APPENDIX K

TDCS GEOLOGIC DATA

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GEOLOGIC MAPPING SUMMARY

Geologic mapping was performed during the construction of the TDCS Shaft and Tunnels and included geologic structural orientation data. The geologic mapping data that were collected during the TDCS excavation was previously presented in the form of preliminary Geologic Maps (GeoTrans, 2009). The Geologic Maps have been completed and are included herein.

The geologic data collected includes the orientation of discontinuities such as fractures, joints, cleavage, bedding planes, bedding shear fractures, and faults. Over 1780 individual discontinuity measurements were recorded. The discontinuity data (strike and dip) was evaluated using stereographic projections of the planar poles to determine and group the major sets of planar discontinuities on a lower hemisphere graph. Also, recorded were observations of conditions including presence of water and DNAPL and other notable geologic features.

The pole plots and stereonet plot of discontinuities from the shaft and tunnels were used to select the drill direction and angle for the drain wells that would cross as many major discontinuities as close as possible to perpendicular (Refer to Figure 2-10). Geologic data of discontinuities with only water or DNAPL or both were plotted on a stereonet to provide a better understanding of the correlation of discontinuity orientation and groundwater and contaminant flow (Figure 2-11).

Additional geologic discontinuity data were obtained from the Tailrace Tunnel and borehole televiewer logs conducted in a number of boreholes including: extensometer E-3 (near Boralex Powerhouse); piezometers: PZ-301 and PZ-303 and; new monitoring wells: V-114, PW-1 and PW-2.

An analysis of the geologic discontinuity data performed by Brierley Associates is provided herein and includes a summary discussion, Tables of Discontinuity Sets, Discontinuity Data and Polar and Stereonet Plots of Discontinuity Data.

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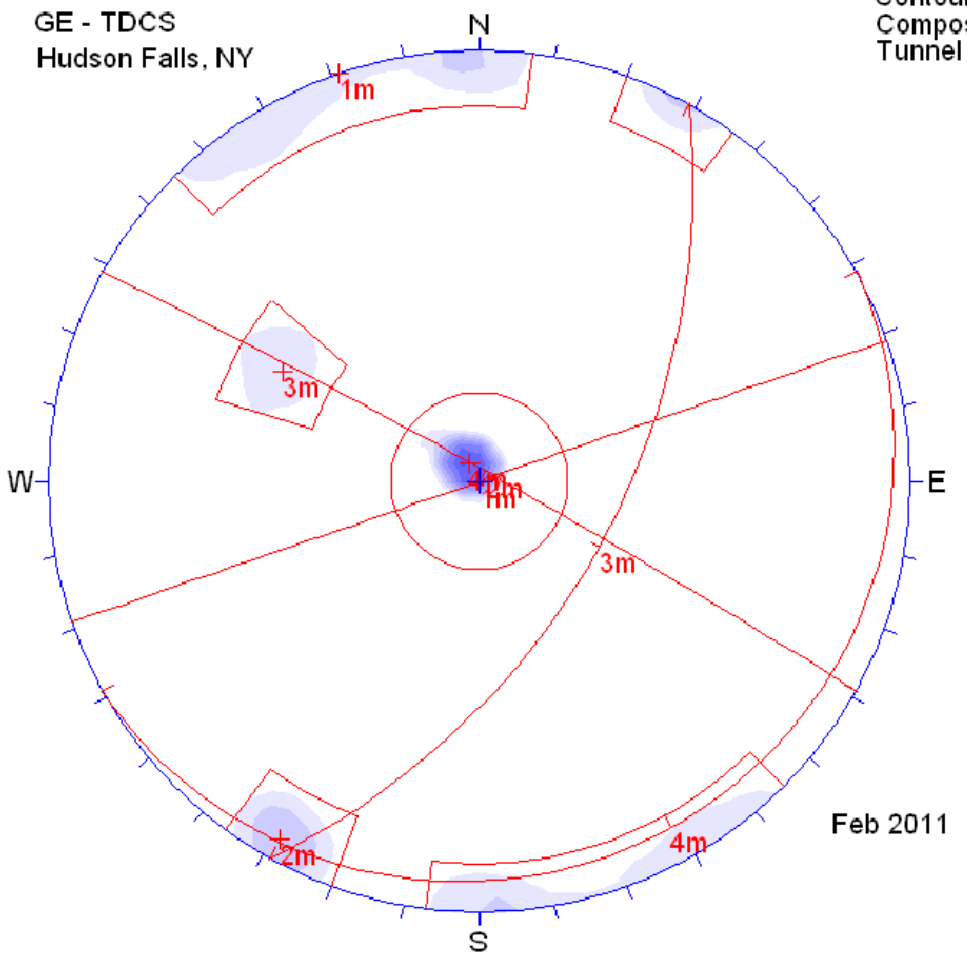
GE - TDCS
Hudson Falls, NY



Contour/Average Planes Plot
Composite - All Discontinuities
Tunnel and Shaft

Orientations- Major Planes

ID		Dip / Direction
1	m	90 / 161
2	m	87 / 029
3	m	55 / 119
4	m	05 / 151

Feb 2011

Equal Angle
Lower Hemisphere
1787 Poles
1787 Entries

REFERENCE: BRIERLEY

TITLE:
TDCS GEOLOGIC DISCONTINUITIES STEREONET

LOCATION:
GE Hudson Falls, New York

TETRA TECH GEO

APPROVED	JRB	FIGURE
DRAFTED	RMK	2-10
PROJECT#	117-2204	
DATE	APRIL 2011	

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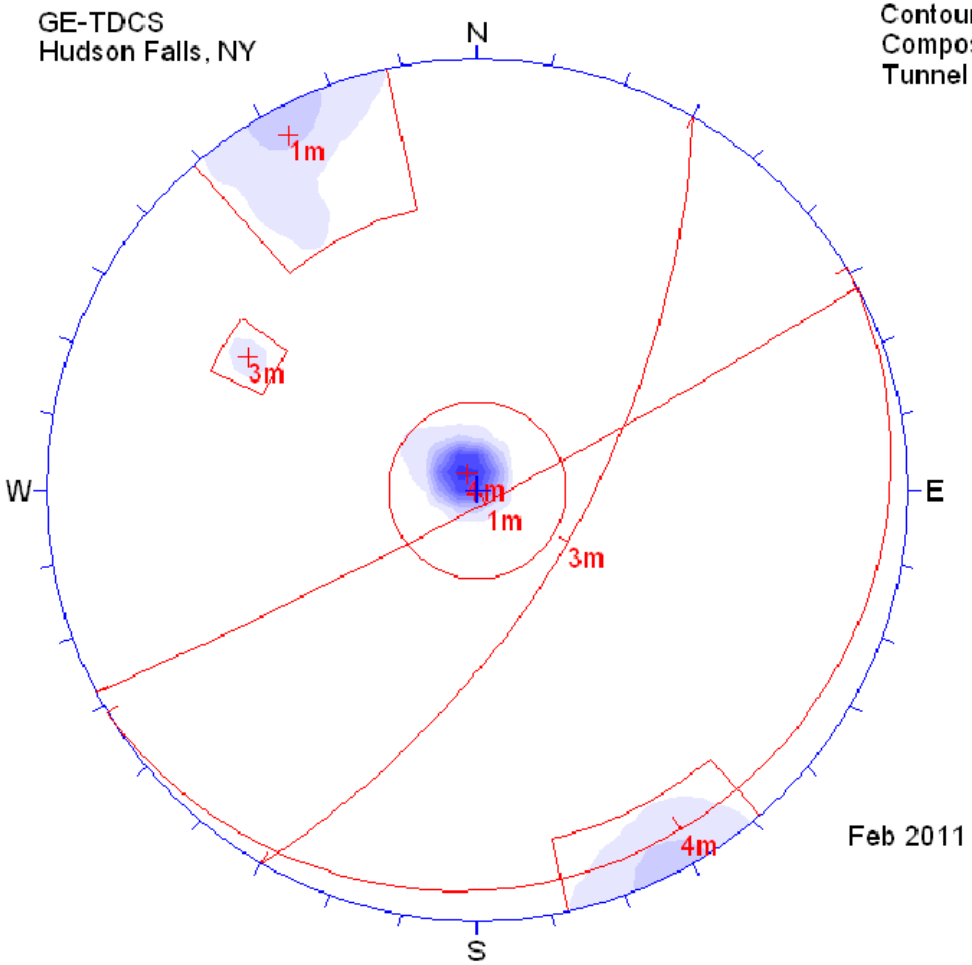
GE-TDCS
Hudson Falls, NY



Contour/Major Planes Plot
Composite - DNAPL/Water Bearing Discontinuities
Tunnel and Shaft

Orientations - Major Planes

ID		Dip / Direction
1	m	86 / 152
3	m	63 / 120
4	m	05 / 149

Feb 2011

Equal Angle
Lower Hemisphere
161 Poles
161 Entries

REFERENCE: BRIERLEY

TITLE: TDCS GEOLOGIC DISCONTINUITIES WITH DNAPL OR WATER

LOCATION: GE Hudson Falls, New York

TETRA TECH GEO

APPROVED	JRB	FIGURE
DRAFTED	RMK	2-11
PROJECT#	117-2204	
DATE	APRIL 2011	

March 2011: Brierley Associates Summary of Geologic Mapping and Discontinuity Analysis

The bedrock fracture and discontinuity data collected from various site wide sources are summarized and analyzed in the form of stereonet diagrams presented herein. These diagrams are generated via computer software called DIPs by Rocscience, Inc.

The DIPs analysis considers the orientation (dip and dip direction) of each documented fracture or discontinuity plane which is represented by a "pole" on the stereonet diagram (refer to scatter pole plots). Each pole may actually represent more than one discontinuity of similar orientation. Further processing with DIPs software allows the user to generate contour plots which serves to analyze pole concentrations on the stereonet. Major data concentrations or "sets" are represented by the color shading on the Contour /Major Planes Plots presented herein. The shading increases in intensity based on the increasing percentage of data points representing the center of the highest concentration of similar fracture orientations. The major data sets are then represented by a statistical Major Plane and Pole (unweighted mean plane and pole vector). The Major Plane is defined by the dip and dip direction of the mean or average fracture that best represents that particular data set.

It must be noted that contoured data that represents less than 3% of the data concentration is deemed to be statistically insignificant and is not considered in the presentation of "Major Planes" on the stereonets. This may impact how certain sets may or may not be represented between statistical units (such as Upper Shale and Lower Shale, etc.), or when considered collectively as Composite of All Tunnel Data and/or Composite of All Shaft Data.

Shaft Data:

Pole Plots and Contour Plots representing fracture data in the excavated access shaft from Upper Snake Hill Shale(Upper Shale) through the Middle Shale and Lower Shale show similarities that persist through each of the shale units, such as Set 2 and 3; whereas the high angle to vertical sets (1 and 5) do not appear as a major set in the Lower Shale; and the near horizontal set (4) does not appear in the Middle Shale. Similarly, the near vertical northeast trending set (5) is considered statistically insignificant when the Composite of all discontinuities in the entire shaft excavation is represented.

Tunnel Segments 1, 2, and 3:

Stereonet plots representing the three tunnel segments show sets 1 and 4 are common throughout all the tunnels, whereas set 3 is noted in Tunnel Segments 2 and 3, but not in Tunnel 1; conversely fracture set 5 is noted only in Tunnel 1. These differences are probably related to how these sets are statistically observed depending on the orientation of the tunnel(s) with respect to the orientation and spacing of the fractures. When all three tunnels are considered as a composite of all fractures, sets 1 and 4 are again manifested as the only two major fracture planes common to all tunnels.

A curious observation may be noted when comparing the Shaft-Lower Snake Hill Shale Major Planes Plot versus the Composite – All Tunnel Discontinuities Major Planes Plot. Since essentially all of the tunnels are excavated in the Lower Snake Hill Shale, it would seem that the respective plots would show similar Major Planes orientations. However, other than the near horizontal southeasterly dipping fractures, and shallower dipping northeasterly trending fractures in the shaft (55°) vs the tunnels (86°), the near vertical northwest trending set observed in the shaft is not highlighted in the tunnels. A possible

explanation is that though this orientation was noted in the tunnels, it was not observed frequently enough to be statistically significant to represent in the contour plots.

DNAPL/Water Bearing Discontinuities:

Three other stereonet plots were generated to represent the orientation of fractures where DNAPL and/or water seepage was observed. Major Planes Plots were develop to represent a Composite of all shaft observations; a composite of all tunnel observations; and a composite of the combined shaft and tunnel observations. These results show similar trending fracture orientations in all three stereonets:

-Set 1: Near vertical, trending northeasterly
-Set 3: Mid-angle, trending northeasterly (most significant as observed in the shaft)
-Set 4: Near horizontal, trending northeasterly to northwesterly

Based on these data, and to intercept the most prominent DNAPL/Water bearing fractures, the drain wells for the Tunnel Drain Collection System were set to orientations of Azimuth 340° (Tunnel 1 and 3)/160° (Tunnel 2); and upward dip of 60°-80° from the tunnel level.

TDCS Tunnel and Shaft Mapping
Discontinuity Set Summary

March 2011

Composite - All Tunnel and Shaft Data - 1787 Poles	SET 1 - 235 Poles				SET 2 - 109 Poles				SET 3 - 132 Poles				SET 4 - 268 Poles				SET 5				SET 6			
	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	161	N 71 E	90 SE	Joint	029	N 61 W	87 NE	Joint/ Cleavage	119	N 29 E	55 SE	Bed. Joint/ Joint/Fault	151	N 61 E	5 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Composite - All Shaft Data - 825 Poles	SET 1 - 94 Poles				SET 2 - 113 Poles				SET 3 - 153 Poles				SET 4 - 76 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	175	N 85 E	89 S	Joint	027	N 63 W	87 NE	Joint/ Cleavage	115	N 25 E	53 SE	Bed. Joint/ Joint/Fault	178	E - W	2 S	*Not Statistically Significant*				*Not Statistically Significant*			
Shaft - Upper Snake Hill Shale - 225 Poles	SET 1 - 74 Poles				SET 2 - 44 Poles				SET 3 - 40 Poles				SET 4 - 9 Poles				SET 5 - 30 Poles				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	172	N 83 E	89 S	Joint	023	N 67 W	88 NE	Joint/ Cleavage	115	N 25 E	48 SE	Bed. Joint/ Shear Frac/Fault	172	N 82 E	3 S	Joint	300	N 30 E	88 NW	*Not Statistically Significant*			
Shaft - Middle Snake Hill Shale - 107 Poles	SET 1 - 16 Poles				SET 2 - 13 Poles				SET 3 - 42 Poles				SET 4				SET 5 - 8 Poles				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint (Extension)	360	E - W	89	Joint	199	N 71 W	85 S	Cleavage/ Joint/Shear Fracture	121	N 31 E	45 SE	*Not Statistically Significant*				Joint	299	N 29 E	67 NW	*Not Statistically Significant*			
Shaft - Lower Snake Hill Shale - 443 Poles	SET 1				SET 2 - 58 Poles				SET 3 - 120 Poles				SET 4 - 29 Poles				SET 5				SET 6			
	Type	Dip Direction	Strike	Dip	Type		Strike	Dip	Type		Strike	Dip	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Not Statistically Significant				Joint	030	N 60 W	86 NE	Joint/ (Cleavage)	122	N 32 E	55 SE	Bed. Joint/ Joint/Fault	164	N 74 E	3 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Composite - All Tunnel Data - 962 Poles	SET 1 - 156 Poles				SET 2				SET 3				SET 4 - 224 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	144	N 54 E	86 SE	*Not Statistically Significant*				*Not Statistically Significant*				Bed. Joint/ Joint/Fault	141	N 51 E	9 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Tunnel #1, Room #1 - 309 Poles	SET 1 - 36 Poles				SET 2 - 36 Poles				SET 3				SET 4 - 82 Poles				SET 5 - 49 Poles				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	151	N 61 E	89 SE	Joint	176	N 86 E	90 S	*Not Statistically Significant*				Bed. Joint/ Shear Frac/Fault	133	N 43 E	16 SE	Joint	071	N 19 W	60 NE	*Not Statistically Significant*			
Tunnel #2, Room #2 - 262 Poles	SET 1 - 63 Poles				SET 2				SET 3 - 16 Poles				SET 4 - 72 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	139	N 49 E	81 SE	*Not Statistically Significant*				Cleavage/ Joint/Shear Fracture	107	N 17 E	58 SE	Bed. Joint/ Shear Frac/Fault	126	N 36 E	9 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Tunnel #3, Room #3 - 391 Poles	SET 1 - 113 Poles				SET 2				SET 3 - 60 Poles				SET 4 - 43 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	132	N 42 E	87 SE	*Not Statistically Significant*				Cleavage/ Joint/Shear Fracture	125	N 35 E	87 SE	Bed. Joint/ Joint/Fault	164	N 74 E	7 SE	*Not Statistically Significant*				*Not Statistically Significant*			
All Tunnel and Shaft Discontinuities Demonstrating Water and/or DNAPL - 161 Poles	SET 1 - 30 Poles				SET 2				SET 3 - 7 Poles				SET 4 - 82 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	152	N 62 E	86 SE	*Not Statistically Significant*				Cleavage/ Joint/Shear Fracture	120	N 30 E	64 SE	Bed. Joint/ Joint/Fault	146	N 56 E	5 SE	*Not Statistically Significant*				*Not Statistically Significant*			
All Tunnel Discontinuities Demonstrating Water and/or DNAPL - 124 Poles	SET 1 - 27 Poles				SET 2				SET 3				SET 4 - 71 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	152	N 62 E	87 SE	*Not Statistically Significant*				*Not Statistically Significant*				Bed. Joint/ Shear Frac/Fault	146	N 56 E	6 SE	*Not Statistically Significant*				*Not Statistically Significant*			
All Shaft Discontinuities Demonstrating Water and/or DNAPL - 37 Poles	SET 1 - 3 Poles				SET 2				SET 3 - 14 Poles				SET 4 - 8 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	335	N 65 E	89 NW	*Not Statistically Significant*				Cleavage/ Joint/Shear Fracture	124	N 34 E	54 SE	Bed. Joint/ Shear Frac/Fault	181	N 89 W	3 S	*Not Statistically Significant*				*Not Statistically Significant*			

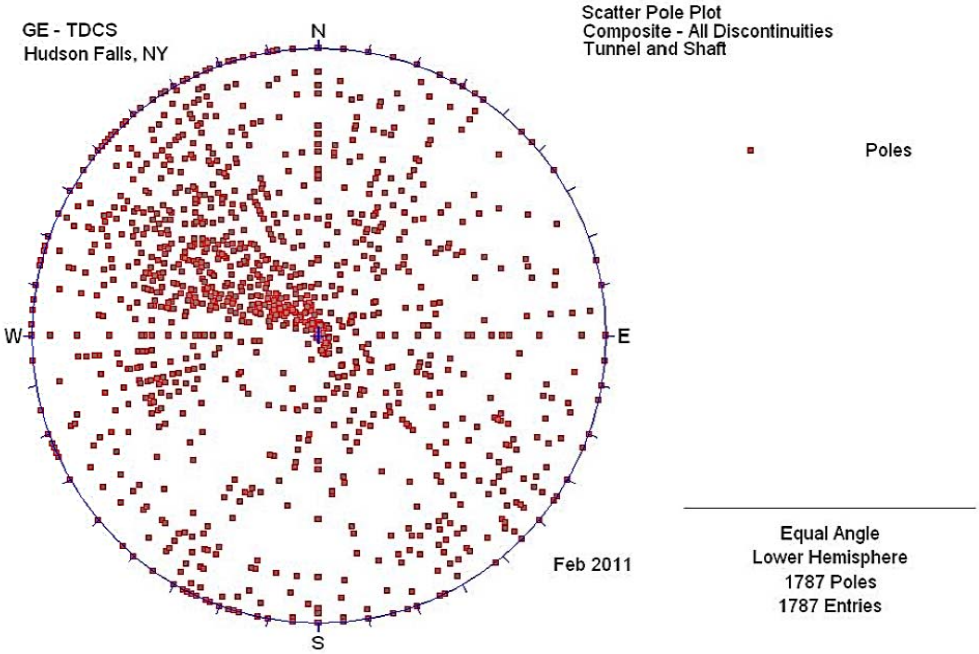
Notes:
1. In each case, sets have been assigned based on stereoplot contouring, using a 3 percent minimum cutoff criteria. Data concentrations less than 3 percent have been excluded.
2. Sets not meeting the cutoff criteria have been desginated "not statistically significant".
3. Tunnel data includes respective room data.
4. Shaft data includes Boring B-210.

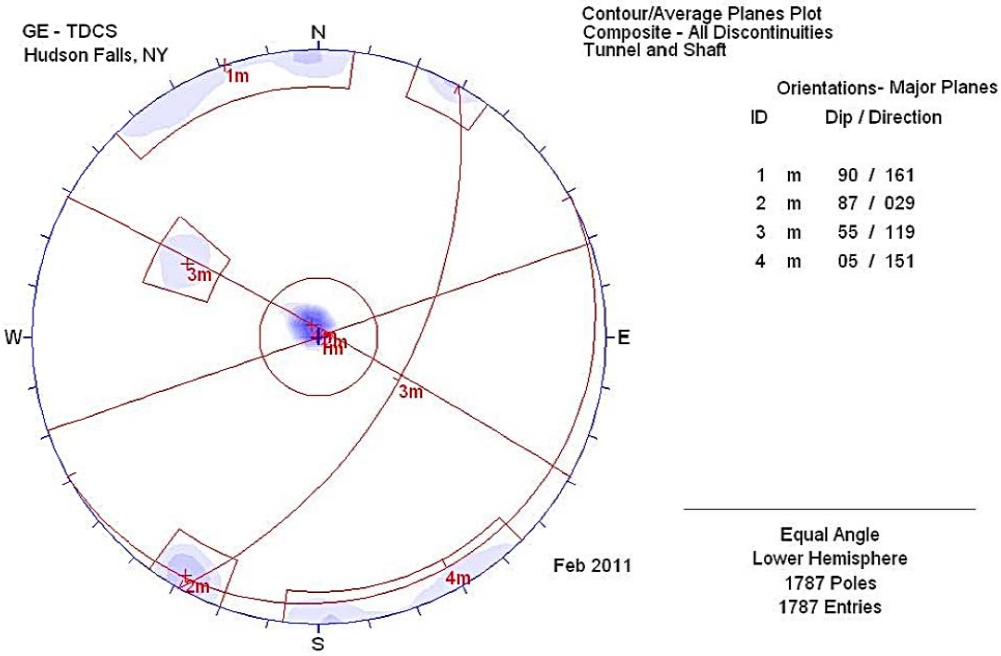
TDCS Tailrace Tunnel, Wells, Borings, Surface Mapping
Discontinuity Set Summary

March 2011

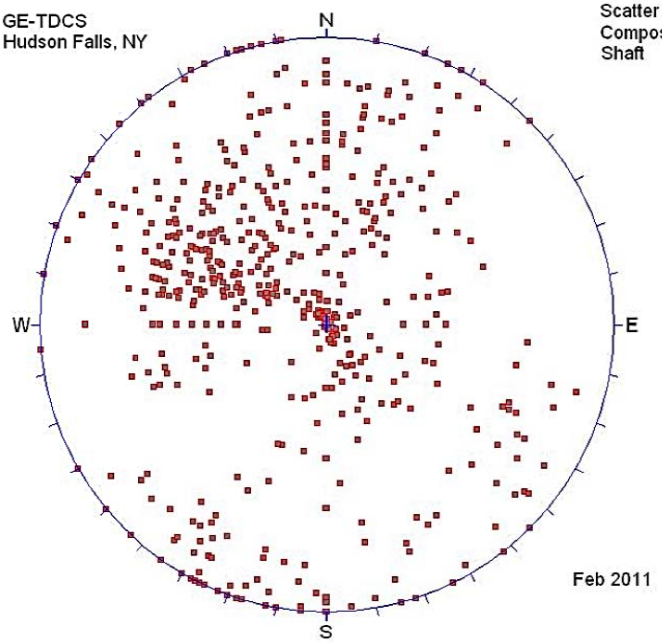
Tailrace Tunnel - 42 Poles	SET 1 - 8 Poles				SET 2 - 6 Poles				SET 3 - 9 Poles				SET 4				SET 5				SET 6 - 5 poles			
	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	313	N 43 E	86 NW	Joint	183	N 87 W	88 SE	Joint/ Cleavage	128	N 38 E	61 SE	*Not Statistically Significant*				*Not Statistically Significant*				Joint	185	N 85 W	62 SW
Borings E1, E2, E3 - 289 Poles	SET 1				SET 2				SET 3 - 54 Poles				SET 4 - 188 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Not Statistically Significant				*Not Statistically Significant*				Joint/ Cleavage	138	N 48 E	62 SE	Bed. Joint/ Joint/Fault	168	N 78 E	9 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Piezometers PZ301, PZ303 - 129 poles	SET 1				SET 2 - 63 Poles				SET 3				SET 4 - 49 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Not Statistically Significant				Joint	035	N 55 W	81 NE	*Not Statistically Significant*				Bed. Joint/ Shear Frac/Fault	157	N 67 E	3 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Monitoring Wells pw-1, pw-2, v-114 - 495 Poles	SET 1				SET 2				SET 3 - 76 Poles				SET 4 - 303 Poles				SET 5				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Not Statistically Significant				*Not Statistically Significant*				Cleavage/ Joint/Shear Fracture	140	N 50 E	62 SE	Bed. Joint/ Shear Frac/Fault	145	N 55 E	5 SE	*Not Statistically Significant*				*Not Statistically Significant*			
Access Shaft Surface Mapping - 214 Poles	SET 1				SET 2 - 85 Poles				SET 3 - 46 Poles				SET 4				SET 5 - 6 Poles				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Not Statistically Significant				Joint	187	N 83 W	84 SW	Joint/ (Cleavage)	112	N 22 E	55 SE	*Not Statistically Significant*				Joint	303	N 33 E	75 NW	*Not Statistically Significant*			
Hydro Plant Mapping - 95 Poles	SET 1 - 52 Poles				SET 2 - 12 Poles				SET 3 - 8 Poles				SET 4 - 15 Poles				SET 5 - 8 Poles				SET 6			
	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type		Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip	Type	Dip Direction	Strike	Dip
	Joint	170	N 80 E	78 SE	Joint	033	N 57 W	82 SE	Joint/ (Cleavage)	118	N 28 E	40 SE	Bed. Joint/ Shear Frac/Fault	149	N 59 E	5 SE	Joint	120	N 30 E	83 SE	*Not Statistically Significant*			

Notes:
1. In each case, sets have been assigned based on stereoplot contouring, using a 3 percent minimum cutoff criteria. Data concentrations less than 3 percent have been excluded.
2. Sets not meeting the cutoff criteria have been desginated "not statistically significant".


GE - TDCS
Hudson Falls, NY
N
W
E
S
Scatter Pole Plot
Composite - All Discontinuities
Tunnel and Shaft
Poles
Feb 2011
Equal Angle
Lower Hemisphere
1787 Poles
1787 Entries


GE - TDCS
Hudson Falls, NY
N
W
E
S
1m
3m
1m
3m
2m
4m
Contour/Average Planes Plot
Composite - All Discontinuities
Tunnel and Shaft
Orientations- Major Planes
ID Dip / Direction
1 m 90 / 161
2 m 87 / 029
3 m 55 / 119
4 m 05 / 151
Feb 2011
Equal Angle
Lower Hemisphere
1787 Poles
1787 Entries

GE-TDCS
Hudson Falls, NY



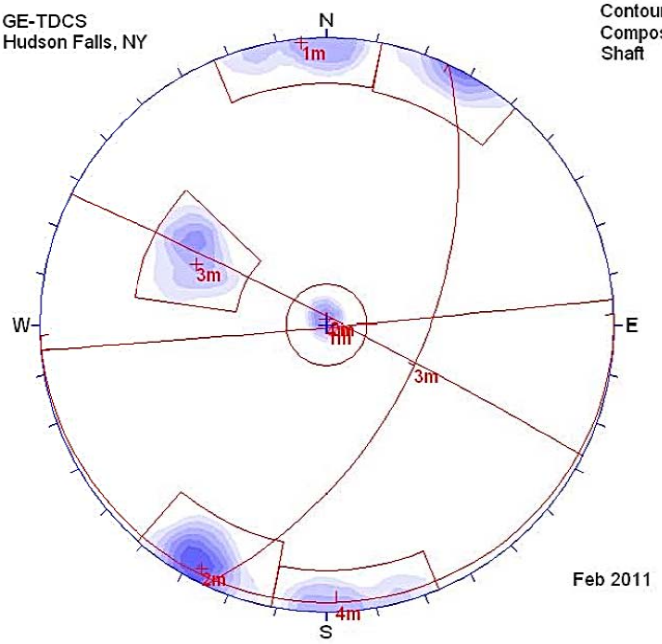
Scatter Pole Plot
Composite - All Discontinuities
Shaft

Poles

Equal Angle
Lower Hemisphere
825 Poles
825 Entries

Feb 2011

GE-TDCS
Hudson Falls, NY



Contour/Average Planes Plot
Composite - All Discontinuities
Shaft

Orientations - Major Planes

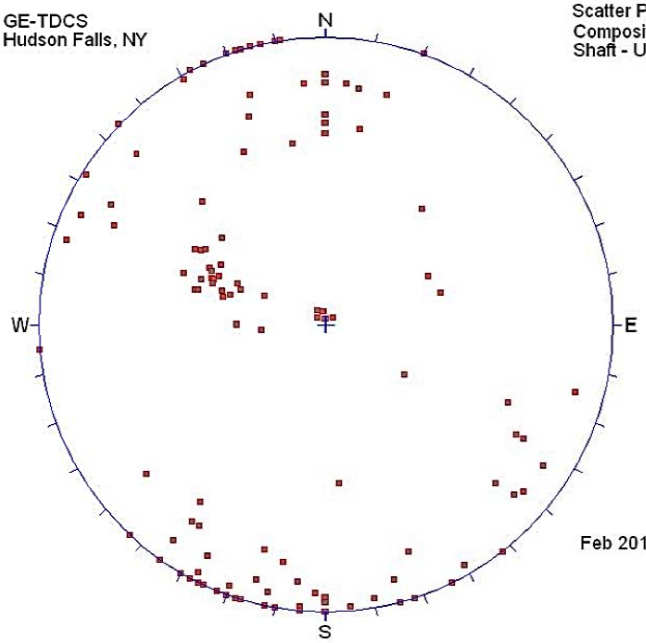
ID		Dip / Direction
1	m	89 / 175
2	m	87 / 027
3	m	53 / 115
4	m	02 / 178

Equal Angle
Lower Hemisphere
825 Poles
825 Entries

Feb 2011

GE-TDCS
Hudson Falls, NY

Scatter Pole Plot
Composite - All Discontinuities
Shaft - Upper Snake Hill



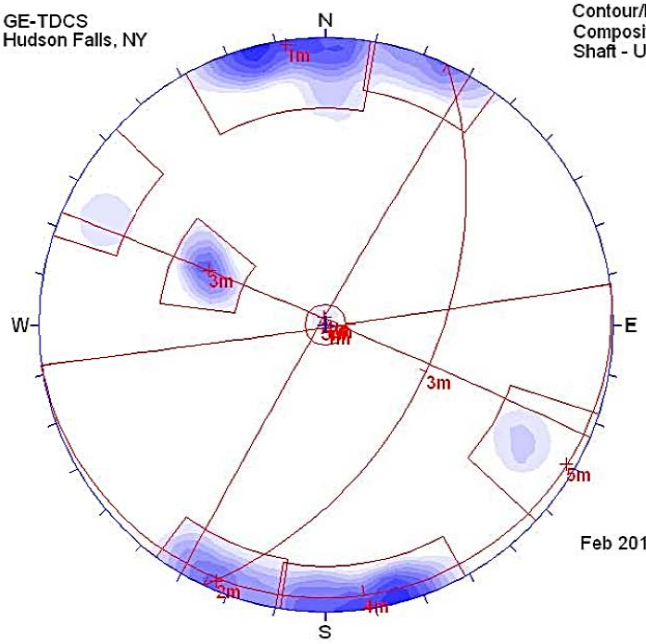
Poles

Feb 2011

Equal Angle
Lower Hemisphere
225 Poles
225 Entries

GE-TDCS
Hudson Falls, NY

Contour/Major Planes Plot
Composite - All Discontinuities
Shaft - Upper Snake Hill

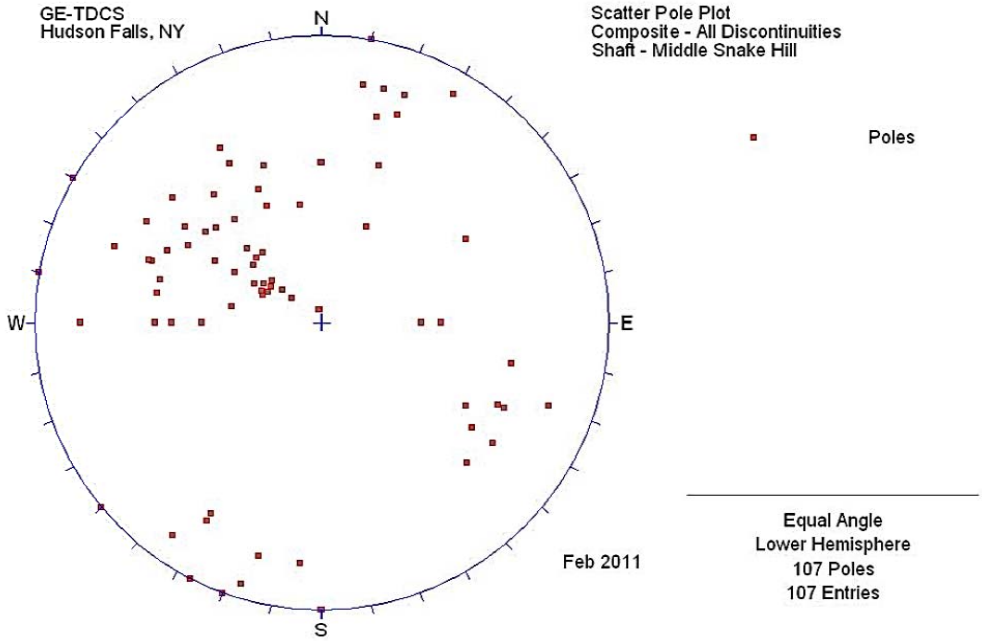


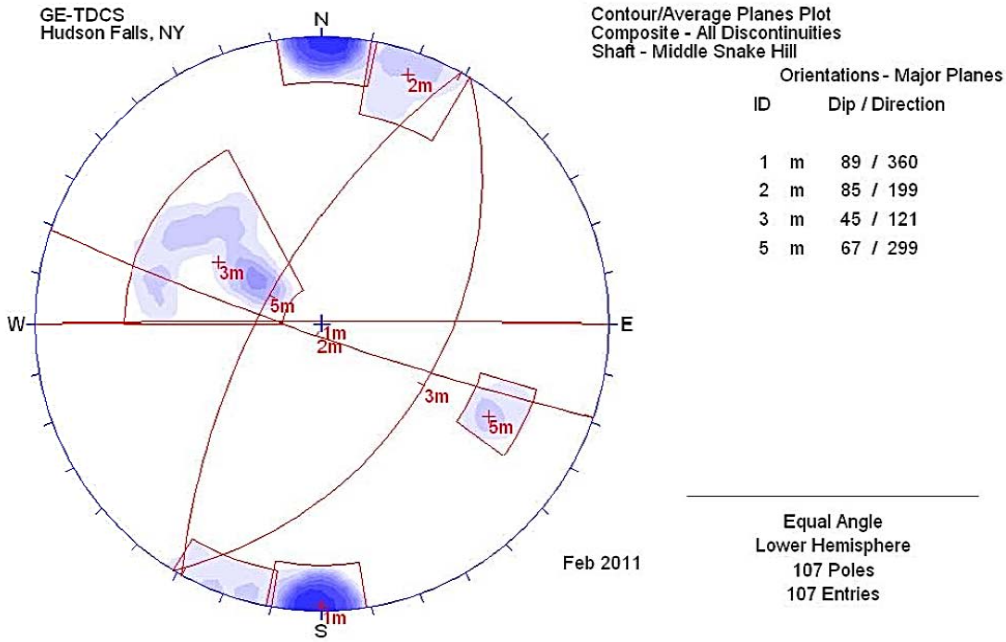
Orientations- Major Planes

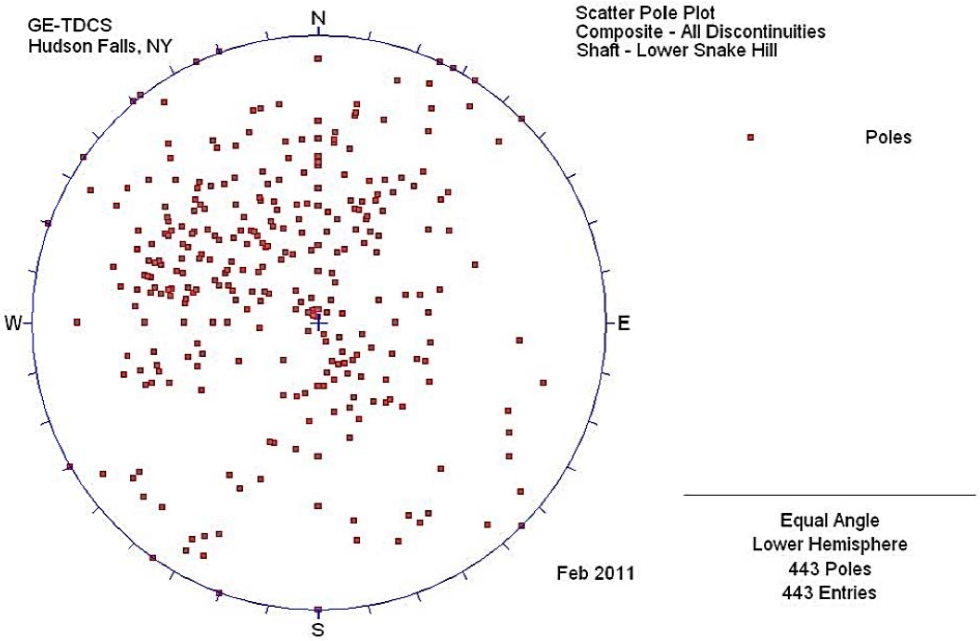
ID		Dip / Direction
1	m	89 / 172
2	m	88 / 023
3	m	48 / 115
4	m	03 / 172
5	m	88 / 300

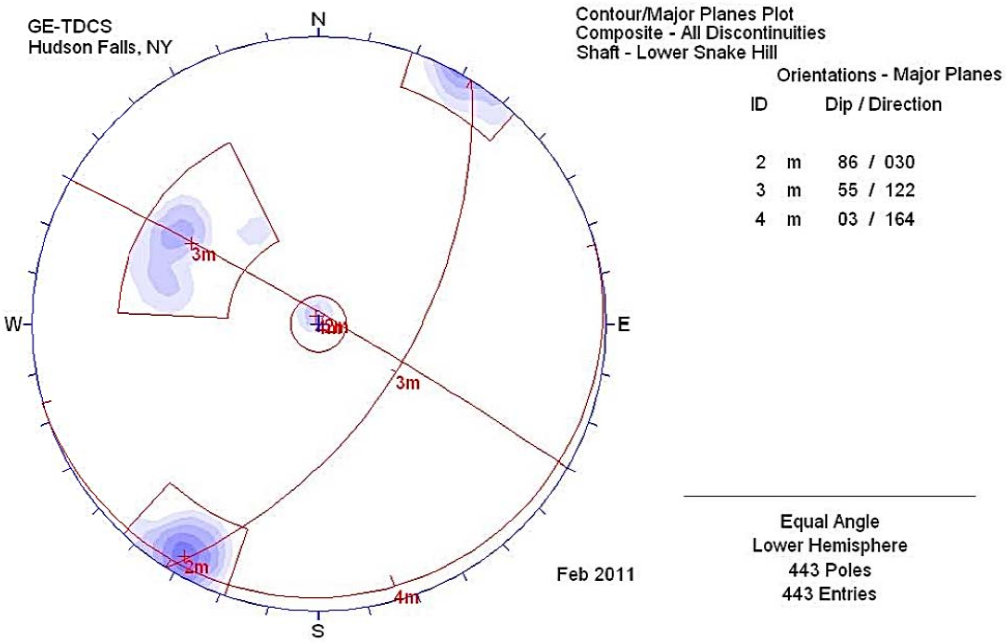
Feb 2011

Equal Angle
Lower Hemisphere
225 Poles
225 Entries

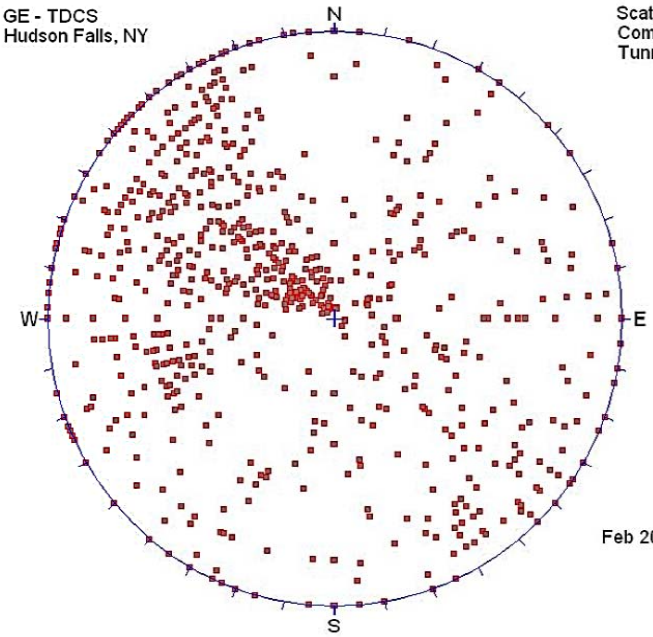

GE-TDCS
Hudson Falls, NY
N
W
E
S
Scatter Pole Plot
Composite - All Discontinuities
Shaft - Middle Snake Hill
Poles
Feb 2011
Equal Angle
Lower Hemisphere
107 Poles
107 Entries


GE-TDCS
Hudson Falls, NY
N
W
E
S
Contour/Average Planes Plot
Composite - All Discontinuities
Shaft - Middle Snake Hill
Orientations - Major Planes
ID Dip / Direction
1 m 89 / 360
2 m 85 / 199
3 m 45 / 121
5 m 67 / 299
2m
3m
5m
1m
2m
3m
5m
1m
Feb 2011
Equal Angle
Lower Hemisphere
107 Poles
107 Entries


GE-TDCS
Hudson Falls, NY
Scatter Pole Plot
Composite - All Discontinuities
Shaft - Lower Snake Hill
N
E
S
W
Poles
Equal Angle
Lower Hemisphere
443 Poles
443 Entries
Feb 2011


GE-TDCS
Hudson Falls, NY
Contour/Major Planes Plot
Composite - All Discontinuities
Shaft - Lower Snake Hill
Orientations - Major Planes
ID Dip / Direction
2 m 86 / 030
3 m 55 / 122
4 m 03 / 164
N
E
S
W
3m
3m
2m
4m
Equal Angle
Lower Hemisphere
443 Poles
443 Entries
Feb 2011

GE - TDCS
Hudson Falls, NY



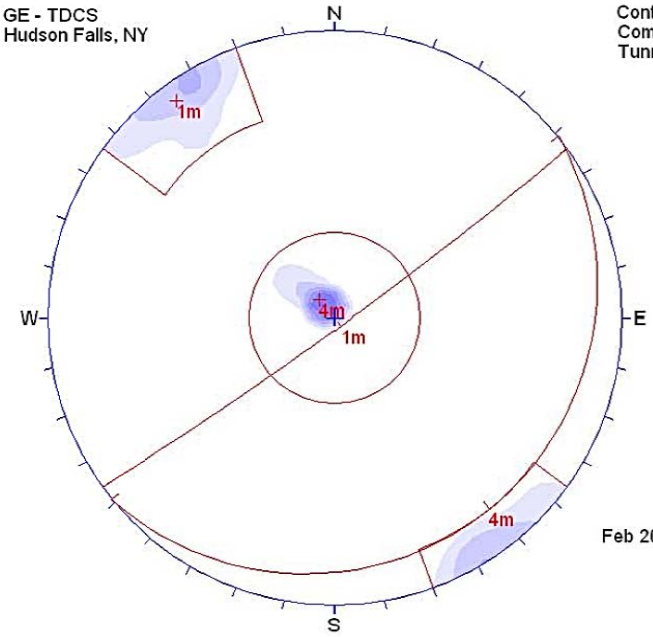
Scatter Pole Plot
Composite - All Discontinuities
Tunnel

Poles

Feb 2011

Equal Angle
Lower Hemisphere
962 Poles
962 Entries

GE - TDCS
Hudson Falls, NY



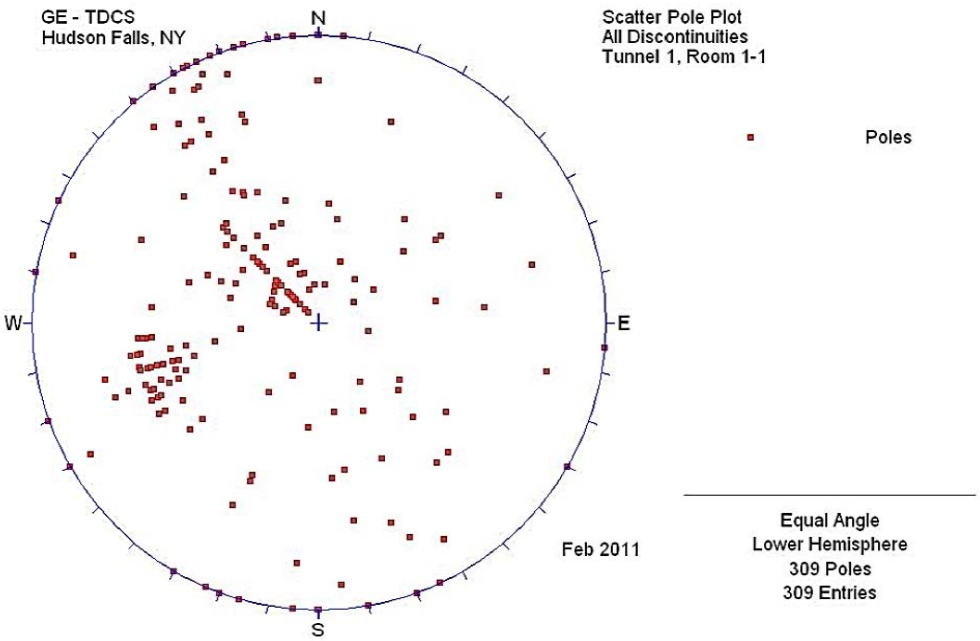
Contour/Average Planes Plot
Composite - All Discontinuities
Tunnel

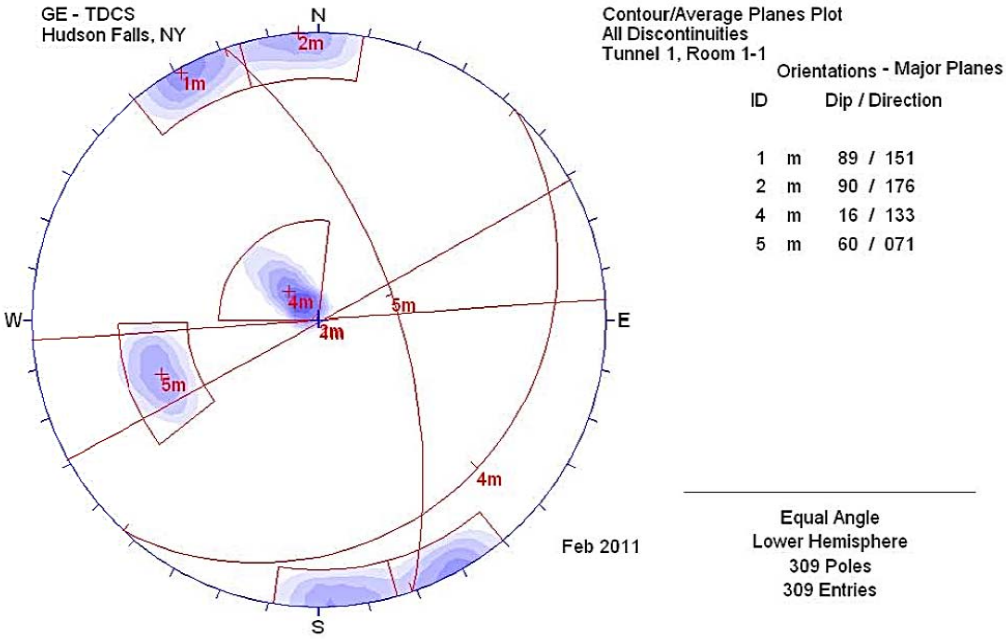
Orientations - Major Planes

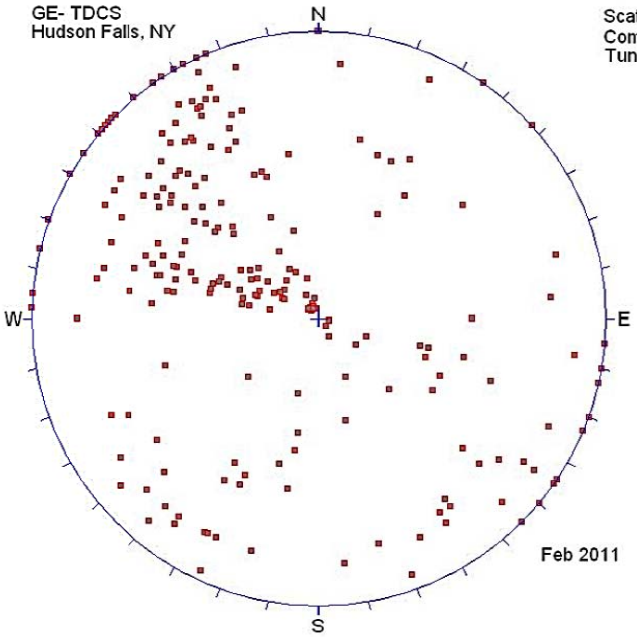
ID		Dip / Direction
1	m	86 / 144
4	m	09 / 141

Feb 2011

Equal Angle
Lower Hemisphere
962 Poles
962 Entries


GE - TDCS
Hudson Falls, NY
N
E
S
W
Scatter Pole Plot
All Discontinuities
Tunnel 1, Room 1-1
Poles
Feb 2011
Equal Angle
Lower Hemisphere
309 Poles
309 Entries

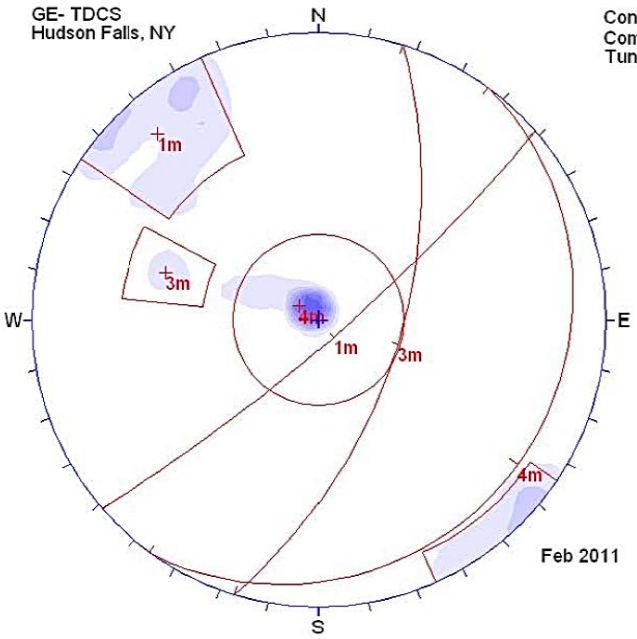

GE - TDCS
Hudson Falls, NY
N
E
S
W
1m
2m
4m
5m
3m
5m
4m
Contour/Average Planes Plot
All Discontinuities
Tunnel 1, Room 1-1
Orientations - Major Planes
ID Dip / Direction
1 m 89 / 151
2 m 90 / 176
4 m 16 / 133
5 m 60 / 071
Feb 2011
Equal Angle
Lower Hemisphere
309 Poles
309 Entries



Scatter Pole Plot
Composite - All Discontinuities
Tunnel 2, Room 2-2

Poles

Equal Angle
Lower Hemisphere
262 Poles
262 Entries



Contour/Major Planes Plot
Composite - All Discontinuities
Tunnel 2, Room 2-2

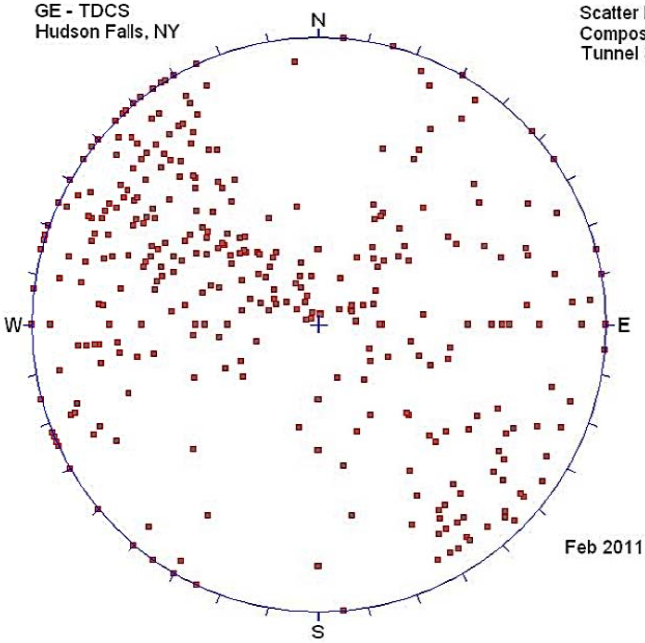
Orientations - Major Planes

ID		Dip / Direction
1	m	81 / 139
3	m	58 / 107
4	m	09 / 126

Equal Angle
Lower Hemisphere
262 Poles
262 Entries

GE - TDCS
Hudson Falls, NY

Scatter Pole Plot
Composite - All Discontinuities
Tunnel 3, Room 3-1



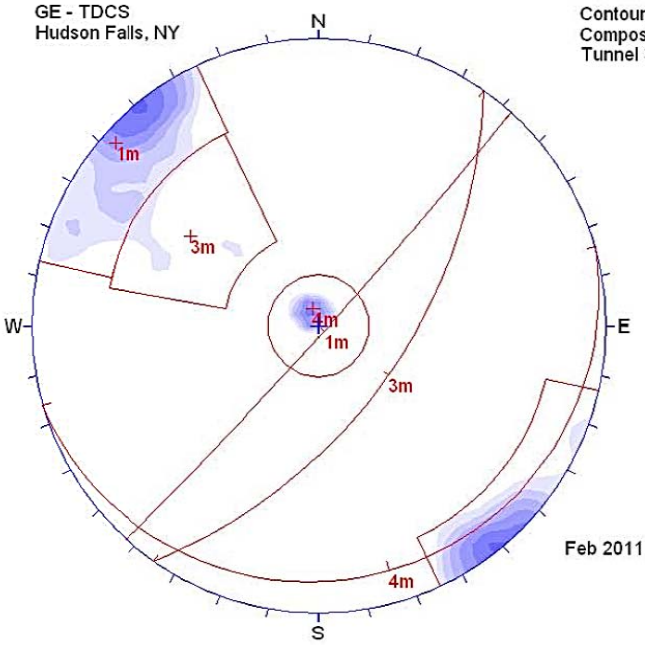
Poles

Feb 2011

Equal Angle
Lower Hemisphere
391 Poles
391 Entries

GE - TDCS
Hudson Falls, NY

Contour/Average Planes Plot
Composite - All Discontinuities
Tunnel 3, Room 3-1

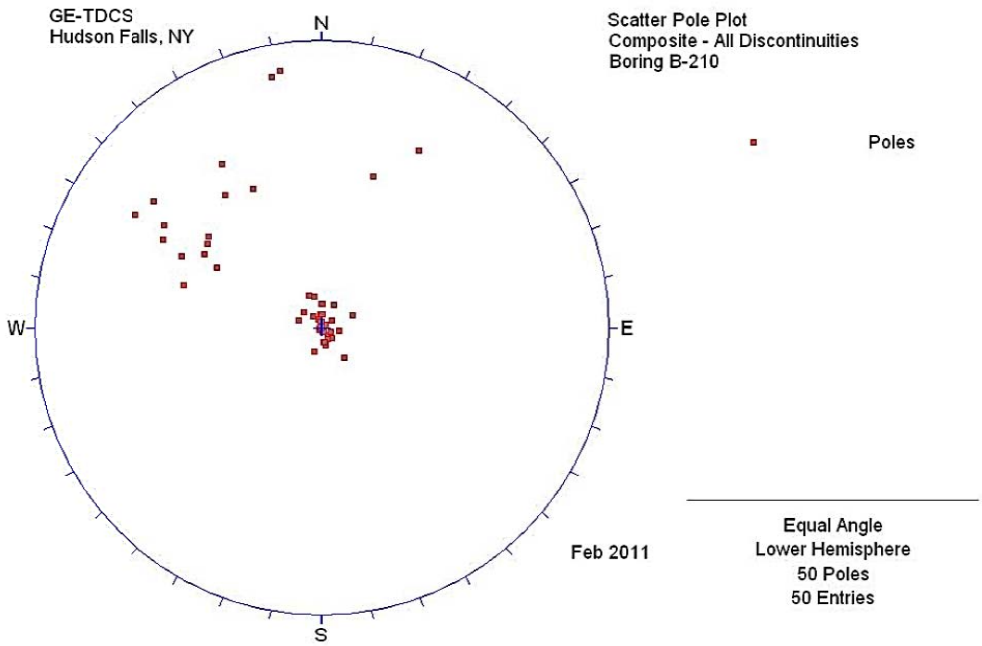


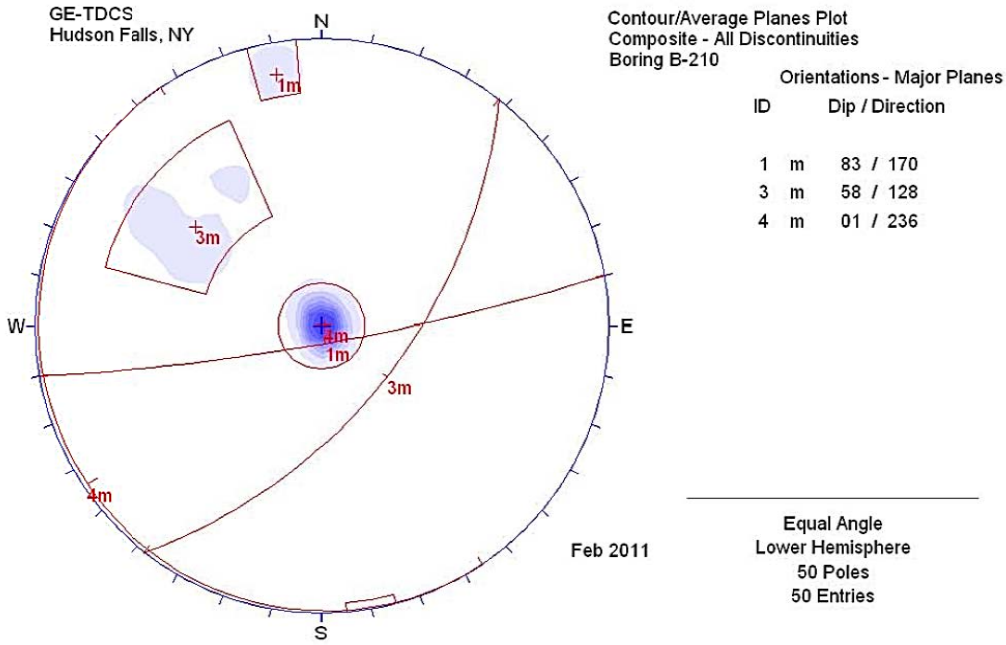
Orientations - Major Planes

ID		Dip / Direction
1	m	87 / 132
4	m	07 / 164
3	m	57 / 125

Feb 2011

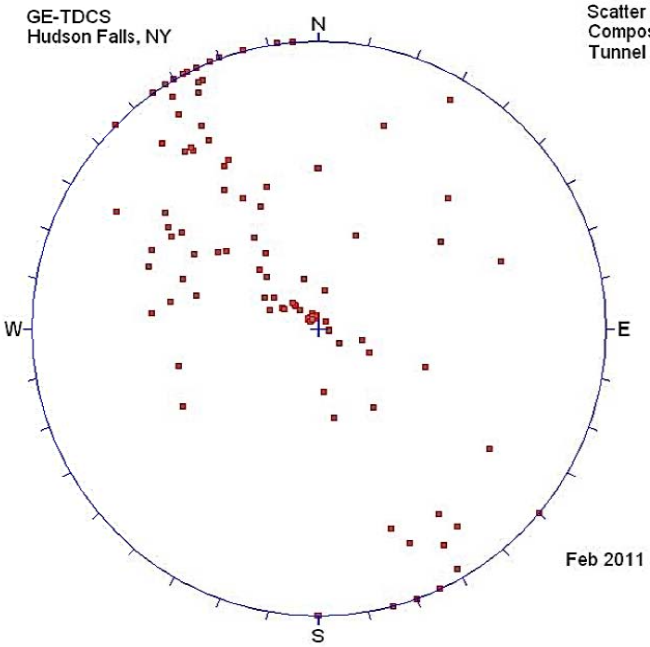
Equal Angle
Lower Hemisphere
391 Poles
391 Entries


GE-TDCS
Hudson Falls, NY
N
W
E
S
Scatter Pole Plot
Composite - All Discontinuities
Boring B-210
Poles
Feb 2011
Equal Angle
Lower Hemisphere
50 Poles
50 Entries


GE-TDCS
Hudson Falls, NY
N
W
E
S
1m
3m
4m
1m
3m
4m
Contour/Average Planes Plot
Composite - All Discontinuities
Boring B-210
Orientations - Major Planes
ID Dip / Direction
1 m 83 / 170
3 m 58 / 128
4 m 01 / 236
Feb 2011
Equal Angle
Lower Hemisphere
50 Poles
50 Entries

GE-TDCS
Hudson Falls, NY

Scatter Pole Plot
Composite - DNAPL/Water Bearing Discontinuities
Tunnel and Shaft



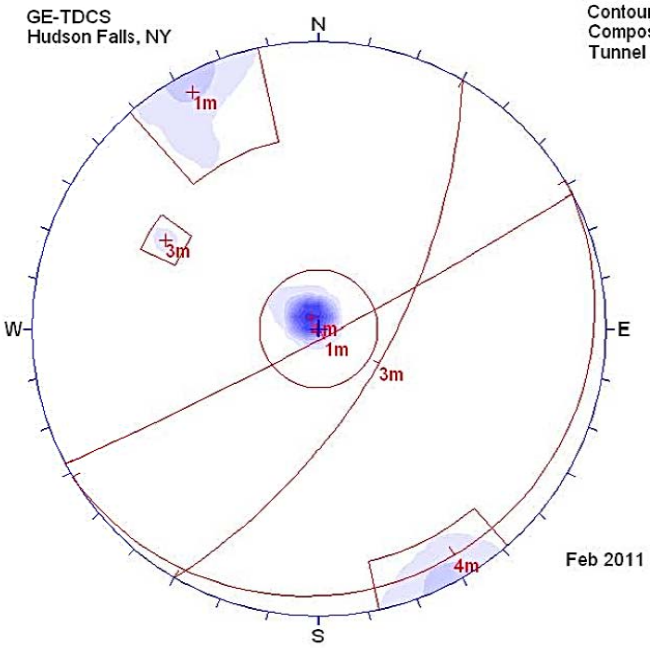
Poles

Feb 2011

Equal Angle
Lower Hemisphere
161 Poles
161 Entries

GE-TDCS
Hudson Falls, NY

Contour/Major Planes Plot
Composite - DNAPL/Water Bearing Discontinuities
Tunnel and Shaft



Orientations - Major Planes

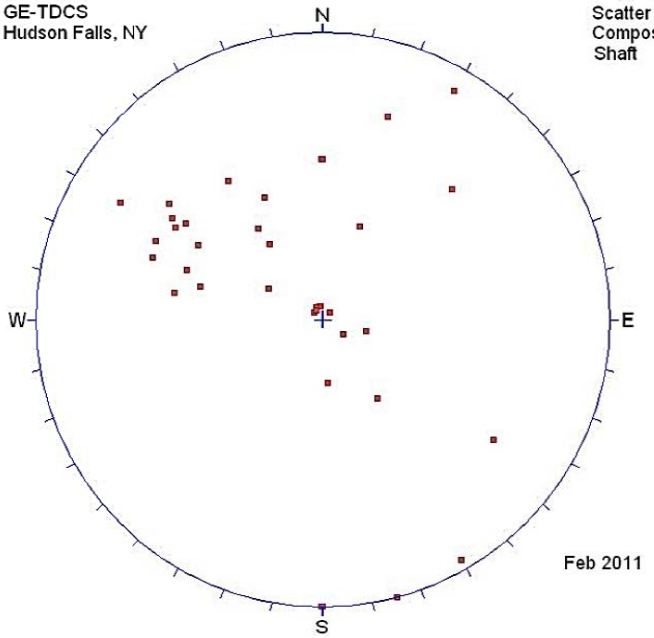
ID		Dip / Direction
1	m	86 / 152
3	m	63 / 120
4	m	05 / 149

Feb 2011

Equal Angle
Lower Hemisphere
161 Poles
161 Entries

GE-TDCS
Hudson Falls, NY

Scatter Pole Plot
Composite - DNAPL/Water Bearing Discontinuities
Shaft



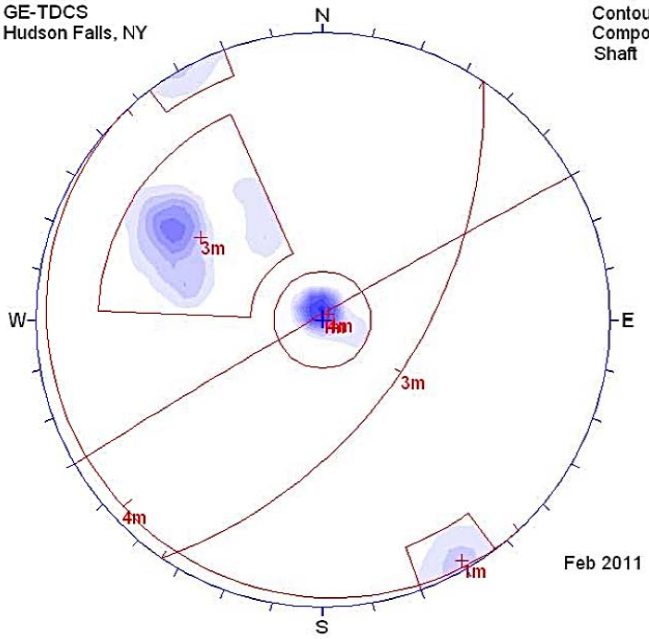
Poles

Feb 2011

Equal Angle
Lower Hemisphere
37 Poles
37 Entries

GE-TDCS
Hudson Falls, NY

Contour/Average Planes Plot
Composite - DNAPL/Water Bearing Discontinuities
Shaft



Orientations - Major Planes

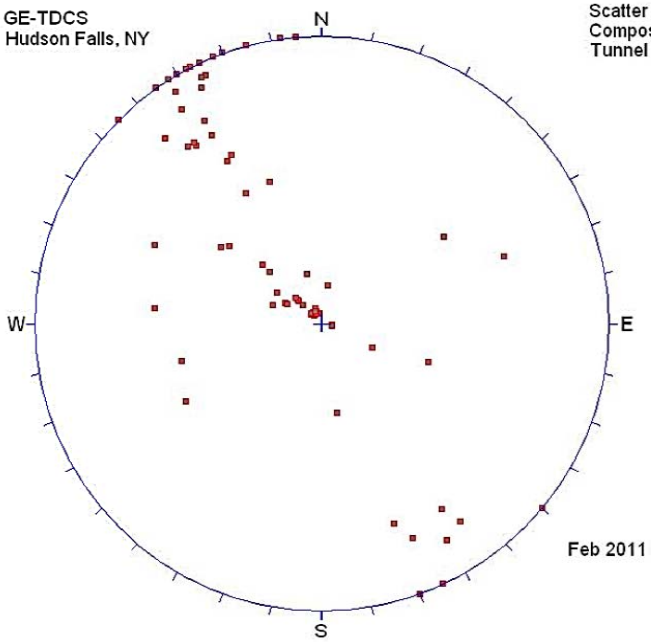
ID		Dip / Direction
1	m	88 / 330
3	m	54 / 124
4	m	03 / 227

Feb 2011

Equal Angle
Lower Hemisphere
37 Poles
37 Entries

GE-TDCS
Hudson Falls, NY

Scatter Pole Plot
Composite - DNAPL/Water Bearing Discontinuities
Tunnel



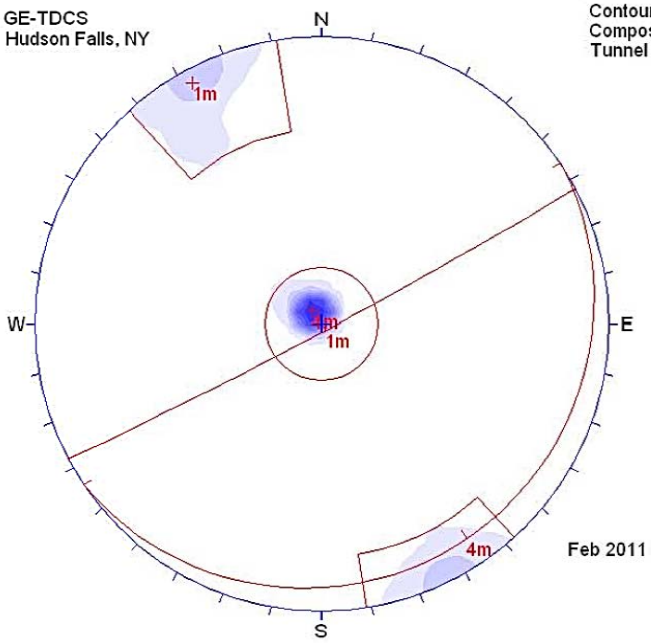
Poles

Feb 2011

Equal Angle
Lower Hemisphere
124 Poles
124 Entries

GE-TDCS
Hudson Falls, NY

Contour/Average Planes Plot
Composite - DNAPL/Water Bearing Discontinuities
Tunnel



Orientations - Major Planes

ID		Dip / Direction
1	m	87 / 152
4	m	06 / 146

Feb 2011

Equal Angle
Lower Hemisphere
124 Poles
124 Entries

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
Shaft - Upper Snake Hill Shale		225-215	310	84	joint	
"		225-215	5	89	joint	
"		225-215	22	90	joint	
"		225-215	355	89	joint	
"		225-215	185	80	joint	
"		225-215	122	89	joint	
"		225-215	185	80	joint	
"		225-215	180	80	joint	
"		225-215	185	80	joint	
"		225-215	175	80	joint	
"		225-215	110	55	joint	
"		225-215	180	82	joint	
"		225-215	150	89	joint	
"		225-215	110	49	joint	
"		225-215	0	90	joint	
"		225-215	15	85	joint	
"		225-215	120	45	joint	
"		225-215	170	5	Bed Joint	W
"		213-206	107	38	joint	
"		213-206	108	87	joint	
"		213-206	313	78	joint	
"		213-206	302	36	joint	
"		213-206	293	69	joint	
"		213-206	355	58	joint	
"		213-206	2	86	joint	
"		213-206	112	46	joint	
"		213-206	112	46	joint	
"		213-206	12	87	joint	
"		213-206	0	88	joint	
"		213-206	0	88	joint	
"		213-206	0	88	joint	
"		213-206	116	48	joint	
"		213-206	0	87	joint	
"		213-206	105	50	joint	
"		213-206	108	41	joint	
"		213-206	115	47	joint	
"		213-206	110	45	joint	
"		213-206	334	90	joint	
"		213-206	6	84	joint	
"		213-206	6	84	joint	
"		213-206	112	45	joint	
"		213-207	112	45	joint	
"		206-199	5	90	joint	
"		206-199	150	6	Bed Joint	
"		206-199	10	90	joint	
"		206-199	10	90	joint	
"		206-199	195	79	joint	
"		206-199	195	79	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		206-199	34	79	joint	
"		206-199	30	90	joint	
"		206-199	115	37	joint	
"		206-199	114	86	joint	
"		206-199	114	86	joint	
"		206-199	345	90	joint	
"		206-199	134	90	joint	
"		206-199	162	80	joint	
"		206-199	15	78	joint	
"		206-199	119	81	joint	
"		206-199	160	75	joint	
"		206-199	12	90	joint	
"		206-199	342	90	joint	
"		206-199	10	90	joint	
"		206-199	342	90	joint	
"		206-199	10	80	joint	
"		206-199	132	83	joint	
"		206-199	28	90	joint	
"		206-199	43	90	joint	
"		206-199	115	26	Cleavage	
"		206-199	322	90	joint	
"		206-199	112	35	Cleavage	
"		206-199	312	83	joint	
"		206-199	27	84	joint	
"		206-199	5	90	joint	
"		206-199	114	44	Cleavage	
"		206-199	180	2	Bed Joint	
"		200-192	20	88	joint	
"		200-192	155	67	joint	
"		200-192	20	90	joint	
"		200-192	20	90	joint	
"		200-192	345	90	joint	W
"		200-192	85	90	joint	
"		200-192	0	90	joint	W
"		200-192	330	88	joint	W
"		200-192	330	88	joint	W
"		200-192	50	78	joint	
"		200-192	27	88	joint	
"		200-192	350	88	joint	
"		200-192	90	34	joint	
"		200-192	170	65	joint	
"		200-192	26	90	joint	
"		200-192	130	4	Bed Joint	W
"		194-184	180	72	joint	
"		194-184	35	74	joint	
"		194-184	32	79	joint	
"		194-184	32	79	joint	
"		194-184	190	69	joint	
"		194-184	188	79	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		194-184	200	90	joint	
"		194-184	163	90	joint	
"		194-184	152	90	joint	
"		194-184	200	90	joint	
"		194-184	105	49	Cleavage	
"		194-184	25	90	joint	
"		194-184	165	90	joint	
"		194-184	110	45	Cleavage	
"		194-184	0	90	joint	
"		194-184	35	90	joint	
"		194-184	345	85	joint	
"		194-184	340	80	joint	
"		194-184	155	90	joint	
"		194-184	105	40	Cleavage	
"		194-184	345	90	joint	
"		194-184	180	70	joint	
"		194-184	35	85	joint	
"		194-184	160	90	joint	
"		194-184	180	67	joint	
"		194-184	160	90	joint	
"		194-184	25	90	joint	
"		194-184	255	45	Cleavage	
"		194-184	0	90	joint	
"		194-184	17	90	joint	
"		194-184	245	43	Cleavage	
"		194-184	160	90	joint	
"		194-184	25	90	joint	
"		194-184	170	90	joint	
"		194-184	130	50	Cleavage	
"		194-184	30	90	joint	
"		180-170	162	90	joint	
"		180-170	160	90	joint	
"		180-170	120	55	joint	
"		180-170	220	55	joint	
"		180-170	300	75	joint	
"		180-170	285	84	joint	
"		180-170	121	53	joint	W
"		180-170	300	77	joint	
"		180-170	171	90	joint	
"		180-170	18	90	joint	
"		180-170	122	52	joint	
"		180-170	115	78	joint	
"		180-170	85	25	Cleavage	
"		180-170	135	62	joint	
"		180-170	303	84	joint	
"		180-170	170	90	joint	
"		180-170	167	90	joint	
"		180-170	230	4	Shear Frac	W
"		180-170	180	2	Upper Fault	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
Shaft - Middle Snake Hill Shale		170-159	20	90	joint	
"		170-159	120	90	joint	
"		170-159	305	65	joint	
"		170-159	200	75	joint	
"		170-159	135	40	Cleavage	
"		170-159	170	45	Cleavage	
"		170-159	30	75	joint	
"		170-159	110	75	joint	
"		170-159	15	80	joint	
"		170-159	300	60	joint	
"		170-159	300	60	joint	
"		170-159	295	70	joint	
"		170-159	295	70	joint	
"		170-159	90	55	joint	
"		170-159	130	25	Cleavage	
"		170-159	130	20	Cleavage	
"		170-159	130	34	Cleavage	
"		170-159	290	80	joint	
"		170-159	125	24	Cleavage	
"		170-159	115	25	Cleavage	
"		170-159	35	84	joint	
"		170-159	50	90	joint	
"		170-159	270	38	joint	
"		170-159	90	45	Cleavage	
"		170-159	140	35	Cleavage	
"		170-159	130	68	joint	
"		170-159	20	90	joint	
"		170-159	140	50	joint	
"		170-159	120	90	joint	
"		170-159	180	58	joint	
"		170-159	118	26	Cleavage	
"		170-159	135	35	Shear Frac	
"		170-159	120	30	Shear Frac	
"		170-159	100	35	Cleavage	
"		170-159	100	90	joint	
"		170-159	150	65	joint	
"		158-151	155	54	joint	
"		158-151	120	24	Shear Frac	W
"		158-151	155	48	joint	
"		158-151	295	68	joint	
"		158-151	314	70	joint	
"		158-151	305	72	joint	W
"		158-151	282	68	joint	
"		158-151	295	70	joint	
"		158-151	124	27	Shear Frac	
"		158-151	125	60	joint	
"		158-151	125	60	joint	
"		158-151	5	80	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		158-151	105	60	Cleavage	
"		158-151	210	85	joint	W
"		158-151	125	60	Cleavage	
"		158-151	115	61	joint	
"		158-151	195	73	joint	
"		158-151	200	80	joint	
"		151-141	132	52	Cleavage	
"		151-141	27	90	joint	
"		151-141	200	60	joint	
"		151-141	120	46	Cleavage	
"		151-141	128	54	Cleavage	
"		151-141	27	90	joint	
"		151-141	17	87	joint	
"		151-141	30	77	joint	
"		151-141	90	60	Cleavage	
"		151-141	110	64	Cleavage	W
"		151-141	120	56	Cleavage	
"		151-141	140	60	Cleavage	
"		140-130	190	80	joint	
"		140-130	205	40	joint	
"		140-130	90	80	joint	
"		140-130	120	70	joint	
"		140-130	195	80	joint	
"		140-130	130	15	joint	
"		140-130	0	90	joint	
"		140-130	270	45	Cleavage	
"		140-130	0	90	joint	
"		140-130	150	70	joint	
"		140-130	150	70	joint	
"		140-130	160	60	joint	
"		140-130	120	38	joint	
"		140-130	120	38	joint	
"		140-130	120	38	joint	
"		140-130	120	38	joint	
"		140-130	100	60	joint	
"		140-130	100	60	joint	
"		140-130	100	60	joint	
"		140-130	0	90	joint	
"		140-130	110	65	joint	
"		140-130	240	60	joint	
"		140-130	190	90	joint	
"		140-130	240	60	joint	
"		140-130	190	90	joint	
"		140-130	170	5	Lower Fault	
Shaft - Lower Snake Hill Shale		131-121	90	80	joint	
"		131-121	142	90	joint	
"		131-121	140	65	joint	
"		131-121	110	64	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		131-121	125	40	joint	
"		131-121	80	68	joint	
"		131-121	210	60	joint	
"		131-121	170	2	Bed Jt	
"		131-121	170	2	Bed Jt	
"		131-121	170	2	Bed Jt	
"		131-121	100	65	joint	
"		131-121	138	75	joint	
"		131-121	170	45	Cleav	
"		131-121	90	80	joint	
"		131-121	140	65	joint	
"		131-121	160	45	joint	
"		131-121	75	45	joint	
"		131-121	110	35	joint	
"		131-121	130	75	joint	
"		131-121	170	65	joint	
"		131-121	180	57	joint	
"		120-111	213	90	joint	
"		120-111	26	84	joint	
"		120-111	208	80	joint	
"		120-111	115	65	joint	
"		120-111	180	58	joint	D
"		120-111	225	65	joint	D
"		120-111	105	64	joint	
"		120-111	124	64	joint	D
"		120-111	198	73	joint	D
"		120-111	170	5	Bed Jt	D
"		120-111	175	45	joint	
"		120-111	135	45	joint	
"		120-111	150	72	joint	
"		120-111	150	72	joint	
"		120-111	150	72	joint	
"		120-111	155	90	joint	
"		120-111	150	60	joint	
"		120-111	205	90	joint	
"		120-111	125	65	joint	
"		120-111	180	44	joint	
"		120-111	185	64	joint	
"		120-111	122	62	joint	D
"		120-111	127	67	joint	D
"		120-111	120	78	joint	D
"		120-111	293	31	joint	
"		111-106.5	210	55	joint	
"		111-106.5	180	70	joint	
"		111-106.5	180	50	joint	
"		111-106.5	220	35	joint	
"		111-106.5	102	60	joint	
"		111-106.5	305	10	Bed Jt	D
"		105.5-99	335	32	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		105.5-99	125	78	joint	
"		105.5-99	105	73	joint	
"		105.5-99	112	68	joint	
"		105.5-99	28	80	joint	
"		105.5-99	285	18	Bed Jt	D
"		105.5-99	40	80	joint	
"		105.5-99	0	50	joint	
"		105.5-99	135	30	joint	
"		105.5-99	135	70	joint	
"		105.5-99	90	50	joint	
"		105.5-99	210	48	joint	
"		105.5-99	135	70	joint	
"		105.5-99	30	82	joint	
"		98-87	120	63	joint	
"		98-87	50	5	Bed Jt	
"		98-87	200	55	Cleav	
"		98-87	170	60	joint	
"		98-87	100	70	joint	
"		98-87	120	85	joint	
"		98-87	120	55	joint	
"		98-87	170	5	Bed Jt	
"		98-87	180	30	joint	
"		98-87	320	40	joint	
"		98-87	160	90	joint	
"		98-87	250	10	Bed Jt	
"		98-87	0	65	joint	
"		98-87	180	85	joint	
"		98-87	190	55	joint	
"		98-87	250	60	joint	
"		98-87	110	60	joint	
"		98-87	60	50	joint	
"		98-87	90	40	joint	
"		98-87	300	75	joint	
"		98-87	320	85	joint	
"		98-87	120	50	joint	
"		98-87	175	65	joint	
"		98-87	155	40	joint	
"		98-87	55	85	joint	
"		98-87	0	90	joint	
"		84-77	170	5	Bed Jt	
"		84-77	100	55	joint	D
"		84-77	200	48	joint	
"		84-77	150	60	joint	
"		84-77	185	35	Cleav	
"		84-77	50	80	joint	
"		84-77	100	58	joint	
"		84-77	130	48	joint	
"		84-77	130	50	joint	
"		84-77	110	55	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		84-77	163	75	joint	
"		84-77	202	17	Cleav	
"		84-77	185	67	joint	
"		84-77	198	45	joint	
"		84-77	100	61	Cleav	
"		84-77	103	48	Cleav	
"		84-77	250	25	joint	
"		84-77	100	50	Cleav	
"		84-77	210	75	joint	
"		84-77	295	72	joint	
"		72-67	42	20	joint	
"		72-67	142	62	Cleav	
"		72-67	310	85	joint	
"		72-67	25	78	joint	
"		72-67	180	5	Bed Jt	
"		72-67	30	85	joint	
"		72-67	125	60	joint	D
"		72-67	20	90	joint	
"		72-67	135	62	joint	
"		72-67	190	72	joint	
"		72-67	195	28	joint	
"		72-67	16	30	joint	
"		72-67	202	38	joint	W/D
"		72-67	195	20	joint	
"		72-67	35	90	joint	
"		72-67	112	37	joint	
"		72-67	190	73	joint	
"		72-67	103	55	joint	
"		72-67	35	90	joint	
"		72-67	120	10	joint	
"		72-67	120	62	joint	
"		72-67	235	58	joint	
"		62-58	155	42	Cleav	
"		62-58	205	57	joint	
"		62-58	270	30	joint	
"		62-58	115	65	joint	D?
"		62-58	225	90	joint	
"		62-58	335	73	joint	
"		62-58	120	57	joint	
"		62-58	146	60	joint	D?
"		62-58	150	70	joint	
"		62-58	205	85	joint	
"		62-58	215	85	joint	
"		62-58	198	83	joint	
"		62-58	30	63	joint	
"		62-58	105	62	joint	
"		62-58	205	90	joint	
"		62-58	135	60	Cleav	
"		58-51	0	25	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		58-51	175	55	Cleav	
"		58-51	185	42	Cleav	
"		58-51	210	60	joint	
"		58-51	102	60	joint	
"		58-51	102	56	joint	
"		58-51	155	50	joint	D?
"		58-51	111	61	joint	
"		58-51	145	35	joint	D?
"		58-51	170	35	joint	
"		58-51	145	48	joint	
"		58-51	105	50	Cleav	
"		58-51	126	56	joint	
"		58-51	130	53	joint	
"		58-51	130	30	joint	
"		58-51	315	45	joint	
"		58-51	208	90	joint	
"		58-51	132	60	Cleav	
"		58-51	295	23	joint	
"		51-38	155	5	Bed Jt	W/D
"		51-38	25	31	joint	
"		51-38	205	50	clv	
"		51-38	205	43	clv	
"		51-38	345	23	joint	
"		51-38	345	45	joint	
"		51-38	50	78	joint	
"		51-38	90	35	joint	
"		51-38	115	55	joint	
"		51-38	45	81	joint	
"		51-38	125	56	joint	
"		51-38	105	63	joint	
"		51-38	317	40	joint	
"		51-38	337	40	clv	
"		51-38	330	75	joint	
"		51-38	145	40	joint	
"		51-38	20	48	clv	
"		51-38	110	40	clv	
"		51-38	160	58	joint	
"		51-38	112	42	joint	
"		51-38	310	34	joint	
"		51-38	310	20	joint	
"		51-38	120	47	clv	
"		51-38	325	37	joint	
"		51-38	105	33	clv	
"		51-38	155	51	clv	
"		48-40	160	38	joint	
"		48-40	210	35	joint	
"		48-40	144	43	joint	
"		48-40	195	47	joint	
"		48-40	200	30	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		48-40	190	63	joint	
"		48-40	320	15	joint	
"		48-40	340	16	joint	
"		48-40	350	20	joint	
"		48-40	322	27	joint	
"		48-40	335	5	joint	
"		48-40	205	52	joint	
"		48-40	330	23	joint	
"		48-40	328	19	joint	
"		48-40	170	75	joint	
"		48-40	98	50	joint	
"		48-40	340	8	joint	
"		48-40	85	23	joint	
"		48-40	64	34	joint	
"		48-40	205	44	joint	
"		48-40	180	60	joint	
"		48-40	118	40	joint	
"		48-40	90	40	joint	
"		48-40	145	37	joint	
"		48-40	160	48	joint	
"		48-40	160	54	joint	
"		48-40	147	35	joint	
"		40-31	145	15	joint	
"		40-31	215	60	joint	
"		40-31	165	10	joint	
"		40-31	215	40	joint	
"		40-31	220	5	joint	
"		40-31	180	65	joint	
"		40-31	265	42	joint	
"		40-31	310	20	joint	
"		40-31	140	10	joint	
"		40-31	155	68	joint	
"		40-31	253	35	joint	
"		(33-29)	150	4	BSF	W/D
"		(33-29)	150	4	BSF	W/D
"		40-31	10	28	joint	
"		40-31	215	65	joint	
"		40-31	100	28	joint	
"		40-31	80	46	joint	
"		40-31	138	64	joint	
"		40-31	105	50	joint	
"		40-31	160	38	joint	
"		40-31	120	40	joint	
"		40-31	145	53	joint	
"		40-31	160	28	joint	
"		40-31	230	53	joint	
"		40-31	135	5	Bed Jt	
"		32-25	20	60	joint	
"		32-25	350	35	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		32-25	290	40	joint	
"		32-25	110	62	joint	
"		32-25	350	75	joint	
"		32-25	340	35	joint	
"		32-25	160	70	joint	
"		32-25	185	65	joint	
"		32-25	280	43	joint	
"		32-25	255	40	joint	
"		32-25	120	22	joint	
"		32-25	190	75	joint	
"		32-25	110	24	joint	
"		32-25	145	42	joint	D(?)
"		32-25	90	62	joint	
"		32-25	210	10	joint	
"		32-25	335	18	joint	
"		32-25	165	75	joint	
"		32-25	118	50	joint	
"		32-25	100	50	joint	
"		32-25	125	35	joint	
"		32-25	140	45	joint	
"		32-25	117	70	joint	
"		32-25	115	28	joint	
"		32-25	130	48	joint	
"		32-25	255	47	joint	
"		32-25	125	35	joint	
"		32-25	175	28	joint	
"		32-25	95	65	joint	
"		32-25	75	60	joint	
"		32-25	200	45	joint	
"		32-25	22	48	joint	
"		32-25	135	30	joint	
"		32-25	75	50	joint	
"		32-25	210	40	joint	
"		32-25	40	80	joint	
"		32-25	80	60	joint	
"		32-25	225	62	joint	
"		32-25	180	20	joint	
"		32-25	70	65	joint	
"		32-25	73	60	joint	
"		32-25	70	48	joint	
"		32-25	70	63	joint	
"		32-25	290	43	joint	
"		32-25	68	58	joint	
"		32-25	298	47	joint	
"		32-25	170	40	joint	
"		32-25	105	47	joint	D
"		32-25	325	37	joint	D
"		32-25	350	70	joint	
"		32-25	135	58	joint	

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"		32-25	110	53	joint	D
"		32-25	355	25	joint	D
"		32-25	190	40	joint	
"		32-25	75	70	joint	
"		32-25	10	48	joint	
"		32-25	285	78	joint	
"		32-25	5	38	joint	
"		23-12	320	67	joint	
"		23-12	150	28	joint	
"		23-12	275	70	joint	
"		23-12	333	76	joint	
"		23-12	25	65	joint	
"		23-12	150	3	BSF	
"		23-12	155	30	joint	
"		23-12	318	20	joint	
"		23-12	120	24	joint	
"		23-12	340	78	joint	
"		23-12	150	3	Bed Jt	
"		23-12	165	54	joint	
"		23-12	125	90	joint	
"		23-12	60	90	joint	
"		23-12	315	90	joint	
"		23-12	75	65	joint	
"		23-12	225	83	joint	
"		23-12	110	90	joint	
"		23-12	305	78	joint	
"		23-12	140	78	joint	
"		23-12	315	90	joint	
"		23-12	145	86	joint	
"		23-12	138	40	cleav (?)	
"		23-12	140	90	joint	
B-210	7.43		183.99	9.74		
"	7.60		209.0	10.8		
"	8.49		119.4	64.3		
"	8.93		121.57	74.08		
"	11.19		126.25	52.57		
"	11.93		106.9	9.7		
"	12.77		120.3	45.9		
"	15.31		107.8	53.1		
"	17.66		244.2	2.2		
"	17.93		182	5.21		
"	21.18		184.85	5.8		
"	21.41		166.7	3.7		
"	28.36		171.5	84.4		
"	31.90		169.4	83.5		
"	31.92		181.43	2.61		
"	42.7		169.38	12.51		
"	44.69		348.17	7.06		

Table of Discontinuity Data, Shaft
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Elevation (ft)	Dip Direction (azimuth)	Dip	Feature	W-Water Seep D-DNAPL
"	44.95		320.63	4.47		
"	52.93		131.9	9.3		
"	72.02		142.1	5.0		
"	72.2		160.45	13.16		
"	87.15		129.04	53.45		
"	87.82		123.0	66.1		
"	89.2		199.42	58.9		
"	93.3		149.52	67.48		
"	100.29		280.67	7.11		
"	105.82		209.14	70.11		
"	110.02		238.48	5.37		
"	112.7		154.04	56.74		
"	112.97		127.94	72.64		
"	116.5		144.27	59.71		
"	120.24		345.74	6.55		
"	122.07		117.65	57.75		
"	124.24		0	0		
"	125.2		0	0		
"	129.67		0.0	0.0		
"	135.1		0	0		
"	139.39		297.24	4.18		
"	140.06		315.5	6.6		
"	145.04		37.7	1.2		
"	149.76		0	0		
"	162.92		122	51.33		
"	169.98		332.61	5.01		
"	179.74		0	0		
"	179.96		331.47	2.88		
"	184.94		348.02	6.55		
"	194.88		322.4	15.8		
"	201.46		250.46	13.51		
"	204.88		0	0		
"	219.47		15.9	10.0		

Key
D=DNAPL observed
W=Wet/Water observed
* UBSF=Upper Bedding Shear Fracture (at crown in Tun 1)
* LBSF=Lower Bedding Shear Fracture (at crown in Tun 1)
* BSF=Bedding Shear Fracture (below LBSF)
* dip/dip direction of BSF features are estimated

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
Tunnel #1	0+23-0+35	75	60		
"	0+23-0+35	75	55		
"	0+23-0+35	85	62		
"	0+23-0+35	85	60		
"	0+23-0+35	125	35		
"	0+23-0+35	125	35		
"	0+23-0+35	135	5	D	
"	0+35-0+50	80	65		
"	0+35-0+50	85	60		
"	0+35-0+50	80	50		
"	0+35-0+50	75	63		
"	0+35-0+50	80	55		
"	0+35-0+50	80	64		
"	0+35-0+50	235	55	D	
"	0+35-0+50	5	40		
"	0+35-0+50	155	40		
"	0+35-0+50	160	40		
"	0+35-0+50	160	25		
"	0+35-0+50	160	25		
"	0+35-0+50	160	25		
"	0+35-0+50	50	60		
"	0+35-0+50	60	57	D	
"	0+35-0+50	60	57		
"	0+35-0+50	60	57	D	
"	0+35-0+50	60	57		
"	0+35-0+50	60	57		
"	0+35-0+50	60	57		
"	0+35-0+50	60	57		
"	0+35-0+50	60	57		
"	0+35-0+50	150	55	D	
"	0+35-0+50	335	55		
"	0+35-0+50	0	90		
"	0+35-0+50	135	5	D	
"	0+35-0+50	0	90		
"	0+50-0+60	75	63		
"	0+50-0+60	60	85		
"	0+50-0+60	110	13		
"	0+50-0+60	75	53	D	
"	0+50-0+60	75	63		
"	0+50-0+60	135	50		
"	0+50-0+60	75	60		
"	0+50-0+60	105	35		
"	0+60-0+70	160	73		
"	0+60-0+70	190	40		
"	0+60-0+70	5	80		
"	0+60-0+70	165	13		
"	0+60-0+70	85	64		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	0+60-0+70	80	55		
"	0+60-0+70	85	30		
"	0+60-0+70	135	5	W/D	
"	0+60-0+70	135	5	W/D	
"	0+70-0+80	60	63		
"	0+70-0+80	130	22		
"	0+70-0+80	5	90		
"	0+70-0+80	175	90		
"	0+70-0+80	175	90	D	
"	0+70-0+80	175	90		
"	0+70-0+80	175	90		
"	0+70-0+80	135	5	W/D	
"	0+70-0+80	68	58		
"	0+70-0+80	240	25		
"	0+80-0+90	65	63		
"	0+80-0+90	60	90		
"	0+80-0+90	60	90		
"	0+80-0+90	60	90		
"	0+80-0+90	60	90		
"	0+80-0+90	60	90		
"	0+80-0+90	135	20		
"	0+80-0+90	190	15	D	
"	0+80-0+90	76	65		
"	0+80-0+90	165	20	D	
"	0+80-0+90	355	85		
"	0+80-0+90	355	85		
"	0+80-0+90	20	90		
"	0+80-0+90	135	5	D	
"	0+90-1+00	130	45	D	
"	0+90-1+00	70	90		
"	0+90-1+00	75	58		
"	0+90-1+00	60	65		
"	0+90-1+00	68	64		
"	0+90-1+00	135	22		
"	1+00-1+10	255	75		
"	1+00-1+10	70	90		
"	1+00-1+10	65	62		
"	1+00-1+10	125	21	D	
"	1+00-1+10	115	20		
"	1+00-1+10	65	62		
"	1+00-1+10	30	90		
"	1+00-1+10	30	90		
"	1+00-1+10	68	63		
"	1+00-1+10	115	68		
"	1+00-1+10	135	5	D	
"	1+00-1+10	115	68		
"	1+00-1+10	185	90		
"	1+00-1+10	185	90		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+00-1+10	185	90		
"	1+00-1+10	185	90		
"	1+00-1+10	185	90		
"	1+00-1+10	170	90		
"	1+00-1+10	170	90		
"	1+10-1+20	0	90		
"	1+10-1+20	0	90		
"	1+10-1+20	350	90		
"	1+10-1+20	100	90		
"	1+10-1+20	100	90		
"	1+10-1+20	100	90		
"	1+10-1+20	180	90		
"	1+10-1+20	180	90		
"	1+10-1+20	105	35		
"	1+10-1+20	105	35		
"	1+10-1+20	105	35		
"	1+10-1+20	150	90		
"	1+10-1+20	135	22		
"	1+10-1+20	135	22		
"	1+10-1+20	135	5	D	
"	1+10-1+20	135	5	D	
"	1+20-1+30	75	62		
"	1+20-1+30	282	78		
"	1+20-1+30	282	78		
"	1+20-1+30	282	78		
"	1+20-1+30	113	45		
"	1+20-1+30	265	60		
"	1+20-1+30	333	38		
"	1+20-1+30	300	90		
"	1+20-1+30	260	45		
"	1+20-1+30	335	90	D	
"	1+20-1+30	185	90		
"	1+20-1+30	185	90		
"	1+20-1+30	110	20	D	
"	1+20-1+30	65	65		
"	1+20-1+30	135	5	D	
"	1+20-1+30	135	5	D	
"	1+20-1+30	315	50		
"	1+20-1+30	315	50		
"	1+20-1+30	315	50		
"	1+30-1+40	70	60		
"	1+30-1+40	115	90		
"	1+30-1+40	115	90		
"	1+30-1+40	180	80		
"	1+30-1+40	180	80		
"	1+30-1+40	25	70		
"	1+30-1+40	113	40		
"	1+30-1+40	305	57		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+30-1+40	107	50		
"	1+30-1+40	50	55		
"	1+40-1+50	350	70		
"	1+40-1+50	175	90		
"	1+40-1+50	350	90		
"	1+40-1+50	160	75		
"	1+40-1+50	275	90		
"	1+40-1+50	175	90		
"	1+40-1+50	95	60	W	
"	1+40-1+50	350	35	W	
"	1+40-1+50	350	35	W	
"	1+40-1+50	135	5	W,D	
"	1+40-1+50	350	35	W	
"	1+40-1+50	337	78	D	
"	1+40-1+50	175	90		
"	1+40-1+50	170	90		
"	1+40-1+50	135	5		
"	1+40-1+50	220	22		
"	1+50-1+60	165	90		
"	1+50-1+60	95	60		
"	1+50-1+60	25	23		
"	1+50-1+60	135	23		
"	1+50-1+60	135	23		
"	1+50-1+60	135	5		
"	1+50-1+60	165	47		
"	1+60-1+70	135	15		
"	1+60-1+70	235	53		
"	1+60-1+70	75	75		
"	1+60-1+70	155	90		
"	1+60-1+70	135	5		
"	1+60-1+70	105	14		
"	1+70-1+80	200	73		
"	1+70-1+80	160	90		
"	1+70-1+80	310	40		
"	1+70-1+80	135	20		
"	1+70-1+80	135	5		
"	1+70-1+80	135	16		
"	1+80-1+90	135	30		
"	1+80-1+90	135	14		
"	1+80-1+90	135	15		
"	1+80-1+90	135	45		
"	1+80-1+90	135	13		
"	1+80-1+90	350	90		
"	1+80-1+90	135	5		
"	1+80-1+90	350	55		
"	1+90-2+00	135	35		
"	1+90-2+00	135	20		
"	1+90-2+00	135	17		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+90-2+00	135	12		
"	1+90-2+00	165	90		
"	1+90-2+00	150	90		
"	1+90-2+00	140	83		
"	2+00-2+10	75	65		
"	2+00-2+10	110	18		
"	2+00-2+10	60	63		
"	2+00-2+10	60	63		
"	2+00-2+10	240	16		
"	2+00-2+10	163	90		
"	2+00-2+10	135	5		
"	2+00-2+10	135	20		
"	2+10-2+20	155	90		
"	2+10-2+20	165	90		
"	2+10-2+20	155	25		
"	2+10-2+20	150	90		
"	2+10-2+20	80	40		
"	2+10-2+20	160	20		
"	2+10-2+20	200	25		
"	2+10-2+20	175	15		
"	2+10-2+20	235	75		
"	2+20-2+30	135	12	W	
"	2+20-2+30	135	5		
"	2+20-2+30	150	90		
"	2+20-2+30	135	32	W	
"	2+20-2+30	135	32		
"	2+20-2+30	115	35		
"	2+20-2+30	68	55		
"	2+30-2+40	280	20		
"	2+30-2+40	230	42		
"	2+30-2+40	70	65		
"	2+30-2+40	145	90	W, W/D	
"	2+40-2+50	145	90		
"	2+40-2+50	145	90		
"	2+40-2+50	145	90		
"	2+40-2+50	140	90		
"	2+40-2+50	135	28		
"	2+40-2+50	135	5		
"	2+40-2+50	150	78		
"	2+50-2+60	145	90		
"	2+50-2+60	145	90		
"	2+50-2+60	145	90		
"	2+50-2+60	135	28	W	
"	2+50-2+60	135	30		
"	2+50-2+60	135	5		
"	2+50-2+60	135	40		
"	2+50-2+60	153	90	W	
"	2+50-2+60	153	90	W	

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	2+60-2+70	165	90	W	
"	2+60-2+70	105	83		
"	2+60-2+70	135	20		
"	2+60-2+70	160	90	W	
"	2+70-2+80	152	90		
"	2+70-2+80	145	80		
"	2+70-2+80	72	55		
"	2+70-2+80	75	75		
"	2+70-2+80	155	90	W	
"	2+70-2+80	135	13	W	
"	2+80-2+90	35	33		
"	2+80-2+90	135	20		
"	2+80-2+90	135	13	W	
"	2+80-2+90	152	90	W	
"	2+90-3+00	150	66	W	
"	2+90-3+00	150	74	W	
"	2+90-3+00	153	85	W	
"	2+90-3+00	145	75		
"	2+90-3+00	135	10	W	
"	2+90-3+00	135	5		
"	3+00-3+10	135	33		
"	3+00-3+10	135	14	W	
"	3+00-3+10	152	85		
"	3+00-3+10	153	85		
"	3+00-3+10	135	48		
"	3+00-3+10	160	85		
"	3+00-3+10	133	65		
"	3+00-3+10	150	90		
"	3+00-3+10	85	60		
"	3+00-3+10	145	65		
Room 1-1	3+10-3+20	155	90	W	Crown
"	3+10-3+20	155	87	W	Right Wall
"	3+10-3+20	23	60		Right Wall
"	3+10-3+20	137	50		Left Wall
"	3+10-3+20	145	35		Left Wall
"	3+10-3+20	145	40		Left Wall
"	3+10-3+20	135	5	BSF	Left Wall
"	3+10-3+20	135	5	LBSF	
"	3+20-3+30	172	90	W	Crown
"	3+20-3+30	340	73	W	Right Wall
"	3+20-3+30	70	70		Right Wall
"	3+20-3+30	340	90	W	Right Wall
"	3+20-3+30	70	74		Right Wall
"	3+20-3+30	75	48		Right Wall
"	3+20-3+30	80	67		Right Wall
"	3+20-3+30	70	52		Right Wall
"	3+20-3+30	16	90		Left Wall
"	3+20-3+30	220	50		Left Wall

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	3+20-3+30	185	45		Left Wall
"	3+30-3+40	158	90	W	Crown/RW
"	3+30-3+40	330	82	W	Right Wall
"	3+30-3+40	23	62		Right Wall
"	3+30-3+40	85	63		Right Wall
"	3+30-3+40	315	65		Right Wall
"	3+30-3+40	135	7		Left Wall
"	3+30-3+40	147	57		Left Wall
"	3+30-3+40	135	5	BSF	Left/Right Wall
"	3+30-3+40	135	5	LBSF	Crown
"	3+30-3+40	80	65		Left Wall
"	3+30-3+40	305	38		Left Wall
"	3+30-3+40	148	87	W	Left Wall/Crown
"	3+40	143	75		Back Wall
"	3+40	145	75		Back Wall
"	3+40	23	90		Back Wall
"	3+40	325	28		Back Wall
"	3+40	355	57		Back Wall
"	3+40	155	53		Back Wall
"	3+40	320	65		Back Wall
"	3+40	150	54		Back Wall
"	3+40	135	5	BSF	Back Wall
Tunnel # 2	0+13 - 0+20	210	45		
"	0+13 - 0+20	200	62		
"	0+13 - 0+20	145	90		
"	0+13 - 0+20	150	90		
"	0+13 - 0+20	145	74	W	
"	0+13 - 0+20	154	87	W	
"	0+20 - 0+30	108	42		
"	0+20 - 0+30	115	25		
"	0+20 - 0+30	110	37		
"	0+20 - 0+30	160	55	W	
"	0+20 - 0+30	130	30		
"	0+20 - 0+30	122	80		
"	0+20 - 0+30	145	90		
"	0+20 - 0+30	110	55		
"	0+30 - 0+40	165	35		
"	0+30 - 0+40	140	19		
"	0+30 - 0+40	120	16	W	
"	0+30 - 0+40	137	64		
"	0+30 - 0+40	100	30		
"	0+30 - 0+40	156	57		
"	0+30 - 0+40	120	20		
"	0+30 - 0+40	125	80		
"	0+30 - 0+40	155	5		
"	0+30 - 0+40	50	84		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	0+30 - 0+40	30	66		
"	0+40 - 0+50	155	42		
"	0+40 - 0+50	110	65		
"	0+40 - 0+50	110	25		
"	0+40 - 0+50	150	82		
"	0+40 - 0+50	147	83	W	
"	0+40 - 0+50	150	80		
"	0+50 - 0+60	155	83		
"	0+50 - 0+60	150	78	W	
"	0+50 - 0+60	125	18		
"	0+50 - 0+60	134	58		
"	0+50 - 0+60	105	30		
"	0+50 - 0+60	122	35		
"	0+50 - 0+60	100	19		
"	0+50 - 0+60	155	5		
"	0+50 - 0+60	123	28		
"	0+60 - 0+70	15	30		
"	0+60 - 0+70	53	70		
"	0+60 - 0+70	120	30		
"	0+60 - 0+70	140	80	W	
"	0+60 - 0+70	143	75	W/D	
"	0+60 - 0+70	290	43	W	
"	0+60 - 0+70	135	5		
"	0+70 - 0+80	145	90		
"	0+70 - 0+80	110	75		
"	0+70 - 0+80	100	30		
"	0+70 - 0+80	215	55		
"	0+70 - 0+80	215	90		
"	0+70 - 0+80	285	43		
"	0+70 - 0+80	130	67		
"	0+70 - 0+80	140	90		
"	0+70 - 0+80	112	60		
"	0+70 - 0+80	193	65		
"	0+70 - 0+80	113	40		
"	0+70 - 0+80	127	70		
"	0+70 - 0+80	148	70		
"	0+70 - 0+80	63	73		
"	0+80 - 0+90	340	87		
"	0+80 - 0+90	293	90		
"	0+80 - 0+90	295	50		
"	0+80 - 0+90	73	58		
"	0+80 - 0+90	137	70		
"	0+80 - 0+90	170	8		
"	0+80 - 0+90	130	5	W	
"	0+80 - 0+90	330	8		
"	0+90 - 1+00	152	67		
"	0+90 - 1+00	305	82		
"	0+90 - 1+00	125	80		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	0+90 - 1+00	125	73		
"	0+90 - 1+00	328	77		
"	0+90 - 1+00	130	54		
"	1+00 - 1+10	110	32		
"	1+00 - 1+10	105	60		
"	1+00 - 1+10	104	90		
"	1+00 - 1+10	270	56		
"	1+00 - 1+10	110	26		
"	1+00 - 1+10	152	67	W	
"	1+00 - 1+10	130	17		
"	1+00 - 1+10	143	75		
"	1+00 - 1+10	135	5		
"	1+00 - 1+10	135	70		
"	1+00 - 1+10	135	5		
"	1+10 - 1+20	107	48		
"	1+10 - 1+20	280	90		
"	1+10 - 1+20	126	24		
"	1+10 - 1+20	92	90		
"	1+10 - 1+20	290	65		
"	1+10 - 1+20	110	40		
"	1+10 - 1+20	147	90		
"	1+10 - 1+20	305	85		
"	1+10 - 1+20	310	90	W	
"	1+10 - 1+20	305	18		
"	1+10 - 1+20	160	6	W	
"	1+10 - 1+20	130	5	W	
"	1+20 - 1+30	35	82		
"	1+20 - 1+30	135	90	W	
"	1+20 - 1+30	345	78		
"	1+20 - 1+30	103	42		
"	1+20 - 1+30	160	6	W	
"	1+20 - 1+30	155	80		
"	1+20 - 1+30	140	77		
"	1+20 - 1+30	133	90		
"	1+30 - 1+40	98	67		
"	1+30 - 1+40	100	27		
"	1+30 - 1+40	170	60		
"	1+30 - 1+40	135	5		
"	1+30 - 1+40	25	88		
"	1+30 - 1+40	157	90		
"	1+30 - 1+40	308	77		
"	1+30 - 1+40	128	66		
"	1+30 - 1+40	15	55		
"	1+30 - 1+40	160	6	W	
"	1+30 - 1+40	345	40		
"	1+30 - 1+40	135	90		
"	1+40 - 1+50	315	90		
"	1+40 - 1+50	160	6	W	

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+40 - 1+50	290	20		
"	1+40 - 1+50	132	50		
"	1+40 - 1+50	10	50		
"	1+40 - 1+50	135	5	W	
"	1+50 - 1+60	103	75		
"	1+50 - 1+60	105	42		
"	1+50 - 1+60	110	50		
"	1+50 - 1+60	210	65		
"	1+50 - 1+60	160	6	W/D	
"	1+50 - 1+60	285	40		
"	1+50 - 1+60	285	55		
"	1+50 - 1+60	325	75		
"	1+50 - 1+60	100	56		
"	1+50 - 1+60	135	5	W	
"	1+50 - 1+60	120	90		
"	1+50 - 1+60	130	5		
"	1+50 - 1+60	130	62		
"	1+50 - 1+60	118	80		
"	1+50 - 1+60	130	70		
"	1+60 - 1+70	105	59		
"	1+60 - 1+70	135	45		
"	1+60 - 1+70	117	75		
"	1+60 - 1+70	132	90		
"	1+70 - 1+80	290	90		
"	1+70 - 1+80	110	90		
"	1+70 - 1+80	137	47		
"	1+70 - 1+80	108	62		
"	1+70 - 1+80	125	68		
"	1+70 - 1+80	160	6	W	
"	1+70 - 1+80	130	50		
"	1+70 - 1+80	135	5	W	
"	1+70 - 1+80	205	85		
"	1+70 - 1+80	25	65		
"	1+70 - 1+80	312	74		
"	1+80 - 1+90	100	76		
"	1+80 - 1+90	100	54		
"	1+80 - 1+90	140	4	W	
"	1+80 - 1+90	55	80		
"	1+80 - 1+90	315	38		
"	1+80 - 1+90	140	5	W	
"	1+90 - 2+00	130	90		
"	1+90 - 2+00	115	63		
"	1+90 - 2+00	232	65		
"	1+90 - 2+00	280	4	W	
"	1+90 - 2+00	135	5		
"	1+90 - 2+00	115	55		
"	1+90 - 2+00	135	5	W	
"	1+90 - 2+00	302	50		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+90 - 2+00	205	62		
"	2+00 - 2+10	265	78		
"	2+00 - 2+10	140	55		
"	2+00 - 2+10	150	5	W	
"	2+00 - 2+10	150	22		
"	2+00 - 2+10	135	5	W	
"	2+00 - 2+10	130	90		
"	2+00 - 2+10	125	90		
"	2+00 - 2+10	130	75		
"	2+10 - 2+20	120	15	W	
"	2+10 - 2+20	105	67		
"	2+10 - 2+20	315	4		
"	2+10 - 2+20	130	50		
"	2+10 - 2+20	138	68		
"	2+10 - 2+20	145	5	W	
"	2+20 - 2+30	180	90		
"	2+20 - 2+30	145	75		
"	2+20 - 2+30	160	4	W	
"	2+20 - 2+30	140	90		
"	2+20 - 2+30	135	75		
"	2+30 - 2+40	185	83		
"	2+30 - 2+40	90	80		
"	2+30 - 2+40	10	44		
"	2+30 - 2+40	45	74	c/s	
"	2+30 - 2+40	144	80		
"	2+30 - 2+40	134	90		
"	2+30 - 2+40	141	64		
"	2+30 - 2+40	304	90		
"	2+30 - 2+40	160	4	W	
"	2+40 - 2+50	153	10		
"	2+40 - 2+50	228	90		
"	2+40 - 2+50	160	5	W	
"	2+40 - 2+50	110	56		
"	2+40 - 2+50	312	68		
"	2+40 - 2+50	305	90		
"	2+40 - 2+50	165	4	W	
"	2+50 - 2+60	151	80		
"	2+50 - 2+60	152	90		
"	2+50 - 2+60	159	57		
"	2+50 - 2+60	255	81		
"	2+50 - 2+60	283	90		
"	2+40 - 2+50	155	4	W	
"	2+50 - 2+60	28	80	c/s	
"	2+50 - 2+60	39	80	c/s	
"	2+50 - 2+60	16	80	c/s	
"	2+50 - 2+60	25	80	c/s	
"	2+60 - 2+70	275	90		
"	2+60 - 2+70	162	85		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	2+60 - 2+70	278	84		
"	2+60 - 2+70	131	90		
"	2+60 - 2+70	354	81		
"	2+60 - 2+70	295	83		
"	2+60 - 2+70	315	84		
"	2+60 - 2+70	325	77		
"	2+60 - 2+70	165	4	W	
"	2+60 - 2+70	335	80		
"	2+60 - 2+70	27	80	c/s	
"	2+60 - 2+70	157	75		
"	2+60 - 2+70	95	60		
"	2+60 - 2+70	30	60		
"	2+60 - 2+70	165	16		
ROOM 2-2	2+70 - 2+80	153	81		Right Wall
"	2+70 - 2+80	25	62		Right Wall
"	2+70 - 2+80	95	90		Right Wall
"	2+70 - 2+80	135	5	W	Right Wall
"	2+70 - 2+80	150	4	W	Right Wall
"	2+70 - 2+80	125	32		Right Wall
"	2+70 - 2+80	35	80		Left Wall
"	2+70 - 2+80	155	4	W	Left Wall
"	2+70 - 2+80	35	80	c/s	Crown
"	2+80 - 2+90	10	62		Right Wall
"	2+80 - 2+90	155	68		Right Wall
"	2+80 - 2+90	150	4	W	Right Wall
"	2+80 - 2+90	120	56		Left Wall
"	2+80 - 2+90	328	80		Left Wall
"	2+80 - 2+90	65	77		Left Wall
"	2+80 - 2+90	105	54		Left Wall
"	2+80 - 2+90	127	70		Left Wall
"	2+80 - 2+90	155	90		Left Wall
"	2+80 - 2+90	150	4	W	Left Wall
"	2+80 - 2+90	160	75		Crown
"	2+80 - 2+90	45	80	c/s	Crown
"	2+90 - 2+93	125	18		Right Wall/Crown
"	2+90 - 2+93	335	25		
"	2+90 - 2+93	40	85	c/s	Crown
"	2+93	150	30		Back Wall
"	2+93	155	20		Back Wall
"	2+93	50	35		Back Wall
"	2+93	135	90		Back Wall
"	2+93	150	90		Back Wall
"	2+93	128	57		Back Wall
"	2+93	155	72		Back Wall
"	2+93	155	4	W	Back Wall
"	2+93	135	5		Back Wall

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
Tunnel #3	0+13 - 0+30	147	77		
"	0+13 - 0+30	150	10		
"	0+13 - 0+30	147	90		
"	0+13 - 0+30	65	33		
"	0+13 - 0+30	125	10		
"	0+13 - 0+30	125	15		
"	0+13 - 0+30	75	25		
"	0+13 - 0+30	135	39		
"	0+13 - 0+30	155	5		
"	0+13 - 0+30	137	56		
"	0+13 - 0+30	147	90		
"	0+30 - 0+40	135	80		
"	0+30 - 0+40	55	35		
"	0+30 - 0+40	65	39		
"	0+30 - 0+40	305	87		
"	0+30 - 0+40	130	30		
"	0+30 - 0+40	133	60		
"	0+30 - 0+40	105	20		
"	0+30 - 0+40	80	65		
"	0+30 - 0+40	140	43		
"	0+30 - 0+40	150	90		
"	0+40 - 0+50	138	77		
"	0+40 - 0+50	145	90		
"	0+40 - 0+50	270	62		
"	0+40 - 0+50	315	85		
"	0+40 - 0+50	137	90		
"	0+50 - 0+60	150	32		
"	0+50 - 0+60	145	60		
"	0+50 - 0+60	148	90		
"	0+50 - 0+60	160	12		
"	0+50 - 0+60	141	85		
"	0+50 - 0+60	260	90		
"	0+50 - 0+60	328	85		
"	0+50 - 0+60	150	85		
"	0+50 - 0+60	155	5	W	
"	0+50 - 0+60	150	90	W/D	
"	0+60 - 0+70	333	85		
"	0+60 - 0+70	60	78		
"	0+60 - 0+70	145	80		
"	0+60 - 0+70	148	90	W/D	
"	0+60 - 0+70	280	36		
"	0+60 - 0+70	255	90		
"	0+60 - 0+70	130	3		
"	0+60 - 0+70	135	90		
"	0+60 - 0+70	110	5		
"	0+60 - 0+70	85	75		
"	0+60 - 0+70	145	90		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	0+70 - 0+80	265	15		
"	0+70 - 0+80	108	74		
"	0+70 - 0+80	120	80		
"	0+70 - 0+80	120	52		
"	0+70 - 0+80	148	71		
"	0+70 - 0+80	315	60		
"	0+70 - 0+80	330	80		
"	0+70 - 0+80	340	43		
"	0+70 - 0+80	170	45		
"	0+70 - 0+80	320	28		
"	0+70 - 0+80	90	46		
"	0+70 - 0+80	152	18		
"	0+70 - 0+80	155	5	W/D	
"	0+70 - 0+80	100	80		
"	0+80 - 0+90	128	90		
"	0+80 - 0+90	295	30		
"	0+80 - 0+90	10	40		
"	0+80 - 0+90	210	30		
"	0+80 - 0+90	147	90		
"	0+80 - 0+90	140	90		
"	0+80 - 0+90	328	62		
"	0+80 - 0+90	315	88		
"	0+80 - 0+90	208	45		
"	0+80 - 0+90	323	80		
"	0+80 - 0+90	120	34		
"	0+90 - 1+00	138	44		
"	0+90 - 1+00	128	22		
"	0+90 - 1+00	140	90		
"	0+90 - 1+00	236	57		
"	0+90 - 1+00	85	78		
"	0+90 - 1+00	150	60		
"	0+90 - 1+00	330	40		
"	0+90 - 1+00	235	42		
"	0+90 - 1+00	247	19		
"	0+90 - 1+00	270	62		
"	0+90 - 1+00	295	80		
"	0+90 - 1+00	155	44		
"	0+90 - 1+00	155	5	W	
"	1+00 - 1+10	287	40		
"	1+00 - 1+10	85	70		
"	1+00 - 1+10	340	22		
"	1+00 - 1+10	135	83		
"	1+00 - 1+10	95	54		
"	1+00 - 1+10	110	56		
"	1+00 - 1+10	90	43		
"	1+00 - 1+10	265	83		
"	1+00 - 1+10	64	82		
"	1+00 - 1+10	115	63		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+00 - 1+10	330	69		
"	1+00 - 1+10	295	69		
"	1+00 - 1+10	245	14		
"	1+00 - 1+10	140	43		
"	1+00 - 1+10	127	47	W	
"	1+00 - 1+10	300	65		
"	1+00 - 1+10	122	49		
"	1+00 - 1+10	305	75		
"	1+10 - 1+20	143	85		
"	1+10 - 1+20	110	65		
"	1+10 - 1+20	130	90		
"	1+10 - 1+20	85	76		
"	1+10 - 1+20	83	38		
"	1+10 - 1+20	327	75	W	
"	1+10 - 1+20	80	75		
"	1+10 - 1+20	155	5	W	
"	1+10 - 1+20	150	80		
"	1+10 - 1+20	250	14		
"	1+10 - 1+20	165	25		
"	1+10 - 1+20	145	90		
"	1+10 - 1+20	148	90		
"	1+20 - 1+30	295	22	W	
"	1+20 - 1+30	90	72		
"	1+20 - 1+30	180	29		
"	1+20 - 1+30	110	60		
"	1+20 - 1+30	320	75		
"	1+20 - 1+30	252	75		
"	1+20 - 1+30	140	29		
"	1+20 - 1+30	135	85		
"	1+20 - 1+30	310	77		
"	1+20 - 1+30	155	5	W	
"	1+20 - 1+30	110	28		
"	1+20 - 1+30	105	80		
"	1+30 - 1+40	160	20		
"	1+30 - 1+40	335	75		
"	1+30 - 1+40	155	90		
"	1+30 - 1+40	140	36		
"	1+30 - 1+40	90	35		
"	1+30 - 1+40	128	42		
"	1+30 - 1+40	115	88		
"	1+30 - 1+40	110	60		
"	1+30 - 1+40	0	29		
"	1+30 - 1+40	145	55		
"	1+40 - 1+50	115	90		
"	1+40 - 1+50	135	90		
"	1+40 - 1+50	110	43		
"	1+40 - 1+50	265	72		
"	1+40 - 1+50	155	5	W	

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	1+50 - 1+60	97	90		
"	1+50 - 1+60	145	75	W	
"	1+50 - 1+60	97	90		
"	1+50 - 1+60	25	90		
"	1+50 - 1+60	325	80	W	
"	1+50 - 1+60	315	85		
"	1+50 - 1+60	306	77		
"	1+50 - 1+60	125	70		
"	1+60 - 1+70	142	90		
"	1+60 - 1+70	135	40		
"	1+60 - 1+70	315	48		
"	1+60 - 1+70	135	90		
"	1+60 - 1+70	325	75		
"	1+60 - 1+70	325	84		
"	1+60 - 1+70	155	5	W	
"	1+70 - 1+80	105	90		
"	1+70 - 1+80	150	83		
"	1+70 - 1+80	60	90		
"	1+70 - 1+80	138	80		
"	1+70 - 1+80	120	20		
"	1+70 - 1+80	235	10		
"	1+80 - 1+90	320	85		
"	1+80 - 1+90	108	90		
"	1+80 - 1+90	120	20		
"	1+80 - 1+90	108	65		
"	1+80 - 1+90	310	60		
"	1+80 - 1+90	210	70		
"	1+80 - 1+90	155	5	W	
"	1+90 - 2+00	65	90		
"	1+90 - 2+00	240	15		
"	1+90 - 2+00	135	90		
"	1+90 - 2+00	135	48		
"	1+90 - 2+00	328	80		
"	1+90 - 2+00	290	45		
"	1+90 - 2+00	130	46		
"	1+90 - 2+00	110	40		
"	1+90 - 2+00	35	90		
"	1+90 - 2+00	118	62		
"	1+90 - 2+00	280	50		
"	1+90 - 2+00	123	68		
"	1+90 - 2+00	122	57		
"	2+00 - 2+10	140	73		
"	2+00 - 2+10	230	40		
"	2+00 - 2+10	145	90		
"	2+00 - 2+10	138	75		
"	2+00 - 2+10	140	35		
"	2+00 - 2+10	298	75		
"	2+00 - 2+10	130	68		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	2+00 - 2+10	142	80		
"	2+00 - 2+10	155	5	W	
"	2+10 - 2+20	316	86		
"	2+10 - 2+20	310	86		
"	2+10 - 2+20	100	30		
"	2+10 - 2+20	222	57		
"	2+10 - 2+20	190	4		
"	2+10 - 2+20	210	67		
"	2+10 - 2+20	138	90		
"	2+20 - 2+30	137	70		
"	2+20 - 2+30	45	63		
"	2+20 - 2+30	315	57		
"	2+20 - 2+30	125	80		
"	2+20 - 2+30	120	90		
"	2+20 - 2+30	155	5	W	
"	2+20 - 2+30	125	40		
"	2+20 - 2+30	72	83		
"	2+30 - 2+40	240	58		
"	2+30 - 2+40	270	90		
"	2+30 - 2+40	90	86		
"	2+30 - 2+40	112	80		
"	2+40 - 2+50	195	4		
"	2+40 - 2+50	108	90		
"	2+40 - 2+50	107	59		
"	2+40 - 2+50	146	80		
"	2+40 - 2+50	116	80		
"	2+40 - 2+50	128	90		
"	2+40 - 2+50	205	85		
"	2+40 - 2+50	110	24		
"	2+40 - 2+50	95	75		
"	2+40 - 2+50	155	5	W	
"	2+40 - 2+50	115	82		
"	2+50 - 2+60	135	80		
"	2+50 - 2+60	142	80		
"	2+50 - 2+60	130	76		
"	2+50 - 2+60	287	85		
"	2+50 - 2+60	293	85		
"	2+50 - 2+60	98	50		
"	2+50 - 2+60	135	90	W	
"	2+60 - 2+70	140	67		
"	2+60 - 2+70	107	90		
"	2+60 - 2+70	120	72		
"	2+60 - 2+70	118	80		
"	2+60 - 2+70	140	90		
"	2+60 - 2+70	275	90		
"	2+60 - 2+70	210	48		
"	2+60 - 2+70	155	5	W	
"	2+70 - 2+80	145	62		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	2+70 - 2+80	135	75		
"	2+70 - 2+80	138	65		
"	2+70 - 2+80	120	78		
"	2+70 - 2+80	130	90		
"	2+70 - 2+80	113	77		
"	2+70 - 2+80	140	90		
"	2+80 - 2+90	140	35		
"	2+80 - 2+90	105	84		
"	2+80 - 2+90	110	70		
"	2+80 - 2+90	125	78		
"	2+80 - 2+90	155	5	W	
"	2+90 - 3+00	130	80		
"	2+90 - 3+00	132	27		
"	2+90 - 3+00	300	85		
"	2+90 - 3+00	110	90		
"	2+90 - 3+00	220	33		
"	2+90 - 3+00	115	55		
"	2+90 - 3+00	50	90		
"	2+90 - 3+00	115	58		
"	2+90 - 3+00	130	55		
"	2+90 - 3+00	125	70		
"	2+90 - 3+00	265	40		
"	2+90 - 3+00	105	60		
"	2+90 - 3+00	100	70		
"	2+90 - 3+00	0	47		
"	2+90 - 3+00	155	5	W	
"	3+00 - 3+10	66	90		
"	3+00 - 3+10	40	90		
"	3+00 - 3+10	220	47		
"	3+00 - 3+10	95	74		
"	3+00 - 3+10	226	35		
"	3+00 - 3+10	118	72		
"	3+00 - 3+10	30	87		
"	3+00 - 3+10	250	75		
"	3+00 - 3+10	245	65		
"	3+00 - 3+10	130	53		
"	3+00 - 3+10	70	85		
"	3+00 - 3+10	122	70		
"	3+10 - 3+20	270	65		
"	3+10 - 3+20	250	23		
"	3+10 - 3+20	205	49		
"	3+10 - 3+20	200	66		
"	3+10 - 3+20	210	47		
"	3+10 - 3+20	120	85		
"	3+10 - 3+20	328	77		
"	3+10 - 3+20	150	70		
"	3+10 - 3+20	118	87		
"	3+10 - 3+20	123	78		

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	3+10 - 3+20	305	25		
"	3+10 - 3+20	130	85		
"	3+10 - 3+20	30	75		
"	3+10 - 3+20	287	40		
"	3+10 - 3+20	185	90		
"	3+10 - 3+20	133	80		
"	3+10 - 3+20	210	76		
"	3+10 - 3+20	125	80		
"	3+10 - 3+20	128	52		
"	3+10 - 3+20	205	20		
"	3+10 - 3+20	235	90		
"	3+10 - 3+20	115	65	W	
"	3+10 - 3+20	305	65		
"	3+10 - 3+20	270	75		
"	3+10 - 3+20	67	90		
"	3+20 - 3+30	107	76		
"	3+20 - 3+30	210	90		
"	3+20 - 3+30	85	47		
"	3+20 - 3+30	228	90		
"	3+20 - 3+30	110	80		
"	3+20 - 3+30	124	75		
"	3+20 - 3+30	155	5		
"	3+20 - 3+30	250	68	W	
Room 3-3	3+20 - 3+30	75	90		Right Wall
"	3+20 - 3+30	175	85		Right Wall
"	3+20 - 3+30	285	50		Right Wall
"	3+20 - 3+30	120	70		Right Wall
"	3+20 - 3+30	315	47		Right Wall
"	3+20 - 3+30	155	5	W	Right Wall
"	3+20 - 3+30	115	83		Right Wall
"	3+20 - 3+30	40	85		Right Wall
"	3+20 - 3+30	215	36		Right Wall
"	3+20 - 3+30	146	31		Right Wall
"	3+20 - 3+30	60	90		Left Wall
"	3+20 - 3+30	85	80		Left Wall
"	3+20 - 3+30	155	85		Left Wall
"	3+20 - 3+30	105	80		Left Wall
"	3+20 - 3+30	125	90		Left Wall
"	3+20 - 3+30	228	44		Left Wall
"	3+20 - 3+30	100	85		Left Wall
"	3+30 - 3+40	350	53		Right Wall
"	3+30 - 3+40	80	60		Right Wall
"	3+30 - 3+40	140	68		Right Wall
"	3+30 - 3+40	85	78		Right Wall
"	3+30 - 3+40	120	90		Right Wall
"	3+30 - 3+40	70	84		Right Wall
"	3+30 - 3+40	226	32		Right Wall
"	3+30 - 3+40	258	80		Right Wall

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	3+30 - 3+40	172	19		Right Wall
"	3+30 - 3+40	90	63		Right Wall
"	3+30 - 3+40	155	5	W	Right Wall
"	3+30 - 3+40	90	90		Left Wall
"	3+30 - 3+40	270	25		Left Wall
"	3+30 - 3+40	82	70		Left Wall
"	3+30 - 3+40	155	16		Left Wall
"	3+30 - 3+40	270	85		Left Wall
"	3+30 - 3+40	240	26		Left Wall
"	3+30 - 3+40	233	70		Left Wall
"	3+30 - 3+40	105	45		Left Wall
"	3+30 - 3+40	133	87		Left Wall
"	3+30 - 3+40	202	87		Left Wall
"	3+30 - 3+40	310	85		Crown
"	3+40 - 3+50	265	83		Right Wall
"	3+40 - 3+50	210	90		Right Wall
"	3+40 - 3+50	270	67		Right Wall
"	3+40 - 3+50	245	85		Right Wall
"	3+40 - 3+50	355	90		Right Wall
"	3+40 - 3+50	350	68		Right Wall
"	3+40 - 3+50	80	85		Right Wall
"	3+40 - 3+50	65	80		Right Wall
"	3+40 - 3+50	68	90		Right Wall
"	3+40 - 3+50	215	87		Right Wall
"	3+40 - 3+50	110	90		Right Wall
"	3+40 - 3+50	112	64		Right Wall
"	3+40 - 3+50	70	70		Right Wall
"	3+40 - 3+50	320	72		Right Wall
"	3+40 - 3+50	155	5	W	Right Wall
"	3+40 - 3+50	325	85		Left Wall
"	3+40 - 3+50	125	57		Left Wall
"	3+40 - 3+50	240	80		Left Wall
"	3+40 - 3+50	132	40		Left Wall
"	3+40 - 3+50	270	24		Left Wall
"	3+40 - 3+50	0	80		Left Wall
"	3+40 - 3+50	130	47		Left Wall
"	3+40 - 3+50	30	90		Left Wall
"	3+40 - 3+50	102	60		Left Wall
"	3+40 - 3+50	135	85		Left Wall
"	3+40 - 3+50	228	72		Left Wall
"	3+40 - 3+50	265	87		Left Wall
"	3+40 - 3+50	260	90		Left Wall
"	3+40 - 3+50	260	90		Left Wall
"	3+40 - 3+50	270	55		Crown
"	3+50	155	85		End Wall
"	3+50	105	90		End Wall
"	3+50	125	75		End Wall
"	3+50	300	74		End Wall

Table of Discontinuity Data, Tunnels
GE - TDCS
Hudson Falls, NY

Data Source	Station	Dip Direction (azimuth)	Dip	W-WATER SEEP D-DNAPL	Location
"	3+50	285	80		End Wall
"	3+50	115	18		End Wall
"	3+50	215	82		End Wall
"	3+50	330	85		End Wall
"	3+50	310	80		End Wall
"	3+50	67	50		End Wall
"	3+50	195	90		End Wall
"	3+50	155	5		End Wall

Key
D=DNAPL observed
W=Wet/Water observed
c/s=calcite stringer
* UBSF=Upper Bedding Shear Fracture (at crown in Tun 1)
* LBSF=Lower Bedding Shear Fracture (at crown in Tun 1)
* BSF=Bedding Shear Fracture (below LBSF)
* dip/dip direction of BSF features are estimated

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
PZ301	7.4	151	7	
"	7.9	99	10	
"	8.1	148	3	
"	9.7	225	4	
"	16.8	326	5	
"	17.9	89	5	
"	21.3	116	6	
"	23.5	6	89	
"	24.9	21	87	
"	25.2	28	83	
"	31.7	253	16	
"	32.0	167	14	
"	32.1	170	9	
"	38.2	143	88	
"	50.1	28	84	
"	51.3	223	5	
"	52.9	45	13	
"	54.6	205	90	
"	57.8	29	86	
"	60.8	30	76	
"	61.7	17	85	
"	63.0	26	72	
"	63.7	29	81	
"	64.4	24	79	
"	65.5	29	85	
"	66.3	29	84	
"	69.5	23	82	
"	69.6	350	51	
"	69.8	125	5	
"	72.6	217	6	
"	76.8	40	49	
"	80.1	321	38	
"	80.2	348	11	
"	80.4	7	14	
"	94.1	196	2	
"	94.3	199	7	
"	96.7	32	87	
"	97.5	285	8	
"	99.0	170	88	
PZ303	10.0	163	12	
"	10.3	181	7	
"	10.5	170	6	
"	11.2	256	5	
"	14.9	201	68	
"	23.4	147	7	
"	31.0	144	11	
"	39.6	136	7	
"	43.9	171	4	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	44.7	208	74	
"	45.6	136	6	
"	50.7	156	3	
"	56.5	153	5	
"	62.0	150	7	
"	66.5	37	67	
"	70.9	245	41	
"	71.2	157	5	
"	73.1	150	12	
"	73.5	27	74	
"	76.2	23	83	
"	77.4	16	87	
"	77.7	196	88	
"	78.1	191	82	
"	78.5	194	86	
"	78.9	17	80	
"	80.0	46	81	
"	86.2	152	6	
"	87.0	153	6	
"	88.7	200	58	
"	89.3	159	3	
"	97.1	50	81	
"	99.1	58	75	
"	102.5	46	83	
"	103.4	51	88	
"	104.6	44	80	
"	112.8	107	73	
"	113.6	58	71	
"	114.0	152	3	
"	116.8	62	84	
"	119.3	357	19	
"	119.8	39	82	
"	120.3	39	87	
"	121.0	32	87	
"	124.9	192	84	
"	126.5	38	75	
"	129.2	49	70	
"	132.4	36	67	
"	132.5	207	70	
"	136.7	34	79	
"	136.8	232	2	
"	138.6	34	77	
"	143.5	39	79	
"	144.4	51	68	
"	147.1	45	77	
"	148.8	32	76	
"	153.3	36	76	
"	153.8	39	81	
"	155.5	46	77	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	157.3	52	83	
"	163.8	38	78	
"	169.9	29	82	
"	171.2	48	78	
"	175.3	147	5	
"	176.4	41	77	
"	182.8	43	79	
"	185.9	40	68	
"	186.0	356	37	
"	188.6	36	79	
"	189.8	38	88	
"	199.2	47	74	
"	201.4	50	76	
"	202.6	43	68	
"	209.2	27	89	
"	210.3	142	4	
"	215.3	34	87	
"	216.1	183	1	
"	216.2	37	78	
"	220.7	150	6	
"	222.2	137	6	
"	223.0	153	7	
"	232.0	214	88	
"	232.5	218	83	
"	236.2	156	4	
"	239.4	27	1	
"	240.1	147	4	
"	243.0	38	78	
"	245.0	212	71	
"	246.7	148	2	
"	248.4	206	1	
Recovery Well rw100	17.3	225.6	10.7	
"	18.4	190.3	39.3	
"	21.7	321.3	77.4	
"	23.4	307.7	8.2	
"	27.2	319.5	6.3	
"	32.9	287.5	9.7	
"	33.4	297.4	7.0	
"	38.2	316.2	5.7	
"	42.8	321.1	5.1	
"	43.8	265.2	33.2	
"	49.3	85.1	3.6	
"	49.5	91.8	3.6	
"	52.2	156.1	5.6	
"	53.2	167.9	1.8	
"	54.2	333.5	20.9	
"	56.1	312.6	6.5	
"	56.7	291.0	4.5	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	56.9	266.1	14.6	
"	57.0	248.3	57.2	
"	57.2	251.7	6.4	
"	57.3	211.8	81.2	
"	59.2	181.0	38.6	
"	59.6	157.2	8.7	
"	59.8	319.5	3.6	
"	60.3	311.2	4.7	
"	60.8	281.7	5.2	
"	64.3	233.6	8.3	
"	65.3	282.7	4.1	
"	65.4	282.7	5.6	
"	69.7	235.8	3.4	
"	76.3	252.1	4.1	
"	76.9	237.4	2.9	
"	83.8	252.1	4.1	
"	88.0	301.3	6.7	
"	88.3	301.3	7.2	
"	88.5	226.5	4.5	
"	88.7	208.0	6.7	
"	93.0	249.5	4.7	
"	95.4	221.8	3.6	
"	97.5	184.9	4.1	
"	107.4	267	4.7	
"	114.6	148	57.3	
"	115.1	166.8	63.3	
"	115.6	226.2	3.6	
"	116	169.1	65.1	
"	117.1	185.3	60.5	
"	119	165.8	65.2	
"	119.8	172	69.3	
"	120.4	156.7	65.3	
"	127.9	239.1	2.5	
"	137.6	216.3	3.2	
"	144.4	209.6	58.2	
"	152.7	240.2	3.2	
"	171.5	291.6	3.9	
"	191.9	0	0	
Recovery Well rw103	34.9	199.8	75.8	
"	36	110.5	64.6	
"	36.5	73.4	47.2	
"	37.1	104	35.5	
"	38.8	198.3	70	
"	40.3	125.2	17	
"	41.5	49.2	83.1	
"	42.7	99.7	64	
"	49.9	213.7	75.3	
"	51.9	100.4	7.3	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	52	275	6.5	
"	53.2	225	86.9	
"	54.7	338.9	68.1	
"	56.4	112.7	26.6	
"	56.9	121	13.6	
"	64.6	118.7	12.2	
"	65.2	335.8	80.9	
"	68.6	186.3	79.5	
"	70.5	112.4	8.3	
"	80.2	317.6	26.1	
"	84.5	121.6	10.7	
"	85.3	299.1	59.9	
"	85.7	138.6	17	
"	86	288.4	66.2	
"	86.3	281.3	65.5	
"	87.1	287	61.5	
"	87.2	284.4	63.7	
"	88.2	283.8	52.7	
"	88.5	287.7	56.7	
"	89.2	292.5	67	
"	89.6	278.9	65.9	
"	90.2	286.5	51.4	
"	90.5	282.1	53.9	
"	91.3	291	68.1	
"	92.7	292	70.1	
"	96	221.9	18.7	
"	96.5	213.9	17.7	
"	97.8	248.9	18	
"	98.5	142.1	15.3	
"	99.2	180.3	22.8	
"	99.7	191.4	15.3	
"	100.6	170.7	32.1	
"	101	197.3	25.4	
"	101.2	169.1	26.4	
"	103.1	174.9	27	
"	106.5	184	20.9	
"	106.8	184	22.2	
"	108.1	156.2	59.6	
"	108.9	282.4	11.5	
"	109	284.1	10.5	
"	110.1	249.5	8.3	
"	114.4	138.9	39.3	
"	117.1	253.9	5.1	
"	118.9	130.1	55.4	
"	119.2	127.8	42.5	
"	121.1	124.1	36.5	
"	126.8	137.4	31.2	
"	127.2	138.8	47.9	
"	129.1	127.3	57.2	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	129.9	126.7	56.6	
"	130.1	129.8	50.1	
"	131.7	111.1	35.9	
"	132.4	133.3	43.1	
"	133	139.8	38.5	
"	133.6	131.8	38.8	
"	134	126.8	45.2	
"	134.6	132.1	39.4	
"	134.9	122.7	54.9	
"	135.5	137.7	37.3	
"	135.6	130.4	47.4	
"	135.8	131.8	43.7	
"	136.4	128.9	45	
"	140.1	146.6	32.1	
"	144.6	143.2	53.9	
"	151.1	107.5	55.2	
Recovery Well rw105	31.1	4.3	32	
"	31.4	81.9	37.1	
"	32.5	194.4	14.9	
"	34.3	321	32.3	
"	34.5	295.8	23	
"	34.6	163.8	50.6	
"	35.1	56.4	7.5	
"	35.3	125.2	19.8	
"	38	350.3	76.6	
"	38.6	219.1	27.5	
"	38.7	218	9.5	
"	43.3	306.7	5.1	
"	43.5	321.2	7.8	
"	43.9	138.9	69.4	
"	44.7	125.3	74.4	
"	46.5	123.6	81.2	
"	47	129.4	78.5	
"	52.8	127.5	84.5	
"	53	125.1	84.8	
"	53.3	125.2	84.3	
"	56.6	232.6	7.5	
"	56.7	122	5.5	
"	56.8	235.3	16.1	
"	59.9	120.9	18.9	
"	61.3	181.1	8.9	
"	70.2	103	40.3	
"	70.7	125.3	26	
"	71.2	46.5	15.1	
"	71.3	56.4	5.5	
"	71.5	278.7	12.8	
"	82.4	134	8.4	
"	94.7	0	0	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	95.3	157	14	
"	95.8	173.5	10.2	
"	98.6	0	0	
"	99.6	166.4	7.5	
"	104.3	96.3	81	
"	109.4	0	0	
"	110.5	0	0	
"	116.4	0	0	
"	117.4	17	19.4	
"	117.8	52	17.3	
"	118.3	0	0	
"	118.4	0	0	
"	119.2	91.7	40.7	
"	120	101.2	70.1	
"	120.4	114.9	75.5	
Recovery Well rw110a	20.6	118.1	14.8	
"	20.9	104.5	62.7	
"	55.1	262.3	14	
"	58.4	267.4	12.1	
"	60.7	174.1	73.2	
"	63.6	221.7	12.1	
"	64.1	268.6	4.4	
"	64.3	268.6	6.2	
"	119.8	129.3	73.2	
"	120.2	129.1	74.3	
"	122.4	135.3	72.2	
"	124.4	140.5	71.1	
"	125.1	120.4	77.1	
"	128.1	132.3	65.5	
"	128.5	142.7	68.6	
"	131.3	108.7	71.1	
"	134.5	169.4	7.1	
Recovery Well rw110b	29.6	97	14.5	
"	79.4	204	13	
Recovery Well rw110c	45.9	245.9	6.4	
"	66.5	225.7	18.3	
"	68.3	194.9	9.1	
"	71.2	235.8	25.7	
"	105.6	146.2	68.7	
"	114.9	131.8	66	
"	118.2	131	68.5	
Monitoring Well pw1	71.10	102.1	35.9	
"	71.69	191.34	87.92	
"	72.24	272.57	53.82	
"	73.62	301.85	52.57	
"	74.59	189.05	71.18	
"	75.53	54.91	49.42	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	76.27	276.58	24.16	
"	77.47	175.5	17.7	
"	77.53	173.2	17.2	
"	79.69	128.62	23.59	
"	80.53	160.43	19.43	
"	81.86	143.7	27.5	
"	81.89	171.3	13.4	
"	82.44	140.2	31.2	
"	83.38	162.8	5.3	
"	83.7	151.51	7.73	
"	84.36	204.97	65.89	
"	85.78	146.0	56.2	
"	86.07	140.6	52.0	
"	86.42	133.1	79.9	
"	88.05	137.36	49.1	
"	89.91	123.45	42.01	
"	97.44	35.51	69.81	
"	102.23	245.02	11.6	
"	105.66	189.6	75.4	
"	107.41	341.4	68.5	
"	108.47	115.23	63.33	
"	108.77	110.85	58.55	
"	109.59	114.6	65.9	
"	109.72	111.72	62.69	
"	110.53	123.14	71.62	
"	112.28	127.64	52.13	
"	112.77	121.66	64.35	
"	113.3	117.31	58.71	
"	114.33	97.98	62.97	
"	114.38	320.28	58.95	
"	114.71	98.23	56.29	
"	115.06	113.77	55.26	
"	115.6	98.03	53.56	
"	115.73	53.95	48.75	
"	116.06	106.19	51.89	
"	116.60	124.2	14.9	
"	117.15	231.77	5.71	
"	117.34	285.66	14.42	
"	119.06	141.0	65.7	
"	120.93	144.0	60.3	
"	121.35	142.57	54.12	
"	124.82	149.19	63.26	
"	125.37	136.56	63.69	
"	125.6	149.13	65.72	
"	126.36	157	66.35	
"	126.76	150.42	68.53	
"	127.04	150.9	64.3	
"	128.51	134.95	71.17	
"	129.15	123.19	70.72	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	129.68	147.5	76.6	
"	135.12	348.25	42.97	
"	135.46	342.1	45.81	
"	136.41	340.3	47.8	
"	137.22	156.3	54.2	
"	137.83	31.8	33.8	
"	138.3	140.9	31.3	
"	139.23	152.9	62.4	
"	140.82	144.5	68.8	
"	141.41	137.2	73.4	
"	141.97	131.7	73.2	
"	142.72	132.43	67.25	
"	144.58	323.61	45.56	
"	144.95	137.7	67.8	
"	146.5	143.2	62.9	
"	146.91	134.5	65.8	
"	147.22	122.7	60.5	
"	147.84	141.3	66.2	
"	148.78	147.6	58.9	
"	149	133.17	59.88	
"	150.08	139.25	60.97	
"	151.81	163.7	60.1	
"	153.37	146.08	23.34	
"	153.63	56.22	74.26	
"	158.1	115.16	54.47	
"	158.86	144.5	65.52	
"	161.71	308.2	17.2	
"	163.22	323.3	54.3	
"	165.37	297.79	2.53	
"	170.97	92.64	27.53	
"	178.89	292.0	27.9	
"	179.88	296.56	19.06	
"	181.55	350.5	40.34	
"	183.62	279.02	42.78	
"	186.55	2.37	23.57	
"	188.03	152.7	76.8	
"	194.72	146.3	67.5	
"	196.56	177.1	78.3	
"	197.69	267.2	5.3	
"	198.57	101.3	44.2	
"	198.97	143.7	71.5	
"	199.88	137.8	65.9	
"	200.23	142.3	70.2	
"	202.55	284.2	22.9	
"	217.41	241.9	4.7	
"	217.48	207.4	7.4	
"	227.14	87.96	8.51	
"	227.31	9.84	7.17	
"	230.06	215.4	27.1	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	231.12	194.4	7.3	
"	231.91	161.5	28.4	
"	235.28	178.9	34.9	
"	241.45	330.4	1.0	
"	243.63	140.7	42.7	
"	245.34	281.41	2.37	
"	245.6	229.76	8.3	
"	247.41	259.03	5.51	
"	247.51	274.77	8.07	
"	247.86	291.2	11.7	
"	249.44	295.5	9.4	
"	259.93	262.5	13.9	
"	260.48	235.51	1.74	
"	262.32	317.63	1.97	
"	264.02	340.5	20.7	
"	264.61	130.5	3.4	
"	265.21	290.6	8.4	
"	265.83	230.8	8.2	
"	266.23	240.25	7.05	
"	267.92	154.18	9.8	
"	269.62	144.9	32.0	
"	270.13	168.4	28.5	
"	270.64	248.5	4.7	
"	270.8	248.6	7.5	
"	272.97	148.0	48.5	
"	278.75	296.1	4.1	
"	279.73	202.3	15.7	
"	280.01	136.43	19.27	
"	281.58	158.3	14.9	
Montitoring Well pw2	17.51	100.03	37.69	
"	17.55	42.91	61.22	
"	17.79	147.25	37.31	
"	18.03	140.16	42.72	
"	18.43	146.04	57.7	
"	19.27	161.0	19.6	
"	19.60	306.0	7.7	
"	21.12	343.54	73.8	
"	21.17	46.01	78.14	
"	21.69	51.7	78.0	
"	21.91	139.9	42.8	
"	22.17	62.4	60.5	
"	23.62	331.6	70.9	
"	26.33	57.44	79.06	
"	27.71	116.86	32.82	
"	28.16	121.8	27.3	
"	28.90	135.2	46.2	
"	29.02	333.0	11.5	
"	29.71	317.78	18.46	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	30.66	245.86	17.21	
"	31.91	81.49	61.47	
"	33.35	242.56	18.58	
"	35.55	132.0	12.9	
"	36.82	351.2	64.8	
"	37.2	171.69	59.46	
"	38.68	84.55	15.04	
"	39.72	127.9	16.6	
"	40.43	120.34	33.79	
"	42.64	178.97	72.95	
"	43.76	68.46	6.32	
"	43.91	90.26	5.66	
"	47.25	84.49	33.76	
"	51.96	267.31	12.37	
"	54.55	100.14	5.96	
"	55.33	58.81	64.24	
"	57.31	166.63	61.8	
"	57.71	25.17	2.84	
"	59.03	57.99	6.75	
"	59.26	182.94	61.8	
"	61.57	207.9	75.1	
"	62.25	78.77	28.47	
"	62.33	79.27	32.3	
"	65.02	309.8	51.0	
"	65.85	133.2	22.4	
"	66.53	145.89	16.23	
"	67.03	335.78	3.28	
"	67.89	117.98	25.16	
"	68.74	115.11	57.78	
"	69.27	106.28	67.48	
"	70.32	51.81	44.22	
"	70.57	50.6	34.3	
"	70.78	57.96	47.48	
"	71.3	98.05	55.42	
"	72.40	71.0	46.3	
"	73	40.29	33.02	
"	73.66	350.56	38.13	
"	74.41	88.5	41.6	
"	74.70	103.1	40.3	
"	75.62	355.5	16.8	
"	76.44	32.4	14.1	
"	76.82	81.9	17.8	
"	76.9	68.1	19.8	
"	77.53	67.5	20.6	
"	77.64	57.1	21.5	
"	77.78	59.31	19.75	
"	78.77	79.28	21.39	
"	79.35	58.5	20.4	
"	83.76	86.3	13.0	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	84.74	46.7	12.7	
"	85.63	197.4	9.0	
"	86.27	159.5	16.4	
"	86.79	163.0	19.4	
"	88.43	162.27	15.65	
"	88.96	116.61	24.59	
"	94.34	131.1	22.8	
"	95	148.17	18.33	
"	96.56	133.03	32.84	
"	97.64	166.59	16.3	
"	101.23	131.66	41.87	
"	101.84	146.3	11.1	
"	102.3	122.9	23.3	
"	107.44	127.78	44.33	
"	107.72	141.24	36.48	
"	108.72	143.8	5.5	
"	109.57	130.88	54.36	
"	109.83	352.02	1.69	
"	110.4	73.75	9	
"	110.81	67.23	8.04	
"	111.31	102.8	5.8	
"	111.8	110.4	5.1	
"	112.03	138.7	67.4	
"	113.07	143.0	62.8	
"	113.81	143.3	59.4	
"	115.54	136.4	63.5	
"	115.74	147.3	52.3	
"	116.24	144.2	54.7	
"	116.76	151.4	67.8	
"	118.26	145.7	56.5	
"	118.75	213.0	7.7	
"	119.45	136.76	62.2	
"	120	144.19	62.43	
"	120.69	133.5	61.7	
"	121.12	136.9	61.2	
"	121.88	137.7	73.0	
"	122.48	138.1	68.5	
"	122.86	134.3	70.1	
"	123.6	197.0	73.4	
"	123.74	135.68	54.81	
"	126.92	130.82	59.84	
"	128.94	138.97	51.33	
"	130.1	174.79	3.4	
"	130.51	147.7	62.0	
"	131.94	123.3	44.7	
"	131.99	137.9	59.2	
"	132.48	136.44	62.95	
"	132.63	135.57	65.3	
"	133.21	142.6	60.4	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	133.6	144.0	62.8	
"	134.27	126.6	43.1	
"	134.38	122.0	52.0	
"	135.95	137.65	64.05	
"	136.17	140.28	73.57	
"	137.7	147.0	49.5	
"	139.89	128.0	58.1	
"	140.24	141.3	64.2	
"	141.8	124.1	64.8	
"	141.97	131.3	64.6	
"	142.29	155.7	66.7	
"	143.03	134.9	45.7	
"	143.51	143.42	45.39	
"	144.06	118.75	45.13	
"	144.38	132.7	59.25	
"	150.71	184.02	6.92	
"	152.57	120.3	60.8	
"	153.5	150.1	52.3	
"	154.54	168.0	22.0	
"	159.83	153.0	6.0	
"	166.5	192.5	4.9	
"	169.48	122.0	37.2	
"	170.46	122.9	40.3	
"	174.35	161.13	5.87	
"	176.19	254.4	14.75	
"	178.39	195.6	43.1	
"	182.56	143.4	50.4	
"	182.93	127.4	54.8	
"	183.69	120.9	68.5	
"	184.18	136.0	5.5	
"	184.99	151.5	56.5	
"	185.72	175.4	3.7	
"	189.29	143.1	58.3	
"	191.55	126.9	73.3	
"	192	119.3	2.2	
"	193.33	130.2	61.3	
"	194.46	161.9	66.1	
"	204.76	158.5	3.6	
"	210.53	146.4	3.9	
"	211.99	178.5	7.6	
"	213.26	222.3	39.1	
"	215.95	207.8	3.2	
"	217.03	67.8	2.5	
"	218.09	181.1	2.7	
"	221.5	3.8	1.8	
"	221.69	289.8	1.1	
"	221.96	340.7	2.8	
"	223.15	94.9	4.5	
"	224.23	13.3	7.1	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	225.41	177.8	3.8	
"	226.53	173.8	5.0	
"	227.31	261.8	1.8	
"	227.51	190.92	7.72	
"	229.08	261.58	41.12	
"	233.99	145.7	26.5	
"	236.82	343.05	12.79	
"	237.8	98.63	26.68	
"	239.27	142.76	21.1	
"	239.83	237.34	7.09	
"	240.98	199.5	7.4	
"	241.43	184.2	20.1	
"	241.63	188.7	14.0	
"	241.96	207.7	10.8	
"	242.83	277.4	4.3	
"	243.3	254.8	3.8	
"	245.02	184.1	8.8	
"	245.35	269.7	6.2	
"	245.72	246.4	11.7	
"	246.44	25.2	5.5	
"	246.53	16.3	4.6	
"	247.13	246.2	2.1	
"	248.16	275.4	27.9	
"	251.69	83.9	13.0	
"	254.18	281.17	34.25	
"	254.77	182.3	8.29	
"	255.42	1.3	10.1	
"	255.58	345.6	6.3	
"	255.95	291.2	8.8	
"	256.07	190.91	63.32	
"	256.08	332.43	52.02	
"	257.67	305.8	18.8	
"	258.31	223.0	1.3	
"	259.19	271.0	6.4	
"	259.38	266.0	5.9	
"	260.01	284.7	16.6	
"	260.22	262.2	10.1	
"	262.92	244.1	17.4	
"	263.4	187.4	1.3	
"	263.91	276.9	1.4	
"	264.16	194.4	3.0	
"	264.28	239.3	14.0	
"	264.79	295.3	8.3	
"	265.25	100.5	4.8	
"	266.26	170.4	3.3	
"	266.59	132.4	3.3	
"	268.53	52.1	3.3	
"	268.67	41.5	3.0	
"	269.61	343.6	2.2	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	269.76	359.0	4.4	
"	270.18	281.3	0.3	
"	270.65	207.0	3.7	
"	270.81	111.7	3.8	
"	270.99	101.3	2.4	
"	271.23	281.4	4.4	
"	271.32	173.0	1.7	
"	271.47	277.7	2.2	
"	271.64	241.6	4.2	
"	272.8	179.6	1.9	
"	272.96	102.0	2.7	
"	273.13	32.8	3.5	
"	273.78	164.0	3.9	
"	274.2	115.8	66.4	
"	275.29	236.2	9.1	
"	275.71	202.0	16.3	
"	276.46	351.6	8.5	
"	277.02	82.4	1.8	
"	277.73	267.6	3.6	
"	277.96	62.9	6.7	
"	278.4	238.2	5.2	
"	278.48	235.8	6.5	
"	278.64	267.4	9.7	
"	279.02	332.0	37.9	
"	279.31	174.4	3.4	
"	280.41	299.94	5.84	
"	280.8	255.78	5.55	
"	281.7	356.2	8.4	
"	282.58	59.8	5.4	
"	283.72	328.0	2.4	
"	284.79	191.3	2.6	
"	284.98	316.7	5.3	
"	285.19	236.5	4.0	
"	285.43	227.8	7.1	
"	285.77	248.5	4.4	
"	286	216.8	5.0	
"	286.89	88.47	21.01	
"	287.8	198.16	3.63	
"	287.93	257.32	2.8	
"	288.01	229.57	1.86	
"	288.63	227.6	5.51	
"	289.43	242.25	4.98	
"	290.89	200.23	4.32	
"	292.23	296.57	4.19	
"	292.92	238.16	5.15	
"	293.1	316.2	6.46	
"	293.31	261.62	5.45	
"	293.4	230.73	7.55	
"	293.51	210.15	5.31	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	293.58	219.68	6.49	
"	293.98	160.4	18.91	
"	294.64	162.92	24.01	
"	295.51	122.54	17.25	
"	295.81	178.73	6.56	
"	296.38	221.3	6.61	
"	296.39	135.38	8.75	
"	296.53	195.98	6.25	
"	296.74	185.47	25.14	
"	297.54	216.49	0.92	
"	297.88	203.45	10.14	
"	298.02	295.01	46.59	
"	298.37	287.5	0.81	
"	299.76	183.88	9.12	
"	300.56	128.66	12.46	
"	300.67	204.19	6.72	
"	301.45	339.93	6.43	
Monitoring Well v114	112.84	46.88	15.89	
"	112.89	21.1	16.49	
"	115.87	187.22	21.58	
"	116.48	83.9	2.4	
"	117.93	126.0	19.5	
"	118.01	119.08	15	
"	118.11	132.56	15.48	
"	119.67	128.2	14.4	
"	121.74	140.4	14.9	
"	121.83	115.8	13.4	
"	122.32	126.5	15.9	
"	123.2	114.12	12.11	
"	126.2	121.16	15.41	
"	126.25	117.5	15.1	
"	126.29	78.9	75.6	
"	126.38	134.8	14.0	
"	127.05	145.66	76.15	
"	127.46	125.19	14.69	
"	127.93	119.93	16.25	
"	128.13	136.01	14.41	
"	128.20	121.8	15.0	
"	129.14	158.9	61.8	
"	131.3	157.51	59.9	
"	131.58	117.97	15.28	
"	132.92	120.3	15.1	
"	133.12	133.09	12.94	
"	133.69	123.42	13.66	
"	134.06	122.45	15.44	
"	134.53	118.42	15.63	
"	134.65	122.39	14.94	
"	134.69	126.57	15.2	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	135.22	113.06	15.3	
"	136.07	120.72	15.31	
"	136.14	122.55	16.8	
"	136.44	132.02	13.6	
"	136.68	121.2	15.75	
"	137.19	126.26	15.05	
"	137.26	151.3	61.4	
"	137.48	125.14	15.72	
"	137.82	133.22	15.5	
"	141.66	196.7	2.3	
"	142.62	124.8	15.2	
"	142.94	143.3	10.02	
"	142.97	134.49	14.73	
"	147.69	125.77	15.68	
"	147.8	120.15	13.86	
"	147.95	146.94	15.32	
"	156.57	126.99	13.14	
"	157.88	124.6	13.4	
"	159.92	113.7	14.45	
"	162.68	128.33	15.29	
"	162.84	139.9	14.6	
"	166.75	133.09	6.59	
"	166.8	138.46	9.19	
"	167.78	133.0	14.8	
"	172.13	139.8	17.4	
"	177.62	123.0	15.8	
"	177.82	123.4	11.4	
"	181.24	146.7	72.1	
"	182.53	135.4	81.5	
"	182.54	123.8	14.3	
"	182.65	121.9	18.5	
"	182.7	138.67	73.02	
"	182.79	124.56	15	
"	183.69	317.7	0.4	
"	184.58	129.2	13.2	
"	187.34	127.2	16.5	
"	187.72	116.5	19.1	
"	187.8	120.6	15.1	
"	187.87	116.8	17.7	
"	192.51	124.78	13	
"	202.49	123.27	17.95	
"	203.13	148.2	10.1	
"	203.18	143.5	10.7	
"	203.25	151.44	8.41	
"	208.55	142.36	11.63	
"	212.64	82.91	9.89	
"	212.78	236.9	11.5	
"	212.78	118.3	20.3	
"	216.67	143.93	12.99	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	216.72	205.26	5.48	
Extensometer Boring E1	5.2	171	11	
"	5.7	56	47	
"	6.2	341	71	
"	7.1	292	71	
"	7.1	38	42	
"	7.7	161	14	
"	8.8	147	56	
"	8.9	353	58	
"	10.2	322	77	
"	10.2	189	10	
"	10.3	203	5	
"	10.4	167	13	
"	10.9	39	33	
"	11.3	156	14	
"	11.4	157	10	
"	12.3	158	25	
"	12.8	137	75	
"	12.8	143	16	
"	13.7	163	13	
"	13.8	171	45	
"	13.9	142	83	
"	14.2	158	5	
"	15.8	168	60	
"	16	169	74	
"	16.1	164	36	
"	16.2	151	34	
"	16.6	83	65	
"	16.8	137	44	
"	16.9	152	43	
"	17.5	190	21	
"	17.7	180	18	
"	17.9	176	15	
"	18.1	180	15	
"	18.2	330	60	
"	18.2	183	16	
"	18.3	178	18	
"	18.5	174	18	
"	18.8	184	19	
"	19	171	12	
"	19.3	158	11	
"	19.4	155	11	
"	19.4	180	81	
"	19.6	180	11	
"	19.8	172	11	
"	20.3	162	11	
"	20.7	144	13	
"	20.9	178	8	

Table of Discontinuity Data, Boreholes,Surface Mapping
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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	21.2	173	4	
"	21.4	162	11	
"	21.6	117	9	
"	21.7	132	10	
"	21.7	106	3	
"	22	178	11	
"	22.1	155	9	
"	22.1	192	6	
"	22.3	169	8	
"	22.6	168	6	
"	23	180	7	
"	23.3	156	11	
"	24.2	205	62	
"	24.2	153	4	
"	24.3	143	5	
"	24.4	139	4	
"	24.6	163	5	
"	24.7	137	8	
"	24.9	129	6	
"	25	153	7	
"	25.2	140	11	
"	25.5	187	5	
"	25.6	312	55	
"	25.8	146	8	
"	26	139	7	
"	26.1	150	7	
"	26.2	174	4	
"	26.3	111	7	
"	27.2	157	31	
"	27.3	80	13	
"	27.3	205	7	
"	27.4	57	8	
"	27.5	182	14	
"	27.7	174	9	
"	27.8	144	24	
"	27.9	156	79	
"	28.2	126	21	
"	28.3	131	46	
"	28.4	125	62	
"	28.6	131	56	
"	28.8	132	48	
"	28.9	136	46	
"	29	138	44	
"	29.4	138	52	
"	29.5	145	42	
"	29.7	133	27	
"	30	139	26	
"	30	139	38	
"	30.1	152	42	

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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	30.2	144	39	
"	30.4	141	40	
"	30.4	138	18	
"	30.5	265	7	
"	30.6	258	8	
"	30.6	251	9	
"	30.8	275	3	
"	31.1	135	16	
"	31.2	283	4	
"	31.3	184	6	
"	31.5	223	4	
"	31.7	302	11	
"	31.8	166	28	
"	32	350	6	
"	32.4	249	4	
"	32.8	203	4	
"	32.8	144	69	
"	33.3	132	74	
"	33.5	68	81	
"	33.7	151	56	
"	33.9	141	79	
"	34	239	2	
"	34.5	63	83	
"	34.9	95	62	
"	35.6	144	68	
"	36	133	67	
"	36.1	62	85	
"	36.3	162	4	
"	36.4	158	71	
"	36.9	146	78	
"	37.1	143	76	
"	37.4	222	4	
"	38.6	210	2	
"	38.8	209	4	
"	39.1	144	73	
"	39.3	196	9	
"	39.9	134	71	
"	40.2	238	5	
"	40.3	151	61	
"	40.9	146	35	
"	41	261	5	
"	41.1	130	64	
"	41.1	216	5	
Extensometer Boring E2	4.7	138	27	
"	5.1	154	15	
"	5.3	158	20	
"	5.9	147	11	
"	6.3	153	19	

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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	8.3	163	17	
"	8.4	171	25	
"	10.1	343	74	
"	15.9	142	71	
"	16.2	140	35	
"	21.3	326	39	
"	22.7	353	26	
"	23.4	149	8	
"	25.4	329	90	
"	26.6	149	79	
"	27.7	136	54	
"	28.6	142	80	
"	30.9	142	66	
"	31.6	141	10	
"	31.7	126	7	
"	31.8	128	74	
"	33.7	316	83	
"	34.2	137	59	
"	38.1	110	4	
"	39.9	124	9	
"	40	94	7	
"	40.4	128	61	
"	41.4	140	55	
"	42.6	145	61	
Extensometer Boring E3	4.2	102	16	
"	4.5	72	8	
"	4.6	178	6	
"	4.7	131	83	
"	5.1	1	10	
"	5.1	307	76	
"	5.2	179	17	
"	5.9	272	4	
"	**6**	171	14	
"	6.1	164	35	
"	6.2	166	28	
"	6.2	290	7	
"	6.3	169	38	
"	6.4	179	42	
"	6.5	180	35	
"	6.6	141	37	
"	6.6	186	29	
"	6.7	174	33	
"	6.7	138	39	
"	7	166	32	
"	7.1	154	36	
"	7.2	162	35	
"	7.6	124	53	
"	7.8	219	36	

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Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	7.9	200	24	
"	8.2	211	43	
"	8.2	211	40	
"	8.4	313	62	
"	8.8	4	10	
"	8.9	211	23	
"	8.9	222	7	
"	9	215	18	
"	9.1	209	10	
"	9.3	188	7	
"	9.3	213	9	
"	9.4	186	6	
"	9.8	198	7	
"	9.9	190	7	
"	10.2	228	4	
"	10.3	338	82	
"	11.2	191	7	
"	11.8	196	7	
"	12	208	8	
"	12.2	254	4	
"	12.4	187	8	
"	12.5	198	6	
"	12.6	216	6	
"	12.7	193	7	
"	12.8	200	6	
"	13.1	209	5	
"	13.4	195	8	
"	13.6	180	6	
"	13.7	200	4	
"	13.9	198	10	
"	14.5	183	5	
"	14.9	202	8	
"	15.1	210	6	
"	15.5	185	5	
"	15.5	191	2	
"	15.6	216	6	
"	16.4	214	5	
"	17.1	192	6	
"	17.2	203	4	
"	17.4	244	3	
"	17.6	246	4	
"	18.4	216	3	
"	18.5	180	7	
"	18.8	192	5	
"	18.9	221	85	
"	19	209	5	
"	19.6	194	5	
"	19.7	193	6	
"	20.1	212	6	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	20.4	193	8	
"	20.6	86	2	
"	21.3	167	9	
"	21.4	184	8	
"	21.9	186	11	
"	21.9	156	80	
"	22.9	221	22	
"	23.2	317	74	
"	26.6	84	57	
"	28.6	153	76	
"	31.1	233	5	
"	33.9	125	67	
"	39.8	228	2	
"	41.3	151	59	
"	42.7	143	60	
"	43.6	144	72	
"	44.4	161	44	
"	44.7	160	43	
"	45.7	134	66	
"	46.8	126	70	
"	47.7	136	62	
"	48.6	147	53	
"	49.7	140	53	
"	50.2	121	55	
"	51.2	121	59	
"	51.5	140	59	
"	53.3	163	71	
"	53.7	141	66	
"	54.9	157	76	
"	57.2	161	7	
"	59.8	166	67	
"	61.9	53	79	
"	65.1	169	10	
"	66.3	144	57	
"	72.2	57	76	
"	77.9	322	6	
"	77.9	153	11	
"	85.4	120	61	
"	85.6	136	63	
"	90.5	144	57	
"	91	326	8	
"	92.8	136	66	
"	93.4	130	73	
"	93.5	341	11	
"	93.5	204	4	
"	93.8	38	78	
"	94.5	136	75	
"	96	107	64	
"	98	132	60	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
Tailrace Tunnel		65	75	
"		180	60	
"		310	73	6 @ 4" spacing
"		220	75	
"		135	65	3 @ 10" spacing
"		135	80	
"		20	90	
"		192	60	
"		130	55	
"		125	60	8 @ 2-4" spacing
"		183	50	3 @ 6-12"
"		320	72	
"		130	62	
"		125	52	4 @ 8-12" spacing
"		187	70	
"		125	65	10 @ 3-4"
"		125	52	4 @ 2-4"
"		287	45	
"		345	45	est
"		185	68	est
"		137	85	3 @ 4"
"		315	82	3 @ 4", est
"		18	63	2 @ 2"
"		65	90	est
"		50	65	est
"		195	80	3 @ 2-3', est
"		340	80	3 @ 6-8"
"		135	6	calc coating, dip only
"		340	63	est
"		135	80	7 @ 6-10"
"		5	74	curved
"		340	35	curved
"		10	90	
"		345	90	
"		310	90	3 @ 10"
"		136	70	10 @ 2-4"
"		175	90	3 @ 2-3"
"		300	78	
"		140	40	clvg
"		120	65	
"		175	90	
"		105	70	
"		110	75	
Hydro Plant Surface Mapping	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	177	70	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	335	87	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	34	80	joint
"	Surface	116	85	joint
"	Surface	116	85	joint
"	Surface	116	85	joint
"	Surface	116	85	joint
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	147	6	bedding
"	Surface	119	36	cleavage

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	119	36	cleavage
"	Surface	119	36	cleavage
"	Surface	119	36	cleavage
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	173	78	joint
"	Surface	30	87	joint
"	Surface	30	87	joint
"	Surface	30	87	joint
"	Surface	30	87	joint
"	Surface	125	82	joint
"	Surface	125	82	joint
"	Surface	125	82	joint
"	Surface	125	82	joint
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	153	4	bedding
"	Surface	117	44	cleavage
"	Surface	117	44	cleavage
"	Surface	117	44	cleavage
"	Surface	117	44	cleavage
Access Shaft Surface Mapping	Surface	113	46	bedding
"	Surface	299	70	
"	Surface	38	52	
"	Surface	139	45	
"	Surface	114	52	
"	Surface	125	4	bedding

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	115	6	bedding
"	Surface	116	61	
"	Surface	113	53	
"	Surface	36	46	
"	Surface	108	59	
"	Surface	124	29	bedding
"	Surface	186	70	
"	Surface	107	69	
"	Surface	109	28	bedding
"	Surface	115	4	bedding
"	Surface	108	47	bedding
"	Surface	107	46	bedding
"	Surface	114	5	bedding
"	Surface	18	64	
"	Surface	198	82	
"	Surface	100	42	
"	Surface	110	73	
"	Surface	185	80	
"	Surface	187	75	
"	Surface	60	33	
"	Surface	187	89	
"	Surface	323	80	
"	Surface	190	83	
"	Surface	194	75	
"	Surface	185	80	
"	Surface	186	79	
"	Surface	187	80	
"	Surface	187	81	
"	Surface	186	81	
"	Surface	186	80	
"	Surface	186	80	
"	Surface	186	80	
"	Surface	304	76	
"	Surface	124	84	
"	Surface	322	77	
"	Surface	306	64	
"	Surface	217	55	
"	Surface	228	77	
"	Surface	233	58	
"	Surface	115	48	
"	Surface	184	80	
"	Surface	217	64	
"	Surface	278	79	
"	Surface	278	79	
"	Surface	188	84	
"	Surface	126	56	
"	Surface	244	59	
"	Surface	126	87	
"	Surface	128	80	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	40	84	
"	Surface	200	89	
"	Surface	105	64	
"	Surface	110	72	
"	Surface	185	77	
"	Surface	115	55	
"	Surface	284	82	
"	Surface	269	74	
"	Surface	111	54	
"	Surface	124	77	
"	Surface	182	84	
"	Surface	114	64	
"	Surface	182	82	
"	Surface	246	79	
"	Surface	120	83	
"	Surface	184	80	
"	Surface	185	81	
"	Surface	185	87	
"	Surface	185	85	
"	Surface	121	59	
"	Surface	112	65	
"	Surface	185	82	
"	Surface	185	83	
"	Surface	184	85	
"	Surface	108	58	
"	Surface	114	66	
"	Surface	186	80	
"	Surface	49	83	
"	Surface	184	81	
"	Surface	125	69	
"	Surface	44	66	
"	Surface	116	59	
"	Surface	187	88	
"	Surface	184	81	
"	Surface	193	82	
"	Surface	9	78	
"	Surface	110	52	
"	Surface	184	85	
"	Surface	184	82	
"	Surface	185	84	
"	Surface	185	85	
"	Surface	163	51	
"	Surface	185	85	
"	Surface	155	56	
"	Surface	188	90	
"	Surface	3	82	
"	Surface	117	87	
"	Surface	112	74	
"	Surface	222	82	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

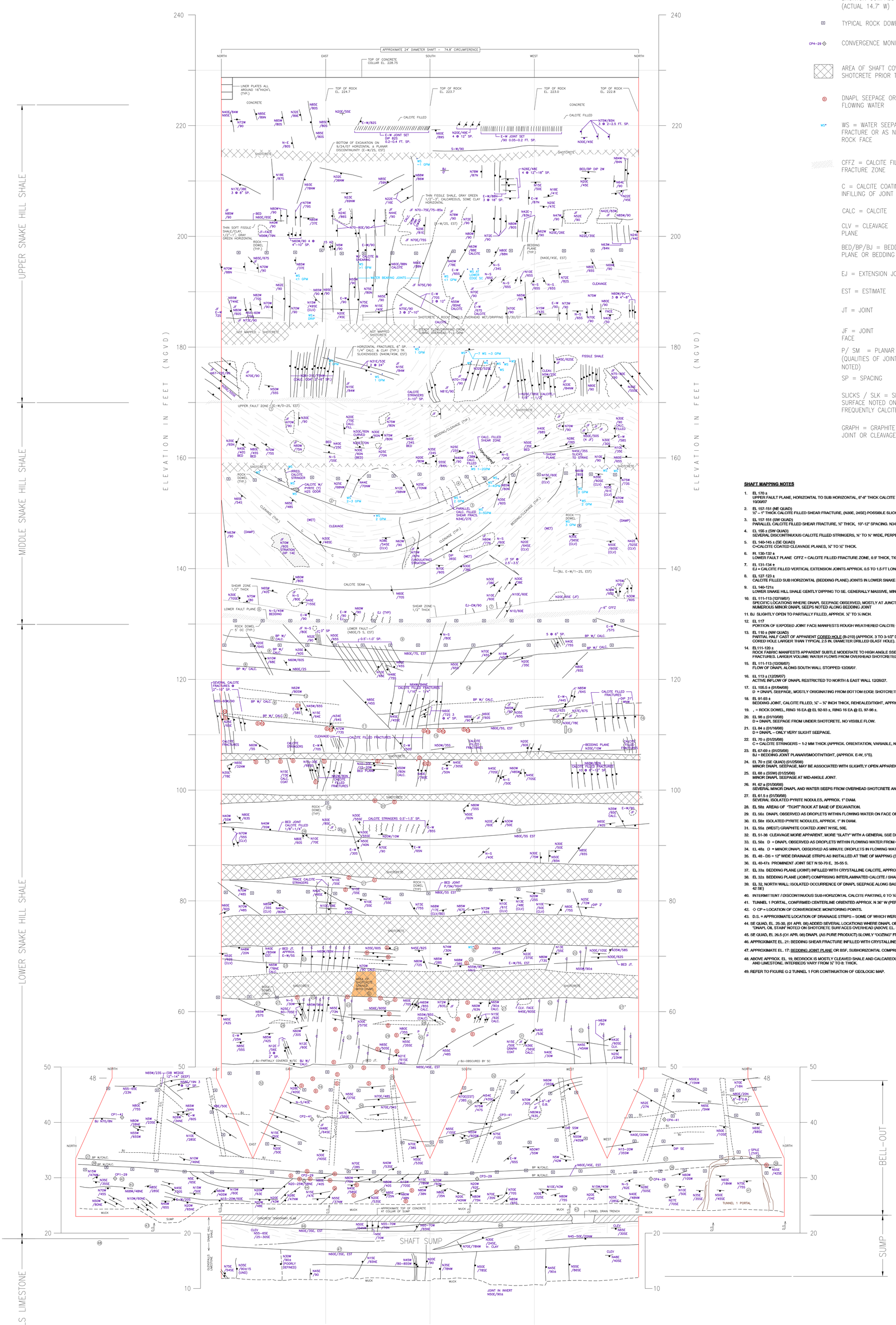
Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	238	74	
"	Surface	186	84	
"	Surface	115	47	
"	Surface	185	79	
"	Surface	186	76	
"	Surface	61	78	
"	Surface	12	54	
"	Surface	185	83	
"	Surface	186	84	
"	Surface	338	33	
"	Surface	186	84	
"	Surface	114	60	
"	Surface	187	80	
"	Surface	142	26	
"	Surface	183	85	
"	Surface	90	49	
"	Surface	175	54	
"	Surface	65	40	
"	Surface	120	61	
"	Surface	114	53	
"	Surface	134	33	
"	Surface	103	69	
"	Surface	161	84	
"	Surface	186	90	
"	Surface	185	83	
"	Surface	183	82	
"	Surface	159	83	
"	Surface	186	86	
"	Surface	7	87	
"	Surface	186	86	
"	Surface	170	54	
"	Surface	186	88	
"	Surface	186	86	
"	Surface	113	62	
"	Surface	186	86	
"	Surface	117	76	
"	Surface	113	52	
"	Surface	119	64	
"	Surface	114	37	
"	Surface	186	86	
"	Surface	279	67	
"	Surface	186	83	
"	Surface	116	42	
"	Surface	8	78	
"	Surface	137	68	
"	Surface	157	84	
"	Surface	14	84	
"	Surface	196	85	
"	Surface	18	85	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	188	89	
"	Surface	146	53	
"	Surface	119	46	
"	Surface	303	77	
"	Surface	303	68	
"	Surface	134	75	
"	Surface	190	90	
"	Surface	150	74	
"	Surface	113	39	
"	Surface	237	87	
"	Surface	100	30	
"	Surface	162	90	
"	Surface	341	89	
"	Surface	189	88	
"	Surface	317	82	
"	Surface	103	41	
"	Surface	125	77	
"	Surface	164	84	
"	Surface	301	75	
"	Surface	291	36	
"	Surface	190	86	
"	Surface	134	17	
"	Surface	190	87	
"	Surface	189	81	
"	Surface	188	88	
"	Surface	190	88	
"	Surface	25	37	
"	Surface	189	87	
"	Surface	189	87	
"	Surface	200	52	
"	Surface	189	86	
"	Surface	121	45	
"	Surface	306	76	
"	Surface	310	77	
"	Surface	106	39	
"	Surface	126	48	
"	Surface	189	87	
"	Surface	189	86	
"	Surface	190	86	
"	Surface	175	76	
"	Surface	261	59	
"	Surface	189	84	
"	Surface	109	62	
"	Surface	36	34	
"	Surface	115	50	
"	Surface	187	82	
"	Surface	111	66	
"	Surface	295	80	
"	Surface	187	85	

Table of Discontinuity Data, Boreholes,Surface Mapping
GE - TDCS
Hudson Falls, NY

Data Source	Depth (ft)	Dip Direction (azimuth)	Dip	Comments
"	Surface	186	83	
"	Surface	185	85	
"	Surface	186	85	
"	Surface	120	48	
"	Surface	184	85	
"	Surface	295	82	
"	Surface	184	86	
"	Surface	186	83	
"	Surface	104	63	
"	Surface	16	73	
"	Surface	307	80	
"	Surface	13	74	



DEVELOPED ELEVATION VIEW

EXPLANATION

SYMBOL FOR JOINT, FRACTURE, OR DISCONTINUITY INDICATING RELATIVE ORIENTATION AND DIP

N80E/90 — JOINT ORIENTATION: STRIKE/DIP (IN DEGREES), MEASURED WITH BRUNTON COMPASS ADJUSTED FOR PROJECT DECLINATION 15° W (ACTUAL 14.7° W)

TYPICAL ROCK DOWEL LOCATION (WHERE NOTED)

CP4-29 — CONVERGENCE MONITORING POINT# – ELEVATION

AREA OF SHAFT COVERED WITH SHOTCRETE PRIOR TO TIME OF MAPPING

D — DNAPL SEEPAGE OR DROPLETS IN FLOWING WATER

WS* — WS = WATER SEEPAGE FROM ROCK FRACTURE OR AS NOTED FLOWING ON ROCK FACE

CFFZ = CALCITE FILLED FRACTURE ZONE

C = CALCITE COATING OR INFILLING OF JOINT

CALC = CALCITE

CLV = CLEAVAGE PLANE

BED/BP/BJ = BEDDING PLANE OR BEDDING JOINT

EJ = EXTENSION JOINT

EST = ESTIMATE

JT = JOINT

JF = JOINT FACE

P/ SM = PLANAR / SMOOTH (QUALITIES OF JOINT SURFACE WHERE NOTED)

SP = SPACING

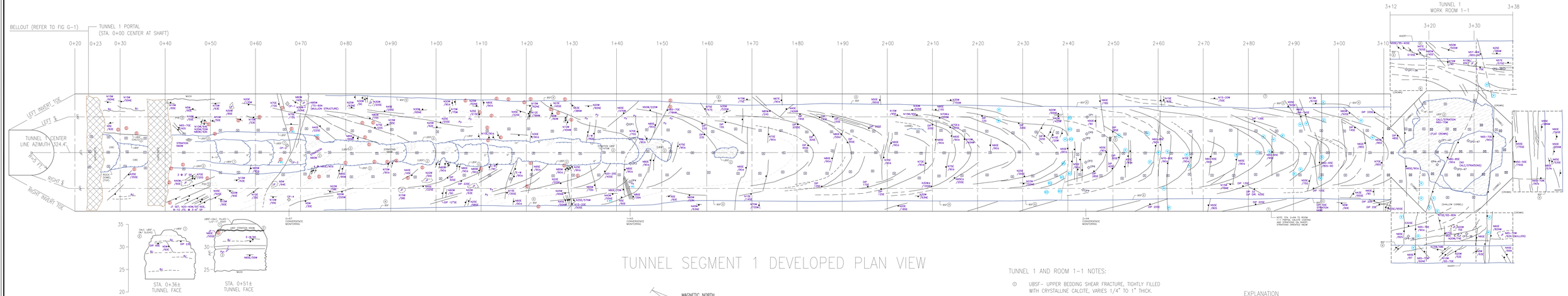
SLICKS / SLK = SLICKENSIDES, SMOOTH STRIATED SURFACE NOTED ON FAULT OR SHEAR PLANES, FREQUENTLY CALCITE COATED.

GRAPH = GRAPHITE COATING ON JOINT OR CLEAVAGE SURFACE.

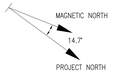
SHAFT MAPPING NOTES

1. EL 170 ±
UPPER FAULT PLANE, HORIZONTAL TO SUB HORIZONTAL, 6"-8" THICK CALCITE WITH ELONGATED, CRENULATED SHALE INCLUSIONS. NO OBSERVED SEEPAGE, TIGHT. 10/30/07
2. EL 157-151 (NE QUAD)
½" – 1" THICK CALCITE FILLED SHEAR FRACTURE, (N30E, 24SE) POSSIBLE SLICKENSIDES STRIATIONS PERPENDICULAR TO STRIKE. 11/14/07
3. EL 157-151 (SW QUAD)
PARALLEL CALCITE FILLED SHEAR FRACTURE, ½" THICK, 10"-12" SPACING. N34E, 27 SE. 11/14/07
4. EL 155 ± (SW QUAD)
SEVERAL DISCONTINUOUS CALCITE FILLED STRINGERS, ¼" TO ½" WIDE, PERPENDICULAR TO BEDDING/CLEAVAGE. 11/14/07.
5. EL 140-145 ± (SE QUAD)
C=CALCITE COATED CLEAVAGE PLANES, ⅛" TO ½" THICK.
6. EL 130-132 ±
LOWER FAULT PLANE CFFZ = CALCITE FILLED FRACTURE ZONE, 0.9' THICK, TIGHT, AND NO WATER SEEPAGE OBSERVED.
7. EL 131-134 ±
EJ = CALCITE FILLED VERTICAL EXTENSION JOINTS APPROX. 0.5 TO 1.5 FT LONG, SPACED ~ 0.5 TO 2 FT APART. LOCATED ABOVE AND BELOW LOWER FAULT PLANE.
8. EL 127-123 ±
CALCITE FILLED SUB HORIZONTAL (BEDDING PLANE) JOINTS IN LOWER SNAKE HILL SHALE.
9. EL 140-121±
LOWER SNAKE HILL SHALE GENTLY DIPPING TO SE. GENERALLY MASSIVE, MINOR WATER ENTERING THROUGH SLIGHTLY OPEN JOINTS. NO LARGE FLOW OBSERVED.
10. EL 111-113 (12/19/07)
SPECIFIC LOCATIONS WHERE DNAPL SEEPAGE OBSERVED, MOSTLY AT JUNCTURE OF VERTICAL/HIGH ANGLE FRACTURES WITH SUB HORIZONTAL BEDDING JOINT 11. NUMEROUS MINOR DNAPL SEEPS NOTED ALONG BEDDING JOINT
11. BJ SLIGHTLY OPEN TO PARTIALLY FILLED, APPROX. ¼" TO ¼ INCH.
12. EL 117
PORTION OF EXPOSED JOINT FACE MANIFESTS ROUGH WEATHERED CALCITE COATED SURFACE.
13. EL 110 ± (NW QUAD)
PARTIAL HALF CAST OF APPARENT CORED HOLE (B-210) (APPROX. 3 TO 3-1/2" DIAM). SOFT WHITE MATERIAL OBSERVED AS INFILLING AT EL 110. (NOTE DIAMETER OF CORED HOLE LARGER THAN TYPICAL 2.5 IN. DIAMETER DRILLED BLAST HOLE).
14. EL111-120 ±
ROCK FABRIC MANIFESTS APPARENT SUBTLE MODERATE TO HIGH ANGLE SSE DIPPING "CLEAVAGE". MINOR WATER SEEPS THROUGHOUT FROM SLIGHTLY OPEN FRACTURES. LARGER VOLUME WATER FLOWS FROM OVERHEAD SHOTCRETED PORTION OF SHAFT AND SEEPAGE CONDUITS TAPPED THROUGH SHOTCRETE.
15. EL 111-113 (12/26/07)
FLOW OF DNAPL ALONG SOUTH WALL STOPPED 12/26/07.
16. EL 113 ± (12/26/07)
ACTIVE INFLOW OF DNAPL RESTRICTED TO NORTH & EAST WALL 12/26/27.
17. EL 105.5 ± (01/04/08)
D = DNAPL SEEPAGE, MOSTLY ORIGINATING FROM BOTTOM EDGE SHOTCRETE.
18. EL 91-93 ±
BEDDING JOINT, CALCITE FILLED, ½" – ¾" INCH THICK, REHEALED/TIGHT, APPROX. DIP 5°S.
19. , = ROCK DOWEL, RING 16 EA @ EL 92-93 ±, RING 16 EA @ EL 97-98 ±.
20. EL 98 ± (01/10/08)
D = DNAPL SEEPAGE FROM UNDER SHOTCRETE. NO VISIBLE FLOW.
21. EL 84 ± (01/16/08)
D = DNAPL – ONLY VERY SLIGHT SEEPAGE.
22. EL 70 ± (01/25/08)
C = CALCITE STRINGERS ~ 1-2 MM THICK (APPROX. ORIENTATION, VARIABLE, N55 – 65W, 80-90°).
23. EL 67-69 ± (01/25/08)
BJ = BEDDING JOINT PLANAR/SMOOTH/TIGHT, (APPROX. E-W, 5°S).
24. EL 70 ± (SE QUAD) (01/25/08)
MINOR DNAPL SEEPAGE. MAY BE ASSOCIATED WITH SLIGHTLY OPEN APPARENT CLEAVAGE JOINTS.
25. EL 69 ± (SSW) (01/25/08)
MINOR DNAPL SEEPAGE AT MID-ANGLE JOINT.
26. EL 62 ± (01/30/08)
SEVERAL MINOR DNAPL AND WATER SEEPS FROM OVERHEAD SHOTCRETE AND FROM SLIGHTLY OPEN CLEAVAGE JOINTS (?).
27. EL 61.5 ± (01/30/08)
SEVERAL ISOLATED PYRITE NODULES, APPROX. 1" DIAM.
28. EL 58± AREAS OF "TIGHT" ROCK AT BASE OF EXCAVATION.
29. EL 56± DNAPL OBSERVED AS DROPLETS WITHIN FLOWING WATER ON FACE OF SHAFT WALLS IN EAST / SE / SW.
30. EL 56± ISOLATED PYRITE NODULES, APPROX. 1" IN DIAM.
31. EL 55± (WEST) GRAPHITE COATED JOINT N15E, 50E.
32. EL 51-38 CLEAVAGE MORE APPARENT, MORE "SLATY" WITH A GENERAL SSE DIP.
33. EL 50± D = DNAPL OBSERVED AS DROPLETS WITHIN FLOWING WATER FROM OVERHEAD AREA IN SE QUADRANT ONLY.
34. EL 48± D = MINOR DNAPL OBSERVED AS MINUTE DROPLETS IN FLOWING WATER FROM OVERHEAD AREA IN SE QUADRANT ONLY.
35. EL 48 - DS = 12" WIDE DRAINAGE STRIPS AS INSTALLED AT TIME OF MAPPING (3-1-2008).
36. EL 40-47± PROMINENT JOINT SET N 50-70 E, 35-55 S.
37. EL 33± BEDDING PLANE (JOINT) INFILLED WITH CRYSTALLINE CALCITE, APPROX. ¼" TO 1" THICK.-LBSF (1)
38. EL 32± BEDDING PLANE (JOINT) COMPRISING INTERLAMINATED CALCITE / SHALE, APPROX. ½" – 1½" THICK –LBSF (2).
39. EL 32, NORTH WALL: ISOLATED OCCURRENCE OF DNAPL SEEPAGE ALONG BASE OF CALCITE FILLED BEDDING PLANE AND INTERSECTION WITH CLEAVAGE PLANE (N 55 E, 42 SE)
40. INTERMITTENT / DISCONTINUOUS SUB-HORIZONTAL CALCITE PARTING, 0 TO ¼" THICK.
41. TUNNEL 1 PORTAL, CONFIRMED CENTERLINE ORIENTED APPROX. N 36° W (PER MEASUREMENT WITH BRUNTON COMPASS).
42. ◇ CP = LOCATION OF CONVERGENCE MONITORING POINTS.
43. D.S. = APPROXIMATE LOCATION OF DRAINAGE STRIPS – SOME OF WHICH WERE STILL BEING APPLIED DURING MAPPING ON 3/24/08.
44. SE QUAD, EL. 25-30, (01 APR. 08) ADDED SEVERAL LOCATIONS WHERE DNAPL OBSERVED ON THIS DATE. MOSTLY DNAPL DROPLETS WITHIN FLOWING WATER. SOME BLACK "DNAPL OIL STAIN" NOTED ON SHOTCRETE SURFACE OVERHEAD (ABOVE EL. 30)
45. SE QUAD, EL 26.5 (O1 APR. 08) DNAPL (AS PURE PRODUCT) SLOWLY "OOZING" FROM APPARENT INTERSECTION OF JOINTS.
46. APPROXIMATE EL. 21: BEDDING SHEAR FRACTURE INFILLED WITH CRYSTALLINE CALCITE APPROX. 1" TO 2.5" THICK – BSF (4) ON T1, BSF (1) ON T2 & T3
47. APPROXIMATE EL. 17: BEDDING JOINT PLANE OR BSF, SUBHORIZONTAL COMPRISING CALCITE INFILL 1/8" THICK AMD INTERLAMINATED CALCITE/SHALE UP TO 2.5" THICK
48. ABOVE APPROX. EL. 19, BEDROCK IS MOSTLY CLEAVED SHALE AND CALCAREOUS SHALE. BELOW APPROX. EL 19, ROCK GRADES TO INTERBEDDED CALCAREOUS SHALE AND LIMESTONE. INTERBEDS VARY FROM ½" TO 8: THICK.
49. REFER TO FIGURE G-2 TUNNEL 1 FOR CONTINUATION OF GEOLOGIC MAP.

TITLE:	TDCS Access Shaft Geologic Map
LOCATION:	GE Hudson Falls, New York
TETRA TECH GEO	CHECKED: JRB, FB, GP; DRAFTED: RMK; FILE:; DATE: APRIL 2011
FIGURE:	G-1



TUNNEL SEGMENT 1 DEVELOPED PLAN VIEW



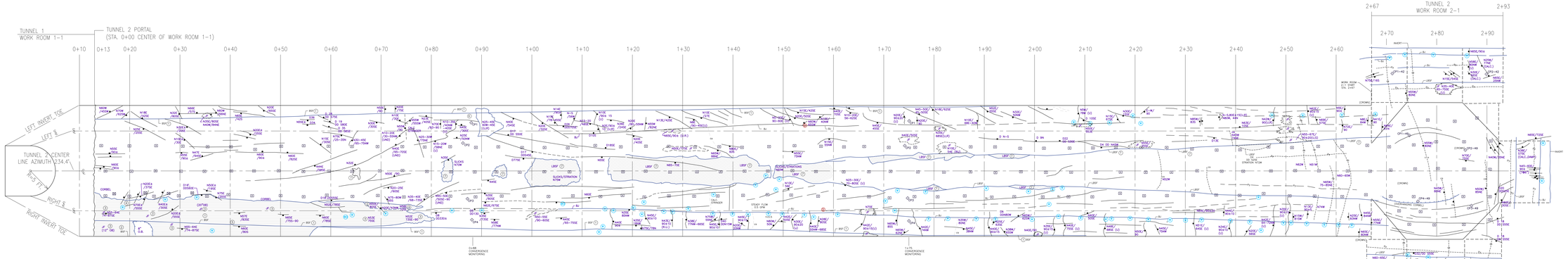
TUNNEL 1 AND ROOM 1-1 NOTES:

1. UBSF- UPPER BEDDING SHEAR FRACTURE, TIGHTLY FILLED WITH CRYSTALLINE CALCITE, VARIES 1/4" TO 1" THICK.
2. LBSF – LOWER BEDDING SHEAR FRACTURE, IRREGULAR LAMINATION OF CALCITE AND SHALE, MOSTLY TIGHT. LAYER VARIES FROM 1" TO 4" THICK, SLICKENSIDES (STRIAE) NOTED ON LOWER SURFACE – ORIENTATION N60–70W
3. Py – INTERMITTENT BEDDING PARTING DISCONTINUOUSLY FILLED WITH HORIZONTALLY ELONGATED PYRITE MINERALIZATION, APPROXIMATELY 1/8" – 1/4" THICK
4. BSF – BEDDING SHEAR FRACTURE, IRREGULAR LAMINATION OF CALCITE/SHALE/MINOR PYRITE; MOSTLY TIGHT. LAYER VARIES FROM 3/4" TO 2" THICK. (FIRST NOTED AT APPROX. STA. 0+75 AT TUNNEL INVERT 5/3/2008) REF TO: TUNNEL 2 NOTE 1; TUNNEL 3 NOTE 1; SHAFT NOTE 46.
5. BH– GROUT FILLED VERTICAL BOREHOLE, B–209, 4" DIAMETER STATION 2+50
6. WELL HF–303, STEEL CASED RECOVERY WELL AT APPROXIMATE STA. 3+19 ADJACENT TO LEFT WALL OF ROOM 1–1. WELL FLOW OBSERVED AT APPROX. 30 GPM FROM UNDERLYING GLENS FALLS LIMESTONE. MECHANICAL PACKER PLACED IN PIPE AT THE INVERT LEVEL TO SEAL OFF FLOW.
7. BSF(2) – APPARENT BEDDING SHEAR FRACTURE MANIFESTING CALCITE COATING WITH SLICKENSIDES/STRIAE ORIENTED APPROXIMATELY N 62 W ±. OBSERVED IN INVERT OF TUNNEL 1 AT APPROXIMATE STA. 2+84 AND CONTINUING INTO INVERT OF ROOM 1–1. REFER TO: SHAFT NOTE 47; TUNNEL 2 NOTE 2; TUNNEL 3 NOTE 3.

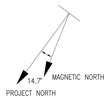
EXPLANATION

- SYMBOL FOR JOINT, FRACTURE, OR DISCONTINUITY INDICATING RELATIVE ORIENTATION AND DIP
- N60W/90 — JOINT ORIENTATION: STRIKE/DIP (IN DEGREES), MEASURED WITH BRUNTON COMPASS ADJUSTED FOR PROJECT DECLINATION 15° W (ACTUAL 14.7° W)
- DIP 30SE — DIP 30SE: DIP=30° DIP DIRECTION = SE OR S45E±
- TUNNEL CENTERLINE AT CROWN
- TUNNEL SPRINGLINE
- BJ — BEDDING JOINT
- BSF — BEDDING SHEAR FRACTURE
- JF — JOINT FACE
- DNAPL STAIN OR OIL SHEEN ON ROCK SURFACE
- WATER SEEPAGE WITH NO VISIBLE DNAPL
- WATER SEEPAGE WITH DNAPL
- OB — OVERBREAK
- ROCK DOWEL (TYPICAL) 6'–0" LONG
- ROCK DOWEL (TYPICAL) 10'–0" LONG
- CF3–36 — WORK ROOM CONVERGENCE MONITORING POINT, NUMBER–ELEVATION
- CF3 — TUNNEL CONVERGENCE MONITORING POINT, NUMBER
- UBSF — SLICKS/STRIATIONS N60–70W TYPICAL

TITLE:	Tunnel 1 Geologic Map
LOCATION:	TDCS – GE Hudson Falls, New York
TETRA TECH GEO	CHECKED: GP JFB JRB; DRAWTED: RMK; FILE:; DATE: MAR 2011
FIGURE:	G–2



TUNNEL SEGMENT 2 DEVELOPED PLAN VIEW



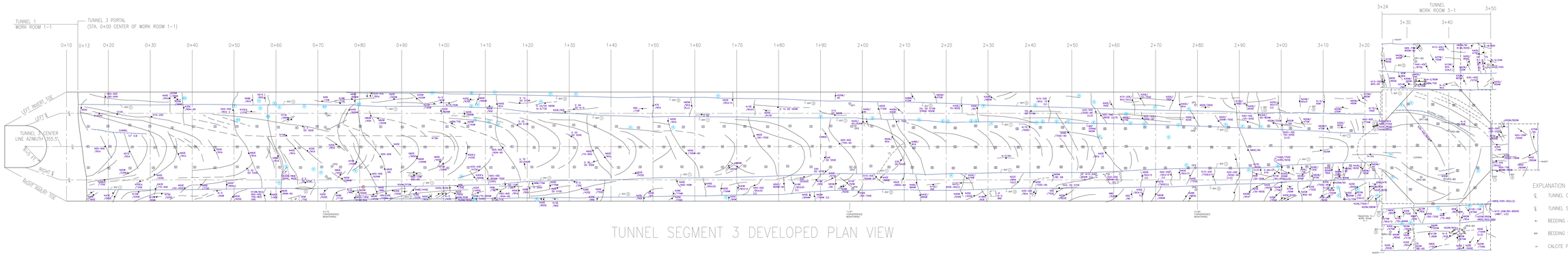
EXPLANATION

- ℄ TUNNEL CENTERLINE AT CROWN
- ℄ TUNNEL SPRINGLINE
- BJ BEDDING JOINT
- BSF BEDDING SHEAR FRACTURE
- CF CALCITE FILLED STRINGER, 1 TO 2 mm THICK, TIGHT
- PY MOSTLY INTERMITTENT, PARTIALLY FILLED, VERY THIN PYRITE PARTING, 0–4 mm THICK, TIGHT
- JF JOINT FACE
- DNAPL STAIN OR OIL SHEEN ON ROCK SURFACE
- WATER SEEPAGE WITH NO VISIBLE DNAPL
- WATER SEEPAGE, STEADY DRIPPING
- WATER SEEPAGE WITH STEADY CONTINUOUS FLOW, GENERALLY <0.5 GPM UNLESS OTHERWISE NOTED.
- WATER SEEPAGE WITH DNAPL
- OB OVERBREAK
- RD ROCK DOWEL (TYPICAL) 6'–0" LONG
- RD ROCK DOWEL (TYPICAL) 10'–0" LONG
- CP3–36 WORK ROOM CONVERGENCE MONITORING POINT, NUMBER–ELEVATION
- CP3 TUNNEL CONVERGENCE MONITORING POINT, NUMBER
- (U) UNDULATING
- (R) ROUGH
- (S) SMOOTH
- D4/D052SE DIP4°/DIP DIRECTION S25E

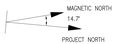
TUNNEL 2 AND ROOM 2–1 NOTES:

1. BSF(1) – BEDDING SHEAR FRACTURE, IRREGULAR LAMINATIONS OF CALCITE/SHALE/MINOR PYRITE. MOSTLY TIGHT. LAYER VARIES FROM 3/4" TO 2" THICK. (DISAPPEARS BELOW INVERT AT APPROX. STA. 2+00). REFER TO TUNNEL 1 NOTE 4 AND REFER TO BSF(1) NOTE 1 TUNNEL 3
2. BSF(2) – APPARENT BEDDING SHEAR FRACTURE MANIFESTING CALCITE COATING WITH SLICKENSIDES/STRIATIONS ORIENTED APPROXIMATELY N 67 W±. (OBSERVED IN INVERT OF TUNNEL 2 IN VICINITY OF STA. 0+20 ONLY). REFER TO NOTE 7, TUNNEL 1 REFER TO NOTE 47, SHAFT
3. ENTIRE RIGHT RIB OF TUNNEL (SHADED AREA) IS MANIFESTED BY JOINT FACE ORIENTED N 80 E, 85±. (FROM STA. 0+13 TO STA. 0+70). JOINT FACE IS SMOOTH, TIGHT, SLIGHTLY UNDULATING AND IS DAMP TO WET WITH WATER. MINOR STEADY INFLOW AT TUNNEL FACE NEAR INVERT AS OBSERVED ON 7/12/08. EXPOSURE OF JOINT FACE ACCOUNTS FOR APPROX. 20" OVERBREAK ABOVE SPRINGLINE, AND APPROX. 12" OVERBREAK NEAR INVERT BETWEEN STA. 0+13 TO STA. 0+70.
4. AT 6" LONG FRACTURE, WATER SEEPAGE TO CONTINUOUS LIGHT FLOW <0.5 GPM. (OBSERVED 7/26/08) STA 0+20 RIGHT
5. RIGHT RIB, STA. 0+12 TO 0+42±, 0 TO 8" WIDE LEDGE ON UPPER SURFACE OF BSF (1). STRIATIONS ORIENTED @ N 62 W.
6. LEFT RIB, STA. 0+87±, LEDGE ON BSF(1). BSF(1) ORIENTED N 80 E, 85±. STRIATION ON CALCITE INFILL ORIENTED @ N 62 W.
8. LEFT RIB, STA. 0+87±, LEDGE ON BSF(1). BSF(1) ORIENTED N 80 E, 85±. STRIATIONS ON CALCITE INFILL ORIENTED @ N 62 W.
7. LBSF – LOWER BEDDING SHEAR FRACTURE (REF. TUNNEL 1 / ROOM 1–1). FEATURE IS SUBHORIZONTAL AND COMPRISES IRREGULAR INTERLAMINATIONS OF CALCITE AND SHALE. CALCITE COATED SURFACES GENERALLY SLICKENSIDED (STRIATED) WITH STRIATIONS ORIENTED AS SHOWN ON MAP. FEATURE VARIES 1" TO 4" THICK AND IS TIGHT TO SLIGHTLY OPEN, WITH VARIABLE WETNESS AND/OR WATER SEEPAGE NOTED BEYOND APPROX. STA. 1+40. (FEATURE FIRST MANIFESTED IN TUNNEL CROWN AT APPROX. STA. 0+85) AND THROUGH OUT TO APPROX. STA 2+45

TITLE:	Tunnel 2 Geologic Map
LOCATION:	TDCS – GE Hudson Falls, New York
TETRA TECH GEO	CHECKED: GP JFB JRB; DRAWTED: RMK; FILE:; DATE: MAR 2011
FIGURE:	G–3



TUNNEL SEGMENT 3 DEVELOPED PLAN VIEW



TUNNEL 3 AND ROOM 3-1 NOTES:

1. BSF(1) OR BSF – BEDDING SHEAR FRACTURE, IRREGULAR LAMINATIONS OF CALCITE/CHALCOPYRITE, GENERALLY TIGHT TO SLIGHTLY OPEN WITH SEVERAL MINOR GROUNDWATER SEEPS AND DAMPNESS OBSERVED ALONG FEATURE, MOSTLY ON LEFT RIB. LAYER WARES FROM 3/4" TO 2" THICK. REFER TO BSF, NOTE 4 TUNNEL1, NOTE 4A, SHAT
2. 2.5" THICK X 2.5' LONG CLAY FILLED LENS WITHIN BSF.
3. BSF – BEDDING SHEAR FRACTURE, PARTIALLY MINERALIZED WITH CRYSTALLINE CALCITE, TRACE SLICKENSIDES, OCCASIONAL MINOR GROUNDWATER SEEPS OR DAMPNESS OBSERVED ALONG FEATURE, MOSTLY ON LEFT RIB. LAYER GENERALLY 1/4" TO 1/2" THICK. REFER TO BSF (3) NOTE 7 TUNNEL 1, NOTE 4T SHAFT.

EXPLANATION

- TUNNEL CENTERLINE AT CROWN
- TUNNEL SPRINGLINE
- BEDDING JOINT
- BSF BEDDING SHEAR FRACTURE
- CALCITE FILLED STRINGER, 1 TO 2 mm THICK, TIGHT
- JOINT FACE
- DNAPL STAIN OR OIL SHEEN ON ROCK SURFACE
- WATER SEEPAGE WITH NO VISIBLE DNAPL
- WATER SEEPAGE, STEADY DRIPPING
- WATER SEEPAGE WITH STEADY CONTINUOUS FLOW, GENERALLY <0.5 GPM UNLESS OTHERWISE NOTED.
- WATER SEEPAGE WITH DNAPL
- OVERBREAK
- ROCK DOWEL (TYPICAL) 6'-0" LONG
- ROCK DOWEL (TYPICAL) 10'-0" LONG
- WR-3-1 WORK ROOM CONVERGENCE MONITORING POINT, NUMBER-ELEVATION
- CP3 TUNNEL CONVERGENCE MONITORING POINT, NUMBER
- (U) UNDULATING
- (R) ROUGH
- (S) SMOOTH
- 5-75° W DIP/DIP DIRECTION S70W

TITLE:	Tunnel 3 Geologic Map
LOCATION:	TDCS – GE Hudson Falls, New York
TETRA TECH GEO	CHECKED: GP JFB JRB DRAFTED: RMK FILE: DATE: MAR 2011
FIGURE	G-4