

K-ELK RIVER 77(4)B

CORE SAMPLES
ANALYSES

DH. 102; DH. 122 TO DH. 137.

276

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-102-1

Lab. No. 8911

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	22.6	17.4	59.4	0.69	110	Air Dried Basis
	22.7	17.5	59.8	0.69	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	78.9	0.6	24.3	0.67	78.9	24.3	0.67	A.D.B.
	78.9		24.4	0.67	78.9	24.3	0.67	D.B.
65M x 0	21.1	0.6	16.9	0.84	100.0	22.7	0.71	A.D.B.
	21.1		17.0	0.85	100.0	22.8	0.71	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	54.7	0.6	5.4	20.3	73.7	0.69	54.7	5.4	A.D.B.
	54.7		5.4	20.4	74.2	0.69	54.7	5.4	D.B.
1.40-1.50	10.7	0.6	13.7	18.7	67.0	0.71	65.4	6.8	A.D.B.
	10.7		13.8	18.8	67.4	0.71	65.4	6.8	D.B.
1.50-1.60	6.3	0.9	20.7				71.7	8.0	A.D.B.
	6.3		20.9				71.7	8.0	D.B.
+1.60	28.3	0.7	65.7				100.0	24.3	A.D.B.
	28.3		66.2				100.0	24.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
6 1/2	0.09	403	---	27% @ 459°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8911 Date April 29, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-102-1

Starting Temperature °C: 320

Softening Temperature °C: 403

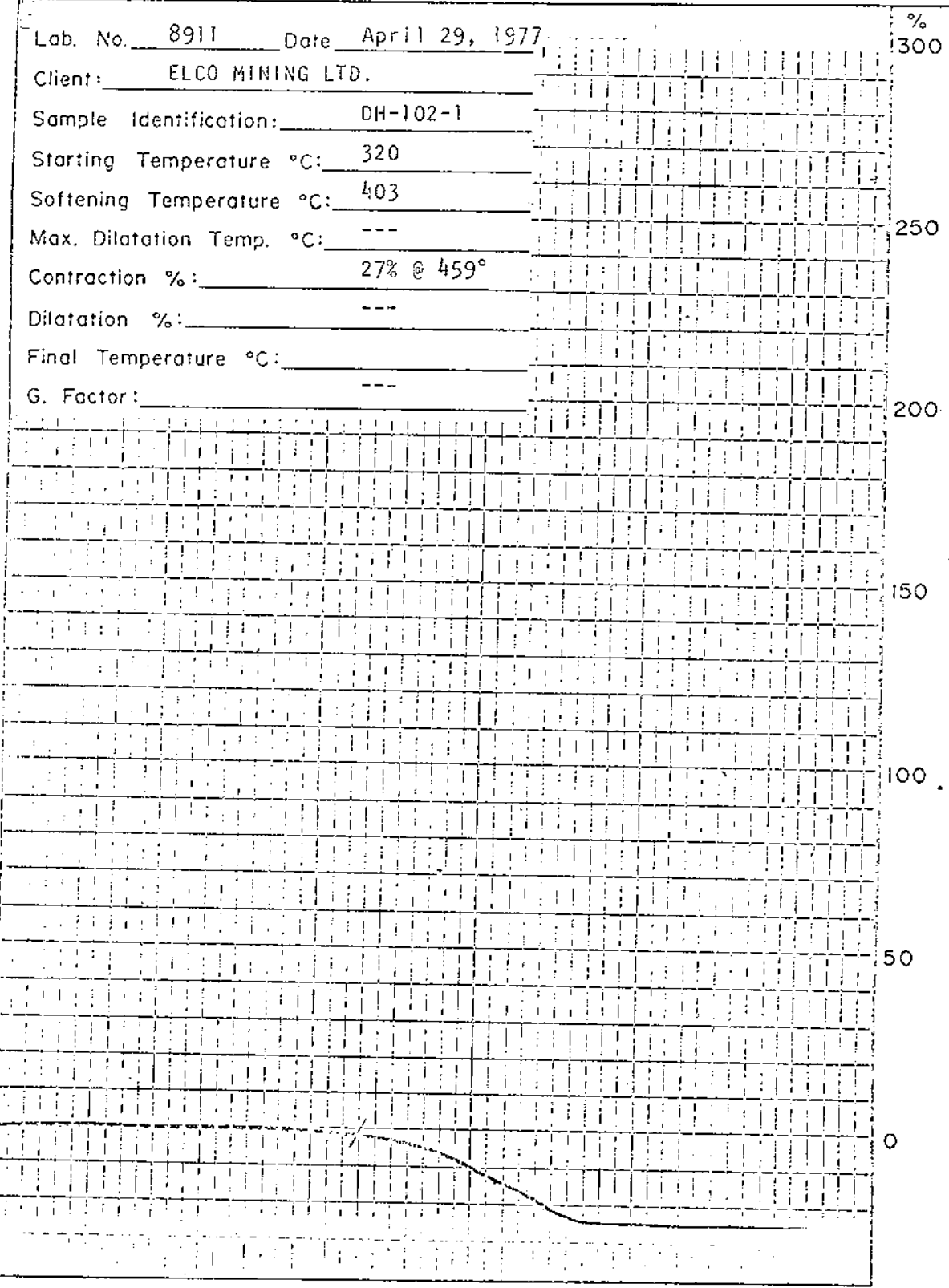
Max. Dilatation Temp. °C: ---

Contraction %: 27% @ 459°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-102-2

Lab. No. 8912

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	27.8	17.1	54.4	1.05	87	Air Dried Basis
	28.0	17.2	54.8	1.06	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	59.4	0.9	35.6	1.06	59.4	35.6	1.06	A.D.B.
	59.3		35.9	1.07	59.3	35.9	1.07	D.B.
65M x 0	40.6	0.5	16.3	1.01	100.0	27.8	1.04	A.D.B.
	40.7		16.4	1.02	100.0	28.0	1.05	D.B.

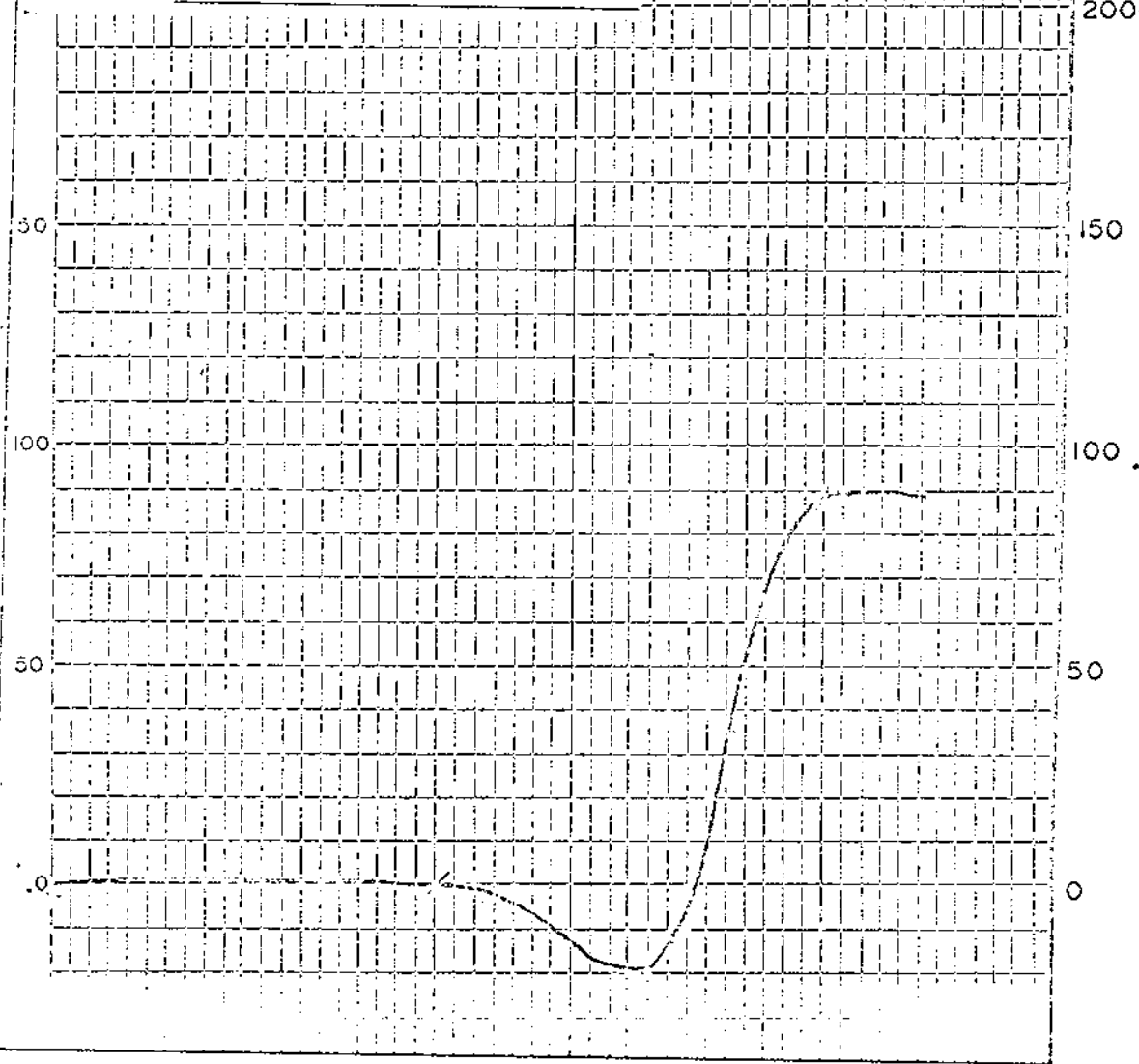
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	30.2	0.9	9.9	20.7	68.5	0.99	30.2	9.9	A.D.B.
	30.2		10.0	20.9	69.1	1.00	30.2	10.0	D.B.
1.40-1.50	18.6	0.8	19.7	18.6	60.9	0.92	48.8	13.6	A.D.B.
	18.6		19.9	18.8	61.3	0.93	48.8	13.8	D.B.
1.50-1.60	10.0	0.9	24.5	X	X	X	58.8	15.5	A.D.B.
	10.0		24.7				58.8	15.6	D.B.
+1.60	41.2	0.9	64.3	X	X	X	100.0	35.6	A.D.B.
	41.2		64.9				100.0	35.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
8 1/2	0.06	392	464	19	89	1.058	

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8912 Date April 29, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-102-2
 Starting Temperature °C: 320
 Softening Temperature °C: 392
 Max. Dilatation Temp. °C: 464
 Contraction %: 19
 Dilatation %: 89
 Final Temperature °C: _____
 G. Factor: 1.058

%
 300
 250
 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title	RUHR DILATOMETER TEST	Date
		Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-102-3 Lab. No. 8913 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS.
0.5	17.8	17.7	64.0	0.57	91	Air Dried Basis
	17.9	17.8	64.3	0.57	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.0	0.5	17.7	0.55	86.0	17.7	0.55	A.D.B.
	86.0		17.8	0.55	86.0	17.8	0.55	D.B.
65M x 0	14.0	0.7	17.4	0.68	100.0	17.7	0.57	A.D.B.
	14.0		17.5	0.68	100.0	17.8	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	57.9	0.5	6.5	19.2	73.8	0.70	57.9	6.5	A.D.B.
	57.9		6.5	19.3	74.2	0.70	57.9	6.5	D.B.
1.40-1.50	16.4	0.8	16.8	16.7	65.7	0.56	74.3	8.8	A.D.B.
	16.4		16.9	16.8	66.3	0.56	74.3	8.8	D.B.
1.50-1.60	7.5	1.0	25.8				81.8	10.3	A.D.B.
	7.5		26.1				81.8	10.4	D.B.
+1.60	18.2	0.5	51.0				100.0	17.7	A.D.B.
	18.2		51.3				100.0	17.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
7	0.07	403	---	18% @ 460°C	---	---	

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8913 Date April 29, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-102-3

Starting Temperature °C: 320

Softening Temperature °C: 403

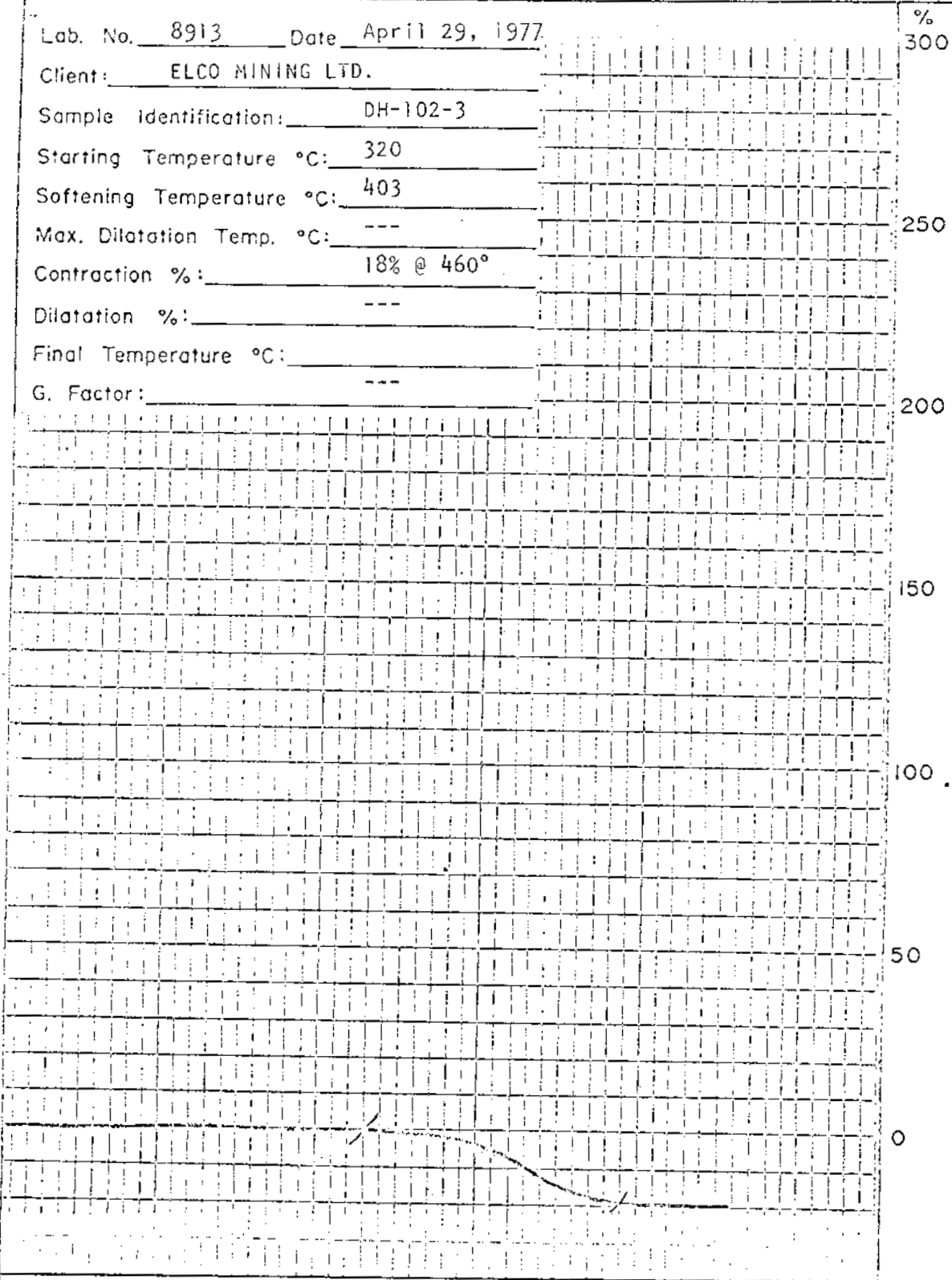
Max. Dilatation Temp. °C: ---

Contraction %: 18% @ 460°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-102-4 Lab. No. 8914 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS.
0.8	20.4	15.7	63.1	0.52	76	Air Dried Basis
	20.6	15.8	63.6	0.52	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.1	0.7	21.3	0.55	92.1	21.3	0.55	A.D.B.
	92.1		21.5	0.55	92.1	21.5	0.55	D.B.
65M x 0	7.9	0.9	17.4	0.58	100.0	21.0	0.55	A.D.B.
	7.9		17.6	0.58	100.0	21.2	0.55	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	64.9	0.7	7.7	17.1	74.5	0.57	64.9	7.7	A.D.B.
	64.9		7.8	17.2	75.0	0.57	64.9	7.8	D.B.
1.40-1.50	6.7	0.7	18.3	16.5	64.5	0.48	71.6	8.7	A.D.B.
	6.7		18.4	16.6	65.0	0.48	71.6	8.8	D.B.
1.50-1.60	8.0	0.7	25.6	X	X	X	79.6	10.4	A.D.B.
	8.0		25.8				79.6	10.5	D.B.
+1.60	20.4	0.7	64.0	X	X	X	100.0	21.3	A.D.B.
	20.4		64.5				100.0	21.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
2 1/2	0.05	411	---	15% @ 475°C	---	---	

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8914 Date April 29, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-102-4

Starting Temperature °C: 320

Softening Temperature °C: 411

Max. Dilatation Temp. °C: ---

Contraction %: 15% @ 475°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-102-5 Lab. No. 8915 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	45.2	13.0	41.0	0.47	63	Air Dried Basis
	45.6	13.1	41.3	0.47	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.1	0.7	45.8	0.45	93.1	45.8	0.45	A.D.B.
	93.1		46.1	0.45	93.1	46.1	0.45	D.B.
65M x 0	6.9	0.7	27.2	0.71	100.0	44.5	0.47	A.D.B.
	6.9		27.4	0.72	100.0	44.8	0.47	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	23.6	0.7	6.4	19.3	73.6	0.83	23.6	6.4	A.D.B.
	23.7		6.4	19.4	74.2	0.84	23.7	6.4	D.B.
1.40-1.50	9.4	0.7	15.2	17.5	66.6	0.84	33.0	8.9	A.D.B.
	9.4		15.3	17.6	67.1	0.85	33.1	8.9	D.B.
1.50-1.60	7.8	0.9	26.5				40.8	12.3	A.D.B.
	7.8		26.7				40.9	12.3	D.B.
+1.60	59.2	0.8	68.9				100.0	45.8	A.D.B.
	59.1		69.5				100.0	46.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
8 1/2	0.09	399	475	21	32	1.018	

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8915 Date April 29, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-102-5

Starting Temperature °C: 320

Softening Temperature °C: 399

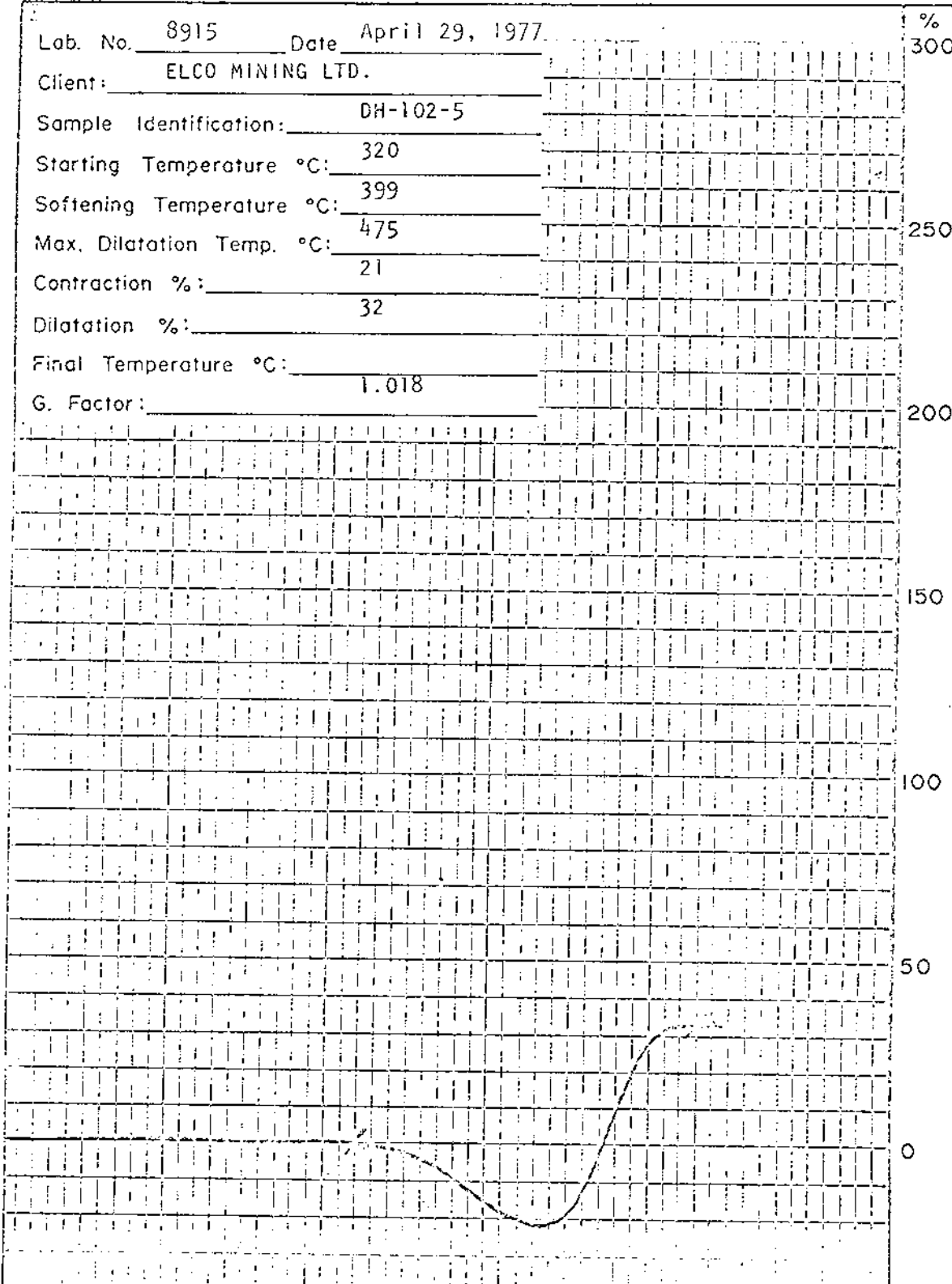
Max. Dilatation Temp. °C: 475

Contraction %: 21

Dilatation %: 32

Final Temperature °C: _____

G. Factor: 1.018



BIRTMET ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD. CORE SAMPLE ANALYSIS

Hole No.: DH-122-1 Lab. No.: 77-1040 Date: February 22, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.7	8.4	27.4	63.5	0.66	96.2	Air Dried Basis
---	8.4	27.6	64.0	0.67	---	Dry Basis

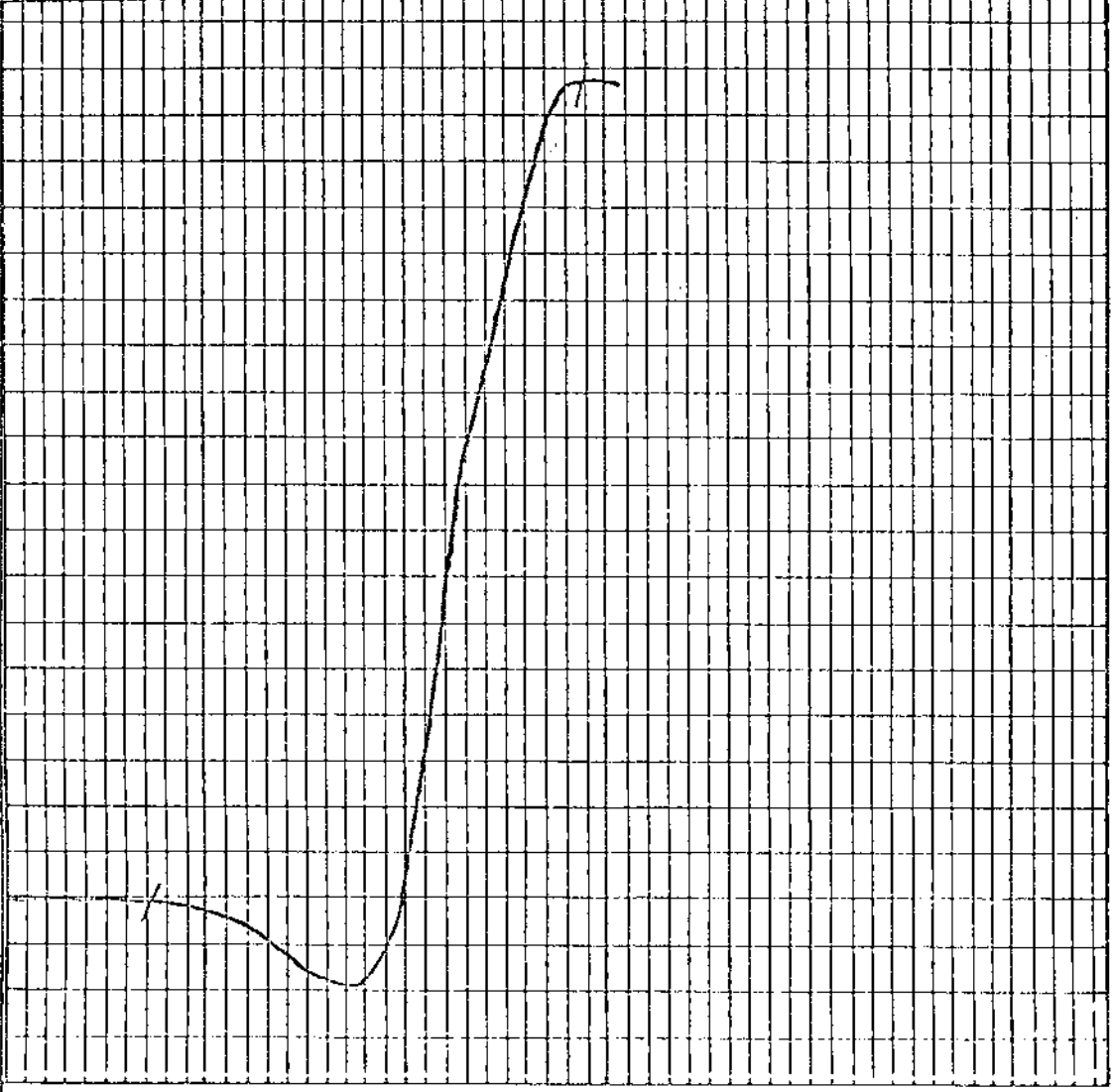
SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	81.6	0.8	8.2	0.71	81.6	8.2	0.71	A.D.B.
	81.6	---	8.3	0.72	81.6	8.3	0.72	D.B.
65m x 0	18.4	0.8	8.8	0.66	100.0	8.3	0.70	A.D.B.
	18.4	---	8.9	0.67	100.0	8.4	0.71	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	86.4	0.8	3.0	28.7	67.5	0.75	86.4	3.0	A.D.B.
	86.4	---	3.0	28.9	68.1	0.76	86.4	3.0	D.B.
1.40-1.50	3.7	1.0	15.3	25.1	58.6	0.76	90.1	3.5	A.D.B.
	3.7	---	15.5	25.3	59.2	0.77	90.1	3.5	D.B.
1.50-1.60	2.8	0.9	24.8	---	---	--	92.9	4.1	A.D.B.
	2.8	---	25.0	---	---	--	92.9	4.2	D.B.
+1.60	7.1	0.8	57.4	---	---	--	100.0	7.9	A.D.B.
	7.1	---	57.9	---	---	--	100.0	8.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
9	0.017	371 ^o C	437 ^o C	19%	177%	1.070

Lab. No. 8302 Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1040
 Starting Temperature °C: 350
 Softening Temperature °C: 371
 Max. Dilatation Temp. °C: 437
 Contraction %: 19
 Dilatation %: 177
 Final Temperature °C: _____
 G. Factor: 1.070

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____

Drawn _____

ELCO MINING LTD. CORE SAMPLE ANALYSIS

Hole No.: DH₁-122-2 Lab. No.: 77-1041 Date: February 22, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.7	8.8	27.9	62.6	0.70	91.3	Air Dried Basis
---	8.9	28.1	63.0	0.70	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	83.9	0.8	9.7	0.77	83.9	9.7	0.77	A.D.B.
	83.9	---	9.8	0.78	83.9	9.8	0.78	D.B.
65m x 0	16.1	0.8	8.6	0.64	100.0	9.5	0.75	A.D.B.
	16.1	---	8.6	0.64	100.0	9.6	0.76	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	84.9	0.7	3.8	28.9	66.6	0.50	84.9	3.8	A.D.B.
	84.9	---	3.9	29.1	67.0	0.50	84.9	3.9	D.B.
1.40-1.50	5.7	0.8	15.8	24.7	58.7	0.55	90.6	4.6	A.D.B.
	5.7	---	16.0	24.9	59.1	0.55	90.6	4.7	D.B.
1.50-1.60	1.6	0.9	23.4	---	---	---	92.2	4.9	A.D.B.
	1.6	---	23.6	---	---	---	92.2	5.0	D.B.
+1.60	7.8	0.9	65.0	---	---	---	100.0	9.6	A.D.B.
	7.8	---	65.6	---	---	---	100.0	9.7	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
9	0.009	365°C	431°C	17%	208%	1.076

Lab. No. 8303 Date Feb/77

Client: Warnock Hersey

Sample Identification: 77-1041

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 431

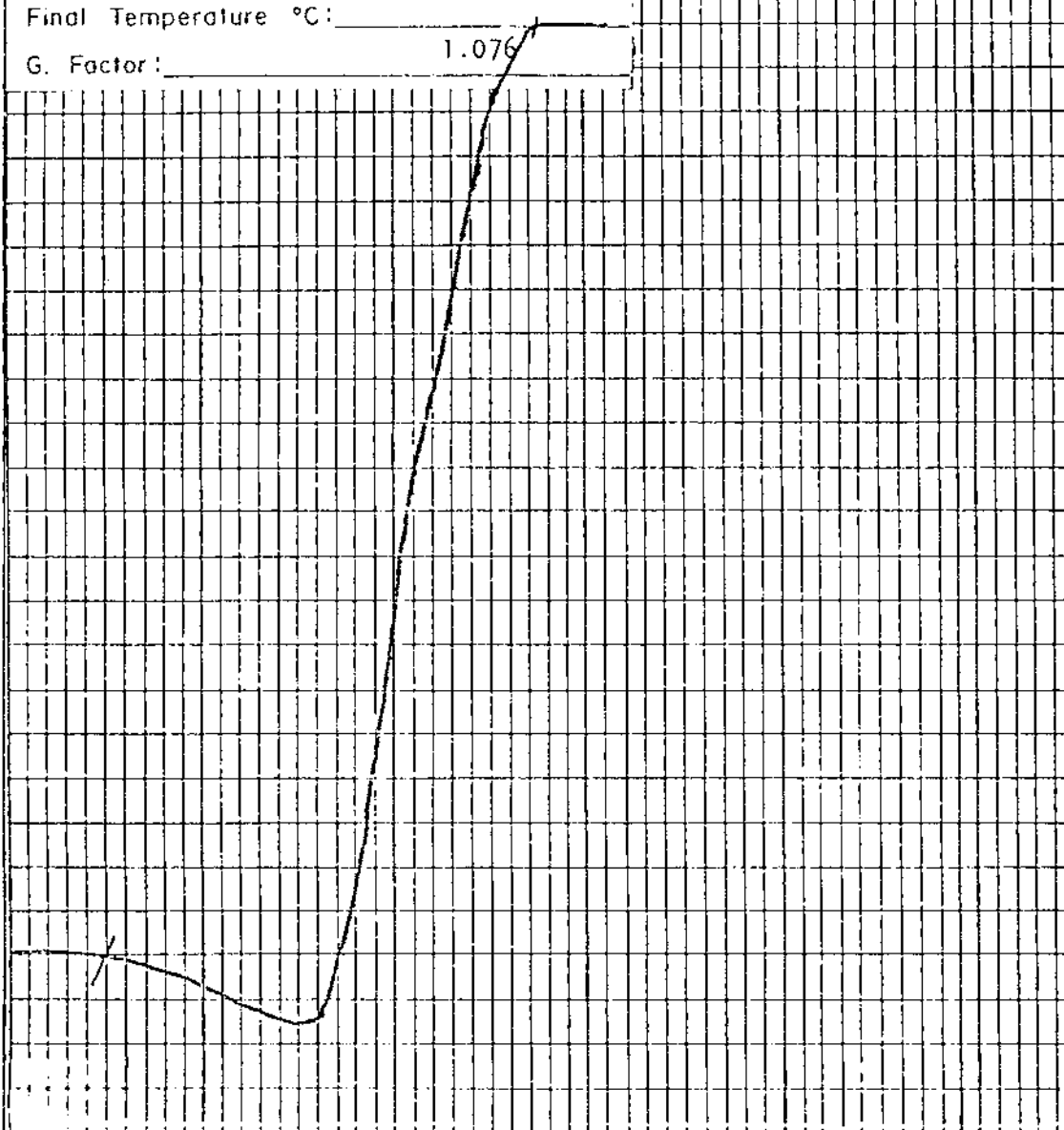
Contraction %: 17

Dilatation %: 208

Final Temperature °C:

G. Factor: 1.076

300
250
200
150
100
50
0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD. CORE SAMPLE ANALYSIS

Hole No.: DH-122-3 Lab. No.: 77-1042 Date: February 22, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.6	15.5	25.1	58.8	0.80	82.3	Air Dried Basis
---	15.6	25.3	59.1	0.81	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
1/4" x 65m	85.1	0.8	17.0	0.74	85.1	17.0	0.74	A.D.B.
	85.1	---	17.1	0.75	85.1	17.1	0.75	D.B.
65m x 0	14.9	0.8	14.7	0.76	100.0	16.6	0.74	A.D.B.
	14.9	---	14.8	0.77	100.0	16.8	0.75	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	74.9	0.7	3.1	30.1	66.1	0.57	74.9	3.1	A.D.B.
	74.9	---	3.1	30.3	66.6	0.57	74.9	3.1	D.B.
1.40-1.50	3.9	0.9	13.0	24.9	61.2	0.67	78.8	3.6	A.D.B.
	3.9	---	13.2	25.2	61.6	0.68	78.8	3.6	D.B.
1.50-1.60	1.0	0.8	21.2	---	---	---	79.8	3.8	A.D.B.
	1.0	---	21.4	---	---	---	79.8	3.8	D.B.
+1.60	20.2	0.9	70.0	---	---	---	100.0	17.2	A.D.B.
	20.2	--	70.6	---	---	---	100.0	17.3	D.B.

COMPOSITE 1/4" x 65 m FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P % on Coal	DILATATION TESTS					G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %		
9	0.009	368°C	434°C	18%	146%	1,069	

Lab. No. 8304 Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1042
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 434
 Contraction %: 18
 Dilatation %: 146
 Final Temperature °C: _____
 G. Factor: 1.069

%
 300
 250
 200
 150
 100
 50
 0




BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

ELCC MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH-122-4 Lab. No.: 77-1043 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS*
0.6	22.6	25.5	51.3	0.69	115.6	Air Dried Basis
---	22.7	25.6	51.7	0.69	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	78.5	0.7	26.7	0.74	78.5	26.7	0.74	A.D.B.
	78.5	---	26.9	0.74	78.5	26.9	0.74	D.B.
65 m x 0	21.5	0.7	11.1	0.76	100.0	23.3	0.74	A.D.B.
	21.5	---	11.2	0.76	100.0	23.5	0.74	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	59.6	0.9	3.3	33.2	62.6	0.58	59.6	3.3	A.D.B.
	59.6	---	3.3	33.5	63.2	0.58	59.6	3.3	D.B.
1.40-1.50	5.5	0.7	12.8	26.9	59.6	0.63	65.1	4.1	A.D.B.
	5.5	---	12.9	27.1	60.0	0.63	65.1	4.1	D.B.
1.50-1.60	2.5	0.9	25.0	---	---	---	67.6	4.9	A.D.B.
	2.5	---	25.2	---	---	---	67.6	4.9	D.B.
+1.60	32.4	0.9	75.4	---	---	---	100.0	27.7	A.D.B.
	32.4	---	76.1	---	---	---	100.0	27.9	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	
9	0.025	365°C	431°C	19%	227%	1.075

Lab. No. 8305 Date Feb/77

Client: Warnock Hersey

Sample Identification: 77-1043

Starting Temperature °C: 350

Softening Temperature °C: 365

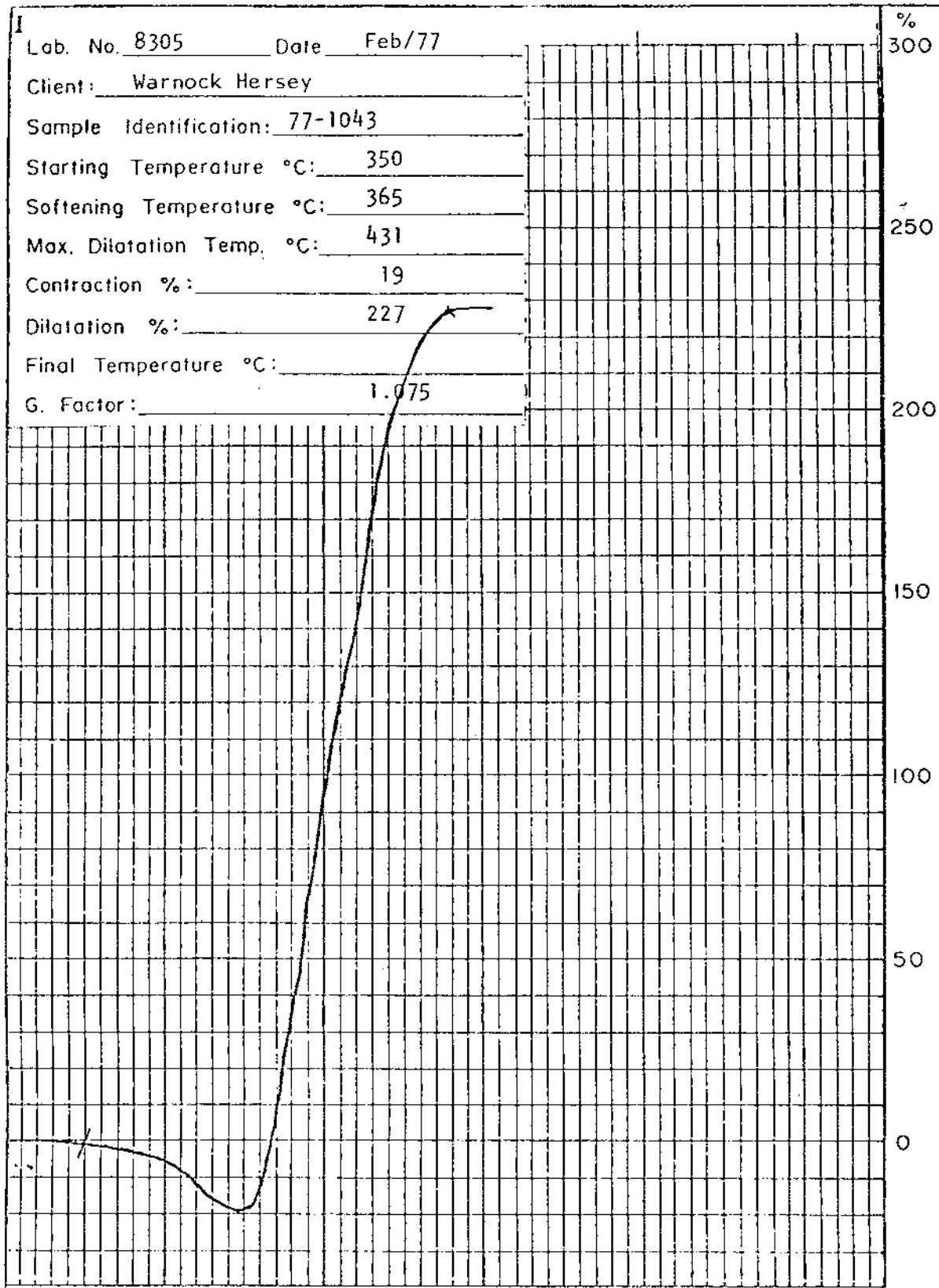
Max. Dilatation Temp. °C: 431

Contraction %: 19

Dilatation %: 227

Final Temperature °C:

G. Factor: 1.075



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCC MINING SAMPLE CORE SAMPLE ANALYSIS

Hole No. DH-122-5 Lab. No.: 77-1044 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C %	S.%	H.G.I.	REMARKS
0.5	31.4	22.6	45.5	0.77	87.8	Air Dried Basis
---	31.5	22.7	45.8	0.77	---	Dry Basis

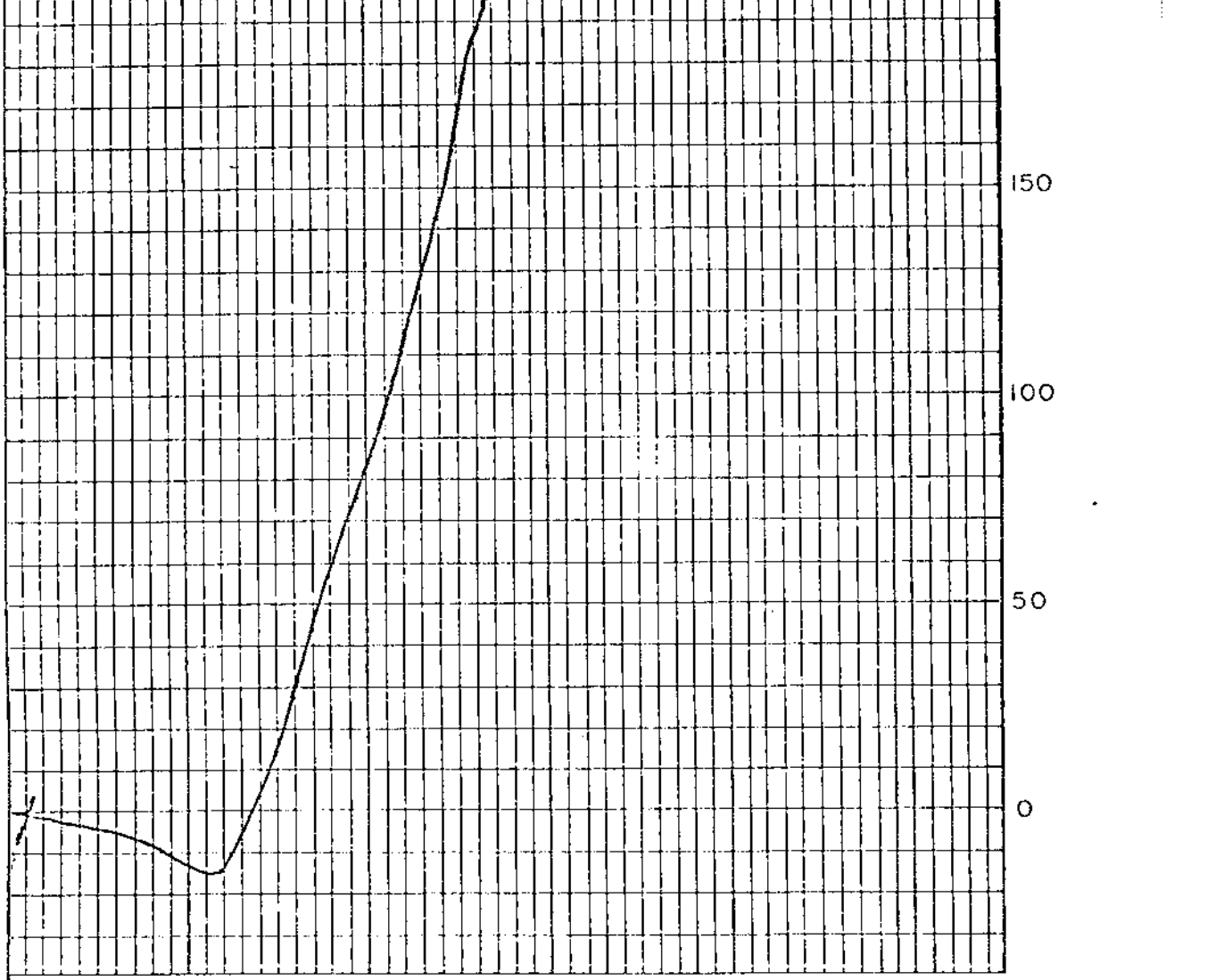
SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	82.2	0.6	33.6	0.73	82.2	33.6	0.73	A.D.B.
	82.2	---	33.8	0.73	82.2	33.8	0.73	D.B.
65m x 0	17.8	0.7	26.5	0.81	100.0	32.3	0.74	A.D.B.
	17.8	---	26.7	0.82	100.0	32.5	0.75	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	42.9	0.8	4.8	33.0	61.4	0.85	42.9	4.8	A.D.B.
	42.9	---	4.8	33.2	62.0	0.86	42.9	4.8	D.B.
1.40-1.50	8.5	0.8	18.3	25.8	55.1	0.85	51.4	7.0	A.D.B.
	8.5	---	18.4	26.0	55.6	0.86	51.4	7.0	D.B.
1.50-1.60	7.5	0.7	31.3	---	---	---	58.9	10.1	A.D.B.
	7.5	---	31.6	---	---	---	58.9	10.2	D.B.
+1.60	41.1	0.8	69.6	---	---	---	100.0	34.6	A.D.B.
	41.1	---	70.2	---	---	---	100.0	34.8	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8½	0.038	353°C	437°C	14%	206%	1.102
		359°C	433°C	9%	221%	1.094

DUPLICATE RUN -- Average 1.098

Lab. No. 8306(A) Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1044
 Starting Temperature °C: 350
 Softening Temperature °C: 353
 Max. Dilatation Temp. °C: 437
 Contraction %: 14
 Dilatation %: 206
 Final Temperature °C: _____
 G. Factor: 1.102



BIRLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

II

Lab. No. 8306 (B) Date Feb/77

Client: Warnock Hersey

Sample Identification: 77-1044

Starting Temperature °C: 350

Softening Temperature °C: 359

Max. Dilatation Temp. °C: 433

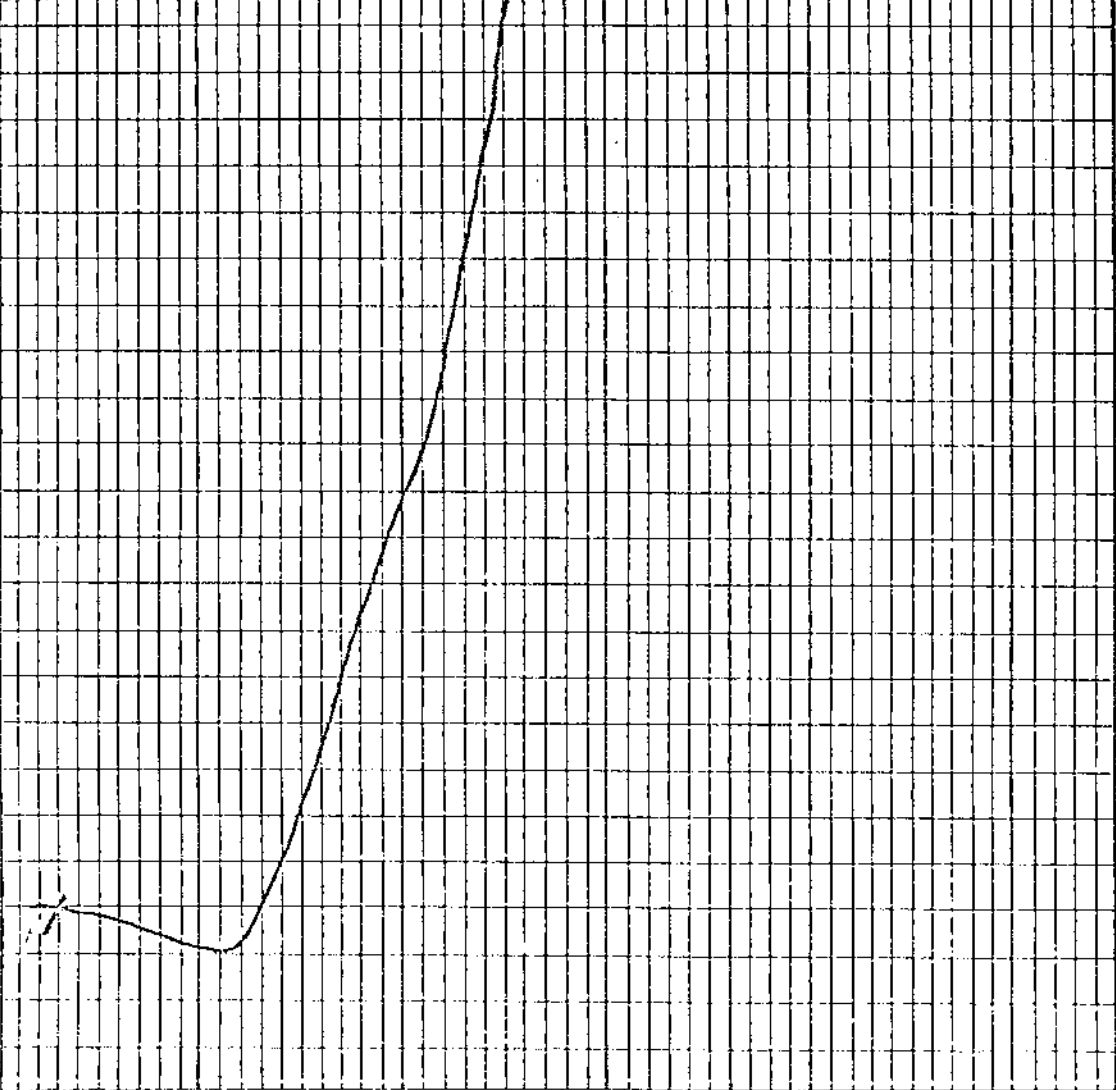
Contraction %: 9

Dilatation %: 221

Final Temperature °C: _____

G. Factor: 1.094 Average - 1.098

%
300
250
200
150
100
50
0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. DH - 122 -6 Lab. No.: 77 - 1045 Date: February 23, 1977

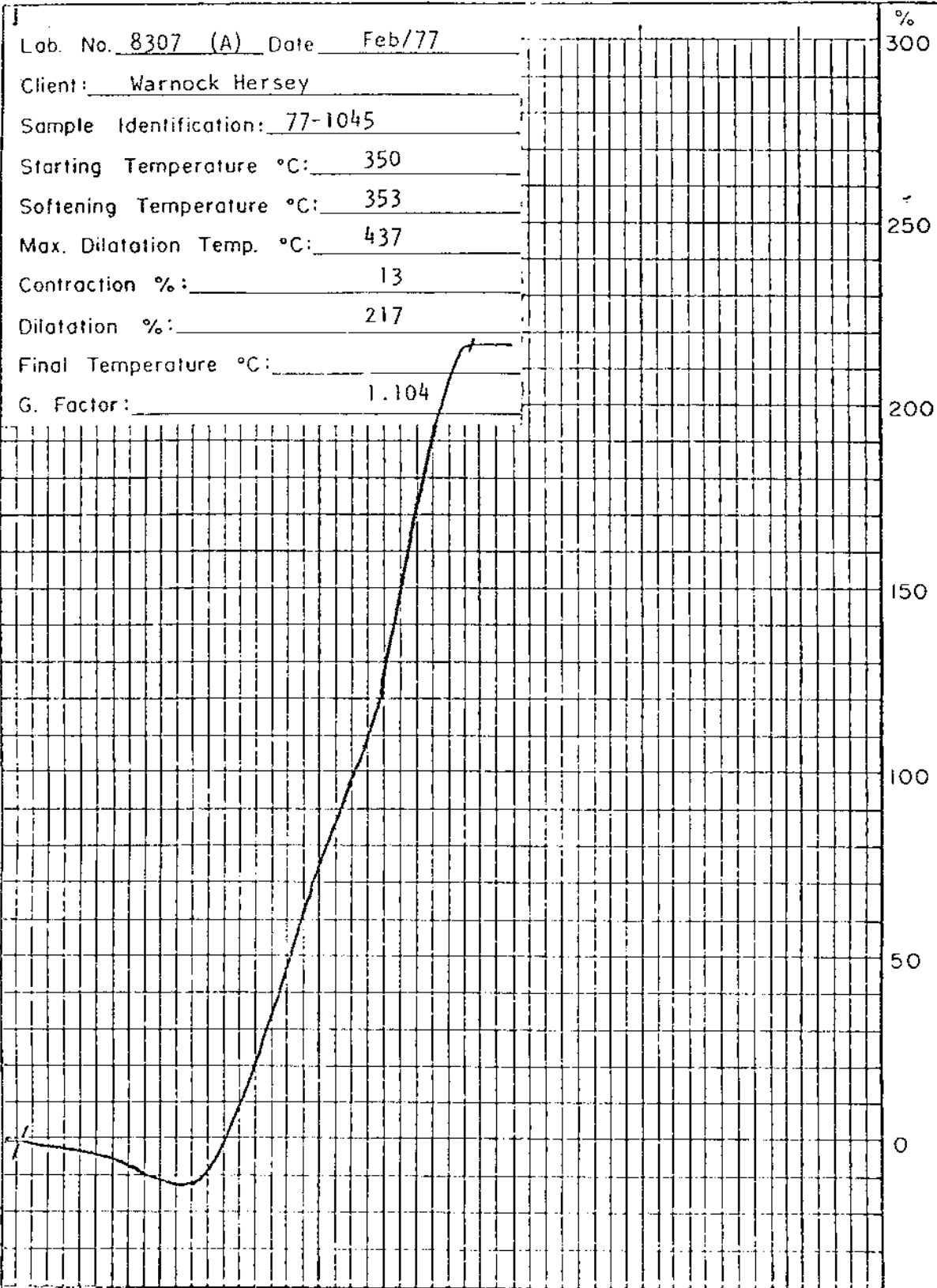
HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.5	28.0	24.5	47.0	1.06	92.7	Air Dried Basis
- - -	28.1	24.6	47.3	1.06	- - -	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	82.1	0.6	31.6	1.06	82.1	31.6	1.06	A.D.B.
	82.1	- - -	31.8	1.07	82.1	31.8	1.07	D.B.
65m x 0	17.9	0.6	18.5	1.08	100.0	29.2	1.06	A.D.B.
	17.9	- - -	18.6	1.09	100.0	29.4	1.07	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	46.8	0.8	3.5	32.4	63.3	0.93	46.8	3.5	A.D.B.
	46.8	- - -	3.5	32.7	63.8	0.94	46.8	3.5	D.B.
1.40-1.50	9.1	0.8	21.2	25.9	52.1	0.95	55.9	6.4	A.D.B.
	9.1	- - -	21.4	26.1	52.5	0.96	55.9	6.4	D.B.
1.50-1.60	8.4	0.7	31.9	- - -	- - -	- - -	64.3	9.7	A.D.B.
	8.4	- - -	32.2	- - -	- - -	- - -	64.3	9.8	D.B.
+1.60	35.7	0.9	68.5	- - -	- - -	- - -	100.0	30.7	A.D.B.
	35.7	- - -	69.1	- - -	- - -	- - -	100.0	31.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8½	0.016	359°C	404°C	10%	225%	1.057
		353°C	437°C	13%	217%	1.104

Lab. No. 8307 (A) Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1045
 Starting Temperature °C: 350
 Softening Temperature °C: 353
 Max. Dilatation Temp. °C: 437
 Contraction %: 13
 Dilatation %: 217
 Final Temperature °C: _____
 G. Factor: 1.104



BIRLEY ENGINEERING (CANADA) LTD.

Title

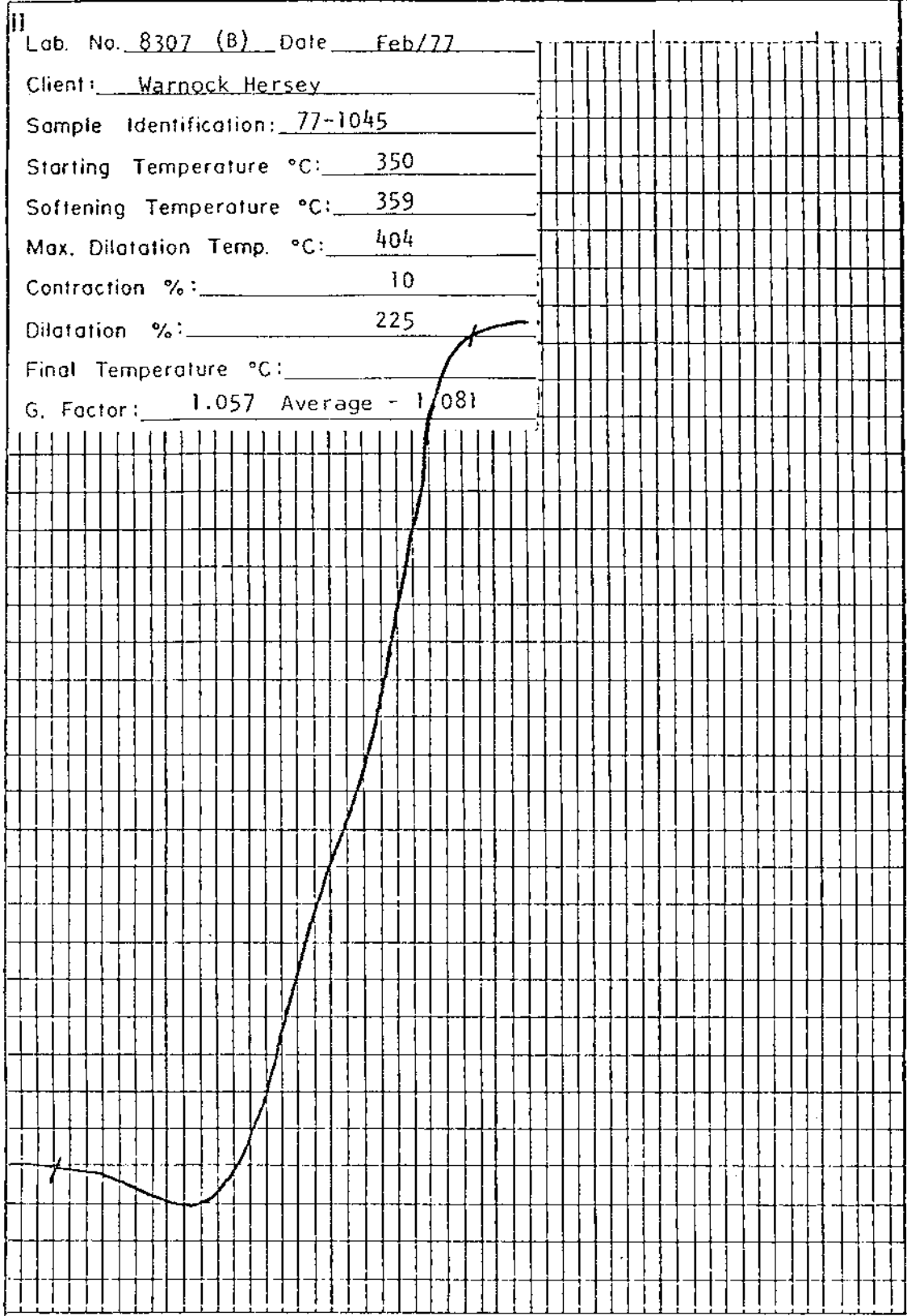
RUHR DILATOMETER TEST

Date

Drawn

Lab. No. 8307 (B) Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1045
 Starting Temperature °C: 350
 Softening Temperature °C: 359
 Max. Dilatation Temp. °C: 404
 Contraction %: 10
 Dilatation %: 225
 Final Temperature °C:
 G. Factor: 1.057 Average - 1.081

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. DH - 122 - 7 Lab. No.: 77 - 1046 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C %	S.%	H.G.I.	REMARKS
0.9	42.9	19.1	37.1	0.64	94.1	Air Dried Basis
---	43.3	19.2	37.5	0.65	---	Dry Basis

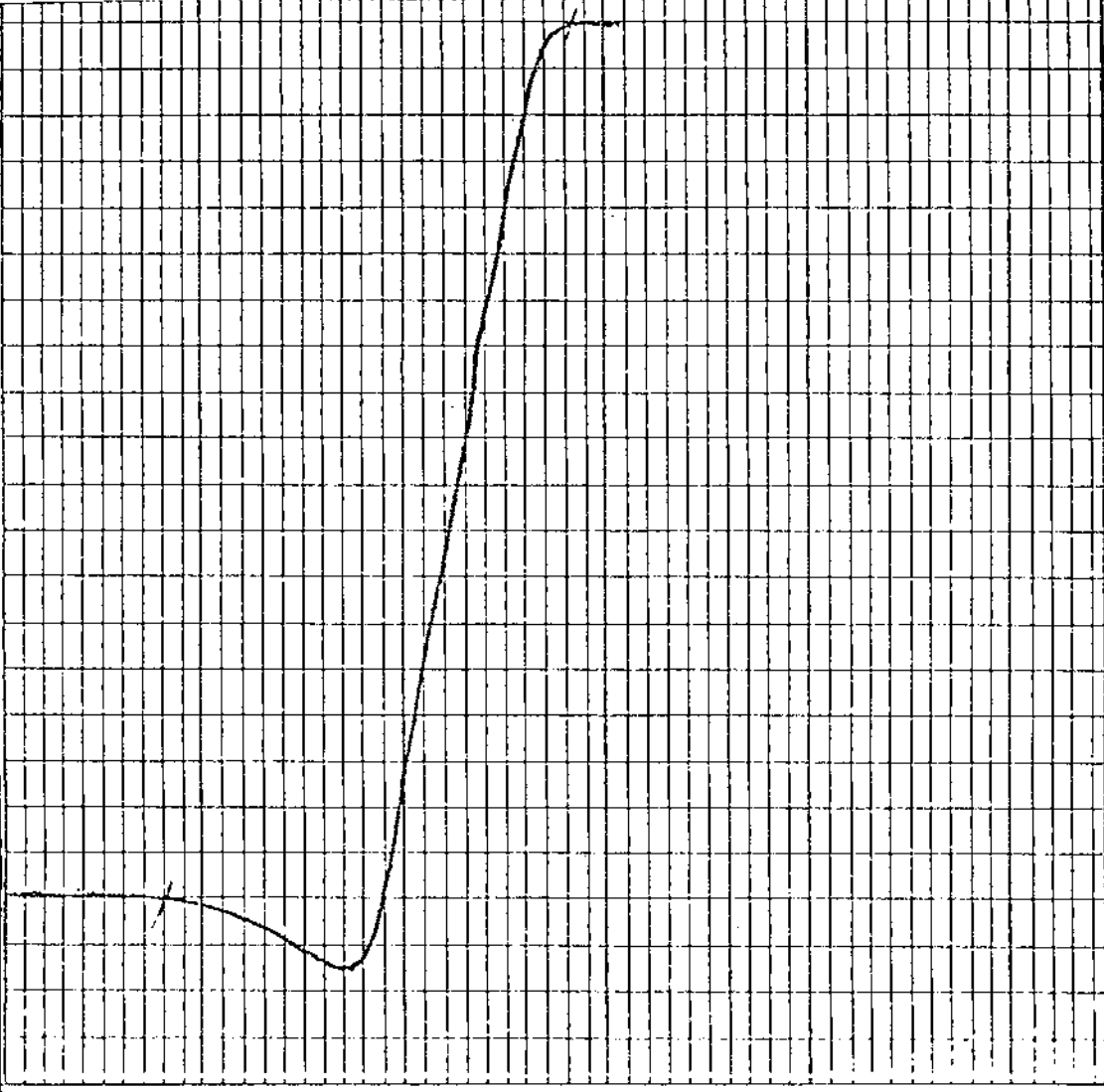
SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65 m	75.9	0.7	47.8	0.61	75.9	47.8	0.61	A.D.B.
	75.9	---	48.1	0.61	75.9	48.1	0.61	D.B.
65m x 0	24.1	0.7	26.5	0.82	100.0	42.7	0.66	A.D.B.
	24.1	---	26.7	0.83	100.0	42.9	0.66	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	33.0	0.7	4.4	29.4	65.5	0.66	33.0	4.4	A.D.B.
	33.0	---	4.4	29.6	66.0	0.66	33.0	4.4	D.B.
1.40-1.50	4.2	0.8	15.8	24.6	58.8	0.67	37.2	5.7	A.D.B.
	4.2	--	16.0	24.8	59.2	0.68	37.2	5.7	D.B.
1.50-1.60	3.0	0.7	27.3	---	---	---	40.2	7.3	A.D.B.
	3.0	---	27.5	---	---	---	40.2	7.4	D.B.
+1.60	59.8	0.8	79.1	---	---	---	100.0	50.2	A.D.B.
	59.8	---	79.8	---	---	---	100.0	50.7	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	
8	0.010	374°C	435°C	16%	189%	1.068

II
 Lab. No. 8308 Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1046
 Starting Temperature °C: 350
 Softening Temperature °C: 374
 Max. Dilatation Temp. °C: 435
 Contraction %: 16
 Dilatation %: 189
 Final Temperature °C: _____
 G. Factor: 1.068

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. - DH - 122 - 8 Lab. No.: 77 - 1047 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C %	S.%	H.G.I.	REMARKS
0.6	66.7	12.4	20.3	0.45	73.3	Air Dried Basis
---	67.1	12.5	20.4	0.45	---	Dry Basis

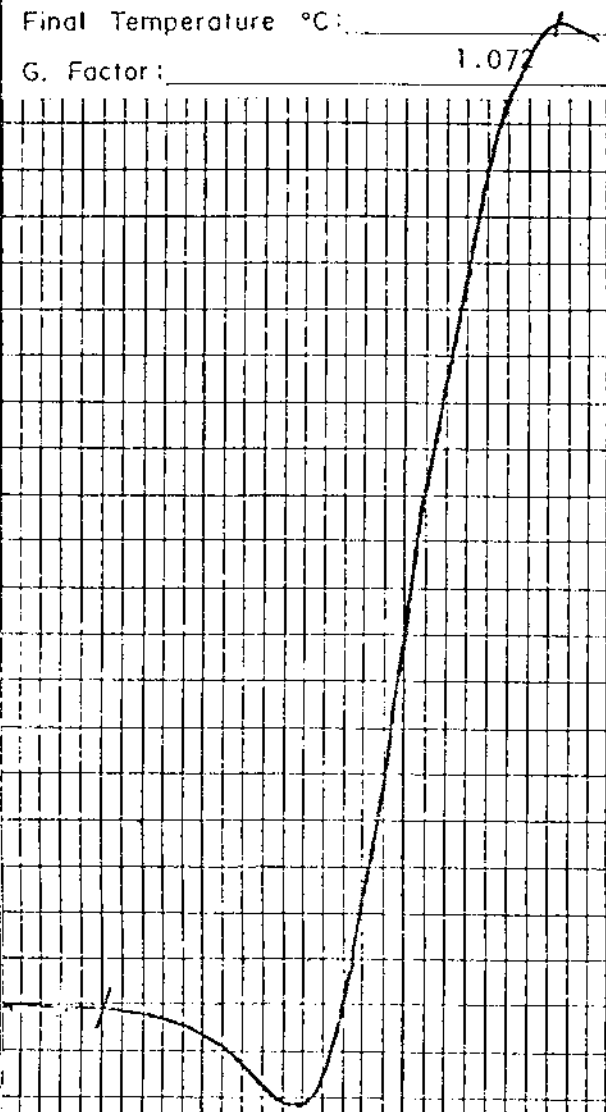
SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	81.6	0.7	71.4	0.44	81.6	71.4	0.44	A.D.B.
	81.6	---	72.0	0.44	81.6	72.0	0.44	D.B.
65m x 0	18.4	0.7	40.0	0.67	100.0	65.6	0.48	A.D.B.
	18.4	---	40.3	0.67	100.0	66.2	0.48	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M.									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	9.3	0.7	4.5	28.0	66.8	0.78	9.3	4.5	A.D.B.
	9.3	---	4.6	28.2	67.2	0.79	9.3	4.6	D.B.
1.40-1.50	2.6	0.7	12.5	25.5	61.3	0.80	11.9	6.2	A.D.B.
	2.6	---	12.6	25.7	61.7	0.81	11.9	6.2	D.B.
1.50-1.60	1.3	0.8	27.2	---	---	---	13.2	8.3	A.D.B.
	1.3	---	27.4	---	---	---	13.2	8.4	D.B.
+1.60	86.8	1.0	83.2	---	---	---	100.0	73.3	A.D.B.
	86.8	---	84.0	---	---	---	100.0	74.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	F % on Coal	DILATATION TESTS				G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	
9	0.004	365°C	431°C	22%	213%	1.072

Lab. No. 8309 Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1047
 Starting Temperature °C: 350
 Softening Temperature °C: 365
 Max. Dilatation Temp. °C: 431
 Contraction %: 22
 Dilatation %: 213
 Final Temperature °C:
 G. Factor: 1.072

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH - 122 - 9 Lab. No.: 77 - 1048 Date: February 23, 1977

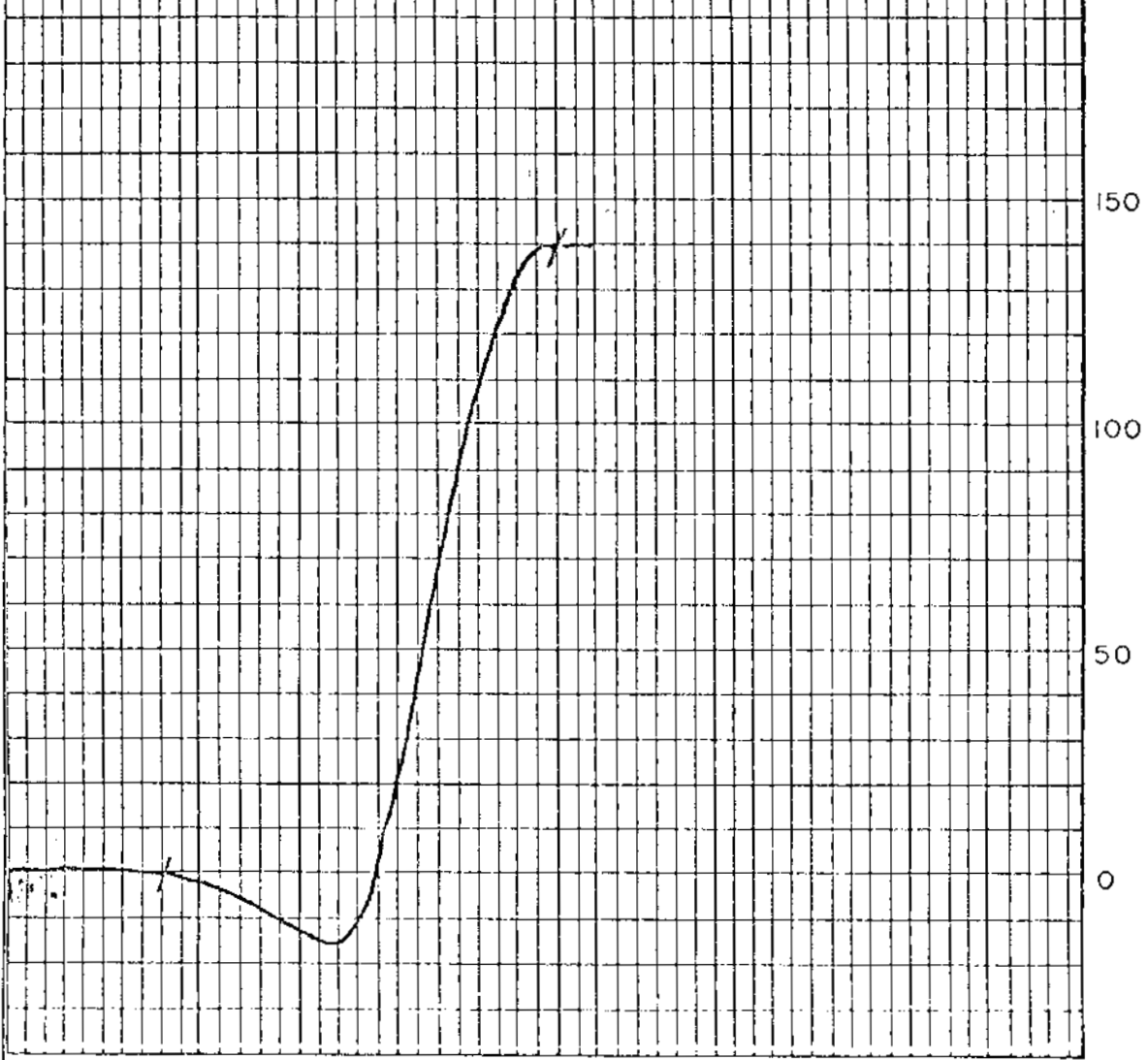
HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.6	25.4	22.7	51.3	0.72	144.7	Air Dried Basis
- - -	25.5	22.8	51.7	0.72	- - -	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	76.1	0.8	29.9	0.67	76.1	29.9	0.67	A.D.B.
	76.1	- - -	30.1	0.68	76.1	30.1	0.68	D.B.
65m x 0	23.9	0.7	12.9	0.73	100.0	25.8	0.68	A.D.B.
	23.9	- - -	13.0	0.74	100.0	26.0	0.69	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	61.6	0.8	4.6	28.8	65.8	0.56	61.6	4.6	A.D.B.
	61.6	- - -	4.7	29.1	66.2	0.56	61.6	4.7	D.B.
1.40-1.50	5.0	0.7	16.9	24.9	57.5	0.58	66.6	5.5	A.D.B.
	5.0	- - -	17.0	25.2	57.8	0.59	66.6	5.5	D.B.
1.50-1.60	2.0	0.9	26.0	- - -	- - -	- - -	68.6	6.1	A.D.B.
	2.0	- - -	26.2	- - -	- - -	- - -	68.6	6.2	D.B.
+1.60	31.4	1.0	83.0	- - -	- - -	- - -	100.0	30.3	A.D.B.
	31.4	- - -	83.8	- - -	- - -	- - -	100.0	30.6	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8½	0.013	368°C	434°C	16%	140%	1.070

Lab. No. 8310 Date Feb/77
 Client: Warnock Hersey
 Sample Identification: 77-1048
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 434
 Contraction %: 16
 Dilatation %: 140
 Final Temperature °C: _____
 G. Factor: 1.070



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH - 122 -10 Lab. No.: 77 - 1049 Date: February 23, 1977

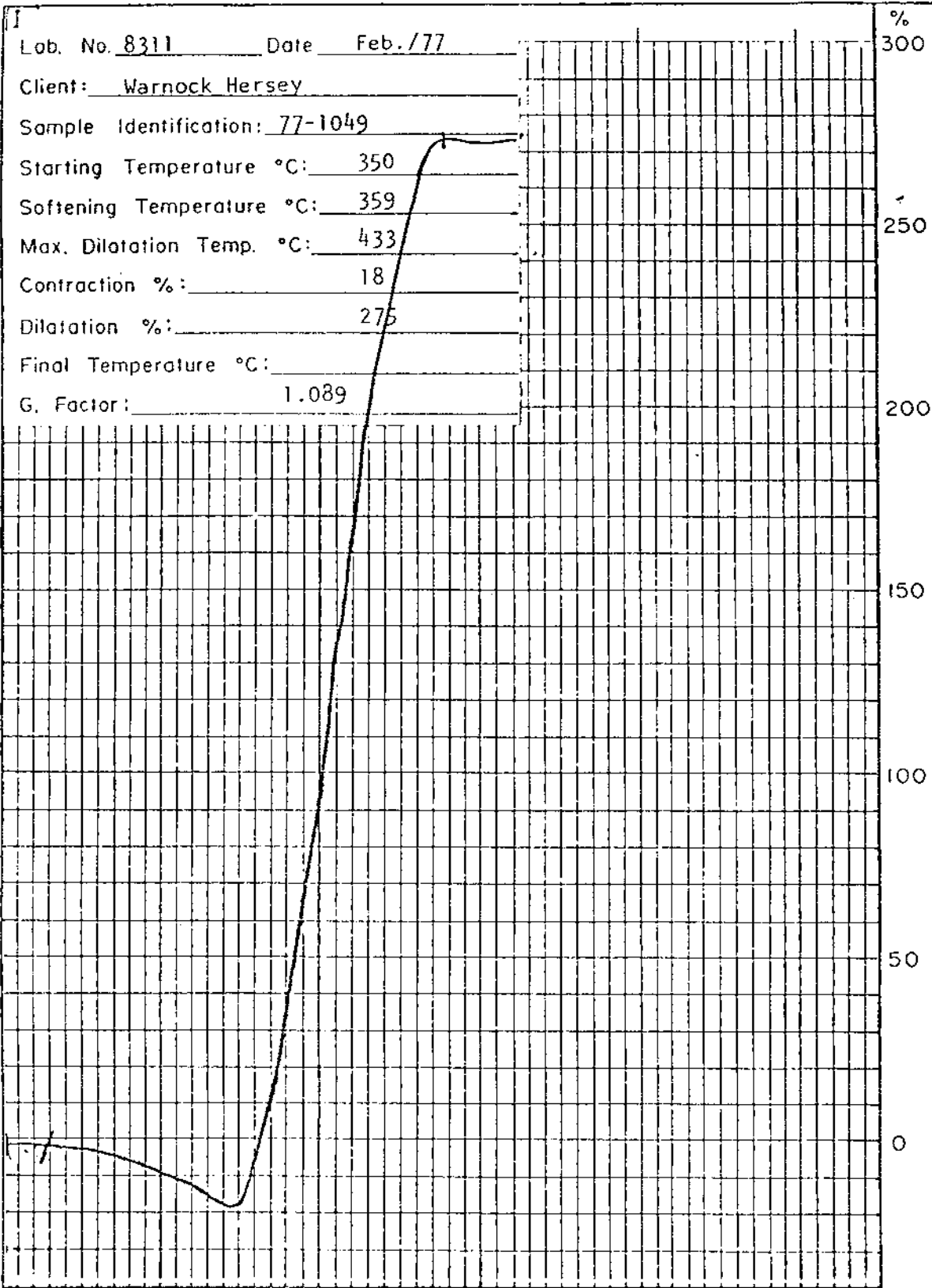
HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C %	S. %	H.G.I.	REMARKS
0.7	58.3	15.5	25.5	0.57	79.5	Air Dried Basis
---	58.7	15.6	25.7	0.57	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	79.1	0.9	63.6	0.53	79.1	63.6	0.53	A.D.B.
	79.1	---	64.2	0.53	79.1	64.2	0.53	D.B.
65m x 0	20.9	0.7	46.5	0.78	100.0	60.0	0.58	A.D.B.
	20.9	---	46.8	0.79	100.0	60.0	0.58	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	15.0	0.8	6.3	32.0	60.9	0.79	15.0	6.3	A.D.B.
	15.0	---	6.4	32.2	61.4	0.80	15.0	6.4	D.B.
1.40-1.50	8.4	0.9	16.9	24.9	57.3	0.83	23.4	10.1	A.D.B.
	8.4	---	17.0	25.2	57.8	0.84	23.4	10.2	D.B.
1.50-1.60	2.7	0.9	26.2	---	---	---	26.1	11.8	A.D.B.
	2.7	---	26.4	---	---	---	26.1	11.9	D.B.
+1.60	73.9	0.9	84.4	---	---	---	100.0	65.4	A.D.B.
	73.9	---	85.1	---	---	---	100.0	66.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	F % on Coal	DILATATION TESTS					G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %		
8½	0.015	359°C	433°C	18%	275%	1.089	

Lab. No. 8311 Date Feb./77
 Client: Warnock Hersey
 Sample Identification: 77-1049
 Starting Temperature °C: 350
 Softening Temperature °C: 359
 Max. Dilatation Temp. °C: 433
 Contraction %: 18
 Dilatation %: 275
 Final Temperature °C:
 G. Factor: 1.089



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH-122-11 Lab. No.: 77 - 1050 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.7	61.0	14.1	24.2	0.54	57.4	Air Dried Basis
---	61.4	14.2	24.4	0.54	---	Dry Basis

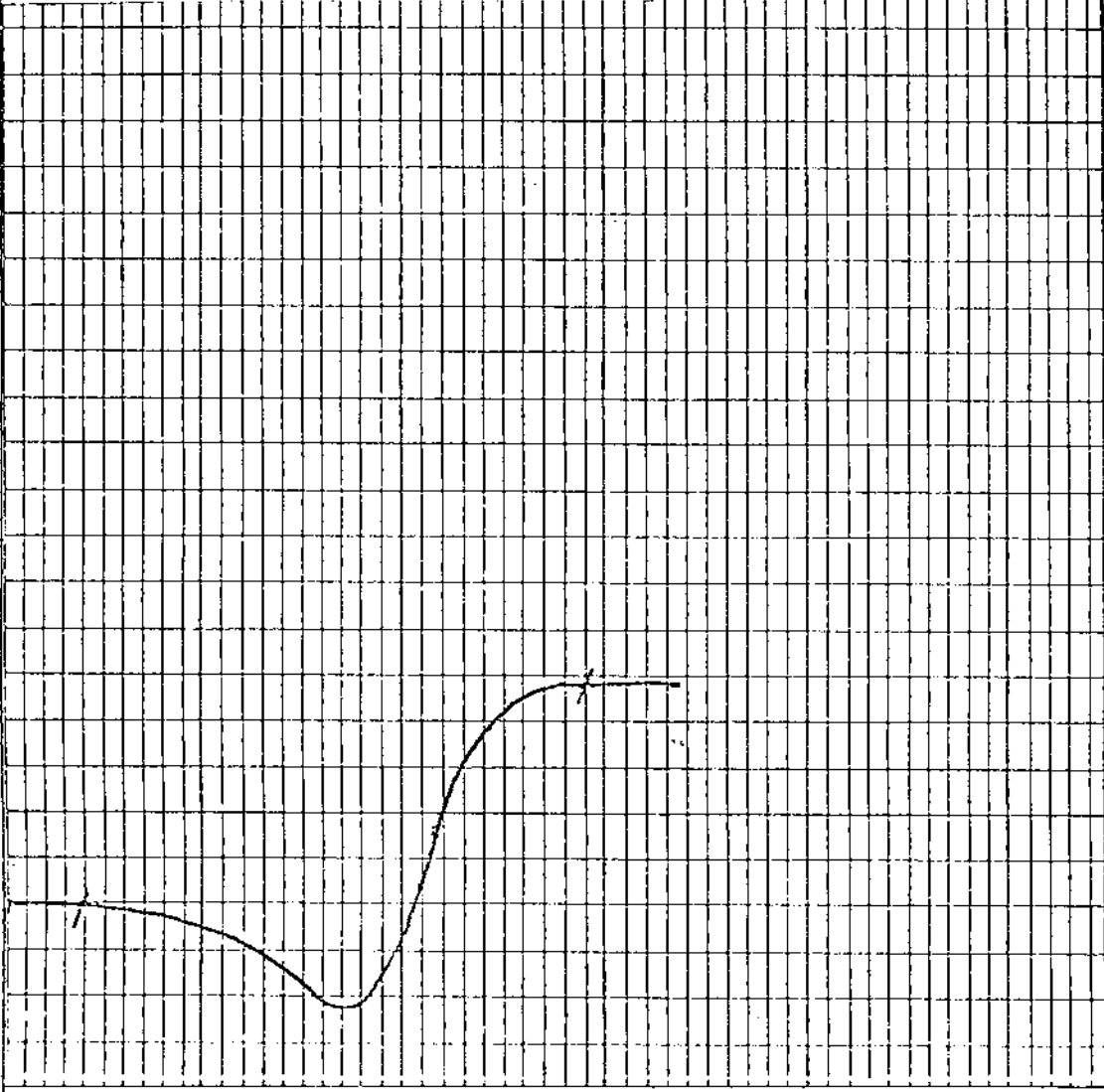
SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	83.3	0.8	64.8	0.46	83.3	64.8	0.46	A.D.B.
	83.3	---	65.3	0.46	83.3	65.3	0.46	D.B.
65m x 0	16.7	0.7	52.4	0.55	100.0	62.7	0.48	A.D.B.
	16.7	---	52.8	0.55	100.0	63.1	0.48	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	NIL	I.S.	I.S.	I.S.	I.S.	I.S.	NIL	I.S.	A.D.B.
	NIL	I.S.	I.S.	I.S.	I.S.	I.S.	NIL	I.S.	D.B.
1.40-1.50	12.3	0.6	20.5	23.6	55.3	0.77	12.3	20.5	A.D.B.
	12.3	---	20.6	23.8	55.6	0.78	12.3	20.6	D.B.
1.50-1.60	2.6	0.6	29.7	---	---	---	14.9	22.1	A.D.B.
	2.6	---	29.9	---	---	---	14.9	22.2	D.B.
+1.60	85.1	0.8	72.5	---	---	---	100.0	65.0	A.D.B.
	85.1	---	73.1	---	---	---	100.0	65.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
7½	0.027	362°C	437°C	23%	48%	1.034

II
 Lab. No. 8312 Date Feb./77
 Client: Warnock Hersey
 Sample Identification: 77-1050
 Starting Temperature °C: 350
 Softening Temperature °C: 362
 Max. Dilatation Temp. °C: 437
 Contraction %: 23
 Dilatation %: 48
 Final Temperature °C: _____
 G. Factor: 1.034

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. · DH -122-12 Lab. No. :77 - 1051 Date. February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.8	40.7	18.4	40.1	0.56	94.8	Air Dried Basis
---	41.0	18.6	40.4	0.56	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼" x 65m	80.0	0.8	41.3	0.54	80.0	41.3	0.54	A.D.B.
	80.0	---	41.6	0.54	80.0	41.6	0.54	D.B.
65m x 0	20.0	0.7	27.3	0.65	100.0	38.5	0.56	A.D.B.
	20.0	---	27.5	0.65	100.0	38.8	0.56	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	40.2	0.8	4.8	27.2	67.2	0.65	40.2	4.8	A.D.B.
	40.2	---	4.8	27.5	67.7	0.66	40.2	4.8	D.B.
1.40-1.50	7.4	0.7	14.9	23.7	60.7	0.64	47.6	6.4	A.D.B.
	7.4	---	15.0	23.9	61.1	0.64	47.6	6.4	D.B.
1.50-1.60	5.2	0.7	28.8	---	---	---	52.8	8.6	A.D.B.
	5.2	---	29.1	---	---	---	52.8	8.6	D.B.
+1.60	47.2	0.7	77.6	---	---	---	100.0	41.2	A.D.B.
	47.2	---	78.2	---	---	---	100.0	41.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8	0.039	374°C	434°C	18%	74%	1.047

Lab. No. 8313 Date Feb./77
 Client: Warnock Hersey
 Sample Identification: 77-1051
 Starting Temperature °C: 350
 Softening Temperature °C: 374
 Max. Dilatation Temp. °C: 434
 Contraction %: 18
 Dilatation %: 74
 Final Temperature °C: _____
 G. Factor: 1.047

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH-122-13 Lab. No.: 77 - 1052 Date: February 23, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.7	37.1	18.2	44.0			
---	37.4	18.3	44.3	0.64	94.1	Air Dried Basis
				0.64	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
1/4" x 65m	78.8	0.6	41.1					
	78.8	---	41.4	0.62	78.8	41.1	0.62	A.D.B.
65m x 0	21.2	0.6	24.4					
	21.2	---	24.5	0.69	100.0	37.6	0.62	D.B.
				0.69	100.0	37.8	0.63	A.D.B.
							0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	46.0	1.0	4.8	25.1	69.1				
	46.0	---	4.9	25.3	69.8	0.68	46.0	4.8	A.D.B.
1.40-1.50	4.2	0.6	17.4	22.3	59.7				
	4.2	---	17.5	22.4	60.1	0.69	46.6	4.9	D.B.
1.50-1.60	3.8	0.9	26.5	---	---				
	3.8	---	26.8	---	---	0.60	50.2	5.8	A.D.B.
+1.60	46.0	0.8	79.2	---	---				
	46.1	---	79.8	---	---	0.60	50.2	5.9	D.B.
							54.0	7.3	A.D.B.
							54.0	7.4	D.B.
							100.0	40.4	A.D.B.
							100.0	40.7	D.B.

COMPOSITE 1/4" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8 1/2	0.031	377 °C	434 °C	17%	108%	1.054

Lab. No. 8314 Date Feb. 3/77

Client: Warnock Hersey

Sample Identification: 77-1052

Starting Temperature °C: 350

Softening Temperature °C: 377

Max. Dilatation Temp. °C: 434

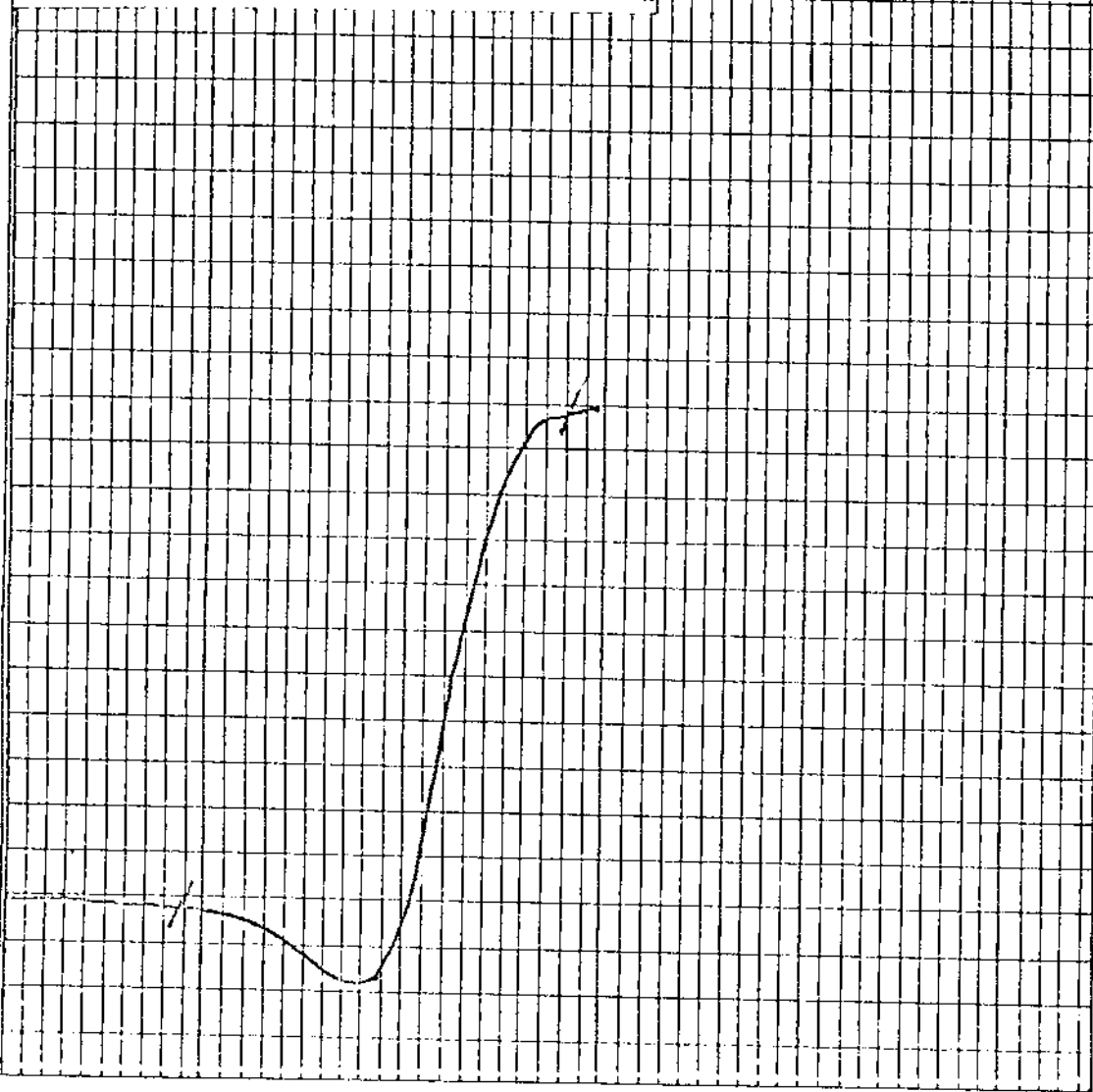
Contraction %: 17

Dilatation %: 108

Final Temperature °C: _____

G. Factor: 1.054

%
300
250
200
150
100
50
0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 1 Lab. No. 8247 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	22.6	27.8	48.6	0.84	99	Air Dried Basis
	22.8	28.1	49.1	0.85	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	98.4	1.0	23.1	0.84	98.4	23.1	0.84	A.D.B.
	98.4		23.3	0.85	98.4	23.3	0.85	D.B.
65M x 0	1.6	0.8	14.5	0.98	100.0	23.0	0.84	A.D.B.
	1.6		14.6	0.99	100.0	23.2	0.85	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	64.1	1.1	6.6	31.8	60.5	0.96	64.1	6.6	A.D.B.
	64.1		6.7	32.2	61.1	0.97	64.1	6.7	D.B.
1.40-1.50	8.8	1.3	18.5	25.5	54.7	0.73	72.9	8.0	A.D.B.
	8.8		18.7	25.8	55.5	0.74	72.9	8.1	D.B.
1.50-1.60	3.7	1.7	29.2	X	X	X	76.6	9.1	A.D.B.
	3.7		29.7				76.6	9.2	D.B.
+1.60	23.4	1.1	68.9	X	X	X	100.0	23.1	A.D.B.
	23.4		69.7				100.0	23.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6	.11	353	440	18	202	1.101

EMBLEY ENGINEERING (CANADA) LTD.

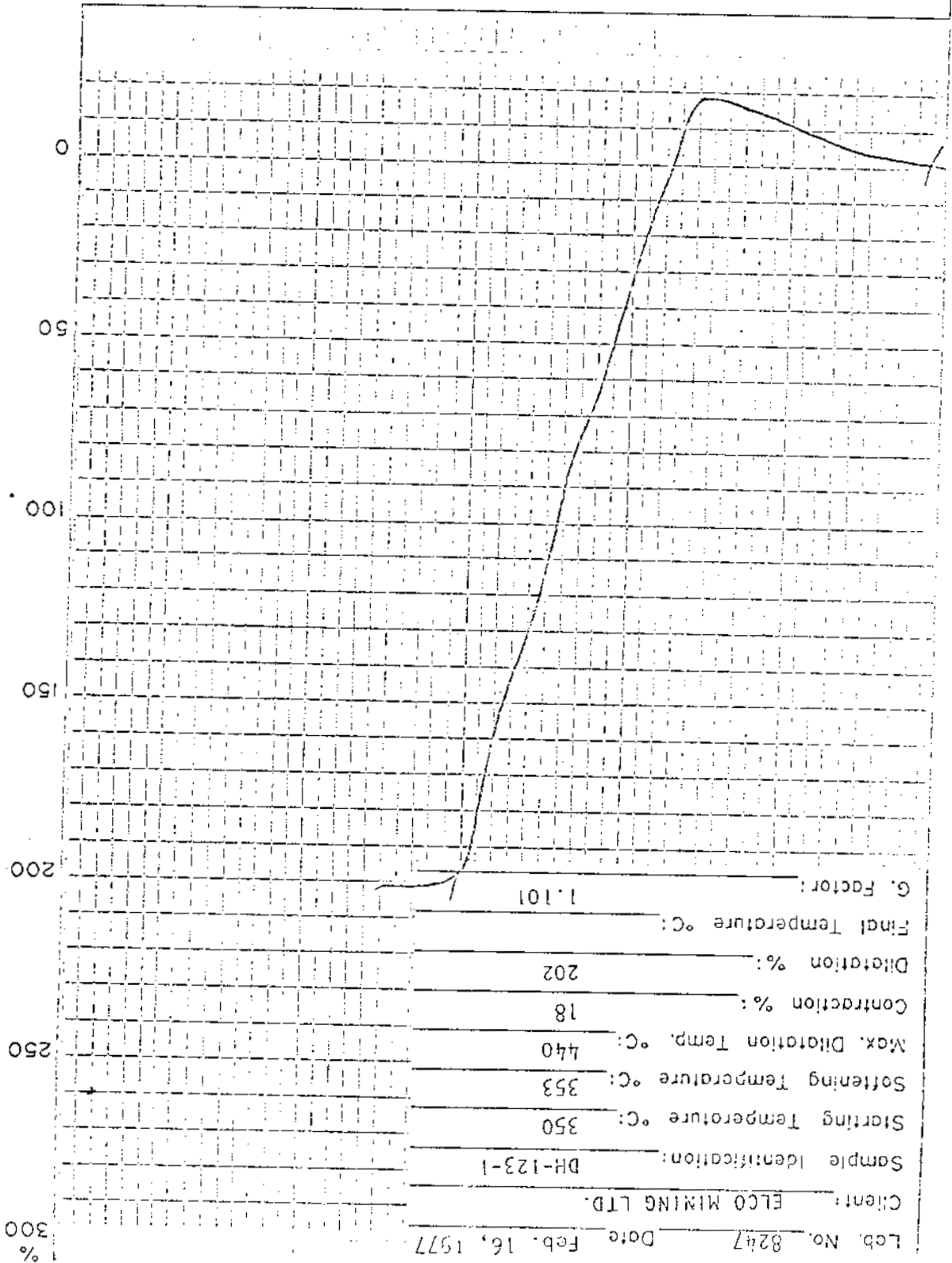


RUHR DILATOMETER TEST

Drawn

Date

Title



ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 2 Lab. No. 8248 DATE: Feb/77

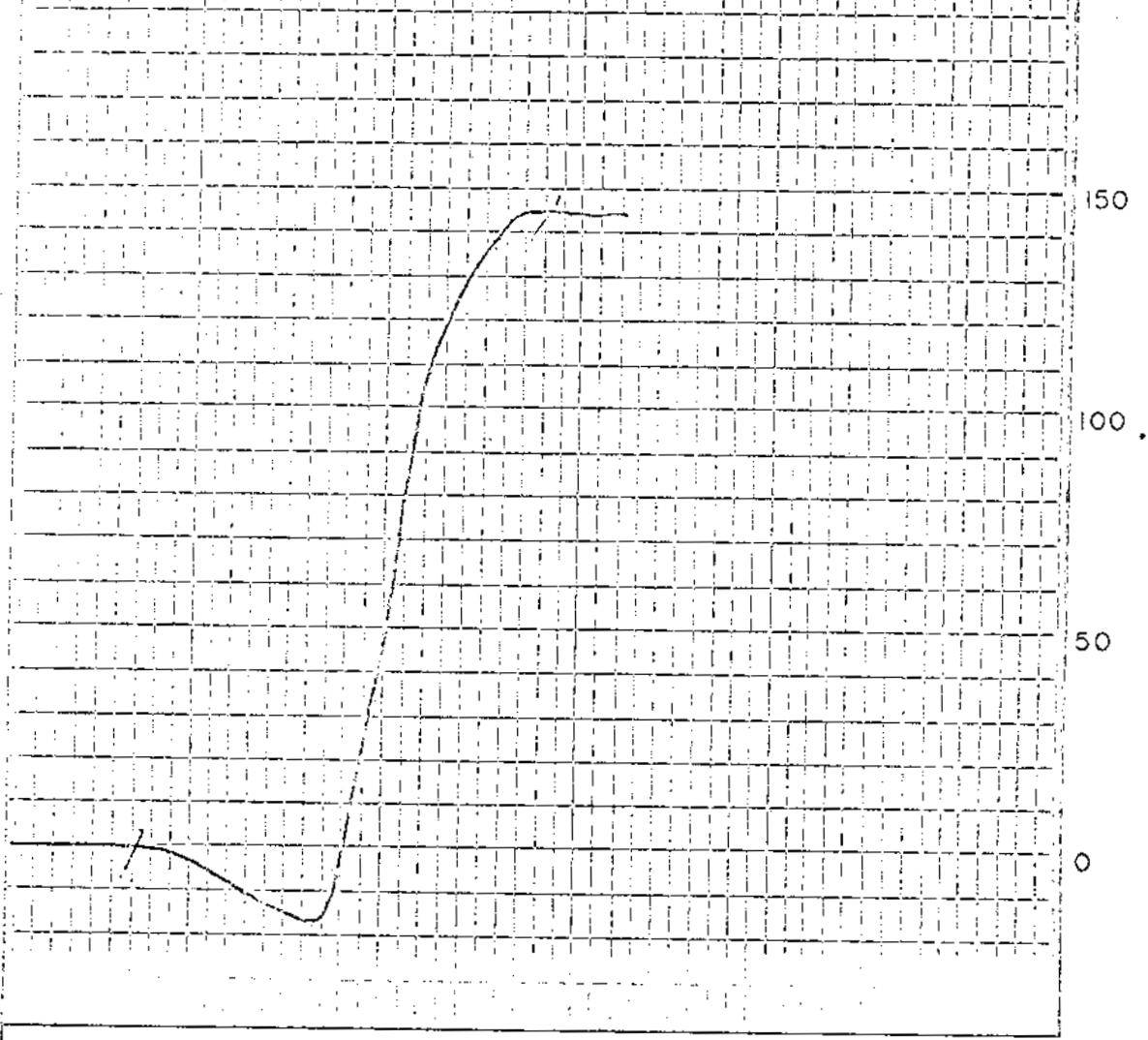
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	64.1	17.7	17.2	0.41	87	Air Dried Basis
	64.7	17.9	17.4	0.41	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.1	0.9	66.4	0.39	92.1	66.4	0.39	A.D.B.
	92.1		67.0	0.39	92.1	67.0	0.39	D.B.
65M x 0	7.9	1.1	37.0	0.80	100.0	64.1	0.42	A.D.B.
	7.9		37.4	0.81	100.0	64.7	0.42	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	18.6	0.9	4.6	31.4	63.1	0.92	18.6	4.6	A.D.B.
	18.6		4.6	31.7	63.7	0.93	18.6	4.6	D.B.
1.40-1.50	2.2	1.0	16.7	27.1	55.2	0.86	20.8	5.9	A.D.B.
	2.2		16.9	27.4	55.7	0.87	20.8	5.9	D.B.
1.50-1.60	0.9	1.2	29.5	X	X	X	21.7	6.9	A.D.B.
	0.9		29.9				21.7	6.9	D.B.
+1.60	78.3	0.8	82.0	X	X	X	100.0	65.7	A.D.B.
	78.3		82.7				100.0	66.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.14	371	434	17	145	1.066

Lab. No. 8248 Date Feb. 17, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-123-2
 Starting Temperature °C: 350
 Softening Temperature °C: 371
 Max. Dilatation Temp. °C: 434
 Contraction %: 17
 Dilatation %: 145
 Final Temperature °C: _____
 G. Factor: 1.066



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 3 Lab. No. 8249 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	20.6	25.4	53.0	0.73	105	Air Dried Basis
	20.8	25.7	53.5	0.74	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.3	1.2	21.3	0.67	92.3	21.3	0.67	A.D.B.
	92.3		21.6	0.68	92.3	21.6	0.68	D.B.
65M x 0	7.7	1.2	19.9	0.76	100.0	21.2	0.68	A.O.B.
	7.7		20.1	0.77	100.0	21.5	0.69	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.8	1.0	4.5	29.9	64.6	0.88	68.8	4.5	A.D.B.
	68.9		4.5	30.2	65.3	0.89	68.9	4.5	D.B.
1.40-1.50	4.0	1.2	18.2	25.1	55.5	0.74	72.8	5.3	A.D.B.
	4.0		18.4	25.4	56.2	0.75	72.9	5.3	D.B.
1.50-1.60	2.4	1.4	26.9	 	 	 	75.2	5.9	A.D.B.
	2.4		27.3	 	 	 	75.3	6.0	D.B.
+1.60	24.8	1.1	69.9	 	 	 	100.0	21.8	A.D.B.
	24.7		70.7	 	 	 	100.0	22.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7	.04	371	428	19	51	1.034

Lab. No. 8249 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-3

Starting Temperature °C: 350

Softening Temperature °C: 371

Max. Dilatation Temp. °C: 428

Contraction %: 19

Dilatation %: 51

Final Temperature °C:

G. Factor: 1.034

%
300

250

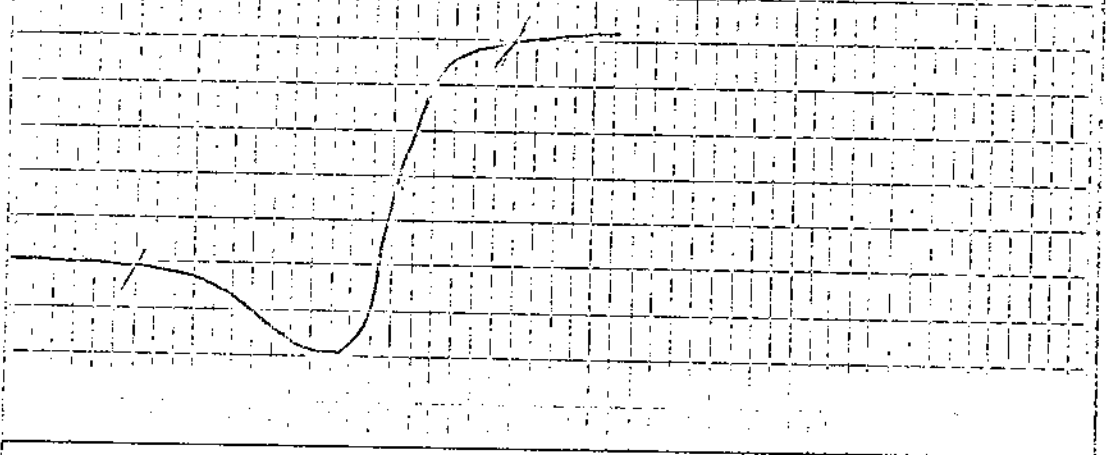
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 4 Lab. NO. 8250 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	48.4	20.7	30.2	0.52	88	Air Dried Basis
	48.7	20.8	30.5	0.52	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.8	0.7	50.1	0.54	93.8	50.1	0.54	A.D.B.
	93.8		50.5	0.54	93.8	50.5	0.54	D.B.
65M x 0	6.2	0.9	35.0	0.70	100.0	49.2	0.55	A.D.B.
	6.2		35.3	0.71	100.0	49.6	0.55	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	23.1	0.8	4.9	31.5	62.8	1.05	23.1	4.9	A.D.B.
	23.0		4.9	31.8	63.3	1.06	23.0	4.9	D.B.
1.40-1.50	3.9	0.8	23.1	26.0	50.1	0.81	27.0	7.5	A.D.B.
	3.9		23.3	26.2	50.5	0.82	26.9	7.6	D.B.
1.50-1.60	10.3	0.7	34.2	X	X	X	37.3	14.9	A.D.B.
	10.3		34.4				37.2	15.0	D.B.
+1.60	62.7	0.4	70.8	X	X	X	100.0	49.9	A.D.B.
	62.8		71.1				100.0	50.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.04	367	429	17	238	1.072

Lab. No. 8250 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-4

Starting Temperature °C: 350

Softening Temperature °C: 367

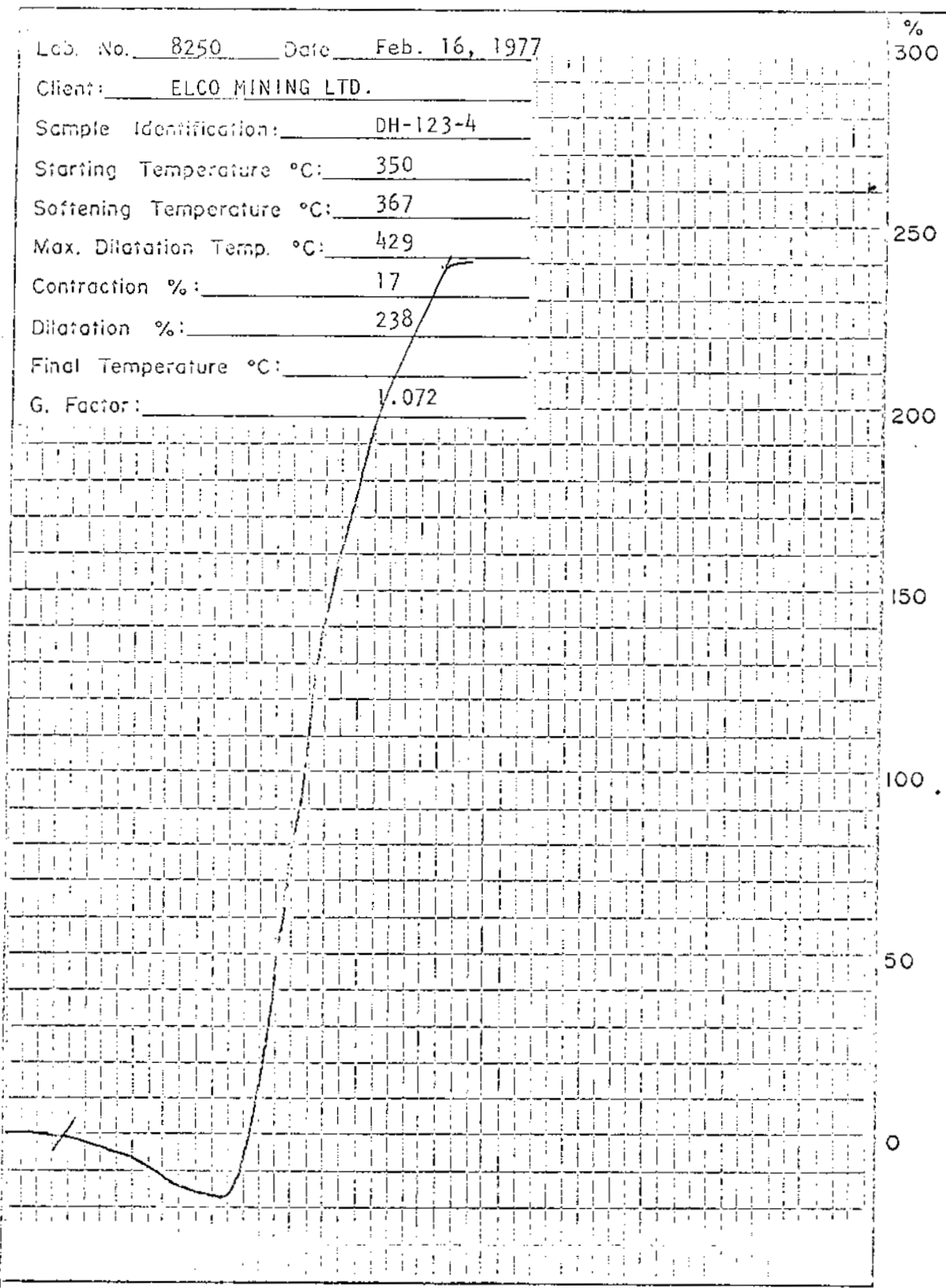
Max. Dilatation Temp. °C: 429

Contraction %: 17

Dilatation %: 238

Final Temperature °C:

G. Factor: 1.072



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 5 Lab. NO. 8251 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	19.2	26.3	53.6	0.71	118	Air Dried Basis
	19.4	26.5	54.1	0.72	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	81.4	1.0	20.0	0.70	81.4	20.0	0.70	A.D.B.
	81.4		20.2	0.71	81.4	20.2	0.71	D.B.
65M x 0	18.6	1.0	13.1	0.65	100.0	18.7	0.69	A.D.B.
	18.6		13.2	0.66	100.0	18.9	0.70	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	73.9	5.4	3.6	29.6	61.4	0.72	73.9	3.6	A.D.B.
	73.2		3.8	31.3	64.9	0.76	73.2	3.8	D.B.
1.40-1.50	2.1	2.4	19.4	25.0	53.2	0.71	76.0	4.1	A.D.B.
	2.1		19.9	25.6	54.5	0.73	75.3	4.2	D.B.
1.50-1.60	3.0	2.4	26.5				79.0	4.9	A.D.B.
	3.1		27.2				78.4	5.1	D.B.
+1.60	21.0	1.8	72.3				100.0	19.0	A.D.B.
	21.6		73.6				100.0	19.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.04	374	422	22	83	1.036

Lab. No. 8251 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-5

Starting Temperature °C: 350

Softening Temperature °C: 374

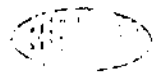
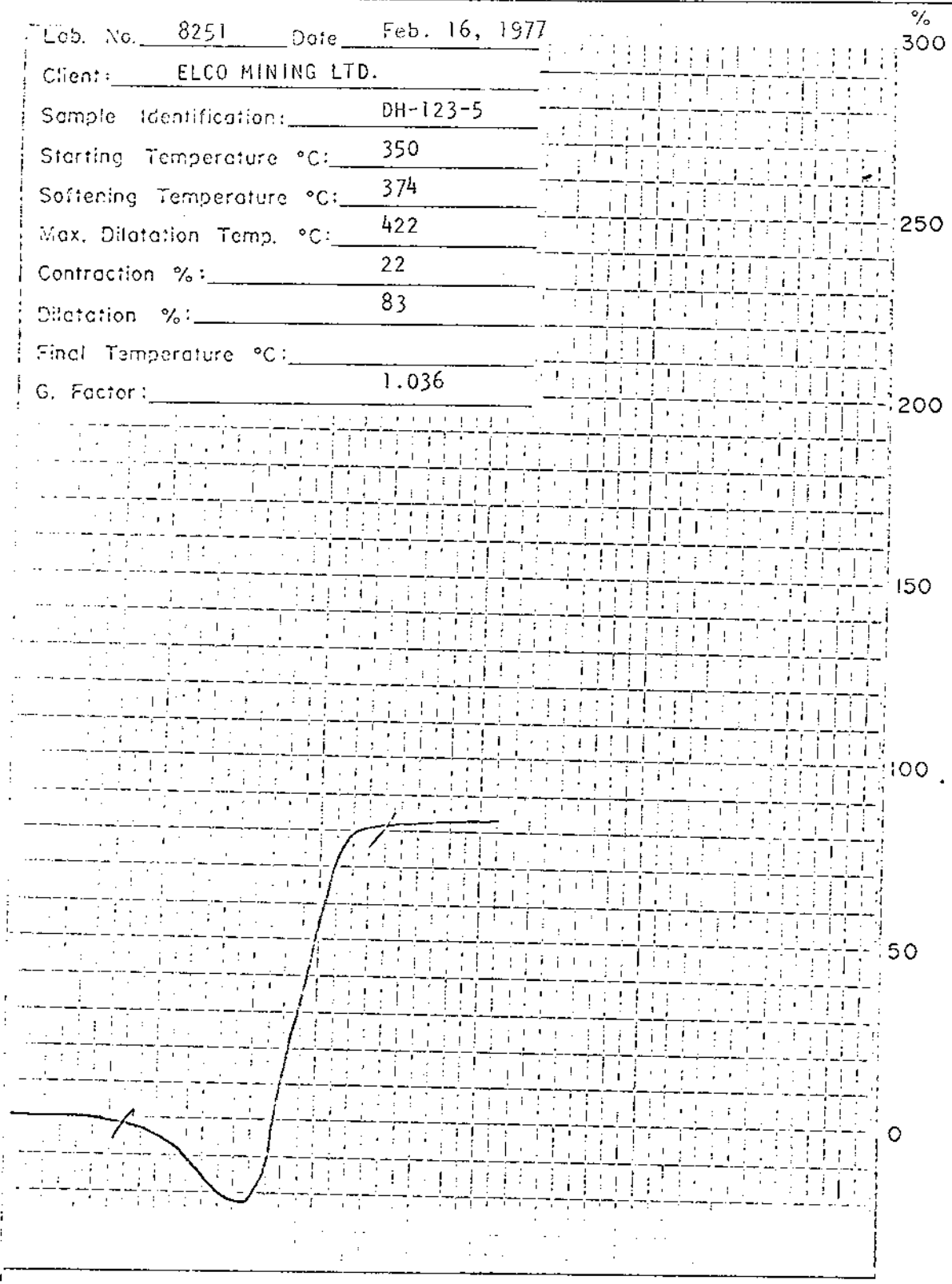
Max. Dilatation Temp. °C: 422

Contraction %: 22

Dilatation %: 83

Final Temperature °C:

G. Factor: 1.036



BENTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 6 Lab. No. 8252 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	33.8	24.3	40.8	0.93	59	Air Dried Basis
	34.2	24.6	41.2	0.94	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	97.2	0.7	35.1	0.87	97.2	35.1	0.87	A.D.B.
	97.2		35.3	0.88	97.2	35.3	0.88	D.B.
65M x 0	2.8	1.0	25.3	0.95	100.0	34.8	0.87	A.D.B.
	2.8		25.6	0.96	100.0	35.0	0.88	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	35.7	0.7	6.9	32.0	60.4	1.22	35.7	6.9	A.D.B.
	35.6		6.9	32.2	60.9	1.23	35.6	6.9	D.B.
1.40-1.50	12.2	0.7	23.4	26.3	49.6	0.93	47.9	11.1	A.D.B.
	12.2		23.6	26.5	49.9	0.94	47.8	11.2	D.B.
1.50-1.60	13.3	0.7	33.1				61.2	15.9	A.D.B.
	13.3		33.3				61.1	16.0	D.B.
+1.60	38.8	0.3	66.1				100.0	35.4	A.D.B.
	38.9		66.3				100.0	35.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
6 1/2	Trace	365	440	19	256	1.087

Lab. No. 8252 Date Feb. 16, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-6

Starting Temperature °C: 350

Softening Temperature °C: 365

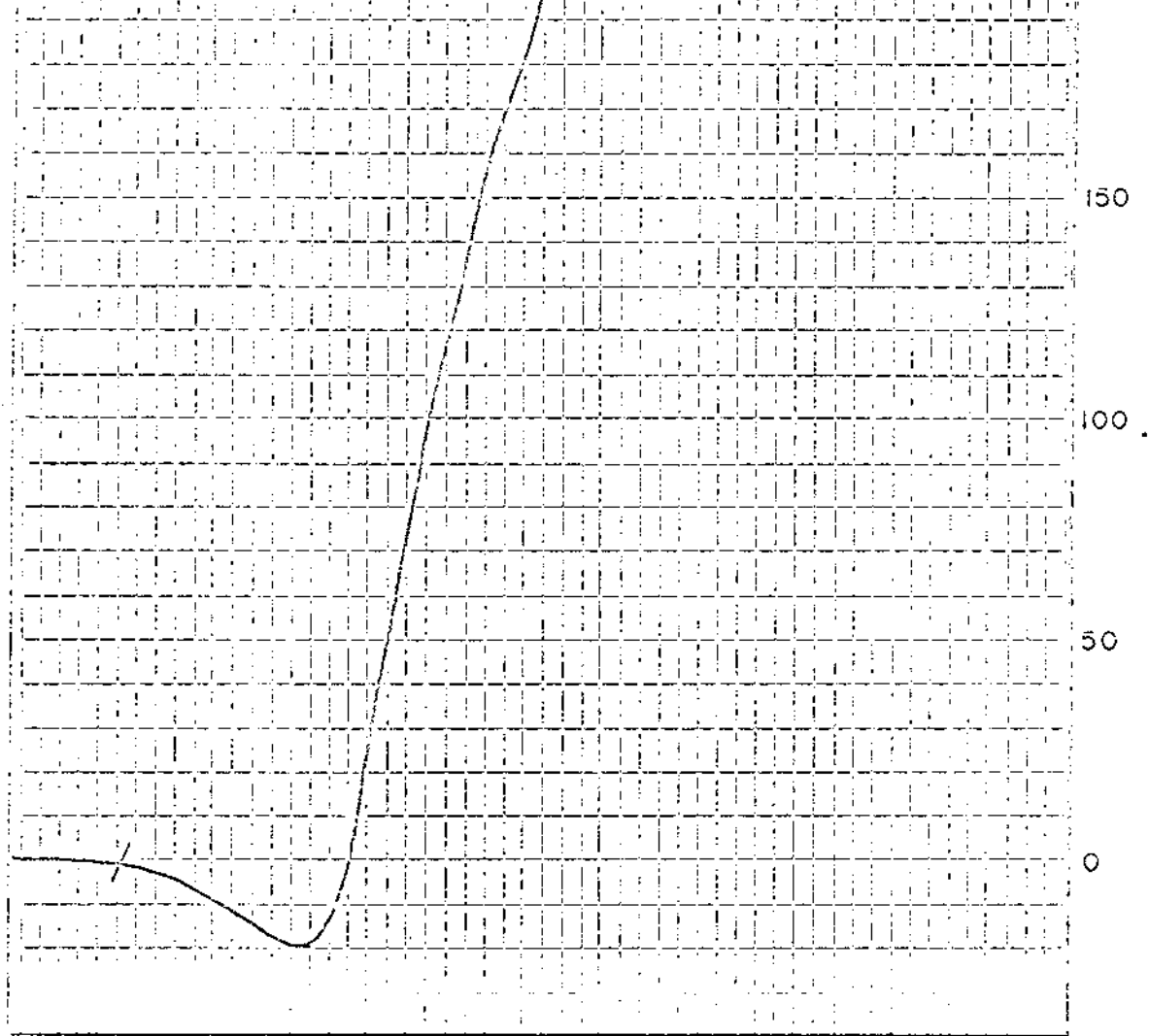
Max. Dilatation Temp. °C: 440

Contraction %: 19

Dilatation %: 256

Final Temperature °C:

G. Factor: 1.087



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 7 Lab. No. 8253 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	50.0	20.5	28.6	0.56	57	Air Dried Basis
	50.5	20.7	28.8	0.57	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			REMARKS
					WT. %	ASH %	S. %	
1/4" x 65M	96.0	0.9	51.6	0.55	96.0	51.6	0.55	A.D.B.
	96.0		52.1	0.55	96.0	52.1	0.55	D.B.
65M x 0	4.0	1.0	30.6	0.80	100.0	50.8	0.56	A.D.B.
	4.0		30.9	0.81	100.0	51.3	0.56	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		REMARKS
							WT. %	ASH %	
-1.40	26.0	0.7	4.7	31.7	62.9	1.02	26.0	4.7	A.D.B.
	26.0		4.7	31.9	63.4	1.03	26.0	4.7	D.B.
1.40-1.50	3.8	0.7	21.3	27.7	50.3	0.83	29.8	6.8	A.D.B.
	3.8		21.5	27.9	50.6	0.84	29.8	6.8	D.B.
1.50-1.60	3.6	0.7	34.3				33.4	9.8	A.D.B.
	3.6		34.5				33.4	9.8	D.B.
+1.60	66.6	0.8	72.3				100.0	51.4	A.D.B.
	66.6		72.9				100.0	51.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.03	362	434	156	240	1.087

Lab. No. 8253 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-7

Starting Temperature °C: 350

Softening Temperature °C: 362

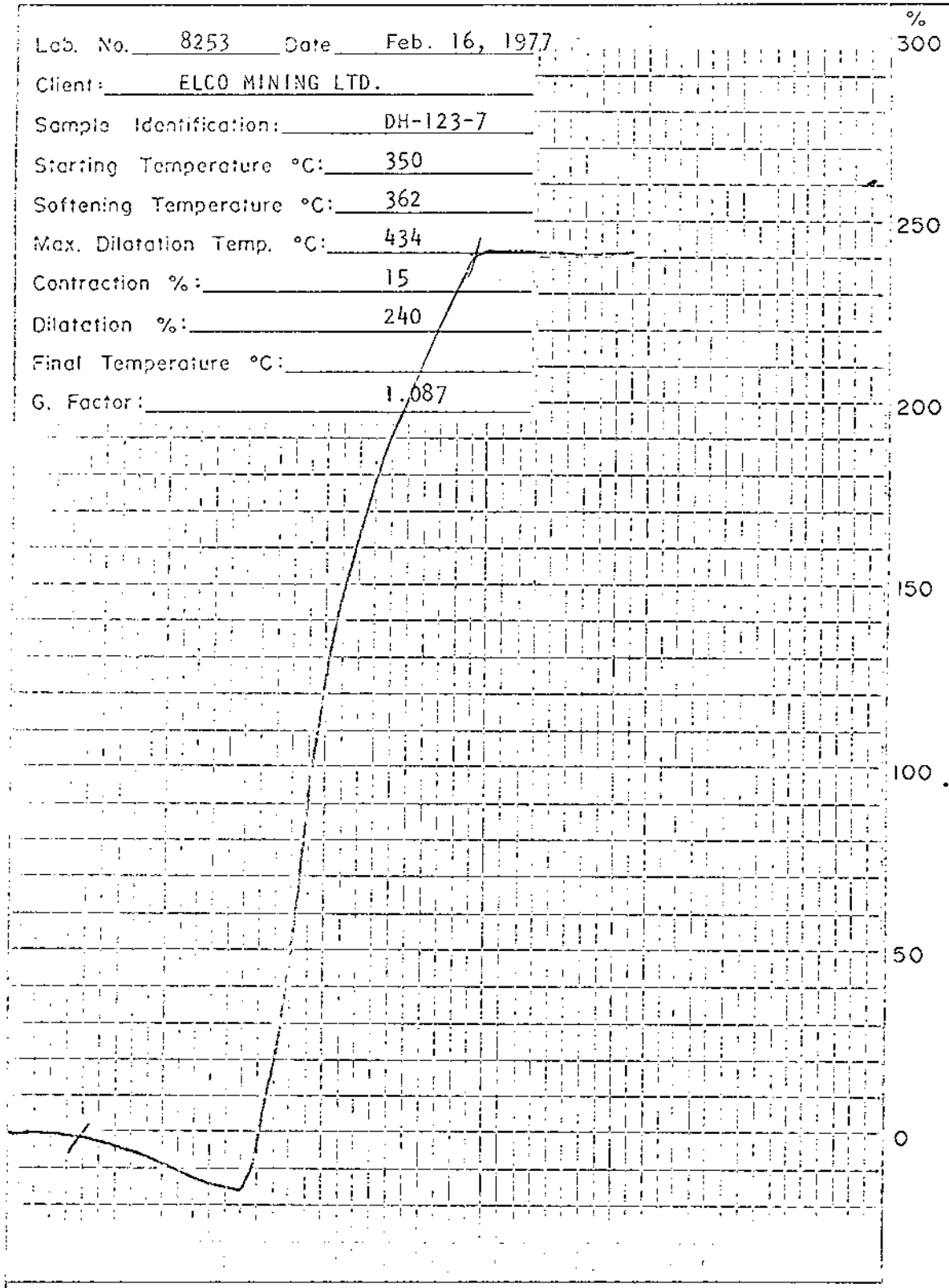
Max. Dilatation Temp. °C: 434

Contraction %: 15

Dilatation %: 240

Final Temperature °C:

G. Factor: 1.087



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 8 Lab. No. 8254 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	27.3	24.5	47.5	0.98	76	Air Dried Basis
	27.5	24.7	47.8	0.99	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.1	1.3	27.7	1.00	96.1	27.7	1.00	A.D.B.
	96.1		28.1	1.01	96.1	28.1	1.01	D.B.
65M x 0	3.9	1.0	26.4	1.00	100.0	27.6	1.00	A.D.B.
	3.9		26.7	1.01	100.0	28.0	1.01	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	61.6	1.5	4.5	30.5	63.5	1.20	61.6	4.5	A.D.B.
	61.4		4.6	31.0	64.4	1.22	61.4	4.6	D.B.
1.40-1.50	2.5	1.1	20.9	26.1	51.9	1.39	64.1	5.1	A.D.B.
	2.5		21.1	26.4	52.5	1.41	63.9	5.2	D.B.
1.50-1.60	2.2	1.3	31.3				66.3	6.0	A.D.B.
	2.2		31.7				66.1	6.1	D.B.
+1.60	33.7	0.6	69.3				100.0	27.3	A.D.B.
	33.9		69.7				100.0	27.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.04	368	429	18	232	1.070

Lab. No. 8254 Date Feb. 16, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-8

Starting Temperature °C: 350

Softening Temperature °C: 368

Max. Dilatation Temp. °C: 429

250

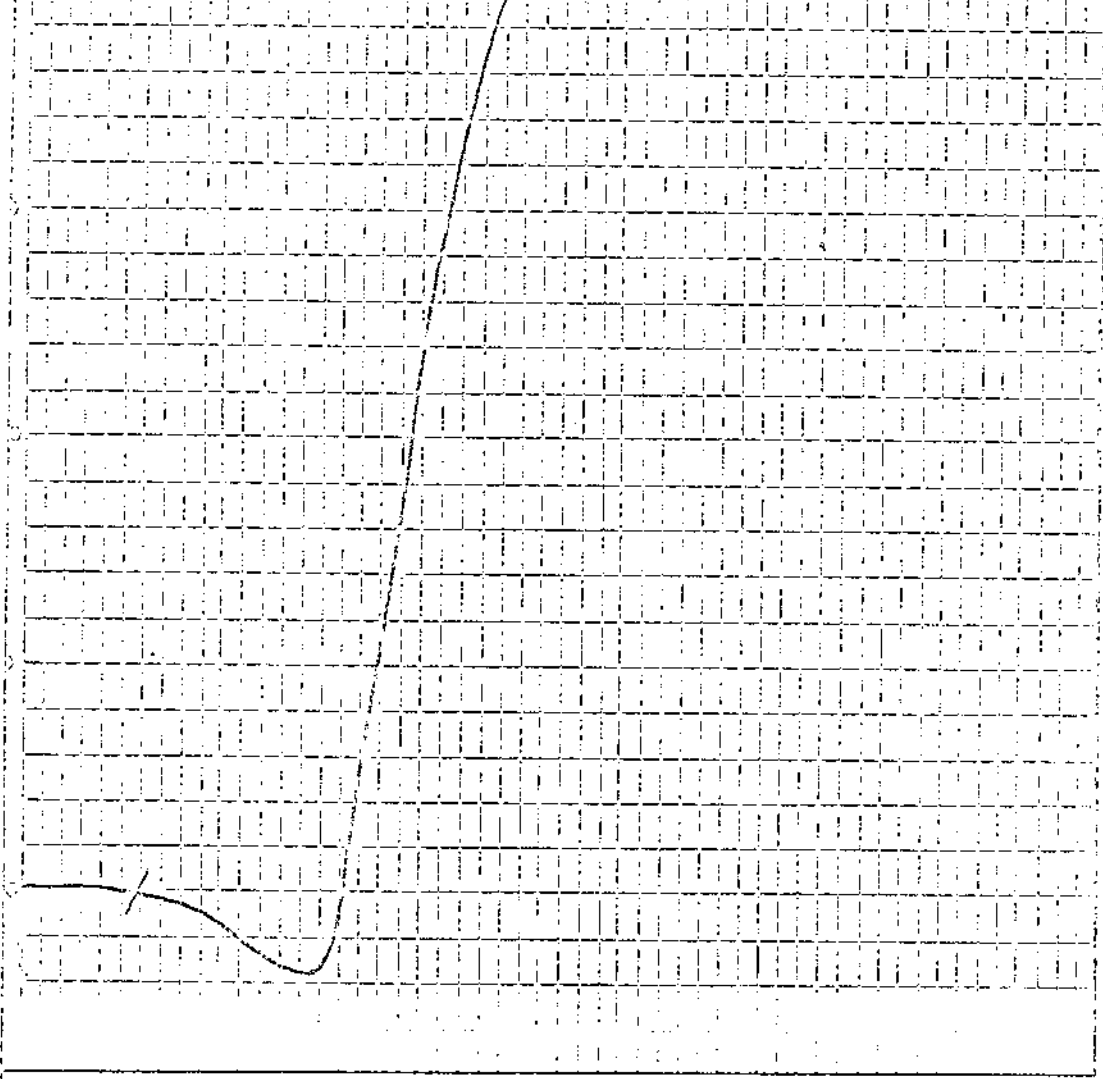
Contraction %: 18

Dilatation %: 232

Final Temperature °C: 1.070

200

G. Factor:



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 9 Lab. No. 8255 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	49.4	20.9	28.6	0.84	64	Air Dried Basis
	49.9	21.1	29.0	0.85	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.6	1.0	50.5	0.79	93.6	50.5	0.79	A.D.B.
	93.6		51.0	0.80	93.6	51.0	0.80	D.B.
65M x 0	6.4	1.1	29.9	1.13	100.0	49.2	0.81	A.D.B.
	6.4		30.2	1.14	100.0	49.7	0.82	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	30.4	0.9	7.1	30.5	61.5	1.22	30.4	7.1	A.D.B.
	30.4		7.2	30.8	62.0	1.23	30.4	7.2	D.B.
1.40-1.50	3.5	1.0	17.5	27.6	53.9	1.26	33.9	8.2	A.D.B.
	3.5		17.7	27.9	54.4	1.26	33.9	8.3	D.B.
1.50-1.60	2.5	1.1	32.2	X	X	X	36.4	9.8	A.D.B.
	2.5		32.6				36.4	10.0	D.B.
+1.60	63.6	0.8	73.1	X	X	X	100.0	50.1	A.D.B.
	63.6		73.7				100.0	50.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7 1/2	.01	356	436	22	263	1.093

Lab. No. 8255 Date Feb. 16, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-9

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 436

Contraction %: 22

Dilatation %: 263

Final Temperature °C:

G. Factor: 1.093

250

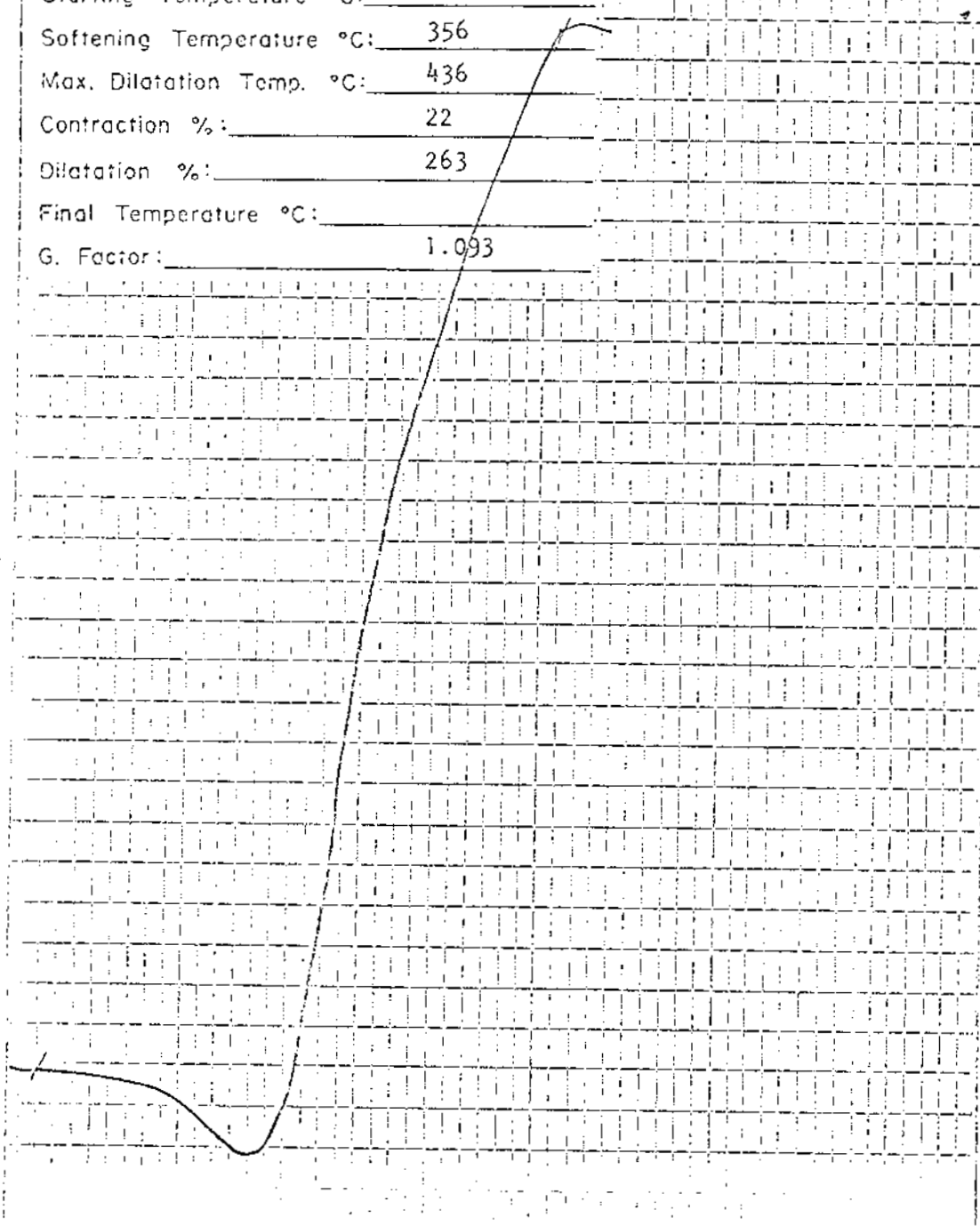
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 10 (8 kg. sample) Lab.No.8275 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	49.0	19.9	30.3	0.86	74	Air Dried Basis
	49.4	20.1	30.5	0.87	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.7	1.2	51.0	0.85	92.7	51.0	0.85	A.O.B.
	92.7		51.6	0.86	92.7	51.6	0.86	D.B.
65M x 0	7.3	1.2	26.2	1.24	100.0	49.2	0.88	A.O.B.
	7.3		26.5	1.26	100.0	49.8	0.89	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	35.5	1.5	3.7	30.1	64.7	1.21	35.5	3.7	A.O.B.
	35.3		3.8	30.6	65.6	1.23	35.3	3.8	D.B.
1.40-1.50	3.5	1.0	20.5	25.5	53.0	1.15	39.0	5.2	A.O.B.
	3.6		20.7	25.8	53.5	1.16	38.9	5.4	D.B.
1.50-1.60	1.6	1.2	32.6				40.6	6.3	A.O.B.
	1.6		33.0				40.5	6.5	D.B.
+1.60	59.4	1.0	81.5				100.0	51.0	A.O.B.
	59.5		82.3				100.0	51.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.O.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.03	356	422	23	243	1.088

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 10 (5 kg. sample) Lab.No.8276 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	24.6	20.1	54.6	0.85	108	Air Dried Basis
	24.8	20.2	55.0	0.86	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.2	1.0	24.0	0.83	95.2	24.0	0.83	A.D.B.
	95.2		24.2	0.84	95.2	24.2	0.84	D.B.
65M x 0	4.8	0.9	20.8	0.92	100.0	23.8	0.83	A.D.B.
	4.8		21.0	0.93	100.0	24.0	0.84	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	69.4	1.1	4.3	24.9	69.7	1.02	69.4	4.3	A.D.B.
	69.5		4.3	25.2	70.5	1.03	69.5	4.3	D.B.
1.40-1.50	5.3	1.4	17.2	19.8	61.6	0.83	74.7	5.2	A.D.B.
	5.3		17.4	20.1	62.5	0.84	74.8	5.2	D.B.
1.50-1.60	3.6	1.7	27.0				78.3	6.2	A.D.B.
	3.5		27.5				78.3	6.2	D.B.
+1.60	21.7	1.0	85.6				100.0	23.4	A.D.B.
	21.7		86.5				100.0	23.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.04	374	431	22	186	1.059

Lab. No. 8275 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-10

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 422

250

Contraction %: 23

Dilatation %: 243

Final Temperature °C:

G. Factor: 1.088

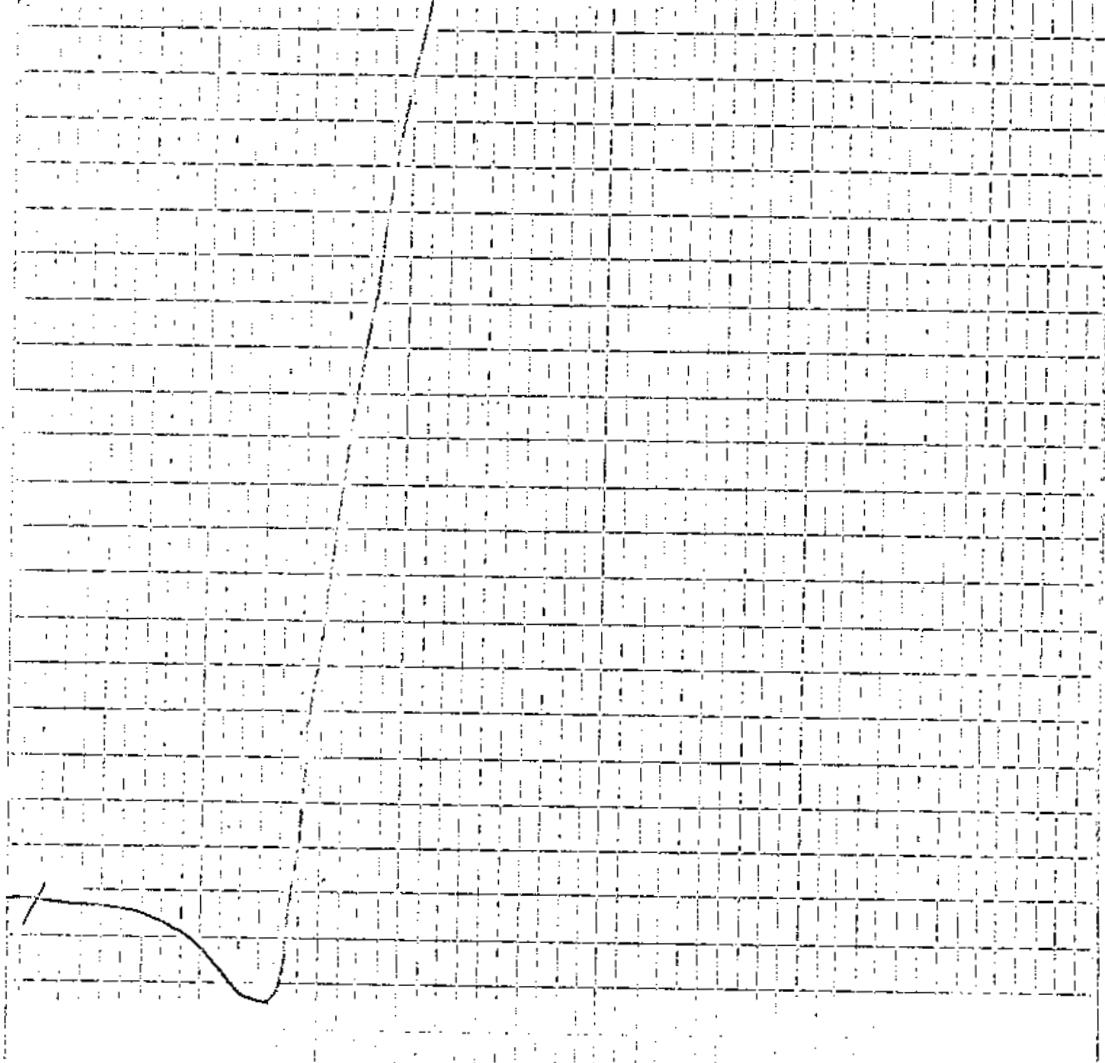
200

150

100

50

0



DIRTLEY ENGINEERING (CANADA) LTD.

Title

Date

RUHR DILATOMETER TEST

Drawn

Lab. No. 8276 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-10

Starting Temperature °C: 350

Softening Temperature °C: 374

Max. Dilatation Temp. °C: 431

250

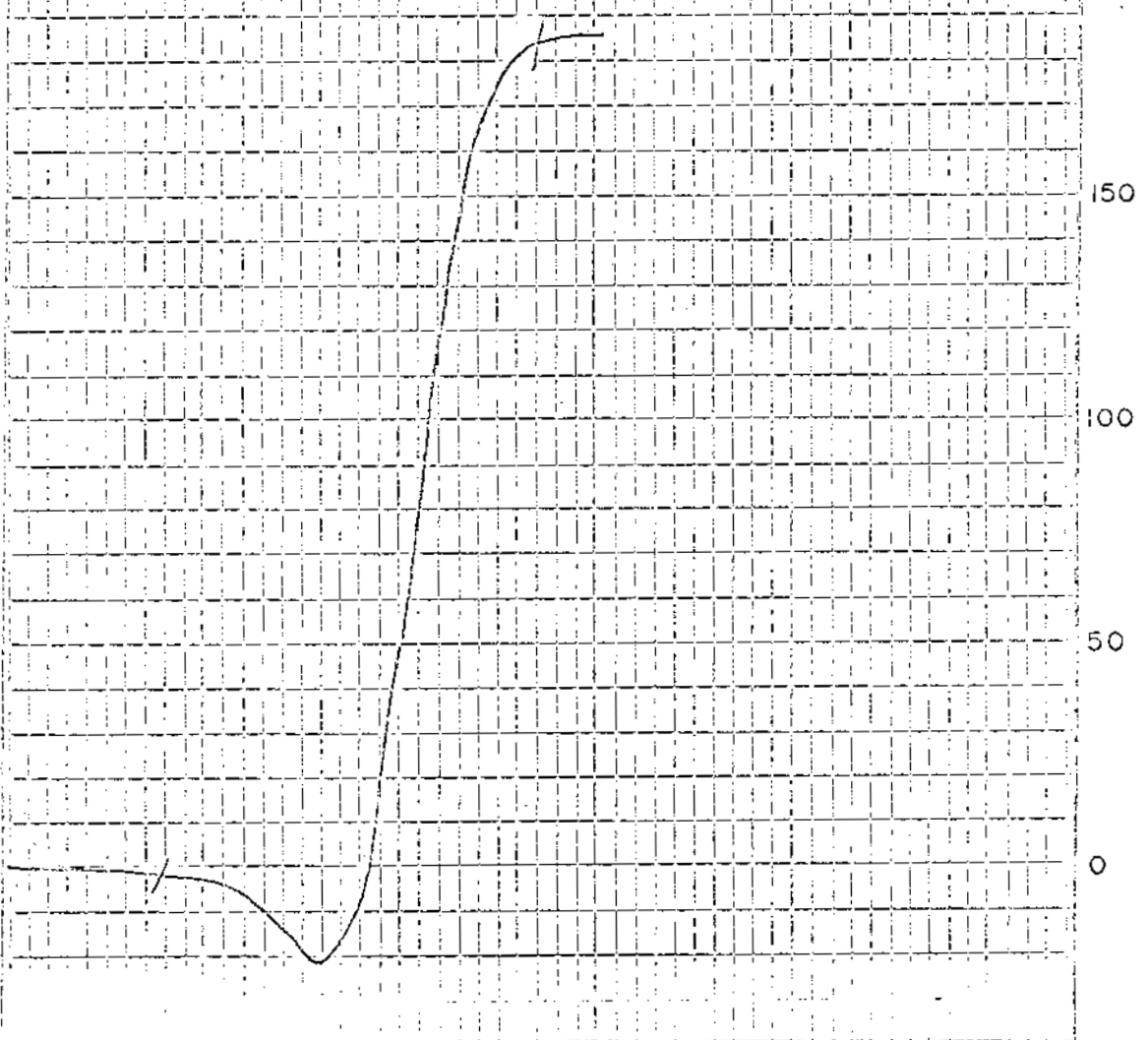
Contraction %: 22

Dilatation %: 186

Final Temperature °C:

G. Factor: 1.059

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

Date

RUHR DILATOMETER TEST

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 11 Lab. No. 8256 DATE: Feb/77

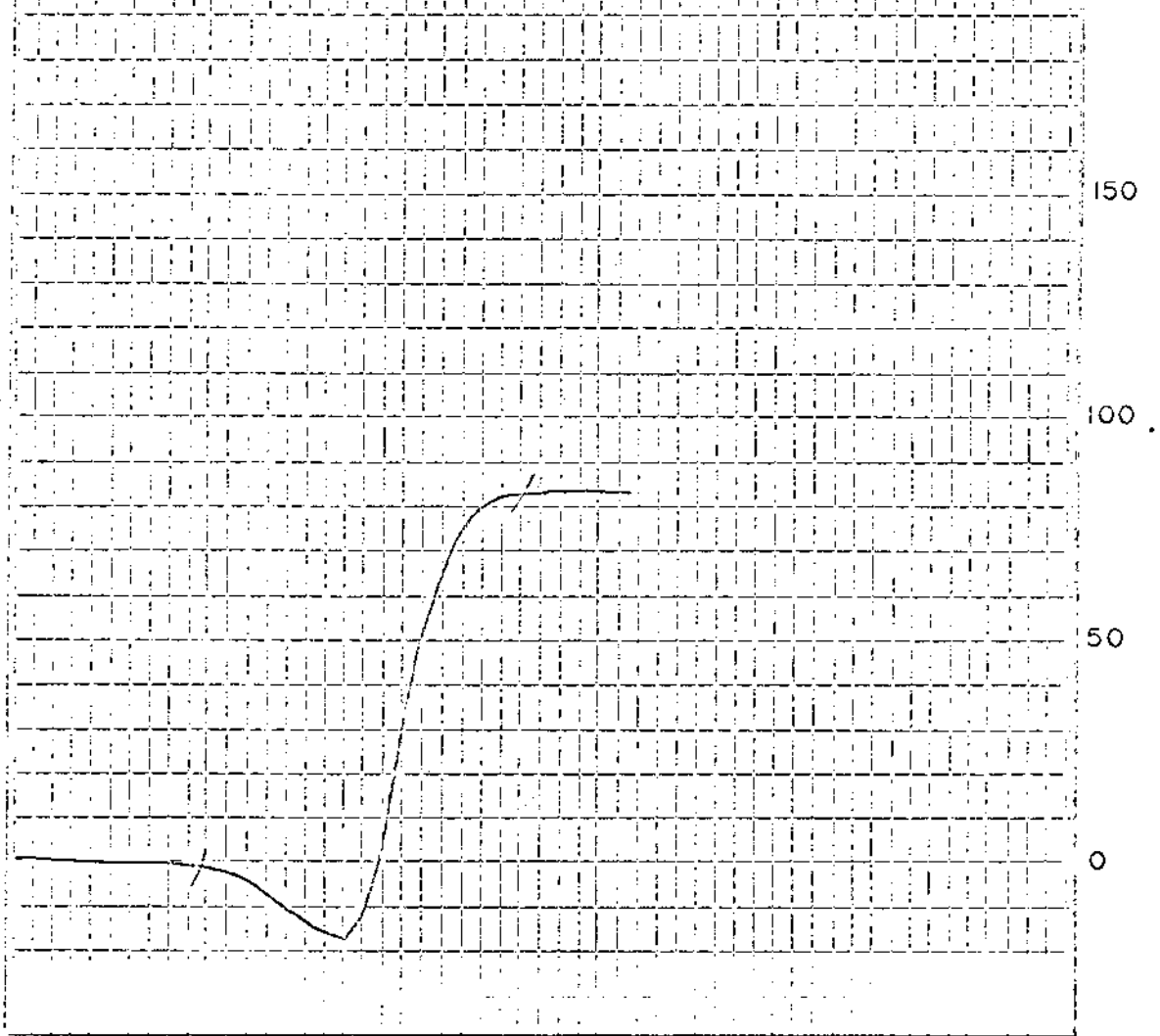
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	9.3	28.1	61.6	0.64	146	Air Dried Basis
	9.4	28.4	62.2	0.65	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	83.1	0.9	9.8	0.62	83.1	9.8	0.62	A.D.B.
	83.2		9.9	0.63	83.2	9.9	0.63	D.B.
65M x 0	16.9	1.2	9.1	0.67	100.0	9.7	0.63	A.D.B.
	16.8		9.2	0.68	100.0	9.8	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	86.4	3.8	3.6	29.4	63.2	0.83	86.4	3.6	A.D.B.
	86.3		3.7	30.6	65.7	0.86	86.3	3.7	D.B.
1.40-1.50	3.3	2.9	15.8	24.4	56.9	0.73	89.7	4.0	A.D.B.
	3.3		16.3	25.1	58.6	0.75	89.6	4.2	D.B.
1.50-1.60	1.6	2.4	26.8	 	 	 	91.3	4.4	A.D.B.
	1.6		27.5	 	 	 	91.2	4.6	D.B.
+1.60	8.7	2.5	60.6	 	 	 	100.0	9.3	A.D.B.
	8.8		62.2	 	 	 	100.0	9.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.03	380	428	16	83	1.042

Lab. No. 8256 Date Feb. 16, 1977 %
 300
 Client: ELCO MINING LTD.
 Sample Identification: DH-123-11
 Starting Temperature °C: 350
 Softening Temperature °C: 380
 Max. Dilatation Temp. °C: 428 250
 Contraction %: 16
 Dilatation %: 83
 Final Temperature °C: _____
 G. Factor: 1.042 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 12 Lab. No. 8257 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	16.9	25.5	56.9	0.66	82	Air Dried Basis
	17.0	25.7	57.3	0.66	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.4	0.6	16.7	0.64	95.4	16.7	0.64	A.D.B.
	95.4		16.8	0.64	95.4	16.8	0.64	D.B.
65M x 0	4.6	0.9	11.5	0.68	100.0	16.5	0.64	A.D.B.
	4.6		11.6	0.69	100.0	16.6	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	75.0	0.7	4.5	28.4	66.4	0.73	75.0	4.5	A.D.B.
	74.9		4.5	28.6	66.9	0.74	74.9	4.5	D.B.
1.40-1.50	5.8	0.6	19.5	23.5	56.4	0.65	80.8	5.6	A.D.B.
	5.9		19.6	23.6	56.8	0.65	80.8	5.6	D.B.
1.50-1.60	2.2	0.6	28.7				83.0	6.2	A.D.B.
	2.2		28.9				83.0	6.2	D.B.
+1.60	17.0	0.4	71.6				100.0	17.3	A.D.B.
	17.0		71.9				100.0	17.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.05	365	437	23	227	1.079

Lab. No. 8257 Date Feb. 16, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-123-12

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 437

250

Contraction %: -23

Dilatation %: 227

Final Temperature °C:

G. Factor: 1.079

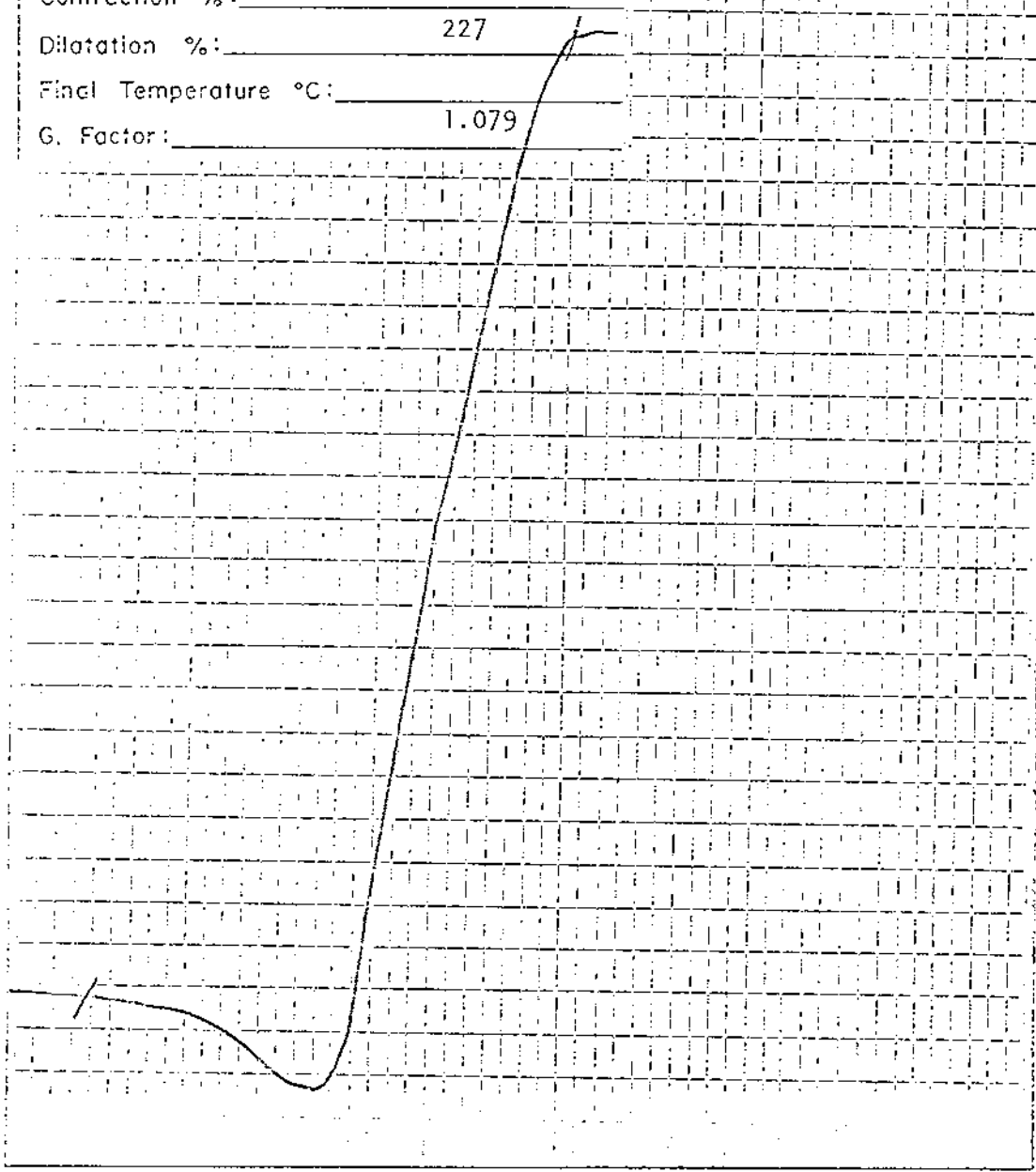
200

150

100

50

0



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 13

Lab. No. 8258

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	36.7	19.6	42.9	0.87	82	Air Dried Basis
	37.0	19.8	43.2	0.88	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.8	0.7	37.8	0.89	96.8	37.8	0.89	A.D.B.
	96.8		38.1	0.90	96.8	38.1	0.90	D.B.
65M x 0	3.2	1.0	32.7	0.83	100.0	37.6	0.89	A.D.B.
	3.2		33.0	0.84	100.0	37.9	0.90	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	53.0	0.8	3.3	27.5	68.4	0.93	53.0	3.3	A.D.B.
	52.9		3.3	27.7	69.0	0.94	52.9	3.3	D.B.
1.40-1.50	3.7	0.6	18.7	24.5	56.2	0.73	56.7	4.3	A.D.B.
	3.7		18.8	24.6	56.6	0.73	56.6	4.3	D.B.
1.50-1.60	1.2	0.6	32.8				57.9	4.9	A.D.B.
	1.2		33.0				57.8	4.9	D.B.
+1.60	42.1	0.4	82.5				100.0	37.6	A.D.B.
	42.2		82.8				100.0	37.8	D.B.

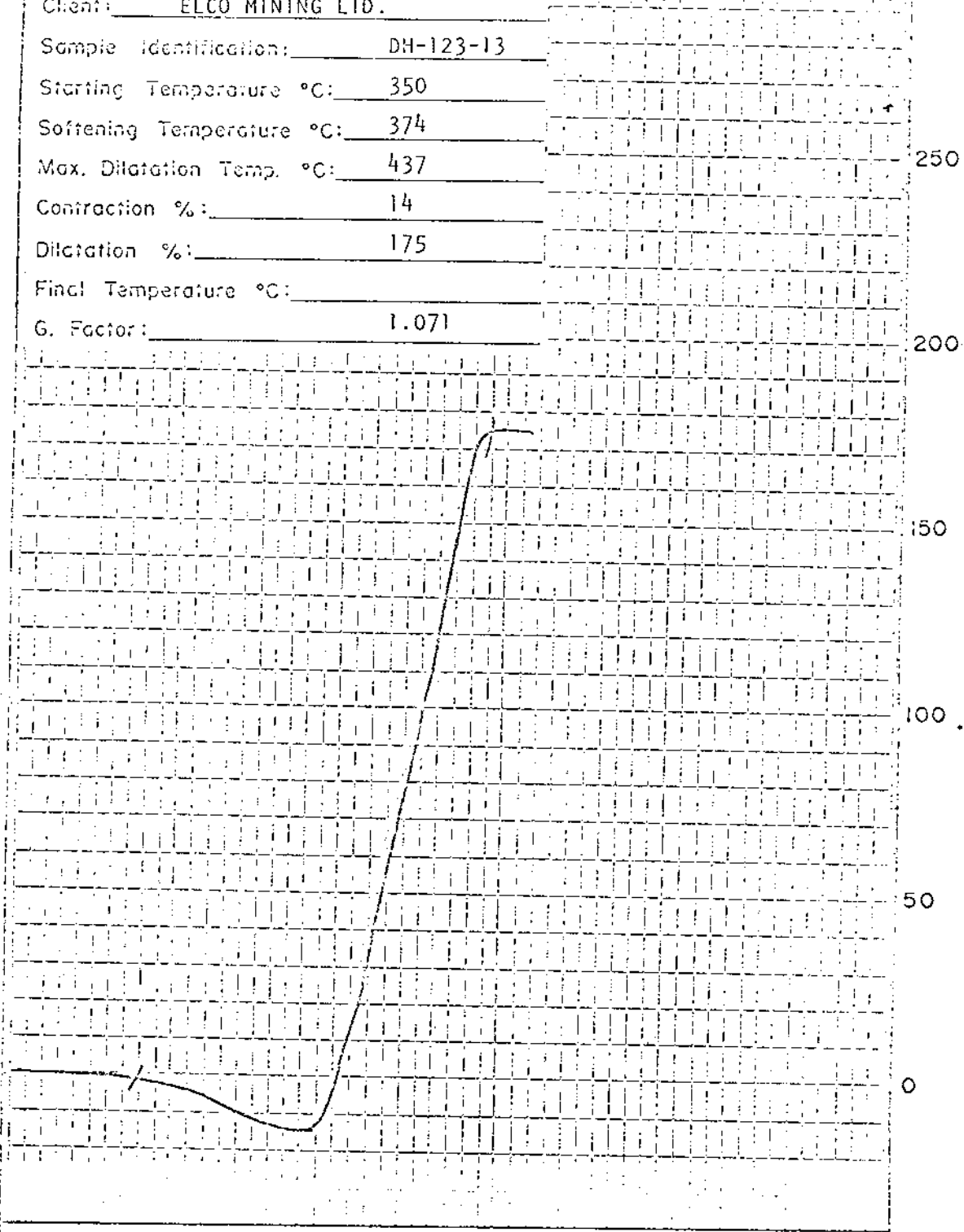
COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.02	374	437	14	175	1.071

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8258 Date Feb. 16, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-123-13
 Starting Temperature °C: 350
 Softening Temperature °C: 374
 Max. Dilatation Temp. °C: 437
 Contraction %: 14
 Dilatation %: 175
 Final Temperature °C: _____
 G. Factor: 1.071

%
300



SIBLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 14 Lab. No. 8259 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	65.2	13.3	20.9	0.79	65	Air Dried Basis
	65.6	13.4	21.0	0.79	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.2	0.7	66.8	0.77	91.2	66.8	0.77	A.D.B.
	91.2		67.3	0.78	91.2	67.3	0.78	D.B.
65M x 0	8.8	0.8	45.1	0.80	100.0	64.9	0.77	A.D.B.
	8.8		45.5	0.81	100.0	65.2	0.78	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	15.7	1.0	4.1	28.9	66.0	1.25	15.7	4.1	A.D.B.
	15.7		4.1	29.2	66.7	1.26	15.7	4.1	D.B.
1.40-1.50	2.2	1.0	13.3	24.8	60.9	1.53	17.9	5.2	A.D.B.
	2.2		13.4	25.1	61.5	1.55	17.9	5.2	D.B.
1.50-1.60	1.4	1.0	25.5				19.3	6.7	A.D.B.
	1.4		25.8				19.3	6.7	D.B.
+1.60	80.7	0.9	81.3				100.0	66.9	A.D.B.
	80.7		82.0				100.0	67.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.04	356	431	21	285	1.090

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8259 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-1

Starting Temperature °C: 350

Softening Temperature °C: 356

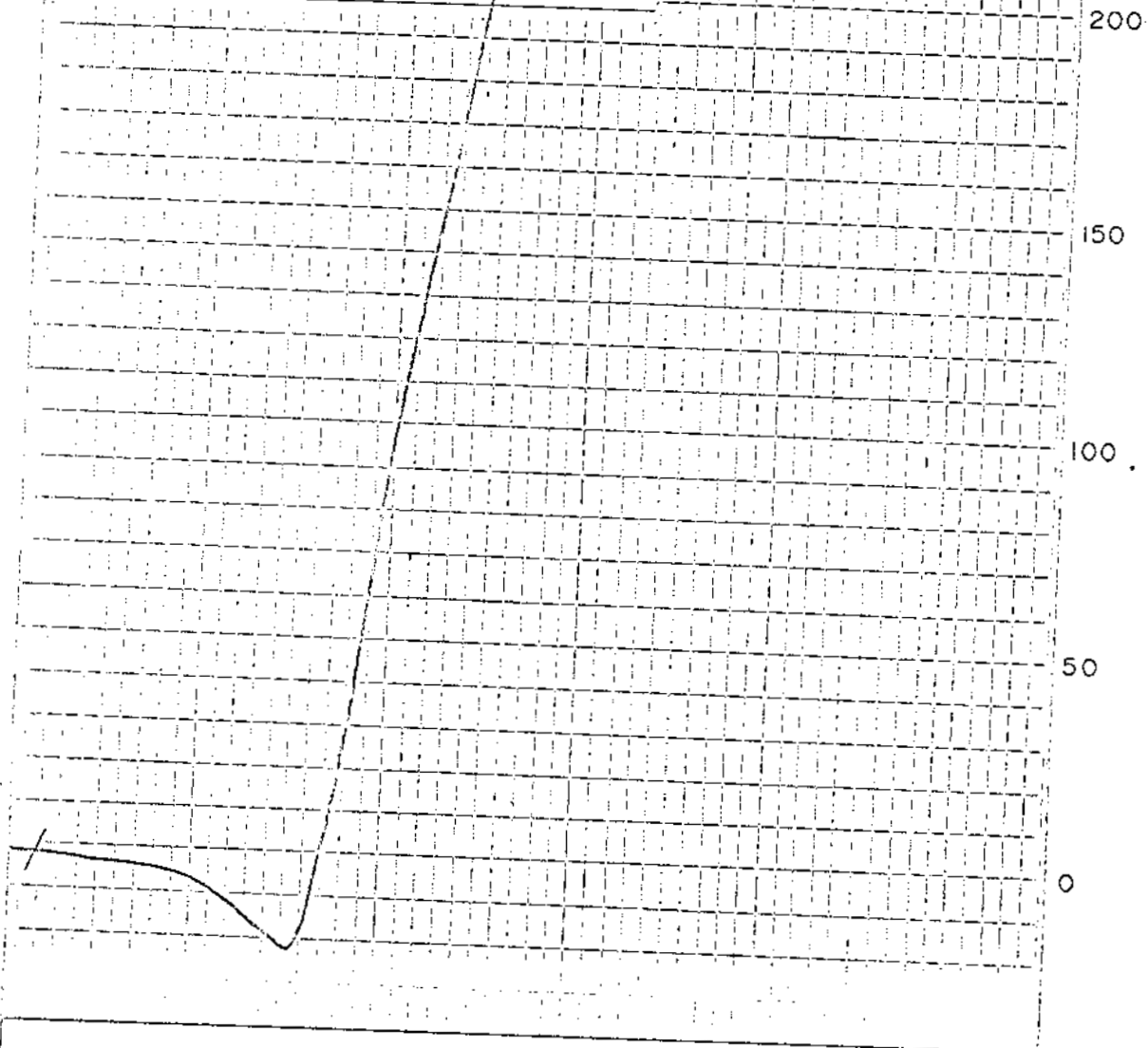
Max. Dilatation Temp. °C: 431

Contraction %: 21

Dilatation %: 285

Final Temperature °C:

G. Factor: 1.090



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 123 - 15 Lab. No. 8260 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	33.8	21.5	43.8	0.81	112	Air Dried Basis
	34.1	21.7	44.2	0.82	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.2	0.8	34.8	0.84	94.2	34.8	0.84	A.D.B.
	94.2		35.1	0.85	94.2	35.1	0.85	D.B.
65M x 0	5.8	1.1	27.9	0.89	100.0	34.4	0.84	A.D.B.
	5.8		28.2	0.90	100.0	34.7	0.85	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	45.9	0.7	5.1	29.6	64.6	1.04	45.9	5.1	A.D.B.
	45.9		5.1	29.8	65.1	1.05	45.9	5.1	D.B.
1.40-1.50	10.1	0.7	11.4	26.8	61.1	0.98	56.0	6.2	A.D.B.
	10.1		11.5	27.0	61.5	0.99	56.0	6.3	D.B.
1.50-1.60	6.1	1.6	19.3	X	X	X	62.1	7.5	A.D.B.
	6.0		19.6				62.0	7.5	D.B.
+1.60	37.9	0.6	77.9	X	X	X	100.0	34.2	A.D.B.
	38.0		78.4				100.0	34.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.11	50% 362	423	10	187	1.075
		50% 371	425	8	208	1.067

Av.=1.071

TOP HALF OF PENCIL

Lab. No. 8260 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-15

Starting Temperature °C: 350

Softening Temperature °C: 362

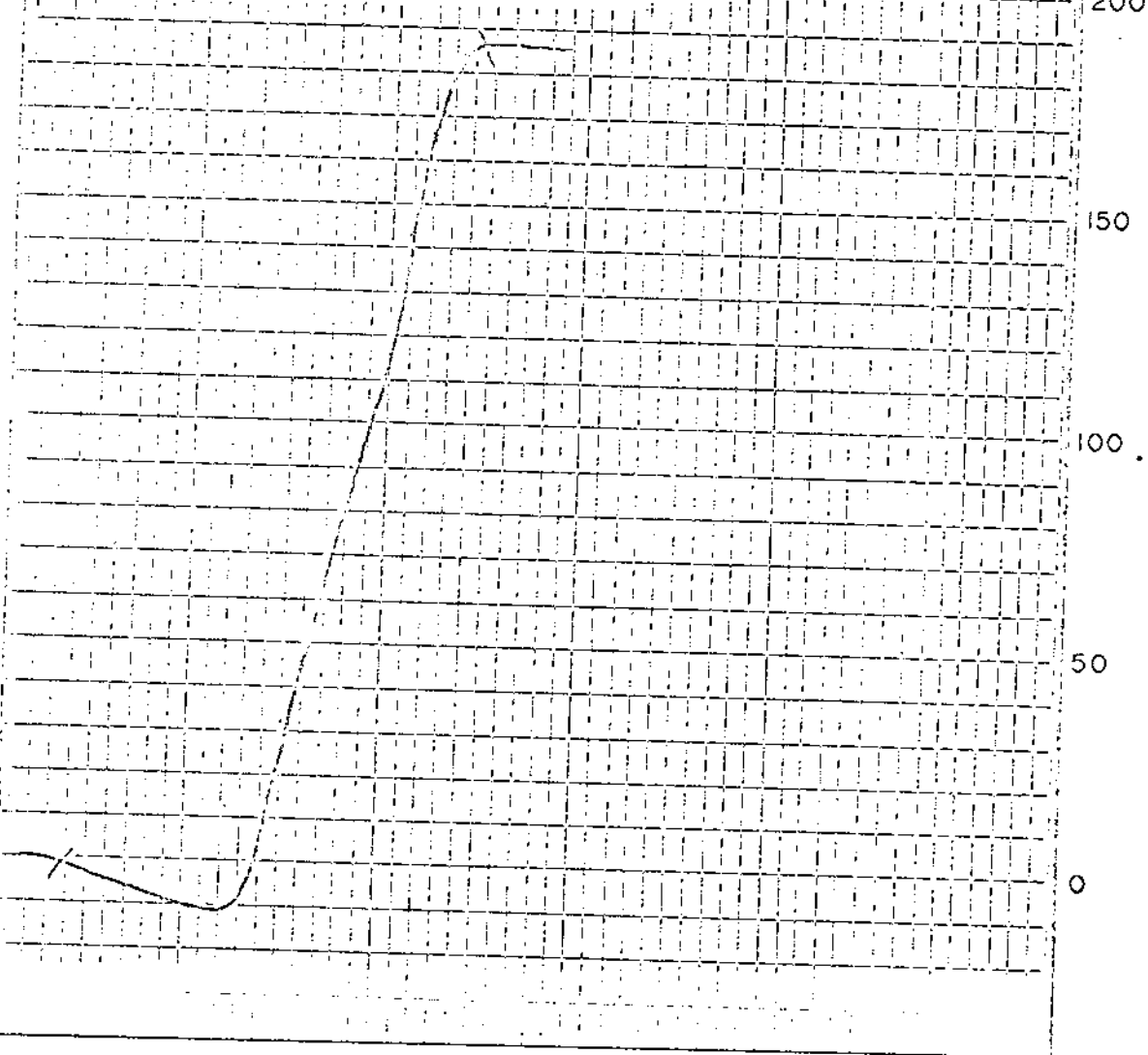
Max. Dilatation Temp. °C: 423

Contraction %: 10

Dilatation %: 187

Final Temperature °C:

G. Factor: 1.075



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

BOTTOM HALF OF PENCIL

Lab. No. 8260 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-123-15

Starting Temperature °C: 350

Softening Temperature °C: 371

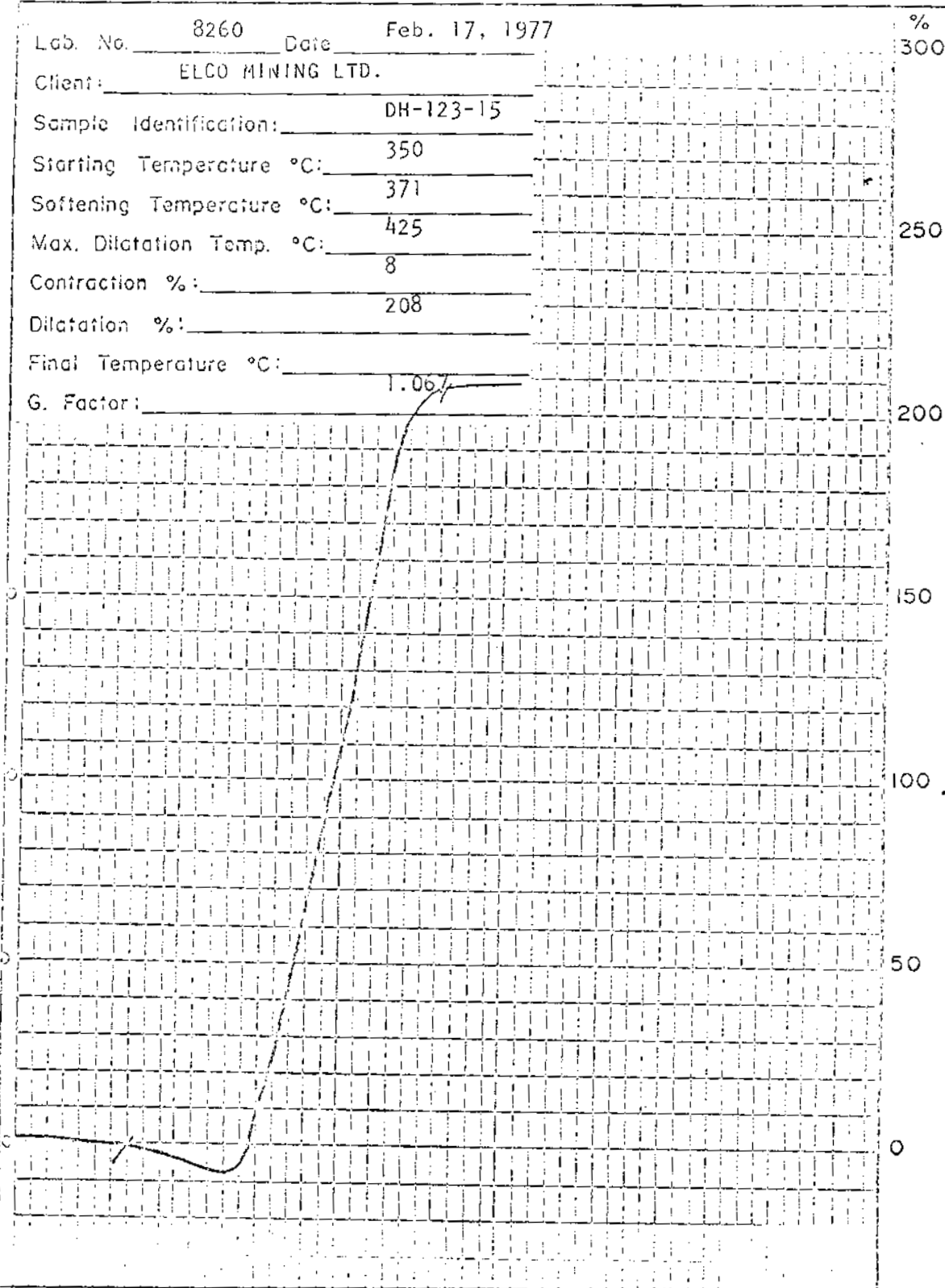
Max. Dilatation Temp. °C: 425

Contraction %: 8

Dilatation %: 208

Final Temperature °C: _____

G. Factor: 1.067



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 1 Lab. NO. 8261 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	48.2	20.3	30.6	0.46	94	Air Dried Basis
	48.6	20.5	30.9	0.46	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			REMARKS
					WT. %	ASH %	S. %	
1/4" x 65M	97.0	0.8	48.4	0.46	97.0	48.4	0.46	A.D.B.
	97.0		48.8	0.46	97.0	48.8	0.46	D.B.
65M x 0	3.0	1.1	37.6	0.55	100.0	48.1	0.46	A.D.B.
	3.0		38.0	0.56	100.0	48.5	0.46	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		REMARKS
							WT. %	ASH %	
-1.40	28.4	0.9	6.6	32.7	59.8	0.73	28.4	6.6	A.D.B.
	28.4		6.7	33.0	60.3	0.74	28.4	6.7	D.B.
1.40-1.50	8.6	0.8	18.3	29.7	51.2	0.68	37.0	9.3	A.D.B.
	8.6		18.4	29.9	51.7	0.69	37.0	9.4	D.B.
1.50-1.60	5.3	0.9	32.5	X	X	X	42.3	12.2	A.D.B.
	5.2		32.8				42.3	12.3	D.B.
+1.60	57.7	0.7	75.0	X	X	X	100.0	48.4	A.D.B.
	57.7		75.5				100.0	48.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7 1/2	.08	356	428	21	186	1.079

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8261 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124 - 1

Starting Temperature °C: 350

Softening Temperature °C: 356

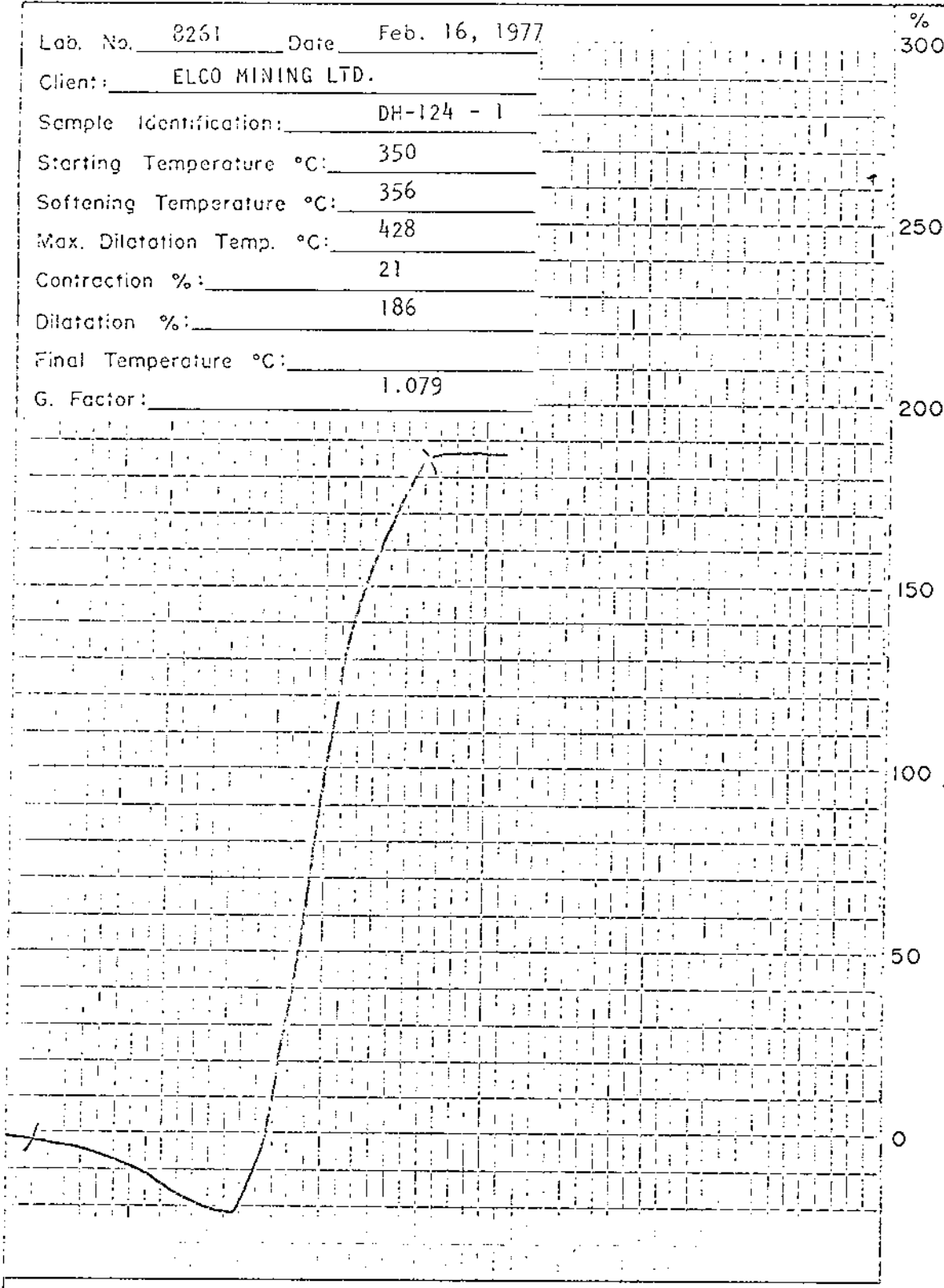
Max. Dilatation Temp. °C: 428

Contraction %: 21

Dilatation %: 186

Final Temperature °C:

G. Factor: 1.079



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 2

Lab. No. 8262

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	69.5	16.0	13.6	0.38	46	Air Dried Basis
	70.1	16.1	13.8	0.38	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.2	0.6	70.9	0.35	96.2	70.9	0.35	A.D.B.
	96.2		71.3	0.35	96.2	71.3	0.35	D.B.
65M x 0	3.8	1.0	48.2	0.55	100.0	70.0	0.36	A.D.B.
	3.8		48.7	0.56	100.0	70.4	0.36	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	4.3	0.8	10.3	34.5	54.4	0.81	4.3	10.3	A.D.B.
	4.3		10.4	34.8	54.8	0.82	4.3	10.4	D.B.
1.40-1.50	3.0	0.8	25.3	30.3	43.6	0.68	7.3	16.5	A.D.B.
	2.9		25.5	30.5	44.0	0.69	7.2	16.5	D.B.
1.50-1.60	2.4	0.9	34.5				9.7	20.9	A.D.B.
	2.4		34.8				9.6	21.1	D.B.
+1.60	90.3	0.3	76.1				100.0	70.7	A.D.B.
	90.4		76.3				100.0	71.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
4 1/2	.06	365	431	9	251	1.084

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8262 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-2

Starting Temperature °C: 350

Softening Temperature °C: 365

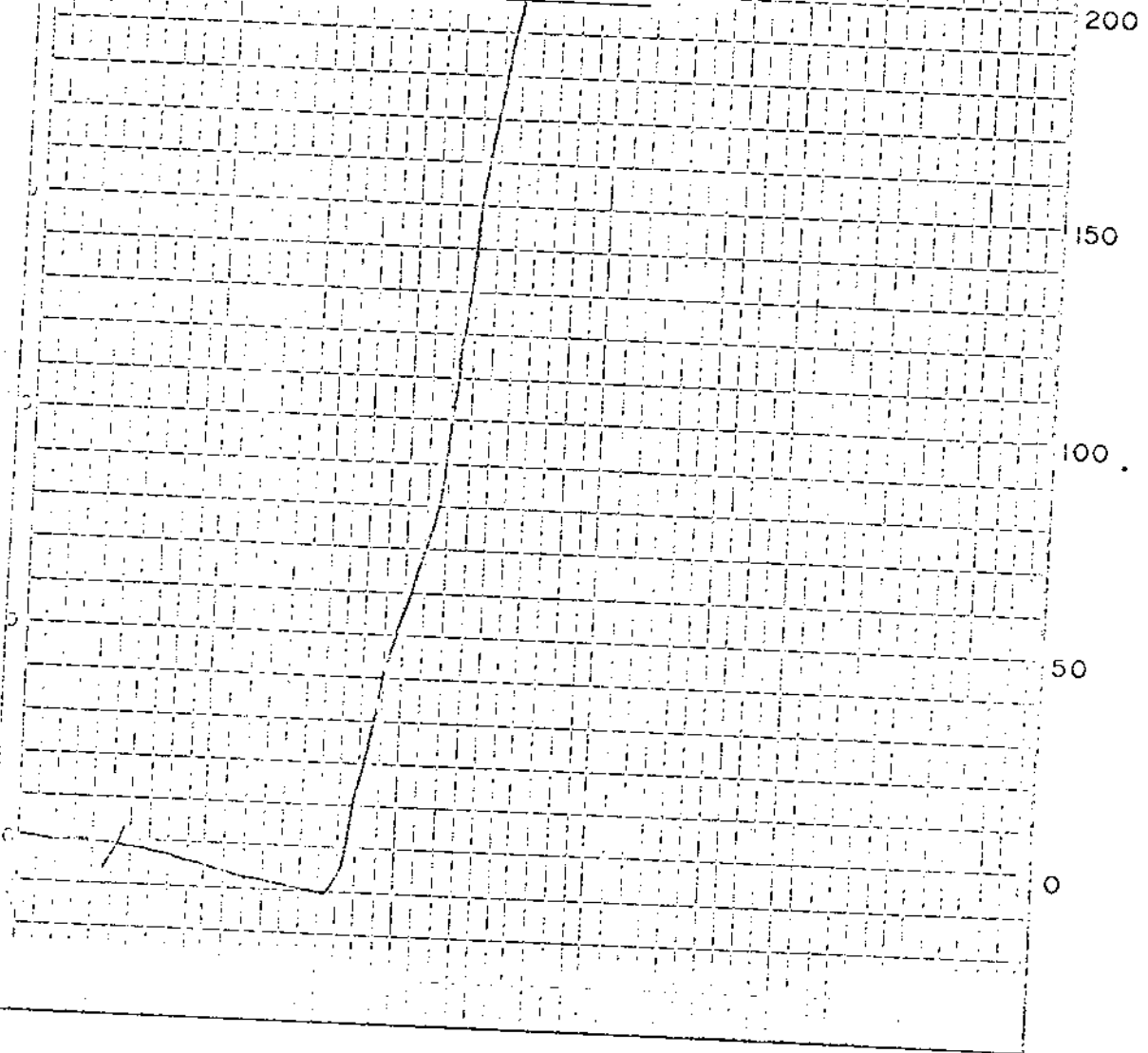
Max. Dilatation Temp. °C: 431

Contraction %: 9

Dilatation %: 251

Final Temperature °C: _____

G. Factor: 1.084



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 3 Lab. No. 8263 DATE: Feb/77

HEAD RAW ANALYSIS						
R.H. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	36.0	24.9	38.2	0.56	71	Air Dried Basis
	36.3	25.1	38.6	0.57	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			REMARKS
					WT. %	ASH %	S. %	
1/4" x 65M	91.1	1.0	37.4	0.59	91.1	37.4	0.59	A.D.B.
	91.1		37.8	0.60	91.1	37.8	0.60	D.B.
65M x 0	8.9	1.5	31.8	0.55	100.0	36.9	0.59	A.D.B.
	8.9		32.3	0.56	100.0	37.3	0.60	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		REMARKS
							WT. %	ASH %	
-1.40	35.5	1.0	5.5	33.1	60.4	0.71	35.5	5.5	A.D.B.
	35.4		5.6	33.4	61.0	0.72	35.4	5.6	D.B.
1.40-1.50	11.8	1.0	14.1	30.5	54.4	0.64	47.3	7.6	A.D.B.
	11.8		14.2	30.8	55.0	0.65	47.2	7.8	D.B.
1.50-1.60	8.2	0.8	35.2				55.5	11.7	A.D.B.
	8.2		35.5				55.4	11.9	D.B.
+1.60	44.5	0.6	69.5				100.0	37.4	A.D.B.
	44.6		69.9				100.0	37.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6 1/2	.18	353	413	22	189	1.066

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8263 Date Feb. 16, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-3

Starting Temperature °C: 350

Softening Temperature °C: 353

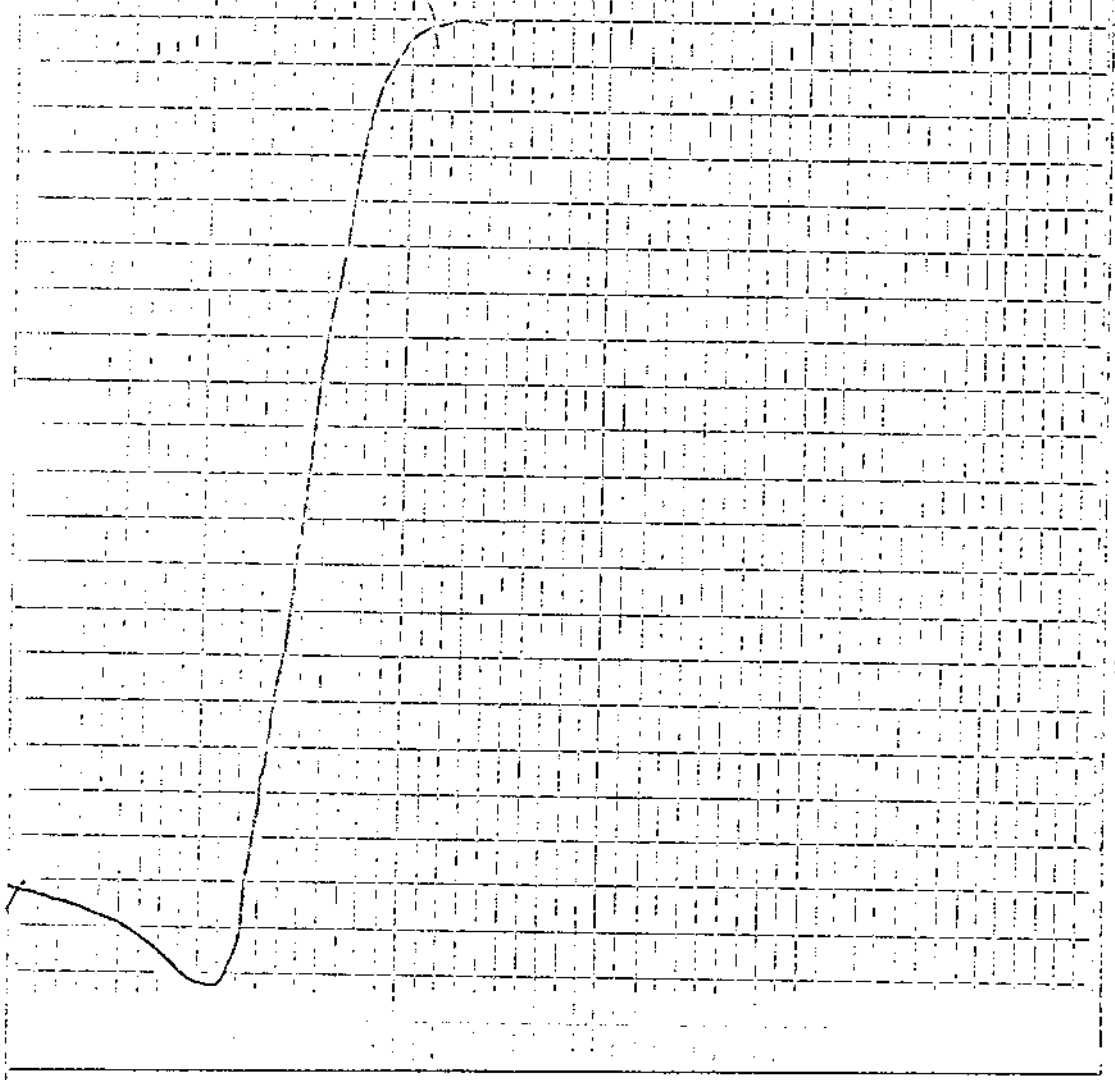
Max. Dilatation Temp. °C: 413

Contraction %: 22

Dilatation %: 189

Final Temperature °C:

G. Factor: 1.066



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 4 Lab. No. 8264 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	52.4	18.4	28.2	0.50	79	Air Dried Basis
	52.9	18.6	28.5	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.8	1.2	52.5	0.49	94.8	52.5	0.49	A.D.B.
	94.8		53.1	0.50	94.8	53.1	0.50	D.B.
65M x 0	5.2	1.2	37.2	0.56	100.0	51.7	0.49	A.D.B.
	5.2		37.7	0.57	100.0	52.3	0.50	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	35.9	1.2	6.2	33.4	59.2	0.88	35.9	6.2	A.D.B.
	35.9		6.3	33.8	59.9	0.89	35.9	6.3	D.B.
1.40-1.50	0.5	0.6	11.5	30.2	57.7	0.86	36.4	6.3	A.D.B.
	0.5		11.6	30.4	58.0	0.87	36.4	6.4	D.B.
1.50-1.60	0.3	0.5	26.4				36.7	6.4	A.D.B.
	0.3		26.6				36.7	6.5	D.B.
+1.60	63.3	1.2	78.4				100.0	52.0	A.D.B.
	63.3		79.4				100.0	52.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7	Trace	353	408	20	178	1.061

Lab. No. 8264 Date Feb. 16, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-4

Starting Temperature °C: 350

Softening Temperature °C: 353

Max. Dilatation Temp. °C: 408

250

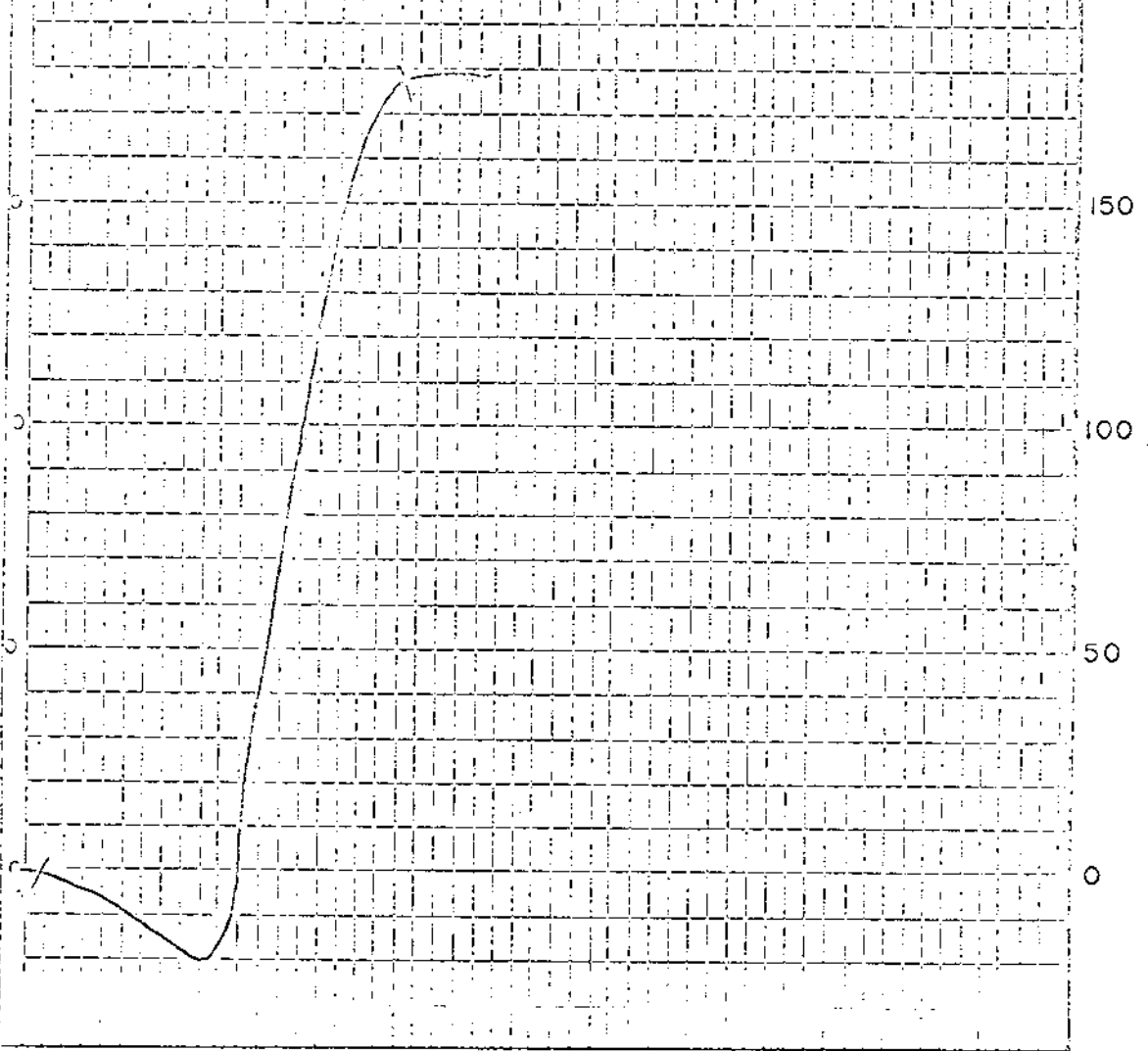
Contraction %: 20

Dilatation %: 178

Final Temperature °C: 1.061

G. Factor:

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 5 Lab. No. 8265 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	38.2	24.0	36.9	0.54	62	Air Dried Basis
	38.5	24.2	37.3	0.54	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.7	0.7	40.0	0.49	94.7	40.0	0.49	A.D.B.
	94.7		40.3	0.49	94.7	40.3	0.49	D.B.
65M x 0	5.3	1.1	25.7	0.68	100.0	39.2	0.50	A.D.B.
	5.3		26.0	0.69	100.0	39.5	0.50	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	46.8	1.0	3.8	34.3	60.9	0.71	46.8	3.8	A.D.B.
	46.8		3.8	34.6	61.6	0.72	46.8	3.8	D.B.
1.40-1.50	3.7	0.9	20.0	29.1	50.0	0.70	50.5	5.0	A.D.B.
	3.7		20.2	29.4	50.4	0.71	50.5	5.0	D.B.
1.50-1.60	2.9	0.9	34.6				53.4	6.6	A.D.B.
	2.9		34.9				53.4	6.6	D.B.
+1.60	46.6	0.8	77.6				100.0	39.7	A.D.B.
	46.6		78.2				100.0	40.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.03	356	426	19	210	1.081

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8265 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-5

Starting Temperature °C: 350

Softening Temperature °C: 356

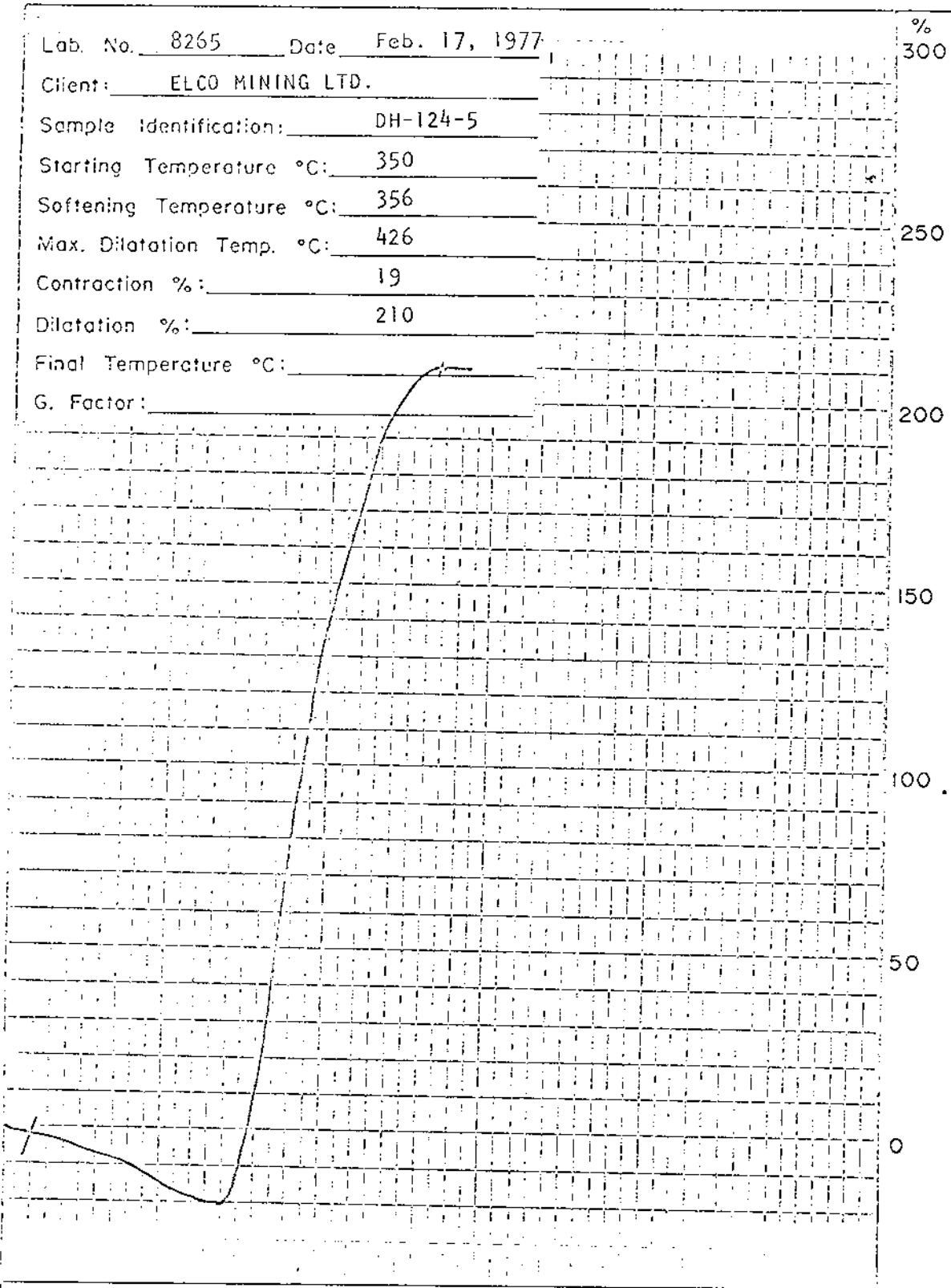
Max. Dilatation Temp. °C: 426

Contraction %: 19

Dilatation %: 210

Final Temperature °C:

G. Factor:



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 6 Lab. No. 8266 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	56.4	21.3	21.1	0.42	77	Air Dried Basis
	57.1	21.6	21.3	0.43	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.3	1.0	61.8	0.39	86.3	61.8	0.39	A.D.B.
	86.3		62.4	0.39	86.3	62.4	0.39	D.B.
65M x 0	13.7	1.3	23.4	0.79	100.0	56.5	0.44	A.D.B.
	13.7		23.7	0.80	100.0	57.1	0.45	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	23.0	2.5	3.4	33.5	60.6	0.89	23.0	3.4	A.D.B.
	22.7		3.5	34.4	62.1	0.91	22.7	3.5	D.B.
1.40-1.50	2.8	2.6	13.9	29.3	54.2	0.93	25.8	4.5	A.D.B.
	2.7		14.3	30.1	55.6	0.95	25.4	4.6	D.B.
1.50-1.60	0.9	2.3	17.5				26.7	5.0	A.D.B.
	0.9		17.9				26.3	5.1	D.B.
+1.60	73.3	0.4	82.5				100.0	61.8	A.D.B.
	73.7		82.8				100.0	62.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7	.01	365	425	16	164	1.067

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8266 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-6

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 425

Contraction %: 16

Dilatation %: 164

Final Temperature °C:

G. Factor: 1.067

250

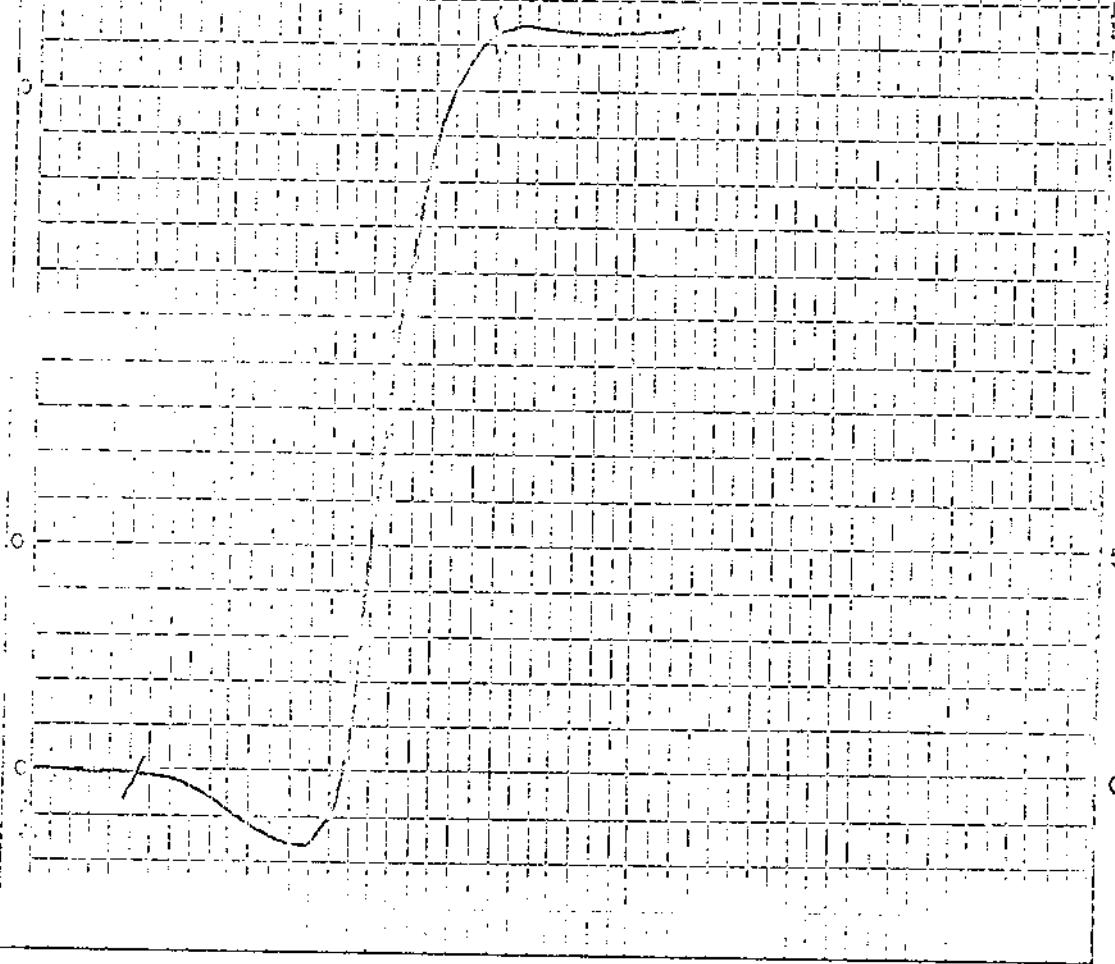
200

150

100

50

0



DITLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 7

Lab. No. 8267

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	17.7	29.5	51.8	0.74	84	Air Dried Basis
	17.9	29.8	52.3	0.75	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.0	1.0	16.7	0.73	95.0	16.7	0.73	A.D.B.
	95.0		16.9	0.74	95.0	16.9	0.74	D.B.
65M x 0	5.0	1.2	19.2	0.77	100.0	16.8	0.73	A.D.B.
	5.0		19.4	0.78	100.0	17.0	0.74	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	80.7	1.0	4.3	33.6	61.1	0.83	80.7	4.3	A.D.B.
	80.6		4.3	33.9	61.8	0.84	80.6	4.3	D.B.
1.40-1.50	2.0	1.0	18.2	27.7	53.1	0.73	82.7	4.6	A.D.B.
	2.0		18.4	28.0	53.6	0.74	82.6	4.6	D.B.
1.50-1.60	0.4	1.0	23.4				83.1	4.7	A.D.B.
	0.4		23.6				83.0	4.7	D.B.
+1.60	16.9	0.6	78.9				100.0	17.3	A.D.B.
	17.0		79.4				100.0	17.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7 1/2	.08	353	426	20	225	1.085

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8267 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-7

Starting Temperature °C: 350

Softening Temperature °C: 353

Max. Dilatation Temp. °C: 426

250

Contraction %: 20

Dilatation %: 225

Final Temperature °C:

G. Factor: 1.085

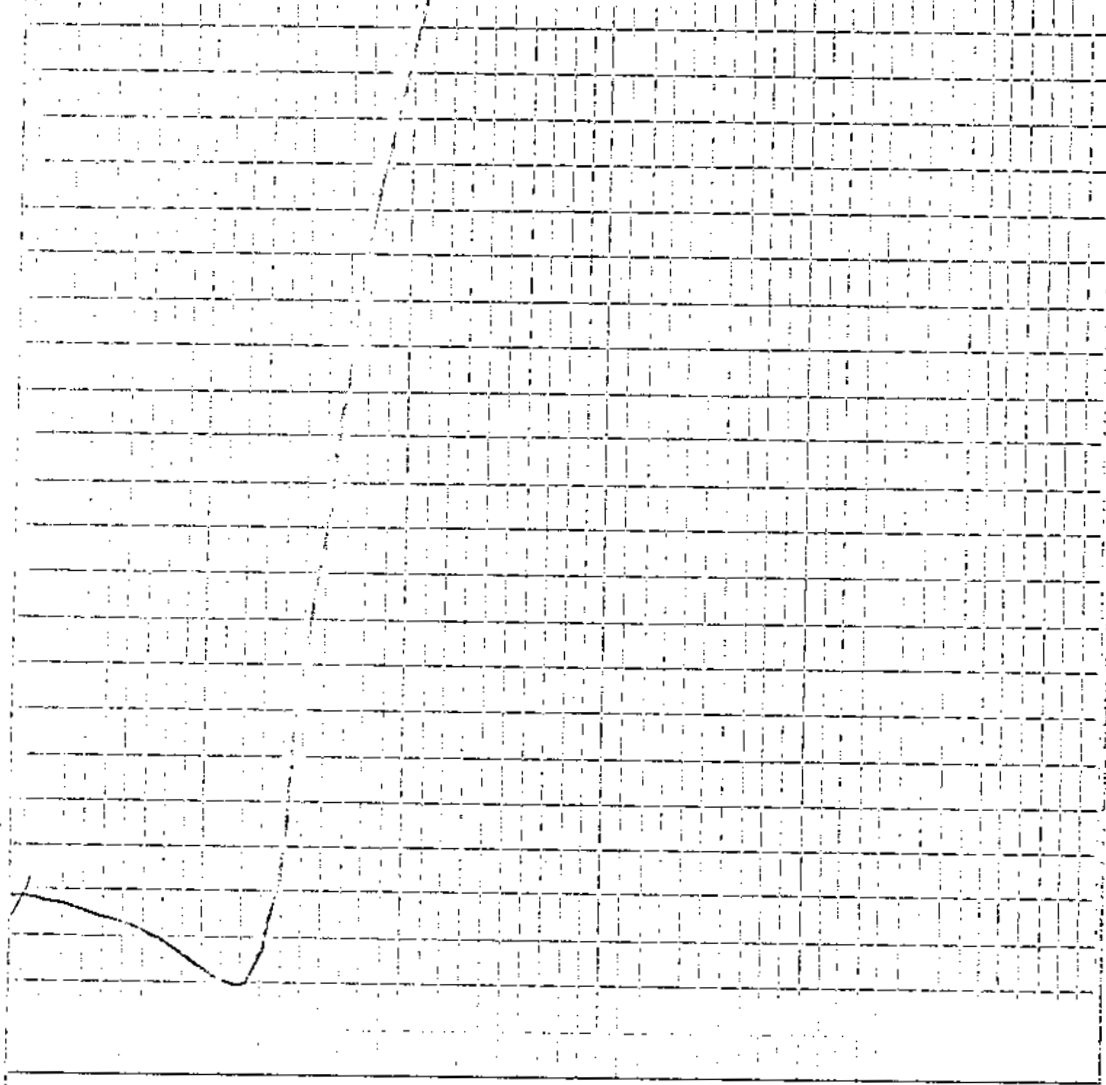
200

150

100

50

0



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 8

Lab. No. 8268

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	35.8	19.7	43.7	0.75	113	Air Dried Basis
	36.1	19.9	44.0	0.76	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	88.4	1.1	38.2	0.73	88.4	38.2	0.73	A.D.B.
	88.4		38.6	0.74	88.4	38.6	0.74	D.B.
65M x 0	11.6	1.3	16.9	0.86	100.0	35.7	0.75	A.D.B.
	11.6		17.1	0.87	100.0	36.1	0.78	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	32.7	0.9	5.5	34.4	59.2	0.97	32.7	5.5	A.D.B.
	32.7		5.5	34.7	59.8	0.98	32.7	5.5	D.B.
1.40-1.50	7.6	0.8	18.1	33.2	47.9	0.83	40.3	7.9	A.D.B.
	7.7		18.2	33.5	48.3	0.84	40.4	7.9	D.B.
1.50-1.60	5.2	1.2	25.7				45.5	9.9	A.D.B.
	5.2		26.0				45.6	10.0	D.B.
+1.60	54.5	1.1	61.9				100.0	38.2	A.D.B.
	54.4		62.6				100.0	38.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7 1/2	.07	356	425	23	252	1.079

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8268 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-8

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 425

Contraction %: 23

Dilatation %: 252

Final Temperature °C:

G. Factor: 1.079

250

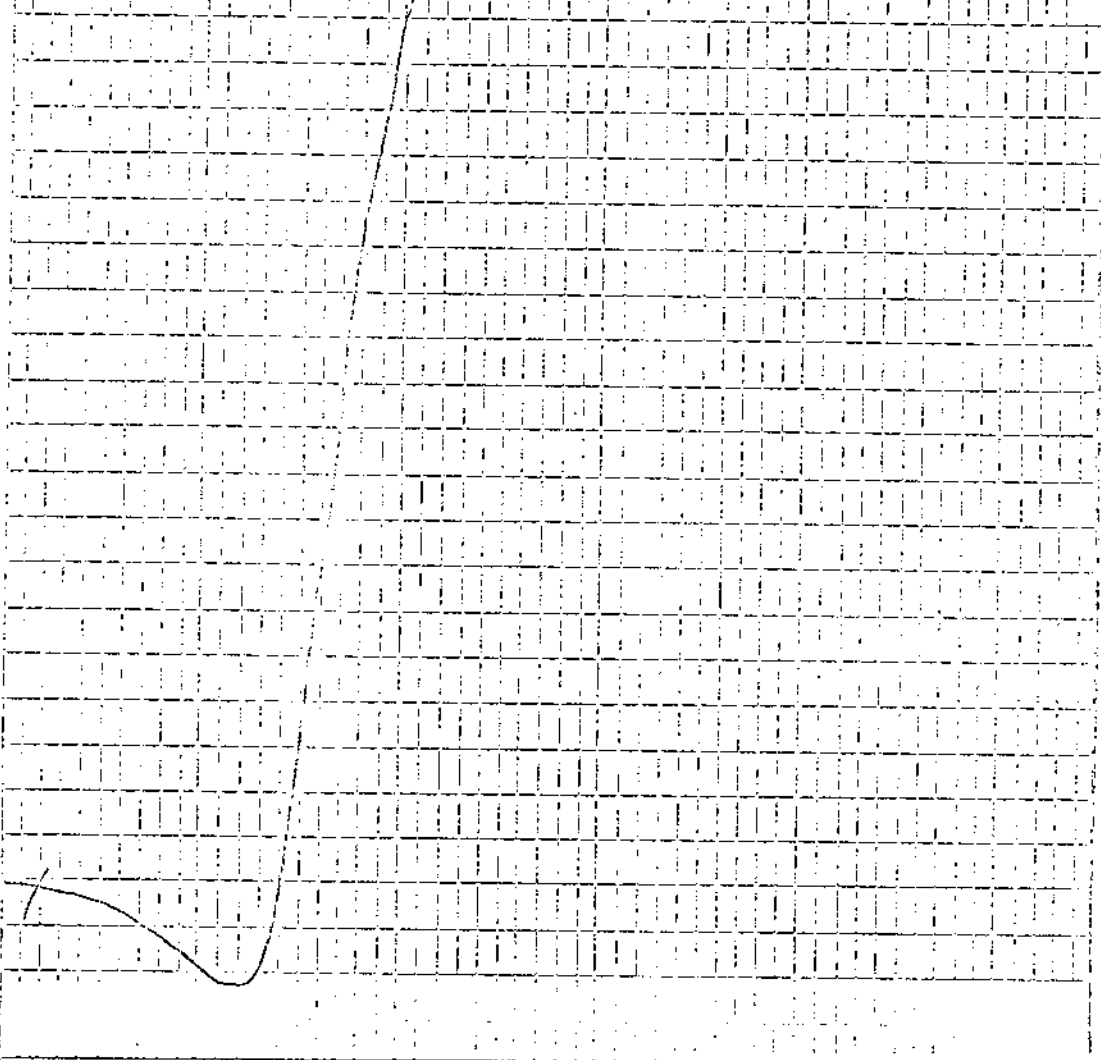
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 9

Lab. No. 8269

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	18.0	29.0	52.0	0.96	78	Air Dried Basis
	18.2	29.3	52.5	0.97	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.9	1.2	19.2	0.94	92.9	19.2	0.94	A.D.B.
	92.9		19.4	0.95	92.9	19.4	0.95	D.B.
65M x 0	7.1	1.1	13.9	1.03	100.0	18.8	0.95	A.D.B.
	7.1		14.1	1.04	100.0	19.0	0.96	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	69.8	1.0	4.9	32.7	61.4	1.04	69.8	4.9	A.D.B.
	69.8		4.9	33.0	62.1	1.05	69.8	4.9	D.B.
1.40-1.50	6.6	1.3	16.2	29.4	53.1	0.83	76.4	5.9	A.D.B.
	6.5		16.4	29.8	53.8	0.84	76.3	5.9	D.B.
1.50-1.60	2.6	1.3	30.6				79.0	6.7	A.D.B.
	2.6		31.0				78.9	6.7	D.B.
+1.60	21.0	1.2	65.2				100.0	19.0	A.D.B.
	21.1		66.0				100.0	19.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.24	368	425	19	180	1.062

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8269 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-9

Starting Temperature °C: 350

Softening Temperature °C: 368

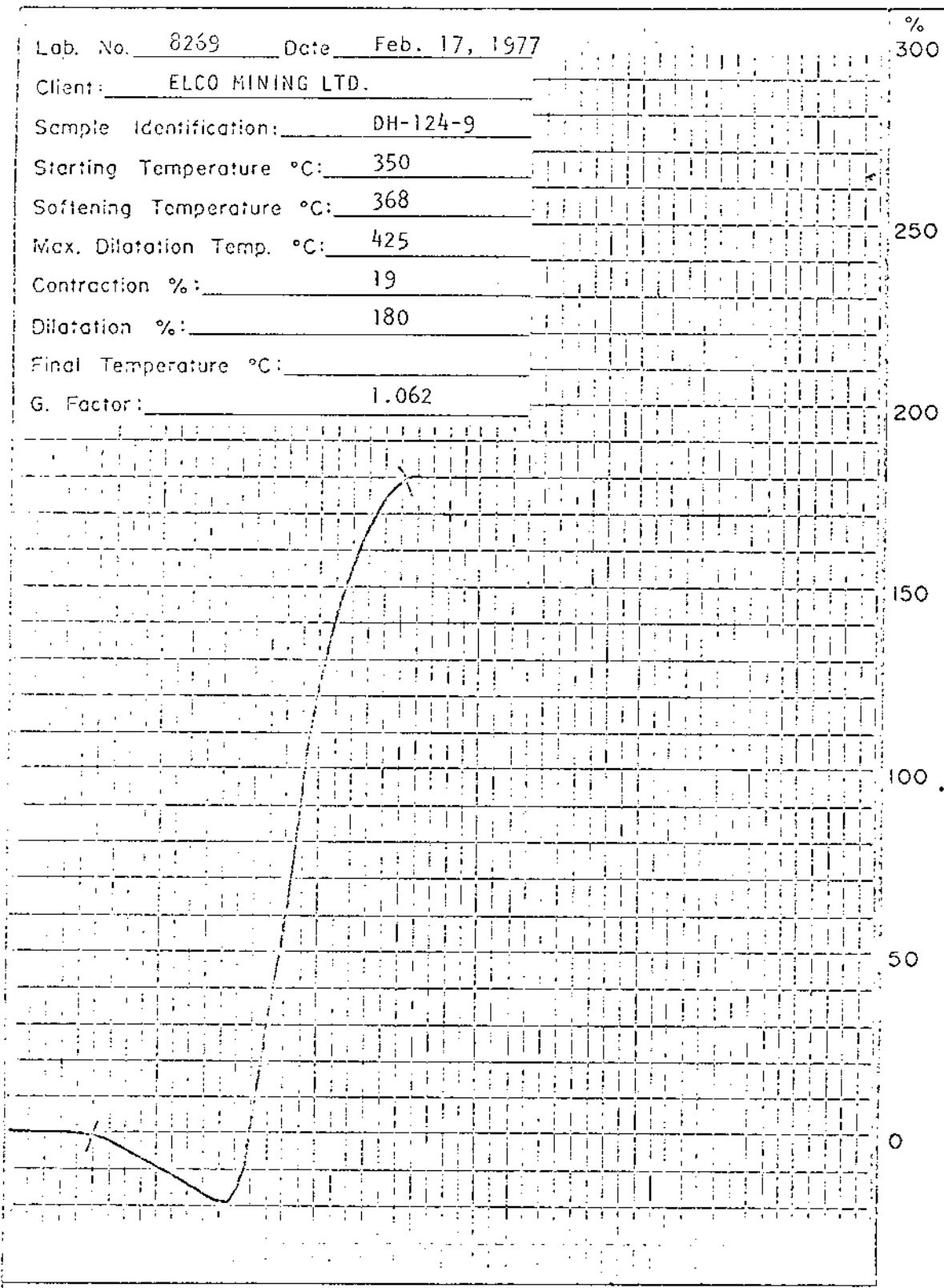
Max. Dilatation Temp. °C: 425

Contraction %: 19

Dilatation %: 180

Final Temperature °C:

G. Factor: 1.062



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 10

Lab. No. 8270

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	39.6	13.3	46.4	3.62	59	Air Dried Basis
	39.9	13.4	46.7	3.65	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.6	1.0	40.9	3.53	94.6	40.9	3.53	A.D.B.
	94.6		41.3	3.57	94.6	41.3	3.57	D.B.
65M x 0	5.4	1.0	35.8	4.78	100.0	40.6	3.60	A.D.B.
	5.4		36.2	4.83	100.0	41.0	3.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	36.1	1.0	6.7	32.5	59.8	1.45	36.1	6.7	A.D.B.
	36.2		6.8	32.8	60.4	1.46	36.2	6.8	D.B.
1.40-1.50	8.1	0.9	19.9	28.4	50.8	1.55	44.2	9.1	A.D.B.
	8.1		20.1	28.7	51.2	1.56	44.3	9.2	D.B.
1.50-1.60	3.9	1.0	29.6				48.1	10.8	A.D.B.
	3.9		29.9				48.2	10.9	D.B.
+1.60	51.9	1.1	68.9				100.0	41.0	A.D.B.
	51.8		69.7				100.0	41.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
5	.14	371	428	9	216	1.070

Lab. No. 8270 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-10

Starting Temperature °C: 350

Softening Temperature °C: 371

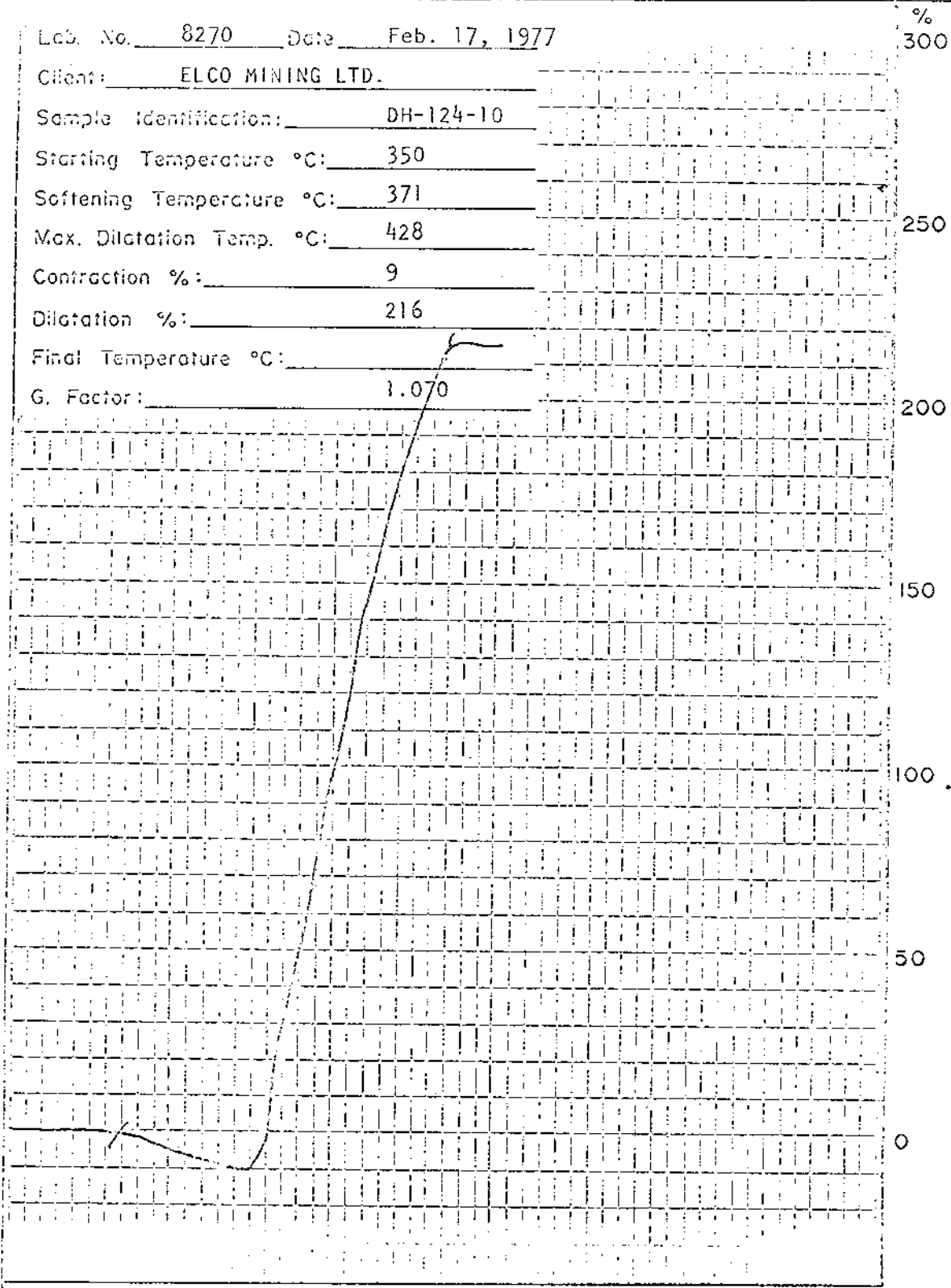
Max. Dilatation Temp. °C: 428

Contraction %: 9

Dilatation %: 216

Final Temperature °C:

G. Factor: 1.070



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 11 Lab. No. 8271 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	9.5	29.8	59.7	0.75	98	Air Dried Basis
	9.6	30.1	60.3	0.76	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.7	1.2	9.2	0.69	94.7	9.2	0.69	A.D.B.
	94.7		9.3	0.70	94.7	9.3	0.70	D.B.
65M x 0	5.3	1.1	7.2	0.75	100.0	9.1	0.69	A.D.B.
	5.3		7.3	0.76	100.0	9.2	0.70	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	85.0	1.1	3.1	31.8	64.0	0.74	85.0	3.1	A.D.B.
	85.0		3.1	32.2	64.7	0.75	85.0	3.1	D.B.
1.40-1.50	3.6	1.0	22.2	26.0	50.8	0.70	88.6	3.9	A.D.B.
	3.6		22.4	26.3	51.3	0.71	88.6	3.9	D.B.
1.50-1.60	3.2	1.3	32.1				91.8	4.9	A.D.B.
	3.2		32.5				91.8	4.9	D.B.
+1.60	8.2	1.7	59.9				100.0	9.4	A.D.B.
	8.2		60.9				100.0	9.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.02	350	425	23	119	1.070

Lab. No. 8271 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-11

Starting Temperature °C: 350

Softening Temperature °C: 350

Max. Dilatation Temp. °C: 425

Contraction %: 23

Dilatation %: 119

Final Temperature °C: 1.070

G. Factor: 1.070



BENTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date
Drawn

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 12

Lab. No. 8272

DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	10.7	28.7	59.7	0.49	93	Air Dried Basis
	10.8	29.0	60.2	0.49	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.3	2.4	10.4	0.50	93.3	10.4	0.50	A.D.B.
	93.2		10.7	0.51	93.2	10.7	0.51	D.B.
65M x 0	6.7	1.1	8.9	0.51	100.0	10.3	0.50	A.D.B.
	6.8		9.0	0.52	100.0	10.6	0.51	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	84.9	2.7	3.4	30.6	63.3	0.65	84.9	3.4	A.D.B.
	84.7		3.5	31.4	65.1	0.67	84.7	3.5	D.B.
1.40-1.50	3.4	2.0	20.6	25.6	51.8	0.46	88.3	4.1	A.D.B.
	3.5		21.0	26.1	52.9	0.47	88.2	4.2	D.B.
1.50-1.60	2.5	1.5	29.2				90.8	4.8	A.D.B.
	2.5		29.6				90.7	4.9	D.B.
+1.60	9.2	1.3	65.7				100.0	10.4	A.D.B.
	9.3		66.6				100.0	10.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.04	371	423	20	104	1.046

Lab. No. 8272 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-12

Starting Temperature °C: 350

Softening Temperature °C: 371

Max. Dilatation Temp. °C: 423

250

Contraction %: 20

Dilatation %: 104

Final Temperature °C: 1.046

G. Factor: 1.046

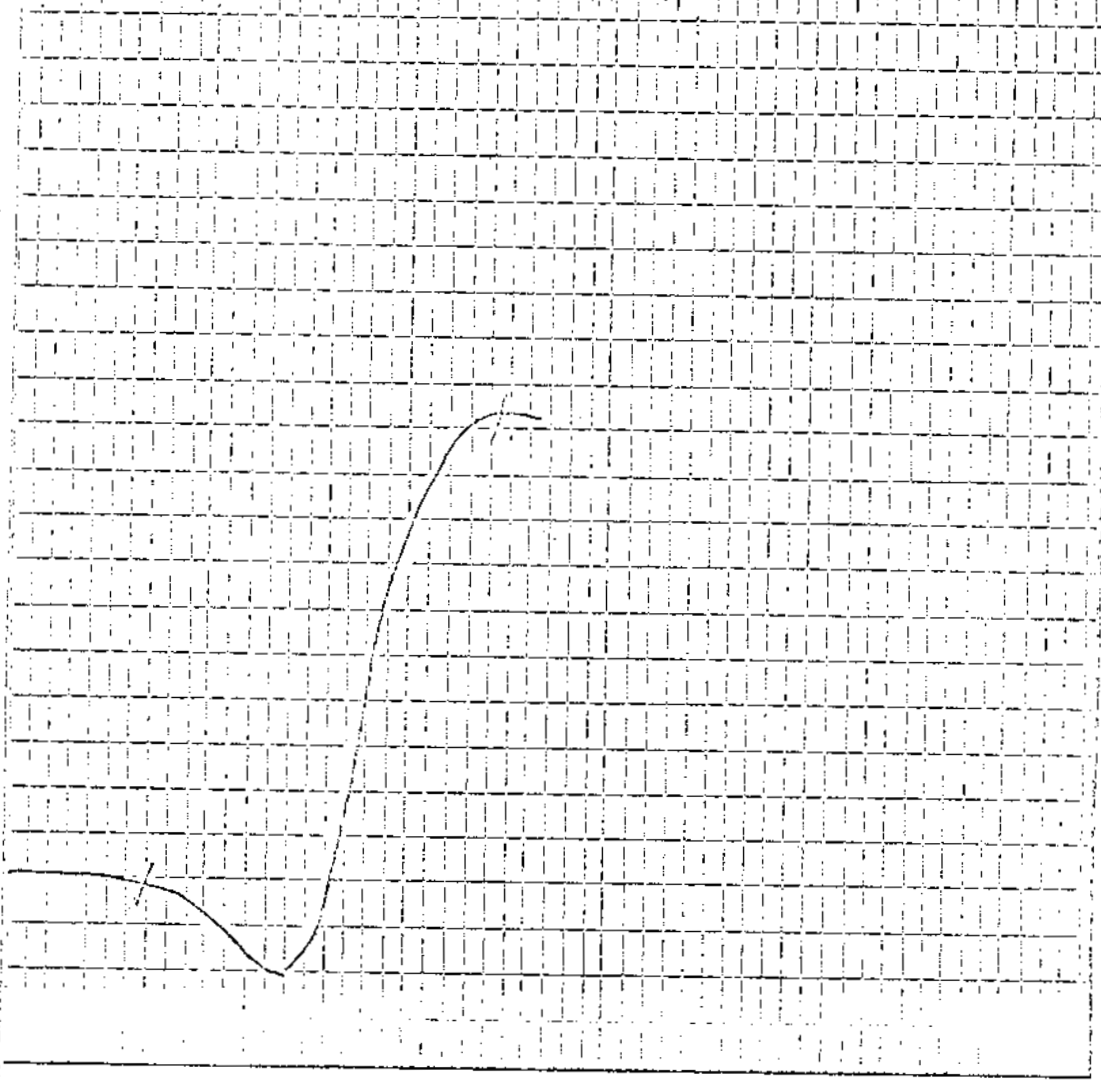
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 16 Lab. No. 8273 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	56.4	16.0	27.0	0.56	74	Air Dried Basis
	56.7	16.1	27.2	0.56	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	90.2	0.7	58.5	0.55	90.2	58.5	0.55	A.D.B.
	90.2		58.9	0.55	90.2	58.9	0.55	D.B.
65M x 0	9.8	0.9	28.7	0.74	100.0	55.6	0.57	A.D.B.
	9.8		29.0	0.75	100.0	56.0	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	26.3	1.9	4.6	27.0	66.5	0.81	26.3	4.6	A.D.B.
	26.2		4.7	27.5	67.8	0.83	26.2	4.7	D.B.
1.40-1.50	4.2	1.2	16.9	23.7	58.2	0.77	30.5	6.3	A.D.B.
	4.1		17.1	24.0	58.9	0.78	30.3	6.4	D.B.
1.50-1.60	1.4	1.1	31.3				31.9	7.4	A.D.B.
	1.4		31.6				31.7	7.5	D.B.
+1.60	68.1	1.1	83.4				100.0	59.2	A.D.B.
	68.3		84.3				100.0	60.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.04	374	428	9	192	1.065

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8273 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-16

Starting Temperature °C: 350

Softening Temperature °C: 374

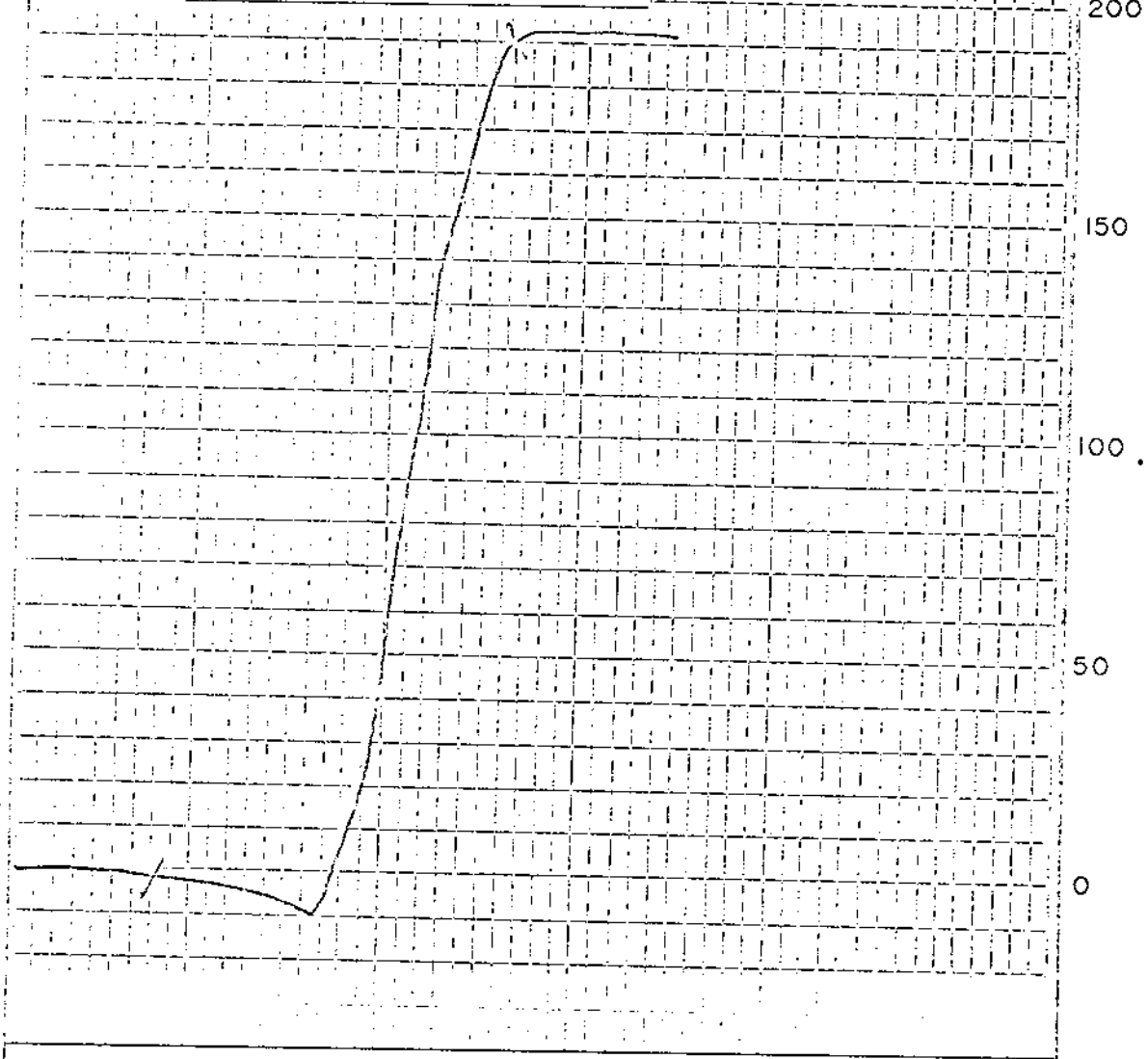
Max. Dilatation Temp. °C: 428

Contraction %: 9

Dilatation %: 192

Final Temperature °C:

G. Factor: 1.065



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 124 - 17 Lab. No. 8274 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	58.0	14.6	26.2	0.56	59	Air Dried Basis
	58.7	14.8	26.5	0.57	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.1	0.8	59.3	0.56	93.1	59.3	0.56	A.D.B.
	93.1		59.8	0.56	93.1	59.8	0.56	D.B.
65M x 0	6.9	1.1	45.6	0.73	100.0	58.4	0.57	A.D.B.
	6.9		46.1	0.74	100.0	58.9	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	24.1	0.6	8.2	27.8	63.4	1.05	24.1	8.2	A.D.B.
	24.1		8.2	28.0	63.8	1.06	24.1	8.2	D.B.
1.40-1.50	7.4	0.7	20.9	24.9	53.5	0.90	31.5	11.2	A.D.B.
	7.2		21.0	25.1	53.9	0.91	31.5	11.2	D.B.
1.50-1.60	3.0	0.8	31.1				34.5	12.9	A.D.B.
	3.0		31.4				34.5	13.0	D.B.
+1.60	65.5	0.5	83.6				100.0	59.2	A.D.B.
	65.5		84.0				100.0	59.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.06	50% 350	419	7	223	1.092
		50% 356	419	8	207	1.081

Av. = 1.087

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8274 Date Feb. 17, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-124-17

Starting Temperature °C: 350

Softening Temperature °C: 350

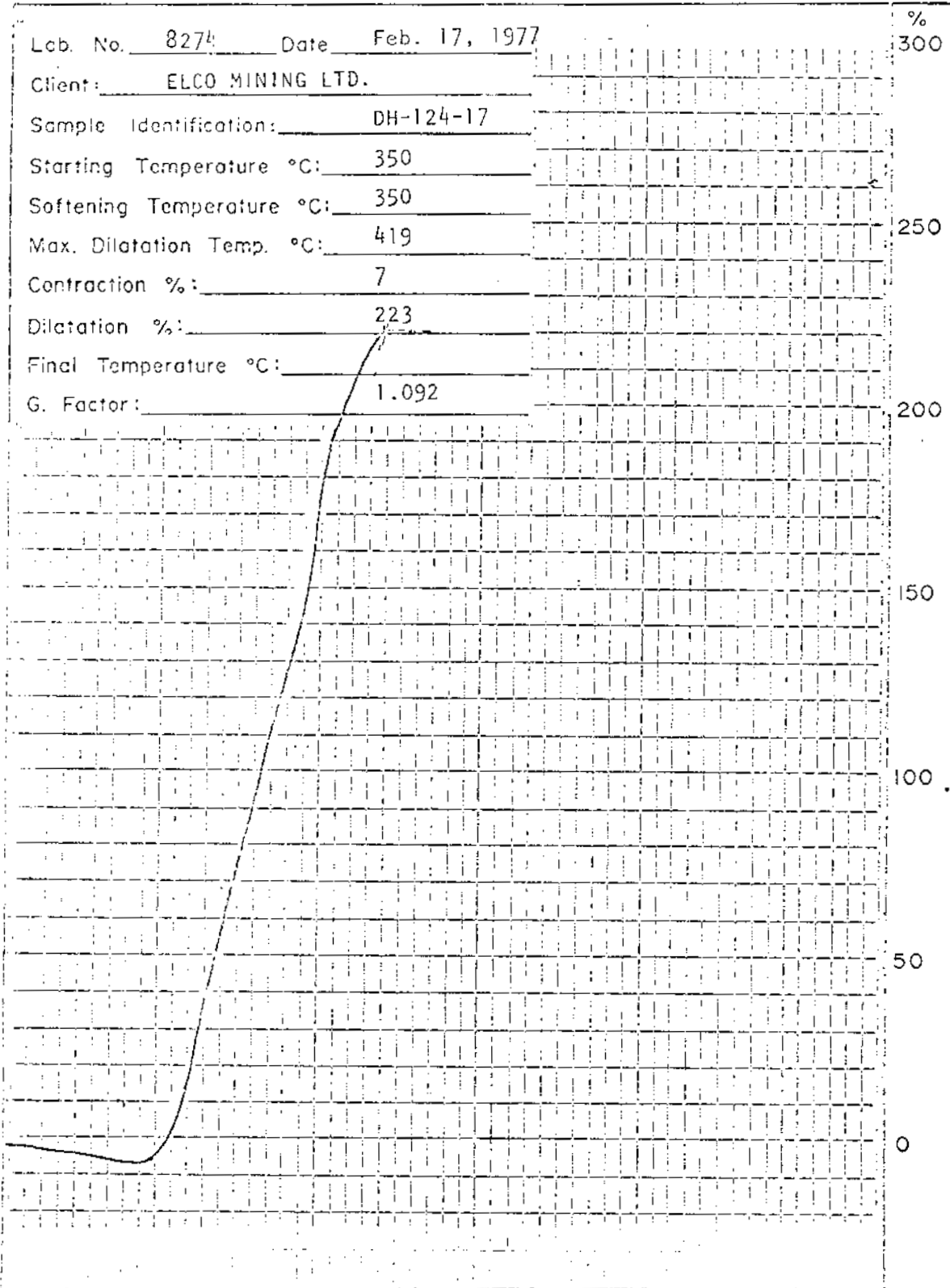
Max. Dilatation Temp. °C: 419

Contraction %: 7

Dilatation %: 223

Final Temperature °C: _____

G. Factor: 1.092



DITILEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

BOTTOM HALF OF PENCIL

Lab. No. 3274 Date Feb. 17, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-124-17

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 419

250

Contraction %: 8

Dilatation %: 207

Final Temperature °C: _____

G. Factor: 1.081

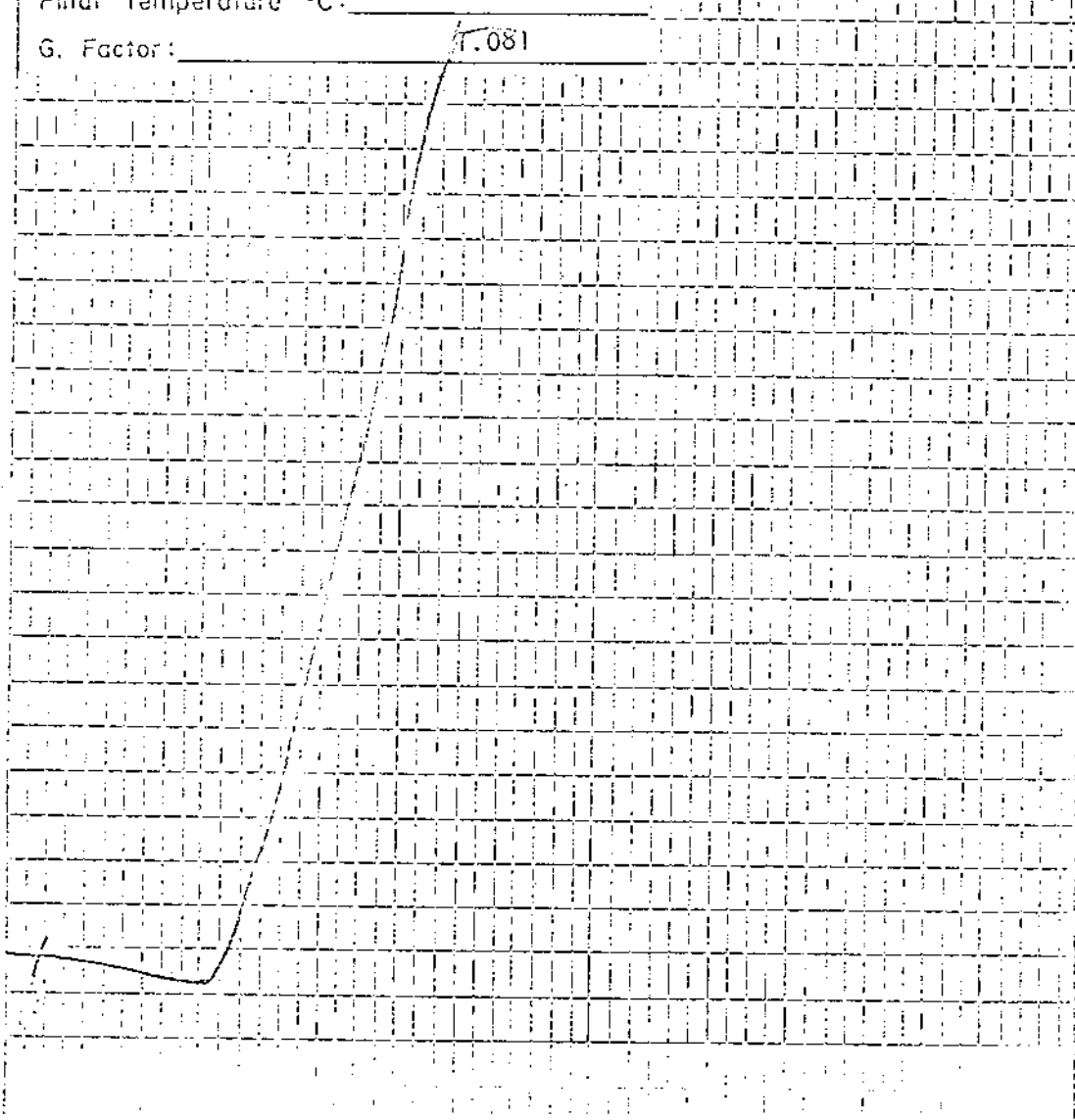
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 125 - 1 Lab. No. 8524 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	41.8	14.1	43.1	0.51	76	Air Dried Basis
	42.2	14.2	43.6	0.52	--	Dry Basis

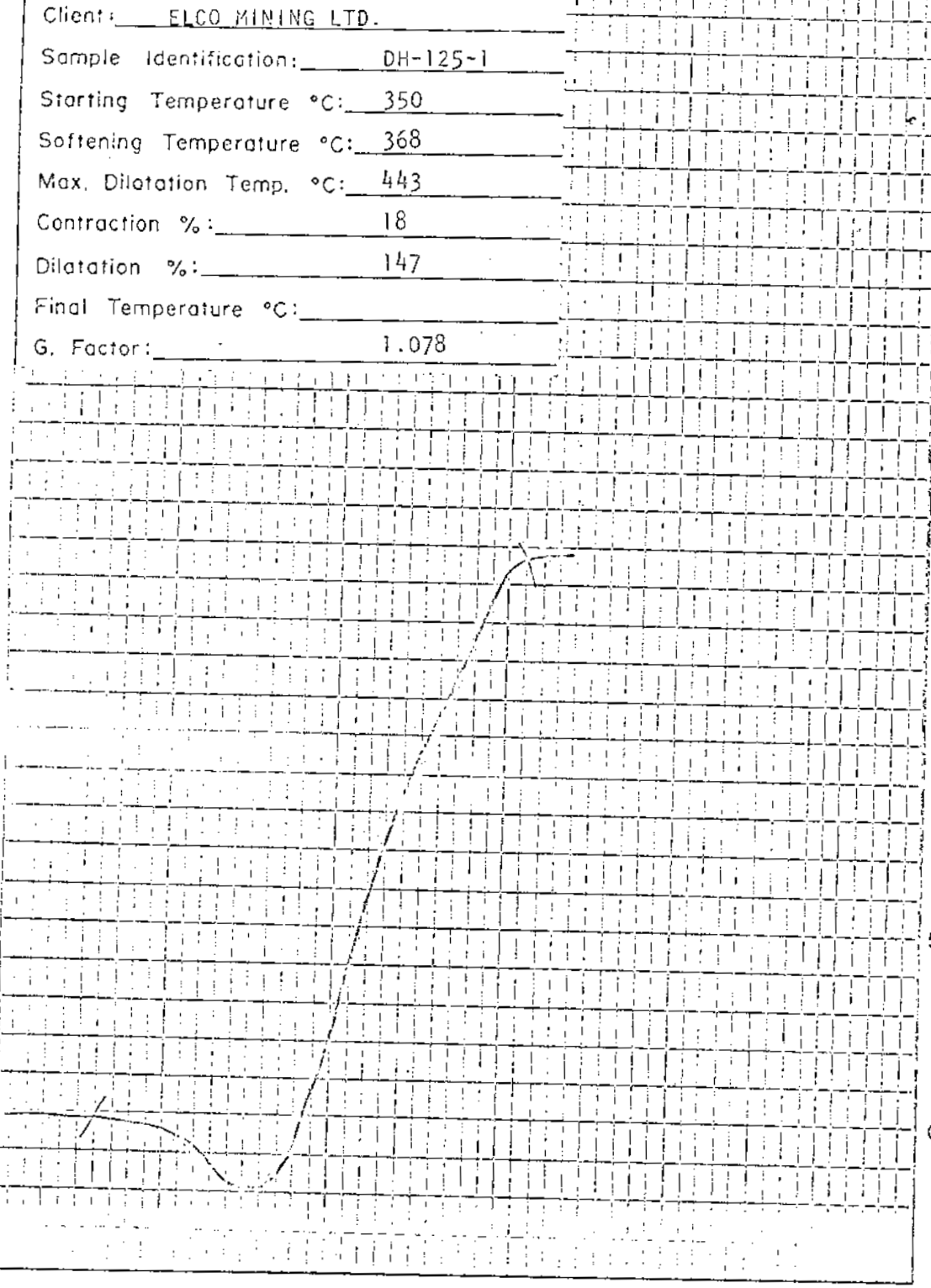
SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	82.8	1.0	41.9	0.54	82.8	41.9	0.54	A.D.B.
	82.8		42.3	0.55	82.8	42.3	0.55	D.B.
65M x 0	17.2	0.8	38.0	0.52	100.0	41.2	0.54	A.D.B.
	17.2		38.3	0.52	100.0	41.6	0.54	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	18.7	0.9	11.1	20.5	67.5	0.72	18.7	11.1	A.D.B.
	18.7		11.2	20.7	68.1	0.73	18.7	11.2	D.B.
1.40-1.50	17.3	0.9	19.7	18.6	60.8	0.62	36.0	15.2	A.D.B.
	17.3		19.9	18.8	61.3	0.63	36.0	15.4	D.B.
1.50-1.60	9.9	1.8	27.3				45.9	17.8	A.D.B.
	9.9		27.8				45.9	18.1	D.B.
+1.60	54.1	0.9	61.5				100.0	41.5	A.D.B.
	54.1		62.1				100.0	41.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
6 1/2	.01	368	443	18	147	1.078

Lab. No. 8524 Date March 1, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-125-1
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 443
 Contraction %: 18
 Dilatation %: 147
 Final Temperature °C: _____
 G. Factor: 1.078

%
300



BIRTLEY ENGINEERING (CANADA) LTD.

Title
 RUHR DILATOMETER TEST

Date
 Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 125 - 2 Lab. No. 8525 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	61.2	11.1	26.9	0.50	78	Air Dried Basis
	61.7	11.2	27.1	0.50	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	80.9	1.1	67.8	0.56	80.9	67.8	0.56	A.D.B.
	80.9		68.6	0.57	80.9	68.6	0.57	D.B.
65M x 0	19.1	0.7	33.7	0.52	100.0	61.3	0.55	A.D.B.
	19.1		33.9	0.52	100.0	62.0	0.56	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	10.1	1.1	6.4	20.8	71.7	0.64	10.1	6.4	A.D.B.
	10.1		6.5	21.0	72.5	0.65	10.1	6.5	D.B.
1.40-1.50	6.4	1.2	16.5	18.1	64.2	0.56	16.5	10.3	A.D.B.
	6.4		16.7	18.3	65.0	0.57	16.5	10.5	D.B.
1.50-1.60	4.4	1.2	25.6	X	X	X	20.9	13.5	A.D.B.
	4.4		25.9				20.9	13.7	D.B.
+1.60	79.1	1.1	82.2	X	X	X	100.0	67.8	A.D.B.
	79.1		83.1				100.0	68.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8	.01	380	440	15	67	1.049

Lcb. No. 8525 Date March 1, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-125-2

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 440

Contraction %: 15

Dilatation %: 67

Final Temperature °C:

G. Factor: 1.049

%
300

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 125 - 3 Lab. No. 8526 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	14.9	18.4	66.1	0.60	120	Air Dried Basis
	15.0	18.5	66.5	0.60	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	80.5	3.2	14.3	0.62	80.5	14.3	0.62	A.D.B.
	80.5		14.8	0.64	80.5	14.8	0.64	D.B.
65M x 0	19.5	0.6	14.8	0.66	100.0	14.4	0.63	A.D.B.
	19.5		14.9	0.66	100.0	14.8	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	74.1	3.6	7.1	20.0	69.3	0.69	74.1	7.1	A.D.B.
	73.8		7.4	20.7	71.9	0.72	73.8	7.4	D.B.
1.40-1.50	10.7	3.1	16.9	18.2	61.8	0.62	84.8	8.3	A.D.B.
	10.7		17.4	18.8	63.8	0.64	84.5	8.7	D.B.
1.50-1.60	5.3	1.7	25.5	X	X	X	90.1	9.3	A.D.B.
	5.4		25.9				89.9	9.7	D.B.
+1.60	9.9	1.5	53.7				100.0	13.7	A.D.B.
	10.1		54.5				100.0	14.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	PX ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
9	.01	389	458	13	56	1.053	

Lab. No. 8526 Date March 1, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-125-3

Starting Temperature °C: 350

Softening Temperature °C: 389

Max. Dilatation Temp. °C: 458

250

Contraction %: 13

Dilatation %: 56

Final Temperature °C:

G. Factor: 1.053

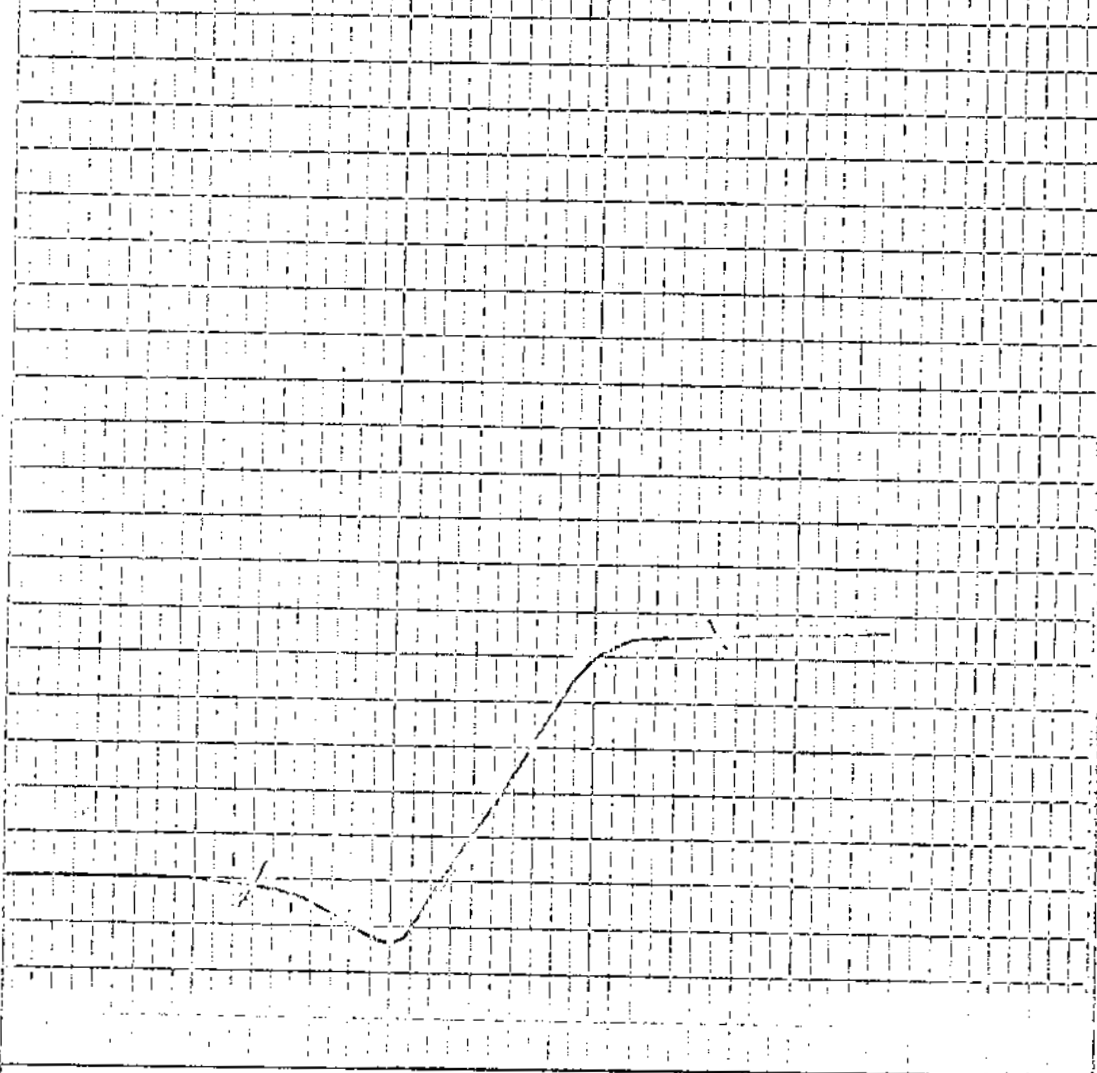
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 126 - 1

LAB. NO. 8368

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	27.6	15.8	55.8	0.34	97	Air Dried Basis
	27.8	15.9	56.3	0.34	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.6	0.7	28.0	0.34	89.6	28.0	0.34	A.D.B.
	89.6		28.2	0.34	89.6	28.2	0.34	D.B.
65M x 0	10.4	0.7	18.8	0.32	100.0	27.0	0.34	A.D.B.
	10.4		18.9	0.32	100.0	27.2	0.34	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	47.7	1.3	5.5	19.0	74.2	0.49	47.7	5.5	A.D.B.
	47.8		5.6	19.3	75.1	0.50	47.8	5.6	D.B.
1.40-1.50	15.6	1.3	13.5	17.2	68.0	0.48	63.3	7.5	A.D.B.
	15.6		13.7	17.4	68.9	0.49	63.4	7.6	D.B.
1.50-1.60	5.9	3.6	20.9				69.2	8.6	A.D.B.
	5.8		21.7				69.2	8.8	D.B.
+1.60	30.8	1.2	72.3				100.0	28.2	A.D.B.
	30.8		73.2				100.0	28.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
3	.03	417	---	8% @ 467°	---	---

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8368 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample identification: DH-126-1

Starting Temperature °C: 350

Softening Temperature °C: 417

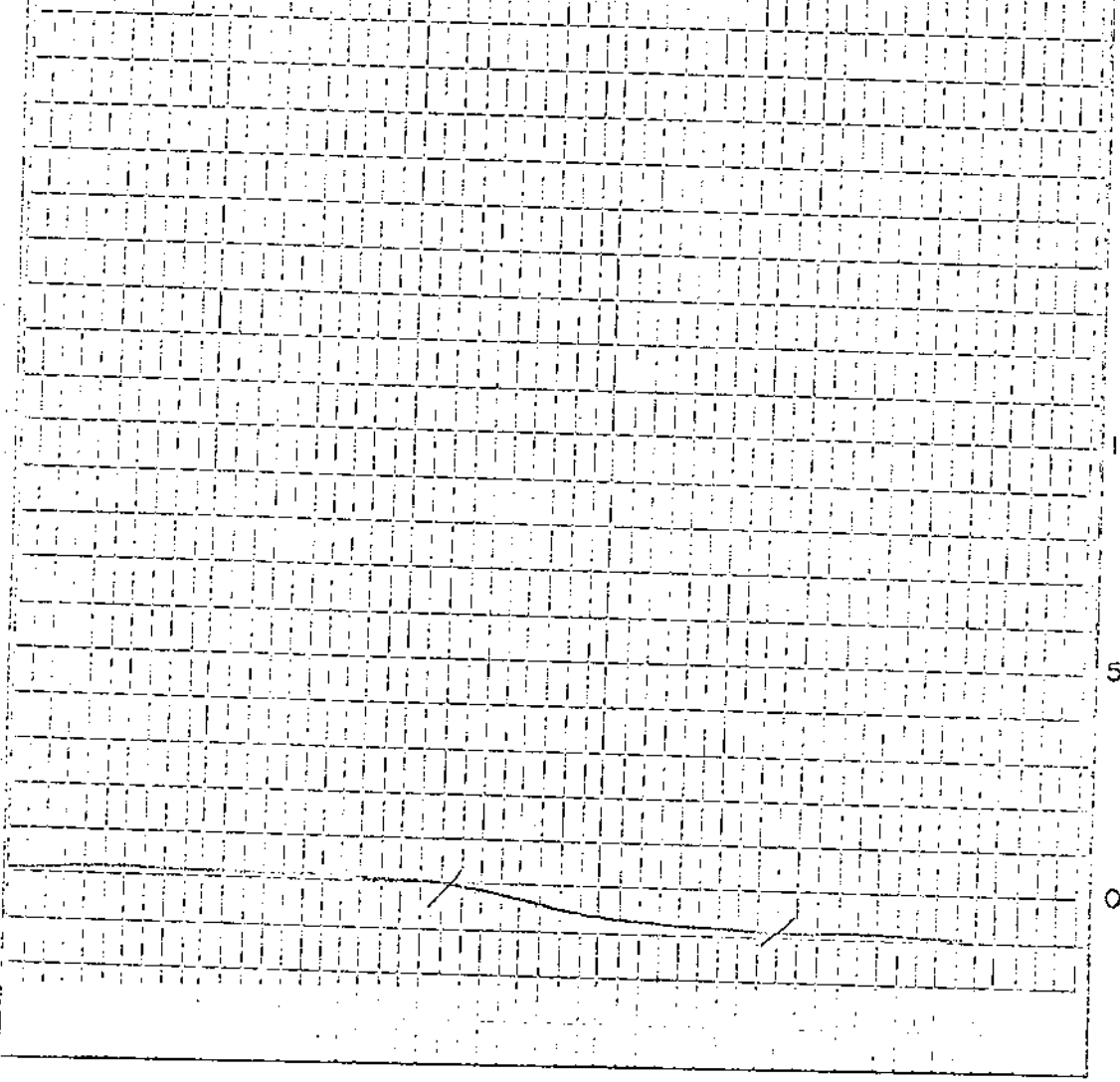
Max. Dilatation Temp. °C: ---

Contraction %: 8% @ 467°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 126 - 2

LAB. NO. 8369

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	54.3	12.9	32.1	0.53	69	Air Dried Basis
	54.7	13.0	32.3	0.53	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	84.6	0.9	57.0	0.46	84.6	57.0	0.46	A.D.B.
	84.6		57.5	0.46	84.6	57.5	0.46	D.B.
65M x 0	15.4	0.8	35.1	0.80	100.0	53.6	0.51	A.D.B.
	15.4		35.4	0.81	100.0	54.1	0.51	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	11.1	0.9	5.1	19.2	74.8	0.96	11.1	5.1	A.D.B.
	11.1		5.1	19.4	75.5	0.97	11.1	5.1	D.B.
1.40-1.50	6.9	1.2	14.9	17.9	66.0	0.76	18.0	8.9	A.D.B.
	6.9		15.1	18.1	66.8	0.77	18.0	8.9	D.B.
1.50-1.60	6.5	1.4	24.1				24.5	12.9	A.D.B.
	6.4		24.4				24.4	13.0	D.B.
+1.60	75.5	0.8	70.2				100.0	56.2	A.D.B.
	75.6		70.8				100.0	56.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.02	388	456	13	43	1.045

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8369 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-126-2

Starting Temperature °C: 350

Softening Temperature °C: 388

Max. Dilatation Temp. °C: 456

250

Contraction %: 13

Dilatation %: 43

Final Temperature °C:

G. Factor: 1.045

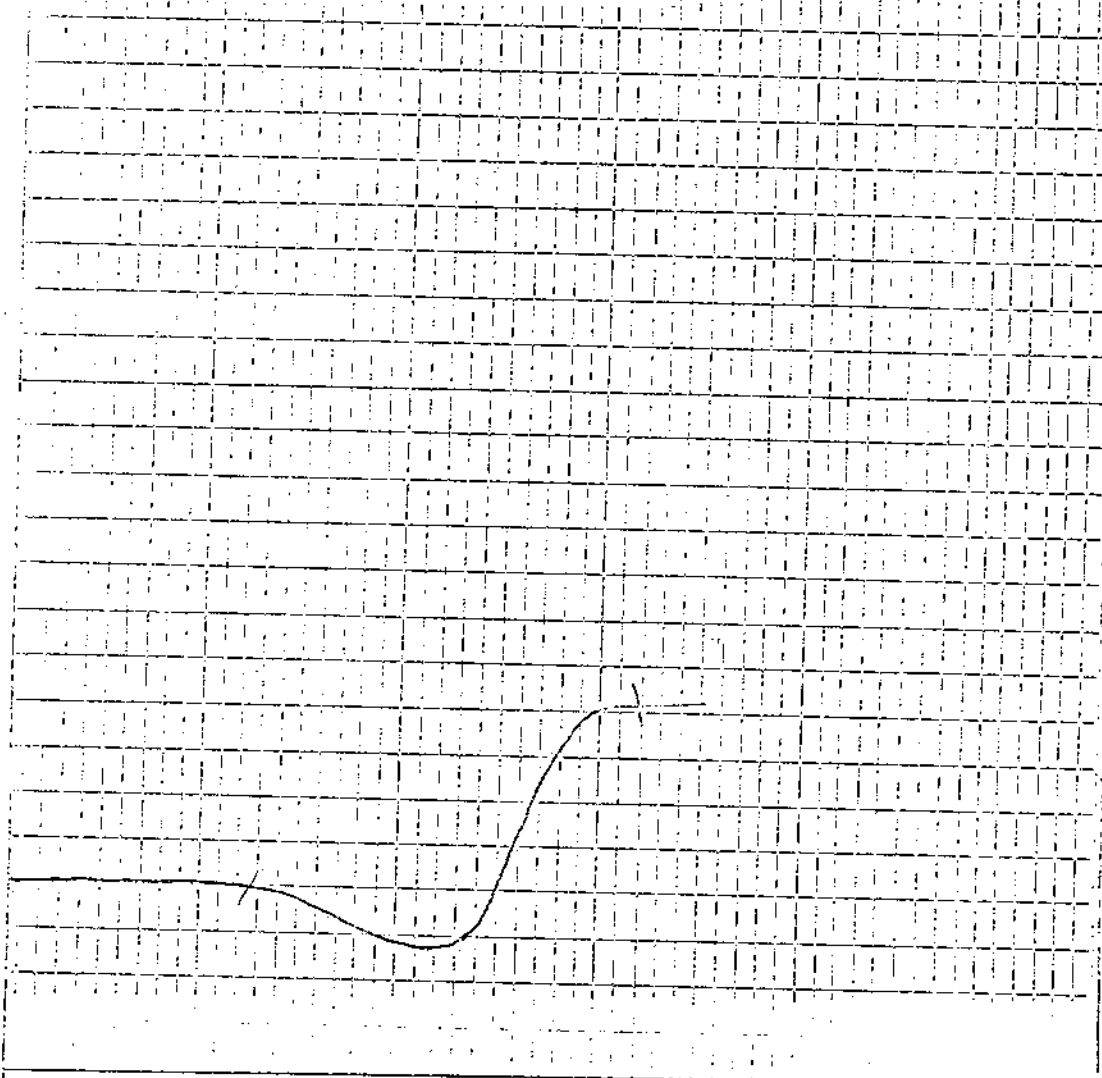
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 126 - 3

Lab. No. 8370

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	48.4	13.6	37.2	0.51	82	Air Dried Basis
	48.8	13.7	37.5	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	84.8	2.0	46.6	0.54	84.8	46.6	0.54	A.D.B.
	84.6		47.6	0.55	84.6	47.6	0.55	D.B.
65M x 0	15.2	1.1	55.3	0.41	100.0	47.9	0.52	A.D.B.
	15.4		55.9	0.41	100.0	48.9	0.53	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	26.7	2.4	7.1	18.8	71.7	0.79	26.7	7.1	A.D.B.
	26.6		7.3	19.3	73.4	0.81	26.6	7.3	D.B.
1.40-1.50	12.1	2.8	17.5	17.3	62.4	0.73	38.8	10.3	A.D.B.
	12.0		18.0	17.8	64.2	0.75	38.6	10.6	D.B.
1.50-1.60	8.2	2.4	28.0				47.0	13.4	A.D.B.
	8.1		28.7				46.7	13.8	D.B.
+1.60	53.0	1.6	74.9				100.0	46.0	A.D.B.
	53.3		76.1				100.0	47.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.11	380	446	9	77	1.067

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8370 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-126-3

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 446

250

Contraction %: 9

Dilatation %: 77

Final Temperature °C: 1.067

200

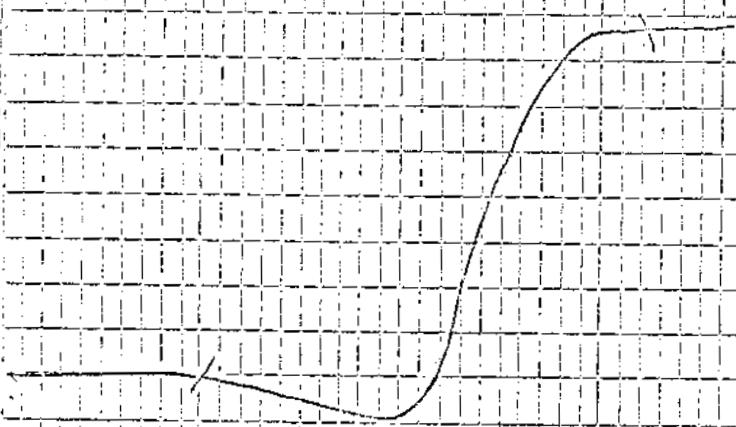
G. Factor: 1.067

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 1 Lab. 8431 DATE: Feb./77

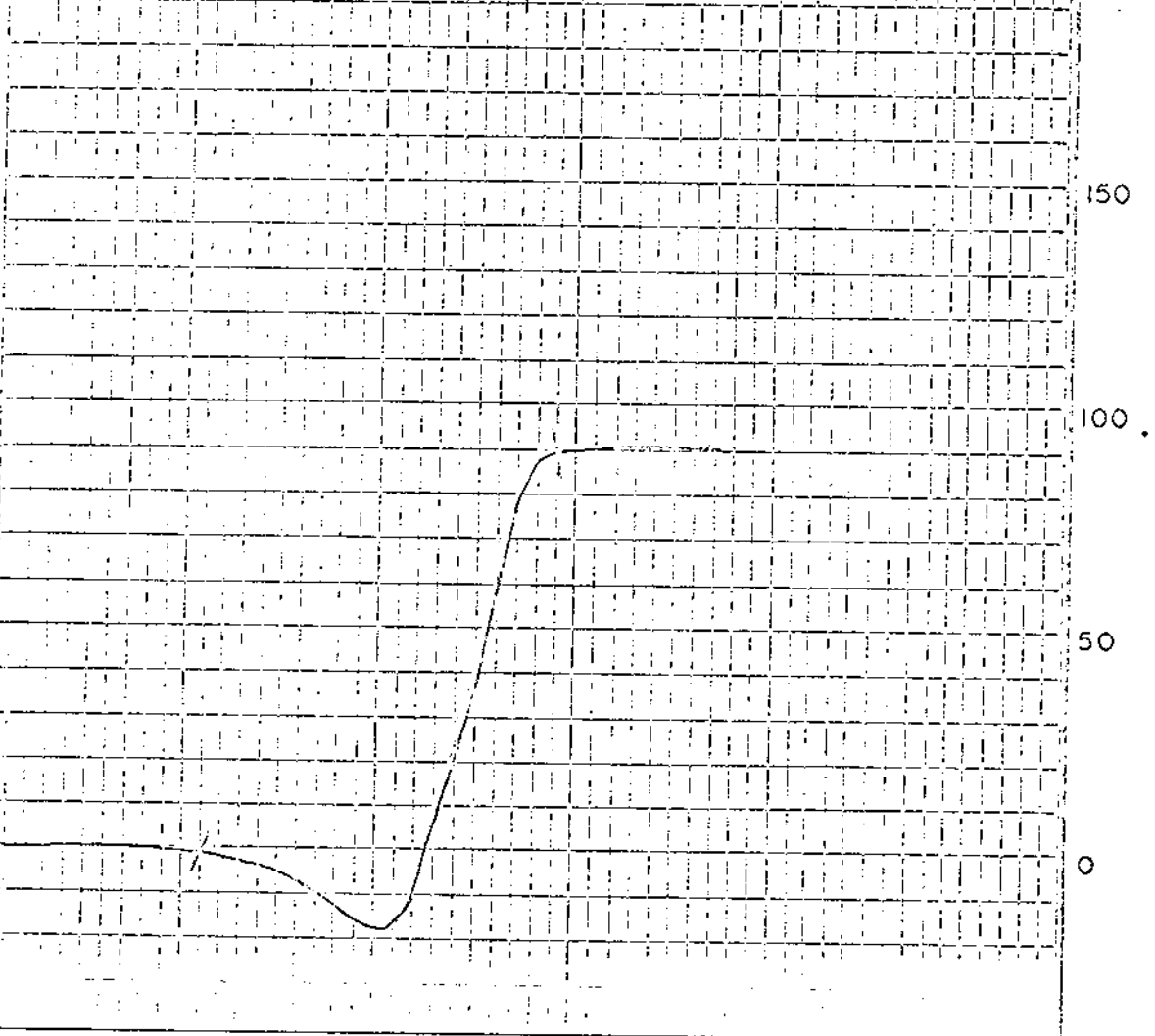
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	24.5	19.7	55.1	0.65	79	Air Dried Basis
	24.7	19.8	55.5	0.65	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	81.4	1.0	27.9	0.56	81.4	27.9	0.56	A.D.B.
	81.4		28.2	0.57	81.4	28.2	0.57	D.B.
65M x 0	18.6	1.1	13.1	0.76	100.0	25.1	0.60	A.D.B.
	18.6		13.2	0.77	100.0	25.4	0.61	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	53.1	0.9	6.9	23.6	68.6	0.82	53.1	6.9	A.D.B.
	53.1		7.0	23.8	69.2	0.83	53.1	7.0	D.B.
1.40-1.50	5.3	1.4	17.8	21.1	59.7	0.70	58.4	7.9	A.D.B.
	5.3		18.1	21.4	60.5	0.71	58.4	8.0	D.B.
1.50-1.60	5.4	1.1	30.7				63.8	9.8	A.D.B.
	5.4		31.0				63.8	10.0	D.B.
+1.60	36.2	1.1	61.4				100.0	28.5	A.D.B.
	36.2		62.1				100.0	28.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.01	383	437	17	90	1.047

Lab. No. 3331 Date Feb. 22, 1977 %
 Client: ELCO MILLING LTD. 300
 Sample Identification: DM-127-1
 Starting Temperature °C: 350
 Softening Temperature °C: 383
 Max. Dilatation Temp. °C: 437 250
 Contraction %: 17
 Dilatation %: 90
 Final Temperature °C: _____
 G. Factor: 1.047 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title	Date
RUHR DILATOMETER TEST	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 2 Lab. No. 8432 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	13.4	21.6	64.4	0.58	92	Air Dried Basis
	13.5	21.7	64.8	0.58	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	88.9	2.3	13.8	0.60	88.9	13.8	0.60	A.D.B.
	88.8		14.1	0.61	88.8	14.1	0.61	D.B.
65M x 0	11.1	0.9	8.1	0.71	100.0	13.2	0.61	A.D.B.
	11.2		8.2	0.72	100.0	13.4	0.62	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	70.6	2.6	3.8	21.1	72.5	0.73	70.6	2.6	A.D.B.
	70.3		3.9	21.7	74.4	0.75	70.3	3.9	D.B.
1.40-1.50	8.9	1.4	12.6	20.3	65.7	0.58	79.5	4.8	A.D.B.
	9.0		12.8	20.6	66.6	0.59	79.3	4.9	D.B.
1.50-1.60	5.5	1.3	25.4				85.0	6.1	A.D.B.
	5.5		25.7				84.8	6.3	D.B.
+1.60	15.0	1.5	57.6				100.0	13.8	A.D.B.
	15.2		58.5				100.0	14.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
3	.03	399	---	20% @ 437°	---	---

Lab. No. 8532 Date Feb. 22, 1977

%
300

Client: ELCO MINING LTD.

Sample identification: DR-127-2

Starting Temperature °C: 350

Softening Temperature °C: 399

Max. Dilatation Temp. °C: ---

250

Contraction %: 20% @ 437°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

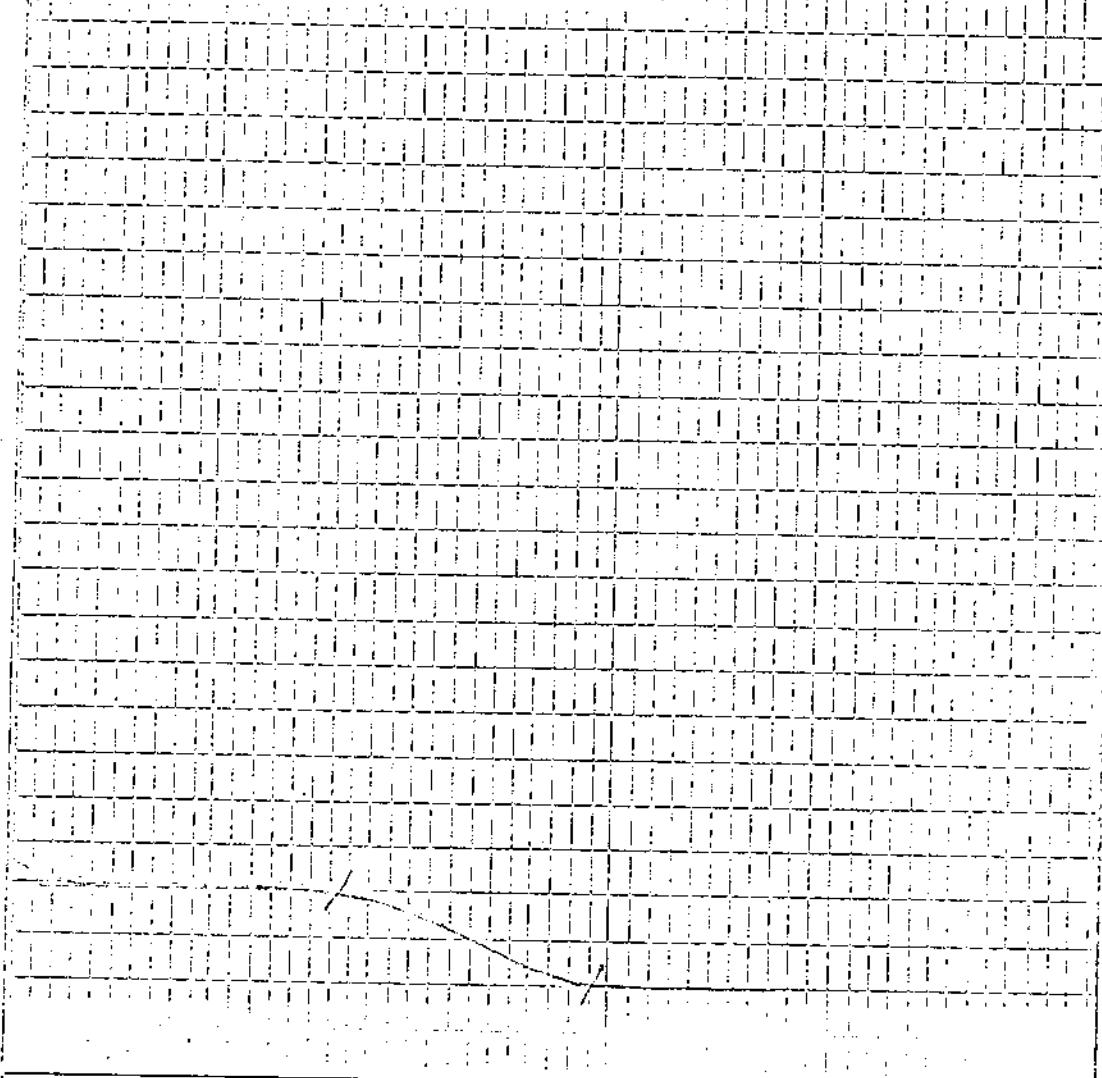
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

LECO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 3 Lab. No. 8433 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	15.5	19.5	64.4	0.52	84	Air Dried Basis
	15.6	19.6	65.8	0.52	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.4	1.0	16.3	0.56	91.4	16.3	0.56	A.D.B.
	91.4		16.5	0.57	91.4	16.5	0.57	D.B.
65M x 0	8.6	0.8	9.7	0.66	100.0	15.7	0.57	A.D.B.
	8.6		9.8	0.67	100.0	15.9	0.58	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	70.4	1.0	4.3	21.2	73.5	0.64	70.4	4.3	A.D.B.
	70.4		4.3	21.4	74.3	0.65	70.4	4.3	D.B.
1.40-1.50	9.9	0.9	15.2	19.6	64.3	0.63	80.3	5.6	A.D.B.
	9.9		15.3	19.8	64.9	0.64	80.3	5.7	D.B.
1.50-1.60	3.9	0.8	24.2				84.2	6.5	A.D.B.
	3.9		24.4				84.2	6.5	D.B.
+1.60	15.8	1.0	68.4				100.0	16.3	A.D.B.
	15.8		69.1				100.0	16.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% OIL COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
4	.05	398	---	15% @ 455°	---	---

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. SA33 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DK-127-3

Starting Temperature °C: 350

Softening Temperature °C: 398

Max. Dilatation Temp. °C: ---

Contraction %: 15% @ 455°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

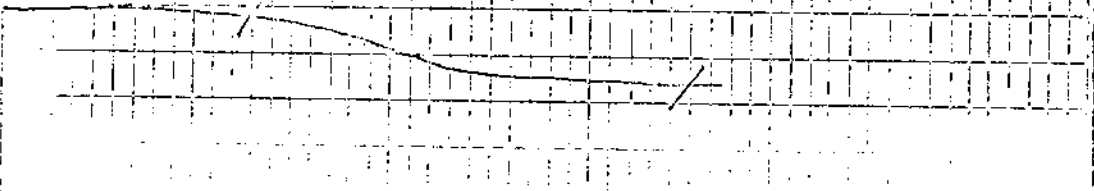
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 4 Lab. No. 8434 DATE: Feb./77

H E A D R A W A N A L Y S I S						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	24.0	18.9	56.4	0.56	75	Air Dried Basis
	24.2	19.0	56.8	0.56	--	Dry Basis

S I Z E / R A W A N A L Y S E S								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.7	0.8	24.1	0.54	92.7	24.1	0.54	A.D.B.
	92.7		24.3	0.54	92.7	24.3	0.54	D.B.
65M x 0	7.3	0.9	16.4	0.71	100.0	23.5	0.55	A.D.B.
	7.3		16.5	0.72	100.0	23.7	0.55	D.B.

S I N K - F L O A T A N A L Y S I S : 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	52.5	1.0	5.8	20.1	73.1	0.65	52.5	5.8	A.D.B.
	52.5		5.9	20.3	73.8	0.66	52.5	5.9	D.B.
1.40-1.50	13.7	0.8	16.3	18.1	64.8	0.54	66.2	8.0	A.D.B.
	13.7		16.4	18.2	65.4	0.54	66.2	8.1	D.B.
1.50-1.60	7.9	0.8	26.4	 	 	 	74.1	9.9	A.D.B.
	7.9		26.6	 	 	 	74.1	10.0	D.B.
+1.60	25.9	1.0	60.6	 	 	 	100.0	23.1	A.D.B.
	25.9		61.2	 	 	 	100.0	23.3	D.B.

C O M P O S I T E 1/4" x 65M F L O A T S @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	D I L A T A T I O N T E S T					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
4 1/2	.06	389	---	19% @ 424°	---	---	

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 5 Lab. No. 8435 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	60.1	12.7	26.6	0.51	61	Air Dried Basis
	60.5	12.8	26.7	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.9	0.9	62.0	0.54	92.9	62.0	0.54	A.D.B.
	92.8		62.6	0.54	92.8	62.6	0.54	D.B.
65M x 0	7.1	0.6	26.0	0.80	100.0	59.4	0.56	A.D.B.
	7.2		26.2	0.80	100.0	60.0	0.56	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	17.2	1.0	2.9	24.9	71.2	1.04	17.2	2.9	A.D.B.
	17.2		2.9	25.2	71.9	1.05	17.2	2.9	D.B.
1.40-1.50	2.0	0.7	11.1	23.7	64.5	0.98	19.2	3.8	A.D.B.
	2.0		11.2	23.9	64.9	0.99	19.2	3.8	D.B.
1.50-1.60	2.3	1.7	24.6				21.5	6.0	A.D.B.
	2.3		25.0				21.5	6.0	D.B.
+1.60	78.5	0.8	77.3				100.0	62.0	A.D.B.
	78.5		77.9				100.0	62.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.01	368	434	19	240	1.076

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 0435 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: EE-127-5

Starting Temperature °C: 350

Softening Temperature °C: 368

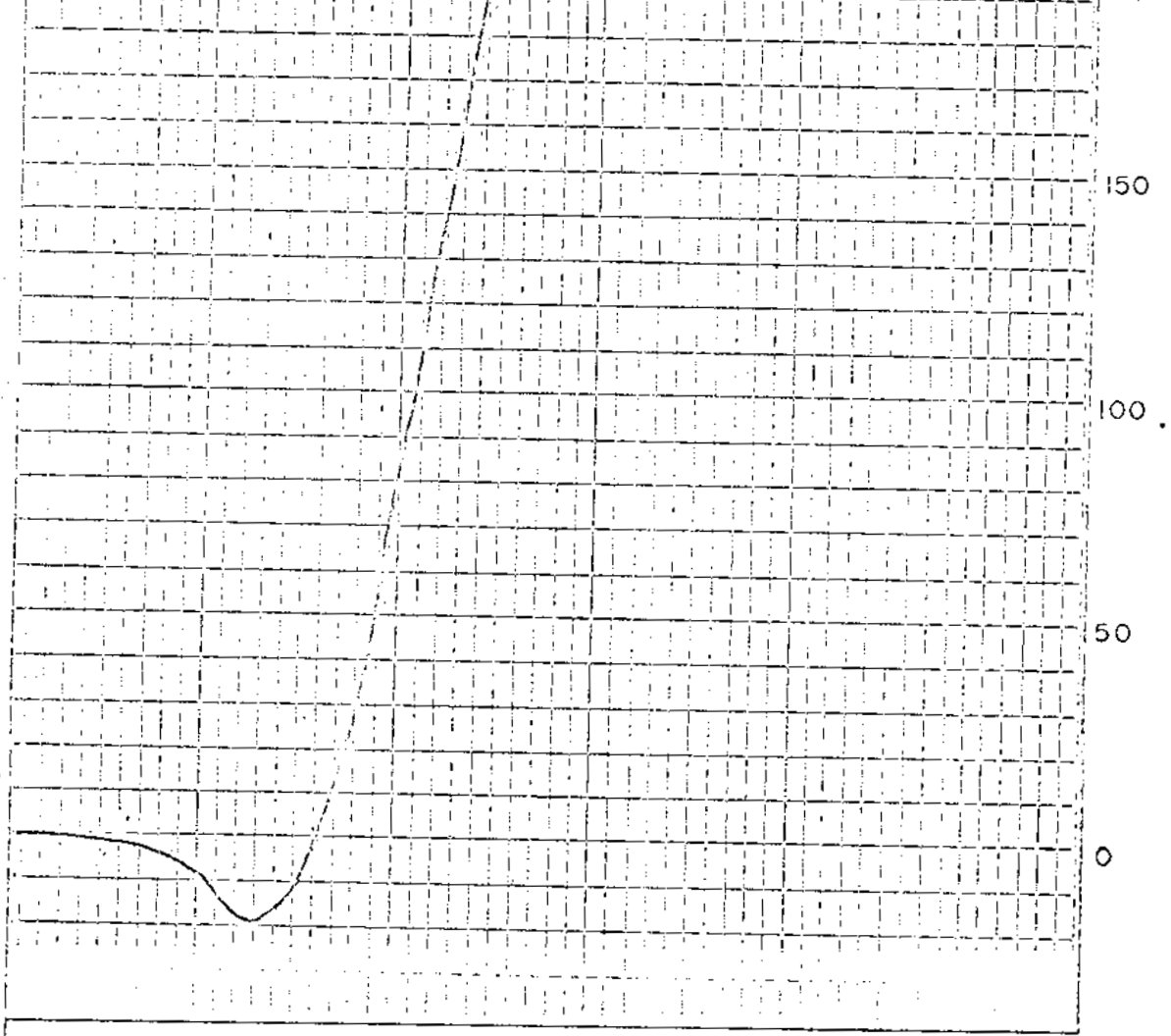
Max. Dilatation Temp. °C: 434

Contraction %: 19

Dilatation %: 240

Final Temperature °C: _____

G. Factor: 1.076



BIRTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 6

Lab. No. 8504

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	22.8	18.8	57.7		97	Air Dried Basis
	23.0	18.9	58.1		--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	90.0	0.7	23.3	0.51	90.0	23.3	0.51	A.D.B.
	90.0		23.5	0.51	90.0	23.5	0.51	D.B.
65M x 0	10.0	0.9	18.2	0.54	100.0	22.8	0.51	A.D.B.
	10.0		18.4	0.54	100.0	23.0	0.51	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	66.3	4.0	5.4	21.3	69.3	0.64	66.3	5.4	A.D.B.
	65.7		5.6	22.2	72.2	0.67	65.7	5.6	D.B.
1.40-1.50	7.7	1.9	15.8	18.3	64.0	0.54	74.0	6.5	A.D.B.
	7.8		16.1	18.7	65.2	0.55	73.5	6.7	D.B.
1.50-1.60	2.7	2.1	24.6				76.7	7.1	A.D.B.
	2.7		25.1				76.2	7.4	D.B.
+1.60	23.3	1.0	72.1				100.0	22.3	A.D.B.
	23.8		72.8				100.0	22.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
7	.05	389	452	19	- 13	0.715	

Lab. No. 8504 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-127-6

Starting Temperature °C: 350

Softening Temperature °C: 389

Max. Dilatation Temp. °C: 452

250

Contraction %: 19

Dilatation %: - 13

Final Temperature °C:

G. Factor: 0.715

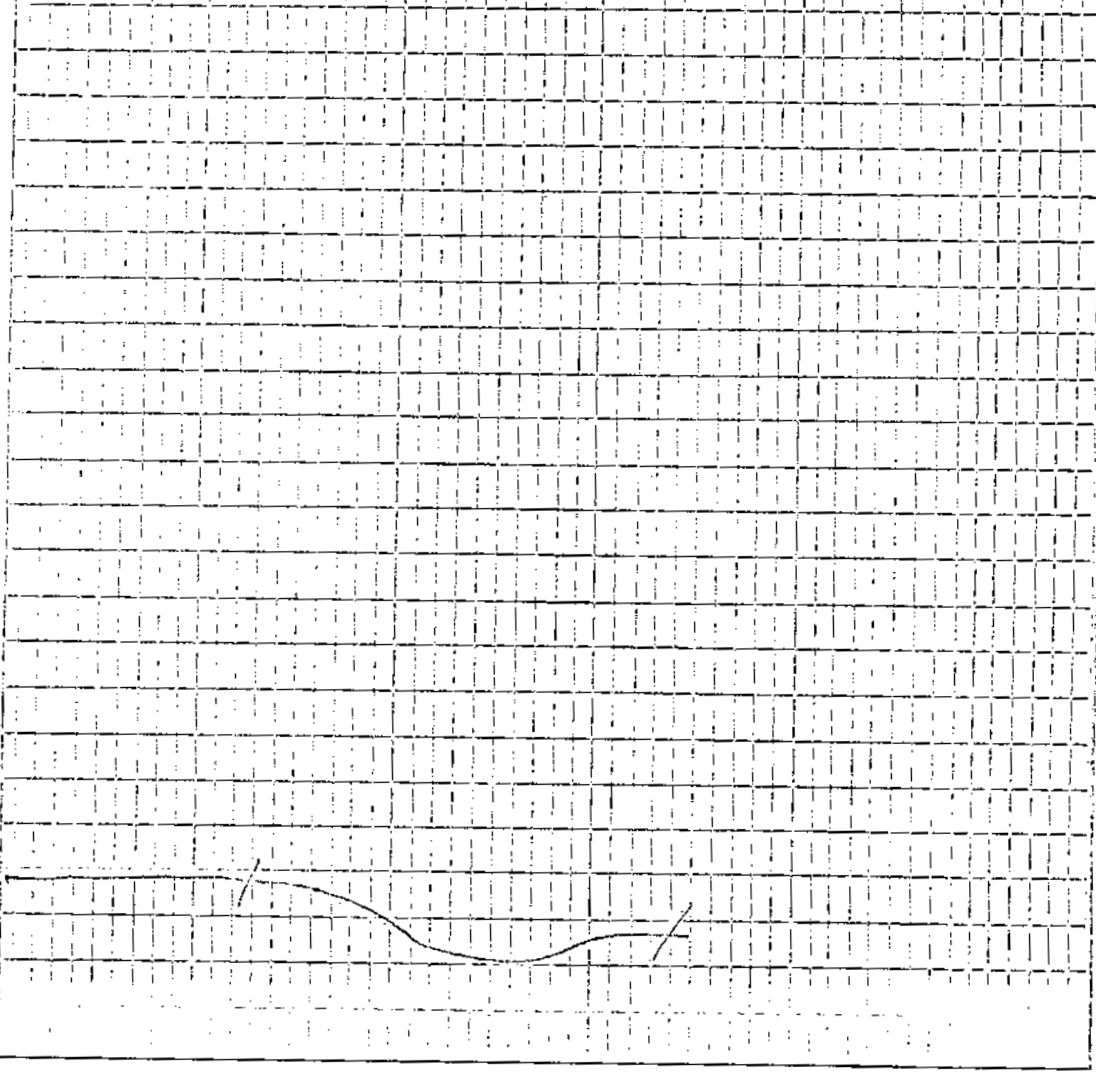
200

150

100

50

0



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 7

Lab. No. 8505

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	73.8	9.6	15.8	0.30	47	Air Dried Basis
	74.4	9.7	15.9	0.30	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.2	0.8	76.9	0.30	89.2	76.9	0.30	A.D.B.
	89.2		77.5	0.30	89.2	77.5	0.30	D.B.
65M x 0	10.8	0.9	40.8	0.63	100.0	73.0	0.34	A.D.B.
	10.8		41.2	0.64	100.0	73.6	0.34	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	6.5	0.6	4.0	23.3	72.2	0.82	6.5	4.0	A.D.B.
	6.5		4.0	23.4	72.6	0.82	6.5	4.0	D.B.
1.40-1.50	1.2	0.7	19.5	20.8	59.0	0.70	7.7	6.4	A.D.B.
	1.2		19.6	20.9	59.5	0.70	7.7	6.4	D.B.
1.50-1.60	1.0	0.6	32.1				8.7	9.4	A.D.B.
	1.0		32.3				8.7	9.4	D.B.
+1.60	91.3	0.8	82.5				100.0	76.1	A.D.B.
	91.3		83.2				100.0	76.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.01	377	440	14	226	1.073

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8505 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-127-7

Starting Temperature °C: 350

Softening Temperature °C: 377

Max. Dilatation Temp. °C: 440

250

Contraction %: 14

Dilatation %: 226

Final Temperature °C:

G. Factor: 1.073

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 127 - 8 Lab. No. 8506 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.4	14.4	18.9	66.3	0.58	110	Air Dried Basis
	14.5	19.0	66.5	0.58	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.7	2.5	14.3	0.54	86.7	14.3	0.54	A.D.B.
	86.5		14.7	0.55	86.5	14.7	0.55	D.B.
65M x 0	13.3	0.8	9.6	0.43	100.0	13.7	0.53	A.D.B.
	13.5		9.7	0.43	100.0	14.0	0.53	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	64.9	2.9	5.1	19.8	72.2	0.66	64.9	5.1	A.D.B.
	64.7		5.3	20.4	74.3	0.68	64.7	5.3	D.B.
1.40-1.50	16.3	2.1	12.8	18.2	66.9	0.52	81.2	6.6	A.D.B.
	16.4		13.1	18.6	68.3	0.53	81.1	6.9	D.B.
1.50-1.60	6.0	2.2	19.1				87.2	7.5	A.D.B.
	6.0		19.5				87.1	7.7	D.B.
+1.60	12.8	1.4	52.8				100.0	13.3	A.D.B.
	12.9		53.5				100.0	13.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1 1/2	.09	410	--	17% @ 458°	--	--

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8506 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: D3-127-8

Starting Temperature °C: 350

Softening Temperature °C: 410

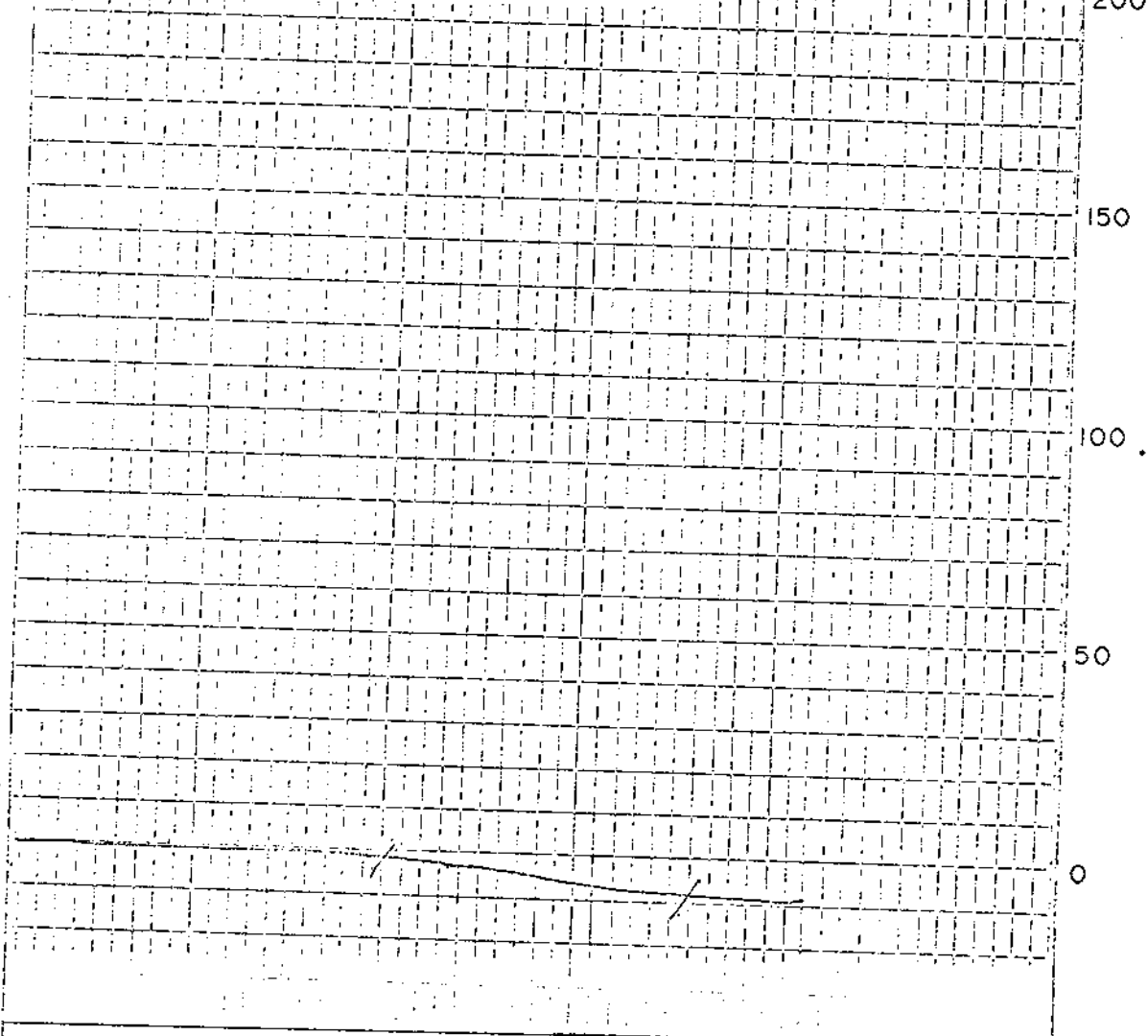
Max. Dilatation Temp. °C: ---

Contraction %: 17% @ 458°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 1 LAB. NO. 8371 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	53.6	16.8	28.6	0.70	65	Air Dried Basis
	54.1	17.0	28.9	0.71	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	88.4	0.9	56.4	0.66	88.4	56.4	0.66	A.D.B.
	88.4		56.9	0.67	88.4	56.9	0.67	D.B.
65M x 0	11.6	1.1	28.8	0.67	100.0	53.2	0.66	A.D.B.
	11.6		29.1	0.68	100.0	53.7	0.67	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	21.4	1.1	4.1	30.3	64.5	0.81	21.4	4.1	A.D.B.
	21.4		4.1	30.6	65.3	0.82	21.4	4.1	D.B.
1.40-1.50	2.9	1.0	22.5	27.0	49.5	0.75	24.3	6.3	A.D.B.
	2.8		22.7	27.3	50.0	0.76	24.2	6.3	D.B.
1.50-1.60	6.6	0.9	35.3				30.9	12.5	A.D.B.
	6.6		35.6				30.8	12.5	D.B.
+1.60	69.1	0.9	76.0				100.0	56.4	A.D.B.
	69.2		76.7				100.0	56.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.03	356	433	17	260	1.094

Lab. No. 8371 Date Feb. 23, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-128-1

Starting Temperature °C: 350

Softening Temperature °C: 356

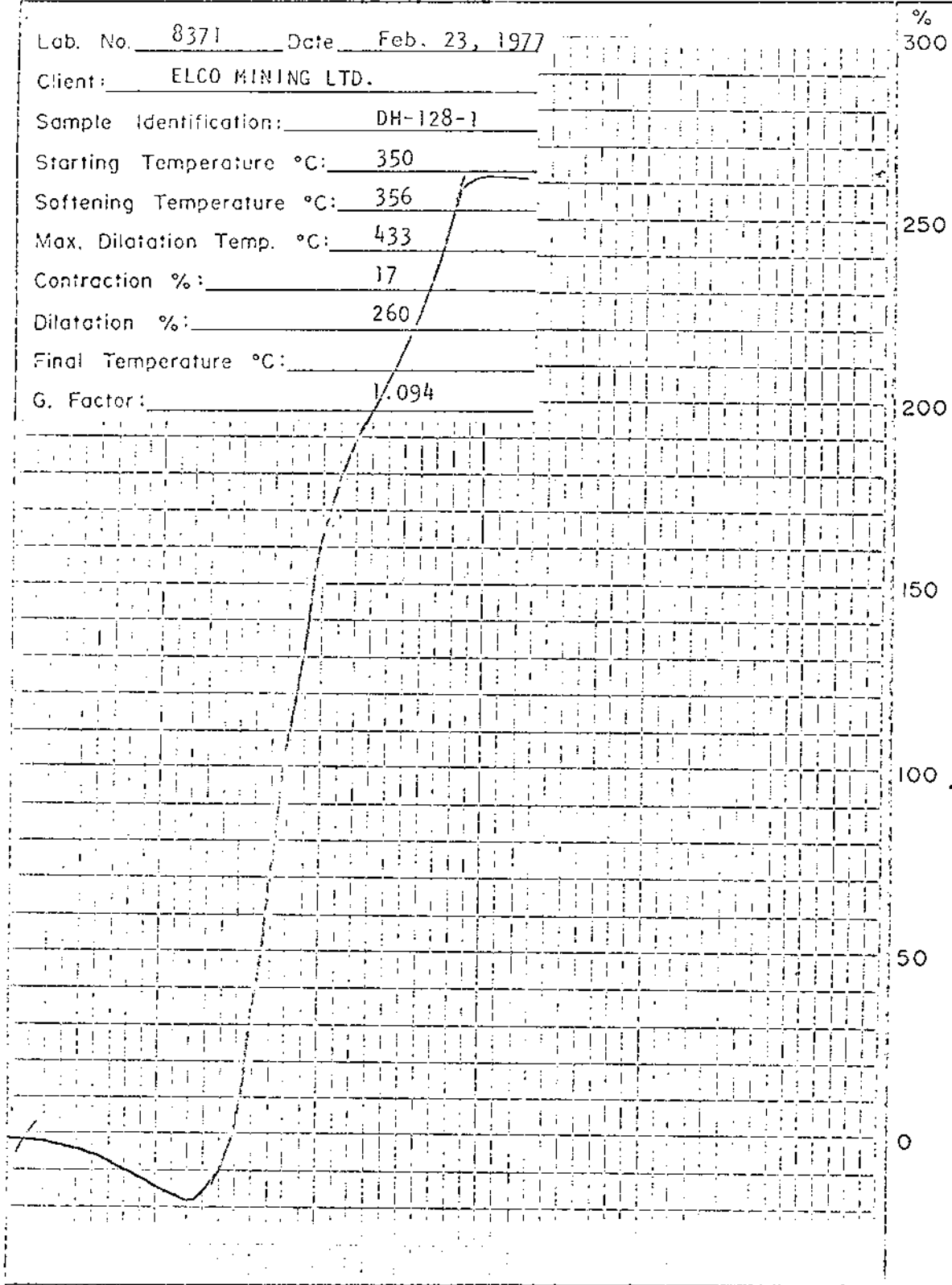
Max. Dilatation Temp. °C: 433

Contraction %: 17

Dilatation %: 260

Final Temperature °C: _____

G. Factor: 1.094



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 2 Lab. NO. 8372 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	67.6	14.6	16.8	0.81	54	Air Dried Basis
	68.3	14.7	17.0	0.82	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.6	1.1	71.0	0.74	87.6	71.0	0.74	A.D.B.
	87.6		71.8	0.75	87.6	71.8	0.75	D.B.
65M x 0	12.4	0.9	47.4	1.16	100.0	68.1	0.79	A.D.B.
	12.4		47.8	1.17	100.0	68.8	0.80	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	4.2	1.0	5.7	31.8	61.5	1.38	4.2	5.7	A.D.B.
	4.2		5.8	32.1	62.1	1.39	4.2	5.8	D.B.
1.40-1.50	1.0	1.0	22.1	25.7	51.2	1.52	5.2	8.9	A.D.B.
	1.0		22.3	26.0	51.7	1.54	5.2	9.0	D.B.
1.50-1.60	1.1	1.1	29.7				6.3	12.5	A.D.B.
	1.1		30.0				6.3	12.6	D.B.
+1.60	93.7	1.1	75.4				100.0	71.4	A.D.B.
	93.7		76.2				100.0	72.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
9	Trace	(50%) 353	440	9	210	1.111	
		(50%) 356	442	10	198		

TOP HALF OF PENCIL

Lcb. No. 8372 Date Feb. 23, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-128-2

Starting Temperature °C: 340

Softening Temperature °C: 353

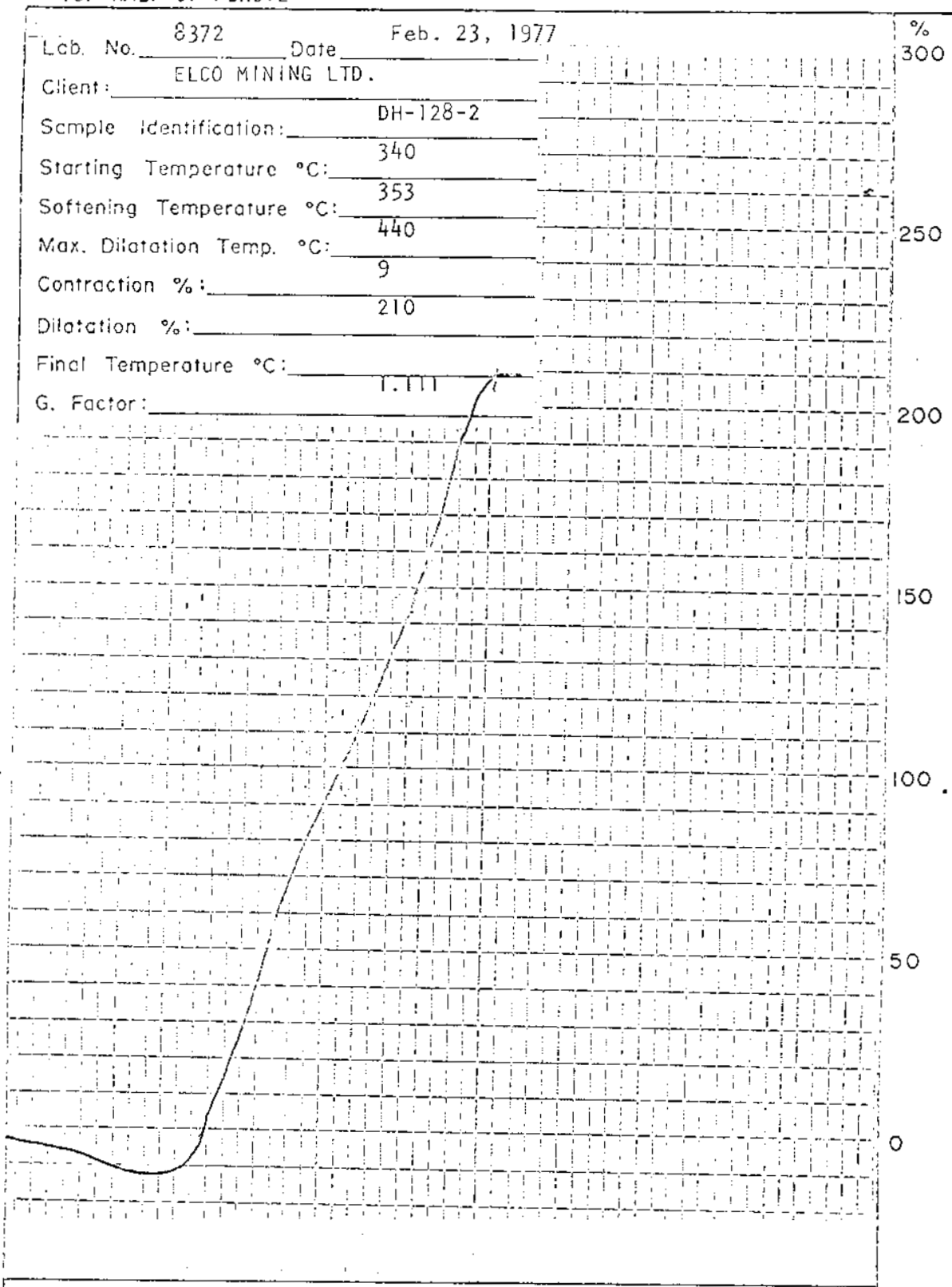
Max. Dilatation Temp. °C: 440

Contraction %: 9

Dilatation %: 210

Final Temperature °C: 1.111

G. Factor:



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST	Date
	Drawn

Lab. No. 8372 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-2

Starting Temperature °C: 350

Softening Temperature °C: 356

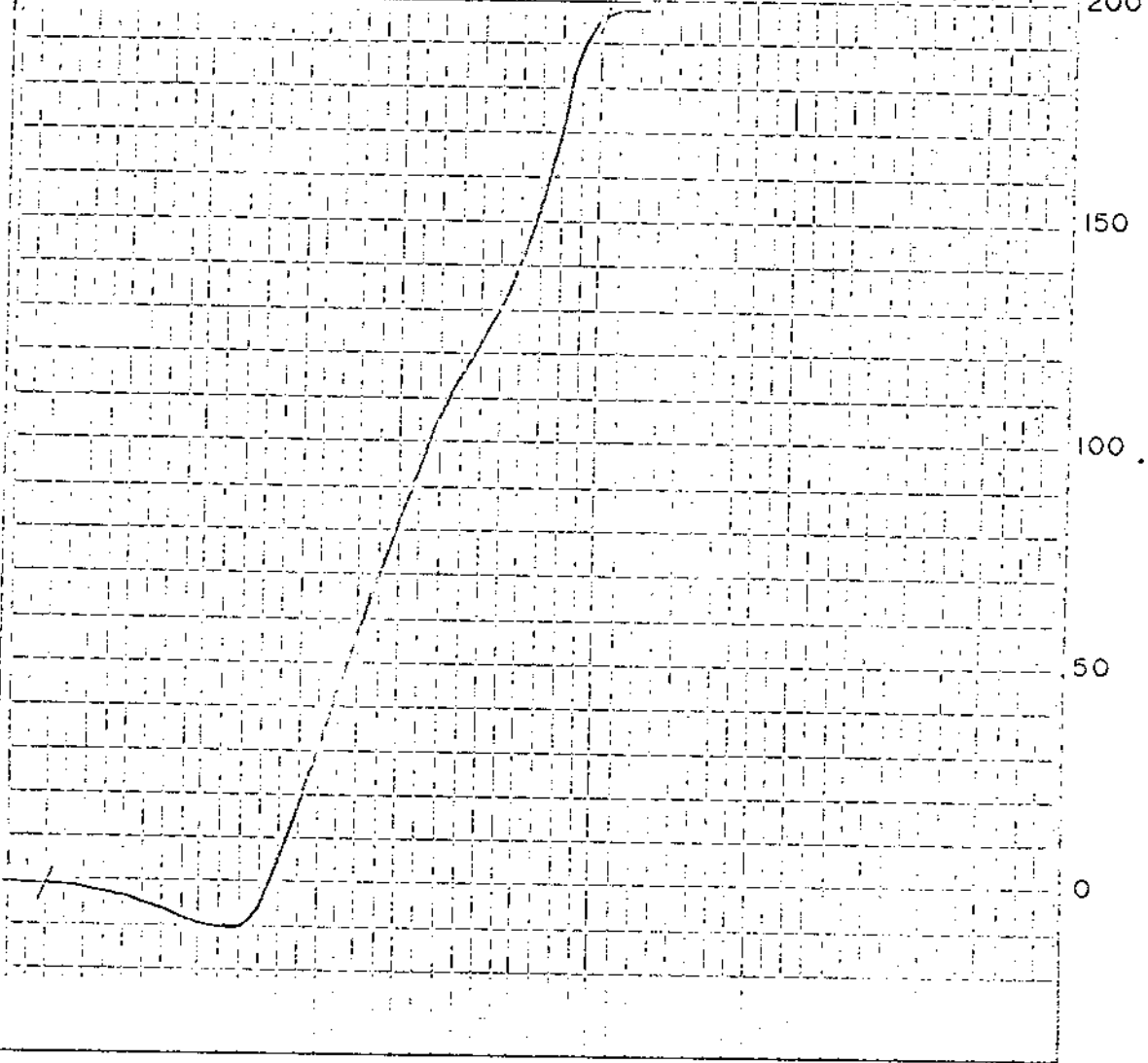
Max. Dilatation Temp. °C: 442

Contraction %: 10

Dilatation %: 158

Final Temperature °C: _____

G. Factor: 1.110



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 3 Lab. No. 8373 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	72.8	11.4	14.7	0.46	76	Air Dried Basis
	73.6	11.5	14.9	0.47	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.1	1.5	75.3	0.41	89.1	75.3	0.41	A.D.B.
	89.1		76.4	0.42	89.1	76.4	0.42	D.B.
65M x 0	10.9	1.1	51.8	0.66	100.0	72.7	0.44	A.D.B.
	10.9		52.4	0.67	100.0	73.8	0.45	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	8.3	1.6	6.2	28.2	64.0	1.18	8.3	6.2	A.D.B.
	8.3		6.3	28.7	65.0	1.20	8.3	6.3	D.B.
1.40-1.50	2.6	1.2	13.4	26.8	58.6	1.20	10.9	7.9	A.D.B.
	2.6		13.6	27.1	59.3	1.21	10.9	8.0	D.B.
1.50-1.60	0.9	1.6	25.1				11.8	9.2	A.D.B.
	0.9		25.5				11.8	9.4	D.B.
+1.60	88.2	1.5	84.1				100.0	75.3	A.D.B.
	88.2		85.4				100.0	76.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.06	359	428	21	268	1.081

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8373 Date Feb. 23, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-128-3

Starting Temperature °C: 340

Softening Temperature °C: 359

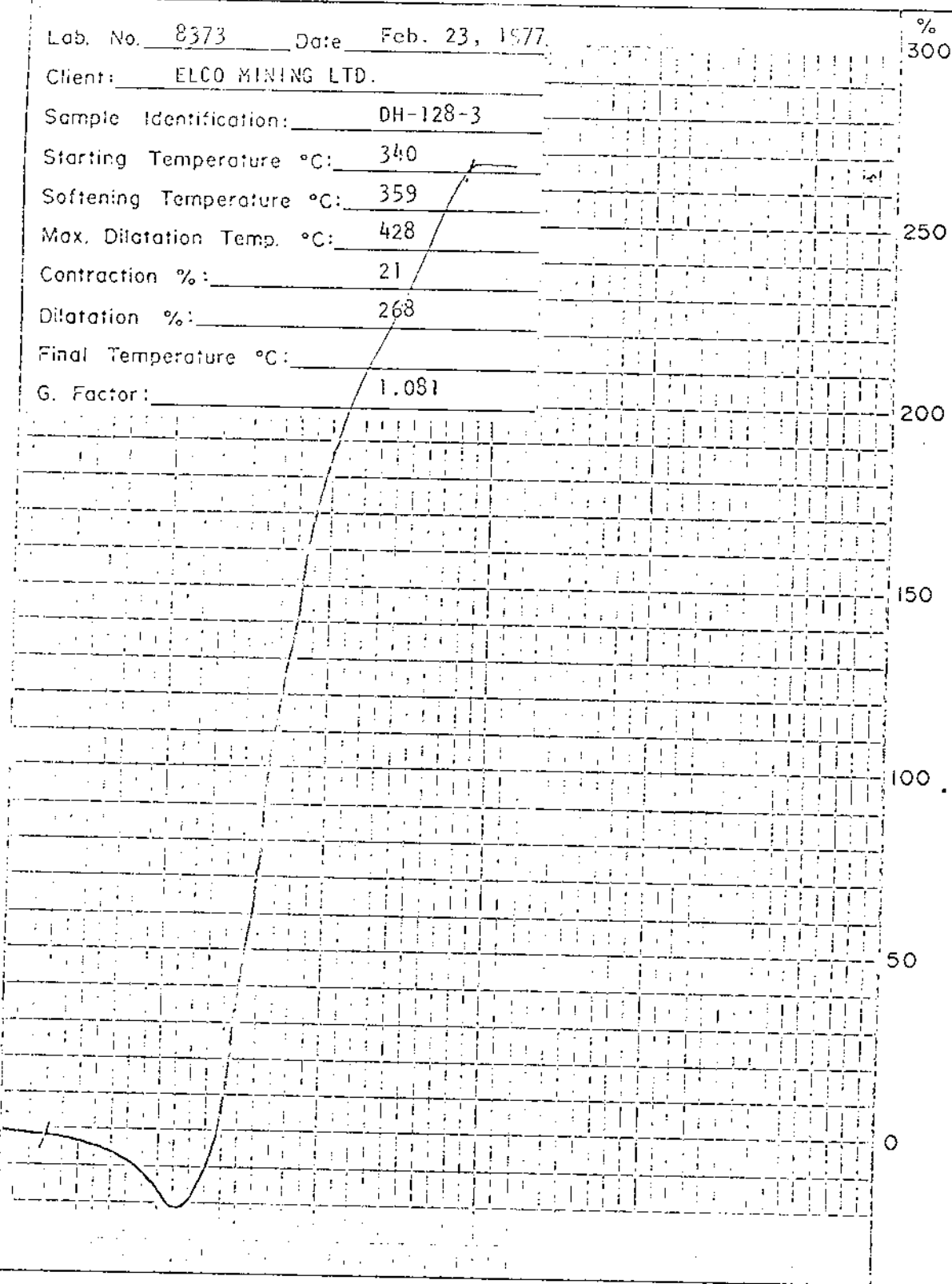
Max. Dilatation Temp. °C: 428

Contraction %: 21

Dilatation %: 268

Final Temperature °C:

G. Factor: 1.081



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 4 Lab. No. 8374 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	67.5	12.2	19.4	0.51	65	Air Dried Basis
	68.1	12.3	19.6	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	85.2	0.9	72.8	0.47	85.2	72.8	0.47	A.D.B.
	85.2		73.5	0.47	85.2	73.5	0.47	D.B.
65M x 0	14.8	0.9	33.5	0.88	100.0	67.0	0.53	A.D.B.
	14.8		33.8	0.89	100.0	67.6	0.53	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	8.8	1.2	3.4	27.3	68.1	1.17	8.8	3.4	A.D.B.
	8.8		3.4	27.6	69.0	1.18	8.8	3.4	D.B.
1.40-1.50	4.2	1.2	11.6	24.4	62.8	1.15	13.0	6.0	A.D.B.
	4.2		11.7	24.7	63.6	1.16	13.0	6.1	D.B.
1.50-1.60	1.1	1.3	26.3				14.1	7.6	A.D.B.
	1.1		26.6				14.1	7.7	D.B.
+1.60	85.9	0.9	83.5				100.0	72.8	A.D.B.
	85.9		84.3				100.0	73.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.02	368	434	10	285	1.083

Lab. No. 8374 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-4

Starting Temperature °C: 350

Softening Temperature °C: 368

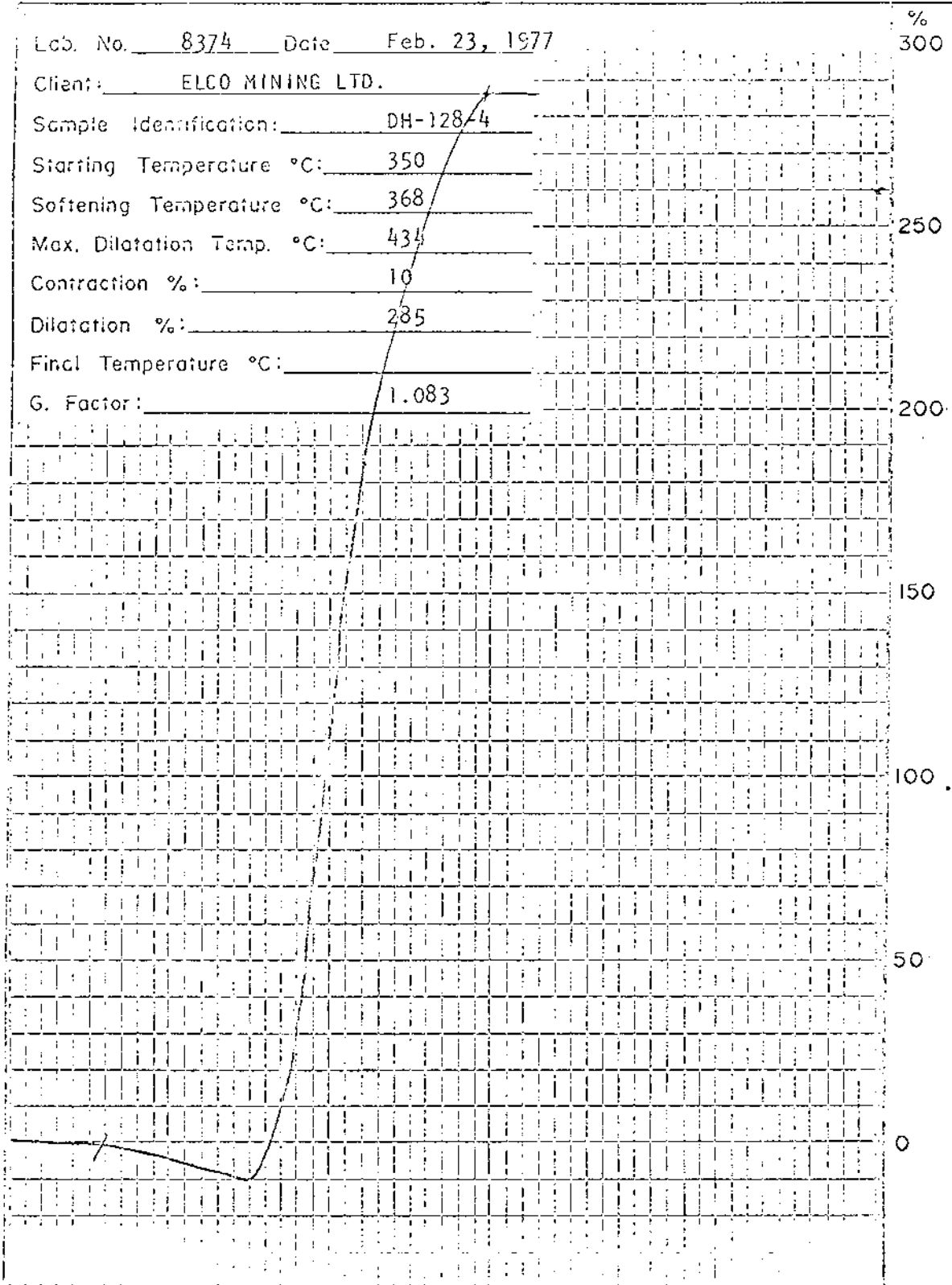
Max. Dilatation Temp. °C: 434

Contraction %: 10

Dilatation %: 285

Final Temperature °C: _____

G. Factor: 1.083



BARTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 5 Lab. No. 8375 DATE: Feb./77

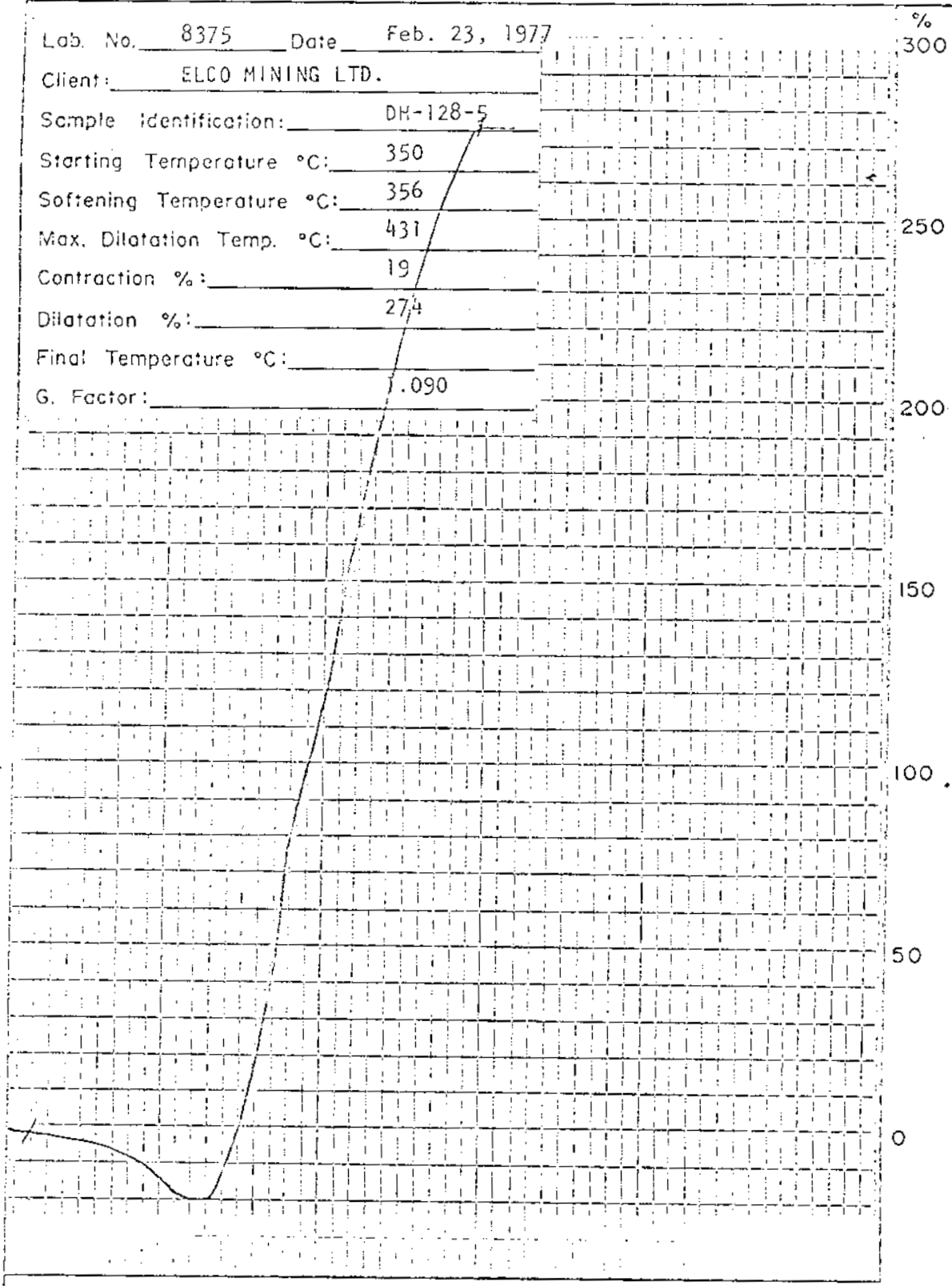
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	37.7	21.2	40.3	1.23	62	Air Dried Basis
	38.0	21.4	40.6	1.24	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	88.2	0.9	39.4	1.22	88.2	39.4	1.22	A.D.B.
	88.2		39.8	1.23	88.2	39.8	1.23	D.B.
65M x 0	11.8	0.9	17.5	1.15	100.0	36.8	1.21	A.D.B.
	11.8		17.7	1.16	100.0	37.2	1.22	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	40.2	1.0	4.8	29.2	65.0	1.14	40.2	4.8	A.D.B.
	40.2		4.8	29.5	65.7	1.15	40.2	4.8	D.B.
1.40-1.50	10.5	0.8	18.9	22.8	57.5	0.99	50.7	7.7	A.D.B.
	10.5		19.1	23.0	57.9	1.00	50.7	7.8	D.B.
1.50-1.60	3.9	1.0	27.9				54.6	9.2	A.D.B.
	3.9		28.2				54.6	9.2	D.B.
+1.60	45.4	0.9	75.8				100.0	39.4	A.D.B.
	45.4		76.5				100.0	39.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.10	356	431	19	274	1.090

Lab. No. 8375 Date Feb. 23, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DM-128-5
 Starting Temperature °C: 350
 Softening Temperature °C: 356
 Max. Dilatation Temp. °C: 431
 Contraction %: 19
 Dilatation %: 27.4
 Final Temperature °C: _____
 G. Factor: .090



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 6

Lab. No. 8376

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	30.2	22.5	46.2	0.85	80	Air Dried Basis
	30.5	22.8	46.7	0.86	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.8	1.0	31.1	0.88	95.8	31.1	0.88	A.D.B.
	95.8		31.4	0.89	95.8	31.4	0.89	D.B.
65M x 0	4.2	0.9	20.7	0.86	100.0	30.7	0.88	A.D.B.
	4.2		20.9	0.87	100.0	31.0	0.89	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	52.9	1.0	4.1	27.8	67.1	0.86	52.9	4.1	A.D.B.
	52.9		4.1	28.1	67.8	0.87	52.9	4.1	D.B.
1.40-1.50	6.3	1.1	19.8	24.3	54.8	0.85	59.2	5.8	A.D.B.
	6.3		20.0	24.6	55.4	0.86	59.2	5.8	D.B.
1.50-1.60	4.5	1.1	28.4				63.7	7.4	A.D.B.
	4.5		28.7				63.7	7.4	D.B.
+1.60	36.3	1.0	72.8				100.0	31.1	A.D.B.
	36.3		73.5				100.0	31.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.04	368	428	16	282	1.072

Lab. No. 8376 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-6

Starting Temperature °C: 350

Softening Temperature °C: 368

Max. Dilatation Temp. °C: 428

Contraction %: 16

Dilatation %: 282

Fincl Temperature °C:

G. Factor: 1.072

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 7 Lab. No. 8377 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	42.8	18.6	37.7	1.08	89	Air Dried Basis
	43.2	18.8	38.0	1.09	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			REMARKS
					WT. %	ASH %	S. %	
1/4" x 65M	90.0	1.8	44.7	1.11	90.0	44.7	1.11	A.D.B.
	89.9		45.5	1.13	89.9	45.5	1.13	D.B.
65M x 0	10.0	0.8	19.8	0.88	100.0	42.2	1.09	A.D.B.
	10.1		20.0	0.89	100.0	42.9	1.11	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		REMARKS
							WT. %	ASH %	
-1.40	38.5	2.5	4.1	26.2	67.2	1.37	38.5	4.1	A.D.B.
	38.2		4.2	26.9	68.9	1.41	38.2	4.2	D.B.
1.40-1.50	5.3	2.4	13.9	22.8	60.9	1.17	43.8	5.3	A.D.B.
	5.2		14.3	23.4	62.4	1.20	43.4	5.4	D.B.
1.50-1.60	2.4	2.7	26.9				46.2	6.4	A.D.B.
	2.4		27.6				45.8	6.6	D.B.
+1.60	53.8	1.2	76.0				100.0	43.8	A.D.B.
	54.2		76.9				100.0	44.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.11	374	421	13	117	1.050

Lab. No. 8377 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-7

Starting Temperature °C: 350

Softening Temperature °C: 374

Max. Dilatation Temp. °C: 421

250

Contraction %: 13

Dilatation %: 117

Final Temperature °C:

G. Factor: 1.050

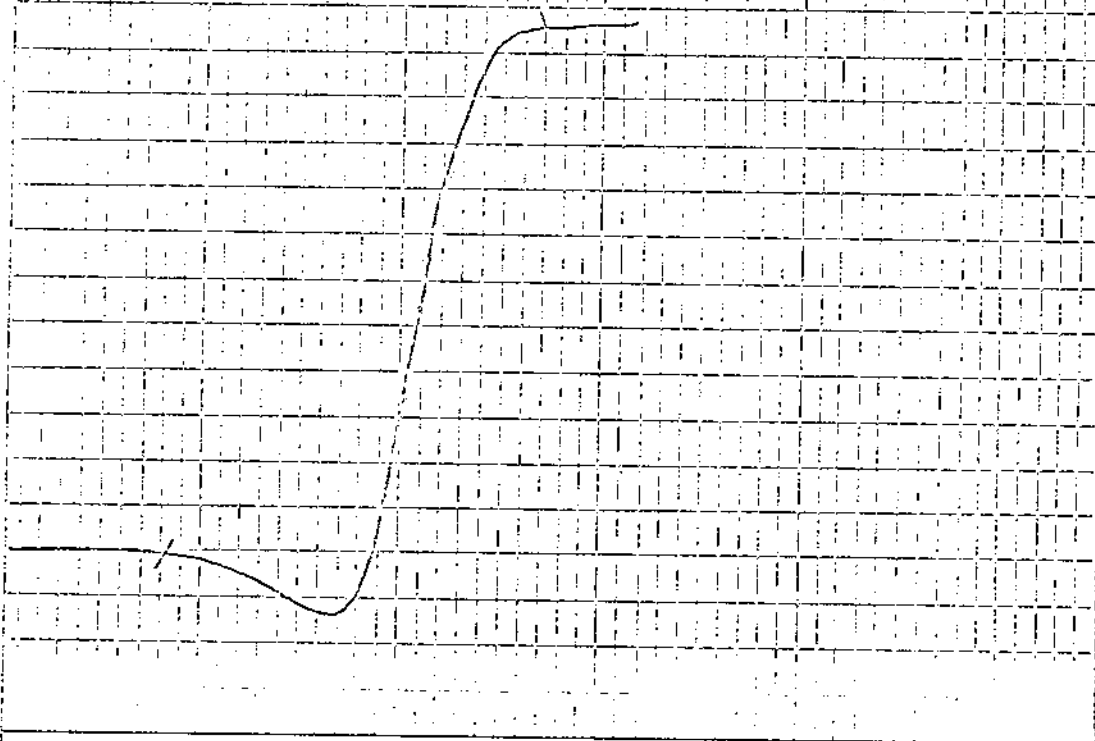
200

150

100

50

0



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 8 Lab. No. 8378 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	12.2	22.4	64.3	0.68	93	Air Dried Basis
	12.3	22.6	65.1	0.69	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.0	1.0	13.1	0.69	86.0	13.1	0.69	A.D.B.
	86.0		13.2	0.70	86.0	13.2	0.70	D.B.
65M x 0	14.0	1.2	11.5	0.68	100.0	12.9	0.69	A.D.B.
	14.0		11.6	0.69	100.0	13.0	0.70	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	74.9	0.7	4.0	24.8	70.5	0.87	74.9	4.0	A.D.B.
	74.9		4.0	25.0	71.0	0.88	74.9	4.0	D.B.
1.40-1.50	9.4	0.6	16.7	20.9	61.8	0.64	84.3	5.4	A.D.B.
	9.4		16.8	21.0	62.2	0.64	84.3	5.4	D.B.
1.50-1.60	4.1	0.6	26.8	X			88.4	6.4	A.D.B.
	4.1		27.0				88.4	6.4	D.B.
+1.60	11.6	0.7	64.5	X			100.0	13.1	A.D.B.
	11.6		65.0				100.0	13.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PZ ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.03	380	437	24	83	1.040

Lab. No. 8378 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-8

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 437

250

Contraction %: 24

Dilatation %: 83

Final Temperature °C:

G. Factor: 1.040

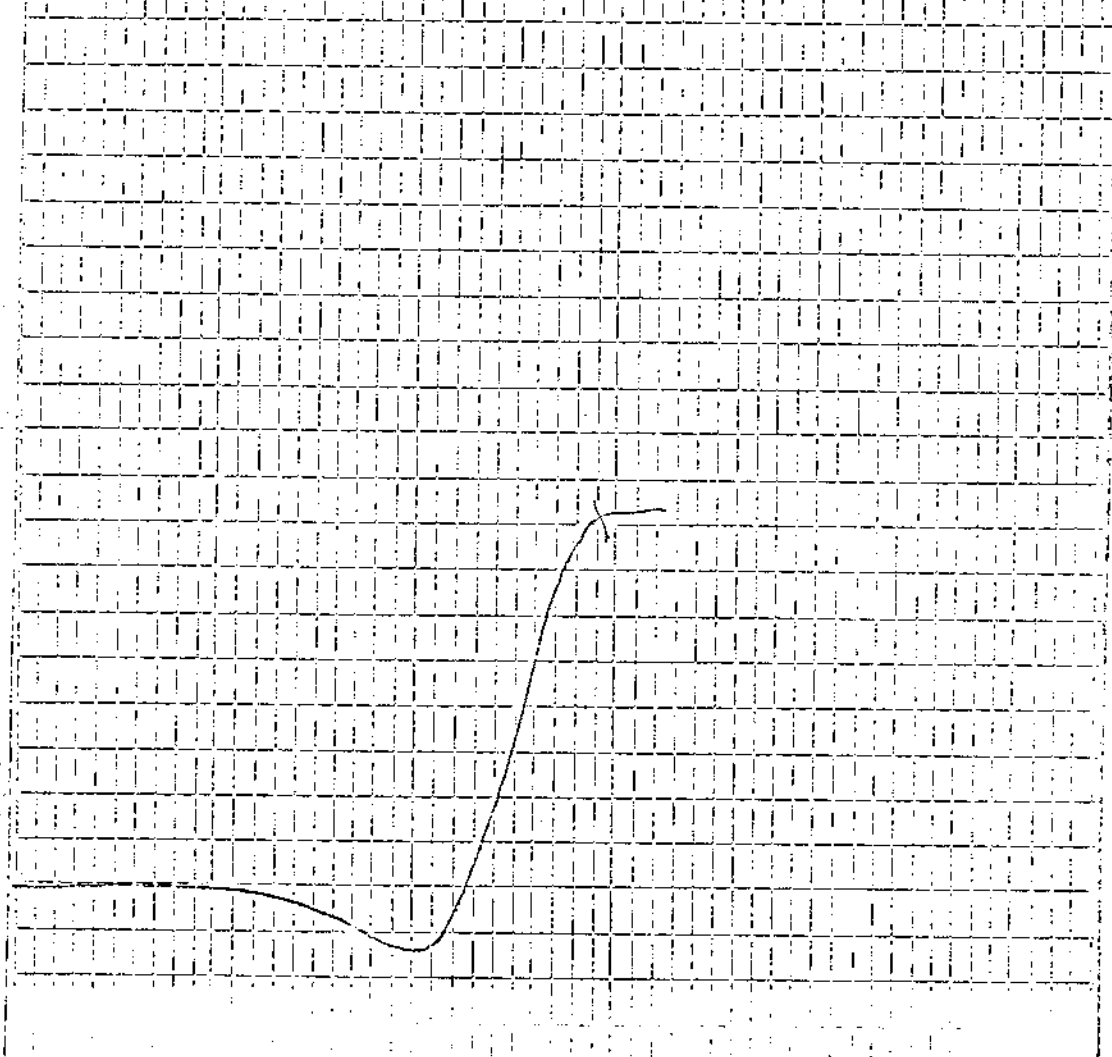
200

150

100

50

0



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 9 Lab. No. 8379 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	13.7	23.1	62.3	0.66	79	Air Dried Basis
	13.8	23.3	62.9	0.67	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.2	1.0	14.8	0.65	92.2	14.8	0.65	A.D.B.
	92.2		14.9	0.66	92.2	14.9	0.66	D.B.
65M x 0	7.8	0.8	10.1	0.68	100.0	14.4	0.65	A.D.B.
	7.8		10.2	0.69	100.0	14.5	0.66	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	70.2	1.1	4.6	24.4	69.9	0.78	70.2	4.6	A.D.B.
	70.2		4.7	24.7	70.6	0.79	70.2	4.7	D.B.
1.40-1.50	10.5	1.0	16.9	20.6	61.5	0.60	80.7	6.2	A.D.B.
	10.5		17.1	20.8	62.1	0.61	80.7	6.3	D.B.
1.50-1.60	4.4	1.0	26.4				85.1	7.2	A.D.B.
	4.4		26.7				85.1	7.4	D.B.
+1.60	14.9	0.9	61.0				100.0	15.3	A.D.B.
	14.9		61.6				100.0	15.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P2 ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.03	380	435	16	155	1.058

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8379 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-9

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 435

250

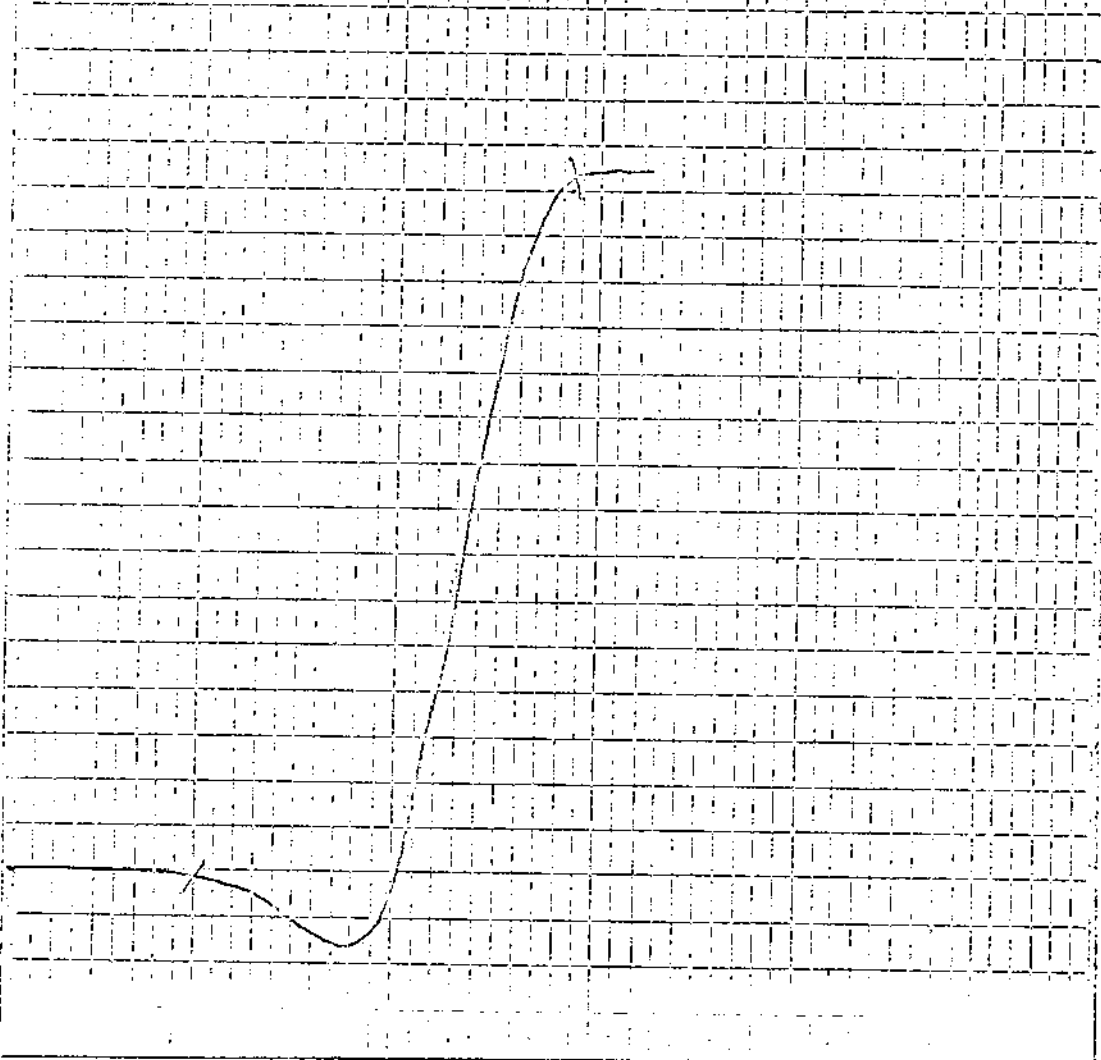
Contraction %: 16

Dilatation %: 155

Final Temperature °C:

G. Factor: 1.058

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 10

Lab. No. 8380

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	28.0	23.0	48.2	0.71	N.S.S.*	Air Dried Basis
	28.2	23.2	48.6	0.72	--	Dry Basis

* N.S.S. = not sufficient sample

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.8	0.8	29.2	0.70	91.8	29.2	0.70	A.D.B.
	91.8		29.4	0.71	91.8	29.4	0.71	D.B.
65M x 0	8.2	0.7	16.4	0.83	100.0	28.2	0.71	A.D.B.
	8.2		16.5	0.84	100.0	28.3	0.72	D.B.

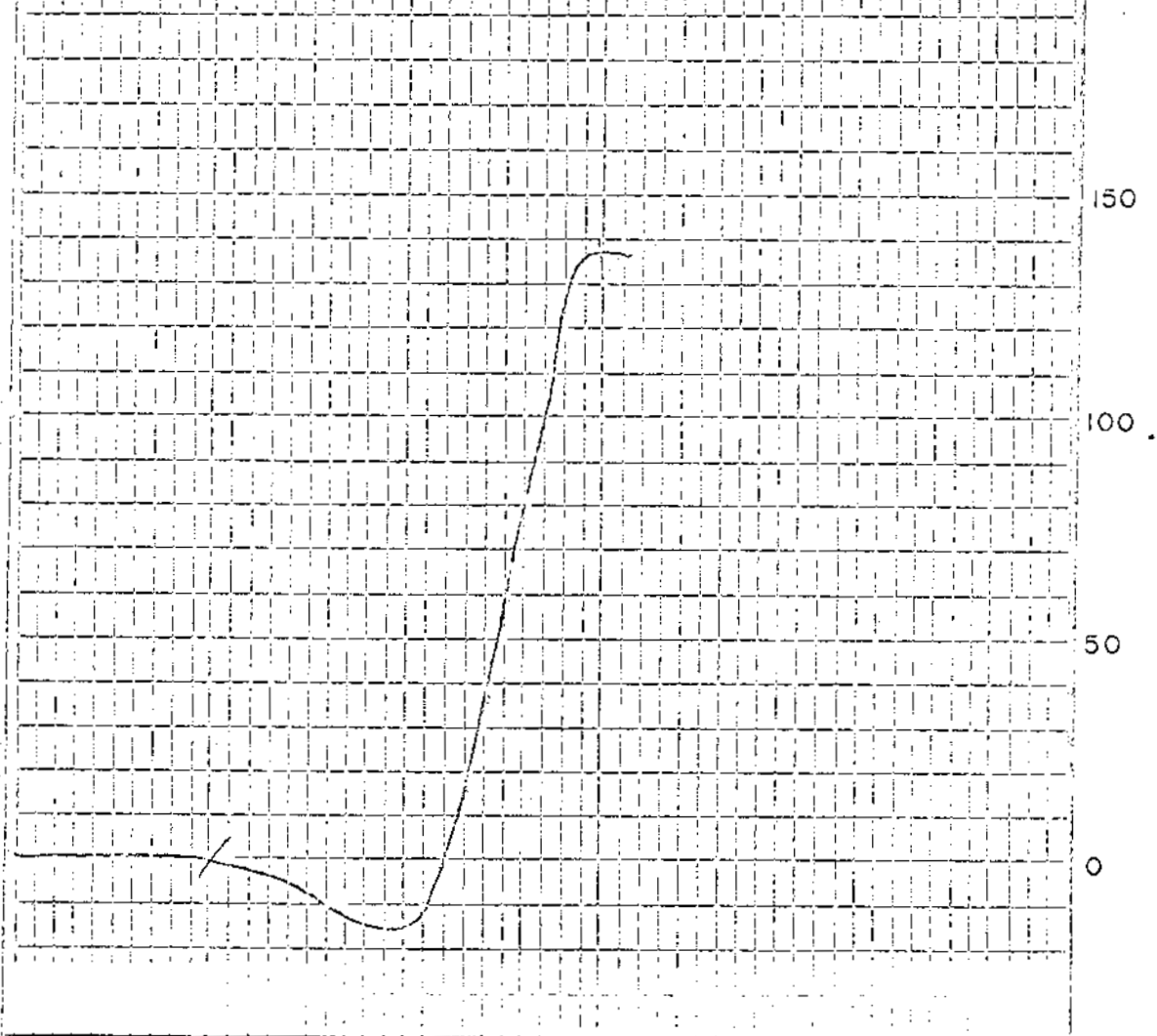
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	51.1	0.8	4.6	24.1	70.5	0.95	51.1	4.6	A.D.B.
	51.1		4.6	24.3	71.1	0.96	51.1	4.6	D.B.
1.40-1.50	7.7	0.7	17.4	21.9	60.0	0.84	58.8	6.3	A.D.B.
	7.7		17.5	22.1	60.4	0.85	58.8	6.3	D.B.
1.50-1.60	5.4	0.8	26.1				64.2	7.9	A.D.B.
	5.4		26.3				64.2	8.0	D.B.
+1.60	35.8	0.8	67.2				100.0	29.2	A.D.B.
	35.8		67.7				100.0	29.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.04	380	440	16	137	1.061

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8380 Date Feb. 23, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-128-10
 Starting Temperature °C: 350
 Softening Temperature °C: 380
 Max. Dilatation Temp. °C: 440 250
 Contraction %: 16
 Dilatation %: 137
 Final Temperature °C: _____
 G. Factor: 1.061 200



SIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date <hr/> Drawn
-----------------------------------------------------------------------	-------------------------

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 11 Lab. No. 8381 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	26.0	18.6	54.2	0.50	103	Air Dried Basis
	26.3	18.8	54.9	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.0	1.0	29.0	0.47	87.0	29.0	0.47	A.D.B.
	87.0		29.3	0.47	87.0	29.3	0.47	D.B.
65M x 0	13.0	1.1	12.6	0.58	100.0	26.9	0.48	A.D.B.
	13.0		12.7	0.59	100.0	27.1	0.49	D.B.

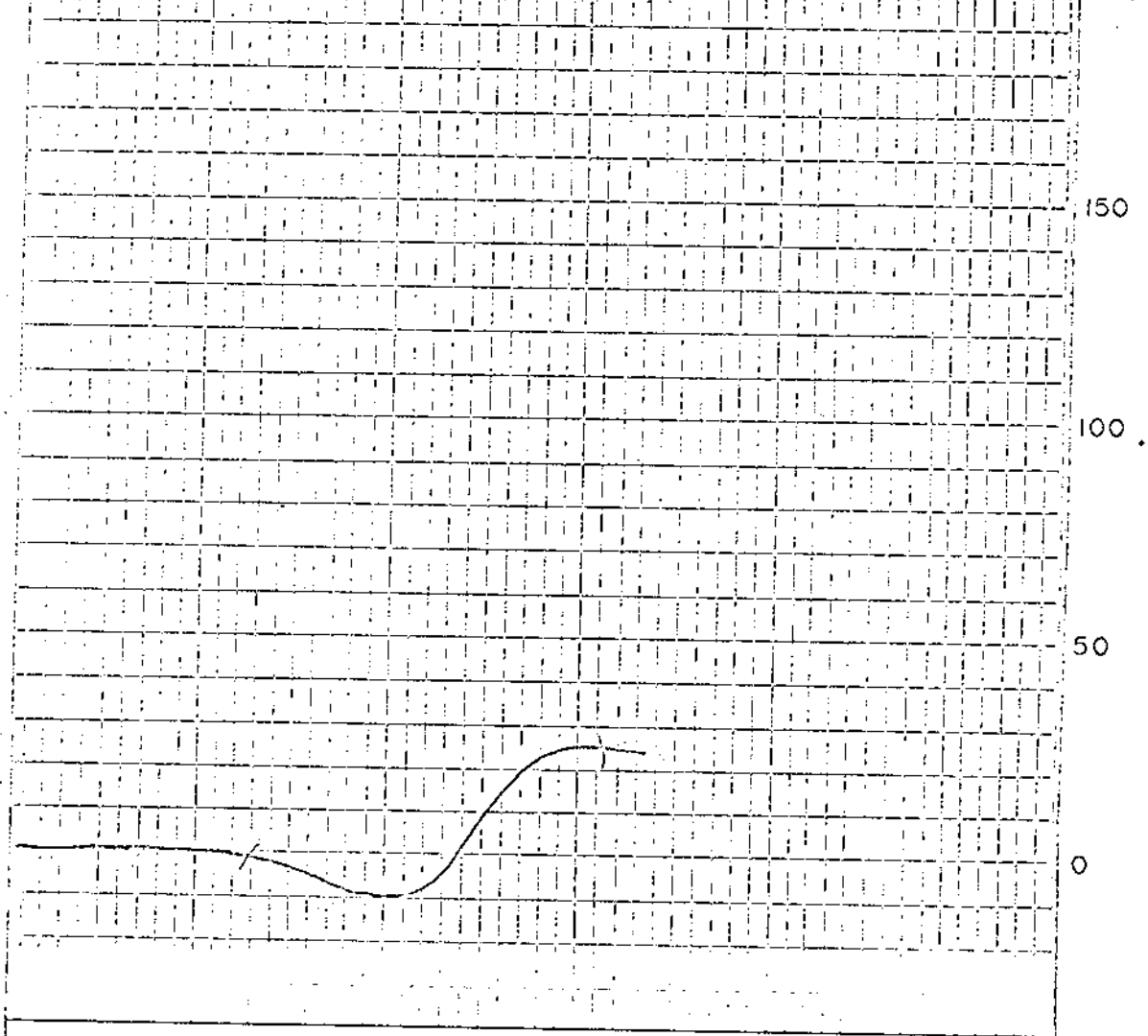
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	55.6	2.4	4.2	23.7	69.7	0.70	55.6	4.2	A.D.B.
	55.3		4.3	24.3	71.4	0.72	55.3	4.3	D.B.
1.40-1.50	6.3	1.6	16.5	19.4	62.5	0.59	61.9	5.5	A.D.B.
	6.3		16.8	19.7	63.5	0.60	61.6	5.6	D.B.
1.50-1.60	3.4	1.3	27.0				65.3	6.6	A.D.B.
	3.4		27.4				65.0	6.7	D.B.
+1.60	34.7	1.1	73.9				100.0	29.9	A.D.B.
	35.0		74.7				100.0	30.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6	.03	389	443	9	25	1.032

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8381 Date Feb. 23, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-128-11
 Starting Temperature °C: 350
 Softening Temperature °C: 389
 Max. Dilatation Temp. °C: 443
 Contraction %: 9
 Dilatation %: 25
 Final Temperature °C: _____
 G. Factor: 1.032



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 12

Lab. No. 8382

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	25.2	21.5	52.6	0.47	89	Air Dried Basis
	25.4	21.7	52.9	0.47	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.3	1.0	26.8	0.46	86.3	26.8	0.46	A.D.B.
	86.3		27.1	0.46	86.3	27.1	0.46	D.B.
65M x 0	13.7	0.8	14.0	0.69	100.0	27.0	0.49	A.D.B.
	13.7		14.1	0.70	100.0	25.3	0.49	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	53.7	1.3	5.4	21.1	72.2	0.58	53.7	5.4	A.D.B.
	53.5		5.5	21.4	73.1	0.59	53.5	5.5	D.B.
1.40-1.50	9.9	0.8	17.1	18.7	63.4	0.54	63.6	7.2	A.D.B.
	9.9		17.2	18.9	63.9	0.54	63.4	7.3	D.B.
1.50-1.60	5.8	0.9	25.2				69.4	8.7	A.D.B.
	5.9		25.4				69.3	8.9	D.B.
+1.60	30.6	0.6	67.7				100.0	26.8	A.D.B.
	30.7		68.1				100.0	27.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
3 1/2	.01	392	---	14% @ 428°	---	---

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8382 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-12

Starting Temperature °C: 350

Softening Temperature °C: 392

Max. Dilatation Temp. °C: ---

Contraction %: 14% @ 428°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 13 Lab. No. 8383 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	12.7	21.1	65.1	0.64	110	Air Dried Basis
	12.8	21.3	65.9	0.65	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.1	0.8	13.2	0.64	87.1	13.2	0.64	A.D.B.
	87.2		13.3	0.65	87.2	13.3	0.65	D.B.
65M x 0	12.9	1.0	7.6	0.66	100.0	12.5	0.64	A.D.B.
	12.8		7.7	0.67	100.0	12.6	0.65	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	74.5	2.5	2.9	22.5	72.1	0.76	74.5	2.9	A.D.B.
	74.3		3.0	23.1	73.9	0.78	74.3	3.0	D.B.
1.40-1.50	8.0	2.7	10.5	18.6	68.2	0.67	82.5	3.6	A.D.B.
	8.0		10.8	19.1	70.1	0.69	82.3	3.8	D.B.
1.50-1.60	2.6	1.5	22.4				85.1	4.2	A.D.B.
	2.6		22.7				84.9	4.3	D.B.
+1.60	14.9	1.1	68.0				100.0	13.7	A.D.B.
	15.1		68.8				100.0	14.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
5 1/2	.02	389	---	14% @ 428	---	---	

Lab. No. 8383 Date Feb. 23, 1977

%
300

Client: EILCO MINING LTD.

Sample Identification: DH-128-13

Starting Temperature °C: 350

Softening Temperature °C: 389

Max. Dilatation Temp. °C: ---

Contraction %: 14% @ 428°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

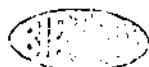
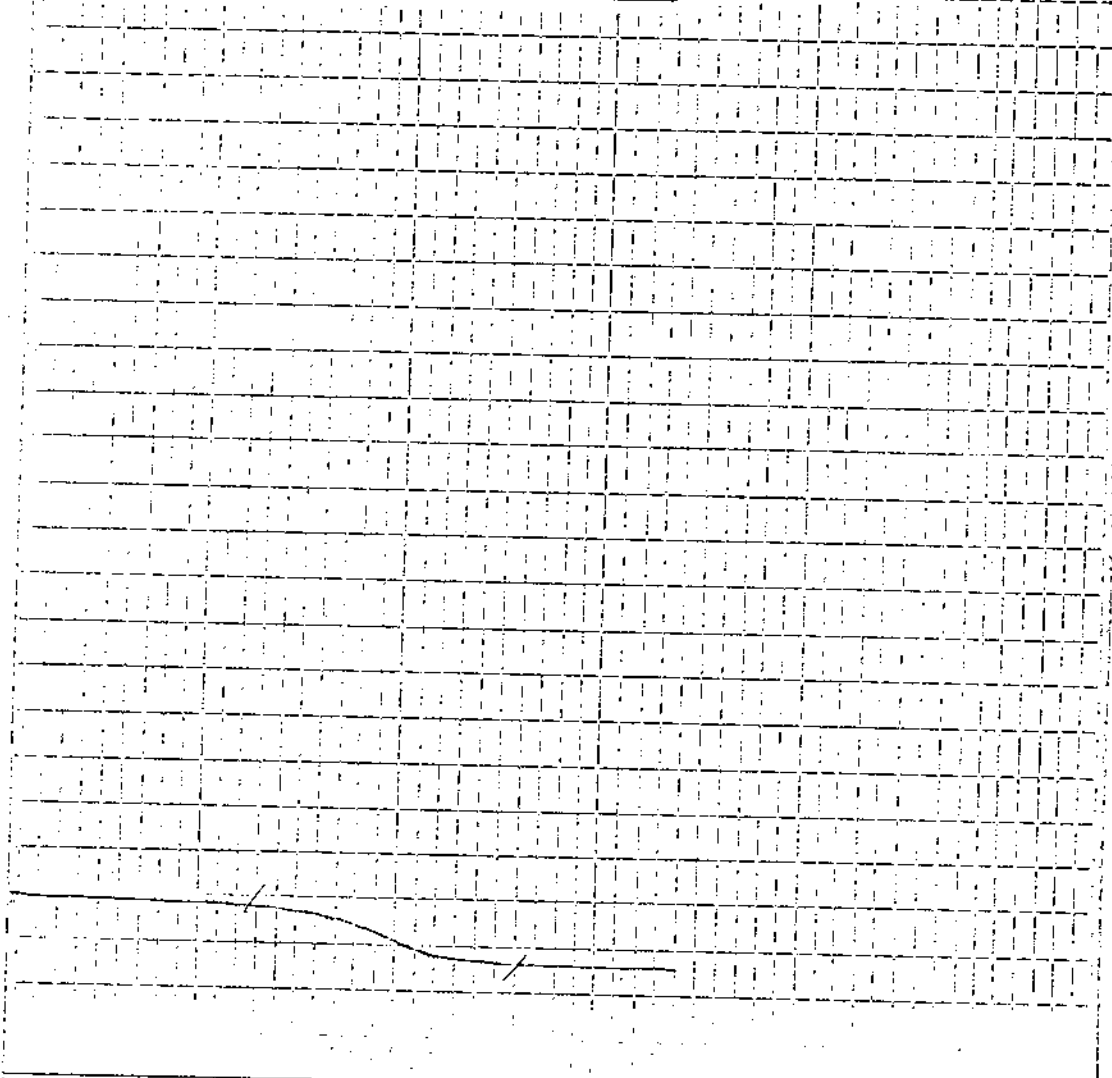
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 128 - 14

Lab. No. 8384

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	16.2	19.6	63.3	0.51	109	Air Dried Basis
	16.3	19.8	63.9	0.51	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	90.2	2.5	17.4	0.50	90.2	17.4	0.50	A.D.B.
	90.1		17.8	0.51	90.1	17.8	0.51	D.B.
65M x 0	9.8	0.9	12.5	0.58	100.0	16.9	0.51	A.D.B.
	9.9		12.6	0.59	100.0	17.3	0.52	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	56.9	2.2	4.5	21.7	71.6	0.72	56.9	4.5	A.D.B.
	57.0		4.6	22.2	73.2	0.74	57.0	4.6	D.B.
1.40-1.50	16.0	2.1	13.7	20.0	64.2	0.68	72.9	6.5	A.D.B.
	16.1		14.0	20.4	65.6	0.69	73.1	6.7	D.B.
1.50-1.60	5.7	3.3	23.5				78.6	7.8	A.D.B.
	5.7		24.3				78.8	7.9	D.B.
+1.60	21.4	3.2	53.0				100.0	17.4	A.D.B.
	21.2		54.8				100.0	17.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
5 1/2	.03	401	---	8% @ 437°	---	---	

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8384 Date Feb. 23, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-128-14

Starting Temperature °C: 350

Softening Temperature °C: 401

Max. Dilatation Temp. °C: ---

Contraction %: 8% @ 437°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

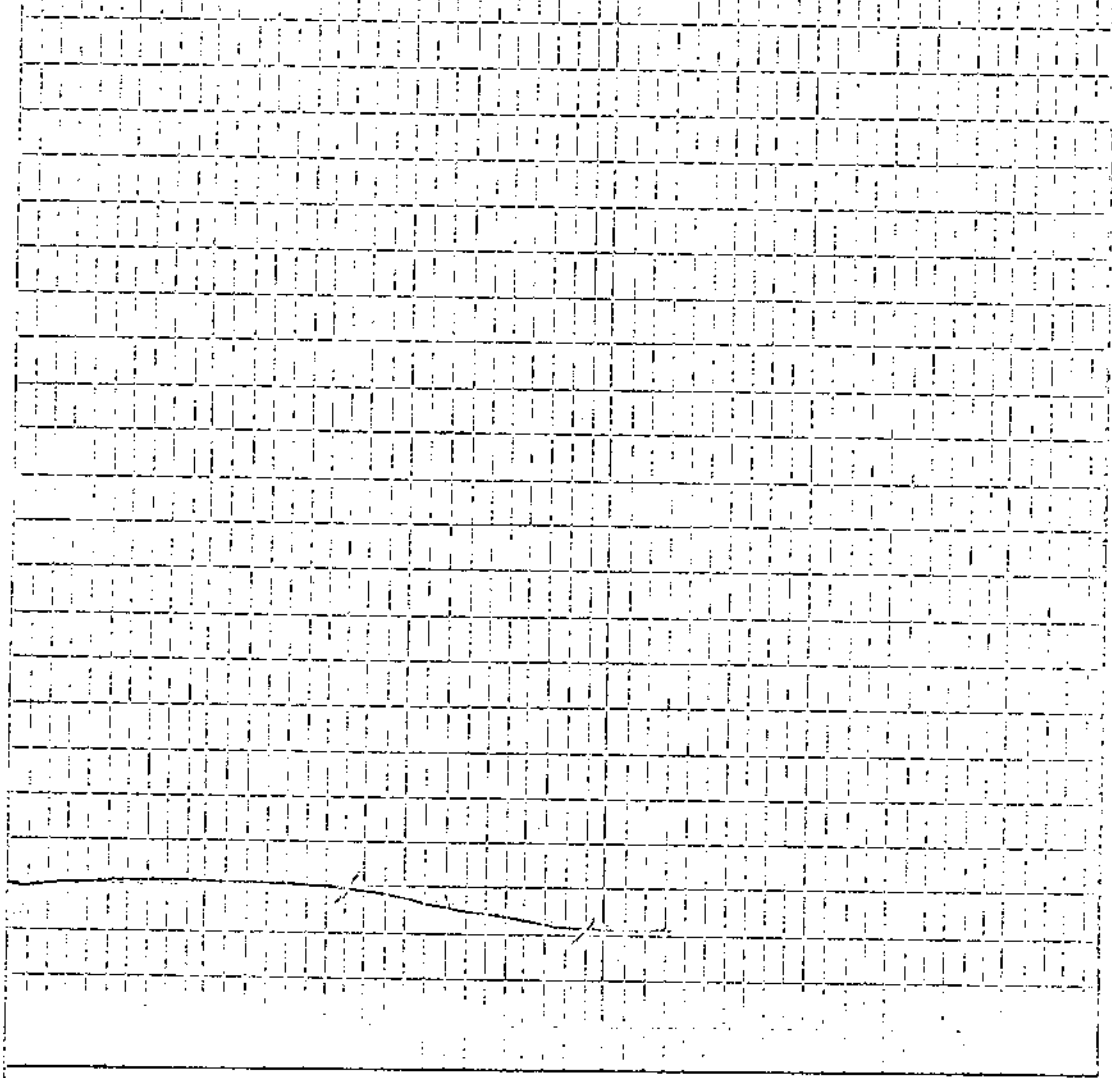
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 1 Lab. No. 8436 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	9.1	30.5	59.4	0.90	104	Air Dried Basis
	9.2	30.8	60.0	0.91	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.1	2.4	10.4	0.91	87.1	10.4	0.91	A.D.B.
	86.9		10.7	0.93	86.9	10.7	0.93	D.B.
65M x 0	12.9	1.2	3.6	0.98	100.0	9.5	0.92	A.D.B.
	13.1		3.6	0.99	100.0	9.8	0.94	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.5	2.9	3.2	32.6	61.3	1.14	68.5	3.2	A.D.B.
	68.2		3.3	33.6	63.1	1.17	68.2	3.3	D.B.
1.40-1.50	20.3	1.1	21.7	24.6	62.6	0.79	88.8	7.4	A.D.B.
	20.5		21.9	24.9	53.2	0.80	88.7	7.6	D.B.
1.50-1.60	7.1	1.4	26.1				95.9	8.8	A.D.B.
	7.2		26.5				95.9	9.0	D.B.
+1.60	4.1	1.6	60.6				100.0	10.9	A.D.B.
	4.1		61.6				100.0	11.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PK ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7 1/2	Trace	362	422	17	100	1.057

Lab. No. 5206 Date Feb. 24, 1977

Client: ELCO PAPER LTD.

Sample Identification: PA-129-1

Starting Temperature °C: 350

Softening Temperature °C: 362

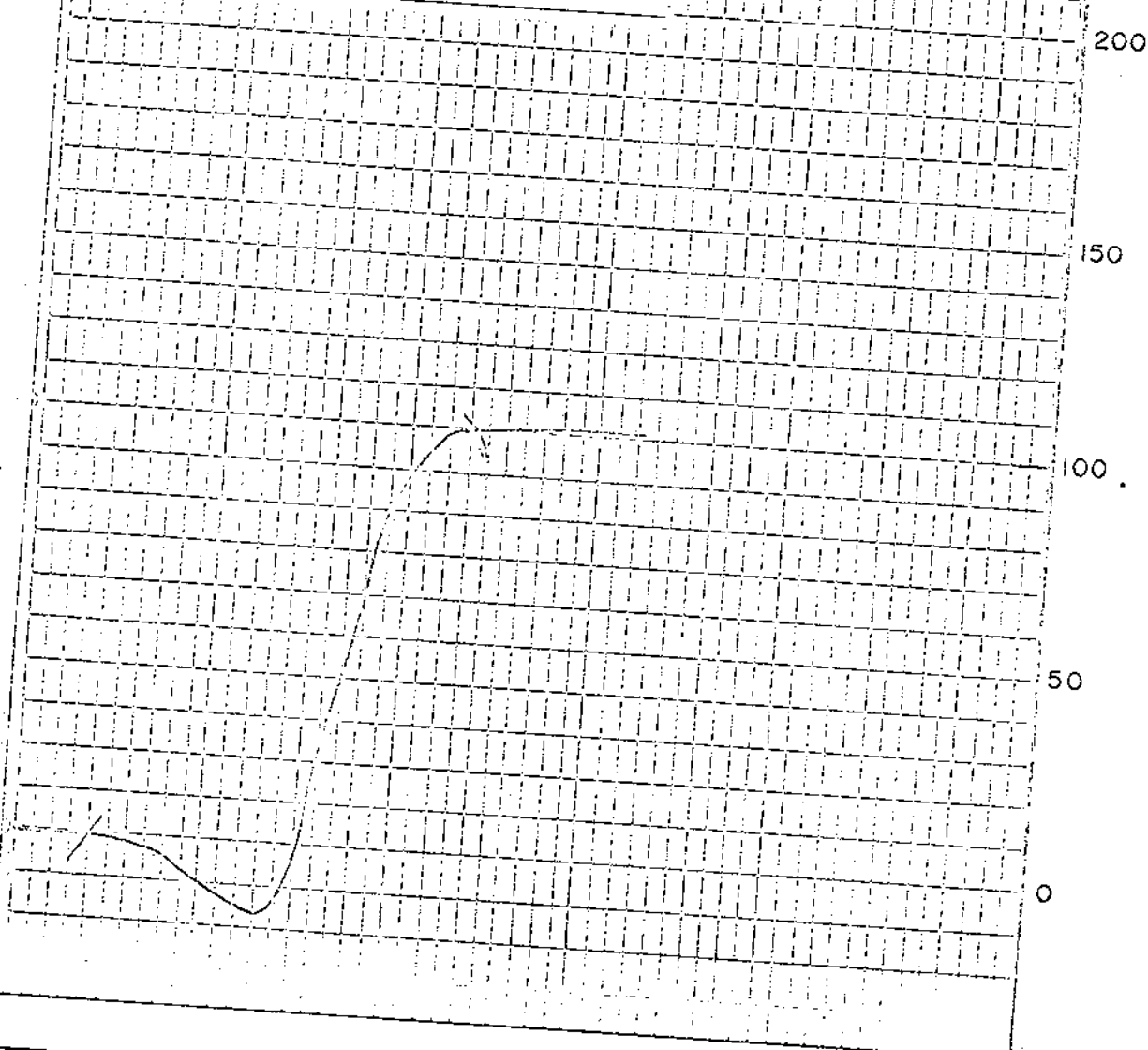
Max. Dilatation Temp. °C: 422

Contraction %: 17

Dilatation %: 100

Final Temperature °C: _____

G. Factor: 1.057



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 2 Lab. No. 8437 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	24.7	15.3	59.0	0.34	112	Air Dried Basis
	24.9	15.5	59.6	0.34	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	84.5	0.8	25.3	0.34	84.5	25.3	0.34	A.D.B.
	84.6		25.6	0.34	84.6	25.6	0.34	D.B.
65M x 0	15.5	1.2	22.5	0.44	100.0	24.9	0.36	A.D.B.
	15.4		22.8	0.45	100.0	25.2	0.36	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	58.4	2.6	5.2	17.9	74.3	0.54	58.4	5.2	A.D.B.
	58.2		5.3	18.4	76.3	0.55	58.2	5.3	D.B.
1.40-1.50	12.1	1.6	15.7	17.1	65.6	0.40	70.5	7.0	A.D.B.
	12.1		16.0	17.4	66.6	0.41	70.3	7.1	D.B.
1.50-1.60	5.3	2.2	24.7	 	 	 	75.8	8.2	A.D.B.
	5.4		25.3	 	 	 	75.7	8.4	D.B.
+1.60	24.2	1.7	76.7	 	 	 	100.0	24.8	A.D.B.
	24.3		78.0	 	 	 	100.0	25.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
3	.03	431	---	10% @ 467°	---	---

Lab. No. 5437 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DM-129-2

Starting Temperature °C: 350

Softening Temperature °C: 431

Max. Dilatation Temp. °C: ---

Contraction %: 10% @ 467°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

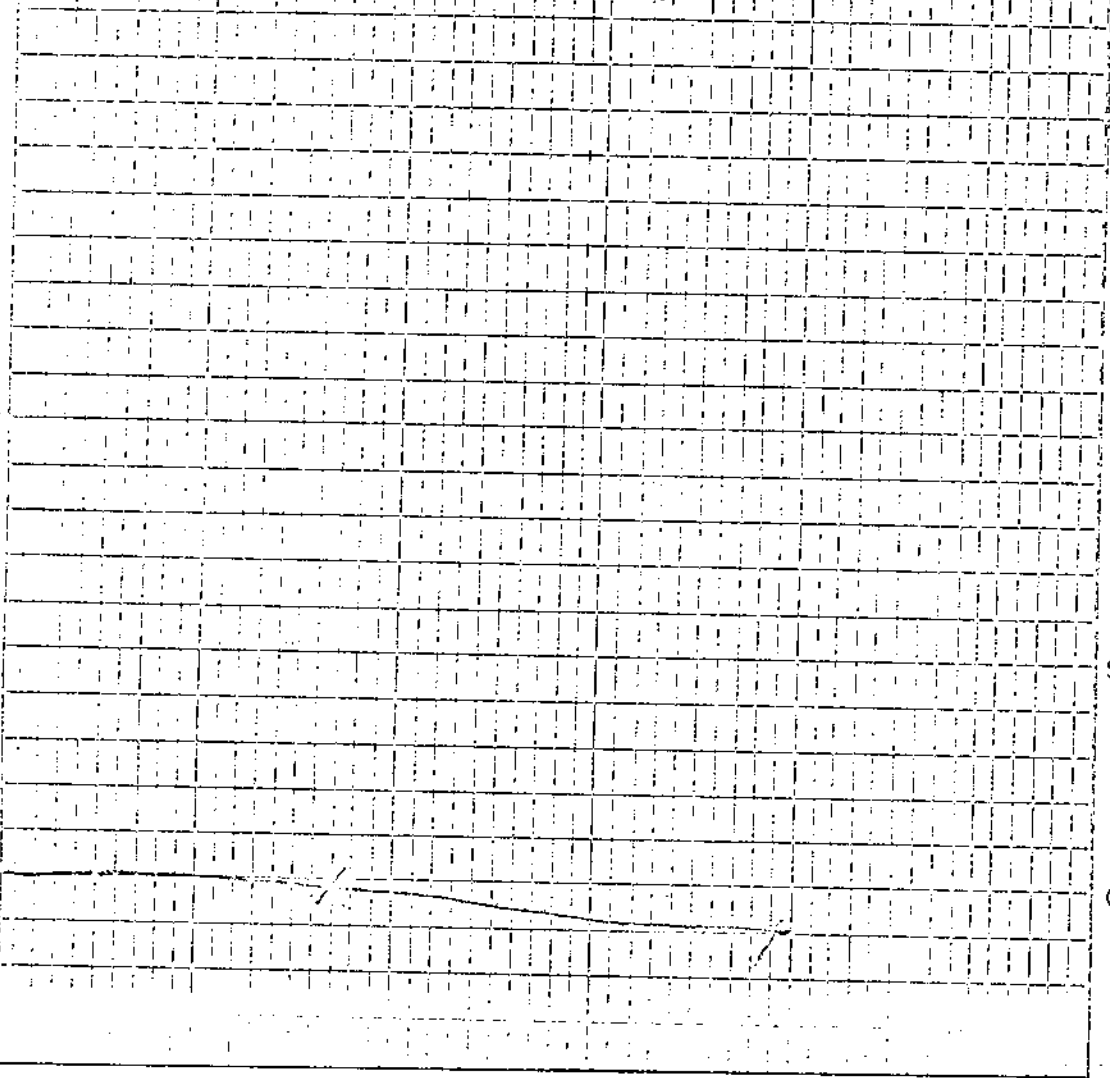
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 3 Lab. No. 8438 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	35.5	22.2	41.4	1.02	84	Air Dried Basis
	35.8	22.4	41.8	1.03	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.1	1.3	35.9	0.99	87.1	35.9	0.99	A.D.B.
	87.1		36.4	1.00	87.1	36.4	1.00	D.B.
65M x 0	12.9	1.0	37.5	0.86	100.0	36.1	0.97	A.D.B.
	12.9		37.9	0.87	100.0	36.6	0.98	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	45.1	1.1	5.4	29.8	63.7	1.12	45.1	5.4	A.D.B.
	45.3		5.5	30.1	64.4	1.13	45.3	5.5	D.B.
1.40-1.50	8.9	1.5	19.3	24.3	54.9	0.97	54.0	7.7	A.D.B.
	8.9		19.6	24.7	55.7	0.98	54.2	7.8	D.B.
1.50-1.60	4.3	1.7	29.5	 	 	 	58.3	9.3	A.D.B.
	4.2		30.0	 	 	 	58.4	9.4	D.B.
+1.60	41.7	1.5	74.2	 	 	 	100.0	36.4	A.D.B.
	41.6		75.3	 	 	 	100.0	36.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7	.07	362	428	20	120	1.063

Lab. No. 3418 Date Feb. 24, 1977

Client: BLON MINING LTD.

Sample Identification: DL-129-3

Starting Temperature °C: 350

Softening Temperature °C: 362

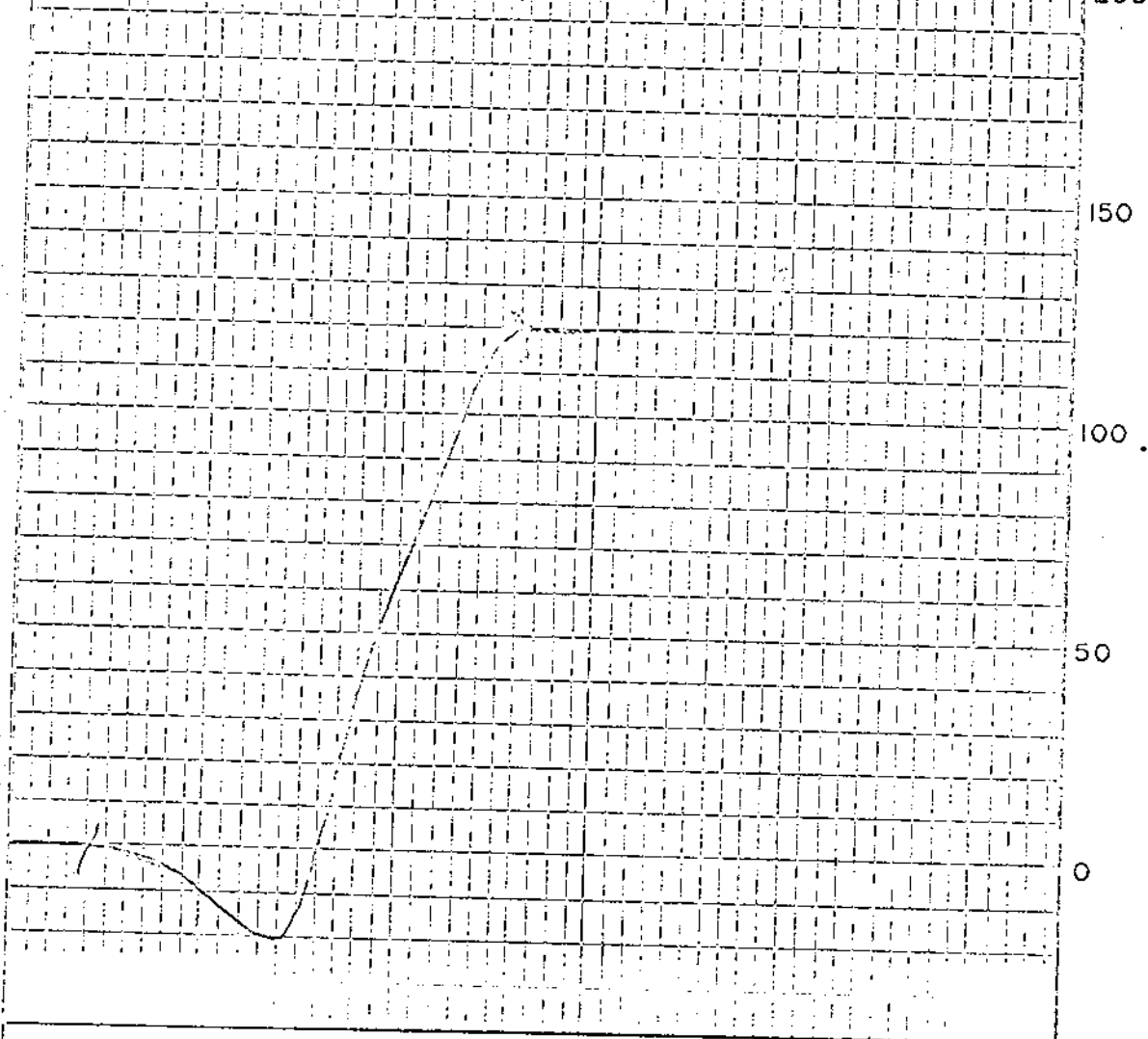
Max. Dilatation Temp. °C: 423

Contraction %: 20

Dilatation %: 120

Final Temperature °C: _____

G. Factor: 1.053



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 4 Lab. No. 8439 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	11.1	28.4	59.5	0.72	89	Air Dried Basis
	11.2	28.7	60.1	0.73	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.8	0.9	10.9	0.70	89.8	10.9	0.70	A.D.B.
	89.8		11.0	0.71	89.8	11.0	0.71	D.B.
65M x 0	10.2	1.1	11.0	0.73	100.0	10.9	0.70	A.D.B.
	10.2		11.1	0.74	100.0	10.9	0.71	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	82.8	1.4	2.9	30.4	65.3	0.71	82.8	2.9	A.D.B.
	82.9		2.9	30.8	66.3	0.72	82.9	2.9	D.B.
1.40-1.50	3.1	1.5	21.6	24.5	52.4	0.63	85.9	3.6	A.D.B.
	3.1		21.9	24.9	53.2	0.64	86.0	3.6	D.B.
1.50-1.60	1.7	2.3	24.2				87.6	4.0	A.D.B.
	1.7		24.8				87.7	4.0	D.B.
+1.60	12.4	2.6	58.4				100.0	10.7	A.D.B.
	12.3		60.0				100.0	10.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.04	365	428	19	207	1.071

Lab. No. 8479 Date Feb. 24, 1977

Client: ELCO MINING LTD.

Sample Identification: EH-129-A

Starting Temperature °C: 350

Softening Temperature °C: 365

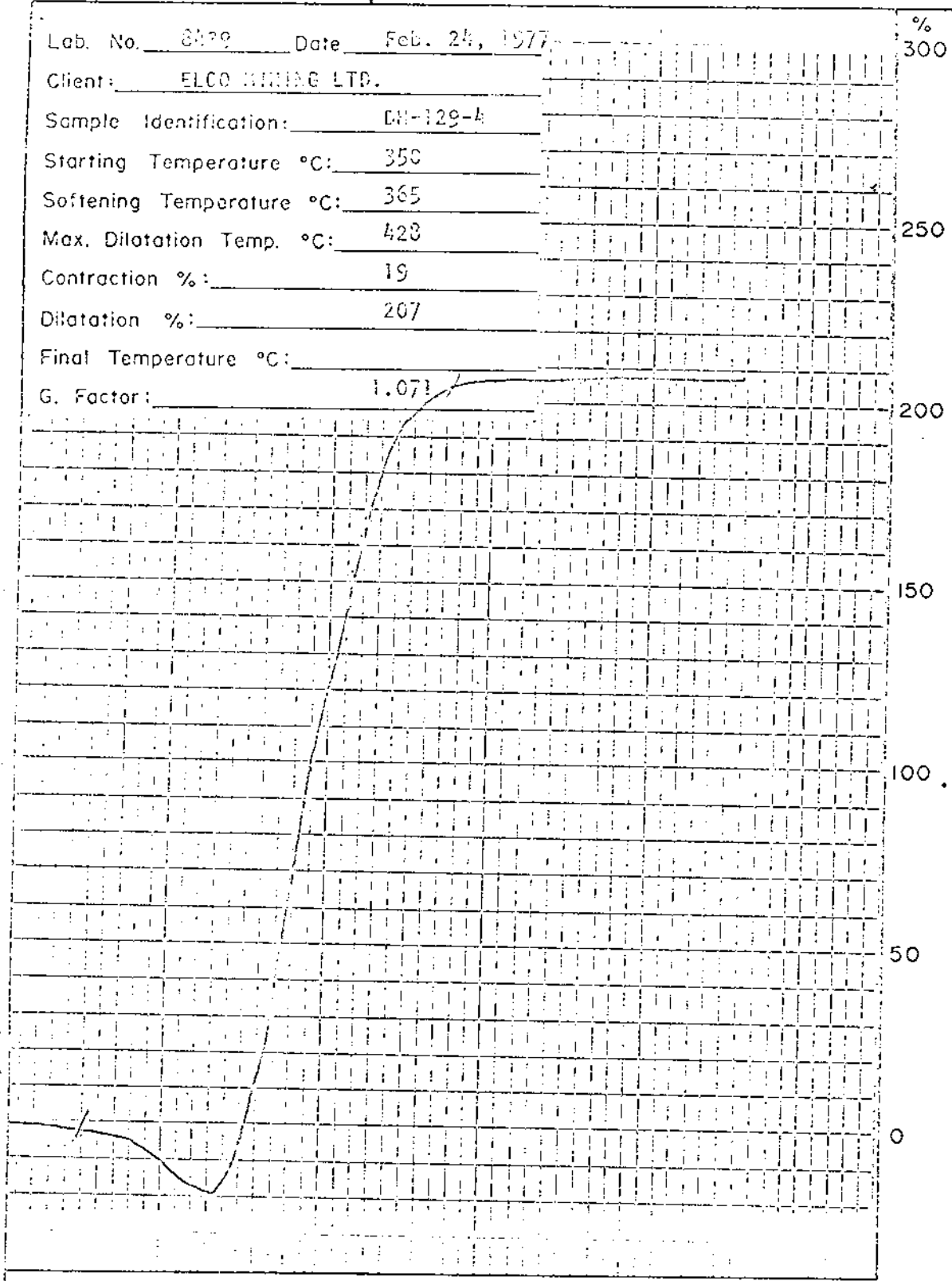
Max. Dilatation Temp. °C: 428

Contraction %: 19

Dilatation %: 207

Final Temperature °C:

G. Factor: 1.071



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 5 Lab. No. 8440 DATE: Feb./77

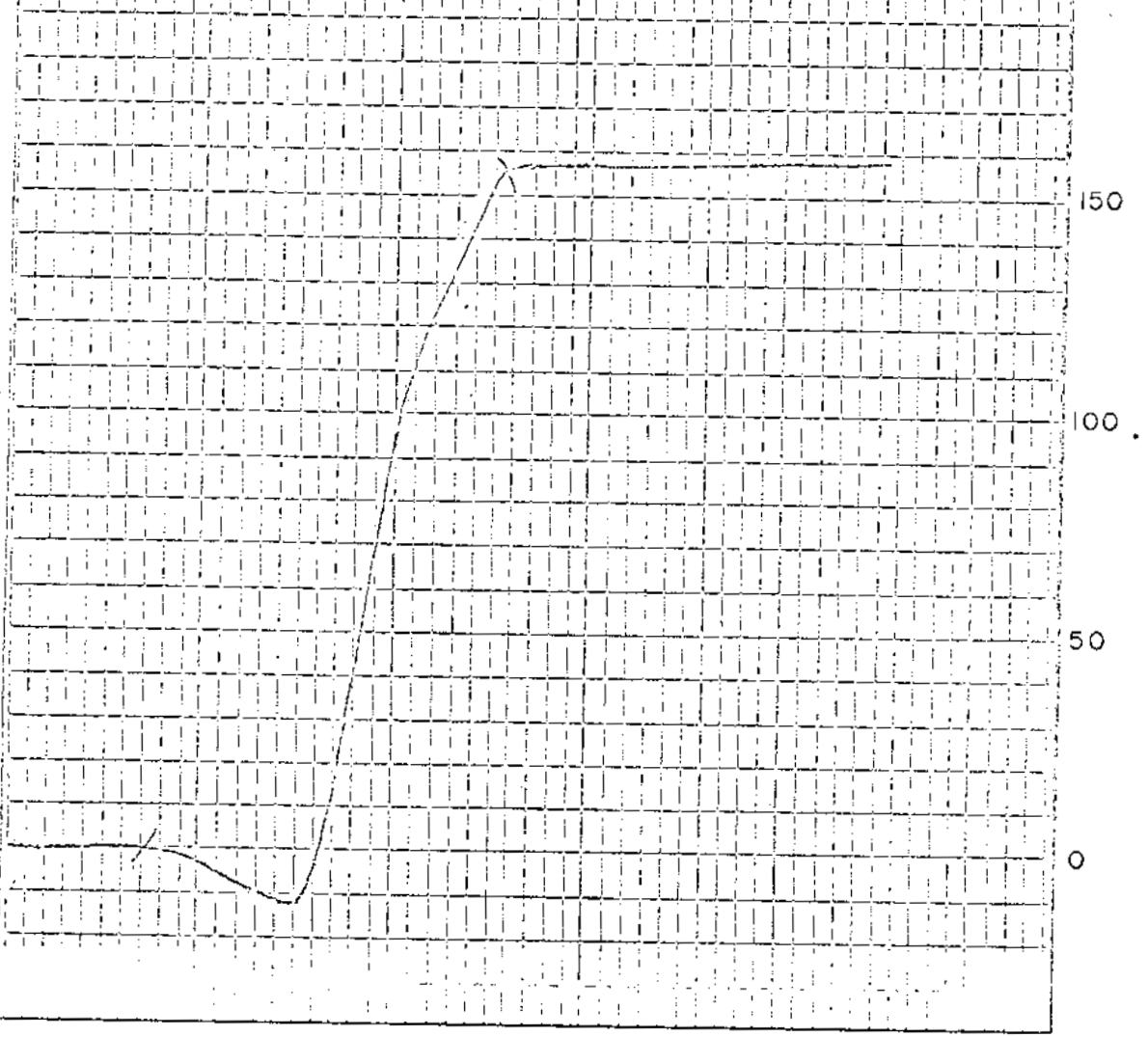
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	17.8	26.0	55.3	1.06	80	Air Dried Basis
	18.0	26.2	55.8	1.07	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.9	1.5	17.9	1.10	91.9	17.9	1.10	A.D.B.
	91.9		18.2	1.12	91.9	18.2	1.12	D.B.
65M x 0	8.1	1.1	12.0	1.02	100.0	17.4	1.09	A.D.B.
	8.1		12.1	1.03	100.0	17.7	1.11	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	70.0	1.4	5.2	28.9	64.5	1.02	70.0	5.2	A.D.B.
	70.0		5.3	29.3	65.4	1.03	70.0	5.3	D.B.
1.40-1.50	9.6	1.9	16.2	25.7	56.2	0.91	79.6	6.5	A.D.B.
	9.6		16.5	26.2	57.3	0.93	79.6	6.7	D.B.
1.50-1.60	2.5	2.9	26.4				82.1	7.1	A.D.B.
	2.5		27.2				82.1	7.3	D.B.
+1.60	17.9	1.4	64.4				100.0	17.4	A.D.B.
	17.9		65.3				100.0	17.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PZ ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.03	371	426	12	156	1.063

Lab. No. 0580 Date Feb. 24, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DN-129-B
 Starting Temperature °C: 350
 Softening Temperature °C: 371
 Max. Dilatation Temp. °C: 426 250
 Contraction %: 12
 Dilatation %: 156
 Final Temperature °C: _____
 G. Factor: 1.053 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drawn

WELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 6 Lab. No. 8441 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	15.7	25.8	57.7	0.74	77	Air Dried Basis
	15.8	26.0	58.2	0.75	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.9	1.0	15.1	0.77	92.9	15.1	0.77	A.D.B.
	92.9		15.3	0.78	92.9	15.3	0.78	D.B.
65M x 0	7.1	1.2	16.6	0.74	100.0	15.2	0.77	A.D.B.
	7.1		16.8	0.75	100.0	15.4	0.78	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	74.7	1.5	4.7	28.3	65.5	0.90	74.7	4.7	A.D.B.
	74.7		4.8	28.7	66.5	0.91	74.7	4.8	D.B.
1.40-1.50	6.7	1.2	20.4	24.0	54.4	0.78	81.4	6.0	A.D.B.
	6.7		20.6	24.3	55.1	0.79	81.4	6.1	D.B.
1.50-1.60	4.1	1.3	29.9	X	X	X	85.5	7.1	A.D.B.
	4.1		30.3				85.5	7.3	D.B.
+1.60	14.5	1.4	59.7	X	X	X	100.0	14.8	A.D.B.
	14.5		60.5				100.0	15.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.05	368	432	13	158	1.073

Lab. No. 8451 Date Feb. 25, 1977

Client: ELCO MINING LTD.

Sample Identification: DB-129-6

Starting Temperature °C: 350

Softening Temperature °C: 368

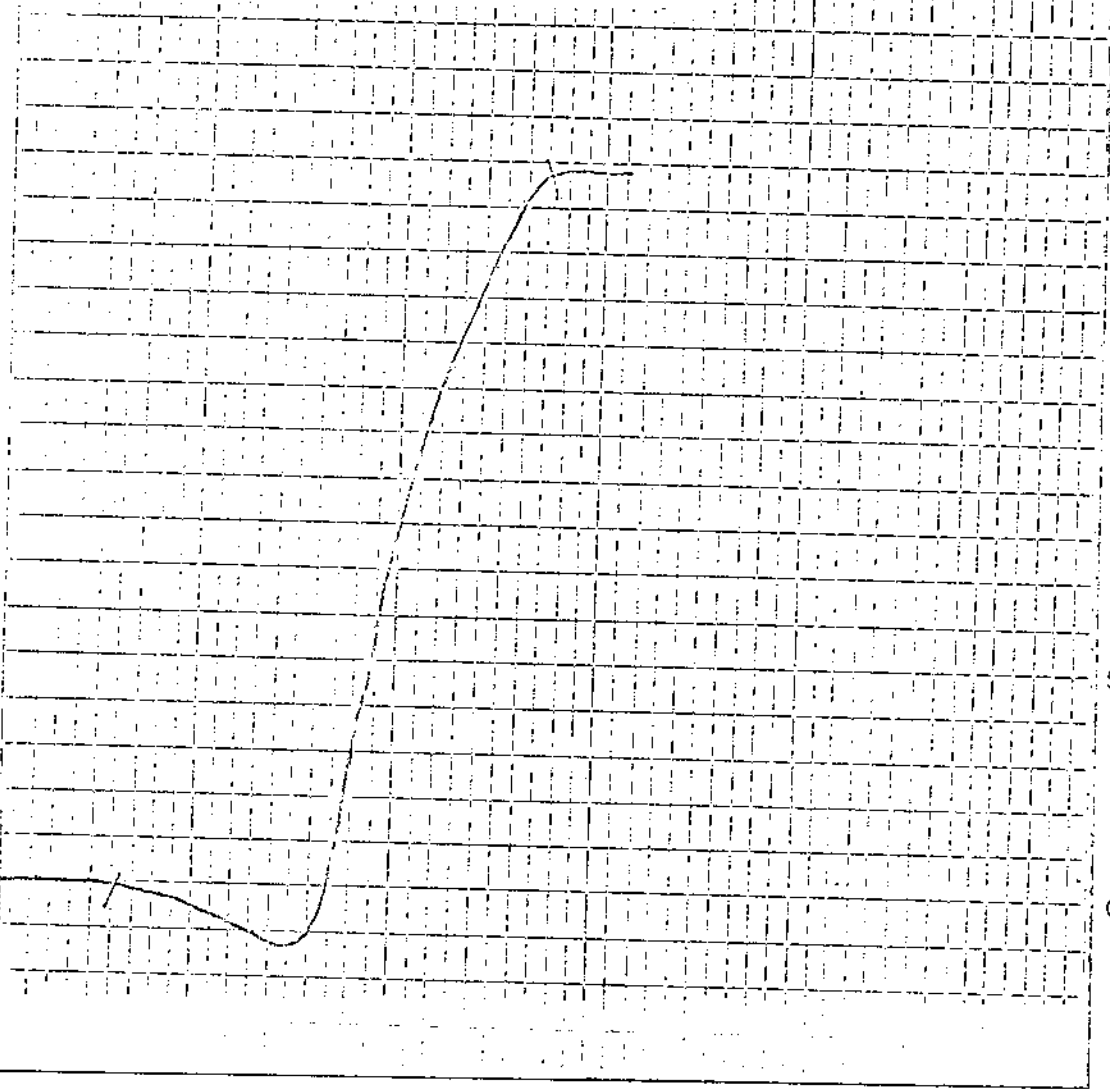
Max. Dilatation Temp. °C: 432

Contraction %: 13

Dilatation %: 158

Final Temperature °C: _____

G. Factor: 1.073



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 7 Lab. No. 8442 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	7.5	27.3	64.6	1.02	80	Air Dried Basis
	7.5	27.5	65.0	1.03	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.H. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.8	0.9	8.2	1.04	93.8	8.2	1.04	A.D.B.
	93.8		8.3	1.05	93.8	8.3	1.05	D.B.
65M x 0	6.2	0.9	5.7	1.01	100.0	8.0	1.04	A.D.B.
	6.2		5.8	1.02	100.0	8.1	1.05	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.H. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	86.0	0.9	2.8	28.6	67.7	1.08	86.0	2.8	A.D.B.
	86.0		2.8	28.9	68.3	1.09	86.0	2.8	D.B.
1.40-1.50	3.4	1.0	20.1	24.0	54.9	0.87	89.4	3.5	A.D.B.
	3.4		20.3	24.2	55.5	0.88	89.4	3.5	D.B.
1.50-1.60	5.5	1.0	34.4	X	X	X	94.9	5.3	A.D.B.
	5.5		34.7				94.9	5.3	D.B.
+1.60	5.1	1.2	62.1	X	X	X	100.0	8.2	A.D.B.
	5.1		62.9				100.0	8.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8	.02	371	435	13	216	1.076

Lab. No. 2442 Date Feb. 25, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DM-129-7

Starting Temperature °C: 350

Softening Temperature °C: 371

Max. Dilatation Temp. °C: 435

250

Contraction %: 13

Dilatation %: 216

Final Temperature °C: _____

G. Factor: 1.075

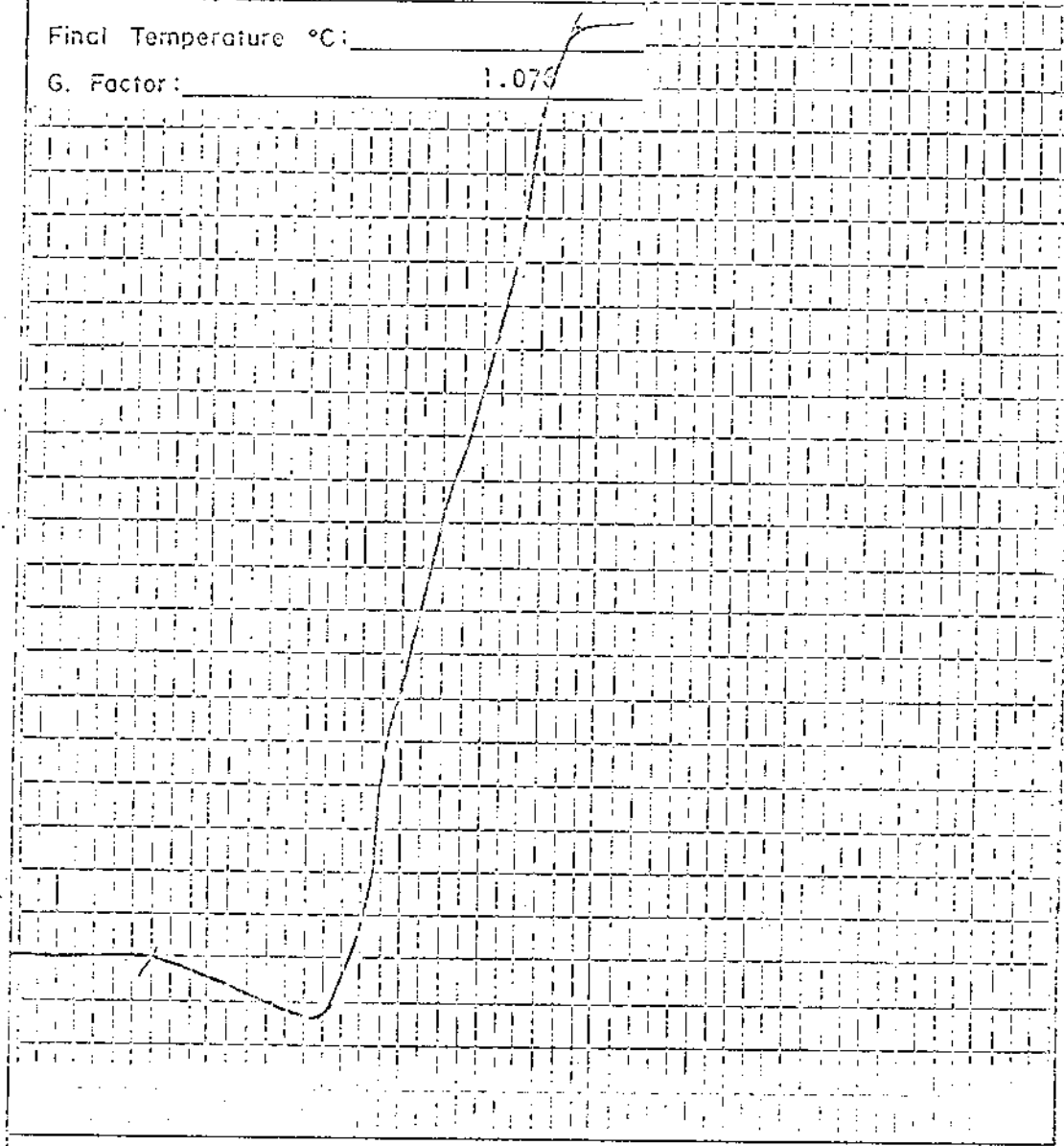
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 8 Lab. No. 8443 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	29.4	22.1	47.5	0.72	79	Air Dried Basis
	29.7	22.3	48.0	0.73	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.8	1.2	29.8	0.73	87.8	29.8	0.73	A.D.B.
	87.8		30.2	0.74	87.8	30.2	0.74	D.B.
65M x 0	12.2	1.2	17.1	0.88	100.0	28.3	0.75	A.D.B.
	12.2		17.3	0.89	100.0	28.6	0.76	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	56.5	1.2	3.5	27.9	67.4	0.90	56.5	3.5	A.D.B.
	56.5		3.5	28.2	68.3	0.91	56.5	3.5	D.B.
1.40-1.50	6.2	1.3	18.7	23.9	56.1	0.89	62.7	5.0	A.D.B.
	6.2		18.9	24.2	56.9	0.90	62.7	5.0	D.B.
1.50-1.60	4.2	1.5	29.5				66.9	6.5	A.D.B.
	4.2		29.9				66.9	6.6	D.B.
+1.60	33.1	1.3	73.7				100.0	28.8	A.D.B.
	33.1		74.8				100.0	29.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.06	368	430	11	223	1.076

Lab. No. 0143 Date Feb. 24, 1977

%
300

Client: ELCO INDUSTRIES LTD.

Sample Identification: BH-129-8

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 430

250

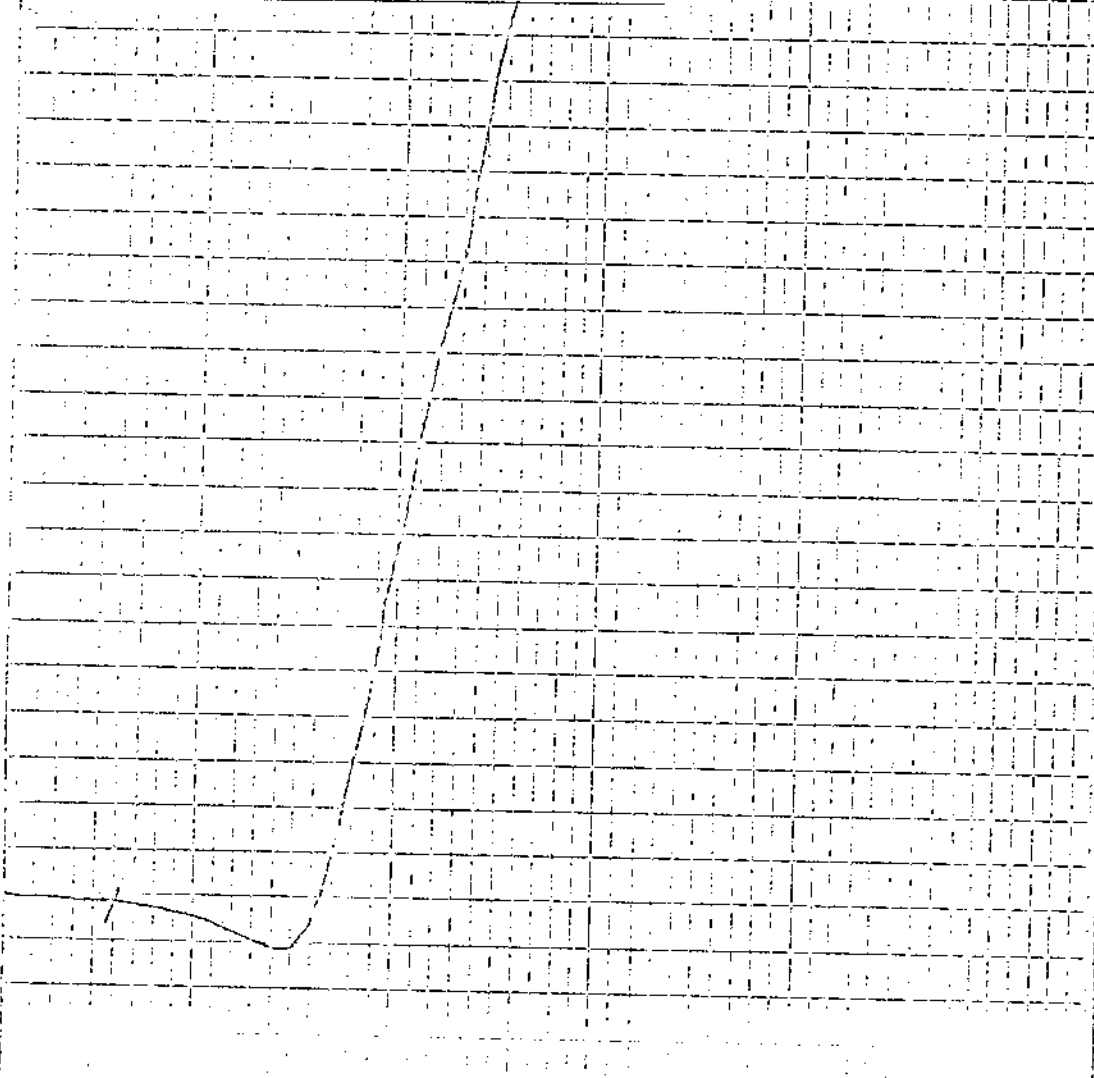
Contraction %: 11

Dilatation %: 223

Final Temperature °C:

G. Factor: 1.076

200



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 9 Lab. No. 8444 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	6.9	26.7	65.7	1.07	80	Air Dried Basis
	6.9	26.9	66.2	1.08	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.6	0.8	6.8	1.05	95.6	6.8	1.05	A.D.B.
	95.6		6.9	1.06	95.6	6.9	1.06	D.B.
65M x 0	4.4	1.0	6.5	0.98	100.0	6.8	1.05	A.D.B.
	4.4		6.6	0.99	100.0	6.9	1.06	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	89.9	0.8	4.0	27.4	67.8	1.06	89.9	4.0	A.D.B.
	89.9		4.0	27.6	68.4	1.07	89.9	4.0	D.B.
1.40-1.50	4.7	0.7	18.6	22.7	58.0	0.92	94.6	4.7	A.D.B.
	4.7		18.7	22.9	58.4	0.93	94.6	4.7	D.B.
1.50-1.60	2.1	0.9	25.7	 	 	 	96.7	5.2	A.D.B.
	2.1		25.9	 	 	 	96.7	5.2	D.B.
+1.60	3.3	1.1	50.4	 	 	 	100.0	6.7	A.D.B.
	3.3		51.0	 	 	 	100.0	6.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.11	362	432	21	253	1.081

Lab. No. 8444 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-129-9

Starting Temperature °C: 350

Softening Temperature °C: 362

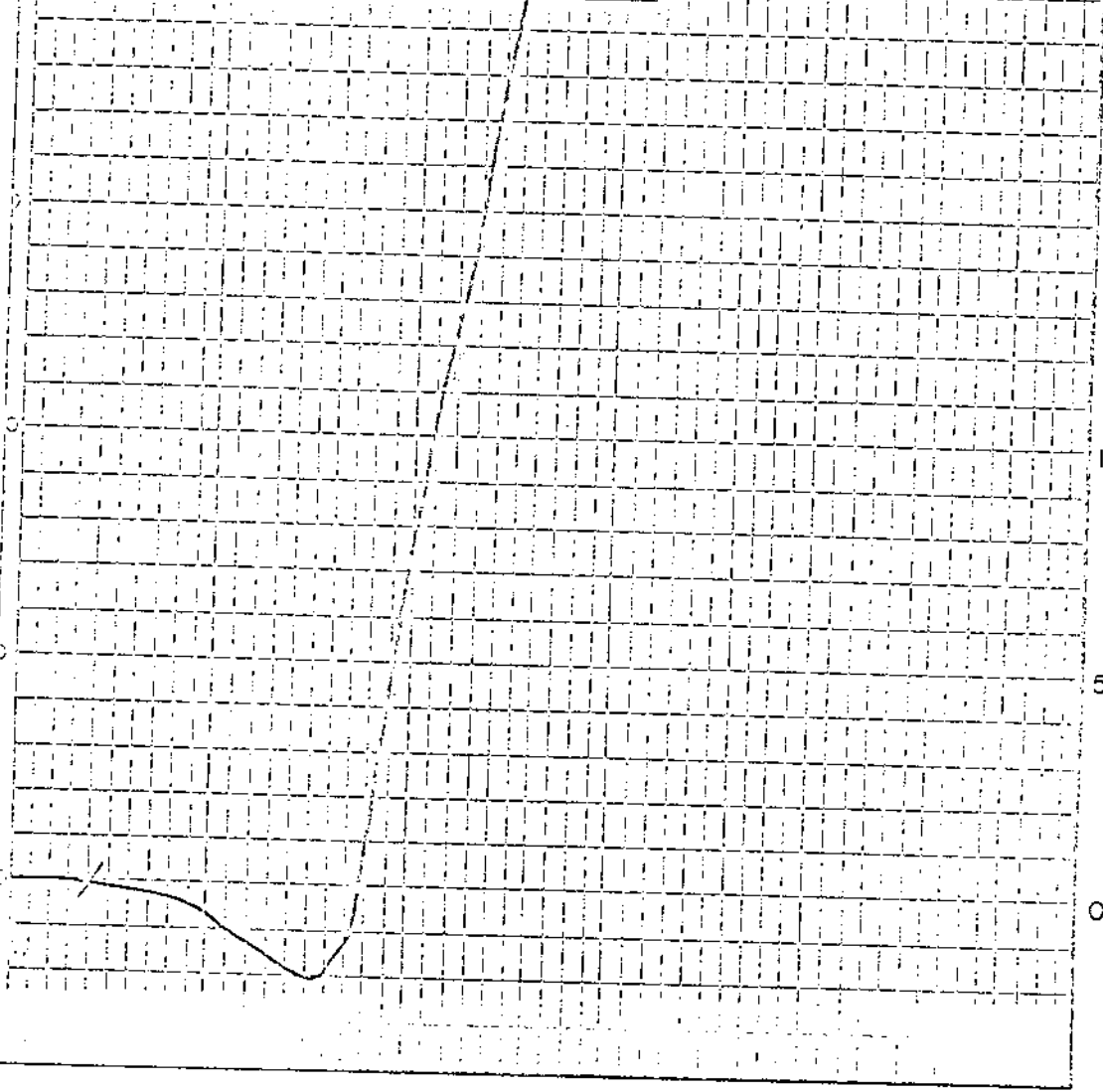
Max. Dilatation Temp. °C: 432

Contraction %: 21

Dilatation %: 253

Final Temperature °C: _____

G. Factor: 1.051



BIRTLEY ENGINEERING (CANADA) LTD.

Title
RUMR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 10 Lab. No. 8445 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	19.8	24.7	54.8	2.66	82	Air Dried Basis
	19.9	24.9	55.2	2.68	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.5	0.9	19.9	2.70	93.5	19.9	2.70	A.D.B.
	93.5		20.1	2.72	93.5	20.1	2.72	D.B.
65M x 0	6.5	0.9	11.4	2.09	100.0	19.3	2.66	A.D.B.
	6.5		11.5	2.11	100.0	19.5	2.68	D.B.

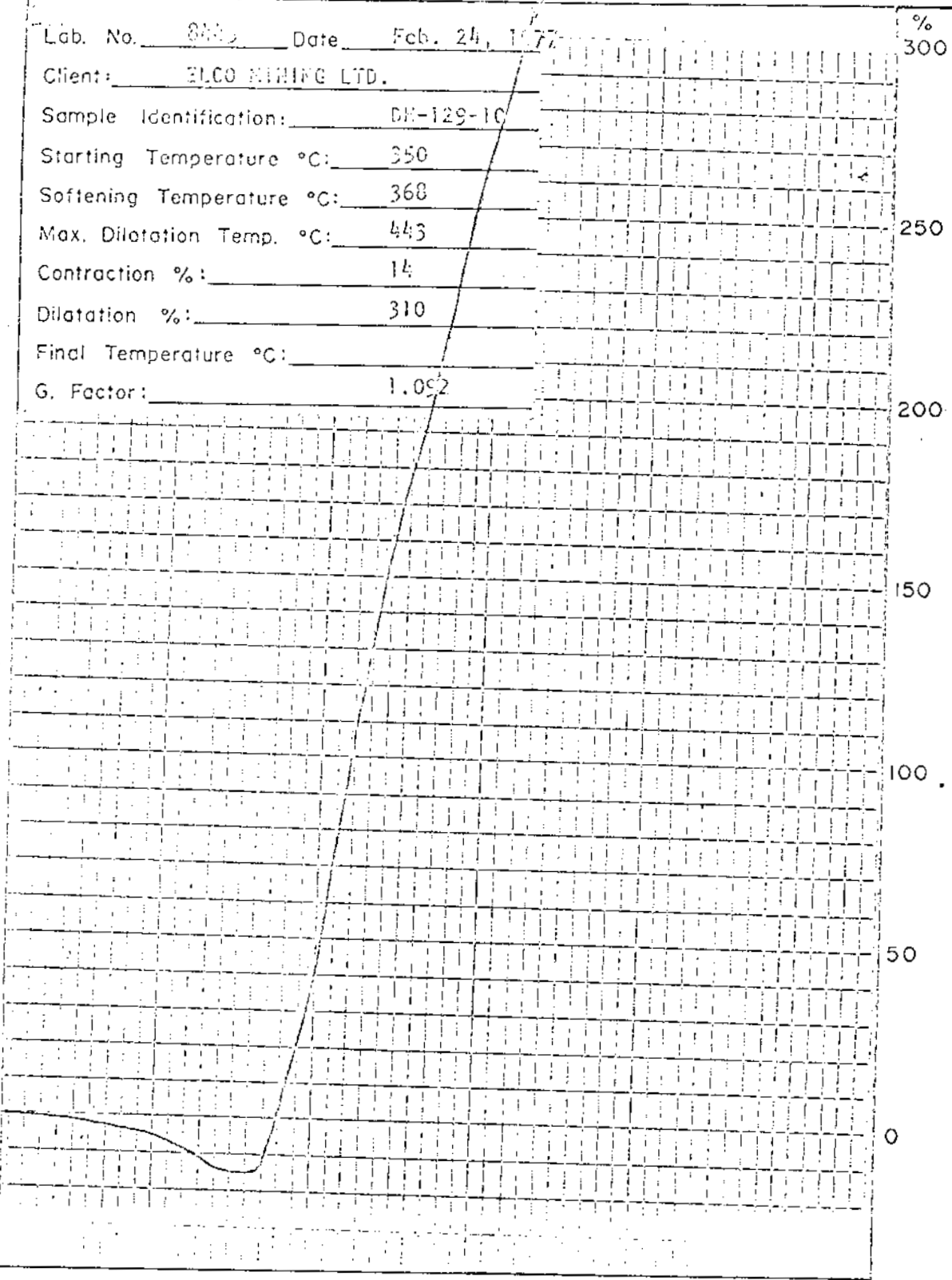
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	65.2	0.9	4.5	28.0	66.6	0.78	65.2	4.5	A.D.B.
	65.2		4.5	28.3	67.2	0.79	65.2	4.5	D.B.
1.40-1.50	7.3	0.7	21.2	22.6	55.5	0.80	72.5	6.2	A.D.B.
	7.3		21.3	22.8	55.9	0.81	72.5	6.2	D.B.
1.50-1.60	7.2	0.7	33.8				79.7	8.7	A.D.B.
	7.2		34.0				79.7	8.7	D.B.
+1.60	20.3	0.9	63.0				100.0	19.9	A.D.B.
	20.3		64.5				100.0	20.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.02	368	443	14	310	1.092

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 843 Date Feb. 24, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DM-129-10
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 443
 Contraction %: 14
 Dilatation %: 310
 Final Temperature °C: _____
 G. Factor: 1.092



BIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drawn

VELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO. DH 129 - 11 Lab. No. 8446 DATE: Feb./77

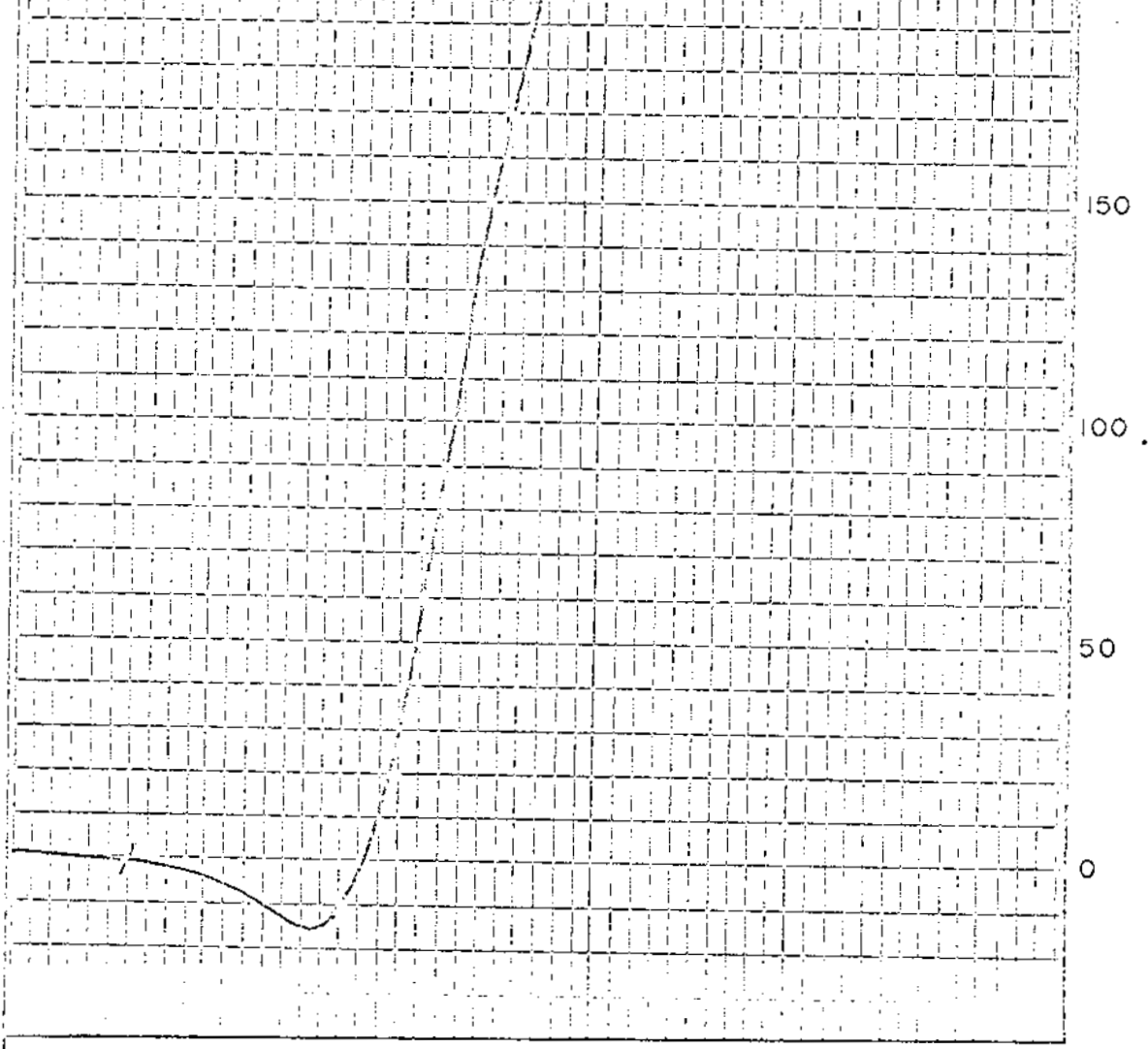
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	16.0	25.3	58.1	0.71	87	Air Dried Basis
	16.1	25.5	58.4	0.71	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.7	0.9	16.3	0.76	93.7	16.3	0.76	A.D.B.
	93.7		16.4	0.77	93.7	16.4	0.77	D.B.
65M x 0	6.3	0.9	9.8	0.73	100.0	15.9	0.76	A.D.B.
	6.3		9.9	0.74	100.0	16.0	0.77	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	76.6	1.0	4.0	28.5	66.5	0.83	76.6	4.0	A.D.B.
	76.6		4.0	28.8	67.2	0.84	76.6	4.0	D.B.
1.40-1.50	5.3	0.7	19.4	23.6	56.3	0.69	81.9	5.0	A.D.B.
	5.3		19.5	23.8	56.7	0.70	81.9	5.0	D.B.
1.50-1.60	2.2	0.7	30.9	X	X	X	84.1	5.7	A.D.B.
	2.2		31.1				84.1	5.7	D.B.
+1.60	15.9	0.7	69.6	X	X	X	100.0	15.8	A.D.B.
	15.9		70.1				100.0	15.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.04	368	443	15	295	1.091

Lab. No. 2146 Date Feb. 24, 1977 %
300
 Client: ALCO MINING LTD.
 Sample Identification: DH-129-111
 Starting Temperature °C: 350
 Softening Temperature °C: 368 250
 Max. Dilatation Temp. °C: 443
 Contraction %: 15
 Dilatation %: 295
 Final Temperature °C: _____
 G. Factor: 1.09 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 12 Lab. No. 8480 DATE: Feb./77

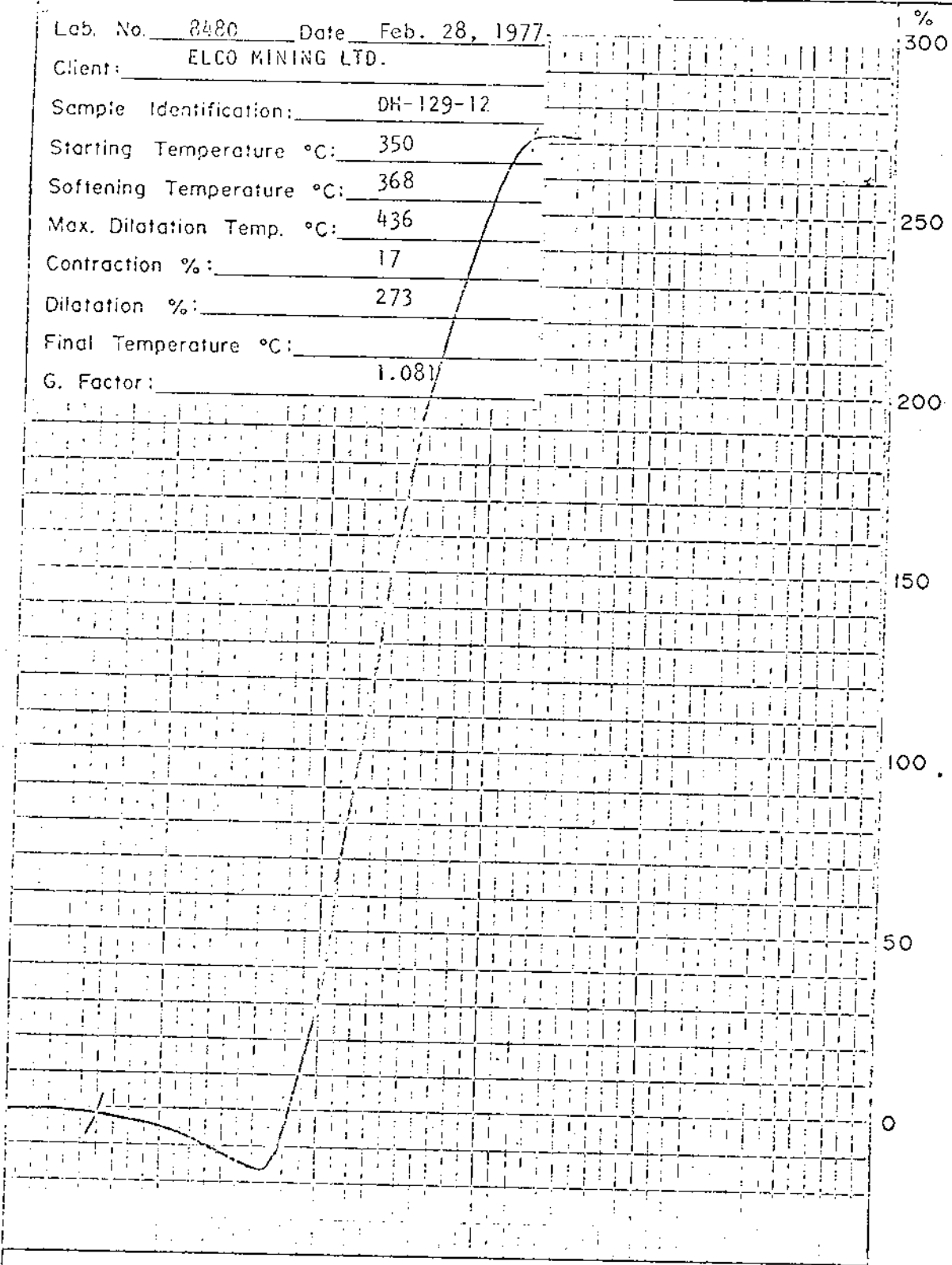
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	23.0	25.2	50.8	0.94	86	Air Dried Basis
	23.2	25.5	51.3	0.95	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.8	1.9	23.4	0.96	89.8	23.4	0.96	A.D.B.
	89.8		23.9	0.97	89.8	23.9	0.97	D.B.
65M x 0	10.2	1.0	13.5	0.92	100.0	22.4	0.96	A.D.B.
	10.2		13.6	0.93	100.0	22.8	0.97	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	66.9	1.9	4.0	27.4	66.7	0.88	66.9	4.0	A.D.B.
	66.9		4.1	27.9	68.0	0.90	66.9	4.1	D.B.
1.40-1.50	4.4	1.2	19.9	23.2	55.7	0.82	71.3	5.0	A.D.B.
	4.4		20.1	23.5	56.4	0.83	71.3	5.1	D.B.
1.50-1.60	2.5	2.0	28.0				73.8	5.8	A.D.B.
	2.5		28.6				73.8	5.9	D.B.
+1.60	26.2	2.1	69.7				100.0	22.5	A.D.B.
	26.2		71.1				100.0	23.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PZ ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.05	368	436	17	273	1.081

Lab. No. 2480 Date Feb. 28, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-129-12
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 436
 Contraction %: 17
 Dilatation %: 273
 Final Temperature °C: _____
 G. Factor: 1.081



BIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 13 Lab. No. 8481 DATE: Feb./77

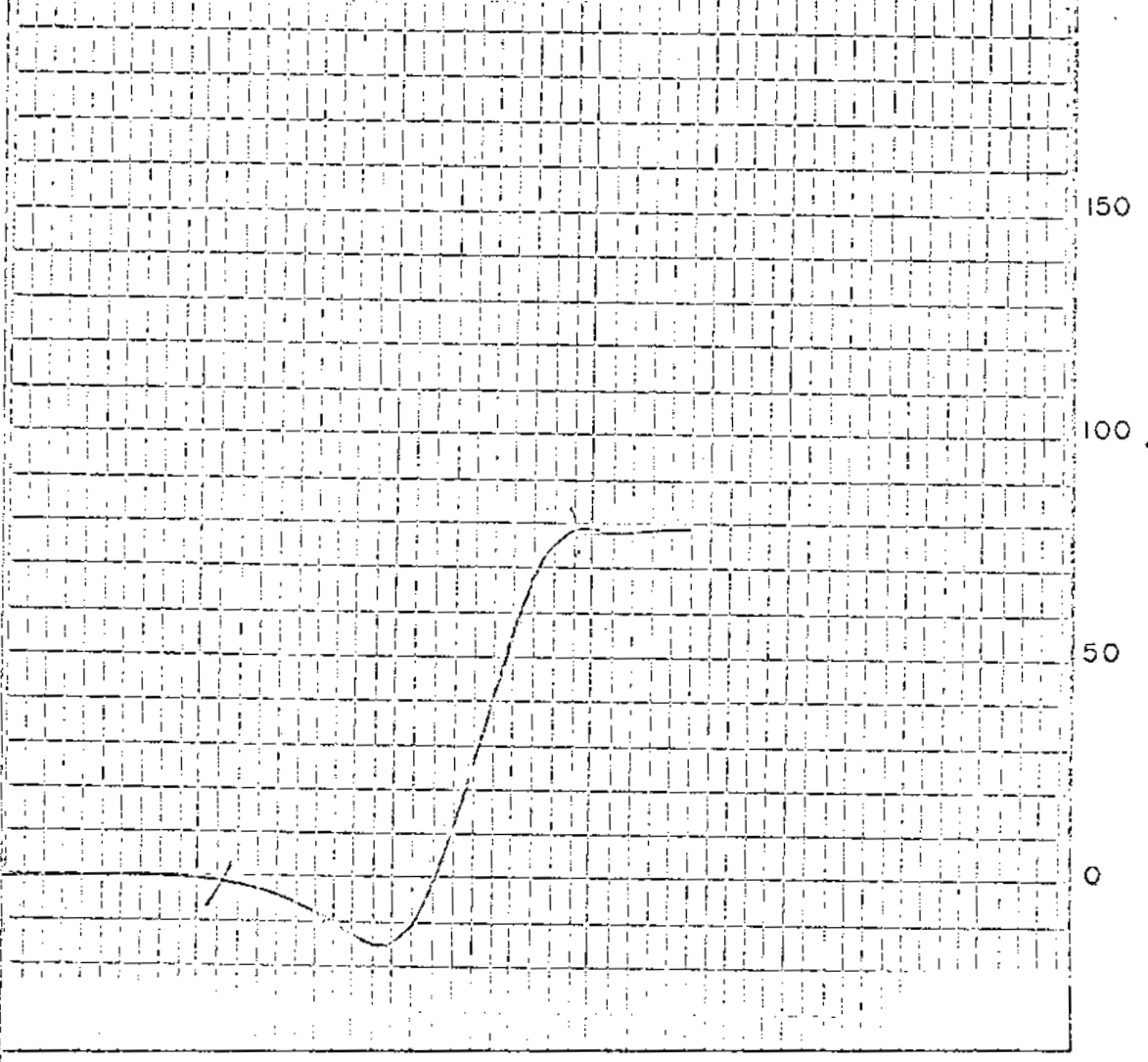
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS*
0.9	52.6	16.5	30.0	0.58	107	Air Dried Basis
	53.1	16.6	30.3	0.59	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	79.9	2.6	57.5	0.53	79.9	57.5	0.53	A.D.B.
	79.6		59.0	0.54	79.6	59.0	0.54	D.B.
65M x 0	20.1	1.0	32.4	0.70	100.0	52.5	0.57	A.D.B.
	20.4		32.7	0.71	100.0	53.6	0.58	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	25.2	3.0	5.1	25.6	66.3	0.90	25.2	5.1	A.D.B.
	25.2		5.3	26.4	68.3	0.93	25.2	5.3	D.B.
1.40-1.50	2.4	4.2	11.7	21.8	62.3	0.75	27.6	5.7	A.D.B.
	2.4		12.2	22.8	65.0	0.78	27.6	5.9	D.B.
1.50-1.60	2.0	4.1	19.2	X	X	X	29.6	6.6	A.D.B.
	2.0		20.0				29.6	6.9	D.B.
+1.60	70.4	2.4	79.7	X	X	X	100.0	58.1	A.D.B.
	70.4		81.7				100.0	59.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.20	383	437	15	78	1.047

Lab. No. 8481 Date Feb. 28, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-129-13
 Starting Temperature °C: 350
 Softening Temperature °C: 383
 Max. Dilatation Temp. °C: 437 250
 Contraction %: 15
 Dilatation %: 78
 Final Temperature °C: _____
 G. Factor: 1.047 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 129 - 14 Lab. No. 8482 DATE: Feb./77

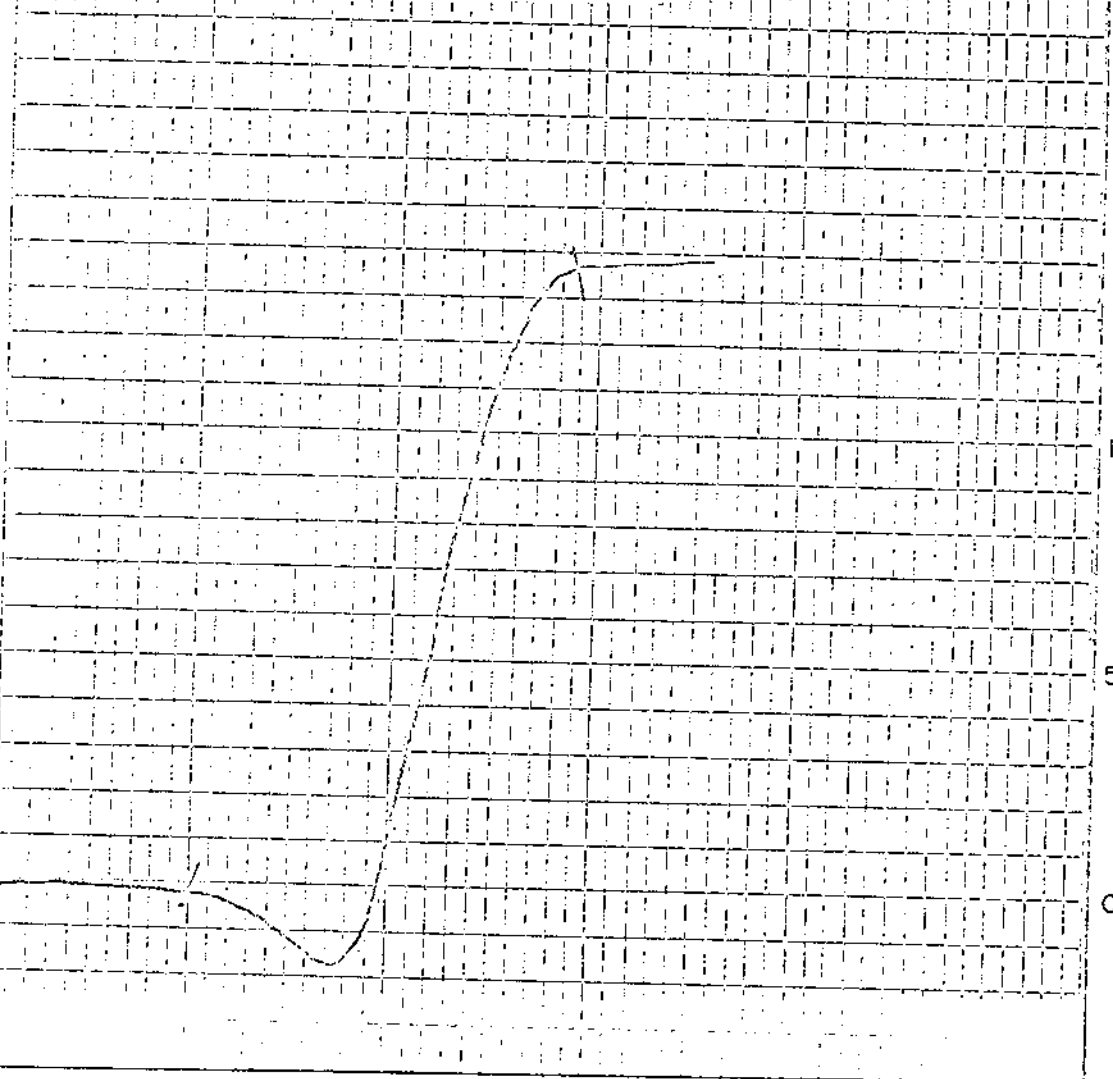
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	33.3	22.9	43.2	0.70	89	Air Dried Basis
	33.5	23.0	43.5	0.70	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.2	2.1	34.5	0.70	87.2	34.5	0.70	A.D.B.
	87.0		35.2	0.72	87.0	35.2	0.72	D.B.
65M x 0	12.8	0.9	19.3	0.92	100.0	32.6	0.73	A.D.B.
	13.0		19.5	0.93	100.0	33.2	0.75	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	51.3	2.8	4.8	26.0	66.4	0.84	51.3	4.8	A.D.B.
	50.9		4.9	26.7	68.4	0.86	50.9	4.9	D.B.
1.40-1.50	4.3	2.1	14.0	23.8	60.1	0.87	55.6	5.5	A.D.B.
	4.4		14.3	24.3	61.4	0.89	55.3	5.6	D.B.
1.50-1.60	2.0	3.1	24.0				57.6	6.2	A.D.B.
	2.0		24.8				57.3	6.3	D.B.
+1.60	42.4	1.3	71.4				100.0	33.8	A.D.B.
	42.7		72.3				100.0	34.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.11	380	437	17	137	1.057

Lab. No. 8482 Date Feb. 25, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-129-14
 Starting Temperature °C: 350
 Softening Temperature °C: 380
 Max. Dilatation Temp. °C: 437
 Contraction %: 17
 Dilatation %: 137
 Final Temperature °C: _____
 G. Factor: 1.057



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST	Date
	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 1 Lab. No. 8447 DATE: Feb. /77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	58.6	16.7	23.6	0.61	65	Air Dried Basis
	59.3	16.9	23.8	0.62	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	85.7	2.0	61.2	0.60	85.7	61.2	0.60	A.D.B.
	85.7		62.4	0.61	85.7	62.4	0.61	D.B.
65M x 0	14.3	1.5	37.7	0.76	100.0	57.8	0.62	A.D.B.
	14.3		38.3	0.77	100.0	59.0	0.63	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	15.9	3.0	4.3	33.7	59.0	1.08	15.9	4.3	A.D.B.
	15.8		4.4	34.7	60.9	1.11	15.8	4.4	D.B.
1.40-1.50	1.3	2.6	16.4	28.6	52.4	0.98	17.2	5.2	A.D.B.
	1.3		16.8	29.4	53.8	1.01	17.1	5.3	D.B.
1.50-1.60	2.3	2.5	26.3				19.5	7.7	A.D.B.
	2.3		27.0				19.4	7.9	D.B.
+1.60	80.5	1.8	73.3				100.0	60.5	A.D.B.
	80.6		74.6				100.0	61.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7 1/2	.01	359	422	27	172	1.062

Lab. No. 8447 Date Feb. 24, 1977

%
300

Client: SLCO MINING LTD.

Sample Identification: DP-130-1

Starting Temperature °C: 350

Softening Temperature °C: 359

Max. Dilatation Temp. °C: 422

Contraction %: 27

Dilatation %: 172

Final Temperature °C: _____

G. Factor: 1.062

250

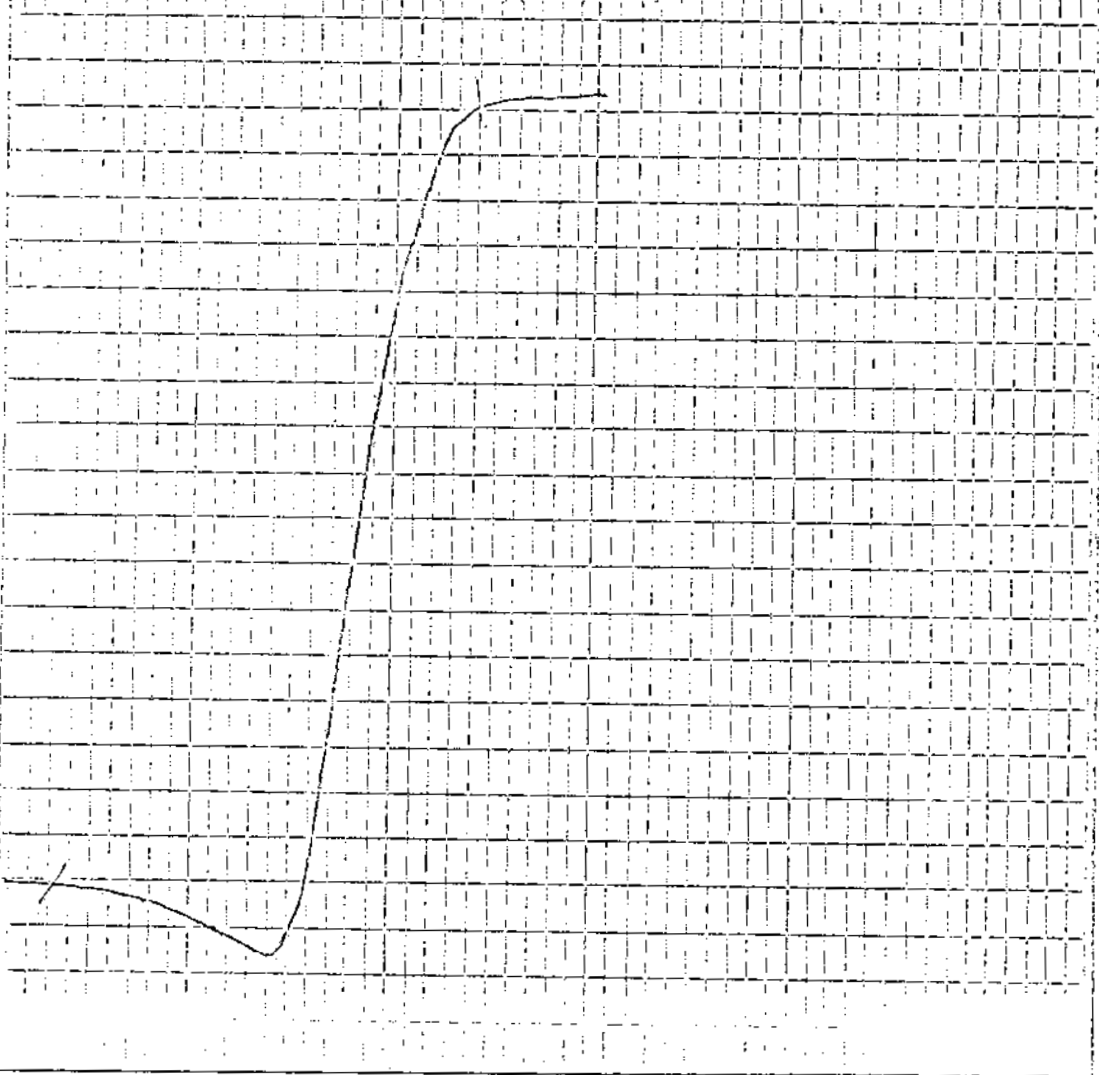
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 2 Lab. No. 8448 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	45.4	25.0	28.5	0.36	59	Air Dried Basis
	45.9	25.3	28.8	0.36	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.6	1.0	46.4	0.29	91.6	46.4	0.29	A.D.B.
	91.7		46.9	0.29	91.7	46.9	0.29	D.B.
65M x 0	8.4	1.5	28.0	0.54	100.0	44.9	0.31	A.D.B.
	8.3		28.4	0.55	100.0	45.4	0.31	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	30.0	1.2	6.3	34.1	58.4	0.70	30.0	6.3	A.D.B.
	29.9		6.4	34.5	59.1	0.71	29.9	6.4	D.B.
1.40-1.50	4.8	1.3	20.4	28.7	49.6	0.62	34.8	8.2	A.D.B.
	4.8		20.7	29.1	50.2	0.63	34.7	8.4	D.B.
1.50-1.60	3.5	1.1	31.9				38.3	10.4	A.D.B.
	3.5		32.3				38.2	10.6	D.B.
+1.60	61.7	0.9	67.3				100.0	45.5	A.D.B.
	61.8		67.9				100.0	46.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
6 1/2	.12	368	431	13	185	1.074

Lcd. No. 3156 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-130-2

Starting Temperature °C: 350

Softening Temperature °C: 368

Max. Dilatation Temp. °C: 431

250

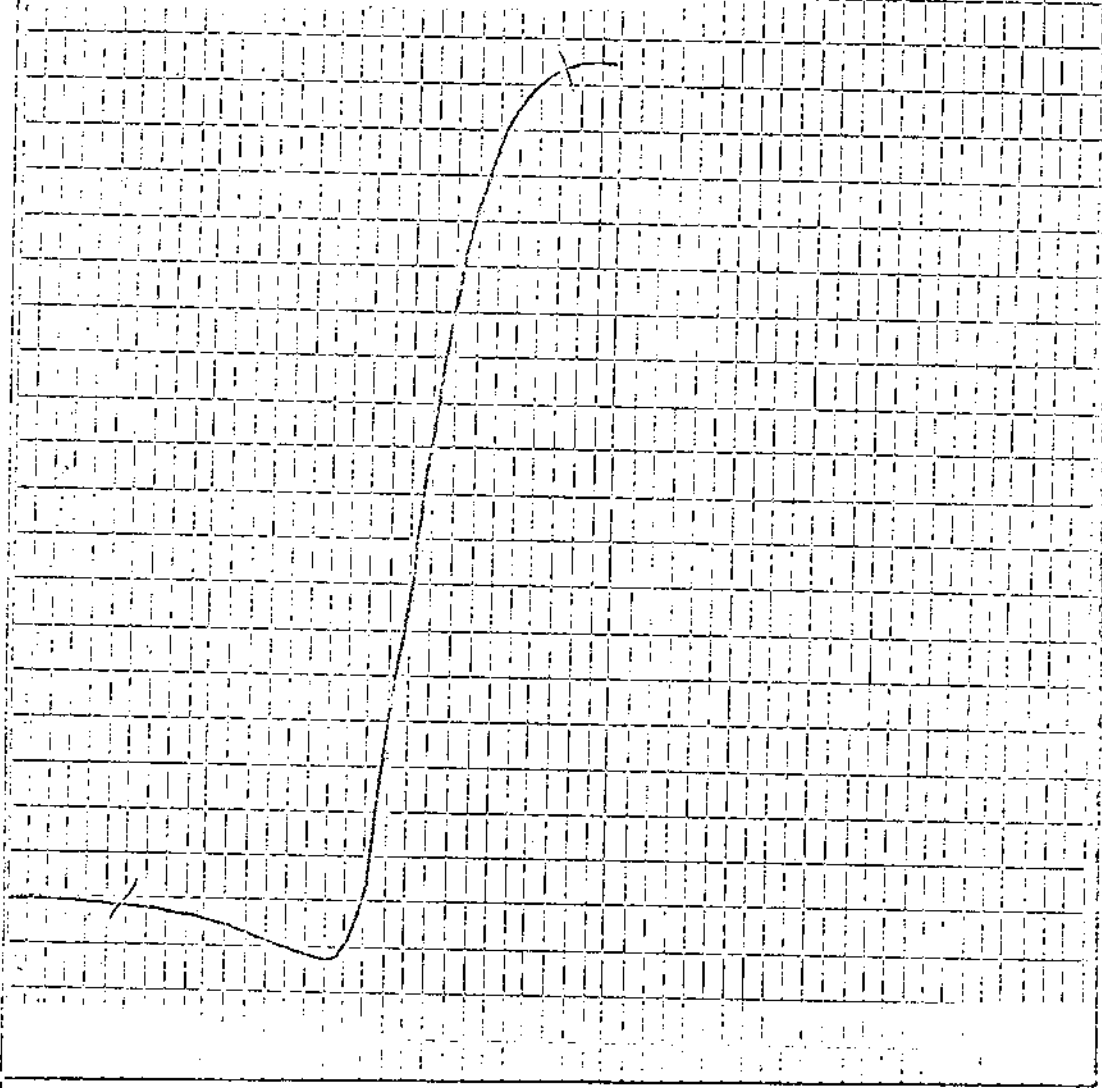
Contraction %: 13

Dilatation %: 165

Final Temperature °C: _____

G. Factor: 1.074

200



150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 3 Lab. NO. 8449 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	19.4	32.3	47.3	0.90	74	Air Dried Basis
	19.6	32.6	47.8	0.91	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.2	1.2	20.2	0.87	91.2	20.2	0.87	A.D.B.
	91.2		20.4	0.88	91.2	20.4	0.88	D.B.
65M x 0	8.8	1.5	15.6	0.89	100.0	19.8	0.87	A.D.B.
	8.8		15.8	0.90	100.0	20.0	0.88	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	67.3	1.2	3.9	34.1	60.8	0.72	67.3	3.9	A.D.B.
	67.3		3.9	34.5	61.6	0.73	67.3	3.9	D.B.
1.40-1.50	4.3	1.2	19.8	30.0	79.0	0.64	71.6	4.9	A.D.B.
	4.3		20.0	30.4	49.6	0.65	71.6	4.9	D.B.
1.50-1.60	4.1	1.4	31.2				75.7	6.3	A.D.B.
	4.1		31.6				75.7	6.3	D.B.
+1.60	24.3	1.1	65.5				100.0	20.7	A.D.B.
	24.3		66.2				100.0	20.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
6 1/2	.07	362	428	17	174	1.074	

Lab. No. 0449 Date Feb. 24, 1977

Client: ELCO MINING LTD.

Sample Identification: DR-130-3

Starting Temperature °C: 350

Softening Temperature °C: 362

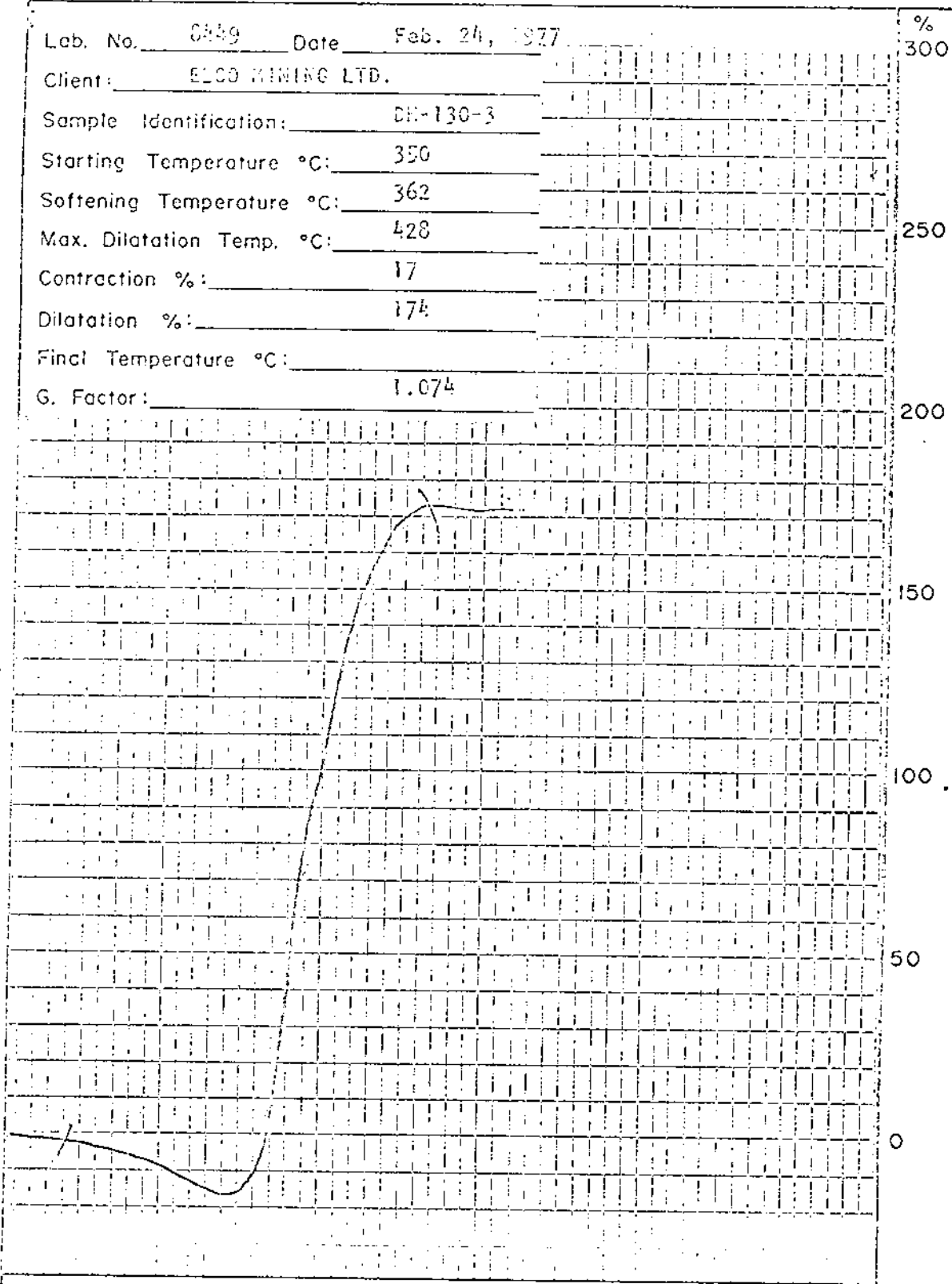
Max. Dilatation Temp. °C: 428

Contraction %: 17

Dilatation %: 17 1/2

Final Temperature °C:

G. Factor: 1.074



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 4 Lab. No. 8450 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	23.1	29.6	46.4	0.80	59	Air Dried Basis
	23.3	29.9	46.8	0.81	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.8	0.7	23.2	0.81	96.3	23.2	0.81	A.D.B.
	96.3		23.4	0.82	96.3	23.4	0.82	D.B.
65M x 0	3.7	1.3	17.7	0.88	100.0	23.0	0.81	A.D.B.
	3.7		17.9	0.89	100.0	23.2	0.82	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.5	0.7	4.3	34.5	60.5	1.00	68.5	4.3	A.D.B.
	68.5		4.3	34.7	61.0	1.01	68.5	4.3	D.B.
1.40-1.50	2.1	0.8	16.2	28.9	54.1	0.84	70.6	4.7	A.D.B.
	2.1		16.3	29.1	54.6	0.85	70.6	4.7	D.B.
1.50-1.60	1.1	1.0	33.3				71.7	5.1	A.D.B.
	1.1		33.6				71.7	5.1	D.B.
+1.60	28.3	0.8	69.1				100.0	23.2	A.D.B.
	28.3		69.7				100.0	23.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6	.16	368	434	13	220	1.079

Lab. No. 8450 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DM-130-4

Starting Temperature °C: 350

Softening Temperature °C: 368

Max. Dilatation Temp. °C: 434

Contraction %: 13

Dilatation %: 220

Final Temperature °C: _____

G. Factor: 1.079



BIRTLEY ENGINEERING (CANADA) LTD.

<p>Title</p> <p style="text-align: center;">RUHR DILATOMETER TEST</p>	<p>Date</p> <hr/> <p>Drawn</p>
-----------------------------------------------------------------------	--------------------------------

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 5 Lab. No. 8451 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	31.5	25.1	42.3	0.90	59	Air Dried Basis
	31.9	25.4	42.7	0.91	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	0.8	32.2	0.94	94.4	32.2	0.94	A.D.B.
	94.4		32.5	0.95	94.4	32.5	0.95	D.B.
65M x 0	5.6	1.3	23.3	1.10	100.0	31.7	0.95	A.D.B.
	5.6		23.6	1.11	100.0	32.0	0.96	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	57.4	0.9	4.6	33.2	61.3	1.16	57.4	4.6	A.D.B.
	57.3		4.6	33.5	61.9	1.17	57.3	4.6	D.B.
1.40-1.50	4.1	0.9	19.5	29.4	50.2	1.02	61.5	5.6	A.D.B.
	4.1		19.7	29.7	50.6	1.03	61.4	5.6	D.B.
1.50-1.60	2.4	1.0	28.4	X	X	X	63.9	6.4	A.D.B.
	2.4		28.7				63.8	6.5	D.B.
+1.60	36.1	0.5	77.9	X	X	X	100.0	32.2	A.D.B.
	36.2		78.3				100.0	32.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
7 1/2	.04	365	414	22	170	1.050	

Lab. No. 0451 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DE-130-5

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 414

Contraction %: 22

Dilatation %: 170

Final Temperature °C: _____

G. Factor: 1.050

250

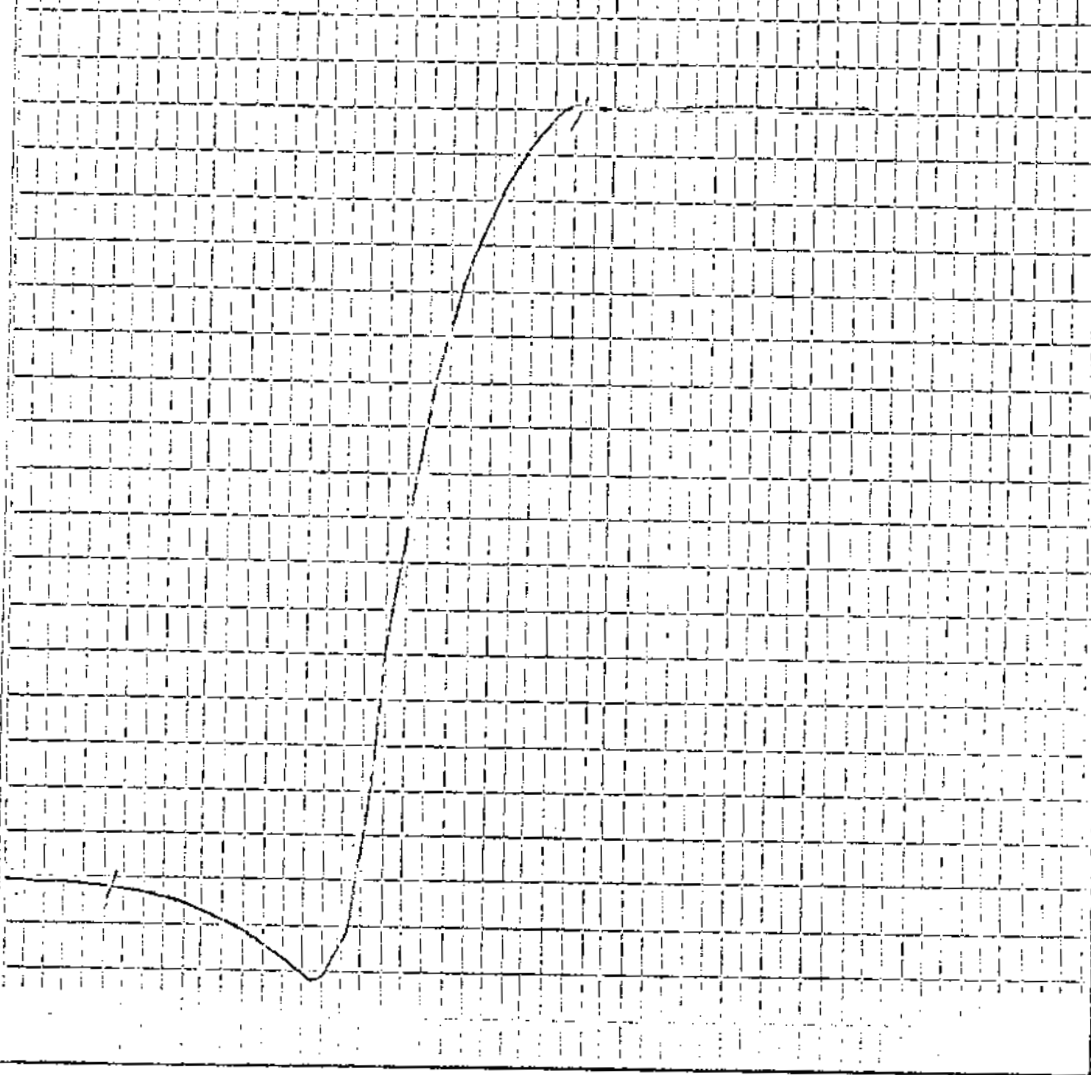
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 6 Lab. No. 8452 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	8.2	32.2	58.4	1.02	69	Air Dried Basis
	8.3	32.6	59.1	1.03	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	0.9	8.3	1.03	94.4	8.3	1.03	A.D.B.
	94.7		8.4	1.04	94.7	8.4	1.04	D.B.
65M x 0	5.6	1.4	7.6	1.09	100.0	8.3	1.03	A.D.B.
	5.3		7.7	1.11	100.0	8.4	1.04	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	90.8	0.9	3.9	33.3	61.9	0.89	90.8	3.9	A.D.B.
	90.8		3.9	33.6	62.5	0.90	90.8	3.9	D.B.
1.40-1.50	2.2	0.8	20.9	28.5	49.8	0.98	93.0	4.3	A.D.B.
	2.2		21.1	28.7	50.2	0.99	93.0	4.3	D.B.
1.50-1.60	1.4	0.8	32.3				94.4	4.7	A.D.B.
	1.4		32.6				94.4	4.7	D.B.
+1.60	5.6	0.7	54.8				100.0	7.5	A.D.B.
	5.6		55.2				100.0	7.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7	.06	368	428	16	207	1.069

Lab. No. 8492 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DM-130-6

Starting Temperature °C: 350

Softening Temperature °C: 368

Max. Dilatation Temp. °C: 428

250

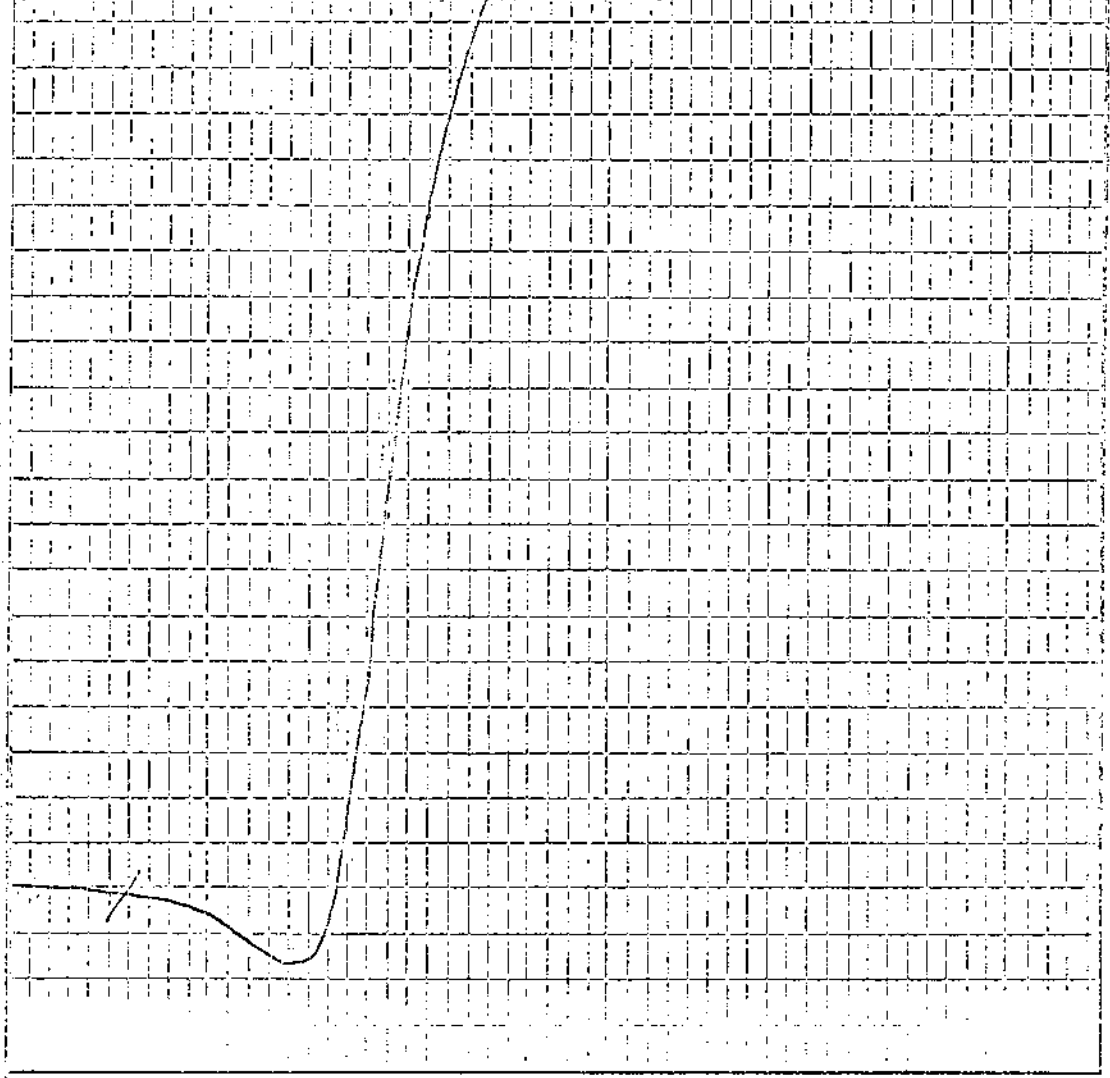
Contraction %: 16

Dilatation %: 207

Final Temperature °C: _____

G. Factor: 1.039

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title	RUHR DILATOMETER TEST	Date
		Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 7 Lab. No. 8453 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	20.2	25.6	53.3	0.65	72	Air Dried Basis
	20.4	25.8	53.8	0.66	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			I
					WT. %	ASH %	S. %	
1/4" x 65M	94.5	0.9	20.1	0.68	94.5	20.1	0.68	A.D.B.
	94.6		20.3	0.69	94.6	20.3	0.69	D.B.
65M x 0	5.5	1.4	18.1	0.70	100.0	20.0	0.68	A.D.B.
	5.4		18.4	0.71	100.0	20.2	0.69	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	73.1	0.9	4.9	30.2	64.0	0.75	73.1	4.9	A.D.B.
	73.1		4.9	30.5	64.6	0.76	73.1	4.9	D.B.
1.40-1.50	6.4	0.9	19.1	23.5	56.5	0.70	79.5	6.0	A.D.B.
	6.4		19.3	23.7	57.0	0.71	79.5	6.1	D.B.
1.50-1.60	2.3	1.1	28.7				81.8	6.7	A.D.B.
	2.3		29.0				81.8	6.7	D.B.
+1.60	18.2	1.1	75.5				100.0	19.2	A.D.B.
	18.2		76.3				100.0	19.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7	.18	374	432	14	78	1.053

Lab. No. 8743 Date Feb. 24, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-130-7

Starting Temperature °C: 250

Softening Temperature °C: 374

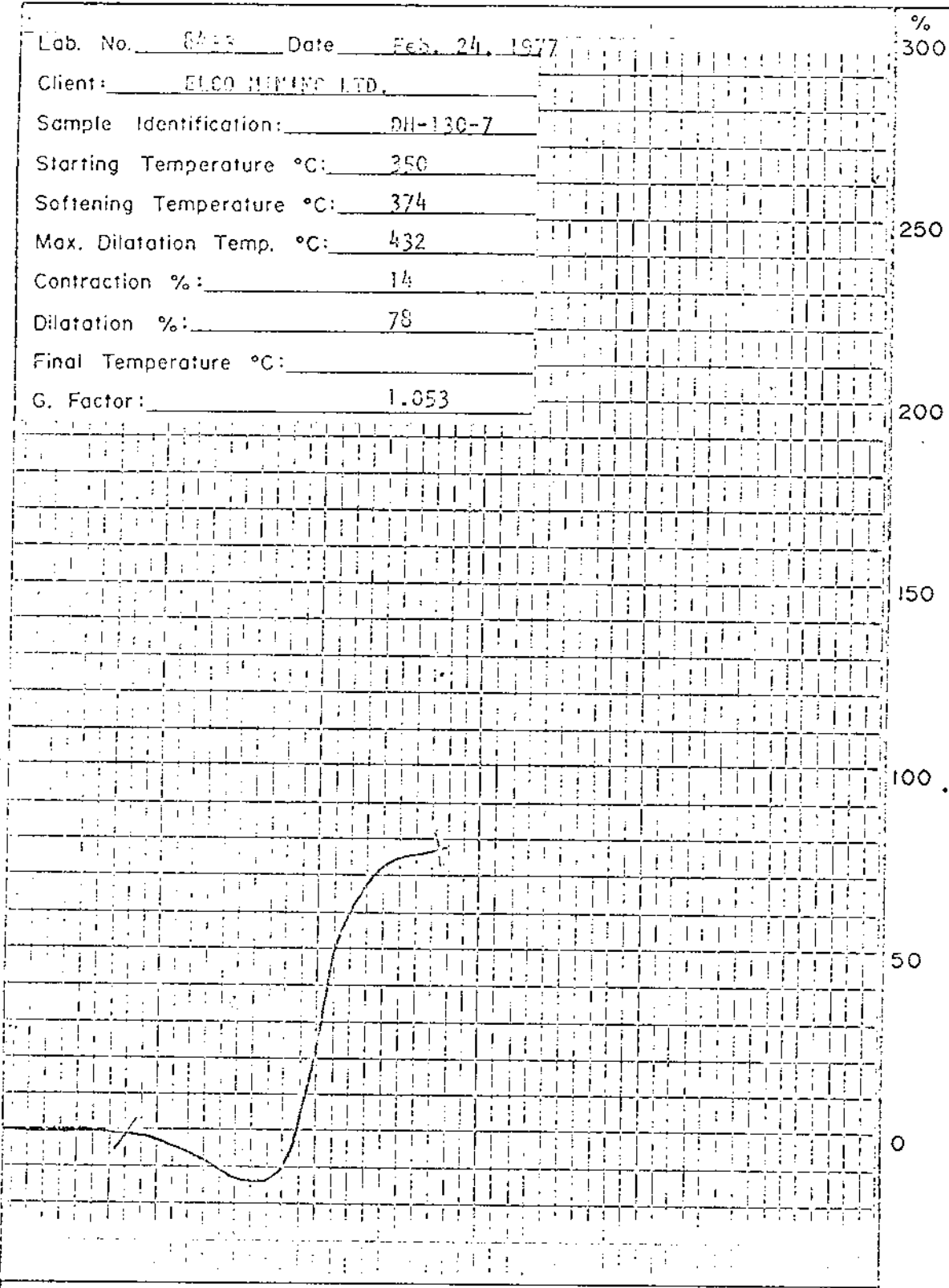
Max. Dilatation Temp. °C: 432

Contraction %: 14

Dilatation %: 78

Final Temperature °C:

G. Factor: 1.053



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 8 Lab. No. 8454 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.3	15.0	27.5	56.2	0.46	101	Air Dried Basis
	15.2	27.9	56.9	0.47	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	83.0	1.2	15.6	0.51	83.0	15.6	0.51	A.D.B.
	83.0		15.8	0.52	83.0	15.8	0.52	D.B.
65M x 0	17.0	1.7	9.2	0.48	100.0	14.5	0.50	A.D.B.
	17.0		9.4	0.49	100.0	14.7	0.51	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	80.8	2.2	2.9	32.0	62.9	0.59	80.8	2.9	A.D.B.
	80.7		3.0	32.7	64.3	0.60	80.7	3.0	D.B.
1.40-1.50	2.7	1.3	19.3	25.7	53.7	0.52	83.5	3.4	A.D.B.
	2.7		19.6	27.0	54.4	0.53	83.4	3.5	D.B.
1.50-1.60	1.5	1.4	29.1				85.0	3.9	A.D.B.
	1.5		29.5				84.9	4.0	D.B.
+1.60	15.0	1.5	76.3				100.0	14.7	A.D.B.
	15.1		77.5				100.0	15.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.03	374	419	21	96	1.038

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8454 Date Feb. 24, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: EH-130-8

Starting Temperature °C: 350

Softening Temperature °C: 374

Max. Dilatation Temp. °C: 419

250

Contraction %: 21

Dilatation %: 96

Final Temperature °C: _____

G. Factor: 1.038

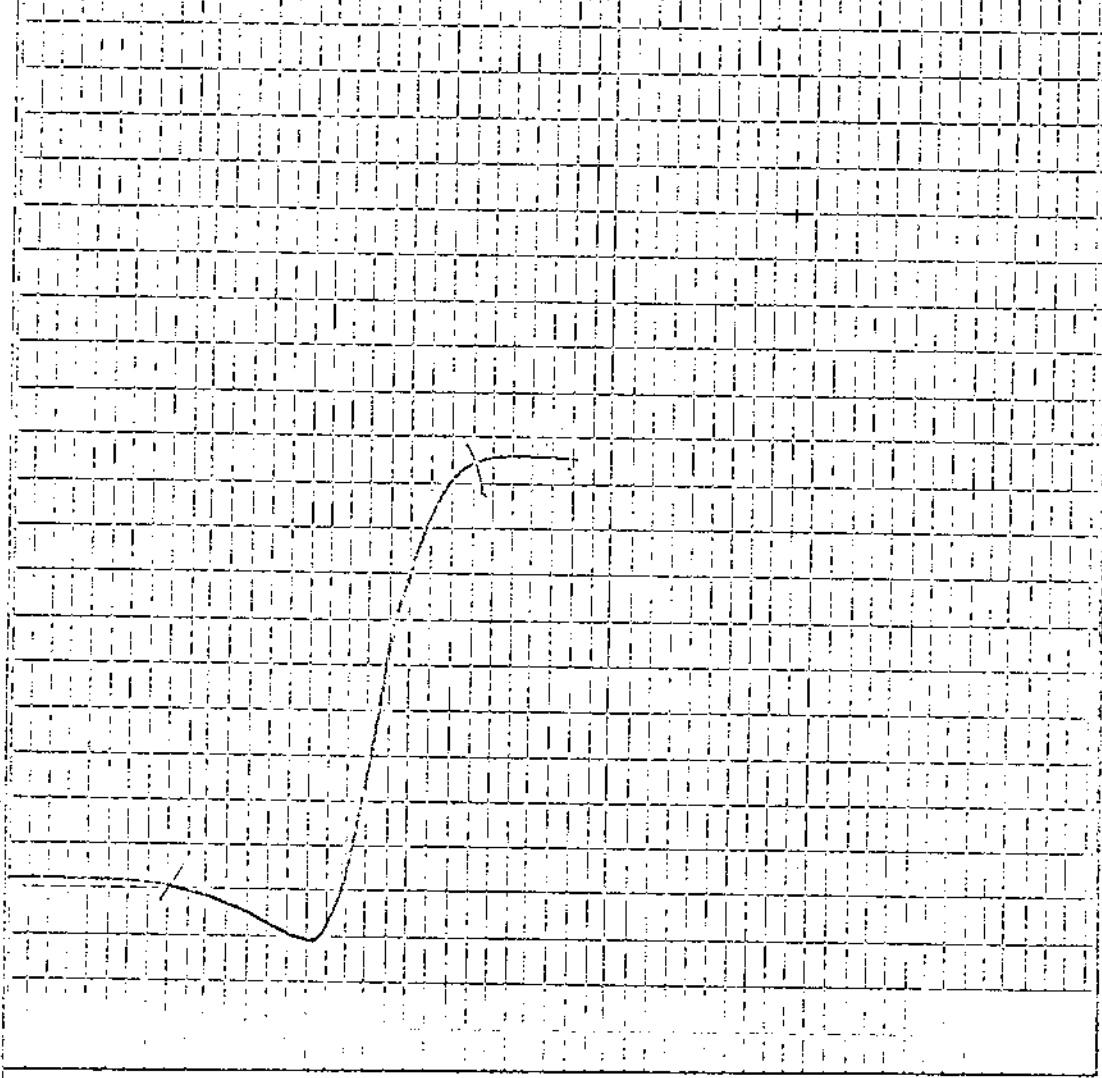
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 9 Lab. No. 8455 DATE: Feb. /77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	4.7	30.8	63.6	0.78	77	Air Dried Basis
	4.7	31.1	64.2	0.79	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.4	1.1	4.7	0.78	93.4	4.7	0.78	A.D.B.
	93.4		4.8	0.79	93.4	4.8	0.79	D.B.
65M x 0	6.6	1.0	7.7	0.73	100.0	4.9	0.78	A.D.B.
	6.6		7.8	0.74	100.0	5.0	0.79	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	95.1	1.1	3.0	32.0	63.9	0.70	95.1	3.0	A.D.B.
	95.1		3.0	32.4	64.6	0.71	95.1	3.0	D.B.
1.40-1.50	2.2	0.9	14.1	27.4	57.6	0.78	97.3	3.3	A.D.B.
	2.2		14.2	27.6	58.2	0.79	97.3	3.3	D.B.
1.50-1.60	0.5	1.0	25.3	X	X	X	97.8	3.4	A.D.B.
	0.5		25.6				97.8	3.4	D.B.
+1.60	2.2	1.0	65.6	X	X	X	100.0	4.7	A.D.B.
	2.2		66.3				100.0	4.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.06	359	428	13	94	1.071

Lab. No. 8455 Date Feb. 24, 1977

Client: ELCO MINING LTD.

Sample Identification: D11-130-9

Starting Temperature °C: 350

Softening Temperature °C: 359

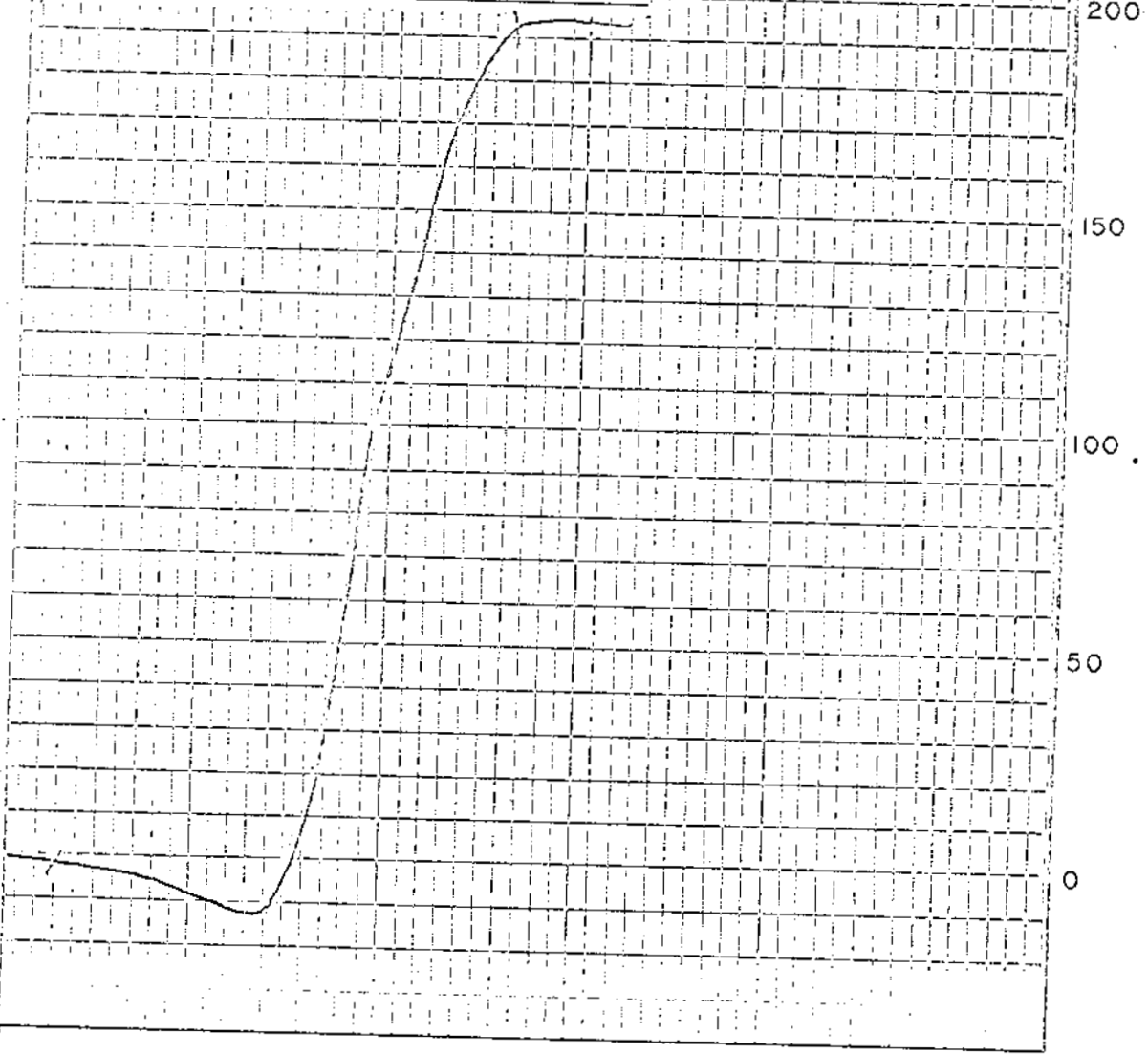
Max. Dilatation Temp. °C: 428

Contraction %: 13

Dilatation %: 94

Final Temperature °C: _____

G. Factor: 1.071



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 130 - 10

Lab. No. 8483

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	11.6	29.3	58.2	1.00	72	Air Dried Basis
	11.7	29.6	58.7	1.01	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.3	0.8	10.9	1.03	91.3	10.9	1.03	A.D.B.
	91.3		11.0	1.04	91.3	11.0	1.04	D.B.
65M x 0	8.7	0.9	12.0	0.93	100.0	11.0	1.02	A.D.B.
	8.7		12.1	0.94	100.0	11.1	1.03	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	81.5	0.8	4.1	31.0	64.1	1.14	81.5	4.1	A.D.B.
	81.5		4.1	31.2	64.7	1.16	81.5	4.1	D.B.
1.40-1.50	9.4	1.0	22.0	26.8	50.2	0.92	90.9	6.0	A.D.B.
	9.4		22.2	27.1	50.7	0.93	90.9	6.0	D.B.
1.50-1.60	2.5	1.1	29.3				93.4	6.6	A.D.B.
	2.5		29.6				93.4	6.6	D.B.
+1.60	6.6	1.0	72.4				100.0	10.9	A.D.B.
	6.6		73.1				100.0	11.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.06	(50%) 356 (50%) 356	440 437	12 12	176 182	1.100

TOP HALF OF PENCIL

Lab. No. 8483 Date March 2, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-130-10

Starting Temperature °C: 350

Softening Temperature °C: 356

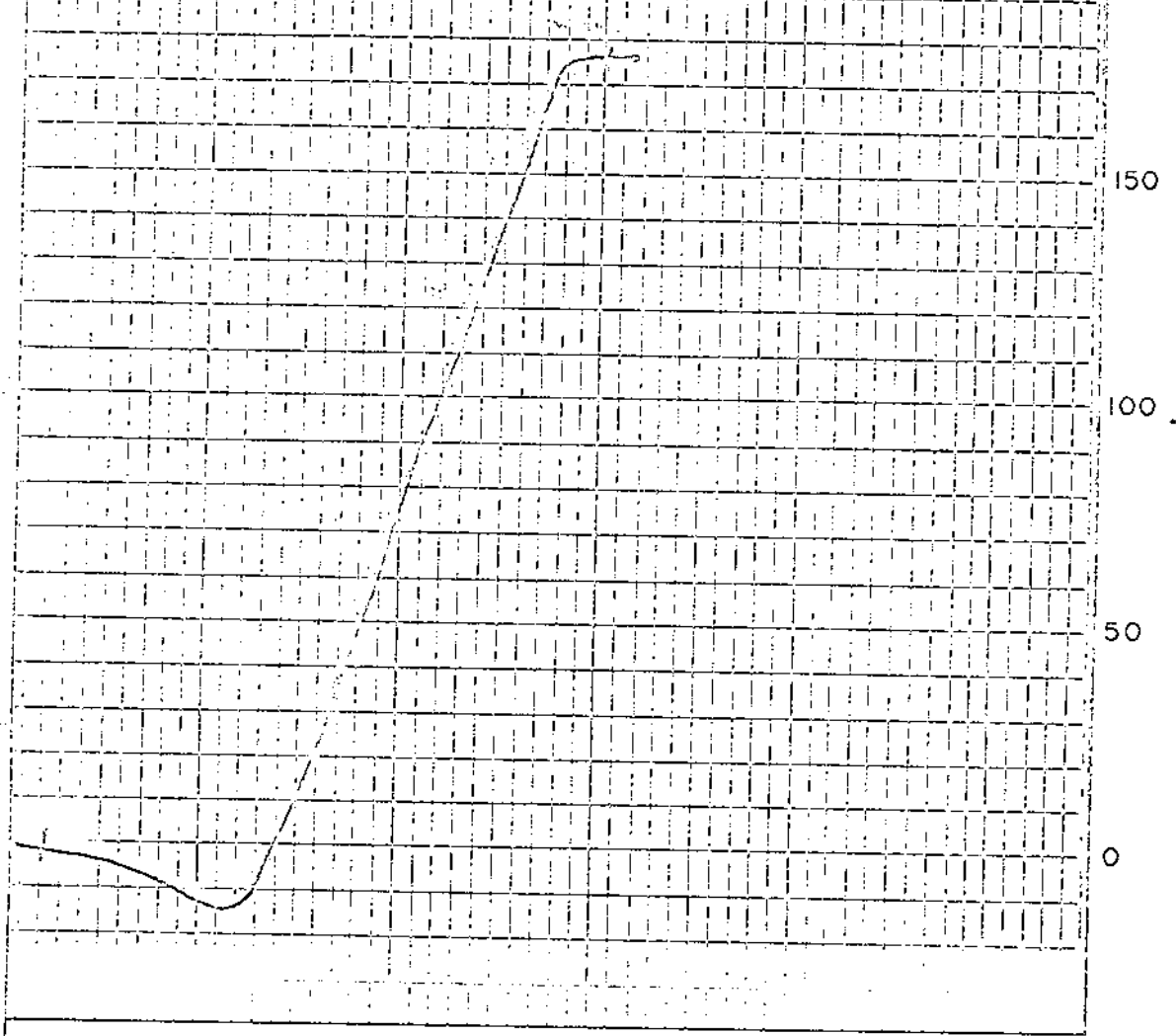
Max. Dilatation Temp. °C: 440

Contraction %: 12

Dilatation %: 176

Final Temperature °C: 1.101

G. Factor: 1.101



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

BOTTOM HALF OF PENCIL

Lab. No. 8483 Date March 2, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-130-10

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 437

250

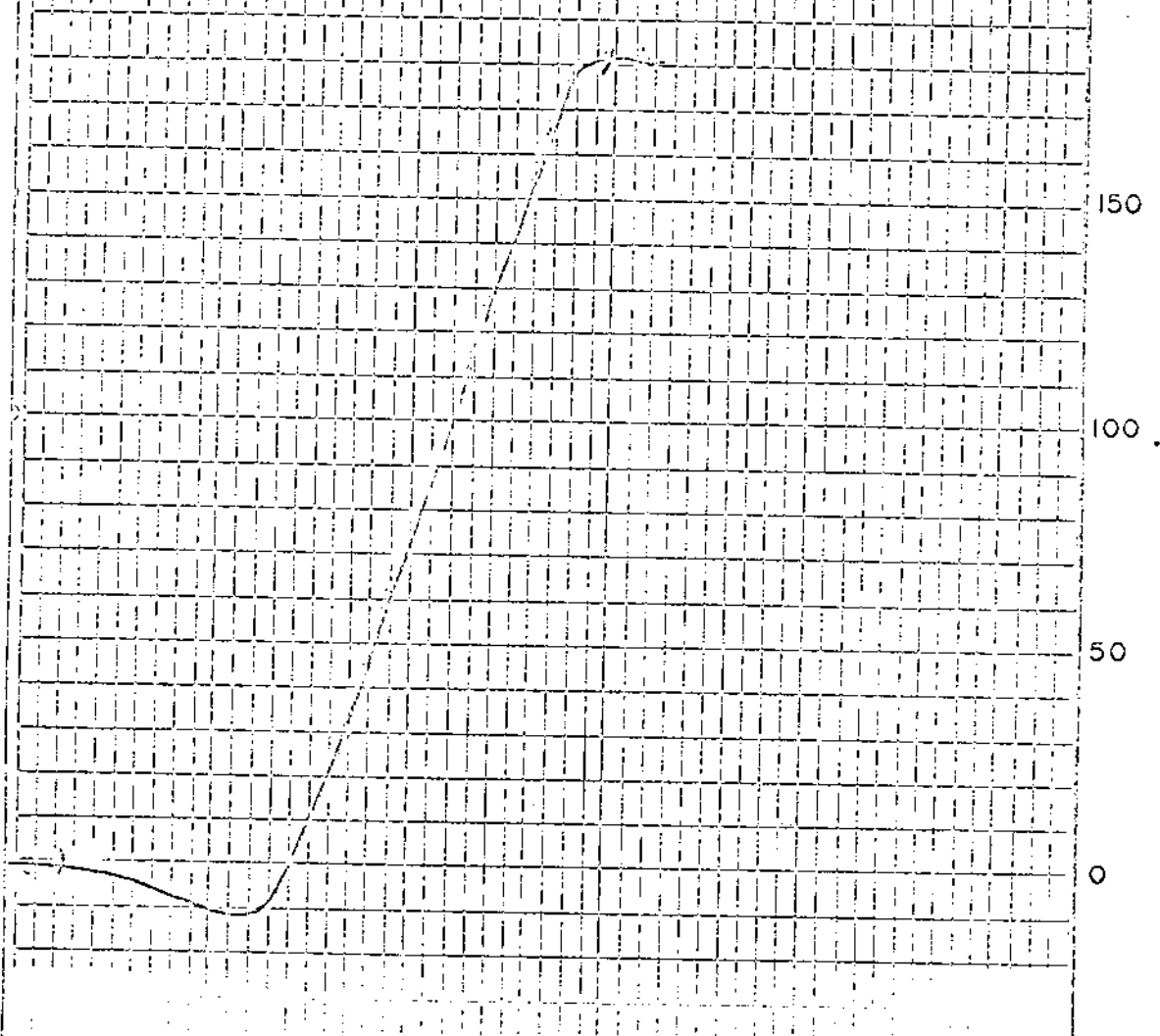
Contraction %: 12

Dilatation %: 182

Final Temperature °C:

G. Factor: 1.098

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 1 Lab. No. 8484 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.5	35.0	24.6	38.9	0.88	106	Air Dried Basis
	35.5	25.0	39.5	0.89	---	Dry Basis

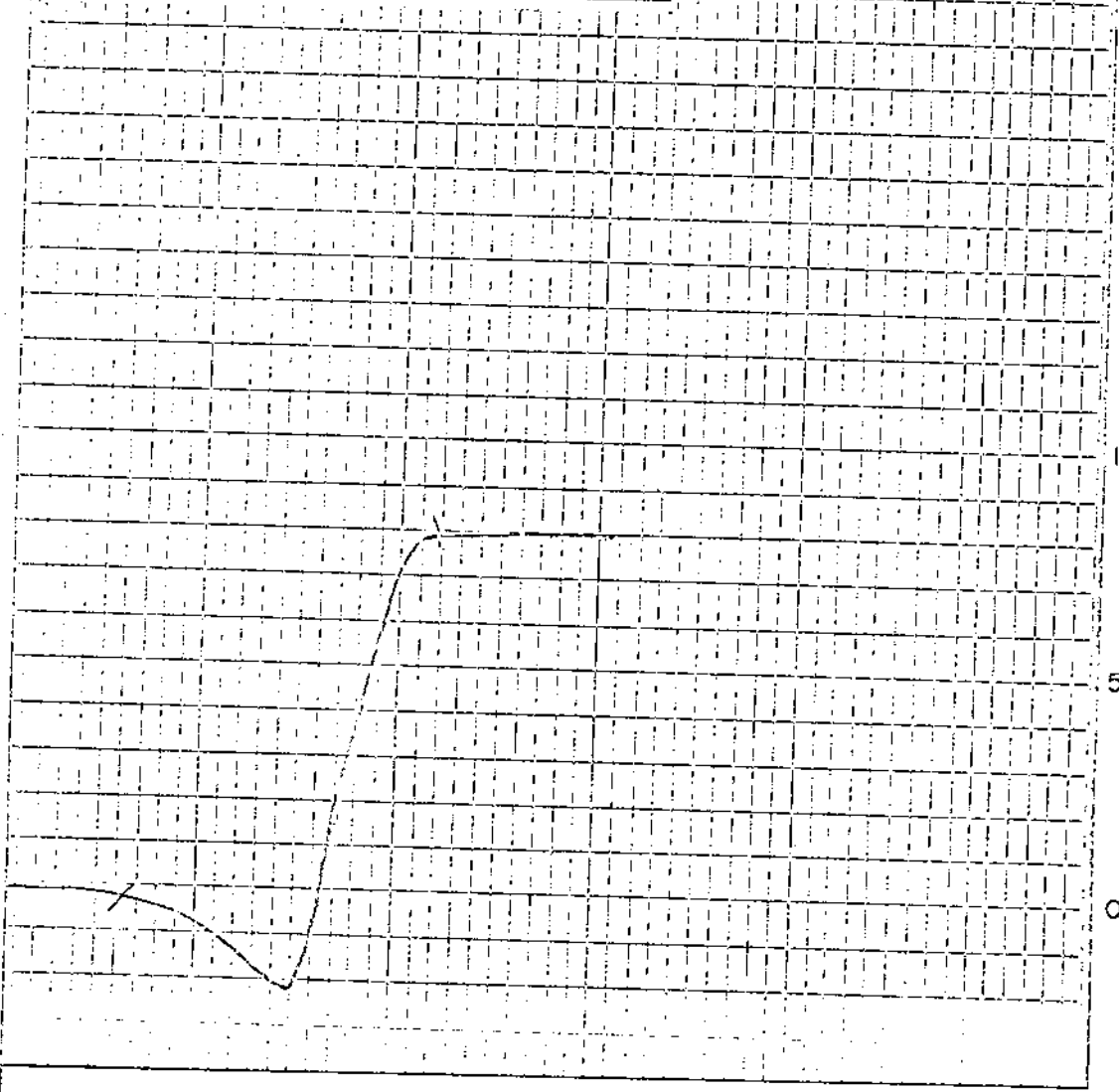
SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	80.3	3.0	38.2	0.84	80.3	38.2	0.84	A.D.B.
	80.0		39.4	0.87	80.0	39.4	0.87	D.B.
65M x 0	19.7	1.5	23.7	1.02	100.0	35.3	0.88	A.D.B.
	20.0		24.1	1.04	100.0	36.3	0.90	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	40.6	4.6	7.7	32.7	55.0	1.10	40.6	7.7	A.D.B.
	40.0		8.1	34.3	57.6	1.15	40.0	8.1	D.B.
1.40-1.50	6.7	4.1	17.8	30.2	47.9	1.08	47.3	9.1	A.D.B.
	6.7		18.6	31.5	49.9	1.13	46.7	9.6	D.B.
1.50-1.60	4.5	4.2	26.4	X	X	X	51.8	10.6	A.D.B.
	4.4		27.6				51.1	11.2	D.B.
+1.60	48.2	1.9	69.9	X	X	X	100.0	39.2	A.D.B.
	48.9		71.3				100.0	40.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6 1/2	.02	368	416	21	79	1.037

Lab. No. 8484 Date Feb. 25, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-131-1
 Starting Temperature °C: 350
 Softening Temperature °C: 368
 Max. Dilatation Temp. °C: 416
 Contraction %: 21
 Dilatation %: 79
 Final Temperature °C: _____
 G. Factor: 1.037

%
300



BIRTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date

 Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 2 Lab. No. 8485 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	10.1	34.0	54.7	0.96	58	Air Dried Basis
	10.2	34.4	55.4	0.97	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.5	1.2	9.3	0.92	96.5	9.3	0.92	A.D.B.
	96.5		9.4	0.93	96.5	9.4	0.93	D.B.
65M x 0	3.5	1.1	17.5	0.86	100.0	9.6	0.92	A.D.B.
	3.5		17.7	0.87	100.0	9.7	0.93	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	90.6	1.2	6.8	35.9	56.1	0.94	90.6	6.8	A.D.B.
	90.6		6.9	36.3	56.8	0.93	90.6	6.9	D.B.
1.40-1.50	5.0	1.4	20.3	28.6	49.7	0.85	95.6	7.5	A.D.B.
	5.0		20.6	29.0	50.4	0.87	95.6	7.6	D.B.
1.50-1.60	1.9	1.1	33.0				97.5	8.0	A.D.B.
	1.9		33.4				97.5	8.1	D.B.
+1.60	2.5	1.1	58.4				100.0	9.3	A.D.B.
	2.5		59.0				100.0	9.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6 1/2	.07	365	431	18	190	1.074

Lab. No. 8485 Date Feb. 25, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-131-2

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 431

250

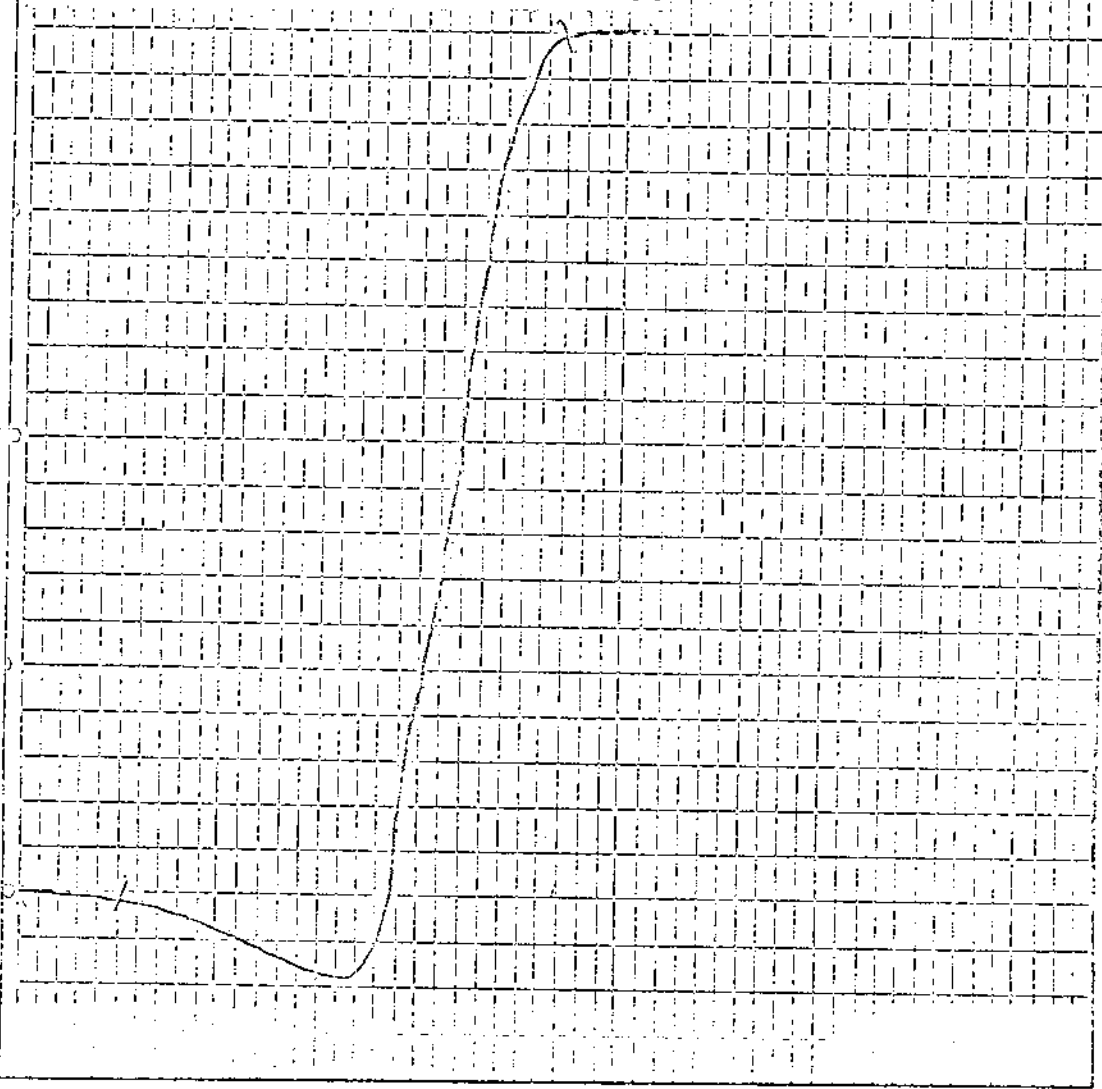
Contraction %: 18

Dilatation %: 190

Final Temperature °C:

G. Factor: 1.074

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 3 Lab. No. 8486 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.3	10.7	32.1	55.9	0.90	59	Air Dried Basis
	10.8	32.5	56.7	0.91	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.6	1.2	10.1	0.97	92.6	10.1	0.97	A.D.B.
	92.6		10.2	0.98	92.6	10.2	0.98	D.B.
65M x 0	7.4	1.3	13.8	0.88	100.0	10.4	0.96	A.D.B.
	7.4		14.0	0.89	100.0	10.5	0.97	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	78.7	1.1	5.6	34.0	59.3	0.84	78.7	5.6	A.D.B.
	78.8		5.7	34.4	59.9	0.95	78.8	5.7	D.B.
1.40-1.50	14.3	1.3	23.0	27.8	47.9	0.74	93.0	8.3	A.D.B.
	14.3		23.3	28.2	48.5	0.75	93.1	8.4	D.B.
1.50-1.60	3.2	1.3	28.0				96.2	8.9	A.D.B.
	3.2		28.4				96.3	9.1	D.B.
+1.60	3.8	2.4	40.0				100.0	10.1	A.D.B.
	3.7		41.0				100.0	10.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
4 1/2	.08	356	422	23	142	1.065

Lab. No. 8403 Date Feb. 25, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-131-3

Starting Temperature °C: 350

Softening Temperature °C: 356

Max. Dilatation Temp. °C: 422

250

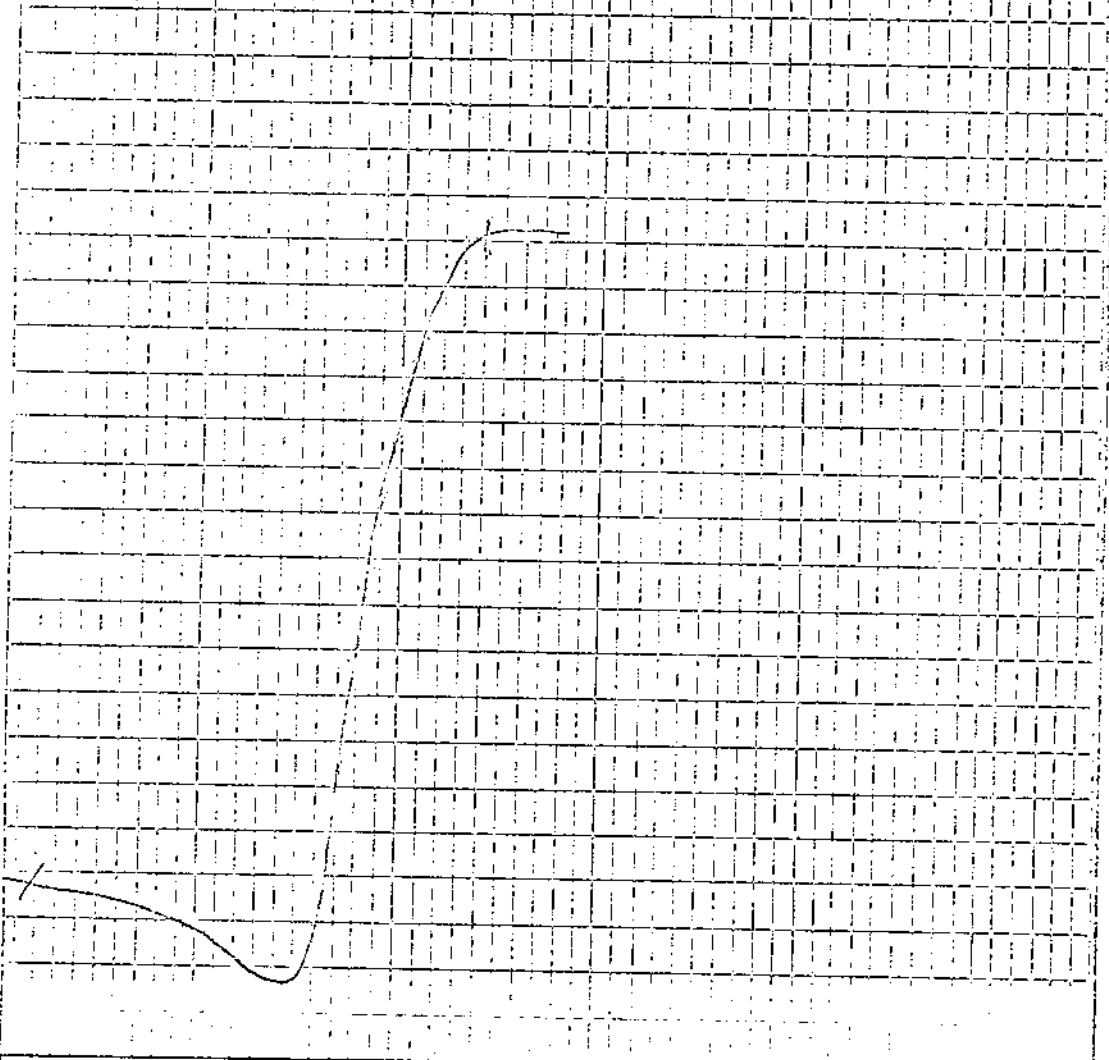
Contraction %: 23

Dilatation %: 142

Final Temperature °C:

G. Factor: 1.065

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 4

Lab. No. 8487

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.2	34.1	23.8	40.9	0.58	76	Air Dried Basis
	34.5	24.1	41.4	0.59	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.4	1.3	34.3	0.62	87.4	34.3	0.62	A.D.B.
	87.4		34.8	0.63	87.4	34.8	0.63	D.B.
65M x 0	12.6	1.5	24.7	0.66	100.0	33.1	0.63	A.D.B.
	12.6		25.1	0.67	100.0	33.6	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	53.1	1.8	4.7	33.6	59.9	0.82	53.1	4.7	A.D.B.
	52.9		4.8	34.2	61.0	0.83	52.9	4.8	D.B.
1.40-1.50	3.7	2.1	20.2	28.6	49.1	0.75	56.8	5.7	A.D.B.
	3.7		20.6	29.2	50.2	0.77	56.6	5.8	D.B.
1.50-1.60	2.4	1.7	30.3				59.2	6.7	A.D.B.
	2.5		30.8				59.1	6.9	D.B.
+1.60	40.8	1.3	73.4				100.0	33.5	A.D.B.
	40.9		74.4				100.0	34.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7 1/2	.04	365	422	17	152	1.061

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8487 Date Feb. 25, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-131-4

Starting Temperature °C: 350

Softening Temperature °C: 365

Max. Dilatation Temp. °C: 422

250

Contraction %: 17

Dilatation %: 152

Final Temperature °C:

G. Factor: 1.061

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 5 Lab. No. 8488 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.3	16.6	30.1	52.0	0.76	67	Air Dried Basis
	16.8	30.5	52.7	0.77	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.9	1.6	17.6	0.73	93.9	17.6	0.73	A.D.B.
	93.9		17.9	0.74	93.9	17.9	0.74	D.B.
65M x 0	6.1	1.1	14.9	0.68	100.0	17.4	0.73	A.D.B.
	6.1		15.1	0.69	100.0	17.7	0.74	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.3	1.9	4.2	35.7	58.2	0.79	68.3	4.2	A.D.B.
	68.1		4.3	36.4	59.3	0.81	68.1	4.3	D.B.
1.40-1.50	11.6	1.1	23.2	28.0	47.7	0.66	79.9	7.0	A.D.B.
	11.6		23.5	28.3	48.2	0.67	79.7	7.1	D.B.
1.50-1.60	3.7	1.3	30.6				83.6	8.0	A.D.B.
	3.7		31.0				83.4	8.2	D.B.
+1.60	16.4	0.9	66.8				100.0	17.6	A.D.B.
	16.6		67.4				100.0	18.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7 1/2	.07	368	428	8	207	1.075

Lab. No. 8488 Date Feb. 25, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-131-5

Starting Temperature °C: 350

Softening Temperature °C: 368

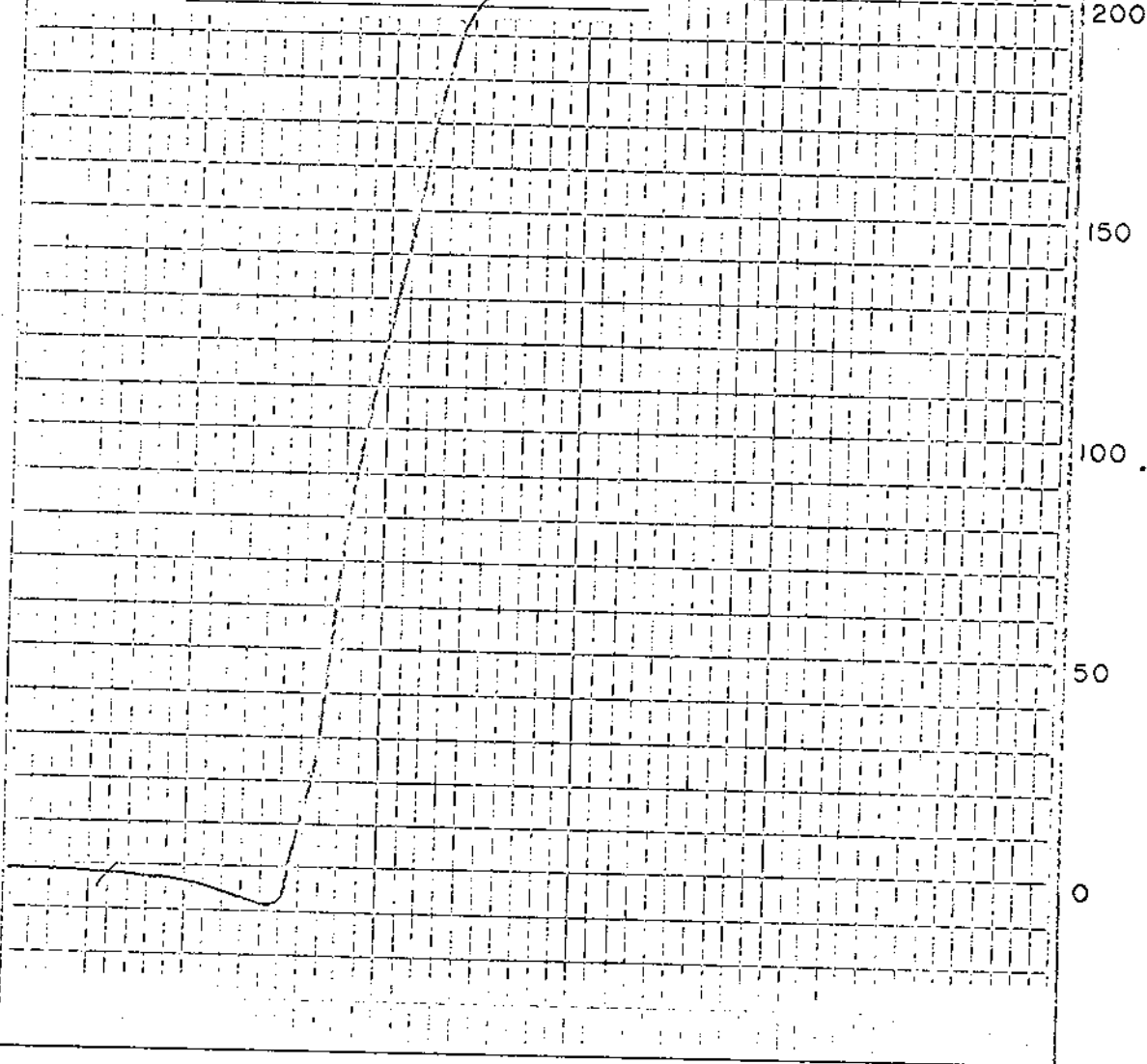
Max. Dilatation Temp. °C: 428

Contraction %: 8

Dilatation %: 207

Final Temperature °C:

G. Factor: 1.075



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 6

Lab. No. 8489

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	52.5	17.6	28.9	0.42	66	Air Dried Basis
	53.0	17.8	29.2	0.42	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	88.9	1.4	53.6	0.45	88.9	53.6	0.45	A.D.B.
	88.9		54.4	0.46	88.9	54.4	0.46	D.B.
65M x 0	11.1	1.2	36.7	0.56	100.0	51.7	0.46	A.D.B.
	11.1		37.1	0.57	100.0	52.5	0.47	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	18.1	1.2	7.8	31.8	59.2	0.68	18.1	7.8	A.D.B.
	18.1		7.9	32.2	59.9	0.69	18.1	7.9	D.B.
1.40-1.50	2.8	1.1	24.4	26.8	47.7	0.62	20.9	10.0	A.D.B.
	2.8		24.7	27.1	48.2	0.63	20.9	10.2	D.B.
1.50-1.60	5.0	1.2	36.8				25.9	15.2	A.D.B.
	5.0		37.2				25.9	15.4	D.B.
+1.60	74.1	1.4	66.0				100.0	52.8	A.D.B.
	74.1		66.9				100.0	53.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
7 1/2	.09	368	425	16	159	1.062	

Lab. No. 8489 Date Feb. 25, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-131-6

Starting Temperature °C: 350

Softening Temperature °C: 368

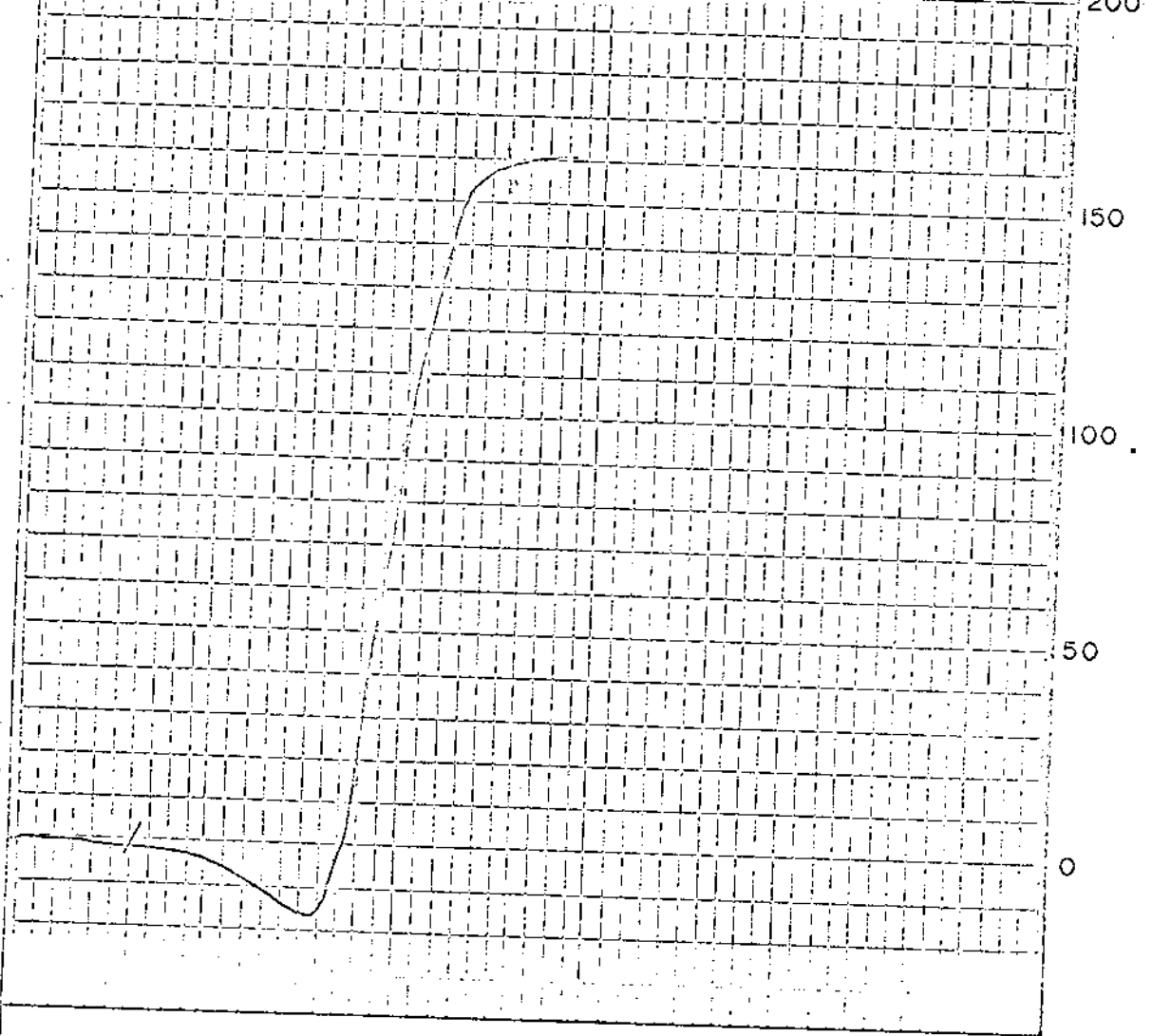
Max. Dilatation Temp. °C: 425

Contraction %: 16

Dilatation %: 159

Final Temperature °C:

G. Factor: 1.062



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 7 Lab. No. 8490 DATE: Feb/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	20.5	28.0	50.5	0.72	61	Air Dried Basis
	20.7	28.3	51.0	0.73	--	Dry Basis

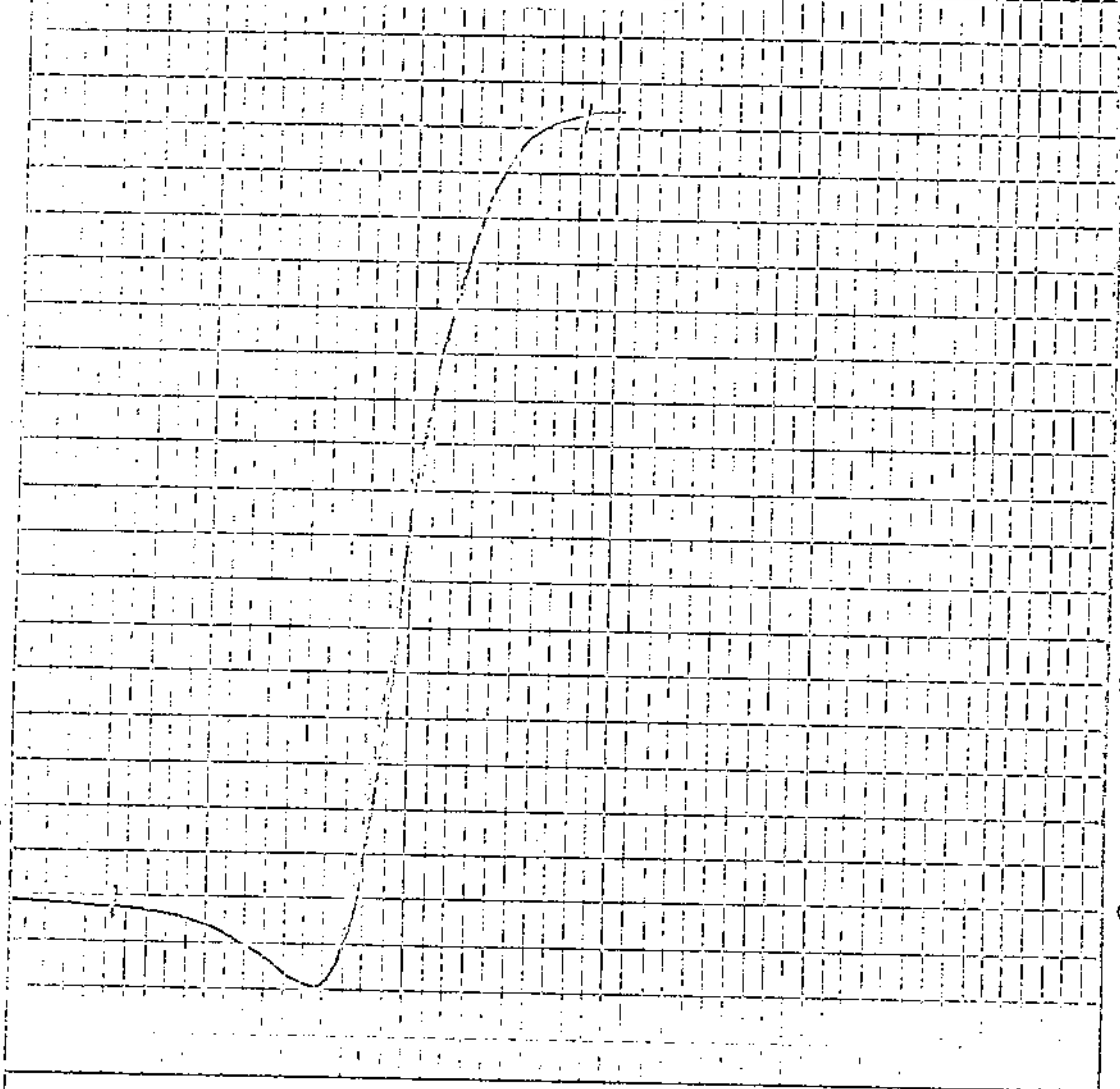
SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	0.9	20.0	0.74	94.4	20.0	0.74	A.D.B.
	94.4		20.2	0.75	94.4	20.2	0.75	D.B.
65M x 0	5.6	1.0	16.9	0.67	100.0	19.8	0.74	A.D.B.
	5.6		17.1	0.68	100.0	20.0	0.75	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	71.3	0.8	5.2	34.3	59.7	0.82	71.3	5.2	A.D.B.
	71.3		5.2	34.6	60.2	0.83	71.3	5.2	D.B.
1.40-1.50	10.1	0.9	25.9	27.3	45.9	0.60	81.4	7.8	A.D.B.
	10.1		26.1	27.5	46.4	0.60	81.4	7.8	D.B.
1.50-1.60	2.3	1.0	36.9				83.7	8.6	A.D.B.
	2.3		37.3				83.7	8.6	D.B.
+1.60	16.3	0.9	72.6				100.0	19.0	A.D.B.
	16.3		73.3				100.0	19.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
7	.02	365	434	19	173	1.074

Lab. No. 8490 Date Feb. 28, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-131-7
 Starting Temperature °C: 350
 Softening Temperature °C: 365
 Max. Dilatation Temp. °C: 434
 Contraction %: 19
 Dilatation %: 173
 Final Temperature °C: _____
 G. Factor: 1.074

%
 300
 250
 200
 150
 100
 50
 0



BIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 131 - 8 Lab. No. 8491 DATE: Feb./77

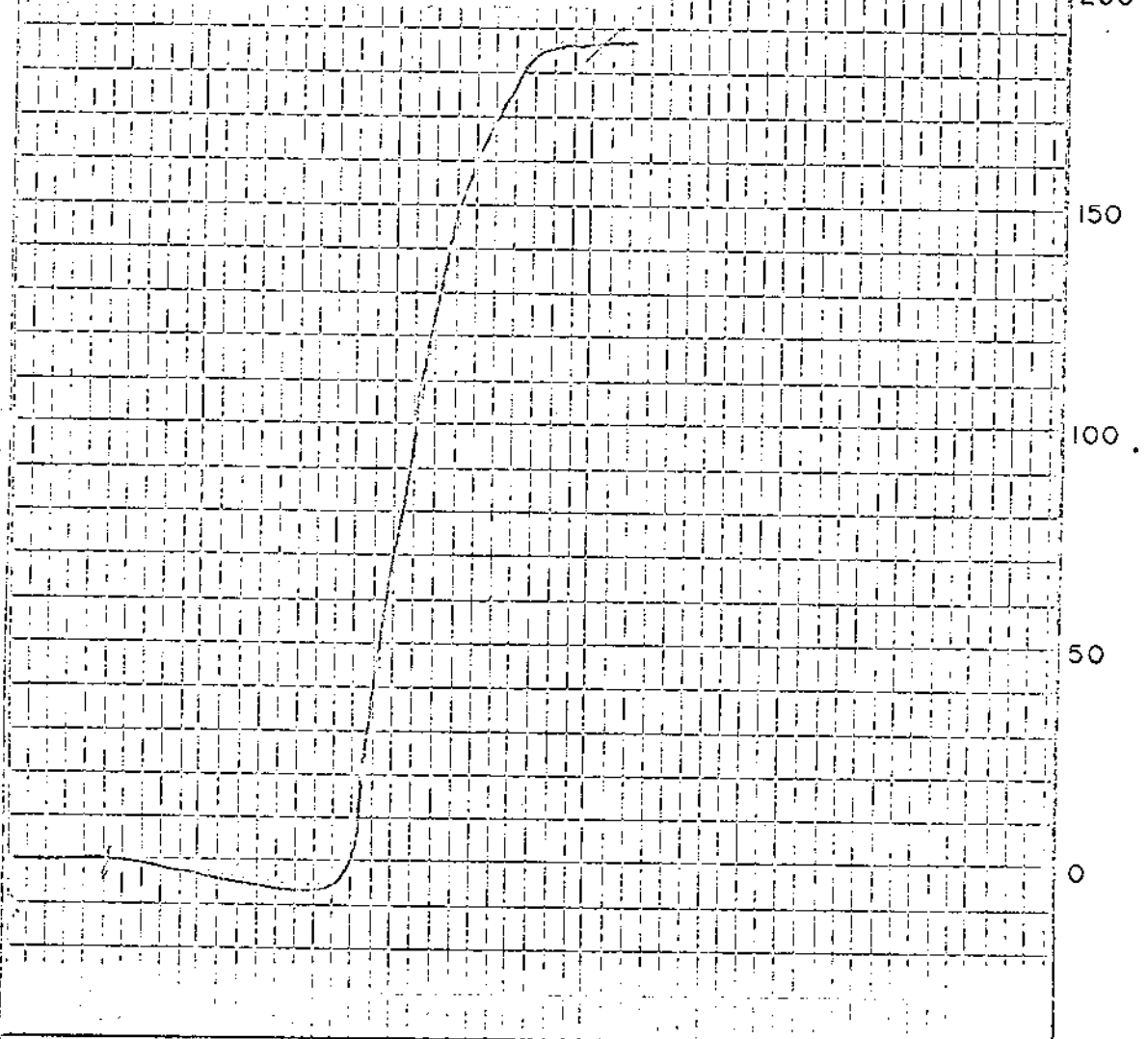
HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	14.2	31.1	53.7	0.69	66	Air Dried Basis
	14.3	31.4	54.3	0.70	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.3	1.2	13.8	0.68	93.3	13.8	0.68	A.D.B.
	93.3		14.0	0.69	93.3	14.0	0.69	D.B.
65M x 0	6.7	1.1	13.5	0.78	100.0	13.8	0.69	A.D.B.
	6.7		13.7	0.79	100.0	14.0	0.70	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	79.3	1.3	3.5	33.7	61.5	0.84	79.3	3.5	A.D.B.
	79.3		3.5	34.1	62.4	0.85	79.3	3.5	D.B.
1.40-1.50	3.5	1.1	25.1	27.1	46.7	0.76	82.8	4.4	A.D.B.
	3.5		25.4	27.4	47.2	0.77	83.8	4.4	D.B.
1.50-1.60	4.8	1.3	33.8				87.6	6.0	A.D.B.
	4.8		34.2				87.6	6.1	D.B.
+1.60	12.4	1.2	64.1				100.0	13.2	A.D.B.
	12.4		64.9				100.0	13.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P3 ON COAL	DILATATION TEST					G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
7 1/2	.03	365	434	5	186	1.089	

Lab. No. 8491 Date Feb. 28, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-131-8
 Starting Temperature °C: 350
 Softening Temperature °C: 365
 Max. Dilatation Temp. °C: 434 250
 Contraction %: 5
 Dilatation %: 186
 Final Temperature °C: _____
 G. Factor: 1.089 200



SIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drwn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 1 Lab. No. 8492 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	24.0	23.1	52.1	0.62	78	Air Dried Basis
	24.2	23.3	52.5	0.63	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.5	0.9	25.0	0.66	91.5	25.0	0.66	A.D.B.
	91.5		25.2	0.67	91.5		0.67	D.B.
65M x 0	8.5	1.0	15.7	0.72	100.0	24.2	0.67	A.D.B.
	8.5		15.9	0.73	100.0		0.68	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.3	1.4	4.3	28.0	66.3	0.79	68.3	4.3	A.D.B.
	68.2		4.4	28.4	67.2	0.80	68.2	4.4	D.B.
1.40-1.50	3.9	0.7	20.7	23.7	54.9	0.74	72.2	5.2	A.D.B.
	3.9		20.8	23.9	55.3	0.75	72.1	5.3	D.B.
1.50-1.60	2.1	1.0	31.0				74.3	5.9	A.D.B.
	2.1		31.3				74.2	6.0	D.B.
+1.60	25.7	1.0	77.6				100.0	24.3	A.D.B.
	25.8		78.4				100.0	24.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	.04	371	428	15	135	1.060

Lab. No. 8492 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-1

Starting Temperature °C: 350

Softening Temperature °C: 371

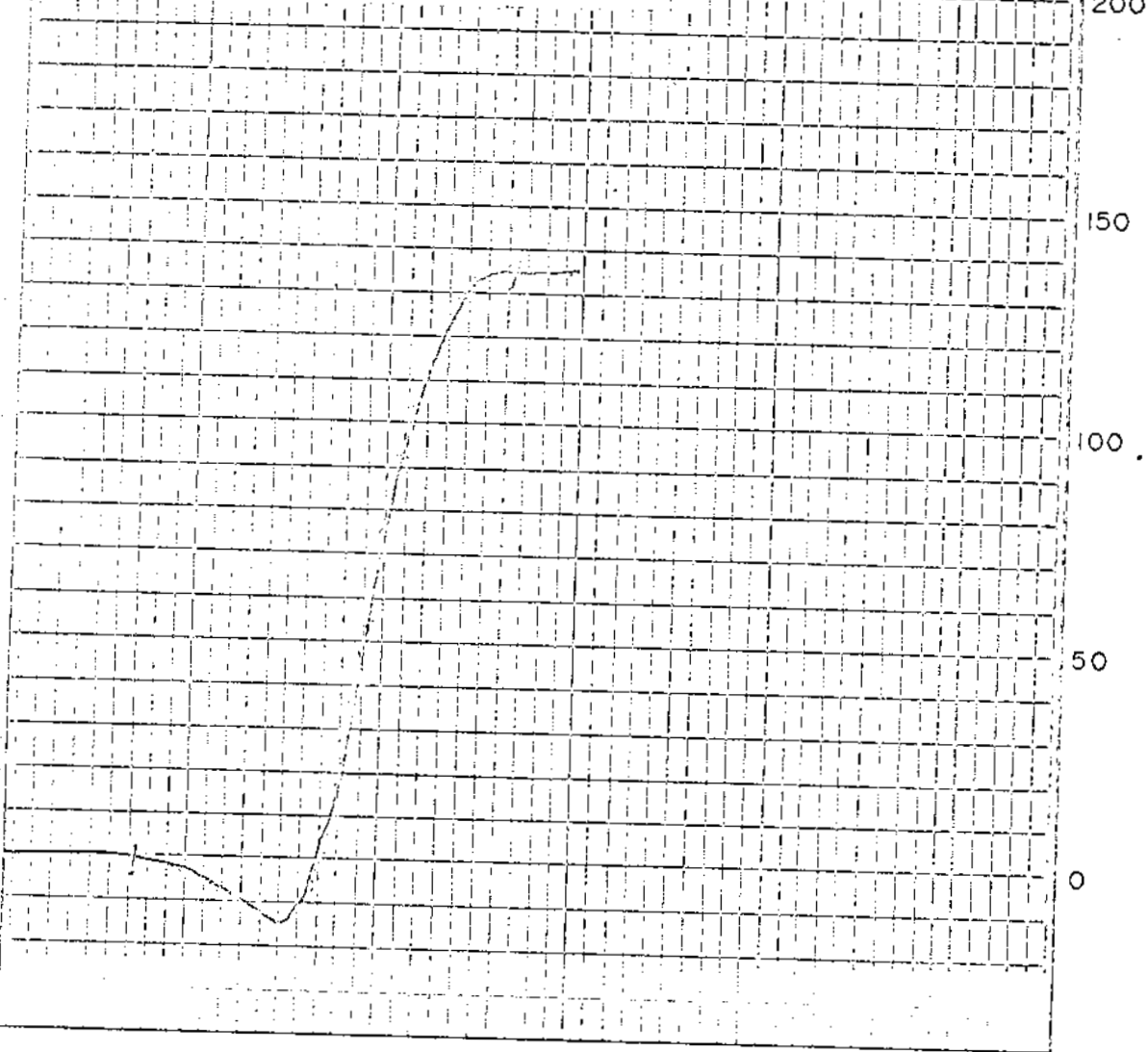
Max. Dilatation Temp. °C: 428

Contraction %: 15

Dilatation %: 135

Final Temperature °C: _____

G. Factor: 1.060



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 2 Lab. No. 8493 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
2.2	25.0	24.1	48.7	0.74	92	Air Dried Basis
	25.6	24.6	49.8	0.76	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.9	2.4	26.3	0.70	87.9	26.3	0.70	A.D.B.
	87.7		26.9	0.72	87.7	26.9	0.72	D.B.
65M x 0	12.1	1.0	15.7	0.69	100.0	25.0	0.70	A.D.B.
	12.3		15.9	0.70	100.0	25.5	0.72	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	66.2	2.9	3.4	28.0	65.7	0.92	66.2	3.4	A.D.B.
	65.0		3.5	28.8	67.7	0.95	65.8	3.5	D.B.
1.40-1.50	3.0	1.2	18.9	23.7	56.2	0.73	69.2	4.1	A.D.B.
	3.0		19.1	24.0	56.9	0.74	68.8	4.2	D.B.
1.50-1.60	1.9	1.7	27.1				71.1	4.7	A.D.B.
	1.9		27.6				70.7	4.8	D.B.
+1.60	28.9	1.3	76.5				100.0	25.4	A.D.B.
	29.3		77.5				100.0	26.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.05	368	425	16	159	1.062

Lab. No. 8493 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-2

Starting Temperature °C: 350

Softening Temperature °C: 368

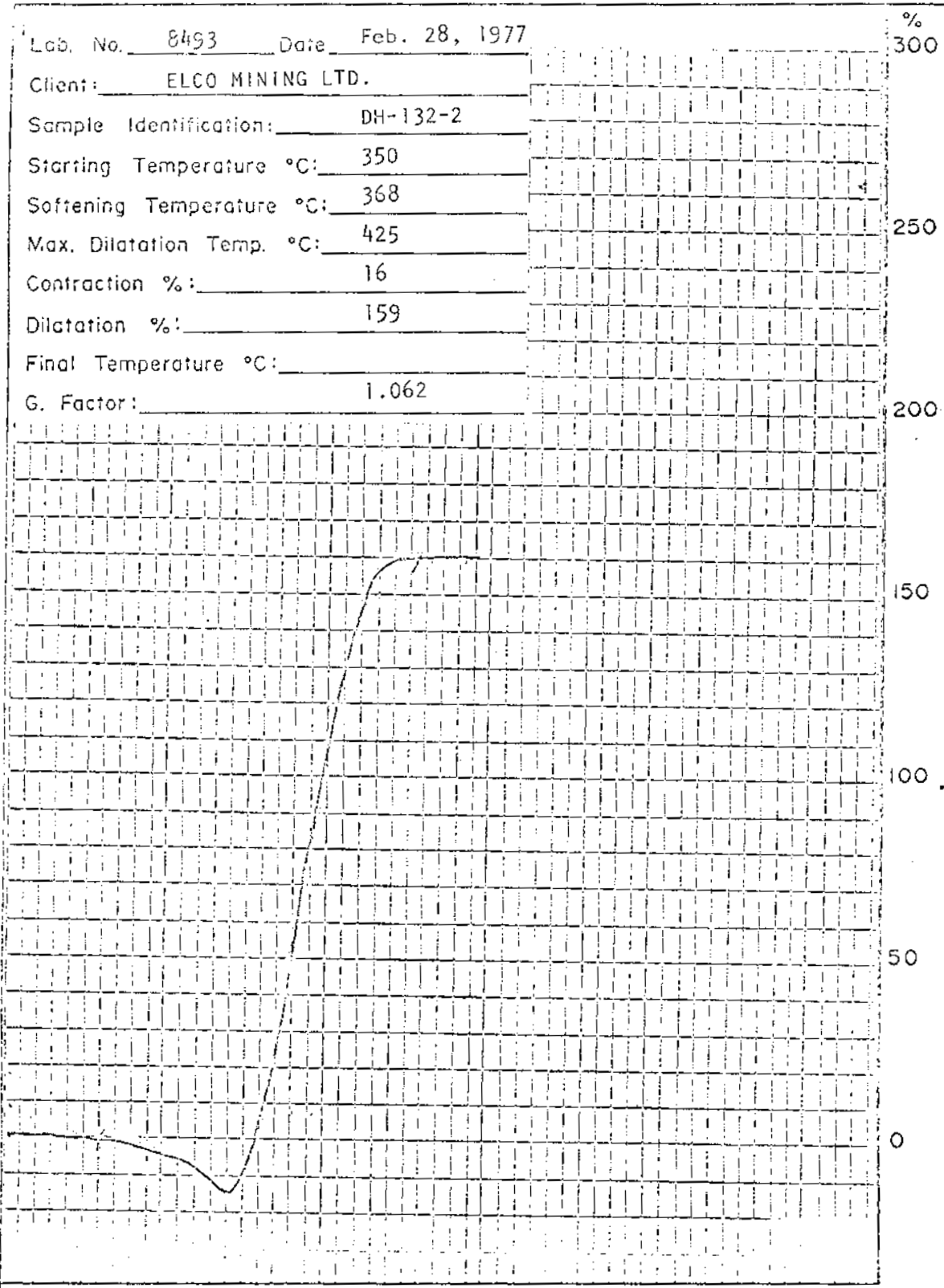
Max. Dilatation Temp. °C: 425

Contraction %: 16

Dilatation %: 159

Final Temperature °C:

G. Factor: 1.062



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 3 Lab. No. 8494 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
2.0	52.5	17.3	28.2	0.75	86	Air Dried Basis
	53.6	17.7	28.7	0.76	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	82.5	2.2	57.0	0.70	82.5	57.0	0.70	A.D.B.
	82.4		58.3	0.72	82.4	58.3	0.72	D.B.
65M x 0	17.5	1.1	31.0	0.96	100.0	52.5	0.75	A.D.B.
	17.6		31.3	0.97	100.0	53.5	0.77	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	29.5	3.9	5.3	26.7	64.1	1.10	29.5	5.3	A.D.B.
	29.0		5.5	27.8	66.7	1.14	29.0	5.5	D.B.
1.40-1.50	2.7	1.2	20.4	24.2	54.2	1.14	32.2	6.6	A.D.B.
	2.7		20.6	24.5	54.9	1.15	31.7	6.8	D.B.
1.50-1.60	2.5	1.2	28.0				34.7	8.1	A.D.B.
	2.5		28.3				34.2	8.4	D.B.
+1.60	65.3	1.4	81.8				100.0	56.2	A.D.B.
	65.8		83.0				100.0	57.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8 1/2	.03	371	431	15	210	1.069

Lab. No. 8494 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-3

Starting Temperature °C: 350

Softening Temperature °C: 371

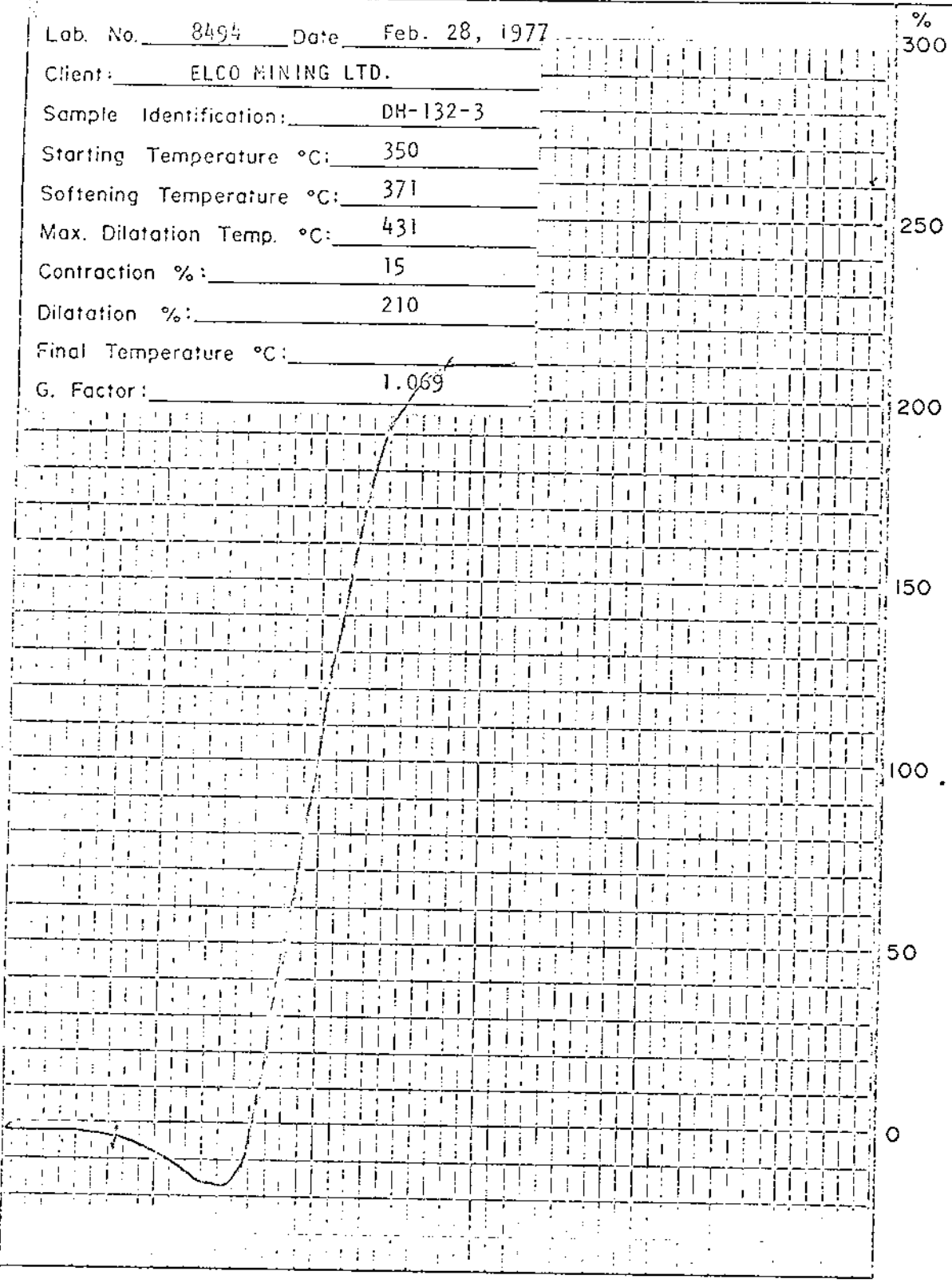
Max. Dilatation Temp. °C: 431

Contraction %: 15

Dilatation %: 210

Final Temperature °C: _____

G. Factor: 1.069



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 4

Lab. No. 8495

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	32.3	21.1	45.8	0.68	85	Air Dried Basis
	32.6	21.3	46.1	0.69	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.2	1.4	32.2	0.70	93.2	32.2	0.70	A.D.B.
	93.1		32.7	0.71	93.1	32.7	0.71	D.B.
65M x 0	6.8	0.7	27.1	0.77	100.0	31.9	0.71	A.D.B.
	6.9		27.3	0.78	100.0	32.3	0.72	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	55.6	1.6	4.6	27.2	66.6	0.86	55.6	4.6	A.D.B.
	55.5		4.7	27.6	67.7	0.87	55.5	4.7	D.B.
1.40-1.50	5.9	1.0	17.3	23.3	58.4	0.83	61.5	5.8	A.D.B.
	5.9		17.5	23.5	59.0	0.84	61.4	5.9	D.B.
1.50-1.60	3.0	1.8	29.0				64.5	6.9	A.D.B.
	3.0		29.5				64.4	7.0	D.B.
+1.60	35.5	1.1	75.9				100.0	31.4	A.D.B.
	35.6		76.7				100.0	31.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	.05	374	437	13	221	1.074

Lcd. No. 8495 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-4

Starting Temperature °C: 350

Softening Temperature °C: 374

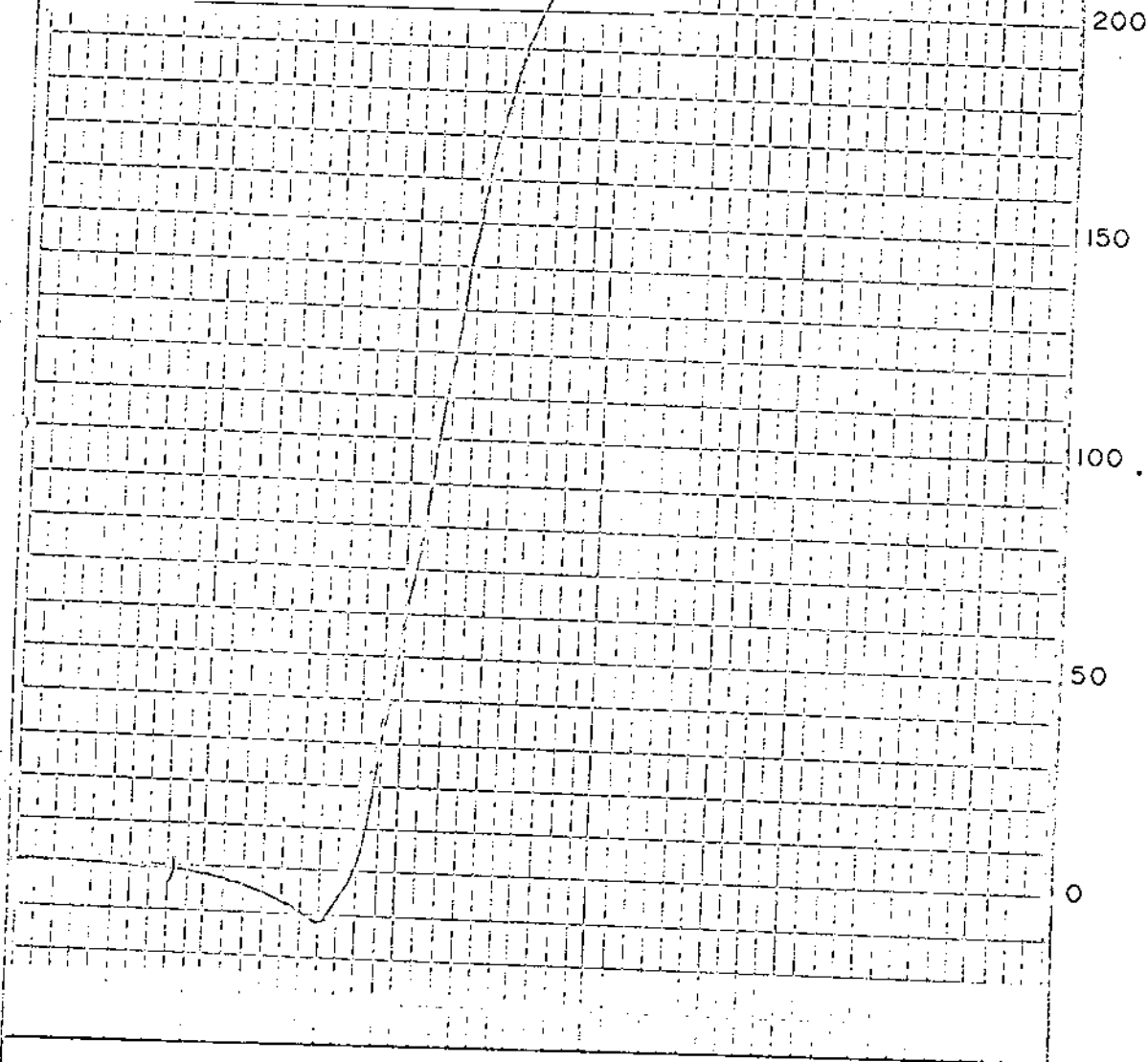
Max. Dilatation Temp. °C: 437

Contraction %: 13

Dilatation %: 221

Final Temperature °C: _____

G. Factor: 1.074



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 5 Lab. No. 8496 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	30.4	19.7	49.3	0.72	81	Air Dried Basis
	30.6	19.8	49.6	0.72	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.3	1.0	30.1	0.76	92.3	30.1	0.76	A.D.B.
	92.3		30.4	0.77	92.3	30.4	0.77	D.B.
65M x 0	7.7	0.8	22.2	0.75	100.0	29.5	0.76	A.D.B.
	7.7		22.4	0.76	100.0	29.8	0.77	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	56.8	1.0	6.7	25.9	66.4	0.87	56.8	6.7	A.D.B.
	56.8		6.8	26.2	67.0	0.88	56.8	6.8	D.B.
1.40-1.50	6.9	0.8	19.5	20.3	59.4	0.74	63.7	8.1	A.D.B.
	6.9		19.7	20.5	59.8	0.75	63.7	8.2	D.B.
1.50-1.60	3.6	1.0	29.6				67.3	9.2	A.D.B.
	3.6		29.9				67.3	9.4	D.B.
+1.60	32.7	1.0	70.5				100.0	29.3	A.D.B.
	32.7		71.2				100.0	29.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	.04	368	431	19	157	1.065

Lab. No. 8496 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-5

Starting Temperature °C: 350

Softening Temperature °C: 368

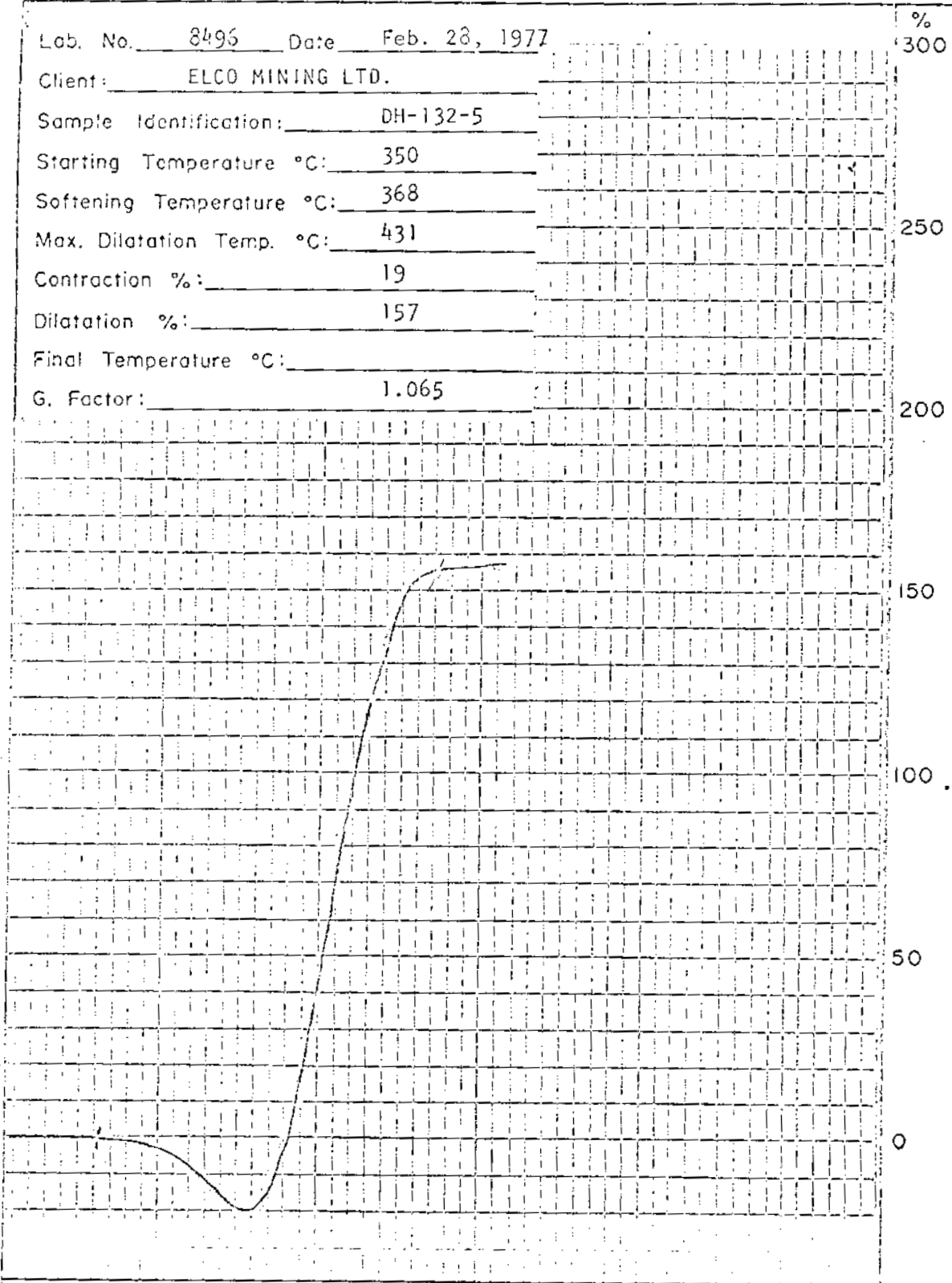
Max. Dilatation Temp. °C: 431

Contraction %: 19

Dilatation %: 157

Final Temperature °C: _____

G. Factor: 1.065



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
Drawn _____

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 6 Lab. No. 8497 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	32.4	19.3	47.4	0.98	100	Air Dried Basis
	32.7	19.5	47.8	0.99	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	76.9	1.9	37.2	0.93	76.9	37.2	0.93	A.D.B.
	76.7		37.9	0.95	76.7	37.9	0.95	D.B.
65M x 0	23.1	0.7	14.6	1.12	100.0	32.0	0.97	A.D.B.
	23.3		14.7	1.13	100.0	32.5	0.98	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	47.1	2.4	3.6	25.5	68.5	0.90	47.1	3.6	A.D.B.
	46.9		3.7	26.1	70.2	0.92	46.9	3.7	D.B.
1.40-1.50	3.5	1.3	17.2	21.0	60.5	0.84	50.6	4.5	A.D.B.
	3.5		17.4	21.3	61.3	0.85	50.4	4.7	D.B.
1.50-1.60	2.0	1.1	25.4	 	 	 	52.6	5.3	A.D.B.
	2.0		25.7	 	 	 	52.4	5.5	D.B.
+1.60	47.4	1.4	72.6	 	 	 	100.0	37.2	A.D.B.
	47.6		73.6	 	 	 	100.0	37.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.03	377	428	16	87	1.045

Lab. No. 8497 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-132-6

Starting Temperature °C: 350

Softening Temperature °C: 377

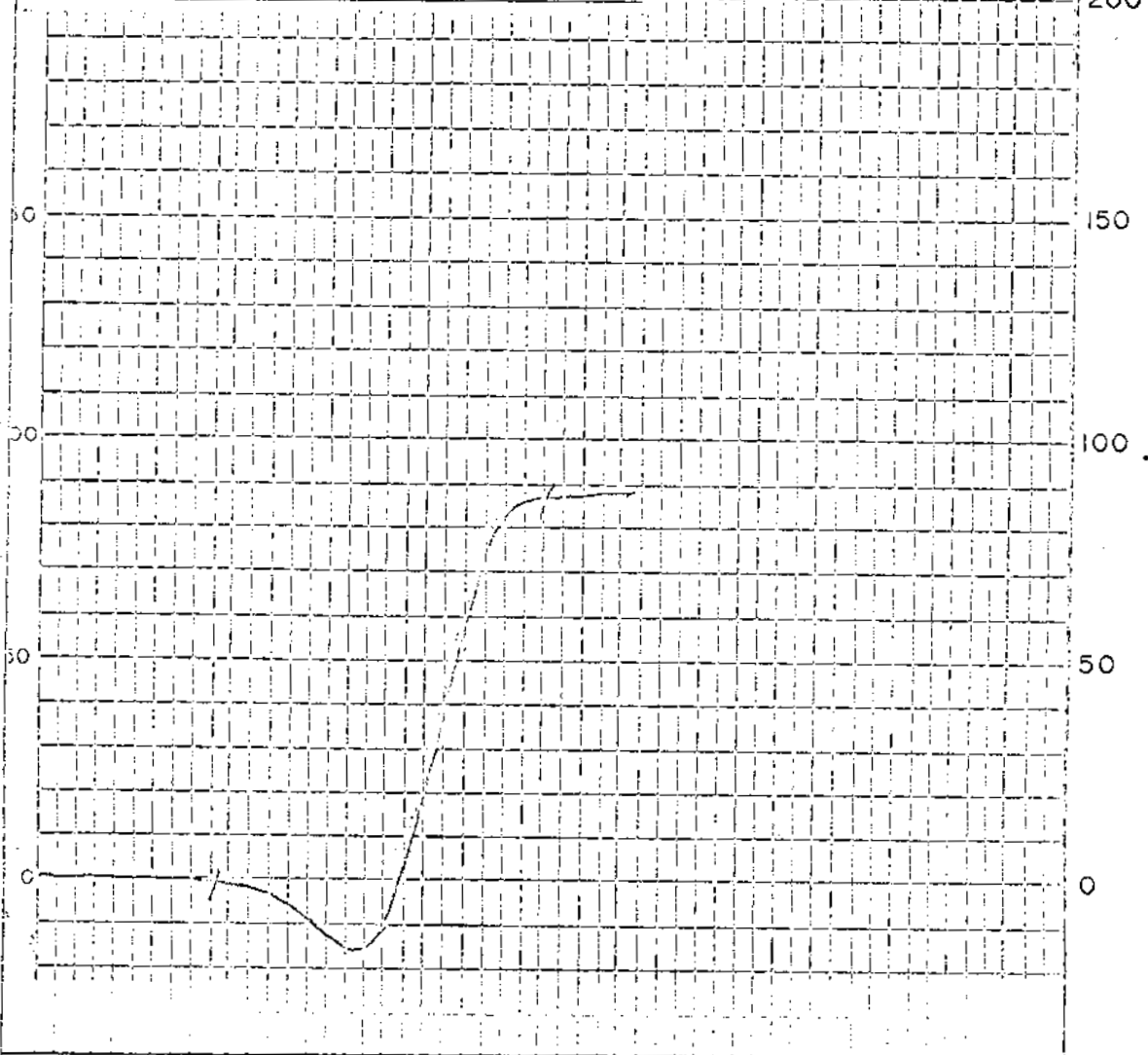
Max. Dilatation Temp. °C: 428

Contraction %: 16

Dilatation %: 87

Final Temperature °C: _____

G. Factor: 1.045



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 7 Lab. No. 8498 DATE: Feb. /77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	14.4	22.9	61.8	0.63	93	Air Dried Basis
	14.5	23.1	62.4	0.64	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.2	0.7	14.4	0.63	91.2	14.4	0.63	A.D.B.
	91.2		14.5	0.63	91.2	14.5	0.63	D.B.
65M x 0	8.8	0.7	15.7	0.60	100.0	14.5	0.63	A.D.B.
	8.8		15.8	0.60	100.0	14.6	0.63	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	73.8	1.5	5.2	24.9	68.4	0.74	73.8	5.2	A.D.B.
	73.7		5.3	25.3	69.4	0.75	73.7	5.3	D.B.
1.40-1.50	9.0	1.1	18.3	21.2	59.4	0.56	82.8	6.6	A.D.B.
	9.1		18.5	21.4	60.1	0.57	82.8	6.8	D.B.
1.50-1.60	3.8	1.2	28.7				86.6	7.6	A.D.B.
	3.8		29.0				86.6	7.7	D.B.
+1.60	13.4	1.0	58.6				100.0	14.4	A.D.B.
	13.4		59.2				100.0	14.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
8	.14	380	434	11	106	1.056

Lab. No. 8498 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-132-7

Starting Temperature °C: 350

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 434

250

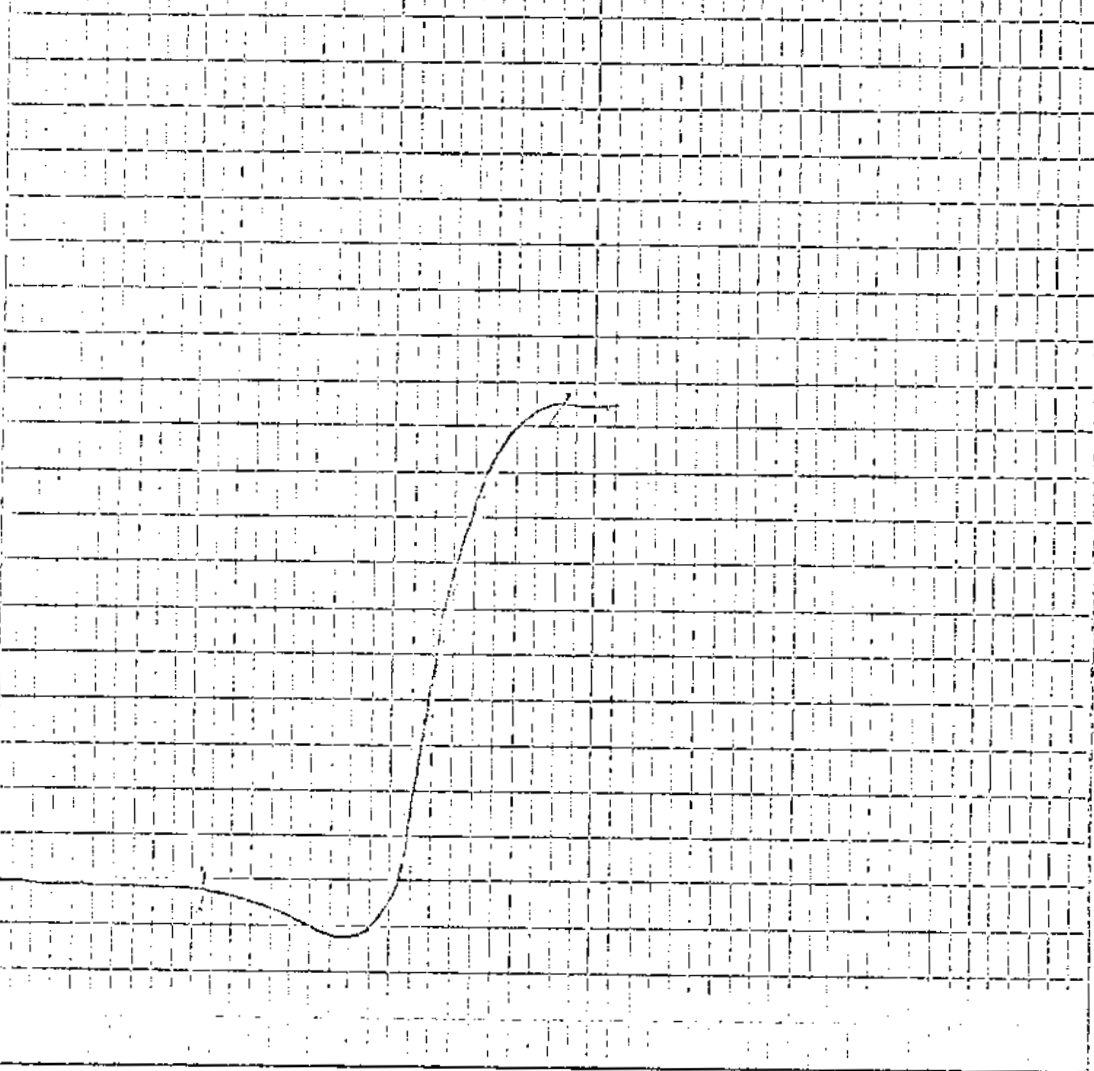
Contraction %: 11

Dilatation %: 106

Final Temperature °C:

G. Factor: 1.056

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 8 Lab. No. 8499 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	62.8	13.4	23.0		67	Air Dried Basis
	63.3	13.5	23.2		--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	84.6	1.4	64.3	0.49	84.6	64.3	0.49	A.D.B.
	84.5		65.2	0.50	84.5	65.2	0.50	D.B.
65M x 0	15.4	0.7	48.1	0.64	100.0	61.8	0.51	A.D.B.
	15.5		48.4	0.64	100.0	62.6	0.51	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	16.1	1.8	4.4	27.2	67.6	1.02	16.1	4.4	A.D.B.
	16.0		4.5	26.7	68.8	1.04	16.0	4.5	D.B.
1.40-1.50	1.4	1.3	22.7	23.7	52.3	0.89	17.5	5.9	A.D.B.
	1.4		23.0	24.0	53.0	0.90	17.4	6.0	D.B.
1.50-1.60	1.2	1.3	29.4				18.7	7.4	A.D.B.
	1.2		29.8				18.6	7.5	D.B.
+1.60	81.3	1.3	76.4				100.0	63.5	A.D.B.
	81.4		77.4				100.0	64.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8 1/2	.02	371	437	21	206	1.071

Lab. No. 8499 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-132-8

Starting Temperature °C: 350

Softening Temperature °C: 371

Max. Dilatation Temp. °C: 437

250

Contraction %: 21

Dilatation %: 206

Final Temperature °C:

G. Factor: 1.071

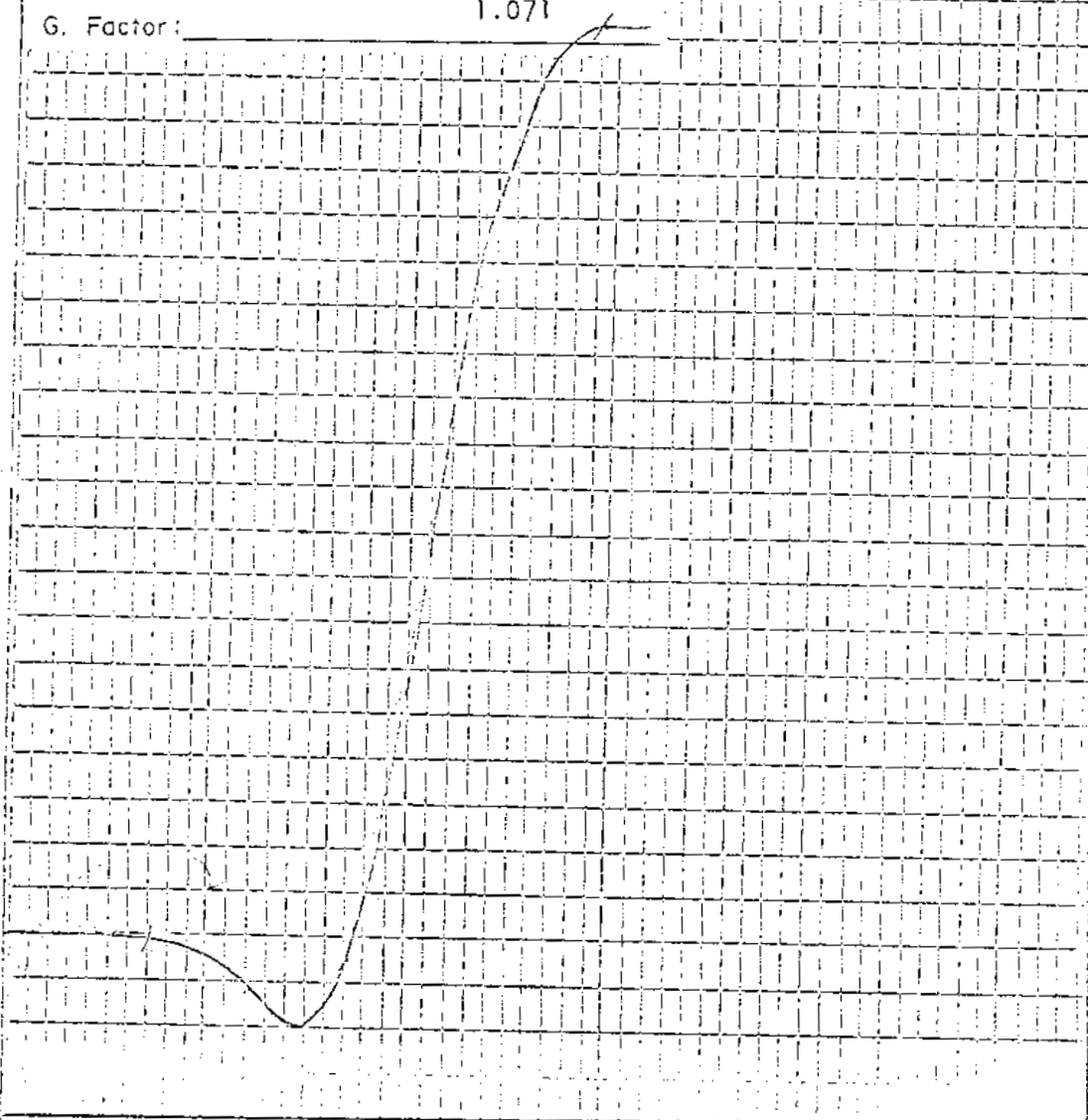
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 9

Lab. No. 8500

DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	36.8	16.3	46.1	0.51	90	Air Dried Basis
	37.1	16.4	46.5	0.51	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	87.0	0.8	38.6	0.50	87.0	38.6	0.50	A.D.B.
	87.0		38.9	0.50	87.0	38.9	0.50	D.B.
65M x 0	13.0	1.0	20.6	0.56	100.0	36.3	0.51	A.D.B.
	13.0		20.8	0.57	100.0	36.5	0.51	D.B.

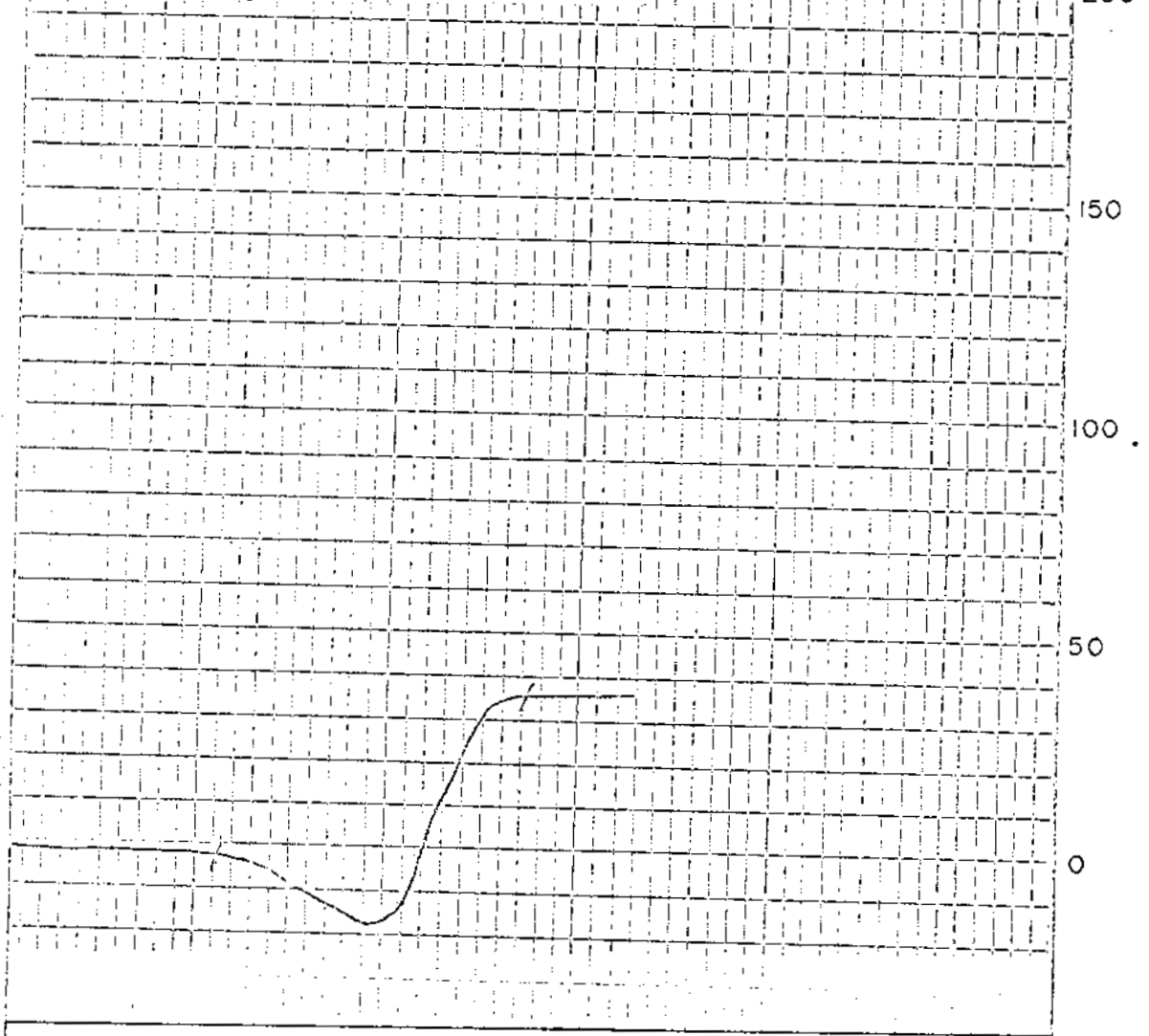
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	39.4	1.5	4.4	23.0	71.1	0.75	39.4	4.4	A.D.B.
	39.4		4.5	23.4	72.1	0.76	39.4	4.5	D.B.
1.40-1.50	13.2	1.5	10.6	20.9	67.0	0.68	52.6	6.0	A.D.B.
	13.2		10.8	21.2	68.0	0.69	52.6	6.1	D.B.
1.50-1.60	3.4	1.7	25.1				56.0	7.1	A.D.B.
	3.4		25.5				56.0	7.3	D.B.
+1.60	44.0	1.4	77.7				100.0	38.2	A.D.B.
	44.0		78.8				100.0	38.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
7 1/2	.02	383	431	15	38	1.026

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8500 Date Feb. 28, 1977
 Client: ELCO MINING LTD.
 Sample Identification: DH-132-9
 Starting Temperature °C: 350
 Softening Temperature °C: 383
 Max. Dilatation Temp. °C: 431
 Contraction %: 15
 Dilatation %: 38
 Final Temperature °C: _____
 G. Factor: 1.026




BIRTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date

 Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 10 Lab. No. 8501 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	25.0	17.7	56.4	0.58	89	Air Dried Basis
	25.2	17.9	56.9	0.59	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.7	1.8	26.1	0.52	86.7	26.1	0.52	A.D.B.
	86.6		26.6	0.53	86.6	26.6	0.53	D.B.
65M x 0	13.3	1.0	15.4	0.62	100.0	24.7	0.53	A.D.B.
	13.4		15.6	0.63	100.0	25.1	0.54	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	57.1	1.9	4.7	20.9	72.5	0.62	57.1	4.7	A.D.B.
	57.0		4.8	21.3	73.9	0.63	57.0	4.8	D.B.
1.40-1.50	10.5	1.3	13.9	18.5	66.3	0.56	67.6	6.1	A.D.B.
	10.6		14.1	18.7	67.2	0.57	67.6	6.3	D.B.
1.50-1.60	3.4	2.1	23.0				71.0	6.9	A.D.B.
	3.4		23.5				71.0	7.1	D.B.
+1.60	29.0	1.7	73.0				100.0	26.1	A.D.B.
	29.0		74.3				100.0	26.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
4	.01	395	--	16% @ 434°	--	--

Lab. No. 8501 Date Feb. 28, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-132-10

Starting Temperature °C: 350

Softening Temperature °C: 395

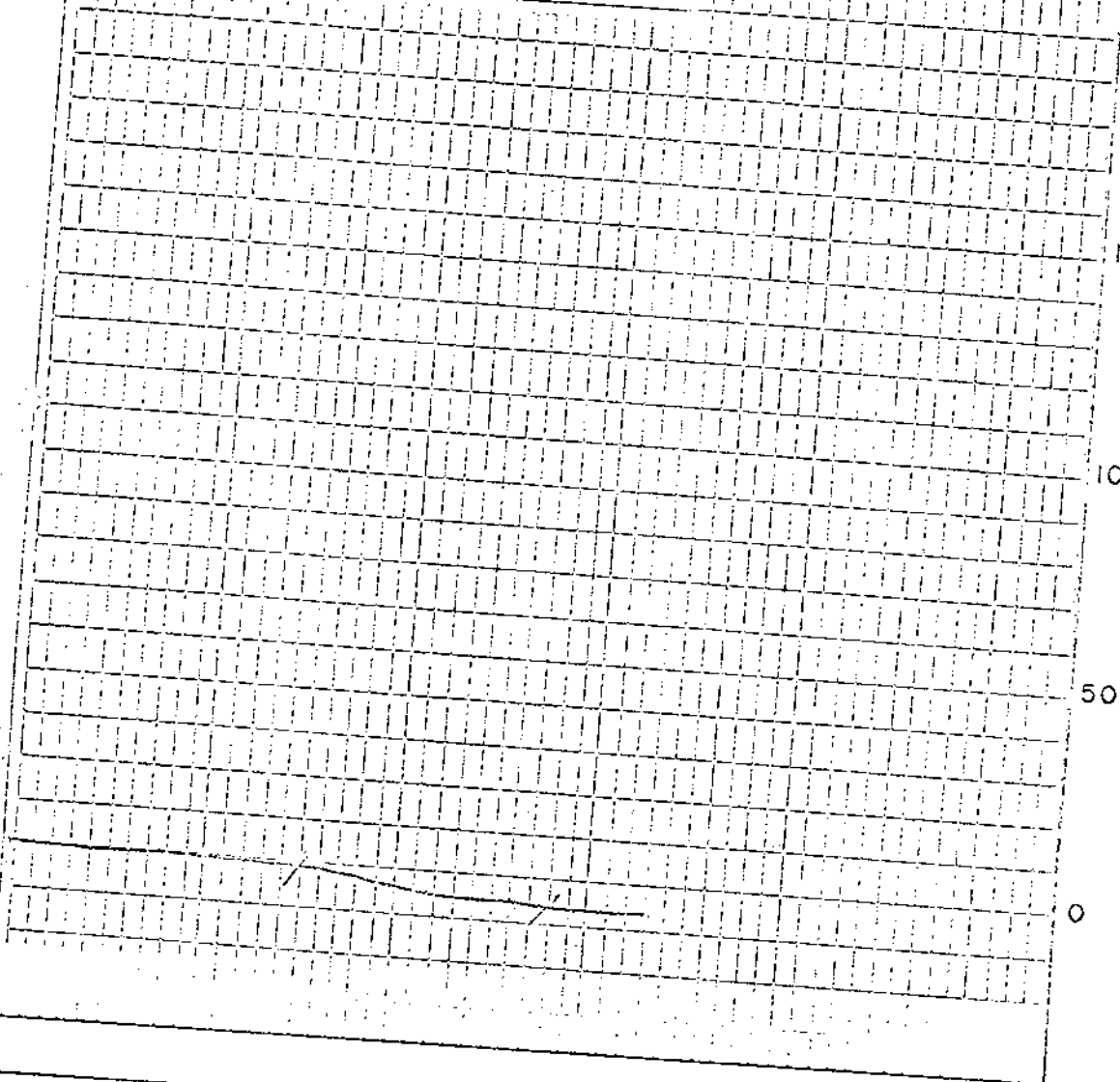
Max. Dilatation Temp. °C: ---

Contraction %: 16% @ 434°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 11 Lab. No. 8502 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
3.5	28.9	17.9	49.7		86	Air Dried Basis
	29.9	18.5	51.6		--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.3	3.8	30.3	0.62	89.3	30.3	0.62	A.D.B.
	89.1		31.5	0.64	89.1	31.5	0.64	D.B.
65M x 0	10.7	1.0	17.2	0.65	100.0	28.9	0.62	A.D.B.
	10.9		17.4	0.66	100.0	30.0	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	55.8	5.4	4.9	21.8	67.9	0.84	55.8	4.9	A.D.B.
	54.8		5.2	23.0	71.8	0.89	54.8	5.2	D.B.
1.40-1.50	5.9	2.7	16.5	19.4	61.4	0.66	61.7	6.0	A.D.B.
	5.9		17.0	19.9	63.1	0.68	60.7	6.3	D.B.
1.50-1.60	3.7	2.6	26.6	X	X	X	65.4	7.2	A.D.B.
	3.8		27.3				64.5	7.6	D.B.
+1.60	34.6	1.5	73.9	X	X	X	100.0	30.3	A.D.B.
	35.5		75.0				100.0	31.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				G. NO.
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
6	.05	392	--	12% @ 434°	--	--

Lab. No. 8502 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-132-11

Starting Temperature °C: 350

Softening Temperature °C: 392

Max. Dilatation Temp. °C: ---

Contraction %: 12% @ 434°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

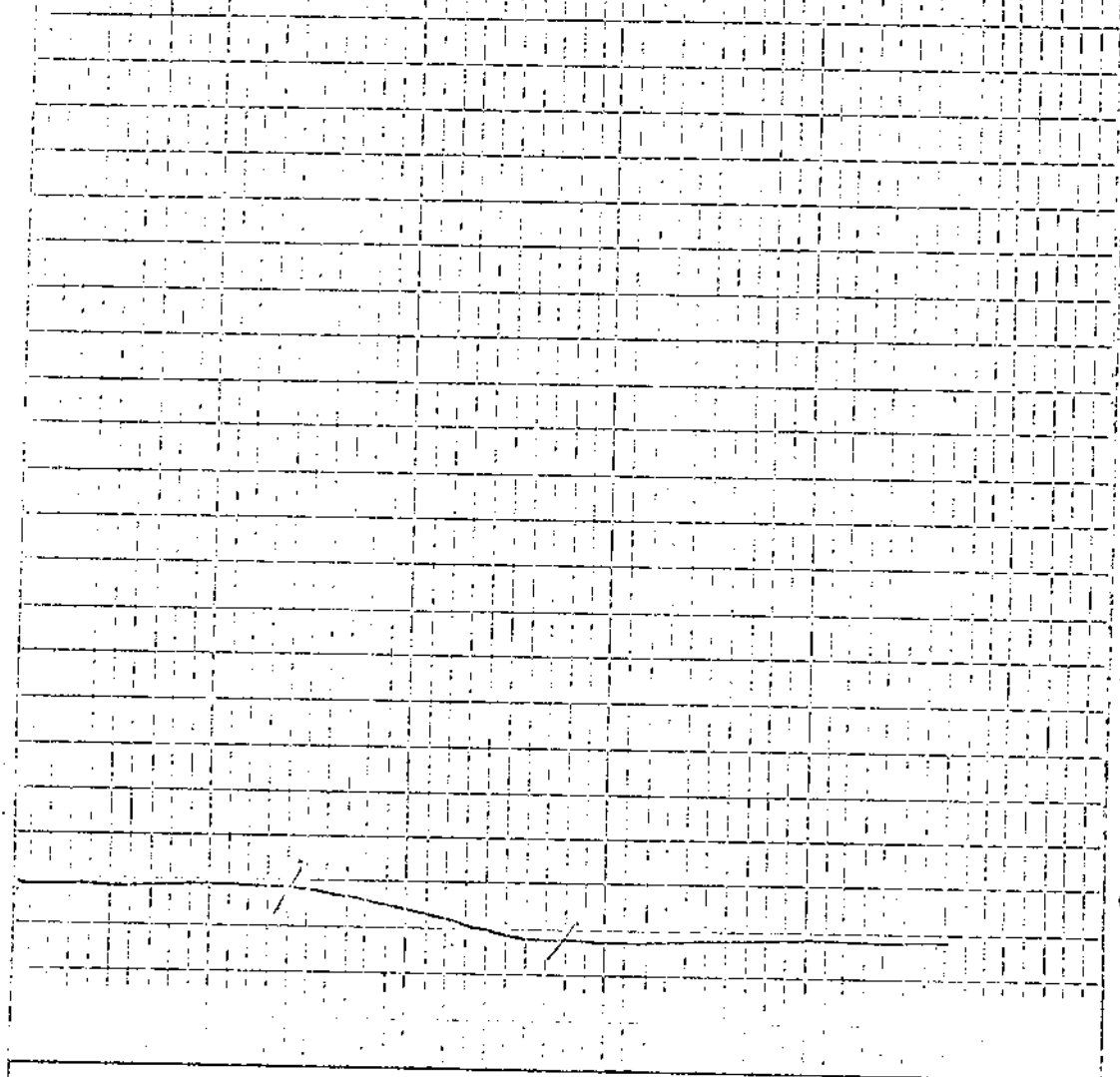
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH - 132 - 12 Lab. No. 8503 DATE: Feb./77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.6	23.6	17.8	58.0	0.58	75	Air Dried Basis
	23.7	17.9	58.4	0.58	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			!
					WT. %	ASH %	S. %	
1/4" x 65M	93.9	0.6	24.0	0.57	93.9	24.0	0.57	A.D.B.
	93.9		24.1	0.57	93.9	24.1	0.57	D.B.
65M x 0	6.1	0.8	14.6	0.60	100.0	23.4	0.57	A.D.B.
	6.1		14.7	0.60	100.0	23.5	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	52.5	1.5	6.7	20.1	71.7	0.64	52.5	6.7	A.D.B.
	52.4		6.8	20.4	72.8	0.65	52.4	6.8	D.B.
1.40-1.50	15.9	1.0	16.7	17.6	64.7	0.59	68.4	9.0	A.D.B.
	15.9		16.9	17.8	65.3	0.60	68.3	9.2	D.B.
1.50-1.60	7.7	0.9	28.0				76.1	10.9	A.D.B.
	7.8		28.3				76.1	11.1	D.B.
+1.60	23.9	1.3	62.4				100.0	23.2	A.D.B.
	23.9		63.2				100.0	23.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
4 1/2	.06	395	--	13% @ 428°	--	--

Lab. No. 8503 Date Feb. 28, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-132-12

Starting Temperature °C: 350

Softening Temperature °C: 395

Max. Dilatation Temp. °C: ---

Contraction %: 13% @ 428°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

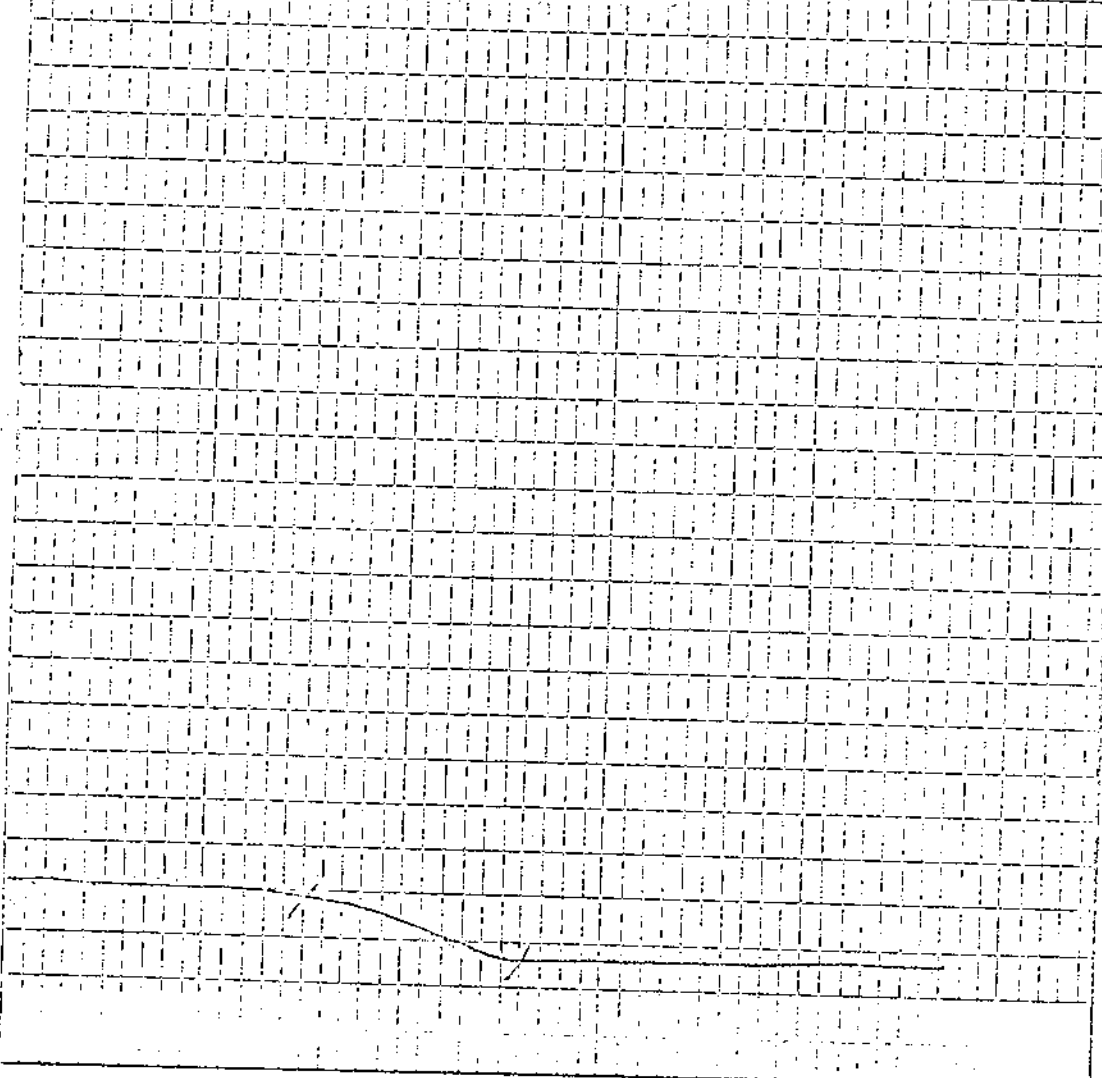
200

150

100

50

0



SIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. DH 133 - 1 Lab. No.: 77 - 3066 Date March 28, 1977

HEAD RAW ANALYSIS						
P.M.%	Ash%	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
0.7	19.3	23.8	56.2	0.61	99.0	Air Dried Basis
--	19.4	24.0	56.6	0.62	--	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼ x 65	91.5	0.6	20.2	0.62	91.5	20.2	0.62	A.D.B.
	91.5	--	20.4	0.62	91.5	20.4	0.62	D.B.
65 x 0	8.5	0.6	12.3	0.62	100.0	19.5	0.62	A.D.B.
	8.5	--	12.4	0.62	100.0	19.7	0.62	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M.%	F.C.%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	66.5	0.8	5.4	30.3	63.5	0.64	66.5	5.4	A.D.B.
	66.5	--	5.4	30.5	64.1	0.64	66.5	5.4	D.B.
1.40-1.50	9.1	1.0	14.2	25.1	59.7	0.59	75.6	6.4	A.D.B.
	9.1	--	14.3	25.4	60.3	0.60	75.6	6.5	D.B.
1.50-1.60	3.2	1.1	24.3	--	--	--	78.8	7.2	A.D.B.
	3.2	--	24.6	--	--	--	78.8	7.2	D.B.
+1.60	21.2	0.7	67.2	--	--	--	100.0	19.9	A.D.B.
	21.2	--	67.7	--	--	--	100.0	20.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				G.No.
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	
9	0.045					

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No. DH 133 - 2 Lab. No.: 77 - 3067 Date: March 28, 1977

HEAD RAW ANALYSIS						
F.M.%	Ash%	V.M.%	F.C %	S. %	H.G.I.	REMARKS'
0.7	33.4	22.5	46.0	0.86	92.7	Air Dried Basis
---	33.6	22.6	46.4	0.86	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼ x 65	88.6	0.6	34.8	0.86	88.6	34.8	0.86	A.D.B.
	88.6	--	35.0	0.86	88.6	35.0	0.86	D.B.
65 x 0	11.4	0.6	17.4	0.84	100.0	32.8	0.86	A.D.B.
	11.4	--	17.5	0.84	100.0	33.0	0.86	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S. G.	Wt.%	R.M.%	Ash %	V.M%	F.C%	S. %	Cumulative		
							Wt. %	Ash %	
-1.40	46.2	0.9	6.2	27.0	65.9	0.77	46.2	6.2	A.D.B.
	46.2	--	6.3	27.2	66.5	0.78	46.2	6.3	D.B.
1.40-1.50	6.7	0.8	15.3	26.6	57.3	0.68	52.9	7.4	A.D.B.
	6.7	--	15.4	26.8	57.8	0.68	52.9	7.4	D.B.
1.50-1.60	3.5	0.8	23.6	--	--	--	56.4	8.4	A.D.B.
	3.5	0.8	23.8	--	--	--	56.4	8.5	D.B.
+1.60	43.6	0.9	67.7	--	--	--	100.0	34.2	A.D.B.
	43.6	--	68.3	--	--	--	100.0	34.6	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	DILATATION TESTS				
		Softening Temp.(°C)	Max. Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
8½	0.015	360	452	23	220	1.101

Lab. No. 8681 Date March 31, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-133-2

Starting Temperature °C: 320

Softening Temperature °C: 360

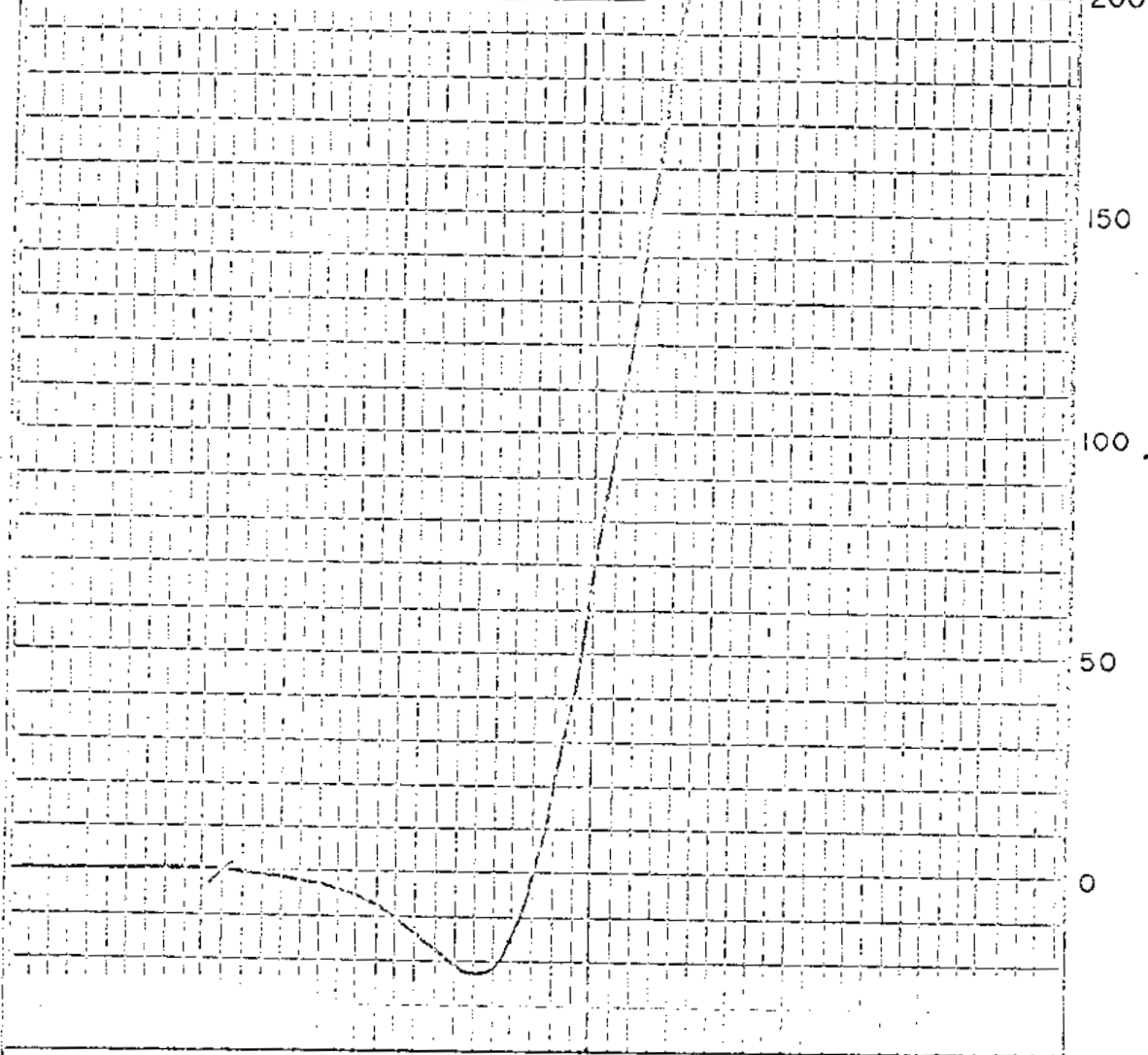
Max. Dilatation Temp. °C: 452

Contraction %: 23

Dilatation %: 220

Final Temperature °C:

G. Factor: 1.101



BARTLEY ENGINEERING (CANADA) LTD.

Title

RURR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-133-3

Lab. No. 8681

DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	15.3	24.1	59.9	0.81	86	Air Dried Basis
	15.4	24.3	60.3	0.82	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.5	0.6	15.9	0.81	89.5	15.9	0.81	A.D.B.
	89.5		16.0	0.81	89.5	16.0	0.81	D.B.
65M x 0	10.5	0.8	12.1	0.79	100.0	15.5	0.81	A.D.B.
	10.5		12.2	0.80	100.0	15.6	0.81	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	75.6	0.8	4.4	25.9	68.9	0.86	75.6	4.4	A.D.B.
	75.6		4.4	26.1	69.5	0.87	75.6	4.4	D.B.
1.40-1.50	5.4	0.7	22.5	21.6	55.2	0.71	81.0	5.6	A.D.B.
	5.4		22.7	21.8	55.5	0.72	81.0	5.6	D.B.
1.50-1.60	3.9	0.9	32.3				84.9	6.8	A.D.B.
	3.9		32.6				84.9	6.9	D.B.
+1.60	15.1	1.0	64.3				100.0	15.5	A.D.B.
	15.1		64.9				100.0	15.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Starting Temp.=320°C)				G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
9	0.05	360	452	23	220	1.101

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-133-4 Lab. No. 8682 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	20.4	23.0	55.9	0.81	88	Air Dried Basis
	20.5	23.2	56.3	0.82	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			!
					WT. %	ASH %	S. %	
1/4" x 65M	86.3	0.8	21.5	0.77	86.3	21.5	0.77	A.D.B.
	86.3		21.7	0.78	86.3	21.7	0.78	D.B.
65M x 0	13.7		13.5	0.86	100.0	20.4	0.78	A.D.B.
	13.7		13.6	0.87	100.0	20.6	0.79	D.B.

SINK - FLOAT ANALYSES: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	72.0	0.8	4.4	26.8	68.0	0.88	72.0	4.4	A.D.B.
	72.0		4.4	27.0	68.6	0.89	72.0	4.4	D.B.
1.40-1.50	4.6	0.8	19.0	24.0	56.2	0.74	76.6	5.3	A.D.B.
	4.6		19.2	24.2	56.6	0.75	76.6	5.3	D.B.
1.50-1.60	1.7	0.9	24.4	X	X	X	78.3	5.7	A.D.B.
	1.7		24.6				78.3	5.7	D.B.
+1.60	21.7	1.0	78.6	X	X	X	100.0	21.5	A.D.B.
	21.7		79.4				100.0	21.7	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	PZ ON COAL	DILATATION TEST (Starting Temp.=320°C)					G. NO.
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
8 1/2	0.04	363	460	20	177	1.104	

* S.T & M.D.T. corrected with factor 6/5

Lab. No. 8682 Date March 31, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-133-4

Starting Temperature °C: 320

Softening Temperature °C: 363

Max. Dilatation Temp. °C: 460

250

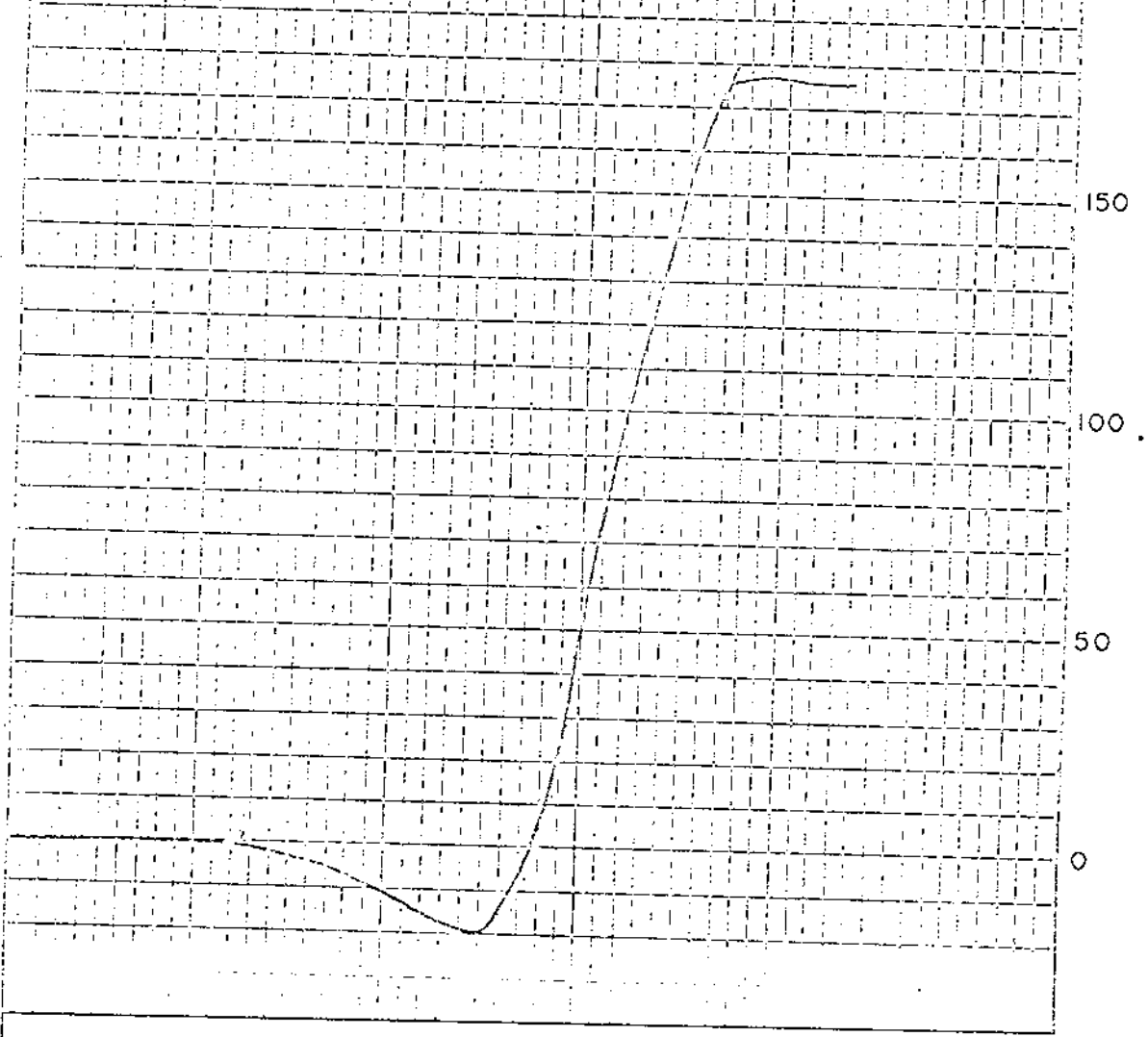
Contraction %: 20

Dilatation %: 177

Final Temperature °C:

G. Factor: 1.104

200



BIRTLEY ENGINEERING (CANADA) LTD.

Title <p style="text-align: center;">RUHR DILATOMETER TEST</p>	Date
	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-133-5 Lab. No. 8683 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	54.5	14.9	29.8	0.58	65	Air Dried Basis
	54.9	15.0	30.1	0.58	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.1	0.8	55.2	0.57	83.1	55.2	0.57	A.D.B.
	93.1		55.6	0.57	93.1	55.6	0.57	D.B.
65M x 0	6.9	0.7	37.5	0.73	100.0	54.0	0.58	A.D.B.
	6.9		37.8	0.74	100.0	54.4	0.58	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	15.3	0.8	5.1	25.7	68.4	1.05	15.3	5.1	A.D.B.
	15.4		5.1	25.9	69.0	1.06	15.4	5.1	D.B.
1.40-1.50	1.6	0.8	17.9	23.6	57.7	0.93	16.9	6.3	A.D.B.
	1.6		18.0	23.8	58.2	0.94	17.0	6.3	D.B.
1.50-1.60	1.3	0.9	27.9	X	X	X	18.2	7.9	A.D.B.
	1.3		28.2				18.3	7.9	D.B.
+1.60	81.8	1.0	65.1	X	X	X	100.0	54.7	A.D.B.
	81.7		65.8				100.0	55.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PX ON COAL	DILATATION TEST (Starting Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	0.14	360	452	27	257	1.101

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8683 Date March 30, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-133-5

Starting Temperature °C: 320

Softening Temperature °C: 360

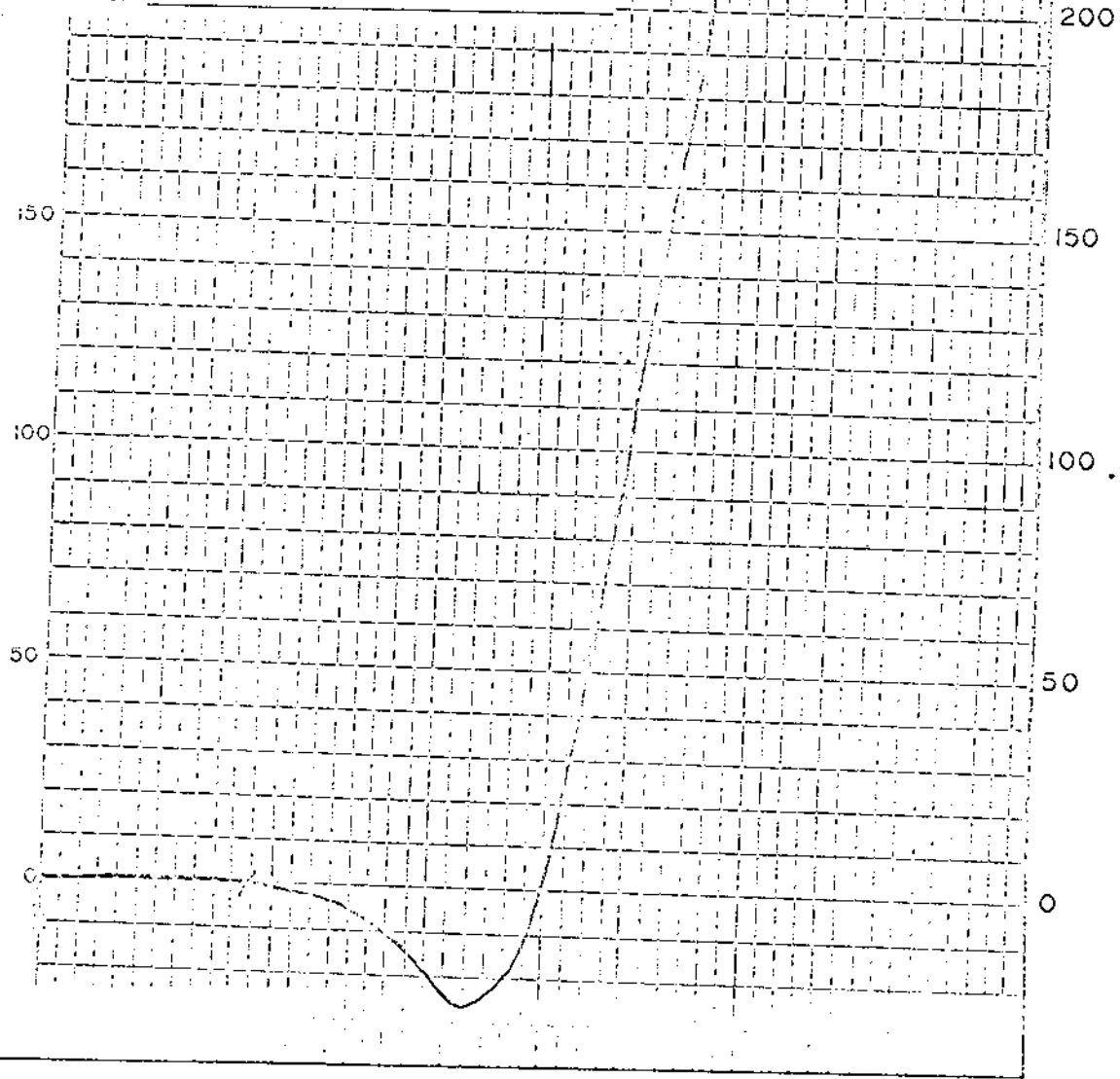
Max. Dilatation Temp. °C: 452

Contraction %: 27

Dilatation %: 257

Final Temperature °C: _____

G. Factor: 1.101



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST	Date
	Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-133-6 Lab. No. 8684 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	14.9	21.8	62.5	0.60	100	Air Dried Basis
	15.0	22.0	63.0	0.60	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	83.4	0.8	15.9	0.63	83.4	15.9	0.63	A.D.B.
	83.4		16.0	0.64	83.4	16.0	0.64	D.B.
65M x 0	16.6	0.7	10.5	0.65	100.0	15.0	0.63	A.D.B.
	16.6		10.6	0.65	100.0	15.1	0.63	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	75.7	0.8	4.1	23.8	71.3	0.70	75.7	4.1	A.D.B.
	75.7		4.1	24.0	71.9	0.71	75.7	4.1	D.B.
1.40-1.50	7.4	0.8	17.4	19.8	62.0	0.66	83.1	5.3	A.D.B.
	7.4		17.5	20.0	62.5	0.67	83.1	5.3	D.B.
1.50-1.60	2.9	0.9	25.9	X	X	X	86.0	6.0	A.D.B.
	2.9		26.1				86.0	6.0	D.B.
+1.60	14.0	1.1	72.5	X	X	X	100.0	15.3	A.D.B.
	14.0		73.3				100.0	15.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P2 ON COAL	DILATATION TEST (Starting Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
9	0.06	381	460	21	37	1.027

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8684 Date March 21, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-133-6

Starting Temperature °C: 320

Softening Temperature °C: 381

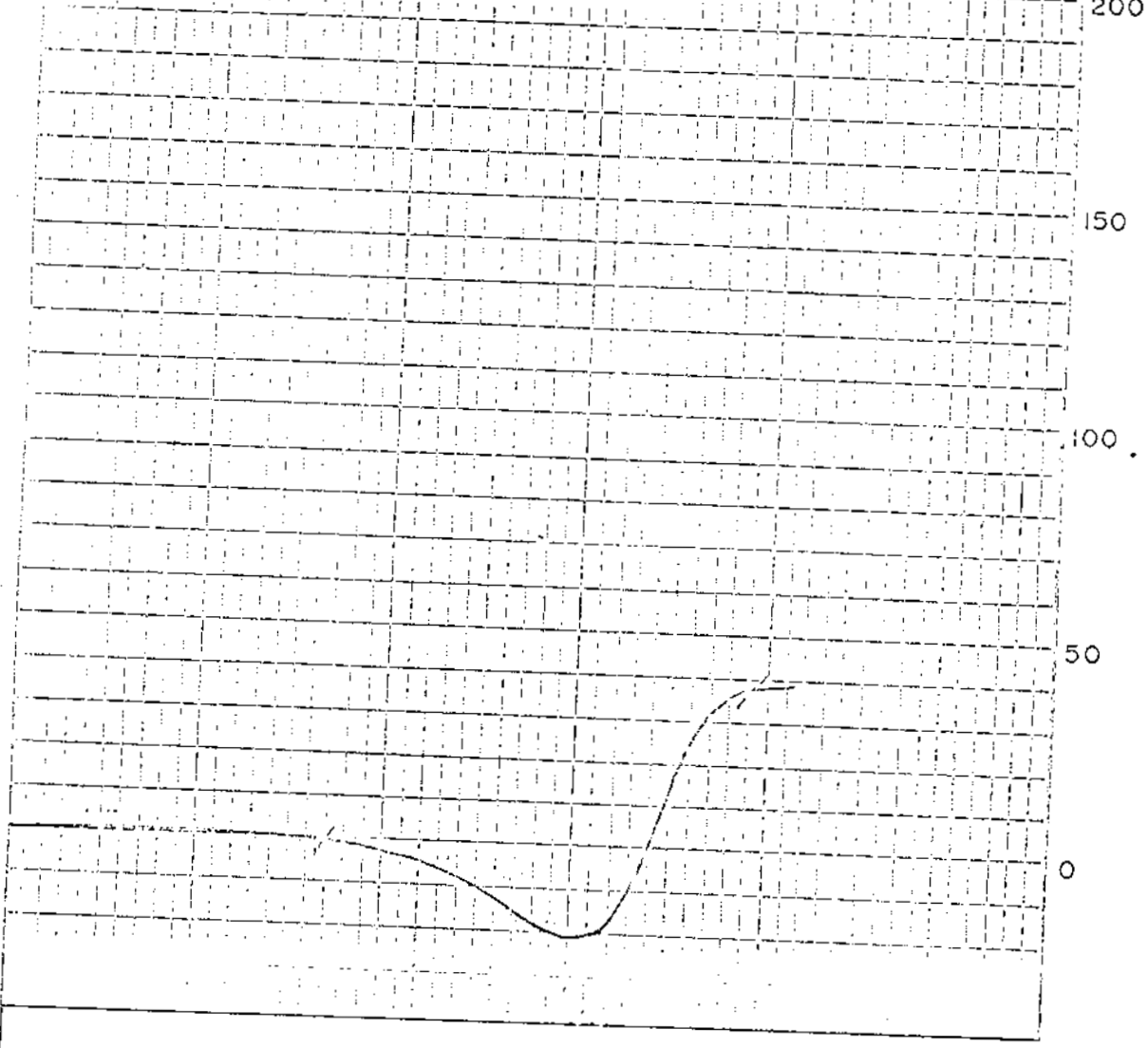
Max. Dilatation Temp. °C: 460

Contraction %: 21

Dilatation %: 37

Final Temperature °C:

G. Factor: 1.027



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-133-7 Lab. No. 8685 DATE: March/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.5	10.7	22.5	66.3	0.68	113	Air Dried Basis
	10.8	22.6	66.6	0.68	---	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	83.9	0.5	10.3	0.69	83.9	10.3	0.69	A.D.B.
	83.9		10.4	0.69	83.9	10.4	0.69	D.B.
65M x 0	16.1	0.6	10.8	0.70	100.0	10.4	0.69	A.D.B.
	16.1		10.9	0.70	100.0	10.5	0.69	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	80.5	0.5	4.1	24.9	70.5	0.79	80.5	4.1	A.D.B.
	80.5		4.1	25.0	70.9	0.79	80.5	4.1	D.B.
1.40-1.50	6.3	0.6	15.6	20.2	63.6	0.71	86.8	4.9	A.D.B.
	6.3		15.7	20.3	64.0	0.71	86.8	4.9	D.B.
1.50-1.60	4.7	0.7	21.5				91.5	5.8	A.D.B.
	4.7		21.7				91.5	5.8	D.B.
+1.60	8.5	0.8	53.2				100.0	9.8	A.D.B.
	8.5		53.6				100.0	9.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Starting Temp.=320°C)				
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
8	0.05	381	462	26	21	0.990

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8685 Date March 31, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-133-7

Starting Temperature °C: 320

Softening Temperature °C: 381

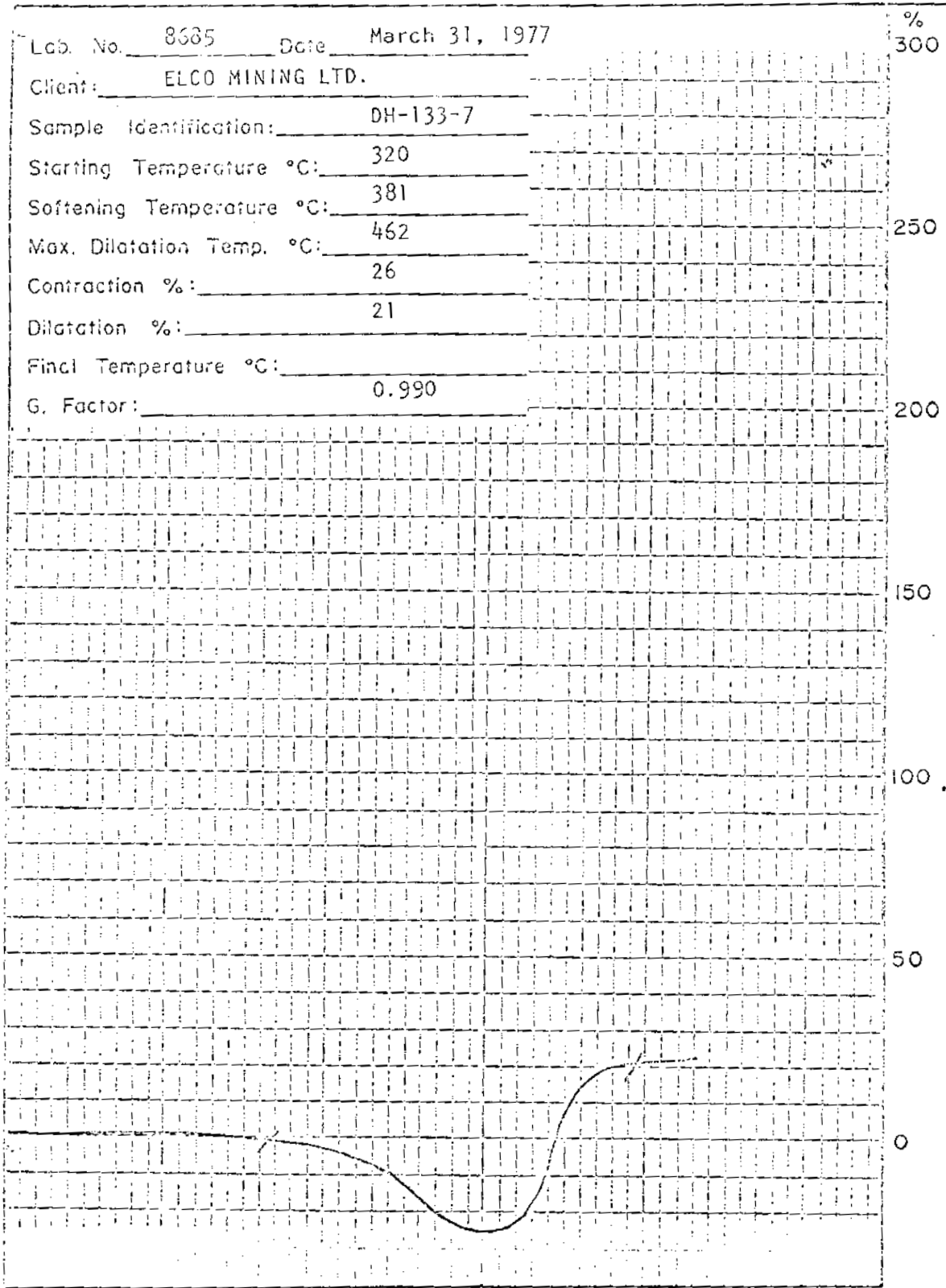
Max. Dilatation Temp. °C: 462

Contraction %: 26

Dilatation %: 21

Final Temperature °C:

G. Factor: 0.990



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

Hole No.: DH 133 - 8 Lab. No.: 77 - 3068 Date: March 28, 1977

HEAD RAW ANALYSIS						
F.M.%	Ash%	V.M.%	F.C %	S.%	H.G.I.	REMARKS
0.7	11.2	22.3	66.7	0.76	113.5	Air Dried Basis
--	11.3	22.5	67.1	0.76	---	Dry Basis

SIZE / RAW ANALYSES								
Size Fraction	Wt. %	R.M.%	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
1/4 x 65	79.8	0.6	11.8	0.76	79.8	11.8	0.76	A.D.B.
	79.8	--	11.8	0.76	79.8	11.8	0.76	D.B.
65 x 0	20.2	0.6	7.7	0.80	100.0	11.0	0.77	A.D.B.
	20.2	--	7.8	0.80	100.0	11.0	0.77	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65 M									
S. G.	Wt.%	R.M%	Ash %	V.M%	F.C%	S.%	Cumulative		
							Wt. %	Ash %	
-1.40	77.0	0.7	4.6	28.1	66.6	0.76	77.0	4.6	A.D.B.
	77.0	--	4.6	28.4	67.0	0.76	77.0	4.6	D.B.
1.40-1.50	9.1	0.6	14.0	20.4	65.0	0.68	86.1	5.6	A.D.B.
	9.1	--	14.1	20.6	65.3	0.68	86.1	5.6	D.B.
1.50-1.60	3.2	0.7	28.9	--	--	--	89.3	6.4	A.D.B.
	3.2	--	29.1	--	--	--	89.3	6.4	D.B.
+1.60	10.7	0.6	53.8	--	--	--	100.0	11.5	A.D.B.
	10.7	--	54.1	--	--	--	100.0	11.5	D.B.

COMPOSITE 1/4" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	F % on Coal	DILATATION TESTS				
		Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G. No.
9	0.031					

CLIENT: WARNOCK HERSEY

PROJECT: DILATATION TESTS *

SAMPLE : -8 Mesh, 1.50 S.G. Float
Composite

DATE: March 30, 1977

Well No.	W.H. I.D. No.	INITIAL TEMP (°C)	SOFTENING TEMP (°C)	MAX. DILAT'N TEMP (°C)	MAX. CONTRACT'N %	MAX. DILATATION %	G.No.
DH 30-7	77-3059	320	421	---	21% @ 464°	---	---
DH 30-8	77-3060	320	424	---	13% @ 471°	---	---
DH 30-9	77-3061	320	414	486	26	12	0.971
DH 30-10	77-3062	320	424	---	15% @ 468°	---	---
DH 30-11	77-3063	320	424	---	15% @ 443°	---	---
DH 30-12	77-3064	320	410	482	30	6	0.949
DH 30-13	77-3065	320	396	475	27	63	1.038
DH 133-1	77-3066	320	370	457	25	149	1.081
DH 133-2	77-3067	320	370	453	28	221	1.085
DH 133-8	77-3068	320	424	471	25	105	1.033

* Softening Temp., Maximum Dilatation/Contraction Temp.
are corrected with factor = 6/5

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 134 - 1 Lab. No.: 77 - 4052 Date: May 2, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.6	31.5	24.3	42.6	0.70	96.2	Air Dried Basis
--	32.0	24.7	43.3	0.71	---	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	73.6	1.7	31.8	0.80	73.6	31.8	0.80	A.D.B.
	73.6	--	32.3	0.81	73.6	32.3	0.81	D.B.
65 x 0	26.4	1.4	32.4	0.61	100.0	32.0	0.75	A.D.B.
	26.4	--	32.9	0.62	100.0	32.4	0.76	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	43.8	1.6	6.3	31.8	60.3	0.71	43.8	6.3	A.D.B.
	43.8	--	6.4	32.3	61.3	0.72	43.8	6.4	D.B.
1.40-1.50	9.5	1.6	16.6	28.8	53.0	0.61	53.3	8.1	A.D.B.
	9.5	--	16.8	29.3	53.9	0.62	53.3	8.2	D.B.
1.50-1.60	5.8	1.5	25.6	--	--	--	59.1	9.8	A.D.B.
	5.8	--	26.0	--	--	--	59.1	10.0	D.B.
+1.60	40.9	1.4	64.1	--	--	--	100.0	32.0	A.D.B.
	40.9	--	65.0	--	--	--	100.0	32.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
3	0.010					

Lab. No. 77 - 4052 Date June 6, 1977

Client: Elco Mining Ltd.

Sample Identification: DH 134 - 1

Starting Temperature °C: 350°C

Softening Temperature °C: 383°C

Max. Dilatation Temp. °C: --

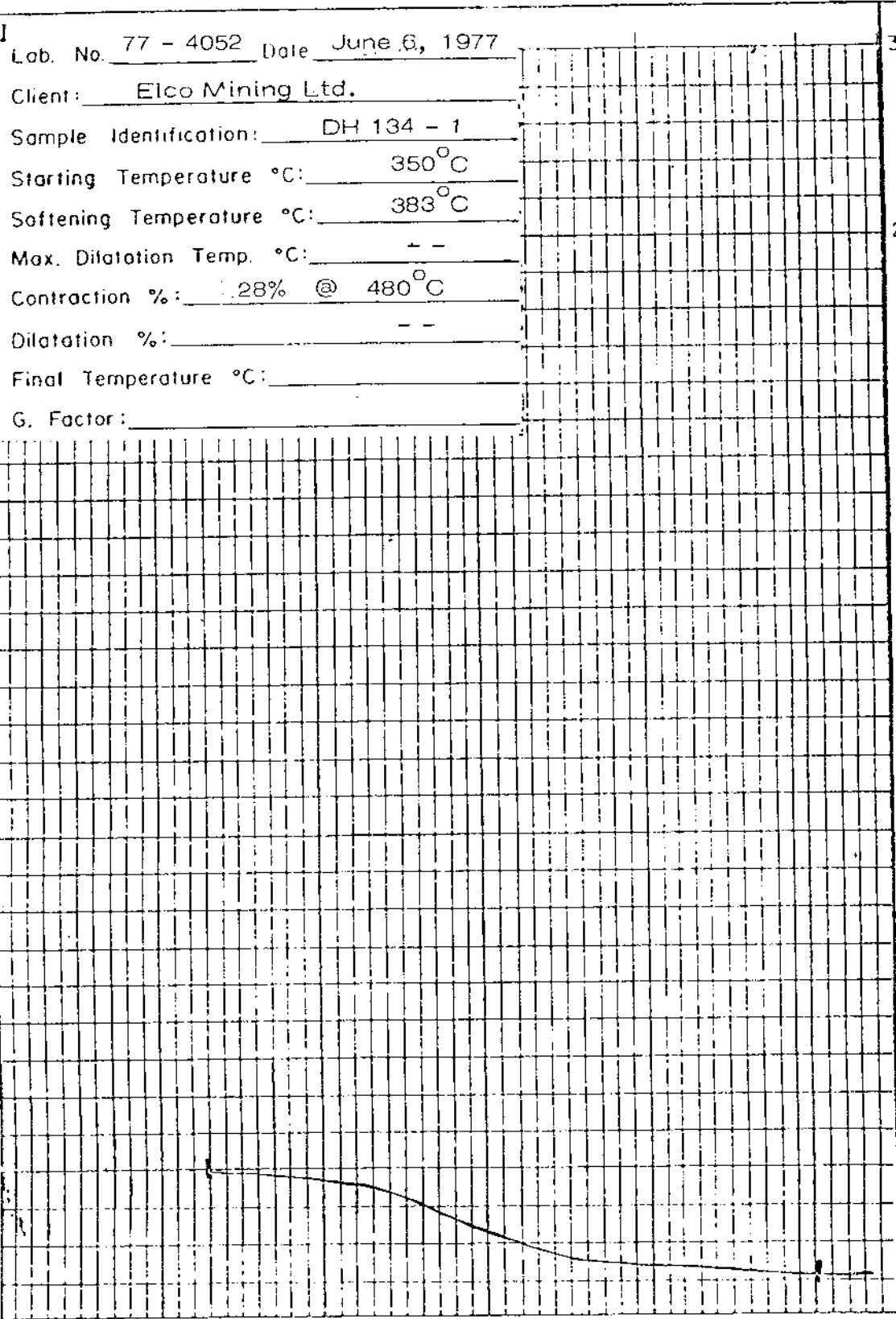
Contraction %: 28% @ 480°C

Dilatation %: --

Final Temperature °C: --

G. Factor: --

%
300
250
200
150
100
50
0



WARNOCK HERSEY PROFESSIONAL SERVICES

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-134-2 Lab. No. 8832 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
2.1	55.4	18.3	24.2	0.36	55	Air Dried Basis
	56.6	18.7	24.7	0.37	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.5	1.8	56.3	0.38	95.5	56.3	0.38	A.D.B.
	95.5		57.3	0.39	95.5	57.3	0.39	D.B.
65M x 0	4.5	2.3	45.9	0.49	100.0	55.8	0.38	A.D.B.
	4.5		47.0	0.50	100.0	56.8	0.39	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	20.4	1.6	6.3	33.2	58.9	0.68	20.4	6.3	A.D.B.
	20.3		6.4	33.7	59.9	0.69	20.3	6.4	D.B.
1.40-1.50	6.0	1.4	18.8	29.7	50.1	0.59	26.4	9.1	A.D.B.
	6.0		19.1	30.1	50.8	0.60	26.3	9.3	D.B.
1.50-1.60	5.3	1.5	29.7				31.7	12.6	A.D.B.
	5.3		30.2				31.6	12.8	D.B.
+1.60	68.3	1.1	76.4				100.0	56.2	A.D.B.
	68.4		77.2				100.0	56.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
2	0.03	367	---	23% @ 453°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8332 Date April 18, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-134-2

Starting Temperature °C: 320

Softening Temperature °C: 367

Max. Dilatation Temp. °C: ---

Contraction %: 23% @ 453°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-134-3

Lab. No. 8833

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
2.6	40.5	21.4	35.5	0.53	59	Air Dried Basis
	41.6	22.0	36.4	0.54	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.9	1.4	41.0	0.54	93.9	41.0	0.54	A.D.B.
	94.0		41.6	0.55	94.0	41.6	0.55	D.B.
65M x 0	6.1	2.8	28.8	0.61	100.0	40.3	0.54	A.D.B.
	6.0		29.6	0.63	100.0	40.9	0.55	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	40.8	2.0	4.9	32.7	60.4	0.66	40.8	4.9	A.D.B.
	40.6		5.0	33.4	61.6	0.67	40.6	5.0	D.B.
1.40-1.50	10.5	1.5	13.5	28.1	56.9	0.63	51.3	6.7	A.D.B.
	10.5		13.7	28.5	57.8	0.64	51.1	6.8	D.B.
1.50-1.60	3.0	1.6	23.6				54.3	7.6	A.D.B.
	3.0		24.0				54.1	7.7	D.B.
+1.60	45.7	0.9	80.7				100.0	41.0	A.D.B.
	45.9		81.4				100.0	41.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1 1/2	0.04	370	---	20% @ 453°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8833 Date April 18, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-134-3

Starting Temperature °C: 320

Softening Temperature °C: 370

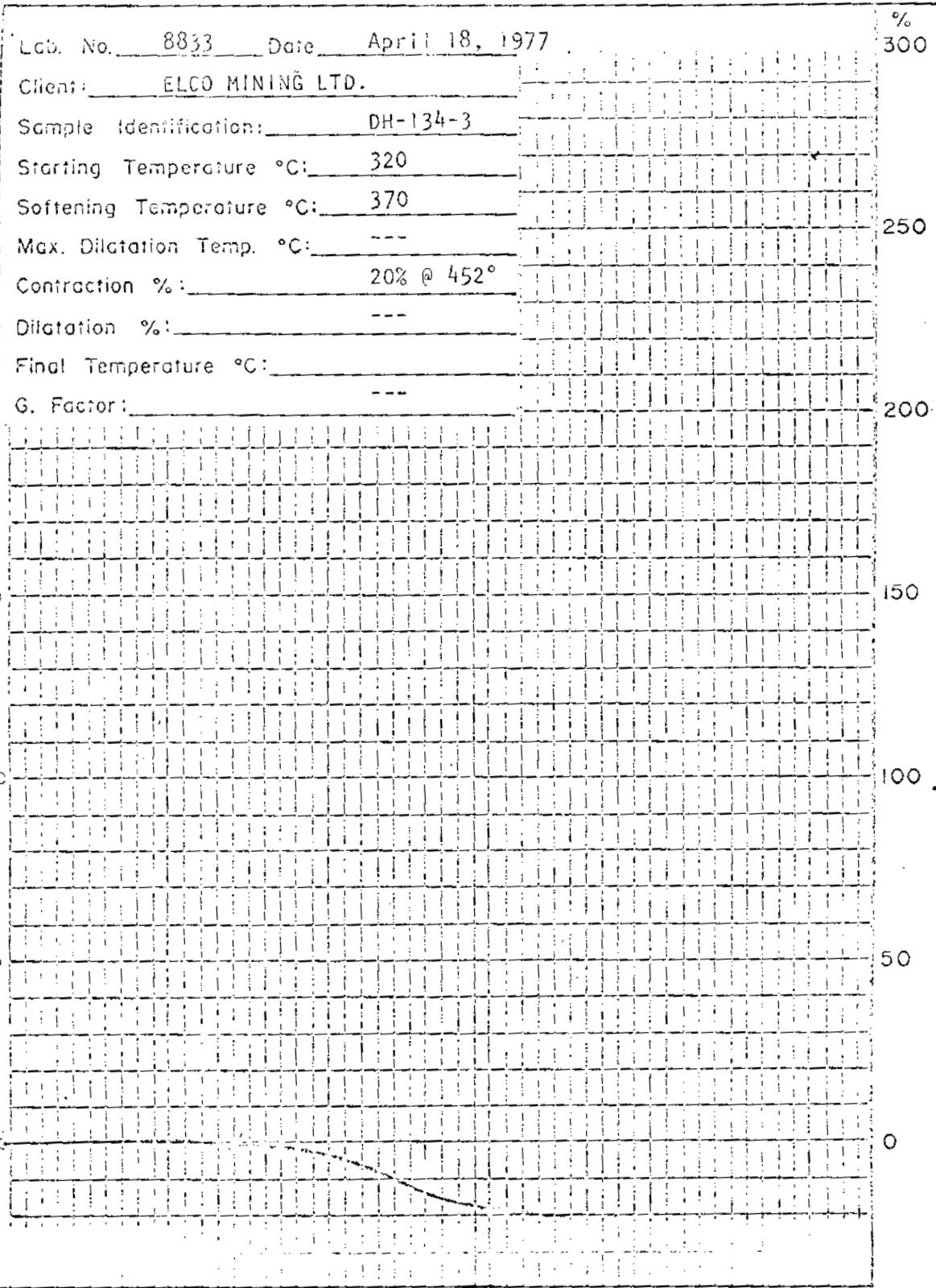
Max. Dilatation Temp. °C: ---

Contraction %: 20% @ 452°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-1

Lab. No. 8916

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	25.3	26.3	47.5	0.47	54	Air Dried Basis
	25.5	26.5	48.0	0.47	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.9	0.9	24.3	0.49	94.9	24.3	0.49	A.D.B.
	94.9		24.5	0.49	94.9	24.5	0.49	D.B.
65M x 0	5.1	0.9	35.0	0.46	100.0	24.8	0.49	A.D.B.
	5.1		35.3	0.46	100.0	25.1	0.49	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	38.7	0.9	6.5	32.3	60.3	0.57	38.7	6.5	A.D.B.
	38.7		6.6	32.6	60.8	0.58	38.7	6.6	D.B.
1.40-1.50	27.5	0.8	16.6	27.2	55.4	0.50	66.2	10.7	A.D.B.
	27.5		16.7	27.4	55.9	0.50	66.2	10.8	D.B.
1.50-1.60	9.1	0.7	25.6	X	X	X	75.3	12.5	A.D.B.
	9.1		25.8				75.3	12.6	D.B.
+1.60	24.7	0.9	60.1	X	X	X	100.0	24.3	A.D.B.
	24.7		60.6				100.0	24.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1 1/2	0.02	363	---	12% @ 464°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8916 Date April 29, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-1

Starting Temperature °C: 320

Softening Temperature °C: 363

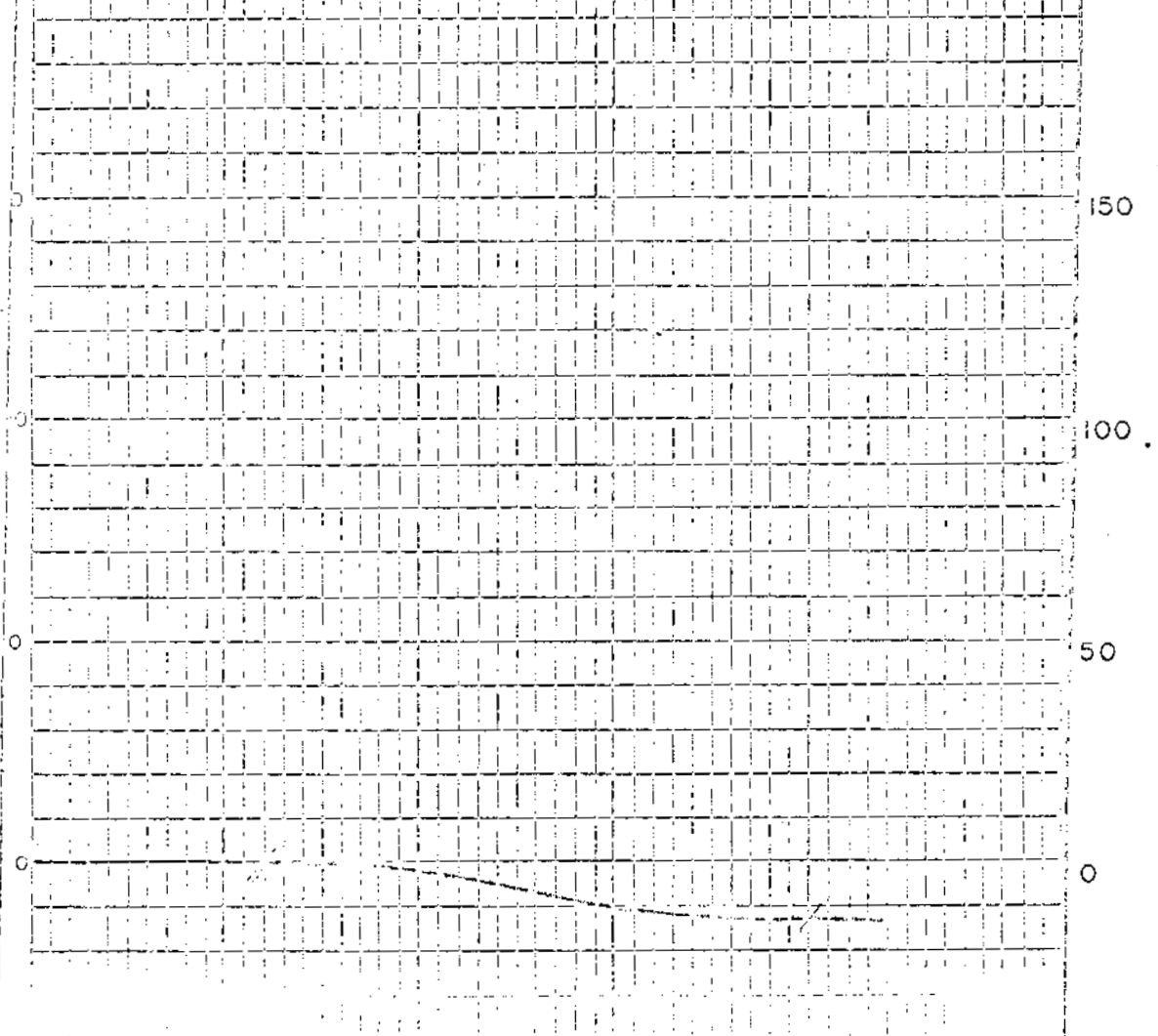
Max. Dilatation Temp. °C: ---

Contraction %: 12% @ 464°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIERLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-2

Lab. No. 8917

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	23.6	27.3	48.2	0.61	67	Air Dried Basis
	23.8	27.5	48.7	0.62	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	89.5	0.9	23.2	0.60	89.5	23.2	0.60	A.D.B.
	89.5		23.4	0.61	89.5	23.4	0.61	D.B.
65M x 0	10.5	0.9	28.9	0.82	100.0	23.8	0.62	A.D.B.
	10.5		29.2	0.83	100.0	24.0	0.63	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	63.7	0.9	5.5	31.4	62.2	0.64	63.7	5.5	A.D.B.
	63.7		5.5	31.7	62.8	0.65	63.7	5.5	D.B.
1.40-1.50	2.8	0.9	13.7	27.8	57.6	0.60	66.5	5.8	A.D.B.
	2.8		13.8	28.1	58.1	0.61	66.5	5.8	D.B.
1.50-1.60	5.0	0.9	19.7				71.5	6.8	A.D.B.
	5.0		19.9				71.5	6.8	D.B.
+1.60	28.5	1.0	64.2				100.0	23.2	A.D.B.
	28.5		64.8				100.0	23.4	D.B.

COMPOSITE 1/4" x 65M FLOATS ? 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1 1/2	0.04	363	---	13% @ 446°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8917 Date April 29, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-135-2

Starting Temperature °C: 320

Softening Temperature °C: 363

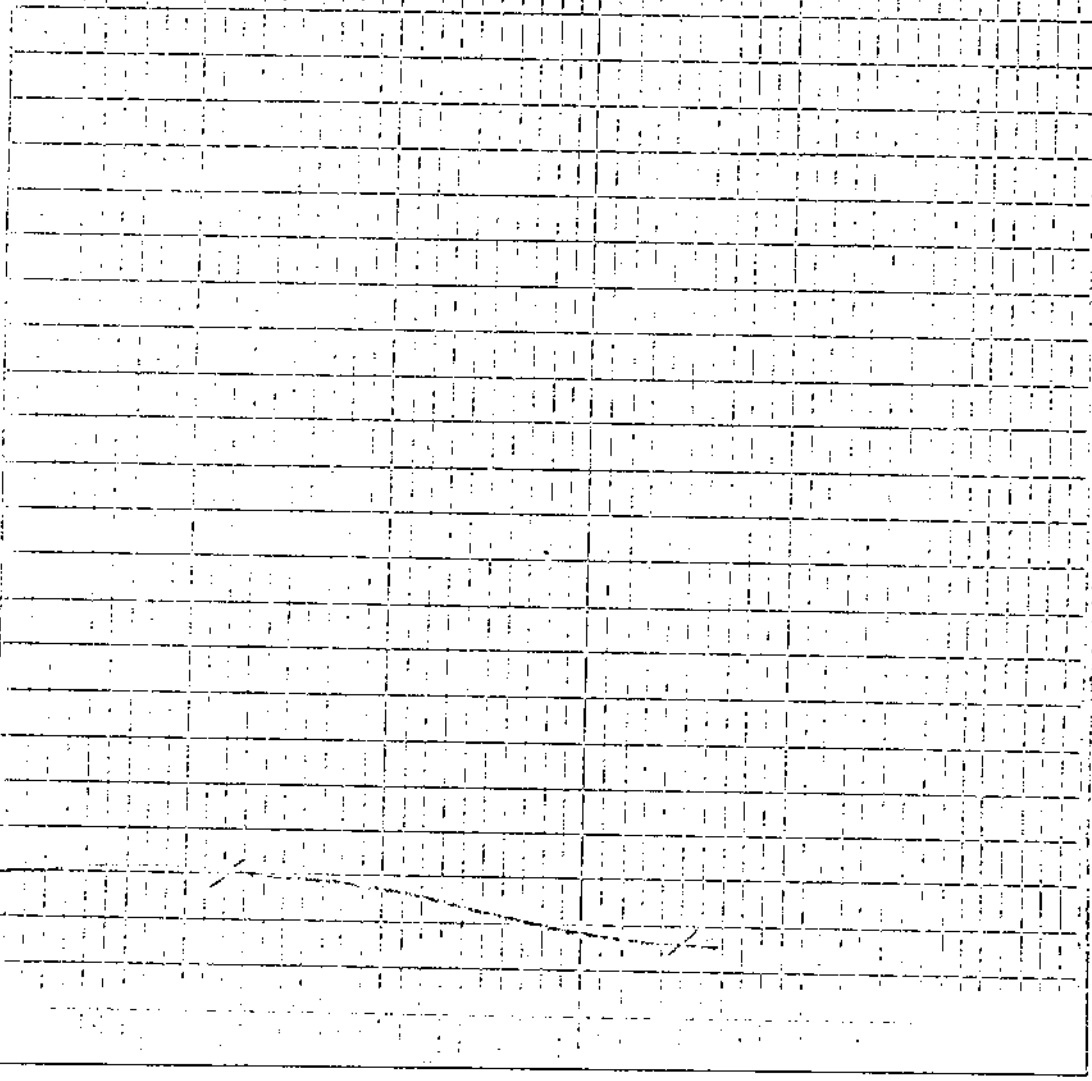
Max. Dilatation Temp. °C: ---

Contraction %: 12% @ 446°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-3 Lab. No. 8918 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	37.7	23.6	37.8	0.55	62	Air Dried Basis
	38.0	23.8	38.2	0.55	--	Dry Basis

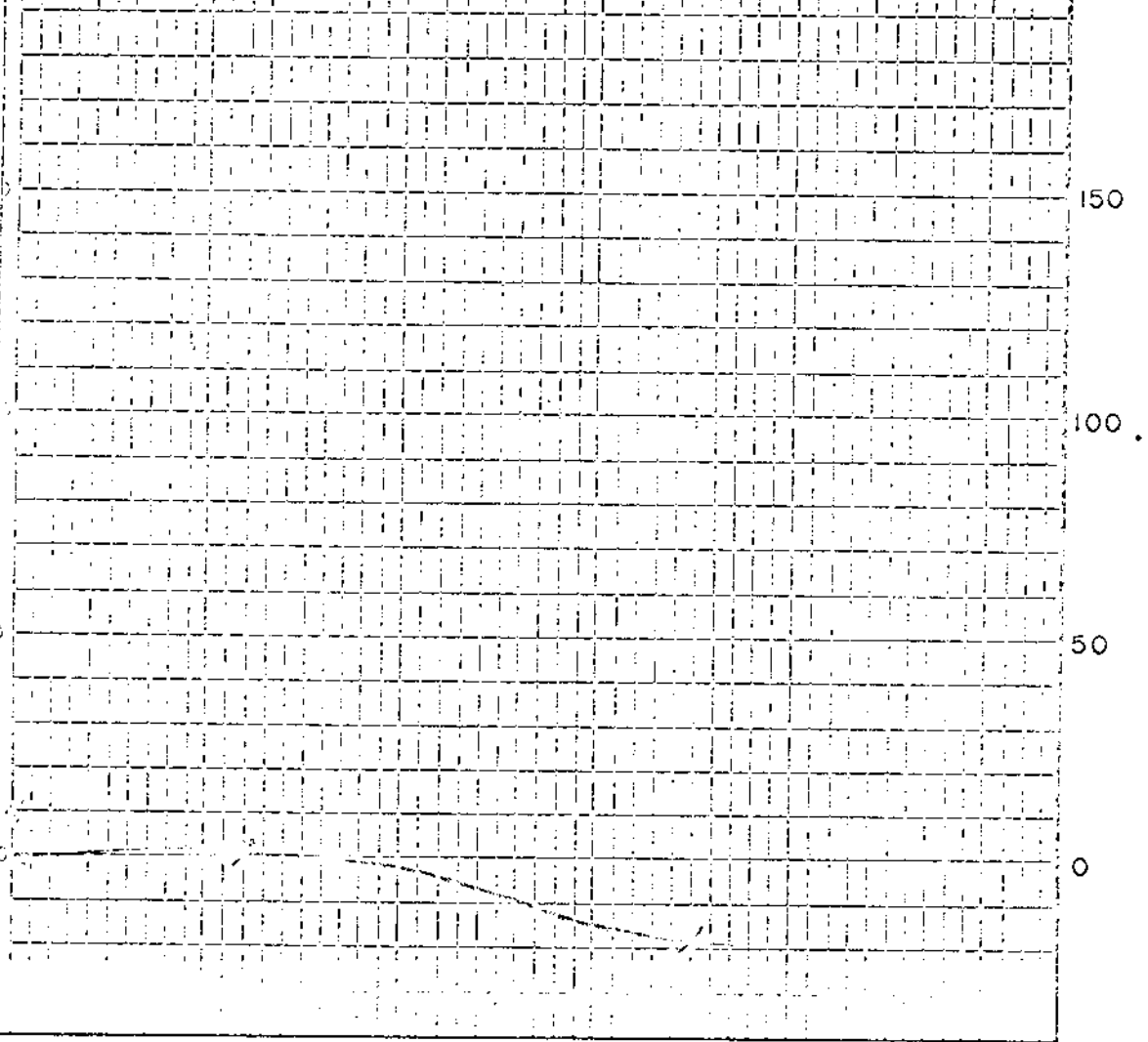
SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.3	0.9	38.0	0.56	93.3	38.0	0.56	A.D.B.
	93.3		38.3	0.57	93.3	38.3	0.57	D.B.
65M x 0	6.7	0.9	28.4	0.63	100.0	37.4	0.56	A.D.B.
	6.7		28.7	0.64	100.0	37.7	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	43.7	1.1	4.5	33.9	60.5	0.77	43.7	4.5	A.D.B.
	43.6		4.6	34.3	61.1	0.78	43.6	4.6	D.B.
1.40-1.50	8.3	1.1	16.4	28.7	53.8	0.71	52.0	6.4	A.D.B.
	8.3		16.6	29.0	54.4	0.72	51.9	6.5	D.B.
1.50-1.60	5.5	1.1	26.9				57.5	8.4	A.D.B.
	5.5		27.2				57.4	8.5	D.B.
+1.60	42.5	0.7	78.0				100.0	38.0	A.D.B.
	42.6		78.5				100.0	38.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1 1/2	0.02	363	---	18% @ 446°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8918 Date April 29, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-135-3
 Starting Temperature °C: 320
 Softening Temperature °C: 363
 Max. Dilatation Temp. °C: --- 250
 Contraction %: 18% @ 446°
 Dilatation %: ---
 Final Temperature °C: ---
 G. Factor: --- 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-4

Lab. No. 8919

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	27.9	27.0	44.2	1.52	59	Air Dried Basis
	28.2	27.2	44.6	1.53	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.2	0.9	27.4	1.54	92.2	27.4	1.54	A.D.B.
	92.2		27.6	1.55	92.2	27.6	1.55	D.B.
65M x 0	7.8	0.8	34.6	1.31	100.0	28.0	1.52	A.D.B.
	7.8		34.9	1.32	100.0	28.2	1.53	D.B.

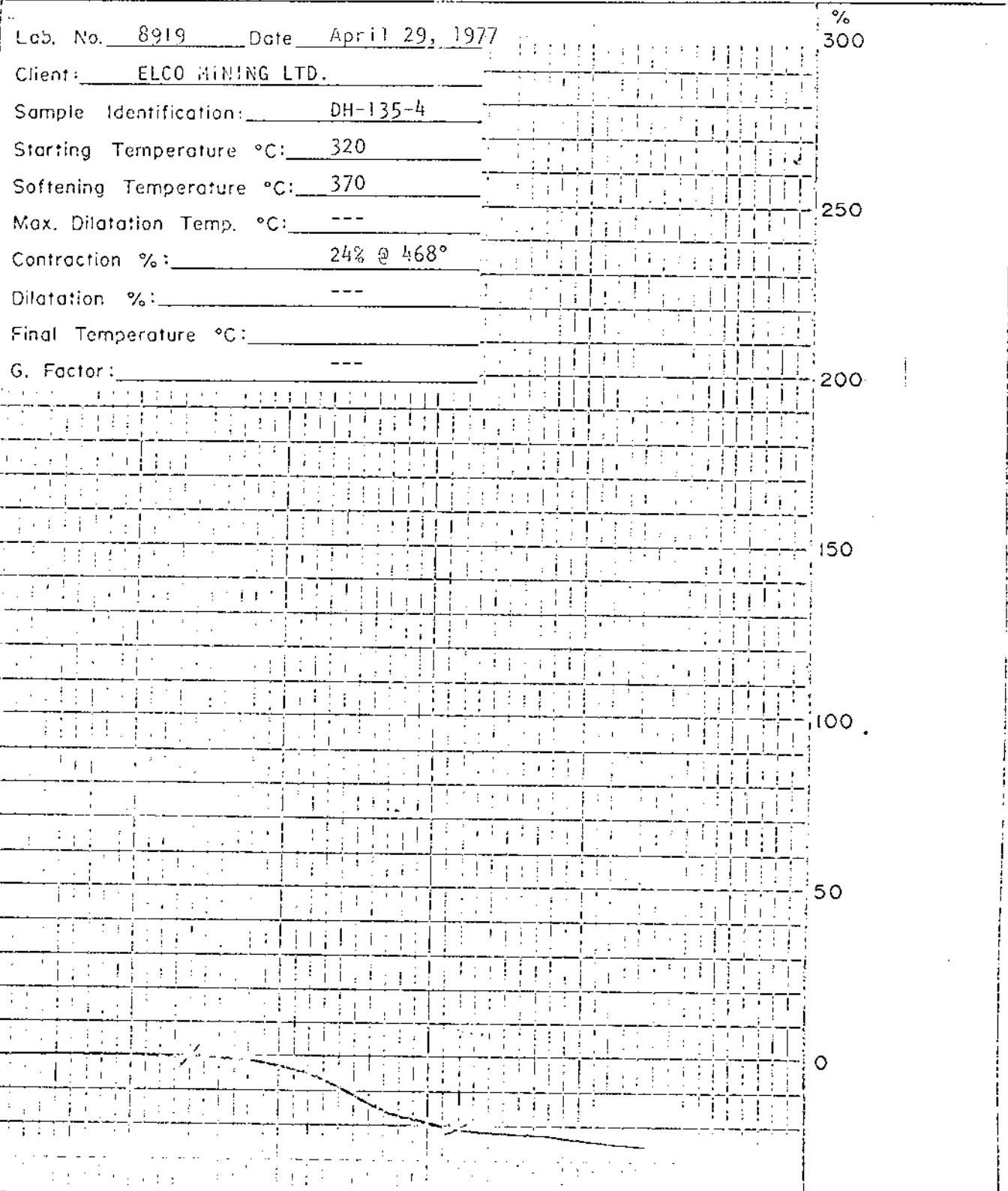
SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	51.6	0.9	5.0	35.5	58.6	0.79	51.6	5.0	A.D.B.
	51.6		5.0	35.8	59.2	0.80	51.6	5.0	D.B.
1.40-1.50	9.9	0.9	16.3	29.1	53.7	0.70	61.5	6.8	A.D.B.
	9.9		16.4	29.4	54.2	0.71	61.5	6.8	D.B.
1.50-1.60	6.6	0.9	25.2				68.1	8.6	A.D.B.
	6.6		25.4				68.1	8.6	D.B.
+1.60	31.9	0.8	67.5				100.0	27.4	A.D.B.
	31.9		68.0				100.0	27.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2	0.02	370	---	24% @ 468°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries



BIRTLEY ENGINEERING (CANADA) LTD.

Title	RUHR DILATOMETER TEST	Date
		Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-5 Lab. No. 8920 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	14.9	30.1	54.2	0.68	89	Air Dried Basis
	15.0	30.3	54.7	0.69	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	90.2	0.8	15.6	0.69	90.2	15.6	0.69	A.D.B.
	90.2		15.7	0.70	90.2	15.7	0.70	D.B.
65M x 0	9.8	1.0	14.3	0.63	100.0	15.5	0.68	A.D.B.
	9.8		14.4	0.64	100.0	15.6	0.69	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	74.8	0.8	3.7	34.1	61.4	0.74	74.8	3.7	A.D.B.
	74.8		3.7	34.4	61.9	0.75	74.8	3.7	D.B.
1.40-1.50	5.7	0.9	9.9	28.9	60.3	0.72	80.5	4.1	A.D.B.
	5.7		10.0	29.2	60.8	0.73	80.5	4.1	D.B.
1.50-1.60	2.5	1.0	15.4	X	X	X	83.0	4.5	A.D.B.
	2.5		15.6				83.0	4.5	D.B.
+1.60	17.0	0.8	73.1	X	X	X	100.0	16.1	A.D.B.
	17.0		73.7				100.0	16.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1	0.03	370	---	18% @ 468°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8920 Date April 29, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-5

Starting Temperature °C: 320

Softening Temperature °C: 370

Max. Dilatation Temp. °C: ---

Contraction %: 18% @ 468°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

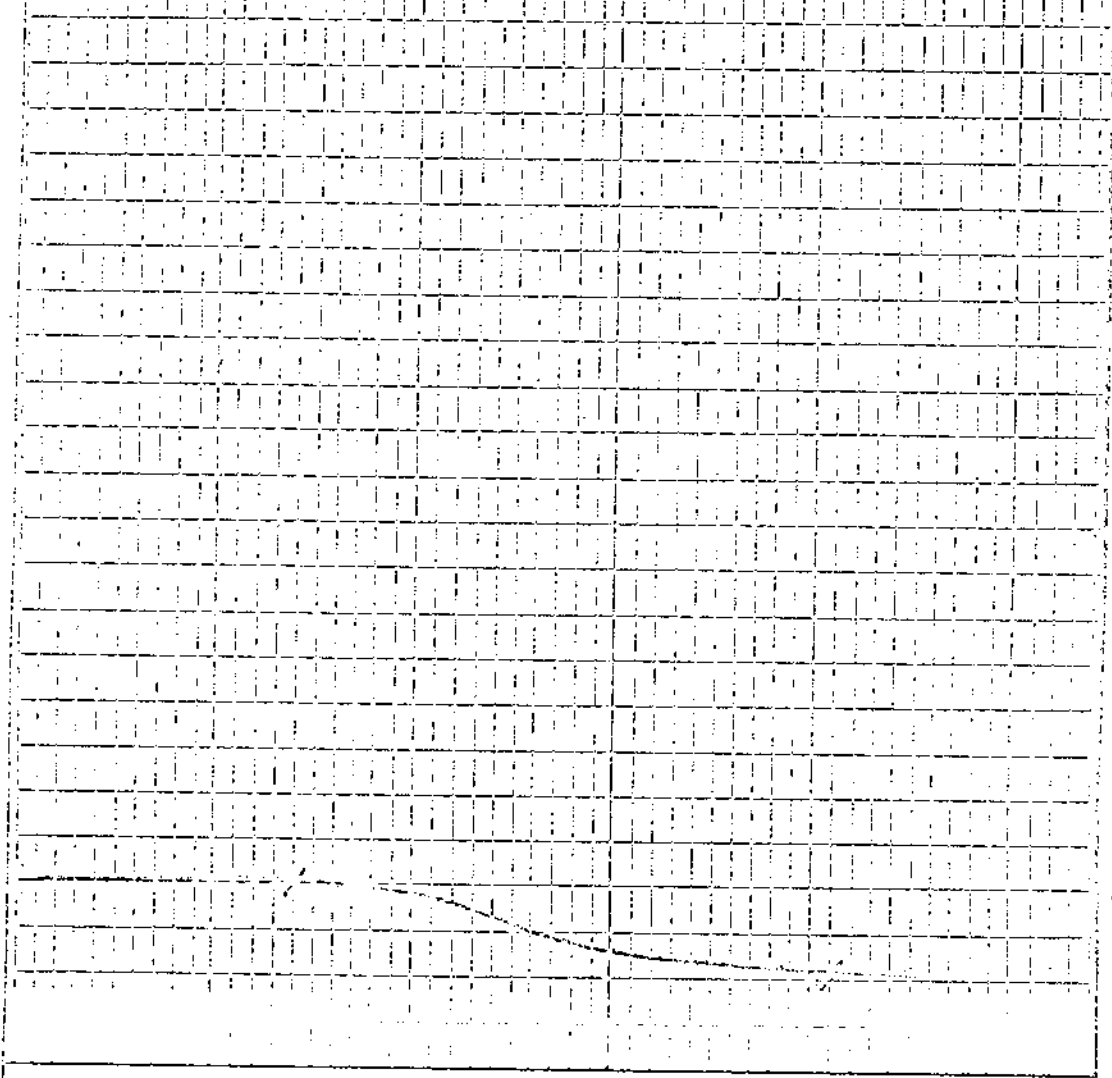
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-6

Lab. No. 8921

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	9.4	32.1	57.5	0.67	70	Air Dried Basis
	9.5	32.4	58.1	0.68	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.8	1.0	8.7	0.67	92.8	8.7	0.67	A.D.B.
	92.8		8.8	0.68	92.8	8.8	0.68	D.B.
65M x 0	7.2	1.1	17.9	0.71	100.0	9.4	0.67	A.D.B.
	7.2		18.1	0.72	100.0	9.5	0.68	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	82.5	1.0	2.9	34.4	61.7	0.69	82.5	2.9	A.D.B.
	82.5		2.9	34.7	62.4	0.70	82.5	2.9	D.B.
1.40-1.50	7.5	1.0	14.8	28.3	55.9	0.66	90.0	3.9	A.D.B.
	7.5		14.9	28.6	56.5	0.67	90.0	3.9	D.B.
1.50-1.60	2.3	1.0	26.5				92.3	4.5	A.D.B.
	2.3		26.8				92.3	4.5	D.B.
+1.60	7.7	1.1	59.4				100.0	8.7	A.D.B.
	7.7		60.1				100.0	8.8	D.B.

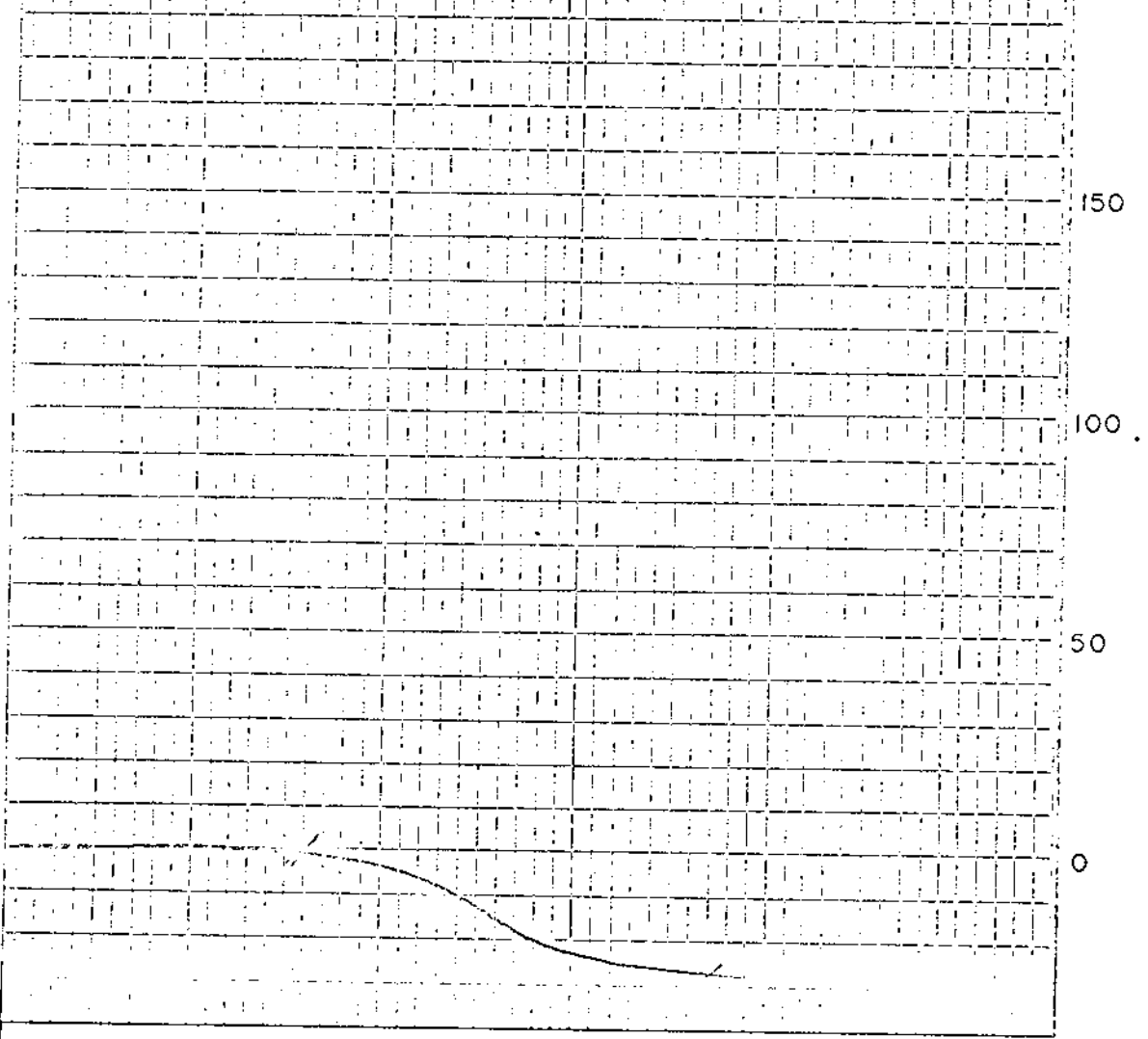
COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	PK ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2	0.02	378	---	28% @ 453°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8921 Date May 2, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-135-6
 Starting Temperature °C: 320
 Softening Temperature °C: 378
 Max. Dilatation Temp. °C: --- 250
 Contraction %: 28% @ 453°
 Dilatation %: ---
 Final Temperature °C: ---
 G. Factor: --- 200



BIRTLEY ENGINEERING (CANADA) LTD.

Title	Date
RUHR DILATOMETER TEST	Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-7

Lab. No. 8922

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	13.8	31.8	53.4	0.64	63	Air Dried Basis
	13.9	32.1	54.0	0.65	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	1.0	13.8	0.64	94.4	13.8	0.64	A.D.B.
	94.4		13.9	0.65	94.4	13.9	0.65	D.B.
65M x 0	5.6	0.9	13.3	0.53	100.0	13.8	0.63	A.D.B.
	5.6		13.4	0.53	100.0	13.9	0.64	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	71.6	1.0	2.8	34.4	61.8	0.69	71.6	2.8	A.D.B.
	71.6		2.8	34.7	62.5	0.70	71.6	2.8	D.B.
1.40-1.50	6.4	0.9	11.3	28.3	59.5	0.54	78.0	3.5	A.D.B.
	6.4		11.4	28.6	60.0	0.54	78.0	3.5	D.B.
1.50-1.60	2.7	1.0	16.8				80.7	3.9	A.D.B.
	2.7		17.0				80.7	4.0	D.B.
+1.60	19.3	1.1	55.2				100.0	13.8	A.D.B.
	19.3		55.8				100.0	14.0	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
2 1/2	0.01	378	---	21% @ 453°C	---	---	

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8922 Date May 2, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-7

Starting Temperature °C: 320

Softening Temperature °C: 378

Max. Dilatation Temp. °C: ---

Contraction %: 21% @ 453°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

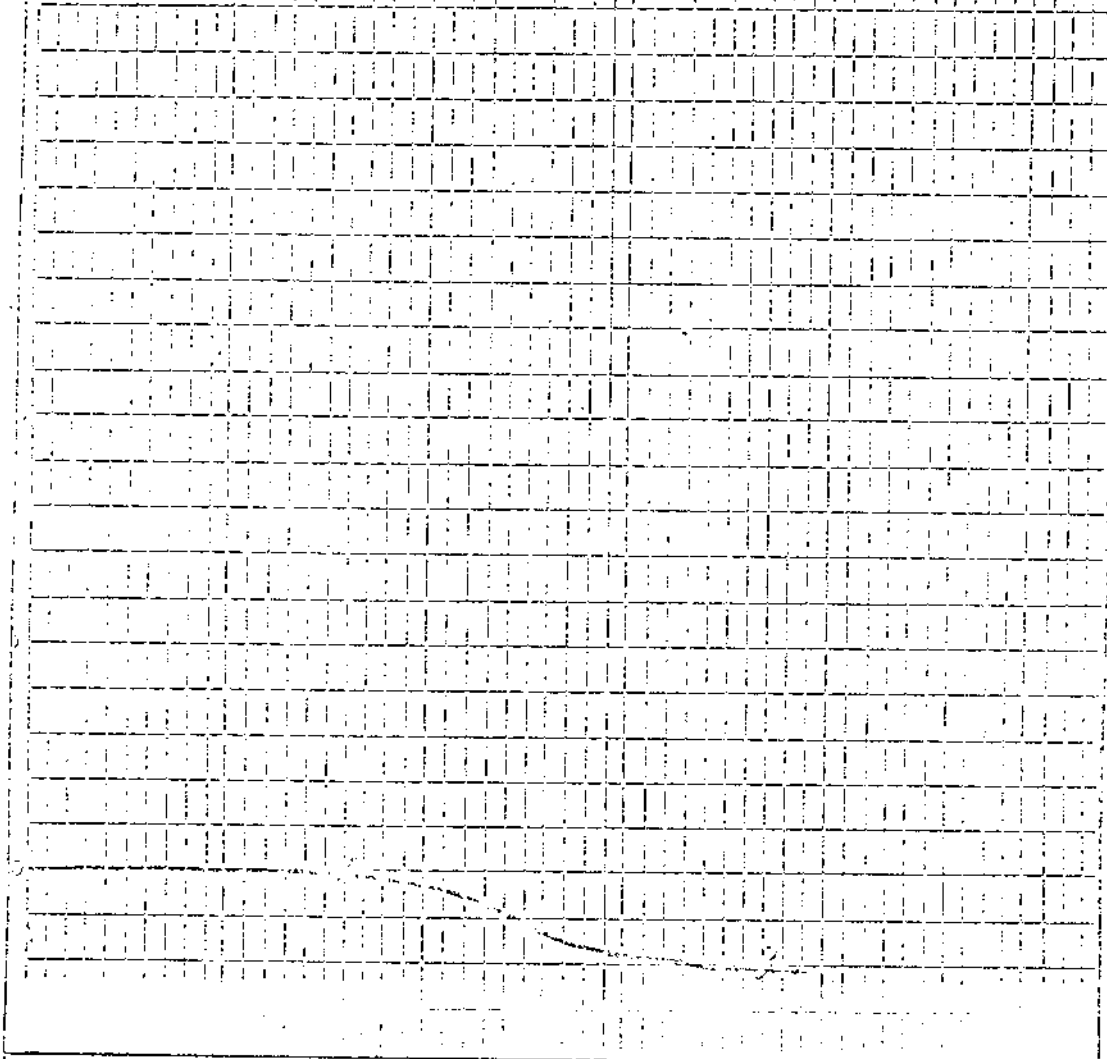
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-8

Lab. No. 8923

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	24.6	29.2	45.2	0.42	72	Air Dried Basis
	24.8	29.5	45.7	0.42	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.0	1.0	24.4	0.41	92.0	24.4	0.41	A.D.B.
	92.1		24.6	0.41	92.1	24.6	0.41	D.B.
65M x 0	8.0	1.2	32.6	0.49	100.0	25.1	0.42	A.D.B.
	7.9		33.0	0.50	100.0	25.3	0.42	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	57.9	0.9	4.0	35.4	59.7	0.45	57.9	4.0	A.D.B.
	57.9		4.0	35.7	60.3	0.45	57.9	4.0	D.B.
1.40-1.50	7.1	1.3	13.7	29.5	55.5	0.50	65.0	5.1	A.D.B.
	7.1		13.9	29.9	56.2	0.51	65.0	5.1	D.B.
1.50-1.60	2.8	1.4	25.0				67.8	5.9	A.D.B.
	2.8		25.4				67.8	5.9	D.B.
+1.60	32.2	1.1	65.0				100.0	24.9	A.D.B.
	32.2		65.7				100.0	25.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp. = 320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.02	374	---	23% @ 450°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8923 Date May 2, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-8

Starting Temperature °C: 320

Softening Temperature °C: 374

250

Max. Dilatation Temp. °C: ---

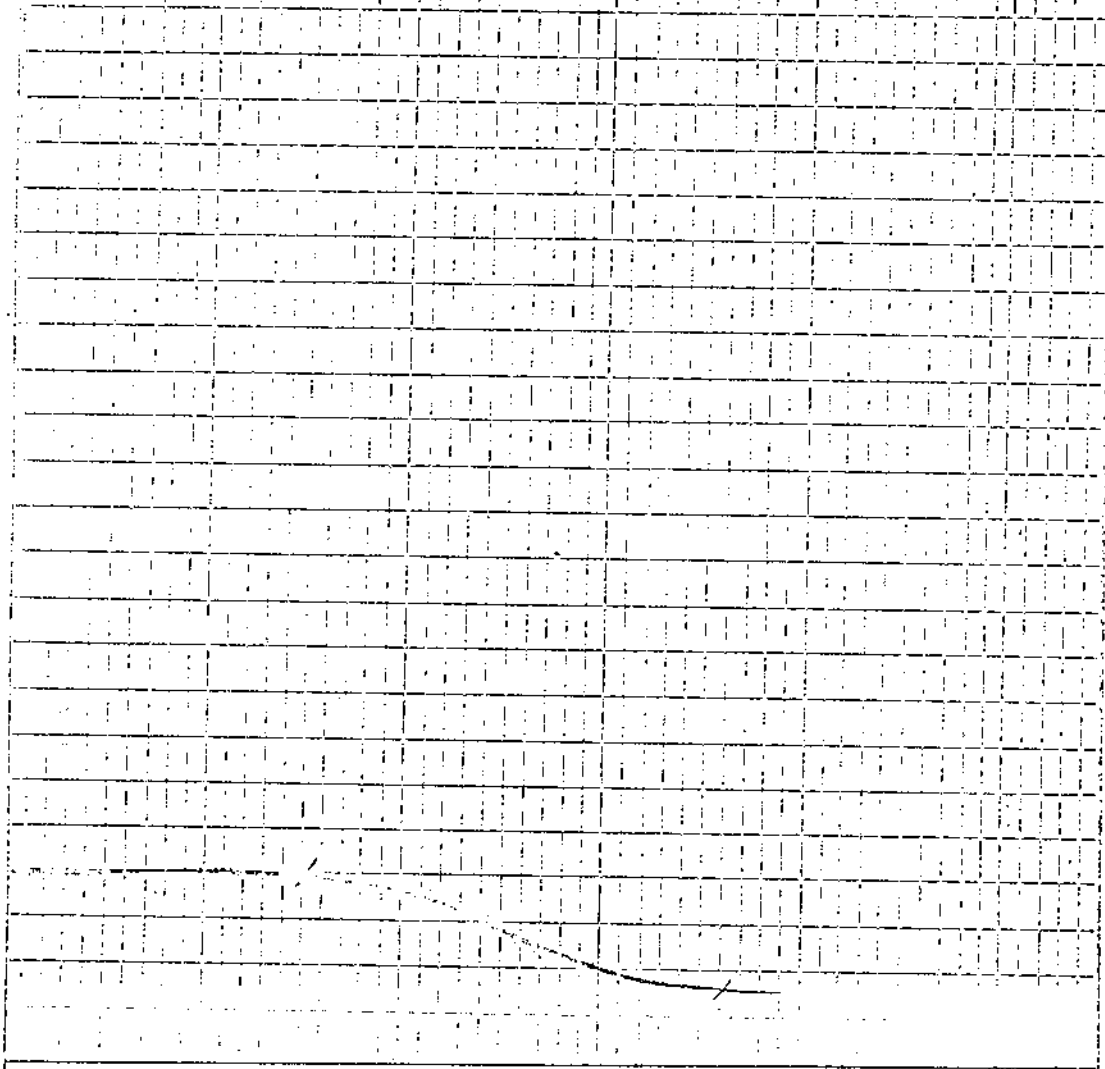
Contraction %: 23% @ 450°

Dilatation %: ---

Final Temperature °C: ---

200

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-9 Lab. No. 8924 DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	31.0	27.9	40.3	0.65	75	Air Dried Basis
	31.3	28.1	40.6	0.66	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	85.9	0.7	31.0	0.64	85.9	31.0	0.64	A.D.B.
	85.9		31.2	0.64	85.9	31.2	0.64	D.B.
65M x 0	14.1	1.0	31.1	0.69	100.0	31.0	0.65	A.D.B.
	14.1		31.4	0.70	100.0	31.2	0.65	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	48.8	0.7	13.1	32.9	53.3	0.73	48.8	13.1	A.D.B.
	48.8		13.2	33.1	53.7	0.74	48.8	13.2	D.B.
1.40-1.50	10.2	0.8	23.4	30.8	45.0	0.70	59.0	14.9	A.D.B.
	10.1		23.6	31.0	45.4	0.71	59.0	15.0	D.B.
1.50-1.60	14.8	0.9	32.9				73.8	18.5	A.D.B.
	14.8		33.2				73.8	18.6	D.B.
+1.60	26.2	0.8	66.3				100.0	31.0	A.D.B.
	26.2		66.8				100.0	31.3	D.B.

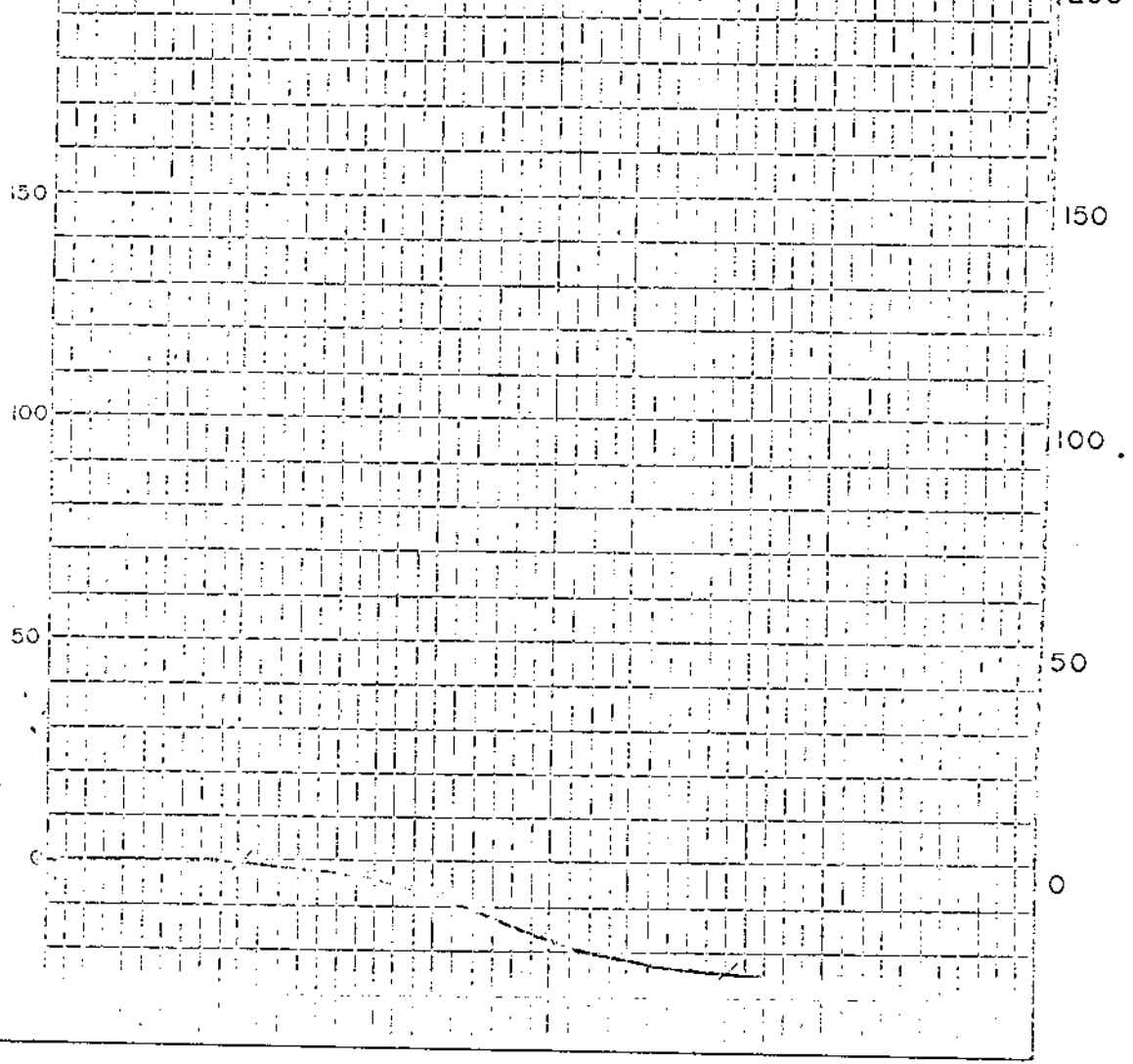
COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% GN COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2	0.01	356	---	24% @ 446°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8524 Date May 2, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-135-9
 Starting Temperature °C: 320
 Softening Temperature °C: 356
 Max. Dilatation Temp. °C: --- 250
 Contraction %: 24% @ 446°
 Dilatation %: ---
 Final Temperature °C: ---
 G. Factor: --- 200



SIRTLEY ENGINEERING (CANADA) LTD.

Title	Date
	Drawn
RUHR DILATOMETER TEST	

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-10

Lab. No. 8925

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	12.7	32.9	53.4	0.54	65	Air Dried Basis
	12.8	33.2	54.0	0.55	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.7	1.0	12.8	0.56	94.7	12.8	0.56	A.D.B.
	94.7		12.9	0.57	94.7	12.9	0.57	D.B.
65M x 0	5.3	1.2	10.9	0.58	100.0	12.7	0.56	A.D.B.
	5.3		11.0	0.59	100.0	12.8	0.57	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	73.2	1.0	4.7	36.5	57.8	0.56	73.2	4.7	A.D.B.
	73.2		4.7	36.9	58.4	0.57	73.2	4.7	D.B.
1.40-1.50	12.6	0.8	10.2	N.S.S.	---	0.47	85.8	5.5	A.D.B.
	12.6		10.3	---	---	0.47	85.8	5.5	D.B.
1.50-1.60	4.0	1.0	12.8				89.8	5.8	A.D.B.
	4.0		12.9				89.8	5.9	D.B.
+1.60	10.2	1.0	73.9				100.0	12.8	A.D.B.
	10.2		73.6				100.0	12.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
3	0.08	360	---	22% @ 417°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 8925 Date May 2, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-135-10

Starting Temperature °C: 320

Softening Temperature °C: 360

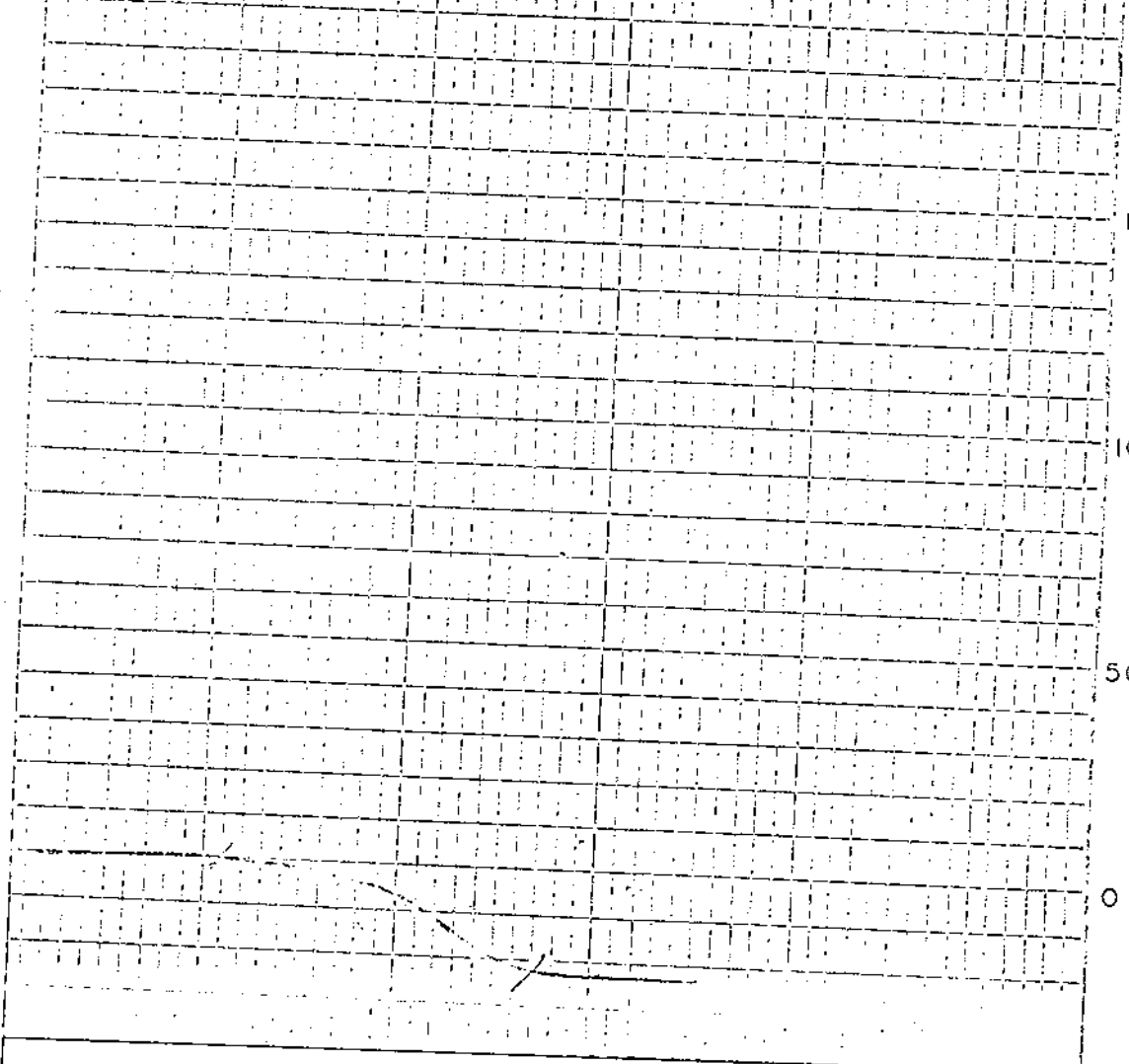
Max. Dilatation Temp. °C: ---

Contraction %: 22% @ 417°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-11

Lab. No. 8926

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	47.9	21.3	29.8	0.69	54	Air Dried Basis
	48.4	21.5	30.1	0.70	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.7	1.0	48.8	0.68	93.7	48.8	0.68	A.D.B.
	93.7		49.3	0.69	93.7	49.3	0.69	D.B.
65M x 0	6.3	1.0	34.0	0.77	100.0	47.9	0.69	A.D.B.
	6.3		34.3	0.78	100.0	48.4	0.70	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	24.4	0.8	5.2	35.8	58.2	0.97	24.4	5.2	A.D.B.
	24.5		5.2	36.1	58.7	0.98	24.5	5.2	D.B.
1.40-1.50	6.0	0.9	11.4	31.0	56.7	0.84	30.4	6.4	A.D.B.
	6.0		11.5	31.3	57.2	0.85	30.5	6.4	D.B.
1.50-1.60	11.7	1.0	32.0				42.1	13.5	A.D.B.
	11.7		32.3				42.2	13.6	D.B.
+1.60	57.9	1.1	74.5				100.0	48.8	A.D.B.
	57.8		75.3				100.0	49.3	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.							
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)					G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %		
3	0.02	360	---	22% @ 428°C	---	---	

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No.	8926	Date	May 2, 1977	%
Client:	ELCO MINING LTD.			300
Sample Identification:	DH-135-11			
Starting Temperature °C:	320			
Softening Temperature °C:	360			
Max. Dilatation Temp. °C:	---			250
Contraction %:	22% @ 428°			
Dilatation %:	---			
Final Temperature °C:	---			
G. Factor:	---			200
				150
				100
				50
				0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-12

Lab. No. 8927

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	25.3	31.2	42.6	0.47	63	Air Dried Basis
	25.5	31.5	43.0	0.47	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.2	0.9	25.6	0.47	95.2	25.6	0.47	A.D.B.
	95.2		25.8	0.47	95.2	25.8	0.47	D.B.
65M x 0	4.8	1.0	20.1	0.52	100.0	25.3	0.47	A.D.B.
	4.8		20.3	0.53	100.0	25.5	0.47	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	65.2	1.0	3.4	35.9	59.7	0.52	65.2	3.4	A.D.B.
	65.1		3.4	36.3	60.3	0.53	65.1	3.4	D.B.
1.40-1.50	4.3	0.9	11.6	31.5	56.0	0.66	69.5	3.9	A.D.B.
	4.3		11.7	31.8	56.5	0.67	69.4	3.9	D.B.
1.50-1.60	2.1	1.0	18.6				71.6	4.3	A.D.B.
	2.1		18.8				71.5	4.4	D.B.
+1.60	28.4	0.7	79.2				100.0	25.6	A.D.B.
	28.5		79.8				100.0	25.9	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.01	360	---	23% @ 428°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8927 Date May 2, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-135-12

Starting Temperature °C: 320

Softening Temperature °C: 360

Max. Dilatation Temp. °C: ---

Contraction %: 23% @ 428°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-13

Lab. No. 8928

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.9	41.8	24.2	33.1	0.62	58	Air Dried Basis
	42.2	24.4	33.4	0.63	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	86.1	0.9	43.3	0.57	86.1	43.3	0.57	A.D.B.
	86.1		43.7	0.58	86.1	43.7	0.58	D.B.
65M x 0	13.9	0.9	32.2	0.70	100.0	41.8	0.59	A.D.B.
	13.9		32.5	0.71	100.0	42.1	0.60	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	25.9	0.6	5.0	36.8	57.6	0.86	25.9	5.0	A.D.B.
	26.0		5.0	37.0	58.0	0.87	26.0	5.0	D.B.
1.40-1.50	5.0	0.7	17.0	30.1	52.2	0.77	30.9	6.9	A.D.B.
	5.0		17.1	30.3	52.6	0.78	31.0	7.0	D.B.
1.50-1.60	5.7	0.7	27.2				36.6	10.1	A.D.B.
	5.7		27.4				36.7	10.1	D.B.
+1.60	63.4	1.0	62.4				100.0	43.3	A.D.B.
	63.3		63.0				100.0	43.6	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
2 1/2	0.03	360	---	28% @ 435°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8928 Date May 2, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-135-13

Starting Temperature °C: 320

Softening Temperature °C: 360

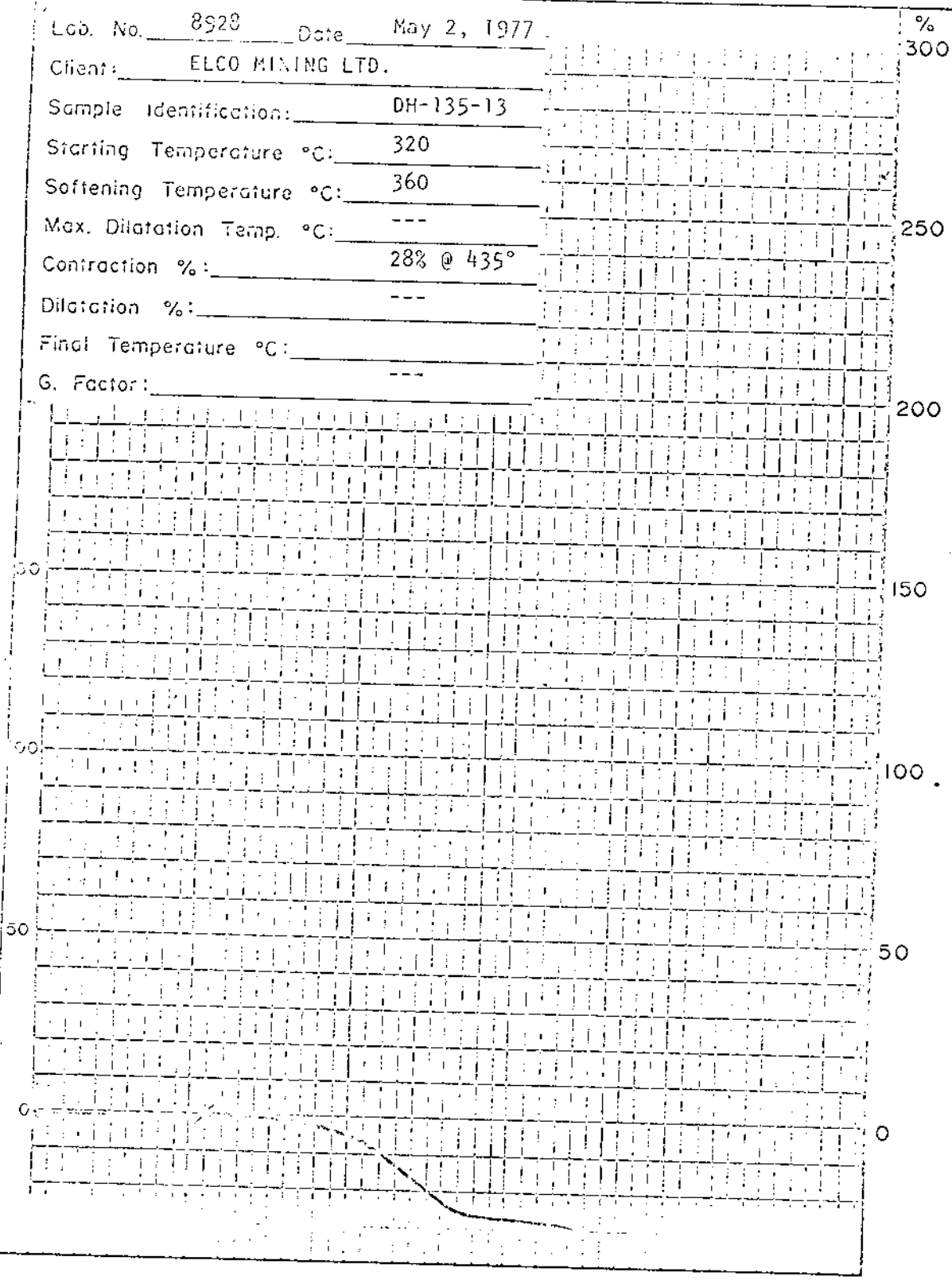
Max. Dilatation Temp. °C: ---

Contraction %: 28% @ 435°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-14

Lab. No. 8929

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.7	31.0	27.4	40.9	0.70	56	Air Dried Basis
	31.2	27.6	41.2	0.70	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.0	0.7	31.3	0.69	94.0	31.3	0.69	A.D.B.
	94.0		31.5	0.69	94.0	31.5	0.69	D.B.
65M x 0	6.0	0.8	26.6	0.64	100.0	31.0	0.69	A.D.B.
	6.0		26.8	0.65	100.0	31.2	0.69	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	55.2	0.7	4.1	36.6	58.6	0.66	55.2	4.1	A.D.B.
	55.2		4.1	36.9	59.0	0.66	55.2	4.1	D.B.
1.40-1.50	6.1	0.9	13.4	31.0	54.7	0.64	61.3	5.0	A.D.B.
	6.1		13.5	31.3	55.2	0.65	61.3	5.0	D.B.
1.50-1.60	2.2	0.8	23.6				63.5	5.7	A.D.B.
	2.2		23.8				63.5	5.7	D.B.
+1.60	36.5	0.8	75.9				100.0	31.3	A.D.B.
	36.5		76.5				100.0	31.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
3	0.08	356	---	21% @ 428°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8925 Date May 2, 1977

Client: ELCO MINING LTD.

Sample Identification: DH-135-14

Starting Temperature °C: 320

Softening Temperature °C: 356

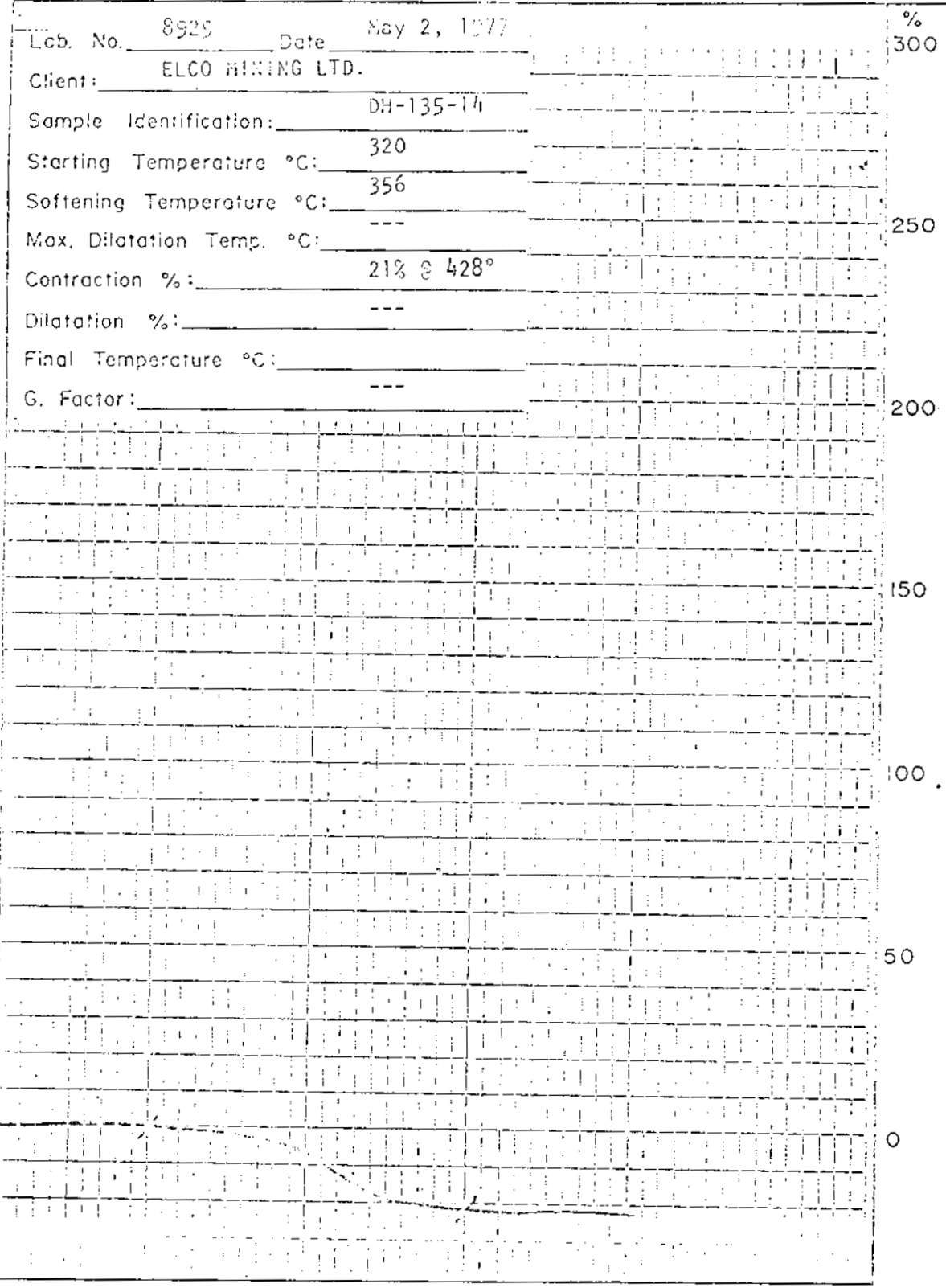
Max. Dilatation Temp. °C: ---

Contraction %: 21% @ 428°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BENTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date
Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-15

Lab. No. 8930

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
0.8	9.7	34.4	55.1	0.75	58	Air Dried Basis
	9.8	34.7	55.5	0.76	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	0.8	9.1	0.77	94.4	9.1	0.77	A.D.B.
	94.4		9.2	0.78	94.4	9.2	0.78	D.B.
65M x 0	5.6	0.9	20.2	0.69	100.0	9.7	0.77	A.D.B.
	5.6		20.4	0.70	100.0	9.8	0.78	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	84.6	0.8	2.8	37.1	59.3	0.78	84.6	2.8	A.D.B.
	84.6		2.8	37.4	59.8	0.79	84.6	2.8	D.B.
1.40-1.50	5.4	0.9	10.0	31.6	57.5	0.74	90.0	3.2	A.D.B.
	5.4		10.1	31.9	58.0	0.75	90.0	3.2	D.B.
1.50-1.60	1.2	1.1	19.8				91.2	3.5	A.D.B.
	1.2		20.0				91.2	3.5	D.B.
+1.60	8.8	1.2	67.7				100.0	9.1	A.D.B.
	8.8		68.5				100.0	9.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.02	360	---	28% @ 453°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8930 Date May 2, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-15

Starting Temperature °C: 320

Softening Temperature °C: 360

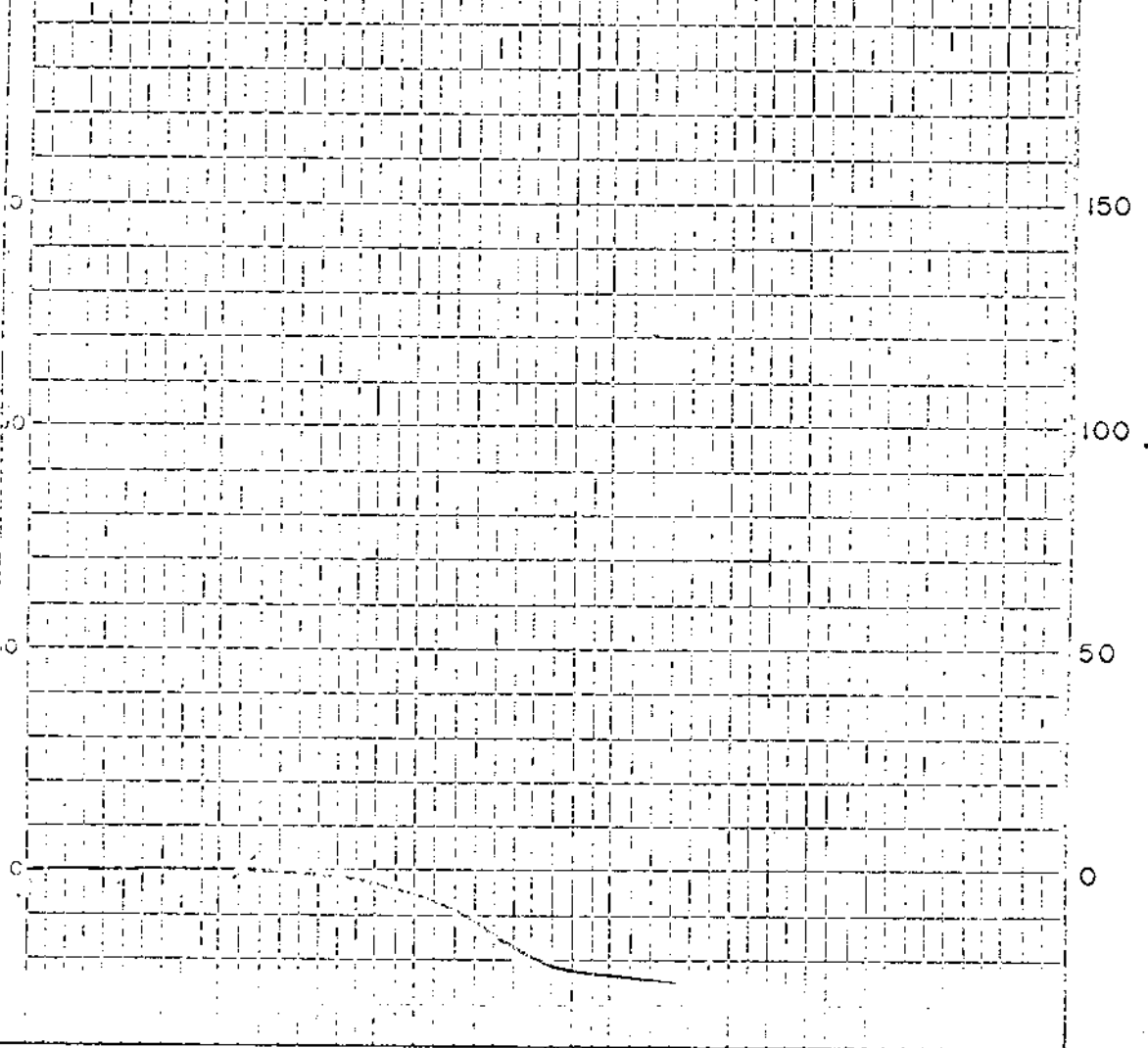
Max. Dilatation Temp. °C: ---

Contraction %: 28% @ 453°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-135-16

Lab. No. 8931

DATE: April/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	35.8	26.3	36.9	0.59	57	Air Dried Basis
	36.2	26.6	37.2	0.60	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	93.4	1.0	35.8	0.57	93.4	35.8	0.57	A.D.B.
	93.4		36.2	0.58	93.4	36.2	0.58	D.B.
65M x 0	6.6	1.1	35.8	0.71	100.0	35.8	0.58	A.D.B.
	6.6		36.2	0.72	100.0	36.2	0.59	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	53.6	0.9	3.2	35.8	60.1	0.72	53.6	3.2	A.D.B.
	53.7		3.2	36.1	60.7	0.73	53.7	3.2	D.B.
1.40-1.50	3.4	0.9	14.5	32.3	52.3	0.78	57.0	3.9	A.D.B.
	3.4		14.6	32.6	52.8	0.79	57.1	3.9	D.B.
1.50-1.60	2.5	1.0	27.4				59.5	4.9	A.D.B.
	2.4		27.7				59.5	4.8	D.B.
+1.60	40.5	1.2	81.3				100.0	35.8	A.D.B.
	40.5		82.3				100.0	36.2	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.03	370	---	23% @ 462°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 8931 Date May 2, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-135-16

Starting Temperature °C: 320

Softening Temperature °C: 370

Max. Dilatation Temp. °C: ---

Contraction %: 23% @ 462°

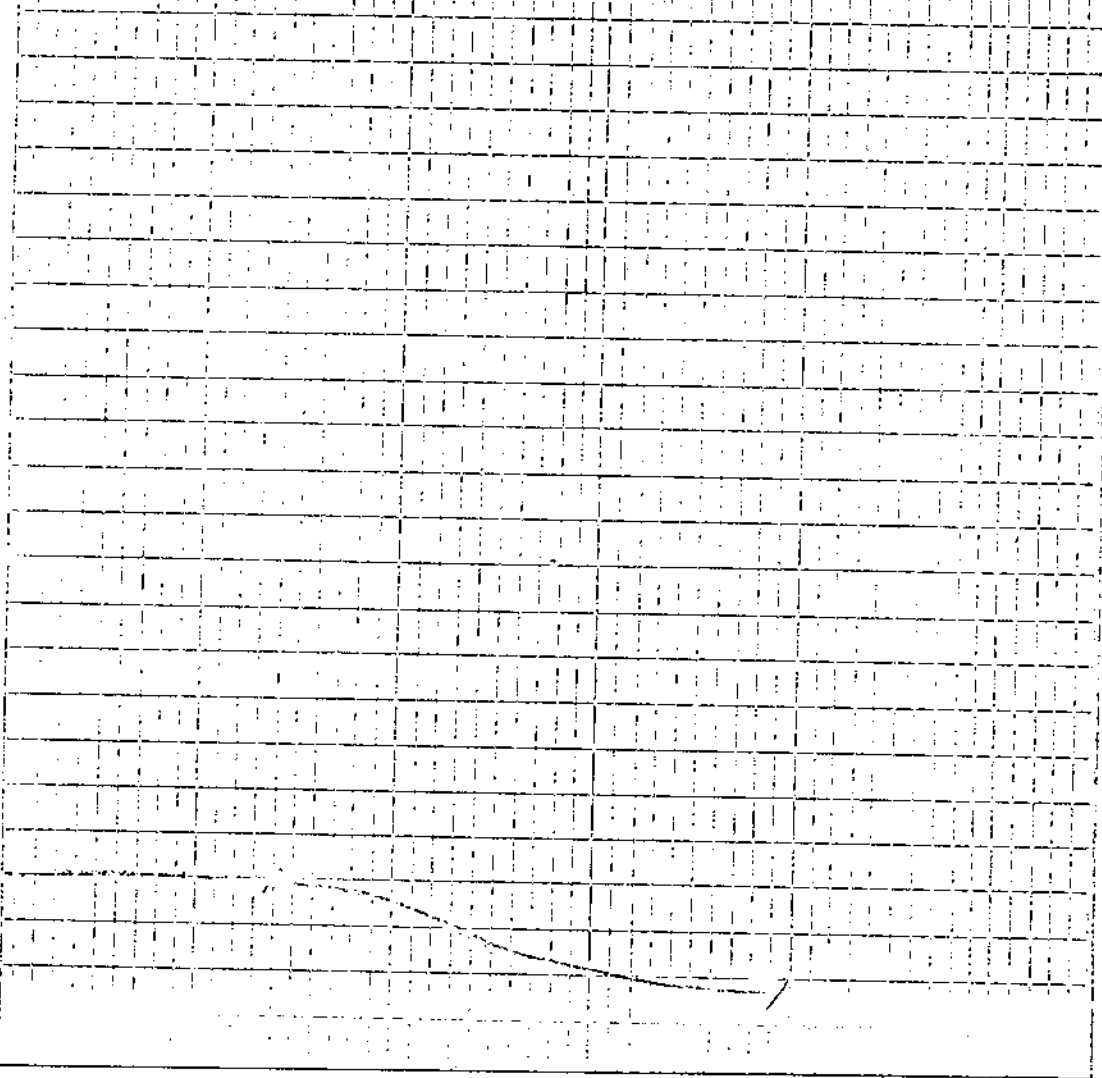
250

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

200



BENTLEY ENGINEERING (CANADA) LTD.

Title
RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 135 - 17 Lab. No.: 77 - 4319 Date: June 2, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.8	28.6	28.7	40.9	0.68	60.8	Air Dried Basis
--	29.1	29.3	41.6	0.69	---	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	93.6	0.6	28.7	0.70	93.6	28.7	0.70	A.D.B.
	93.6	--	28.8	0.70	93.6	28.8	0.70	D.B.
65 x 0	6.4	2.1	28.4	0.71	100.0	28.6	0.70	A.D.B.
	6.4	--	29.0	0.73	100.0	28.8	0.70	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	55.5	1.9	6.3	34.8	57.0	0.76	55.5	6.3	A.D.B.
	55.5	--	6.4	35.5	58.1	0.77	55.5	6.4	D.B.
1.40-1.50	10.5	1.8	14.0	32.6	51.6	0.70	66.0	7.5	A.D.B.
	10.5	--	14.3	33.2	52.5	0.71	66.0	7.6	D.B.
1.50-1.60	2.8	1.8	20.8	--	--	--	68.8	8.1	A.D.B.
	2.7	--	21.2	--	--	--	68.7	8.2	D.B.
+1.60	31.2	1.2	76.6	--	--	--	100.0	29.4	A.D.B.
	31.3	--	77.5	--	--	--	100.0	29.9	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G.No.
		3½				

Lab. No. 77 - 4319 Date June 10, 1977

Client: Elco Mining Ltd.

Sample Identification: DH 135 - 17

Starting Temperature °C: 350

Softening Temperature °C: 364

Max. Dilatation Temp. °C: ---

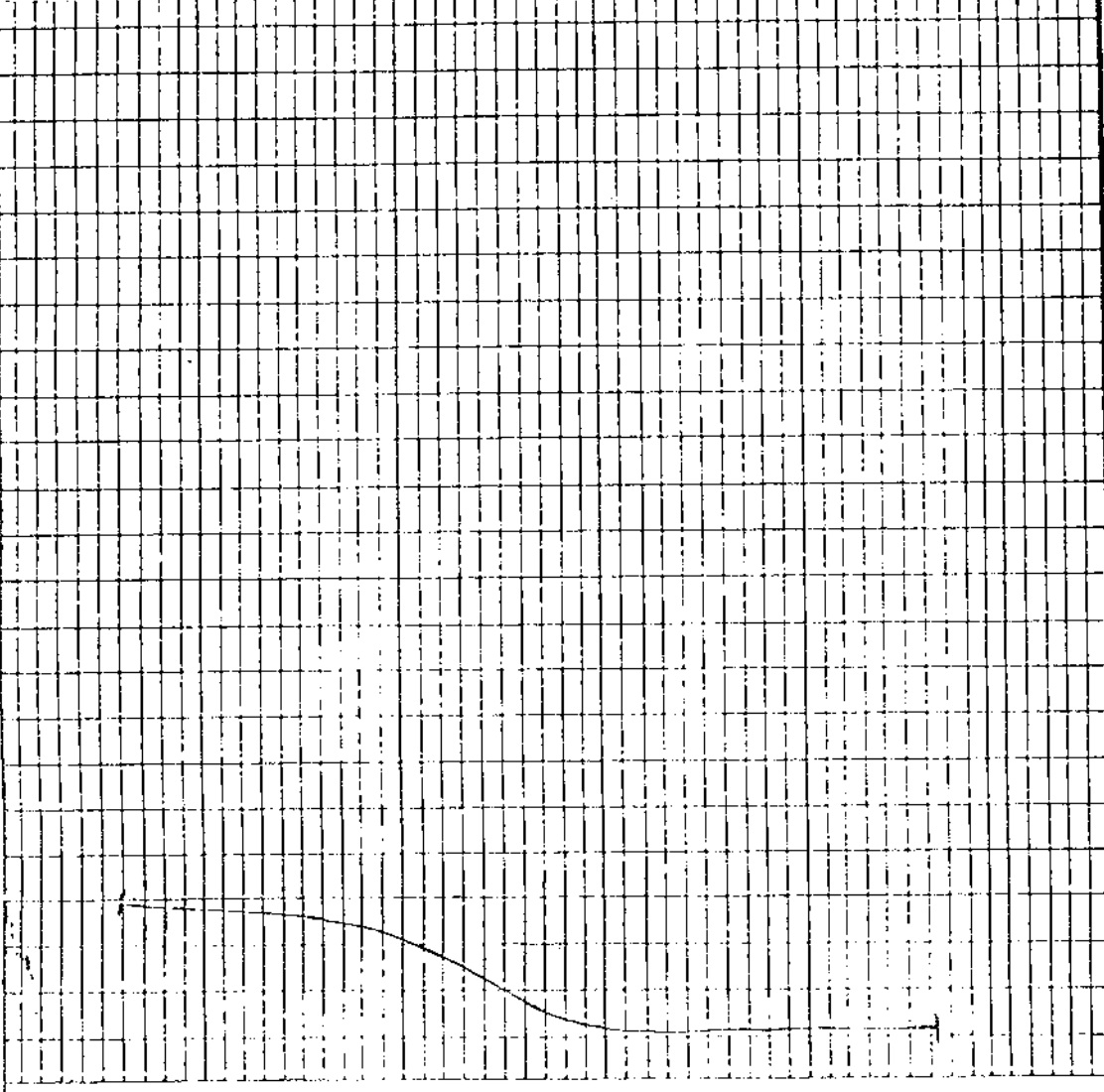
Contraction %: 29% @ 432

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

%
300
250
200
150
100
50
0



WARNOCK HURSEY PROFESSIONAL SERVICES

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 135 - 18 Lab. No.: 77 - 4320 Date: June 3, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.1	17.3	27.5	53.1	0.54	74.7	Air Dried Basis
--	17.7	28.1	54.2	0.55	--	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	91.0	2.0	15.6	0.52	91.0	16.6	0.52	A.D.B.
	91.0	--	16.9	0.53	91.0	16.9	0.53	D.B.
65 x 0	9.0	2.5	15.9	0.52	100.0	16.5	0.52	A.D.B.
	9.0	--	16.3	0.53	100.0	16.8	0.53	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	72.1	2.1	3.6	32.4	61.9	0.51	72.1	3.6	A.D.B.
	72.3	--	3.7	33.1	63.2	0.52	72.3	3.7	D.B.
1.40-1.50	5.8	1.3	15.6	28.9	54.2	0.53	77.9	4.5	A.D.B.
	5.8	--	15.8	29.3	54.9	0.54	78.1	4.6	D.B.
1.50-1.60	1.2	0.9	24.0	--	--	--	79.1	4.8	A.D.B.
	1.2	--	24.2	--	--	--	79.3	4.9	D.B.
+1.60	20.9	0.8	65.6	--	--	--	100.0	17.5	A.D.B.
	20.7	--	66.2	--	--	--	100.0	17.6	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
I.S.						

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 135 - 19 Lab. No.: 77 - 4321 Date: June 2, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.2	17.6	32.1	49.1	0.37	66.4	Air Dried Basis
--	17.8	32.4	49.8	0.37	--	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt. %	R.M. %	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼ x 65	94.1	2.0	17.9	0.35	94.1	17.9	0.35	A.D.B.
	94.1	--	18.2	0.36	94.1	18.2	0.36	D.B.
65 x 0	5.9	2.4	18.1	0.40	100.0	17.9	0.35	A.D.B.
	5.9	--	18.5	0.41	100.0	18.2	0.36	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt. %	R.M. %	Ash %	V.M. %	F.C. %	S. %	Cumulative		
							Wt. %	Ash %	
-1.40	70.8	2.3	3.1	35.9	58.7	0.30	70.8	3.1	A.D.B.
	70.9	--	3.2	36.8	60.0	0.31	70.9	3.2	D.B.
1.40-1.50	5.3	1.8	15.0	30.3	52.9	0.33	76.1	3.9	A.D.B.
	5.3	--	15.3	30.8	53.9	0.34	76.2	4.0	D.B.
1.50-1.60	3.5	1.9	16.8	--	--	--	79.6	4.5	A.D.B.
	3.5	--	17.1	--	--	--	79.7	4.6	D.B.
+1.60	20.4	1.5	72.0	--	--	--	100.0	18.3	A.D.B.
	20.3	--	73.1	--	--	--	100.0	18.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
2½						

Lab. No. 77 - 4321 Date June 10, 1977

Client: Elco Mining Ltd.

Sample Identification: DH 135 - 19

Starting Temperature °C: 350°C

Softening Temperature °C: 378°C

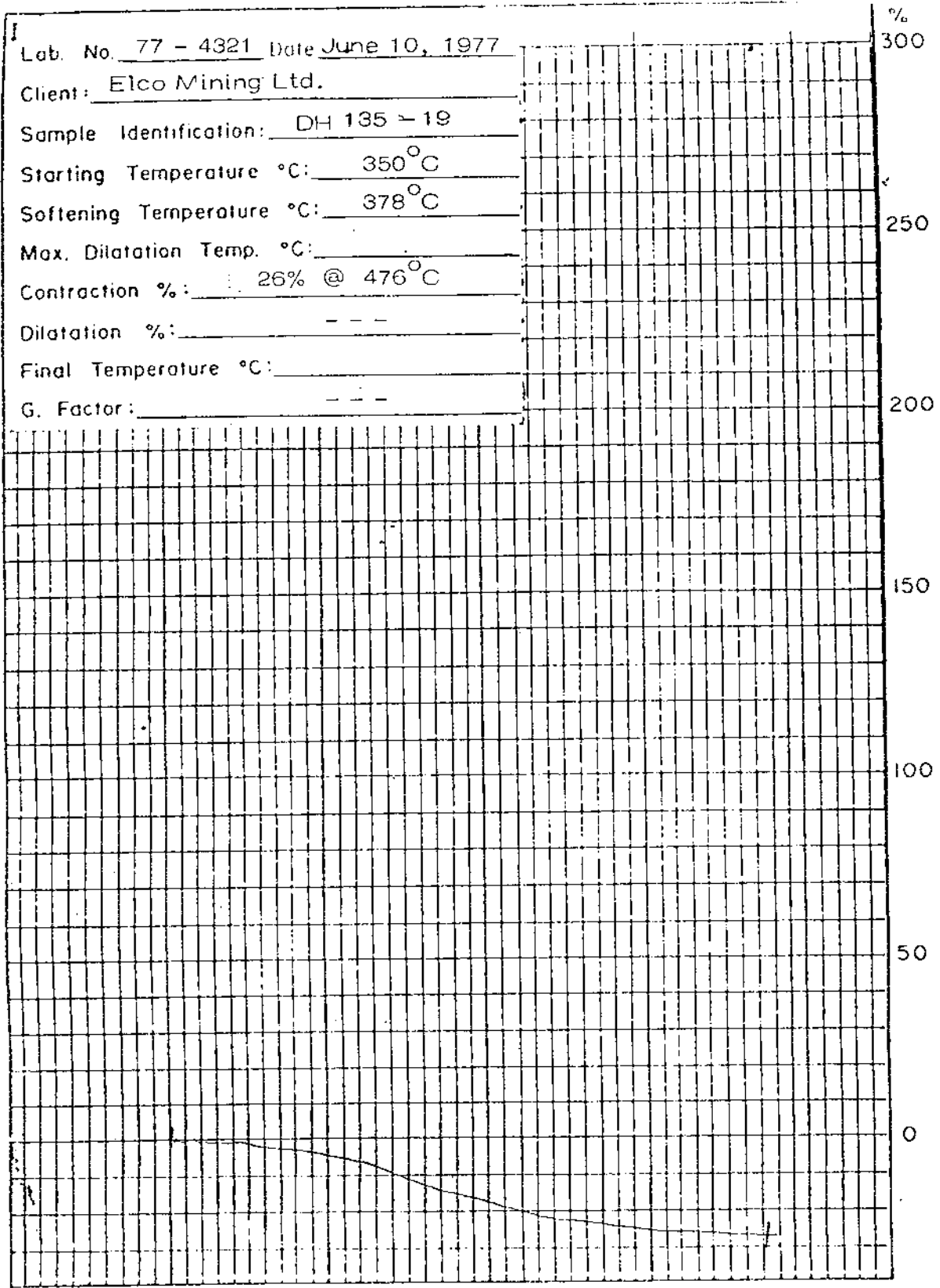
Max. Dilatation Temp. °C: _____

Contraction %: 26% @ 476°C

Dilatation %: ---

Final Temperature °C: _____

G. Factor: ---



WARNOCK HERSEY PROFESSIONAL SERVICES

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 135 - 20 Lab. No.: 77 - 4322 Date: June 3, 1977

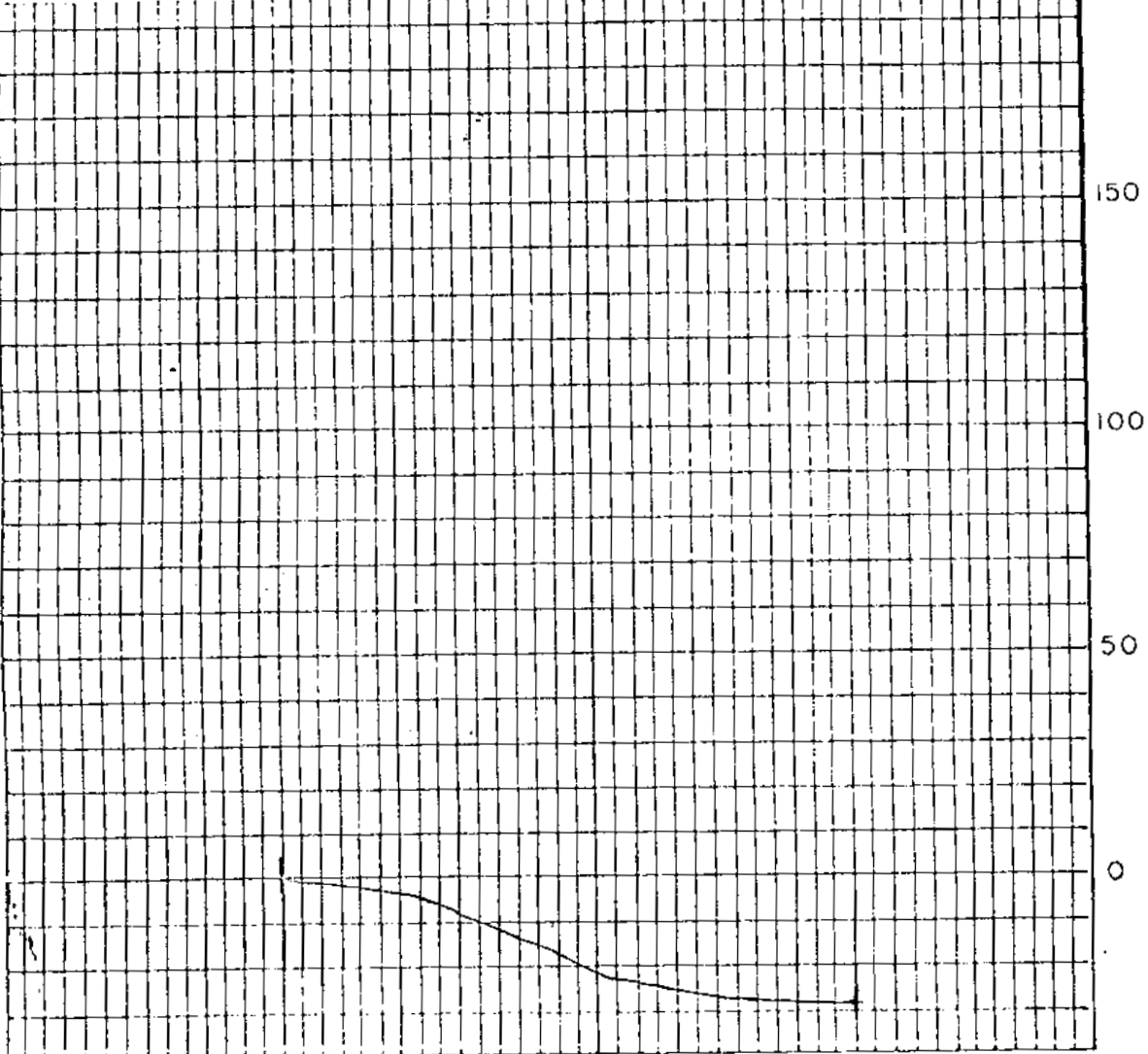
HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.3	6.8	34.9	56.0	0.34	74.7	Air Dried Basis
--	7.0	35.7	57.3	0.35	---	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	92.6	2.2	7.5	0.34	92.6	7.5	0.34	A.D.B.
	92.6	--	7.7	0.35	92.6	7.7	0.35	D.B.
65 x 0	7.4	2.5	7.5	0.38	100.0	7.5	0.34	A.D.B.
	7.4	--	7.7	0.39	100.0	7.7	0.35	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	86.9	2.4	2.1	36.8	58.7	0.39	86.9	2.1	A.D.B.
	87.0	--	2.2	37.7	60.1	0.39	87.0	2.2	D.B.
1.40-1.50	4.7	2.1	5.6	33.5	58.8	0.32	91.6	2.3	A.D.B.
	4.7	--	5.7	34.2	60.1	0.33	91.7	2.4	D.B.
1.50-1.60	1.2	2.0	10.9	--	--	--	92.8	2.4	A.D.B.
	1.2	--	11.1	--	--	--	92.9	2.5	D.B.
+1.60	7.2	1.5	68.9	--	--	--	100.0	7.2	A.D.B.
	7.1	--	69.9	--	--	--	100.0	7.3	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max.Dil.	Maximum	Maximum	G.No.
		Temp.(°C)	Temp.(°C)	Contr.%	Dil. %	
2½						

Lab. No. 77 - 4322 Date June 13, 1977
 Client: Elco Mining Ltd.
 Sample Identification: DH 135 - 20
 Starting Temperature °C: 350°C
 Softening Temperature °C: 387°C
 Max. Dilatation Temp. °C: ---
 Contraction %: 29% @ 462°C
 Dilatation %: ---
 Final Temperature °C: ---
 G. Factor: ---



WARNOCK HERSEY PROFESSIONAL SERVICES

Title	Date
RUHR DILATOMETER TEST	Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 1 Lab. No.: 77 - 4323 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.8	23.7	29.1	44.4	0.35	79.5	Air Dried Basis
--	24.4	29.9	45.7	0.36	--	Dry Basis

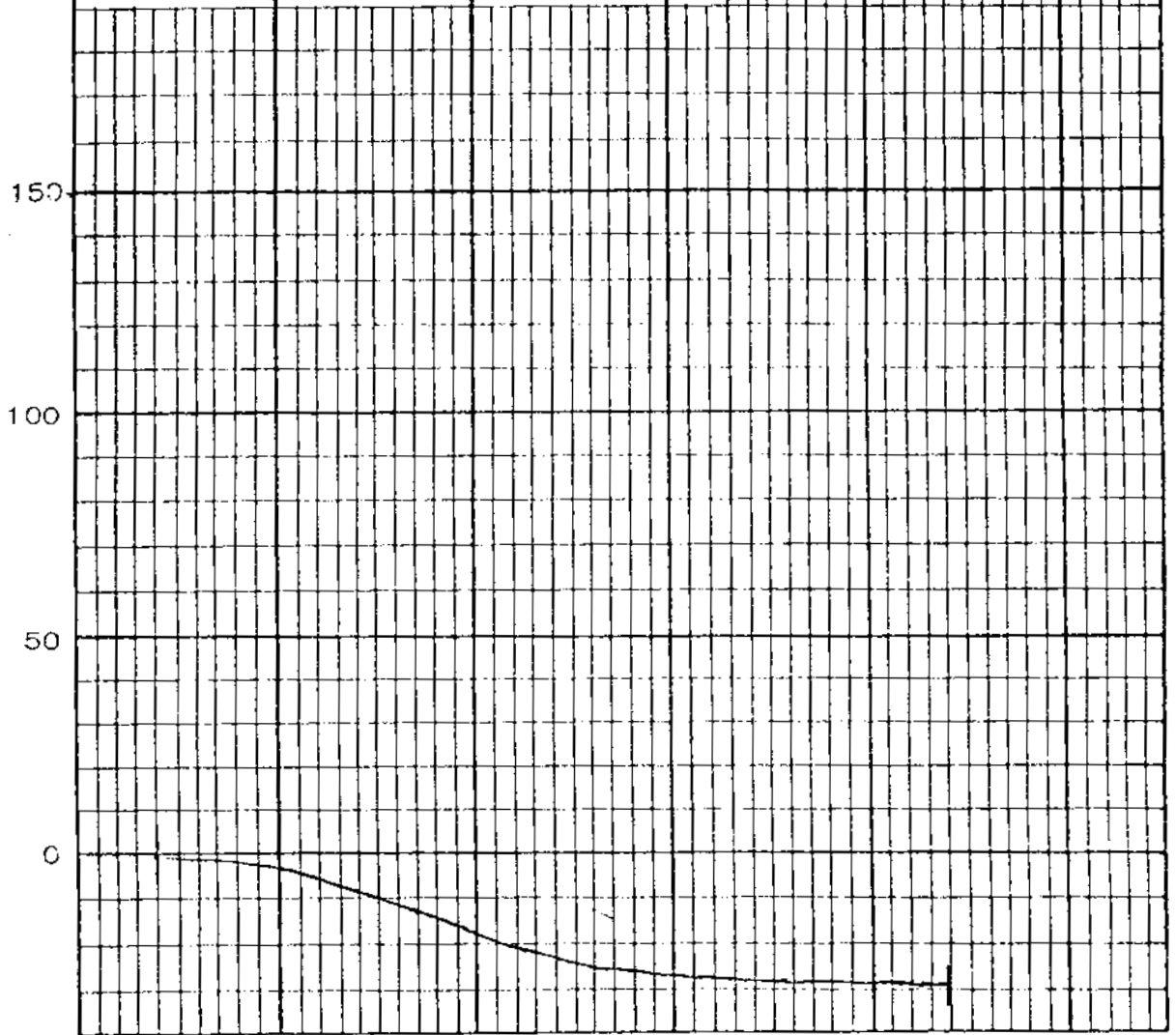
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	88.4	2.6	21.2	0.36	88.4	21.2	0.36	A.D.B.
	88.4	--	21.8	0.37	88.4	21.8	0.37	D.B.
65 x 0	11.6	2.6	32.9	0.42	100.0	22.6	0.37	A.D.B.
	11.6	--	33.8	0.43	100.0	23.2	0.38	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	70.5	2.1	2.9	37.7	57.3	0.37	70.5	2.9	A.D.B.
	70.5	--	3.4	38.5	58.1	0.38	70.5	3.4	D.B.
1.40-1.50	2.4	1.6	18.1	32.3	48.0	0.35	72.9	3.4	A.D.B.
	2.4	--	18.4	32.8	48.8	0.36	72.9	3.9	D.B.
1.50-1.60	1.7	1.9	21.7	--	--	--	74.6	3.8	A.D.B.
	1.7	--	22.0	--	--	--	74.6	4.3	D.B.
+1.60	25.4	1.8	75.2	--	--	--	100.0	21.9	A.D.B.
	25.4	--	75.6	--	--	--	100.0	22.7	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G.No.
1½	0.003					

% Lab. No. 77-4323 Date: July 11/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 136 - 1
Starting Temperature °C: 350
Softening Temperature °C: 382
250 Max. Dilatation Temp. °C: _____
Contraction %: 29% @ 48l
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 2 Lab. No.: 77 - 4324 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.0	46.6	24.4	27.0	0.47	86.5	Air Dried Basis
--	47.6	24.9	27.5	0.48	---	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	92.6	2.0	46.6	0.46	92.6	46.6	0.46	A.D.B.
	92.6	--	47.6	0.47	92.6	47.6	0.47	D.B.
65 x 0	7.4	2.1	40.9	0.55	100.0	46.2	0.47	A.D.B.
	7.4	--	41.7	0.56	100.0	47.2	0.48	D.B.

SINK - FLOCAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	39.9	1.9	5.4	39.7	53.0	0.70	39.9	5.4	A.D.B.
	39.9	--	5.5	40.4	54.1	0.71	39.9	5.5	D.B.
1.40-1.50	5.9	1.6	17.3	35.1	46.0	0.67	46.0	6.9	A.D.B.
	5.9	--	17.6	35.7	46.7	0.68	46.0	7.0	D.B.
1.50-1.60	2.3	1.9	29.6	--	--	--	48.1	8.0	A.D.B.
	2.3	--	30.2	--	--	--	48.1	8.2	D.B.
+1.60	51.9	1.6	82.0	--	--	--	100.0	46.4	A.D.B.
	51.9	--	83.4	--	--	--	100.0	47.2	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G.No.
1½	0.170					

% Lab. No. 77-4324 Date: July 11/77

300 Client: Elco Mining Ltd.

Sample I. D.: DH 136 - 2

Starting Temperature °C: 350

Softening Temperature °C: 375

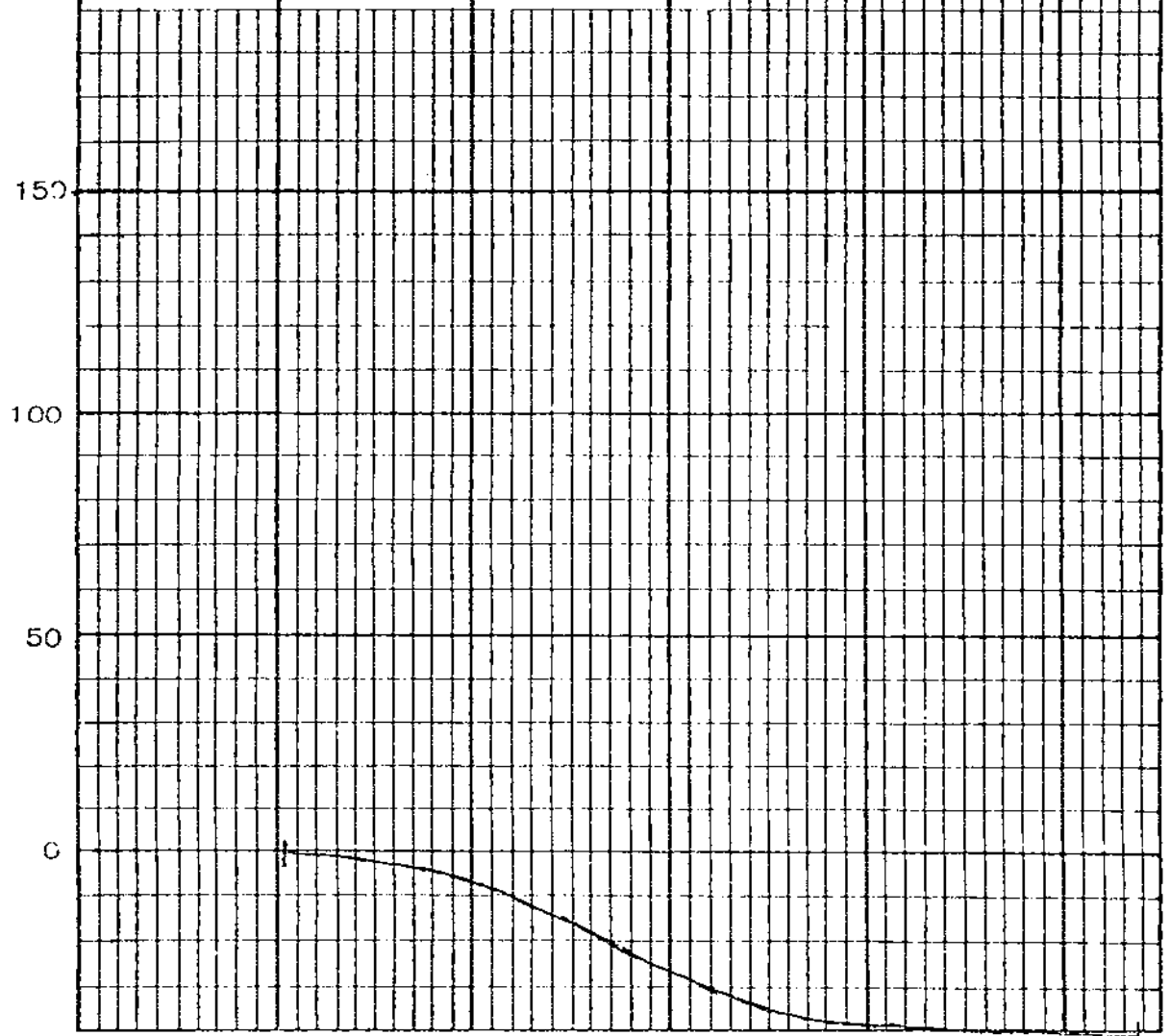
250 Max. Dilatation Temp. °C: _____

Contraction %: 41% @ 483

Dilatation %: _____

Final Temperature °C: _____

200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 3 Lab. No.: 77 - 4325 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.1	30.5	29.4	40.1	0.66	70.5	Air Dried Basis
--	31.2	30.0	38.8	0.67	---	Dry Basis

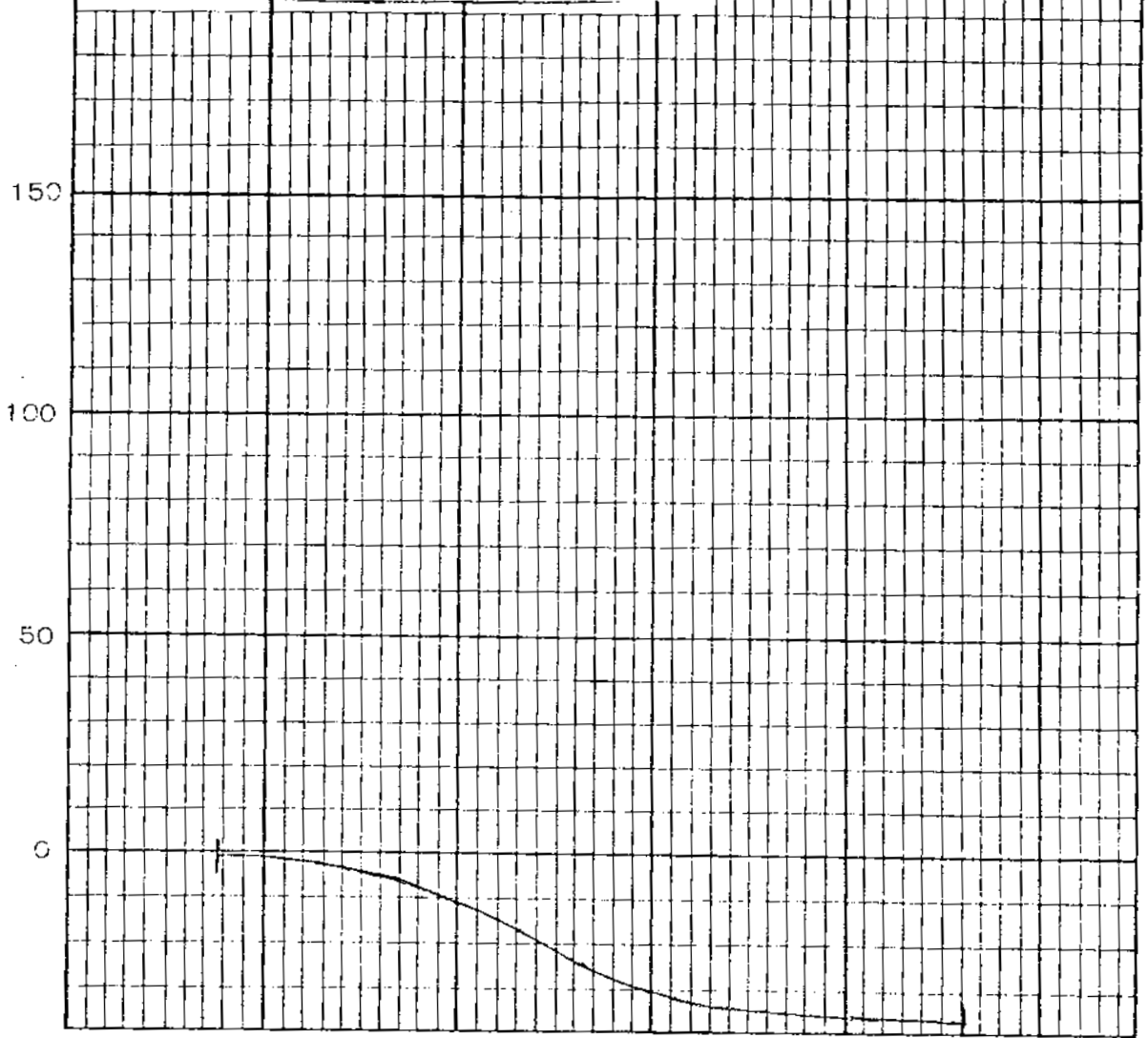
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	92.5	2.4	29.6	0.65	92.5	29.6	0.65	A.D.B.
	92.5	--	30.3	0.67	92.5	30.3	0.67	D.B.
65 x 0	7.5	2.2	31.8	0.65	100.0	29.8	0.65	A.D.B.
	7.5	--	32.6	0.66	100.0	30.5	0.67	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	55.7	1.9	6.5	37.7	55.8	0.78	55.7	6.5	A.D.B.
	55.7	--	6.6	38.5	54.9	0.79	55.7	6.6	D.B.
1.40-1.50	6.1	1.6	20.8	33.9	45.3	0.73	61.8	7.9	A.D.B.
	6.1	--	21.2	34.5	44.3	0.74	61.8	8.0	D.B.
1.50-1.60	3.9	1.7	29.2	--	--	--	65.7	9.2	A.D.B.
	3.9	--	29.7	--	--	--	65.7	9.3	D.B.
+1.60	34.3	1.7	69.6	--	--	--	100.0	29.9	A.D.B.
	34.3	--	70.8	--	--	--	100.0	30.4	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
2	0.096					

% Lab. No. 77-4325 Date: July 11/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 136 - 3
Starting Temperature °C: 350
Softening Temperature °C: 375
250 Max. Dilatation Temp. °C: _____
Contraction %: 38% @ 473
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 4 Lab. No.: 77 - 4326 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.3	21.8	31.3	46.9	0.71	58.7	Air Dried Basis
- -	21.3	32.0	46.7	0.73	- - -	Dry Basis

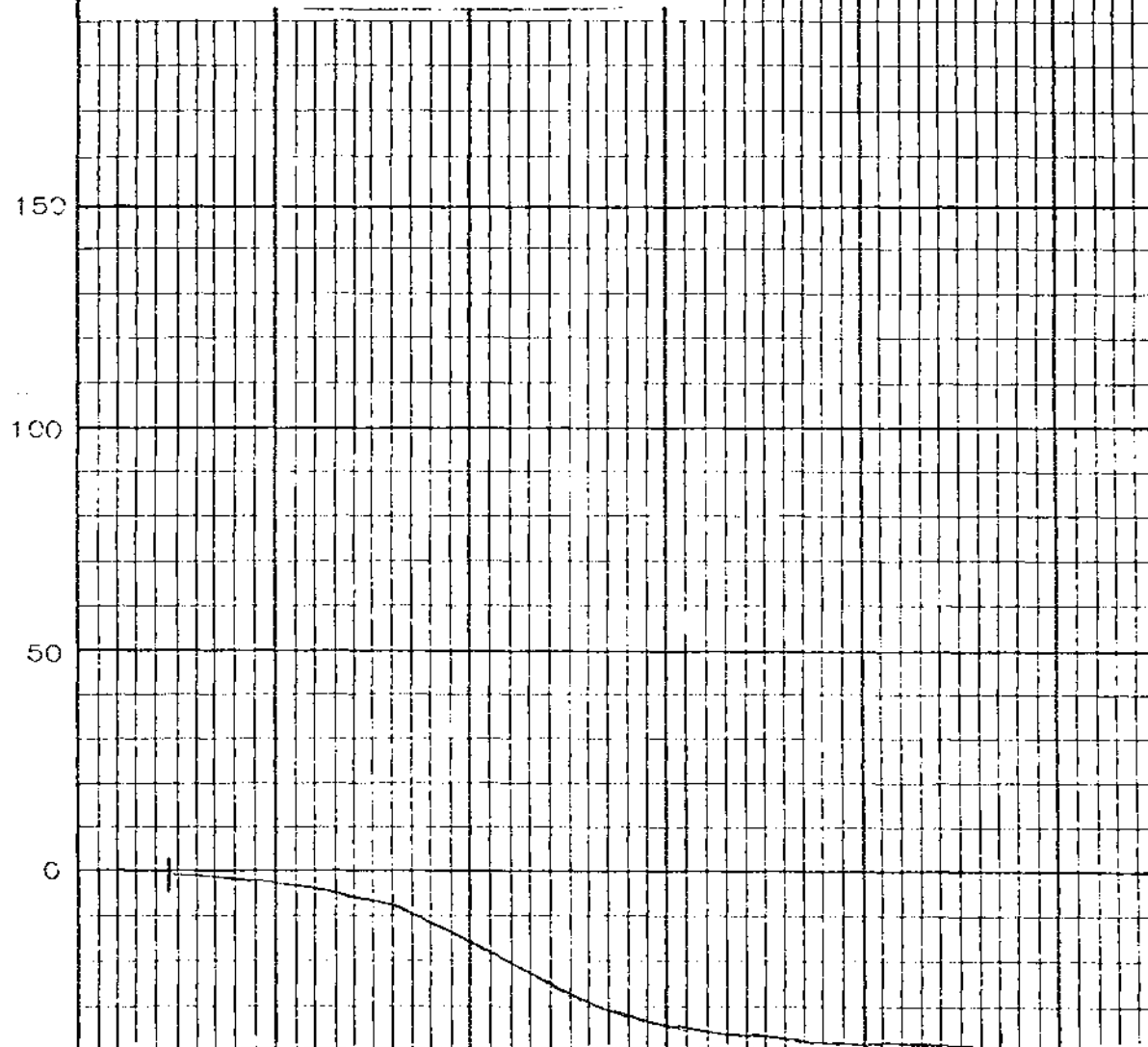
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	93.7	2.3	20.5	0.72	93.7	20.5	0.72	A.D.B.
	93.7	- -	21.0	0.74	93.7	21.0	0.74	D.B.
65 x 0	6.3	2.5	21.7	0.71	100.0	20.6	0.72	A.D.B.
	6.3	- -	22.3	0.73	100.0	21.1	0.74	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	65.6	1.9	5.4	37.9	56.7	0.75	65.6	5.4	A.D.B.
	65.6	- -	5.5	38.7	55.8	0.76	65.6	5.5	D.B.
1.40-1.50	6.0	1.6	21.7	33.2	45.1	0.79	71.6	6.8	A.D.B.
	6.0	- -	22.0	33.7	44.3	0.80	71.6	6.9	D.B.
1.50-1.60	3.7	1.6	30.5	- -	- -	- -	75.3	7.9	A.D.B.
	3.7	- -	31.0	- -	- -	- -	75.3	8.1	D.B.
+1.60	24.7	1.6	55.8	- -	- -	- -	100.0	19.7	A.D.B.
	24.7	- -	56.7	- -	- -	- -	100.0	20.1	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
2	0.089					

% Lab. No. 77-4326 Date: 09/11/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 136 - 4
Starting Temperature °C: 350
Softening Temperature °C: 368
250 Max. Dilatation Temp. °C: _____
Contraction %: 39% @ 479
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUPR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 5 Lab. No.: 77 - 4327 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.1	38.2	26.1	35.7	0.72	56.7	Air Dried Basis
- -	39.0	26.7	34.3	0.74	- -	Dry Basis

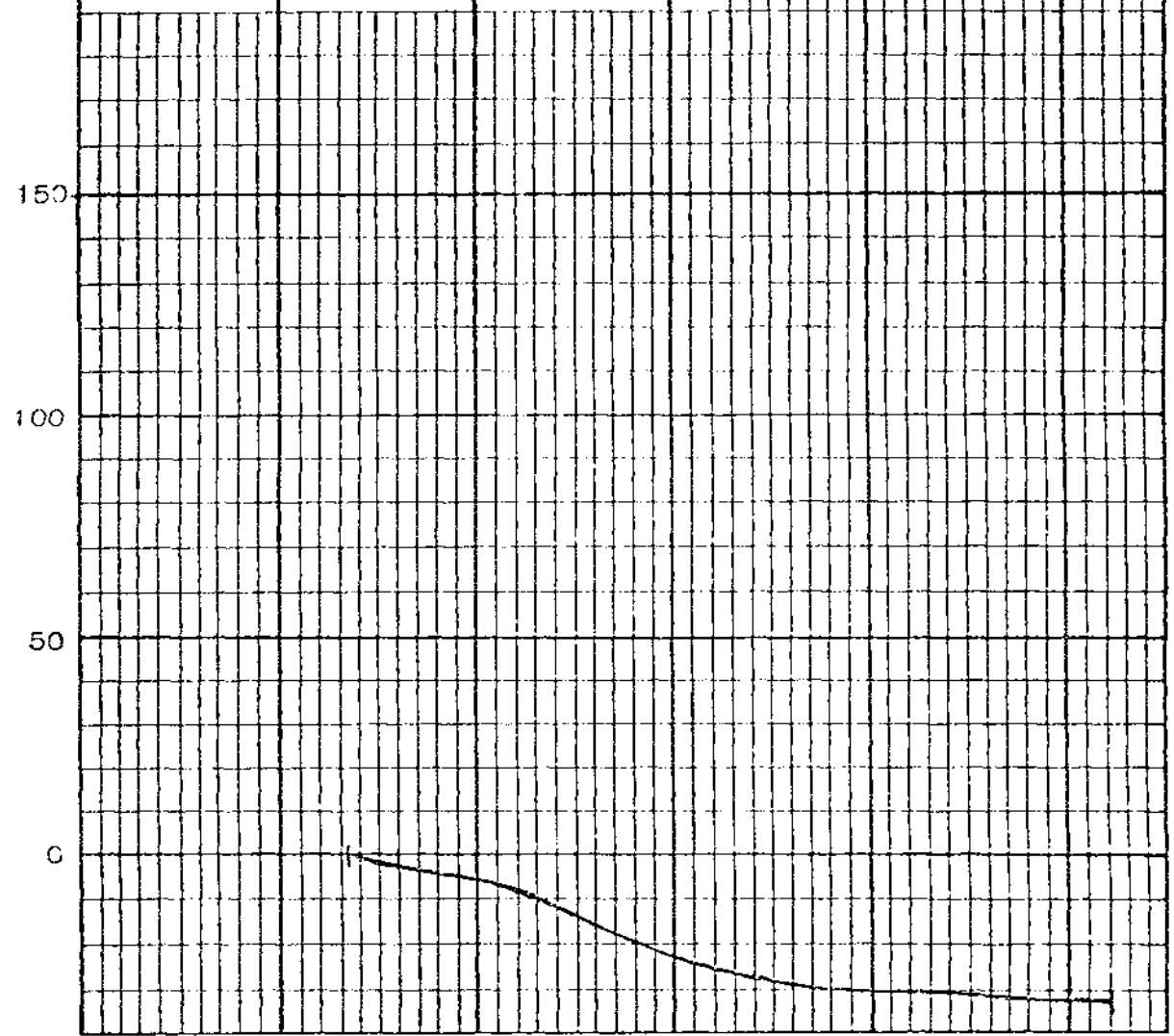
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	94.0	2.1	39.1	0.71	94.0	39.1	0.71	A.D.B.
	94.0	- -	39.9	0.73	94.0	39.9	0.73	D.B.
65 x 0	6.0	2.2	36.4	0.75	100.0	38.9	0.71	A.D.B.
	6.0	- -	37.2	0.77	100.0	39.7	0.73	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	35.4	1.9	5.4	37.1	57.5	0.88	35.4	5.4	A.D.B.
	35.4	- -	5.5	37.8	56.7	0.90	35.4	5.5	D.B.
1.40-1.50	5.2	1.7	22.7	31.6	45.7	0.85	40.6	7.6	A.D.B.
	5.2	- -	23.1	32.2	44.7	0.86	40.6	7.7	D.B.
1.50-1.60	6.1	1.6	30.3	- -	- -	- -	46.7	10.6	A.D.B.
	6.1	- -	30.8	- -	- -	- -	46.7	10.8	D.B.
+1.60	53.3	1.6	66.4	- -	- -	- -	100.0	40.3	A.D.B.
	53.3	- -	67.5	- -	- -	- -	100.0	41.0	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening Temp. (°C)	Max. Dil. Temp. (°C)	Maximum Contr. %	Maximum Dil. %	G. No.
1½	0.024					

% Lab. No. 77-4327 Date: July 11/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 136 - 5
Starting Temperature °C: 350
Softening Temperature °C: 385
250 Max. Dilatation Temp. °C: _____
Contraction %: 32% @ 484 °C
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date
Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 6 Lab. No.: 77 - 4328 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.9	48.6	23.2	28.2	0.42	63.6	Air Dried Basis
- -	49.5	23.7	26.8	0.43	- - -	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	90.3	1.8	50.3	0.38	90.3	50.3	0.38	A.D.B.
	90.3	- -	51.2	0.39	90.3	51.2	0.39	D.B.
65 x 0	9.7	2.1	45.6	0.46	100.0	49.8	0.39	A.D.B.
	9.7	- -	46.5	0.47	100.0	50.7	0.40	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	41.2	1.9	4.9	37.3	57.8	0.61	41.2	4.9	A.D.B.
	41.2	- -	5.0	38.0	57.0	0.62	41.2	5.0	D.B.
1.40-1.50	4.5	1.9	12.4	35.0	52.6	0.66	45.7	5.6	A.D.B.
	4.5	- -	12.6	35.7	51.7	0.67	45.7	5.7	D.B.
1.50-1.60	1.8	1.7	25.2	- -	- -	- -	47.5	6.4	A.D.B.
	1.8	- -	25.6	- -	- -	- -	47.5	6.5	D.B.
+1.60	52.5	1.4	87.3	- -	- -	- -	100.0	48.9	A.D.B.
	52.5	- -	88.5	- -	- -	- -	100.0	49.6	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
1½	0.022					

% Lab. No. 77-4328 Date July 11/77

300 Client: Elco Mining Ltd.

Sample I. D.: DH 136 - 1

Starting Temperature °C: 350

Softening Temperature °C: 377

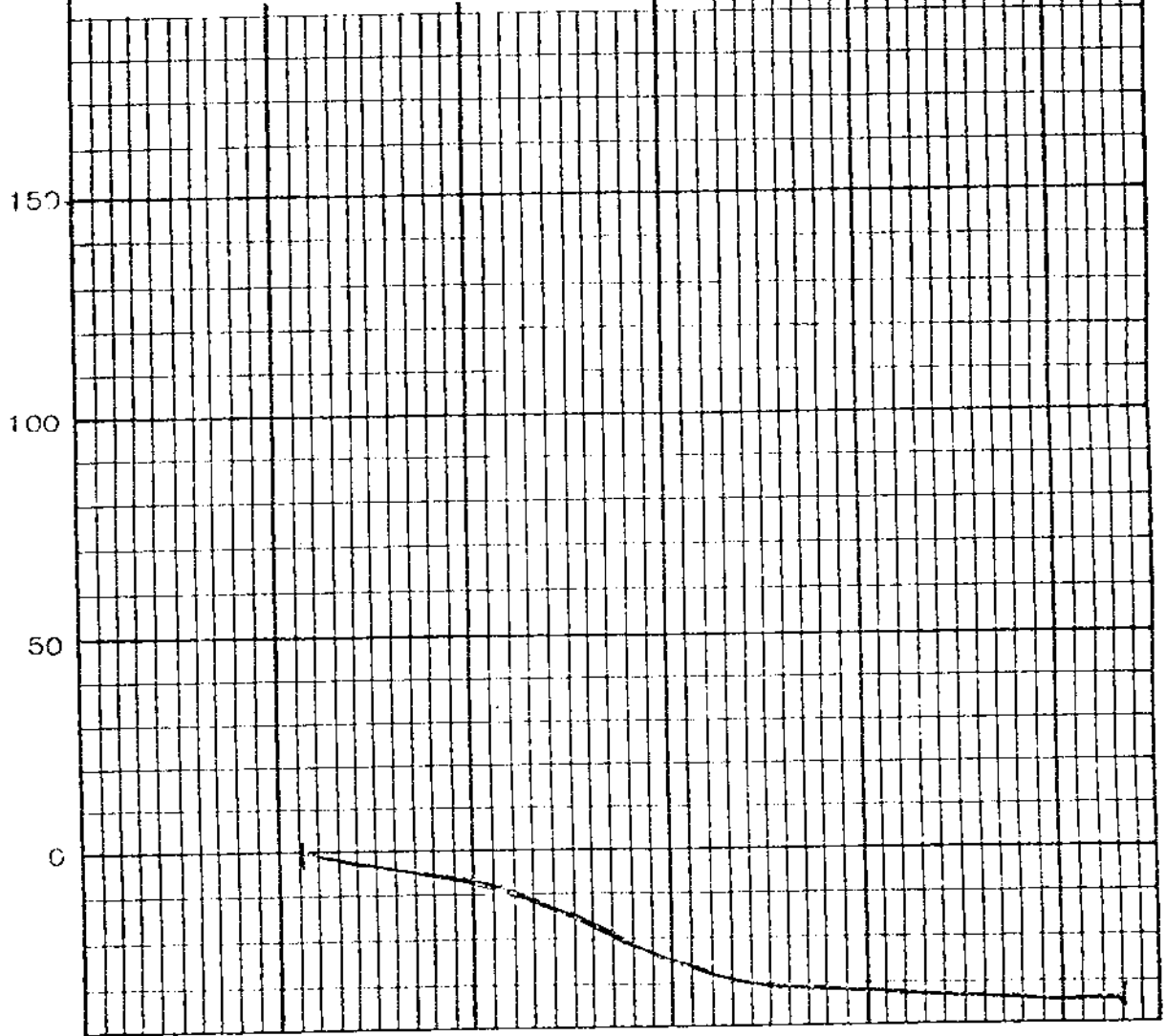
250 Max. Dilatation Temp. °C: _____

Contraction %: 35% @ 486 °C

Dilatation %: _____

Final Temperature °C: _____

200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 7 Lab. No.: 77 - 4329 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.0	30.1	30.7	39.2	0.66	62.2	Air Dried Basis
- -	30.7	31.4	37.9	0.67	▾ ▾	Dry Basis

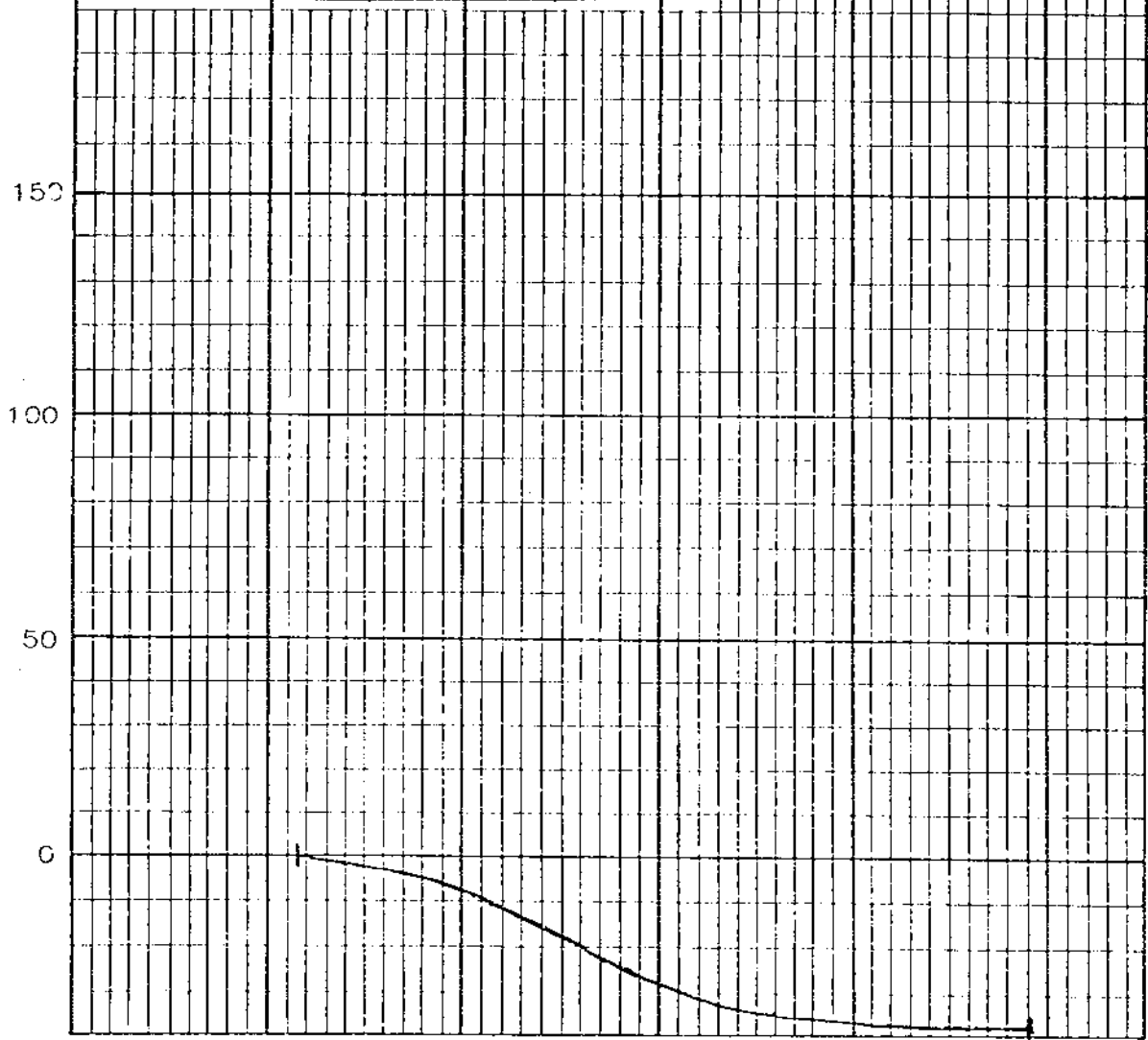
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	91.3	2.0	30.8	0.63	91.3	30.8	0.63	A.D.B.
	91.3	- -	31.4	0.64	91.3	31.4	0.64	D.B.
65 x 0	8.7	2.1	33.8	0.63	100.0	31.1	0.63	A.D.B.
	8.7	- -	34.5	0.64	100.0	31.6	0.64	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	50.6	1.8	9.5	37.0	53.5	0.73	50.6	9.5	A.D.B.
	50.6	- -	9.7	37.7	52.6	0.74	50.6	9.7	D.B.
1.40-1.50	12.9	1.6	23.3	33.1	43.6	0.72	63.5	12.3	A.D.B.
	12.9	- -	23.6	33.6	42.8	0.73	63.5	12.5	D.B.
1.50-1.60	5.4	1.6	30.6	- -	- -	- -	68.9	13.7	A.D.B.
	5.4	- -	31.1	- -	- -	- -	68.9	13.9	D.B.
+1.60	31.1	1.4	68.9	- -	- -	- -	100.0	30.9	A.D.B.
	31.1	- -	69.9	- -	- -	- -	100.0	31.4	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
2	0.053					

% Lab. No. 77-1329 Date: 13/13/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 136 - 7
Starting Temperature °C: 350
Softening Temperature °C: 378
250 Max. Dilatation Temp. °C: _____
Contraction %: 38% @ 474°C
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RÜHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136- 8 Lab. No.: 77 - 4330 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.9	41.3	25.7	33.0	0.56	66.4	Air Dried Basis
- -	42.1	26.2	31.7	0.57	- -	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	89.2	1.9	40.6	0.54	89.2	40.6	0.54	A.D.B.
	89.2	- -	41.4	0.55	89.2	41.4	0.55	D.B.
65 x 0	10.8	2.1	37.1	0.57	100.0	40.2	0.54	A.D.B.
	10.8	- -	37.9	0.58	100.0	41.0	0.55	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	44.6	1.8	7.1	38.8	54.1	0.69	44.6	7.1	A.D.B.
	44.6	- -	7.3	39.6	53.1	0.70	44.6	7.3	D.B.
1.40-1.50	3.9	1.8	21.1	32.8	46.1	0.69	48.5	8.2	A.D.B.
	3.9	--	21.5	33.4	45.1	0.70	48.5	8.4	D.B.
1.50-1.60	5.2	1.6	27.4	- -	- -	- -	53.7	10.1	A.D.B.
	5.2	- -	27.9	- -	- -	- -	53.7	10.3	D.B.
+1.60	46.3	1.2	76.8	- -	- -	--	100.0	40.9	A.D.B.
	46.3	- -	77.6	- -	- -	- -	100.0	41.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
1	0.053					

% Lab. No. 77-4330 Date: July 13/77

300 Client: Elco Mining Ltd.

Sample I. D.: DH 136 - 8

Starting Temperature °C: 350

Softening Temperature °C: 373

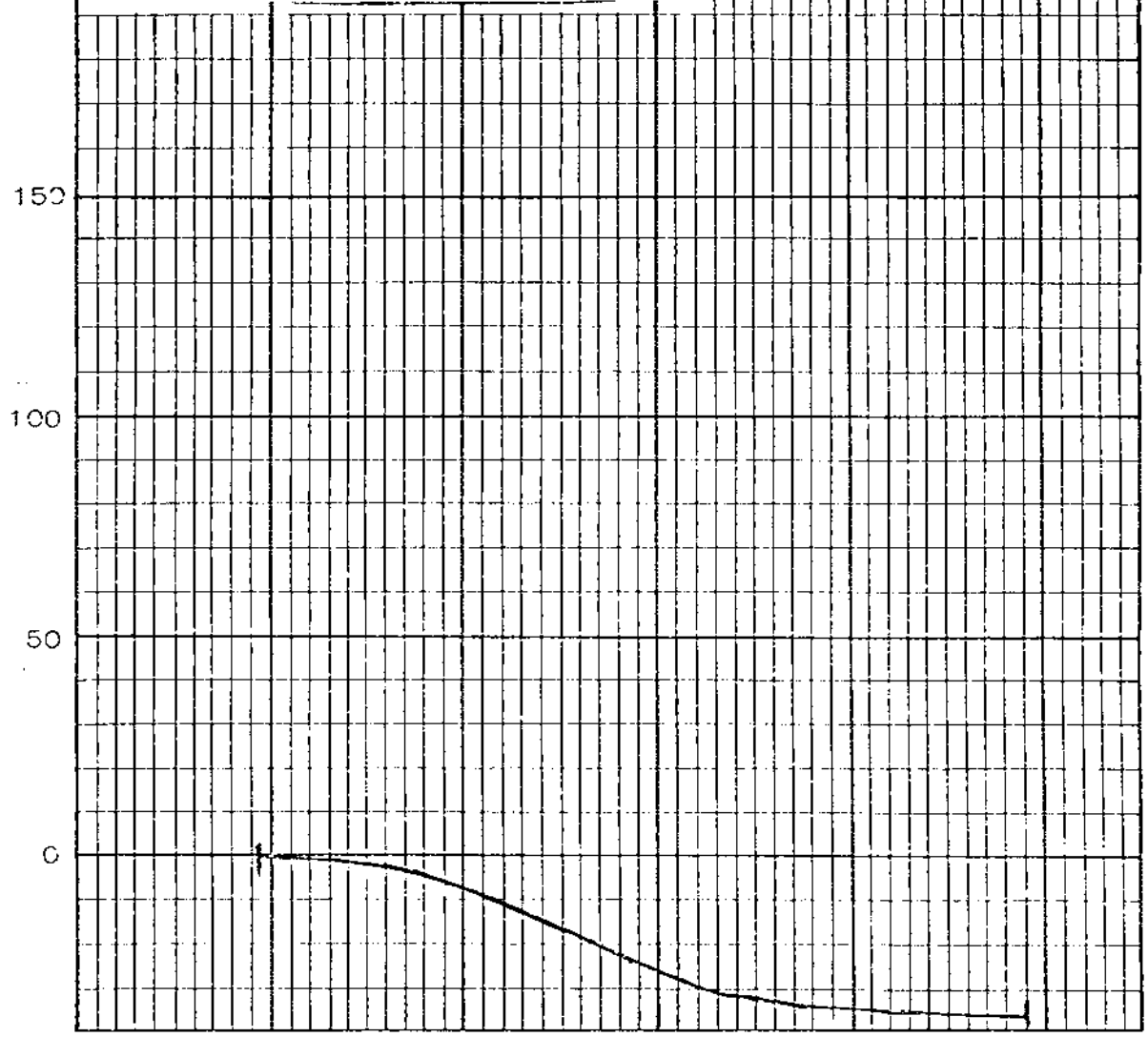
250 Max. Dilatation Temp. °C: _____

Contraction %: 36% @ 474°C

Dilatation %: _____

Final Temperature °C: _____

200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

CLIENT - Elco Mining Ltd.

Sample Identification - DH 136 - 8

Lab. No. - 77 - 4330

Footage -

CLEAN - 1.50 Composite	
<u>As Analyzed Basis</u>	
Moisture % (Inherent) -	1.8
Ash % -	8.2
Volatile Matter % -	38.3
Fixed Carbon % -	51.7
Total -	100.0
Sulphur % -	0.69
FSI -	1
Btu per lb. -	12,753
Equilibrium Moisture % -	3.8
Hardgrove Grindability - Carbon Dioxide	0.10
Specific Gravity (20 mesh) -	
<u>Dry Basis</u>	
Ash % -	8.4
Volatile % -	39.0
Btu per lb. -	12,987
<u>Dry, Ash - Free Basis</u>	
Volatile % -	42.6
Btu per lb. -	14,170

FLOAT / SINK ANALYSIS

<u>Specific Gravity</u>		<u>Weight %</u>	<u>Ash %</u>
<u>Sink</u>	<u>Float</u>		
	1.50	48.5	8.4
1.50			

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 136 - 9 Lab. No.: 77 - 4331 Date: June 9, 1977

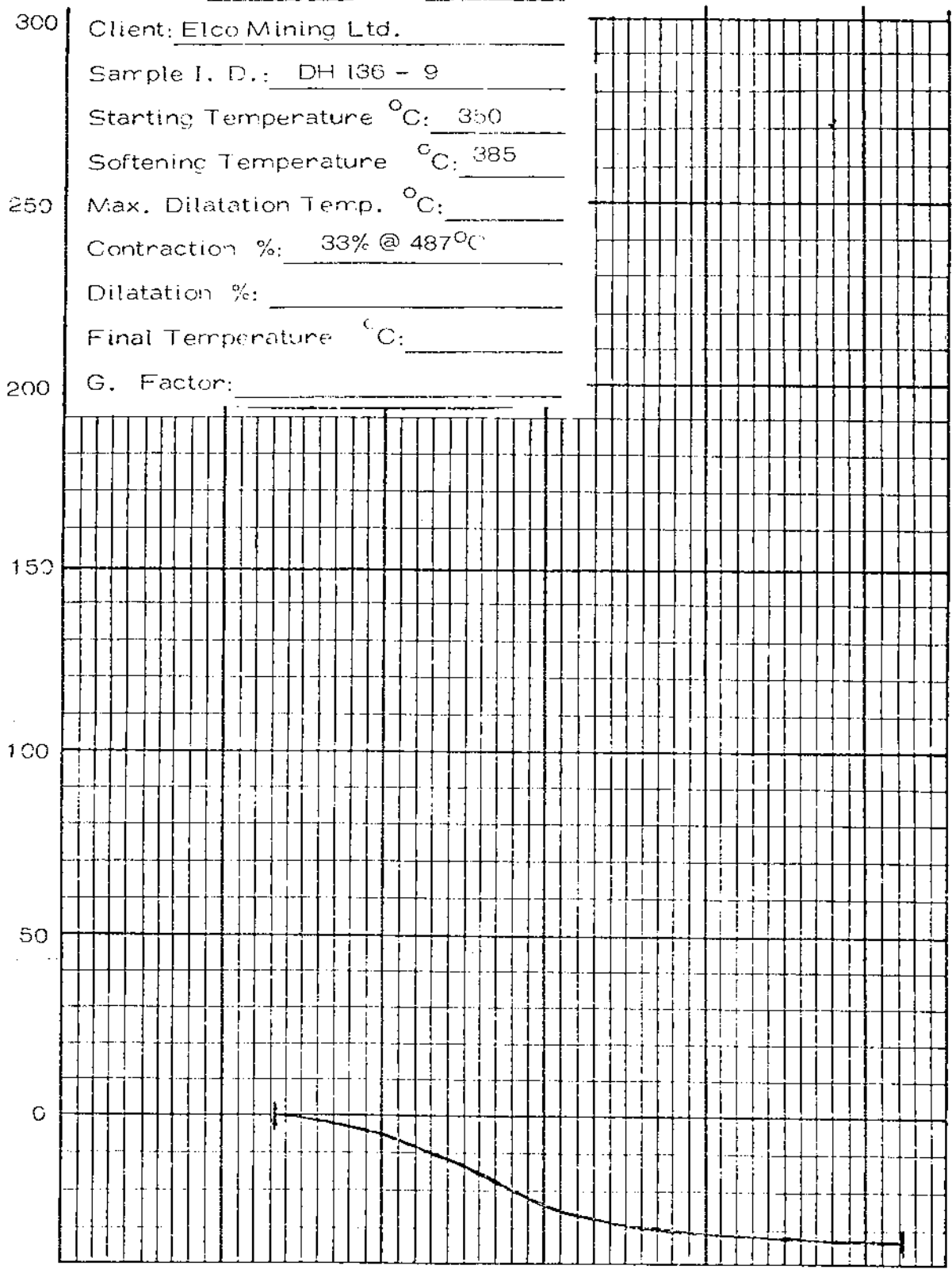
HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
2.7	14.7	33.4	51.9	0.53	69.8	Air Dried Basis
- -	15.1	34.3	50.6	0.54	- -	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	91.6	2.8	14.9	0.53	91.6	14.9	0.53	A.D.B.
	91.6	- -	15.3	0.55	91.6	15.3	0.55	D.B.
65 x 0	8.4	2.9	12.4	0.53	100.0	14.7	0.53	A.D.B.
	8.4	- -	12.8	0.55	100.0	15.1	0.55	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	78.0	2.2	3.8	37.5	58.7	0.47	78.0	3.8	A.D.B.
	78.0	- -	3.9	38.4	57.7	0.48	78.0	3.9	D.B.
1.40-1.50	2.9	1.9	21.8	30.5	47.7	0.54	80.9	4.4	A.D.B.
	2.9	- -	22.2	31.1	46.7	0.55	80.9	4.6	D.B.
1.50-1.60	2.5	1.7	31.2	- -	- -	- -	83.4	5.2	A.D.B.
	2.5	- -	31.7	- -	- -	- -	83.4	5.4	D.B.
+1.60	16.6	1.7	63.4	- -	- -	- -	100.0	14.9	A.D.B.
	16.6	- -	64.1	- -	- -	- -	100.0	15.1	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
2	0.024					

% Lab. No. 77-4331 Date: July 13/77
 Client: Elco Mining Ltd.
 Sample I. D.: DH 136 - 9
 Starting Temperature °C: 350
 Softening Temperature °C: 385
 250 Max. Dilatation Temp. °C: _____
 Contraction %: 33% @ 487°C
 Dilatation %: _____
 Final Temperature °C: _____
 200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATOMETER TEST

Date
Drawn

Warnock Hersey Professional Services Ltd.

CLIENT - Elco Mining Ltd.

Sample Identification - DH 136 - 9

Lab. No. - 77 - 4331

Footage -

CLEAN - 1.50 Composite	
<u>As Analyzed Basis</u>	
Moisture % (Inherent) -	2.2
Ash % -	4.4
Volatile Matter % -	37.2
Fixed Carbon % -	56.2
Total -	100.0
Sulphur % -	0.47
FSI -	2
Btu per lb. -	13,221
Equilibrium Moisture % -	4.2
Handpicks Grindability - Carbon Dioxide	0.06
Specific Gravity (20 mesh) -	
<u>Dry Basis</u>	
Ash % -	4.6
Volatile % -	38.1
Btu per lb. -	13,524
<u>Dry, Ash - Free Basis</u>	
Volatile % -	40.0
Btu per lb. -	14,155

FLOAT / SINK ANALYSIS

<u>Specific Gravity</u>		<u>Weight %</u>	<u>Ash %</u>
<u>Sink</u>	<u>Float</u>		
1.50	1.50	80.9	4.6

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-136-10 Lab. No. 9034 DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.9	24.5	31.0	42.6	0.71	86	Air Dried Basis
	25.0	31.6	43.4	0.72	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.7	1.8	24.7	0.71	95.7	24.7	0.71	A.D.B.
	95.7		25.2	0.72	95.7	25.2	0.72	D.B.
65M x 0	4.3	2.1	19.2	0.69	100.0	24.5	0.71	A.D.B.
	4.3		19.6	0.70	100.0	25.0	0.72	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	68.0	2.0	4.6	37.9	55.5	0.74	68.0	4.6	A.D.B.
	67.9		4.7	38.7	56.6	0.76	67.9	4.7	D.B.
1.40-1.50	2.9	1.9	23.5	32.6	42.0	0.68	70.9	5.4	A.D.B.
	2.9		24.0	33.2	42.8	0.69	70.8	5.5	D.B.
1.50-1.60	2.4	1.7	33.6				73.3	6.3	A.D.B.
	2.4		34.2				73.2	6.4	D.B.
+1.60	26.7	1.2	75.2				100.0	24.7	A.D.B.
	26.8		76.1				100.0	25.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp. = 320°C)				
		SOFTENING TEMP* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G.I. NO.
4 1/2	0.07	380	436	30	- 28	0.334

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 5034 Date Mar 18, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-136-10

Starting Temperature °C: 320

Softening Temperature °C: 380

Max. Dilatation Temp. °C: 436

250

Contraction %: 30

Dilatation %: - 28

Final Temperature °C:

G. Factor: 0.334

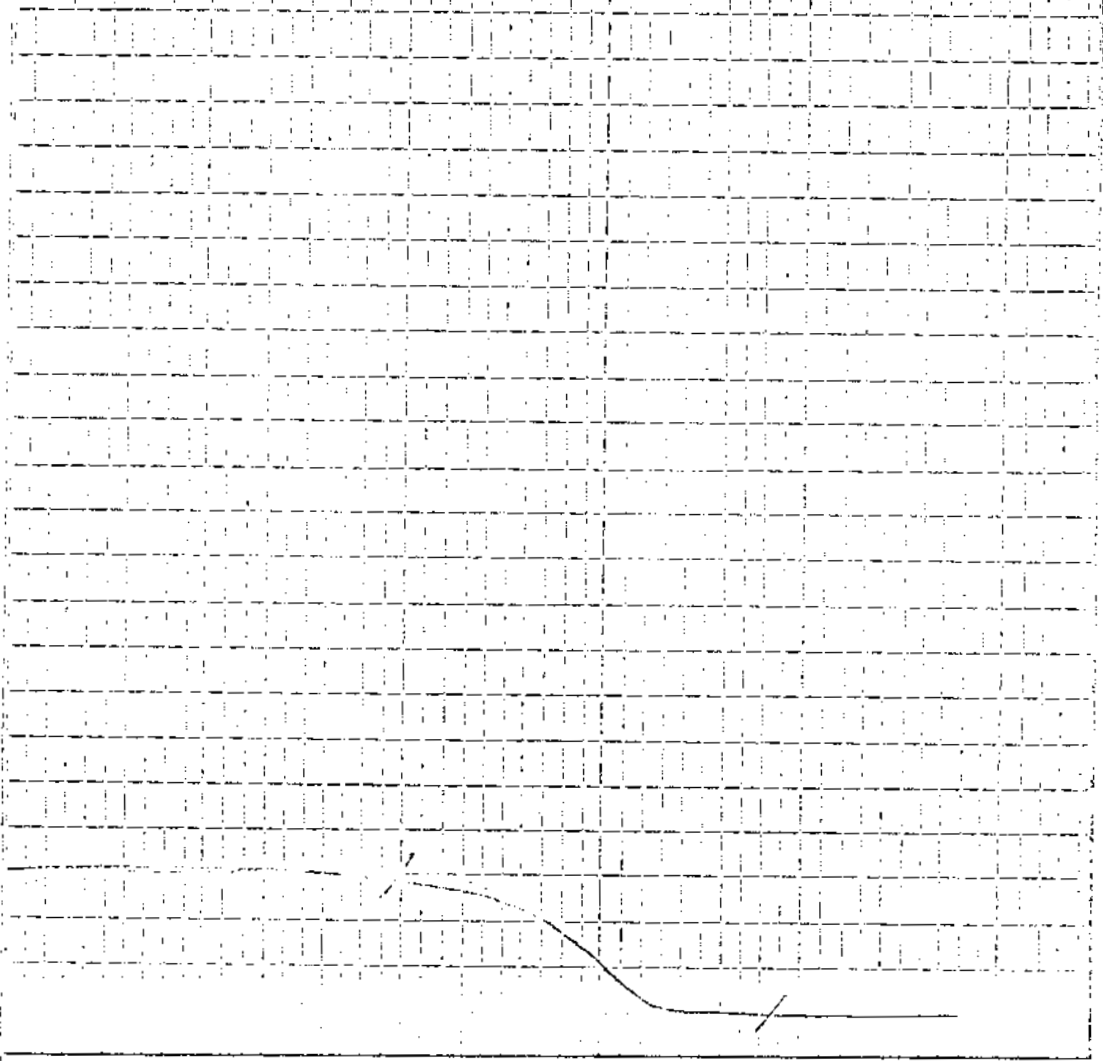
200

150

100

50

0



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-136-11

Lab. No. 9035

DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.5	39.2	25.5	33.8	0.60	69	Air Dried Basis
	39.8	25.9	34.3	0.61	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	95.2	1.4	40.5	0.59	95.2	40.5	0.59	A.D.B.
	95.3		41.1	0.60	95.3	41.1	0.60	D.B.
65M x 0	4.8	1.8	28.0	0.73	100.0	39.9	0.60	A.D.B.
	4.7		28.5	0.74	100.0	40.5	0.61	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	37.8	1.7	9.2	35.0	54.1	0.78	37.8	9.2	A.D.B.
	37.7		9.4	35.6	55.0	0.79	37.7	9.4	D.B.
1.40-1.50	7.4	1.7	25.5	32.4	40.4	0.66	45.2	11.9	A.D.B.
	7.4		25.9	33.0	41.1	0.67	45.1	12.1	D.B.
1.50-1.60	5.7	1.6	34.3				50.9	14.4	A.D.B.
	5.7		34.9				50.8	14.7	D.B.
+1.60	49.1	1.2	67.5				100.0	40.5	A.D.B.
	49.2		68.3				100.0	41.1	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. (°C)	MAX. DIL. TEMP. (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.05	407	---	38% @ 479°C	---	---

S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 9035 Date May 18, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-136-11

Starting Temperature °C: 320

Softening Temperature °C: 407

Max. Dilatation Temp. °C: ---

Contraction %: 38% @ 479°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

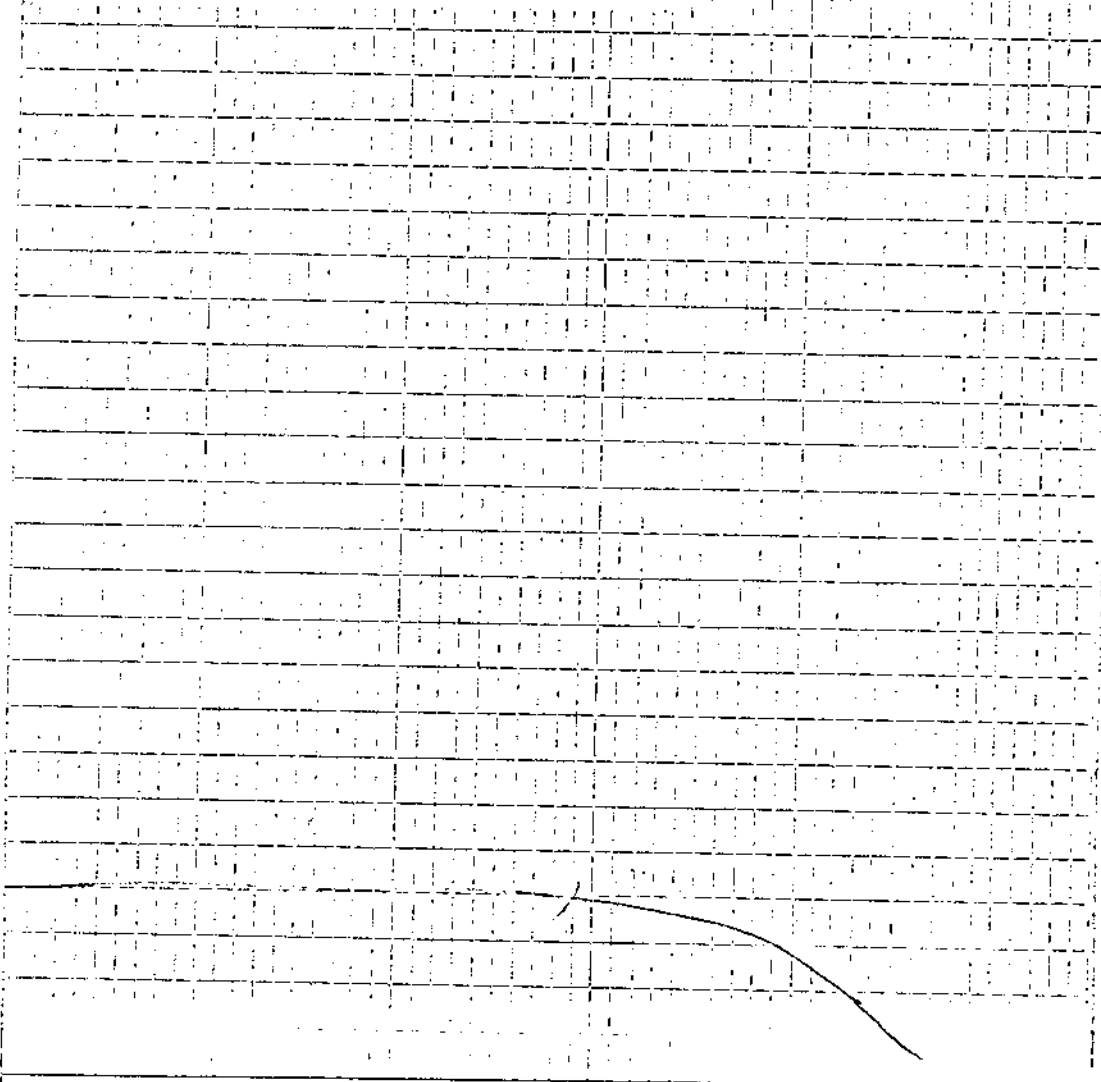
200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-136-12

Lab. No. 9036

DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.4	39.8	25.5	33.3	0.58	77	Air Dried Basis Dry Basis
	40.4	25.9	33.7	0.59	--	

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	91.4	1.3	39.7	0.60	91.4	39.7	0.60	A.D.B.
	91.4		40.2	0.61	91.4	40.2	0.61	D.B.
65M x 0	8.6	1.7	37.2	0.58	100.0	39.5	0.60	A.D.B.
	8.6		37.8	0.59	100.0	40.0	0.61	D.B.

SINK-FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	40.2	1.3	9.2	36.7	52.8	0.83	40.2	9.2	A.D.B.
	40.2		9.3	37.2	53.5	0.84	40.2	9.3	D.B.
1.40-1.50	7.4	1.3	24.9	31.8	42.0	0.62	47.6	11.6	A.D.B.
	7.4		25.2	32.2	42.6	0.63	47.6	11.8	D.B.
1.50-1.60	4.4	1.3	31.5				52.0	13.3	A.D.B.
	4.4		31.9				52.0	13.5	D.B.
+1.60	48.0	1.4	67.3				100.0	39.2	A.D.B.
	48.0		68.3				100.0	39.8	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP. *(°C)	MAX. DIL. TEMP. *(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
3	0.02	413	---	30% @ 467°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 9036 Date May 18, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-136-12

Starting Temperature °C: 320

Softening Temperature °C: 413

Max. Dilatation Temp. °C: ---

Contraction %: 30% @ 467°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

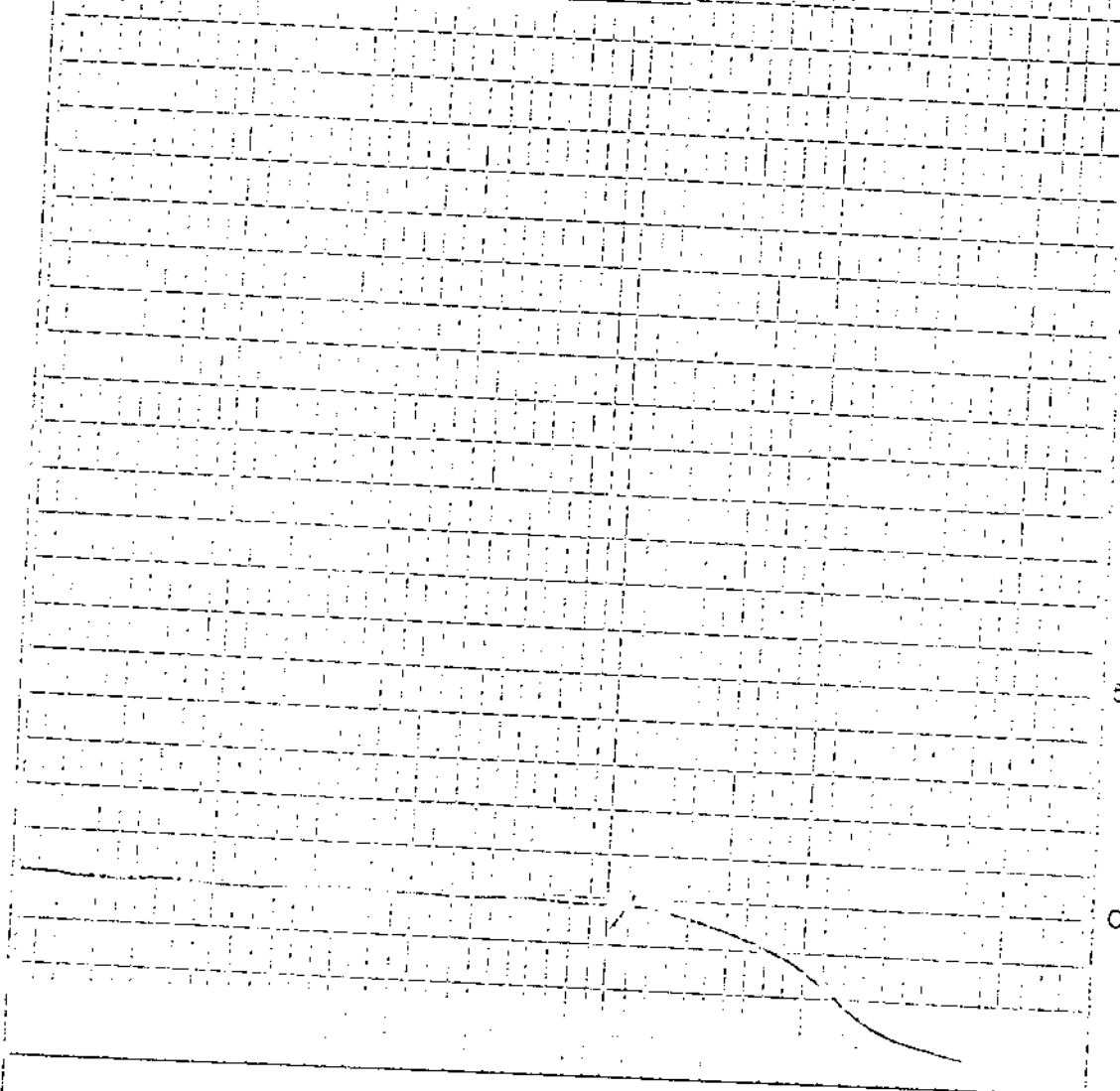
200

150

100

50

0



BENTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

HOLE NO.: DH-136-13

Lab. No. 9037

DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.1	67.8	17.6	13.5	0.32	58	Air Dried Basis
	68.6	17.8	13.6	0.32	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	92.7	1.1	69.2	0.33	92.7	69.2	0.33	A.D.B.
	92.7		70.0	0.33	92.7	70.0	0.33	D.B.
65M x 0	7.3	1.5	47.4	0.52	100.0	67.6	0.34	A.D.B.
	7.3		48.1	0.53	100.0	68.4	0.34	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	15.8	1.1	5.2	37.3	56.4	0.80	15.8	5.2	A.D.B.
	15.8		5.3	37.7	57.0	0.81	15.8	5.3	D.B.
1.40-1.50	1.4	1.0	18.6	32.4	48.0	0.77	17.2	6.3	A.D.B.
	1.4		18.8	32.7	48.5	0.78	17.2	6.4	D.B.
1.50-1.60	0.9	1.2	32.7				18.1	7.6	A.D.B.
	0.9		33.1				18.1	7.7	D.B.
+1.60	81.9	1.1	83.4				100.0	69.7	A.D.B.
	81.9		84.3				100.0	70.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.04	371	---	37% @ 485°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Lab. No. 5037 Date May 19, 1977.

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-136-13

Starting Temperature °C: 320

Softening Temperature °C: 371

Max. Dilatation Temp. °C: ---

Contraction %: 37% @ 485°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-136-14

Lab. No. 9038

DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.6	44.3	23.8	30.3	0.52	63	Air Dried Basis
	45.0	24.2	30.8	0.53	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	94.4	1.4	44.8	0.55	94.4	44.8	0.55	A.D.B.
	94.4		45.4	0.56	94.4	45.4	0.56	D.B.
65M x 0	5.6	1.7	47.7	0.53	100.0	45.0	0.55	A.D.B.
	5.6		48.5	0.54	100.0	45.6	0.56	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	34.7	1.6	8.1	37.4	52.9	0.77	34.7	8.1	A.D.B.
	34.6		8.2	38.0	53.8	0.78	34.6	8.2	D.B.
1.40-1.50	5.1	1.7	24.5	31.1	42.7	0.70	39.8	10.2	A.D.B.
	5.1		24.9	31.6	43.5	0.71	39.7	10.3	D.B.
1.50-1.60	6.9	1.5	35.4				46.7	13.9	A.D.B.
	6.9		35.9				46.6	14.1	D.B.
+1.60	53.3	1.2	71.8				100.0	44.8	A.D.B.
	53.4		72.7				100.0	45.4	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				G. NO.
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	
3	0.04	368	---	30% @ 431°C	---	---

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 9035 Date May 19, 1977

%
300

Client: ELCO MINING LTD.

Sample Identification: DH-136-14

Starting Temperature °C: 320

Softening Temperature °C: 368

Max. Dilatation Temp. °C: ---

Contraction %: 30% @ 431°

Dilatation %: ---

Final Temperature °C: ---

G. Factor: ---

250

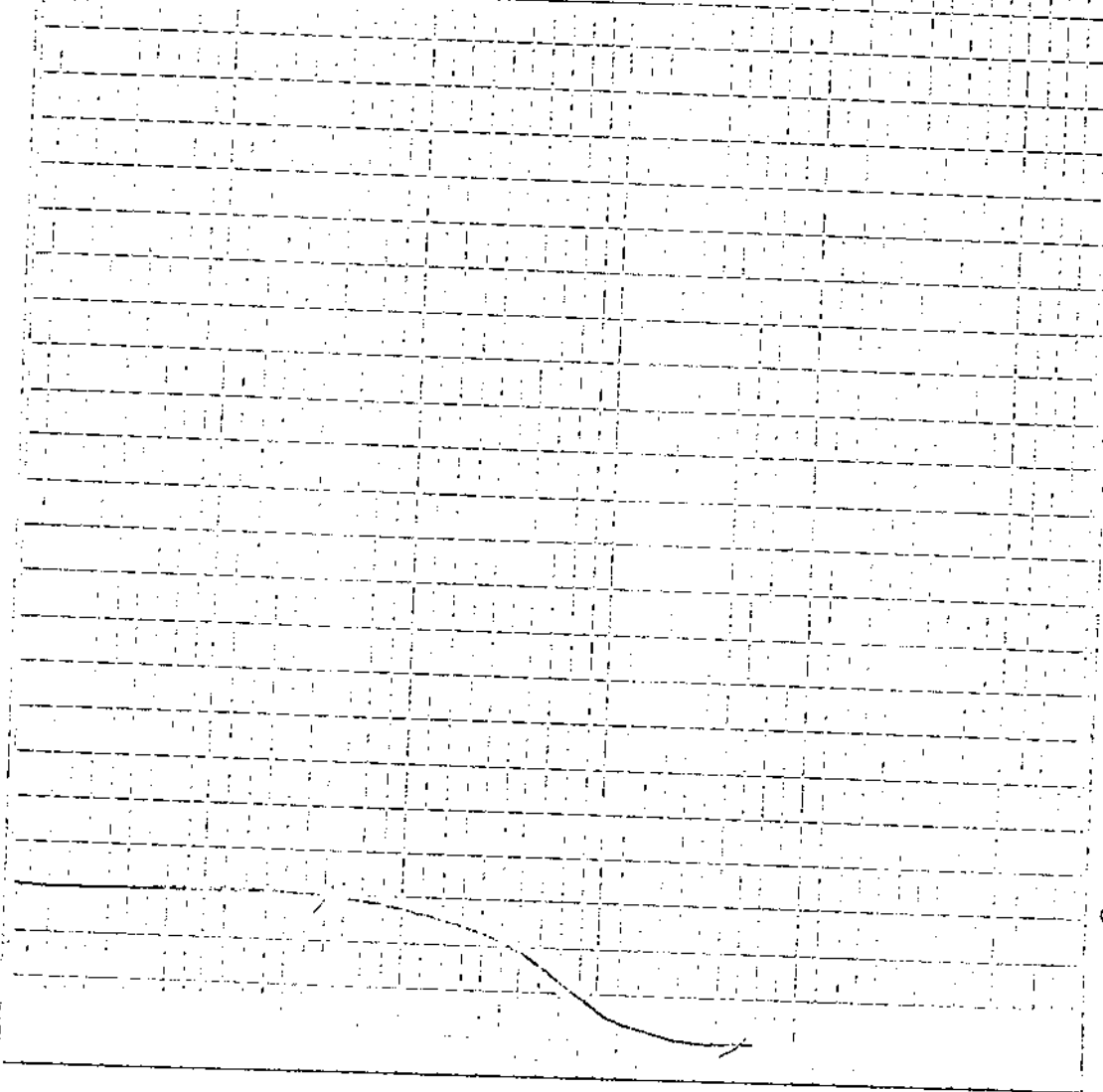
200

150

100

50

0



EMBLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 137 - 1 Lab. No.: 77 - 4332 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.8	38.4	27.1	34.5	0.64	83.0	Air Dried Basis
- -	39.1	27.6	33.3	0.65	- -	Dry Basis

SIZE / RAW ANALYSIS								
Size Fraction	Wt. %	R.M. %	Ash %	S. %	CUMULATIVE			
					Wt. %	Ash %	S. %	
¼ x 65	70.6	1.9	40.9	0.56	70.6	40.9	0.56	A.D.B.
	70.6	- -	41.7	0.57	70.6	41.7	0.57	D.B.
65 x 0	29.4	2.2	26.8	0.68	100.0	36.8	0.60	A.D.B.
	29.4	- -	27.3	0.70	100.0	37.8	0.61	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt. %	R.M. %	Ash %	V.M. %	F.C. %	S. %	Cumulative		
							Wt. %	Ash %	
-1.40	40.7	1.8	7.3	37.6	55.1	0.72	40.7	7.3	A.D.B.
	40.7	- -	7.4	38.3	54.3	0.73	40.7	7.4	D.B.
1.40-1.50	5.9	1.9	17.8	34.5	47.7	0.74	46.6	8.6	A.D.B.
	5.9	--	18.1	35.2	46.7	0.75	46.6	8.7	D.B.
1.50-1.60	2.8	1.9	24.7	- -	- -	- -	49.4	9.5	A.D.B.
	2.8	- -	25.2	- -	- -	- -	49.4	9.7	D.B.
+1.60	50.6	1.2	73.5	- -	- -	--	100.0	41.9	A.D.B.
	50.6	--	74.4	- -	- -	- -	100.0	42.4	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G. No.
		Temp. (°C)	Temp. (°C)	Contr. %	Dil. %	
1½	0.039					

% Lab. No. 77-4332 Date: July 13/77

300 Client: Elco Mining Ltd

Sample I. D.: DH 137 - 1

Starting Temperature °C: 350

Softening Temperature °C: 374

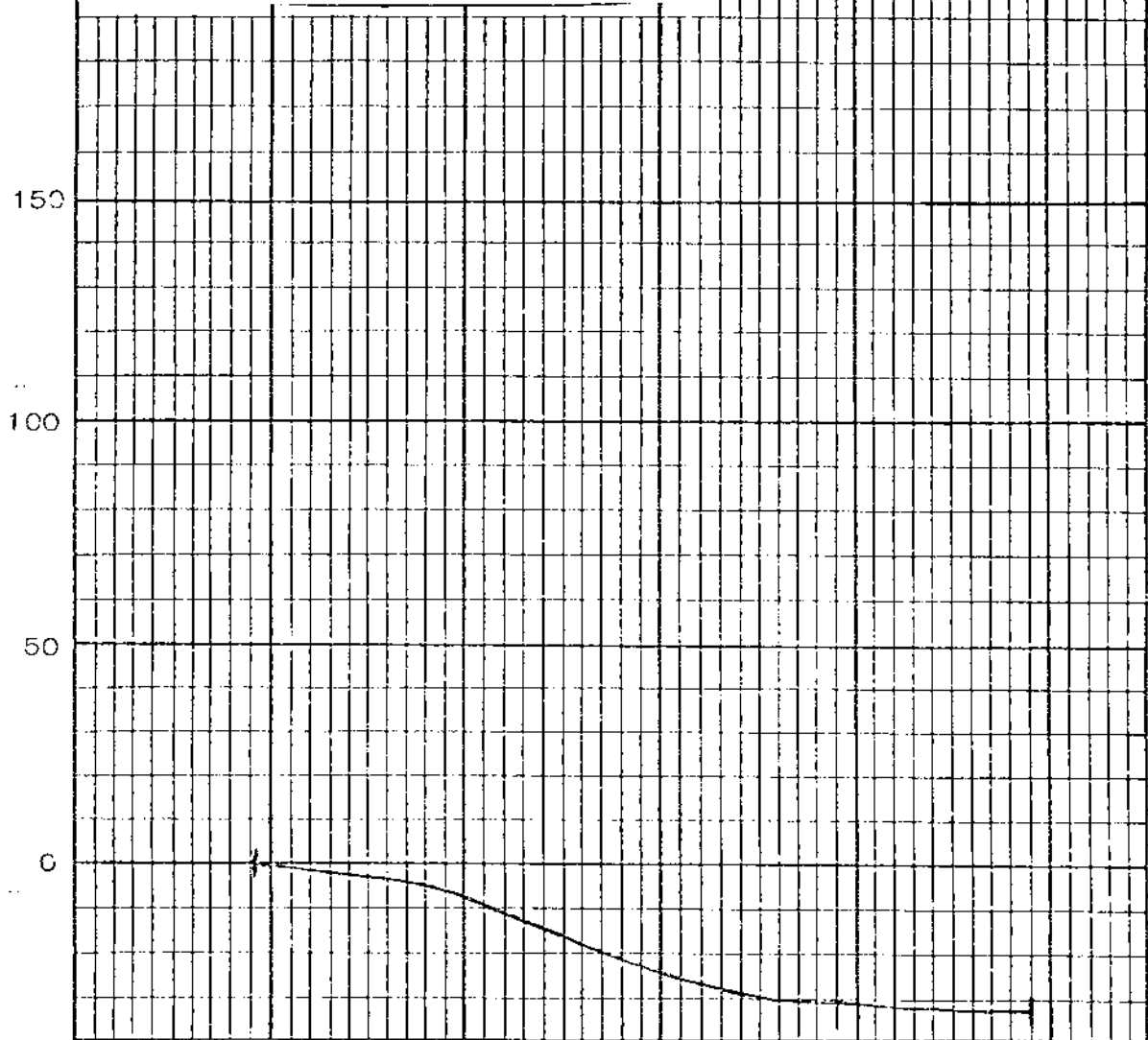
250 Max. Dilatation Temp. °C: _____

Contraction %: 32% @ 478°C

Dilatation %: _____

Final Temperature °C: _____

200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATOMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 137 - 2 Lab. No.: 77 - 4333 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.4	46.7	25.3	28.0	1.01	75.4	Air Dried Basis
- -	47.4	25.7	26.9	1.02	- -	Dry Basis

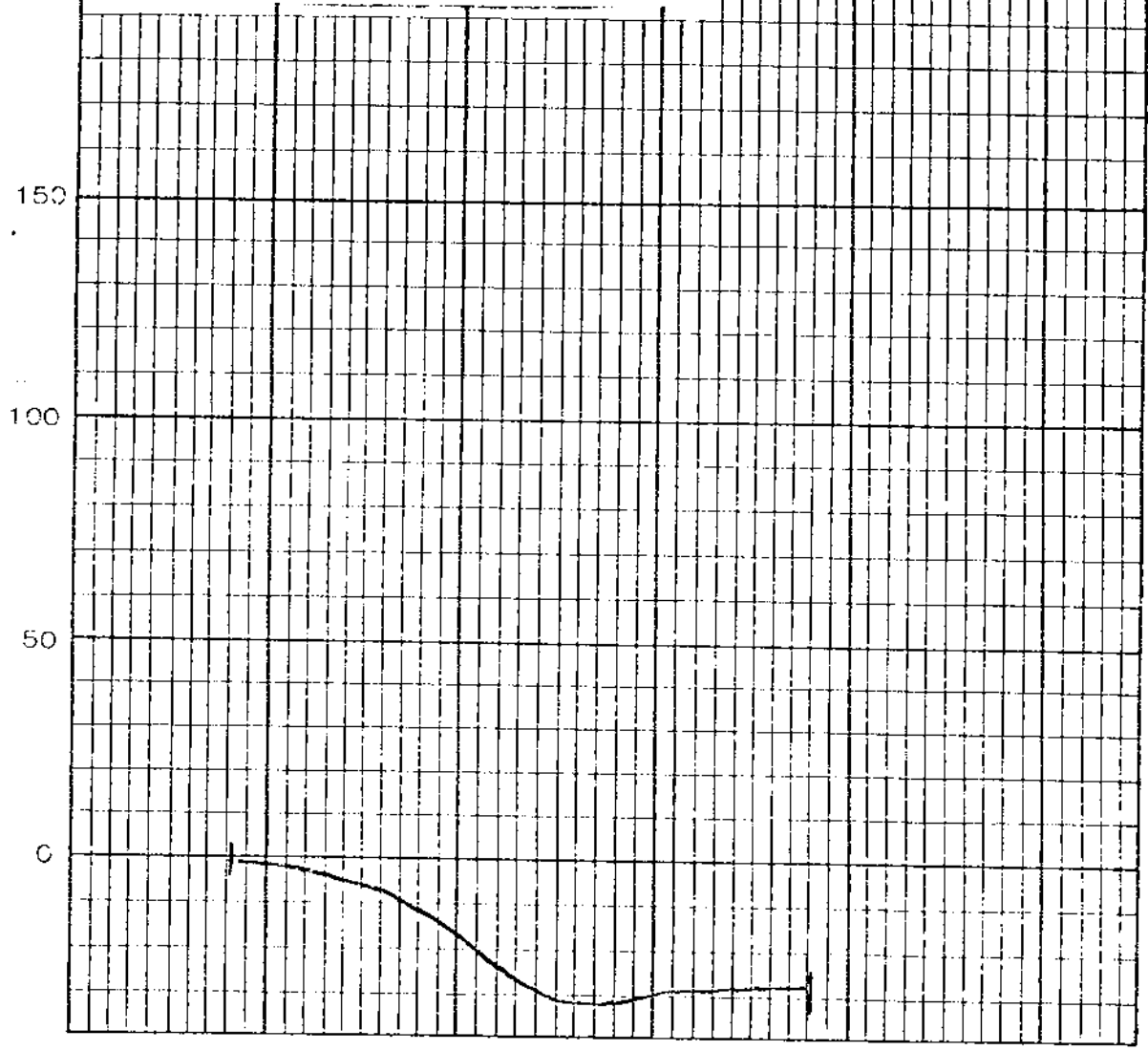
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	94.0	1.5	46.2	1.00	94.0	46.2	1.00	A.D.B.
	94.0	- -	46.9	1.02	94.0	46.9	1.02	D.B.
65 x 0	6.0	1.8	37.5	1.06	100.0	45.7	1.00	A.D.B.
	6.0	- -	38.1	1.08	100.0	46.4	1.02	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	34.2	1.8	5.5	39.3	55.2	0.99	34.2	5.5	A.D.B.
	34.2	- -	5.6	40.0	54.4	1.01	34.2	5.6	D.B.
1.40-1.50	3.3	1.6	22.5	34.8	42.7	1.31	37.5	6.9	A.D.B.
	3.3	- -	22.8	35.4	41.8	1.33	37.5	7.1	D.B.
1.50-1.60	2.8	1.4	31.6	- -	- -	- -	40.3	8.7	A.D.B.
	2.8	- -	32.0	- -	- -	- -	40.3	8.8	D.B.
+1.60	59.7	1.3	71.1	- -	- -	- -	100.0	45.9	A.D.B.
	59.7	- -	72.0	- -	- -	- -	100.0	46.5	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max. Dil.	Maximum	Maximum	G.No.
		Temp.(°C)	Temp.(°C)	Contr. %	Dil. %	
2½	0.009					

% Lab. No. 77-4333 Date: July 13/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 137 - 2
Starting Temperature °C: 350
Softening Temperature °C: 370
250 Max. Dilatation Temp. °C: 447
Contraction %: 32%
Dilatation %: -26%
Final Temperature °C: _____
200 G. Factor: 0.415



Warnock Hersey Professional Services Ltd.

RUPR DILATOMETER TEST

Date _____
Drawn _____

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 137 - 3 Lab. No.: 77 - 4334 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.6	56.8	19.2	24.0	1.29	50.4	Air Dried Basis
- -	57.7	19.5	22.8	1.31	- -	Dry Basis

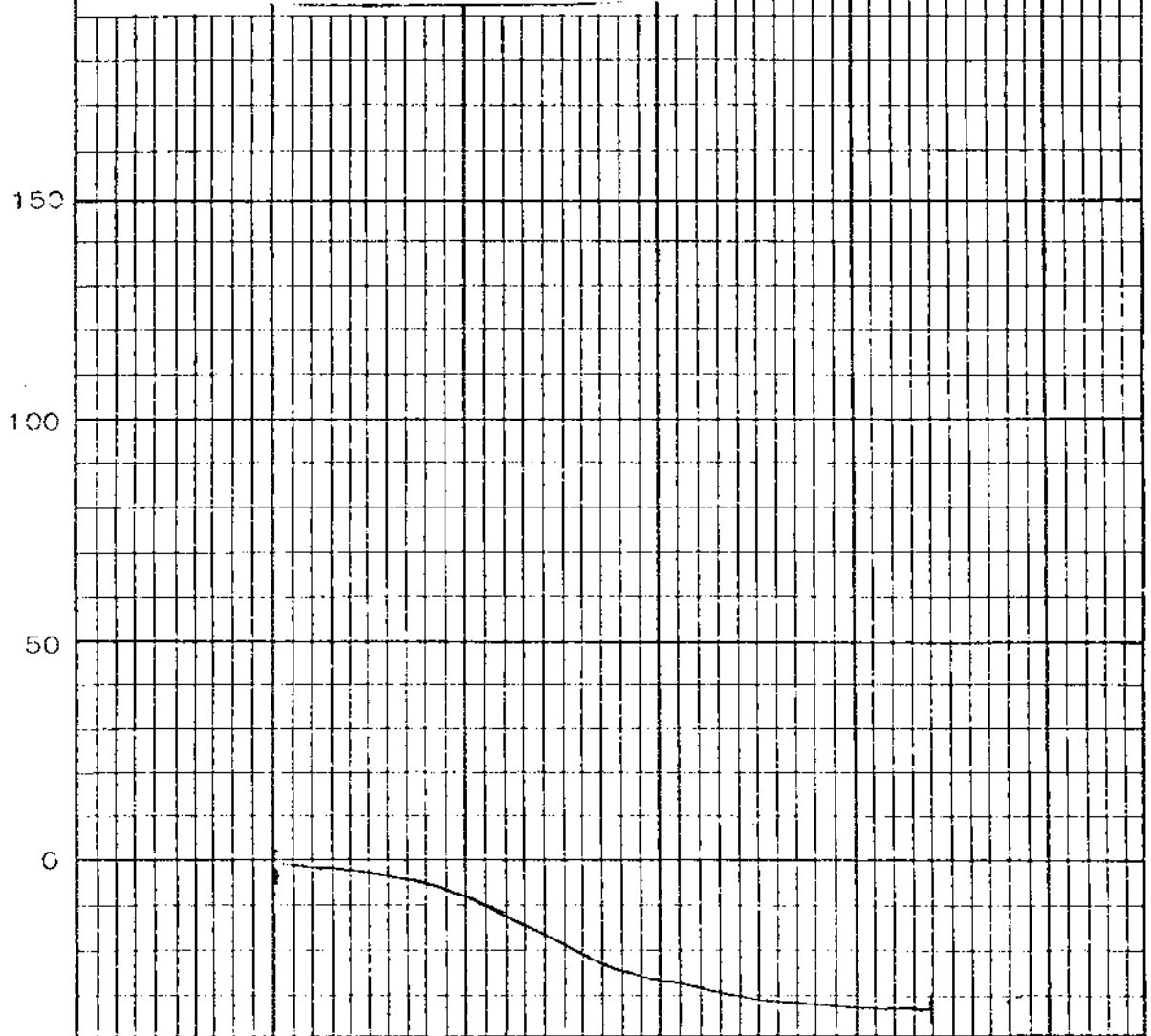
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	93.7	1.6	56.5	1.17	93.7	56.5	1.17	A.D.B.
	93.7	- -	57.4	1.19	93.7	57.4	1.19	D.B.
65 x 0	6.3	1.7	49.8	0.99	100.0	56.1	1.16	A.D.B.
	6.3	--	50.7	1.01	100.0	57.0	1.18	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	12.4	1.9	3.3	36.5	60.2	1.01	12.4	3.3	A.D.B.
	12.4	- -	3.4	37.2	59.4	1.03	12.4	3.4	D.B.
1.40-1.50	1.0	2.1	15.4	I.S.	- -	I.S.	13.4	4.2	A.D.B.
	1.0	- -	15.7	I.S.	---	I.S.	13.4	4.3	D.B.
1.50-1.60	1.0	1.8	27.4	- -	- -	- -	14.4	5.8	A.D.B.
	1.0	- -	27.9	- -	- -	- -	14.4	5.9	D.B.
+1.60	85.6	1.4	67.2	- -	- -	- -	100.0	58.3	A.D.B.
	85.6	- -	68.2	- -	- -	- -	100.0	59.2	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coat	Softening Temp.(°C)	Max.Dil. Temp.(°C)	Maximum Contr. %	Maximum Dil. %	G.No.
2½	0.007					

% Lab. No. 77-4334 Date: July 13/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 137 - 3
Starting Temperature °C: 350
Softening Temperature °C: 365
250 Max. Dilatation Temp. °C: _____
Contraction %: 34% @ 463°C
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATCMETER TEST

Date

Drawn

Warnock Hersey Professional Services Ltd.

ELCO MINING LTD.
CORE SAMPLE ANALYSIS

Hole No.: DH 137 - 4 Lab. No.: 77 - 4335 Date: June 9, 1977

HEAD RAW ANALYSIS						
R.M.%	Ash %	V.M.%	F.C.%	S.%	H.G.I.	REMARKS
1.5	47.5	27.7	23.3	0.60	70.5	Air Dried Basis
- -	48.3	28.1	23.6	0.61	- - -	Dry Basis

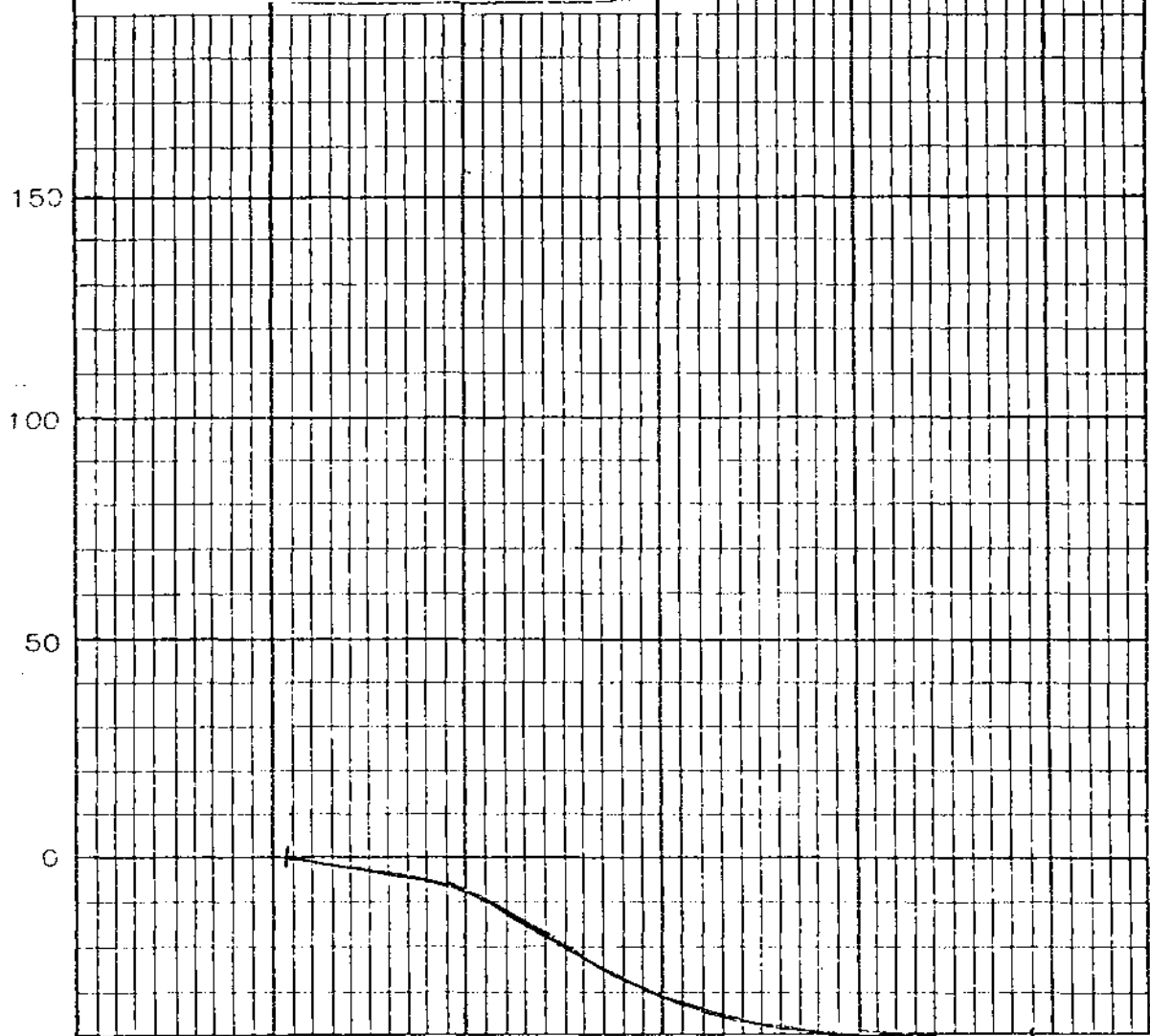
SIZE / RAW ANALYSIS								
Size Fraction	Wt.%	R.M.%	Ash %	S.%	CUMULATIVE			
					Wt.%	Ash %	S.%	
¼ x 65	87.6	1.6	48.0	0.64	87.6	48.0	0.64	A.D.B.
	87.6	- -	48.7	0.65	87.6	48.7	0.65	D.B.
65 x 0	12.4	2.0	34.2	0.70	100.0	46.3	0.65	A.D.B.
	12.4	- -	34.8	0.71	100.0	47.0	0.66	D.B.

SINK - FLOAT ANALYSIS: ¼" x 65 M									
S.G.	Wt.%	R.M.%	Ash%	V.M.%	F.C.%	S.%	Cumulative		
							Wt.%	Ash%	
-1.40	34.1	1.5	7.4	37.6	53.5	0.83	34.1	7.4	A.D.B.
	34.1	- -	7.6	38.2	54.2	0.84	34.1	7.6	D.B.
1.40-1.50	5.5	1.9	18.9	32.8	46.4	0.85	39.6	8.9	A.D.B.
	5.5	- -	19.3	33.4	47.3	0.87	39.6	9.2	D.B.
1.50-1.60	2.9	1.7	30.2	- -	- -	- -	42.5	10.4	A.D.B.
	2.9	- -	30.7	- -	- -	- -	42.5	10.7	D.B.
+1.60	57.5	1.0	73.8	- -	- -	- -	100.0	46.8	A.D.B.
	57.5	- -	74.6	- -	- -	- -	100.0	47.4	D.B.

COMPOSITE ¼" x 65 m FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P % on Coal	Softening	Max.Dil.	Maximum	Maximum	G.No.
		Temp.(°C)	Temp.(°C)	Contr.%	Dil. %	
3	0.029					

% Lab. No. 77-4335 Date: July 13/77

300 Client: Elco Mining Ltd.
Sample I. D.: DH 137 - 4
Starting Temperature °C: 350
Softening Temperature °C: 375
250 Max. Dilatation Temp. °C: _____
Contraction %: 41% @ 472°C
Dilatation %: _____
Final Temperature °C: _____
200 G. Factor: _____



Warnock Hersey Professional Services Ltd.

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-137-5 Lab. No. 9039 DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.3	31.3	34.3	33.1	0.74	46	Air Dried Basis
	31.7	34.8	33.5	0.75	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.3	1.4	32.0	0.76	96.3	32.0	0.76	A.D.B.
	96.3		32.5	0.77	96.3	32.5	0.77	D.B.
65M x 0	3.7	1.6	32.2	0.83	100.0	32.0	0.76	A.D.B.
	3.7		32.7	0.84	100.0	32.5	0.77	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	55.8	1.6	10.9	43.0	44.5	0.90	55.8	10.9	A.D.B.
	55.7		11.1	43.7	45.2	0.91	55.7	11.1	D.B.
1.40-1.50	10.6	1.2	29.4	37.6	31.8	0.72	66.4	13.9	A.D.B.
	10.6		29.8	38.1	32.1	0.73	66.3	14.1	D.B.
1.50-1.60	4.2	1.5	35.5				70.6	15.1	A.D.B.
	4.2		36.0				70.5	15.4	D.B.
+1.60	29.4	1.1	73.8				100.0	32.4	A.D.B.
	29.5		74.6				100.0	32.9	D.B.

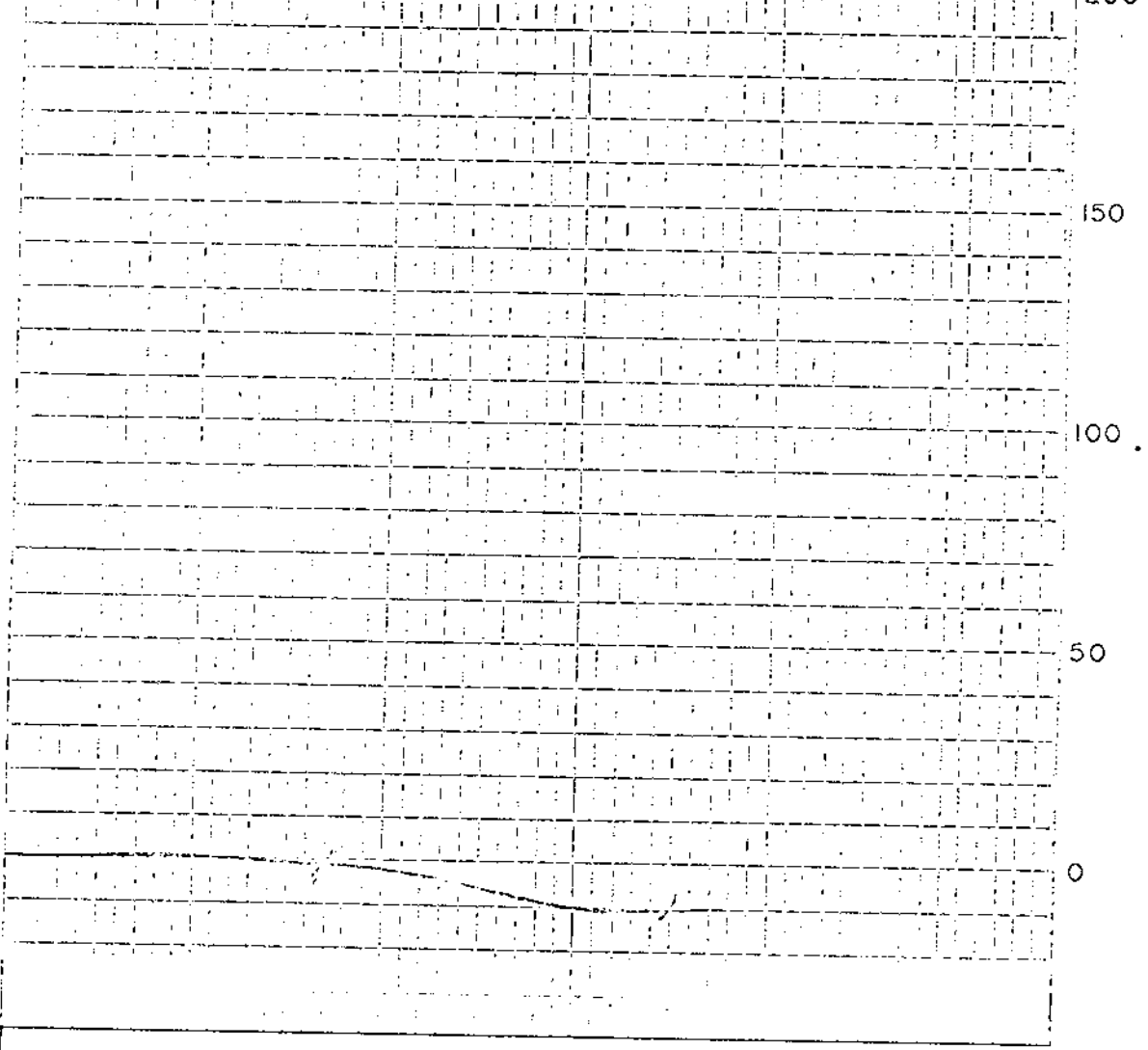
COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.* (°C)	MAX. DIL. TEMP.* (°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
1	0.17	371	425	11	- 9	0.596

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 9038 Date May 19, 1977 %
 Client: ELCO MINING LTD. 300
 Sample Identification: DH-137-5
 Starting Temperature °C: 320
 Softening Temperature °C: 371
 Max. Dilatation Temp. °C: 425 250
 Contraction %: 11
 Dilatation %: - 9
 Final Temperature °C: _____
 G. Factor: 0.596 200



DIRTLEY ENGINEERING (CANADA) LTD.

Title RUHR DILATOMETER TEST

Date _____
 Drawn _____

ELCO MINING LTD.

CORE SAMPLE ANALYSIS

HOLE NO.: DH-137-6

Lab.No. 9040

DATE: May/77

HEAD RAW ANALYSIS						
R.M. %	ASH %	V.M. %	F.C. %	S. %	H.G.I.	REMARKS
1.0	59.1	20.1	19.8	0.51	63	Air Dried Basis
	59.7	20.3	20.0	0.52	--	Dry Basis

SIZE / RAW ANALYSES								
SIZE FRACTION	WT. %	R.M. %	ASH %	S. %	CUMULATIVE			
					WT. %	ASH %	S. %	
1/4" x 65M	96.5	1.0	59.9	0.52	96.5	59.9	0.52	A.D.B.
	96.5		60.5	0.53	96.5	60.5	0.53	D.B.
65M x 0	3.5	1.5	41.5	0.69	100.0	59.3	0.53	A.D.B.
	3.5		42.1	0.70	100.0	59.9	0.54	D.B.

SINK - FLOAT ANALYSIS: 1/4" x 65M									
S. G.	WT. %	R.M. %	ASH %	V.M. %	F.C. %	S. %	CUMULATIVE		
							WT. %	ASH %	
-1.40	24.3	0.8	8.5	41.0	49.7	0.89	24.3	8.5	A.D.B.
	24.4		8.6	41.3	50.1	0.90	24.4	8.6	D.B.
1.40-1.50	3.5	0.9	20.0	36.5	42.6	0.80	27.8	10.0	A.D.B.
	3.5		20.2	36.8	43.0	0.81	27.9	10.1	D.B.
1.50-1.60	2.4	0.9	30.1				30.2	11.5	A.D.B.
	2.4		30.4				30.3	11.7	D.B.
+1.60	69.8	1.1	80.8				100.0	59.9	A.D.B.
	69.7		81.7				100.0	60.5	D.B.

COMPOSITE 1/4" x 65M FLOATS @ 1.50 S.G., A.D.B.						
F.S.I.	P% ON COAL	DILATATION TEST (Initial Temp.=320°C)				
		SOFTENING TEMP.*(°C)	MAX. DIL. TEMP.*(°C)	MAXIMUM CONTR. %	MAXIMUM DIL. %	G. NO.
2 1/2	0.02	377	428	25	- 24	0.244

* S.T. & M.D.T. corrected with factor 6/5

Birtley Engineering

Subsidiary of Great West Steel Industries

Lab. No. 9040 Date May 19, 1977

%
300

Client: ELCO MINING LTD

Sample Identification: DH-137-6

Starting Temperature °C: 350

Softening Temperature °C: 377

Max. Dilatation Temp. °C: 428

Contraction %: 25

Dilatation %: - 24

Final Temperature °C:

G. Factor: 0.244

250

200

150

100

50

0



BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

ELCO MINING LTD.

1.6 FLOAT %

ELK RIVER CORE SAMPLES

LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.	LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.
7882	DH-74-1	67.6	7926	DH-76-1	85.3
7883	DH-74-2	65.4	7927	DH-76-2	56.7
7884	DH-74-3	17.9	7928	DH-76-3	73.6
7885	DH-74-4	72.2	7929	DH-76-4	26.4
			7930	DH-76-5	58.3
7898	DH-59-1	84.8	7931	DH-76-6	74.0
7899	DH-59-2	85.7	7932	DH-76-7	80.4
7900	DH-59-3	22.0	7933	DH-76-8	32.3
7901	DH-59-4	15.8			
7902	DH-59-5	85.3	7934	DH-78-1	56.1
7903	DH-59-6	84.8	7935	DH-78-2	53.3
			7936	DH-78-3	53.3
7904	DH-71-1	74.9	7937	DH-78-4	47.6
7905	DH-71-2	61.1	7938	DH-78-5	98.8
7906	DH-71-3	32.7			
7907	DH-71-4	53.7	7939	DH-60-1	84.1
7908	DH-71-5	60.1	7940	DH-60-2	77.9
7909	DH-71-6	82.4	7941	DH-60-3	85.0
7910	DH-71-7	68.0	7942	DH-60-4	70.5
			7943	DH-60-5	51.3
7914	DH-72-1	63.7			
7915	DH-72-2	52.3	7944	R-76-1-1	69.3
7916	DH-72-3	41.5	7945	R-76-1-2	6.6
7917	DH-72-4	32.9			
7918	DH-72-5	74.2	7963	R-76-2-3	27.8
			7964	R-76-2-4	5.8
7919	DH-73-1	51.1			
7920	DH-73-2	72.7	7965	DH-42-1	93.8
7921	DH-73-3	60.1	7966	DH-42-2	95.3
7922	DH-73-4	26.3	7967	DH-42-3	69.0
7923	DH-73-5	11.7	7968	DH-42-4	41.0
7924	DH-73-6	77.0	7969	DH-42-5	85.6
7925	DH-73-7	27.6	7970	DH-42-6	68.8

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.	LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.
7971	DH-42-7	41.7	8000	DH-68-1	92.0
			8001	DH-68-2	81.0
7972	DH-45-1	70.2	8002	DH-68-3	50.4
7973	DH-45-2	85.9	8003	DH-68-4	40.6
7974	DH-45-3	76.1	8004	DH-68-5	79.4
7975	DH-45-4	83.4	8005	DH-68-6	72.4
7975	DH-45-5	83.4			
			8011	DH-40-1	40.9
7977	DH-48-1	66.8	8012	DH-40-2	80.9
7978	DH-48-2	74.1	8013	DH-40-3	64.2
7979	DH-48-3	95.7	8089	DH-40-4	85.7
			8014	DH-40-5	88.2
7980	DH-53-1	57.3	8015	DH-40-6	57.6
7981	DH-53-2	35.5	8016	DH-40-7	87.8
7982	DH-53-3	95.6	8017	DH-40-8	41.5
7983	DH-53-4	6.3	8018	DH-40-9	50.9
7984	DH-53-5	89.9	8019	DH-40-10	74.8
7985	DH-53-6	86.7			
7986	DH-53-7	30.5	8020	DH-43-1	94.8
7987	DH-53-8	78.7	8021	DH-43-2	74.8
7988	DH-57-1	66.6	8022	DH-44-1	76.0
7989	DH-57-2	59.5	8023	DH-44-2	88.7
7990	DH-57-3	46.8	8024	DH-44-3	86.1
7991	DH-57-4	81.5			
7992	DH-57-5	85.7	8025	DH-47-1	45.7
7993	DH-57-6	86.8	8026	DH-47-2	60.0
7994	DH-57-7	36.2	8027	DH-47-3	42.6
7995	DH-57-8	73.0	8028	DH-47-4	52.2
			8029	DH-47-5	53.7
7996	DH-58-1	54.0	8030	DH-47-6	45.2
7997	DH-58-2	92.5	8031	DH-47-7	90.8
7998	DH-58-3	75.2	8032	DH-47-8	86.1
7999	DH-58-4	97.6	8033	DH-47-9	72.1

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

LAB. NO.	HOLE NO.	%YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.	LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60S.G.
8034	DH-47-10	76.7	8217	DH-52-1	72.4
8035	DH-47-11	75.1	8218	DH-52-2	78.7
8036	DH-47-12	94.9	8219	DH-52-3	84.9
			8220	DH-52-4	87.1
8037	DH-49-1	90.9	8221	DH-52-5	87.5
8038	DH-49-2	65.5	8222	DH-52-6	57.9
8039	DH-49-3	90.5	8223	DH-52-7	58.5
8040	DH-49-4	90.8			
8041	DH-56-1	74.1			
8042	DH-56-2	46.2			
8043	DH-56-3	86.3			
8044	DH-56-4	63.0			
8045	DH-56-5	64.6			
8046	DH-56-6	78.4			
8202	DH-26-1	80.1			
8203	DH-26-2	81.6			
8204	DH-26-3	91.8			
8205	DH-26-4	96.7			
8206	DH-26-5	81.3			
8207	DH-27-1	82.0			
8208	DH-27-2	97.2			
8209	DH-27-3	85.7			
8210	DH-27-4	93.0			
8211	DH-27-5	79.6			
8212	DH-33-1	90.8			
8213	DH-33-2	73.0			
8214	DH-33-3	52.3			
8215	DH-33-4	91.7			
8216	DH-33-5	60.7			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60SG	LAB. NO.	HOLE NO.	% YIELD, DRY BASIS 1/4"x65M FLOAT @ 1.60SG
8225	DH-24-1	45.4	8257	DH-123-12	83.0
8226	DH-24-2	62.7	8258	DH-123-13	57.8
8227	DH-24-3	67.3	8259	DH-123-14	19.3
8228	DH-24-4	96.3	8260	DH-123-15	62.0
8229	DH-24-5	62.2			
8230	DH-24-6	29.1	8261	DH-124-1	42.3
8231	DH-24-7	96.2	8262	DH-124-2	9.6
8232	DH-24-8	35.2	8263	DH-124-3	55.4
8233	DH-24-9	65.3	8264	DH-124-4	36.7
8234	DH-24-10	57.4	8265	DH-124-5	53.4
8235	DH-24-11	57.2	8266	DH-124-6	26.3
8236	DH-24-12	70.3	8267	DH-124-7	83.0
			8268	DH-124-8	45.6
8237	DH-41-1	74.2	8269	DH-124-9	78.9
8238	DH-41-2	93.7	8270	DH-124-10	48.2
8239	DH-41-3	81.1	8271	DH-124-11	91.8
8240	DH-41-4	87.7	8272	DH-124-12	90.7
8241	DH-41-5	44.9	8273	DH-124-16	31.7
8242	DH-41-6	79.6	8274	DH-124-17	34.5
8243	DH-41-7	82.2			
8244	DH-41-8	81.4	8275	DH-123-10 (large)	40.5
8245	DH-41-9	89.7			
8246	DH-41-11	51.1	8276	DH-123-10 (small)	78.3
8247	DH-123-1	76.6			
8248	DH-123-2	21.7			
8249	DH-123-3	75.3			
8250	DH-123-4	37.2			
8251	DH-123-5	78.4			
8252	DH-123-6	61.1			
8253	DH-123-7	33.4			
8254	DH-123-8	66.1			
8255	DH-123-9	36.4			
8256	DH-123-11	91.2			

Birdley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

1/4" x 65M FLOAT @ 1.60 S.G.					
LAB. NO.	HOLE NO.	% YIELD DRY BASIS	LAB. NO.	HOLE NO.	% YIELD DRY BASIS
8351	DH-35-1	63.2	8377	DH-128-7	45.8
8352	DH-35-2	38.1	8378	DH-128-8	88.4
8353	DH-35-3	65.0	8379	DH-128-9	85.1
8354	DH-35-4	86.0	8380	DH-128-10	64.2
8355	DH-35-5	80.5	8381	DH-128-11	65.0
			8382	DH-128-12	69.3
8356	DH-82-1	94.9	8383	DH-128-13	84.9
8357	DH-82-2	85.1	8384	DH-128-14	78.8
8358	DH-82-3	42.1			
8359	DH-82-4	43.3			
8360	DH-82-5	26.2			
8361	DH-82-6	58.2			
8362	DH-82-7	16.8			
8363	DH-82-8	84.8			
8364	DH-82-9	75.9			
8365	DH-82-10	99.1			
8366	DH-82-11	86.4			
8367	DH-82-12	53.9			
8368	DH-126-1	69.2			
8369	DH-126-2	24.4			
8370	DH-126-3	46.7			
8371	DH-128-1	30.8			
8372	DH-128-2	6.3			
8373	DH-128-3	11.8			
8374	DH-128-4	14.1			
8375	DH-128-5	54.6			
8376	DH-128-6	63.7			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

1/4" x 65M FLOAT @ 1.60 S. G.					
LAB. NO.	HOLE NO.	% YIELD DRY BASIS	LAB. NO.	HOLE NO.	% YIELD DRY BASIS
8429	DH-36-1	56.4			
8430	DH-36-2	31.7			
8431	DH-127-1	63.8			
8432	DH-127-2	84.8			
8433	DH-127-3	84.2			
8434	DH-127-4	74.1			
8435	DH-127-5	21.5			
8436	DH-129-1	95.9			
8437	DH-129-2	75.7			
8438	DH-129-3	58.4			
8439	DH-129-4	87.7			
8440	DH-129-5	82.1			
8441	DH-129-6	85.5			
8442	DH-129-7	94.9			
8443	DH-129-8	66.9			
8444	DH-129-9	96.7			
8445	DH-129-10	79.7			
8446	DH-129-11	84.1			
8447	DH-130-1	19.4			
8448	DH-130-2	38.2			
8449	DH-130-3	75.7			
8450	DH-130-4	71.7			
8451	DH-130-5	63.8			
8452	DH-130-6	94.4			
8453	DH-130-7	81.8			
8454	DH-130-8	84.9			
8455	DH-130-9	97.8			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.
ELK RIVER CORE SAMPLES

1/4" x 65M FLOAT @ 1.60 S.G.					
LAB. NO.	HOLE NO.	% YIELD DRY BASIS	LAB. NO.	HOLE NO.	% YIELD DRY BASIS
8470	DH-29-1	83.0	8494	DH-132-3	34.2
			8495	DH-132-4	64.4
8471	DH-36-3	81.5	8496	DH-132-5	67.3
8472	DH-36-4	86.0	8497	DH-132-6	52.4
8473	DH-36-5	80.7	8498	DH-132-7	86.6
			8499	DH-132-8	18.6
8474	DH-37-1	92.4	8500	DH-132-9	56.0
8475	DH-37-2	77.9	8501	DH-132-10	71.0
8476	DH-37-3	47.2	8502	DH-132-11	64.5
8477	DH-37-4	66.3	8503	DH-132-12	76.1
8478	DH-37-5	76.1			
8479	DH-37-6	84.4	8504	DH-127-6	76.2
			8505	DH-127-7	8.7
8480	DH-129-12	73.8	8506	DH-127-8	87.1
8481	DH-129-13	29.6			
8482	DH-129-14	57.3			
8483	DH-130-10	93.4			
8484	DH-131-1	51.1			
8485	DH-131-2	97.5			
8486	DH-131-3	96.3			
8487	DH-131-4	59.1			
8488	DH-131-5	83.4			
8489	DH-131-6	25.9			
8490	DH-131-7	83.7			
8491	DH-131-8	87.6			
8492	DH-132-1	74.2			
8493	DH-132-2	70.7			

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

1/4" x 65M FLOAT @ 1.60 S.G.					
LAB. NO.	HOLE NO.	% YIELD DRY BASIS	LAB. NO.	HOLE NO.	% YIELD DRY BASIS
8512	DH-29-2	80.4			
8513	DH-29-3	67.6			
8514	DH-29-4	49.3			
8515	DH-29-5	92.4			
8516	DH-29-6	70.1			
8517	DH-29-7	83.1			
8518	DH-30-1	85.1			
8519	DH-30-2	62.6			
8520	DH-30-3	76.1			
8521	DH-30-4	25.2			
8522	DH-30-5	88.5			
8523	DH-30-6	60.0			
8524	DH-125-1	45.9			
8525	DH-125-2	20.9			
8526	DH-125-3	89.9			
8527	DH-37-7	30.1			
8528	DH-37-8	79.5			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

March/77

1/4" x 65 M FLOAT @ 1.60 S.G.					
LAB. NO.	HOLE/SAMPLE	% YIELD DRY BASIS	LAB. NO.	HOLE/SAMPLE	% YIELD DRY BASIS
8542	R-77-17-1	30.6	8571	R-77-19-3	77.4
8543	R-77-17-2	42.1	8572	R-77-19-4	26.6
8544	R-77-17-3	45.9	8573	R-77-19-5	61.5
8545	R-77-17-4	87.8	8574	R-77-19-6	13.1
8546	R-77-17-5	64.5			
8547	R-77-17-6	20.5			
8548	R-77-17-7	76.1			
8549	R-77-17-8	50.9			
8550	R-77-17-9	60.6			
8551	R-77-17-10	9.1			
8552	R-77-17-11	67.4			
8553	R-77-17-12	42.9			
8554	R-77-18-1	32.6			
8555	R-77-18-2	84.8			
8556	R-77-18-3	21.7			
8557	R-77-18-4	69.0			
8558	R-77-18-5	93.2			
8559	R-77-18-6	65.7			
8560	R-77-18-7	58.2			
8561	R-77-18-8	69.8			
8562	R-77-18-9	66.5			
8563	R-77-20-1	43.9			
8564	R-77-20-2	61.3			
8565	R-77-20-3	72.3			
8566	R-77-20-4	64.5			
8567	R-77-20-5	25.2			
8568	R-77-20-6	76.0			
8570	R-77-19-2	29.1			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

1/4" x 65M FLOAT @ 1.60 S.G.					
LAB. NO.	HOLE NO.	% YIELD DRY BASIS	LAB. NO.	HOLE NO.	% YIELD DRY BASIS
8652	DH-1-1	74.8	8680	DH-22-11	69.3
8653	DH-1-2	44.6	8681	DH-133-3	84.9
8654	DH-10-1	71.8	8682	DH-133-4	78.3
8655	DH-10-2	87.9	8683	DH-133-5	18.3
8656	DH-10-3	74.9	8684	DH-133-6	86.0
8657	DH-10-4	76.5	8685	DH-133-7	91.5
8658	DH-10-5	81.7			
8659	DH-10-6	75.4			
8660	DH-18-1	82.9			
8661	DH-18-2	88.4			
8662	DH-18-3	75.4			
8663	DH-18-4	44.5			
8664	DH-18-5	73.6			
8665	DH-18-6	66.6			
8666	DH-18-7	93.2			
8667	DH-18-8	91.8			
8668	DH-18-9	83.7			
8669	DH-19-1	51.6			
8670	DH-19-2	74.2			
8671	DH-19-3	34.9			
8772	DH-19-4	46.7			
8773	DH-19-5	52.0			
8774	DH-19-6	85.1			
8775	DH-19-7	72.1			
8776	DH-19-8	89.2			
8777	DH-19-9	54.7			
8678	DH-19-10	82.7			
8679	DH-22-10	87.9			

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

April/77

CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS	CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS
8710	7-77-24-1	72.0	8739	R-77-9-2 ✓	54.0
8711	R-77-24-2	48.2	8740	R-77-9-3	78.1
8712	R-77-24-3	29.8	8741	R-77-9-4	17.8
8713	R-77-24-4	16.9	8742	R-77-9-5	24.3
8714	R-77-24-5	51.8			
8715	R-77-24-6	64.5			
8716	R-77-24-7	57.9			
8717	R-77-24-8	33.1			
8718	R-77-24-9	73.8			
8719	R-77-24-10	80.7			
8720	R-77-15-3	38.1			
8721	R-77-15-4	59.9			
8722	R-77-15-5	49.4			
8723	R-77-15-6	12.6			
8724	R-77-15-7	65.2			
8725	R-77-15-8	7.6			
8726	R-77-15-9	18.5			
8727	R-77-15-10	65.2			
8728	R-77-12-4	58.6			
8729	R-77-12-5	10.6			
8730	R-77-12-6	34.0			
8731	R-77-12-7	36.3			
8732	R-77-12-8	63.3			
8733	R-77-12-9	28.9			
8734	R-77-12-10	42.7			
8735	R-77-12-13	30.7			
8736	R-77-12-14	4.5			
8737	R-77-12-15	6.7			
8738	R-77-9-1	31.1			

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ELCO MINING LTD.

ELK RIVER CORE SAMPLES

April/77

CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS	CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS
8808	DH-2-1	69.0	8836	R-77-11-3	43.8
			8837	R-77-11-4	51.1
8809	DH-4-1	87.6	8838	R-77-11-5	75.8
8810	DH-4-2	53.3	8839	R-77-11-6	56.1
8811	DH-4-3	55.7			
8812	DH-4-4	76.0	8840	R-77-27-1	53.9
8813	DH-4-5	67.0	8841	R-77-27-2	39.6
8814	DH-4-6	52.3	8842	R-77-27-3	56.2
8815	DH-4-7	66.2	8843	R-77-27-4	45.9
8816	DH-4-8	43.5	8844	R-77-27-5	36.6
8817	DH-4-9	89.4	8845	R-77-27-6	22.1
8818	DH-4-10	74.9	8846	R-77-27-7	23.8
8819	DH-4-11	65.3	8847	R-77-27-8	71.1
8820	DH-4-12	92.4	8848	R-77-27-9	75.9
8821	DH-12-1	61.2	8849	R-77-10-1	49.3
8822	DH-12-2	93.0			
8823	DH-12-3	66.6	8850	R-77-6-1	10.9
8824	DH-12-4	31.7	8851	R-77-6-2	11.3
8825	DH-12-5	54.8	8852	R-77-6-3	61.4
8826	DH-12-6	94.2	8853	R-77-6-4	54.0
8827	DH-12-7	84.7	8854	R-77-6-5	9.0
8828	DH-12-8	79.2			
8829	DH-12-9	73.1			
8830	DH-12-10	78.2			
8831	DH-12-11	82.2			
8832	DH-134-2	31.6			
8833	DH-134-3	54.1			
8834	DH-77-11-1	86.7			
8835	DH-77-11-2	47.3			

Birtley Engineering

Subsidiary of Great West Steel Industries

ELCO MINING LTD.

ELK RIVER CORE SAMPLES

April/77

1/4"x65M Float @ 1.60 S.G.

CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS	CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS
8859	DH-2-2	45.1	8887	DH-12-14	64.5
8860	DH-2-3	65.8			
8861	DH-2-4	75.0	8888	DH-13-1	95.5
8862	DH-2-5	71.9	8889	DH-13-2	96.2
8863	DH-2-6	18.7	8890	DH-13-3	77.7
8864	DH-2-7	66.0	8891	DH-13-4	52.5
8865	DH-2-8	68.9	8892	DH-13-5	93.5
			8893	DH-13-6	81.2
8866	DH-4-13	52.8	8894	DH-13-7	47.5
8867	DH-4-14	72.8	8895	DH-13-8	94.8
			8896	DH-13-9	75.8
8868	DH-5-1	71.5	8897	DH-13-10	67.3
8869	DH-5-2	58.3	8898	DH-13-11	71.9
8870	DH-5-3	93.6	8899	DH-13-12	83.9
8871	DH-5-4	79.1			
8872	DH-5-5	69.2	8900	DH-14-1	47.0
8873	DH-5-6	68.5	8901	DH-14-2	91.8
8874	DH-5-7	88.6	8902	DH-14-3	98.3
8875	DH-5-8	63.8	8903	DH-14-4	95.3
8876	DH-5-9	38.1	8904	DH-14-5	81.1
8877	DH-5-10	72.3	8905	DH-14-6	59.5
8878	DH-5-11	88.9	8906	DH-14-7	78.
			8907	DH-14-8	44.4
8879	DH-6-1	84.4	8908	DH-14-9	88.9
8880	DH-6-2	73.2	8909	DH-14-10	52.3
8881	DH-6-3	47.9	8910	DH-14-11	96.9
8882	DH-6-4	85.6			
8883	DH-6-5	66.9	8911	DH-102-1	71.7
8884	DH-6-6	96.0	8912	DH-102-2	58.8
			8913	DH-102-3	81.8
8885	DH-12-12	76.0	8914	DH-102-4	79.6
8886	DH-12-13	78.8	8915	DH-102-5	40.9

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ELK RIVER CORE SAMPLES

April/77

1/4"x65M Float @ 1.60 S.G.

CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS	CS&MT LAB. NO.	ELCO HOLE/SAMPLE	% YIELD DRY BASIS
8916	DH-135-1	75.3			
8917	DH-135-2	71.5			
8918	DH-135-3	57.4			
8919	DH-135-4	68.1			
8920	DH-135-5	83.0			
8921	DH-135-6	92.3			
8922	DH-135-7	80.7			
8923	DH-135-8	67.8			
8924	DH-135-9	73.8			
8925	DH-135-10	89.8			
8926	DH-135-11	42.2			
8927	DH-135-12	71.5			
8928	DH-135-13	36.7			
8929	DH-135-14	63.5			
8930	DH-135-15	91.2			
8931	DH-135-16	59.5			
8967	R-77-5-6	12.4			
8968	R-77-5-7	13.9			
8969	R-77-5-8	48.6			
8970	R-77-7-4	14.8			
8971	R-77-7-5	5.4			
8972	R-77-7-6	40.2			