAS COMPANY	CROOKSTON F-33341	1732						
31097005910000	TYRONE	HOME GAS COMPANY	CROSBY F-33354	1718						
31097005920000	TYRONE	HOME GAS COMPANY	DABOLL F-33350	1741						
31097005930000	TYRONE	HOME GAS COMPANY	DABOLL [H131]	1740						
31097005940000	TYRONE	HOME GAS COMPANY	DECKER 5 [H126]	1174						
31123006280000	BARRINGTON	COLUMBIA GAS TRANS C	BAILEY [H226]	2049	ONONDAGA	1993				
31123006300000	BARRINGTON	DECKER; ET AL	BELLIS 1	2123						
31123006310000	BARRINGTON	HOME GAS COMPANY	WELDY [H221]	2106						
31123006320000	BARRINGTON	HOME GAS COMPANY	VAN GORDON [H204]	2010						
31123006330000	BARRINGTON	COLUMBIA GAS TRANS C	HAMMER [H222]	2197	ONONDAGA	2114				
31097006350000	ORANGE	COBBIE HILL OIL & GA	ENGLE 2	3800						
31123006360000	BARRINGTON	HOME GAS COMPANY	BASSETT F-31039	2127						
31123006370000	BARRINGTON	COLUMBIA GAS TRANS C	BASSETT [H165]	2060	ONONDAGA	1982				
31097006380000	TYRONE	COLUMBIA GAS TRANS C	DISBOROW [H205]	2114	ONONDAGA	2034				
31097006390000	TYRONE	KEMP ET AL	COOLBAUGH 1	2002						
31097006400000	TYRONE	COLUMBIA GAS TRANS C	FAUCETT [H138]	1907						
31097006410000	TYRONE	COLUMBIA GAS TRANS C	CROSBY 2 [H142]	1926						
31097006420000	TYRONE	COLUMBIA GAS TRANS C	MOSKAL & LITTELL [H2	2082						
31097006430000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H068]	2096	ONONDAGA	2007				
31097007330000	HECTOR	CARGILL INC.	FEE 10	1934						
31097007350000	READING	INTERNATIONAL SALT C	INTERNATIONAL 13	1874						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31097007360000	DIX	CUNNINGHAM NATURAL G	HILL 1	3424						
31097007370000	HECTOR	HOLT FARM	VALOIS 1	2900						
31123008320000	MILO	ANDREWS	ANDREWS	2053						
31123008330000	JERUSALEM	NONE SPECIFIED	EBENS 2	1300						
31123010230000	TORREY	BAKERS CHEM CO.	TAYLOR CHEMICAL 1	761						
31097010240000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H139]	1885						
31097010740000	TYRONE	COLUMBIA GAS TRANS C	LITTEER [H074]	2014						
31097010750000	TYRONE	COLUMBIA GAS TRANS C	GASPER [H155]	1755						
31097010760000	TYRONE	COLUMBIA GAS TRANS C	PULVER 2 [H072]	2158						
31097010770000	TYRONE	COLUMBIA GAS TRANS C	TRAVIS [H073]	2056						
31097010780000	TYRONE	COLUMBIA GAS TRANS C	MALLOY 1 H110	1965						
31097010790000	TYRONE	COLUMBIA GAS TRANS C	GALEK [H193]	2102						
31097010800000	TYRONE	COLUMBIA GAS TRANS C	GLENN [H113]	2216	ONONDAGA	2090				
31097010810000	TYRONE	COLUMBIA GAS TRANS C	LITTEEL [H077]	2201						
31097010820000	TYRONE	COLUMBIA GAS TRANS C	GARDNER [H211]	2150						
31097010830000	TYRONE	COLUMBIA GAS TRANS C	WADELL [H111]	2165						
31097010840000	TYRONE	COLUMBIA GAS TRANS C	SPROUL [H064]	2059						
31097010850000	TYRONE	COLUMBIA GAS TRANS C	GALEK [H112]	2118						
31097010860000	TYRONE	COLUMBIA GAS TRANS C	SVIDERSKI [H066]	2079						
31097010870000	TYRONE	COLUMBIA GAS TRANS C	WALTON [H217]	2123						
31097010880000	TYRONE	COLUMBIA GAS TRANS C	ALLEN [H069]	2052						
31097010890000	TYRONE	COLUMBIA GAS TRANS C	SALAMANDRA [H109]	2251	ONONDAGA	2112				
31097010900000	TYRONE	COLUMBIA GAS TRANS C	DECENBERG [H062]	1804						
31097010910000	TYRONE	COLUMBIA GAS TRANS C	RUDDICK [H061]	1785						
31097010920000	TYRONE	COLUMBIA GAS TRANS C	DECENBERG [H058]	1872						
31097010930000	TYRONE	COLUMBIA GAS TRANS C	HOLLECK [H140]	1935						
31123010940000	BARRINGTON	COLUMBIA GAS TRANS C	FAUCETT [H219]	1959	ONONDAGA	1883				
31097010950000	TYRONE	COLUMBIA GAS TRANS C	EARNEST [H145]	1972	ONONDAGA	1895				
31123010960000	BARRINGTON	COLUMBIA GAS TRANS C	HAYES [H148]	2043	ONONDAGA	1965				
31123010970000	BARRINGTON	HOME GAS COMPANY	REEP FARM 2 [H130]	2059						
31123010980000	BARRINGTON	HOME GAS COMPANY	REEP FARM 1 [H141]	2059						
31123010990000	BARRINGTON	COLUMBIA GAS TRANS C	HAYES [H147]	2056	ONONDAGA	1975				
31123011000000	BARRINGTON	HOME GAS COMPANY	MILES [H150]	2010						
31097011010000	TYRONE	COLUMBIA GAS TRANS C	OLSZEWISKI 3 [H137]	1806	ONONDAGA	1720				
31097011020000	TYRONE	COLUMBIA GAS TRANS C	OLSZEWISKI [H136]	1774						
31101011030000	WAYNE	NONE SPECIFIED	WIXON	1756						
31101011040000	WAYNE	COLUMBIA GAS TRANS C	MILLS [H175]	1728	ONONDAGA	1655				
31101011050000	WAYNE	COLUMBIA GAS TRANS C	JURCZAK (WYSS 2) [H1	1747	ONONDAGA	1668				
31101011060000	WAYNE	HOME GAS COMPANY	DECENBURG [H127]	1737						
31101011070000	WAYNE	HOME GAS COMPANY	EARNEST F-33333	1735						
31097011080000	TYRONE	HOME GAS COMPANY	GARDNER [H151]	1828						
31101011090000	WAYNE	COLUMBIA GAS TRANS C	SCOTCHMER [H170]	1741	ONONDAGA	1625				
31101011100000	WAYNE	HOME GAS COMPANY	SMITH F-33612	1729						
31097011110000	TYRONE	COLUMBIA GAS TRANS C	NORRIS [H120]	1683						
31097011120000	TYRONE	COLUMBIA GAS TRANS C	ANDREWS [H168]	1800						
31097011130000	TYRONE	COLUMBIA GAS TRANS C	MILLIS [H115]	1728	ONONDAGA	1652				
31097011140000	TYRONE	HOME GAS COMPANY	EVELAND [H134]	1725						
31097011150000	TYRONE	COLUMBIA GAS TRANS C	TURNER [H171]	1740						
31097011160000	TYRONE	HOME GAS COMPANY	MILES [H232]	1724						
31097011170000	TYRONE	COLUMBIA GAS TRANS C	JURCZAK (WYSS 1) [H1	1770						
31097011180000	TYRONE	COLUMBIA GAS TRANS C	OLSZEWISKI 1 [H135]	1769						
31097011190000	TYRONE	COLUMBIA GAS TRANS C	DAY [H162]	1693						
31097011200000	TYRONE	HOME GAS COMPANY	EARNEST [H125]	1743						
31097011210000	TYRONE	COLUMBIA GAS TRANS C	BRIMMER [H153]	1732						
31097011220000	TYRONE	HOME GAS COMPANY	STRATTON [H117]	0						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31101011230000	WAYNE	HOME GAS COMPANY	GORDON F-33329	1177						
31097011260000	TYRONE	HOME GAS COMPANY	BANACH-HAYES 1 [H176	1778						
31097011270000	TYRONE	COLUMBIA GAS TRANS C	GLOVER [H158]	1744	ONONDAGA	1662				
31097011280000	TYRONE	HOME GAS COMPANY	MATTOON [H133]	1725						
31097011300000	TYRONE	HOME GAS COMPANY	PITCHER F-33344	1738						
31097011310000	TYRONE	HOME GAS COMPANY	HOOVER [H159]	1738						
31097011320000	TYRONE	COLUMBIA GAS TRANS C	DAY [H157]	1723						
31097011330000	TYRONE	COLUMBIA GAS TRANS C	HOUSE [H129]	1713						
31101011350000	WAYNE	COLUMBIA GAS TRANS C	EARNEST [H203]	1733	ONONDAGA	1660				
31101011370000	WAYNE	HOME GAS COMPANY	HOUCK F-33330	1734						
31123011400000	BARRINGTON	COLUMBIA GAS TRANS C	SWORTS FARM [H220]	1789	ONONDAGA	1665				
31101011410000	WAYNE	COLUMBIA GAS TRANS C	SCHMOKER [H224]	1671	ONONDAGA	1600				
31101011420000	WAYNE	COLUMBIA GAS TRANS C	BARTON [H192]	1776	ONONDAGA	1700				
31101011430000	WAYNE	HOME GAS COMPANY	WALSH F-33334	1727						
31097011440000	TYRONE	COLUMBIA GAS TRANS C	PHILLIPS (BROWN) [H1	1740						
31101011450000	WAYNE	HOME GAS COMPANY	SHORES F-33335	0						
31097011960000	TYRONE	COLUMBIA GAS TRANS C	LITTEER 5 [H086]	1988						
31097012820000	TYRONE	COLUMBIA GAS TRANS C	LOSEY [H071]	2158						
31123013000000	MILO	KEUBA MILLS	FOX & CURTIS MILL 1	400						
31097018100000	TYRONE	COLUMBIA GAS TRANS C	LOSEY 4 [H090]	1962	ONONDAGA	1884				
31097018110000	TYRONE	COLUMBIA GAS TRANS C	LOSEY [H089]	1982						
31097018120000	TYRONE	COLUMBIA GAS TRANS C	DEMING [H088]	2096						
31097018130000	TYRONE	COLUMBIA GAS TRANS C	SPROUL [H087]	2102						
31123025820000	MILO	NONE SPECIFIED	FOX & CURTIS MILL 2	400						
31123025830000	MILO	NONE SPECIFIED	GRAY HUTTON GEER 1	1732						
31097026430000	TYRONE	COLUMBIA GAS TRANS C	SALAMANDRA [H098]	2150						
31097026440000	TYRONE	COLUMBIA GAS TRANS C	LITTEELL [H100]	2145						
31097026450000	TYRONE	COLUMBIA GAS TRANS C	LITTEER 6 [H101]	2112						
31097026460000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H102]	2107						
31097026470000	TYRONE	COLUMBIA GAS TRANS C	WADDELL 2 [H103]	2100						
31123029620000	BARRINGTON	COLUMBIA GAS TRANS C	KEUKA-VISTA [H149]	2061	ONONDAGA	1975				
31097029700000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H108]	1851						
31097032900000	READING	INTERNATIONAL SALT C	FEE 18	2494						
31097038880000	READING	AKZO NOBEL SALT INC.	INTERNATIONAL 24	2080						
31097038890000	READING	INTERNATIONAL SALT C	BRINE 25	2401						
31097038900000	READING	INTERNATIONAL SALT C	INTERNATIONAL 26	2326						
31097038910000	READING	AKZO NOBEL SALT INC.	AKZO 27	2638						
31097038920000	READING	NEW YORK STATE ELECT	WATKINS GLEN 28	2649						
31097039400000	READING	INTERNATIONAL SALT C	INTERNATIONAL 29	2698						
31123039940000	MILO	HANLEY & BIRD	SARGENT 1	1245						
31099040780000	OVID	BEAN BROS	FEE 5	0						
31097041870000	HECTOR	FELMONT OIL CORP.	MORRIS 1	2773						
31097044000000	DIX	TEXAS EASTERN TRANSM	WATKINS STORAGE 1	2726						
31123044100000	STARKEY	PARSONS BROS	WHITE 1	1807						
31101050630000	PULTENEY	GREAT LAKES GAS CORP	SMOLOS 1	2299						
31097057790000	TYRONE	HOME GAS COMPANY	WEBB [H231]	1762						
31097090270000	READING	INTERNATIONAL SALT C	INTERNATIONAL 4A	1842						
31097090280000	READING	INTERNATIONAL SALT C	INTERNATIONAL 7A	1860						
31097093790000	TYRONE	COLUMBIA GAS TRANS C	ALLEN [H059]	1831	ONONDAGA	1754				
31097093800000	TYRONE	COLUMBIA GAS TRANS C	SPROUL [H091]	2050						
31097093810000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H092]	2048						
31097093820000	TYRONE	COLUMBIA GAS TRANS C	LITTELL [H097]	2192						
31097093830000	TYRONE	COLUMBIA GAS TRANS C	WADDELL [H106]	2106						
31097093840000	TYRONE	HOME GAS COMPANY	SNYDER [H119]	1737						
31097093850000	TYRONE	COLUMBIA GAS TRANS C	VAUGHN [H121]	1893						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31097093860000	TYRONE	COLUMBIA GAS TRANS C	BULLOCK [H128]	1735						
31097093870000	TYRONE	COLUMBIA GAS TRANS C	RUMSEY [H143]	1701	ONONDAGA	1632				
31097093880000	TYRONE	COLUMBIA GAS TRANS C	MILES [H146]	1992						
31097093890000	TYRONE	COLUMBIA GAS TRANS C	HERICK [H152]	1692						
31123093900000	BARRINGTON	COLUMBIA GAS TRANS C	HOUCK [H180]	1914	ONONDAGA	1837				
31097093910000	TYRONE	COLUMBIA GAS TRANS C	RUMSEY [H183]	1742						
31097093920000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H184]	1782						
31097093930000	TYRONE	COLUMBIA GAS TRANS C	MILES [H185]	1762						
31097093940000	TYRONE	COLUMBIA GAS TRANS C	OLSZEWISKI [H186]	1812						
31097093950000	TYRONE	COLUMBIA GAS TRANS C	WOODARD [H187]	1883						
31097093960000	TYRONE	COLUMBIA GAS TRANS C	PITCHER [H188]	1814						
31097093970000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H190]	1890						
31097093980000	TYRONE	COLUMBIA GAS TRANS C	RUDDICK [H191]	1787						
31097093990000	TYRONE	COLUMBIA GAS TRANS C	FOREMAN [H194]	1861	ONONDAGA	1777				
31097094000000	TYRONE	COLUMBIA GAS TRANS C	MILES [H195]	1795						
31097094010000	TYRONE	COLUMBIA GAS TRANS C	ALLEN [H196]	1890						
31097094020000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H198]	1920						
31097094030000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H199]	1916						
31097094040000	TYRONE	COLUMBIA GAS TRANS C	ARDREY [H200]	1877						
31097094050000	TYRONE	COLUMBIA GAS TRANS C	SVIDERSKI [H201]	2097						
31097094060000	TYRONE	COLUMBIA GAS TRANS C	HERRICK [H206]	1748						
31097094070000	TYRONE	COLUMBIA GAS TRANS C	PULVER [H207]	2094						
31097094080000	TYRONE	COLUMBIA GAS TRANS C	ALLEN [H208]	1933						
31097094090000	TYRONE	COLUMBIA GAS TRANS C	SVIDERSKI [H209]	2171	ONONDAGA	2085				
31097094100000	TYRONE	COLUMBIA GAS TRANS C	BEYEA [H210]	2014						
31097094110000	TYRONE	COLUMBIA GAS TRANS C	BAILEY [H213]	1911						
31097094120000	TYRONE	COLUMBIA GAS TRANS C	ARDREY [H214]	1807						
31097094130000	TYRONE	COLUMBIA GAS TRANS C	GALEK [H215]	2069						
31097094140000	TYRONE	COLUMBIA GAS TRANS C	PRICE [H227]	1986						
31097094150000	TYRONE	COLUMBIA GAS TRANS C	HOUCK [H182]	1856						
31097094160000	TYRONE	COLUMBIA GAS TRANS C	LOSEY [H093]	2056						
31097094190000	TYRONE	COLUMBIA GAS TRANS C	SALAMANDRA [H094]	2117	ONONDAGA	2044				
31097094200000	TYRONE	COLUMBIA GAS TRANS C	RUDDICK [H095]	1945						
31097094210000	TYRONE	COLUMBIA GAS TRANS C	LOSEY [H096]	1952						
31097094230000	TYRONE	HOME GAS COMPANY	HUBERT [H181]	250						
31097094240000	TYRONE	COLUMBIA GAS TRANS C	KELLY [H225]	2099	ONONDAGA	2028				
31123098510000	MILO	MORTON SALT DIV./THI	FEE 14	1348						
31123112210000	BARRINGTON	COLUMBIA GAS TRANS C	OLSZEWISKE(GASPER)[H	1875	ONONDAGA	1794				
31097112450000	HECTOR	CARGILL INC.	FEE 11	1945						
31101115610000	URBANA	CNG TRANSMISSION COR	TAYLOR WINE CO	2232	ONONDAGA	2070				
31101115700000	PULTENEY	CNG TRANSMISSION COR	BRAYER WN-1441	2285	ONONDAGA	2126				
31097122260000	READING	AKZO NOBEL SALT INC.	AKZO 53	1198						
31097122270000	READING	AKZO NOBEL SALT INC.	AKZO 54	1511						
31097123360000	READING	AKZO NOBEL SALT INC.	AKZO 53A	1297						
31123124000000	JERUSALEM	NONE SPECIFIED	FEE 1	50						
31097125480000	READING	CARGILL INC.	AKZO 55	2925						
31123128120000	MILO	MORTON SALT DIV./THI	FEE 2	1375	ONONDAGA	1128				
31123128130000	MILO	MORTON SALT DIV./THI	FEE 3	1435	ONONDAGA	1200				
31097128580000	READING	AKZO NOBEL SALT INC.	AKZO 57	2770						
31097128590000	READING	CARGILL INC.	AKZO 56	2936						
31123131740000	STARKEY	MORTON SALT DIV./THI	MORTON SALT CORE TES	2077						
31101136990000	WHEELER	COLUMBIA GAS TRANS C	NYS REFORESTATION 6	9794	ONONDAGA	2824	LOCKPORT	4474	TRENTON	7090
31097137960000	READING	COLUMBIA GAS TRANS C	PRATT & MEEHAN	2430	ONONDAGA	2258				
31097143030000	READING	INTERNATIONAL SALT C	INTERNATIONAL 4B	1841						
31101154380000	PULTENEY	MINTER LEE E.	KASSOW 1	7956	ONONDAGA	2364	LOCKPORT	3793	TRENTON	6444

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31123154450000	JERUSALEM	PENNZOIL PRODUCING C	DARBY CORNERS 1	3755	ONONDAGA	1690	LOCKPORT	3207		
31123154690000	JERUSALEM	PENNZOIL PRODUCING C	JERUSALEM	3603	ONONDAGA	1595	LOCKPORT	2900		
31097160360000	READING	TEXAS EASTERN TRANSM	FEE A	670						
31097160370000	READING	TEXAS EASTERN TRANSM	FEE B	651						
31097160380000	READING	TEXAS EASTERN TRANSM	FEE C	641						
31097160390000	READING	TEXAS EASTERN TRANSM	FEE D	660						
31011161150000	GENOA	DEVONIAN ENERGY CORP	DUNKLE 1-8	3807						
31123175400000	MILO	ZIMMERMAN; AARON W.	ZIMMERMAN 1	3750	ONONDAGA	1460	LOCKPORT	2799		
31123175410000	BARRINGTON	CABOT OIL & GAS CORP	MERRITT 1	3967	ONONDAGA	1544				
31123194030000	BARRINGTON	ARDENT RESOURCES; IN	COOK 1	4220	ONONDAGA	1731	LOCKPORT	3240		
31097194490000	DIX	CARGILL INC.	FEE 15	2686	ONONDAGA	1238				
31097194500000	DIX	CARGILL INC.	FEE 16	2694						
31101194970000	PULTENEY	COLUMBIA NATURAL RESOURCE	EVANGELOS 1	7961	ONONDAGA	2368	LOCKPORT	3806	TRENTON	6424
31097196300000	DIX	CARGILL INC.	FEE 17	2690	ONONDAGA	1262				
31099196860000	LODI	MITCHELL EXPLORATION	TOWNSEND 1	4100	ONONDAGA	1547	LOCKPORT	3100		
31101196910000	BRADFORD	PILOT EXPLORATION IN	HORTON 1	3288						
31097196920000	READING	COLUMBIA NATURAL RESOURCE	PERIGO 21578 TPI	8384	ONONDAGA	2350	LOCKPORT	4292	TRENTON	7162
31097204170000	READING	COLUMBIA NATURAL RESOURCE	EPSTEIN 21624-PI	8520						
31123205620000	POTTER	ARDENT RESOURCES; IN	CASTNER 1-S	3674	ONONDAGA	1304	LOCKPORT	2600		
31097211260000	TYRONE	COLUMBIA GAS TRANSMISSION	BANACH-HAYES #1							
31097213510000	HECTOR	VANDERMARK EXPLORATI	DRAKE 1	2297						
31097214170000	DIX	CARGILL INC.	FEE 18	2625						
31097214180000	DIX	CARGILL INC.	FEE 19	2941						
31097214190000	DIX	CARGILL INC.	FEE 20	2770						
31097214670000	READING	CARGILL INC.	FEE 58	2642	ONONDAGA	1670				
31097214720000	DIX	CARGILL INC.	FEE 21	2675						
31101215920000	PULTENEY	COLUMBIA NATURAL RESOURCE	GRAY 1	7493	ONONDAGA	2456	LOCKPORT	3862	TRENTON	6472
31097216180000	READING	NEW YORK STATE ELECT	WATKINS GLEN 59	2042	ONONDAGA	1381				
31097216300000	DIX	CARGILL INC.	FEE 22	2687						
31097216310000	DIX	CARGILL INC.	FEE 23	2650						
31097216320000	DIX	CARGILL INC.	FEE 24	2615						
31101216880000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	LEVANDOWSKI	7315	ONONDAGA	2434	LOCKPORT	3843	TRENTON	6453
31101216890100	PRATTSBURG	COLUMBIA NATURAL RESOURCE	COVERT 1	7135	ONONDAGA	2106	LOCKPORT	3566	TRENTON	6178
31101216890000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	COVERT 1	7131	ONONDAGA	2094	LOCKPORT	3574	TRENTON	6178
31101216920000	PULTENEY	COLUMBIA NATURAL RESOURCE	PIZURA 1	7064	ONONDAGA	2020	LOCKPORT	3454	TRENTON	6090
31097216950000	DIX	CARGILL INC.	FEE 25	2770						
31101217030100	PULTENEY	COLUMBIA NATURAL RESOURCE	RADIGAN 1	6690	ONONDAGA	1712	LOCKPORT	3136	TRENTON	5772
31101217030000	PULTENEY	COLUMBIA NATURAL RESOURCE	RADIGAN 1	7257	ONONDAGA	1712	LOCKPORT	3145	TRENTON	5772
31101217040000	WAYNE	COLUMBIA NATURAL RESOURCE	FIMLAID 1	8028	ONONDAGA	1942	LOCKPORT	3842	TRENTON	6695
31101217050000	PULTENEY	COLUMBIA NATURAL RESOURCE	SMITH 1	7110	ONONDAGA	2112	LOCKPORT	3530	TRENTON	6156
31101217060000	PULTENEY	COLUMBIA NATURAL RESOURCE	FOX 1	7000	ONONDAGA	2208			TRENTON	6290
31101217070200	COHOCTON	COLUMBIA NATURAL RESOURCE	PRATTSBURG TOWN FARM 1	10000						
31101217070000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	PRATTSBURG TOWN FARM	7699	ONONDAGA	2590	LOCKPORT	3992	TRENTON	6574
31101217070100	PRATTSBURG	COLUMBIA NATURAL RESOURCE	PRATTSBURG TOWN FARM	7505						
31101217100000	PULTENEY	COLUMBIA NATURAL RESOURCE	BERGSTRESSER 1	6691	ONONDAGA	1776			TRENTON	5826
31101217120000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	KOZAK 1	7800	ONONDAGA	2428	LOCKPORT	3864	TRENTON	6485
31097217250000	TYRONE	COLUMBIA NATURAL RESOURCE	FORTE #1	8269	ONONDAGA	2128	LOCKPORT	4039	TRENTON	6828
31097217260000	TYRONE	COLUMBIA NATURAL RESOURCE	MAST #1	8176	ONONDAGA	2090	LOCKPORT	3990	TRENTON	6748
31101227410100	PULTENEY	COLUMBIA NATURAL RESOURCE	VON RHEDEY #1	7783						
31101227410000	PULTENEY	COLUMBIA NATURAL RESOURCE	VON RHEDEY #1	8030	ONONDAGA	2257			TRENTON	6543
31123227430000	STARKEY	COLUMBIA NATURAL RESOURCE	SENSENIG #1	7237	ONONDAGA	1731			TRENTON	6110
31101227450000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	FABER #1	7820	ONONDAGA	2250			TRENTON	6494
31123227460100	BARRINGTON	COLUMBIA NATURAL RESOURCE	DEWITT #1	10000						
31123227460000	BARRINGTON	COLUMBIA NATURAL RESOURCE	DEWITT #1	7925	ONONDAGA	2192			TRENTON	6478
31101227470000	PULTENEY	COLUMBIA NATURAL RESOURCE	SMITH #1	7696	ONONDAGA	2288			TRENTON	6524

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31101227480000	PULTENEY	COLUMBIA NATURAL RESOURCE	MCALLISTER #1	7240	ONONDAGA	2071			TRENTON	6337
31123227500000	BARRINGTON	COLUMBIA NATURAL RESOURCE	WEITZ #1	7555	ONONDAGA	2023				
31123227520000	BARRINGTON	COLUMBIA NATURAL RESOURCE	KNAPP #1	7543	ONONDAGA	1900	LOCKPORT	3461	TRENTON	6143
31109227530000	ULYSSES	COLUMBIA NATURAL RESOURCE	KOSKINEN	7465						
31097227540000	HECTOR	COLUMBIA NATURAL RESOURCE	GUNNING #1	7999	ONONDAGA	2390			TRENTON	7018
31101227550000	PULTENEY	COLUMBIA NATURAL RESOURCE	SNYDER #1	6816	ONONDAGA	1640			TRENTON	5894
31101227560000	PULTENEY	COLUMBIA NATURAL RESOURCE	GRAND VIEW #1	7500						
31123227570000	ITALY	BELDEN & BLAKE CORP	NYSRA 1	7000	ONONDAGA	2042			TRENTON	5828
31123227640100	ITALY	BELDEN & BLAKE CORP	COSTANZA 1	6257						
31123227640200	ITALY	BELDEN & BLAKE CORP	COSTANZA 1	10000						
31123227640000	ITALY	BELDEN & BLAKE CORP	COSTANZA 1	5409						
31101227650000	PULTENEY	COLUMBIA NATURAL RESOURCE	WISE #1	8130						
31101227650100	PULTENEY	COLUMBIA NATURAL RESOURCE	WISE #1	7611						
31109227670000	ULYSSES	COLUMBIA NATURAL RESOURCE	DUDDLESTON	7446						
31101227680000	PRATTSBURG	COLUMBIA NATURAL RESOURCE	COVERT #2	7385						
31101227690000	PULTENEY	COLUMBIA NATURAL RESOURCE	BALLAM-CARTER #1	7587						
31101227720000	PULTENEY	COLUMBIA NATURAL RESOURCE	EGRESI #1	7145						
31123227730000	BARRINGTON	COLUMBIA NATURAL RESOURCE	KNAPP #2	7178						
31123227730100	BARRINGTON	COLUMBIA NATURAL RESOURCE	KNAPP 2A	10000						
31123227740000	BARRINGTON	COLUMBIA NATURAL RESOURCE	KNAPP #3	7707						
31123227750100	JERUSALEM	COLUMBIA NATURAL RESOURCE	WALTERS	6042						
31123227750000	JERUSALEM	COLUMBIA NATURAL RESOURCE	WALTERS	6865						
31123227760000	BARRINGTON	COLUMBIA NATURAL RESOURCE	SILK #1	7179						
31123227900100	MILO	COLUMBIA NATURAL RESOURCE	AGLIATA #1	7034						
31123227900000	MILO	COLUMBIA NATURAL RESOURCE	AGLIATA #1	7000						
31123227910100	BARRINGTON	COLUMBIA NATURAL RESOURCE	BAUER #1	7132						
31123227910000	BARRINGTON	COLUMBIA NATURAL RESOURCE	BAUER #1	7000						
31097227930000	HECTOR	COLUMBIA NATURAL RESOURCE	COOK #1	7587						
31097227940100	HECTOR	COLUMBIA NATURAL RESOURCE	DELL-STILLWELL 1	7890						
31097227940000	HECTOR	COLUMBIA NATURAL RESOURCE	DELL-STILLWELL 1	7740						
31123227950100	BARRINGTON	COLUMBIA NATURAL RESOURCE	MARTIN-REPACKI #1	10000						
31123227950000	BARRINGTON	COLUMBIA NATURAL RESOURCE	MARTIN-REPACKI #1	7800						
31123227960100	BARRINGTON	COLUMBIA NATURAL RESOURCE	ZIMMERMAN #1	7624						
31123227960000	BARRINGTON	COLUMBIA NATURAL RESOURCE	ZIMMERMAN #1	7600						
31123227970000	JERUSALEM	COLUMBIA NATURAL RESOURCE	BEDIENT #1	6886						
31097227990100	TYRONE	COLUMBIA NATURAL RESOURCE	RUMSEY #1	7974						
31097227990000	TYRONE	COLUMBIA NATURAL RESOURCE	RUMSEY #1	8000						
31097228230000	HECTOR	COLUMBIA NATURAL RESOURCE	AUSTIC #1	7510						
31123228280000	BENTON	COLUMBIA NATURAL RESOURCE	MARTIN 1	10000						
31123228400100	JERUSALEM	COLUMBIA NATURAL RESOURCE	DICK #1	10000						
31123228400000	JERUSALEM	COLUMBIA NATURAL RESOURCE	DICK 1	6694						
31097228410000	ORANGE	EAST RESOURCES	SRA 2 #1	10000						
31101228440000	PULTENEY	COLUMBIA NATURAL RESOURCE	DOYLE 1	10000						
31101228450000	PULTENEY	COLUMBIA NATURAL RESOURCE	MEDREK 1	10000						
31097228470000	ORANGE	EAST RESOURCES	SRA 2 #2	10000						
31123228580000	ITALY	BELDEN & BLAKE	MULLIGAN #1	10000						
31097501690000	DIX	CARGILL INC.	FEE 6	1875						
31097501700000	DIX	CARGILL INC.	FEE 8	1844						
31097501710000	HECTOR	CARGILL INC.	FEE 9	1900						
31097501720000	DIX	CARGILL INC.	FEE 7	1849						
31097515470000	READING	INTERNATIONAL SALT C	INTERNATIONAL 4	1890						
31097518220000	READING	INTERNATIONAL SALT C	INTERNATIONAL 11	1893						
31097518230000		INTERNATIONAL SALT C	FEE 1A	1866						
31097521420000	READING	INTERNATIONAL SALT C	INTERNATIONAL 17	2483						
31097521430000	READING	INTERNATIONAL SALT C	INTERNATIONAL 32	2649						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
31097529000000	DIX	CARGILL INC.	BRINE 1	1812						
31097529100000	READING	INTERNATIONAL SALT C	INTERNATIONAL 1	1854						
31097529110000	READING	INTERNATIONAL SALT C	INTERNATIONAL 2	1863						
31097529120000	READING	INTERNATIONAL SALT C	INTERNATIONAL 3	2001						
31097529130000	READING	INTERNATIONAL SALT C	INTERNATIONAL 3A	1876						
31097529140000	READING	INTERNATIONAL SALT C	INTERNATIONAL 3B	2000						
31097529150000	READING	INTERNATIONAL SALT C	INTERNATIONAL 5	1883						
31097529160000	READING	INTERNATIONAL SALT C	INTERNATIONAL 5A	1877						
31097529170000	READING	INTERNATIONAL SALT C	INTERNATIONAL 6	1878						
31097529180000	READING	INTERNATIONAL SALT C	INTERNATIONAL 8	1918						
31097529190000	READING	INTERNATIONAL SALT C	INTERNATIONAL 9	1734						
31097529200000	READING	INTERNATIONAL SALT C	INTERNATIONAL 9A	1892						
31097529210000	READING	INTERNATIONAL SALT C	INTERNATIONAL 12	1874						
31097529220000	READING	INTERNATIONAL SALT C	INTERNATIONAL 12A	1976						
31097529230000	READING	INTERNATIONAL SALT C	INTERNATIONAL 13A	2096						
31097529240000	READING	INTERNATIONAL SALT C	INTERNATIONAL 14A	1955						
31097529260000	READING	INTERNATIONAL SALT C	INTERNATIONAL 15	1922						
31097529270000	READING	INTERNATIONAL SALT C	INTERNATIONAL 16	1920						
31097529280000	READING	INTERNATIONAL SALT C	INTERNATIONAL 20A	1953						
31097529290000	READING	INTERNATIONAL SALT C	INTERNATIONAL 21	1997						
31097529300000	READING	INTERNATIONAL SALT C	INTERNATIONAL 22	1951						
31097529310000	READING	INTERNATIONAL SALT C	INTERNATIONAL 23	1959						
31097529320000	READING	INTERNATIONAL SALT C	INTERNATIONAL 33	2782						
31097543690000	READING	CARGILL INC.	FEE 4	1848						
31097543700000	READING	CARGILL INC.	FEE 5	1848						
31097611870000	READING	INTERNATIONAL SALT C	INTERNATIONAL 7	1875						
31097611880000	READING	NEW YORK STATE ELECT	AKZO 30	0						
31097611890000	READING	AKZO NOBEL SALT INC.	AKZO 31	2806						
31097611900000	READING	CARGILL INC.	AKZO 34	4282						
31097611910000	READING	CARGILL INC.	AKZO 35	2675						
31097611920000	READING	CARGILL INC.	AKZO 36	2857						
31097611930000	READING	AKZO NOBEL SALT INC.	AKZO 37	2772						
31097611940000	READING	CARGILL INC.	AKZO 38	2660						
31097611950000	READING	CARGILL INC.	AKZO 39	2903	ONONDAGA	1610				
31097611960000	READING	CARGILL INC.	AKZO 40	2875						
31097611970000	READING	CARGILL INC.	AKZO 41	2830						
31097611980000	READING	CARGILL INC.	AKZO 42	2687						
31097611990000	READING	CARGILL INC.	AKZO 43	2830						
31097612000000	READING	CARGILL INC.	AKZO 44	2832						
31097612010000	READING	AKZO NOBEL SALT INC.	AKZO 45	2870						
31097612020000	READING	NEW YORK STATE ELECT	AKZO 46	2082						
31097612030000	READING	CARGILL INC.	AKZO 47	2929						
31097612040000	READING	CARGILL INC.	AKZO 48	2930	ONONDAGA	1648				
31097612050000	READING	CARGILL INC.	AKZO 49	2951						
31097612060000	READING	CARGILL INC.	AKZO 50	2866						
31097612070000	READING	CARGILL INC.	AKZO 51	2815						
31097612080000	READING	AKZO NOBEL SALT INC.	AKZO 52	2782						
31097612090000	DIX	CARGILL INC.	WELL 2	1810						
31097612100000	READING	CARGILL INC.	WELL 3	1815						
31097612110000	DIX	CARGILL INC.	BRINE WELL 12	1904						
31097612120000	DIX	CARGILL INC.	BRINE WELL 13	2672						
31097612130000	DIX	CARGILL INC.	BRINE WELL 14	2674						
31097615450000	READING	INTERNATIONAL SALT C	INTERNATIONAL 20	1898						
31097615460000	READING	INTERNATIONAL SALT C	INTERNATIONAL 16A	1980						
31097615520000	DIX	COLUMBIA GAS TRANS C	WATKINS GLEN STATE P	0						

API Permit No.	Town	Operator	Well Name	Total Depth	Formation	Depth	Formation	Depth	Formation	Depth
						91		24		29

DOE Finger Lakes Project

Traverse 1A, Route 414/96A

20000718

Bieber, Budny, Nelson, J. Fountain, M. Fountain

Start SW cornor of Combs & Lily, heading south

H2=1750, 11.4; batt=8.0; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample

Sample #	Distance (ft)	Bkgd	Peak	Net	Ethane	Comments/Duplicates
0	0	1.0	4.7	3.7		1.0
1	30	1.0	1.0	0.0		
2	60	1.0	bo	0.0		
3	90	1.0	1.2	0.2		
4	120	1.0	bo	0.0		
5	150	1.0	9.8	8.8	0.0	lab
6	180	1.0	2.3	1.3		
7	210	1.0	1.0	0.0		
8	240	1.0	2.0	1.0		
9	270	1.0	1.0	0.0		
10	300	1.0	1.0	0.0		1.5
11	330	1.0	1.4	0.4		
12	360	1.0	1.8	0.8		
13	390	1.0	1.0	0.0		
14	420	1.0	1.1	0.1		
15	450	1.0	1.4	0.4		
16	480	1.0	1.2	0.2		
17	510	1.0	7.8	81.0	0.0	lab
18	540	1.0	2.0	1.0		
19	570	1.0	3.0	2.0		
20	600	1.0	1.8	0.8		2.0
21	630	1.0	1.8	0.8		
22	660	1.0	3.0	2.0		
23	690	1.0	1.8	0.8		
24	720	1.0	2.0	1.0		
25	750	1.0	1.8	0.8		
26	780	1.0	2.7	1.7		
27	810	1.0	1.0	0.0		
28	840	1.0	4.0	3.0		
29	870	1.0	2.0	1.0		
30	900	1.0	2.0	1.0		2.1
31	930	1.0	6.0	75.0	0.0	lab
32	960	1.0	2.0	1.0		
33	990	1.0	2.1	1.1		
34	1020	1.0	1.4	0.4		
35	1050	1.0	2.4	1.4		
36	1080	1.0	3.0	2.0		
37	1110	1.0	7.8	6.8	0.0	lab
38	1140	1.0	1.0	0.0		
39	1170	1.0	1.2	0.2		
40	1200	1.0	10+	75.0	0.0	lab; 6.0
41	1230	1.0	1.2	0.2		
42	1260	1.0	1.0	0.0		
43	1290	1.0	1.0	0.0		
44	1320	1.0	1.4	0.4		
45	1350	1.0	2.0	1.0		
46	1380	1.0	1.2	0.2		
47	1410	1.0	1.0	0.0		
48	1440	1.0	4.8	3.8	0.0	lab

49	1470	1.0	4.2	3.2	0.0	lab			
50	1500	1.0	3.2	2.2	0.0	7.8; lab			
51	1530	1.0	2.3	1.3					
52	1560	1.0	2.0	1.0					
53	1590	1.0	1.3	0.3		not taken on 0719			
54	1620	1.0	3.8	2.8					
55	1650	1.0	1.4	0.4					
56	1680	1.0	4.2	3.2	0.0	lab			
57	1710	1.0	1.8	0.8					
58	1740	1.0	1.3	0.3					
59	1770	1.0	1.2	0.2					
60	1800	1.0	1.0	0.0		1.3			
61	1830	1.0	1.1	0.1					
62	1860	1.0	1.0	0.0					
63	1890	1.0	1.0	0.0		8' S cement culvert			
64	1920	1.0	1.2	0.2					
65	1950	1.0	10+	70.0	0.0	lab			
66	1980	1.0	2.0	1.0					
67	2010	1.0	3.0	2.0					
68	2040	1.0	1.2	0.2					
69	2070	1.0	3.1	2.1					
70	2100	1.0	3.2	2.2		1.8			
71	2130	1.0	10+	21.0	0.0	lab			
72	2160	1.0	2.0	1.0					
73	2190	1.0	2.1	1.1					
74	2220	1.0	10+	102	20.0	lab			
75	2250	1.0	10+	72.0	8.0	lab			
76	2280	1.0	2.3	1.3					
77	2310	1.0	1.8	0.8					
78	2340	1.0	1.9	0.9					
79	2370	1.0	1.2	0.2					
80	2400	1.0	2.1	1.1		4.1			
81	2430	1.0	3.1	2.1					
82	2460	1.0	6.2	5.2	0.0	lab			
83	2490	1.0	10+	10.0	0.0	lab			
84	2520	1.0	10+	155	7.0	lab			
85	2550	1.0	10+	130	0.0	lab			
86	2580	1.0	8.7	8.0	0.0	lab			
87	2610	1.0	1.2	0.2					
88	2640	1.0	2.3	1.3					
89	2670	1.0	9.9	10.0	0.0	lab			
90	2700	1.0	2.0	1.0					
91	2730	1.0	10+	18.0	0.0	lab			
92	2760	1.0	5.5	261	4.0	lab			
93	2790	1.0	4.4	3.4					
94	2820	1.0	10+	72.0	0.0	lab			
95	2850	1.0	10+	10.0	0.0	20' S Reynolds Carrier; lab			
96	2880	1.0	3.8	2.8		very shallow			
97	2910	1.0	1.7	0.7					
98	2940	1.0	10+	10.0	0.0	lab			
99	2970	1.0	1.2	0.2					
100	3000	1.0	4.0	3.0		1.5			
101	3030	1.0	2.4	1.4					
102	3060	1.0	10+	47.0	0.0	lab			
103	3090	1.0	2.9	1.9					
104	3120	1.0	3.2	2.2					
105	3150	1.0	2.3	1.3					
106	3180	1.0	1.4	0.4					

107	3210	1.0	5.2	4.2					
108	3240	1.0	3.0	2.0					
109	3270	1.0	4.0	3.0					
110	3300	1.0	3.6	2.6		3.0			
111	3330	1.0	4.4	3.4					
112	3360	1.0	5.0	4.0	0.0	intsect of w wycroft/96a; lab			
113	3390	1.0	4.2	3.2					
114	3420	1.0	6.2	5.2	0.0	lab			
115	3450	1.0	3.2	2.2					
116	3480	1.0	3.0	2.0					
117	3510	1.0	1.9	0.9					
118	3540	1.0	3.8	2.8					
119	3570	1.0	4.1	3.1					
120	3600	1.0	4.2	3.2		3.0			
121	3630	1.0	2.3	1.3					
122	3660	1.0	ns	ns					
123	3690	1.0	4.2	3.2					
124	3720	1.0	4.0	3.0					
125	3750	1.0	2.0	1.0					
126	3780	1.0	1.2	0.2					
127	3810	1.0	3.4	2.4					
128	3840	1.0	3.2	2.2					
129	3870	1.0	3.3	2.3					
130	3900	1.0	1.8	0.8		2.0			
131	3930	1.0	2.8	1.8					
132	3960	1.0	10+	22.0	0.0	lab			
133	3990	1.0	6.4	5.4	0.0	lab			
134	4020	1.0	8.7	7.7	0.0	lab			
135	4050	1.0	1.8	0.8					
136	4080	1.0	10+	12.0	0.0	lab			
137	4110	1.0	2.0	1.0					
138	4140	1.0	8.5	7.5	0.0	lab			
139	4170	1.0	2.0	1.0					
140	4200	1.0	3.0	2.0		1.8			
141	4230	1.0	2.4	1.4					
142	4260	1.0	2.0	1.0					
143	4290	1.0	10+	10.0	0.0	lab			
144	4320	1.0	2.2	1.2					
145	4350	1.0	6.0	5.0					
146	4380	1.0	6.0	5.0	0.0	lab			
147	4410	1.0	2.2	1.2					
148	4440	1.0	5.5	4.5					
149	4470	1.0	4.2	3.2					
150	4500	1.0	1.0	0.0		1.5			
151	4530	1.0	1.2	0.2					
152	4560	1.0	10+	13.0	0.0	lab			
153	4590	1.0	2.0	1.0					
154	4620	1.0	10+	46.0	2.0	lab			
155	4650	1.0	5.0	4.0					
156	4680	1.0	2.9	1.9					
157	4710	1.0	2.5	1.5					
158	4740	1.0	3.0	2.0					
159	4770	1.0	2.4	1.4					
160	4800	1.0	10+	32.0	0.0	lab			
161	4830	1.0	4.9	3.9					
162	4860	1.0	4.2	3.2					
163	4890	1.0	bo	17.0	0.0	lab			
164	4920	1.0	10+	10.0	0.0	lab			

165	4950	1.0	3.0	2.0					
166	4980	1.0	3.2	2.2					
167	5010	1.0	2.3	1.3					
168	5040	1.0	2.2	1.2					
169	5070	1.0	10+	12.0	0.0	lab			
170	5100	1.0	1.2	0.2		1.0			
171	5130	1.0	3.0	2.0					
172	5160	1.0	1.0	0.0					
173	5190	1.0	4.2	3.2					
174	5220	1.0	4.2	3.2					
175	5250	1.0	3.2	2.2					
176	5280	1.0	10+	11.0	0.0	S sid drway 7978 @ 96a; lab			

DOE Finger Lakes Project									
Traverse 1B, Route 414/96A									
20000719									
Bieber, Budny, Nelson, J. Fountain, M. Fountain									
Start S edge of driveway at 7978 on 414/96a, heading south									
H2=1400, 12; batt=8.0; flow=ok; leak test=ok; bo=blow out(assume 0); ns=no sample									
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	10+	12.0	0.0	lab			
1	30	1.0	3.2	2.2					
2	60	1.0	10+	18.0	0.0	lab			
3	90	1.0	2.6	1.6					
4	120	1.0	1.2	0.2					
5	150	1.0	1.3	0.3					
6	180	1.0	6.2	17.0	0.0	lab			
7	210	1.0	2.8	1.8					
8	240	1.0	1.2	0.2					
9	270	1.0	1.1	0.1					
10	300	1.0	1.2	0.2		1.0			
11	330	1.0	2.3	1.3					
12	360	1.0	1.6	0.6					
13	390	1.0	3.2	2.2					
14	420	1.0	1.8	0.8					
15	450	1.0	1.8	0.8					
16	480	1.0	1.9	0.9					
17	510	1.0	7.9	47.0	0.0	lab			
18	540	1.0	1.0	0.0					
19	570	1.0	10+	56.0	3.0	lab			
20	600	1.0	1.0	0.0		2.0			
21	630	1.0	10+	90.0	8.0	lab			
22	660	1.0	1.8	0.8					
23	690	1.0	10+	170	18.0	lab			
24	720	1.0	2.0	1.0					
25	750	1.0	2.0	1.0					
26	780	1.0	4.7	3.7					
27	810	1.0	2.7	1.7					
28	840	1.0	1.2	0.2					
29	870	1.0	4.2	3.2					
30	900	1.0	2.1	1.1		1.6			
31	930	1.0	2.0	1.0					
32	960	1.0	2.8	1.8					
33	990	1.0	3.4	2.4					
34	1020	1.0	1.8	0.8					
35	1050	1.0	10+	30.0	0.0	lab			
36	1080	1.0	10+	150	30.0	lab			
37	1110	1.0	2.0	1.0					
38	1140	1.0	2.2	1.2					
39	1170	1.0	3.9	2.9					
40	1200	1.0	10+	10.0	0.0	lab			
41	1230	1.0	2.2	1.2					
42	1260	1.0	3.2	2.2					
43	1290	1.0	1.0	0.0					
44	1320	1.0	4.9	3.9					
45	1350	1.0	1.8	0.8					
46	1380	1.0	1.7	0.7					
47	1410	1.0	10+	20.0	0.0	lab			
48	1440	1.0	1.2	0.2					

49	1470	1.0	2.0	1.0					
50	1500	1.0	10+	10.0	0.0	lab			
51	1530	1.0	4.2	3.2					
52	1560	1.0	3.2	2.2					
53	1590	1.0	10+	110	12.0	lab			
54	1620	1.0	8.2	17.0	0.0	lab			
55	1650	1.0	10+	22.0	0.0	lab			
56	1680	1.0	2.7	1.7					
57	1710	1.0	10+	67.0	7.0	lab			
58	1740	1.0	10+	20.0	0.0	lab			
59	1770	1.0	10+	72.0	6.0	lab			
60	1800	1.0	10+	18.0	0.0	lab			
61	1830	1.0	2.0	1.0					
62	1860	1.0	10+	34.0	4.0	lab			
63	1890	1.0	10+	18.0	0.0	lab			
64	1920	1.0	3.2	2.2					
65	1950	1.0	3.0	2.0					
66	1980	1.0	1.3	0.3					
67	2010	1.0	2.0	1.0					
68	2040	1.0	2.8	1.8					
69	2070	1.0	2.3	1.3					
70	2100	1.0	2.1	1.1		2.0			
71	2130	1.0	1.8	0.8					
72	2160	1.0	2.0	1.0					
73	2190	1.0	10+	9+					
74	2220	1.0	2.3	1.3					
75	2250	1.0	3.2	2.2					
76	2280	1.0	2.8	1.8					
77	2310	1.0	10+	17.0	0.0	lab			
78	2340	1.0	10+	10.0	0.0	lab			
79	2370	1.0	5.9	4.9					
80	2400	1.0	3.2	2.2					
81	2430	1.0	10+	43.0	15.0	lab			
82	2460	1.0	3.1	2.1					
83	2490	1.0	4.5	3.5					
84	2520	1.0	bo	0.0					
85	2550	1.0	bo	0.0					
86	2580	1.0	5.8	4.8		opp drwy			
87	2610	1.0	1.8	0.8					
88	2640	1.0	2.2	1.2					
89	2670	1.0	10+	18.0	0.0	lab			
90	2700	1.0	10+	63.0	0.0	lab			
91	2730	1.0	4.2	3.2					
92	2760	1.0	3.0	2.0					
93	2790	1.0	2.0	1.0					
94	2820	1.0	10+	120	22.0	mid drwy; lab			
95	2850	1.0	2.0	1.0					
96	2880	1.0	4.0	3.0					
97	2910	1.0	2.0	1.0					
98	2940	1.0	1.1	0.1					
99	2970	1.0	2.0	1.0					
100	3000	1.0	1.2	0.2		1.4			
101	3030	1.0	3.8	2.8					
102	3060	1.0	3.4	2.4					
103	3090	1.0	5.8	4.8					
104	3120	1.0	4.2	3.2					
105	3150	1.0	4.0	3.0					
106	3180	1.0	4.0	3.0					

107	3210	1.0	3.7	2.7					
108	3240	1.0	1.6	0.6					
109	3270	1.0	2.1	1.1					
110	3300	1.0	3.1	2.1		2.4			
111	3330	1.0	1.8	0.8					
112	3360	1.0	10+	160	32.0	lab			
113	3390	1.0	3.2	2.2					
114	3420	1.0	ns	ns		rd intersect			
115	3450	1.0	ns	ns		rd intersect			
116	3480	1.0	5.9	4.9					
117	3510	1.0	4.8	3.8					
118	3540	1.0	10+	20.0	0.0	lab			
119	3570	1.0	10+	76.0	4.0	lab			
120	3600	1.0	1.0	0.0		1.2			
121	3630	1.0	2.3	1.3					
122	3660	1.0	10+	80.0	8.0	lab			
123	3690	1.0	6.1	5.1					
124	3720	1.0	2.8	1.8					
125	3750	1.0	2.3	1.3					
126	3780	1.0	1.4	0.4					
127	3810	1.0	1.4	0.4					
128	3840	1.0	2.0	1.0					
129	3870	1.0	2.7	1.7					
130	3900	1.0	1.0	0.0		1.1			
131	3930	1.0	6.8	5.8					
132	3960	1.0	5.0	4.0					
133	3990	1.0	3.7	2.7					
134	4020	1.0	2.9	1.9					
135	4050	1.0	2.0	1.0					
136	4080	1.0	4.9	3.9					
137	4110	1.0	7.0	6.0					
138	4140	1.0	6.2	5.2		20' S drwy 8213@96a			
139	4170	1.0	3.7	2.7					
140	4200	1.0	1.2	0.2		1.8			
141	4230	1.0	10+	12.0	0.0	lab			
142	4260	1.0	1.0	0.0					
143	4290	1.0	10+	15.0	0.0	lab			
144	4320	1.0	2.2	1.2					
145	4350	1.0	2.0	1.0		pol 548a			
146	4380	1.0	1.2	0.2					
147	4410	1.0	3.9	2.9					
148	4440	1.0	2.3	1.3					
149	4470	1.0	3.5	2.5					
150	4500	1.0	2.0	1.0		1.8			
151	4530	1.0	4.8	3.8					
152	4560	1.0	2.0	1.0					
153	4590	1.0	2.2	1.2					
154	4620	1.0	10+	10.0	0.0	lab			
155	4650	1.0	3.4	2.4					
156	4680	1.0	2.2	1.2					
157	4710	1.0	3.0	2.0					
158	4740	1.0	3.6	2.6					
159	4770	1.0	2.4	1.4					
160	4800	1.0	4.0	3.0		2.0			
161	4830	1.0	3.7	2.7					
162	4860	1.0	2.0	1.0					
163	4890	1.0	3.2	2.2					
164	4920	1.0	10+	12.0	0.0	lab			

165	4950	1.0	10+	10.0	0.0	lab			
166	4980	1.0	2.0	1.0					
167	5010	1.0	10+	117	5.0	lab			
168	5040	1.0	10+	52.0	0.0	lab			
169	5070	1.0	5.5	4.5					
170	5100	1.0	2.0	1.0		2.1			
171	5130	1.0	10+	22.0	0.0	lab			
172	5160	1.0	6.9	5.9					
173	5190	1.0	10+	30.0	0.0	lab			
174	5220	1.0	10+	32.0	0.0	45' to pol 545; lab			

DOE Finger Lakes Project

Traverse 1C, Route 414/96A

20000727

Bieber, Budny, Nelson, J. Fountain, M. Fountain

Start 3' past start of gravel pull off, heading south

H2=1950, 12; batt=8.1; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample

Sample #	Distance (ft)	Bkgd	Peak	Net	Ethane	Comments/Duplicates
0	0	1.0	5.2	4.2		
1	30	1.0	4.4	3.4		
2	60	1.0	3.2	2.2		
3	90	1.0	1.4	0.4		
4	120	1.0	1.2	0.2		
5	150	1.0	5.0	4.0		
6	180	1.0	2.1	1.1		
7	210	1.0	3.2	2.2		
8	240	1.0	3.0	2.0		
9	270	1.0	1.8	0.8		
10	300	1.0	1.2	0.2		1.0
11	330	1.0	3.2	2.2		
12	360	1.0	1.0	0.0		
13	390	1.0	2.0	1.0		
14	420	1.0	2.2	1.2		
15	450	1.0	1.0	0.0		
16	480	1.0	2.1	1.1		
17	510	1.0	2.0	1.0		
18	540	1.0	2.0	1.0		
19	570	1.0	2.4	1.4		
20	600	1.0	7.2	6.2	0.0	lab
21	630	1.0	2.3	1.3		
22	660	1.0	8.9	8.0	0.0	lab
23	690	1.0	5.5	4.5		
24	720	1.0	4.0	3.0		
25	750	1.0	2.1	1.1		
26	780	1.0	3.1	2.1		
27	810	1.0	2.8	1.8		
28	840	1.0	1.8	0.8		
29	870	1.0	1.2	0.2		
30	900	1.0	2.1	1.1		1.2
31	930	1.0	2.2	1.2		
32	960	1.0	1.8	0.8		
33	990	1.0	2.0	1.0		985' fr 0 to Lodi twn sig
34	1020	1.0	2.2	1.2		
35	1050	1.0	6.2	5.2	0.0	lab
36	1080	1.0	10+	9+		
37	1110	1.0	4.7	3.7		
38	1140	1.0	4.4	3.4		
39	1170	1.0	4.0	3.0		
40	1200	1.0	1.7	0.7		2.0
41	1230	1.0	3.2	2.2		
42	1260	1.0	10+	123	0.0	lab
43	1290	1.0	2.8	1.8		
44	1320	1.0	3.7	2.7		
45	1350	1.0	10+	14.0	0.0	lab
46	1380	1.0	10+	39.0	8.0	lab
47	1410	1.0	3.9	2.9		
48	1440	1.0	3.7	2.7		

49	1470	1.0	2.5	1.5					
50	1500	1.0	2.1	1.1		3.0			
51	1530	1.0	3.0	2.0					
52	1560	1.0	4.2	3.2					
53	1590	1.0	5.9	4.9					
54	1620	1.0	1.6	0.6					
55	1650	1.0	2.0	1.0					
56	1680	1.0	1.2	0.2					
57	1710	1.0	1.1	0.1					
58	1740	1.0	2.0	1.0					
59	1770	1.0	2.6	1.6					
60	1800	1.0	1.2	0.2		1.0			
61	1830	1.0	0.9	-0.1					
62	1860	1.0	8.9	12.0	0.0	lab			
63	1890	1.0	2.6	1.6					
64	1920	1.0	1.0	0.0					
65	1950	1.0	1.2	0.2					
66	1980	1.0	5.5	4.5					
67	2010	1.0	0.8	-0.2					
68	2040	1.0	1.0	0.0					
69	2070	1.0	10+	10.0	0.0	lab			
70	2100	1.0	1.1	0.1		1.0			
71	2130	1.0	1.0	0.0					
72	2160	1.0	2.4	1.4					
73	2190	1.0	2.0	1.0					
74	2220	1.0	2.2	1.2					
75	2250	1.0	2.6	1.6					
76	2280	1.0	2.0	1.0					
77	2310	1.0	3.2	2.2					
78	2340	1.0	2.2	1.2					
79	2370	1.0	0.9	-0.1		pol L91421			

DOE Finger Lakes Project									
Traverse 1D, County Road 137									
20000727									
Bieber, Budny, Nelson, J. Fountain, M. Fountain									
Start junction of 96a with Cnty Rd 131, heading south; oppsite pol L9147									
H2=1570, 13; batt=7.8; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample									
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	1.6	0.6		1.2			
1	30	1.0	5.8	4.8					
2	60	1.0	10+	27.0	0.0	lab			
3	90	1.0	5.0	4.0					
4	120	1.0	10+	28.0	0.0	lab			
5	150	1.0	7.2	6.2	0.0	lab			
6	180	1.0	1.0	0.0					
7	210	1.0	4.2	3.2					
8	240	1.0	8.0	7.0	0.0	lab			
9	270	1.0	9.8	8.8	0.0	lab			
10	300	1.0	4.8	3.8		1.8			
11	330	1.0	8.8	17.0	0.0	lab			
12	360	1.0	10+	10.0	0.0	lab			
13	390	1.0	3.2	2.2					
14	420	1.0	10+	14.0	0.0	lab			
15	450	1.0	2.2	1.2					
16	480	1.0	10+	10.0	0.0	lab			
17	510	1.0	2.8	1.8					
18	540	1.0	1.8	0.8					
19	570	1.0	3.6	2.6					
20	600	1.0	2.0	1.0		1.6			
21	630	1.0	3.0	2.0					
22	660	1.0	1.6	0.6					
23	690	1.0	2.0	1.0					
24	720	1.0	1.2	0.2					
25	750	1.0	3.6	2.6					
26	780	1.0	1.2	0.2					
27	810	1.0	2.0	1.0					
28	840	1.0	2.2	1.2					
29	870	1.0	3.6	2.6					
30	900	1.0	2.2	1.2		1.6			
31	930	1.0	1.6	0.6					
32	960	1.0	3.2	2.2					
33	990	1.0	8.4	19.0	1.0	lab			
34	1020	1.0	1.8	0.8					
35	1050	1.0	1.6	0.6					
36	1080	1.0	2.0	1.0					
37	1110	1.0	1	0.0					
38	1140	1.0	1.6	0.6					
39	1170	1.0	1.4	0.4					
40	1200	1.0	1.6	0.6		4.4			
41	1230	1.0	1.0	0.0					
42	1260	1.0	2.2	1.2					
43	1290	1.0	1.2	0.2					
44	1320	1.0	1.1	0.1					
45	1350	1.0	2.2	1.2					
46	1380	1.0	2.0	1.0					
47	1410	1.0	3.0	2.0					
48	1440	1.0	8.0	22.0	0.0	lab			

49	1470	1.0	9.2	17.0	0.0	lab			
50	1500	1.0	10+	134	3.0	10+; lab			
51	1530	1.0	10+	148	0.0	lab			
52	1560	1.0	10+	10.0	0.0	lab			
53	1590	1.0	10+	10.0	0.0	lab			
54	1620	1.0	7.2	9.0	0.0	lab			
55	1650	1.0	10+	12.0	0.0	lab			
56	1680	1.0	6.2	5.2					
57	1710	1.0	2.4	1.4					
58	1740	1.0	10.0	90.0	7.0	lab			
59	1770	1.0	3.0	2.0					
60	1800	1.0	1.2	0.2		1.2			
61	1830	1.0	3.8	2.8					
62	1860	1.0	bo	0.0					
63	1890	1.0	2.2	1.2					
64	1920	1.0	1.0	0.0					
65	1950	1.0	1.0	0.0					
66	1980	1.0	4.0	3.0					
67	2010	1.0	3.2	2.2					
68	2040	1.0	1.8	0.8					
69	2070	1.0	3.0	2.0					
70	2100	1.0	1.0	0.0		1.2			
71	2130	1.0	1.4	0.4					
72	2160	1.0	4.4	3.4					
73	2190	1.0	1.2	0.2					
74	2220	1.0	1.4	0.4					
75	2250	1.0	1.4	0.4					
76	2280	1.0	1.8	0.8					
77	2310	1.0	1.0	0.0					
78	2340	1.0	0.8	-0.2					
79a	2370	1.0	3.8	2.8		# error			
79b	2400	1.0	2.8	1.8		# error			
80	2430	1.0	0.8	-0.2		0.8			
81	2460	1.0	3.8	2.8					
82	2490	1.0	1.4	0.4					
83	2520	1.0	1.8	0.8					
84	2550	1.0	1.0	0.0					
85	2580	1.0	1.0	0.0					
86	2610	1.0	1.2	0.2					
87	2640	1.0	1.0	0.0					
88	2670	1.0	1.2	0.2					
89	2700	1.0	1.4	0.4					
90	2730	1.0	1.2	0.2		1.6			
91	2760	1.0	2.0	1.0					
92	2790	1.0	1.6	0.6					
93	2820	1.0	1.0	0.0					
94	2850	1.0	1.0	0.0					
95	2880	1.0	1.8	0.8					
96	2910	1.0	1.8	0.8					
97	2940	1.0	2.4	1.4					
98	2970	1.0	1.0	0.0					
99	3000	1.0	2.0	1.0					
100	3030	1.0	ns	ns		over drain pipe			
101	3060	1.0	ns	ns		on bridge			
102	3090	1.0	10+	10.0					
103	3120	1.0	4.6	3.6					
104	3150	1.0	2.6	1.6					
105	3180	1.0	3.0	2.0					

106	3210	1.0	3.0	2.0					
107	3240	1.0	4.0	3.0					
108	3270	1.0	1.8	0.8					
109	3300	1.0	2.0	1.0					
110	3330	1.0	1.2	0.2		1.2			
111	3360	1.0	1.2	0.2					
112	3390	1.0	1.0	0.0					
113	3420	1.0	1.2	0.2					
114	3450	1.0	1.2	0.2					
115	3480	1.0	1.0	0.0					
116	3510	1.0	1.0	0.0					
117	3540	1.0	1.2	0.2					
118	3570	1.0	1.2	0.2					
119	3600	1.0	0.8	-0.2					
120	3630	1.0	3.8	2.8		2.0, end pol L804492			

DOE Finger Lakes Project						
Traverse 1E, County Road 137						
20000728						
Bieber, Budny, Nelson, J. Fountain, M. Fountain						
Start pol L 804 492, heading south						
H2=1600, 11; batt=8.1; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample						
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**
0	0	1.0	1.0	0.0		1.4
1	30	1.0	1.8	0.8		
2	60	1.0	1.0	0.0		
3	90	1.0	2.2	1.2		
4	120	1.0	2.1	1.1		
5	150	1.0	2.0	1.0		
6	180	1.0	bo	0.0		
7	210	1.0	bo	0.0		
8	240	1.0	1.0	0.0		
9	270	1.0	1.0	0.0		
10	300	1.0	2.8	1.8		3.0
11	330	1.0	5.0	4.0		
12a	360	1.0	10+	93.0	25.0	lab
12b	390	1.0	6.3	5.3		
13	420	1.0	2.0	1.0		
14	450	1.0	3.4	2.4		
15	480	1.0	10+	257	68.0	lab
16	510	1.0	10+	367	97.0	lab
17	540	1.0	2.3	1.3		
18	570	1.0	1.8	0.8		
19	600	1.0	5.5	4.5		
20	630	1.0	3.6	2.6		2.4
21	660	1.0	4.0	3.0		
22	690	1.0	6.1	5.1		
23	720	1.0	4.0	3.0		bo
24	750	1.0	7.6	6.6	0.0	lab
25	780	1.0	10+	29.0	2.0	lab
26	810	1.0	6.3	5.3	0.0	lab
27	840	1.0	4.6	3.6		
28	870	1.0	6.5	5.5	0.0	lab
29	900	1.0	8.7	7.7	0.0	lab
30	930	1.0	4.6	3.6		3.8
31	960	1.0	ns	ns		on bridge
32	990	1.0	ns	ns		on bridge
33	1020	1.0	1.1	0.1		
34	1050	1.0	5.0	4.0		
35	1080	1.0	7.2	6.2		bo
36	1110	1.0	6.6	5.6	0.0	lab
37	1140	1.0	10+	23.0	0.0	lab
38	1170	1.0	10+	50.0	2.0	lab
39	1200	1.0	10+	17.0	0.0	lab
40	1230	1.0	1.5	0.5		4.2
41	1260	1.0	10+	10.0	0.0	lab
42	1290	1.0	5.5	4.5		
43	1320	1.0	8.5	17.0	0.0	lab
44	1350	1.0	8.4	7.4	0.0	lab
45	1380	1.0	5.3	4.3		
46	1410	1.0	3.2	2.2		
47	1440	1.0	7.0	6.0	0.0	lab

48	1470	1.0	4.6	3.6					
49	1500	1.0	1.8	0.8					
50	1530	1.0	1.7	0.7		1.4			
51	1560	1.0	4.2	3.2					
52	1590	1.0	3.8	2.8					
53	1620	1.0	6.7	5.7	0.0	lab			
54	1650	1.0	10+	10.0	0.0	lab			
55	1680	1.0	4.8	3.8		55--80 near bedrx			
56	1710	1.0	4.2	3.2					
57	1740	1.0	3.8	2.8					
58	1770	1.0	4.6	3.6					
59	1800	1.0	1.6	0.6					
60	1830	1.0	3.0	2.0		1.7			
61	1860	1.0	5.4	4.4					
62	1890	1.0	3.4	2.4					
63	1920	1.0	2.6	1.6					
64	1950	1.0	2.6	1.6					
65	1980	1.0	2.5	1.5					
66	2010	1.0	1.0	0.0					
67	2040	1.0	10+	10.0	0.0	lab			
68	2070	1.0	4.8	3.8					
69	2100	1.0	6.0	5.0					
70	2130	1.0	7.2	6.2	0.0	4.2; lab			
71	2160	1.0	10+	137	8.0	lab			
72	2190	1.0	10+	10.0	0.0	lab			
73	2220	1.0	1.4	0.4					
74	2250	1.0	10+	10.0	0.0	lab			
75	2280	1.0	4.0	3.0					
76	2310	1.0	2.9	1.9					
77	2340	1.0	?	0.0		assume 0			
78	2370	1.0	2.4	1.4					
79	2400	1.0	2.2	1.2					
80	2430	1.0	2.8	1.8		1.9			
81	2460	1.0	1.6	0.6					
82	2490	1.0	3.8	2.8					
83	2520	1.0	3.6	2.6					
84	2550	1.0	1.0	0.0					
85	2580	1.0	4.0	3.0					
86	2610	1.0	9.1	8.1	0.0	lab			
87	2640	1.0	6.0	5.0					
88	2670	1.0	3.0	2.0					
89	2700	1.0	3.9	2.9					
90	2730	1.0	8.4	7.4	0.0	2.8; lab			
91	2760	1.0	6.5	5.5	0.0	lab			
92	2790	1.0	2.4	1.4					
93	2820	1.0	2.8	1.8					
94	2850	1.0	2.0	1.0					
95	2880	1.0	2.5	1.5					
96	2910	1.0	2.0	1.0					
97	2940	1.0	10+	406	164.0	lab			
98	2970	1.0	2.0	1.0					
99	3000	1.0	5.0	4.0					
100	3030	1.0	1.8	0.8		1.6			
101	3060	1.0	2.0	1.0					
102	3090	1.0	2.7	1.7					
103	3120	1.0	3.8	2.8					
104	3150	1.0	1.6	0.6					
105	3180	1.0	10.0	9.0	0.0	lab			

106	3210	1.0	1.2	0.2					
107	3240	1.0	1.0	0.0					
108	3270	1.0	8.6	7.6	0.0	lab			
109	3300	1.0	2.1	1.1					
110	3330	1.0	2.6	1.6		2.2			
111	3360	1.0	1.6	0.6					
112	3390	1.0	2.2	1.2					
113	3420	1.0	1.8	0.8					
114	3450	1.0	2.6	1.6					
115	3480	1.0	3.0	2.0					
116	3510	1.0	2.8	1.8					
117	3540	1.0	2.9	1.9					
118	3570	1.0	4.5	3.5					
119	3600	1.0	2.0	1.0					
120	3630	1.0	1.0	0.0		1.0			
121	3660	1.0	1.5	0.5					
122	3690	1.0	2.6	1.6					
123	3720	1.0	0.8	-0.2					
124	3750	1.0	2.0	1.0					
125	3780	1.0	1.6	0.6					
126	3810	1.0	1.6	0.6					
127	3840	1.0	1.6	0.6					
128	3870	1.0	3.2	2.2					
129	3900	1.0	2.4	1.4					
130	3930	1.0	9.8	10.0	0.0	4.4; lab			
131	3960	1.0	10+	353	20.0	10+; lab			
132	3990	1.0	1.0	0.0					
133	4020	1.0	6.8	24.0	0.0	lab			
134	4050	1.0	1.2	0.2					
135	4080	1.0	2.5	1.5					
136	4110	1.0	6.0	5.0					
137	4140	1.0	7.6	6.6	0.0	lab			
138	4170	1.0	3.4	2.4					
139	4200	1.0	10+	17.0	0.0	lab			
140	4230	1.0	2.2	1.2		2.0			
141	4260	1.0	1.8	0.8					
142	4290	1.0	8.4	115	0.0	lab			
143	4320	1.0	10+	173	43.0	lab			
144	4350	1.0	3.0	2.0					
145	4380	1.0	2.0	1.0					
146	4410	1.0	3.0	2.0					
147	4440	1.0	2.0	1.0					
148	4470	1.0	1.8	0.8					
149	4500	1.0	6.9	73.0	0.0	lab			
150	4530	1.0	3.2	2.2		5.6			
151	4560	1.0	2.2	1.2					
152	4590	1.0	3.4	2.4					
153	4620	1.0	2.0	1.0					
154	4650	1.0	2.4	1.4					
155	4680	1.0	2.0	1.0					
156	4710	1.0	1.6	0.6					
157	4740	1.0	4.6	3.6					
158	4770	1.0	6.8	32.0	0.0	lab			
159	4800	1.0	2.4	1.4					
160	4830	1.0	2.6	1.6		1.8			
161	4860	1.0	5.0	4.0					
162	4890	1.0	4.5	3.5					
163	4920	1.0	6.4	5.4	0.0	lab			

164	4950	1.0	2.9	1.9					
165	4980	1.0	4.6	3.6					
166	5010	1.0	3.0	2.0					
167	5040	1.0	2.4	1.4					
168	5070	1.0	4.0	3.0					
169	5100	1.0	4.2	3.2					
170	5130	1.0	2.6	1.6		1.8			
171	5160	1.0	2.0	1.0					
172	5190	1.0	3.6	2.6					
173	5220	1.0	4.0	3.0					
174	5250	1.0	4.0	3.0		150' short pol 04/604			

DOE Finger Lakes Project									
Traverse 1F, Route 96a									
20000808									
Bieber, Budny, Nelson, J. Fountain, M. Fountain									
Start pol 91421 just short of Lodi proper, heading south; soil moist									
H2=1900, 13; batt=8.1; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample									
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	1.0	0.0		1.0			
1	30	1.0	1.8	0.8					
2	60	1.0	bo	0.0					
3	90	1.0	8.2	23.0	0.0	lab			
4	120	1.0	3.0	2.0					
5	150	1.0	9.8	32.0	0.0	lab			
6	180	1.0	10+	23.0	0.0	lab			
7	210	1.0	10+	37.0	0.0	lab			
8	240	1.0	3.4	2.4					
9	270	1.0	3.0	2.0					
10	300	1.0	1.0	0.0		1.4			
11	330	1.0	10+	42.0	0.0	lab			
12	360	1.0	9.8	18.0	0.0	lab			
13	390	1.0	10+	28.0	0.0	lab			
14	420	1.0	10+	32.0	0.0	lab			
15	450	1.0	10+	65.0	0.0	lab			
16	480	1.0	bo	0.0					
17	510	1.0	bo	0.0					
18	540	1.0	10+	17.0	0.0	lab			
19	570	1.0	1.0	0.0					
20	600	1.0	1.2	0.2		1.4			
21	630	1.0	2.6	1.6					
22	660	1.0	1.2	0.2					
23	690	1.0	3.1	2.1					
24	720	1.0	6.0	5.0					
25	750	1.0	3.2	2.2					
26	780	1.0	ns	ns					
27	810	1.0	ns	ns					
28	840	1.0	ns	ns					
29	870	1.0	ns	ns					
30	900	1.0	4.6	3.6		3.0			
31	930	1.0	ns	ns					
32	960	1.0	5.2	4.2					
33	990	1.0	ns	ns					
34	1020	1.0	10+	10.0					
35	1050	1.0	ns	ns					
36	1080	1.0	5.4	4.4					
37	1110	1.0	6.4	5.4					
38	1140	1.0	1.0	0.0					
39	1170	1.0	7.2	6.2					
40	1200	1.0	2.3	1.3		2.0			
41	1230	1.0	6.4	5.4					
42	1260	1.0	4.0	3.0					
43	1290	1.0	6.2	5.2					
44	1320	1.0	1.6	0.6					
45	1350	1.0	8.2	31.0	0.0	lab			
46	1380	1.0	8.2	82.0	0.0	lab			
47	1410	1.0	5.0	4.0					
48	1440	1.0	4.0	3.0					

49	1470	1.0	3.1	2.1					
50	1500	1.0	3.2	2.2		2.0			
51	1530	1.0	5.0	4.0					
52	1560	1.0	2.3	1.3					
53	1590	1.0	bo	0.0					
54	1620	1.0	5.8	21.0	0.0	lab			
55	1650	1.0	bo	0.0					
56	1680	1.0	4.6	3.6		bo			
57	1710	1.0	9.8	8.8	0.0	lab			
58	1740	1.0	bo	0.0					
59	1770	1.0	bo	0.0					
60	1800	1.0	10+	17.0	0.0	4.0; lab			
61	1830	1.0	bo	0.0		130' short pol 0001 R-2			

DOE Finger Lakes Project									
Traverse 1G, County Road 137									
20000808									
Bieber, Budny, Nelson, J. Fountain, M. Fountain									
Start 150' short of pol 0464, heading south									
H2=1900, 13; batt=8.1; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample; H2O=water in syringe									
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	1.0	0.0		1.2			
1	30	1.0	1.2	0.2					
2	60	1.0	bo	0.0					
3	90	1.0	1.8	0.8					
4	120	1.0	bo	0.0					
5	150	1.0	3.2	2.2					
6	180	1.0	2.0	1.0					
7	210	1.0	1.4	0.4					
8	240	1.0	2.4	1.4					
9	270	1.0	2.4	1.4					
10	300	1.0	bo	0.0		bo			
11	330	1.0	1.8	0.8					
12	360	1.0	1.4	0.4					
13	390	1.0	3.0	2.0					
14	420	1.0	bo	0.0					
15	450	1.0	2.4	1.4					
16	480	1.0	5.2	4.2					
17	510	1.0	2.0	1.0					
18	540	1.0	1.8	0.8					
19	570	1.0	2.4	1.4					
20	600	1.0	1.0	0.0		11.0			
21	630	1.0	2.8	1.8					
22	660	1.0	3.6	2.6					
23	690	1.0	3.0	2.0					
24	720	1.0	bo	0.0					
25	750	1.0	1.4	0.4					
26	780	1.0	4.8	3.8					
27	810	1.0	2.6	1.6					
28	840	1.0	1.2	0.2					
29	870	1.0	3.4	2.4					
30	900	1.0	2.2	1.2		2.3			
31	930	1.0	2.4	1.4					
32	960	1.0	1.0	0.0					
33	990	1.0	1.2	0.2					
34	1020	1.0	1.6	0.6					
35	1050	1.0	bo	0.0					
36	1080	1.0	1.0	0.0					
37	1110	1.0	1.2	0.2					
38	1140	1.0	1.8	0.8					
39	1170	1.0	1.0	0.0					
40	1200	1.0	2.1	1.1		2.0			
41	1230	1.0	1.2	0.2					
42	1260	1.0	0.9	-0.1					
43	1290	1.0	1.0	0.0					
44	1320	1.0	2.3	1.3					
45	1350	1.0	3.1	2.1					
46	1380	1.0	1.1	0.1					
47	1410	1.0	bo	0.0					
48	1440	1.0	bo	0.0					

49	1470	1.0	2.0	1.0					
50	1500	1.0	bo	0.0		bo			
51	1530	1.0	1.8	0.8					
52	1560	1.0	bo	0.0					
53	1590	1.0	bo	0.0					
54	1620	1.0	2.2	1.2					
55	1650	1.0	1.2	0.2		bo			
56	1680	1.0	2.0	1.0					
57	1710	1.0	1.0	0.0					
58	1740	1.0	2.0	1.0					
59	1770	1.0	1.2	0.2					
60	1800	1.0	H2O	H2O		1.0; 60--67 v. wet			
61	1830	1.0	1.1	0.1					
62	1860	1.0	bo	0.0					
63	1890	1.0	bo	0.0					
64	1920	1.0	2.1	1.1					
65	1950	1.0	2.4	1.4					
66	1980	1.0	bo	0.0					
67	2010	1.0	1.2	0.2		at pol 0476			
68	2040	1.0	2.0	1.0		bo			
69	2070	1.0	1.0	0.0					
70	2100	1.0	1.2	0.2		1.1			
71	2130	1.0	1.4	0.4					
72	2160	1.0	2.2	1.2					
73	2190	1.0	2.8	1.8					
74	2220	1.0	3.2	2.2					
75	2250	1.0	4.7	3.7					
76	2280	1.0	bo	0.0					
77	2310	1.0	1.2	0.2					
78	2340	1.0	1.8	0.8					
79	2370	1.0	bo	0.0					
80	2400	1.0	bo	0.0		bo			
81	2430	1.0	3.2	2.2					
82	2460	1.0	bo	0.0					
83	2490	1.0	1.0	0.0					
84	2520	1.0	2.3	1.3					
85	2550	1.0	1.4	0.4					
86	2580	1.0	1.8	0.8					
87	2610	1.0	bo	0.0					
88	2640	1.0	10+	78.0	0.0	lab			
89	2670	1.0	bo	0.0					
90	2700	1.0	1.2	0.2		1.3			
91	2730	1.0	1.4	0.4					
92	2760	1.0	1.0	0.0					
93	2790	1.0	9.8	52.0	0.0	lab			
94	2820	1.0	bo	0.0					
95	2850	1.0	2.0	1.0					
96	2880	1.0	3.2	2.2					
97	2910	1.0	1.8	0.8					
98	2940	1.0	2.0	1.0					
99	2970	1.0	3.0	2.0					
100	3000	1.0	2.4	1.4		1.2			
101	3030	1.0	2.4	1.4					
102	3060	1.0	9.8	17.0	0.0	lab			
103	3090	1.0	6.2	5.2					
104	3120	1.0	10+	12.0	0.0	lab			
105	3150	1.0	10+	10.0	0.0	lab			
106	3180	1.0	10+	12.0	0.0	lab			

107	3210	1.0	6.8	5.8					
108	3240	1.0	10+	72.0	2.0	lab			
109	3270	1.0	9.8	8.8	0.0	lab			
110	3300	1.0	6.4	5.4					
111	3330	1.0	ns	ns		over stream			
112	3360	1.0	ns	ns		over stream			
113	3390	1.0	3.4	2.4					
114	3420	1.0	1.8	0.8					
115	3450	1.0	2.4	1.4					
116	3480	1.0	ns	ns					
117	3510	1.0	10+	10.0	0.0	lab			
118	3540	1.0	bo	0.0					
119	3570	1.0	2.6	1.6					
120	3600	1.0	1.0	0.0		1.2			
121	3630	1.0	1.2	0.2					
122	3660	1.0	3.2	2.2					
123	3690	1.0	bo	0.0					
124	3720	1.0	1.4	0.4					
125	3750	1.0	2.5	1.5					
126	3780	1.0	3.4	2.4					
127	3810	1.0	2.9	1.9					
128	3840	1.0	3.8	2.8					
129	3870	1.0	10+	17.0	0.0	lab			
130	3900	1.0	0.9	-0.1		1.0			
131	3930	1.0	2.0	1.0					
132	3960	1.0	2.0	1.0					
133	3990	1.0	3.0	2.0					
134	4020	1.0	3.2	2.2					
135	4050	1.0	1.4	0.4					
136	4080	1.0	6.0	5.0					
137	4110	1.0	bo	0.0					
138	4140	1.0	2.1	1.1					
139	4170	1.0	ns	ns		stream			
140	4200	1.0	ns	ns		stream			
141	4230	1.0	1.2	0.2		stream			
142	4260	1.0	3.2	2.2					
143	4290	1.0	3.8	2.8					
144	4320	1.0	3.0	2.0					
145	4350	1.0	1.6	0.6					
146	4380	1.0	2.0	1.0					
147	4410	1.0	6.2	5.2					
148	4440	1.0	3.2	2.2					
149	4470	1.0	1.2	0.2					
150	4500	1.0	3.1	2.1		3.3			
151	4530	1.0	1.2	0.2					
152	4560	1.0	3.2	2.2					
153	4590	1.0	1.4	0.4					
154	4620	1.0	9.8	32.0	0.0	lab			
155	4650	1.0	1.8	0.8					
156	4680	1.0	1.0	0.0		30' short pol 0490			

DOE Finger Lakes Project						
Traverse 1H, County Road 137						
20000809						
Bieber, Budny, Nelson, J. Fountain, M. Fountain						
Start pol 0490, heading south; soil moist; 70 stop: soggy soil!						
H2=1600, 13; batt=8.2; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample						
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**
0	0	1.0	1.8	0.8		2.0
1	30	1.0	2.3	1.3		
2	60	1.0	2.4	1.4		
3	90	1.0	2.9	1.9		
4	120	1.0	3.0	2.0		
5	150	1.0	1.0	0.0		
6	180	1.0	1.8	0.8		
7	210	1.0	2.1	1.1		
8	240	1.0	bo	0.0		
9	270	1.0	bo	0.0		
10	300	1.0	1.1	0.1		bo
11	330	1.0	bo	0.0		
12a	360	1.0	1.8	0.8		2 # 12
12b	390	1.0	5.1	4.1		2 # 12
13	420	1.0	1.1	0.1		
14	450	1.0	1.2	0.2		
15	480	1.0	9.2	78.0	0.0	lab
16	510	1.0	bo	0.0		
17	540	1.0	7.8	8.0	0.0	lab
18	570	1.0	bo	0.0		
19	600	1.0	1.2	0.2		
20	630	1.0	1.3	0.3		1.2
21	660	1.0	1.2	0.2		
22	690	1.0	1.8	0.8		
23	720	1.0	10+	27.0	0.0	lab
24	750	1.0	1.8	0.8		
25	780	1.0	1.6	0.6		
26	810	1.0	3.2	2.2		
27	840	1.0	4.1	3.1		
28	870	1.0	2.8	1.8		
29	900	1.0	2.0	1.0		
30	930	1.0	1.2	0.2		1.2
31	960	1.0	1.4	0.4		
32	990	1.0	1.2	0.2		
33	1020	1.0	2.0	1.0		
34	1050	1.0	1.4	0.4		
35	1080	1.0	1.2	0.2		
36	1110	1.0	1.2	0.2		
37	1140	1.0	1.6	0.6		
38	1170	1.0	10+	18.0	0.0	lab
39	1200	1.0	1.1	0.1		
40	1230	1.0	5.1	32.0	0.0	9.8; lab
41	1260	1.0	5.0	4.0	N cornr Parmenter, 137, Banther Hill	
42	1290	1.0	5.2	4.2		
43	1320	1.0	1.2	0.2		
44	1350	1.0	bo	0.0		
45	1380	1.0	1.0	0.0		
46	1410	1.0	bo	0.0		
47	1440	1.0	1.6	0.6		

48	1470	1.0	3.2	2.2					
49	1500	1.0	2.2	1.2					
50	1530	1.0	1.1	0.1		2.0			
51	1560	1.0	1.4	0.4					
52	1590	1.0	2.6	1.6					
53	1620	1.0	1.4	0.4					
54	1650	1.0	2.1	1.1					
55	1680	1.0	2.0	1.0		bo			
56	1710	1.0	5.2	4.2					
57	1740	1.0	5.0	4.0					
58	1770	1.0	2.0	1.0					
59	1800	1.0	1.8	0.8					
60	1830	1.0	1.8	0.8		ns, too wet			
61	1860	1.0	4.2	3.2					
62	1890	1.0	1.6	0.6					
63	1920	1.0	1.0	0.0					
64	1950	1.0	3.2	2.2					
65	1980	1.0	7.9	48.0	0.0	lab			
66	2010	1.0	1.1	0.1					
67	2040	1.0	5.2	4.2					
68	2070	1.0	1.2	0.2					
69	2100	1.0	10+	23.0	0.0	lab			
70	2130	1.0	2.0	1.0		1.2; pol 04104; too wet			

DOE Finger Lakes Project									
Traverse 1I, County Road 137									
20000809									
Bieber, Budny, Nelson, J. Fountain, M. Fountain									
Start S edge of Senanca Rd @ intersect of Cty Rd 137, heading NORTH									
H2=1600, 13; batt=8.2; flow=ok; leak test=ok; bo=blow out (assume 0); ns=no sample									
							feet south		
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	3.6	2.6			3330		
1	30	1.0	8.2	53.0	0.0	lab	3300		
2	60	1.0	3.1	2.1			3270		
3	90	1.0	4.7	3.7			3240		
4	120	1.0	bo	0.0			3210		
5	150	1.0	3.8	2.8			3180		
6	180	1.0	1.4	0.4			3150		
7	210	1.0	1.2	0.2			3120		
8	240	1.0	2.0	1.0			3090		
9	270	1.0	1.2	0.2			3060		
10	300	1.0	2.4	1.4		water!	3030		
11	330	1.0	2.0	1.0			3000		
12	360	1.0	1.8	0.8			2970		
13	390	1.0	1.4	0.4			2940		
14	420	1.0	2.0	1.0			2910		
15	450	1.0	2.0	1.0			2880		
16	480	1.0	bo	0.0			2850		
17	510	1.0	1.3	0.3			2820		
18	540	1.0	1.7	0.7			2790		
19	570	1.0	2.1	1.1			2760		
20	600	1.0	2.0	1.0		1.3	2730		
21	630	1.0	2.2	1.2			2700		
22	660	1.0	1.8	0.8			2670		
23	690	1.0	2.1	1.1			2640		
24	720	1.0	1.8	0.8			2610		
25	750	1.0	4.7	3.7			2580		
26	780	1.0	1.2	0.2			2550		
27	810	1.0	2.0	1.0			2520		
28	840	1.0	1.2	0.2			2490		
29	870	1.0	1.8	0.8			2460		
30	900	1.0	1.2	0.2		1.1	2430		
31	930	1.0	2.1	1.1			2400		
32	960	1.0	bo	0.0			2370		
33	990	1.0	1.3	0.3			2340		
34	1020	1.0	1.2	0.2			2310		
35	1050	1.0	1.5	0.5			2280		
36	1080	1.0	1.0	0.0			2250		
37	1110	1.0	1.2	0.2			2220		
38	1140	1.0	2.0	1.0		pol 158	2190		
39	1170	1.0	1.0	0.0			2160		
40	1200	1.0	1.0	0.0		1.2	2130		
41	1230	1.0	3.6	2.6			2100		
42	1260	1.0	1.8	0.8			2070		
43	1290	1.0	1.8	0.8			2040		
44	1320	1.0	1.2	0.2			2010		
45	1350	1.0	1.8	0.8			1980		
46	1380	1.0	1.9	0.9			1950		
47	1410	1.0	1.2	0.2			1920		
48	1440	1.0	1.6	0.6			1890		

49	1470	1.0	1.4	0.4			1860		
50	1500	1.0	1.6	0.6		1.0	1830		
51	1530	1.0	1.2	0.2			1800		
52	1560	1.0	1.4	0.4			1770		
53	1590	1.0	bo	0.0			1740		
54	1620	1.0	2.6	1.6		bo	1710		
55	1650	1.0	1.1	0.1			1680		
56	1680	1.0	2.4	1.4			1650		
57	1710	1.0	2.1	1.1			1620		
58	1740	1.0	2.4	1.4			1590		
59	1770	1.0	1.7	0.7			1560		
60	1800	1.0	2.1	1.1		2.0	1530		
61	1830	1.0	2.1	1.1			1500		
62	1860	1.0	3.1	2.1			1470		
63	1890	1.0	bo	0.0			1440		
64	1920	1.0	bo	0.0			1410		
65	1950	1.0	1.2	0.2		bo	1380		
66	1980	1.0	3.8	2.8			1350		
67	2010	1.0	3.2	2.2		N bank stream	1320		
68	2040	1.0	4.5	3.5			1290		
69	2070	1.0	1.4	0.4			1260		
70	2100	1.0	2.1	1.1		1.0	1230		
71	2130	1.0	1.0	0.0			1200		
72	2160	1.0	2.0	1.0			1170		
73	2190	1.0	4.0	3.0			1140		
74	2220	1.0	bo	0.0			1110		
75	2250	1.0	3.3	2.3			1080		
76	2280	1.0	2.0	1.0			1050		
77	2310	1.0	2.0	1.0			1020		
78	2340	1.0	9.8	101	0.0	bo; lab	990		
79	2370	1.0	3.0	2.0			960		
80	2400	1.0	1.0	0.0		1.2	930		
81	2430	1.0	10+	82.0	0.0	bo; lab	900		
82	2460	1.0	2.0	1.0			870		
83	2490	1.0	2.1	1.1			840		
84	2520	1.0	2.1	1.1			810		
85	2550	1.0	1.8	0.8			780		
86	2580	1.0	4.0	3.0			750		
87	2610	1.0	2.9	1.9			720		
88	2640	1.0	10+	27.0	0.0	lab	690		
89	2670	1.0	1.1	0.1			660		
90	2700	1.0	2.2	1.2		2.1	630		
91	2730	1.0	bo	0.0			600		
92	2760	1.0	1.2	0.2			570		
93	2790	1.0	bo	0.0			540		
94	2820	1.0	1.4	0.4			510		
95	2850	1.0	1.4	0.4			480		
96	2880	1.0	1.6	0.6			450		
97	2910	1.0	1.4	0.4			420		
98	2940	1.0	1.7	0.7			390		
99	2970	1.0	1.1	0.1			360		
100	3000	1.0	1.4	0.4		1.3	330		
101	3030	1.0	1.3	0.3			300		
102	3060	1.0	1.1	0.1			270		
103	3090	1.0	1.8	0.8			240		
104	3120	1.0	4.7	3.7			210		
105	3150	1.0	3.2	2.2			180		
106	3180	1.0	1.8	0.8			150		

107	3210	1.0	2.4	1.4			120		
108	3240	1.0	2.6	1.6			90		
109	3270	1.0	3.1	2.1			60		
110	3300	1.0	2.1	1.1			30		
111	3330	1.0	1.1	0.1		54' S pol 883	0		

Sample #	Distance (ft)	Bkgd	Peak	Net	Ethane	Comments/Duplicates	
111	3330	1.0	1.1	0.1		54' S pol 883	0
110	3300	1.0	2.1	1.1			30
109	3270	1.0	3.1	2.1			60
108	3240	1.0	2.6	1.6			90
107	3210	1.0	2.4	1.4			120
106	3180	1.0	1.8	0.8			150
105	3150	1.0	3.2	2.2			180
104	3120	1.0	4.7	3.7			210
103	3090	1.0	1.8	0.8			240
102	3060	1.0	1.1	0.1			270
101	3030	1.0	1.3	0.3			300
100	3000	1.0	1.4	0.4		1.3	330
99	2970	1.0	1.1	0.1			360
98	2940	1.0	1.7	0.7			390
97	2910	1.0	1.4	0.4			420
96	2880	1.0	1.6	0.6			450
95	2850	1.0	1.4	0.4			480
94	2820	1.0	1.4	0.4			510
93	2790	1.0	bo	0.0			540
92	2760	1.0	1.2	0.2			570
91	2730	1.0	bo	0.0			600
90	2700	1.0	2.2	1.2		2.1	630
89	2670	1.0	1.1	0.1			660
88	2640	1.0	10+	27.0	0.0	lab	690
87	2610	1.0	2.9	1.9			720
86	2580	1.0	4.0	3.0			750
85	2550	1.0	1.8	0.8			780
84	2520	1.0	2.1	1.1			810
83	2490	1.0	2.1	1.1			840
82	2460	1.0	2.0	1.0			870
81	2430	1.0	10+	82.0	0.0	bo; lab	900
80	2400	1.0	1.0	0.0		1.2	930
79	2370	1.0	3.0	2.0			960
78	2340	1.0	9.8	101	0.0	bo; lab	990
77	2310	1.0	2.0	1.0			1020
76	2280	1.0	2.0	1.0			1050
75	2250	1.0	3.3	2.3			1080
74	2220	1.0	bo	0.0			1110
73	2190	1.0	4.0	3.0			1140
72	2160	1.0	2.0	1.0			1170
71	2130	1.0	1.0	0.0			1200
70	2100	1.0	2.1	1.1		1.0	1230
69	2070	1.0	1.4	0.4			1260
68	2040	1.0	4.5	3.5			1290
67	2010	1.0	3.2	2.2		N bank stream	1320
66	1980	1.0	3.8	2.8			1350
65	1950	1.0	1.2	0.2		bo	1380
64	1920	1.0	bo	0.0			1410
63	1890	1.0	bo	0.0			1440

62	1860	1.0	3.1	2.1			1470		
61	1830	1.0	2.1	1.1			1500		
60	1800	1.0	2.1	1.1		2.0	1530		
59	1770	1.0	1.7	0.7			1560		
58	1740	1.0	2.4	1.4			1590		
57	1710	1.0	2.1	1.1			1620		
56	1680	1.0	2.4	1.4			1650		
55	1650	1.0	1.1	0.1			1680		
54	1620	1.0	2.6	1.6		bo	1710		
53	1590	1.0	bo	0.0			1740		
52	1560	1.0	1.4	0.4			1770		
51	1530	1.0	1.2	0.2			1800		
50	1500	1.0	1.6	0.6		1.0	1830		
49	1470	1.0	1.4	0.4			1860		
48	1440	1.0	1.6	0.6			1890		
47	1410	1.0	1.2	0.2			1920		
46	1380	1.0	1.9	0.9			1950		
45	1350	1.0	1.8	0.8			1980		
44	1320	1.0	1.2	0.2			2010		
43	1290	1.0	1.8	0.8			2040		
42	1260	1.0	1.8	0.8			2070		
41	1230	1.0	3.6	2.6			2100		
40	1200	1.0	1.0	0.0		1.2	2130		
39	1170	1.0	1.0	0.0			2160		
38	1140	1.0	2.0	1.0		pol 158	2190		
37	1110	1.0	1.2	0.2			2220		
36	1080	1.0	1.0	0.0			2250		
35	1050	1.0	1.5	0.5			2280		
34	1020	1.0	1.2	0.2			2310		
33	990	1.0	1.3	0.3			2340		
32	960	1.0	bo	0.0			2370		
31	930	1.0	2.1	1.1			2400		
30	900	1.0	1.2	0.2		1.1	2430		
29	870	1.0	1.8	0.8			2460		
28	840	1.0	1.2	0.2			2490		
27	810	1.0	2.0	1.0			2520		
26	780	1.0	1.2	0.2			2550		
25	750	1.0	4.7	3.7			2580		
24	720	1.0	1.8	0.8			2610		
23	690	1.0	2.1	1.1			2640		
22	660	1.0	1.8	0.8			2670		
21	630	1.0	2.2	1.2			2700		
20	600	1.0	2.0	1.0		1.3	2730		
19	570	1.0	2.1	1.1			2760		
18	540	1.0	1.7	0.7			2790		
17	510	1.0	1.3	0.3			2820		
16	480	1.0	bo	0.0			2850		
15	450	1.0	2.0	1.0			2880		
14	420	1.0	2.0	1.0			2910		
13	390	1.0	1.4	0.4			2940		
12	360	1.0	1.8	0.8			2970		
11	330	1.0	2.0	1.0			3000		
10	300	1.0	2.4	1.4		water!	3030		
9	270	1.0	1.2	0.2			3060		
8	240	1.0	2.0	1.0			3090		
7	210	1.0	1.2	0.2			3120		
6	180	1.0	1.4	0.4			3150		
5	150	1.0	3.8	2.8			3180		

4	120	1.0	bo	0.0			3210		
3	90	1.0	4.7	3.7			3240		
2	60	1.0	3.1	2.1			3270		
1	30	1.0	8.2	53.0	0.0	lab	3300		
0	0	1.0	3.6	2.6			3330		

DOE Finger Lakes Project									
Traverse 1J, Cty Rd 137									
20001013									
Budny, Harper, Nelson (correction was Budny & Nelson 20001023)									
Start 30' from pol 04104 on Cty Rd 137, heading south									
H2=1900, 12; batt=8.0; flow=ok; leak test=ok; bo=blow out (assume 0, unless otherwise); ns=no sample									
Sample #	**Distance (ft)**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	0	1.0	10+	41.0	3.0	9.1, lab			
1	30	1.0	5.0	33.0	4.0	lab			
2	60	1.0	6.9	13.0	0.0	lab			
3	90	1.0	10.0	35.0	0.0	lab			
4	120	1.0	10.0	12.0	0.0	lab			
5	150	1.0	3.0	2.0					
6	180	1.0	6.0	8.0	0.0	lab			
7	210	1.0	4.1	9.0	0.0	lab			
8	240	1.0	7.5	12.0	0.0	lab			
9	270	1.0	7.1	14.0	0.0	lab			
10	300	1.0	2.1	1.1		2.9			
11	330	1.0	2.9	1.9					
12	360	1.0	error	9.0	0.0	corrected: 20001023, lab			
13	390	1.0	5.8	7.0	0.0	corrected: 20001023, lab			
14a	420	1.0	4.4	3.4		corrected: 20001023			
14b	450	1.0	3.0	2.0		corrected: 20001023			
15	480	1.0	3.6	2.6		corrected: 20001023			
16	510	1.0	3.4	2.4		corrected: 20001023			
17	540	1.0	3.2	2.2		corrected: 20001023			
18	570	1.0	2.0	1.0		corrected: 20001023			
19	600	1.0	1.6	0.6		corrected: 20001023			
20	630	1.0	3.6	2.6		corrected: 20001023			
21	660	1.0	1.6	0.6		corrected: 20001023			
22	690	1.0	10+	20.0	0.0	corrected: 20001023, lab			
23	720	1.0	3.4	2.4		corrected: 20001023			
24a	750	1.0	3.4	2.4		corrected: 20001023			
24b	780	1.0	2.0	1.0		corrected: 20001023			
25	810	1.0	2.0	1.0					
26	840	1.0	1.9	0.9					
27	870	1.0	7.2	12.0	0.0	lab			
28	900	1.0	1.0	0.0					
29	930	1.0	?	?		missing			
30	960	1.0	2.0	1.0		3.4, corrected: 20001023			
31	990	1.0	6.9	16.0	0.0	lab			
32	1020	1.0	10+	234.0	24.0	lab			
33	1050	1.0	2.9	1.9					
34	1080	1.0	4.0	20.0	0.0	lab			
35	1110	1.0	3.2	2.2					
36	1140	1.0	3.4	2.4					
37	1170	1.0	2.6	1.6					
38	1200	1.0	2.2	1.2					
39	1230	1.0	6.8	10.0	0.0	lab			
40	1260	1.0	7.5	8.0	0.0	lab			
41	1290	1.0	bo	3.0	0.0	lab			
42	1320	na	na	4.0	0.0	lab			
43	1350	na	na	9.0	0.0	lab			
44	1380	na	na	0.0	0.0	lab			
45	1410	na	na	5.0	0.0	lab			
46	1440	na	na	12.0	0.0	lab			

47	1470	na	na	7.0	0.0	lab			
48	1500	na	na	?	?	lab, missing			
49	1530	na	na	7.0	0.0	lab			
50	1560	1.0	bo	15.0	0.0	7.1, lab			
51	1590	1.0	1.7	0.7					
52	1620	na	na	15.0	0.0	lab			
53	1650	na	na	13.0	0.0	lab			
54	1680	na	na	3.0	0.0	lab			
55	1710	na	na	6.0	0.0	lab			
56	1740	na	na	6.0	0.0	lab			
57	1770	na	na	8.0	0.0	lab			
58	1800	na	na	9.0	0.0	lab			
59	1830	na	na	3.0	0.0	lab			
60	1860	na	na	2.0	0.0	lab			
61	1890	na	na	2.0	0.0	lab			
62	1920	na	na	4.0	0.0	lab			
63	1950	na	na	4.0	0.0	lab			
64	1980	na	na	2.0	0.0	lab			
65	2010	na	na	0.0	0.0	lab			
66	2040	na	na	0.0	0.0	lab			
67	2070	na	na	7.0	0.0	lab			
68	2100	na	na	9.0	0.0	lab			
69	2130	na	na	0.0	0.0	lab			
70	2160	na	na	0.0	0.0	lab			
71	2190	na	na	8.0	0.0	lab			
72	2220	na	na	0.0	0.0	lab			
73	2250	na	na	2.0	0.0	lab			
74	2280	na	na	4.0	0.0	lab			
75	2310	na	na	3.0	0.0	lab			
76	2340	na	na	3.0	0.0	lab			
77	2370	na	na	11.0	0.0	lab			
78	2400	na	na	7.0	0.0	lab			
79	2430	na	na	6.0	0.0	lab			
80	2460	na	na	6.0	0.0	lab			
81	2490	na	na	3.0	0.0	lab			
82	2520	na	na	5	0.0	lab, 10' N pol 04122			
83	2550	na	na	0	0.0	lab			
84	2580	na	na	7.0	0.0	lab			
85	2610	na	na	8.0	0.0	lab			
86	2640	na	na	6.0	0.0	lab			
87	2670	na	na	5.0	0.0	lab			
88	2700	na	na	4.0	0.0	lab			
89	2730	na	na	9.0	0.0	lab			
90	2760	na	na	0	0.0	lab			
91	2790	na	na	5.0	0.0	lab			
92	2820	na	na	4.0	0.0	lab			
93	2850	na	na	6.0	0.0	lab			
94	2880	na	na	2.0	0.0	lab			
95	2910	na	na	5.0	0.0	lab			
96	2940	na	na	5.0	0.0	lab			
97	2970	na	na	15.0	0.0	lab			
98	3000	na	na	23.0	0.0	lab			
99	3030	na	na	3.0	0.0	lab			
100	3060	na	na	8.0	0.0	lab			
101	3090	na	na	5.0	0.0	lab			
102	3120	na	na	7.0	0.0	lab			
103	3150	na	na	7.0	0.0	lab			
104	3180	na	na	7.0	0.0	lab			

105	3210	na	na	3.0	0.0	lab			
106	3240	na	na	2.0	0.0	lab			
107	3270	na	na	4.0	0.0	lab			
108	3300	na	na	0.0	0.0	lab			
109	3330	na	na	2.0	0.0	lab, stop 13' N pol 04126-1			

DOE Finger Lakes Project									
Traverse 1K, Cty Rd 137 & Lodi-Center Rd									
20001023									
Budny & Nelson									
Start 43' S pol 04126-1, heading south									
H2=1900, 12; batt=8.0; flow=ok; leak test=ok; bo=blow out (assume 0, unless otherwise); ns=no sample									
Sample #	**distance**	**Bkgd**	**Peak**	**Net**	**Ethane**	**Comments/Duplicates**			
0	30	1.0	7.2	6.2	0.0	4.2, lab			
1	60	1.0	10+	10.0	1.0	lab			
2	90	1.0	6.4	8.0	0.0	lab			
3	120	1.0	4.8	3.8	0.0	lab			
4	150	1.0	5.2	4.2					
5	180	1.0	6.5	7.0	0.0	lab			
6	210	1.0	3.2	2.2					
7	240	1.0	3.3	2.3					
8	270	1.0	8.5	10.0	0.0	lab			
9	300	1.0	10+	16.0	8.0	lab			
10	330	1.0	5.0	4.0	0.0	4.8, lab			
11	360	1.0	5.8	9.0	0.0	lab			
12	390	1.0	6.0	11.0	0.0	lab			
13	420	1.0	7.9	6.9	0.0	lab			
14	450	1.0	9.8	8.8	0.0	lab			
15	480	1.0	5.8	4.8	0.0	lab			
16	510	1.0	5.0	5.0	0.0	lab			
17	540	1.0	3.6	2.6					
18	570	1.0	10+	18.0	0.0	lab			
19	600	1.0	7.2	9.0	0.0	lab			
20	630	1.0	4.8	3.8		4.4			
21	660	1.0	3.6	2.6					
22	690	1.0	6.9	5.9	0.0	lab			
23	720	1.0	4.0	3.0					
24	750	1.0	1.6	0.6					
25	780	1.0	5.0	4.0	0.0	lab			
26	810	1.0	2.2	1.2					
27	840	1.0	3.0	2.0					
28	870	1.0	2.0	1.0	Cty Rd 137 elbows, so now on Lodi-Center				
29	900	1.0	3.8	2.8					
30	930	1.0	3.2	2.2		3.2			
31	960	1.0	3.7	2.7					
32	990	1.0	bo	7.0	0.0	lab			
33	1020	1.0	1.4	0.4					
34	1050	1.0	2.4	1.4					
35	1080	1.0	1.6	0.6					
36	1110	1.0	4.0	3.0					
37	1140	1.0	3.0	2.0					
38	1170	1.0	3.5	2.5					
39	1200	1.0	4.0	3.0					
40	1230	1.0	bo	7.0	0.0	bo, lab			
41	1260	1.0	error	8.0	0.0	technician's error, lab			
42	1290	1.0	1.8	0.8					
43	1320	1.0	4.0	3.0					
44	1350	1.0	3.6	2.6					
45	1380	1.0	3.1	2.1					
46	1410	1.0	6.6	6.0	0.0	lab			
47	1440	1.0	4.8	3.8					
48	1470	1.0	4.6	3.6					

49	1500	1.0	6.0	11.0	0.0	lab			
50	1530	1.0	10+	12.0	0.0	4.2, lab			
51	1560	1.0	1.4	0.4					
52	1590	1.0	4.9	3.9					
53	1620	1.0	1.6	0.6					
54	1650	1.0	4.9	3.9					
55	1680	1.0	6.0	5.0	0.0	lab			
56	1710	1.0	6.2	6.0	0.0	lab			
57	1740	1.0	4.0	3.0					
58	1770	1.0	2.2	1.2					
59	1800	1.0	1.4	0.4					
60	1830	1.0	3.6	2.6		4.4			
61	1860	1.0	4.8	3.8					
62	1890	1.0	3.9	2.9					
63	1920	1.0	1.1	0.1					
64	1950	1.0	bo	0.0	0.0	lab			
65	1980	1.0	1.2	0.2					
66	2010	1.0	10+	10.0	0.0	lab			
67	2040	1.0	10+	45.0	3.0	lab			
68	2070	1.0	5.2	14.0	0.0	lab			
69	2100	1.0	4.2	3.2					
70	2130	1.0	10+	82.0	17.0	10+, lab			
71	2160	1.0	3.6	2.6					
72	2190	1.0	4.2	3.2					
73	2220	1.0	4.0	3.0					
74	2250	1.0	10+	96.0	19.0	lab			
75	2280	1.0	7.4	6.4	0.0	lab			
76	2310	1.0	9.6	8.6	0.0	lab			
77	2340	1.0	1.4	0.4					
78	2370	1.0	5.0	4.0	0.0	lab			
79	2400	1.0	3.2	2.2					
80	2430	1.0	3.6	2.6		3.4			
81	2460	1.0	3.0	2.0					
82	2490	1.0	3.6	2.6					
83	2520	1.0	2.0	1.0		68' s of pole 883			

DOE Summer 2000 Finger Lakes Project Soil Gas Data									
NOTE: NET IS BASED ON LAB PEAKS WHEN FIELD IS OFF SCALE, THUS IT MAY NOT									
EQUAL PK-BKG -note 2: when first sample (sample 0) of a traverse is the same as the last									
sample of previoius traverse, it is omitted									
Traverse	sample #	ft on tra	peak	bkg	net	total ft	ethane net	Path	comments
1a	0	0	4.7	1	3.7	0	0	1	
1a	1	30	1	1	0	30	0	1	
1a	2	60		1	0	60	0	1	blow out
1a	3	90	1.2	1	0.2	90	0	1	
1a	4	120		1	0	120	0	1	blow out
1a	5	150	9.8	1	8.8	150	0	1	
1a	6	180	2.3	1	1.3	180	0	1	
1a	7	210	1	1	0	210	0	1	
1a	8	240	2	1	1	240	0	1	
1a	9	270	1	1	0	270	0	1	
1a	10	300	1	1	0	300	0	1	
1a	11	330	1.4	1	0.4	330	0	1	
1a	12	360	1.8	1	0.8	360	0	1	
1a	13	390	1	1	0	390	0	1	
1a	14	420	1.1	1	0.1	420	0	1	
1a	15	450	1.4	1	0.4	450	0	1	
1a	16	480	1.2	1	0.2	480	0	1	
1a	17	510	7.8	1	81	510	0	1	
1a	18	540	2	1	1	540	0	1	
1a	19	570	3	1	2	570	0	1	
1a	20	600	1.8	1	0.8	600	0	1	
1a	21	630	1.8	1	0.8	630	0	1	
1a	22	660	3	1	2	660	0	1	
1a	23	690	1.8	1	0.8	690	0	1	
1a	24	720	2	1	1	720	0	1	
1a	25	750	1.8	1	0.8	750	0	1	
1a	26	780	2.7	1	1.7	780	0	1	
1a	27	810	1	1	0	810	0	1	
1a	28	840	4	1	3	840	0	1	
1a	29	870	2	1	1	870	0	1	
1a	30	900	2	1	1	900	0	1	
1a	31	930	6	1	75	930	0	1	
1a	32	960	2	1	1	960	0	1	
1a	33	990	2.1	1	1.1	990	0	1	
1a	34	1020	1.4	1	0.4	1020	0	1	
1a	35	1050	2.4	1	1.4	1050	0	1	
1a	36	1080	3	1	2	1080	0	1	
1a	37	1110	7.8	1	6.8	1110	0	1	
1a	38	1140	1	1	0	1140	0	1	
1a	39	1170	1.2	1	0.2	1170	0	1	
1a	40	1200	10+	1	75	1200	0	1	off scale
1a	41	1230	1.2	1	0.2	1230	0	1	
1a	42	1260	1	1	0	1260	0	1	
1a	43	1290	1	1	0	1290	0	1	
1a	44	1320	1.4	1	0.4	1320	0	1	
1a	45	1350	2	1	1	1350	0	1	
1a	46	1380	1.2	1	0.2	1380	0	1	
1a	47	1410	1	1	0	1410	0	1	
1a	48	1440	4.8	1	3.8	1440	0	1	
1a	49	1470	4.2	1	3.2	1470	0	1	
1a	50	1500	3.2	1	2.2	1500	0	1	
1a	51	1530	2.3	1	1.3	1530	0	1	
1a	52	1560	2	1	1	1560	0	1	

1a	53	1590	1.3	1	0.3	1590	0	1	
1a	54	1620	3.8	1	2.8	1620	0	1	
1a	55	1650	1.4	1	0.4	1650	0	1	
1a	56	1680	4.2	1	3.2	1680	0	1	
1a	57	1710	1.8	1	0.8	1710	0	1	
1a	58	1740	1.3	1	0.3	1740	0	1	
1a	59	1770	1.2	1	0.2	1770	0	1	
1a	60	1800	1	1	0	1800	0	1	
1a	61	1830	1.1	1	0.1	1830	0	1	
1a	62	1860	1	1	0	1860	0	1	
1a	63	1890	1	1	0	1890	0	1	
1a	64	1920	1.2	1	0.2	1920	0	1	
1a	65	1950	10+	1	70	1950	0	1	off scale
1a	66	1980	2	1	1	1980	0	1	
1a	67	2010	3	1	2	2010	0	1	
1a	68	2040	1.2	1	0.2	2040	0	1	
1a	69	2070	3.1	1	2.1	2070	0	1	
1a	70	2100	3.2	1	2.2	2100	0	1	
1a	71	2130	10+	1	21	2130	0	1	off scale
1a	72	2160	2	1	1	2160	0	1	
1a	73	2190	2.1	1	1.1	2190	0	1	
1a	74	2220	10+	1	102	2220	20	1	off scale
1a	75	2250	10+	1	72	2250	8	1	off scale
1a	76	2280	2.3	1	1.3	2280	0	1	
1a	77	2310	1.8	1	0.8	2310	0	1	
1a	78	2340	1.9	1	0.9	2340	0	1	
1a	79	2370	1.2	1	0.2	2370	0	1	
1a	80	2400	2.1	1	1.1	2400	0	1	
1a	81	2430	3.1	1	2.1	2430	0	1	
1a	82	2460	6.2	1	5.2	2460	0	1	
1a	83	2490	10+	1	10	2490	0	1	off scale
1a	84	2520	10+	1	155	2520	7	1	off scale
1a	85	2550	10+	1	130	2550	0	1	off scale
1a	86	2580	8.7	1	8	2580	0	1	
1a	87	2610	1.2	1	0.2	2610	0	1	
1a	88	2640	2.3	1	1.3	2640	0	1	
1a	89	2670	9.9	1	10	2670	0	1	
1a	90	2700	2	1	1	2700	0	1	
1a	91	2730	10+	1	18	2730	0	1	off scale
1a	92	2760	5.5	1	261	2760	4	1	
1a	93	2790	4.4	1	3.4	2790	0	1	
1a	94	2820	10+	1	72	2820	0	1	off scale
1a	95	2850	10+	1	10	2850	0	1	off scale
1a	96	2880	3.8	1	2.8	2880	0	1	
1a	97	2910	1.7	1	0.7	2910	0	1	
1a	98	2940	10+	1	10	2940	0	1	off scale
1a	99	2970	1.2	1	0.2	2970	0	1	
1a	100	3000	4	1	3	3000	0	1	
1a	101	3030	2.4	1	1.4	3030	0	1	
1a	102	3060	10+	1	47	3060	0	1	off scale
1a	103	3090	2.9	1	1.9	3090	0	1	
1a	104	3120	3.2	1	2.2	3120	0	1	
1a	105	3150	2.3	1	1.3	3150	0	1	
1a	106	3180	1.4	1	0.4	3180	0	1	
1a	107	3210	5.2	1	4.2	3210	0	1	
1a	108	3240	3	1	2	3240	0	1	
1a	109	3270	4	1	3	3270	0	1	
1a	110	3300	3.6	1	2.6	3300	0	1	

1a	111	3330	4.4	1	3.4	3330	0	1	
1a	112	3360	5	1	4	3360	0	1	
1a	113	3390	4.2	1	3.2	3390	0	1	
1a	114	3420	6.2	1	5.2	3420	0	1	
1a	115	3450	3.2	1	2.2	3450	0	1	
1a	116	3480	3	1	2	3480	0	1	
1a	117	3510	1.9	1	0.9	3510	0	1	
1a	118	3540	3.8	1	2.8	3540	0	1	
1a	119	3570	4.1	1	3.1	3570	0	1	
1a	120	3600	4.2	1	3.2	3600	0	1	
1a	121	3630	2.3	1	1.3	3630	0	1	
1a	122	3660				3660	0	1	no sample
1a	123	3690	4.2	1	3.2	3690	0	1	
1a	124	3720	4	1	3	3720	0	1	
1a	125	3750	2	1	1	3750	0	1	
1a	126	3780	1.2	1	0.2	3780	0	1	
1a	127	3810	3.4	1	2.4	3810	0	1	
1a	128	3840	3.2	1	2.2	3840	0	1	
1a	129	3870	3.3	1	2.3	3870	0	1	
1a	130	3900	1.8	1	0.8	3900	0	1	
1a	131	3930	2.8	1	1.8	3930	0	1	
1a	132	3960	10+	1	22	3960	0	1	off scale
1a	133	3990	6.4	1	5.4	3990	0	1	
1a	134	4020	8.7	1	7.7	4020	0	1	
1a	135	4050	1.8	1	0.8	4050	0	1	
1a	136	4080	10+	1	12	4080	0	1	off scale
1a	137	4110	2	1	1	4110	0	1	
1a	138	4140	8.5	1	7.5	4140	0	1	
1a	139	4170	2	1	1	4170	0	1	
1a	140	4200	3	1	2	4200	0	1	
1a	141	4230	2.4	1	1.4	4230	0	1	
1a	142	4260	2	1	1	4260	0	1	
1a	143	4290	10+	1	10	4290	0	1	off scale
1a	144	4320	2.2	1	1.2	4320	0	1	
1a	145	4350	6	1	5	4350	0	1	
1a	146	4380	6	1	5	4380	0	1	
1a	147	4410	2.2	1	1.2	4410	0	1	
1a	148	4440	5.5	1	4.5	4440	0	1	
1a	149	4470	4.2	1	3.2	4470	0	1	
1a	150	4500	1	1	0	4500	0	1	
1a	151	4530	1.2	1	0.2	4530	0	1	
1a	152	4560	10+	1	13	4560	0	1	off scale
1a	153	4590	2	1	1	4590	0	1	
1a	154	4620	10+	1	46	4620	2	1	off scale
1a	155	4650	5	1	4	4650	0	1	
1a	156	4680	2.9	1	1.9	4680	0	1	
1a	157	4710	2.5	1	1.5	4710	0	1	
1a	158	4740	3	1	2	4740	0	1	
1a	159	4770	2.4	1	1.4	4770	0	1	
1a	160	4800	10+	1	32	4800	0	1	off scale
1a	161	4830	4.9	1	3.9	4830	0	1	
1a	162	4860	4.2	1	3.2	4860	0	1	
1a	163	4890	0	1	17	4890	0	1	blow out
1a	164	4920	10+	1	10	4920	0	1	off scale
1a	165	4950	3	1	2	4950	0	1	
1a	166	4980	3.2	1	2.2	4980	0	1	
1a	167	5010	2.3	1	1.3	5010	0	1	
1a	168	5040	2.2	1	1.2	5040	0	1	

1a	169	5070	10+	1	12	5070	0	1	off scale
1a	170	5100	1.2	1	0.2	5100	0	1	
1a	171	5130	3	1	2	5130	0	1	
1a	172	5160	1	1	0	5160	0	1	
1a	173	5190	4.2	1	3.2	5190	0	1	
1a	174	5220	4.2	1	3.2	5220	0	1	
1a	175	5250	3.2	1	2.2	5250	0	1	
1a	176	5280	10+	1	11	5280	0	1	off scale
1b	1	30	3.2	1	2.2	5310	0	1	sample 0
1b	2	60	10+	1	18	5340	0	1	was at
1b	3	90	2.6	1	1.6	5370	0	1	same
1b	4	120	1.2	1	0.2	5400	0	1	point as
1b	5	150	1.3	1	0.3	5430	0	1	sample
1b	6	180	6.2	1	17	5460	0	1	186
1b	7	210	2.8	1	1.8	5490	0	1	
1b	8	240	1.2	1	0.2	5520	0	1	
1b	9	270	1.1	1	0.1	5550	0	1	
1b	10	300	1.2	1	0.2	5580	0	1	
1b	11	330	2.3	1	1.3	5610	0	1	
1b	12	360	1.6	1	0.6	5640	0	1	
1b	13	390	3.2	1	2.2	5670	0	1	
1b	14	420	1.8	1	0.8	5700	0	1	
1b	15	450	1.8	1	0.8	5730	0	1	
1b	16	480	1.9	1	0.9	5760	0	1	
1b	17	510	7.9	1	47	5790	0	1	
1b	18	540	1	1	0	5820	0	1	
1b	19	570	10+	1	56	5850	3	1	
1b	20	600	1	1	0	5880	0	1	
1b	21	630	10+	1	90	5910	8	1	
1b	22	660	1.8	1	0.8	5940	0	1	
1b	23	690	10+	1	170	5970	18	1	
1b	24	720	2	1	1	6000	0	1	
1b	25	750	2	1	1	6030	0	1	
1b	26	780	4.7	1	3.7	6060	0	1	
1b	27	810	2.7	1	1.7	6090	0	1	
1b	28	840	1.2	1	0.2	6120	0	1	
1b	29	870	4.2	1	3.2	6150	0	1	
1b	30	900	2.1	1	1.1	6180	0	1	
1b	31	930	2	1	1	6210	0	1	
1b	32	960	2.8	1	1.8	6240	0	1	
1b	33	990	3.4	1	2.4	6270	0	1	
1b	34	1020	1.8	1	0.8	6300	0	1	
1b	35	1050	10+	1	30	6330	0	1	
1b	36	1080	10+	1	150	6360	30	1	
1b	37	1110	2	1	1	6390	0	1	
1b	38	1140	2.2	1	1.2	6420	0	1	
1b	39	1170	3.9	1	2.9	6450	0	1	
1b	40	1200	10+	1	10	6480	0	1	
1b	41	1230	2.2	1	1.2	6510	0	1	
1b	42	1260	3.2	1	2.2	6540	0	1	
1b	43	1290	1	1	0	6570	0	1	
1b	44	1320	4.9	1	3.9	6600	0	1	
1b	45	1350	1.8	1	0.8	6630	0	1	
1b	46	1380	1.7	1	0.7	6660	0	1	
1b	47	1410	10+	1	20	6690	0	1	
1b	48	1440	1.2	1	0.2	6720	0	1	
1b	49	1470	2	1	1	6750	0	1	
1b	50	1500	10+	1	10	6780	0	1	

1b	51	1530	4.2	1	3.2	6810	0	1	
1b	52	1560	3.2	1	2.2	6840	0	1	
1b	53	1590	10+	1	110	6870	12	1	
1b	54	1620	8.2	1	17	6900	0	1	
1b	55	1650	10+	1	22	6930	0	1	
1b	56	1680	2.7	1	1.7	6960	0	1	
1b	57	1710	10+	1	67	6990	7	1	
1b	58	1740	10+	1	20	7020	0	1	
1b	59	1770	10+	1	72	7050	6	1	
1b	60	1800	10+	1	18	7080	0	1	
1b	61	1830	2	1	1	7110	0	1	
1b	62	1860	10+	1	34	7140	4	1	
1b	63	1890	10+	1	18	7170	0	1	
1b	64	1920	3.2	1	2.2	7200	0	1	
1b	65	1950	3	1	2	7230	0	1	
1b	66	1980	1.3	1	0.3	7260	0	1	
1b	67	2010	2	1	1	7290	0	1	
1b	68	2040	2.8	1	1.8	7320	0	1	
1b	69	2070	2.3	1	1.3	7350	0	1	
1b	70	2100	2.1	1	1.1	7380	0	1	
1b	71	2130	1.8	1	0.8	7410	0	1	
1b	72	2160	2	1	1	7440	0	1	
1b	73	2190	10+	1	9+	7470	0	1	
1b	74	2220	2.3	1	1.3	7500	0	1	
1b	75	2250	3.2	1	2.2	7530	0	1	
1b	76	2280	2.8	1	1.8	7560	0	1	
1b	77	2310	10+	1	17	7590	0	1	
1b	78	2340	10+	1	10	7620	0	1	
1b	79	2370	5.9	1	4.9	7650	0	1	
1b	80	2400	3.2	1	2.2	7680	0	1	
1b	81	2430	10+	1	43	7710	15	1	
1b	82	2460	3.1	1	2.1	7740	0	1	
1b	83	2490	4.5	1	3.5	7770	0	1	
1b	84	2520	bo	1	0	7800	0	1	
1b	85	2550	bo	1	0	7830	0	1	
1b	86	2580	5.8	1	4.8	7860	0	1	
1b	87	2610	1.8	1	0.8	7890	0	1	
1b	88	2640	2.2	1	1.2	7920	0	1	
1b	89	2670	10+	1	18	7950	0	1	
1b	90	2700	10+	1	63	7980	0	1	
1b	91	2730	4.2	1	3.2	8010	0	1	
1b	92	2760	3	1	2	8040	0	1	
1b	93	2790	2	1	1	8070	0	1	
1b	94	2820	10+	1	120	8100	22	1	
1b	95	2850	2	1	1	8130	0	1	
1b	96	2880	4	1	3	8160	0	1	
1b	97	2910	2	1	1	8190	0	1	
1b	98	2940	1.1	1	0.1	8220	0	1	
1b	99	2970	2	1	1	8250	0	1	
1b	100	3000	1.2	1	0.2	8280	0	1	
1b	101	3030	3.8	1	2.8	8310	0	1	
1b	102	3060	3.4	1	2.4	8340	0	1	
1b	103	3090	5.8	1	4.8	8370	0	1	
1b	104	3120	4.2	1	3.2	8400	0	1	
1b	105	3150	4	1	3	8430	0	1	
1b	106	3180	4	1	3	8460	0	1	
1b	107	3210	3.7	1	2.7	8490	0	1	
1b	108	3240	1.6	1	0.6	8520	0	1	

1b	109	3270	2.1	1	1.1	8550	0	1	
1b	110	3300	3.1	1	2.1	8580	0	1	
1b	111	3330	1.8	1	0.8	8610	0	1	
1b	112	3360	10+	1	160	8640	32	1	
1b	113	3390	3.2	1	2.2	8670	0	1	
1b	114	3420	ns	1	ns	8700	0	1	
1b	115	3450	ns	1	ns	8730	0	1	
1b	116	3480	5.9	1	4.9	8760	0	1	
1b	117	3510	4.8	1	3.8	8790	0	1	
1b	118	3540	10+	1	20	8820	0	1	
1b	119	3570	10+	1	76	8850	4	1	
1b	120	3600	1	1	0	8880	0	1	
1b	121	3630	2.3	1	1.3	8910	0	1	
1b	122	3660	10+	1	80	8940	8	1	
1b	123	3690	6.1	1	5.1	8970	0	1	
1b	124	3720	2.8	1	1.8	9000	0	1	
1b	125	3750	2.3	1	1.3	9030	0	1	
1b	126	3780	1.4	1	0.4	9060	0	1	
1b	127	3810	1.4	1	0.4	9090	0	1	
1b	128	3840	2	1	1	9120	0	1	
1b	129	3870	2.7	1	1.7	9150	0	1	
1b	130	3900	1	1	0	9180	0	1	
1b	131	3930	6.8	1	5.8	9210	0	1	
1b	132	3960	5	1	4	9240	0	1	
1b	133	3990	3.7	1	2.7	9270	0	1	
1b	134	4020	2.9	1	1.9	9300	0	1	
1b	135	4050	2	1	1	9330	0	1	
1b	136	4080	4.9	1	3.9	9360	0	1	
1b	137	4110	7	1	6	9390	0	1	
1b	138	4140	6.2	1	5.2	9420	0	1	
1b	139	4170	3.7	1	2.7	9450	0	1	
1b	140	4200	1.2	1	0.2	9480	0	1	
1b	141	4230	10+	1	12	9510	0	1	
1b	142	4260	1	1	0	9540	0	1	
1b	143	4290	10+	1	15	9570	0	1	
1b	144	4320	2.2	1	1.2	9600	0	1	
1b	145	4350	2	1	1	9630	0	1	
1b	146	4380	1.2	1	0.2	9660	0	1	
1b	147	4410	3.9	1	2.9	9690	0	1	
1b	148	4440	2.3	1	1.3	9720	0	1	
1b	149	4470	3.5	1	2.5	9750	0	1	
1b	150	4500	2	1	1	9780	0	1	
1b	151	4530	4.8	1	3.8	9810	0	1	
1b	152	4560	2	1	1	9840	0	1	
1b	153	4590	2.2	1	1.2	9870	0	1	
1b	154	4620	10+	1	10	9900	0	1	
1b	155	4650	3.4	1	2.4	9930	0	1	
1b	156	4680	2.2	1	1.2	9960	0	1	
1b	157	4710	3	1	2	9990	0	1	
1b	158	4740	3.6	1	2.6	10020	0	1	
1b	159	4770	2.4	1	1.4	10050	0	1	
1b	160	4800	4	1	3	10080	0	1	
1b	161	4830	3.7	1	2.7	10110	0	1	
1b	162	4860	2	1	1	10140	0	1	
1b	163	4890	3.2	1	2.2	10170	0	1	
1b	164	4920	10+	1	12	10200	0	1	
1b	165	4950	10+	1	10	10230	0	1	
1b	166	4980	2	1	1	10260	0	1	

1b	167	5010	10+	1	117	10290	5	1	
1b	168	5040	10+	1	52	10320	0	1	
1b	169	5070	5.5	1	4.5	10350	0	1	
1b	170	5100	2	1	1	10380	0	1	
1b	171	5130	10+	1	22	10410	0	1	
1b	172	5160	6.9	1	5.9	10440	0	1	
1b	173	5190	10+	1	30	10470	0	1	
1b	174	5220	10+	1	32	10500	0	1	
1c	0	0	5.2	1	4.2	10530	0	1	First
1c	1	30	4.4	1	3.4	10560	0	1	sample on
1c	2	60	3.2	1	2.2	10590	0	1	1c is 30 ft
1c	3	90	1.4	1	0.4	10620	0	1	beyond
1c	4	120	1.2	1	0.2	10650	0	1	end of 1b
1c	5	150	5	1	4	10680	0	1	
1c	6	180	2.1	1	1.1	10710	0	1	
1c	7	210	3.2	1	2.2	10740	0	1	
1c	8	240	3	1	2	10770	0	1	
1c	9	270	1.8	1	0.8	10800	0	1	
1c	10	300	1.2	1	0.2	10830	0	1	
1c	11	330	3.2	1	2.2	10860	0	1	
1c	12	360	1	1	0	10890	0	1	
1c	13	390	2	1	1	10920	0	1	
1c	14	420	2.2	1	1.2	10950	0	1	
1c	15	450	1	1	0	10980	0	1	
1c	16	480	2.1	1	1.1	11010	0	1	
1c	17	510	2	1	1	11040	0	1	
1c	18	540	2	1	1	11070	0	1	
1c	19	570	2.4	1	1.4	11100	0	1	
1c	20	600	7.2	1	6.2	11130	0	1	
1c	21	630	2.3	1	1.3	11160	0	1	
1c	22	660	8.9	1	8	11190	0	1	
1c	23	690	5.5	1	4.5	11220	0	1	
1c	24	720	4	1	3	11250	0	1	
1c	25	750	2.1	1	1.1	11280	0	1	
1c	26	780	3.1	1	2.1	11310	0	1	
1c	27	810	2.8	1	1.8	11340	0	1	
1c	28	840	1.8	1	0.8	11370	0	1	
1c	29	870	1.2	1	0.2	11400	0	1	
1c	30	900	2.1	1	1.1	11430	0	1	
1c	31	930	2.2	1	1.2	11460	0	1	
1c	32	960	1.8	1	0.8	11490	0	1	
1c	33	990	2	1	1	11520	0	1	
1c	34	1020	2.2	1	1.2	11550	0	1	
1c	35	1050	6.2	1	5.2	11580	0	1	
1c	36	1080	10+	1	9+	11610	0	1	
1c	37	1110	4.7	1	3.7	11640	0	1	
1c	38	1140	4.4	1	3.4	11670	0	1	
1c	39	1170	4	1	3	11700	0	1	
1c	40	1200	1.7	1	0.7	11730	0	1	
1c	41	1230	3.2	1	2.2	11760	0	1	
1c	42	1260	10+	1	123	11790	0	1	
1c	43	1290	2.8	1	1.8	11820	0	1	
1c	44	1320	3.7	1	2.7	11850	0	1	
1c	45	1350	10+	1	14	11880	0	1	
1c	46	1380	10+	1	39	11910	8	1	
1c	47	1410	3.9	1	2.9	11940	0	1	
1c	48	1440	3.7	1	2.7	11970	0	1	
1c	49	1470	2.5	1	1.5	12000	0	1	

1c	50	1500	2.1	1	1.1	12030	0	1	
1c	51	1530	3	1	2	12060	0	1	
1c	52	1560	4.2	1	3.2	12090	0	1	
1c	53	1590	5.9	1	4.9	12120	0	1	
1c	54	1620	1.6	1	0.6	12150	0	1	
1c	55	1650	2	1	1	12180	0	1	
1c	56	1680	1.2	1	0.2	12210	0	1	
1c	57	1710	1.1	1	0.1	12240	0	1	
1c	58	1740	2	1	1	12270	0	1	
1c	59	1770	2.6	1	1.6	12300	0	1	
1c	60	1800	1.2	1	0.2	12330	0	1	
1c	61	1830	0.9	1	-0.1	12360	0	1	
1c	62	1860	8.9	1	12	12390	0	1	
1c	63	1890	2.6	1	1.6	12420	0	1	
1c	64	1920	1	1	0	12450	0	1	
1c	65	1950	1.2	1	0.2	12480	0	1	
1c	66	1980	5.5	1	4.5	12510	0	1	
1c	67	2010	0.8	1	-0.2	12540	0	1	
1c	68	2040	1	1	0	12570	0	1	
1c	69	2070	10+	1	10	12600	0	1	
1c	70	2100	1.1	1	0.1	12630	0	1	
1c	71	2130	1	1	0	12660	0	1	
1c	72	2160	2.4	1	1.4	12690	0	1	
1c	73	2190	2	1	1	12720	0	1	
1c	74	2220	2.2	1	1.2	12750	0	1	
1c	75	2250	2.6	1	1.6	12780	0	1	
1c	76	2280	2	1	1	12810	0	1	
1c	77	2310	3.2	1	2.2	12840	0	1	
1c	78	2340	2.2	1	1.2	12870	0	1	
1c	79	2370	0.9	1	0	12900	0	1	
1f	1	30	1.8	1	0.8	12930	0	1	first
1f	2	60	bo	1	0	12960	0	1	sample is
1f	3	90	8.2	1	23	12990	0	1	same as
1f	4	120	3	1	2	13020	0	1	last
1f	5	150	9.8	1	32	13050	0	1	sample on
1f	6	180	10+	1	23	13080	0	1	1d
1f	7	210	10+	1	37	13110	0	1	
1f	8	240	3.4	1	2.4	13140	0	1	
1f	9	270	3	1	2	13170	0	1	
1f	10	300	1	1	0	13200	0	1	
1f	11	330	10+	1	42	13230	0	1	
1f	12	360	9.8	1	18	13260	0	1	
1f	13	390	10+	1	28	13290	0	1	
1f	14	420	10+	1	32	13320	0	1	
1f	15	450	10+	1	65	13350	0	1	
1f	16	480	bo	1	0	13380	0	1	
1f	17	510	bo	1	0	13410	0	1	
1f	18	540	10+	1	17	13440	0	1	
1f	19	570	1	1	0	13470	0	1	
1f	20	600	1.2	1	0.2	13500	0	1	
1f	21	630	2.6	1	1.6	13530	0	1	
1f	22	660	1.2	1	0.2	13560	0	1	
1f	23	690	3.1	1	2.1	13590	0	1	
1f	24	720	6	1	5	13620	0	1	
1f	25	750	3.2	1	2.2	13650	0	1	
1f	26	780	ns		ns	13680	0	1	no sample
1f	27	810	ns		ns	13710	0	1	no sample
1f	28	840	ns		ns	13740	0	1	no sample

1f	29	870	ns		ns	13770	0	1	no sample
1f	30	900	4.6	1	3.6	13800	0	1	
1f	31	930	ns		ns	13830	0	1	no sample
1f	32	960	5.2	1	4.2	13860	0	1	
1f	33	990	ns		ns	13890	0	1	no sample
1f	34	1020	10+	1	10	13920	0	1	
1f	35	1050	ns		ns	13950	0	1	no sample
1f	36	1080	5.4	1	4.4	13980	0	1	
1f	37	1110	6.4	1	5.4	14010	0	1	
1f	38	1140	1	1	0	14040	0	1	
1f	39	1170	7.2	1	6.2	14070	0	1	
1f	40	1200	2.3	1	1.3	14100	0	1	
1f	41	1230	6.4	1	5.4	14130	0	1	
1f	42	1260	4	1	3	14160	0	1	
1f	43	1290	6.2	1	5.2	14190	0	1	
1f	44	1320	1.6	1	0.6	14220	0	1	
1f	45	1350	8.2	1	31	14250	0	1	
1f	46	1380	8.2	1	82	14280	0	1	
1f	47	1410	5	1	4	14310	0	1	
1f	48	1440	4	1	3	14340	0	1	
1f	49	1470	3.1	1	2.1	14370	0	1	
1f	50	1500	3.2	1	2.2	14400	0	1	
1f	51	1530	5	1	4	14430	0	1	
1f	52	1560	2.3	1	1.3	14460	0	1	
1f	53	1590	bo	1	0	14490	0	1	
1f	54	1620	5.8	1	21	14520	0	1	
1f	55	1650	bo	1	0	14550	0	1	
1f	56	1680	4.6	1	3.6	14580	0	1	
1f	57	1710	9.8	1	8.8	14610	0	1	
1f	58	1740	bo	1	0	14640	0	1	
1f	59	1770	bo	1	0	14670	0	1	
1f	60	1800	10+	1	17	14700	0	1	
1f	61	1830	bo	1	0	14730	0	1	intersection
1d	0	0	1.6	1	0.6	14760	0	1	with 137
1d	1	30	5.8	1	4.8	14790	0	1	starts on
1d	2	60	10+	1	27	14820	0	1	other side
1d	3	90	5	1	4	14850	0	1	of
1d	4	120	10+	1	28	14880	0	1	intersection
1d	5	150	7.2	1	6.2	14910	0	1	from 1f
1d	6	180	1	1	0	14940	0	1	
1d	7	210	4.2	1	3.2	14970	0	1	
1d	8	240	8	1	7	15000	0	1	
1d	9	270	9.8	1	8.8	15030	0	1	
1d	10	300	4.8	1	3.8	15060	0	1	
1d	11	330	8.8	1	17	15090	0	1	
1d	12	360	10+	1	10	15120	0	1	
1d	13	390	3.2	1	2.2	15150	0	1	
1d	14	420	10+	1	14	15180	0	1	
1d	15	450	2.2	1	1.2	15210	0	1	
1d	16	480	10+	1	10	15240	0	1	
1d	17	510	2.8	1	1.8	15270	0	1	
1d	18	540	1.8	1	0.8	15300	0	1	
1d	19	570	3.6	1	2.6	15330	0	1	
1d	20	600	2	1	1	15360	0	1	
1d	21	630	3	1	2	15390	0	1	
1d	22	660	1.6	1	0.6	15420	0	1	
1d	23	690	2	1	1	15450	0	1	
1d	24	720	1.2	1	0.2	15480	0	1	

1d	25	750	3.6	1	2.6	15510	0	1	
1d	26	780	1.2	1	0.2	15540	0	1	
1d	27	810	2	1	1	15570	0	1	
1d	28	840	2.2	1	1.2	15600	0	1	
1d	29	870	3.6	1	2.6	15630	0	1	
1d	30	900	2.2	1	1.2	15660	0	1	
1d	31	930	1.6	1	0.6	15690	0	1	
1d	32	960	3.2	1	2.2	15720	0	1	
1d	33	990	8.4	1	19	15750	1	1	
1d	34	1020	1.8	1	0.8	15780	0	1	
1d	35	1050	1.6	1	0.6	15810	0	1	
1d	36	1080	2	1	1	15840	0	1	
1d	37	1110	1	1	0	15870	0	1	
1d	38	1140	1.6	1	0.6	15900	0	1	
1d	39	1170	1.4	1	0.4	15930	0	1	
1d	40	1200	1.6	1	0.6	15960	0	1	
1d	41	1230	1	1	0	15990	0	1	
1d	42	1260	2.2	1	1.2	16020	0	1	
1d	43	1290	1.2	1	0.2	16050	0	1	
1d	44	1320	1.1	1	0.1	16080	0	1	
1d	45	1350	2.2	1	1.2	16110	0	1	
1d	46	1380	2	1	1	16140	0	1	
1d	47	1410	3	1	2	16170	0	1	
1d	48	1440	8	1	22	16200	0	1	
1d	49	1470	9.2	1	17	16230	0	1	
1d	50	1500	10+	1	134	16260	3	1	
1d	51	1530	10+	1	148	16290	0	1	
1d	52	1560	10+	1	10	16320	0	1	
1d	53	1590	10+	1	10	16350	0	1	
1d	54	1620	7.2	1	9	16380	0	1	
1d	55	1650	10+	1	12	16410	0	1	
1d	56	1680	6.2	1	5.2	16440	0	1	
1d	57	1710	2.4	1	1.4	16470	0	1	
1d	58	1740	10	1	90	16500	7	1	
1d	59	1770	3	1	2	16530	0	1	
1d	60	1800	1.2	1	0.2	16560	0	1	
1d	61	1830	3.8	1	2.8	16590	0	1	
1d	62	1860	bo	1	0	16620	0	1	
1d	63	1890	2.2	1	1.2	16650	0	1	
1d	64	1920	1	1	0	16680	0	1	
1d	65	1950	1	1	0	16710	0	1	
1d	66	1980	4	1	3	16740	0	1	
1d	67	2010	3.2	1	2.2	16770	0	1	
1d	68	2040	1.8	1	0.8	16800	0	1	
1d	69	2070	3	1	2	16830	0	1	
1d	70	2100	1	1	0	16860	0	1	
1d	71	2130	1.4	1	0.4	16890	0	1	
1d	72	2160	4.4	1	3.4	16920	0	1	
1d	73	2190	1.2	1	0.2	16950	0	1	
1d	74	2220	1.4	1	0.4	16980	0	1	
1d	75	2250	1.4	1	0.4	17010	0	1	
1d	76	2280	1.8	1	0.8	17040	0	1	
1d	77	2310	1	1	0	17070	0	1	
1d	78	2340	0.8	1	0	17100	0	1	
1d	79a	2370	3.8	1	2.8	17130	0	1	
1d	79b	2400	2.8	1	1.8	17160	0	1	
1d	80	2430	0.8	1	0	17190	0	1	
1d	81	2460	3.8	1	2.8	17220	0	1	

1d	82	2490	1.4	1	0.4	17250	0	1	
1d	83	2520	1.8	1	0.8	17280	0	1	
1d	84	2550	1	1	0	17310	0	1	
1d	85	2580	1	1	0	17340	0	1	
1d	86	2610	1.2	1	0.2	17370	0	1	
1d	87	2640	1	1	0	17400	0	1	
1d	88	2670	1.2	1	0.2	17430	0	1	
1d	89	2700	1.4	1	0.4	17460	0	1	
1d	90	2730	1.2	1	0.2	17490	0	1	
1d	91	2760	2	1	1	17520	0	1	
1d	92	2790	1.6	1	0.6	17550	0	1	
1d	93	2820	1	1	0	17580	0	1	
1d	94	2850	1	1	0	17610	0	1	
1d	95	2880	1.8	1	0.8	17640	0	1	
1d	96	2910	1.8	1	0.8	17670	0	1	
1d	97	2940	2.4	1	1.4	17700	0	1	
1d	98	2970	1	1	0	17730	0	1	
1d	99	3000	2	1	1	17760	0	1	
1d	100	3030	ns	1		17790	0	1	
1d	101	3060	ns	1		17820	0	1	
1d	102	3090	10+	1	10	17850	0	1	
1d	103	3120	4.6	1	3.6	17880	0	1	
1d	104	3150	2.6	1	1.6	17910	0	1	
1d	105	3180	3	1	2	17940	0	1	
1d	106	3210	3	1	2	17970	0	1	
1d	107	3240	4	1	3	18000	0	1	
1d	108	3270	1.8	1	0.8	18030	0	1	
1d	109	3300	2	1	1	18060	0	1	
1d	110	3330	1.2	1	0.2	18090	0	1	
1d	111	3360	1.2	1	0.2	18120	0	1	
1d	112	3390	1	1	0	18150	0	1	
1d	113	3420	1.2	1	0.2	18180	0	1	
1d	114	3450	1.2	1	0.2	18210	0	1	
1d	115	3480	1	1	0	18240	0	1	
1d	116	3510	1	1	0	18270	0	1	
1d	117	3540	1.2	1	0.2	18300	0	1	
1d	118	3570	1.2	1	0.2	18330	0	1	
1d	119	3600	0.8	1		18360	0	1	
1d	120	3630	3.8	1	2.8	18390	0	1	
1e	1	30	1.8	1	0.8	18420	0	1	
1e	2	60	1	1	0	18450	0	1	
1e	3	90	2.2	1	1.2	18480	0	1	
1e	4	120	2.1	1	1.1	18510	0	1	
1e	5	150	2	1	1	18540	0	1	
1e	6	180	bo	1	0	18570	0	1	
1e	7	210	bo	1	0	18600	0	1	
1e	8	240	1	1	0	18630	0	1	
1e	9	270	1	1	0	18660	0	1	
1e	10	300	2.8	1	1.8	18690	0	1	
1e	11	330	5	1	4	18720	0	1	
1e	12a	360	10+	1	93	18750	25	1	
1e	12b	390	6.3	1	5.3	18780	0	1	
1e	13	420	2	1	1	18810	0	1	
1e	14	450	3.4	1	2.4	18840	0	1	
1e	15	480	10+	1	257	18870	68	1	
1e	16	510	10+	1	367	18900	97	1	
1e	17	540	2.3	1	1.3	18930	0	1	
1e	18	570	1.8	1	0.8	18960	0	1	

1e	19	600	5.5	1	4.5	18990	0	1	
1e	20	630	3.6	1	2.6	19020	0	1	
1e	21	660	4	1	3	19050	0	1	
1e	22	690	6.1	1	5.1	19080	0	1	
1e	23	720	4	1	3	19110	0	1	
1e	24	750	7.6	1	6.6	19140	0	1	
1e	25	780	10+	1	29	19170	2	1	
1e	26	810	6.3	1	5.3	19200	0	1	
1e	27	840	4.6	1	3.6	19230	0	1	
1e	28	870	6.5	1	5.5	19260	0	1	
1e	29	900	8.7	1	7.7	19290	0	1	
1e	30	930	4.6	1	3.6	19320	0	1	
1e	31	960	ns	1		19350	0	1	no sample
1e	32	990	ns	1		19380	0	1	no sample
1e	33	1020	1.1	1	0.1	19410	0	1	
1e	34	1050	5	1	4	19440	0	1	
1e	35	1080	7.2	1	6.2	19470	0	1	
1e	36	1110	6.6	1	5.6	19500	0	1	
1e	37	1140	10+	1	23	19530	0	1	
1e	38	1170	10+	1	50	19560	2	1	
1e	39	1200	10+	1	17	19590	0	1	
1e	40	1230	1.5	1	0.5	19620	0	1	
1e	41	1260	10+	1	10	19650	0	1	
1e	42	1290	5.5	1	4.5	19680	0	1	
1e	43	1320	8.5	1	17	19710	0	1	
1e	44	1350	8.4	1	7.4	19740	0	1	
1e	45	1380	5.3	1	4.3	19770	0	1	
1e	46	1410	3.2	1	2.2	19800	0	1	
1e	47	1440	7	1	6	19830	0	1	
1e	48	1470	4.6	1	3.6	19860	0	1	
1e	49	1500	1.8	1	0.8	19890	0	1	
1e	50	1530	1.7	1	0.7	19920	0	1	
1e	51	1560	4.2	1	3.2	19950	0	1	
1e	52	1590	3.8	1	2.8	19980	0	1	
1e	53	1620	6.7	1	5.7	20010	0	1	
1e	54	1650	10+	1	10	20040	0	1	
1e	55	1680	4.8	1	3.8	20070	0	1	
1e	56	1710	4.2	1	3.2	20100	0	1	
1e	57	1740	3.8	1	2.8	20130	0	1	
1e	58	1770	4.6	1	3.6	20160	0	1	
1e	59	1800	1.6	1	0.6	20190	0	1	
1e	60	1830	3	1	2	20220	0	1	
1e	61	1860	5.4	1	4.4	20250	0	1	
1e	62	1890	3.4	1	2.4	20280	0	1	
1e	63	1920	2.6	1	1.6	20310	0	1	
1e	64	1950	2.6	1	1.6	20340	0	1	
1e	65	1980	2.5	1	1.5	20370	0	1	
1e	66	2010	1	1	0	20400	0	1	
1e	67	2040	10+	1	10	20430	0	1	
1e	68	2070	4.8	1	3.8	20460	0	1	
1e	69	2100	6	1	5	20490	0	1	
1e	70	2130	7.2	1	6.2	20520	0	1	
1e	71	2160	10+	1	137	20550	8	1	
1e	72	2190	10+	1	10	20580	0	1	
1e	73	2220	1.4	1	0.4	20610	0	1	
1e	74	2250	10+	1	10	20640	0	1	
1e	75	2280	4	1	3	20670	0	1	
1e	76	2310	2.9	1	1.9	20700	0	1	

1e	77	2340				20730	0	1	no data
1e	78	2370	2.4	1	1.4	20760	0	1	found for
1e	79	2400	2.2	1	1.2	20790	0	1	sample
1e	80	2430	2.8	1	1.8	20820	0	1	
1e	81	2460	1.6	1	0.6	20850	0	1	
1e	82	2490	3.8	1	2.8	20880	0	1	
1e	83	2520	3.6	1	2.6	20910	0	1	
1e	84	2550	1	1	0	20940	0	1	
1e	85	2580	4	1	3	20970	0	1	
1e	86	2610	9.1	1	8.1	21000	0	1	
1e	87	2640	6	1	5	21030	0	1	
1e	88	2670	3	1	2	21060	0	1	
1e	89	2700	3.9	1	2.9	21090	0	1	
1e	90	2730	8.4	1	7.4	21120	0	1	
1e	91	2760	6.5	1	5.5	21150	0	1	
1e	92	2790	2.4	1	1.4	21180	0	1	
1e	93	2820	2.8	1	1.8	21210	0	1	
1e	94	2850	2	1	1	21240	0	1	
1e	95	2880	2.5	1	1.5	21270	0	1	
1e	96	2910	2	1	1	21300	0	1	
1e	97	2940	10+	1	406	21330	164	1	
1e	98	2970	2	1	1	21360	0	1	
1e	99	3000	5	1	4	21390	0	1	
1e	100	3030	1.8	1	0.8	21420	0	1	
1e	101	3060	2	1	1	21450	0	1	
1e	102	3090	2.7	1	1.7	21480	0	1	
1e	103	3120	3.8	1	2.8	21510	0	1	
1e	104	3150	1.6	1	0.6	21540	0	1	
1e	105	3180	10	1	9	21570	0	1	
1e	106	3210	1.2	1	0.2	21600	0	1	
1e	107	3240	1	1	0	21630	0	1	
1e	108	3270	8.6	1	7.6	21660	0	1	
1e	109	3300	2.1	1	1.1	21690	0	1	
1e	110	3330	2.6	1	1.6	21720	0	1	
1e	111	3360	1.6	1	0.6	21750	0	1	
1e	112	3390	2.2	1	1.2	21780	0	1	
1e	113	3420	1.8	1	0.8	21810	0	1	
1e	114	3450	2.6	1	1.6	21840	0	1	
1e	115	3480	3	1	2	21870	0	1	
1e	116	3510	2.8	1	1.8	21900	0	1	
1e	117	3540	2.9	1	1.9	21930	0	1	
1e	118	3570	4.5	1	3.5	21960	0	1	
1e	119	3600	2	1	1	21990	0	1	
1e	120	3630	1	1	0	22020	0	1	
1e	121	3660	1.5	1	0.5	22050	0	1	
1e	122	3690	2.6	1	1.6	22080	0	1	
1e	123	3720	0.8	1	0	22110	0	1	
1e	124	3750	2	1	1	22140	0	1	
1e	125	3780	1.6	1	0.6	22170	0	1	
1e	126	3810	1.6	1	0.6	22200	0	1	
1e	127	3840	1.6	1	0.6	22230	0	1	
1e	128	3870	3.2	1	2.2	22260	0	1	
1e	129	3900	2.4	1	1.4	22290	0	1	
1e	130	3930	9.8	1	10	22320	0	1	
1e	131	3960	10+	1	353	22350	20	1	
1e	132	3990	1	1	0	22380	0	1	
1e	133	4020	6.8	1	24	22410	0	1	
1e	134	4050	1.2	1	0.2	22440	0	1	

1e	135	4080	2.5	1	1.5	22470	0	1	
1e	136	4110	6	1	5	22500	0	1	
1e	137	4140	7.6	1	6.6	22530	0	1	
1e	138	4170	3.4	1	2.4	22560	0	1	
1e	139	4200	10+	1	17	22590	0	1	
1e	140	4230	2.2	1	1.2	22620	0	1	
1e	141	4260	1.8	1	0.8	22650	0	1	
1e	142	4290	8.4	1	115	22680	0	1	
1e	143	4320	10+	1	173	22710	43	1	
1e	144	4350	3	1	2	22740	0	1	
1e	145	4380	2	1	1	22770	0	1	
1e	146	4410	3	1	2	22800	0	1	
1e	147	4440	2	1	1	22830	0	1	
1e	148	4470	1.8	1	0.8	22860	0	1	
1e	149	4500	6.9	1	73	22890	0	1	
1e	150	4530	3.2	1	2.2	22920	0	1	
1e	151	4560	2.2	1	1.2	22950	0	1	
1e	152	4590	3.4	1	2.4	22980	0	1	
1e	153	4620	2	1	1	23010	0	1	
1e	154	4650	2.4	1	1.4	23040	0	1	
1e	155	4680	2	1	1	23070	0	1	
1e	156	4710	1.6	1	0.6	23100	0	1	
1e	157	4740	4.6	1	3.6	23130	0	1	
1e	158	4770	6.8	1	32	23160	0	1	
1e	159	4800	2.4	1	1.4	23190	0	1	
1e	160	4830	2.6	1	1.6	23220	0	1	
1e	161	4860	5	1	4	23250	0	1	
1e	162	4890	4.5	1	3.5	23280	0	1	
1e	163	4920	6.4	1	5.4	23310	0	1	
1e	164	4950	2.9	1	1.9	23340	0	1	
1e	165	4980	4.6	1	3.6	23370	0	1	
1e	166	5010	3	1	2	23400	0	1	
1e	167	5040	2.4	1	1.4	23430	0	1	
1e	168	5070	4	1	3	23460	0	1	
1e	169	5100	4.2	1	3.2	23490	0	1	
1e	170	5130	2.6	1	1.6	23520	0	1	
1e	171	5160	2	1	1	23550	0	1	
1e	172	5190	3.6	1	2.6	23580	0	1	
1e	173	5220	4	1	3	23610	0	1	
1e	174	5250	4	1	3	23640	0	1	
1g	1	30	1.2	1	0.2	23670	0	1	sample 0
1g	2	60	bo	1	0	23700	0	1	was same
1g	3	90	1.8	1	0.8	23730	0	1	location as
1g	4	120	bo	1	0	23760	0	1	end of trav.
1g	5	150	3.2	1	2.2	23790	0	1	1e
1g	6	180	2	1	1	23820	0	1	
1g	7	210	1.4	1	0.4	23850	0	1	
1g	8	240	2.4	1	1.4	23880	0	1	
1g	9	270	2.4	1	1.4	23910	0	1	
1g	10	300	bo	1	0	23940	0	1	
1g	11	330	1.8	1	0.8	23970	0	1	
1g	12	360	1.4	1	0.4	24000	0	1	
1g	13	390	3	1	2	24030	0	1	
1g	14	420	bo	1	0	24060	0	1	
1g	15	450	2.4	1	1.4	24090	0	1	
1g	16	480	5.2	1	4.2	24120	0	1	
1g	17	510	2	1	1	24150	0	1	
1g	18	540	1.8	1	0.8	24180	0	1	

1g	19	570	2.4	1	1.4	24210	0	1	
1g	20	600	1	1	0	24240	0	1	
1g	21	630	2.8	1	1.8	24270	0	1	
1g	22	660	3.6	1	2.6	24300	0	1	
1g	23	690	3	1	2	24330	0	1	
1g	24	720	bo	1	0	24360	0	1	
1g	25	750	1.4	1	0.4	24390	0	1	
1g	26	780	4.8	1	3.8	24420	0	1	
1g	27	810	2.6	1	1.6	24450	0	1	
1g	28	840	1.2	1	0.2	24480	0	1	
1g	29	870	3.4	1	2.4	24510	0	1	
1g	30	900	2.2	1	1.2	24540	0	1	
1g	31	930	2.4	1	1.4	24570	0	1	
1g	32	960	1	1	0	24600	0	1	
1g	33	990	1.2	1	0.2	24630	0	1	
1g	34	1020	1.6	1	0.6	24660	0	1	
1g	35	1050	bo	1	0	24690	0	1	
1g	36	1080	1	1	0	24720	0	1	
1g	37	1110	1.2	1	0.2	24750	0	1	
1g	38	1140	1.8	1	0.8	24780	0	1	
1g	39	1170	1	1	0	24810	0	1	
1g	40	1200	2.1	1	1.1	24840	0	1	
1g	41	1230	1.2	1	0.2	24870	0	1	
1g	42	1260	0.9	1	0	24900	0	1	
1g	43	1290	1	1	0	24930	0	1	
1g	44	1320	2.3	1	1.3	24960	0	1	
1g	45	1350	3.1	1	2.1	24990	0	1	
1g	46	1380	1.1	1	0.1	25020	0	1	
1g	47	1410	bo	1	0	25050	0	1	
1g	48	1440	bo	1	0	25080	0	1	
1g	49	1470	2	1	1	25110	0	1	
1g	50	1500	bo	1	0	25140	0	1	
1g	51	1530	1.8	1	0.8	25170	0	1	
1g	52	1560	bo	1	0	25200	0	1	
1g	53	1590	bo	1	0	25230	0	1	
1g	54	1620	2.2	1	1.2	25260	0	1	
1g	55	1650	1.2	1	0.2	25290	0	1	
1g	56	1680	2	1	1	25320	0	1	
1g	57	1710	1	1	0	25350	0	1	
1g	58	1740	2	1	1	25380	0	1	
1g	59	1770	1.2	1	0.2	25410	0	1	
1g	60	1800		1		25440	0	1	water in
1g	61	1830	1.1	1	0.1	25470	0	1	syringe,
1g	62	1860	bo	1	0	25500	0	1	no data
1g	63	1890	bo	1	0	25530	0	1	
1g	64	1920	2.1	1	1.1	25560	0	1	
1g	65	1950	2.4	1	1.4	25590	0	1	
1g	66	1980	bo	1	0	25620	0	1	
1g	67	2010	1.2	1	0.2	25650	0	1	
1g	68	2040	2	1	1	25680	0	1	
1g	69	2070	1	1	0	25710	0	1	
1g	70	2100	1.2	1	0.2	25740	0	1	
1g	71	2130	1.4	1	0.4	25770	0	1	
1g	72	2160	2.2	1	1.2	25800	0	1	
1g	73	2190	2.8	1	1.8	25830	0	1	
1g	74	2220	3.2	1	2.2	25860	0	1	
1g	75	2250	4.7	1	3.7	25890	0	1	
1g	76	2280	bo	1	0	25920	0	1	

1g	77	2310	1.2	1	0.2	25950	0	1	
1g	78	2340	1.8	1	0.8	25980	0	1	
1g	79	2370	bo	1	0	26010	0	1	
1g	80	2400	bo	1	0	26040	0	1	
1g	81	2430	3.2	1	2.2	26070	0	1	
1g	82	2460	bo	1	0	26100	0	1	
1g	83	2490	1	1	0	26130	0	1	
1g	84	2520	2.3	1	1.3	26160	0	1	
1g	85	2550	1.4	1	0.4	26190	0	1	
1g	86	2580	1.8	1	0.8	26220	0	1	
1g	87	2610	bo	1	0	26250	0	1	
1g	88	2640	10+	1	78	26280	0	1	
1g	89	2670	bo	1	0	26310	0	1	
1g	90	2700	1.2	1	0.2	26340	0	1	
1g	91	2730	1.4	1	0.4	26370	0	1	
1g	92	2760	1	1	0	26400	0	1	
1g	93	2790	9.8	1	52	26430	0	1	
1g	94	2820	bo	1	0	26460	0	1	
1g	95	2850	2	1	1	26490	0	1	
1g	96	2880	3.2	1	2.2	26520	0	1	
1g	97	2910	1.8	1	0.8	26550	0	1	
1g	98	2940	2	1	1	26580	0	1	
1g	99	2970	3	1	2	26610	0	1	
1g	100	3000	2.4	1	1.4	26640	0	1	
1g	101	3030	2.4	1	1.4	26670	0	1	
1g	102	3060	9.8	1	17	26700	0	1	
1g	103	3090	6.2	1	5.2	26730	0	1	
1g	104	3120	10+	1	12	26760	0	1	
1g	105	3150	10+	1	10	26790	0	1	
1g	106	3180	10+	1	12	26820	0	1	
1g	107	3210	6.8	1	5.8	26850	0	1	
1g	108	3240	10+	1	72	26880	2	1	
1g	109	3270	9.8	1	8.8	26910	0	1	
1g	110	3300	6.4	1	5.4	26940	0	1	
1g	111	3330	ns	1		26970	0	1	no sample
1g	112	3360	ns	1		27000	0	1	no sample
1g	113	3390	3.4	1	2.4	27030	0	1	
1g	114	3420	1.8	1	0.8	27060	0	1	
1g	115	3450	2.4	1	1.4	27090	0	1	
1g	116	3480	ns	1		27120	0	1	no sample
1g	117	3510	10+	1	10	27150	0	1	
1g	118	3540	bo	1	0	27180	0	1	
1g	119	3570	2.6	1	1.6	27210	0	1	
1g	120	3600	1	1	0	27240	0	1	
1g	121	3630	1.2	1	0.2	27270	0	1	
1g	122	3660	3.2	1	2.2	27300	0	1	
1g	123	3690	bo	1	0	27330	0	1	
1g	124	3720	1.4	1	0.4	27360	0	1	
1g	125	3750	2.5	1	1.5	27390	0	1	
1g	126	3780	3.4	1	2.4	27420	0	1	
1g	127	3810	2.9	1	1.9	27450	0	1	
1g	128	3840	3.8	1	2.8	27480	0	1	
1g	129	3870	10+	1	17	27510	0	1	
1g	130	3900	0.9	1	0	27540	0	1	
1g	131	3930	2	1	1	27570	0	1	
1g	132	3960	2	1	1	27600	0	1	
1g	133	3990	3	1	2	27630	0	1	
1g	134	4020	3.2	1	2.2	27660	0	1	

1g	135	4050	1.4	1	0.4	27690	0	1	
1g	136	4080	6	1	5	27720	0	1	
1g	137	4110	bo	1	0	27750	0	1	
1g	138	4140	2.1	1	1.1	27780	0	1	
1g	139	4170	ns	1		27810	0	1	no sample
1g	140	4200	ns	1		27840	0	1	no sample
1g	141	4230	1.2	1	0.2	27870	0	1	
1g	142	4260	3.2	1	2.2	27900	0	1	
1g	143	4290	3.8	1	2.8	27930	0	1	
1g	144	4320	3	1	2	27960	0	1	
1g	145	4350	1.6	1	0.6	27990	0	1	
1g	146	4380	2	1	1	28020	0	1	
1g	147	4410	6.2	1	5.2	28050	0	1	
1g	148	4440	3.2	1	2.2	28080	0	1	
1g	149	4470	1.2	1	0.2	28110	0	1	
1g	150	4500	3.1	1	2.1	28140	0	1	
1g	151	4530	1.2	1	0.2	28170	0	1	
1g	152	4560	3.2	1	2.2	28200	0	1	
1g	153	4590	1.4	1	0.4	28230	0	1	
1g	154	4620	9.8	1	32	28260	0	1	
1g	155	4650	1.8	1	0.8	28290	0	1	
1g	156	4680	1	1	0	28320	0	1	
1h	0	0	1.8	1	0.8	28350	0	1	
1h	1	30	2.3	1	1.3	28380	0	1	
1h	2	60	2.4	1	1.4	28410	0	1	
1h	3	90	2.9	1	1.9	28440	0	1	
1h	4	120	3	1	2	28470	0	1	
1h	5	150	1	1	0	28500	0	1	
1h	6	180	1.8	1	0.8	28530	0	1	
1h	7	210	2.1	1	1.1	28560	0	1	
1h	8	240	bo	1	0	28590	0	1	
1h	9	270	bo	1	0	28620	0	1	
1h	10	300	1.1	1	0.1	28650	0	1	
1h	11	330	bo	1	0	28680	0	1	
1h	12a	360	1.8	1	0.8	28710	0	1	
1h	12b	390	5.1	1	4.1	28740	0	1	
1h	13	420	1.1	1	0.1	28770	0	1	
1h	14	450	1.2	1	0.2	28800	0	1	
1h	15	480	9.2	1	78	28830	0	1	wet
1h	16	510	bo	1		28860	0	1	wet
1h	17	540	7.8	1	8	28890	0	1	wet
1h	18	570	bo	1		28920	0	1	wet
1h	19	600	1.2	1	0.2	28950	0	1	wet
1h	20	630	1.3	1	0.3	28980	0	1	wet
1h	21	660	1.2	1	0.2	29010	0	1	wet
1h	22	690	1.8	1	0.8	29040	0	1	wet
1h	23	720	10+	1	27	29070	0	1	wet
1h	24	750	1.8	1	0.8	29100	0	1	wet
1h	25	780	1.6	1	0.6	29130	0	1	wet
1h	26	810	3.2	1	2.2	29160	0	1	wet
1h	27	840	4.1	1	3.1	29190	0	1	wet
1h	28	870	2.8	1	1.8	29220	0	1	wet
1h	29	900	2	1	1	29250	0	1	wet
1h	30	930	1.2	1	0.2	29280	0	1	wet
1h	31	960	1.4	1	0.4	29310	0	1	wet
1h	32	990	1.2	1	0.2	29340	0	1	wet
1h	33	1020	2	1	1	29370	0	1	wet
1h	34	1050	1.4	1	0.4	29400	0	1	wet

1h	35	1080	1.2	1	0.2	29430	0	1	wet
1h	36	1110	1.2	1	0.2	29460	0	1	wet
1h	37	1140	1.6	1	0.6	29490	0	1	wet
1h	38	1170	10+	1	18	29520	0	1	wet
1h	39	1200	1.1	1	0.1	29550	0	1	wet
1h	40	1230	5.1	1	32	29580	0	1	wet
1h	41	1260	5	1	4	29610	0	1	wet
1h	42	1290	5.2	1	4.2	29640	0	1	wet
1h	43	1320	1.2	1	0.2	29670	0	1	wet
1h	44	1350	bo	1		29700	0	1	wet
1h	45	1380	1	1	0	29730	0	1	wet
1h	46	1410	bo	1		29760	0	1	wet
1h	47	1440	1.6	1	0.6	29790	0	1	wet
1h	48	1470	3.2	1	2.2	29820	0	1	wet
1h	49	1500	2.2	1	1.2	29850	0	1	wet
1h	50	1530	1.1	1	0.1	29880	0	1	wet
1h	51	1560	1.4	1	0.4	29910	0	1	wet
1h	52	1590	2.6	1	1.6	29940	0	1	wet
1h	53	1620	1.4	1	0.4	29970	0	1	wet
1h	54	1650	2.1	1	1.1	30000	0	1	wet
1h	55	1680	2	1	1	30030	0	1	wet
1h	56	1710	5.2	1	4.2	30060	0	1	wet
1h	57	1740	5	1	4	30090	0	1	wet
1h	58	1770	2	1	1	30120	0	1	wet
1h	59	1800	1.8	1	0.8	30150	0	1	wet
1h	60	1830	1.8	1	0.8	30180	0	1	wet
1h	61	1860	4.2	1	3.2	30210	0	1	wet
1h	62	1890	1.6	1	0.6	30240	0	1	wet
1h	63	1920	1	1	0	30270	0	1	wet
1h	64	1950	3.2	1	2.2	30300	0	1	wet
1h	65	1980	7.9	1	48	30330	0	1	wet
1h	66	2010	1.1	1	0.1	30360	0	1	wet
1h	67	2040	5.2	1	4.2	30390	0	1	wet
1h	68	2070	1.2	1	0.2	30420	0	1	wet
1h	69	2100	10+	1	23	30450	0	1	wet
1h	70	2130	2	1	1	30480	0	1	wet
1j	0	0	10+	1	41	30510	3	1	note
1j	1	30	5	1	33	30540	4	1	instrument
1j	2	60	6.9	1	13	30570	0	1	went out
1j	3	90	10	1	35	30600	0	1	in field
1j	4	120	10	1	12	30630	0	1	analyses
1j	5	150	3	1	2	30660	0	1	done in lab
1j	6	180	6	1	8	30690	0	1	hence
1j	7	210	4.1	1	9	30720	0	1	many na in
1j	8	240	7.5	1	12	30750	0	1	field data
1j	9	270	7.1	1	14	30780	0	1	
1j	10	300	2.1	1	1.1	30810	0	1	
1j	11	330	2.9	1	1.9	30840	0	1	
1j	12	360	error	1	9	30870	0	1	
1j	13	390	5.8	1	7	30900	0	1	
1j	14a	420	4.4	1	3.4	30930	0	1	
1j	14b	450	3	1	2	30960	0	1	
1j	15	480	3.6	1	2.6	30990	0	1	
1j	16	510	3.4	1	2.4	31020	0	1	
1j	17	540	3.2	1	2.2	31050	0	1	
1j	18	570	2	1	1	31080	0	1	
1j	19	600	1.6	1	0.6	31110	0	1	
1j	20	630	3.6	1	2.6	31140	0	1	

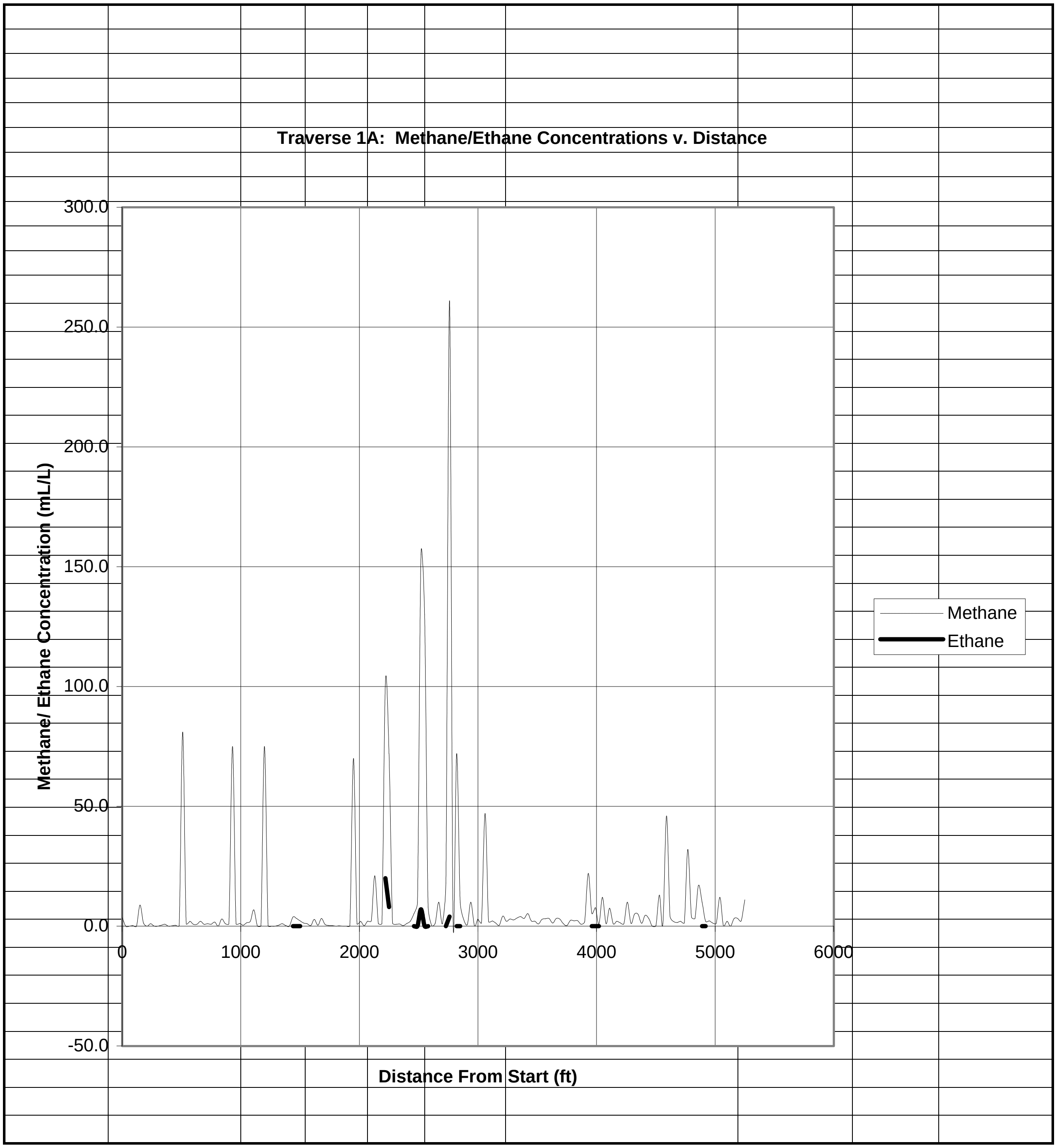
1j	21	660	1.6	1	0.6	31170	0	1	
1j	22	690	10+	1	20	31200	0	1	
1j	23	720	3.4	1	2.4	31230	0	1	
1j	24a	750	3.4	1	2.4	31260	0	1	
1j	24b	780	2	1	1	31290	0	1	
1j	25	810	2	1	1	31320	0	1	
1j	26	840	1.9	1	0.9	31350	0	1	
1j	27	870	7.2	1	12	31380	0	1	
1j	28	900	1	1	0	31410	0	1	
1j	29	930		1		31440	0	1	
1j	30	960	2	1	1	31470	0	1	
1j	31	990	6.9	1	16	31500	0	1	
1j	32	1020	10+	1	234	31530	24	1	
1j	33	1050	2.9	1	1.9	31560	0	1	
1j	34	1080	4	1	20	31590	0	1	
1j	35	1110	3.2	1	2.2	31620	0	1	
1j	36	1140	3.4	1	2.4	31650	0	1	
1j	37	1170	2.6	1	1.6	31680	0	1	
1j	38	1200	2.2	1	1.2	31710	0	1	
1j	39	1230	6.8	1	10	31740	0	1	
1j	40	1260	7.5	1	8	31770	0	1	
1j	41	1290	bo	1	3	31800	0	1	
1j	42	1320	na	na	4	31830	0	1	
1j	43	1350	na	na	9	31860	0	1	
1j	44	1380	na	na	0	31890	0	1	
1j	45	1410	na	na	5	31920	0	1	
1j	46	1440	na	na	12	31950	0	1	
1j	47	1470	na	na	7	31980	0	1	
1j	48	1500	na	na		32010		1	
1j	49	1530	na	na	7	32040	0	1	
1j	50	1560	bo	1	15	32070	0	1	
1j	51	1590	1.7	1	0.7	32100	0	1	
1j	52	1620	na	na	15	32130	0	1	
1j	53	1650	na	na	13	32160	0	1	
1j	54	1680	na	na	3	32190	0	1	
1j	55	1710	na	na	6	32220	0	1	
1j	56	1740	na	na	6	32250	0	1	
1j	57	1770	na	na	8	32280	0	1	
1j	58	1800	na	na	9	32310	0	1	
1j	59	1830	na	na	3	32340	0	1	
1j	60	1860	na	na	2	32370	0	1	
1j	61	1890	na	na	2	32400	0	1	
1j	62	1920	na	na	4	32430	0	1	
1j	63	1950	na	na	4	32460	0	1	
1j	64	1980	na	na	2	32490	0	1	
1j	65	2010	na	na	0	32520	0	1	
1j	66	2040	na	na	0	32550	0	1	
1j	67	2070	na	na	7	32580	0	1	
1j	68	2100	na	na	9	32610	0	1	
1j	69	2130	na	na	0	32640	0	1	
1j	70	2160	na	na	0	32670	0	1	
1j	71	2190	na	na	8	32700	0	1	
1j	72	2220	na	na	0	32730	0	1	
1j	73	2250	na	na	2	32760	0	1	
1j	74	2280	na	na	4	32790	0	1	
1j	75	2310	na	na	3	32820	0	1	
1j	76	2340	na	na	3	32850	0	1	
1j	77	2370	na	na	11	32880	0	1	

1j	78	2400	na	na	7	32910	0	1	
1j	79	2430	na	na	6	32940	0	1	
1j	80	2460	na	na	6	32970	0	1	
1j	81	2490	na	na	3	33000	0	1	
1j	82	2520	na	na	5	33030	0	1	
1j	83	2550	na	na	0	33060	0	1	
1j	84	2580	na	na	7	33090	0	1	
1j	85	2610	na	na	8	33120	0	1	
1j	86	2640	na	na	6	33150	0	1	
1j	87	2670	na	na	5	33180	0	1	
1j	88	2700	na	na	4	33210	0	1	
1j	89	2730	na	na	9	33240	0	1	
1j	90	2760	na	na	0	33270	0	1	
1j	91	2790	na	na	5	33300	0	1	
1j	92	2820	na	na	4	33330	0	1	
1j	93	2850	na	na	6	33360	0	1	
1j	94	2880	na	na	2	33390	0	1	
1j	95	2910	na	na	5	33420	0	1	
1j	96	2940	na	na	5	33450	0	1	
1j	97	2970	na	na	15	33480	0	1	
1j	98	3000	na	na	23	33510	0	1	
1j	99	3030	na	na	3	33540	0	1	
1j	100	3060	na	na	8	33570	0	1	
1j	101	3090	na	na	5	33600	0	1	
1j	102	3120	na	na	7	33630	0	1	
1j	103	3150	na	na	7	33660	0	1	
1j	104	3180	na	na	7	33690	0	1	
1j	105	3210	na	na	3	33720	0	1	
1j	106	3240	na	na	2	33750	0	1	
1j	107	3270	na	na	4	33780	0	1	
1j	108	3300	na	na	0	33810	0	1	
1j	109	3330	na	na	2	33840	0	1	
1k	0	30	7.2	1	6.2	33870	0	1	
1k	1	60	10+	1	10	33900	1	1	
1k	2	90	6.4	1	8	33930	0	1	
1k	3	120	4.8	1	3.8	33960	0	1	
1k	4	150	5.2	1	4.2	33990	0	1	
1k	5	180	6.5	1	7	34020	0	1	
1k	6	210	3.2	1	2.2	34050	0	1	
1k	7	240	3.3	1	2.3	34080	0	1	
1k	8	270	8.5	1	10	34110	0	1	
1k	9	300	10+	1	16	34140	8	1	
1k	10	330	5	1	4	34170	0	1	
1k	11	360	5.8	1	9	34200	0	1	
1k	12	390	6	1	11	34230	0	1	
1k	13	420	7.9	1	6.9	34260	0	1	
1k	14	450	9.8	1	8.8	34290	0	1	
1k	15	480	5.8	1	4.8	34320	0	1	
1k	16	510	5	1	5	34350	0	1	
1k	17	540	3.6	1	2.6	34380	0	1	
1k	18	570	10+	1	18	34410	0	1	
1k	19	600	7.2	1	9	34440	0	1	
1k	20	630	4.8	1	3.8	34470	0	1	
1k	21	660	3.6	1	2.6	34500	0	1	
1k	22	690	6.9	1	5.9	34530	0	1	
1k	23	720	4	1	3	34560	0	1	
1k	24	750	1.6	1	0.6	34590	0	1	
1k	25	780	5	1	4	34620	0	1	

1k	26	810	2.2	1	1.2	34650	0	1	
1k	27	840	3	1	2	34680	0	1	
1k	28	870	2	1	1	34710	0	1	
1k	29	900	3.8	1	2.8	34740	0	1	
1k	30	930	3.2	1	2.2	34770	0	1	
1k	31	960	3.7	1	2.7	34800	0	1	
1k	32	990	bo	1	7	34830	0	1	
1k	33	1020	1.4	1	0.4	34860	0	1	
1k	34	1050	2.4	1	1.4	34890	0	1	
1k	35	1080	1.6	1	0.6	34920	0	1	
1k	36	1110	4	1	3	34950	0	1	
1k	37	1140	3	1	2	34980	0	1	
1k	38	1170	3.5	1	2.5	35010	0	1	
1k	39	1200	4	1	3	35040	0	1	
1k	40	1230	bo	1	7	35070	0	1	
1k	41	1260	error	1	8	35100	0	1	
1k	42	1290	1.8	1	0.8	35130	0	1	
1k	43	1320	4	1	3	35160	0	1	
1k	44	1350	3.6	1	2.6	35190	0	1	
1k	45	1380	3.1	1	2.1	35220	0	1	
1k	46	1410	6.6	1	6	35250	0	1	
1k	47	1440	4.8	1	3.8	35280	0	1	
1k	48	1470	4.6	1	3.6	35310	0	1	
1k	49	1500	6	1	11	35340	0	1	
1k	50	1530	10+	1	12	35370	0	1	
1k	51	1560	1.4	1	0.4	35400	0	1	
1k	52	1590	4.9	1	3.9	35430	0	1	
1k	53	1620	1.6	1	0.6	35460	0	1	
1k	54	1650	4.9	1	3.9	35490	0	1	
1k	55	1680	6	1	5	35520	0	1	
1k	56	1710	6.2	1	6	35550	0	1	
1k	57	1740	4	1	3	35580	0	1	
1k	58	1770	2.2	1	1.2	35610	0	1	
1k	59	1800	1.4	1	0.4	35640	0	1	
1k	60	1830	3.6	1	2.6	35670	0	1	
1k	61	1860	4.8	1	3.8	35700	0	1	
1k	62	1890	3.9	1	2.9	35730	0	1	
1k	63	1920	1.1	1	0.1	35760	0	1	
1k	64	1950	bo	1	0	35790	0	1	
1k	65	1980	1.2	1	0.2	35820	0	1	
1k	66	2010	10+	1	10	35850	0	1	
1k	67	2040	10+	1	45	35880	3	1	
1k	68	2070	5.2	1	14	35910	0	1	
1k	69	2100	4.2	1	3.2	35940	0	1	
1k	70	2130	10+	1	82	35970	17	1	
1k	71	2160	3.6	1	2.6	36000	0	1	
1k	72	2190	4.2	1	3.2	36030	0	1	
1k	73	2220	4	1	3	36060	0	1	
1k	74	2250	10+	1	96	36090	19	1	
1k	75	2280	7.4	1	6.4	36120	0	1	
1k	76	2310	9.6	1	8.6	36150	0	1	
1k	77	2340	1.4	1	0.4	36180	0	1	
1k	78	2370	5	1	4	36210	0	1	
1k	79	2400	3.2	1	2.2	36240	0	1	
1k	80	2430	3.6	1	2.6	36270	0	1	
1k	81	2460	3	1	2	36300	0	1	
1k	82	2490	3.6	1	2.6	36330	0	1	
1k	83	2520	2	1	1	36360	0	1	68's of pole

1i	111	0	1.1	1	0.1	36346	0	1	883
1i	110	30	2.1	1	1.1	36376	0	1	54's of pole
1i	109	60	3.1	1	2.1	36406	0	1	883
1i	108	90	2.6	1	1.6	36436	0	1	
1i	107	120	2.4	1	1.4	36466	0	1	
1i	106	150	1.8	1	0.8	36496	0	1	
1i	105	180	3.2	1	2.2	36526	0	1	
1i	104	210	4.7	1	3.7	36556	0	1	
1i	103	240	1.8	1	0.8	36586	0	1	
1i	102	270	1.1	1	0.1	36616	0	1	
1i	101	300	1.3	1	0.3	36646	0	1	
1i	100	330	1.4	1	0.4	36676	0	1	
1i	99	360	1.1	1	0.1	36706	0	1	
1i	98	390	1.7	1	0.7	36736	0	1	
1i	97	420	1.4	1	0.4	36766	0	1	
1i	96	450	1.6	1	0.6	36796	0	1	
1i	95	480	1.4	1	0.4	36826	0	1	
1i	94	510	1.4	1	0.4	36856	0	1	
1i	93	540	bo	1	0	36886	0	1	
1i	92	570	1.2	1	0.2	36916	0	1	
1i	91	600	bo	1	0	36946	0	1	
1i	90	630	2.2	1	1.2	36976	0	1	
1i	89	660	1.1	1	0.1	37006	0	1	
1i	88	690	10+	1	27	37036	0	1	
1i	87	720	2.9	1	1.9	37066	0	1	
1i	86	750	4	1	3	37096	0	1	
1i	85	780	1.8	1	0.8	37126	0	1	
1i	84	810	2.1	1	1.1	37156	0	1	
1i	83	840	2.1	1	1.1	37186	0	1	
1i	82	870	2	1	1	37216	0	1	
1i	81	900	10+	1	82	37246	0	1	
1i	80	930	1	1	0	37276	0	1	
1i	79	960	3	1	2	37306	0	1	
1i	78	990	9.8	1	101	37336	0	1	
1i	77	1020	2	1	1	37366	0	1	
1i	76	1050	2	1	1	37396	0	1	
1i	75	1080	3.3	1	2.3	37426	0	1	
1i	74	1110	bo	1	0	37456	0	1	
1i	73	1140	4	1	3	37486	0	1	
1i	72	1170	2	1	1	37516	0	1	
1i	71	1200	1	1	0	37546	0	1	
1i	70	1230	2.1	1	1.1	37576	0	1	
1i	69	1260	1.4	1	0.4	37606	0	1	
1i	68	1290	4.5	1	3.5	37636	0	1	
1i	67	1320	3.2	1	2.2	37666	0	1	
1i	66	1350	3.8	1	2.8	37696	0	1	
1i	65	1380	1.2	1	0.2	37726	0	1	
1i	64	1410	bo	1	0	37756	0	1	
1i	63	1440	bo	1	0	37786	0	1	
1i	62	1470	3.1	1	2.1	37816	0	1	
1i	61	1500	2.1	1	1.1	37846	0	1	
1i	60	1530	2.1	1	1.1	37876	0	1	
1i	59	1560	1.7	1	0.7	37906	0	1	
1i	58	1590	2.4	1	1.4	37936	0	1	
1i	57	1620	2.1	1	1.1	37966	0	1	
1i	56	1650	2.4	1	1.4	37996	0	1	
1i	55	1680	1.1	1	0.1	38026	0	1	
1i	54	1710	2.6	1	1.6	38056	0	1	

1i	53	1740	bo	1	0	38086	0	1	
1i	52	1770	1.4	1	0.4	38116	0	1	
1i	51	1800	1.2	1	0.2	38146	0	1	
1i	50	1830	1.6	1	0.6	38176	0	1	
1i	49	1860	1.4	1	0.4	38206	0	1	
1i	48	1890	1.6	1	0.6	38236	0	1	
1i	47	1920	1.2	1	0.2	38266	0	1	
1i	46	1950	1.9	1	0.9	38296	0	1	
1i	45	1980	1.8	1	0.8	38326	0	1	
1i	44	2010	1.2	1	0.2	38356	0	1	
1i	43	2040	1.8	1	0.8	38386	0	1	
1i	42	2070	1.8	1	0.8	38416	0	1	
1i	41	2100	3.6	1	2.6	38446	0	1	
1i	40	2130	1	1	0	38476	0	1	
1i	39	2160	1	1	0	38506	0	1	
1i	38	2190	2	1	1	38536	0	1	
1i	37	2220	1.2	1	0.2	38566	0	1	
1i	36	2250	1	1	0	38596	0	1	
1i	35	2280	1.5	1	0.5	38626	0	1	
1i	34	2310	1.2	1	0.2	38656	0	1	
1i	33	2340	1.3	1	0.3	38686	0	1	
1i	32	2370	bo	1	0	38716	0	1	
1i	31	2400	2.1	1	1.1	38746	0	1	
1i	30	2430	1.2	1	0.2	38776	0	1	
1i	29	2460	1.8	1	0.8	38806	0	1	
1i	28	2490	1.2	1	0.2	38836	0	1	
1i	27	2520	2	1	1	38866	0	1	
1i	26	2550	1.2	1	0.2	38896	0	1	
1i	25	2580	4.7	1	3.7	38926	0	1	
1i	24	2610	1.8	1	0.8	38956	0	1	
1i	23	2640	2.1	1	1.1	38986	0	1	
1i	22	2670	1.8	1	0.8	39016	0	1	
1i	21	2700	2.2	1	1.2	39046	0	1	
1i	20	2730	2	1	1	39076	0	1	
1i	19	2760	2.1	1	1.1	39106	0	1	
1i	18	2790	1.7	1	0.7	39136	0	1	
1i	17	2820	1.3	1	0.3	39166	0	1	
1i	16	2850	bo	1	0	39196	0	1	
1i	15	2880	2	1	1	39226	0	1	
1i	14	2910	2	1	1	39256	0	1	
1i	13	2940	1.4	1	0.4	39286	0	1	
1i	12	2970	1.8	1	0.8	39316	0	1	
1i	11	3000	2	1	1	39346	0	1	
1i	10	3030	2.4	1	1.4	39376	0	1	
1i	9	3060	1.2	1	0.2	39406	0	1	
1i	8	3090	2	1	1	39436	0	1	
1i	7	3120	1.2	1	0.2	39466	0	1	
1i	6	3150	1.4	1	0.4	39496	0	1	
1i	5	3180	3.8	1	2.8	39526	0	1	
1i	4	3210	bo	1	0	39556	0	1	
1i	3	3240	4.7	1	3.7	39586	0	1	
1i	2	3270	3.1	1	2.1	39616	0	1	
1i	1	3300	8.2	1	53	39646	0	1	
1i	0	3330	3.6	1	2.6	39676	0	1	
						intersection with seneca rd			
						1322.533333	sample points (one pt is 14 ft		
						7.514393939	from another, total is 1323		
							miles of traverse		


Traverse 1A: Methane/Ethane Concentrations v. Distance
300.0
250.0
200.0
150.0
100.0
50.0
0.0
-50.0
Methane/ Ethane Concentration (mL/L)
0
1000
2000
3000
4000
5000
6000
Distance From Start (ft)
Methane
Ethane