

BC Geological Survey  
Coal Assessment Report  
1042

Basin Project

Drilling program October 2009

Geologist's logs only.

The map on the first page is from a 43-101 report obtained from SEDAR on the work done prior to the drilling. The numbers on this map match those in that report, but whether locations were drilled exactly as proposed should be verified.

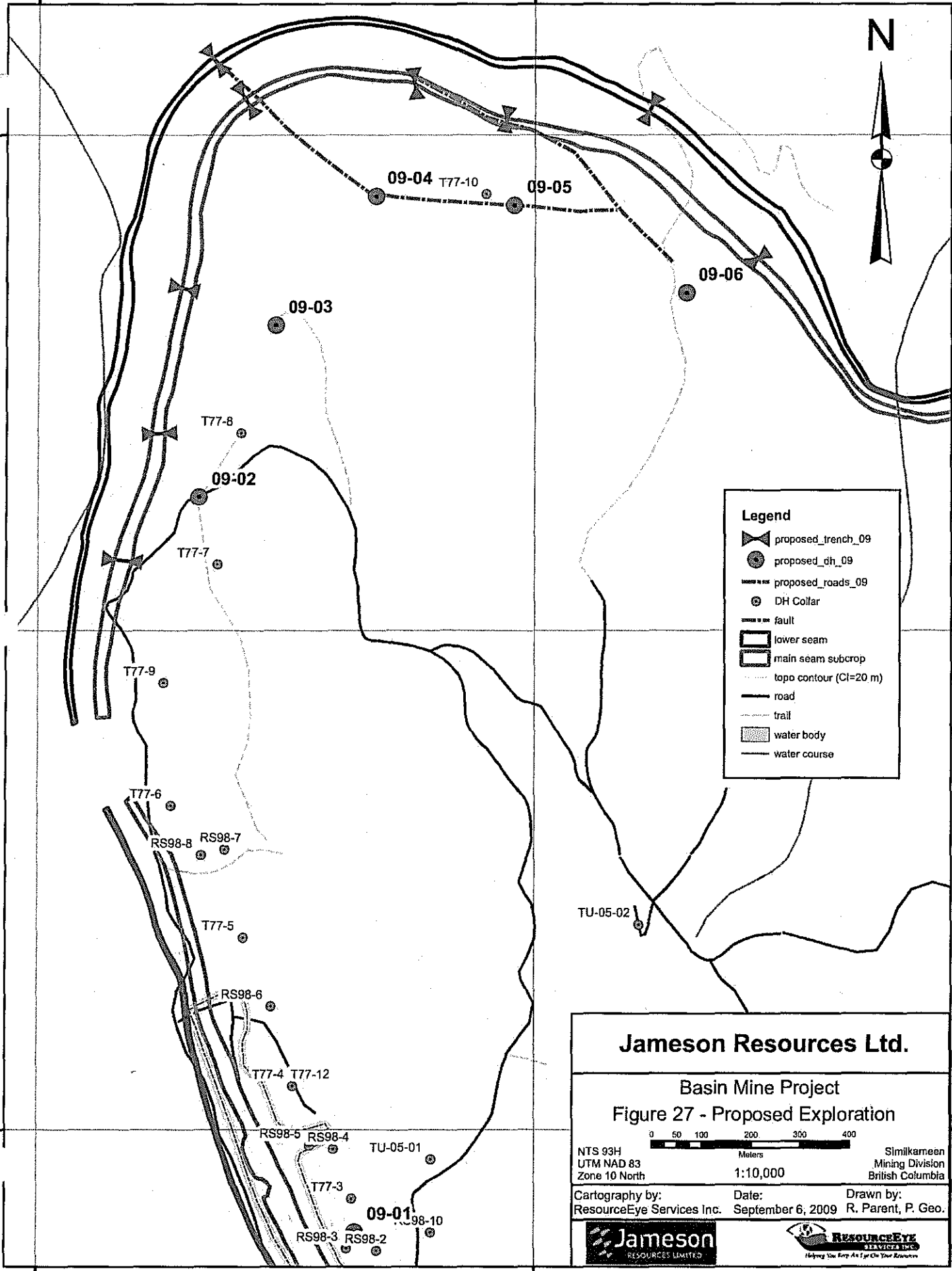
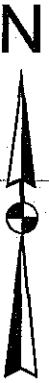
661000

662000

5488000

5487000

5486000



**Legend**

- proposed\_trench\_09
- proposed\_dh\_09
- proposed\_roads\_09
- DH Collar
- fault
- lower seam
- main seam subcrop
- topo contour (CI=20 m)
- road
- trail
- water body
- water course

**Jameson Resources Ltd.**

**Basin Mine Project**

**Figure 27 - Proposed Exploration**

0 50 100 200 300 400  
Meters

NTS 93H  
UTM NAD 83  
Zone 10 North

Similkameen  
Mining Division  
British Columbia

Cartography by: Date: Drawn by:  
ResourceEye Services Inc. September 6, 2009 R. Parent, P. Geo.

**Jameson**  
RESOURCES LIMITED

**RESOURCEEYE**  
SERVICES INC.  
Helping You Keep An Eye On Your Resources

*Proposed holes from 43-101 Report obtained from Sedar  
These numbers match those in this report, but whether locations are*

## Coal Core Sampling Protocol for Basin

**Purpose** to insure an accurate and detailed record of the major coal zone lithology and stratigraphy is recorded

to insure that coal samples collected are representative of each logical mining unit and persevered in a form that allows for analysis of the in situ conditions

### Suggested Approach

#### Drilling/Core Retrieval

Each cored run needs to be labeled in the field to indicate top and bottom and depth interval as the cores are retrieved. The field geologist will describe and photograph the core on site.

There are two major coal horizons on the property, identified historically as the Main and Lower Seams. These are more properly classified as coal zones as each contains an alternating series of coal and non coal parting material. Previous geologists visually described the coal units as:

- Clean coal                      Bright and blocky coal interval
- Medium Clean Coal        Dull banded coal interval with minor non coal inclusions
- Dirty Coal                  Dull banded coal with numerous thin interbeds of non coal material.

Non Coal rock parting material includes bentonite, mudstone, sandstone and volcanic tuff material.

The fresh core should be washed with clean water to remove any drilling contamination and then described and measured. All units identified as coal should be wrapped with plastic to prevent excessive moisture loss.

The entire core suite from each hole should be stored as a unit.

#### Geophysical Logging

Each core hole should be geophysically logged as soon as possible after completion. The site geologist should be provided with a copy of the geophysical log prior to any core sampling procedure.

## Core Sampling Procedure.

The geophysical log should be picked to identify all major lithologies. Each coal seam roof and floor contact interval needs to be identified and all in seam parting materials and transition zones. Essentially, the picked log will provide the sampling plan for the actual core. Logging core without an e-log can lead to mistakes.

The cores should be unwrapped and laid out in sequence.. Tops/bottoms and all major lithologic units need to be cross correlated with the e-log picks. This process will identify any lost core zones and confirm that the tops and bottoms are in the right order.

For each major coal unit within the zone, a sample of approximately 1 m should be collected. The length of sample collected will be proportional to the homogeneity of the coal itself as indicated on the Density/Gamma log. If the unit is consistent, samples up to 5 meters would be acceptable. If the unit is variable, then samples need to be more discrete to capture the variability.

In seam parting material should be sampled separately if the parting is greater than 15 cm in thickness. Partings less than 15 cm should be included with the coal sample as they are generally considered non removable during mining.

All samples collected will be the whole core over the selected interval. If a split sample is required, then the core should be split along its vertical axis.

The samples should immediately placed in plastic bags. A sample identification tag indicating hole number, interval and sample number should be placed in the bag and the bag sealed. A duplicate sample identification tag can then be attached to the outside of the bag.

At this point, samples should only be collected for coal and parting material unless there is doubt about the actual nature (high carbon shales/siltstones) of the units.

## Coal Sample Testing Protocol for Basin

**Purpose** to provide an accurate, detailed record of coal quality within each discrete sub units of the two major coal zones

to provide composite samples of the logical mining units in each coal zone for washability testing

### Suggested Approach

#### Stage 1 Raw Coal Analysis

Sealed sample bags are delivered to the coal testing laboratory and inventoried. Each individual sample is air dried and crushed to minus  $\frac{3}{4}$  inch topsize.

Air dried loss is determined and a Proximate Analysis, Calorific Value, and Sulphur are determined for each sample.

The sample retains are proportionately composited into logical mining units. Each composite sample is then screened at:

$\frac{3}{4}$  inch x  $\frac{1}{4}$  inch

$\frac{1}{4}$  inch x 28 mesh

28 mesh x 100 mesh

Minus 100 mesh

A proximate Analysis, Calorific Value and Sulphur Analysis is conducted on each composite screen fraction

#### Stage 2 Clean Coal Analysis

Float/Sink Testing at Specific Gravities ranging from 1.30 to 2.0 will be conducted on the  $\frac{3}{4}$  inch x  $\frac{1}{4}$  inch;  $\frac{1}{4}$  x 28 Mesh and 28 Mesh x 100 Mesh size fractions. These are meant to represent the coarse, middlings and fines fractions in a full scale coal preparation wash circuit.

Dry ash, sulphur and Calorific Value will be determined on each Float and Sink increment.

A  $\frac{3}{4}$  inch by 100 Mesh Clean coal analysis and yield will be calculated at the 1.60 SG Float cut point. No Float/Sink analysis will be conducted on the minus 100 Mesh fraction as this is considered part of the reject material.



**Corehole Log**

Date: **Oct 24**  
 Hole No: **09-04**  
 Page: **1** of **29**

Location: (UTM NAD83) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Units ( ) Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recover		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
1	1	5.5	8.5	<del>3.0</del> 3.0		2.74						91		
					0.2		Conglomeratic SST: brown to greenish gray, hd, broken fragments				—			
					0.44		Siltstone: blocky, gray banded, hd				31			
					0.25		Carb. Siltstone: med-dk gray, blocky, hd, few lt brown silt clasts at top.				—			
					0.07		Coal: hd, brittle, clean, thin band				—		6.95	
					0.05		Carb. Shale: dk gray-brown, med soft.				—		7.05	
					0.04		Bentonite: brown, soft, milled, carbonaceous				—			
					<del>0.31</del> 0.30		Carb. Siltstone: dk gray blocky, hd, w/ thin bentonite and coal bands,							
					0.15		Siltstone: gray-brown, blocky, hd				56		8.55	
					0.55		Carb Siltstone: dk gray-brown, blocky, hd w/ some softer shaly bands,							
					0.32		Siltstone: gray brown banded, carb. bands, blocky, hd,						8.25	
					0.05		Coal: thin band,						8.6	
					0.14		Carb. Siltstone: dk gray, broken fragments, hd w/ softer shaly-muddy bands,						8.65	

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Total:	<del>3.0</del> 0.0	<del>2.74</del> 0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
			Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 24-

Hole No: 09-04

Page: 2 of 29

Location:  
(UTM NAD83)  
Units (ft)

Lat. \_\_\_° \_\_\_' \_\_\_" N Long. \_\_\_° \_\_\_' \_\_\_" W

DLS

Lsd

Sec

Twp

Rge

Mer

Elevation :

Northing :

Easting :

Cored Interval - Units (ft)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
														8.8
2	1				0.14		Bentonitic Sandstone: gray w/ cream bentonite granules, blocky, hd.							
					0.13		Bentonite: lt gray, blocky soft, wavy, gradational contact w/ sst above,							
2	2	8.5	9.7	1.2		1.15								9.6
					0.71		Conglomeratic Sandstone: lt gray, blocky, lt cream bentonitic granules throughout, med soft				45			10.0
					0.21		Siltstone: lt brown, blocky to crushed fragments, w/ thin lt brown clay bands hd w/ thin soft brown clay band.				50			
					0.23		Siltstone: gray-brown, blocky, hd, banded,							
2	3	9.7	10.85	1.15		0.96								8.3
					0.07		Coal: broken chunky fragment, hd, bright,							10.5
					0.26		Bentonitic Sandstone: lt gray, med soft, w/ cream bentonite granules,							11.0
					0.02		Coal:							
					0.16		Siltstone: gray-brown, blocky broken fragments,							
					0.12		Carb. Mudstone: dk gray-black, dull, silty upper contact.							
Total:		2.35 0.0		2.11 0.0		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
						Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

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Comments:



**Corehole Log**

Date: 07-24-

Hole No: 09-04

Page: 3 of 29

Location: (UTM NAD83) Units (ft)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W			DLS	Lsd	Sec	Twp	Rge	Mer
	Elevation:	Northing:	Easting:						

Cored Interval - Units (-)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding					
2	3				0.05		Coal: broken fragments, hd, shiny.								
					0.07		Carb. Siltstone: dk gray, broken fragments, hd,								
					0.21		Siltstone: lt gray blocky, hd, <del>with silt impurities</del> w/ quartzite crystals & veins,				53				
2	4	10.85	11.5	0.65	0.55		Siltstone: lt gray-brown, blocky, hd, quartz veins & crystals,						85		
					0.23		Bentonite: lt brown, soft, milled,								11.75
3	4				0.18		Siltstone: dk gray-brown, broken, hd chunky fragments,							12.0	
3	5	11.5	12.9	1.4	0.84		Siltstone: as above						60		
					0.04		Bentonite: lt brown, soft, pliable,								
					0.27		Carbonaceous Mudstone: dk gray-black, silty, med hd, soft clay bands,								
					0.06		Siltstone: gray-brown, blocky, hd,	1	60					13.0	
					0.13		Sandstone: dk gray-brown, blocky, hd, coarse grained, clastic.							13.15	
					0.24		Carbonaceous Mudstone: dk gray-black, blocky to chunky, med hd		70					13.4	
					0.06		Siltstone: brown, blocky, hd,								

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Total:	<del>2.05</del>	2.05	<del>1.37</del>	1.37	0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:





**Corehole Log**

Date: Oct 24 -  
 Hole No: 09-04  
 Page: 4 of 29

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
3	6	12.9	14.5	1.6		6.72							50	13.7
					0.32		Siltstone: med-dk gray, blocky, hd, carb. bands,							14.0
					0.06		Bentonite: lt gray, blocky, soft, waxy.							
					0.34		Carbonaceous Siltstone: dk gray-black, dull, blocky, hd,							
3	7	14.5	14.5	3.0		2.2							77	
					0.06		Carb Siltstone: as above							
					0.55		Siltstone: gray-brown, blocky, hd, broken fragments,							
					0.21		Carbonaceous Mudstone/Shale: dk gray-black, dull, med soft, clayey bands							
					<del>0.06</del>		<del>Bentonite Siltstone: lt gray-brown, v soft, med crumbly, dry,</del>							
							<del>Carbonaceous Siltstone: dk gray, chunky broken fragments, med soft,</del>							
					0.15		Siltstone: gray-brown, blocky, hd, w/ quartzite veins,							
					0.1		Coal/Carb Shale: blocky, med hd, banded							15.9
					0.15		Carbonaceous Shale: blocky, coal and bentonite bands, med soft,							16.0
					0.29		Siltstone: gray, blocky, hd,				72			
					0.2		Carbonaceous Shale: dk gray-black, dull, med soft & fissile brittle, few thin bright coal bands.							

368

Total:  4.6  2.92 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0  0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

C 0.1 + 0.03 +  
 cm ds. 0.15 + 0.2 + 0.09 + 0.06  
 silt 0.29 + 0.18 +  
 b. 0.06 +  
 0.13  
 0.50  
 1.7  
 0.47  
 0.15



**Corehole Log**

Date: Oct. 24-  
 Hole No: 09-04  
 Page: 5 of 29

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.18		Siltstone: lt gray-brown, banded, blocky, hd,							
					0.09		Carbonaceous Mudstone: dk gray-black, dull, med hd, or dk-brown to							
					0.09		Carb. Clay; black, dull, v. soft,							
					0.03		Coal:							
					0.06		Bentonite: lt gray-brown, v. soft, conchoidal,							
					0.06		Carb. Mudstone: broken chunky fragments							
4	8	17.5	20.5	3.0		2.8						93		
					0.65		Bentonitic Silt: gray-brown, soft, conchoidal, dry, v. soft.							10.3
					0.12		Siltstone: gray-brown, blocky, hd,							19.0
					0.14		Carbonaceous Siltstone: dk brown-black blocky, banded, hd, shaly at base							18.8
					0.29		Siltstone: gray blocky, v. hd, conchoidal at base,							19.0
					0.38		Carb. Shale/Mudstone: dk gray-black, dull w/ <del>some</del> bright sand band, blocky, med hd							19.4
					<del>0.18</del> 0.84		Carb. Siltstone: dk gray-brown, banded, blocky, v. hd, quartzite veins at base				78			20.9
					0.12		Siltstone: gray-brown, blocky, v. hd,							19.0
5	9	20.5	23.5	3.0		1.4							47	

Total:	<del>6.0</del> 0.0	<del>4.2</del> 0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
			Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

SiltS 112 + 0.29 + 0.12 = 0.53  
 CSiltS 0.4 + 0.38 = 0.78

26 712  
 17.8  
 19.0  
 19.0  
 19.0



**Corehole Log**

Date: Oct 24-  
 Hole No: 09-04  
 Page: 6 of 29

Location: (UTM NAD83) Units (ft) Lat: \_\_\_° \_\_\_' \_\_\_" N Long: \_\_\_° \_\_\_' \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (L)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
5	9				0.85		Siltstone: gray-brown, blocky, hd, banded, quartzite veins at base.				59			
					0.33		Carb. Siltstone: dk brown, blocky, hd, banded.							
					0.21		Siltstone: gray-brown, blocky, hd, banded, as above.						32.6	
					0.1		Carbonaceous Mudstone: dull black.							
6	10	23.5	26.5	3.0		2.2						73	23.6	
					0.24		shaly Chal: shaly at base, broken fragments, med soft, dull banded.						23.85	
					0.1		Bentonitic Clay; brown, soft, wet, conch. inclusions.							
					0.05		Carb. Mudstone: dk brown-black, dull.							
					0.19		Siltstone: gray-brown, blocky, hd, w/ quartzite veins.	2	50				24.1	
					0.39		Carbonaceous Mudstone: dk brown, banded, med hd, blocky.			75			24.5	
					0.21		Siltstone: gray-brown, blocky, v. hd, conchoidal fractures, quartzite veins, banded.			70			24.9	
					0.06		Carb. Siltstone: dk brown, blocky, hd, gradational base.						25.2	
					0.13		Carb. Shale: dull black, soft, crumbly.						25.3	
					0.14		Siltstone: gray-brown, blocky, v. hd, as above.	1	16	75			25.4	
					0.3		Carb. Shale: dk brown, blocky, bentonitic.							
Total:				3.0	0.0	2.7	Rec. Total / Cored Total x 100 =			%	Total Drill Depth:	0.0		
							Rec. Coal / Total Coal x 100 =			%	Total Log Depth:	0.0		

Core loss  
 Section 4 2673  
 Core loss  
 Sect 3

Comments:

Section 4

cmds 11 + .24 + .05 + .39 = 0.78  
 b 11 + = 0.1  
 silts 1.19 = 0.19



**Corehole Log**

Date: Oct 24 -  
 Hole No: 09-04  
 Page: 7 of 29

Location: (UTM NAD83) Units (1/4)  
 Lat. \_\_\_° \_\_\_' \_\_\_" N Long. \_\_\_° \_\_\_' \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (...)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
6	10				0.05		Bentonite: lt beige, soft, carbonaceous etc at base,							25.8
					0.32		Siltstone: gray, blocky, hd, w/ coaly bands & clasts							
7	11	26.5	27.5	3.0		2.8						93		
					0.18									
					0.16		Siltstone: gray-brown, blocky to chunky broken fragments, v. hd,							26.8
					0.12		Coal: shaly, broken chunky fragments, bright bands, gradational contacts.							26.95
					0.5		Carbonaceous Mudstone/Bone: dull black to dk brown, minor thin coal bands, hd, blocky,							27.65
					0.22		Sandstone: brown, clastic, blocky, med hd lt cream bentonite granules.							27.9
					0.27		Coal, Siltstone: dk gray, blocky, hd,							
					0.02		Bentonite: brown, soft,							
					0.11		Coal: blocky to chunky; broken, bright banded							28.9
					0.17		Coal, Siltstone: gray-brown, blocky, hd							29.7
					0.1		Sandstone? lt beige med soft, bentonite matrix							27.7
					0.6		Carbonaceous Mudstone/Bone; dull black, blocky, hd							27.8
					0.04		Sandstone: bentonite, as above.							28.4
7	12	28.6	29.6	3.0		2.5	Carbon Siltstone: dk gray, blocky, hd							29.3
Total:		3.0		0.0		2.8		Rec.Total / Cored Total x 100 = $\frac{2.8}{3.0} = 93.3\%$		Total Drill Depth:		0.0		
								Rec.Coal / Total Coal x 100 =		Total Log Depth:		0.0		

Comments:

Section 3

sils	.21 + .14 + .32 + .16 + .07 + .07	1.41
csils	.06 + .27 + .17	0.5
cmds	.13 + .3 + .5 + .6 + .12	1.65
SS	.22 + .11 + .04	0.36
C	.12 + .11 + .12 + .11 + .18	0.56
bone	.05	0.05
h	.05 + .02	.07

Section 3  
2674



**Corehole Log**

Date: Oct 25  
 Hole No: 09-04  
 Page: 8 of 29

Location: (UTM NAD83) Units (M) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
7	12	29.5	32.5	3.0		2.5						83		
					0.12		Coal: chunky broken fragments hd, dull banded						29.9	
					0.05		Stone: dk brown, blocky, hd,						30.1	
					0.07		Siltstone: gray-brown, blocky, hd							
					0.12		Carb Mudstone/Stone: dk brown-black, dull, banded, hd,							
8	12				0.1		Coal: broken chunky fragments, shiny, hd.					2		
					0.07		Siltstone: gray-brown, blocky,							
					0.18		Beney Coal: blocky, hd, clay band at base, dull,						30.8	
					0.24		Siltstone: gray-brown, carbony bands in top 30cm, hd, quartzite veins,	60	62				31.0	
					0.12		Sandstone: brown, hd, well cemented, clastic fabric						31.9	
					0.1		Carb Mudstone: dk brown, blocky, hd,							
					0.08		Coal: blocky, hd, brittle, dull & bright bands,						32.5 32.7	
					0.04		Siltstone: dk gray, blocky, hd, slightly carbony,							
					0.1		Carb. Siltstone: coal bands grading to hd silt, blocky, med hd						33.9	
					0.11		Bentonitic Silt: brown, soft, coarsely, carbony bands at contacts						33.1	
					0.5		Siltstone: gray-brown, blocky to broken chunks							
Total:		3.0		2.5		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

Comments:

CMAS 11 + .

Sheet 3

Sheet 7



**Corehole Log**

Date: **Oct 25/09**  
 Hole No: **09-04**  
 Page: **9** of **29**

Location: (JTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
8	13	32.5	35.5	3.0		2.62	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,							
					0.1		Siltstone: gray chunky broken fragments, as above.						87	
					0.12		Siltstone: brown, blocky, slightly carbonaceous, elastic, bentonitic.							
					0.07		Carb Clays dk brown, soft,							
					0.18		Carb Mudstone: dk brown, blocky, brown silt bands							
					0.74		Siltstone: gray banded blocky, v. hd chert and quartzite veins throughout, minor coal fragments, clastic matrix, highly fractured w/ fill				54			
					2.05		Coal: crushed, bright,							
					0.1		Bone: dk brown, hd, blocky,					3		26
					0.08		Coal; broken fragments, gradational contacts							35.0
					0.32		Siltstone: blocky, hd w/ chert bands, carbonaceous contacts, gray-brown banded							
					0.09		Coal/Carb Mudst: dk brown-black, broken crushed fragments,							
					0.5		Siltstone: gray-brown, blocky, hd, banded w/ fine brown muds, well indurated, quartzite veins and crystals on fractures near base,							
					0.27		Mudstone: dk gray, blocky to chunky, hd, slightly slightly carb.							

Total:		3.0		2.62	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Sec 2  
 mds .07 +  
 C .03 + .05 + .08  
 Silt .09 + .15 + .1 + .12 + .74 + .32 + .5  
 clts .1  
 b .11 +  
 Bone .07 +  
 1.02  
 0.21  
 2.32  
 .1  
 .11  
 .17



**Corehole Log**

Date: Oct 25/09  
 Hole No: 09-04  
 Page: 10 of 29

Location: (UTM NAD83) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Units ( ) Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (M)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
9	14	35.5	37.7	2.2		1.96						89		
					0.65		Carb. Mudstone: dk gray w/ med brown silt bands, blocky, hd,			70	50			
					0.42		Siltstone: med gray, blocky, hd, quartzite veins, fining downward, slightly carb at base,						36.3	
					0.42		Carbonaceous Mudstone: dk gray-black, dull, blocky to broken fragments, brown silt bands at base						36.7	
					0.1		Sandstone: brown, vfg, blocky, hd,						37.0	
					0.2		Carb Mudstone: v. hd, silicified bone, dull black w/ chert and quartzite veins,						37.3	
					0.17		Mudstone: dk brown, blocky, hd, banded, quartz <del>crystals</del> drusy quartz crystals on joint and fracture surfaces.	1	30					
10	15	38.5	40.2	0.8		0.68						85.5		
		37.7	40.2	2.3		1.92								
					0.11		Mudstone: dk gray-brown, blocky as above.							
					0.14		Coal: blocky to chunky fragments, dull banded, hd, brittle,						38.4	
					0.04		Carb Mudstone: thin mud band,				4			
					0.1		Coal: <del>chunky</del> blocky broken fragments, dull, gradational at base						38.7	
					0.14		Siltstone: dk gray-black, carbonaceous, hd,							
Total:		3.0		2.64		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

Comments:

Section 1

silt 1.42 + .14 = 1.56  
 silt 0.3  
 mds 0.17 + .11 + .05 = 0.33  
 cnds 0.42 + .12 + .04 + .05 = 0.63  
 SS 0.1 + = 0.1  
 C 0.14 + .1 + .15 + .05 = 0.44

Bed 2

26716

Bed 1



**Corehole Log**

Date: **Oct 25/09**  
 Hole No: **09-04**  
 Page: **11** of **29**

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
10	15				0.15		Coal: chunky broken fragments hd, dull bedded, silt bands;					5		39.2 39.8
10	16	38.5	40.0	1.5		1.18								78
					0.3		Carbonaceous siltstone: dk grey - black, dull, chunky broken fragments, hd, few shiny vitreous band							
					0.65		Carbonaceous Mud Parting: dk brown - black							
					0.05		Coal: crushed, chunky fragments							40.00 40.1
					0.13		Mudstone: dk-brown-black, blocky, hd,							
					0.13		Sandstone: lt grey-brown, fgs. blocky, clay matrix, med hd,							
					0.52		Mudstone: dk brown w/ cream bentonite bands throughout, blocky, med hd, waxy							
11	17	40.0	41.5	1.5		1.4								93
					0.5		Mudstone: med brown, blocky, med hd, few thin bentonite bands near base	1	55	70	80			
					0.12		Mudstone: color change to lt. brown, blocky, hd,			70	80			
					0.12		Bentonitic Sandstone: lt grey-white, clay matrix, med soft,			70				
					0.02		Bentonite: lt cream, soft, milled							41.7 41.7
					0.56		Mudstone: dk brown blocky, med hd, few thin lt. grey bentonite bands,			70	83			

306

305

Total:  $\frac{3.0}{0.0} \times \frac{2.58}{0.0} =$  Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 $\frac{3.0}{0.0} \times \frac{2.58}{0.0} =$  Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:





**Corehole Log**

Date: **Oct 25/09**  
 Hole No: **09-04**  
 Page: **12** of **29**

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
11	18	415	445	3.0		3.0	Mudstone: dk brown, blocky, med hd, <del>light banding, massive,</del> massive	2	50/30	70	78		100	
12	19	445	475	3.0		3.0	Mudstone: dk brown, blocky, as above,			70			100	
						1.85	Mudstone: color change, lt brown w/ dk bands, blocky, med hd,			70				
						0.56	Mudstone: brown, blocky, med hd, near vertical fractures	1	20	68				
						0.22	Carbonaceous Mudstone: dk brown, blocky to broken chunky fragments, low angle fractures throughout, med soft, waxy.							73
13	20	475	493	2.8		2.05	Mudstone: brown, blocky, med hd, massive, as above, unconformable lower contact w/ Bent Mudst.						100	
						0.80	Bentonitic Mudstone: lt brown w/ cream-white bentonite bands throughout, blocky to chunky broken fragments, med soft,							
						1.25								
14	21	493	502	0.9		0.9	Mudstone: dk brown w/ lt gray bentonite bands, soft, waxy, blocky to chunky broken fragments,						100	
						0.23								
						0.18								
						0.100	Mudstone: <u>color change to lt brown</u> , blocky, med soft, banded,			65	50			

Total: ~~9.7~~ 9.7 ~~8.95~~ 8.95 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

365

48.2

364



**Corehole Log**

Date: **Oct 25/09**  
 Hole No: **09-04**  
 Page: **13** of **29**

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting:

Cored Interval - Units (-)					Recoverd		Description			Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding						
14	21				0.12		Carbonaceous mudstone: dk brown, blocky to broken chunky fragments, med hd, waxy									
14	22	50.2	51.4	1.2		1.05									88	
					0.26		Mudstone: dk brown, carbonaceous, as above									
					0.79		Mudstone: brown, blocky to chunky, crushed at bottom (core loss) med soft, waxy.									
15	23	51.4	53.0	1.6		0.80									50	364
					0.8		Mudstone: brown, chunky broken, crushed at base (core loss), as above,									
15	24	53.0	56.0	3.0		0.86									27	53.0
					0.08		Siltstone: brown, chunky broken fragments, hd,									
					0.13		Bentonitic Mudst: gray-dk gray, soft, carbonaceous at base,									
					0.65		Sandstone: lt gray, coarse grained, conglomeritic, soft, bentonitic clay matrix, (core loss)									
15	25	56.0	59.0	3.0		2.4									80	363
					0.38		Boney Coal: dull, blocky, hd, brittle, w/ some bright bands,									56.8-57
					0.13		Zone: dull black, blocky, hd,									57.6-57.7
					0.39		Mudstone: gray-brown, blocky, med hd, massive									56

Total:  $\frac{8.8}{0.0} \times \frac{5.11}{0.0} = \frac{24.4}{30.5} = 80\%$  Rec.Total / Cored Total x 100 = 24.4 / 30.5 = 80 % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



**Corehole Log**

Date: **Oct 26/09**  
 Hole No: **09-04**  
 Page: **14** of **29**

Location: (UTM NAD83) Units (...)  
 Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (...)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
15	25				0.1		Siltstone: gray-brown, blocky, hd							
					0.12		Bentonite: gray-brown, soft, waxy							
					0.56		Siltstone: gray-brown, blocky, med soft, hd, massive.				100			
					0.55		Mudstone: gray-brown, blocky, chunky, med soft, waxy, massive, vertical fractures, silt and bentonite inclusions throughout.							
					0.17		Siltstone: gray-brown, chunky broken fragments, med hd,							
16	26	59.0	62.5	3.0		3.0							100	
					0.3		Siltstone: gray-brown, blocky, hd,				100			
					0.5		Bentonite: <del>gray</del> gray-brown, blocky, soft, waxy,							
					1.26		Siltstone: lt gray-brown, blocky, med soft, <del>interbedded w/</del> interbedded w/ coarser sand and bentonite, clayey matrix,				55			
					0.08		Carbonaceous Mudstone: dk gray, to black, med soft, waxy							
		61.14	61.39		0.25		Coal: dull lustrous, blocky, hd, honey amber blebs throughout. (quite silty) does not show up on cgl. log - did not sample)							
					0.07		Carbonaceous Clay: dk brown, v. soft,							
					0.19		Siltstone: brown, blocky, hd, gradational contacts.							

Total:	<input checked="" type="checkbox"/>	3.0	<input checked="" type="checkbox"/>	3.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: **Oct 26/09**  
 Hole No: **09-04**  
 Page: **5** of **29**

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
16	26	61.5	62.5		0.35		Coal: blocky, dull banded, hd, shiny <del>breaks</del> breaks, clean.							62.3-62.7
17	27	62.5	65.5	3.0		2.54							85	
					0.1		Bentonite: gray, blocky, soft,							
					0.1		Coar. Mudstone: dk gray, dull, waxy, soft.							
					1.52		Bentonite: lt gray-brown, blocky, soft, coarse fragments of plant remains throughout, massive,							
		64.2			0.33		Coal: blocky, hd brittle, shiny, clean, sharp contacts							62.8-63.1
					0.25		Sandstone: gray-brown, blocky, fgn, med hd, fining downward	1		100				
					0.14		Siltstone: gray-brown, blocky, med hd, massive							
					0.1		Bentonitic Clay: gray, blocky, soft							
18	28	65.5	68.5	3.0		3.0							100	
					0.85		Siltstone: lt gray-brown banded, blocky, med hd, interbanded layers of fine silt and mud,			100				
					1.27		Conglomeratic Sandstone: gray-brown, fine-med grained numerous lt gray-white silt and clay clasts throughout <del>and</del> fragments and clasts at top near			55				
					0.15		Mudstone: gray-brown, blocky, med hd, massive							
					0.73		Conglomeratic Sandstone: as above.							

Total:	<input checked="" type="checkbox"/>	6.0	<input checked="" type="checkbox"/>	5.54	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0	Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: Oct 26/09  
 Hole No: 09-04  
 Page: 16 of 29

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
19	29	68.5	71.5	3.0		3.0							100	
					1.01		Conglomeritic Sandstone: gray-brown, blocky med hd, lt gray-white silt clasts throughout, clasts < 0.5 cm dia.				100			
					1.99		Conglomerate: lt gray blocky med clasts siltstone clasts <sup>gravel</sup> between 1-10 cm diameter, Sandstone matrix				64			
20	30	71.5	71.5	3.0		3.0							100	
					0.05		Conglomerate: as above.							
					0.63		Bentonitic Sandstone: gray blocky, med soft, conglomeric sand lenses in gray bentonitic clay matrix, (50/50)				80			
					0.67		Clay: med gray, v soft, plastic, massive,							
					0.37		Sandstone: conglomeritic, w/ gray soft clay matrix,							
					0.64		Clay: gray, blocky, soft, massive, as above							
					0.12		Sandstone: conglomeritic, coarse grained granulos, blocky, med soft, clay matrix							
					0.22		Bentonite: lt gray-brown, blocky, stiff, waxy							
					0.25		Coal: blocky, hd, dull,							73.9
														74.1

Lower Section 3

Total:	<del>6.0</del>	6.0	<del>6.0</del>	6.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0	0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: Oct 26/09  
 Hole No: 09-04  
 Page: 17 of 29

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
21	31	74.5	77.2	2.7		2.56	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.						95	
					0.24		Boney Coal: blocky, hd, dull w/ few stringers							
					0.14		Clay: bumpy surface, med grey, soft, minor carb stringers							93
					0.65		Clay: med grey, plastic, soft, some lighter bands, some bumpy surface bands (silty?)							
					0.04		Bentonite - light grey - brown, banded with darker material, Clay: as above			75				
					0.16		Coal: siltst: dark brown - black, blocky, coal stringers							
					0.12		Coal: light, <sup>locally</sup> blocky bedding, bright + dull, pyrite blebs							
					0.26		Carb. siltst: med-dk brown, med hard, pyrite blebs, coal stringers			65				
					0.14		Coal: bone, hard, blocky, hard							
					0.07		Carb. siltst: med gray, hard, massive, coaly stringers							
					0.09		Carb. medst: dk grey, fairly hd.							
22	32	77.2	79.9	2.7		2.33							86	
22	33	79.9	80.9	1.0		0.27	Sandstone: light grey, fine-med grained, coaly, sharp basal contact w mudst.			60				78.2
					0.05		Mudstone: v. dark grey, massive							
					0.19		Siltstone: li grey, some fgn sand	34	28	97			60	
					0.19		hard, calcite filled joints, calcite base			50			87	79.7
Total:					9.0	8.8	Rec. Total / Cored Total x 100 =	%		Total Drill Depth:	0.0			
					0.0	0.0	Rec. Coal / Total Coal x 100 =	%		Total Log Depth:	0.0			

Comments:

26717

C. 0.22 + 0.34 + 0.14 + 0.12 + 0.14 0.86  
 b 0.14 + 0.65 + 0.04 0.83  
 Cstls 0.16 + 0.26 + 0.07 0.49  
 mudst 0.09 0.09



**Corehole Log**

Date: Oct 26, 2009

Hole No: 09-04

Page: 18 of 29

Location: (UTM NAD83) Units (..) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (..)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding				
					0.1		Coal: bright, dull, streaks along bedding, pyrite blebs							
					0.15		Carb mdst: soft, brown grey slickensides			60				
					0.1		Coal: bright + dull, blocky, hard, pyrite							
					0.58		Carb mdst: dk brown grey, Coal wisps + bands up to 0.07 hard, pyrite			58				
23	34	79.9	80.5	0.6		0.47	Silt: lt grey, hard, blocky, coaly wisps, bentonite at upper contact			38			78	
					0.14		Coal: hard, shony, slickensides							
					0.21		Carb mdst/silt: dk grey - lt grey - hard, blocky							81.3
24	35	80.5	80.5	3		3.0	Silt: med brown grey, v. hd, pitted surface, white grains throughout, up to 2mm mostly rounded, surface is soft			54			100	
					0.3		C silt: as above with coaly wisps + bands							
					0.11		Silt: med grey, hard, blocky							82.7
					0.43		Carb. clay: light grey with black coaly bands, v. soft (possibly bentonite)							
					0.08		Carb mdst: hard, dk brown grey, coaly wisps to bands up to 1 cm.							
					0.08		Coal: bone, hard							85.2
														85.3

9.7  
26718

Total:		3.0		3.0	0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Section 2  
 C 0.1 + 0.1 + 0.14 0.34  
 Carb 0.15 + 0.58 + 0.21 0.94  
 silt 0.08 0.08



**Corehole Log**

Date: Oct. 26, 2009  
 Hole No: 09-04  
 Page: 19 of 29

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.45		Carb. siltst: dk brown grey, chard, blocky, coal bands up to .05							
25	35	835	865	3.0		2.47							82	
					<del>0.07</del>		Carb. mdst: brown, soft, waxy,							
					0.06		Coal: blocky, hd, dull & boney.							16.7
					0.08		Bone: dk brown, blocky, dull, hd							16.9
					0.04		Carb. Clay: dk brown-blk, soft,							
					0.26		Carb. Siltstone: gray-brown blocky med soft w/ coal fragments throughout							
					0.07		Conglomeratic Sandstone: lt brown w/ granules, blocky, med hd,				100			
					0.12		Siltstone: lt gray-brown (buff), soft & crumbly							
					0.1		Bentonite: gray, soft, sticky, carb bands at base,							
					0.1		Carb. Siltstone: dk brown, blocky, hd,	1	26					
26	26	865	895	3.0		3.0							100	
					0.08		Carb. Siltstone: dk brown, blocky, as. above							
					0.68		Siltstone: gray-brown w/ dk gray-black carb bands throughout, blocky, hd	1	26		84			
					0.03		Bentonite: buff, soft, milled							
					1.35		Conglomeratic Sandstone: lt brown w/ pebble to granule sized clasts throughout, blocky, hd,				94			
					0.40		Sandstone: lt gray w/ dk gray-black carb bands throughout, soft & friable							

Total: ~~6.0~~ 0.0 ~~5.47~~ 0.0  
 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

c mdst .42 + .07 0.49  
 C .08 + .06 + .08 0.22  
 b .43 + .04 0.47  
 c silt .45 0.45

26719





**Corehole Log**

Date: **Oct 26/09**  
 Hole No: **09-04**  
 Page: **20** of **29**

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
26					0.46		Conglomeritic Sandstone: lt brown, blocky, hd, as above.				100			
26	37	89.5	92.5	3.0		3.0	Conglomeritic Sandstone: as above					100		
					0.14		Siltstone: dk gray-brown, slightly carbonaceous, blocky, hd.							
					0.16		Siltstone: lt gray, blocky, med soft and friable							
					0.17		Conglomeritic Sandstone: lt gray w/ granule size clasts, blocky, hd				100			
					0.37		Sandstone: lt gray, blocky, f.g., hd hard becoming softer and friable at base,				100			
					0.80		Carb Mudstone: dk brown, blocky broken fragments, some clay and carbonaceous bands,	1	30	65	51		90.2	
					0.64		Siltstone: lt gray-brown (buff) blocky, med soft & friable, clay rich matrix, poorly cemented,						90.8	
					0.62		Bentonitic Siltstone: lt gray, blocky, soft, waxy,							
27	38	92.5	95.5	3.0		3.0	Bentonitic Siltstone: as above					100		
					0.17		Bentonitic Clay: gray, blocky, soft, gritty sandstone fragments in middle							
					0.15		Bentonitic Sandstone: gritty conglomeritic, lt gray, soft, blocky							
					0.28		Siltstone: gray, blocky, hd							
					0.13									
					0.4									

Total:  6.0  6.0 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0  0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



**Corehole Log**

Date: Oct 26/09  
 Hole No: 09-04  
 Page: 21 of 29

Location: (UTM NAD83) Units (-) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (-)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
27	38				0.04		Bentonite: lt gray, blocky, soft, waxy.							
					0.45		Bentonite Siltstone: lt gray (med), blocky, soft, crumbly, friable,							
					0.16		Carb Mudstone: dk brown, blocky, hd, honey, banded,			55				
					1.13		Siltstone: lt gray, blocky hd, faint banding towards base,	1	15		100			
					0.87		Carb Mudstone/Bone: interbanded layers of carb mudstone, bentonite and lt gray silts, blocky, med soft, and shiny coal, blocky, med soft with hd honey bands,							
28	39	95.5	98.5	3.0		2.9							97	
					0.15		Bentonite Siltstone: lt gray, blocky, coalified plant debris, soft, friable, dry,							
					0.25		Carbonaceous Mudstone: dk brown, dull black banded, blocky, hd, gradational at base,							
					0.43		Boney Coal: dull banded, blocky, brittle, thin bentonite veins and bands, med bands and clests throughout, dirty, boney and hd at base						97.6	
					0.52		Siltstone: med-lt gray, top 4" slightly carb, blocky, hd,	1	40		100			
					0.06		Bentonite: pale gray-brown, waxy, soft carbonaceous at base							
					0.18		Carbonaceous Siltstone/Bone: dk brown w/silt bands, blocky hd, bentonite wedge at base							
Total:				3.0	0.0	2.9	Rec.Total / Cored Total x 100 =			%		Total Drill Depth:	0.0	
							Rec.Coal / Total Coal x 100 =			%		Total Log Depth:	0.0	

Comments:

C 0.43 + .42 0.85  
 SH 0.52 0.52  
 C.SH 0.18 0.18

26720



**Corehole Log**

Date: Oct 26/09  
 Hole No: 09-04  
 Page: 22 of 29

Location: (UTM NAD83) Units ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: Northing: Easting: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
28	39				0.42		Boney Coal: dull banded, blocky, brown silt and mud bands and clasts throughout, gradational contacts.	2		60/45				98.7
					0.28		Siltstone: gray, blocky, hd, slightly carbonaceous, massive			45				99.1
					0.1		Bentonitic Siltstone: lt gray-brown, soft, friable							
					0.06		Carb. Mudstone: dk brown, blocky, hd,							
					0.07		Bentonite: lt gray-brown, soft, waxy, silty.							
					0.15		Boney Coal: dull banded, hd, brittle,							
					0.23		Mudstone: brown, blocky, hd,							
29	40	98.5	101.5	3.0		3.0							100	
					0.42		Bentonitic Siltstone: lt gray, interbanded silt & bentonite, med soft				67			
					0.14		Bentonite: lt gray, blocky, waxy, soft,							
					0.11		Siltstone: gray, blocky, hd, faint banding,							
					0.23		Bentonite: lt gray, blocky, soft, waxy, as above,							
					0.24		Bentonitic Siltstone: lt gray, blocky, soft, friable, waxy.							
					0.14		Siltstone: gray, blocky, hd,							
					0.18		Carbonaceous Siltstone: med- dk brown, banded, blocky, hd.	1	42	50				
					0.28		Siltstone: gray, blocky, hd, massive			45				

Total:  3.0  3.0 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0  0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



**Corehole Log**

Date: **Oct 26/09**

Hole No: **09-04**

Page: **23** of **29**

Location:  
(UTM NAD83)  
Units (...)

Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W

DLS Lsd Sec Twp Rge Mer

Elevation :

Northing :

Easting :

Cored Interval - Units (...)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
30	40				0.05		Coal: thin band, blocky, hd, shiny,							
					1.22		Siltstone: gray, blocky, hd, massive,				85			
30	41	106.5	102.9	1.4		1.28							91	
					0.37		Carbonaceous Siltstone: dk brown chunky broken fragments, banded, med hd							
					0.12		Bone: blocky, dull, hd,							
					0.13		Siltstone: gray-brown, blocky, hd,							
					0.15		Bone: dull, blocky, hd, coal band at base,							
					0.2		Mudstone: dk brown, banded w/ thin bentonite and carbonaceous stringers.							
					0.31		Siltstone: gray, blocky, hd, faint banding,							
31	42	102.9	104.5	1.6		1.6							100	
					1.6		Siltstone: as above, <del>fine</del> thin banding throughout			60	100			
31	43	104.5	107.9	3.0		2.8							93	
					2.3		Siltstone: as, above			15	54	100		
					0.5		Mudstone: brown, blocky hd, silty bands, slightly carbonaceous							
32	44	107.5	108.5	1.0		0.9							90	
					0.9		Mudstone: med-dk brown, blocky to chunky broken fragments, hd, slightly carbonaceous w/ coarse stringers throughout,							
33	45	108.5	109.9	1.4		1.4							100	
Total:					8.4	7.58	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:



**Corehole Log**

Date: Oct 26/09  
 Hole No: 09-04  
 Page: 24 of 29

Location: (UTM NAD83) Units (3) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units (...)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
33	45				0.7		Mudstone: gray-brown, blocky to chunky, hd, carbonaceous thin stringers and quartzite veins,			55				
					0.7		Siltstone: gray, blocky, hd, massive	1	35	55				
			113.5											
33	46	109.9	<del>109.5</del>	113.5	3.6								100	
					3.6		Siltstone: gray, blocky, hd, faint banding throughout w/ minor coloration changes				97			
35	47	113.5	116.5	116.5	3.0	2.9							96	
					0.12		Siltstone: med gray, blocky, hd, as above,				100			
					0.06		arenite: lt beige, soft, firm, sharp contacts,							
					1.07		Siltstone: gray-brown, banded, blocky, hd,				100			
					0.74		Sandstone: lt gray, blocky, hd f.g., massive faint banding							
					0.1		Sandstone: gray-brown, conby. banded, blocky, hd,				70			
					0.1		Bone: dull, blocky, hd,				70			
					0.21		Mudstone: brown blocky, hd, carbonaceous stringers throughout							
35	48	116.5	119.5	119.5	3.0	3.0							100	
					0.26		Mudstone: lt brown, blocky, hd, coalified plant debris, as above,							
					0.42		Siltstone: lt gray, blocky, hd,				100			

Total: ~~9.6~~ 9.6 0.0 ~~9.5~~ 9.5 0.0  
 Rec.Total / Cored Total x 100 = 60.57 / 63.0 = 96.1% Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



**Corehole Log**

Date: Oct 27/09

Hole No: 09-04

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Location: (UTM NAD83) Units ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W			DLS	Lsd	Sec	Twp	Rge	Mer
	Elevation :	Northing :	Easting :						

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Weiness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
36	48				0.25		Silty Mudstone: brown, blocky, slightly carbonaceous, silt and bentonite bands,							
					0.1		Bentonite: gray, soft, plastic							
					0.6		Siltstone: med gray-brown, blocky, hd, banded,				100			
					0.16		Bentonitic Siltstone: lt gray, blocky, soft & friable,							
					0.74		Siltstone: med-lt gray, blocky, hd slightly carbonaceous in upper 1/2.			60	100			
					0.42		Sandstone: lt gray, blocky, hd, med-coarse grained carbonaceous stringers throughout,				100			
37	49	119.5	122.5	3.0		3.0	Sandstone: as above					100		
					0.04		Sandstone: as above							
					0.48		Mudstone: brown, blocky, banded, hd,							
					0.27		Bentonite: lt beige, blocky, soft waxy, w/ sand lenses and clasts							
					2.21		Mudstone: brown, blocky, banded, hd, thin bentonite bands in upper 1/3, 3cm Bentonite band @ 5cm above base,				67			
38	50	122.5	125.5	3.0		2.9	Mudstone: brown, blocky banded, as, above, w/ lt beige bentonite bands throughout.	15	60	60			97	

Total:		6.0		5.9			Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0			Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: Oct 27/09

Hole No: 09-04

Page: 26 of 27

Location:  
(UTM NAD83)  
Units ( )

Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W

DLS Lsd Sec Twp Rge Mer

Elevation :

Northing :

Easting :

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
39	51	125.5	128.5	3.0		3.0	Mudstone: as above, banded, w/ beige bentonite + calcite veins			60	90		100	
40	52	128.5	131.5	3.0		3.0	Mudstone: as above			60	89		100	
					0.17									
					1.63		Siltstone: med grey, <sup>weak</sup> banded, msst interbeds			68	70			
					1.2		Mudstone: med brown, blocky, well banded			60	76			
41	53	131.5	134.5	3.0		3.0	Mudst: as above 1.53-1.72 silty at .88-1.15, banding becoming thinner with depth Calcite rich band at 2.25'			58	86		100	
42	54	134.5	136	1.5		1.5	Mudst: as above, bands more wide, calcite veins at 0.95 becomes more silty near bottom			57	84		100	
					0.28		Siltst: grey, hard, blocky, banded			60	100			

Total:	<del>10.5</del>	10.5	0.0	0.0	Rec.Total / Cored Total x 100 = $76.97 / 79.5 = 46.8\%$	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: **Oct 27/09**

Hole No: **09-04**

Page: **27** of **29**

Location: (UTM NAD83) Units ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W			DLS	Lsd	Sec	Twp	Rge	Mer
	Elevation :	Northing :	Easting :						

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
43		136	137.5	1.5		1.4							93	
					1.4		Siltstone: gray, blocky, banded, hd,			60	93			
43	55	137.5	140.5	3.0		3.0							100	
					2.07		Siltstone: gray, blocky, as above.							
					0.26		Clay: med gray, soft, sticky							
					0.37		Silty Mudstone: gray, banded, blocky, hd, fining downward,				95			
44	56	140.5	143.5	3.0		3.0							100	
					0.96		Silty Mudstone: as above.							
					1.64		Siltstone: gray, blocky, hd, faintly banded, quartzite veins and fracture-fills, pyrite lenses and blebs.			58	85			
					0.1		Silty Mudstone: med gray, blocky, hd, pyrite bands,							
					0.3		Bentonitic Siltstone: lt gray, banded, blocky, med soft w/ soft friable bands,							
45	57	143.5	146.5	3.0		2.8							93	
					0.20		Bentonitic Siltstone: as above							
					0.40		Silty Mudstone: med gray, blocky hd, white bentonite fracture-fills, calcite flakes, <del>pyrite</del> blebs,				60			
					2.2		Silty Mudstone: <del>Siltstone</del> : gray, blocky, hd, faint banding throughout, calcite veins, pyrite blebs,			28	60	85		
46	58	146.5	149.1	2.6		2.6							100	
					0.61		Silty Mudstone: blocky banded, hd as above, pyrite lenses,			55	67			
Total:				131		12.6	Rec.Total / Cored Total x 100 =	%		Total Drill Depth:			0.0	
				0.0		0.0	Rec.Coal / Total Coal x 100 =	%		Total Log Depth:			0.0	

Comments:





**Corehole Log**

Date: *Oct 27, 2009*

Hole No: *09-04*

Page: *28* of *29*

Location:  
(UTM NAD83)  
Units ( )

Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W

DLS Lsd Sec Twp Rge Mer

Elevation :

Northing :

Easting :

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding				
					<i>0.50</i>		<i>Silty mdat: as above</i>			<i>54</i>				
					<i>1.31</i>		<i>Mudstone: dark grey, banded but not distinct, some soft bands up to 1 cm thick (beatonite?)</i>			<i>49</i>				
					<i>0.18</i>		<i>Mudstone - Beatonite interbedded dk grey mdat with light grey, gritty beatonite?, v. soft. beatonite bands 1/2 cm. Crumbly</i>			<i>35</i>				
<i>48</i>	<i>59</i>	<i>149.1</i>	<i>150.9</i>	<i>1.8</i>		<i>1.04</i>							<i>57</i>	
						<i>1.04</i>	<i>Mudstone: dk grey, minor thin beatonite bands, v. minor silty bands</i>			<i>54</i>				
<i>48</i>	<i>60</i>	<i>150.9</i>	<i>151.9</i>	<i>1.0</i>		<i>0.95</i>				<i>44</i>			<i>95</i>	
						<i>0.95</i>	<i>Mdat: as above, colour slightly browner; 0.03 beatonite band at 0.56; broken</i>							
<i>61</i>		<i>151.9</i>	<i>152.1</i>	<i>0.2</i>		<i>0.1</i>							<i>50</i>	
						<i>0.1</i>	<i>Mdat: as above, broken, no beatonite</i>							
<i>62</i>		<i>152.1</i>	<i>152.9</i>	<i>0.8</i>		<i>0.45</i>							<i>56</i>	
						<i>0.45</i>	<i>Mdat: as above, 4 beatonite bands from 1 mm - 3 cm wide and as broken</i>			<i>54</i>				
<i>63</i>		<i>152.9</i>	<i>154.2</i>	<i>1.3</i>		<i>0.81</i>							<i>62</i>	
						<i>0.81</i>	<i>Mdat: as above, top half highly broken, beatonite + silty bands</i>			<i>44</i>			<i>62</i>	
<i>64</i>		<i>154.2</i>	<i>155.5</i>	<i>1.3</i>		<i>0.72</i>							<i>55</i>	
						<i>0.72</i>	<i>Mdat: as above, bottom half highly broken, beatonite + silty bands + at 154.5 a highly soft, med grey band</i>			<i>55</i>			<i>55</i>	
<i>65</i>		<i>155.5</i>	<i>156.8</i>	<i>1.3</i>		<i>1.14</i>							<i>88</i>	
						<i>1.14</i>	<i>Mdat: as above, finely bedded, soft and deformational, 0.6 beatonite @ 0.74</i>			<i>46</i>			<i>88</i>	
Total:				<i>9.0</i>	<i>0.0</i>	<i>5.21</i>								
							Rec.Total / Cored Total x 100 =			%	Total Drill Depth:		<i>0.0</i>	
							Rec.Coal / Total Coal x 100 =			%	Total Log Depth:		<i>0.0</i>	

Comments:



**Corehole Log**

Date: Oct 27, 2009

Hole No: 09-04

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Location: (UTM NAD83) Units ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_

DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
<del>46</del> 66		156.8	158	1.2		0.94	Mdat: as above, highly broken minor pyrite			60			78	
50	67	158	159.2	1.2		0.8	Mdat: as above, more grey than brown, becoming silty at depth			52				67
68		159.2	160.2	1.0		0.75				<del>57</del>			75	
					0.26		Mdat: as above, crumbly + broken							
					0.49		Siltstone med. grey, some brownish grey, finely bedded, hard, broken, highly broken near bottom			61				
69		160.2	161.5	1.3		1.23							95	
					1.73		Siltstone: as above, highly broken + crumbly at bottom minor bentonite at 0.61			60				
51	70	161.5	164.5	3.0		3.0	<del>Silt:</del> as above			<del>57</del>			100	
					0.53		Silt: as above, banding becomes wavy near bottom			59	38			
<del>52</del>					2.47		Volcanics (?) - blue grey, v. hard, massive, dark mineralization scattered throughout Top part of unit is darker + cut by a 1 cm soft black material non calcite lined vugs			62				

Total: ~~7.7~~ 0.0 ~~6.72~~ 0.0 Rec.Total / Cored Total x 100 =  $46.1 / 46.3 = 89\%$  Total Drill Depth: 164.5 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:  $144.46 / 163.8 = 88.2\%$  Overall Rec %



**Corehole Log**

Date: Oct 28/09  
 Hole No: 09-05  
 Page: 1 of 30

Location: (UTM NAD83) Units (M) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 Elevation: \_\_\_\_\_ Northing: \_\_\_\_\_ Easting: \_\_\_\_\_

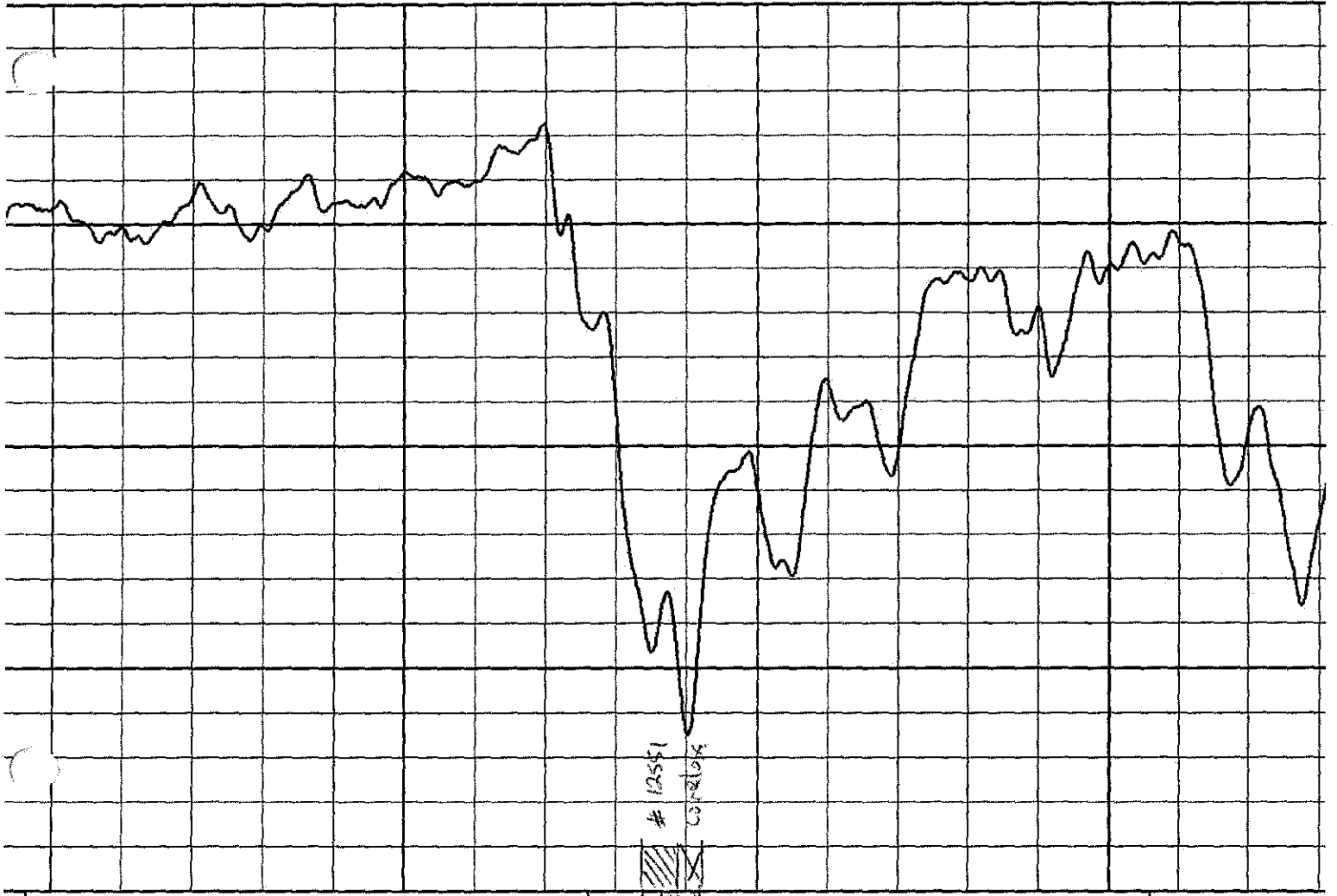
DLS \_\_\_\_\_ Lsd \_\_\_\_\_ Sec \_\_\_\_\_ Twp \_\_\_\_\_ Rge \_\_\_\_\_ Mer \_\_\_\_\_

Cored Interval - Units (M)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
1	1	9.7	11.0	1.3		1.5						100	
					0.12		Sandstone: brown, blocky, coarse gr., weathered, iron stained.						
					0.29		Benitic Mudstone: gray, blocky, soft, granular to blocky base, massive.						
					1.09		Sandstone: gray, med grained, blocky, med soft to some v. soft friable layers, clay matrix.	1	25	82			
2	2	11.0	14.0	3.0		2.8						93	
					0.93		Sandstone: blocky, gray-brown, slightly weathered, soft, sandy, as above.			88			
					0.75		Mudstone: gray, blocky, med soft benitic bands.			73			
					1.12		Sandstone: lt gray, blocky, med soft, P-mg.			87			
2	3	14.0	17.5	3.5		2.22						612	
					0.22		Sandstone: lt gray, conglomeritic? v. soft & sandy (conc loss).						
2	4	17.5	20.5	3.0		0.70						23	
					0.70		Sandstone: conglomeritic?, v. soft & sandy, as above.						
2	5	20.5	23.1	2.6		0.5						19.2	
					0.5		Sandstone: as above, ssp, conglomeritic.						
3	6	23.1	26.5	3.4		2.6						77	
					1.05		Mudstone: med gray-brown, blocky, med soft & clayey, coaly lobs throughout, slightly carbonaceous, horizontal bedding.	0	0	82			

362

Total: 19.8 / 8.72 Rec.Total / Cored Total x 100 = \_\_\_\_\_ % Total Drill Depth: \_\_\_\_\_ 0.0  
0.0 / 0.0 Rec.Coal / Total Coal x 100 = \_\_\_\_\_ % Total Log Depth: \_\_\_\_\_ 0.0

Comments:

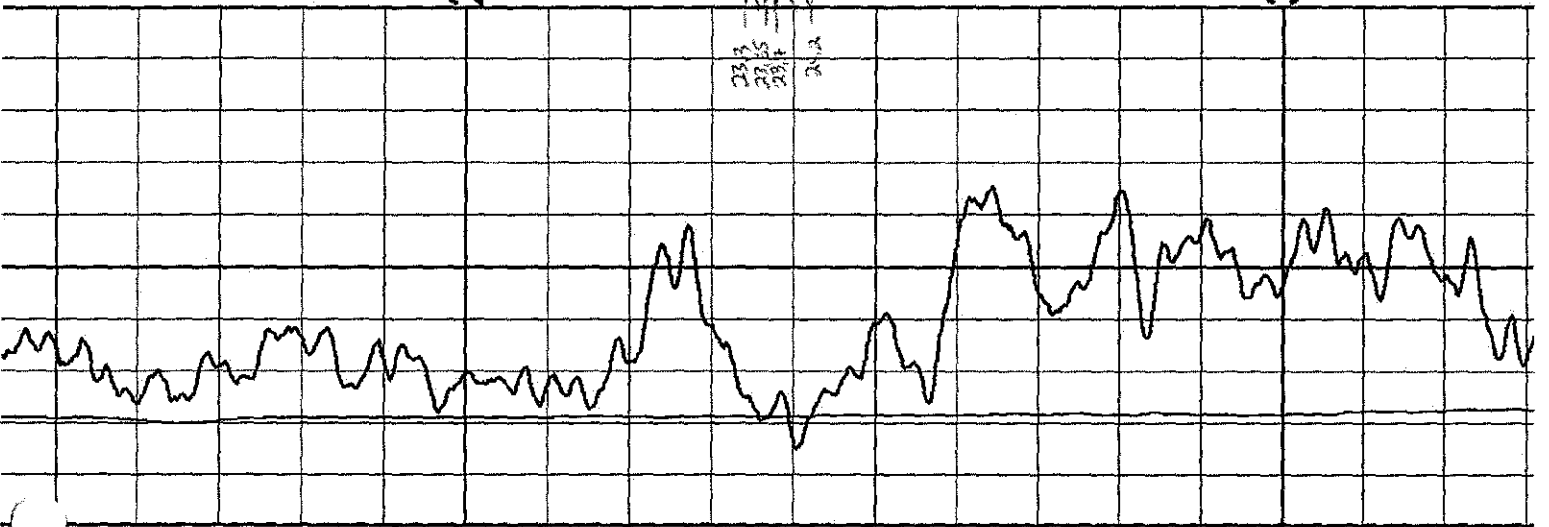


20

30

# 12551  
CORRECTION

233  
232  
231  
230  
229





### Corehole Log

Date: Oct 28/09

Hole No: 09-05

Page: 2 of 30

UNITS: (M)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W			DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:						

Cored Interval - Units (-)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
3	6				0.46		Bentonitic Mud: dk gray-brown, blocky, soft & pliable, <del>stiff waxy</del>						
					0.61		Mudstone: brown, blocky, waxy bentonitic, massive, soft, vertical fractures,						
					0.49		Coal: blocky to broken crushed fragments upper 1/2 bright and shiny fringing dull at base, brown mud parting @ 10 cm from bottom, dirty,						(23.3)
						5cm							23.65 - 27.7 p. 23.9
4	7	26.5	29.5	3.0		2.6						87	
					0.09		Mudstone: gray, blocky, med hd, coaly fragments		90				
					0.37		Carbonaceous Mudstone: dk brown-black, dull, blocky, med hd, waxy		90				
					0.51		Bentonitic Mudstone: dk brown, blocky to chunky broken fragments, med soft, waxy w/ bentonite bands						
					0.09		Siltstone: gray-brown, blocky, med hd, coaly bands and blebs,						
					0.82		Sandstone: gray-brown, blocky, hd, f.g., brown silty bands near base.		90	76			
					0.46		Sandstone: gray-greenish, blocky, s&p, hd, massive.		90	100			
					2.26		Siltstone: med gray broken chunky fragments, hd,						
4	8	29.5	31.8	2.3		2.16						94	
					5.3	4.76							
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:		0.0		
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0		

3C2

3C1

Comments:



### Corehole Log

Date: Oct 28/09  
 Hole No: 09-05  
 Page: 3 of 30

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.47		Mudstone: soft, dk grey, blocky, med hard, thin (105) coal layer at base	79						
					1.69		Sandstone: bands of coarse + med + fine grained sst, some angular pebbles, hard, salt + pepper, pyrite along fractures, v. minor carb material, blocky, hd.	32	82	38				
5	9	31.8	34.5	2.7	<del>2.7</del>	0.6	Sandstone: as above						22	31.5
					0.2		Bentonitic mud: dark grey-brown, v. soft + plastic, blocky							
	10	34.5	35.5	1.0		0.81	Bentonitic mud: as above, top 0.4 m. mushy, bottom is blocky						81	
6	11	35.5	38.5	3.0	<del>2.34</del>	2.32	Bentonitic mud: as above, varies from mushy to blocky to crumbly						77	
	12	38.5	41.5	3.0	<del>0.74</del>	2.46	Mudstone: silty, brownish grey, grading down to med grey, med hard, blocky, some visible banding	29	4				82	37.6
					1.72		Mudstone: dark brown, ranges from blocky to crumbly to v. soft + waxy, massive							
	13	41.5	44.5	3.0	<del>2.86</del>	2.86	Mudst: as above, faint banding visible in places (silty band at 1.5, white veins, possibly gypsum, v. minor banding (silty layer), blocky to crumbly	67					95	36.9
Total:				12.7	0.0	9.05	0.0	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:	0.0	
								Rec.Coal / Total Coal x 100 =			%	Total Log Depth:	0.0	

Comments:



### Corehole Log

Date: Oct 28/09  
 Hole No: 09-05  
 Page: 4 of 30

UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:									
Cored Interval - Units ( )		Recoverd		Description				Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)		
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding			
8	14	44.5	46.9	2.4		1.67	Mudstone: as above, 0.2 m bentonite band @ 0.40, bottom 0.5m is becoming silty			55	88				70
9	15	46.9	48.8	2.9		1.8	Mudstone, finely bedded: dk grey with grey-brown layers. Banding due to siltiness of some layers, bentonite beds at 0.7 + 1.22				89				62
10	16	48.8	50.5	1.7		1.9	Carbonaceous Mudst/clay: dk brown, blocky to chunky soft wet carbonaceous clay bands at 0.1 and 0.2,								100
					0.25		Mudstone: brown, blocky, fine banding								
					0.07		Bentonitic Clay: gray-dk brown, soft, carbonaceous at base,								
					0.32		Mudstone: brown, banded med hd, blocky, as above						44		
					0.1		Carbonaceous Mudstone: dk brown, blocky med hd gradational contact.								
					0.07		Carbonaceous Clay/Bent: dk brown, soft, pliable,								
					0.6		Mudstone: brown, blocky, banded med hd, minor fissility,						90		
					0.23		Siltstone: gray-brown, blocky, hd, massive,			1	35	85			48.6
															49.6
	17				0.04		Mudstone: dk brown, soft								
11	8	50.5	53.5	3.0		2.8	Mudstone: brown, banded blocky med hd, thin fine silt & clay bands, fissile								93
					1.5					42	90				
Total:				10.0		8.17	Rec. Total / Cored Total x 100 =			%	Total Drill Depth:				0.0
				0.0		0.0	Rec. Coal / Total Coal x 100 =			%	Total Log Depth:				0.0

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Comments:



### Corehole Log

Date: Oct 28/09  
 Hole No: 09-05  
 Page: 5 of 30

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____ Northing: _____ Elevation: _____						

Cored Interval - Units ( )					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,</small>	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
11	17				0.08		Bentonite: soft, waxy brown banded, sharp contacts,							
					0.98		Mudstone: brown, blocky, banded, as above.							
					0.14		Carbonaceous Mud/Bentonite: dk brown w/ beige bentonite bands, soft, waxy			88				
					0.1		Carbonaceous Mudstone: dk brown, blocky, med hd,							
11	18	53.5	56.5	3.0		2.2							73	
					1.7		Mudstone: brown, blocky, banded w/ dk clay clay, med hd w/ some soft, zones clayey							
					0.5		Carbonaceous Mudstone: dk brown, blocky, carb. clay bands, med soft, waxy							
12	19	56.5	59.5	3.0		3.0							100	
					1.0		Silty Mudstone: lt brown, blocky, sandy clasts in top 15cm, low angle shears, massive			40	95			
					2.0		Mudstone: brown, blocky med hd shaly, brittle, low angle shears, massive			15	100			
13	20	59.5	62.5	3.0		2.6							87	
					1.3		Mudstone: brown, blocky, silty, as above			15	100			
					0.23		Sandstone: lt gray, blocky, hd, v. fq.				100			
Total:		<del>X</del>		9.0	<del>X</del>		7.8	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
Total:		<del>X</del>		0.0	<del>X</del>		0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

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Comments:





### Corehole Log

Date: Oct 28/09

Hole No: 09-05

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UNITS: (___)		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS		Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units (-)					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding				
13	20				1.07		Mudstone: med-dk brown, carbonaceous, blocky to chunky broken fragments, med soft & shaly at base.			20			19			
14	21	62.5	65.5	3.0	0.5	1.35	Mudstone: med brown, blocky, med hd, dk carb bands throughout, carb clay at base.								45	
					0.85		Carbonaceous Mudstone: dk brown, broken crushed fragments (core loss zone) soft, shaly, fissile, muddy									
15	22	65.5	68.5	3.0		2.55									85	
					2.15		Mudstone: blocky, brown, med hd, waxy thin bentonite bands throughout			25			59			
					0.40		Carbonaceous Mudstone: dk brown, med soft, waxy, crumbly.									
16	23	68.5	70.5	2.0	0.2	1.8	Carbonaceous Mudstone: as above, blocky to chunky fragments								90	
					1.4		Mudstone: brown, blocky, hd, massive, well cemented						60			
Total:		8.0		5.7		Rec.Total / Cored Total x 100 =			%	Total Drill Depth:			0.0			
		0.0		0.0		Rec.Coal / Total Coal x 100 =			%	Total Log Depth:			0.0			
Comments:																

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### Corehole Log

Date: Oct 28/09

Hole No: 09-05

Page: 7 of 30

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W					DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:						

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
16	23				0.2		Carbonaceous Mudstone: dk brown, chunky broken fragments, shaly, fissile, med soft, brittle							
16	24	70.5	72.7	2.2	1.52		Mudstone: med brown, blocky, hd, silt veins and, massive, chert				49			70
					0.76		Carbonaceous Mudstone: dk brown, broken fragments, med soft, shaly,							
17	25	72.7	76.5	1.8	<del>1.5</del> 1.5		Mudstone: med-dk brown, blocky to chunky broken fragments, carbonaceous bands, med soft to med hd, massive							83
17	26	76.5	77.4	2.0	1.8		Mudstone: blocky, gray-brown, med hd w/ well cemented zones, bottom contact clayey & soft							90
					0.64		Coal Bone: blocky, hd, dull banded, gradational contacts,				90			75.2
					0.32		Bentonitic Mudstone: med-dk brown, blocky, waxy, soft, silt bands,							
					0.29		Boney Coal: blocky, hd, dull, calcite veins							
					0.4		Bentonite: brown, soft, broken							
					0.15		Coal: crushed, shiny, brittle, calcite veins							

Main 369

Total:	<del>6.0</del> 0.0	<del>4.82</del> 0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
			Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 29, 09

Hole No: 09-05

Page: 8 of 30

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)				
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding								
18	27	765	794	29		3.18												
					0.03		Runey Coal:											
					0.44		Bentonite Siltstone: base, blocky, med soft, bentonite bands, waxy											
					6.16		Siltstone: dk brown, banded, slightly carbonaceous											
					0.18		Bentonite Siltstones as above,											
					0.1		Same: dull, blocky,											
					0.14		Bentonite Siltstone: gray-brown, blocky, med soft											
					0.22		Carbonaceous Siltstone: blocky, gray-brown banded, waxy bands											
					0.11		Same: dull black, hd, gradational contact,											
					0.12		Coal: blocky, shiny bright banded											78.4
					0.12		Siltstone: brown, blocky, broken fragments, hd,											
					0.06		Carbonaceous Mud: crushed, dull black, muddy											
					0.38		Mudstone: gray-brown, blocky, brown carbonaceous bands towards base, calcareous											
					0.19		Siltstone: gray, blocky to chunky broken fragments, med hd, calcareous.											

sect 6

Total:	X	29	X	3.18	0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



# Corehole Log

Date: Oct 29/09

Hole No: 09-05

Page: 9 of 30

UNITS: (___)	Lat. ___° / ___' / ___" N	Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units (..)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.17		Coal: blocky, hd, bright bands, gradational contacts,							
					0.16		Mudstone: gray-brown, blocky, carbonaceous bands, calcite veins, hd, calcareous, well cemented	75	82					
					0.16		Coal: crushed, crumbly soft, shiny, sharp lower contact.							
19	28	79.4	82.0	2.6		1.65							63	
					0.03		Coal: blocky, hd, dull							
					0.13		Siltstone: brown, broken, hd, fragment							80.1
		79.56	79.96		0.4		Boney Coal: blocky, hd, calcite veins, bright bands w/ some dull honey layers.				26601			80.5
					0.17		Siltstone: blocky to chunky, broken, med-dk brown, carbonaceous bands, calcareous, hd, well cemented,							
					0.12		Carbonaceous Mudstone: dk brown, blocky, hd, calcite veins							
					0.13		Bentonite: gray crushed broken fragments, soft, dry, waxy,							81.0
20	39	82.0	83.5	1.5		1.4							93	
					0.03		Bentonite: light beige, broken, soft & waxy							81.4
					0.4		Siltstone: blocky, lt-med gray, calcite veins, only band in middle, hd, well cemented,	80	90					81.6
					0.3									

Total:		4.1		3.05			Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0			Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Section

5

2.00



### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05  
 Page: 112 of 30

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
2029					0.04		Bentonite: gray, blocky, soft & waxy							
					0.22		Carbonaceous Mudstone/Brac: dk brown-black, carbonaceous bands, hd and honey at base,							
					0.15		Carbonaceous Mudstone: dk brown-black, blocky, med hd, waxy,							82.3
		82.93			0.42		Coal: blocky to chunky broken fragments, shiny bright banded, calcite on fractures,							82.55
					0.12		Sandstone: brown, blocky, broken, coarse grained,				2603			
					0.03		Bentonite: greenish-gray, broken fragments, soft & waxy							
2030		83.6	86.1	2.6		1.52						58		83.0
			83.63		0.13		Bony Coal: broken chunky fragments, hd, dull,							83.3
					0.15		Siltstone: med brown, blocky, thin carb clay <del>is</del> top band							83.65
		83.8	86.06		0.25		Coal: blocky, hd, bright banded,							83.9
					0.24		Bentonite: lt brown, blocky w/ carbonaceous bands, soft, waxy,							84.2
		84.2	84.52		0.22		Coal: blocky, hd, dull banded, brittle,			65	26605			84.5
					0.16		Siltstone: med brown, blocky, v. hd, well cemented, grayish-							84.3
Total:					2.6	0.0	1.52	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
								Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

Comments:

26603 C 142 + 113 + 105 (0.8)  
 2 0.12

82.3  
 82.55  
 83.0  
 83.3  
 83.65  
 83.9  
 84.2  
 84.5  
 Core loss



### Corehole Log

Date: **Oct 29/09**

Hole No: **09-05**

Page: **11** of **30**

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
20	30				0.12		Carbonaceous Mudstone: dk brown, blocky, dull soft carbonaceous clay in middle, at base							
					0.22		Carbonaceous Siltstone: dk brown, blocky, hd, well cemented,							
21	31	86.1	89.1	3.0		0.64							21	9.6
					0.64		Siltstone: blocky to chunky broken fragment, carbonaceous bands throughout hd (main core loss - run consists mainly of broken rubble)							
21	32	89.1	92.5	3.4		0.51							15	
					0.51		Siltstone: gray-brown, up carbonaceous bands, hd, blocky to chunky broken fragments,							
21	33	92.5	95.5	3.0		0.50							16	89.7
					0.05		Coal: broken chunky fragments, rubble, (core loss), hd, shiny.							
					0.22		Siltstone: chunky broken fragments, hd, gray-brown,							
					0.05		Bentonitic Clay: dk brown, soft, carbonaceous,							
					0.18		Siltstone: gray-brown, blocky to chunky broken fragments,							
21	34	95.5	97.6	2.1		0.95							45	
					0.19		Carbonaceous Siltstone: dk brown-black, dull, chunky broken fragments, hd,							
Total:					11.5	2.0	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
Total:					0.0	0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Sect 5

Sect 4

Sect 2

Sect 3

Comments:



### Corehole Log

Date: Oct 29/09

Hole No: 09-05

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UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____ Northing: _____ Elevation: _____						

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding					
21	34				0.07		Bentonite: dk brown, soft, carbonaceous, shale								
					0.06		Carbonaceous Mudstone: dk gray-black chunky broken fragments, dull, soft & shaly, friable								
					0.05		Siltstone: gray-brown, blocky, hd								
					0.2		Boney Coal: blocky to chunky, dull, hd						97.0	96.8	
					0.34		Bone: dull black, v. hd, silicified w/ quartz veins, blocky								
					0.04		Boney coal: dull black, broken fragments							97.0	
22	35	97.6	98.5	0.9		0.8						7661789			
					0.31		Boney Coal: blocky, hd, dull but some shiny bands							97.0	97.6
					0.1		Bentonite: brown, blocky, soft, <del>and</del> coarse coal clasts								
					0.34		Bone: dull black, blocky, v. hd, mud clasts & bands				77				97.8
22	36	98.5	101.5	3.0		3.0							100	97.8	
					0.2		Bone: blocky, hd, dull, silt bands					26618			98.0
					0.1		Siltstone: lt gray, blocky, hd, sharp contacts								
					0.46		Silty Mudstone: med-dk gray-brown, carbonaceous bands, blocky hd								
					0.53										
Total:					3.9	0.0	3.8	0.0	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
									Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

Comments:

26617 ... 0.2 + 0.04 + 0.31 = 0.55

Int 3  
 12  
 12  
 Set



# Corehole Log

Date: Oct 29/09

Hole No: 09-05

Page: 13 of 30

UNITS: ( )	Lat. ° / ' / " N	Long. ° / ' / " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:			

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
22	36				0.07		Carbonaceous Siltstone: dk brown, blocky, hd,							
					0.03		Bentonite: brown, carbonaceous bands, soft, waxy,							
					0.3		Bone: blocky, hd, dull, mud bands and clasts throughout,				26619			98.6
					0.09		Siltstone: gray-dk brown, gradational at base, hd,							98.9
					0.27		Bone: blocky, hd, dull, as above,				26620			98.3
					0.26		Carbonaceous Siltstone: dk brown-black, carbonaceous bands, blocky hd,							100.3
					0.09		Siltstone: buff, blocky, v. hd, chert bands,							
					0.05		Coal: thin stringer,							
					0.18		Siltstone: as above, chert bands, v. hd,			80				
					0.17		Bony Coal: blocky, hd, silt band in upper 1/2, dull, gradational upper contacts,							101.5
					0.15		Carbonaceous siltstone: gray-dk brown, carb. bands, blocky, hd,				26621			
					0.22		Coal: blocky, hd, shiny banded, clean							102

Total:	X	0.0	X	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

98.6  
98.9  
98.3  
100.3  
101.5  
102





### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05  
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UNITS: ( ) Lat. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " N Long. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
22	36				0.27		Coar. siltstone: gray-dk brown, carb. bands, blocky, hd,							100.8
					0.09		Bone: dull, blocky, hd, mud bands							101.0
23	37	101.5	103.8	2.3		2.2					26622	96		101.2
					0.09		Coal: chunky broken fragments, hd, shiny,							101.2
					0.15		Siltstone: gray-brown, blocky, banded, hd,							
					0.13		<del>Coal</del> Bone: dull blocky, hd, blocky, broken fragments,							
					0.12		Sandstone: brown blocky, f.g., hd, coaly lenses & clasts							
					0.37		Siltstone: gray, blocky, carbonaceous bands, hd,							
					0.12		Boney Coal: blocky, hd, dull, banded, gradational at base	75			26623			102.2
					0.06		Siltstone: gray-brown, elastic wedge, parting, broken fragments,							102.4
					0.12		Bone: dull blocky, blocky, broken fragments, hd, Carbonaceous siltstone: dk brown, blocky, hd,							
					0.91		Coar. silt: as above blue-white veins (not calcite) @ 0.47	76	17					
Total:					2.3	2.2	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:

sdz  
102.3  
102.5  
104.2  
104.4

26623 silt 0.06 +  
0.07

0.08



### Corehole Log

Date: Oct. 29/09

Hole No: 09-05

Page: 15 of 30

UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units (___)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
24	36	103.8	105.2	1.4		1.2		7						103.2
						<del>1.02</del>	Carbonaceous siltstone: dk brown, blocky hard, lighter brown silt, cleats in plates, some hard, lt brown, beige material, possibly hard platy <sup>volcanic</sup> contact with siltstone is co-depositional			18			86	
						0.08	Boney coal: Dull, hard, blocky							104.2
						0.1	Carb siltst: as above							
39		105.2	107.0	1.8		1.27							76	
						0.5	Carb siltst: as above, several coaly bands, more beige, hard material			71				
						0.14	Boney coal; hard, blocky, dull, some bright bands			30				105.3
						0.15	Carb. siltst: as above			70				
						0.27	Coal: blocky, chunky, powdery at base, some bright, some none					26624		105.5
						<del>0.16</del>	Mudstone: <sup>dark at top to</sup> <del>some dark</del> beige, hd massive			65				106.3
40	39	107.0	108.6	1.6		1.6							100	
						0.21	Sandstone: medium beige, finely bedded + fine gr at top grading to coarser + lighter + more massive below. <sup>1002 mudst at base</sup>			66				
						0.03	Bentonite: soft, medium beige							
						1.36	Silt, mudstone: dk brown,							
Total:	X		4.8	X		4.07	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:			0.0		
	X		0.0	X		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:			0.0		

Comments:



### Corehole Log

Date: Oct 29 / 09  
 Hole No: 09-05  
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UNITS: ( )	Lat. _____ ° / _____ ' / _____ " N Long. _____ ° / _____ ' / _____ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
							(Silty mdst) hard, 2 mm - 1 cm thick bentonite bands, 2 cm coal @ 1.32				36			
		108.6	113.5	4.9		1.1							22	
					0.07		Silty Mdst: as above							
					0.14		Bentonite - soft, mushy							
					0.89		Silty Mudstone - dk brown, chunky near top, mostly blocky, v. broken near bottom	83	78					
*	26	40	113.5	113.5	?	3.68								
					0.14		Silty Mudstone: as above							
					0.12		Bony coal: hard, broken, mostly rock							
					5.26 <del>1.46</del>		Mudstone: Siltstone: dk dark brown faint banding, hard				100 <del>100</del>			
					1.68		Mudstone: dark brown, hard, 2 bentonite bands (1 cm, 3 mm) at 1.3				77			
					0.48		Silty mudstone: brown, hard, faint banding, tiny calcite veins, blocky	53	71	77				
	27	41	113.5	116.5	3.0	3.0							100	
					0.44		Siltstone: dk brown, faintly banded, hard, blocky, calc. vein	23	77	100				
					1.8		Mdst: dk brown, hard, faintly banded, blocky				65			
					0.76		Silty Mdst: dk brown, hard, blocky	25	75					
Total:		X		7.9	X		4.1	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
				0.0			0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

2 - 113.5  
 marks  
 1 in box 26  
 1 " " 27

Comments:



### Corehole Log

Date: 0d. 29/2009  
 Hole No: 09-05  
 Page: 17 of 30

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
26	42	116.5	119.5	3.0		2.88							96	
					0.18		Silty mds: as above							
					0.22		Siltstone: light brown, beige, hard, blocky, calcite at top + near bottom				100		100	
					2.48		Mudstone: med-dk brown, massive, hard, minor calcite veins along joints	16	80	95				
29	43	119.5		2.11		0.02	Mds: as above							
							Distinctly banded. Mudstone: alternating light brown / dark brown bands, also some sandstone, siltstone + bentonite bands (0.01-0.07 cm wide), dark bands are 2 mm - 1 cm wide, light bands are 1 cm - 5 cm wide, hard, blocky							
30 - continued next page.														

Total:	3.0	0.0	2.88	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05  
 Page: 18 of 30

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
30	44	119.5	122.5	3.0		3.0	Silty Mudstone: interbanded layers of silt, mud & bentonite, individual bands vary from 20.5cm to > 5.0cm, blocky, lt brown to lt gray color, hd,			80	54		100	
30	45	122.5	125.1	2.6		2.58	Silty Mudstone: blocky, lt gray to brown bands of silt, mud and bentonite, as above, soft-med hd, some calcite veins,			78	58		99	
31	46	125.1	128.2	3.1		3.0	Mudstone: brown, blocky, silty banded with lt gray bentonites and fine silty, few calcite veins, turning dk brown and carbonaceous at base,			18	75	63	100	
32	47	128.2	131.3	3.1		3.05	Mudstone: brown, blocky, hd, clay bands,			18			98	
						0.33	Bentonite: beige, blocky, soft, waxy,							
						0.1	Mudstone: brown, blocky, hd, silty bands, massive							
						0.92	Bentonite: lt gray- soft waxy, sharp contacts							
						0.05	Mudstone: brown, as above							
						0.06	Bentonite: as above							
						0.06								

Total:		11.8		11.63	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05  
 Page: 19 of 30

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
32	47				1.53		Mudstone - brown, blocky, hd, silty, massive, as above.							
33	48	131.3	134.4	3.1		3.02	(Box 34 Missing 2)	10	78	100		100		
					1.70		Mudstone: brown, blocky, hd, as above.							
					1.38		Silty Mudstone: brown, blocky, hd, silty at base,				100			
34	49	134.4	137.5	3.1		2.94	massive						?	82
					0.91		Mudstone: brown, blocky, hd massive,	36	70	87				
					0.18		Coal: blocky, hd, bright banding, sharp clean contacts.				100	2660		134.8
					0.11		S. (stone) gray-brown, blocky, hd, massive				100			134.98
<del>35</del>	<del>50</del>	<del>137.5</del>			0.2		Silty Mudstone: gray-brown, blocky, hd massive, few carb. bands at base, sharp lower contact							
					0.17		Carbonaceous Mudstone: dk brown banded, gradational contacts, blocky, hd.							135.15
					0.37		Coal: blocky, hd, bright banding, gradational contacts							135.45
					0.07		Mudstone: brown, blocky, hd, gradational contacts					2665		
					0.35		Coal: blocky, hd, shiny, honeycomb contacts, hackly cleat surfaces,							136.0
					0.14		Sandstone: lt gray-brown, blocky, hd, g.o.							

Box 34 - 38

Sec

Section 3

Total:		6.2		5.92	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
		0.0		0.0	Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

C 1.18 + .37 + .35 + .32 + .22 = 1.44 SS .14 + .19 = 0.33  
 Slt .2 + .1 = 0.3 CSS .08 + .11 = 0.19



### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05

Page: 20 of 30

UNITS: ( )	Lat. ____ ° / ____ ' / ____ " N Long. ____ ° / ____ ' / ____ " W						DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:			Elevation:						

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
35					0.08		Carbonaceous Sandstone: dk brown, broken chunky fragments,							
					0.32		Coal: blocky, hd, dull & lustrous, gradational contacts,				26608			136.5 = 136.5
					0.05		Carbonaceous Mudstone: chunky broken fragments,							136.8 = 136.8
36	51	137.5	140.5	3.0		2.95							98	
					0.17		Mudstone: brown, blocky, hd, carbonaceous bands in lower 1/2							
					0.11		Siltstone: lt gray-brown, carbonaceous bands, blocky, hd,							137.0
					0.27		Bony Coal: blocky, hd, dull w/ some shiny bands, gradational contacts,				26608			137.27 = 137.27
					0.11		Carbonaceous Sandstone: dk brown, broken, hd, gritty, f.g.							
					0.19		Sandstone: gray-brown, blocky, hd, f.g.							
					0.05		Beudantic: gray-green, soft, waxy							
					0.13		Mudstone: gray-brown, blocky, silty at base w/ coaly fragments, gradational contact							137.75
					0.26		Coal: blocky, hd, brittle, clean, bright bedded,				26610			138.0
					0.163		Mudstone: brown w/ carbonaceous bands, blocky, hd,				75	100		

Total:		3.0		2.95	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0

Comments:

mdst 0.13 + 0.163 + 0.3 + 0.13 + 0.08 = 1.27  
 C 0.26 + 0.27 + 0.47 + 0.22 + 0.34 + 0.18 = 1.74 bone 0.26

136.5  
 136.8  
 98  
 137.0  
 137.27  
 137.75  
 138.0  
 Sect 2.



### Corehole Log

Date: Oct 29, 09

Hole No: 09-05

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UNITS: ( )	Lat. ___ ° ' ___ " N	Long. ___ ° ' ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:			

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
36					0.37		Coal: blocky, hd, dull lustrous bands,	?			100	26611		138.7
					0.3		Mudstone: brown, blocky, hd, carbonaceous bands in lower 1/2, gradational floor contact.				100			139.0
					0.47		Coal: blocky, hd, dull & bright bands, thin clay band (1.5cm) at 10 cm above base,				100	26612		139.25
					0.05		Bentonite: lt gray-cream color, soft, waxy,							139.75
36	52	140.5	143.5	3.0	3.0	2.84							94	
					0.33		Bentonite: lt gray, soft, waxy, sharp lower contact w/ coal							140.1
					0.22		Coal: blocky, hd, dull w/ some bright bands, brittle,							140.3
					0.13		Mudstone: brown, blocky, hd, slightly carbonaceous,				0.74e			140.4
											0.13 mudstone			
											0.26 brown			
37					0.34		Coal: blocky, hd, bright banded, lustrous at base,					26613		140.5
					0.26		Stone: dk brown-black, blocky, hd, dull,							140.8
					0.08		Mudstone: dk brown, carbonaceous, gradational contacts							140.85
					0.18		Coal: blocky, hd, bright banded,							141.0
					0.17		Carbonaceous Mudstone: dk brown, -black, blocky to congl soft fragments, dull waxy							141.15
Total:					3.0	2.84	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:

138.7  
139.0  
139.25  
139.75  
94  
100  
140.1  
140.3  
140.4  
140.5  
140.8  
140.85  
141.0  
141.15  
Sect 7





### Corehole Log

Date: Oct 29/09  
 Hole No: 09-05  
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UNITS: ( ) Lat. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" N Long. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
37		142.87			0.6		Coal: blocky, hd, bright banded, thin (2cm) silt parting @ 2cm from top; gradational contacts,							141.8
		142.97			0.13		Mudstone: gray-brown, blocky hd, massive				26614			142.0
		143.1			0.2		Coal: blocky, hd, bright banded, thin 0.05cm clay parting at middle, sharp contacts,							142.3
		143.3			0.2		Siltstone: gray-brown, w/ thin coal band in middle, blocky, hd,							142.5
						2.7							90	
37	53	143.5	146.5	3.0		2.7							87	
					0.35		Bentonite: lt gray-brown blocks to chunky broken fragments mod soft, waxy, sharp lower contact							
					0.14		Carbonaceous Mudstone: dk gray-brown, blocky, hd, bossy at base							143.0
					0.6		Bony Coal: blocky to flaggy fragments, dull hd, carbony with bands in lower 1/2, gradational floor contact,				26615			143.8
					0.48		Carbonaceous Mudstone: dk gray-brown, top 0.22 black soft carbony, med, mod soft q clayey,							
					0.5		Siltstone: gray-brown, blocky, hd, turning carbonaceous at base							
					0.1		Bony shell black, blocky, hd.							
					0.05		Bentonitic Clay: gray/brown							
Total:				3.0	0.0	2.7	Rec. Total / Cored Total x 100 = carbony band, soft %	Total Drill Depth:			0.0			
							Rec. Coal / Total Coal x 100 = %	Total Log Depth:			0.0			

Comments:

Endst .17 + .14  
 C .6 + .2 + .6  
 (0.31)  
 (1.4)  
 b (0.35)



### Corehole Log

Date: Oct 29, 09  
 Hole No: 09-05  
 Page: 23 of 30

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
37					0.14		Coal: blocky, hd, dull, w/ thin mud bands,							
					0.14		Siltstone: gray-brown, clayey, sandy, blocky, fld,							145.8
					0.2		Coal: blocky to chunky broken fragments, hd, bright shiny bands, dull & hoarse at upper contact,				266 1/2			146.0
38	54	146.5	147.5	1.0		1.2						100		
					0.06		<del>Carbonaceous</del> Shale: Shaly coal: flaky broken fragment, soft, fissile, dull <del>shiny</del> banded							146.2
					0.20		Carbonaceous Mudstone: dk brown <sup>gray</sup> blocky upper contact gradational & muddy.							
39					0.20		Bentonitic Mudstone: gray, blocky, soft, sticky,							
					0.21		Bentonitic Siltstone: lt-med gray, clay matrix w/ sand, silt inclusions, blocky, med soft, clastic							
					0.53		Sandstone: gray-brown, blocky, med hd, clayey matrix,				100			
39	55	147.5	149.5	2.0		1.74							87	
					0.47		Sandstone: gray-brown, blocky, med hd, clastic, 2 cm+ bentonite and silt clasts,				100			
					0.3		Bentonitic Sandstone: gray, blocky, med soft, sandy mix w/ heavy gray clay.							

Total:	3.0	0.0	2.94	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 30/09  
 Hole No: 09-05  
 Page: 24 of 30

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
38	55				0.97		Sandstone: gray-brown, dirty sand, granular texture w/ soft & mud clasts throughout, blocky, med hard,							
39	56	149.5	152.5	3.0		3.0							100	
					0.15		Sandstone: gray-brown, blocky, as above,							
					0.12		Mudstone: brown, blocky, soft, bentonitic.							
					0.64		Sandstone: lt brown, blocky, med soft, bentonitic,				84			
					0.07		Bone: blocky, hd, dull, sharp contacts.							
					0.57		Bentonite: lt gray, blocky, soft, sticky, wet,							
					0.05		Carbonaceous Mud: dk brown, soft, sticky,							
					0.08		Carbonaceous Mudstone: dk brown, blocky, waxy, hd & lumpy at base,							
					0.05		Bentonite: beige, soft, sticky, wet							
					0.54		Mudstone: gray-brown, blocky, med hd, massive,				84	100		
					0.73		Siltstone: lt gray-brown, blocky, hd, fine, upward, massive,	4	45			100		
41	57	152.5	155.5	3.0		2.92							98	
					0.16		Mudstone: gray, blocky, med hd,							

Total:	6.0	0.0	5.92	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 30, 09  
 Hole No: 09-05  
 Page: 25 of 30

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
U1	57				0.35		Bentonitic Siltstone: lt beige, blocky, med soft, waxy, silty,							
					0.25		Mudstone: gray-brown, blocky, slightly carbonaceous, massive,							
					0.16		Bentonitic Siltstone: beige blocky soft, silty, bentonite bands,							
					0.26		Siltstone: gray, blocky, hd, coal clasts, massive,							
					0.18		Mudstone: gray-brown, blocky, med hd, waxy,							
					0.15		Mudstone: dk brown carbonaceous, gradational, becoming more coaly at base,							
					0.1		Brce: dk brown, blocky, hd, dull,							153.8
					0.26		Sandstone: v. hd, blocky, dk gray, silicified, very well cemented,							
					0.8		Coal: blocky, hd, brittle, bright banded, thin clay band at top, gypsum (?) clasts towards base, clean,							154.6
					0.04		Bentonitic Mud: gray-brown w/ <del>coaly fragments</del> coaly fragments and wisps, slightly carbonaceous							
					0.08		Siltstone: gray-brown, blocky, med hd,							
					0.12		Mudstone: dk brown, broken, muddy, soft							

Below Lower

Total: X 0.0 X 0.0  
 Rec. Total / Cored Total x 100 = \_\_\_\_\_ % Total Drill Depth: 0.0  
 Rec. Coal / Total Coal x 100 = \_\_\_\_\_ % Total Log Depth: 0.0

Comments:

bone 11  
 SS .01



### Corehole Log

Date: Oct 30/09  
 Hole No: 09-05  
 Page: 26 of 30

UNITS: (___)	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
<del>4157</del>														
4258		1555	1564	0.9		0.81							90	
					0.07		Mudstone: dk brown, as above							
					0.35		Bentonite: med-dk brown, top 17 cm very soft, wet, and crumbly; coal band in middle,							
					0.1		Bone: blocky to chunky, dull, hd.							155.3
					0.13		Carbonaceous Sandstone: dk broken, blocky to broken fragments, hd.							
					0.21		Bentonitic Siltstone: gray, blocky, med soft,							
4259		1564	1585	2.1		2.27							100	
					0.7		Bentonitic Siltstone: gray, blocky, <del>med</del> crumbly bands and thin bentonite in lanes 72,							
					1.45		Sandstone: gray-brown, blocky, <del>med</del> crumbly bands throughout v. hd, <del>soft</del> well cemented,			85				
					0.1		Bentonite: lt gray, blocky, soft,							
4360		1585	1615	3.0										
					0.06		Siltstone: gray, blocky, hd,							
					0.17		Bentonitic Silt: lt gray-white, blocky, soft, waxy, silty,							

Total:	<del>6.0</del>	6.0	<del>4.74</del>	4.74	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0	0.0	0.0	0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 30/09

Hole No: 09-05

Page: 27 of 30

UNITS: ( )		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer						
UTM NAD83		Easting:		Northing:		Elevation:											
Cored Interval - Units ( )					Recoverd		Description				Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.				No.	Joints	Bedding				
43	60	<del>1555</del>	<del>1655</del>	<del>30</del>	1.43		Sandstone: conglomeratic, grey, blocky, hd to vhd, ft and silt and med clasts throughout, clast size from <1cm to >5cm.				55	<del>45</del>	81				
							Silty Mudstone: dk grey, blocky, hd, coaly bands and clasts, slightly carbonaceous.										99
44	61	1615	1645	3.0	2.8	2.97	Conglomeratic Sandstone: lilicy grey, blocky, hd-vhd, st grey, angular, silt + med clasts throughout but decreasing amount in bottom 0.3 m; sst is darker grey in bottom 0.15 m; minor coal clasts in bottom 0.6 m; calcite veins				24	61	84				
45					0.09		Boney coal: hard, dull, blocky						64				
					0.08		C.mdst: dk grey, hard, blocky 0.01 bright coal band										
<del>46</del>	61	1645	165.1	0.6	<del>0.37</del>	0.59	Carb mdst / siltst: dk grey, hard, blocky, 2 cm bentonite bands, minor coaly (bright) bands						63			98	
					0.22		Bentonitic siltstone: light grey, hard, blocky						40				
	62	1651	1675	2.4	0.12	2.16	Bentonitic siltst: as above						45				90
Total:		X		6.0	X		5.72	Rec.Total / Cored Total x 100 =				%	Total Drill Depth:		0.0		
				0.0			0.0	Rec.Coal / Total Coal x 100 =				%	Total Log Depth:		0.0		

361

Comments:



### Corehole Log

Date: *Oct. 30/09*

Hole No: *09-05*

Page: *18* of *30*

UNITS: ( )		Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W				DLS	Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:									
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample CI	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding					
					<del>1.52</del> <del>1.7</del>		Bentonite + bentonitic mudst: alternating soft, plastic bentonite + more competent silty bentonitic layers (hard & blocky), 1cm carb mudst @ 1.4				75				
					<del>0.02</del>		bone								
					0.08		Carb mudstone: dk grey, hard, blocky								
					0.08		Bentonite: soft, plastic, lt grey			7					
					0.21		Boxey coal: hard, minor silty bands, some bright coal bands, blocky								
					0.13		Sandstone: lt-med grey, fine, grained, hard, blocky, carb stringers								
					0.02		Coal: bright								
47	63	1675	1705	3.0		3.0									100
					0.05		Coal: dull, some bright, some mudst, broken								
					0.06		Carb. mudstone: black, broken								
					0.07		Bentonite: weak, lt grey, carbonaceous								
					0.24		Carb mudstone, black, blocky, hard, some bone			77					
					0.35		Carb sandstone: lt grey, hard, blocky, carb stringers + bands	16	85	77					
					1.03		Sandstone: light grey, fine - medium grained, mostly massive			74	40				
Total:		<del>3.0</del> 0.0		<del>3.0</del> 0.0		Rec. Total / Cored Total x 100 =		%		Total Drill Depth:		0.0			
						Rec. Coal / Total Coal x 100 =		%		Total Log Depth:		0.0			

Comments:



### Corehole Log

Date: *Oct. 30/09*

Hole No: *09-05*

Page: *29* of *30*

UNITS: ( )		Lat. ° / ' / " N		Long. ° / ' / " W		DLS	Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:									
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding					
					0.97		Carb. siltstone: dk grey brown - black, blocky, some broken, some sections, some 1 cm bright coal bands, some dull, powdery bands, silty parts are hard			62					
					0.16		Sandstone: med. grey, hard, blocky								
					0.07		Coal: broken, bright + dull								
4864	170.5	171.0	0.5		0.45		Carb. mudstone: black-dk grey, blocky, mod hard - hard, some coaly bands with white material, one 0.07 bentonite band								90
	171.0	173.5	2.5		2.42		Carb. sandstone: med grey, med. grained sst between 2 coaly bands, cut by calcite veins, minor bentonite band, coal is dull								97
					0.19		Thinly bedded carb. siltstone + bentonite: overall dark grey, hard. 5 1cm - 2cm bentonite bands, some interbedded mud + bentonite blocky.			70	67				
					0.3		Bentonite: lt creamy beige, some interbedded mud. hard, blocky			79					
					0.04		Coal: dull, some bright								
Total:		3.0		2.82		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0			
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0			
Comments:															





### Corehole Log

Date: Oct 30 / 09  
 Hole No: 09-05  
 Page: 3c of 3c

UNITS: ( )	Lat. ___° / ___' / ___" N		Long. ___° / ___' / ___" W		DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints Bedding				
					0.10		Bentonite: as above						
					1.11		Thinly bedded carb mdst, carb siltst coal + bentonite, blocky, hd coal is honey	74	31				
49	65	173.5	176.5	3.0		2.88						96	
					0.18		Thinly bedded carb mdst / siltst / c + bentonite: as above						
					0.71		Bentonitic <sup>siltst</sup> mdst: medium gray blocky, hard, banded by more bentonitic layers + more carb bands.	76	87				
					0.16		Carb <sup>mdst</sup> <del>siltstone</del> : dark gray, blocky, hard, fine coaly layers (2 mm)						
					0.52		Sandstone: med grey, blocky fine grained, at top, med gr in middle, fine gr at bottom	73	88				
					0.39		Siltstone: dk brown grey, hard, blocky, bentonitic band (2cm) near top, calcite vein minor carb stringers near top		77				
					0.44		Mudstone: dk brown grey, hard, blocky, calcite veins		72				
					0.46		Siltst: med-dk grey brown, hard, blocky, scattered pebbles (angular)						

Total:	<input checked="" type="checkbox"/>	3.0	<input checked="" type="checkbox"/>	2.88	Rec.Total / Cored Total x 100 = <u>142.1 / 170.8</u>	% <u>83</u>	Total Drill Depth:	<u>176.5</u>	0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0

Comments: 83% Overall Rec %



### Corehole Log

Date: 01/31/2009

Hole No: 09-06

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UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS		Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:											
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)		
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding					
#							<del>3.7 m casing</del>										
1	1	3.7	5.5	1.8		1.5										83	
					0.44		Sandstone: light grey, orange weathered, coarse grained with some pebbles < 1cm hard, blocky, pitted surface										
					0.6		Clay: dk grey, soft, plastic, waxy										
					0.46		Sst: med grey, c. gr. Hard, blocky fining downwards but no discernible banding, pitted surface					73					100
	2	5.5	8.5	3.0		3.0	Sst: med grey, c. gr., occasional pebbles (~0.5cm) throughout, hard, blocky, at 17" a 2cm chunk of coal! finer + coarser zones but no discernible banding										
#																	
2	3	8.5	11.5	3.0		2.67	Sst: med grey, m hard, blocky v. c. gr towards bottom										89
3	4	11.5	14.5	3.0		2.66	Sst: as above										89
					0.81												
					0.81		Mudstone: dk grey brown hard, blocky					23 75					
					0.84		Siltstone: med grey, some sandy zones, some muddy zones, carbonaceous at top in rindles, hard, blocky					40 62 67					
4	5	14.5	17.5	3.0		3.0											100
					0.05		Siltstone: as above, carb @ 0.5' near base										
Total:					13.8	0.0	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:				0.0		
					6.83	0.0	Rec.Coal / Total Coal x 100 =			%	Total Log Depth:				0.0		

Comments:



### Corehole Log

Date: Oct 31 / 09

Hole No: 09-06

Page: 2 of 36

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.14		Mdsl: dk grey, hard, blocky, carbonaceous			70				
					0.42		Siltstone: med grey, hard, blocky, some carb zones			71	57			
					1.85		Sandstone: med grey s+p, ranges from c to f gr. hard, blocky, minor carb stringers, some banding	44	66	73				
					0.06		Carb mudstone: black, blocky							
6	175	205	3.0			3.0							100	
					0.06		Bentonite: yellowy cream, soft, plastic							
					0.29		Carb mdsl: dk grey brown, mod hard, blocky							
					2.65		Sandstone: med coarse gr., med grey, pitted surface, minor carb stringers mod hard, blocky	14	65	52				
6	7	205	235	3.0		3.6							87	
					0.12		Carb mudstone: dk grey, hard blocky							
					1.43		Siltstone: med grey, hard blocky, well bedded, some sandy bands, some carb stringers near base	19	82	57				
					0.54		Sandstone: med grey, mostly c. gr., some fine, carb + f gr at base, mod hard, blocky							
Total:				6.0		5.61	Rec.Total / Cored Total x 100 =	%		Total Drill Depth:			0.0	
				0.0		0.0	Rec.Coal / Total Coal x 100 =	%		Total Log Depth:			0.0	

Comments:



### Corehole Log

Date: **Oct 31/09**

Hole No: **09-06**

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UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,			No.	Joints	Bedding				
7	8				0.3		Sandstone: med gray, blocky, fgr. as above.						100			
					0.17		Sandstone: lt gray blocky, v. coarse grained, s&P.						100			
7	8	23.5	26.8	27		3.1									100	
					0.18		Sandstone: as above, massive, iron stained joint fracture			1	30		100			
					0.18		Sandstone: gray, blocky, fgr, w/ few dk coaly bands									
					0.90		Sandstone: lt gray, blocky, hd, med-course gr, s&P,						100			
					0.04		Mudstone: dk brown, carbonaceous,									
					0.11		Sandstone: as above,			25	60	6				
					0.18		Siltstone: gray banded, blocky, hd, early gradational floor, contact,									
					0.65		Silty Mudstone: gray-brown, faint banding, blocky, hd,			55	70					
					0.86		Sandstone: gray, blocky, hd, coarse grained, iron stained joint/fractures, near vertical fractures.			0		70				
8	9	26.2	29.4	3.2		3.08									96	
					0.16		Sandstone: gray, blocky, cgr, as above.									
					0.43		Sandstone: gray, blocky, fgr, few wispy coaly stringers.						100			
Total:		59		0.0		6.18		0.0		Rec.Total / Cored Total x 100 =			%	Total Drill Depth:		0.0
										Rec.Coal / Total Coal x 100 =			%	Total Log Depth:		0.0
Comments:																



## Corehole Log

Date: Oct 31/09

Hole No: 09-06

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UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:									
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding					
8	9				0.4		Siltstone: gray blocky, hd, coal fragment & clasts in upper 10 cm								
					0.3		Bony Coal: of dull banded, blocky, broken fragments mostly dull w/ some shiny bands,								
					0.74		Siltstone: lt gray, blocky, hd, coaly fragments,	1	40	90	100				
					0.19		Mudstone: gray-brown, blocky, hd, carb. bands,		40						
					0.96		Siltstone: gray to pale greenish gray, hd, blocky, intact w/ no breaks, some faint lineation @ ~40 TCA,					100			
9	10	29.4	32.5	3.1		3.05									98
					1.32		Siltstone: blocky, gray, hd, as above, thin 2cm mud bands,	1	15			86			
					0.2		Mudstone: gray, blocky to chunky broken fragments med soft & waxy, silty at base								
					0.60		Silty Mudstone: lt gray, blocky, hd, faint lineations,	1	30			100			
					0.11		Siltstone: gray, blocky, hd, faint banding,					100			
					0.25		Siltstone: as above.					100			
					0.59		Mudstone: gray-brown, blocky, med hd, waxy, minor carb. bands,					65	85		
					0.09		Siltstone: gray, blocky, hd, as above.								
Total:		3.1		3.05		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0			
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0			
Comments:															



### Corehole Log

Date: Oct 31/09

Hole No: 09-06

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UNITS: ( )		Lat. ° ' " N Long. ° ' " W				DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,			No.	Joints	Bedding				
10	11	325	355	3.0		2.8										
					0.04		Siltstone: gray, blocky, as above									
					0.93		Sandstone: gray, blocky, med. f. - coarse grained, silty bands w/ bedding, lamination,						100			
					0.29		Mudstone: gray-brown, blocky, med. hd, <sup>few</sup> wavy bands, waxy.									
					0.57		Sandstone: gray, blocky, fgr, silty at base, hd, vertical fractures,			40			88			
					0.35		Mudstone: gray-brown, blocky, carb bands at top contact, med. hd, waxy.									
					0.30		Siltstone: lt gray-med brown, fine downward, gradational at base						100			
					0.28		Carbonaceous Mudstone: dk brown, w/ <sup>soft</sup> carbonaceous shaly bands, med soft, waxy,						62			
					0.03		Silty Mudstone: gray, blocky, med hd,									
11	12	355	385	3.0		2.7										90
					0.85		Silty Mudstone: gray, blocky, med hd, massive, low angle to near vertical fractures w/ calcite						88			
					1.67		Siltstone: gray, blocky, hd, faint bedding, calcite vein & fracture fills, flakes,			65			95			
					0.18		Silty Mudstone: gray, blocky, med hd, massive,						100			
Total:				6.0	5.5		Rec.Total / Cored Total x 100 =			%	Total Drill Depth:		0.0			
				0.0	0.0		Rec.Coal / Total Coal x 100 =			%	Total Log Depth:		0.0			

31C1

34.6

Comments:



# Corehole Log

Date: Oct 31/09  
 Hole No: 09-06  
 Page: 6 of 36

UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W					DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:						

Cored Interval - Units (___)					Recoverd		Description	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
12	13	38.5	39.4	0.9		1.16				100		100	
					0.15		Silty mudstone: as above						
					0.70		Siltstone: grey, blocky, hd, faint banding, massive			100			
					0.27		Sandstone: lt grey, blocky, hd, v. fq.		69	100			
					0.08		Carbonaceous Mudstone: dk brown, broken crushed fragments, dull, earthy, med soft						
12	14	39.4	41.5	2.1		1.9						90	
					0.16		Carbonaceous Mudstone: brown, blocky, med soft, waxy						
					0.04		Bentonite: lt grey-brown, soft, clastic wedge						
					0.8		Carbonaceous Mudstone: dk brown, blocky, as above	45	75	67			
					0.14		Siltstone: med grey, blocky, med hd, mud band in middle						
					0.30		Mudstone: med-dk brown, blocky, med soft, slightly earthy at base						
					0.06		Bentonite: grey, soft, pliable, waxy						
13	15	41.5	44.5	3.0	0.6	2.6	Mudstone: brown, blocky, med hd, massive					89	
					0.04		Bentonite: grey, soft, waxy, as above						
					0.52		Mudstone: brown, blocky, med soft & waxy						
							Carbonaceous mud: dk brown, blocky, soft						
Total:				6.0		5.69	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:	0.0	
				0.0		0.0	Rec.Coal / Total Coal x 100 =			%	Total Log Depth:	0.0	

38.5  
3610

↑  
40cm mudst  
20cm mudst  
↓

Comments:



## Corehole Log

Date: **Oct 31/09**

Hole No: **09-06**

Page: **7** of **36**

UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,			No.	Joints	Bedding				
13	15				0.88		Mudstone: med-dk brown, bottom 20cm carbonaceous, blocky to chunky broken fragments, broken at base, med soft & waxy,									
					1.10		Mudstone: brown, blocky, med hd, more competent, massive faint banding,									
					0.4		Mudstone: med-dk brown, blocky, soft, clayey,									
14	16	44.5	47.5	3.0		1.3									43	
					1.3		Mudstone: chunky broken fragment, med-dk brown slightly carbonaceous, med soft, platy, shaly, (platy),									
14	17	47.5	48.5	1.0		1.06									100	
							Mudstone: med-dk brown, 7cm bentonite band @ 30cm from top, carbonaceous, soft, platy, as above, massive.									
15	18	48.5	50.5	2.0		1.5									75	
					1.5		Mudstone: med-dk brown, blocky, med hd w/ softer bands, massive,			2	25/30	70	40			
15	19	50.5	51.5	1.0		1.02									100	
					0.72		Mudstone: blocky to chunky broken fragments, as above,					80	22			
					0.3		Mudstone: blocky to chunky broken fragments, as above.									
Total:		X		7.0	X		4.88	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:		0.0		
				0.0			0.0	Rec.Coal / Total Coal x 100 =			%	Total Log Depth:		0.0		
Comments:																





### Corehole Log

Date: Oct 31/09

Hole No: 09-06

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UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
16	20	51.5	52.8	1.3		1.15	Shale <del>Mudstone</del> : med brown lt-dk banded throughout, blocky, med hd w/ softer carb. bands, platy to shaly fissile in places,							82
						1.15				70	19.			
16	21	52.8	54.4	1.6		1.2	Shale <del>Mudstone</del> : med soft platy, fissile, as above, thin bentonite band (3cm) at 0.8 from top,			80				75
						1.2								
17	22	54.4	56.5	2.1		1.49	Shale <del>Mudstone</del> : med-dk brown, blocky to flaggy, fissile, <del>lt-dk brown</del> banded, med soft,			75				71
						1.49								
17	23	56.5	59.5	3.0		3.2	Shale <del>Mudstone</del> : blocky to flaggy, as above			75				62
						0.54								
						0.22	Siltstone: lt gray, blocky, hd, v. fs, silt.							
						2.44	Shale <del>Mudstone</del> : med-dk brown, blocky brown banded w/ carb. bands throughout, med soft w/ shaly fissile zones,			72				
18	24	59.5	61.8	2.3		2.1	Shale <del>Mudstone</del> : as above							87
						0.18								
						0.09	Bentonite Mudst: gray-brown, banded, soft,							
						1.83	Shale							
						0.27	<del>Mudstone</del> : dk brown, banded, blocky, shaly, med soft, brittle.			70				

Total:	X	10.3	0.0	X	9.14	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 31/09  
 Hole No: 09-06  
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UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
19	25	618	642	2.4		2.4								100
					0.2		Shale: brown banded med hd, shaly fissile, brittle							
					0.04		Sandstone: lt gray, blk blocky hd, frag, sharp contacts							
					2.16		Shale: blocky to flaggy, fissile, dk carbony bands towards base, med soft to soft							
20	26	642	655	1.3		1.3								100
					1.3		Shale: blocky to flaggy, as above							
20	27	655	678	2.3		2.1								91
					2.1		Shale: blocky to flaggy, as above; 5cm <del>cap</del> capstone play sandstone @ 1m from top; carbony mud bands throughout							
21	28	678	714	3.6		3.15								88
					1.0		Shale: blocky to flaggy, as above, brown banded, fissile							
					0.02		Benidomite: gray, soft, shaly							
					0.13		<del>Shale</del> Mudstone: dk brown, blocky to chunky, carbonaceous, shaly bands							
					2.0		Mudstone: dk brown w/ lt. bands, blocky to flaggy to chunky broken fragments, med hd w/ softer fissile zones, carbonaceous							

Total:	9.6	0.0	8.85	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Oct 31/09  
 Hole No: 09-06  
 Page: 10 of 36

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
22	29	71.4	74.0	2.6		2.2							85	
						2.2	Mudstone: med gray to dk brown, bedded, med hd w/ softer shaly beds, as above,			75	29			
23	30	74.0	76.3	2.3		2.17							94	
						2.07	Mudstone: as above,			85	45			
						0.1	Bentonite: gray, blocky to chunky, crushed fragments, soft & crumbly, clay.							
24	31	76.3	77.5	1.2		1.15							96	
						0.08	Bentonite: gray-brown, carbonaceous at base, soft, waxy.							
						0.76	Mudstone: dk brown, blocky to chunky broken fragment, med hd, carbonaceous.							
						0.11	Sandstone: lt gray-brown, blocky, f. gr, sharp contacts,							
						0.2	Siltstone: brown, blocky, fining upward, hd,							
24	32	77.5	80.5	3.0		3.1							100	
						1.04	Sandstone: lt gray-brown, blocky, hd, f. gr.							
						0.1	Siltstone: brown, blocky, hd, carbonaceous.							
						0.08	Sandstone: lt calc, med hd, bentonitic.							
						0.1	Carbonaceous Mudstone: chunky broken fragments, dull dk brown,							
Total:		X		9.1	X		8.62	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
				0.0			0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

F5.6

Comments:



### Corehole Log

Date: Oct 31/09  
 Hole No: 09-06  
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UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	No.	Joints	Bedding				
24	33				0.40		Siltstone: lt gray-brown, upper 1/2 is brown and slightly carbonaceous, fine grained, upward, blocky, hd,	1	50	70	100			
					0.41		Shaly Coal: dull black, blocky, slightly fissile, med hd, brittle,			70				78.3
					0.2		Sandstone: gray-brown w/ conky bands, hd, fine grained							
					0.11		Coal: blocky, hd, dull lustrous,			70				
					0.06		Bentonite: brown, slightly carbonaceous, soft, waxy,							79.3
					0.58		Coal: blocky, hd dull & bright band, clean, brittle, hackly cleats			70	80			79.9
25	33	90.5	83.5	3.0		2.95						26625	98	
					0.14		Coal: blocky to flaggy, as above, slightly honey at base,							80.0
					0.21		Mudstone: blocky, brown banded, lt brown bentonite clasts near top, hd,			75				
					0.08		Mudstone: blocky, hd, as above							
					0.46									
					0.55		Siltstone: lt gray-brown, blocky, banded, hd, stringer				70			
					0.43		Mudstone: med-dk brown, blocky, hd, quartzite veins, carbonaceous band at base			70	100			

Total:  $\frac{3.0}{0.0}$   $\frac{2.95}{0.0}$  Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

cmdst .41 0.41  
 ss .2 + .74 0.94  
 .46 + .11 0.57

sect 6



### Corehole Log

Date: **Oct 31/09**

Hole No: **09-06**

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UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units (___)					Recoverd		Description	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joint/Bedding				
					0.11		Siltstone: gray-brown, blocky, hd,						
					0.74		Sandstone: lt brown, blocky, hd, fine-med gr., fining upward,			100			81.8
					0.36		Barne: dull black blocky, hd, calcite veins & fracture fills, gradational contacts,		70		26626		82.2
					0.30		Bentonite: gray-lt brown, blocky, soft, waxy,						82.5
					0.12		Barne: dull, blocky, hd, as above.						83.1
26.34	83.5	86.5	3.0			2.9						97	
					0.2		Siltstone: lt gray-brown, banded, blocky, hd, sharp floor contact,						82.1
					0.18		Coal: blocky, dull & boney at top, dull w/ some shiny bands toward base, hd, hackly,				26627		82.9
					0.38		Boney Coal: blocky, hd, dull boney bands, gradational floor contact,						83.3
					0.25		Carbonaceous mudstone: dk brown, blocky, conky bands, hd, quartzite veins,			100			83.75
					0.12		Siltstone: brown, blocky, hd,			100			84.15
					0.21		Coal: blocky, dull banded w/ some shiny coal, dull & boney at base, gradational floor,			100			84.4

Total:	3.0	0.0	2.9	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Sect 5  
 bon e .12 + .13  
 C .18 + .38 + .21 + .82 + .38 + .3 + .14 + .18 + .34 = 3.19 SS 11 + 108 + 0.18  
 0.25 es Hst .23 + .13 + .26

Sect 6  
 Bentonite  
 Sect 5



### Corehole Log

Date: Oct 31/09

Hole No: 09-06

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UNITS: (___)	Lat. ____° / ____' / ____" N Long. ____° / ____' / ____" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units (___)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.23		Carbonaceous Siltstone: med-dk brown carb. gradational contacts, hd, calcite veins,				100			
					0.52		Coal: blocky, hd, dull & bright banded, <del>clean</del> top 20 cm boney w/ some mud stringers,		70		74			84.8 (right originally)
					0.13		Carbonaceous Siltstone: dk brown, blocky, hd, gradational contacts,				74			
					0.38		Coal: blocky, hd, dull & bright banded, boney at base.		71		74	26623		
27	35	86.5	89.5	3.0		3.0					Coal 1.5		100	
					0.03		Siltstone: brown, blocky hd, thin band,				silt 0.13			
					0.30		Coal: blocky hd, dull & bright banded, brittle, hackly breaks, clean,				silt 0.14			
											b.coal 0.4			
					0.11		Siltstone: dk brown, blocky, carbonaceous, gradational contacts,							86.1
					0.4		Boney Coal: blocky, hd, dull w/ few bright bands, gradational upper contact, sharp floor,							86.2
					0.1		<del>Bony</del> Sandstone: lt gray, blocky, hd, clayey matrix, sharp contacts,							86.3 (right originally)

Total:	3.0	0.0	3.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06

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UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.18		Boney Coal: blocky, hd, dull & bright banded,							
					0.08		Sandstone: brown, blocky, hd, f.g.							87.1
					0.34		Coal: blocky hd, dull & bright bands, mud clasts, & dull boney bands				26629			87.4
					0.09		Mudstone: dk brown, blocky, carbonaceous, hd,							
					0.18		Silty Mudstone: gray-dk brown, banded, carb mud & silt,	75		97				
					0.13		Bones: dull black, blocky, hd							
					0.07		Carbonaceous mudstone: dk brown blocky, hd, gradational,							
					0.21		Siltstone: lt gray, blocky, hd, gray & brown banded, well cemented,							88.5
					0.08		Carb. Siltstone: gradational contact, blocky, hd, dk brown-blk,					sfts	1.06	
					0.25		Coal: blocky, hd, dull & bright banded, calcite veins & flakes on fractures/cleats,	75		97		c sfts	0.08	
												mat	0.49	
												bone	0.27	
					0.45		Siltstone: gray-brown, blocky, hd, coaly bands,			35				
2936		89.5	90.8	1.3		1.3								100
					0.12		Coal: blocky, hd, dull & bright bands, gradational floor.							

Sect 5

Sect 4

Total:  1.3  1.3 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0  0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



### Corehole Log

Date: Nov 1/09

Hole No: 09-06

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UNITS: ( )	Lat. ° / ' / " N	Long. ° / ' / " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )				Recoverd		Description				Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding		(%)		(%)	(m)
29	36				0.42		Siltstone: gray-brown, blocky, hd, banded, upper 15 cm carbonaceous calcite veins								
					0.49		Silty Mudstone: med-dk brown, blocky, hd, carbonaceous bands and silt clasts,								
					0.27		Bone: dull black, blocky, hd,								
29	37	92.8	92.5	1.7		1.56								92	89.9
					0.06		Coal: blocky, hd, dull								
					0.05		Mudstone: dk brown, med soft					26630			89.6
					0.13		Coal: blocky to chunky broken fragments, dull & bright bands, bony contacts,								90.1
					0.46		Carbonaceous Mud/Bone: dk brown - black, blocky, hd, dull <del>with bone</del> some w/ some brown mud bands								90.6
					0.07		Bentonite: brown, blocky, soft & waxy.								90.7
					0.33		Coal: blocky, hd, dull w/ some bright bands, hackly fractures					26631			90.8
					0.25		Siltstone: brown, blocky, hd, w/ soft mud band in middle,								
					0.21		Carbonaceous Mudstone: dk brown, blocky, hd, dull, silty at top, contact,					silt 0.54 mudst 0.182 bone 0.02			
30	38	92.5	92.4	0.9		0.42									100
					0.02		Bone:								
					0.2		Siltstone: gray, blocky, hd, banded								
Total:	✕			2.6	0.0	2.48	0.0	Rec. Total / Cored Total x 100 =			%	Total Drill Depth:		0.0	
				✕						Rec. Coal / Total Coal x 100 =			%	Total Log Depth:	

Sheet 4

Comments:

b .07 + .09 + .06 + .14     0.38     silt .21 + .145 + .142 + .125 + .12 + .09 + .14 + .109     1.85  
 cost .105 +     cslst .105 +     mds .49 + .105 + .21     0.8  
 0.75





### Corehole Log

Date: Nov 1/09

Hole No: 09-06

Page: 16 of 36

UNITS: ( )		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer	
UTM NAD83		Easting:		Northing:		Elevation:						
Cored Interval - Units ( )		Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	No.	Joints	Bedding		
38	38				0.33		Carb. Mudstone: dk brown blocky, hd, silty fining down-ward.					
					0.04		Siltstone: gray-brown, blocky, hd, banded.					
					0.28		Carbonaceous Mudstone: dk brown, blocky, hd, thin thin coal band 8 cm from base above.					
					<del>0.28</del>	1.86						
39	934	95.5	2.1			1.86					89	
					0.16		Bone: dull black, blocky, hd, few shiny coal bands.					93.7
					0.09		Bentonite: gray-brown, blocky, med soft, waxy, slightly carb-onaceous.				26632	94
					0.23		Bone: blocky to flappy fragments, hd, dull.					94.6
					0.14		Siltstone: gray, blocky, banded, v. hd, well cemented.					94.6
					0.24		Carb. Mudstone/Bone: dk brown-blk, blocky, med hd-hd.	70				95.5
					0.43		Bone: dk brown-black, dull, hd, blocky.					95.6
					0.09		Siltstone: dk brown, blocky, hd, well cemented.				base 0.48	96.0
					0.05		Bone: as above.				slt. 0.09	
					0.08		Bentonite/mud: dk brown, blocky, med hd, waxy, slightly carbonaceous soft.				b 0.08	
											coal 0.35	
											c 0.04	
											26632	
Total:		2.1		1.86		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0

93.6

94.6 Sect 4

95.6

96.0

Comments:



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 17 of 36

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____ Northing: _____ Elevation: _____						

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.35		Boney coal: blocky, hd, dull w/ some shiny bands, <del>thin</del> brown mudstone 5cm above base, 2cm.							
3	4	955	963	0.8		0.67							83	
					0.04		Coal - bright banded, broken							96.4
					0.14		Bentonite: grey, crumbly, blocky							
					0.04		Bone: hard, blocky							
					0.24		Carb. mudstone: hard, blocky, some banding, dk brown-grey			64				
					0.21		Mudst: med. dk grey, hd, blocky massive			b 0.14 bone 0.04 Coal 0.24 mudst 0.28				
4		963	985	2.2		2.05				51 0.12			93	
					0.03		Mudst: as above							
					0.09		Coal: blocky, hd, some broken, dull with bright band							
					0.12		Siltst: dk grey-brown, hd, blocky,			74				97.1
					0.09		Bone: dull black, blocky, v. hd							97.2
					0.45		Coal: dull with bright bands, hard, blocky			76		26634		97.4
					0.17		Carb mudst: mushy + pulverized							97.5
					0.12		Mudst: Carb siltstone: dk grey brown, hard, blocky							97.2
Total:					3.0	2.72	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:

Leaf 9



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 18 of 36

UNITS: (\_\_\_) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units (___)					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.05		Coal: bright, hd, blocky				cont 0.17			
					0.13		slt: dk grey brown, hd, blocky calcite veins, interesting calcite structure (looks like blabas)				slt 0.12 C 0.27 slt 0.29 bone 0.07 b 0.15			
					0.07		<del>Coal</del> Bone: black, hard, blocky							
					0.08		Bentonite: carbonaceous, beige, soft							
					0.09		Coal: dull, some bright, blocky, powdery at top							
					0.16		Siltstone: med. grey, hard, blocky, gtz + calcite veins	74			100		98.2 98.3	
					0.13		Coal: hard, blocky, dull, some bright							
					0.07		Clay: med grey, soft plastic, sandy						98.7	
					0.2		Coal: dull with minor bright, hard, blocky						98.9 98.9	
42	98.5	99.1	0.6	0.5	0.57								99.1	
					0.5		Carb mudstone: hard, blocky, dk grey						95	
					0.10		<del>Coal</del> Bone: hard, bright + dull				cmd 0.77 bone 0.18 c 0.11			
							Carb mudstone: dk grey - black, hard, blocky							

Total:  $\frac{0.6}{0.0}$   $\frac{6.57}{0.0}$  Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

sltst 1.85 + .12 + .13 + .16 2.26  
 sltst 0.08 + .12 + 0.12  
 mdst 0.75 + .03 0.78

Sect 4  
 Box 411  
 + 13cm Co.  
 7cm clay  
 98.9  
 98.9  
 99.1  
 13cm + 2  
 Sect 3



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 19 of 36

UNITS: ( )	Lat. ____° / ____' / ____" N Long. ____° / ____' / ____" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
32	43	99.1	101.1	2.0		1.04								52
					0.08		Bone: black, hard, blocky							
					0.12		Carb mudstone: dk grey, hard, blocky							
					0.11		Coal: black, hard, blocky							
					0.15		Carb mudstone: black-dk grey, sd, blocky	20						
					0.25		Coal: black, blocky, hard.						99.8	
					0.56							2663.6		100.1
					0.12		Carb mdat: black, hard, blocky							
					0.10		Coal: v. broken							
					0.11		Carb mdat: black, hard blocky							
44	101.1	101.85	0.75		0.70						and 0.53			
					0.14		Carb mudstone: dk grey-black, m hard, blocky, bright coal, bond near base				C 0.1	97		
					0.34		Mudstone?: colour different: brown, v. hard, blocky				mdo 0.83			
					0.22		Mdat: dk grey mixed with brown, hard, blocky							
45	101.1	101.5	0.4		2.35		Mdat: as above with a <sup>gibber</sup> talate vein rich zone @ 0.16-0.2						89	
					0.27									
					0.16		Carb mdat: dk grey, v. hard blocky	70						

Total:	3.4	0.0	3.05	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Sheet 3



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 20 of 36

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample CI	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.16		Coal: hard, blocky						101.2	
					0.13		Bone: hard, black, blocky				26637		101.8	
					0.16		Carb mdst: pulverized at top, black, several coaly bands at base						102.0	
					0.53		Mudstone: brown, some carb zones, v hard, blocky some calcite veins	78			cbm 0.62 nds 0.83 bone 0.3 b 0.04 slts 0.24 c 0.06			
					0.18		Bone: hard, black, blocky							
					0.24		Clay: med brown, waxy, sticky, plastic							
					0.2		Carb mdst: black, hard, coaly at base, blocky							
					0.08		Siltstone: med grey brown, blocky, hard							
					0.06		Coal: bright							
					0.12		Bone: black, hard, blocky							
					0.16		Siltstone: beige grey, fine laminations	75					104.3 104.5	
33	46	1045	1061	2.6	0.26	1.27	Carbonaceous mdst: hard, broken, some blocky, some calcite veins					79		
					0.3		Mudstone: dk grey, hard blocky, a 0.03 bentonitic mud band							

Sheet 3

Total:  1.6  0.0  1.27  0.0  
 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



# Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 21 of 36

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.27		Bone: hard, blocky						104.5	
					0.2		Coal: med hard, blocky some hard, some crumbly, some!				26635		104.9	
					0.14		Carb mdst: black, hard, blocky						105.5	
					0.04		Coal: crumbly						106	
					0.11		Carb mdst: black, broken						106.6	
31	47	106.0	107.3	1.2		0.96						80		
					0.13		Coal: med hard, broken, blocky, dull						107.1	
					0.48		Mdst: dk grey, blocky, hard, massive						107.3	
					0.15		Bone: black, hard, blocky						107.3	
					0.08		Carb mdst: dk grey, hard blocky	73			bone 0.21 cmd 0.08 C 0.13		107.9	
					0.06		Bone: bl, hard, blocky						107.7	
					0.13		Coal: bright				26635		107.9	
		107.3	108.0	0.7		0.6	Mdst: brownish grey, hard, med blocky, qtz & calcite veins, soft sed structure	48			87	86	108.3	
		108.0	110.0	2.0		1.57							107.9	
					0.13		Mdst: as above				mdst 0.94 cmd 0.35 C 0.06 b 0.13	79	107.9	
					0.25		Carb Sltst / Mdst: lt-dk grey, hard, blocky, coaly bands						108.3	
Total:		3A		3.13		Rec. Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
		0.0		0.0		Rec. Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

Comments:

b (0.4) + C .2 + .11 + .25 + .1 + .14 + .06 + .2 + .04 1.12  
 cmd .5 + .12 + .15 + .12 + .11 + .14 + .16 + .16 + .2 + .26 + .14 + .11 2.17

sect 3  
sect 2



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 22 of 36

UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,			No.	Joints	Bedding				
					0.06		Coal: bright									
					0.21 <del>0.25</del>		Mdat: as above									
					0.13		Bentonite clay: very soft, carbonaceous									
					0.1		Carb mdat: dk grey, blocky sand					75				
					0.18		Bone: black, hd, blocky						26640		106.9	109.1
					0.20		Carb mdat: dk grey, hd, blocky									
					0.04		Mdat									
					0.27		Carb mdat with some coal bands + possibly some bone, half mdat, some blocky									
35	48	110.0	110.5	0.5	0.22		Carb mdat: as above broken								44	
					0.22											110.0
49		110.5	111.0	0.5	0.5		Mdat: med-dk brown grey, hd, blocky, minor carb					72			100	
																110.7
50		111.0	112.0	1.0	0.65										65	
					0.39		Siltstone: hard, blocky, beige brown, minor carb									110.9
					0.15		Carb mdat: v broken									
					0.06		Clay: dark beige, v. soft									
					0.85		Coal: dull									111.0
																111.1
Total:				2.0		1.37	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:		0.0			
				0.0		0.0	Rec.Coal / Total Coal x 100 =			%	Total Log Depth:		0.0			

Sect 2

Sect 1

C 0.13 + 113T 0.06 + 0.32  
 mdat 0.41 + .6 + .13 + .21 + .04 + .5 1.89  
 bone 0.15 + ...

Comments:



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06  
 Page: 23 of 36

UNITS: ( ) Lat. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " N Long. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
	51	112.0	113.2	1.2		1.2				76		100		
					0.24		Mdsl: dk brown, hd, blocky <i>some calcite veins</i>							
					0.74		Carb mdsl: black, some bright bands						111.7	
					0.24		Bone: hard, blocky			77	2664		112.0	
					0.12		Bea tonite: dark beige, soft							
					0.13		Carb mdsl: dk grey, hard, blocky						112.9	
					0.15		Siltstone: gray-brown, blocky, v hd							
					0.66		Bone: hard, blocky			69			113.05	
36	52	113.2	115.5	2.3		2.30						100		
					0.97		Carb mdsl: dk grey, blocky, hard, some silty bands, some bea tonite bands			70				
					0.05		Bea tonite: dk grey, soft							
					0.36		Carb mdsl: as above							
					0.15		Bone: dk, hard, blocky							
					0.87		Carb mdsl: dk grey, hard, blocky							
					0.25		Bone: blocky, hd, dull dk gray w/ lt brown silt bands						113.5 (113.6)	
					0.06		Mudstone: brown, soft, clayey				2664		113.0	
					0.09		Bone: blocky to flaky, dull, hd						114.0	
					0.17		Siltstone: dk gray-brown, blocky, v hd well indurated			55			114.2 (114.5)	
Total:		3.5		3.6		Rec. Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
		0.0		0.0		Rec. Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

Comments:

2111

113.6

114.5

114.2





### Corehole Log

Date: Nov 1 / 09  
 Hole No: 09-06  
 Page: 24 of 36

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:			

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.44		Carbonaceous sandstone & dk brown blocky med soft, wavy thin 4cm <del>and</del> band in middle, 8cm above base, concretion							
					0.47		Bony coal: blocky, hd dull w/ some shiny bright bands			75				115.0
					0.23		Siltstone: gray-brown, blocky hd, carb. mud bands in upper 1/2				100			115.6
					0.69		Bony Coal: blocky, hd dull banded, dk brown mud bands and clasts,			72				115.8
37	53	1155	1170	2.5		1.35						2664390		
					0.15		Siltstone: gray-dk brown blocky hd bottom contact gradational							116.15
					0.42		Bony Coal: blocky, hd dull & bright banded, lt gray silt clasts and bands,							116.3
					0.22		Bone: blocky, dk brown, hd, dull							116.7
					0.23		Carbonaceous Siltstone: gray-dk brown, carbonaceous banded, blocky, hd,							117.2
					0.18		Coal: blocky, hd dull banded shiny broken fractures, blocky clasts			30				117.6
					0.15		Siltstone: gray-brown blocky, hd, upper contact carb. banded and gradational							117.6

Total:	<del>1.5</del>	1.5	<del>1.35</del>	1.35	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0		0.0		Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

sheet 1



### Corehole Log

Date: Nov 1/09  
 Hole No: 09-06

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UNITS: ( )		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer		
UTM NAD83		Easting:		Northing:		Elevation:							
Cored Interval - Units ( )		Recoverd		Description				Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	No.	Joints	Bedding			
37	54	117.	119.0	2.0		1.0							50
					0.47		Carbonaceous Siltstone: gray-dk brown blocky, hd silt bands w/some softer shaly zones						117.9
					0.43		Bony Coal: blocky, hd, dull banded, dull bony layers throughout,						118.0
					0.1		Bone: blocky, v hd, dk brown, dull,				26644		
38	55	119.	119.5	0.5		0.54							100
					0.54		Bone: blocky to chunky, crushed, upper 12cm crushed & muddy, dk brown-black, silt bands, near base,						118.6
38	56	119.5	120.8	1.3		1.35							100
					0.16		Siltstone: gray-brown, blocky, hd,						
					0.59		Coal: blocky to chunky, hd, dull & shiny bands, brittle, hackly fractures, bony gradual floor contact,				26645		119.0
					0.26		Carbonaceous Mudstone: dk brown blocky to chunky broken fragments, med soft & waxy.						119.6
					0.36		Siltstone: gray-brown blocky, hd to med soft, silt and med siltier						
39	57	120.8	123.4	2.6		2.6							100
					1.47		Mudstone: silty, med brown, banded, hd, blocky,	1	35	75	54		
Total:		6.4		5.49		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0	
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0	

Comments:

C 1.05 + .47 + .69 + .12 + .18 + .57 (2.38) sets 1.39 + 1.15 + 1.17 + 1.23 + 1.15 + 1.15 + 1.16 (1.04)  
 bone 1.26 + .06 + .25 + 1.09 + .22 + 1.54 (1.5) Cnds 1.15 + .24 + .12 + .44 + (0.95)  
 b 1.06 + .12 + (0.18)



### Corehole Log

Date: Nov 1, 09

Hole No: 09-06

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UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
39	57				0.18		Sandstone: gray blocky, med - fine gr, med soft							
					0.17		Siltstone: gray-brown blocky to chunky broken fragments, med hd							
					0.78		Mudstone: med brown, blocky, med hd, minor banding, vertical fractures				80			
39	58	123.4	125.8	2.1		1.65							78	
					0.84		Mudstone: gray-brown blocky, banded, hd, shaly & slightly fissile in top 50cm				100			
					0.81		Mudstone: gray-brown blocky, hd, faint banding throughout				100			
40	59	125.5	128.1	2.6		2.56							98	
					2.56		Mudstone: gray-brown, blocky as above w/ <del>clay bands</del> , slightly carbonaceous in bottom 40cm				70	63		
41	60	128.1	131	2.9		2.6								
					2.6		Mudstone: as above, blocky to chunky broken fragments, multiple near vertical fractures	45	70	40				
41	61	131	133	2.0		1.9							95	
					0.62		Silty mudstone: gray-lt brown blocky to chunky broken fragments, v. hd, siltstone bands				32			
					1.28		Mudstone: gray-brown, slightly carbonaceous, blocky to chunky				40			
Total:		X		9.6	X		8.71	Rec. Total / Cored Total x 100 = 90.7%			Total Drill Depth:		0.0	
				0.0			0.0	Rec. Coal / Total Coal x 100 =			Total Log Depth:		0.0	

Comments:



### Corehole Log

Date: Nov 2/09  
 Hole No: 09-06  
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UNITS: ( )	Lat. ____ ° / ____ ' / ____ " N Long. ____ ° / ____ ' / ____ " W					DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:						

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
42	62	133	134.3	1.3		1.1						85	
					0.15		Mudstone: brown, blocky to chunky broken fragments, <del>hd</del> , massive.						
					0.95		Siltstone: gray-brown, blocky to chunky broken fragments, hd, f.g. sandstone bands in lower 1/2, calcite and quartz, fracture fills,						
42	63	134.3	135.75	1.45		1.5						100	
					1.5		Siltstone: blocky hd, gray to dk brown, f.g. sand lenses, and banded zones, pyrite nodules,	2	30	75	60		
43	64	135.75	137.5	1.75		1.37						78	
					0.16		Bentonitic Mud: brown, v soft oozy, wet, sticky, milled by bit (core loss)						
					0.73		Silty Mudstone: gray-brown, blocky to hd, interbanded silt and mud, dipping downward,				61		
					0.07		Bentonite: brown, soft, waxy.						
					0.41		Siltstone: gray-brown, banded, blocky, hd, slightly fissile.	25	70	73			
44	65	137.5	138.6	1.1		1.1						100	
					1.1		Siltstone: gray-brown, blocky, hd, as above.				33		
44	67	138.6	140.05	1.45	0.1	1.37						94	
					0.05		Bentonite: lt gray-cream, soft, waxy, <del>clayey</del>						
					0.46		Siltstone: as above.						
Total:				7.05	0.0	6.44	0.0	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0
								Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0

Comments:



### Corehole Log

Date: Nov 2/09  
 Hole No: 09-06  
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UNITS: ( ) Lat.    ° /    ' /    " N Long.    ° /    ' /    " W  
 UTM NAD83 Easting:     Northing:     Elevation:     DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.73		Siltstone: grey-brown, banded, blocky, hard, as above some clay (soft) bands			66				
45	68	140.05	140.8	0.75		0.54	Mudstone: grey-brown, not hard, crumbly						72	
					0.54		Mudstone: grey-brown, not hard, crumbly, some banding							
69	140.8	141.55	1.05		0.55		Mudstone: dark grey, hard, blocky but breaks in 2nd half						52	
					0.55									
70	141.85	142.8	0.95		0.66		Mudst: dk grey, hard, v. broken						69	
					0.10									
					0.04		Clay: light grey, v. soft, silty, plastic							
					0.52		Siltstone: dk grey brown, v hard, blocky,	34	65	79				
71	142.8	145.4	2.6		2.46		Mudstone: dk grey, <sup>brown</sup> hard, blocky, some banding, some silty layers brown at top. dk grey clay at 2.2	26	76	39			95	
					2.46									
72	145.4	147.4	2.0		1.83		Mudst: dk grey - dk brown grey hard, blocky. 0.03 <sup>reddish</sup> light grey clay at 0.72	40	71	58 <sup>58</sup>			92	
					1.83									
					0.3		Carb mudst: highly broken v dk grey brown							

Total:	<del>   </del>	7.34	<del>   </del>	6.04	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0		0.0		Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 2/09

Hole No: 09f06

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UNITS: (___)		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer						
UTM NAD83		Easting:		Northing:		Elevation:											
Cored Interval - Units (...)					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)		
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding					
47	73	1474	1500	2.6		1.64	Mudstone: dk gray brown, hard, blocky for the most part but bottom 0.37 is broken, some silty layers, a clay layer at 0.98 <del>bottom</del> no visible banding			36	66	—			63		
					0.26	1.64											
48	74	1500	1512	1.2		1.26	Mudstone: as above; coaly bands & silt clasts at base, Bentonite: brown, soft, waxy,			1	40	60	70		100		
					1.0	1.26											
					0.05		Carbonaceous Mud/Bentonite, gradational contact, dull black, soft,										
					0.04												
					0.27		Coal: blocky to flappy, hd, brittle, shiny bedded, fissile at top,							26646		149.3	
49	75	1513	1525	1.3		1.9	Bone: blocky, hd, dull bedded, gradational contact,								100		
					0.1	1.9										149.7	
					0.21		Sandstone: gray-dk brown, top 2-3 cm carbonaceous, blocky, hd, fiss.; thin bentonitic clay band & lam at base,										
					0.2		Carbonaceous Siltstone/Bone dk brown, blocky, hd, dull,					65					
					0.3		Brown Coal: upper 1/2 dull black, hd, lower dull & bright bedded,							26647		150.2	
					0.07		Bentonitic Clay: brown, soft, waxy,									150.5	
Total:		5.1		4.9		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0				0.0	
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0				0.0	

Sheet 3

< 1.27 + .3 + .09 (0.39) b .107 + (0.07)  
bone 11 + .2 + .12 (0.42) mudst .09 + .39 (0.48)



### Corehole Log

Date: Nov 2/09

Hole No: 09-06

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UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer		
UTM NAD83		Easting:		Northing:		Elevation:							
Cored Interval - Units ( )		Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	No.	Joints	Bedding			
					0.09		Mudstone: dk brown blocky, slightly conky, med hd, wavy.						
					0.09		Coal: dull, gray.						150.9
					0.06		Sandstone: gray, blocky, f.g.				26648		
					0.2		Bone: dull black, blocky, hd, thin bentonite stringer,						151.1
					0.09		Siltstone: gray, hd, v.f.s.	SH	0.19				151.3
					0.12		Bone: dull black, hd, as above	bone	0.12				
					0.12			net	0.39				
					0.39		Silty Mudstone: dk gray, blocky, med hd, fining downwards, bentonitic at base.						151.3
49	76	152.5	155.5	3.0		2.84						95	
					0.12		Siltstone: gray, blocky, carbaceous, hd.						151.8
					0.28		Bone: dull black, blocky, hd, calcite veins,			65	26649		152.1
					0.17		Carbonaceous Mudstone: dk brown-black, blocky, banded,						
					0.12		Mudstone brown, blocky, silty, hd						152.4
					0.34		Boney Coal: dull black w/ some shiny bands, blocky, hd, gradational at base.				26650		152.7
					0.08		Carbonaceous Siltstone: dk gray-black, coal interbedded w/ silt layers						152.7
					0.08		Siltstone: gray, blocky, hd, f.g.	SSHs	0.48				
					0.08			Silt	0.27				
					0.4		Carbonaceous Siltstone/Bone: dk gray-black, blocky: dk brown silt and coal interbedded (50/50)						
Total:		3.0		2.84		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0	
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0	

sect 3

sect 2

152.5-152.7

Comments:



### Corehole Log

Date: Nov 2/09  
 Hole No: 09-06  
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UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.19		Siltstone: gray w/ coal bands throughout, carbonaceous, blocky, hd,						153.5	
					0.5		Bone: dull black, blocky, hd, silt bands, 1			55	26651		153.9	
					0.1		Bentonite: lt gray, blocky, soft, waxy, rocky blebs,						154.0	
					0.1		Bone: dull black, hd,						154.3	
					0.3		Bentonite: blocky to chunky, broken, gray, soft, waxy, rocky wisps and small blebs in bottom 8 cm.						154.5	
					0.06		Bone: as above.					98	154.5	
5077	1555	1585	2.0		2.95						26652		154.8	
					0.27		Bone: as above, blocky, hd, dull banded.						154.8	
					0.21		Siltstone: gray-brown, faint banding, blocky, hd.						155.1	
					0.32		<del>Bone</del> Bone: dk brown-black mud bands throughout, dull blocky			65			155.4	
					0.12		Bony Coal: blocky, hd, dull & shiny banded				bone 0.37 b coal 0.12 c silt 0.11 c 0.1816 b 0.03		155.4	
					0.11		Coal Siltstone: dk brown - brown, gradational rocky contacts, blocky,				26653		155.6	
					0.61		Coal: blocky, hd, brittle, bright banded, clean.			63	100		155.6	
					0.03		Bentonite: gray, soft, waxy.							
					0.37		Coal: as above, clean							
Total:					3.0	2.95	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:  
 Silt .12 + .08 + .19 + .21 + .17 + .02 0.79  
 Bone .28 + .15 + .11 + .06 + .21 + .32 + .05 1.52  
 C .34 + .12 + .61 + .37 + .24 +  
 B .1 + .3 + .03 + .26 0.6





# Corehole Log

Date: Nov 2/09  
 Hole No: 09-06  
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UNITS: (\_\_\_\_) Lat. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " N Long. \_\_\_\_ ° / \_\_\_\_ ' / \_\_\_\_ " W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units (L)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.05		Bone: dull black, blocky, gradational contact.							156.6
					0.17		Siltstone: dk brown, blocky, carbonaceous.							
					0.24		Coal: blocky, hd, dull w/ some bright bands,			65				157.0
					0.02		Parting: gray silt.					26657		
					0.23		Coal: as above, shaly at base.							157.5
					0.26		Bentonite: gray, blocky, soft, waxy.							157.6
5172	1585	1604	1.9			1.75							92	157.7
					0.34		Siltstone: gray, blocky, hd, massive.				100			157.9
					0.35		Coal: blocky, dull & bright banded, hackly, brittle.					26655		157.8
					0.68		Coal: blocky to chunky, hd, bright, clean, turning slightly boney at base.			60				158.6
					0.26		Shaly Coal: blocky to chunky crushed fragments, soft & fissile, crumbly, dull.							158.9
					0.25		Mudstone: med gray, blocky, hd, broken chunky fragments at base.			50				158.9
5179	1604	1620	1.6			1.7							100	159.3
					0.33		Siltstone: gray-brown blocky, hd, med clast & coaly bands at base.				100			159.8
					0.17		Bone: blocky, hd, dull banded.					mdt 0.25 st 0.38 bone 0.17 b 0.11		
					0.08		Tuff: buff, med soft.							
					0.14		Coaly Mudstone: dull dk gray, blocky, shaly fissile breaks.			62		cnts 0.24		
					0.03		Tuff: as above, lt gray.							

Total:  35  3.45 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0  0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

Section 2

Section 1



# Corehole Log

Date: Nov 2/09

Hole No: 09-06

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UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer	
UTM NAD83		Easting:		Northing:		Elevation:						
Cored Interval - Units ( )		Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding		
					0.05		Carb. Mudstone: as above					
					0.05		Siltstone: lt brown, blocky, hd.					
					0.05		Carb Mudstone: as above, gradational contact,					
					0.53		Coal: blocky, dull bonded, thin gray mud bands throughout, shaly at base,					160.4
					0.27		Poney Coal: blocky, hd, dull black w/ few shiny bands,				36656	
52.80	112.10	163.5	1.5	1.32	0.11		Mudstone: gray, chunky broken fragments					88
					0.38		Siltstone: lt gray, blocky, hd,				100	
					0.05		Tuff: lt gray-buff, med soft,					
					0.12		Carb. Siltstone dk gray, banded, blocky, dull					
					0.08		Bentonite/Mud: lt gray-dk brown, coaly bands & fragments					
					0.23		Carb Siltstone: med gray, blocky, hd, coaly plant remains,					
53					0.35		Carb Siltstone as above					
53.81	113.5	166.3	2.8	2.8	0.91		Siltstone: lt gray-brown, blocky hd, massive,				100	100
					0.14		Bentonite: gray, blocky, soft, waxy,					
					0.30		Bentonitic Siltstone: gray-brown, blocky, waxy, gradational,				100	
Total:				4.3		4.12	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:		0.0	
				0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0	

Comments:

st 0.31 + 0.33 + 0.05 = 0.69  
 c 1.25 + 1.68 + 1.26 + 1.53 + 1.27 = 1.99  
 emd st 0.14 + 0.05 + 0.05 = 0.24



### Corehole Log

Date: **Nov 2/09**  
 Hole No: **09-06**  
 Page: **34** of **36**

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.91		Siltstone: gray, blocky, bentonitic in lower 1/2, coaly plant fragments near top.							
					0.16		Carb. Siltstone: dk gray, blocky, dull, hd, gradational contact							
					0.38		Boney Coal: top 20 cm is dull w/ white clay/hull bands, brighter towards base							165.3
54	82	166.3	169.3	3.0		2.83							94	
					0.21		Coal: blocky, hd, dull & shiny banded, gradational floor				26657			
					0.04		Bone: dull black, blocky, gradational floor contact,							165.9
					0.06		Bentonite: med-dk brown, soft, slightly conky contacts,							
					0.21		Boney Coal: blocky to chunky, hd, dull banded, gradational at base							
					0.21		Bentonitic Mud: dk brown, blocky, soft, sticky, wet,							
					0.15		Carb Mudstone: dk brown, blocky, soft, clayey,							166.5
					0.18		Coal: blocky, hd, dull & bright bands, clean,				26658			166.7
					0.17		Carb Mudstone: dk brown-blk, blocky to chunky broken fragments, dull, waxy, med soft							
					0.24		Mudstone: gray-brown, blocky, med hd, massive,							
					0.40		Siltstone: gray-brown, fine laminations, blocky, hd,							

Below Lower

Total:	3.0	0.0	2.83	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 2/09  
 Hole No: 09-06  
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UNITS: (\_\_\_\_) Lat. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" N Long. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.96		Sandstone: g. conglomeritic; med-lt gray, blocky, granule to pebble sized silt and mud clasts throughout,							
55	83	169.3	172.3	3.0		2.9								
					0.86		Siltstone: gray, blocky, hd, massive,							
					0.57		Siltstone: as above w/ some conglomeritic granules,				100			
					1.0		Sandstone: conglomeritic; gray f.g. silt matrix w/ light colored silt & mud granules and pebbles,				100			
					0.47		Conglomeritic Sandstone: as above				47			
56	84	172.3	175.3	3.0		3.1								
					0.32		Sandstone: conglomeritic, as above,							
					0.18		Siltstone: lt brown, blocky, hd,							
					0.87		Conglomeritic Sandstone: as above,							
					0.52		Sandstone: brown, blocky, f.g. w/ white-cream granules,							
					0.45		Conglomerate: brown silty matrix w/ pebble to cobblesized clasts, blocky, hd.							
					0.26		Siltstone (?): white, v. hd metamorphic siltstone (granular texture)							
					0.45		Conglomeritic Sandstone: as above,				100			
					0.15		Carb. Mudstone: dk brown-black, blocky, hd,							

Total:	6.0	6.0	0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: **Nov 2/09**

Hole No: **09-06**

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UNITS: ( )	Lat. ____ ° / ____ ' / ____ " N Long. ____ ° / ____ ' / ____ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
5785		175.3	178.3	3.0		3.0								600
					0.26		Carb. Mudstone/ Bone: dk brown w/ mud clests at top and dull and lamy at base			55				
					1.1		Bentonite: lt. brown - cream colored, v. soft, sticky, waxy				100			
					0.4		Sandstone: med-dk gray-brown, blocky, hd, conky upper contact,				600			
					0.08		Bone: dull black, blocky,							
					0.2		Bentonitic Mudstone: med-dk brown, carbonaceous, slightly							
					0.08		Bone: dull black							
					0.28		Sandstone: gray-brown, blocky, med hd, med-f gr.				100			
					0.06		Coal: dull, blocky,							
					0.94		Sandstone: lt gray, blocky to chunky, broken at base, hd, silty bands, v. f gr.			70	27			

Total:	<del>3.0</del>	3.0	<del>0.0</del>	0.0	Rec.Total / Cored Total x 100 = $158.77 / 172.6 = 92$ %	Total Drill Depth: <b>178.3</b> 0.0
					Rec.Coal / Total Coal x 100 = %	Total Log Depth: 0.0

Comments:



### Corehole Log

Date: Nov 4  
 Hole No: 09-03  
 Page: 1 of 28

UNITS: ( )	Lat. ____° / ____' / ____" N Long. ____° / ____' / ____" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____ Northing: _____ Elevation: _____						

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding					
1	1	6.75	7.25	0.50	2	0.75	Broken rubble: hd gray siltstone, & coal, chunky broken fragments,						100		
						0.55	Mudstone: dk brown, blocky to chunky broken fragments, soft, weathered,								
1	2	7.25	12.00	4.75		1.5							58		
						1.5	Mudstone: as above, broken chunky fragments (coal loss).								
2	4	9.85	12.8	2.95		2.4							81		
						0.1	Mudstone: as above, broken fragments,			75					
						2.3	Shale: gray-brown, blocky to flraggy, fissile, sandily broken at base.			75	46			10.3	
3	5	12.8	14.5	1.7		1.52							89		
						1.52	Shale: as above, med hd, fissile.			75	26				
3	6	14.5	17.1	2.6		2.2							85		
						2.2	Shale: blocky to chunky broken fragments, brown-dk brown, bottom 60 cm carbonaceous.			75	45				
4	7	17.1	19.8	2.7		1.3							48		
						1.3	Shale: as above, bottom 50 cm broken fragments (core loss)								
4	8	19.8	24.5	4.7		1.22							71.8		
						0.58	Shale: as above,								
						0.24	Carbonaceous Shale: dk brown, med soft blocky massive.								
Total:		14.75		11.89				Rec. Total / Cored Total x 100 =		%		Total Drill Depth:		0.0	
		0.0		0.0				Rec. Coal / Total Coal x 100 =		%		Total Log Depth:		0.0	

Comments: \_\_\_\_\_

3 b10

3 b11



### Corehole Log

Date: **Nov 4/09**  
 Hole No: **09-03**  
 Page: **2** of **28**

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____

Cored Interval - Units ( )					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.</small>	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
5	8				0.4		Shale: brown blocky to chunky, as above.							
5	9	21.5	22.5	20		0.7						485		369
					0.3		Shale: as above,							215
					0.83		Bentonite lt gray-brown, blocky, soft, waxy, carb. bands at top.							
					0.06		Carb. Mudstone: dk brown, soft shaly.							
					0.06		Bentonite: as above.							
					0.11		Mudstone: as above, carb.							
					0.11		Siltstone: <sup>med-</sup> gray, blocky, hd,							368
5	10	23.5	26.45	24.5		1.08								36.6
					0.08		Carb. Mudstone: dk brown broken crushed fragments, muddy							
					0.13		Siltstone: gray, blocky, carb. bands at top, hd							
					0.09		Bentonite: gray-brown, blocky, soft waxy, carb. blebs							
					0.35		Siltstone: dk gray, blocky, hd, carbonaceous							
					0.43		Siltstone: carbonaceous, as above,							
5	11	26.45	28.6	21.5		0.2								9.3
					0.2		Siltstone: dk gray, broken chunky fragments, (core loss)							
6	12	28.6	29.6	1.0		0.43								43
							Siltstone: as above, broken chunky fragments.							
6	13	29.6	31.0	1.4		1.2								85.7
					0.63		Siltstone: as above, w/ quartzite veins & fracture fills				21			
					0.10		Siltstone: brown, blocky, hd							

Total:	<del>X</del>	9.5 0.0	<del>X</del>	3.88 0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 4/09

Hole No: 09-03

Page: 3 of 28

UNITS: (___)	Lat. ____° / ____' / ____" N Long. ____° / ____' / ____" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units (..)					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,</small>	Orientation (deg TCA)			RQD (%)	Sample CI	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.18		Siltstone: dk gray-brown, blocky, hd,							
					0.05		Bentonite: med-gray, soft, clayey, sticky							
					0.24		Silty Mudstone: dk gray, blocky, med hd, <del>massive</del> fine grained, silty at base,							
6	14	36.0	32.5	1.5		1.3								87
					0.19		Silty Mudstone: as above,							
					1.11		Siltstone: gray-brown, blocky hd, interbedded layers of gray and lt brown silt, hd,							
7	15	32.5	33.1	0.6		0.44								73
					0.3		Siltstone: brown, chunky broken fragments,							
					0.05		Coal: broken chunky fragment, dull & shaly,							
					0.09		Siltstone: gray-brown, blocky, hd,							
7	16	33.1	34.9	1.8		6.27								
					0.39		Siltstone: as above, blocky, hd,							
					0.26		Bentonite/Coal Shale: lt gray-dk brown, interbedded, lenses 1/2 carbonaceous,							
					0.37		Carbonaceous Shale: dk & gray-black, dull, med hd, fossils,							
					0.25		Siltstone: brown, blocky, hd,							
7	17	34.9	35.7	0.8		0.8								100
					0.5		Siltstone: as above, broken chunky				60			
Total:		X		4.7	X		3.81	Rec. Total / Cored Total x 100 = <u>fragments</u> %		Total Drill Depth:		0.0		
				0.0			0.0	Rec. Coal / Total Coal x 100 = _____ %		Total Log Depth:		0.0		

Comments:





### Corehole Log

Date: Nov 4/09  
Hole No: 09-03

Page: 4 of 28

UNITS: ( )	Lat. _____° / _____' / _____" N Long. _____° / _____' / _____" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.18		Coals blocky, hd, dull & bright bands,							
8	18	35.7	38.15	2.45		2.10	Siltstone: as above,						85.7	
					2.1		Siltstone: med-dk gray-brown, blocky, hd, quartzite fracture-fills & vugs, interbedded lt-dk silts/muds,	4	35		76			
8	19	38.15	38.8	0.65		0.42	Siltstone: gray-brown, blocky, hd, interbedded layers of lt-dk silts & muds, well indurated.				48			64.6
8	20	38.8	42.75	3.95		2.9	Siltstone: brown, blocky, hd,							73
					0.1		Siltstone: dk gray, blocky to chunky broken fragments, hd,							
					0.13		Siltstone: dk gray, blocky to chunky broken fragments, hd,							
					0.25		Mdot: dk grey, chunky broken fragments, hd							
					0.56		Sandstone: med-dk brown med hard, fine-grained, 0.05 clay <del>tan</del> mdt band in the middle, 0.01 bentonite band near top, blocky & below mdt carbonaceous			60				
					0.19		Condol-dk grey, hd, blocky				56			
					0.65		Mdot-dk grey, hd, blocky, looks like weathered, broken							
					0.16		Condol: dk grey, hd, broken							

Total:	7.05	0.0	5.42	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



# Corehole Log

Date: Nov 4/09

Hole No: 09-03

Page: 5 of 28

UNITS: (M)		Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units (L)					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding						
					0.25		Mudstone: dk grey, hd, blocky, white veins (not calcite) silty in part									
9	20				0.08		Bone									
					0.09		Carbonaceous Siltstone:					56				
					0.10		Boney Coal:									
					0.34		Siltstone: gray-black, hd, massive									
9	21	42.7	44.5	1.75		1.75								100		
					0.11		Siltstone: as above, chert fracture-fills									42.5
					0.15		Bone: dk brown w/ lt brown ssilt bands, blocky, hd									42.7
					0.18		Coal: blocky to chunky, top 8 cm boney, dull & bright banded, hd									42.9
					0.62		Siltstone: gray blocky hd, coarsening uphole to a f.g. sandstone									43.5
					0.11		Bone: dk brown-black, blocky to fluggy, hd, dull banded									43.6
							<del>Siltstone / Sandstone interbedded silt / med / coal, med - dk gray brown</del>									
					0.18		Sandstone: med-dk gray-brown, hd, blocky, f.g., fine fining upward									
Total:					1.75	1.75	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:		0.0					
					0.0	0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0					

Comments:

Section 7 bone .15 + .11 + 0.26  
 coal .18 + .12 + .13 0.43  
 Sandstone 0.07  
 c.m.s.t. 0.13



### Corehole Log

Date: Nov 4/09  
 Hole No: 09-03  
 Page: 6 of 28

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.12		Boney Coal: blocky, dull & shiny bands thin brown silt bands in lower 1/2				57			43.8
					0.28		Siltstone: med gray-brown, blocky, hd, lt silt and carbony bands							44.0
10	22	44.5	47.25	2.75		2.04								43.9
					0.05		Siltstone: gray, blocky, as above							74
					0.07		Bentonitic Sandstone: brown, v. soft, unconsolidated fine sandy clayey matrix.							44.3
					0.18		Siltstone: med gray, blocky, carbony bands at upper contact, hd							44.5
					0.13		Carbonaceous Mudstone: dk gray-brown, blocky, med soft w/ heavy fissile bands							44.68
					0.13		Boney Coal: dull black, blocky, hd							44.8
					0.05		Bentonite: gray-brown, soft, waxy							45.1
					0.48		Siltstone: med-dk gray, carbonaceous bands in upper 1/2				100			
					0.21		Sandstone: brown, blocky, hd pitted surface				100			
					0.37		Siltstone: gray, blocky, hd thin mud bands and carbony strips at towards base			95	100			46.1
					0.37		Carbonaceous Mudstone: dk brown black, dull, blocky, med hd				30			
11	23	47.25	50.0	2.75		2.15								
					0.14		Carb. Mudstone: blocky to chunky broken fragments, as above							91
					0.22		Siltstone: gray, blocky, hd, carbony gradational contacts							46.8
														47.0

sp. #  
 \* out of  
 binder

②

Total: 5.50 / 4.54 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 0.0 / 0.0 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



# Corehole Log

Date: **Nov 4/09**  
 Hole No: **09-03**  
 Page: **7** of **28**

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
11	23				0.06		Stone: dull black, blocky, hd							47.94
					0.22		Siltstone: earthy bands, blocky, med-dk gray, hd							47.5
					0.07		Coal: boney, dull w/ some shiny bands							47.75
					0.33		Siltstone: med-dk gray-brown, blocky, hd, as above							47.82
					0.15		Mudstone: med gray-brown, blocky, med hd, few earthy bands, earthy contacts	76		44				48.69
					0.13		Coal: boney, dull & bright bands, gradational contacts, hd, brittle							48.78
					0.22		Siltstone: as above, gray-brown, blocky, hd	85		100				
12					0.2		Coal: blocky to chunky fragments, dull & shiny bands, boney, gradational contacts							49.0
					0.21		Siltstone: gray-brown, blocky, hd, as above							49.2
					0.7									100
12	24	50.0	50.7	0.7	0.17		Bony Coal: dull black, banded, blocky, hd							49.75
					0.06		Siltstone: brown, thin silt parting				26			
					0.05		Stone: dk brown, dull, blocky, hd, gradational contact							49.85
					0.42		Coal: blocky, hd, dull & bright bands							

Total:  0.9  0.95  
 Rec.Total / Cored Total x 100 =  100%  
 Rec.Coal / Total Coal x 100 =  %

Comments:

Markers Section 6 condit .37 + .39 (0.71)  
 allot 22 + .33 + .22 + .21 + .06 (1.26)



### Corehole Log

Date: Nov 4/09  
 Hole No: 09-03  
 Page: 8 of 28

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
	25	50.7	50.9	0.2	0.25	0.2	Siltstone: med gray-brown blocky, hd, chert fracture-fills and vngs,				50		50.25	
12	25	50.9	52.6	1.7		1.34	Siltstone: carbonaceous, dk gray, hd,				100		79	
					0.05		Siltstone: gray, blocky, hd,							
					0.06		Siltstone: gray, blocky, hd,							
					0.03		Coal: thin stringer,							
					0.22		Mudstone: med brown, blocky, hd, chert veins,			75			50.9	
					0.03		Siltstone: gray-brown, v. hd, blocky, chert veins & fracture-fills				100		51.2	
					0.58		Bentonite: lt brown, blocky, soft, waxy,				100		51.8	
					0.11		Siltstone: med brown, blocky, calcite fracture fills,							
13	26	52.6	54.6	2.0		0.98							49	
					0.02		Carb. Siltstone: dk brown, chunky broken fragments, hd,							
					0.19		Siltstone: gray-brown, blocky, hd, calcite fracture-fills,							
					0.29		Carb Siltstone: brown, blocky, hd, few coal laminations, broken chunky at base contact,							
					0.03		Carb Siltstone, dull black, broken, gradational contact,							
					0.3		Coal: blocky, dull & bright banded, shaly & crumbly in top 12 cm,						53.6	
Total:				3.7	0.0	2.32	0.0	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
								Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

(b)

Sum S  
266 78  
53.6  
41.2

Comments:



### Corehole Log

Date: Nov 4/09  
 Hole No: 09-03  
 Page: 9 of 28

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
13	26				0.15		Carbonaceous Mudst/Bone: dull black, blocky, gradational,							
13	27	54.6	56.5	1.9		1.48								77
					0.27		Carb Mudstone: dk brown-black, soft, blocky to fluggy fossil fragments,							
					0.52		Carb Mudstone/Bone: dull dk brown-black, as above w/ some hd honey bands,							57.9
					0.35		Coal: blocky, hd brittle, hackly cleats, dull & shiny banded,							54.9
					0.12		Boney Coal: blocky, dull black, gradational w/ bone at base							55.8
					0.09		Carbonaceous Siltstone: dk gray-brown, blocky, hd,							55.5
14	28	56.5	58.8	2.3		1.74								78
					0.09		Carb. Siltstone: as above,							56.0
					0.5		Bone/Boney Coal: blocky, hd, dull banded coal w/ boney bands and thin mud stringers			82				56.5
					0.12		Siltstone: gray-brown, blocky hd							
					0.03		Bentonite: lt gray-brown, soft,							
					0.12		Carbonaceous Mudstone/Bone: dk brown-black, blocky med hd, gradational contact,							
					0.5		Boney Coal: blocky, hd, dull banded, thin mud parting visible in middle,							57.0
														57.5
Total:				4.2	0.0	3.22	0.0	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
								Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

Comments:

Section 5 Coal .3 + .35 + .2 + .5 + .5 + .19 (2.04) silt .12 + .14 (0.26)  
 sand .15 + .27 + .52 + .12 (1.04)



### Corehole Log

Date: Nov 4/09  
 Hole No: 09-03  
 Page: 10 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N	Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.17		Coal: dull dk brown, blocky, hd.							57.7
					0.19		Coal: blocky, hd, dull & bright banded,			76	47			57.9
					0.07		Mudstone - carbonaceous, dk brown, blocky, hd.							
14	29	58.8	60.5	1.7		1.3							76	
					0.14		Siltstone: gray-brown, blocky, banded, hd.							58.5
					0.06		Bone: dk brown-black, blocky, hd, gradational contact.							
					0.21		Coal: blocky, hd, dull & shiny banded, bony at base							58.75
					0.02		Shale: carbonaceous, dk brown, fissile, <del>banded</del> , soft & crumbly							
					0.08		Sandstone: brown, blocky, hd, pitted surface,				30			59.05
					0.2		Bony Coal: blocky, dull banded, w/ some shiny coal at top.			80				59.25
					0.15		Carb. Shale: dk brown, blocky, banded, fissile							59.4
					0.42		Bony Coal: blocky, hd, dull banded,			80				59.85
					0.22		Carbonaceous Mudstone: dk brown, soft, crumbly							
15	30	60.5	62.5	2.0		1.83							92	
					0.06		Siltstone: gray-brown, blocky, v. hd, chert fracture fills and veins.							
					0.34		Carb Siltstone: gray-brown to dk brown, firing downward to softer carbonaceous shale,			75		36		
Total:				3.7	0.0	3.13	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:		0.0		
								Rec. Coal / Total Coal x 100 =	%	Total Log Depth:		0.0		

Comments:

Section 4  
 Siltst 0.14  
 Bone 0.06  
 coal 0.91 + 0.42 + 0.37  
 Crd st 15 + .22  
 0.37



### Corehole Log

Date: Nov 4/09

Hole No: 09-03

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UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____

Cored Interval - Units (___)					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,</small>	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.35		Siltstone: med gray-brown, blocky, hd,							
					0.3		Carbonaceous Siltstone: dk gray, blocky to chunky broken fragments, v. hd, chert veins,							60.7
					0.1		Bone: dk brown, blocky, hd, dull,				36			61.5
					0.12		Carb Siltstone: med-dk gray, early bands of silt clasts,			80				
					0.1		Bone: as above							61.55
					0.34		Carbonaceous Siltstone: med-dk gray-brown, banded, thin fgs sand lenses and coaly at top 13cm, coaly bands throughout							
16					0.12		Carb. Siltstone: med-dk gray, blocky, hd, as above							
16	31	62.5	63.0	0.5		0.38	Carb Siltstone:			75			76	
					0.15		Bone:							62.05
					0.16		Bone:							62.2
					0.103		Bentonitic Sandstone: brown, blocky fgs,							
16	32	63.0	65.5	2.5		2.95							100	
					0.6		Bentonitic Sandstone: (?) = soft, wet, unconsolidated material, clayey matrix							62.5
					0.69		Bone / Carb. Siltstone: dull, dk brown, black, blocky, hd			76	38			63.2
					0.43		Siltstone: dk brown, blocky, carbonaceous,							
Total:					3.0	3.33	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
					0.0	0.0	Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

C

Comments:





# Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 12 of 28

UNITS: ( ) Lat. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" N Long. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.19		Bone: blocky, hd, dull banded w/ 1cm mud band in middle.						63.6	
17					0.15		Siltstone: brown blocky, hd, congl. gradational contacts.						63.8	
11					0.09		Bone: blocky, hd, dull, gradational						64.0	
17					0.17		Carbonaceous Siltstone: dk brown, blocky, hd, vertical fractures and vugs.						64.09	
					0.34		Bone: dull dk brown-black, blocky, shaly mud/basaltic band 6cm above base.						64.25	
					0.29		Siltstone: med-dk gray, blocky, hd, banded.						64.6	
17	33	655	668	1.3	1.16							89		
					0.25		Carbonaceous Siltstone: dk gray-black, blocky, hd, gradational lower contact.			90			65.15	
					0.2		Coal: blocky, hd, dull banded, bottom 5cm zone gradational contact.			90			65.35	
					0.21		Siltstone: gray-brown, blocky, hd, chert fracture fills.			42			65.55	
					0.16		Coal: blocky, dull & shiny banded, thin mud parting in middle.						65.7	
					0.04		Silt Parting: lt brown, med hd.							
					0.04		Coal: as above.						65.8	
Total:					1.3	0.0	1.16	0.0					65.96	

Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

Section 3 Bone: .1 + .16 + .16 + .69 + .19 + .09 + .34 (1.67)  
 Silt: .12 + .34 + .12 + .19 + .17 + .25 + (1.19)  
 C: .2 + .16 + .04 + .09 (0.49)



### Corehole Log

Date: Nov 5/09

Hole No: 09-03

Page: 13 of 28

UNITS: ( )	Lat. _____ ° / _____ ' _____ " N	Long. _____ ° / _____ ' _____ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.26		Siltstone: med-dk gray-brown, blocky, carbonaceous bands,				42			67.6
17	34	66.8	68.5	1.7		1.15								
					0.06		Siltstone: as above,							
					0.07		Siltstone: lt brown, hd, chunky broken fragments,							
					0.10		Coal: bright, blocky, thin stringer,							66.8
														66.6
					0.4		Siltstone: gray-brown, blocky, hd, faint banding,				31			
					0.03		Carb Siltstone: dk gray, blocky, hd,							
					0.08		Siltstone: lt gray-brown, blocky, hd,							
					0.27		Siltstone: med <sup>dk</sup> gray-brown, chunky banded, blocky, hd,							
					0.08		Carb Shale: dk brown, soft, fissile, chunky,							
					0.07		Carb. Siltstone: dk gray, <sup>brown</sup> blocky, hd,							
18	35	69.5	71.5	3.0		1.45							48	68.1
					0.05		Carb. Siltstone: as above, broken chunky fragments,							
					0.18		Mudstone: brown, blocky, hd, waxy							
					0.49		Siltstone: blocky to chunky broken fragments at top, med broken - dk gray, carbonaceous at base,							
Total:					4.7		2.6	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
				0.0		0.0	Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Comments:

Section 2 cello (0.05) +  
 metal 0.18 = Coal



### Corehole Log

Date: **Nov 5/09**  
 Hole No: **09-03**  
 Page: **14** of **22**

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
18	35				0.48		Siltstone: gray-brown, blocky, hd, banded.				31		70.75	
					0.25		<del>Carbonaceous</del> Siltstone: dk gray, blocky, hd, dull.					26689		
18	36	71.5	74.5	3.0	2.91		Bone: dk gray, blocky, hd, dull.					97	71.1	
					0.11		Siltstone: gray-brown, blocky, hd.				35			
					2.26		Carbonaceous Siltstone: dk brown, blocky, hd.							
					0.19		Siltstone: gray, blocky, hd, faint banding.						72.05	
19					0.12		Coal - bright, blocky, some sltst bands				68 72		72.15	
					0.2		Sltst: Carb sltst: bands of coal with bands of sltst							
					0.08		Sltst: dk gray, hd, blocky, white <del>bedded</del> vein							
					0.07		Coal: Bright, blocky						72.46	
					0.14		Sltst: dk gray, hd, blocky, carb at base, <del>white</del> veins							
					0.07		Coal: Bright, minor sltst band				76			
					0.07		Carbonaceous Sltst: bright coal in middle, head, blocky							
					0.22		Coal: Bright and dull, hd, blocky, minor sltst bands						72.8	
Total:					3.0	2.91	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:			0.0		
					0.0	0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:			0.0		

Comments:  
 Section 1  
 bone .25 + .11 + .23 + .06 (0.65)  
 silt .15 + .19 + .06 + .14 + .05 + .03 + .06 (0.7)  
 sltst .26 + .2 + .07 + .08 + (0.61)



### Corehole Log

Date: 5 Nov 09

Hole No: 09-03

Page: 15 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	Elevation: _____

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.08		Coal siltst: coaly band with 0.02 siltst at top + bottom							73.1
					0.11		Coal: boney coal with some mi siltst bands, hd, blocky							73.2
					0.01		Siltst: arenaceous?					26010		73.3
					0.18		Coal: bright + dull, minor siltst							73.5
					0.05		Siltst: dk grey, hd, blocky							73.6
					0.23		Bone: hd, blocky, some pyrite							73.68
					0.03		Siltst: dk grey, hd, blocky	23						73.71
					0.06		Bone: dk grey-bl, hd, blocky							73.79
					0.06		Siltst: dk grey brown, hd, blocky, bedded							73.85
					0.26		Coal: hd, blocky, thin siltst bands near top, a 0.01 dk grey siltst 0.03 above base, bright + dull, pyrite		82					74.6
					0.16		Siltst: med grey brown, hd, blocky, 0.01 coal at base				100			74.6
19	37	745	772	2.7	0.04 0.36	2.52	<del>siltst as above</del> sandstone: med grey brown, med hard, blocky, faintly bedded, breaks easily along bedding, f-m gl.				79	100		93
					0.01		<del>clay?</del> Bentonite: med grey, soft, plastic							74.6
Total:					2.7	2.52	Rec.Total / Cored Total x 100 =				%	Total Drill Depth:		0.0
					0.0	0.0	Rec.Coal / Total Coal x 100 =				%	Total Log Depth:		0.0

end of Scan

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Comments:



### Corehole Log

Date: Nov. 5/09  
 Hole No: 09-03  
 Page: 16 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Weiness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					1.09		Madstone: dk grey brown, hd, blocky, thin clay bands throughout				72			
					0.08		Bentonitic M?: lt-med grey, v-soft, sandy texture							
					0.94		Mdst: as above, 3 clay layers in top 0.2, 1 clay layer at 0.18 above bottom			74	64			
20	38	77.2	79.2	2.0		2.0							100	
					2.0		Mdst: as above, carb at 0.4 - 0.46, breks at 1.52 - 1.57: white coating on breker surfaces			50	82	830		
21	39	79.2	82.6	3.05		3.15							103	
					0.6		Mdst: as above, not quite as dk coloured	2	24	76	67			
					<del>2.01</del> 2.55		Mdst: colour change to a lt-med buff brown with some bands of lighter coloured mdst. Blocky, hd, calcite, worm cavities dk bands: 1-3mm, light bands 1-2 cm	2	36	78	89			79.3
					0.54		Mdst: as above, but banding starting to be finer & approaching distinctive thin banding in hole 05, hd, blocky				100			
22	46	82.78	85.3	3.05		3.07							100	

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Total:	X	8.1	X	8.22	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0	0.0		0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



**Corehole Log**

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 17 of 28

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					<del>0.71</del> 1.38		Mudstone: as above, still not distinctly bedded							
					0.03		Sandstone: grey, soft sed depositional bed blocky calcareous							
					1.66		Mudstone: distinctly bedded zone <sup>thin</sup> alternating light pink brown + dk brown bands, hard, blocky			75				
					1.27		Mudst: as above, some of the lighter grey bands which are ss				55			
23	40	853	865	1.2		1.18	<del>Mudstone as above</del> Mudst: as above						98	
					0.21					78				
					0.97		Mudst: as above but bands are becoming less distinct + wider, lighter coloured top half; sd, blocky	2	53	76	55			
					3.0	3.05							105	
					2.82		Mudst: as above, increasing # of ss bands which are soft & clay matrix? 28ft, plastic, 1 cm bands at 1.67 bentonite? Becoming siltier towards base				62			
					0.23		Siltstone: med. <sup>grey</sup> brown, hard, blocky very indistinct banding							82.4
					0.14	2.96	Siltstone: as above							
42	895	92.5	3.0	0.07	2.07	2.96	Mudstone: dk grey sd, blocky bentonite bands (or 2mm-1cm) throughout				55			
Total:		7.2		7.19		Rec.Total / Cored Total x 100 =		%		Total Drill Depth:		0.0		
		0.0		0.0		Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0		

Comments:

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### Corehole Log

Date: 7/05/09  
 Hole No: 09-03  
 Page: 16 of 28

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.07		Bentonite: lt grey, hard, blocky, waxy							
					0.68		Mdst: dk grey brown, hard, blocky, massive			75				
25	43	92.5	95.5	3.0		2.86						95		
					0.85		Mdst: as above, plant fossils		45	77	58			
					0.03		Bentonite: lt grey, hard, blocky, waxy							
					0.08		Mdst: as above							
					0.07		Bentonite <sup>base</sup> <del>with</del> altat: lt grey							
					<del>14</del>									
					14		Mdst: dk grey brown, bentonite bands throughout; silty layers throughout	42	74	52				
					0.25		Carb mdat: black-dk grey hard, blocky							
					0.2		Mdst: dk grey <sup>base</sup> , hard, blocky							
26	44	95.5	97.8	2.3		2.11						92	95.25	
					0.18		Base - hard, blocky							
					0.13		Mdst: Carb altat / mdat: dk grey brown, hard blocky						96.3	
27					0.24		Mdst: blocky, gr brown, med hard, some thin coaly bands at base	90						
Total:					5.3	0.0	4.97	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
								Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

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Lower Seam

Comments:



### Corehole Log

Date: *Nov 5/09*

Hole No: *09-03*

Page: *19* of *28*

UNITS: ( )		Lat. ° / ' / " N		Long. ° / ' / " W		DLS	Lsd	Sec	Twp	Rge	Mer					
UTM NAD83		Easting:		Northing:		Elevation:										
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,			No.	Joints	Bedding				
					0.06		Coal									
					0.19		Mdsl: as above, some calcite fracture fills									
					0.3		Carb mdsl: blocky-chunky broken, dk gr brown, dull, some br. coaly bands									
					0.28		Stsl: <sup>lt</sup> grey brown, blocky, bentonitic at base med hard - soft at base					71				
					0.03		Bentonite: lt brown, soft, crumbly, waxy									
					0.05		Stsl - grey, broken chunky frag, rd, slightly carb									97.2
					0.23		Bony coal: blocky dull banded, hard					71				97.44
					0.11		Carb. stsl: hd, <sup>dk</sup> grey, v. hard (well cemented)									97.5
					0.05		Coal: bright, gradational upper + lower contacts									97.6
					0.15		Carb mdsl: blocky - crushed in middle, tan bent stringers, dark brown									97.75
					0.16		Coal crushed broken chunky fragments									97.9
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:				0.0	
							Rec.Coal / Total Coal x 100 =			%	Total Log Depth:				0.0	

*Section 3*  
*26728*

*-core loss?*

*Section 3*  
*home (0.18)*  
*Coal 0.06 + 0.23 (0.29)*  
*mdsl (0.19) +*  
*cmdsl (0.3)*





### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 20 of 28

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
27	45	92.8	100.6	2.8		2.46								88
					0.10		Carb siltst: blocky, hd, boney at top							
					0.22		Siltst: grey brown, blocky, hd, well cemented				22			
					0.49		Boney coal: dull with bright bands, some thin silty lenses near top + base, hard, blocky					26662		98.5
					0.09		Siltstone: slightly carb, med brown, blocky, hd, chert veins							99.0
					0.08		Boney coal: block, hard, as above							99.17
					0.17		Siltstone: med grey brown blocky, hd, gradational upper contact, few coal bands near top							99.35
					0.25		Boney coal: dull, bedded blocky, 2 silty bands at 0.11 + 0.17 from top, gradational upper contact					26663		99.6
					0.11		Siltstone: grey brown, blocky, as above							
					0.04		Bone: dull, blocky, hd							
					0.07		Siltstone: brown blocky, med hard clayey matrix							
Total:					2.8	0.0	2.46	Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0	
						0.0		Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

Comments:

Section 2  
 calls 0.11 + .1 (0.21)  
 c .05 + .16 + .49 + .08 + .25 + .23 + .15 (0.48)  
 and .15 + .13 + .2 (0.48) b (0.13)



### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 21 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N	Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.13		Bentonite: grey, blocky, soft, waxy							
					0.13		Carb. mdst: dk brown, blocky → crushed, crushability frags, m-v soft							
					0.23		Coal: bright, banded, blocky, clean, brittle							99.75
					0.15		Boney coal: dk brown-black, dull banded, hd				26664			100.0
					0.2	0.2	Carb. mdst: dk brown, blocky, m-soft, gradational upper contact with coal							100.15
28	21	46	100.6	1022	1.6	1.5						94		
					0.74		Siltstone: lt grey brown, blocky, slightly carb upper contact turning clayey at base (gradational)							
					0.21		Bentonite: lt brown w silt bands, block, soft							
					0.42		Boney coal: blocky → chunky boney frags, dull banded, hd, gradational contact at base				26730	26665		101.2
					0.13		Carb siltst: dk brown, blocky - chunky							101.7

Unsampled

Total:		1.6	0.0	1.5	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
						Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 5/09

Hole No: 09-03

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UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
<u>29</u>	<u>42</u>	<u>102.2</u>	<u>104.5</u>	<u>2.3</u>		<u>2.27</u>	<u>Siltst</u>							<u>99</u>
					<u>0.13</u>		<u>Siltst: grey, blocky, md hard, clayey</u>							
					<u>0.15</u>		<u>Bentonitic slts: grey <sup>sm</sup> dk gray carb bands blocky m. soft waxy streaks</u>							
					<u>0.13</u>		<u>Carb mdst: dull dk brown, med soft blocky - flaggy prob frags. fissile at base</u>							
					<u>0.14</u>		<u>Best siltst: as above</u>							
					<u>0.22</u>		<u>Bentonite: light grey-brown, blocky waxy soft coal frags</u>							
<u>30</u>					<u>1.5</u>		<u>Bentonitic siltst blocky m. hard, lt greenish brown, waxy siltst</u>	<u>1</u>	<u>56</u>	<u>79</u>	<u>100</u>			
<u>31</u>	<u>48</u>	<u>104.5</u>	<u>107.5</u>	<u>3</u>		<u>3</u>								
					<u>1.67</u>		<u>Bentonitic siltst: as above</u>				<u>100</u>			
					<u>0.1</u>		<u>Carb siltst: dk brown, blocky</u>							
					<u>0.28</u>		<u>Bony coal: blocky, dull banded, silt+ mud clasts in middle (2 in wide) in middle, amber flecks on cone face</u>						<u>26666</u>	<u>105.85</u>
														<u>106.15</u>

Total:	<u>5.3</u>	<u>5.27</u>	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
	0.0	0.0	Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 23 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.</small>	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.23		Siltst: lt brown, blocky med hard							106.35
					0.52		Coal: blocky, hd, dull + bright banding, bony gradational base, angles of clecks, gradational contact				26667			106.9
					0.13		Carb mdst: blocky, med-dk brown, carb bands, gradational upper contact with coal				26131			
					0.07		Bentonite:							
30	49	1075	1105	3		2.86							95	
					0.14		Bentonite: lt grey, blocky, soft, waxy							
					0.29		Bentonitic siltst: lt grey brown, a few coaly stringers, blocky, med soft, waxy							
31					0.04		Base: blocky, hd, dull				26668			107.5
					0.09		Coal: dull + string bands blocky							107.54
					0.3		Mdst: grey, blocky silty at base				100			
					0.35		Siltst: lt grey brown, blocky, m hd, fine banding, few carb bands	57			100			
								70			1			

Total:	3.0	0.0	2.86	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 5  
 Hole No: 09-03  
 Page: 24 of 28

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding					
					0.34		Bent siltst: grey brown, blocky m. soft, thin coal band at top								
					0.28		siltst: grey brown, blocky hard, fr. multiple pink fractures, calcite filled								
31	50	110.5	113.5	3.0	0.13	3.08	Bentonite: lt brown grey, blocky, soft waxy, coal frags							102	
					0.05		Bentonite: as above								
					0.20		siltst: blocky, hard, calcite fractures fills + veins throughout, lt grey brown, coal band in middle								
					0.03		Coal								
					0.55		siltst: blocky, lt grey, -part almost like siltst, multiple joint fractures (drill induced)								
					0.04		Bony coal: hd, calcified, dull				68	44			
					0.69		Bentonite: lt grey brown, blocky, soft, granular gritty texture								
					0.42		siltstone: m grey with carb beads - lower half, blocky, hard, yellow blk								
					0.17		Bone: dk grey, dull, blocky, hd								
Total:				3.0	0.0	3.08	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:				0.0		
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:				0.0		

Comments:



### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 25 of 28

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	No.	Joints	Bedding					
					0.1		Bentonite: lt brown, soft blocky, waxy								
					0.08		Carb mdst: <sup>dk</sup> grey, flaggy broken fossil frags								
					0.2		Siltstone lt grey brown to almost white blocky hard			73					
					0.03		Coal: 8' bright								
							Siltstone: highly drill induced fractured lt grey, distinct banding			70					
					1.2										78
33	51	113.5	114.7	<del>114.8</del>	0.93										
					0.12		Silt: as above, broken chunky frags.								
					0.36		Carb mdst / bone: mostly med: broken up chunks of bone / med / bentonite (core loss)								
					0.11		Silt: lt grey brown, blocky, hard								
					0.32		Boney coal: dull, black, blocky - chunky frags dull banded, banded								
					0.02		Carb mdst: dk brown, blocky, med soft								

Total: 1.2 / 0.0    0.93 / 0.0  
 Rec.Total / Cored Total x 100 = \_\_\_\_\_ %    Total Drill Depth: \_\_\_\_\_ 0.0  
 Rec.Coal / Total Coal x 100 = \_\_\_\_\_ %    Total Log Depth: \_\_\_\_\_ 0.0

Comments:



### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 26 of 28

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:			

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
33	52	114.7	116.5	1.8		1.79							100	
					0.03		Coal mdst: as above							
					0.21		Bone blocky hard dull with some lynch, some silty							
					0.10		Bentonite - light-med brown w carb bands, blocky, soft, waxy							
					0.08		Bone: as above							
					0.03		strik: thin parting, lt grey brown							
					0.15		Bone: as above, gradational floor contact				51			
					0.19		Coal clay / Bentonite: lt grey - dk grey brown, blocky, soft, waxy							
					0.45		Coal mdst / bone: dull dk brown, blocky, a hard							
					0.44		Bentonite: lt grey w carb streaks + bands throughout, blocky, soft, waxy							
					0.10		Coal mdst: dk brown broken chunky frags, hard							
34	53	116.5	119.5	3.0		2.84							95	
					0.09		strik: lt grey brown, blocky, carb band at base							

Total:			4.8	0.0	4.63	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
							Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:



### Corehole Log

Date: Nov 5/09  
 Hole No: 09-03  
 Page: 27 of 28

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	_____	_____	_____	_____	_____	_____

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Tot.	Sec.	Tot.		No.	Joints	Bedding				
					0.4		Bentonite: lt grey brown, as above							
					<del>0.55</del>									
					0.55		Bom / carb indat: dk grey brown, blocky - fluggy, fissile frags, lt grey silt bands, calcite fracture fills							
					0.09		Slat: grey, blocky, coaly frag,				76			
					0.16		Bentonitic Slat: lt grey - cream with darker grey silt bands, blocky soft							
					1.55		Slat: dk grey brown with darker carb bands throughout, blocky, hd	80			84			117.7
35	84	119.5	122.5	3.0		2.98								
					2.12		Sandstone: grey-brown, blocky, hd, calcareous, circular to pebble sized clasts throughout	55			100			
					0.36		Sandstone: lt grey, blocky, f. sp. hd, massive,				100			
36	55	122.5	124.8	2.3		2.3								100
					0.90		Sandstone: as above,	253			93			
					0.4		Siltstone - grey-brown, blocky, carbonaceous, hd,				72			
					<del>1.10</del>		Silty Sandstone: grey-brown, blocky, hd, f. sp. sand coarsening uphole,				82			
Total:					5.3	5.28	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:		0.0			
					0.0	0.0	Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0			

3b1

3a

Comments:





### Corehole Log

Date: Nov 5/09

Hole No: 09-03

Page: 28 of 28

UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W				DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:					

Cored Interval - Units (___)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
36	56	124.8	123.5	4.0		4.79							100	
					2.40		Siltstone: lt grey blocky, <sup>thin</sup> clayey bands and stringers, hd, s			78				
					1.40		Sandstone: lt grey blocky, dk grey and silt and clayey bands, hd			80				
					0.17		Sandstone: lt brown (color change) blocky, hd, coarse clastic sandstone,				100			
					0.78		Sandstone: lt-med grey, blocky, hd, clayey bands and fragments throughout, f.g.							100

Total:	X	4.0	X	4.79	Rec.Total / Cored Total x 100 =	104.61/122.05	%	95.7	Total Drill Depth:	0.0
		0.0		0.0	Rec.Coal / Total Coal x 100 =		%		Total Log Depth:	0.0

Comments: Anatomic Pathology Text Report by Case Number COMPLETE



### Corehole Log

Date: Nov 6 / 09  
 Hole No: 09-02  
 Page: 1 of 17

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting: _____	Northing: _____	Elevation: _____				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
1	1	3	4.9	1.9		0.12	Siltstone: lt brown, blocky, broken, hd, iron stained.						26	
						0.08	Carb Siltstone: dk brown, broken chunky fragments, partially weathered.							5.75
						0.12	Bones: dull black, broken chunky fragments.							
1	2	4.9	8.15	3.25		1.15							35	
						0.10	Coal: dull & bright banded, blocky to chunky fragments, hd, brittle.							6.0
						0.14	Bone: dull olt brown, broken chunky fragments.							6.15
						0.05	Carb (Clay/Bentonite) med-dk brown, soft, broken.					26703		
						0.08	Boney Coal: blocky, dull banded, hd, gradational contacts.					30		6.7
						0.03	Bentonite: dk brown soft, milled, sticky.							
						0.10	Carb Siltstone: dk brown, blocky, hd.							7.10
						0.32	Siltstone: lt gray-brown, blocky, hd, chert fracture - pills veins.							7.3
						0.05	Coal: dull, chunky broken fragments.							9.3
						0.12	Carb Siltstone: med-dk gray, blocky, hd, quartz, veins.							
1	3	8.15	4.5	3.25		0.163							50	9.7
						0.1	Bones: dk brown-black, dull flaggy-chunky broken fragments.					26704		9.8
						0.41	Coal: blocky to chunky, hd, dull & bright bands, boney at base.							10.25
						0.12	Carb Mudstone: dk brown, blocky, hd, gradational contact.							

Total:	X	0.0	X	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:	0.0
					Rec.Coal / Total Coal x 100 =	%	Total Log Depth:	0.0

Comments:

Sub 9      Csltr    1.08 + 1.06 +      (14)  
              bone    1.12 + 1.14                      (26)  
              C        1.1 + 1.28 + 1.05                    (42)

Sect 5      csltr    1.12  
                  bone    1.1

} 26703 (1.15)  
 Section 9  
 } 26704



### Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 2 of 7

UNITS: ( )	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
24	9.4	11.5	21		0.95							45	
					0.1		Bony Coal: dull, chunky broken fragments						10.6
					0.11		Coal Siltstone: blocky to chunky fragments, hd, dk gray, brown			φ			
					0.37		Siltstone: lt gray-brown, blocky hd, chest fractures, fills/veins						11.0
					0.28		Bone: dull blacky to blacky, dull w/ some shiny bands, hd			68			11.3
					0.09		Coal Siltstone: dk brown, blocky, hd, gradational upper contact w/ g. s.						
25	11.5	13.6	21		0.92							42.8	
					0.13		Bone - blocky to chunky, hd, dull						11.0
					0.28		Siltstone: gray-brown, blocky, hd				26705		11.3
					0.04		Coal: thin stringer, broken,			16			11.7
					0.08		Bentonite: dk brown, soft, milled, slightly carbonaceous						
					0.12		Coal Siltstone: dk gray, blocky, hd						12.35
					0.13		Coal: bright chunky broken fragments,						12.5
					0.14		Siltstone: brown, blocky, hd			46			
26	13.6	15.7	21		1.6							76	
					0.7		Siltstone: gray-brown, blocky hd, chest veins, fill of highly fractured			45			
					0.1		Bone: dull black, blocky, hd						13.7
					0.1		Bony Coal: blocky to chunky broken fragments, dull banded, bony at base			38			14.0
					0.22		Siltstone / Chest: brown, blocky to chunky, v. ch. conchoidal surfaces						14.9
					0.04		Bentonite: dk brown, soft, clayey, waxy				26706		15.15
Total:					0.0	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:	0.0			
Total:					0.0	0.0	Rec. Coal / Total Coal x 100 =	%	Total Log Depth:	0.0			

Comments:

2nd 7 Cms - 12  
 C .1 + .04 + .13  
 coal .11 + .09 + .12  
 (0.12) b (0.08) Section 6 bone .1 + .1 (0.2) cmst (0.14) 35 .1 + .16 (0.26) (1.73)

26705 section 7 - core loss  
 26706 section 6 - core loss



# Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 3 of 17

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: Northing: Elevation:

Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	No.	Joints	Bedding					
26					0.44		Siltstone: gray-brown blocky, hd, thin (6cm) coal band at top					26706		16.0	
37	15.7	17.5	1.8		1.4		Siltstone: as above						78	16.8	
					0.13		Coars Siltstone: dk brown, chunky broken fragments, hd							16.8	
					0.16		Coal: blocky, dull & shiny banded, hd brittle				25			16.96	
					0.06		Siltstone: lt brown, hd, blocky,							17.0	
					0.14		Coars Mudstone: dk brown, blocky, soft, clayey							17.14	
					0.4		Siltstone: gray-brown blocky, hd chert fracture Ribs/veins							17.5	
					0.1		Sandstone: brown, blocky, lg, hd							17.5	
38	17.5	19.5	2.0		1.88								58	18.15	
					0.1		Bone: blocky to fluggy, dull, brittle							18.15	
					0.16		Sandstone: brown, blocky, lg							18.5	
					0.2		Siltstone: gray-brown blocky, hd, <del>as above</del>							18.5	
					0.16		Bone: blocky to chunky, hd, dull, gradual contact							18.75	
					0.10		Coal: chunky broken fragments, shiny, bright banded							18.75	
					0.10		Siltstone: brown, blocky, hd, coaly fragments							19.0	
					0.15		Coars Siltstone: dk gray, blocky, hd							19.0	
					0.06		Bone: dk brown-black, chunky broken fragments							19.0	
					0.08		Pentamerid Siltstone: lt gray-brown soft, pliable, silt bands at contacts							19.0	
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:				0.0		
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:				0.0		

core loss  
 Section 6  
 26706  
 2.76

core loss

sect. 1

Comments:

Section 5 bone .16 + .06 + 0.22  
 C .1 + .16 + 0.26  
 silts .1 + .12 + .1 + .18 + .13 + .1 = 0.63  
 cndst 0.23



### Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 4 of 17

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:			

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
4	9	19.5	20.8	1.3		0.4							31	
						0.03	Bentonite Silt: as above							19.8
						0.25	Bony Coal: blocky, dull banded, hd, silt lenses, gradational base.							20.1
						0.12	Siltstone: gray-brown, blocky, hd, gradational upper contact.							
4	10	20.8	23.2	2.4		1.35							56	
						0.1	Siltstone: gray-brown, chunky broken fragments as above.							20.3
						0.14	Bony Coal: chunky, dull banded, hd.							21.0
						0.18	Siltstone: gray-brown, blocky, hd, carbonaceous contacts.							21.2
						0.103	Bentonite: brown, soft, mottled.							21.25
						0.23	Carbonaceous Shale: dk brown - black, fissile bands, brittle, muddy.							21.5
						0.16	Coal: blocky, hd, shiny banding.							21.9
						0.17	Sandstone: brown, blocky, slightly carbonaceous, pitted surface.							22.1
						0.34	Carbonaceous Siltstone / Bone / Mudstone: dk brown - black, blocky to chunky broken fragments, dull w/ few shiny coal laminae.							22.5
5	11	23.2	26.1	2.9		1.05							36	
						0.13	Siltstone: dk gray-brown, broken fragments, hd.							22.9
						0.10	Bentonite: lt brown (beige), blocky, soft, waxy.							23.0
						0.49	Mudstone: dk gray-brown, blocky, med hd, waxy, dull, earthy.							
						0.06	Carbonaceous Clay: black, soft, waxy.							
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:				0.0	
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:				0.0	

Comments:

Section 5 most 0.49  
 h 0.06

2870  
 Section 5



### Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 5 of 11

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
5	11				0.27		Siltstone: gray-brown, blocky, v. hd, chert bands,							24.2 24.5
5	12	26.1	27.85	1.75	0.2									26.3 27.0
					0.2		Carbonaceous Siltstone: dk brown, chunky broken fragments (chert), hd				0			27.0
5	13	27.85	28.5	1.65	0.2	0.57	Siltstone: dk gray-brown, chunky at base, blocky to chunky broken fragments,				29			27.7
					0.03		Coal? (rubble)							27.9
					0.34		Siltstone: as above, blocky, hd							27.9
5	14	29.5	30.9	1.4	0.36	1.26	Siltstone: med-dk brown, slightly carbonaceous at base, blocky to chunky, broken at base,				51		90	
					0.9		Siltstone: gray-brown, (lower 1/2 is more brown) blocky, hd, few thin chunky bands in upper 1/2							
6	15	30.9	32.5	1.6	0.56	1.28	Siltstone: gray-brown blocky, v. hd, chert veins throughout, frags of sandstones						80	29.6 30.1
					0.19		Siltstone: lt gray-brown, blocky, hd				50			
					0.26		Boney Coal: blocky, brittle shell of string bands, crushed at base,							31.2 31.5
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =		%	Total Drill Depth:		0.0		
							Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0		

Section 4  
26705  
- Coal loss.  
Sect 3

Comments:

Section 4  
 CSltst 0.2  
 Sltst 0.2 + 1.26 + .9 + .56 (2.92)  
 C (0.03)  
 Sect 3  
 Sltst .19 + .27 + .37 + .2 (1.03)  
 C (0.26)



# Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 6 of 17

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					0.27		Siltstone: gray-brown, blocky, v. hd, w/ vugs and fractures throughout.					26909		
6	16	325	341	1.6		0.92							56	
					0.37		Siltstone: as above,							
					0.2		Siltstone: med brown, blocky, hd, massive,							
					0.05		Carbonaceous Shales dk brown, soft, friable,							33.3
														33.4
					0.18		Siltstone: brown, chunky broken fragments, hd, slightly carbonaceous,							
					0.07		Coal: boney, crushed dull fragments,							34.05
						0.36								
7	17	341	355	1.4		0.44							26	
					0.24		Bony Bone: blocky to chunky fragments, dull banded. It blews mud clasts in approx 1/2,							34.15
					0.17									34.4
					0.15		Siltstone: gray-brown, blocky, hd, chert veins, fractures, vugs, v. hd.							
7	18	355	367	1.2		0.35							29	
					0.2		Siltstones as above,							34.75
					0.15		Coal: chunky broken fragments, dull banded, boney,							35.0
7	19	367	374	0.7		0.28							40	
					0.25		Coal: blocky to chunky, bright banded, clean,							35.99
														36.15

26709 Section 2

26710 Sect. 2

Corals

Total:  0.0  0.0 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

Sect 2 silted 18 + .12 + .2 + .03 (0.53)  
 C 07 + .15 + .25 (0.47)



# Corehole Log

Date: Nov 6/09  
 Hole No: 09-02  
 Page: 7 of 17

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
7	19				0.03		Siltstone: brown, hd,						36.75	
													36.8	
7	20	37.4	38.5	1.1		0.04						4.0		
						0.04	Bone: dull black, hd,							
7	21	38.5	39.05	0.55		0.39						71		
						0.3	Coal: blocky to chunky, crushed at base, dull w/ some shiny bands, shaly/muddy at base,						38.25	
						0.09	Carbonaceous mudstone: dk brown-black, soft, blocky, crumbly, waxy,						38.55	
8	22	39.05	40.3	1.25		1.17						94		
						1.17	Shaly Coal: blocky, dull banded med soft, crumbly, 'waxy streaks',	55	78				38.65	
9	23	40.3	41.3	1.0		0.13						30	39.75	
						0.13	Carbonaceous shale/mudstone: crushed crumbly fragments, dull, waxy, waxy,							
9	23	41.3	41.3	3.0		3.15						100	40.5	
						0.1	Bony Coal: fluggy, dull, hd,							
						0.14	Coal: blocky hd dull & shiny banded, bony bands toward bottom,			85				
						0.4							41.0	
						0.33	Siltstone: lt gray-brown, blocky, med hd, massive	60		88				
						0.16	Sandstone: lt gray-brown, blocky to chunky, med soft & friable, f.g., massive							

Core loss.  
 26711  
 2.4  
 Sect. 1

366

Total:  0.0  0.0 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:

Sect. 1 bone (0.04)  
 0.3 + 1.17 + 0.1 + 0.4 (1.97)





### Corehole Log

Date: Nov 7/09  
 Hole No: 09-02  
 Page: 8 of 11

UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:				

Cored Interval - Units (___)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					1.22		Siltstone: as above			85	67			
					0.11		Sandstone: lt gray, blocky, med soft & friable, f. ga.							
					0.15		Siltstone: as above				73			
					0.24		Silty <del>Silt</del> / Mudstone: med brown, blocky to flaggy, med hd, silty,				41		43.3	
1024	44.3	46.3	3.0		2.0								100	
					0.46		Mudstone: as above,							
					0.5		Carbonaceous Mudstone: dk brown, blocky, med soft, waxy							
					0.34		Silty Mudstone: blocky to flaggy, vertical fractures, med hd, massive,				φ			
					0.09		Carb. Mudstone: as above							
					0.61		Siltstone: gray-brown, blocky, med hd, fining downward, calcite veins / fractures - fills at base, massive.				48			
1025	46.3	49.4	3.1		3.15								100	
					0.27		Silty Mudstone: brown, blocky, med hd, massive,				74			
					0.04		Bentonite: lt gray-brown, soft, plastic,							
					0.48		Silty Mudstone: as above	1	35		63			
					2.36		Siltstone: gray-brown, blocky hd,			84	86			
Total:		X		0.0	X		0.0	Rec.Total / Cored Total x 100 = faint banding		%	Total Drill Depth:		0.0	
								Rec.Coal / Total Coal x 100 =		%	Total Log Depth:		0.0	

Comments:

366

365



### Corehole Log

Date: Nov 17/09  
 Hole No: 09-02  
 Page: 9 of 17

UNITS: ( ) Lat. \_\_\_ ° / \_\_\_ ' / \_\_\_ " N Long. \_\_\_ ° / \_\_\_ ' / \_\_\_ " W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
11	26	49.4	53.5	3.1										
					0.28		Siltstone: as above, <del>fine</del> <del>medium</del>							
					0.49		Silty Mudstone: lt gray-med brown, banded, blocky, hd.				100			
					2.30		Siltstone: lt gray-brown w/ brown mud bands, blocky, hd.				83			
13	27	52.5	55.05	2.75		2.75								
					0.26		Siltstone: as above.							
					2.39		Mudstone: lt gray-med brown banded (distinctive banding) blocky, med hd, flaggy to fissile fracturing along bedding, bentonite bands @ 126cm and 176-183cm from top.		80	44				
14	28	55.25	56.8	1.55		1.64								100
					1.64		Mudstone: as above, w/ bentonite bands @ 61, 110, cm from top.							
14	29	56.8	59.5	2.7		2.66								99
					1.22		Mudstone: as above w/ bentonite @ 85 cm from top.							
					1.44		Mudstone, as above.	1	22	72	49			
15	30	59.5	62.5	3.0		2.9								97
					0.75		Mudstone: as above				71			
					0.11		Bentonite: lt gray, cream colored, soft, waxy							

365  
364

Total:  0.0  0.0 Rec.Total / Cored Total x 100 = % Total Drill Depth: 0.0  
 Rec.Coal / Total Coal x 100 = % Total Log Depth: 0.0

Comments:



### Corehole Log

Date: Nov 7/09  
 Hole No: 09-02  
 Page: 10 of 17

UNITS: ( ) Lat. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" N Long. \_\_\_\_° / \_\_\_\_' / \_\_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_  
 DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
15	30				0.87		Mudstone: as above, brown, blocky, med hd, banded, shaly.							
					0.15		Bentonitic Silt: lt gray-brown w/ brown silt bands, soft, waxy.				69			
					0.98		Mudstone: brown, blocky, faint banding throughout, med hd.				75			58.6
16	31	62.5	65.5	3.0	3.06								100	
					0.74		Mudstone: as above,							
					0.02		Bentonite: lt gray, soft, waxy.							
					0.11		Mudstone: as above,				80			
					0.04		Siltstone: lt gray, blocky, hd.							
					2.15		Mudstone: med-dk brown turning more darker at base, blocky, med hd, massive,				132			
17	32	65.5	67	1.5	1.34								89	
					0.15		Siltstone: med gray, blocky, hd, calcite veins, broken chunky fragments at base.							
					0.04		Bone: dk <sup>brown</sup> brown, hd, gradational contact.							65.2
					0.47		Coal: blocky, dull & shiny banded, hd, brittle, gradational contacts.					26691		65.7
					0.22		Siltstone: med-dk brown, blocky, hd, conky contacts.							
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%		Total Drill Depth:			0.0	
							Rec.Coal / Total Coal x 100 =	%		Total Log Depth:			0.0	

3b4

3b3

Lower  
 Section

Comments:



### Corehole Log

Date: Nov 7/09  
 Hole No: 09-02  
 Page: 11 of 17

UNITS: ( )	Lat. ___ ° / ___ ' / ___ " N	Long. ___ ° / ___ ' / ___ " W	DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:	Northing:	Elevation:					

Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)	
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding					
17	32				0.04		Coal: bright, thin stringer										
					0.15		Mudstone: med-dk brown, blocky, med hd, carbonaceous at base,										
					0.22		Bony Coal: blocky, hd, dull and shiny banded, gradational at base,										66.0 66.22
					0.05		Carbonaceous Siltstone: dk brown, blocky, hd,										
18	33	67.0	68.5	1.5		1.5										100	
					0.09		Siltstone: gray-brown, carbony gradational contacts,										
					0.13		Bone: dk brown-black, blocky, hd, dull										66.36
					0.1		Coal: blocky hd, dull & shiny banded, gradational at base,										66.59
					0.27		Siltstone: lt gray-brown, carbony lenses & bands, blocky, hd,						266.92				
					0.04		Coal: lustrous, bright banded, thin stringer,										67.0
					0.15		Bone: dk brown, blocky, dull,										
					0.12		Bony Coal: dk brown-black, dull w/ few shiny bands, gradational at base,										67.31
					0.06		Carbonaceous Mudstone: dk brown, blocky med hd,										
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =			%	Total Drill Depth:					0.0	
							Rec.Coal / Total Coal x 100 =			%	Total Log Depth:					0.0	

Comments:

Section 3 0.22 + 0.09 + 0.27 + 0.18 (0.76) = mdst 0.06  
 bottom 0.04 + 0.22 + 0.1 + 0.04 + 0.12 + 0.19 (0.71) b 0.05 + 0.12 (0.17)



### Corehole Log

Date: **Nov 7/09**  
 Hole No: **09-02**

Page: **12** of **17**

UNITS: ( )		Lat. ° / ' / " N Long. ° / ' / " W				DLS	Lsd	Sec	Twp	Rge	Mer				
UTM NAD83		Easting:		Northing:		Elevation:									
Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding			
18	33				0.05		Bentonite: pale green-brown, blocky, waxy, soft,								
					0.18		Siltstone: brown, blocky, hd,								
					0.12		Bentonitic Siltstone: lt gray-brown w/ brown silt bands, blocky, caky at base,								
					0.19		Boney Coal: dk brown-black, blocky, hd, dull banded,								67.72
						2.7									67.91
18	34	68.6	71.5	3.0	0.2	2.66	Siltstone: lt gray-brown, blocky, banded, hd,							89	
					0.19		Bentonitic Siltstone: gray, soft blocky, waxy,								
					0.18		Coal: blocky, hd, dull & bright banded, bony gradational upper contact,								68.3
					0.1		Boney Coal/Bone: blocky, hd, dull banded, bony gradational flow contact,								68.58
					0.49		Mudstone: med-dk brown tanning carbonaceous at base, blocky, med hd,						26695	Section 2	
					0.34		Bone: dk brown, blocky, hd, dull, gradational contacts,								69.07
					0.39		Carbonaceous Mudstone: dk brown, blocky, med hd, silty, waxy,								69.41
															69.8
Total:		X		0.0	X		Rec. Total / Cored Total x 100 =		%	Total Drill Depth:		0.0			
							Rec. Coal / Total Coal x 100 =		%	Total Log Depth:		0.0			

Comments:

Section 2    stb (0.2) + .34    mds (0.49)  
                   b (0.19) + .01    bone (0.34)



### Corehole Log

Date: Nov 7, 09  
 Hole No: 09-02  
 Page: 13 of 17

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description			Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.	Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.			No.	Joints	Bedding				
18	37				0.26		Boney Coal: blocky, dull banded, hd, gradational contacts.									69.8
																70.06
					0.34		Siltstone: med-dk gray-brown, blocky, hd, carbonaceous bands, gradational upper contact.									
					0.21		Bentonite: pale gray-green, blocky, soft, waxy.									
19	35	71.5	73.2	1.7	0.68	2.16	Bentonite Siltstone: gray-brown, blocky, med soft, <del>hd</del> .								120	
					0.2		Boney Coal: dk brown-black, blocky, dull & few shiny bands, gradational lower contact.									70.69
					0.23		Siltstone: gray-brown, blocky, hd, conby contacts						26698			70.89
					0.28		Bone: dull dk brown, blocky, hd, very gradational.						26699			71.5
					0.11		Siltstone: gray-brown, blocky, hd,									71.78
20					0.34		Siltstone: as above with 0.02 coal at 0.22									
					0.23		Coal: dull with br. bands, some silty bands									72.22
					0.42		Carb mdst: dk gray-black, med hard, blocky					73				
Total:		0.0		0.0		Rec.Total / Cored Total x 100 = 0		%		Total Drill Depth:		0.0				
						Rec.Coal / Total Coal x 100 =		%		Total Log Depth:		0.0				

Comments:  
 Section 1  
 sand .34 + .23 + .1 + .34 (1.01)  
 b .21 + .05 + (0.29)  
 c mdst (0.42)



### Corehole Log

Date: Nov 7 / 09  
 Hole No: 69-02  
 Page: 14 of 17

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: Northing: Elevation: DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)		RQD (%)	Sample ID	Rec (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Bedding				
					0.19		Coal: bright + dull, chunky						73.05
					0.10		Bentonite: buff, very soft						
20	36	73.2	75.7	2.5		1.65						66	
					0.39		Carb mdst: gray brown, hard, very broken (chunky), some carb chunks in bottom half		62				
					0.11		Bentonitic siltstone: grey brown, v. hard fr. but v. soft surface						
					0.04		Bentonite: greyer than above with no siltiness						
					0.25		Bentonitic siltstone: as above, some calcite veins						
					0.58		Carb mdstone: dk grey brown, hard, blocky		69				
					0.28		Mixed bone + carb mdst: very broken, dk grey-black, some pebbles						74.8
21	37	75.7	77.5	1.8		1.76						98	75.1
					1.03		Siltstone: lt grey, v. hard, blocky, almost cherty with a smooth, waxy fracture surface; carb towards top, v. minor carb stringers throughout			71			
					0.26		Bentonitic siltstone; soft surface, hard, dk grey, carbonaceous, blocky						
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:		0.0		
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:		0.0		

Comments:



### Corehole Log

Date: *Nov 7/09*  
 Hole No: *09-02*  
 Page: *15* of *17*

UNITS: (___)	Lat. ___° / ___' / ___" N Long. ___° / ___' / ___" W					DLS	Lsd	Sec	Twp	Rge	Mer
UTM NAD83	Easting:		Northing:		Elevation:						

Cored Interval - Units (___)					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness.	Orientation (deg TCA)			RQD (%)	Sampl. CI	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
					<del>0.06</del>		<i>Bentonite</i>							
					<i>0.05</i>		<i>Siltstone: dk grey, hd, blocky</i>							
					<i>0.06</i>		<i>Bentonitic siltstone: as above</i>							
					<i>0.16</i>		<i>Bone: black, hd, blocky,</i>			<i>58</i>				<i>76.7</i>
					<i>0.06</i>		<i>Coal: v. broken (chunks) dull + bright, chat surface v. smooth polished</i>							
					<i>0.14</i>		<i>Bone: black, hd, blocky</i>			<i>64</i>				<i>77.0</i>
					<i>0.06</i>		<i>Carb. st. black, hd, blocky</i>							
<i>38</i>	<i>715</i>	<i>80.5</i>	<i>3.0</i>	<i>3.0</i>	<del><i>0.55</i></del>	<i>3.0</i>	<i>Carb. siltst: dk grey brown, visible banding, coaly bands (1 mm - 5 mm) throughout, hd, blocky surf smooth, wavy, joint</i>			<i>57</i>		<i>100</i>		
					<del><i>0.55</i></del>		<i>Carb. siltst: dk grey brown, wavy banding, coaly bands (1 mm - 5 mm) throughout, hd, blocky surf smooth, wavy, joint</i>			<i>90</i>				
					<del><i>0.55</i></del>		<i>Siltstone: dk grey brown, necessarily less carb. surface:</i>			<i>90</i>				
							<i>Bentonitic sandstone: hd, dk grey brown, blocky</i>							
					<i>0.45</i>		<i>Bentonite: soft, waxy surface when scratched, v. soft, plastic, blocky</i>							
<i>32</i>					<i>0.18</i>		<i>Bentonitic siltstone: dk grey brown, blocky, hard</i>							
					<i>0.24</i>		<i>Bentonite: soft, dk grey brown, waxy surface,</i>							
Total:					<i>0.0</i>	<i>0.0</i>	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:					<i>0.0</i>
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:					<i>0.0</i>

Comments:





### Corehole Log

Date: Nov 7/09

Hole No: 09-02

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UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W

UTM NAD83 Easting: Northing: Elevation:

DLS Lsd Sec Twp Rge Mer

Cored Interval - Units ( )					Recoverd		Description Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,	Orientation (deg TCA)		RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints / Bedding				
					1.55		Siltstone: med-dk grey brown hard, blocky, carb wisps massive			79			
39		865	835	3.0		3.0						100	
					1.38		Siltstone: as above: some larger carb bands near base (4 mm)			86			
23					0.89		Sat/siltst: med grey, hd, blocky, slightly coarser grained than above; + becomes banded in 2nd half (bottom half), minor carb wisps; l.l.clo	31	54	72			
					0.5		Carb mudstone: dk grey - black, hd, top half blocky, bottom half chunky, carb bands (small) + stringers						82.5
					0.22		Carb siltstone: dk grey brown, some bright + thin coal bands, hd blocky			67			83.0
23	42	835	862	3.0		2.62						87	
					0.14		Carb siltstone: as above						
					0.42		Siltstone: dk grey brown, hard, blocky, + minor carb, tiny calcite veins	12	65				
					0.35		Carb siltstone / minor bone: dk grey brown - black hard, blocky	57					83.7
													84.05
Total:					0.0	0.0	Rec. Total / Cored Total x 100 =	%	Total Drill Depth:		0.0		
							Rec. Coal / Total Coal x 100 =	%	Total Log Depth:		0.0		

Comments:



### Corehole Log

Date: Nov. 2/09  
 Hole No: 09-02  
 Page: 17 of 17

UNITS: ( ) Lat. \_\_\_° / \_\_\_' / \_\_\_" N Long. \_\_\_° / \_\_\_' / \_\_\_" W  
 UTM NAD83 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Elevation: \_\_\_\_\_

Cored Interval - Units ( )					Recoverd		Description <small>Lithology, Color, Size, Texture, Hardness, Shearing, Contacts, Bedding Angle, Alteration, Wetness,</small>	Orientation (deg TCA)			RQD (%)	Sample ID	Rec. (%)	Log Depth (m)
Box	Cut	From	To	Totl.	Sec.	Totl.		No.	Joints	Bedding				
24					0.06		Bentonitic med grey Sltst: med grey, hd, blocky silty looking surface texture, knife cuts it							
					0.16		Carb mdst: dk grey-black blocky, med hd,			89				
					0.44		Bentonitic siltstone: as above			89				
					0.39		Carb. mudstone: hd, blocky, dk grey - black			61				
					0.08		Coal							
					0.58		Carb mudstone: as above but bottom half is crushed in part + broken in part (chunky)							
24	41	823	824	3.1	2.94									
					0.36		Mdstone: dk grey brown, hard, blocky, banded			61				
					0.29		Siltstone: lt - med grey, blocky, hard, banded cross bedded at top			66				
					2.12		Sandstone: lt - med grey, hd, blocky, distinctly banded at top, less so at depth, carb detritus 0.98-1.26 Chards wisps, stringers fine - med gr			89				
					0.15		Bentonite: med grey, blocky waxy, soft							
Total:					0.0	0.0	Rec.Total / Cored Total x 100 =	%	Total Drill Depth:				0.0	
							Rec.Coal / Total Coal x 100 =	%	Total Log Depth:				0.0	

Comments: