

0123-24360
094129

ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

1016 - 510 WEST HASTINGS STREET, VANCOUVER, B.C. V6B 1L8 TEL (604) 688-2568 • FAX (604) 688-2578

1999 FINAL REPORT
DIVISION MOUNTAIN PROJECT
SOUTHERN YUKON TERRITORY

094129

Coal Exploration Licences Y479, Y480, Y486 and Y487
Coal Mining Leases 3000, 3001, 3002, 3003 and 3004

Located on Map Sheets NTS 115H/8, 105E/5

Whitehorse Mining District

for

CASH RESOURCES LTD.

prepared by

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

by

R.F. Gish
March, 2000

SUMMARY

The 1999 exploration program at Division Mountain was funded and managed by Usibelli Coal Mine, Inc. under an option agreement from Cash Resources Ltd. Cash Resources holds coal mining rights to the main Division Mountain deposit area under Coal Mining Leases 3000, 3001, 3003 and 3004 and coal exploration rights to the surrounding area under Coal Exploration Licenses Y479, Y480, Y486 and Y487.

The exploration was carried out from March 27 to April 26, 1999 and consisted of excavator trenching, reverse circulation drilling and winter road construction to support the program.

The program was directed by Alan Renshaw, P.E., P.L.S. of Usibelli Coal. Camp support and field labour were provided by Archer, Cathro & Associates (1981) Limited under the field supervision of the author. The Author's Statement of Qualifications is given following the accompanying logs and maps.

Reverse circulation percussion drilling was carried out by Midnight Sun Drilling Co. Ltd. using a track-mounted Schramm T6585WS drill supported with a Clark skidder. Down-hole geophysical logging was performed by Amerok Geosciences Ltd. Resistivity was measured using an IFG BMP-04 galvanic resistivity tool with 16 inch and 48 inch electrode spacing. Natural radioactivity was quantified with an IFG BSG-01 four channel gamma probe with windows in the 100 KeV to 3MeV range. Measurement time constant is one second.

Road construction and trenching was carried out by Caron Diamond Drilling Ltd. using a Caterpillar D7E bulldozer and a Caterpillar 235 excavator, respectively.

All contractors are Whitehorse-based.

The drill program totalled 1913 m in 20 holes (99-65 to 99-84). All hole collars are located with a squared 20 by 20 cm, 1 m long post labelled with hole number, direction and inclination. Four trenches totaling 77 m in length were excavated through frozen overburden. These were mapped and all coal seams intersected were sampled before the trenches were backfilled. Locations of drill holes and trenches are given on the accompanying map.

All disturbed lands, including access roads, drill pads and backfilled trenches were recontoured and reseeded with an approved revegetation mix according to the provisions of the Land Use Permit.

Copies of maps, drill logs, geophysical logs, trench logs and coal quality data supplied by Usibelli Coal to Cash Resources at termination of the option agreement are included. No formal report of the program activities was provided.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED



R..F. Gish, B.Sc.



USIBELLI COAL MINE, INC.

P.O. Box 1000 ■ Healy, AK 99743
(907) 683-2226 ■ fax (907) 683-2253

June 7, 1999

Mr. Frank Gish, B.Sc.
1016-510 West Hastings Street
Vancouver, B.C. V6B 1L8

Dear Frank,

Please find enclosed copies of all the drill and trench logs from our spring 1999 exploration program at Division Mountain. I've also enclosed copies of the geophysical logs and all the coal quality data from the samples. Please let me know if there is any other reports or data that we have that you want back. I believe that everything else that we have here in Healy is a copy and not originals.

By way of estimates on the reserve analysis we do agree with your indicated reserve number in excess of 50 million tonnes of run of mine coal (ROM). When we looked at what we thought we could mine economically, we came up with 32.3 million ROM short tons at a strip ratio of 3.2:1 (bank cubic yards per short ton of ROM coal). This assumed a 500 feet mining depth and an aggressive highwall angle averaging 30 degrees off vertical.

After this springs drilling exploration program we felt that with the water that was encountered and some of the geotechnical observations that a mining depth of 500 feet was probably too aggressive. We reanalyzed the reserve using a 300 foot mining depth cutoff, and a 45 degree highwall angle. This took the ROM reserve down to 19 million short tons at a ROM strip ratio of 3.1 bank cubic yards to 1 short ton of coal.

On Corduroy Mountain as you know we intersected coal in 3 drill holes. By projecting out a 1000 feet in both directions along strike we estimated that there is 2.1 million short tons ROM coal by using a 300 foot mining depth and a 30 degree off vertical highwall angle. The ROM strip ratio came out at 3.3 bank cubic yards to 1 short ton of coal. Keep in mind that it is pretty hard to come up with a very meaningful reserve estimate based on only 3 holes.

I really enjoyed working with you on this project Frank and hope we can work together again someday. Best wishes to you and yours!

Sincerely,


Alan E. Renshaw, PE, PLS

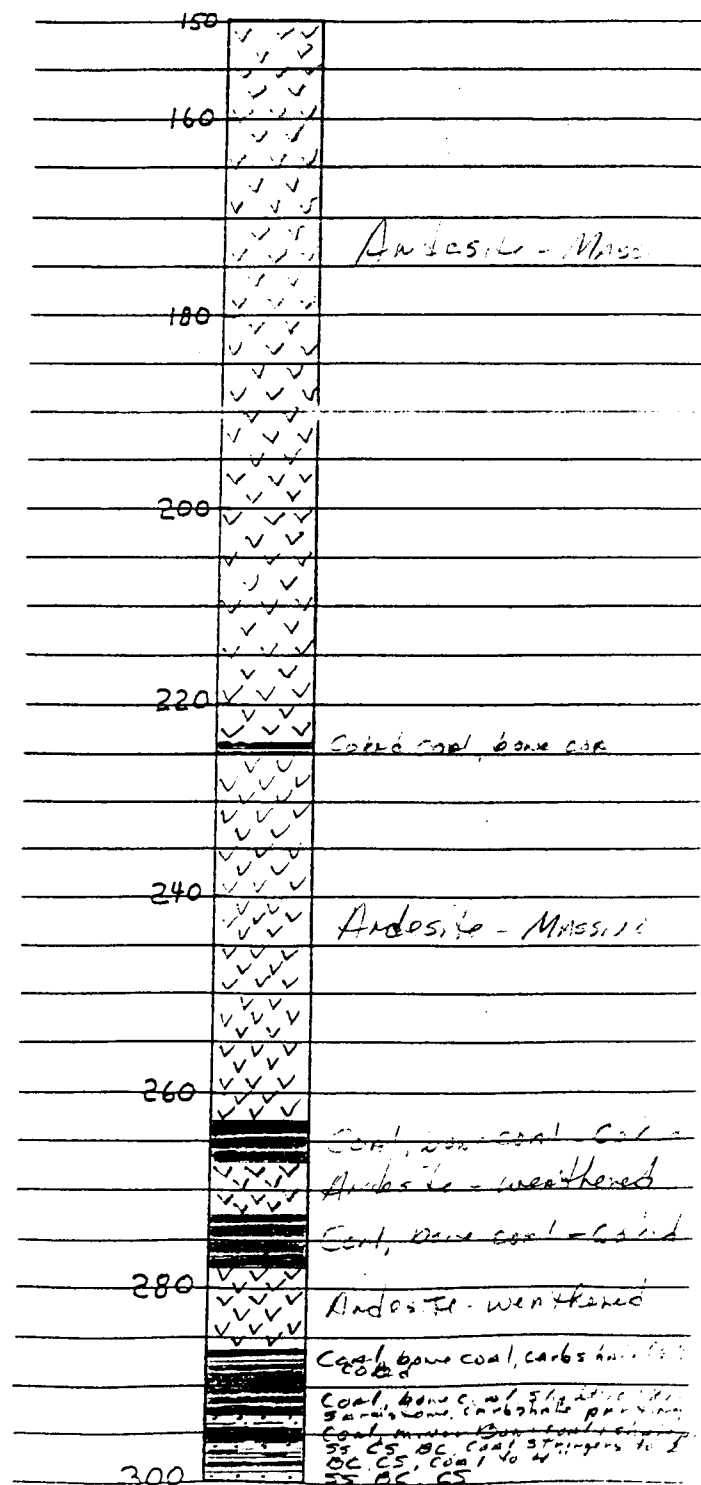
Usibelli Coal Mine, Inc.

~~Note: 1~~

Date: 4/5/99
 Geol: M. D. Gelowich
 Driller: _____
 Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

TRENCH

~~Hole~~: 1 (cont)

Date: 4/5/99

Geol: Mike Belowich

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

300	Carb shale, bone coal
	Carb shale bone coal coal 4.4"
	Ironstone - fossiliferous
	Bone coal Carb shale coal 1"
	Ironstone, CS
	Ironstone - fossiliferous
320	Carb shale - fossiliferous
	Interbedded ss & c. siltst.
	Andesite (Richtersen Formation)
	Sandstone siltstone
340	various dk gray to blk
	non carbonaceous
	Richtersen Formation?
	End of Section 350'
360	
80	
160	
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
240	
260	
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

(135' LONG)

Hole: Trench #2

(N60' SE OF
OLD TRENCH)

Date: 4/11/99

Geol: Mike Belowich

Driller: _____

Weather: _____

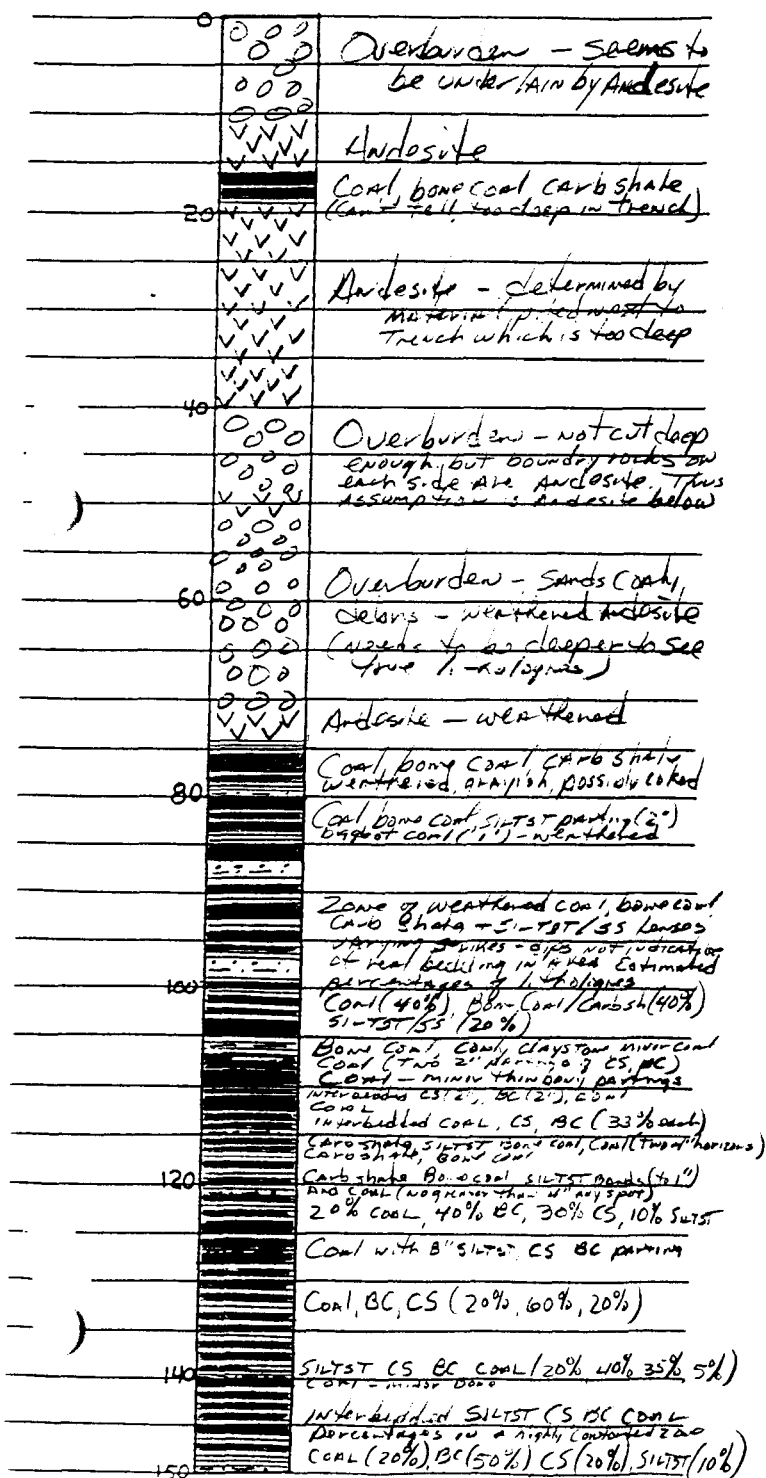
Location: _____

Northing: _____

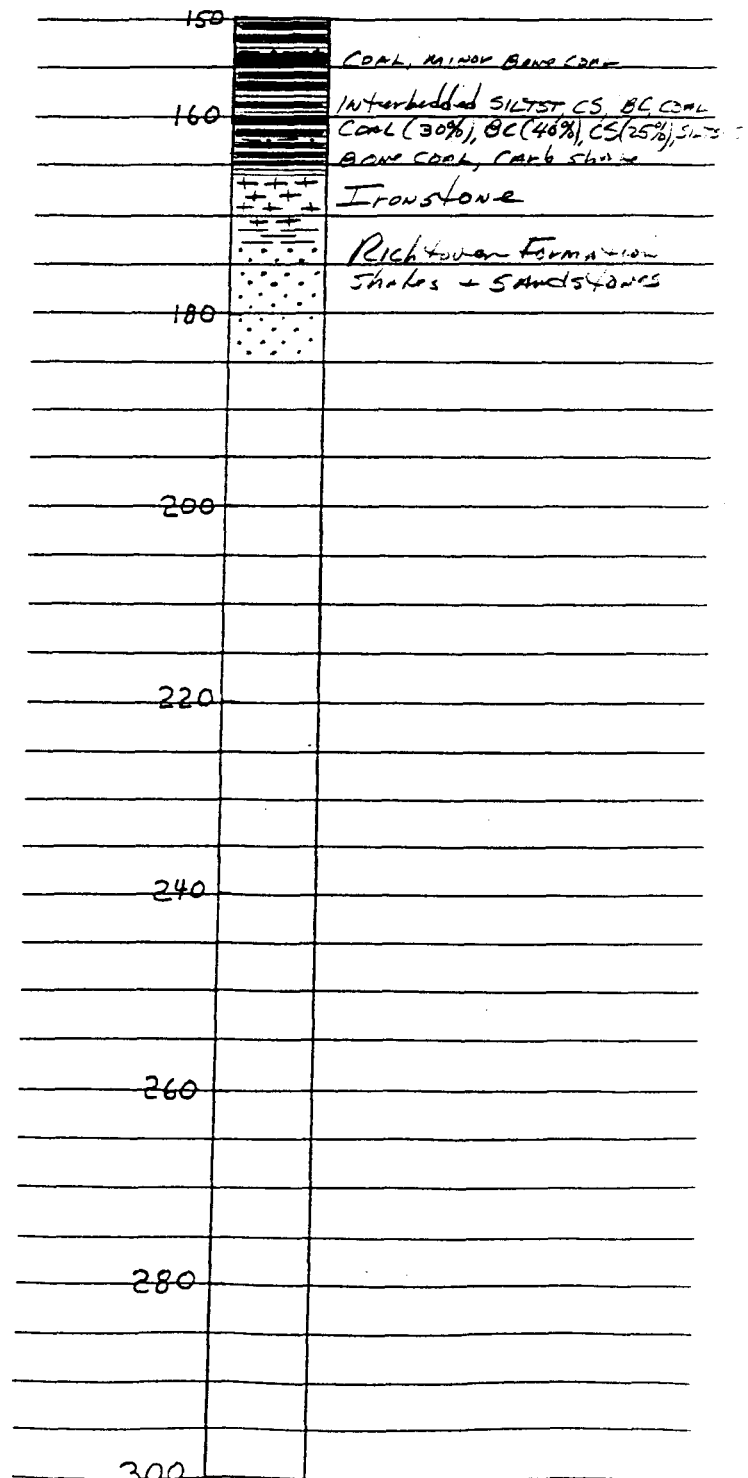
Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

1 of 2

Usibelli Coal Mine, Inc.

VERY POOR INFO.

TRENCH 3 - NEAR 99-66

DUE TO PERMANENT,

Hole: _____

Date: APR. 18

Location: _____

Geol: ALAN RENSHAW

Northing: _____

Driller: _____

Easting: _____

Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	↓	P-Frost
	✓	- TO HARD TO DIG
		- (COULDN'T DIG)
20		TOUGH - O/B.
40	✓	
60		F - Frost
	✓	
80		
100		
120		S.S.
140		
150	↓	P-Frost

SAMPLE LOG DESCRIPTION

150		
160		
180		
200	✓	C-Frost
	✓	
220		
240		
		S.S.
260		
		COAL
		SAMPLE 1
		2
280		
		S.S.
300		

2 of 2

TRAVEL- 3

Note:

Date: _____

Location: _____

Geol: _____

Nothing: _____

Driller: _____

Easting: _____

Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

Continued

300.

320

5.5

340

~~360~~

Code

U.S.

380

64-2-

RICH TOVEN

400

E.O.T. 400

27

And

1. Local

~~150~~

160

~~180~~

~~200~~

22a

240

~~260~~

280

300

DRILL LOG DATA

1 OF 1

Usibelli Coal Mine, Inc.

TRENCH STARTED
ABOUT 50' IN FRONT

TRENCH 4 - NEAR 99-67

Hole: _____

07-012

Date: APR 18

Location: _____

99-67

Geol: ALAN RENSLOW

Northing: _____

Driller: _____

Easting: _____

Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0		
10		
20		P - Frost.
30		?
40		
50		S.S.
55		LOOKED LIKE ANDESITE DIKE BUT IT IS S.S.
60	1	
65	2	
70	3	
75	4	
80	5	
90		
100		S.S.
110		E.O.T.
120		
130		
140		
150		

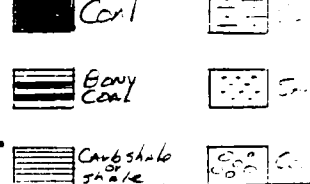
SAMPLE LOG DESCRIPTION

150		
160		
170		
180		
190		
200		
210		
220		
230		
240		
250		
260		
270		
280		
290		
300		

150		Carb shale
160		Shale - Carbonaceous in part carbonaceous
		Siltstone
		Carb shale
		Siltstone
180		Andesite
		Carb shale with bone in siltstone - carbonaceous
		Sandstone - Carb in part
200		Carb shale & siltstone
		Sandstone - Carb in part
		Carb shale
		Siltstone - Carbonaceous
220		Carbonaceous siltstone
		Sandstone - Carb in part
		Carb shale
		Andesite
		Andesite
240		Andesite
		Sandstone - Carb in part
		Carbonaceous siltstone (Carb shale)
		Carb shale, clay cone
		Sandstone
260		
		Carb shale
		Andesite
		Andesite
		Interbedded coal, bone, coal + carb shale
280		
		Andesite
300		Coal, minor bone + carb shale

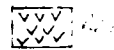
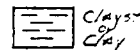
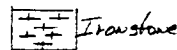
DRILL LOG DATA

Usibelli Coal Mine, Inc.



Hole: 99-65

2 OF 2



LEGEND

Date: _____

Geol: _____

Driller: _____

Weather: _____

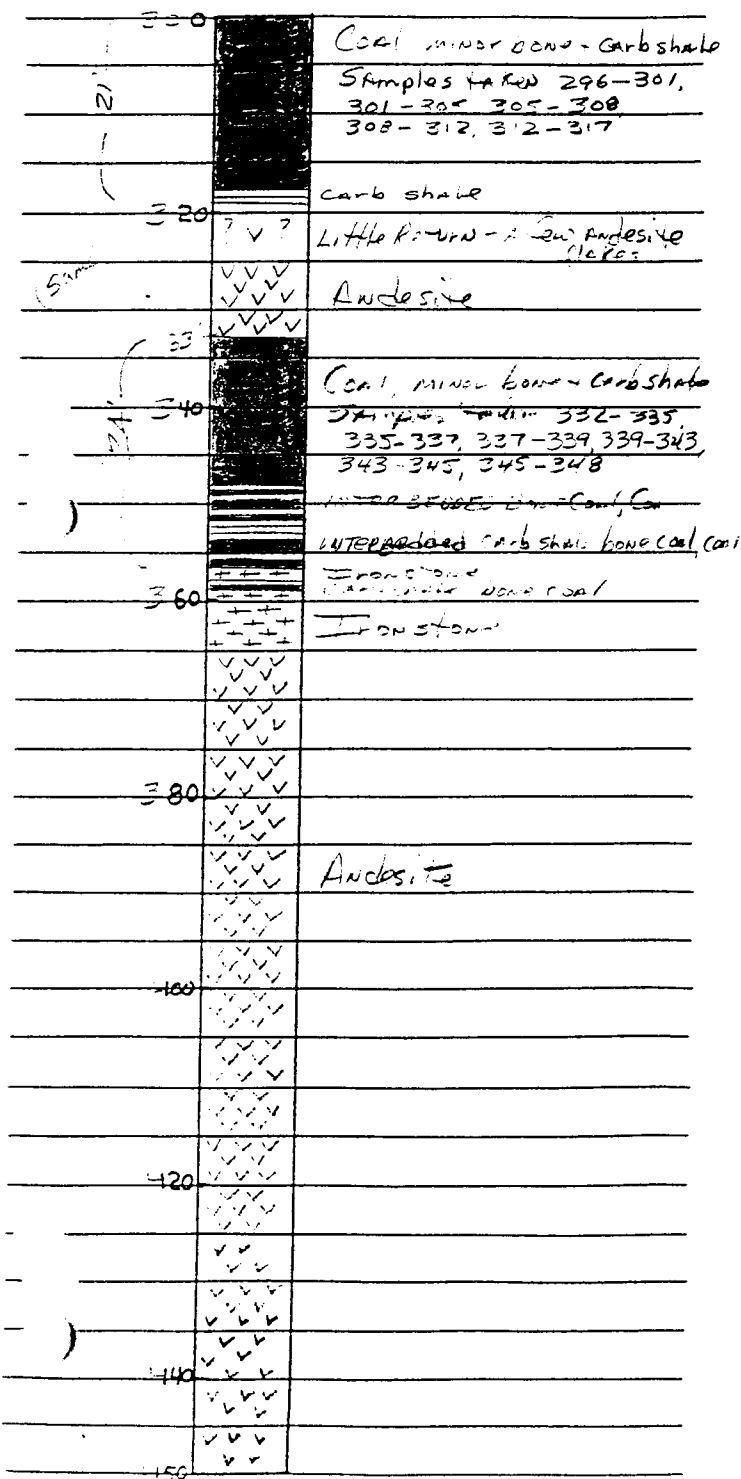
Location: _____

Northing: _____

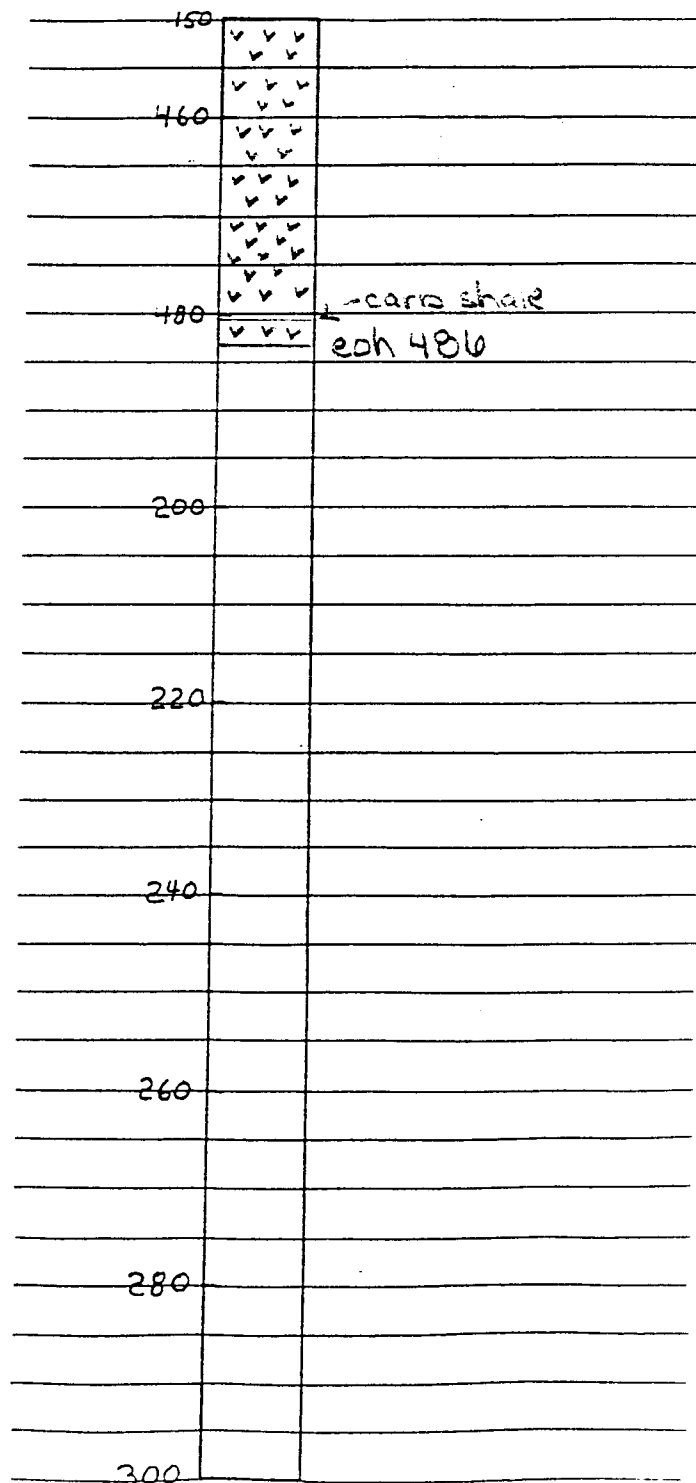
Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ 40°
DIP 50°

Hole: 99-66
1 OF 2

Date: 4/6/99

Location: _____

Geol: MIKE BELOWICH / FRANK GSH

Northing: _____

Driller: MIDNIGHT SUN

Easting: _____

Weather: _____

Elevation: _____

(CAIRNES SYNCLINE EASTERN LIMB)

SAMPLE LOG DESCRIPTION

0		
		overburden
20		siltstone
		Coal samples 25-30, 30-35
40		siltstone
		Coal sample 40-45
		siltstone
		Coal (one foot)
60		carb shale + siltstone
		siltstone
		carb shale
80		siltstone
		carb shale
		siltstone
100		carb shale
		siltstone
		shale
		siltstone
		bone coal
		siltstone
120		Coal (2 feet)
		siltstone
		shale
		siltstone
		shale
		siltstone
		bone coal
140		siltstone
		shale
150		siltstone

SAMPLE LOG DESCRIPTION

150		
160		shale
		siltstone
		coal sample 170-175
180		
200		
		Andesite
220		
		Carbonaceous shale
		Coal Bone Coal
		Samples 230-233, 233-237
240		Interbedded carb shale, siltstone and sandstone
		Sandstone - with occasional carb shale - 5-15% carb
260		Sandstone coarse-grained
280		carb shale overlying
		Coal Bone Coal Sample
		carb shale overlying
		Coal Bone Coal - Sample
		carb shale overlying
		SS
		carb shale overlying
		SS - carb shale overlying
		Coal Bone Coal - Sample
300		Coal Bone Coal - Sample

DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-66
2 of 2

Date: 4/6/99

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

350	Coal bone con. Carb shale bone con. Carb shale bone con. Carb shale bone con.
320	Carb shale bone con. Carb shale bone con. Sandstone Andesite
340	Carb shale bone con. Carb shale bone con. Sandstone Siltstone - carbonaceous
360	Andesite Carb shale Carb shale Sandstone Carbonaceous shale bone con. Minor coal Ironstone Carb shale Siltstone - lots of water
380	Andesite - massive (Acts as a guard)
400	
420	
	End of hole 425'
140	
150	

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ 220°

DI 50°

Hole: 99-67

1052

Date: 4/6/99

Location: _____

Geol: Mike Belowich / FRANK GISH

Northing: _____

Driller: MIDNIGHT SUN

Easting: _____

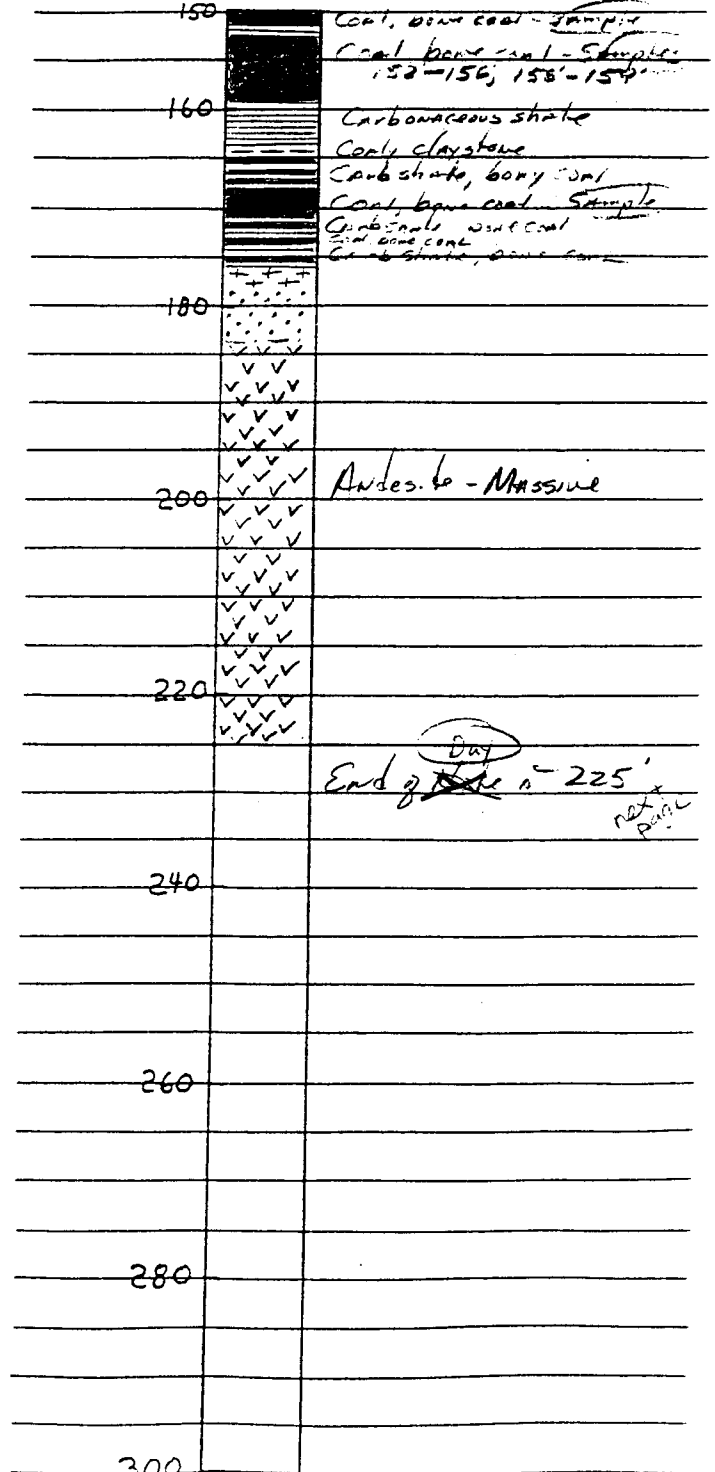
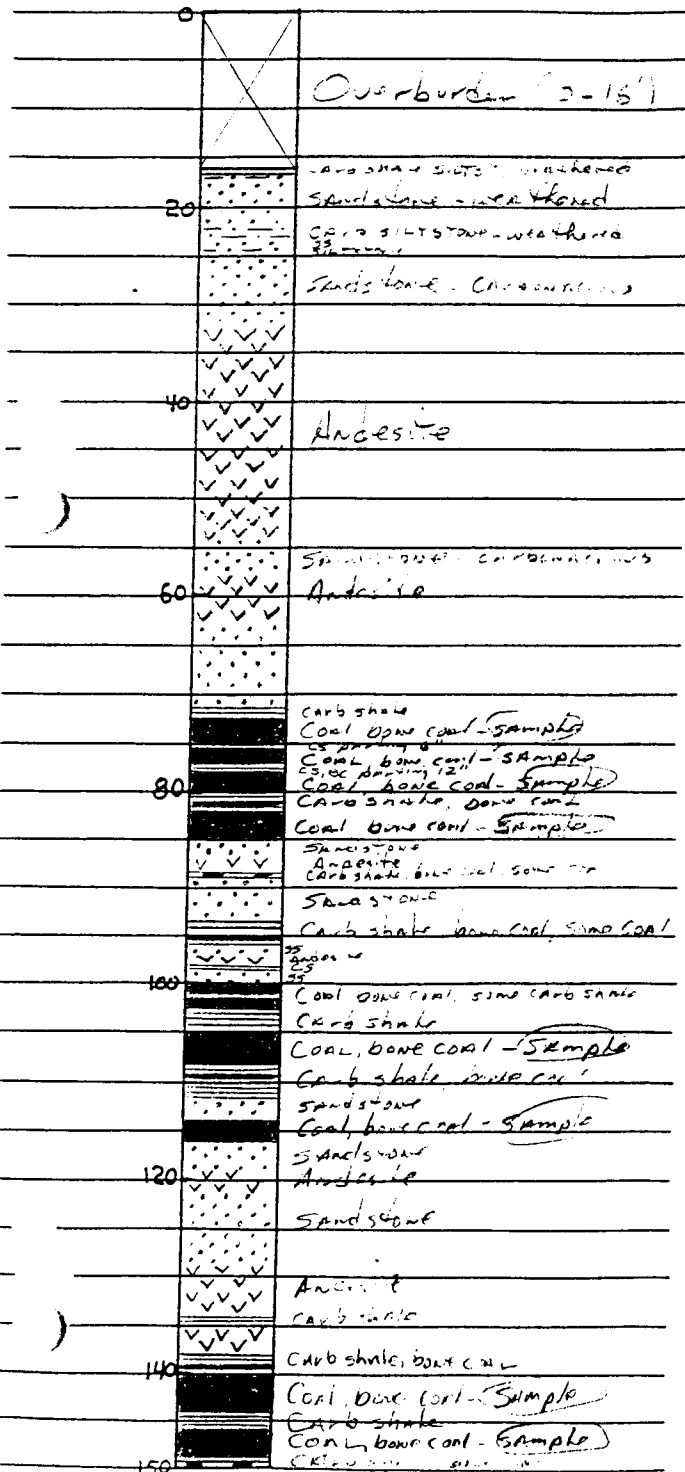
Weather: _____

Elevation: _____

(CAIRNES SYNCLINE WESTERN LIMB)

SAMPLE LOG DESCRIPTION

SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-67

20° 2'

Date: April 6

Geol: FRANK GISH

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	
80	
100	
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
	andesite
240	carb chert
	andesite
260	bony coal
	andesite
	coal
280	shale
	285 eoh
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

VERTICAL ~~HOLE~~

Hole: 99-69

Date: April 7+8

Geol: FRANK GISH

Driller: MICHAEL SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
	Overburden
60	(ALL GRAY)
80	
100	
120	
	125 coh
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
240	
260	
280	
300	

Usibelli Coal Mine, Inc.

H o l e : 99-70

1 OF 2
Location: _____

N o r t h i n g : _____

Easting: _____

Elevation: _____

SAMPLE	LOG	DESCRIPTION
1	100	100
2	100	100
3	100	100
4	100	100
5	100	100
6	100	100
7	100	100
8	100	100
9	100	100
10	100	100
11	100	100
12	100	100
13	100	100
14	100	100
15	100	100
16	100	100
17	100	100
18	100	100
19	100	100
20	100	100
21	100	100
22	100	100
23	100	100
24	100	100
25	100	100
26	100	100
27	100	100
28	100	100
29	100	100
30	100	100
31	100	100
32	100	100
33	100	100
34	100	100
35	100	100
36	100	100
37	100	100
38	100	100
39	100	100
40	100	100
41	100	100
42	100	100
43	100	100
44	100	100
45	100	100
46	100	100
47	100	100
48	100	100
49	100	100
50	100	100
51	100	100
52	100	100
53	100	100
54	100	100
55	100	100
56	100	100
57	100	100
58	100	100
59	100	100
60	100	100
61	100	100
62	100	100
63	100	100
64	100	100
65	100	100
66	100	100
67	100	100
68	100	100
69	100	100
70	100	100
71	100	100
72	100	100
73	100	100
74	100	100
75	100	100
76	100	100
77	100	100
78	100	100
79	100	100
80	100	100
81	100	100
82	100	100
83	100	100
84	100	100
85	100	100
86	100	100
87	100	100
88	100	100
89	100	100
90	100	100
91	100	100
92	100	100
93	100	100
94	100	100
95	100	100
96	100	100
97	100	100
98	100	100
99	100	100
100	100	100

150		
160		
180		
200		
220		
240		
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-70

2052

Date: April 8

Geol: FRANK GISH

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	overburden (ALL GRAY)
80	
100	
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	casing to 1165
180	tricone to 180
180	180 coh
200	
220	
240	
260	
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ. 40°

DIP 50°

Hole: 99-71

Date: April 9

Geol: Mike D. Lowich

Driller: M. D. NG - SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	
	overburden
	casing to 125
80	(ALL GRAY)
100	
120	
	125' eon
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
240	
260	
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ 40°

DIP 50°

Hole: 99-72

Date: 4/10/99

Geol: Mike Belowick

Driller: MIDNIGHT SUN

Weather:

1 of 2

Location:

Northing:

Easting:

Elevation:

SAMPLE LOG DESCRIPTION

0	Gravels
5	Sand + Sandy Gravels
10	Gravels
15	Gravels
20	Gravels
25	Gravels
30	Gravels
35	Gravels
40	Gravels
45	Gravels
50	Gravels
55	Gravels
60	Gravels
65	Gravels
70	Gravels
75	Gravels
80	Gravels
85	Gravels
90	Gravels
95	Gravels
100	Gravels
105	Gravels
110	Gravels
115	Gravels
120	Gravels
125	Gravels
130	Gravels
135	Gravels
140	Gravels
145	Gravels
150	Gravels

SAMPLE LOG DESCRIPTION

150	Sandy Gravels
160	Sand
170	END OF DAY (NEXT PAGE)
180	
190	
200	
210	
220	
230	
240	
250	
260	
270	
280	
290	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-73

2 of 2

Date: April 10

Geol: FRANK GISH

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	overburden
80	
100	casing to 160'
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	↑ ← END OF DAY → ↓
180	
200	traverse to 245'
220	
240	
245'	245' eoh
260	
280	
300	

DRILL LOG DATA

10/2

Usibelli Coal Mine, Inc.

AZ 230°

DIP 50°

Hole: 99-73

1 of 2

Date: April 11

Geol: MIKE BELDWIN

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0		
		overburden
20		sandstone coarse gr
		shale carbonaceous
		sandstone
40		shale
		sandstone
		siltstone
60		sandstone
		siltstone
		sandstone
80		shale carbonaceous
		sandstone
		siltstone
100		sandstone
120		
		sandstone
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		siltstone
		sandstone
180		siltstone
		sandstone
		sandstone
		siltstone
200		sandstone
		siltstone
220		
		sandstone
		siltstone
		sandstone
240		
		shale
260		sandstone
		siltstone
		sandstone
280		siltstone
		sandstone
		siltstone
		sandstone
300		

DRILL LOG DATA

2012

Usibelli Coal Mine, Inc.

Hole: 99-73

Date: April 11

20FZ

Geol: MIKE BELOWICH

Location: _____

Driller: MIDNIGHT SUN

Northing: _____

Weather: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

300		siltstone
		sandstone
		siltstone
320		sandstone
		siltstone
		sandstone
340		siltstone
		sandstone
		siltstone
		sandstone
360		siltstone w coal fragments
		sandstone
		siltstone
		sandstone
380		siltstone
		sandstone
		siltstone
		sandstone
400		siltstone
		sandstone
		siltstone
420		sandstone
		siltstone
		sandstone
440		siltstone w coal fragments (water)
		sandstone
		siltstone
450		sandstone

SAMPLE LOG DESCRIPTION

450		sandstone
460		siltstone
		sandstone
		siltstone
		sandstone with coal fragments
		sandstone
		siltstone w coal fragments
		sandstone
180		siltstone
		sandstone
		siltstone
		sandstone
500		siltstone
		sandstone
220		
240		
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ 230°

DIP 50°

Hole: 99-74

1 OF 2

Date: 4/12/99

Location: _____

Geol: Mike Bolowich / FRANK GISH

Northing: _____

Driller: MIDNIGHT SUN

Easting: _____

Weather: _____

Elevation: _____

(CORRECTION MTN.)

SAMPLE LOG DESCRIPTION

SAMPLE LOG DESCRIPTION

0	000	
10	000	
20	000	Overburden - sandy in part
30	000	
40	000	
50	000	
60	000	
70	000	
80	000	
90	000	
100	000	
110	000	
120	000	
130	000	
140	000	
150	000	

150	000	COAL, BONE COAL - CARB SHALE, BONE COAL
160	000	COAL, BONE COAL - Sample
170	000	COAL, BONE COAL - Sample
180	000	COAL, BONE COAL - Sample
190	000	COAL, BONE COAL - Sample
200	000	COAL, BONE COAL - Sample
210	000	COAL, BONE COAL - Sample
220	000	COAL, BONE COAL - Sample
230	000	COAL, BONE COAL - Sample
240	000	COAL, BONE COAL - Sample
250	000	COAL, BONE COAL - Sample
260	000	COAL, BONE COAL - Sample
270	000	COAL, BONE COAL - Sample
280	000	COAL, BONE COAL - Sample
290	000	COAL, BONE COAL - Sample
300	000	COAL, BONE COAL - Sample

Usibelli Coal Mine, Inc.

2 OF 2

Geol: Mike Belovich (6365)

Driller: MIDNIGHT SUN

W e a t h e r :

Location: _____

Nothing: _____

Easting: _____

Elevation:

(CORDUROY MTN.)

SAMPLE LOG	DESCRIPTION
------------	-------------

A hand-drawn stratigraphic column on lined paper. The column is a vertical rectangle divided into two sections by a horizontal line. The left section contains depth markers in centimeters, and the right section contains lithological descriptions. The depth markers are: 150, 160, 180, 200, 220, 240, 260, 280, and 300. The lithological descriptions are: 'shale / siltstone' and 'siltstone'. The column is filled with various patterns: a top section with a 'V' pattern, a section with horizontal dashed lines, a section with horizontal solid lines, and a section with a stippled pattern.

Depth (cm)	Lithology
150 - 160	shale / siltstone
160 - 180	shale / siltstone
180 - 200	shale / siltstone
200 - 220	siltstone
220 - 240	siltstone
240 - 260	siltstone
260 - 280	siltstone
280 - 300	siltstone

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ. 230°

DIP 50°

Hole: 99-75

Date: 4/13/99

Geol: M. K. Belov

Driller: MIDNIGHT SUN

Weather:

Location:

Northing:

Easting:

Elevation:

SAMPLE LOG DESCRIPTION

0		overburden
20		
40		
60		
80		Andesite - MASSIVE, fine-grained to aphanitic basaltic in part, calcic plagioclase phenocrysts, some porphyritic, some volcanic texture observed
100		
120		
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		Andesite - MASSIVE fine-grained to aphanitic basaltic in part, calcic plagioclase phenocrysts, some volcanic texture observed
220		
240		
260		
280		
300		

DRILL LOG DATA

2012

Usibelli Coal Mine, Inc.

NZ 230°

DIP 50°

Hole: 99-71

Date: April 13 1999

Geol: MIKE BELOWICH / FRANK GISH

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

300	siltstone
	sandstone
320	bony coal & coal siltstone
	coal (drilling w water)
340	siltstone
	coal (drilling w water)
360	siltstone shale coal
	siltstone coal
380	
400	andesite
420	
440	
450	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
240	
260	
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

1022

AZ 230°

Hole: LCM 22-77

DIP 50°

Date: 4/14/99

Location: _____

Geol: Mike R. Smith (J-295) / FRANK GISH

Northing: _____

Driller: MIDNIGHT SUN

Easting: _____

Weather: _____

Elevation: _____

(CORDUROY MTN.)

SAMPLE LOG DESCRIPTION

0	5	
10	15	little
20	25	fragments
30	35	
40	45	
50	55	
60	65	Shale - weathered
70	75	Sandstone
80	85	Carb shale
90	95	Sandstone
100	105	Carb shale
110	115	Sandstone
120	125	Carb shale, sandstone
130	135	
140	145	Sandstone - alternating fine and cgs-grained
150	155	
160	165	
170	175	
180	185	
190	195	
200	205	Carb shale, bone coal
210	215	Carb shale, bone coal, thin coals
220	225	Sandstone
230	235	
240	245	
250	255	
260	265	
270	275	
280	285	
290	295	
300	305	

SAMPLE LOG DESCRIPTION

150	155	Bone coal, carb shale, bone coal, thin coal seams
160	165	Carb shale
170	175	Carb shale, bone coal
180	185	Carb, bone coal - Samples 168-171, 171-174
190	195	Sandstone
200	205	Carb, bone coal, carb shale
210	215	Sandstone
220	225	Carb shale, bone coal
230	235	Sandstone
240	245	Carb shale, bone coal
250	255	Sandstone
260	265	Carb shale
270	275	Sandstone
280	285	Carb shale, bone coal
290	295	Carb shale, bone coal, thin coals
300	305	Sandstone

DRILL LOG DATA

Usibelli Coal Mine, Inc.

2 of 2

Hole: 99-77

Date: April 14 1999

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

300		sandstone
		shale
		coal
		siltstone
		sandstone
		siltstone
		coal
320		siltstone
		Coal sample 320-327
		siltstone
		siltstone
		sandstone
340		siltstone
		sandstone
		siltstone
		Coal (wet)
		siltstone
360		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone
		siltstone

DRILL LOG DATA

Usibelli Coal Mine, Inc.

CUB MTL.
AZ 220°
DIP 50°

Hole: 99-78

Date: April 15
Geol: _____
Driller: _____
Weather: _____

Location: _____
Northing: _____
Easting: _____
Elevation: _____

SAMPLE LOG DESCRIPTION

0	overburden
20	sandstone - coarse grained arkosic
40	@ 50' H ₂ O
60	
80	
100	shale
120	sandstone
140	140-150' - orange w/x crumbly
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	- andesite
240	
260	
280	
300	- coh 300'

DRILL LOG DATA

Usibelli Coal Mine, Inc.

1 of 2

VERTICAL

Hole: 99-79

Date: 4/16/99

Geol: Mike B (0-210')

Driller: MIDNIGHT SUN

Weather: _____

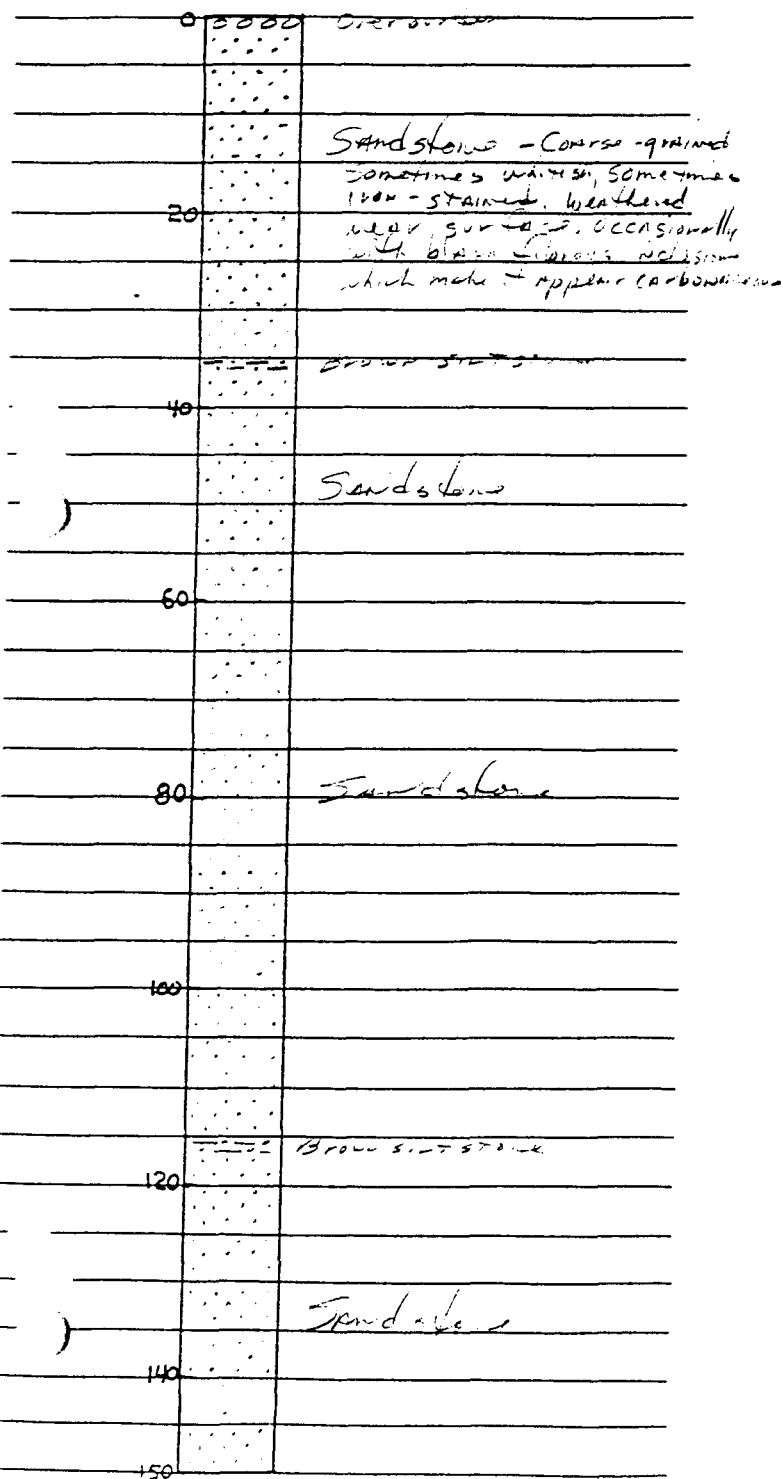
Location: _____

Northing: _____

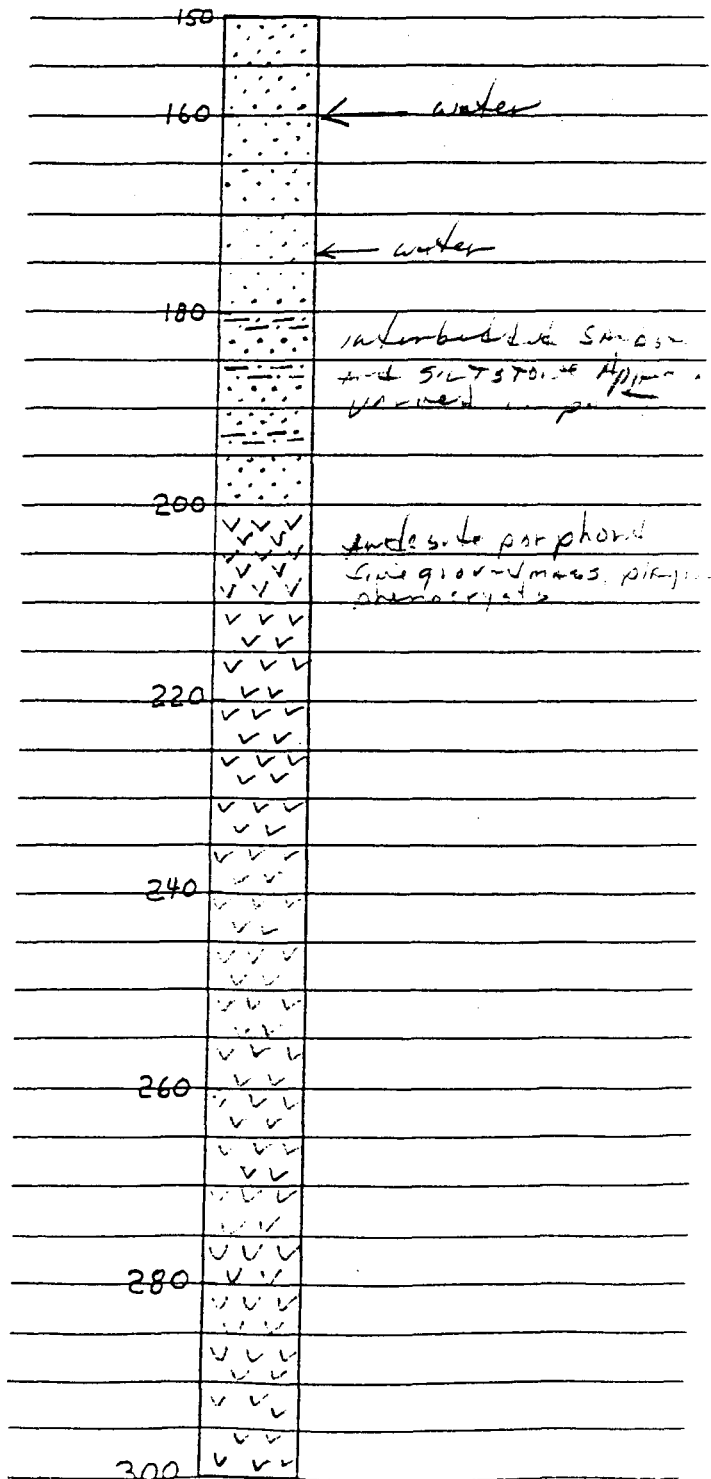
Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

2 of 2

Hole: 99-79

Date: 4-6-99

Location: _____

Geol: Frank Gish

Northing: _____

Driller: MONTGOMERY

Easting: _____

Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

30	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
320	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
340	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
360	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
380	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
400	✓✓✓	
	✓✓✓	
	✓✓✓	
	✓✓✓	
420	✓✓✓	
		coh 420
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

VERTICAL

Hole: 99-80

Date: 4/17/99

Location: _____

Geol: Mto Belowct

Northing: _____

Driller: _____

Easting: _____

Weather: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

SAMPLE LOG DESCRIPTION

0	00%	Overburden
0	00%	Permian run - 2-8
0	00%	water
20		Sandstone - weathered
20		heavy silty - some sand
20		Sandstone - 2-4-10-15
20		with some sand with
20		black nodules
40		Siltstone - 0-2-4
40		Siltstone - 0-2-4
60		Sandstone - cgs - graind
60		white - some occasionally
60		with some black nodules
80		Sandstone - cgs - graind
80		white + brown 2-4
100		Sandstone - white black
100		fibrous nodules
120		Sandstone - cgs - graind
120		white - some etc
140		Unconsolidated - 0-2-4
140		Unconsolidated - 0-2-4
140		MAJOR WATER HORIZON
150		Sandstone etc

150		
160		Sandstone etc
180		dark fibrous rich siltstone
200		Sandstone etc
220		
240		End of Hole 240'
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

VERTICAL

Hole: 99-81

Date: April 17 1999

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	water at 2'
10	
20	fine sandstone - no pebbles
30	
40	- silt clay - clay & very fine powder from cyclone with occasional rounded quartz pebbles
50	
60	
70	
80	
90	- @ 90' water
100	
110	
120	
130	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
170	
180	- several pieces about 1" x 2" x 1/16" of soft striped clay strata
190	
200	200' coh
210	
220	NB
230	- this hole seemed similar to 99-71
240	- it is likely bedrock was not reached
250	- pebbles like below?
260	
270	
280	
290	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ. 270°
DIP 50°

Hole: 99-B2

Date: 4/18/99

Geol: MB (1-140)

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	Reat
5	Silt-clay - brn - gray
10	
20	Concretion - pelitic Boulders with Sandy matrix - Tantalus
30	← Lots of water
40	Sandstone - gray - brn fine grained - Tantalus
50	
60	Tantalus chert - pebbly conglomerate - pebbly Shale stone
70	
80	← water
90	Tantalus chert - pebbly conglomerate - pebbly Shale stone
100	
110	
120	Coal, bone coal Sandstone - gray - greenish Carbonaceous - 1/2" to 1/4" to 1/2" Coal, bone coal Carbonaceous - 1/2" to 1/4" to 1/2" siltstone - with coal fragments
140	cdh 140' rods stuck
150	

SAMPLE LOG DESCRIPTION

150	
160	
170	
180	
190	
200	
210	
220	
230	
240	
250	
260	
270	
280	
290	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

AZ. 270°

DIP 50°

Hole: 99-83

1 OF 2

Date: April 23 & 24

Geol: MIKE B.

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0		overburden 0-5'
	••••	chert pebble conglomerate
	••••	Tantalus Formation
20	••••	water @ 20'
	••••	
	••••	
40	••••	sandstone bed within
	••••	chert pebble cong
60		
80		
100		
120		
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-83

2 OF 2

Date: 4/25/99

Geol: Mike B (45' - 320')

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	Overburden - Tantalus Boulders (weathered) with sandy gravel matrix
80	Carb shale, bone coal, minor coal Sandstone with carb shale horizons at 77, 85, 88, 90, 91
100	Water zone - caving Sandstone - coarse grained Carb shale Carb shale Sandstone with CS zones at 112, 114 More water Sandstone Coal, bone coal, some CS interbedded SS and CS Coal, bone coal, some CS Sandstone with CS at 121, 122, 123, 124 Coal bone coal, CS CS Sandstone
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	Sandstone Coal, bone coal, some CS
160	Sandstone Sandstone with CS zones at 165, 171, 180
180	
200	Coal, bone coal, minor CS Carb shale Coal, bone coal, minor CS Water - lot of it Sandstone - white Black siltstone Andesite or green SS homogeneous, fine grained looks like green quartzite
220	
240	Black siltstone or fine SS Sandstone - coarse, lighter from black to brown
260	Andesite - white phenocrysts in black groundmass, bright - water problems through isoblastic gray tuffs basalt
280	
300	Sandstone, coarse-grained black-speckled banded (varved) in lower part classic pink to tan Continues sandstone to 320 - TL

DRILL LOG DATA

Usibelli Coal Mine, Inc.

10F3

AZ 270°

DIP 50°

Hole: 99-84

10F3

Date: 4/25/69

Geol: Mike B. (0' - 220')

Driller: MICHAEL SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	Overburden - some water
10	Tuffaceous boulders - weathered with sandy, fossil matrix
20	Sandstone - coarse-grained + black siltstones/shales also lower dark sandstones
40	Sandstone - black to brown containing black glassy (obsidian?) particles
60	Black fibrous mudstone
80	Sandstone - greenish with black horizons
100	Sandstone - fine-grained with black inclusions (fibrous)
120	Black fibrous mudstone
140	Sandstone - white-pure to greenish - like fossiliferous
160	Black fibrous mudstone sample taken
180	Sandstone - coarse-grained white to greenish
200	interbedded black fine grained SS and black mudstones, SILTS (varved)
220	Sandstone greenish greenish contains metallic pyrite crystals + lenses homogeneous

SAMPLE LOG DESCRIPTION

150	Sandstone - same green glassy with pyrite
160	
180	Sandstone - coarse-grained greenish to grayish occasionally darker with increased black fibrous inclusions and black glassy (obsidian) crystals
200	
220	Mudstone zones - black next pg.
240	
260	
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

2013

Hole: 99-24
20F3

Date: April 25/99

Geol: MIKE B./FRANK G.

Driller: MIDNIGHT SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0	
20	
40	
60	
80	
100	
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
	water at 225'
	mudstone bed
240	
	sandstone
	- gritty, beige sandstone
	with trace of shale
260	
	mudstone fragments
	- likely Richey fm
280	
300	

DRILL LOG DATA

Usibelli Coal Mine, Inc.

3 of 3

Hole: 99-84

Date: April 25/99

Geol: MIKE B / FRANK G

Driller: MIDWAY - SUN

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

300		
320		
		coh at 325'
40		
60		
80		
100		
120		
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

Summary of TR1-99

Seam	Sample	Depth	Moisture	Ash	BTU	Vol. Carbon	Sulfur	Remarks	
A Seam	#1	20-24	17.64	13.36	8547	28.22	40.78	0.46 S END 4' COAL	
B Seam	#2	32-34	6.01	60.38	3109	18.00	15.61	0.31 S END 2' COAL	
C Seam	#3	43-58	11.77	42.69	5860	13.23	32.32	0.43 N END	
1 Seam	#4	263-266	12.12	35.15	3928	28.29	24.44	0.19 JUNKY	0-1' FROM DIKE 0.86
	#5	273-276	14.42	29.45	6432	20.50	35.63	0.79 SORT OF JUNKY	1-3' FROM DIKE 1.74
	#6	286-288	12.43	37.10	6463	15.16	35.31	0.36 3-5' DIKE	3-5' FROM DIKE 2.33
	#7	288-293	13.52	36.26	6452	16.56	33.66	0.27 BROWN SOIL?	2.03
	#8	293-298	11.01	13.97	10107	22.94	52.08	0.45 GOOD	2.27
	#9	298-303	9.93	22.59	8860	23.03	44.45	0.50 GOOD	1.93

↑
LENGTH ALONG TRENCH

NOTE: MOST OF 1 SEAM WEATHERED. LOW BTU.

DRILL LOG DATA

Usibelli Coal Mine, Inc.

TREK
Hole: 1

Date: 4/5/99

Geol: Mike Belouch

Driller:

Weather:

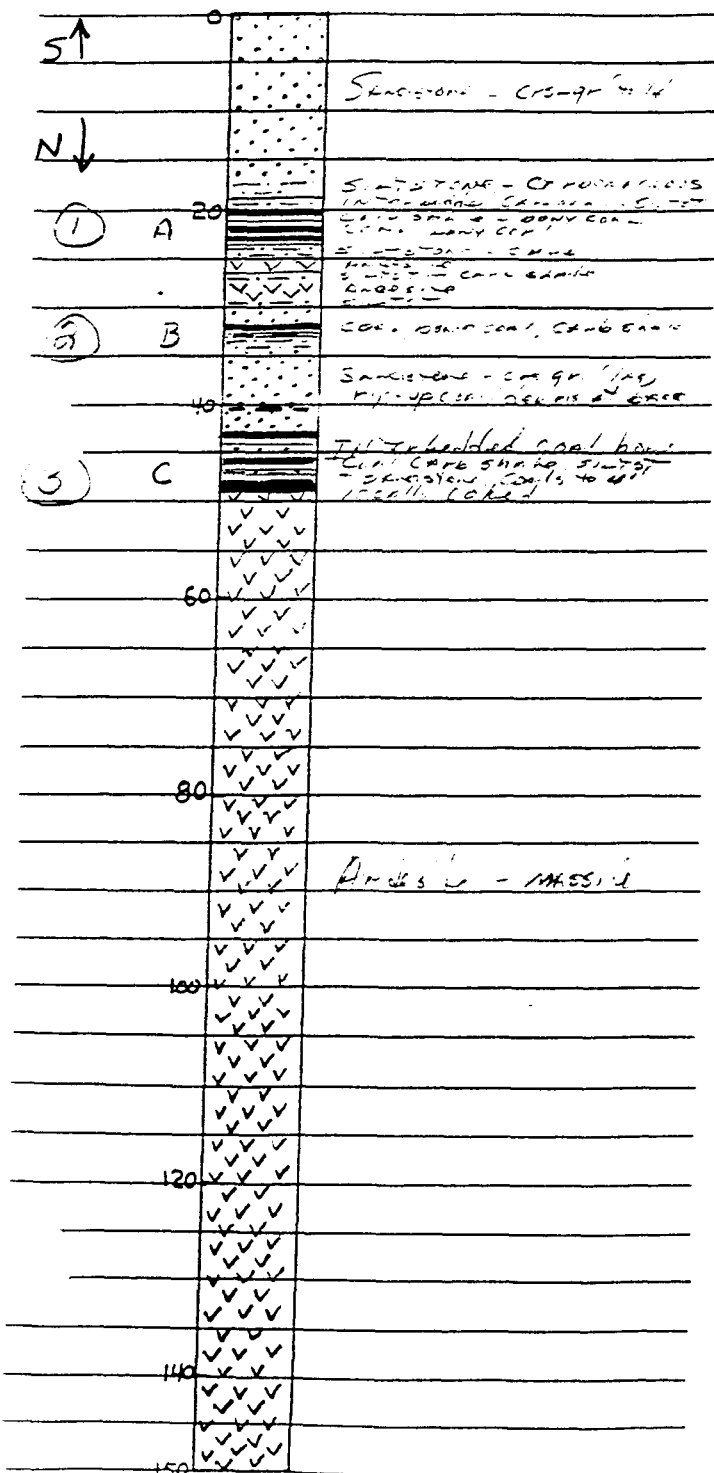
Location:

Northing:

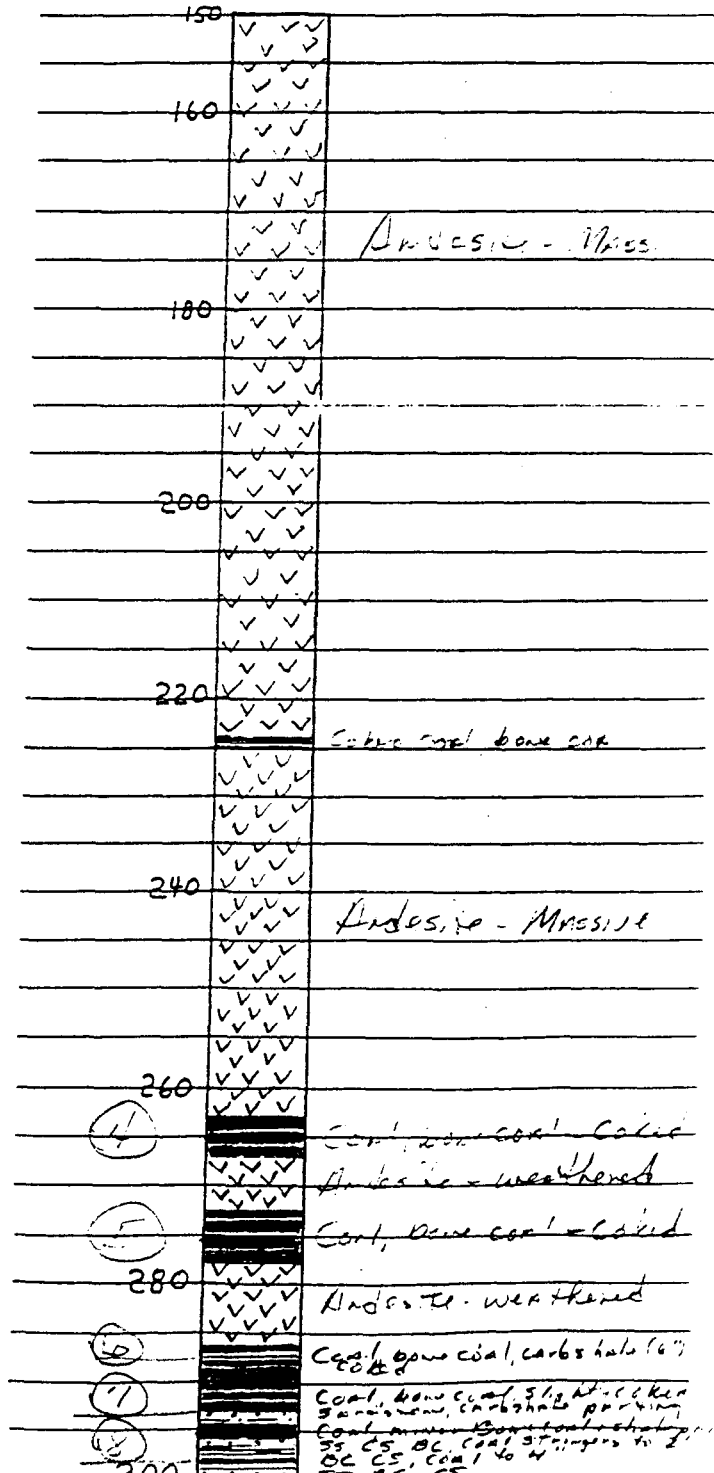
Easting:

Elevation:

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

TRENCH

~~Notes:~~ 1 (cont.)

Date: 4/5/99

Geol: Mike Belowich

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

350	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
320	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
340	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
360	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
80	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
100	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
120	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
140	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
	Carbonaceous shale	Carbonaceous shale
150	Carbonaceous shale	Carbonaceous shale

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR 1-99
SEAM A
SAMPLE # 1
LOCATION DM = Division Mountain
DRILLING DATE 4-25-99
ANALYSIS DATE 4-25-99
ENGINEER: Alan Buchanan ANALYST: W. Patman
DEPTH: higher 30 lower 30
WEIGHTS: gross 1633 tare 795 dry 1565
REMARKS: Southward 4' of coal
weathered, dark, few lumps

5.11
91.89

BHU SEC
AC RC

DRY VALUES: VOLATILES 34.26
ASH 16.22
CARBON 49.51
AS DETERMINE SULFUR .50
AS DETERMINE BTU 9300

AS RECEIVED VALUES: MOISTURE 17.64
VOLATILES 28.22
ASH 13.36
CARBON 40.78
SULFUR .46
BTU 8547

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR 1-99
SEAM B
SAMPLE # 2
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-28-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 32 lower 34
WEIGHTS: gross 1919 tare 797 dry 1888
REMARKS: South end 3' of coal
heavy gray, weathered dry-

DRY VALUES: VOLATILES 19.15
ASH 64.24
CARBON 16.61
AS DETERMINED SULFUR .32
AS DETERMINED BTU 3162

AS RECEIVED VALUES: MOISTURE 6.01
VOLATILES 18.00
ASH 60.38
CARBON 15.61
SULFUR .31
BTU 3109

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 7P1-99
SEAM C
SAMPLE # 3
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-28-99
ENGINEER: AK ANALYST: VP
DEPTH: higher 43 lower 55
WEIGHTS: gross 1630 tare 795 dry 1550
REMARKS: North end
damp dark

DRY VALUES: VOLATILES 14.99
ASH 48.38
CARBON 36.63
AS DETERMINE SULFUR .47
AS DETERMINE BTU 6386

AS RECEIVED VALUES: MOISTURE 11.77
VOLATILES 13.33
ASH 42.60
CARBON 32.32
SULFUR .43
BTU 5860

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-77
SEAM 1
SAMPLE # 4
LOCATION DM1
DRILLING DATE 4-15-77
ANALYSIS DATE 4-28-77
ENGINEER: HR ANALYST: VP
DEPTH: higher 263 lower 266
WEIGHTS: gross 1891 tare 797 dry 1809
REMARKS: all in 1 pile

had fine half dump - rust - looks just

DRY VALUES: VOLATILES 32.19
ASH 40.00
CARBON 27.81
AS DETERMINED SULFUR .20
AS DETERMINED BTU 4222

AS RECEIVED VALUES: MOISTURE 12.12
VOLATILES 28.29
ASH 35.15
CARBON 24.44
SULFUR .19
BTU 3928

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-97
SEAM 1
SAMPLE # 5
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-28-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 273 lower 276
WEIGHTS: gross 1687 tare 796 dry 1599
REMARKS: 1-2' from dkk
foras. Pump - sort of junky

DRY VALUES: VOLATILES 23.96
ASH 34.41
CARBON 41.63
AS DETERMINE SULFUR .88
AS DETERMINE BTU 7112

AS RECEIVED VALUES: MOISTURE 14.42
VOLATILES 30.50
ASH 29.45
CARBON 35.63
SULFUR .79
BTU 6432

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-99
SEAM 1
SAMPLE # 6
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-28-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 286 lower 288
WEIGHTS: gross 1671 tare 796 dry 1600
REMARKS: 3-5 from dkt
fine, lumpy - looks pretty good

DRY VALUES: VOLATILES 17.31
ASH 42.37
CARBON 40.32
AS DETERMINE SULFUR .39
AS DETERMINE BTU 7031

AS RECEIVED VALUES: MOISTURE 12.43
VOLATILES 15.16
ASH 37.10
CARBON 35.31
SULFUR .36
BTU 6463

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-77
SEAM 1
SAMPLE # 7
LOCATION DM
DRILLING DATE 4-5-77
ANALYSIS DATE 4-5-77
ENGINEER: HR ANALYST: UP
DEPTH: higher 288 lower 293
WEIGHTS: gross 1816 tare 798 dry 1720
REMARKS: 5-10 from 240
Brown soil sample. (not)

DRY VALUES: VOLATILES 19.15
ASH 41.93
CARBON 38.92
AS DETERMINE SULFUR 30
AS DETERMINE BTU 7113

AS RECEIVED VALUES: MOISTURE 13.52
VOLATILES 16.56
ASH 36.26
CARBON 33.66
SULFUR .27
BTU 6452

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-99
SEAM 1
SAMPLE # 8
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-28-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 293 lower 298
WEIGHTS: gross 1812 tare 799 dry 1752
REMARKS: 10-15 - 100% d.k.
rust but broke good

DRY VALUES: VOLATILES 25.78
ASH 15.70
CARBON 58.52
AS DETERMINE SULFUR .48
AS DETERMINE BTU 10751

AS RECEIVED VALUES: MOISTURE 11.01
VOLATILES 22.94
ASH 13.97
CARBON 52.08
SULFUR .45
BTU 10107

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR1-59
SEAM 1
SAMPLE # 9
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 4-22-99
ENGINEER: HP ANALYST: VP
DEPTH: higher 298 lower 303
WEIGHTS: gross 1022 tare 797 dry 1777
REMARKS: mostly fine, few lumps - good

DRY VALUES: VOLATILES 25.57
ASH 25.08
CARBON 49.35
AS DETERMINE SULFUR .53
AS DETERMINE BTU 9358

AS RECEIVED VALUES: MOISTURE 9.93
VOLATILES 23.03
ASH 22.59
CARBON 44.45
SULFUR .50
BTU 8860

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

Summary of TR2-99

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
1 Seam	#1	73-75	11.41	21.13	8908	18.07	49.40	0.51	WEATHERED
	#2	75-80	16.44	13.78	8958	22.26	47.44	0.33	WEATHERED
	#3	80-85	14.37	12.04	9626	22.60	50.98	0.37	WEATHERED
	#4	85-90	13.37	17.07	8815	24.15	45.40	0.33	WEATHERED
	#5	90-95	12.47	19.01	8736	24.11	44.41	0.30	WEATHERED
	#6	95-100	10.91	28.08	7435	24.60	36.41	0.28	WEATHERED
	#7	100-105	12.21	17.72	8876	25.84	44.23	0.35	WEATHERED
	#8	105-110	16.31	17.56	8355	24.24	41.89	0.28	WEATHERED
	#9	110-115	14.96	14.64	8965	25.49	44.92	0.29	WEATHERED, DAMP
	#10	115-120	16.44	8.72	9480	28.70	46.14	0.34	WEATHERED, HEAVY
	#11	120-125	15.66	20.71	7729	26.90	36.73	0.28	WEATHERED
	#12	125-130	16.75	11.07	9152	27.46	44.73	0.30	WEATHERED
	#13	130-135	11.01	31.70	6859	24.26	33.03	0.23	WEATHERED
	#14	135-140	17.43	12.22	8672	28.97	41.38	0.32	WEATHERED
	#15	140-145	14.23	17.65	8408	28.46	39.66	0.30	WEATHERED
	#16	145-150	18.19	18.55	7515	27.75	35.51	0.28	WEATHERED
	#17	150-155	15.54	16.71	8305	27.31	40.44	0.31	WEATHERED
	#18	155-160	18.26	11.39	8584	29.97	40.37	0.38	WEATHERED
	#19	160-165	13.58	28.95	6675	27.63	29.84	0.38	WEATHERED

↑
HIGHER BTU VS. TRENCH 1

Ave. BTU = 8424

" Moisture = 14.71%

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TK-22
SEAM 1
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: Don Buchanan ANALYST: J. Polk
DEPTH: higher 73 lower 75
WEIGHTS: gross 1736 tare 795 dry 11665
REMARKS: 12 weathered; dump

0-5

DRY VALUES: VOLATILES 20.40
ASH 23.85
CARBON 55.76
AS DETERMINE SULFUR .55
AS DETERMINE BTU 9632

AS RECEIVED VALUES: MOISTURE 11.41
VOLATILES 18.07
ASH 21.13
CARBON 49.40
SULFUR .57
BTU 8908

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-90
SEAM 1
SAMPLE # 3
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 75 lower 80
WEIGHTS: gross 1567 tare 798 dry 1473
REMARKS: Unaltered
5-10

DRY VALUES: VOLATILES 26.64
ASH 16.49
CARBON 56.77
AS DETERMINE SULFUR 36
AS DETERMINE BTU 9913

AS RECEIVED VALUES: MOISTURE 16.44
VOLATILES 33.26
ASH 13.78
CARBON 47.44
SULFUR 33
BTU 8958

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR3-99
SEAM 1
SAMPLE # 3
LOCATION M
DRILLING DATE 4-11-77
ANALYSIS DATE 5-1-77
ENGINEER: AR ANALYST: VP
DEPTH: higher 80 lower 85
WEIGHTS: gross 1545 tare 796 dry 1484
REMARKS: 10-15

DRY VALUES: VOLATILES 26.39
ASH 14.06
CARBON 59.54
AS DETERMINE SULFUR .40
AS DETERMINE BTU 10487

AS RECEIVED VALUES: MOISTURE 14.37
VOLATILES 22.60
ASH 13.04
CARBON 50.98
SULFUR .37
BTU 9626

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 4
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: AK ANALYST: VP
DEPTH: higher 25 lower 90
WEIGHTS: gross 1702 tare 795 dry 1164
REMARKS: 200' head
15-30

DRY VALUES: VOLATILES 27.88
ASH 19.71
CARBON 53.41
AS DETERMINE SULFUR .35
AS DETERMINE BTU 9416

AS RECEIVED VALUES: MOISTURE 13.37
VOLATILES 24.15
ASH 17.07
CARBON 45.40
SULFUR .33
BTU 8815

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 5
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: RR ANALYST: ST
DEPTH: higher 90 lower 95
WEIGHTS: gross 1644 tare 795 dry 1589
REMARKS: U.S.A. Standard
20-25

DRY VALUES: VOLATILES 27.54
ASH 21.72
CARBON 50.74
AS DETERMINE SULFUR .32
AS DETERMINE BTU 9338

AS RECEIVED VALUES: MOISTURE 13.47
VOLATILES 24.11
ASH 19.01
CARBON 44.61
SULFUR .30
BTU 8736

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-97
SEAM 1
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-11-97
ANALYSIS DATE 5-1-99
ENGINEER: AP ANALYST: VF
DEPTH: higher 95 lower 100
WEIGHTS: gross 1728 tare 795 dry 1675
REMARKS: Weathered heavy
2530

DRY VALUES: VOLATILES 27.61
ASH 31.52
CARBON 40.87
AS DETERMINE SULFUR 30
AS DETERMINE BTU 7875

AS RECEIVED VALUES: MOISTURE 10.91
VOLATILES 24.60
ASH 28.08
CARBON 36.41
SULFUR .28
BTU 7435

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 112-99
SEAM 1
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-1-99
ANALYSIS DATE 5-1-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 100 lower 105
WEIGHTS: gross 1831 tare 799 dry 1769
REMARKS: Weathered

30-35

DRY VALUES: VOLATILES 29.43
ASH 30.19
CARBON 50.38
AS DETERMINE SULFUR 37
AS DETERMINE BTU 9447

AS RECEIVED VALUES: MOISTURE 13.21
VOLATILES 25.84
ASH 17.73
CARBON 44.23
SULFUR .35
BTU 8876

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 712-99
SEAM 1
SAMPLE # 8
LOCATION DM
DRILLING DATE 4-11-65
ANALYSIS DATE 5-1-69
ENGINEER: HM ANALYST: VF
DEPTH: higher 105 lower 110
WEIGHTS: gross 1726 tare 797 dry 1645
REMARKS: Ultrathin damp

35-40

DRY VALUES: VOLATILES 28.96
ASH 20.98
CARBON 50.05
AS DETERMINE SULFUR 31
AS DETERMINE BTU 9152

AS RECEIVED VALUES: MOISTURE 16.31
VOLATILES 24.24
ASH 17.56
CARBON 41.89
SULFUR .28
BTU 8355

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 9
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 110 lower 115
WEIGHTS: gross 1796 tare 796 dry 1720
REMARKS: Weathered damp

40-45

DRY VALUES: VOLATILES 27.97
ASH 17.21
CARBON 52.82
AS DETERMINE SULFUR .31
AS DETERMINE BTU 9709

AS RECEIVED VALUES: MOISTURE 14.96
VOLATILES 25.49
ASH 14.64
CARBON 44.92
SULFUR .29
BTU 8965

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 115 lower 120
WEIGHTS: gross 1875 tare 797 dry 1792
REMARKS: unithread heavy
45-50

DRY VALUES: VOLATILES 34.35
ASH 10.43
CARBON 55.22
AS DETERMINE SULFUR 37
AS DETERMINE BTU 10375

AS RECEIVED VALUES: MOISTURE 16.44
VOLATILES 28.70
ASH 8.72
CARBON 46.14
SULFUR 34
BTU 9430

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 11
LOCATION DP1
DRILLING DATE 4-11-99
ANALYSIS DATE 4-1-99
ENGINEER: HR ANALYST: VF
DEPTH: higher 120 lower 122
WEIGHTS: gross 1582 tare 797 dry 1518
REMARKS: weathered

50-55

DRY VALUES: VOLATILES 31.90
ASH 24.55
CARBON 43.55
AS DETERMINE SULFUR 31
AS DETERMINE BTU 8413

AS RECEIVED VALUES: MOISTURE 15.66
VOLATILES 26.90
ASH 20.71
CARBON 36.73
SULFUR .28
BTU 7729

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 12
LOCATION DM
DRILLING DATE 4-11-95
ANALYSIS DATE 5-1-95
ENGINEER: W.R. ANALYST: W.R.
DEPTH: higher 12.5 lower 130
WEIGHTS: gross 1732 tare 798 dry 1648
REMARKS: Weathered

55-60

DRY VALUES: VOLATILES 32.98
ASH 13.30
CARBON 53.73
AS DETERMINE SULFUR .33
AS DETERMINE BTU 10061

AS RECEIVED VALUES: MOISTURE 16.75
VOLATILES 27.46
ASH 11.07
CARBON 44.73
SULFUR .30
BTU 9152

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 13
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: AR ANALYST: VIP
DEPTH: higher 130 lower 135
WEIGHTS: gross 1597 tare 796 dry 1551
REMARKS: unweathered
60-65

DRY VALUES: VOLATILES 27.26
ASH 35.62
CARBON 37.12
AS DETERMINE SULFUR .24
AS DETERMINE BTU 7266

AS RECEIVED VALUES: MOISTURE 11.01
VOLATILES 24.26
ASH 31.70
CARBON 33.03
SULFUR .23
BTU 6859

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-90
SEAM 1
SAMPLE # 14
LOCATION DM
DRILLING DATE 4-11-59
ANALYSIS DATE 5-1-59
ENGINEER: AP ANALYST: VP
DEPTH: higher 135 lower 140
WEIGHTS: gross 1670 tare 796 dry ~~168~~ 1610
REMARKS: Weathered

65-70

DRY VALUES: VOLATILES 35.09
ASH 14.80
CARBON 50.12
AS DETERMINE SULFUR 34
AS DETERMINE BTU 9309

AS RECEIVED VALUES: MOISTURE 17.43
VOLATILES 28.97
ASH 12.22
CARBON 41.38
SULFUR .32
BTU 8672

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-50
SEAM 1
SAMPLE # 15
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: AM ANALYST: VP
DEPTH: higher 145 lower 145
WEIGHTS: gross 1670 tare 794 dry 1625
REMARKS: Weathered

70-75

DRY VALUES: VOLATILES 33.18
ASH 30.58
CARBON 46.24
AS DETERMINE SULFUR .30
AS DETERMINE BTU 8864

AS RECEIVED VALUES: MOISTURE 14.23
VOLATILES 28.46
ASH 17.65
CARBON 39.66
SULFUR .30
BTU 8408

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR 2-99
SEAM 1
SAMPLE # 16
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 145 lower 150
WEIGHTS: gross 1647 tare 480 dry 1553
REMARKS: Went back

75-80

DRY VALUES: VOLATILES 33.92
ASH 22.67
CARBON 43.41
AS DETERMINE SULFUR 31
AS DETERMINE BTU 8175

AS RECEIVED VALUES: MOISTURE 18.19
VOLATILES 27.75
ASH 18.55
CARBON 35.51
SULFUR .28
BTU 7515

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-99
SEAM 1
SAMPLE # 17
LOCATION DM
DRILLING DATE 4-11-99
ANALYSIS DATE 5-1-99
ENGINEER: PR ANALYST: VP
DEPTH: higher 150 lower 155
WEIGHTS: gross 1471 tare 462 dry 1407
REMARKS: U.S.A. Standard
80-85

DRY VALUES: VOLATILES 32.33
ASH 19.79
CARBON 47.88
AS DETERMINE SULFUR .33
AS DETERMINE BTU 8871

AS RECEIVED VALUES: MOISTURE 15.54
VOLATILES 27.31
ASH 16.71
CARBON 40.44
SULFUR .31
BTU 8305

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-90
SEAM 1
SAMPLE # 18
LOCATION DM
DRILLING DATE 4-11-77
ANALYSIS DATE 5-1-77
ENGINEER: RL ANALYST: VF
DEPTH: higher 155 lower 160
WEIGHTS: gross 1500 tare 490 dry 1422
REMARKS: _____

85-90

DRY VALUES: VOLATILES 36.67
ASH 13.94
CARBON 49.39
AS DETERMINE SULFUR .41
AS DETERMINE BTU 9306

AS RECEIVED VALUES: MOISTURE 18.26
VOLATILES 29.97
ASH 11.39
CARBON 40.37
SULFUR .38
BTU 8584

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR2-95
SEAM 1
SAMPLE # 19
LOCATION DM
DRILLING DATE 4-11-54
ANALYSIS DATE 5-1-55
ENGINEER: HR ANALYST: VR
DEPTH: higher 162 lower 165
WEIGHTS: gross 1324 tare 483 dry 1272
REMARKS: unaffected

90-95

DRY VALUES: VOLATILES 31.97
ASH 33.50
CARBON 34.53
AS DETERMINE SULFUR .41
AS DETERMINE BTU 7152

AS RECEIVED VALUES: MOISTURE 13.58
VOLATILES 27.63
ASH 38.95
CARBON 29.84
SULFUR .38
BTU 6675

DRILL LOG DATA

1 of 2

Usibelli Coal Mine, Inc.

VERY POOR INFO.
DUE TO PERMANENT

TRENCH 3 - NEAR 99-66
Note: _____

Date: APR. 18

Geol: ALAN RENSALL

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0		P-FROST
		- TO HARD TO DIG
		- (COUNT 100)
20		TOTAL - 0/2.
40		
60		F-FROST
80		
100		
120		S.S.
140		
150		P-FROST

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		F-FROST
220		
240		
		S.S.
260		
		← COAL
		← SAMPLE 1
		← Sample 2
280		
		S.S.
300		

2052

TRAVEL 3
Hole:

Date: _____
Geol: _____
Driller: _____
Weather: _____

Location: _____
 Northing: _____
 Easting: _____
 Elevation: _____

SAMPLE LOG DESCRIPTION

320.

(cont'd)

~~320~~

5.5

340

360

Conte

5-11-2

NOT
SAMPLED

5.5

$$\leq 4n + 2$$

380

RICH TOVEN

~~400~~

E.O.T 400

50

1/10/10

2550

150

~~160~~

~~180~~

~~200~~

220

240

~~260~~

280

300

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of TR3-99

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
A Seam	#1	35-37	11.64	11.27	9895	28.17	48.92	0.41	NO DRILL LOG
	#2	37-40	9.71	10.47	10559	27.12	52.69	0.43	DAMP VERTICAL

NOT END!

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE TR-99
SEAM A
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-10-99
ANALYSIS DATE 5-4-99
ENGINEER: Alan K. Brown ANALYST: L. L. Zimmerman
DEPTH: higher 35 lower 37
WEIGHTS: gross 1702 tare 795 dry 1684
REMARKS: _____

No drill log

DRY VALUES: VOLATILES 31.88
ASH 12.75
CARBON 55.37
AS DETERMINE SULFUR .43
AS DETERMINE BTU 10321

AS RECEIVED VALUES: MOISTURE 11.64
VOLATILES 28.17
ASH 11.27
CARBON 48.92
SULFUR .41
BTU 9895

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 222
SEAM A
SAMPLE # 2
LOCATION 1M
DRILLING DATE 4-14-99
ANALYSIS DATE 5-4-99
ENGINEER: RP ANALYST: VP
DEPTH: higher 37 lower 40
WEIGHTS: gross 1473 tare 798 dry 1444
REMARKS: damp vertical

DRY VALUES: VOLATILES 30.04
ASH 11.60
CARBON 58.36
AS DETERMINE SULFUR .45
AS DETERMINE BTU 11038

AS RECEIVED VALUES: MOISTURE 9.71
VOLATILES 27.12
ASH 10.47
CARBON 52.69
SULFUR .43
BTU 10559

DRILL LOG DATA

1 OF 1

Usibelli Coal Mine, Inc.

TRENCH STARTED
ABOUT 50' IN FRONT

5' - 10' E

Date: APR 18

99-67

Geol: ALAN RENSLOW

Driller: _____

Weather: _____

TRENCH 4 - NEAR 99-67

Hole: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

0		
		P - Frost
		?
20		
40		
		S.S.
60		
1		LOOKS LIKE ANDESITE DIKE BUT IT IS S.S.
2		
3		
4		CRILL
5		
80		
		S.S.
		E.O.T.
100		
120		
140		
150		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

COMPARISON OF UCM AND CT&E FOR DIVISION MOUNTAIN COAL ANALYSIS

LOCATION	UCM	CT&E	UCM 2ND RUN	
3" BELOW HW	11,114	11,036	11,098	BTU
Sample ②	8.45	8.64	8.58	MOISTUR
	11.02	11.33	10.81	ASH
	27.76	28.88	28.96	VOLATILE
	50.78	51.15	51.65	FIXED C
	0.54	0.18	0.54	SULFUR
5' FROM HW	11,129	11,114	11,036	
Sample ③	7.48	7.57	7.71	
	12.58	12.32	12.47	
	29.05	30.47	30.13	
	48.87	49.64	49.69	
	0.51	0.43	0.51	
9' BELOW HW	12,236	12,154	12,061	
Sample ④	7.03	6.79	7.24	
	9.96	10.30	9.94	
	17.89	19.30	18.66	
	63.46	63.61	64.15	
	0.68	0.61	0.68	
" BELOW DIKE	11,113	11,148	10,953	
Sample ①	8.70	8.58	8.86	
	11.27	11.50	11.32	
	28.07	29.14	29.13	
	50.00	50.78	50.69	
	0.63	0.55	0.63	
11' BELOW DIKE	11,419	11,343	11,305	
Sample ⑤	9.06	8.78	9.18	
	11.96	11.75	11.99	
	19.10	19.85	19.75	
	58.16	59.62	59.08	
	0.72	0.64	0.72	

NOTE - THIS WAS NOT A DIKE [WAS SANDSTONE]
 ∴ NO QUALITY PROBLEMS - IF IT WAS
 A DIKE THEN COAL QUALITY WOULD
 HAVE GONE DOWN.



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-963-9300 FAX: 708-963-9306



Member of the SGS Group (Société Générale de Surveillance)

May 4, 1999

USIBELLI COAL MINE, INC.
P.O. Box 1000
Healy AK 99743

PLEASE ADDRESS ALL CORRESPONDENCE TO

Sample Identification by
USIBELLI COAL MINE, INC.

4665 PARIS STREET
SUITE 8-200
DENVER, CO 80239
TEL: (303) 373-4772
FAX: (303) 373-4791

DIVISION MOUNTAIN, TRENCH 4
3 FEET BELOW HIGHWALL

Sample taken by USIBELLI COAL MINE, INC.
Analysis report no. 72-403936

Date Received April 19, 1999

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.64	xxxxxx
% Ash	11.33	12.40
% Volatile	28.88	31.61
% Fixed Carbon	51.15	55.99
	100.00	100.00
Btu/lb.	11036	12080
% Sulfur	0.48	0.52
MAF Btu/lb.	13790	

SULFUR FORMS

	As Received	Dry Basis
% Pyritic	0.04	0.04
% Sulfate	< 0.01	< 0.01
% Organic	0.43	0.47
% Total Sulfur	0.48	0.52

% Air Dry Loss = 3.12

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.64	xxxxxx
% Carbon	64.88	71.02
% Hydrogen	3.44	3.77
% Nitrogen	0.88	0.96
% Sulfur	0.48	0.52
% Ash	11.33	12.40
% Oxygen	10.35	11.33
	100.00	100.00

FUSION TEMPERATURE OF ASH (°F)

	Reducing	Oxidizing
Initial Deformation	2700+	2700+
Softening	2700+	2700+
Hemispherical	2700+	2700+
Fluid	2700+	2700+

ANALYSIS OF ASH

% Weight Ignited Basis

Silica, SiO ₂	54.11
Alumina, Al ₂ O ₃	32.35
Titania, TiO ₂	1.28
Ferric Oxide, Fe ₂ O ₃	5.07
Lime, CaO	3.13
Magnesia, MgO	0.69
Potassium Oxide, K ₂ O	1.38
Sodium Oxide, Na ₂ O	0.42
Sulfur Trioxide, SO ₃	0.90
Phosphorous Pentoxide, P ₂ O ₅	0.27
Strontium Oxide, SrO	0.11
Barium Oxide, BaO	0.27
Manganese Oxide, Mn ₃ O ₄	0.02
Undetermined	0.00

Alks. as Na₂O, Dry Coal Basis 0.16
Base:Acid Ratio 0.12
T250 Temperature 2900+
Slagging Index = 0.06

Silica Value

85.89

Type of Ash

BITUMINOUS

Fouling Index

0.05

% MAF Volatile

36.08

% MAF Fixed Carbon

63.92

lbs SO₂/mm Btu

0.87

lbs Sulfur/mm Btu

0.43

% Air Dry Loss

3.12

As Received Net Sample Wt.

667.40 gr

Fluorine, ug/g

59

Chlorine, ug/g

<100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Mark Placid
Denver Laboratory



OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

TERMS AND CONDITIONS ON REVERSE

303 373 4791

PAGE.03

MAY 05 '99 13:17



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-963-8300 FAX: 708-963-8306

1900*



Member of the SGS Group (Société Générale de Surveillance)

May 4, 1999

USIBELLI COAL MINE, INC.
P.O. Box 1000
Healy AK 99743

PLEASE ADDRESS ALL CORRESPONDENCE TO:

Sample Identification by
USIBELLI COAL MINE, INC.

4665 PARIS STREET
SUITE 8-200
DENVER, CO 80239
TEL: (303) 373-4772
FAX: (303) 373-4791

DIVISION MOUNTAIN, TRENCH 4
5 FEET FROM HIGHWALL

Sample taken by USIBELLI COAL MINE, INC.
Analysis report no. 72-403937

Date Received April 19, 1999

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	7.57	XXXXXX
% Ash	12.32	13.33
% Volatile	30.47	32.97
% Fixed Carbon	49.64	53.70
	100.00	100.00
Btu/lb.	11114	12024
% Sulfur	0.43	0.47
MAP Btu/lb.	13873	

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	7.57	XXXXXX
% Carbon	65.02	70.34
% Hydrogen	3.51	3.80
% Nitrogen	0.93	1.01
% Sulfur	0.43	0.47
% Ash	12.32	13.33
% Oxygen	10.22	11.05
	100.00	100.00

SULFUR FORMS

	As Received	Dry Basis
% Pyritic	0.03	0.03
% Sulfate	< 0.01	< 0.01
% Organic	0.39	0.43
% Total Sulfur	0.43	0.47

% Air Dry Loss = 2.82

FUSION TEMPERATURE OF ASH (°F)

	Reducing	Oxidizing
Initial Deformation	2320	2338
Softening	2326	2345
Hemispherical	2336	2356
Fluid	2351	2376

ANALYSIS OF ASH % Weight Ignited Basis

Silica, SiO ₂	28.64
Alumina, Al ₂ O ₃	31.62
Titania, TiO ₂	1.37
Ferric Oxide, Fe ₂ O ₃	4.49
Lime, CaO	12.58
Magnesia, MgO	0.89
Potassium Oxide, K ₂ O	0.81
Sodium Oxide, Na ₂ O	0.23
Sulfur Trioxide, SO ₃	4.74
Phosphorous Pentoxide, P ₂ O ₅	9.95
Strontium Oxide, SrO	0.94
Barium Oxide, BaO	1.50
Manganese Oxide, Mn ₃ O ₄	0.01
Undetermined	2.23

Alks. as Na₂O, Dry Coal Basis 0.10
Base:Acid Ratio 0.31
T250 Temperature 2528
Slagging Index = 2327.20

Silica Value	61.46
Type of Ash	LIGNITIC
Fouling Index	0.23
% MAP Volatile	38.04
% MAP Fixed Carbon	61.96

lbs SO ₂ /mm Btu	0.77
lbs Sulfur/mm Btu	0.39
% Air Dry Loss	2.82
As Received Net Sample Wt.	611.60 gr
Fluorine, ug/g	228
Chlorine, ug/g	<100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory



OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

F-485
Original Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

MAY 05 '99 13:17

303 373 4791

PAGE. 04



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1819 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-963-9300 FAX: 708-963-9306



Member of the SGS Group (Société Générale de Surveillance)

May 4, 1999

USIBELLI COAL MINE, INC.
P.O. Box 1000
Healy AK 99743

Sample Identification by
USIBELLI COAL MINE, INC.

DIVISION MOUNTAIN, TRENCH 4
9 FEET BELOW HIGHWALL

PLEASE ADDRESS ALL CORRESPONDENCE TO:

4665 PARIS STREET
SUITE B-200
DENVER, CO 80239
TEL: (303) 373-4772
FAX: (303) 373-4781

Sample taken by USIBELLI COAL MINE, INC.
Analysis report no. 72-403938

Date Received April 19, 1999

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	6.79	XXXXXX
% Ash	10.30	11.05
% Volatile	19.30	20.71
% Fixed Carbon	63.61	68.24
	100.00	100.00
Btu/lb.	12154	13039
% Sulfur	0.61	0.65
MAF Btu/lb.	14659	

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	6.79	XXXXXX
% Carbon	72.88	78.19
% Hydrogen	2.70	2.90
% Nitrogen	1.10	1.18
% Sulfur	0.61	0.65
% Ash	10.30	11.05
% Oxygen	5.62	6.03
	100.00	100.00

SULFUR FORMS

	As Received	Dry Basis
% Pyritic	0.07	0.07
% Sulfate	< 0.01	< 0.01
% Organic	0.53	0.57
% Total Sulfur	0.61	0.65

% Air Dry Loss = 3.54

FUSION TEMPERATURE OF ASH (°F)

	Reducing	Oxidizing
Initial Deformation	2204	2339
Softening	2237	2348
Hemispherical	2261	2360
Fluid	2338	2379

ANALYSIS OF ASH % Weight Ignited Basis

Silica, SiO ₂	42.45
Alumina, Al ₂ O ₃	19.81
Titania, TiO ₂	0.93
Ferric Oxide, Fe ₂ O ₃	9.06
Lime, CaO	12.89
Magnesia, MgO	2.45
Potassium Oxide, K ₂ O	0.93
Sodium Oxide, Na ₂ O	0.41
Sulfur Trioxide, SO ₃	8.41
Phosphorous Pentoxide, P ₂ O ₅	1.75
Strontium Oxide, SrO	0.33
Barium Oxide, BaO	0.55
Manganese Oxide, Mn ₂ O ₄	0.03
Undetermined	0.00
Alks. as Na ₂ O, Dry Coal Basis	0.11
Base:Acid Ratio	0.41
T250 Temperature	2402
Slagging Index = 2235.20	

Silica Value	63.50
Type of Ash	LIGNITIC
Fouling Index	0.41
% MAF Volatile	23.28
% MAF Fixed Carbon	76.72

lbs SO ₂ /mm Btu	1.00
lbs Sulfur/mm Btu	0.50
% Air Dry Loss	3.54
As Received Net Sample Wt.	695.20 gr
Fluorine, ug/g	97
Chlorine, ug/g	<100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory



OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-963-9300 FAX: 708-963-9306

1808*



Member of the SGS Group (Société Générale de Surveillance)

May 4, 1999

USIBELLI COAL MINE, INC.
P.O. Box 1000
Healy AK 99743

PLEASE ADDRESS ALL CORRESPONDENCE TO:

4665 PARIS STREET
SUITE B-200
DENVER, CO 80239
TEL: (303) 373-4772
FAX: (303) 373-4791

Sample Identification by
USIBELLI COAL MINE, INC.

DIVISION MOUNTAIN, TRENCH 4
1 FOOT BELOW DIKE

Date Received April 19, 1999

Sample taken by USIBELLI COAL MINE, INC.
Analysis report no. 72-403939

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.58	xxxxxx
% Ash	11.50	12.58
% Volatile	29.14	31.87
% Fixed Carbon	50.78	55.55
	100.00	100.00
Btu/lb.	11148	12194
% Sulfur	0.55	0.60
MAF Btu/lb.	13949	

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.58	xxxxxx
% Carbon	64.84	70.92
% Hydrogen	3.36	3.68
% Nitrogen	0.90	0.98
% Sulfur	0.55	0.60
% Ash	11.50	12.58
% Oxygen	10.27	11.24
	100.00	100.00

SULFUR FORMS

	As Received	Dry Basis
% Pyritic	0.04	0.04
% Sulfate	< 0.01	< 0.01
% Organic	0.50	0.55
% Total Sulfur	0.55	0.60

% Air Dry Loss = 3.24

FUSION TEMPERATURE OF ASH (°F)

	Reducing	Oxidizing
Initial Deformation	2318	2363
Softening	2326	2367
Hemispherical	2346	2380
Fluid	2494	2568

ANALYSIS OF ASH % Weight Ignited Basis

Silica, SiO ₂	44.53
Alumina, Al ₂ O ₃	28.73
Titanium, TiO ₂	1.06
Ferric Oxide, Fe ₂ O ₃	4.52
Lime, CaO	8.75
Magnesia, MgO	1.24
Potassium Oxide, K ₂ O	1.19
Sodium Oxide, Na ₂ O	0.42
Sulfur Trioxide, SO ₃	3.65
Phosphorous Pentoxide, P ₂ O ₅	4.42
Strontium Oxide, SrO	0.60
Barium Oxide, BaO	0.87
Manganese Oxide, Mn ₂ O ₄	0.02
Undetermined	0.00

Alks. as Na₂O, Dry Coal Basis 0.15
Base:Acid Ratio 0.22
T250 Temperature 2682
Slagging Index = 2330.40

Silica Value 75.42
Type of Ash LIGNITIC
Fouling Index 0.42
% MAF Volatile 36.46
% MAF Fixed Carbon 63.54

lbs SO₂/mm Btu 0.99
lbs Sulfur/mm Btu 0.49
% Air Dry Loss 3.24
As Received Net Sample Wt. 636.60 gr
Fluorine, ug/g 279
Chlorine, ug/g <100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory



OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

F-485
Original Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

MAY 05 '99 13:18

303 373 4791

PAGE.06



SINCE 1908

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1818 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 830-853-0300 FAX: 830-853-8308



Member of the SGS Group (Société Générale de Surveillance)

May 6, 1999

PLEASE ADDRESS ALL CORRESPONDENCE TO:

 4665 PARIS STREET
 SUITE 8-200
 DENVER, CO 80239
 TEL: (303) 373-4772
 FAX: (303) 373-4791

 USIBELLI COAL MINE, INC.
 P.O. Box 1000
 Healy AK 99743

 Sample Identification by
 USIBELLI COAL MINE, INC.

 DIVISION MOUNTAIN, TRENCH 4
 11 FEET BELOW DIKE

Date Received April 19, 1999

 Sample taken by USIBELLI COAL MINE, INC.
 Analysis report no. 72-403940

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.78	XXXXXX
% Ash	11.75	12.88
% Volatile	19.85	21.76
% Fixed Carbon	59.62	65.36
	100.00	100.00
Btu/lb.	11343	12435
% Sulfur	0.64	0.70
MAF Btu/lb.	14273	

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	8.78	XXXXXX
% Carbon	68.85	75.48
% Hydrogen	2.81	2.75
% Nitrogen	0.99	1.08
% Sulfur	0.64	0.70
% Ash	11.75	12.88
% Oxygen	6.48	7.11
	100.00	100.00

SULFUR FORMS

	As Received	Dry Basis
% Pyritic	0.05	0.05
% Sulfate	< 0.01	< 0.01
% Organic	0.58	0.64
% Total Sulfur	0.64	0.70

% Air Dry Loss = 4.27

FUSION TEMPERATURE OF ASH (°F)

	Reducing	Oxidizing
Initial Deformation	2144	2190
Softening	2160	2199
Hemispherical	2172	2214
Fluid	2211	2268

ANALYSIS OF ASH % Weight Ignited Basis

Silica, SiO ₂	33.07
Alumina, Al ₂ O ₃	18.90
Titania, TiO ₂	1.15
Ferric Oxide, Fe ₂ O ₃	5.74
Lime, CaO	23.85
Magnesia, MgO	2.06
Potassium Oxide, K ₂ O	0.71
Sodium Oxide, Na ₂ O	0.32
Sulfur Trioxide, SO ₃	11.23
Phosphorous Pentoxide, P ₂ O ₅	2.23
Strontium Oxide, SrO	0.25
Barium Oxide, BaO	0.46
Manganese Oxide, Mn ₂ O ₄	0.03
Undetermined	0.00

 Alks. as Na₂O, Dry Coal Basis 0.10
 Base:Acid Ratio 0.62
 T250 Temperature 2240
 Slagging Index = 2158.00

 Silica Value 51.10
 Type of Ash LIGNITIC
 Fouling Index 0.32
 % MAF Volatile 24.98
 % MAF Fixed Carbon 75.02

 lbs SO₂/mm Btu 1.13
 lbs Sulfur/mm Btu 0.56
 % Air Dry Loss 4.27
 As Received Net Sample Wt. 719.90 gr
 Fluorine, ug/g 156
 Chlorine, ug/g <100

 Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.


Denver Laboratory

 MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES
 CONDITIONS ON REVERSE

IT# Fax Note 7671	Date 5-6	# of pages 1
Jada Petman	From Laura	
Co./Dept.	Co. CTE Denver	
Phone #	Phone #	
Fax #	Fax #	

DIVISION Mt. TRENCH 4

SAMPLED 4-12-99

CT&E Analysis

- 1) Proximate + BTU
- 2) Ultimate + Chlorine + Fluorine
- 3) Ash Composition (Analysis of Ash)
- 4) Ash Fusion
- 5) Forms of Sulfur

U.S. 70

Div. 1-17-71

4-12-99

3' below H.C.	(669)
5' below H.C.	(613)
1' below Dike	(638)
9' below H.C.	(696)
11' below Dike	(730)

2.4

USIBELLI COAL MINE, INC.
P.O. BOX 1000
HEALY, ALASKA 99743
(907) 683-2226

TELECOPIER: (907) 683-2253



TO: Mark Thrasher

DATE: 4-14-99

FAX NO: _____

OF PAGES TO FOLLOW: 1

FROM: Usibelli Lab

COMMENTS: Hi, Am sending some more
work for you, some samples from
Canada. -

Thanks,

SIGNED Chda Latorre

4-12-99
3:00 PM

TITLE _____



USIBELLI COAL MINE, INC.

P.O. Box 1000 ■ Healy, AK 99743
(907) 683-2226 ■ fax (907) 683-2253

999

Grasher
Commercial Testing and Engineering Company
Paris Street, B-200
Denver Colorado 80239

RE: Samples for Laboratory Analysis

Dear Mark,

We are sending 5 samples from a property in Canada that we would like the following analysis on.

PROXIMATE plus BTU
ULTIMATE
CHORINE
FLOURINE
ASH COMPOSITION
ASH FUSION
FORMS OF SULFUR

Sample are described as follows:

Division Mountain, Trench 4	3 feet below highwall
Division Mountain, Trench 4	5 feet from highwall
Division Mountain, Trench 4	9 feet below highwall
Division Mountain, Trench 4	1 foot below dike
Division Mountain, Trench 4	11 feet below dike

These are small samples, so if you don't have enough to do all the tests, then drop Ash Fusion and Forms of Sulfur.

If you have any questions, please feel free to call me, at 907 683-9716.

Sincerely,

Vada Peterman
Lab Analyst



USIBELLI COAL MINE, INC.

P.O. Box 1000 ■ Healy, AK 99743
(907) 683-2226 ■ fax (907) 683-2253

April 30, 1999

Mark Thrasher
Commercial Testing and Engineering Company
4665 Paris Street, B-200
Denver, Colorado 80239

RE: Samples for laboratory Analysis

Dear Mark,

We are send 5 samples from a property in Canada for the following: PROXIMATE plus
BTU and SULFUR.

Samples are described as follows:

Division Mountain

Trench One, 10-15 feet from dike, 1 seam
UCM99-65, SAMPLE #2, DEPTH 301 TO 305, 4-14-99
UCM99-66, SAMPLE #6, DEPTH 286 TO 288, 4-6-99
UCM99-74, SAMPLE #4, DEPTH 130 TO 133, 4-12-99
Trench Two, SAMPLE #13, DEPTH 130 TO 135, 4-15-99

I sure am keeping you busy with all this extra, and I am extra busy. I just wanted to share
some of it with you.

Sincerely,

Vada Peterman

Vada Peterman
Lab Analyst

Post-It™ brand fax transmittal memo 7671		# of pages ▶
To	<i>Mark Thrasher</i>	
Co.	<i>CTE</i>	
Dept.		
Fax #		
From	<i>Vada</i>	
Co.	<i>Usibelli</i>	
Phone #		
Fax #	<i>2:45 PM</i>	

Summary of Division Mountain samples taken on 4/12/99

location	btu	moisture	ash	volatiles	fixed carbon	sulfur
3' below high wall	11,144	8.45	11.02	27.76	50.78	0.54
5' from high wall	11,129	7.48	12.58	29.05	48.87	0.51
9' below high wall	12,236	7.03	9.96	17.89	63.46	0.68
1' below dike	11,113	8.70	11.27	28.07	50.00	0.63
11' below dike	11,419	9.06	11.96	19.10	58.16	0.72

SECOND RUN

3' hw	11098	8.58	10.81	28.96	51.65	
5' hw	11036	7.71	12.47	30.13	49.69	
9' hw	12061	7.24	9.94	18.66	64.15	
1' dike	10953	8.86	11.32	29.13	50.69	
11' dike	11305	9.18	11.99	19.75	59.08	

Summary of Division Mountain samples taken on 4.12.99

location	btu	moisture	ash	volatiles	fixed carbon	sulfur
3' below high wall	11,144	8.45	11.02	27.76	50.78	0.54
5' from high wall	11,129	7.48	12.58	29.05	48.87	0.51
9' below high wall	12,236	7.03	9.96	17.89	63.46	0.68
1' below dike	11,113	8.70	11.27	28.07	50.00	0.63
11' below dike	11419	9.06	11.96	19.10	58.16	0.72

USIBELLI COAL MINE, INC.

P.O. BOX 1000
HEALY, ALASKA 99743

PROXIMATE ANALYSIS

(A.) 1. AIR DRY LOSS ON BULK SAMPLE

a. 1665 a. 1665
-b. 796 -b. 1627
c. 869 e. 38

e/c(100)=% 38 / 869 (100)= 4.37 ADL %

2. AS DETERMINED MOISTURE FROM OVEN (60 MESH, ONE GRAM)

f. 4.37, 4.37, 4.37, AVERAGE = 4.37 (4.37)

3. VOLATILES (ONE GRAM SAMPLE)

g. 20.72, 20.72, 20.72, AVERAGE = 20.72

4. ASH (ONE GRAM SAMPLE)

h. 11.91, 11.91, 11.91, AVERAGE = 11.91

5. FIXED CARBON (ONE GRAM SAMPLE)

i. 55.54, 55.54, 55.54, AVERAGE = 55.54

6. SULFUR (AS DETERMINED, $\frac{1}{4}$ GRAM SAMPLE)

j. .56 x 95.63 = .54
AS RECEIVED

7. HEATING VALUE (AS DETERMINED, ONE GRAM SAMPLE)

k. 11648, 11651, 11652 x 95.63 = 11144
AS RECEIVED

(B.) AS RECEIVED PROXIMATE ANALYSIS

MOISTURE 4.37 4.37 VOLATILES 20.72

ASH 11.91 11.91 FIXED CARBON 55.54

BTU 11144 SULFUR .54

(C.) REMARKS See Analysis Report

(D.) PRODUCTION DATE 6-25-99 ANALYSIS FOR Steam Generator

ORDER DATE 6-25-99 ANALYSIS DATE 6-25-99

SOURCE USIBELLI COAL MINE ANALYSIS BY J. H. HARRIS

(E.) EQUIPMENT

Preiser Scientific Inc. Air Drying Oven
LECO TGA-601 for Proximate
LECO SULFUR DETERMINATOR SC-132
PARR ISOPERIBOL CALORIMETER 1261

040693

USIBELLI COAL MINE, INC.
P.O. BOX 1000
HEALY, ALASKA 99743
PROXIMATE ANALYSIS

(A.) 1. AIR DRY LOSS ON BULK SAMPLE

a. 1445 a. 1445
-b. 711 -b. 1416
c. 647 e. 27

e/c(100)=% 29 / 647 (100)= 4.47 ADL %
95.53

2. AS DETERMINED MOISTURE FROM OVEN (60 MESH, ONE GRAM)

f. 3.14 , 3.16 , _____ , AVERAGE = 3.15

3. VOLATILES (ONE GRAM SAMPLE)

g. 31.39 , 31.40 , _____ , AVERAGE = 31.40

4. ASH (ONE GRAM SAMPLE)

h. 13.58 , 13.61 , _____ , AVERAGE = 13.60

5. FIXED CARBON (ONE GRAM SAMPLE)

i. 50.04 , 50.09 , _____ , AVERAGE = 50.06

6. SULFUR (AS DETERMINED, $\frac{1}{4}$ GRAM SAMPLE)

j. _____ , _____ = .53 x 95.53 = .51
AS RECEIVED

7. HEATING VALUE (AS DETERMINED, ONE GRAM SAMPLE)

k. 11656 , 11645 = 11650 x 95.53 = 11127
AS RECEIVED

(B.) AS RECEIVED PROXIMATE ANALYSIS

MOISTURE	<u>7.48</u>	<u>92.52</u>	VOLATILES	<u>31.15</u>
ASH	<u>13.58</u>		FIXED CARBON	<u>48.87</u>
BTU	<u>11129</u>		SULFUR	<u>.51</u>

(C.) REMARKS 5' from HU

(D.) PRODUCTION DATE 4-13-77 ANALYSIS FOR _____
ORDER DATE _____ ANALYSIS DATE _____
SOURCE USIBELLI ANALYSIS BY _____

(E.) EQUIPMENT

Preiser Scientific Inc. Air Drying Oven
LECO TGA-601 for Proximate
LECO SULFUR DETERMINATOR SC-132
PARR ISOPERIBOL CALORIMETER 1261

USIBELLI COAL MINE, INC.

P.O. BOX 1000

HEALY, ALASKA 99743

PROXIMATE ANALYSIS

(A.) 1. AIR DRY LOSS ON BULK SAMPLE

a. 1448 a. 1448
 -b. 795 -b. 1412
 c. 653 e. 56

e/c(100)=% 56 / 653 (100)= 8.51 ADL %
94.49

2. AS DETERMINED MOISTURE FROM OVEN (60 MESH, ONE GRAM)

f. 1.61, 1.61, _____, AVERAGE = 1.61

3. VOLATILES (ONE GRAM SAMPLE)

g. 19.25, 19.25, _____, AVERAGE = 19.25

4. ASH (ONE GRAM SAMPLE)

h. 10.69, 10.70, _____, AVERAGE = 10.70

5. FIXED CARBON (ONE GRAM SAMPLE)

i. 68.56, 68.56, _____, AVERAGE = 68.56

6. SULFUR (AS DETERMINED, $\frac{1}{4}$ GRAM SAMPLE)

j. _____, _____ = .72 x 94.49 = .68
 AS RECEIVED

7. HEATING VALUE (AS DETERMINED, ONE GRAM SAMPLE)

k. 12236, 12236 = 12236 x 94.49 = 12236
 AS RECEIVED

(B.) AS RECEIVED PROXIMATE ANALYSIS

MOISTURE 92.97

VOLATILES 19.25

ASH 9.96

FIXED CARBON 68.56

BTU 12236

SULFUR .68

(C.) REMARKS 5' below 11'(D.) PRODUCTION DATE 2-1-77

ANALYSIS FOR _____

ORDER DATE _____

ANALYSIS DATE _____

SOURCE _____

ANALYSIS BY _____

(E.) EQUIPMENT

Preiser Scientific Inc. Air Drying Oven

LECO TGA-601 for Proximate

LECO SULFUR DETERMINATOR SC-132

PARR ISOPERIBOL CALORIMETER 1261

040693

USIBELLI COAL MINE, INC.
P.O. BOX 1000
HEALY, ALASKA 99743
PROXIMATE ANALYSIS

(A.) 1. AIR DRY LOSS ON BULK SAMPLE

a. 1422 a. 1422
-b. 796 -b. 1289
c. 626 e. 33

e/c(100)=% 33 / 1626 (100)= 5.27 ADL %
94.73

2. AS DETERMINED MOISTURE FROM OVEN (60 MESH, ONE GRAM)

f. 3.61, 3.62, _____, AVERAGE = 3.62

3. VOLATILES (ONE GRAM SAMPLE)

g. 30.80, 30.67, _____, AVERAGE = 30.74

4. ASH (ONE GRAM SAMPLE)

h. 12.72, 12.75, _____, AVERAGE = 12.74

5. FIXED CARBON (ONE GRAM SAMPLE)

i. 54.77, 54.81, _____, AVERAGE = 54.76

6. SULFUR (AS DETERMINED, $\frac{1}{4}$ GRAM SAMPLE)

j. _____, _____ = .67 x 94.73 = .63
AS RECEIVED

7. HEATING VALUE (AS DETERMINED, ONE GRAM SAMPLE)

k. 11121, 11123 = 11121 x 94.73 = 11113
AS RECEIVED

(B.) AS RECEIVED PROXIMATE ANALYSIS

MOISTURE	<u>3.62</u> <u>91.30</u>	VOLATILES	<u>30.74</u>
ASH	<u>12.74</u>	FIXED CARBON	<u>50.00</u>
BTU	<u>11113</u>	SULFUR	<u>.63</u>

(C.) REMARKS 1' below d.k.

(D.) PRODUCTION DATE	<u>4-15-57</u>	ANALYSIS FOR	_____
ORDER DATE	_____	ANALYSIS DATE	_____
SOURCE	<u>USIBELLI COAL MINE</u>	ANALYSIS BY	_____

(E.) EQUIPMENT

Preiser Scientific Inc. Air Drying Oven
LECO TGA-601 for Proximate
LECO SULFUR DETERMINATOR SC-132
PARR ISOPERIBOL CALORIMETER 1261

040693

USIBELLI COAL MINE, INC.

P.O. BOX 1000

HEALY, ALASKA 99743

PROXIMATE ANALYSIS

(A.) 1. AIR DRY LOSS ON BULK SAMPLE

a. 126.7 a. 126.9
 -b. 795 -b. 12.35
 c. 474 e. 34

e/c(100)=% 34 / 474 (100)= 7.17 ADL %
72.83

2. AS DETERMINED MOISTURE FROM OVEN (60 MESH, ONE GRAM)

f. 2.04, 2.05, _____, AVERAGE = 2.04

3. VOLATILES (ONE GRAM SAMPLE)

g. 20.99, 21.01, _____, AVERAGE = 21.00

4. ASH (ONE GRAM SAMPLE)

h. 13.18, 13.12, _____, AVERAGE = 13.15

5. FIXED CARBON (ONE GRAM SAMPLE)

i. 62.72, 62.77, _____, AVERAGE = 62.75

6. SULFUR (AS DETERMINED, $\frac{1}{4}$ GRAM SAMPLE)

j. _____, _____ = .78 x 92.83 = .72
 AS RECEIVED

7. HEATING VALUE (AS DETERMINED, ONE GRAM SAMPLE)

k. 2.16, 12286 = 13201 x 92.83 = 11419
 AS RECEIVED

(B.) AS RECEIVED PROXIMATE ANALYSIS

MOISTURE 7.06 90.94 VOLATILES 19.10

ASH 11.96 FIXED CARBON 58.16

BTU 11,419 SULFUR .72

(C.) REMARKS 11' 60% air dry very dry 10.700

(D.) PRODUCTION DATE 4-12-77 ANALYSIS FOR _____
 ORDER DATE _____ ANALYSIS DATE _____
 SOURCE Truck ANALYSIS BY _____

(E.) EQUIPMENT

Preiser Scientific Inc. Air Drying Oven

LECO TGA-601 for Proximate

LECO SULFUR DETERMINATOR SC-132

PARR ISOPERIBOL CALORIMETER 1261

040693

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-65

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
A Seam	#1	296-301	4.46	21.10	10597	12.78	61.65	0.40	HEAVY,FINE
	#2	301-305	5.01	12.51	11573	28.67	53.81	0.48	GOOD
	#3	305-308	7.76	30.14	8195	24.55	37.55	0.29	DULL
	#4	308-312	5.34	18.06	10476	29.05	47.55	0.40	FINE
	#5	312-317	5.79	17.12	10611	28.07	49.01	0.36	FINE
	#6	332-335	6.97	32.57	8344	18.16	42.31	0.33	FINE
	#7	335-337	7.91	43.32	6206	22.96	25.81	0.38	HEAVY,DULL
	#8	337-339	7.00	32.85	8196	26.60	33.55	0.38	HEAVY,FINE
	#9	339-343	5.83	25.52	9189	26.10	42.55	0.43	HEAVY,DULL
	#10	343-345	4.70	32.89	8369	28.46	33.96	0.51	FINE,DULL
	#11	345-348	6.52	28.13	8896	27.55	37.80	0.68	FINE
Ave. →			6.12	26.75	9,150	24.81	42.32	0.42	

	Coal		Coal
	Easy Coal		Sam
	Carbide share		Coal

 **Easy Coal**
 **Sandstone**

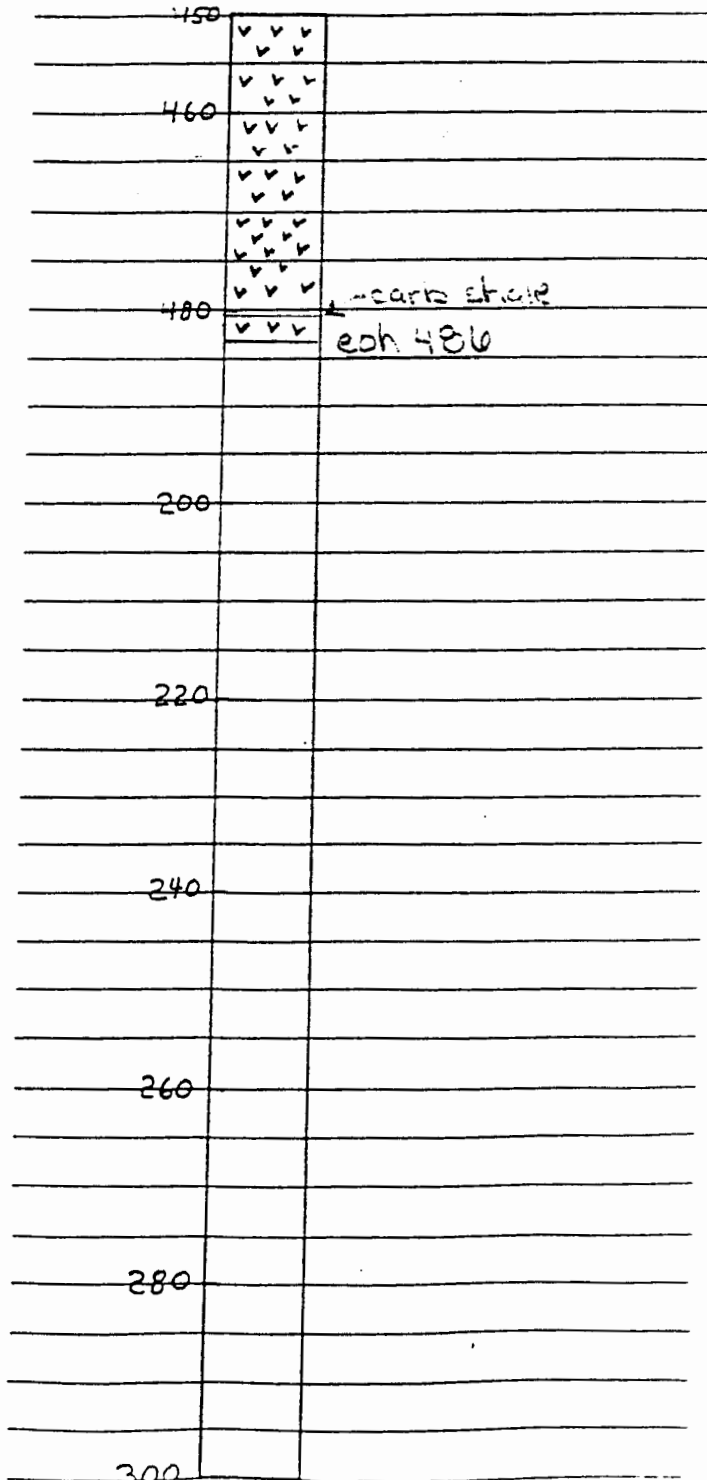
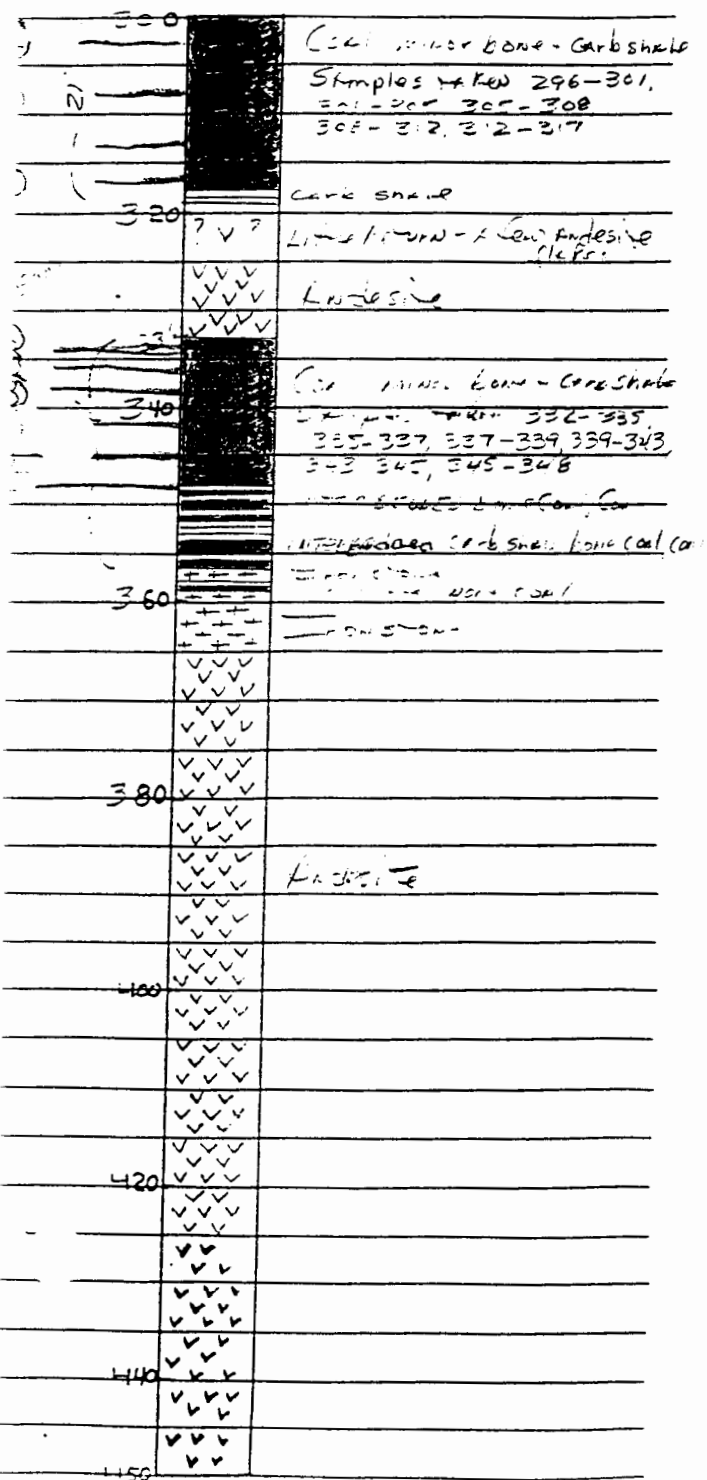
 **Carbonaceous shale**
 **Shale**

Ironstone
Clays
Gr
Clk
See

Date: _____
Geol: _____
Driller: _____
Weather: _____

Location: _____
 Northing: _____
 Easting: _____
 Elevation: _____

SAMPLE LOG DESCRIPTION



USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCm 99 - 65
SEAM A
SAMPLE # 1
LOCATION D.m.
DRILLING DATE 4-4-99
ANALYSIS DATE 4-29-99
ENGINEER: Alan Lorchau ANALYST: V. Peterson
DEPTH: higher 296 lower 301
WEIGHTS: gross 1825 tare 79.5 dry 1792
REMARKS: heavy in line
a little gray

DRY VALUES: VOLATILES 13.38
ASH 22.08
CARBON 64.53
AS DETERMINED SULFUR .41
AS DETERMINED BTU 10962

AS RECEIVED VALUES: MOISTURE 4.46
VOLATILES 13.78
ASH 21.10
CARBON 61.65
SULFUR .40
BTU 10597

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM-19-65
SEAM A
SAMPLE # 2
LOCATION D.M.
DRILLING DATE 4-4-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 301' lower 305'
WEIGHTS: gross 1850 tare 79.5 dry 1820
REMARKS: okay - fine

DRY VALUES: VOLATILES 30.18
ASH 13.17
CARBON 56.65
AS DETERMINE SULFUR .49
AS DETERMINE BTU 11933

AS RECEIVED VALUES: MOISTURE 5.01
VOLATILES 28.67
ASH 12.51
CARBON 53.81
SULFUR .48
BTU 11573

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-65
SEAM A
SAMPLE # 3
LOCATION D.M
DRILLING DATE 4-4-97
ANALYSIS DATE 4-29-97
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 205' lower 208'
WEIGHTS: gross 1691 tare 795 dry 1638
REMARKS: heavy damp
dull

DRY VALUES: VOLATILES 26.61
ASH 32.68
CARBON 40.71
AS DETERMINE SULFUR .31
AS DETERMINE BTU 8707

AS RECEIVED VALUES: MOISTURE 7.76
VOLATILES 24.55
ASH 30.14
CARBON 37.55
SULFUR .29
BTU 8195

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-125
SEAM A
SAMPLE # 4
LOCATION D.L.
DRILLING DATE 4-4-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 308' lower 212'
WEIGHTS: gross 1734 tare 177 dry 1701
REMARKS: fine, lump.

DRY VALUES: VOLATILES 30.69
ASH 19.08
CARBON 50.23
AS DETERMINE SULFUR .41
AS DETERMINE BTU 10860

AS RECEIVED VALUES: MOISTURE 5.34
VOLATILES 29.05
ASH 18.06
CARBON 47.55
SULFUR .40
BTU 10476

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-65
SEAM A
SAMPLE # 5
LOCATION D.M
DRILLING DATE 4-4-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 312' lower 317'
WEIGHTS: gross 34 tare 796 dry 1703
REMARKS: fine lumps

DRY VALUES: VOLATILES 29.80
ASH 18.17
CARBON 52.02
AS DETERMINE SULFUR 37
AS DETERMINE BTU 10991

AS RECEIVED VALUES: MOISTURE 5.79
VOLATILES 28.07
ASH 12.12
CARBON 49.01
SULFUR .36
BTU 10611

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICm 99-65
SEAM A
SAMPLE # 6
LOCATION D.M.
DRILLING DATE 4-4-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 332' lower 325'
WEIGHTS: gross 1709 tare 797 dry 1656
REMARKS: fine, damp

DRY VALUES: VOLATILES 19.52
ASH 35.01
CARBON 45.48
AS DETERMINE SULFUR .35
AS DETERMINE BTU 8859

AS RECEIVED VALUES: MOISTURE 6.97
VOLATILES 18.16
ASH 33.57
CARBON 42.31
SULFUR .33
BTU 8344

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99 - 65
SEAM A
SAMPLE # 7
LOCATION D.M.
DRILLING DATE 4-5-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 335' lower 337'
WEIGHTS: gross 1722 tare 557 dry 1734
REMARKS: hoary druse
dull

DRY VALUES: VOLATILES 24.93
ASH 47.04
CARBON 28.03
AS DETERMINE SULFUR .40
AS DETERMINE BTU 6574

AS RECEIVED VALUES: MOISTURE 7.91
VOLATILES 23.96
ASH 43.32
CARBON 25.81
SULFUR .38
BTU 6306

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-65
SEAM A
SAMPLE # 8
LOCATION D.m.
DRILLING DATE 4-5-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 327' lower 239'
WEIGHTS: gross 1811 tare 795 dry 1760
REMARKS: fine, noisy damp

DRY VALUES: VOLATILES 28.60
ASH 35.32
CARBON 36.08
AS DETERMINE SULFUR .40
AS DETERMINE BTU 8633

AS RECEIVED VALUES: MOISTURE 7.00
VOLATILES 26.60
ASH 33.85
CARBON 33.55
SULFUR .38
BTU 8196

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICM 99 - 65
SEAM A
SAMPLE # 9
LOCATION D.M
DRILLING DATE 4-5-99
ANALYSIS DATE 4-29-99
ENGINEER: A.R. ANALYST: V.P.
DEPTH: higher 339' lower 343'
WEIGHTS: gross 1931 tare 197 dry 1931
REMARKS: heavy fine damp slightly full

DRY VALUES: VOLATILES 27.72
ASH 27.10
CARBON 45.18
AS DETERMINE SULFUR .45
AS DETERMINE BTU 9511

AS RECEIVED VALUES: MOISTURE 5.83
VOLATILES 26.10
ASH 25.52
CARBON 42.55
SULFUR .43
BTU 9189

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LICM 77-65
SEAM A
SAMPLE # 10
LOCATION D.M.
DRILLING DATE 4-5-99
ANALYSIS DATE 4-29-99
ENGINEER: A.E. ANALYST: J.P.
DEPTH: higher 343' lower 345'
WEIGHTS: gross 1712 tare 196 dry 1687
REMARKS: fine shaly coal

DRY VALUES: VOLATILES 29.86
ASH 34.51
CARBON 35.63
AS DETERMINE SULFUR .52
AS DETERMINE BTU 8594

AS RECEIVED VALUES: MOISTURE 4.70
VOLATILES 28.46
ASH 32.89
CARBON 33.96
SULFUR .51
BTU 8369

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICM 97-65
SEAM A
SAMPLE # 11
LOCATION D.M.
DRILLING DATE 4-5-99
ANALYSIS DATE 4-29-99
ENGINEER: A.E. ANALYST: V.P.
DEPTH: higher 345' lower 348'
WEIGHTS: gross 1771 tare 796 dry 1768
REMARKS: fine, damp

DRY VALUES: VOLATILES 29.47
ASH 30.09
CARBON 40.44
AS DETERMINE SULFUR .71
AS DETERMINE BTU 9280

AS RECEIVED VALUES: MOISTURE 6.52
VOLATILES 27.55
ASH 28.13
CARBON 37.80
SULFUR .68
BTU 8896

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-66

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
B Seam	#1	40-45	6.21	21.82	9840	29.05	42.94	0.52	FINES,CLAY LUMP
	#2	170-175	7.09	30.13	8199	13.30	49.47	0.70	HEAVY,GRAY
	#3	230-133	13.90	27.72	7704	8.15	50.22	0.47	FINES,DULL
	#4	233-237	12.61	30.67	7660	7.06	49.65	0.32	FINES,A LITTLE DULL
	#5	279-281	5.42	15.42	10990	30.48	48.68	0.53	HEAVY
	#6	286-288	6.56	17.92	10362	32.41	43.11	0.62	FINES
	#7	296-297	5.20	21.08	10125	27.12	46.58	0.37	HEAVY, FINES
	#8	298-302	6.09	17.64	10405	29.99	46.29	0.40	HEAVY,FINES
	#9	304-305	5.05	14.09	11205	31.21	49.65	0.41	HEAVY,FINES
	#10	310-314	5.80	15.56	10888	29.71	48.93	0.49	HEAVY,FINES

DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-66

Date: 4/6/99

Geol: _____

Driller: _____

Weather: _____

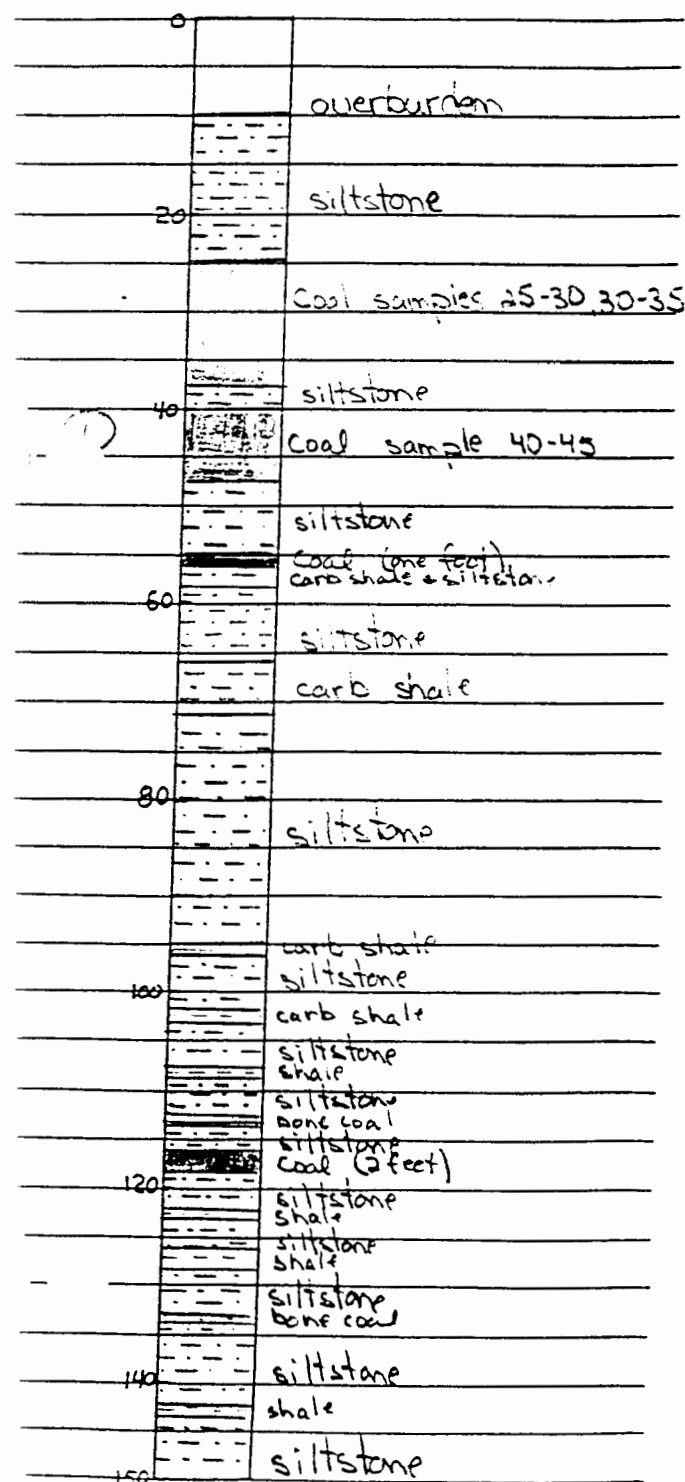
Location: _____

Northing: _____

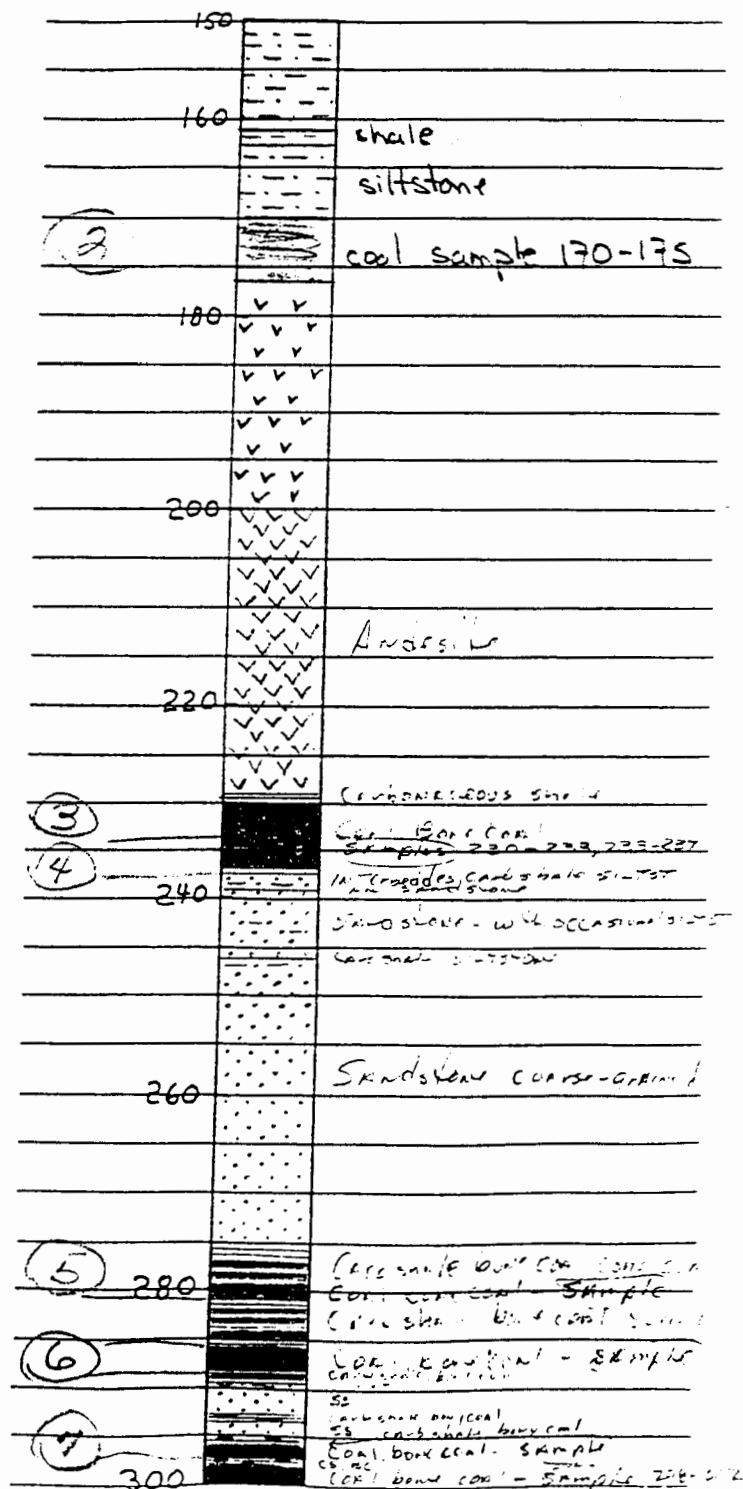
Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-66

Date: 4/6/99

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

330	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
340	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
350	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
360	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
370	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
380	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
390	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
400	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
410	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
420	Coal, dark gray, bituminous, hard, lustrous, breaks into small pieces, some shaly, blue coal
425'	End of Hole 425'

SAMPLE LOG DESCRIPTION

150	
160	
170	
180	
190	
200	
210	
220	
230	
240	
250	
260	
270	
280	
290	
300	

DRILL HOLE 11CM75-66

SEAM B

SAMPLE # 1

LOCATION DM

DRILLING DATE 4-6-99

ANALYSIS DATE 4-30-99

ENGINEER: Alan R. Lankford

ANALYST: J. D. Turner

DEPTH: higher 40

lower 4.5

WEIGHTS: gross 1835 tare 796 dry 1799

REMARKS: lined, clay mudstone of clay after
drying

DRY VALUES: VOLATILES 30.97

ASH 23-26

CARBON 45.78

AS DETERMINE SULFUR .54

AS DETERMINE BTU 10199

AS RECEIVED VALUES: MOISTURE 6.31

VOLATILES 29.05

ASH 21.82

CARBON 42.94

SULFUR 152

BTU 2840

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM 99-66
SEAM B
SAMPLE # 2
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 170 lower 175
WEIGHTS: gross 1704 tare 798 dry 1464
REMARKS: heavy gray
4-8-99

DRY VALUES: VOLATILES 14.33
ASH 33.43
CARBON 53.34
AS DETERMINE SULFUR .73
AS DETERMINE BTU 8560

AS RECEIVED VALUES: MOISTURE 7.09
VOLATILES 13.30
ASH 30.13
CARBON 49.47
SULFUR .70
BTU 8199

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCCM 99-66
SEAM B
SAMPLE # 3
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: FR ANALYST: VP
DEPTH: higher 230 lower 233
WEIGHTS: gross 1885 tare 796 dry 1813
REMARKS: fine, dull

DRY VALUES: VOLATILES 9.47
ASH 33.19
CARBON 58.33
AS DETERMINE SULFUR .50
AS DETERMINE BTU 8241

AS RECEIVED VALUES: MOISTURE 13.90
VOLATILES 8.15
ASH 27.72
CARBON 50.22
SULFUR .47
BTU 7704

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICM 99-66
SEAM B
SAMPLE # 4
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 232 lower 237
WEIGHTS: gross 1529 tare 797 dry 1766
REMARKS: fine, little dull

DRY VALUES: VOLATILES 8.08
ASH 35.10
CARBON 56.82
AS DETERMINE SULFUR .34
AS DETERMINE BTU 8235

AS RECEIVED VALUES: MOISTURE 12.61
VOLATILES 7.06
ASH 30.67
CARBON 49.65
SULFUR .32
BTU 7660

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM 99-66
SEAM B
SAMPLE # 5
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-20-99
ENGINEER: HR ANALYST: VF
DEPTH: higher 227 lower 251
WEIGHTS: gross 1784 tare 798 dry 1755
REMARKS: heavy

DRY VALUES: VOLATILES 32.23
ASH 16.30
CARBON 51.47
AS DETERMINE SULFUR .55
AS DETERMINE BTU 11334

AS RECEIVED VALUES: MOISTURE 5.43
VOLATILES 30.48
ASH 15.42
CARBON 48.68
SULFUR .53
BTU 10990

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-66
SEAM B
SAMPLE # 6
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: P.A. ANALYST: VP
DEPTH: higher 286 lower 288
WEIGHTS: gross 1526 tare 197 dry 1494
REMARKS: fine, small pieces, good

DRY VALUES: VOLATILES 34.69
ASH 19.13
CARBON 46.14
AS DETERMINE SULFUR .65
AS DETERMINE BTU 10843

AS RECEIVED VALUES: MOISTURE 6.56
VOLATILES 32.41
ASH 17.92
CARBON 43.11
SULFUR .62
BTU 10362

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99 -66
SEAM B
SAMPLE # 7
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: AR ANALYST: VF
DEPTH: higher 296 lower 297
WEIGHTS: gross 1815 tare 795 dry 1787
REMARKS: heavy, fine small pieces

DRY VALUES: VOLATILES 38.61
ASH 22.34
CARBON 49.14
AS DETERMINE SULFUR .38
AS DETERMINE BTU 10417

AS RECEIVED VALUES: MOISTURE 5.20
VOLATILES 27.12
ASH 21.08
CARBON 46.58
SULFUR .37
BTU 10125

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-66
SEAM R
SAMPLE # 8
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 4-30-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 298' lower 302
WEIGHTS: gross 1813 tare 493 dry 1776
REMARKS: heavy fines. locks good

DRY VALUES: VOLATILES 31.93
ASH 18.78
CARBON 49.29
AS DETERMINE SULFUR .42
AS DETERMINE BTU 10808

AS RECEIVED VALUES: MOISTURE 6.09
VOLATILES 29.99
ASH 17.64
CARBON 46.29
SULFUR .40
BTU 10405

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM 99-66
SEAM B
SAMPLE # 9
LOCATION 1M
DRILLING DATE 4-6-97
ANALYSIS DATE 4-30-97
ENGINEER: AR ANALYST: UP
DEPTH: higher 304 lower 305
WEIGHTS: gross 1822 tare 725 dry 1794
REMARKS: 2nd time small piece

DRY VALUES: VOLATILES 32.87
ASH 14.84
CARBON 52.29
AS DETERMINE SULFUR .43
AS DETERMINE BTU 11529

AS RECEIVED VALUES: MOISTURE 5.05
VOLATILES 31.21
ASH 14.09
CARBON 49.65
SULFUR .41
BTU 11205

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 97-66
SEAM B
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 6-21-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 310 lower 314
WEIGHTS: gross 1851 tare 775 dry 1817
REMARKS: heavy lined

DRY VALUES: VOLATILES 31.54
ASH 16.52
CARBON 51.94
AS DETERMINE SULFUR .51
AS DETERMINE BTU 11257

AS RECEIVED VALUES: MOISTURE 5.80
VOLATILES 29.71
ASH 15.56
CARBON 48.93
SULFUR .49
BTU 10888

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-67

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
B Seam	#1	25-30	10.18	21.07	9390	24.74	44.01	0.36	DAMP, DULL
	#2	30-35	9.94	20.53	9540	28.52	41.00	0.46	DAMP, DULL
	#3	72-75	6.22	19.01	10195	30.23	44.53	0.63	DAMPISH
	#4	75.5-77.5	7.52	12.93	11057	32.16	47.40	0.64	DAMPISH
	#5	78-80	6.33	13.10	11146	30.28	50.28	0.42	DAMPISH
	#6	82-85	5.94	14.77	11004	28.42	50.88	0.54	DAMPISH
	#7	105-108	5.65	13.42	11382	29.57	51.36	0.97	DAMPISH
	#8	114-116	5.12	12.54	11457	28.40	53.95	0.53	DRY, HEAVY, DULL
	#9	140-144	5.30	15.60	11102	28.59	50.50	0.91	
	#10	146-149	5.59	16.15	10726	31.97	46.29	0.47	DULL
	#11	150-151	4.72	23.00	9746	26.95	45.32	0.37	
	#12	152-156	5.19	12.18	11363	28.73	53.89	0.48	DRY, HEAVY
	#13	156-159	4.35	17.27	10866	33.09	45.29	0.64	DRY
	#14	168-171	4.65	20.25	10165	30.95	44.15	0.62	DRY, HEAVY, DULL

highest sulfur

Usibelli Coal Mine, Inc.

H o l e : 99-67

Date: 4/6/99

Geol: Mike Beiswiler

Driller: _____

W e a t h e r:

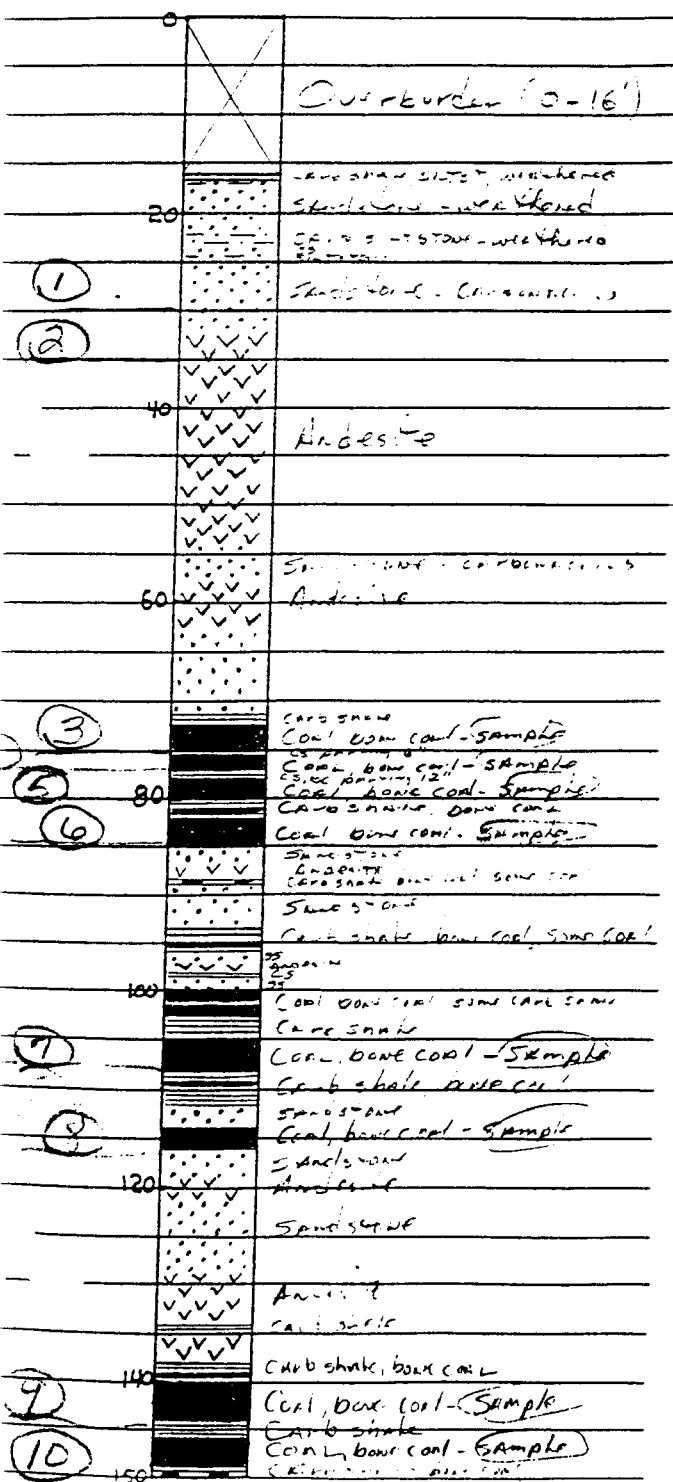
Location:

Nothing: _____

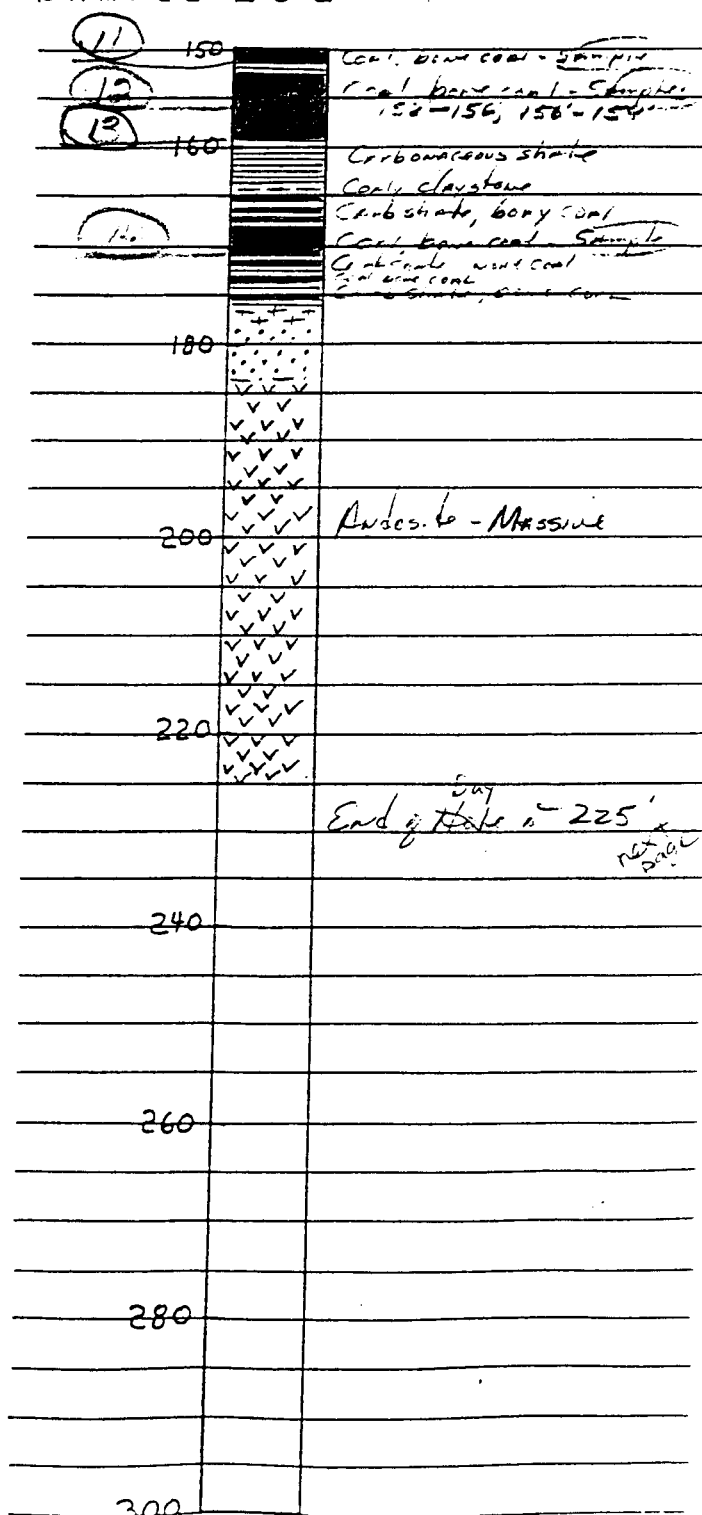
Easting:

Elevation: _____

SAMPLE	LOG	DESCRIPTION
1	100	100
2	100	100
3	100	100
4	100	100
5	100	100
6	100	100
7	100	100
8	100	100
9	100	100
10	100	100
11	100	100
12	100	100
13	100	100
14	100	100
15	100	100
16	100	100
17	100	100
18	100	100
19	100	100
20	100	100
21	100	100
22	100	100
23	100	100
24	100	100
25	100	100
26	100	100
27	100	100
28	100	100
29	100	100
30	100	100
31	100	100
32	100	100
33	100	100
34	100	100
35	100	100
36	100	100
37	100	100
38	100	100
39	100	100
40	100	100
41	100	100
42	100	100
43	100	100
44	100	100
45	100	100
46	100	100
47	100	100
48	100	100
49	100	100
50	100	100
51	100	100
52	100	100
53	100	100
54	100	100
55	100	100
56	100	100
57	100	100
58	100	100
59	100	100
60	100	100
61	100	100
62	100	100
63	100	100
64	100	100
65	100	100
66	100	100
67	100	100
68	100	100
69	100	100
70	100	100
71	100	100
72	100	100
73	100	100
74	100	100
75	100	100
76	100	100
77	100	100
78	100	100
79	100	100
80	100	100
81	100	100
82	100	100
83	100	100
84	100	100
85	100	100
86	100	100
87	100	100
88	100	100
89	100	100
90	100	100
91	100	100
92	100	100
93	100	100
94	100	100
95	100	100
96	100	100
97	100	100
98	100	100
99	100	100
100	100	100



SAMPLE LOG	DESCRIPTION
------------	-------------



DRILL LOG DATA

Usibelli Coal Mine, Inc.

Hole: 99-67

Date: April 6

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

AMPLE LOG DESCRIPTION

0	
20	
40	
60	
80	
100	
120	
140	
150	

SAMPLE LOG DESCRIPTION

150	
160	
180	
200	
220	
	✓✓✓✓ andesite
	✓✓✓✓
	✓✓✓✓
240	===== carb chert
	✓✓✓✓
	✓✓✓✓ andesite
	✓✓✓✓
	✓✓✓✓
260	✓✓✓✓
	===== bony coal
	✓✓✓✓ andesite
	✓✓✓✓ coal

280	----- shale

	285 coh
300	

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM??-67
SEAM B
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 5-5-99
ENGINEER: Alan K. Brown ANALYST: J. J. L. L. L. L. L.
DEPTH: higher 25 lower 30
WEIGHTS: gross 1804 tare 797 dry 1736
REMARKS: damp, dull

DRY VALUES: VOLATILES 27.54
ASH 23.46
CARBON 49.00
AS DETERMINE SULFUR 39
AS DETERMINE BTU 10068

AS RECEIVED VALUES: MOISTURE 10.18
VOLATILES 24.74
ASH 21.07
CARBON 44.01
SULFUR 36
BTU 9390

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 1 LCM 99-67
SEAM B
SAMPLE # 2
LOCATION DM
DRILLING DATE 4-6-97
ANALYSIS DATE 5-5-99
ENGINEER: AK ANALYST: UP
DEPTH: higher 30 lower 35
WEIGHTS: gross 1761 tare 795 dry 1692
REMARKS: dirty dull

DRY VALUES: VOLATILES 31.67
ASH 22.80
CARBON 45.52
AS DETERMINE SULFUR .49
AS DETERMINE BTU 10281

AS RECEIVED VALUES: MOISTURE 9.94
VOLATILES 28.52
ASH 20.53
CARBON 41.00
SULFUR .46
BTU 9540

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-61
SEAM B
SAMPLE # 3
LOCATION DM
DRILLING DATE 4-6-77
ANALYSIS DATE 5-5-77
ENGINEER: AK ANALYST: VF
DEPTH: higher 70 lower 75
WEIGHTS: gross 1780 tare 796 dry 1746
REMARKS: a little damp

DRY VALUES: VOLATILES 32.24
ASH 20.27
CARBON 47.48
AS DETERMINE SULFUR .65
AS DETERMINE BTU 10559

AS RECEIVED VALUES: MOISTURE 6.23
VOLATILES 30.23
ASH 19.01
CARBON 44.53
SULFUR .63
BTU 10195

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 110M 2-67
SEAM B
SAMPLE # 4
LOCATION DM
DRILLING DATE 4-6-77
ANALYSIS DATE 5-4-77
ENGINEER: AR ANALYST: VP
DEPTH: higher 75.5 lower 77
WEIGHTS: gross 1727 tare 798 dry 1694
REMARKS: a little damp

DRY VALUES: VOLATILES 34.77
ASH 13.98
CARBON 51.25
AS DETERMINE SULFUR .67
AS DETERMINE BTU 11591

AS RECEIVED VALUES: MOISTURE 7.52
VOLATILES 33.16
ASH 12.93
CARBON 47.40
SULFUR .64
BTU 11057

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM72-67
SEAM B
SAMPLE # 5
LOCATION DM
DRILLING DATE 2-1-92
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 78 lower 50
WEIGHTS: gross 1777 tare 795 dry 1742
REMARKS: a little damp

DRY VALUES: VOLATILES 32.33
ASH 13.49
CARBON 53.68
AS DETERMINE SULFUR .44
AS DETERMINE BTU 11565

AS RECEIVED VALUES: MOISTURE 6.33
VOLATILES 30.28
ASH 13.10
CARBON 50.28
SULFUR .42
BTU 11146

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LICM-99-61
SEAM B
SAMPLE # 6
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 5-5-99
ENGINEER: AK ANALYST: VP
DEPTH: higher 82 lower 85
WEIGHTS: gross 1893 tare 797 dry 1861
REMARKS: A little damp

DRY VALUES: VOLATILES 30.21
ASH 15.70
CARBON 54.09
AS DETERMINE SULFUR .56
AS DETERMINE BTU 11341

AS RECEIVED VALUES: MOISTURE 5.94
VOLATILES 28.43
ASH 14.77
CARBON 50.88
SULFUR .54
BTU 11004

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 110M92-161
SEAM P
SAMPLE # 7
LOCATION DM
DRILLING DATE 4-6-71
ANALYSIS DATE 5-5-71
ENGINEER: AR ANALYST: VP
DEPTH: higher 105 lower 108
WEIGHTS: gross 1805 tare 799 dry 1770
REMARKS: 0. little damp

DRY VALUES: VOLATILES 31.34
ASH 14.22
CARBON 54.44
AS DETERMINE SULFUR 1.00
AS DETERMINE BTU 11795

AS RECEIVED VALUES: MOISTURE 5.65
VOLATILES 29.57
ASH 13.42
CARBON 51.36
SULFUR .97
BTU 11382

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM99-67
SEAM B
SAMPLE # 8
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 114 lower 116
WEIGHTS: gross 1832 tare 795 dry 1807
REMARKS: dry, heavy, dull

DRY VALUES: VOLATILES 24.93
ASH 13.22
CARBON 56.86
AS DETERMINE SULFUR .54
AS DETERMINE BTU 11750

AS RECEIVED VALUES: MOISTURE 5.12
VOLATILES 28.40
ASH 12.54
CARBON 53.95
SULFUR .53
BTU 11457

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-67
SEAM B
SAMPLE # 9
LOCATION DM
DRILLING DATE 2-6-59
ANALYSIS DATE 5-5-59
ENGINEER: FT ANALYST: VP
DEPTH: higher 140 lower 104
WEIGHTS: gross 1875 tare 79 dry 1850
REMARKS: _____

DRY VALUES: VOLATILES 30.19
ASH 16.47
CARBON 53.33
AS DETERMINE SULFUR .93
AS DETERMINE BTU 11403

AS RECEIVED VALUES: MOISTURE 5.30
VOLATILES 28.59
ASH 15.60
CARBON 50.50
SULFUR .91
BTU 11102

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-67
SEAM E
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-16-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 146 lower 149
WEIGHTS: gross 1856 tare 796 dry 1850
REMARKS: dull

DRY VALUES: VOLATILES 33.86
ASH 17.11
CARBON 49.03
AS DETERMINE SULFUR .48
AS DETERMINE BTU 11076

AS RECEIVED VALUES: MOISTURE 5.59
VOLATILES 31.97
ASH 16.15
CARBON 46.29
SULFUR .47
BTU 10726

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM92-67
SEAM B
SAMPLE # 11
LOCATION DM
DRILLING DATE 4-6-77
ANALYSIS DATE 5-5-77
ENGINEER: AR ANALYST: VP
DEPTH: higher 150 lower 151
WEIGHTS: gross 1793 tare 796 dry 1790
REMARKS: _____

DRY VALUES: VOLATILES 28.29
ASH 24.14
CARBON 47.57
AS DETERMINE SULFUR .38
AS DETERMINE BTU 9981

AS RECEIVED VALUES: MOISTURE 4.72
VOLATILES 26.95
ASH 23.00
CARBON 45.32
SULFUR .37
BTU 9746

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICM 99-67
SEAM B
SAMPLE # 12
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 1531 lower 480
WEIGHTS: gross 1531 tare 480 dry 1505
REMARKS: See Remarks

DRY VALUES: VOLATILES 30.30
ASH 12.85
CARBON 56.84
AS DETERMINE SULFUR .49
AS DETERMINE BTU 11665

AS RECEIVED VALUES: MOISTURE 5.19
VOLATILES 28.73
ASH 12.18
CARBON 53.89
SULFUR .48
BTU 11363

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM99-67
SEAM B
SAMPLE # 13
LOCATION DM
DRILLING DATE 4-6-77
ANALYSIS DATE 5-5-77
ENGINEER: AR ANALYST: VT
DEPTH: higher 156 lower 157
WEIGHTS: gross 1574 tare 486 dry 1493
REMARKS: dry

DRY VALUES: VOLATILES 34.59
ASH 18.06
CARBON 47.35
AS DETERMINE SULFUR .65
AS DETERMINE BTU 11089

AS RECEIVED VALUES: MOISTURE 4.35
VOLATILES 33.09
ASH 17.27
CARBON 45.29
SULFUR .64
BTU 10866

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM 99-67
SEAM B
SAMPLE # 14
LOCATION DM
DRILLING DATE 4-6-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 163 lower 171
WEIGHTS: gross 1539 tare 484 dry 1506
REMARKS: dry, heavy dull

DRY VALUES: VOLATILES 33.46
ASH 21.24
CARBON 46.30
AS DETERMINE SULFUR .63
AS DETERMINE BTU 10392

AS RECEIVED VALUES: MOISTURE 4.65
VOLATILES 30.95
ASH 20.25
CARBON 44.15
SULFUR .62
BTU 10165

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-74

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
C Seam	#1	49-53	5.22	16.07	10839	28.46	50.24	0.46	DRY,FINES
	#2	114-119	6.49	11.15	11450	31.77	50.60	0.71	FINES
	#3	120-125	4.01	28.42	9022	28.10	39.47	0.43	DRY,HEAVY,FINES
	#4	130-133	4.82	14.79	11158	28.34	52.05	0.51	HEAVY,FINES,DRY
	#5	133-136	5.21	14.21	11255	31.42	49.17	0.70	HEAVY,FINES
	#6	139-141	4.93	10.42	11937	29.55	55.10	0.56	DRY,HEAVY,FINES
	#7	141-143	4.79	15.59	11176	30.23	49.39	0.56	DRY,HEAVY,FINES
	#8	148-151	4.77	11.93	11688	28.19	55.11	0.54	HEAVY,FINES
	#9	152-155	5.00	21.10	10147	28.91	44.99	0.49	HEAVY,FINES
	#10	157-160	4.89	18.25	10765	29.22	47.64	0.60	HEAVY,FINES
	#11	166-168	3.86	32.30	8608	23.48	40.35	0.48	HEAVY

DRILL LOG DATA

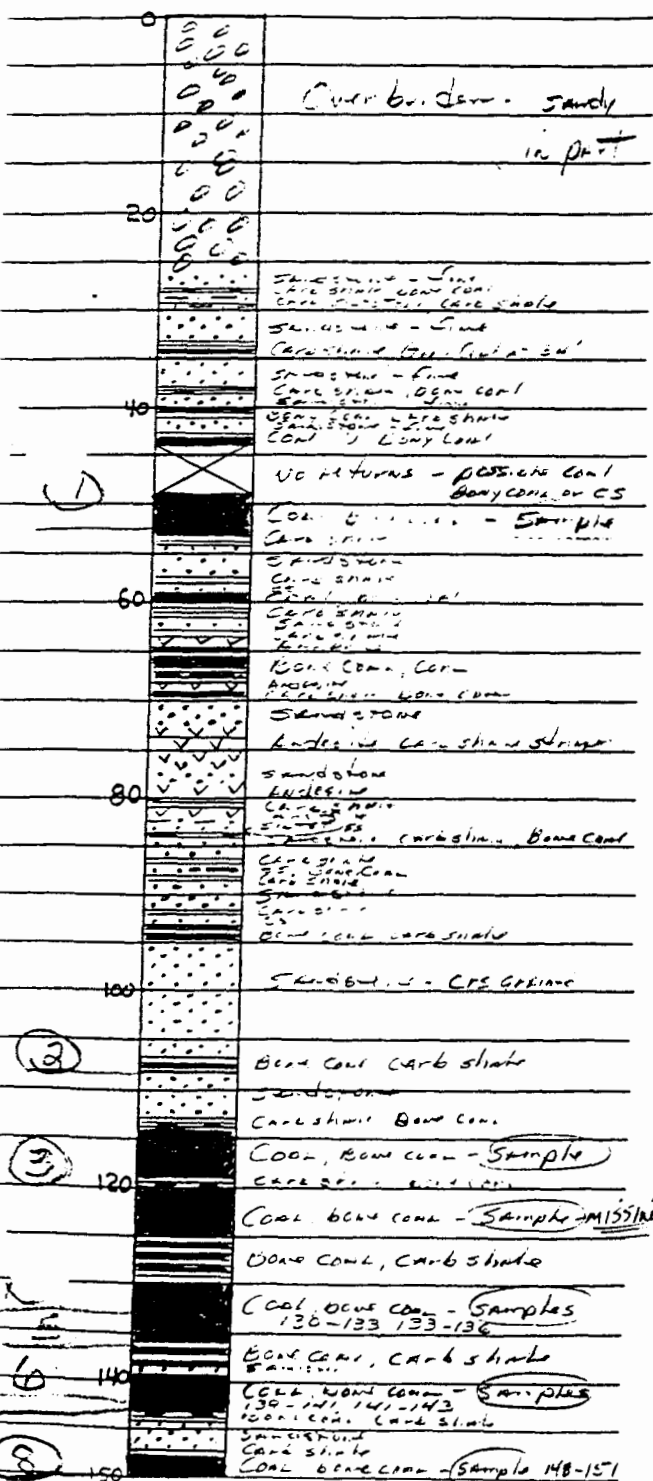
Usibelli Coal Mine, Inc.

Hole: 99-74

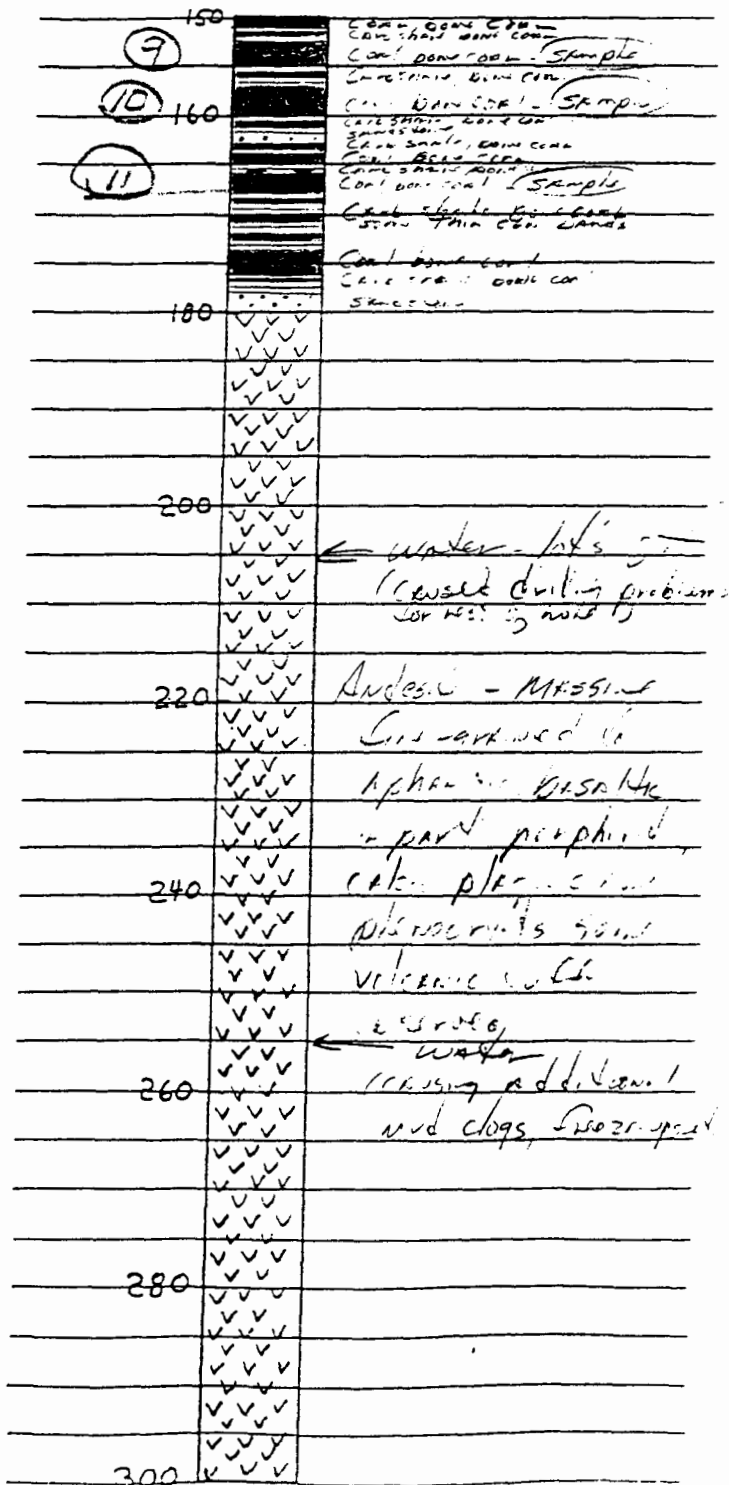
Date: 4/12/99
Geol: Mike Belovich
Driller:
Weather:

Location:
Northing:
Easting:
Elevation:

SAMPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



Usibelli Coal Mine, Inc.

Date: 4/12/99

Geol: Mike Belward 1985

Driller: _____

Weather:

Location: _____

Nothing: _____

Easting:

Elevation:

SAMPLE LOG	DESCRIPTION
1	...
2	...
3	...
4	...
5	...
6	...
7	...
8	...
9	...
10	...
11	...
12	...
13	...
14	...
15	...
16	...
17	...
18	...
19	...
20	...
21	...
22	...
23	...
24	...
25	...
26	...
27	...
28	...
29	...
30	...
31	...
32	...
33	...
34	...
35	...
36	...
37	...
38	...
39	...
40	...
41	...
42	...
43	...
44	...
45	...
46	...
47	...
48	...
49	...
50	...
51	...
52	...
53	...
54	...
55	...
56	...
57	...
58	...
59	...
60	...
61	...
62	...
63	...
64	...
65	...
66	...
67	...
68	...
69	...
70	...
71	...
72	...
73	...
74	...
75	...
76	...
77	...
78	...
79	...
80	...
81	...
82	...
83	...
84	...
85	...
86	...
87	...
88	...
89	...
90	...
91	...
92	...
93	...
94	...
95	...
96	...
97	...
98	...
99	...
100	...

A hand-drawn stratigraphic column on lined paper. The column is a vertical rectangle divided into two sections by a horizontal line. The left section contains depth markers: 450, 460, 480, 500, 220, 240, 260, 280, and 300. The right section contains lithological descriptions: 'shale / siltstone' and 'siltstone'. The column is filled with various patterns: a top section with a 'V' pattern, a section with horizontal dashed lines, a section with horizontal solid lines, a section with horizontal dashed lines, a section with horizontal solid lines, a section with horizontal dashed lines, a section with horizontal solid lines, a section with horizontal dashed lines, a section with horizontal solid lines, and a bottom section with horizontal dashed lines.

Depth (m)	Lithology
450	shale / siltstone
460	shale / siltstone
480	shale / siltstone
500	shale / siltstone
220	siltstone
240	siltstone
260	siltstone
280	siltstone
300	siltstone

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM99-74
SEAM C
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-12-99
ANALYSIS DATE 5-4-99
ENGINEER: Alan K. B. B. B. ANALYST: D. J. B. B. B.
DEPTH: higher 49 lower 53
WEIGHTS: gross 1774 tare 796 dry 1749
REMARKS: dry fines

DRY VALUES: VOLATILES 30.03
ASH 16.96
CARBON 53.01
AS DETERMINE SULFUR .47
AS DETERMINE BTU 11126

AS RECEIVED VALUES: MOISTURE 5.22
VOLATILES 28.46
ASH 16.07
CARBON 50.24
SULFUR .46
BTU 10839

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM-97-02
SEAM C
SAMPLE # 2
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VF
DEPTH: higher 114 lower 119
WEIGHTS: gross 1716 tare 799 dry 1693
REMARKS: fine

DRY VALUES: VOLATILES 33.97
ASH 11.93
CARBON 54.11
AS DETERMINE SULFUR .73
AS DETERMINE BTU 11760

AS RECEIVED VALUES: MOISTURE 6.49
VOLATILES 31.77
ASH 11.15
CARBON 50.60
SULFUR .71
BTU 11450

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM99-74
SEAM C
SAMPLE # 3
LOCATION DM
DRILLING DATE 4-12-99
ANALYSIS DATE 5-5-99
ENGINEER: RR ANALYST: VR
DEPTH: higher 120 lower 125
WEIGHTS: gross 1832 tare 797 dry 1812
REMARKS: dry heavy free

DRY VALUES: VOLATILES 29.27
ASH 29.61
CARBON 41.12
AS DETERMINE SULFUR .44
AS DETERMINE BTU 9200

AS RECEIVED VALUES: MOISTURE 4.01
VOLATILES 28.10
ASH 28.43
CARBON 39.47
SULFUR .43
BTU 9032

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM79-74
SEAM C
SAMPLE # 4
LOCATION DM
DRILLING DATE 4-12-99
ANALYSIS DATE 5-5-99
ENGINEER: RP ANALYST: VP
DEPTH: higher 130 lower 133
WEIGHTS: gross 1837 tare 797 dry 1813
REMARKS: heavy fines dig

DRY VALUES: VOLATILES 29.77
ASH 15.54
CARBON 54.69
AS DETERMINE SULFUR .53
AS DETERMINE BTU 11436

AS RECEIVED VALUES: MOISTURE 4.82
VOLATILES 28.34
ASH 14.79
CARBON 52.05
SULFUR .51
BTU 11158

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UOM99-14
SEAM 1
SAMPLE # 5
LOCATION DM
DRILLING DATE 4-13-90
ANALYSIS DATE 5-5-99
ENGINEER: AK ANALYST: VF
DEPTH: higher 133 lower 136
WEIGHTS: gross 1713 tare 725 dry 1689
REMARKS: heavy lignite

DRY VALUES: VOLATILES 33.15
ASH 14.99
CARBON 51.81
AS DETERMINE SULFUR .73
AS DETERMINE BTU 11561

AS RECEIVED VALUES: MOISTURE 5.21
VOLATILES 31.43
ASH 14.21
CARBON 49.17
SULFUR .70
BTU 11255

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 110M90-74
SEAM 2
SAMPLE # 6
LOCATION 17
DRILLING DATE 4-13-99
ANALYSIS DATE 5-5-99
ENGINEER: AA ANALYST: VF
DEPTH: higher 39 lower 141
WEIGHTS: gross 1756 tare 998 dry 1715
REMARKS: dry 100% fine

DRY VALUES: VOLATILES 31.08
ASH 10.96
CARBON 57.96
AS DETERMINE SULFUR .57
AS DETERMINE BTU 12218

AS RECEIVED VALUES: MOISTURE 4.93
VOLATILES 29.55
ASH 10.42
CARBON 55.10
SULFUR .56
BTU 11937

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM 79-74
SEAM C
SAMPLE # 7
LOCATION DM
DRILLING DATE 4-15-99
ANALYSIS DATE 5-5-99
ENGINEER: 100 ANALYST: VP
DEPTH: higher 141 lower 143
WEIGHTS: gross 180.9 tare 795 dry 1805
REMARKS: dry heavy fine

DRY VALUES: VOLATILES 31.75
ASH 16.37
CARBON 51.88
AS DETERMINE SULFUR .57
AS DETERMINE BTU 11456

AS RECEIVED VALUES: MOISTURE 4.79
VOLATILES 30.23
ASH 15.59
CARBON 49.39
SULFUR .56
BTU 11176

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 97-11
SEAM C
SAMPLE # 8
LOCATION DM
DRILLING DATE 2-12-99
ANALYSIS DATE 5-5-99
ENGINEER: AM ANALYST: VP
DEPTH: higher 145 lower 151
WEIGHTS: gross 1769 tare 796 dry 1746
REMARKS: heavier than

DRY VALUES: VOLATILES 29.60
ASH 22.21
CARBON 47.36
AS DETERMINE SULFUR .55
AS DETERMINE BTU 11985

AS RECEIVED VALUES: MOISTURE 4.77
VOLATILES 28.19
ASH 11.93
CARBON 55.11
SULFUR .54
BTU 11688

DRILL HOLE UCM99-74
SEAM 2
SAMPLE # 7
LOCATION DM
DRILLING DATE 11-15-77
ANALYSIS DATE 5-5-99
ENGINEER: 115 ANALYST: JP
DEPTH: higher 150 lower 155
WEIGHTS: gross 1128 tare 798 dry 1683
REMARKS: dry, fine

DRY VALUES: VOLATILES 30.43
 ASH 22.21
 CARBON 47.36
 AS DETERMINE SULFUR .50
 AS DETERMINE BTU 10452

AS RECEIVED VALUES:	MOISTURE	<u>5.00</u>
	VOLATILES	<u>28.91</u>
	ASH	<u>21.10</u>
	CARBON	<u>44.99</u>
	SULFUR	<u>.49</u>
	BTU	<u>10147</u>

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM77-12
SEAM C
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-10-99
ANALYSIS DATE 5-5-99
ENGINEER: AK ANALYST: UP
DEPTH: higher 157 lower 160
WEIGHTS: gross 1165 tare 796 dry 1639
REMARKS: heavy fines

DRY VALUES: VOLATILES 30.72
ASH 19.19
CARBON 50.09
AS DETERMINE SULFUR .62
AS DETERMINE BTU 11100

AS RECEIVED VALUES: MOISTURE 4.89
VOLATILES 29.22
ASH 18.25
CARBON 47.64
SULFUR .60
BTU 10765

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UICM79-1/4
SEAM 2
SAMPLE # 11
LOCATION DM
DRILLING DATE 4-12-99
ANALYSIS DATE 5-5-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 165 lower 165
WEIGHTS: gross 1678 tare 794 dry 1660
REMARKS: rainy

DRY VALUES: VOLATILES 24.42
ASH 33.60
CARBON 41.97
AS DETERMINE SULFUR .49
AS DETERMINE BTU 8779

AS RECEIVED VALUES: MOISTURE 3.86
VOLATILES 23.48
ASH 33.30
CARBON 40.35
SULFUR .48
BTU 8608

, USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-76

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
D Seam	#1	247-252	4.45	17.92	10730	27.71	49.92	0.48	HEAVY
	#2	252-256	4.44	26.24	9294	25.06	44.27	0.42	DRY,HOLE IN BAG

DRILL LOG DATA

1012

Usibelli Coal Mine, Inc.

Hole: 99-76

Date: 4/13/91

Geol: (M. E. Leland (0-51))

Driller: _____

Weather: _____

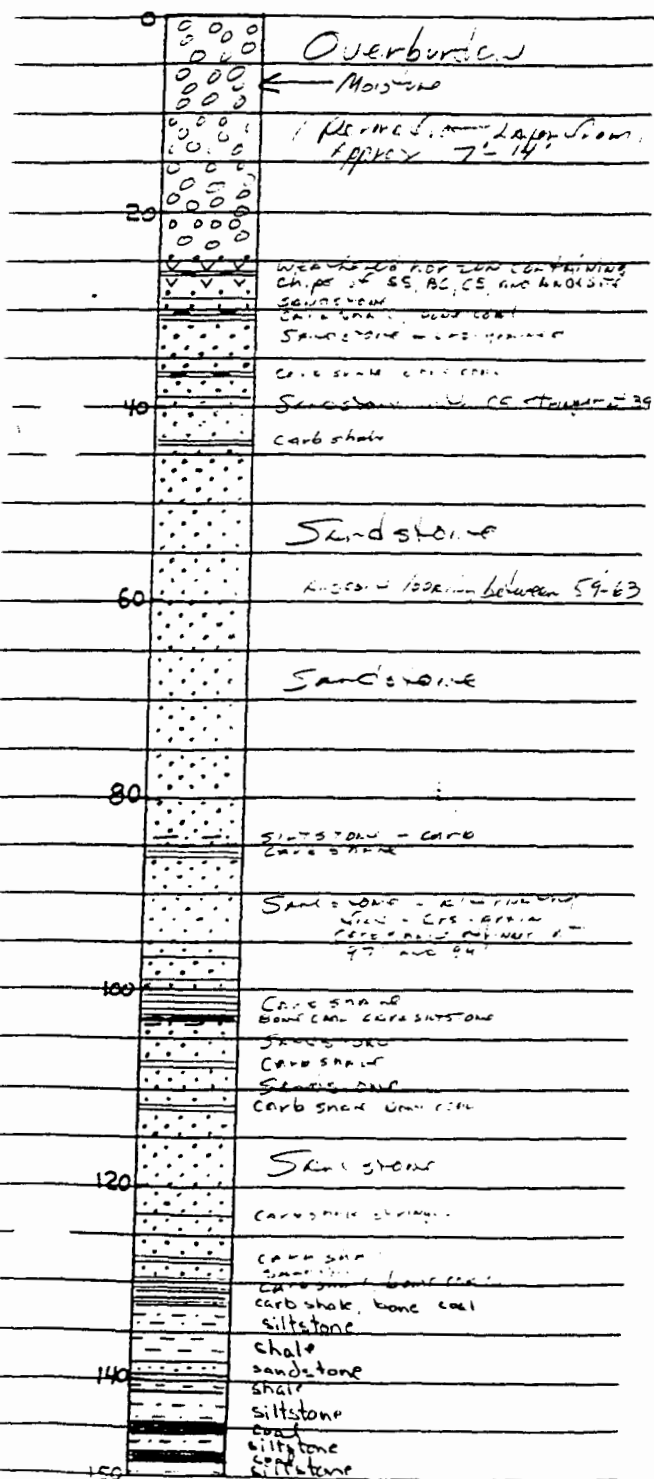
Location: _____

Northing: _____

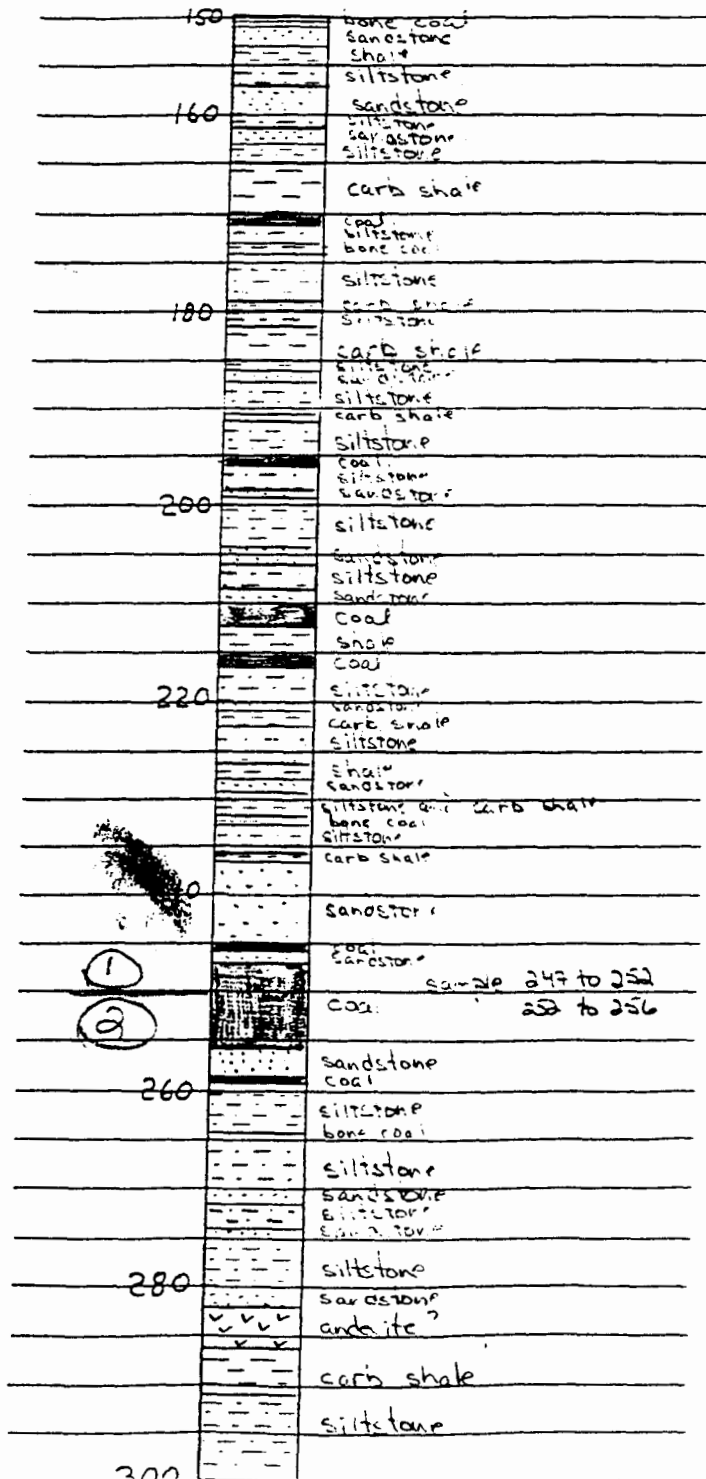
Easting: _____

Elevation: _____

MPLE LOG DESCRIPTION



SAMPLE LOG DESCRIPTION



DRILL LOG DATA

2012

Usibelli Coal Mine, Inc.

Hole: 99-71

Date: April 13 1999
Geol: _____
Driller: _____
Weather: _____

Location: _____
Northing: _____
Easting: _____
Elevation: _____

SAMPLE LOG DESCRIPTION

300		siltstone
		sandstone
320		bone coal & coal siltstone
		coal (drilling to water)
340		siltstone
		coal (drilling to water)
360		siltstone shale
		coal
		siltstone
		coal
380		
400		andesite
420		
440		
450		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM99-76
SEAM D
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-23-99
ANALYSIS DATE 5-4-99
ENGINEER: B. W. K. K. K. K. ANALYST: J. J. K. K. K.
DEPTH: higher 247 lower 250
WEIGHTS: gross 1732 tare 799 dry 1711
REMARKS: heavy

DRY VALUES: VOLATILES 29.00
ASH 18.75
CARBON 53.25
AS DETERMINE SULFUR .49
AS DETERMINE BTU

AS RECEIVED VALUES: MOISTURE 4.45
VOLATILES 27.71
ASH 17.92
CARBON 49.92
SULFUR .48
BTU 10730

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE 11CM93-76
SEAM L
SAMPLE # 2
LOCATION DM
DRILLING DATE 5-3-99
ANALYSIS DATE 5-4-99
ENGINEER: AM ANALYST: WR
DEPTH: higher 252 lower 256
WEIGHTS: gross 1780 tare 79.5 dry 1758
REMARKS: dry hole in bag

DRY VALUES: VOLATILES 26.22
ASH 27.46
CARBON 46.33
AS DETERMINE SULFUR .43
AS DETERMINE BTU 9511

AS RECEIVED VALUES: MOISTURE 4.44
VOLATILES 25.06
ASH 26.24
CARBON 44.37
SULFUR .42
BTU 9294

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 90.111
SEAM E
SAMPLE # 11
LOCATION DM
DRILLING DATE 4-14-99
ANALYSIS DATE 5-4-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 32.0 lower 32.7
WEIGHTS: gross 1811 tare 796 dry 1735
REMARKS: wet, dull gray

DRY VALUES: VOLATILES 19.58
ASH 61.64
CARBON 18.78
AS DETERMINE SULFUR .33
AS DETERMINE BTU 4138

AS RECEIVED VALUES: MOISTURE 8.82
VOLATILES 17.85
ASH 56.26
CARBON 17.12
SULFUR .31
BTU 3846

USIBELLI COAL MINE, INC.

TEST HOLE ANALYSIS

ary of UCM99-77

Seam	Sample	Depth	Moisture	Ash	BTU	Vol.	Carbon	Sulfur	Remarks
E Seam	#1	168-171	4.96	11.98	11436	28.20	54.86	0.47	DRY
	#2	171-174	4.37	17.79	10693	29.73	48.10	0.43	DRY, HEAVY
	#3	236-238	4.07	16.48	11100	29.77	49.68	0.66	DRY, HEAVY
	#4	238-240	3.51	29.73	9167	30.74	36.01	0.87	DRY
	#5	242.5-245.5	4.60	18.10	10703	28.23	49.07	0.51	DRY
	#6	247.5-251.0	4.15	28.51	9112	26.32	41.02	0.47	HEAVY
	#7	251-254	4.67	14.53	11259	29.64	51.16	0.55	HEAVY
	#8	261-263	4.90	13.99	11412	30.96	50.16	0.75	DRY, HEAVY
	#9	291-294	4.38	11.21	11790	32.60	51.82	0.64	HEAVY
	#10	295-297	4.86	20.23	10315	29.31	45.59	0.57	HEAVY
	#11	320-327	8.82	56.20	3846	17.85	17.12	0.31	WET, DULL, GRAY

DRILL LOG DATA

Usibelli Coal Mine, Inc.

1022

Hole: LCM 77-77

Date: 4/14/99
Geol: M. J. Redsmith (0-283)
Driller: _____
Weather: _____

Location: _____
Northing: _____
Easting: _____
Elevation: _____

SAMPLE LOG DESCRIPTION

0		
10		little
20		Interbedded
30		7-25 fragments
40		fragments
50		interbedded
60		Sandstone
70		Carb shale
80		Sandstone
90		Carb shale
100		Sandstone
110		Carb shale, sandstone
120		Sandstone - Alternating fine and ch. grained
130		Carb shale stringer
140		Carb shale, bone coal
150		Carb shale, bone coal, thin coals
160		Sandstone
170		Carb shale - 4. thin ss stringer at 118
180		Sandstone with CS, EC stringer
190		Carb shale - 4. ss stringer at 126
200		Sandstone
210		Carb shale, cont. claystone
220		interbedded sandstone - Carb shale
230		bone coal, thin coal stringer
240		Carb siltstone
250		Carb shale

SAMPLE LOG DESCRIPTION

150		Bone coal, carb shale, thin coal stringer
160		Carb shale
170	(1)	Carb shale, bone coal
180	(2)	CS, BC, COAL - Sample 168-171, 171-174
190		Sandstone
200		Sandstone
210		Carb shale
220		Sandstone
230		Carb shale
240	(3)	Carb shale, bone coal
250	(4)	Carb shale, bone coal
260	(5)	Carb shale, bone coal
270	(6)	Carb shale, bone coal
280	(7)	Carb shale, bone coal
290	(8)	Carb shale, bone coal
300	(9)	Carb shale, bone coal
310	(10)	Carb shale, bone coal

DRILL LOG DATA

Usibelli Coal Mine, Inc.

2022

Hole: 99-77

Date: April 14 1999

Geol: _____

Driller: _____

Weather: _____

Location: _____

Northing: _____

Easting: _____

Elevation: _____

SAMPLE LOG DESCRIPTION

320		Sandstone
		Shale
		Coal
		Siltstone
		Sandstone
		Siltstone
		Coal
		Siltstone
320		Coal sample 320-327
		Siltstone
		Siltstone
		Sandstone
340		Siltstone
		Sandstone
		Siltstone
		Coal (wet)
		Siltstone
360		
380		
400		
420		
		420' coh
440		
450		

SAMPLE LOG DESCRIPTION

150		
160		
180		
200		
220		
240		
260		
280		
300		

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM 79-77
SEAM E
SAMPLE # 1
LOCATION DM
DRILLING DATE 4-12-79
ANALYSIS DATE 5-3-79
ENGINEER: Alvin R. Brown ANALYST: W. J. Harrison
DEPTH: higher 168 lower 171
WEIGHTS: gross 1609 tare 794 dry 1589
REMARKS: dry

DRY VALUES: VOLATILES 29.67
ASH 12.61
CARBON 57.72
AS DETERMINE SULFUR .48
AS DETERMINE BTU 11237

AS RECEIVED VALUES: MOISTURE 4.96
VOLATILES 28.20
ASH 11.98
CARBON 54.86
SULFUR .47
BTU 11436

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCMA9-77
SEAM E
SAMPLE # 2
LOCATION DM
DRILLING DATE 2-14-77
ANALYSIS DATE 5-3-77
ENGINEER: AR ANALYST: JP
DEPTH: higher 171 lower 174
WEIGHTS: gross 1640 tare 795 dry 1621
REMARKS: dry, heavy-

DRY VALUES: VOLATILES 31.09
ASH 18.60
CARBON 50.30
AS DETERMINED SULFUR .44
AS DETERMINED BTU 10947

AS RECEIVED VALUES: MOISTURE 4.37
VOLATILES 29.73
ASH 17.79
CARBON 48.10
SULFUR .43
BTU ~~10693~~ 10693

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM122-11"
SEAM E
SAMPLE # 3
LOCATION DM
DRILLING DATE 2-1-00
ANALYSIS DATE 5-3-99
ENGINEER: RR ANALYST: VP
DEPTH: higher 236 lower 228
WEIGHTS: gross 1694 tare 797 dry 1677
REMARKS: dry heavy

DRY VALUES: VOLATILES 31.03
ASH 17.18
CARBON 51.79
AS DETERMINE SULFUR .67
AS DETERMINE BTU 11324

AS RECEIVED VALUES: MOISTURE 4.07
VOLATILES 39.77
ASH 16.48
CARBON 49.68
SULFUR .66
BTU 11100

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-77
SEAM E
SAMPLE # 4
LOCATION DM
DRILLING DATE 4-14-99
ANALYSIS DATE 5-3-99
ENGINEER: HR ANALYST: VR
DEPTH: higher 23.8 lower 24.0
WEIGHTS: gross 1632 tare 796 dry 16.18
REMARKS: dry

DRY VALUES: VOLATILES 31.86
ASH 30.81
CARBON 37.32
AS DETERMINE SULFUR .88
AS DETERMINE BTU 9314

AS RECEIVED VALUES: MOISTURE 3.51
VOLATILES 30.74
ASH 29.73
CARBON 36.01
SULFUR .87
BTU 9167

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LCM 99-11
SEAM E
SAMPLE # .5
LOCATION DM
DRILLING DATE 4-10-99
ANALYSIS DATE 5-3-99
ENGINEER: HP ANALYST: VP
DEPTH: higher 343.5 lower 345
WEIGHTS: gross 1641 tare 795 dry 1623
REMARKS: dry

DRY VALUES: VOLATILES 29.59
ASH 18.97
CARBON 51.44
AS DETERMINE SULFUR .52
AS DETERMINE BTU 10943

AS RECEIVED VALUES: MOISTURE 4.60
VOLATILES 28.23
ASH 18.10
CARBON 49.07
SULFUR .51
BTU 10703

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM72-11
SEAM E
SAMPLE # 6
LOCATION DM
DRILLING DATE 4-14-79
ANALYSIS DATE 5-3-79
ENGINEER: HR ANALYST: VP
DEPTH: higher 247.5 lower 251
WEIGHTS: gross 1795 tare 796 dry 1777
REMARKS: heavy

DRY VALUES: VOLATILES 27.46
ASH 29.74
CARBON 42.80
AS DETERMINE SULFUR .48
AS DETERMINE BTU 9311

AS RECEIVED VALUES: MOISTURE 4.15
VOLATILES 26.33
ASH 28.51
CARBON 41.03
SULFUR .47
BTU 9112

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM99-77
SEAM E
SAMPLE # 7
LOCATION UM
DRILLING DATE 4-14-99
ANALYSIS DATE 5-4-99
ENGINEER: PK ANALYST: LF
DEPTH: higher 2.51 lower 2.54
WEIGHTS: gross 1661 tare 796 dry 1639
REMARKS: heavy-

DRY VALUES: VOLATILES 31.09
ASH 15.24
CARBON 53.67
AS DETERMINE SULFUR .56
AS DETERMINE BTU 11561

AS RECEIVED VALUES: MOISTURE 4.67
VOLATILES 29.64
ASH 14.53
CARBON 51.16
SULFUR .55
BTU 11259

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE LLCM99-77
SEAM E
SAMPLE # 8
LOCATION DM
DRILLING DATE 4-14-99
ANALYSIS DATE 5-4-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 531 lower 267
WEIGHTS: gross 1681 tare 797 dry 1659
REMARKS: Heavy dry-

DRY VALUES: VOLATILES 32.55
ASH 14.71
CARBON 52.74
AS DETERMINE SULFUR .77
AS DETERMINE BTU 11714

AS RECEIVED VALUES: MOISTURE 4.90
VOLATILES 30.96
ASH 13.98
CARBON 50.16
SULFUR .75
BTU 11412

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM99-7"
SEAM E
SAMPLE # 9
LOCATION LM
DRILLING DATE 4-14-95
ANALYSIS DATE 5-4-99
ENGINEER: AR ANALYST: VP
DEPTH: higher 291 lower 294
WEIGHTS: gross 1672 tare 797 dry 1653
REMARKS: heavy

DRY VALUES: VOLATILES 34.09
ASH 11.73
CARBON 54.19
AS DETERMINE SULFUR .65
AS DETERMINE BTU 13059

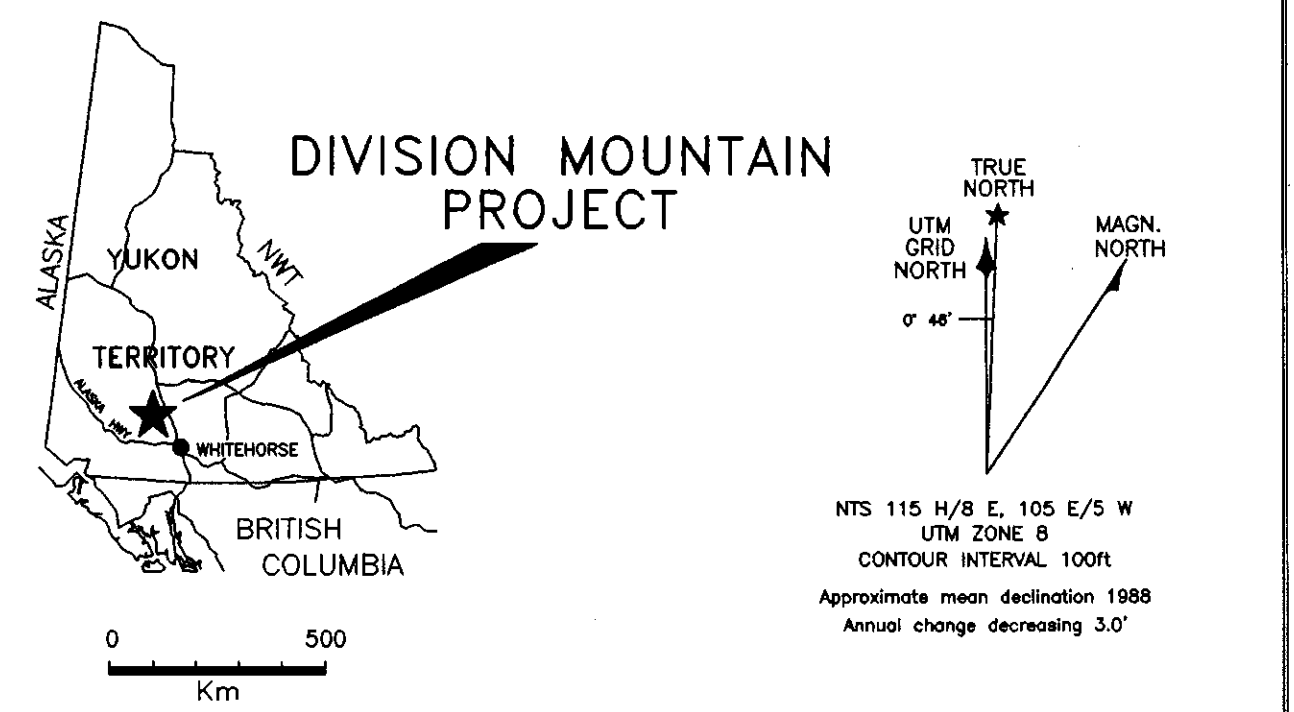
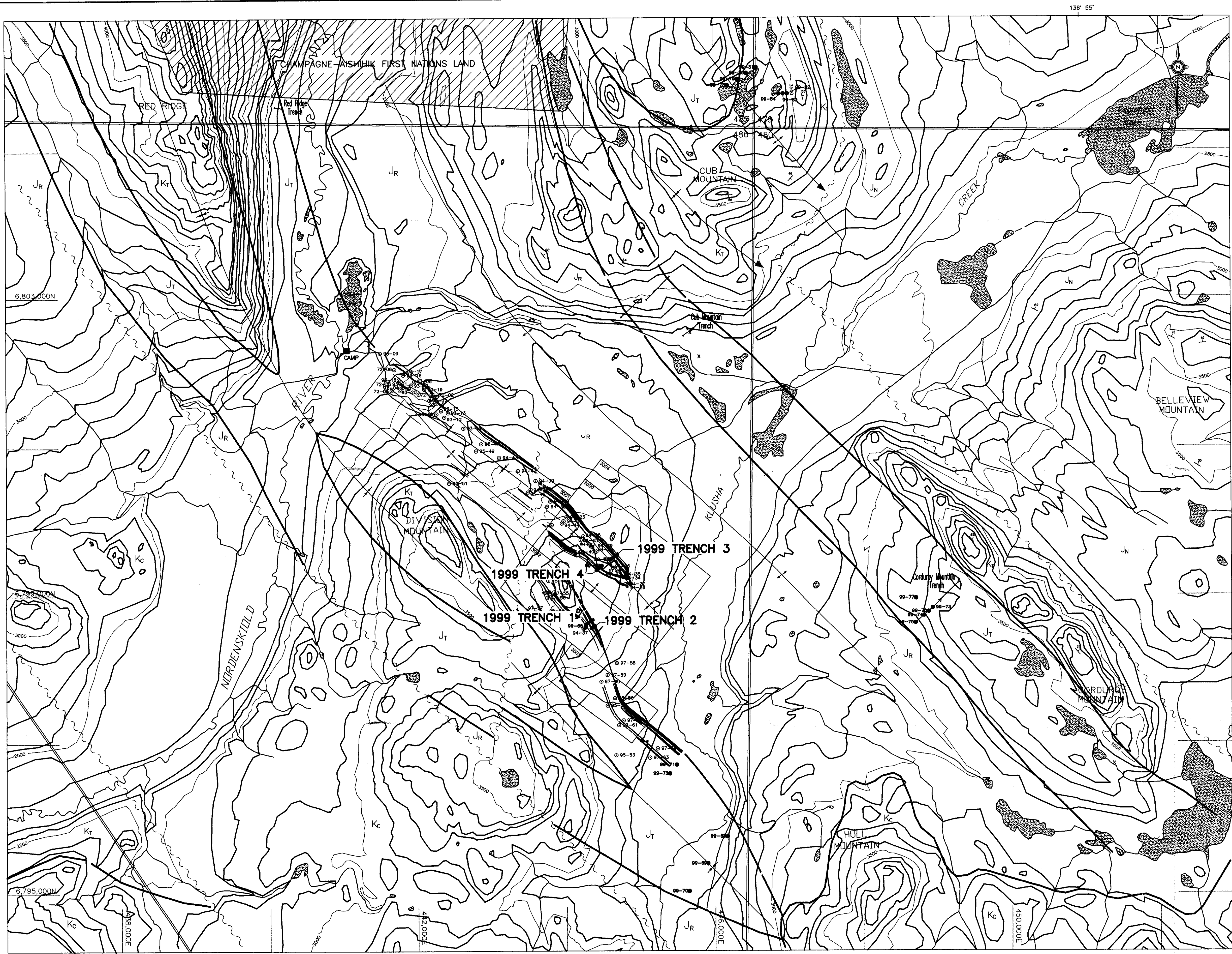
AS RECEIVED VALUES: MOISTURE 4.38
VOLATILES 33.60
ASH 11.21
CARBON 51.82
SULFUR .64
BTU 11790

USIBELLI COAL MINE, INC.
EXPLORATION ANALYSIS

DRILL HOLE UCM 99-77
SEAM E
SAMPLE # 10
LOCATION DM
DRILLING DATE 4-10-99
ANALYSIS DATE 5-4-99
ENGINEER: F.R. ANALYST: VR
DEPTH: higher 29.5 lower 29.1
WEIGHTS: gross 1688 tare 795 dry 1661
REMARKS: Heavy

DRY VALUES: VOLATILES 30.81
ASH 21.26
CARBON 47.92
AS DETERMINE SULFUR .59
AS DETERMINE BTU 10640

AS RECEIVED VALUES: MOISTURE 4.86
VOLATILES 29.31
ASH 20.23
CARBON 45.59
SULFUR .51
BTU 10315



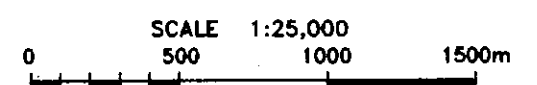
NOTES: ALL 1999 DRILL HOLES AND TRENCH LOCATIONS AS SHOWN ARE APPROXIMATE AS THEY WERE NOT FIELD SURVEYED AT THIS TIME.

LEGEND

- Upper Cretaceous
Carmacks Group
[Kc] andesite sills and dykes
- Upper Jurassic to Lower Cretaceous
Tantalus Formation
[Kt] chert pebble conglomerate
- Middle to Upper Jurassic
Tanglefoot Formation
[Jt] coal
[Jr] coaly shale, shale, siltstone, sandstone, conglomerate
- Lower to Middle Jurassic
Richtofen Formation
[Jr] interlaminated black shale and siltstone to gritty siltstone
[Jn] dacite tuff, sandstone, conglomerate, shale
- formational contact (known)
- formational contact (assumed)
- syncline axis
- anticline axis
- fault
- 97-58 diamond drill hole
- attitude of bedding
- 3002 Coal Lease
- 487 Coal Exploration Licence
- x coal float occurrence
- trench
- four wheel drive road
- 99-708 1999 DRILL HOLE LOCATIONS
- 1999 TRENCH LOCATIONS

USIBELLI COAL MINE, INC.

FINAL TRENCH AND DRILL HOLE LOCATION MAP
DIVISION MOUNTAIN PROJECT



DIVISION MOUNTAIN PROJECT

RESISTIVITY
NATURAL GAMMA
POTASSIUM

HOLE: 99-65

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT
LOCATION: 115 H/8
DATE LOGGED: 08 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

Total depth:

Logged depth: 76.3 m

Total runs: 4 Plotted run: 3

Logged by: M. Power / J. Boyce

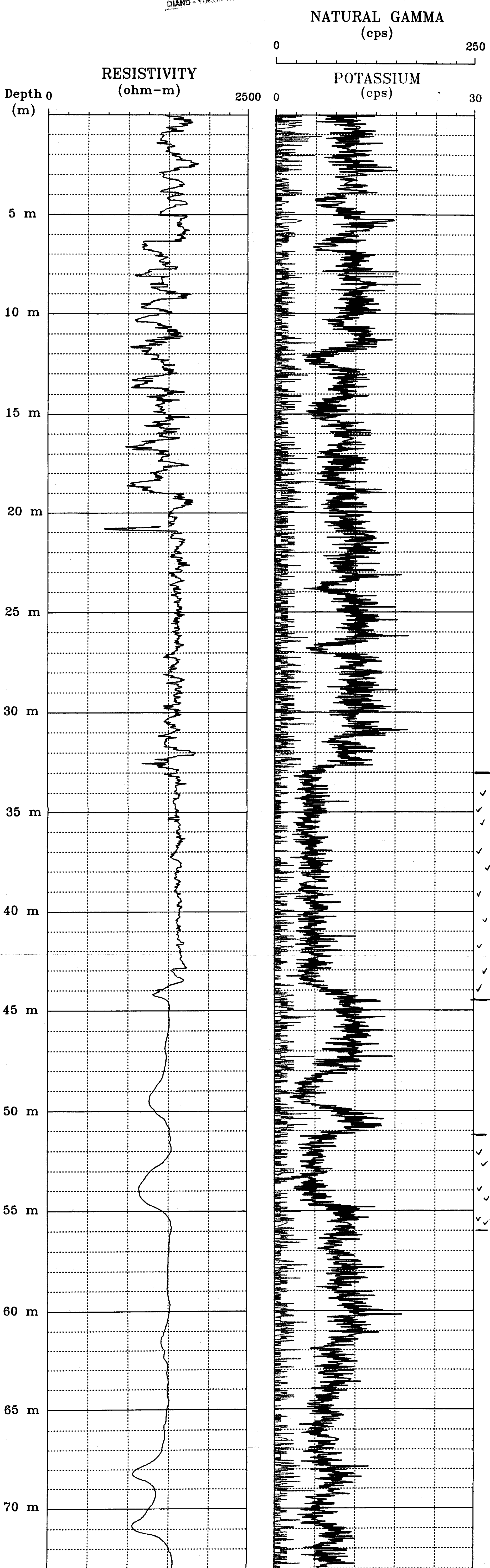
NOTES:

094129



AMEROK
GEOSCIENCES LTD.

DIAND - YUKON REGIONAL CAMP



DIVISION MOUNTAIN PROJECT

TEMPERATURE
TEMPERATURE
GRADIENT

HOLE 99-65

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT
LOCATION: 115 H/8
DATE LOGGED: 08 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

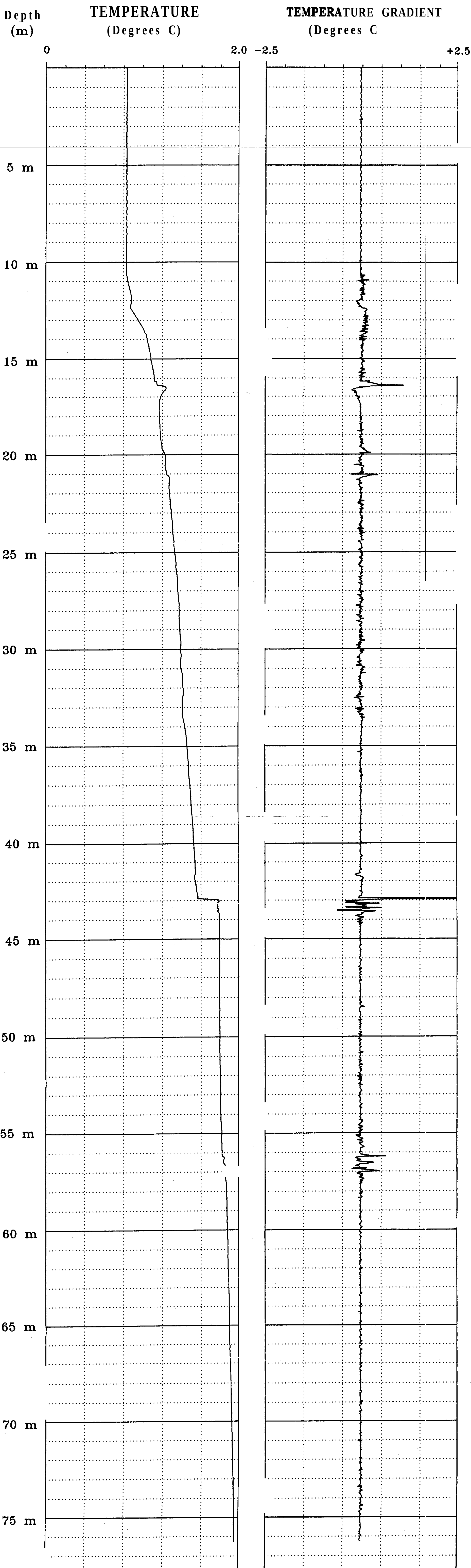
Total depth:

Logged depth: 76.3 m

Total runs: 4 Plotted run: 3

Logged by: M.Power / J. Boyce

NOTES: 094129

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

RESISTIVITY
NATURAL GAMMA
POTASSIUM

HOLE: 99-66

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT
LOCATION: 115 H/8

DATE LOGGED: 08 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

Total depth:

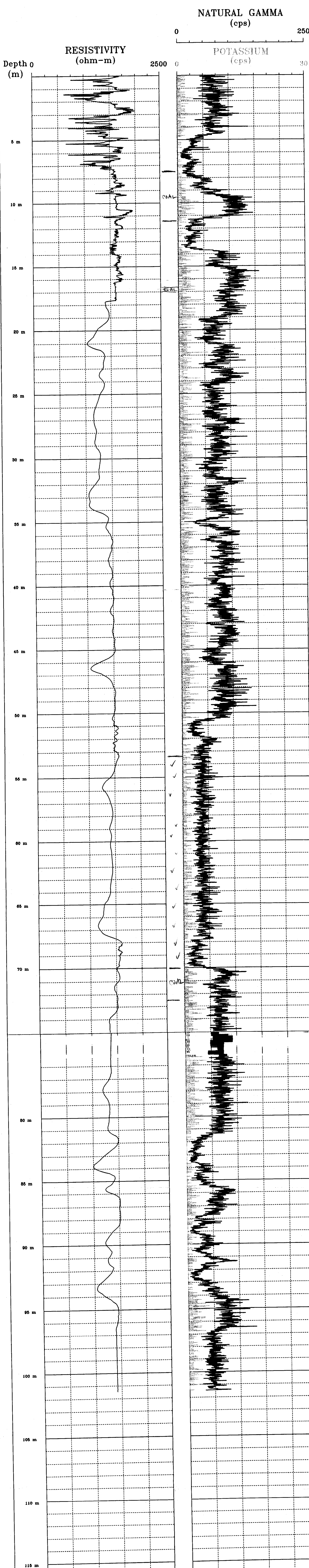
Logged depth: 101.5 m

Total runs: 2 Plotted run: 2

Logged by: M. Power / J. Boyce

NOTES:

094129

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

TEMPERATURE TEMPERATURE GRADIENT

HOLE 99-66

CASH RESOURCES LTD.

 DISTRICT: WHITEHORSE, YT
 LOCATION: 115 H/8
 DATE LOGGED: 08 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

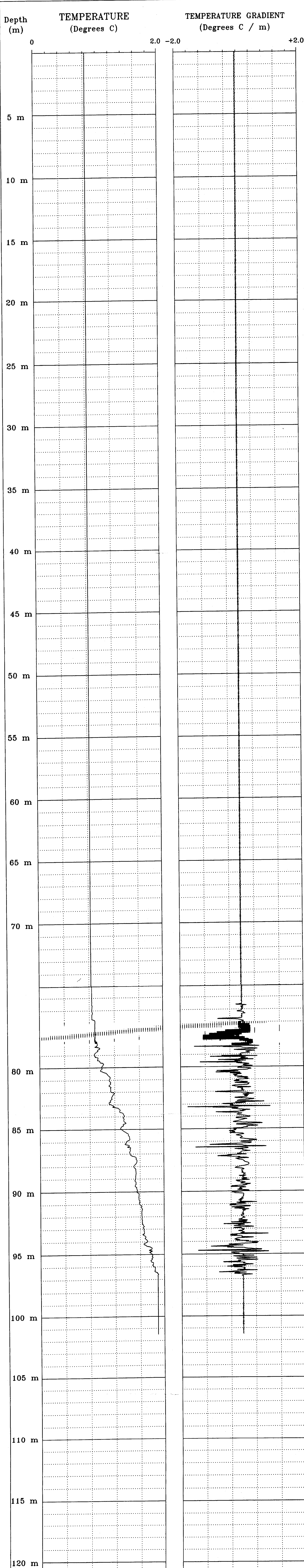
Total depth:

Logged depth: 101.5 m

Total runs: 2 Plotted run: 2

Logged by: M.Power / J. Boyce

NOTES: 094129


AMEROK
 GEOSCIENCES LTD.


DIVISION MOUNTAIN PROJECT

RESISTIVITY
NATURAL GAMMA
POTASSIUM

HOLE: 99-67

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT
LOCATION: 115 H/8
DATE LOGGED: 08 APR 99

Hole diameter: 100 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

Total depth:

Logged depth: 86.5 m

Total runs: 2

Plotted run: 2

Logged by: M. Power / J. Boyce

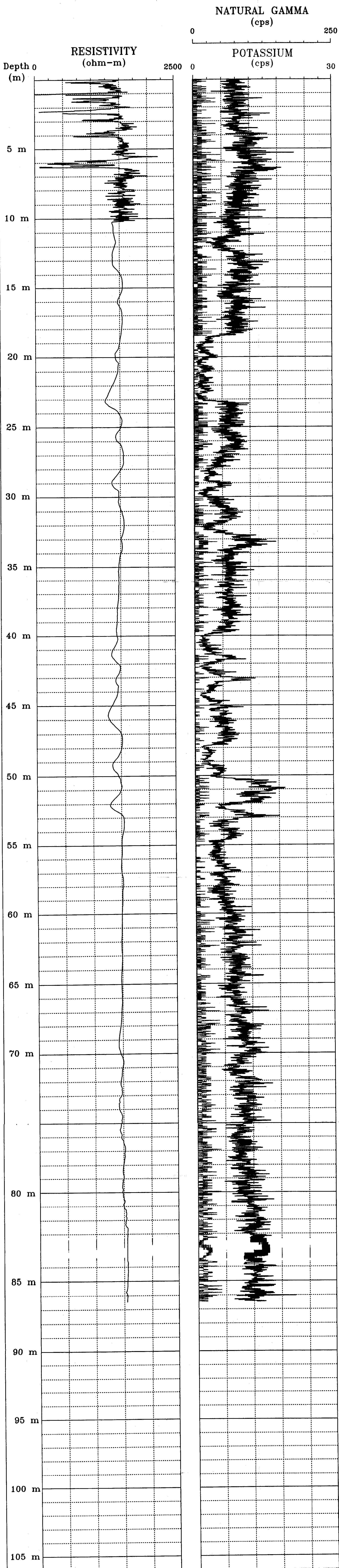
NOTES:

094129

DIAMOND-YUKON REGION LITHOLOGY



AMEROK
GEOSCIENCES LTD.



DIVISION MOUNTAIN PROJECT

TEMPERATURE
TEMPERATURE
GRADIENT

HOLE 99-67

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT

LOCATION: 115 H/8

DATE LOGGED: 08 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 0 C

Hole azimuth:

Hole inclination: -50

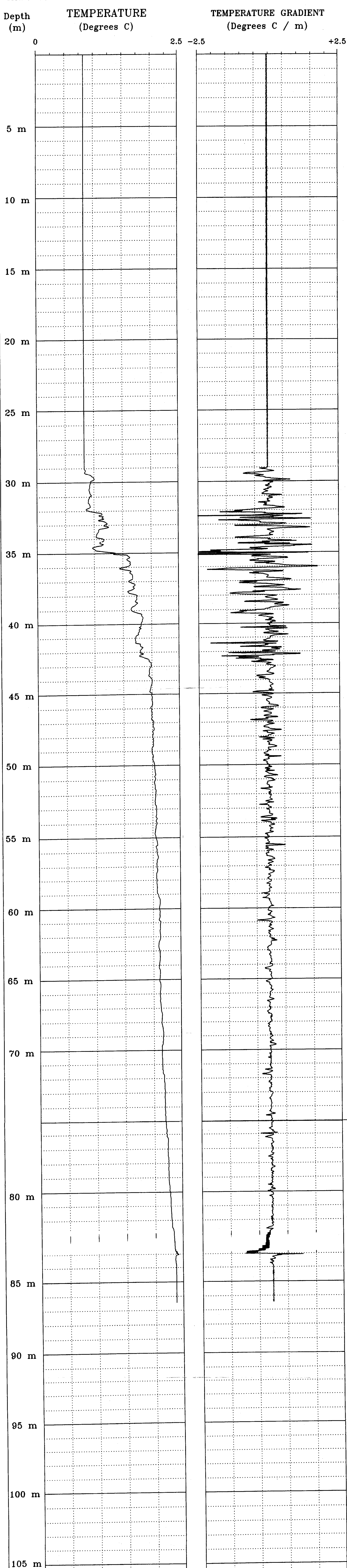
Total depth:

Logged depth: 86.5 m

Total runs: 2 Plotted run: 2

Logged by: M.Power / J. Boyce

NOTES: 094123

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

RESISTIVITY
NATURAL GAMMA
POTASSIUM

HOLE: 99-74

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT
LOCATION: 115 H/8
DATE LOGGED: 15 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 4 C

Hole azimuth:

Hole inclination: -50

Total depth:

Logged depth: 95.3 m

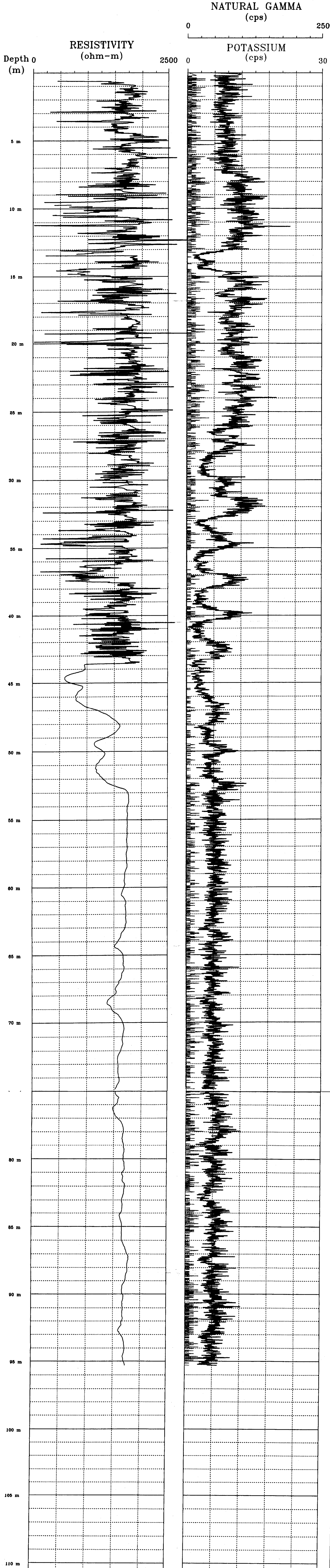
Total runs: 2 Plotted run: 2

Logged by: M. Power / G. Lee

NOTES:

Permafrost over upper part of hole
resulted in erratic resistivity readings.
Data set edited to remove.

094129

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

TEMPERATURE
TEMPERATURE
GRADIENT

HOLE 99-74

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT

LOCATION: 115 H/8

DATE LOGGED: 15 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 4 C

Hole azimuth:

Hole inclination: -50

Total depth:

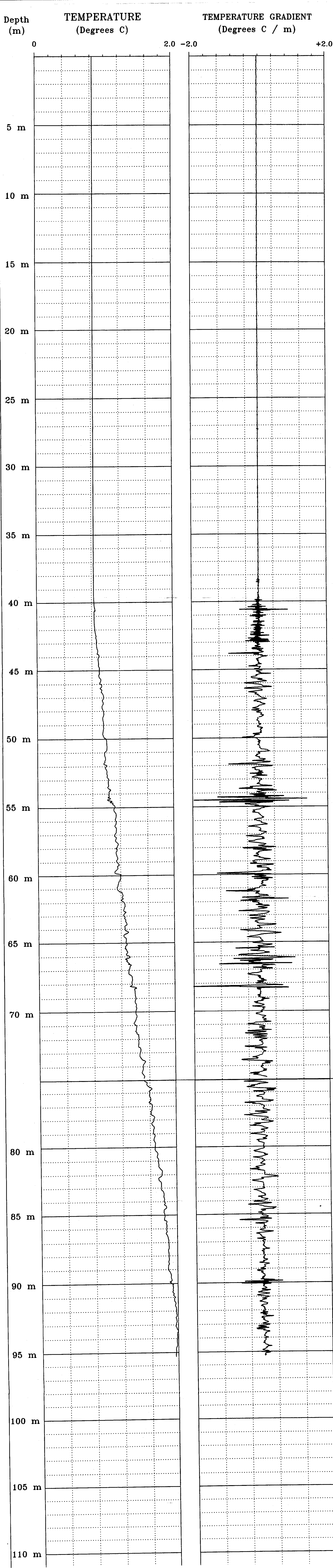
Logged depth: 95.3 m

Total runs: 2 Plotted run: 2

Logged by: M. Power / G. Lee

NOTES:

094129

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

RESISTIVITY
NATURAL GAMMA
POTASSIUM

HOLE: 99-76

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT

LOCATION: 115 H/8

DATE LOGGED: 15 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 4 C

Hole azimuth:

Hole inclination: -50

Total depth:

Logged depth: 135.5 m

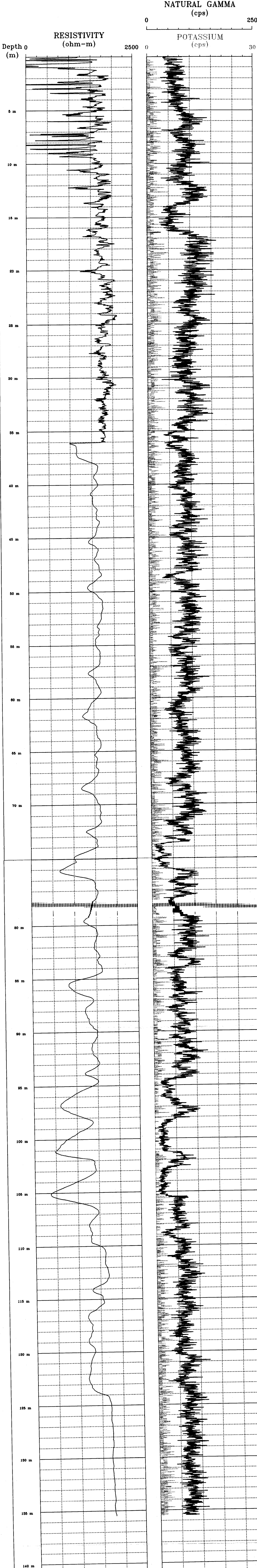
Total runs: 2

Plotted run: 2

Logged by: M. Power / G. Lee

NOTES:

.094129

AMEROK
GEOSCIENCES LTD.

DIVISION MOUNTAIN PROJECT

TEMPERATURE
TEMPERATURE
GRADIENT

HOLE 99-76

CASH RESOURCES LTD.

DISTRICT: WHITEHORSE, YT

LOCATION: 115 H/8

DATE LOGGED: 15 APR 99

Hole diameter: 152 mm

Drilling fluid: None / RC

Surface temperature: 4 C

Hole azimuth:

Hole inclination: -50

Total depth:

Logged depth: 135.5 m

Total runs: 2 Plotted run: 2

Logged by: M.Power / G. Lee

NOTES: 094129

AMEROK
GEOSCIENCES LTD.