PR-SUKUNKA 77(4)A.

COAL QUALITY INVESTIGATIONS.

BOOK 2 of 3 PHASE I 1977.

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## SECTION 3 APPENDICES

### BULK SAMPLE PROGRAM



Appendix 1 Description of Procedures

Appendix 2 Analytical Program Detailed Results

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| Tables 80 - 101 | Sukunka #1 Mine/Chamberlain Seam |
| Tables 102 - 123 | Sukunka Main Mine/Chamberlain Seam |
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Appendix 3 Petrographic Testing Results

SECTION 3 APPENDIX 1

BULK SAMPLE PROGRAM

DESCRIPTION OF PROCEDURES

I N D E X





Exhibits at end of Appendix

SECTION 3 APPENDIX 1

# BULK SAMPLE PROGRAM
# DESCRIPTION OF PROCEDURES

1. Bulk samples were obtained from three locations within existing mine workings and one from an adit driven specifically for this purpose. The locations of the sampling points are shown in Exhibits K to O, and were from the following seams:

| | | |
|---|---|---|
| Chamberlain Seam | - | Sukunka No. 1 Mine |
| Skeeter Seam | - | Sukunka No. 1 Mine |
| Chamberlain Seam | - | Sukunka Main Mine |
| Bird Seam | - | Saddle Creek Adit |

A channel sample was also obtained from the Chamberlain Seam from an adit driven in the Saddle Creek area.

2. Underground samples

2.1 The original intention was to use continuous miners and shuttle cars to cut and transport the bulk samples, using B.P. personnel. In the event this was not possible, so B.P. contracted Thyssen Mining Construction of Canada to obtain the samples under Intermin supervision.

A Dosco Mark IIA heading machine was used to cut the sample while an Eimco 913-LHD load haul dumper was used to transport the sample from the face to the surface.

2.2 Skeeter Seam - Sukunka No.1 Mine

Coal sampled Friday, September 30, 1977. The machines were trammed to the face and the Dosco used to clean the face of exposed coal. The method of operation of the Dosco is such that the face becomes concave in shape. The amount of coal

removed to ensure the bulk sample was unoxidized was therefore variable between 4 feet at the sides increasing to 7 feet in the centre.

Prior to sampling, the floor adjacent to the face was cleaned up using handshovels. The Dosco and the Eimco shovel were cleaned out.

The Dosco was operated in the following manner during sampling. The cutting head bored approximately 2 feet deep into the top centre of the face, and about 2 feet below the roof, then arced horizontally to both sides. It then cut down 2 feet before taking another horizontal slice. This continued until the floor was reached. The Dosco cutting head was skimmed along the floor, although the head tended to bounce off the floor. Finally, the coal along the roof was cut to the clear parting.

Meantime, the coal sample was loaded directly into the Eimco shovel by the Dosco loading conveyor, and transported to the surface of the mine. It was then tipped over a ramp into a truck. The raw coal remaining at the face was cleaned up by hand shovel.

The Dosco was then used to make two vertical cuts 12" apart to leave a pillar of coal for sampling and description by B.P. Geologist.

The entire sample comprising approximately 20 tons of coal was loaded into two trucks which when filled were covered with tarpaulins and driven to Chetwynd and parked overnight.

The following day the trucks were weighed full and then discharged onto an area of clean plywood sheets, (overlapped and

nailed together). The trucks were then weighed empty so that the weight of coal sample could be calculated.

Clean drums lined with plastic bags were placed in a circle around the pile of coal. The sample was then loaded into the drums by hand shovel. Three men worked moving around the pile loading the coal in the following manner: -

| | | |
|---|---|---|
| First shovel load | - | sample drum |
| Second shovel load | - | discarded |
| Third shovel load | - | reserve sample drum |
| Fourth shovel load | - | discarded |

When the drums were full they were labelled inside the plastic bags, sealed with wire ties and lever type lids fixed. Reference numbers were painted on the outside of the drum. The drums were then loaded by front-end loader into a trailer and transported by road to the Birtley Coal Science Laboratory at Calgary for testing.

2.2.1 For this bulk sample the cutting picks of the Dosco were very blunt, consequently, a greater proportion of fines than in average production could be expected.

2.2.2 Operation of the Dosco was intermittent due to:

(a) Electrical power problems.
(b) Difficulty maintaining cutting sprays free from blockage, and lack of water pressure.
(c) Difficulties with Eimco loader and -
(d) Time required for loader to transport sample to surface.

It is considered that this would have little or no effect on the quality of the sampled coal.

2.2.3 Approximate dimensions of the sample take are:

6' 11" Seam thickness
13' Wide cut
6' Advance

2.2.4 Weight of sample prior to subdivision was 40,520 lbs.

2.3 Chamberlain Seam - Sukunka Main Mine

Coal sampled Monday, October 3rd, 1977.

The method of sampling was identical to that for the Skeeter Seam (Section 2.2) except where stated below.

2.3.1 New picks for the Dosco were available and fitted shortly after the start of sampling. After the change there was a visible decrease in the quantity of fines produced.

2.3.2 The sampling operation was continuous except for the delays for the Loader to transport the coal sample to the surface, and return. The electrical/spray problems of the first sample did not occur.

2.3.3 The face was cleaned off to: -

4' advance left hand side
6' advance right hand side
9' advance in centre

2.3.4 The approximate dimensions of the sample take are: -

10' seam thickness
12' Wide cut
4' Advance

2.3.5 Weight of sample prior to subdivision was 30,400 lbs.

Due to this lower quantity of new sample the subdivision procedure was slightly changed so that every third shovelfull was discarded where in the previous test every alternate shovelfull was discarded.

2.4 Chamberlain Seam - Sukunka No. 1 Mine

Coal sampled on Wednesday, October 5, 1977.

Again a similar procedure was followed to obtain the sample but subsequent handling was slightly different. Instead of trucking the coal sample to Chetwynd for sub-division, it was handled at the Sukunka No.1 mine. The sample was dumped onto the cleaned floor of the machine shop and subdivided the following day, loaded into drums and then directly into the trailer for transport to Calgary.

2.4.1 Weight of sample prior to subdivision estimated at 40,000 lbs., therefore, alternate shovel loads were discarded.

2.4.2 Due to circumstances outside their control, Intermin were not present when the sample was taken, and therefore, we cannot accept responsibility for the accuracy of sampling. However, we are confident, from subsequent inspection of the sampling site, that the sample was taken in a representative manner after the face had been adequately cleaned off.

3.0 Adit Samples - Bird Seam - Saddle Creek

3.1.1 Messrs. Thyssen Mining Construction were contracted by B.P. to drive an adit into the Bird Seam from the outcrop location shown in Exhibit O.

While the adit was being driven, grab samples were taken and flown to Calgary for analysis of coking properties to indicate when the oxidized zone had been passed. At the same time, F.S.I. measurements on sections of the seam were done by B.P. Geologists at the Exploration site. The results of these tests are shown in Table 79.
A visual inspection of the seam was also made at regular intervals for signs of weathering.

3.1.2 When the adit had been driven in 160 feet, the decision was made to sample the coal seam based on the following circumstances: -

3.1.2.1 Coking tests, based on the grab samples, showed little significant improvement. In fact, dilation results were inconsistent due, it is thought, to the accuracy of the grab sampling method.

3.1.2.2 Visual evidence showed that although the seam contained a sheared zone, it was not significantly changing in characteristics.

3.1.2.3 The seam had become harder, being more difficult to drill, again, indicating the weathered zone had been passed.

3.1.2.4 The seam had achieved a more consistent thickness.

3.1.2.5 From a practical aspect, the exploration camp was being dismantled and half of the Thyssen mining crew were leaving the following day.

3.1.2.6 The make of water into the adit was becoming unmanageable. Consequently, the sample was taken on Monday, Oct. 17, 1977.

3.1.3 The adit face was prepared by exposing the full coal seam including floor to approximately three feet below the main coal section. The sample was taken only from the main coal band, a height of approximately 7 feet. The floor behind the face had been removed to a distance of approximately 10 feet to form a catchment basin for the coal sample.

The seam was drilled to 4 feet and fired and the resultant coal sample loaded by hand for transport to the adit mouth. Here the coal sample was tipped directly into clean drums sitting on plywood sheets. The drums were labelled inside and out and sealed with lever type lids. In order to obtain sufficient sample, a further round of shots were fired to a depth of two feet and the loading procedure repeated. The face was then trimmed square to ensure a sample representative of the full face had been obtained.

3.1.4 The approximate dimensions of the sample take are: -

7' seam thickness
5½' wide
6' advance

A total of 52 drums were filled with sample weighing approximately 20,000 lbs.

3.1.5 The drums were loaded into pick-up trucks/Bombadier and transported from the adit site to the exploration site. Here they were offloaded and stored overnight. The following day they were loaded onto trucks for transport down to Chetwynd, where they were transferred onto a trailer for transport to the Calgary laboratory.

3.1.6 Subdivision took place at the laboratory into two samples, one for testing and the other for reserve.

3.1.7 After the main bulk sample had been obtained from the adit face, the floor was drilled and fired and two drums loaded with the resultant material. Again, these were transported to the Calgary Laboratory for testing.

3.2 Chamberlain Seam - Saddle Creek

The original intention was to obtain a bulk sample of Chamberlain Seam coal from an adit driven at Saddle Creek.

Messrs. Thyssen commenced driving the adit at the location shown in Exhibit N , and it became quickly obvious that the seam thickness was approaching 20 feet in the area of the adit. Consequently, as other data indicated that the seam in this area was not typical of the rest of the property, it was decided to abort the adit after some 50 feet of drivage. However, a channel sample of the lower 14 feet of the seam was obtained by B.P. Geologists weighing approximately 150 Kg. and loaded into a drum for transport to Birtley's Calgary laboratory.

A limited analytical program was initiated to indicate the general quality of the coal.

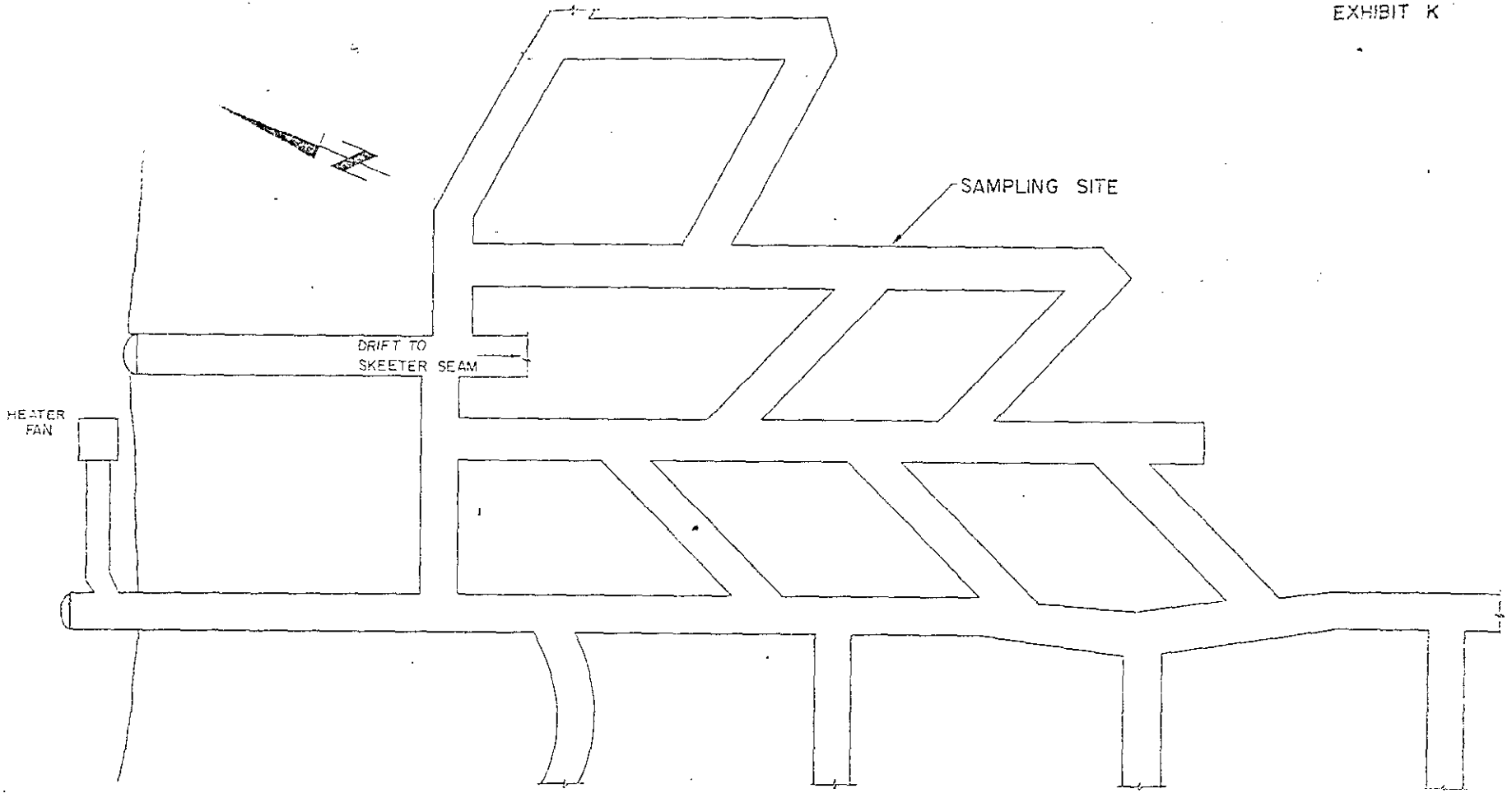
4. Seam Sections

Exhibits P, Q, R and S at the end of this section show seam sections taken at the coal face where each sample was procured. The section sampled is indicated in each case. These sections were drawn up from data supplied by B.P. Canada Coal Division. No section was taken for the Chamberlain seam at the Sukunka Main Mine.

## 5. Photographs

At the end of this section are photographs which show some of the sampling work in progress.

EXHIBIT K




FEET

0 50 100 150

SCALE

BP CANADA

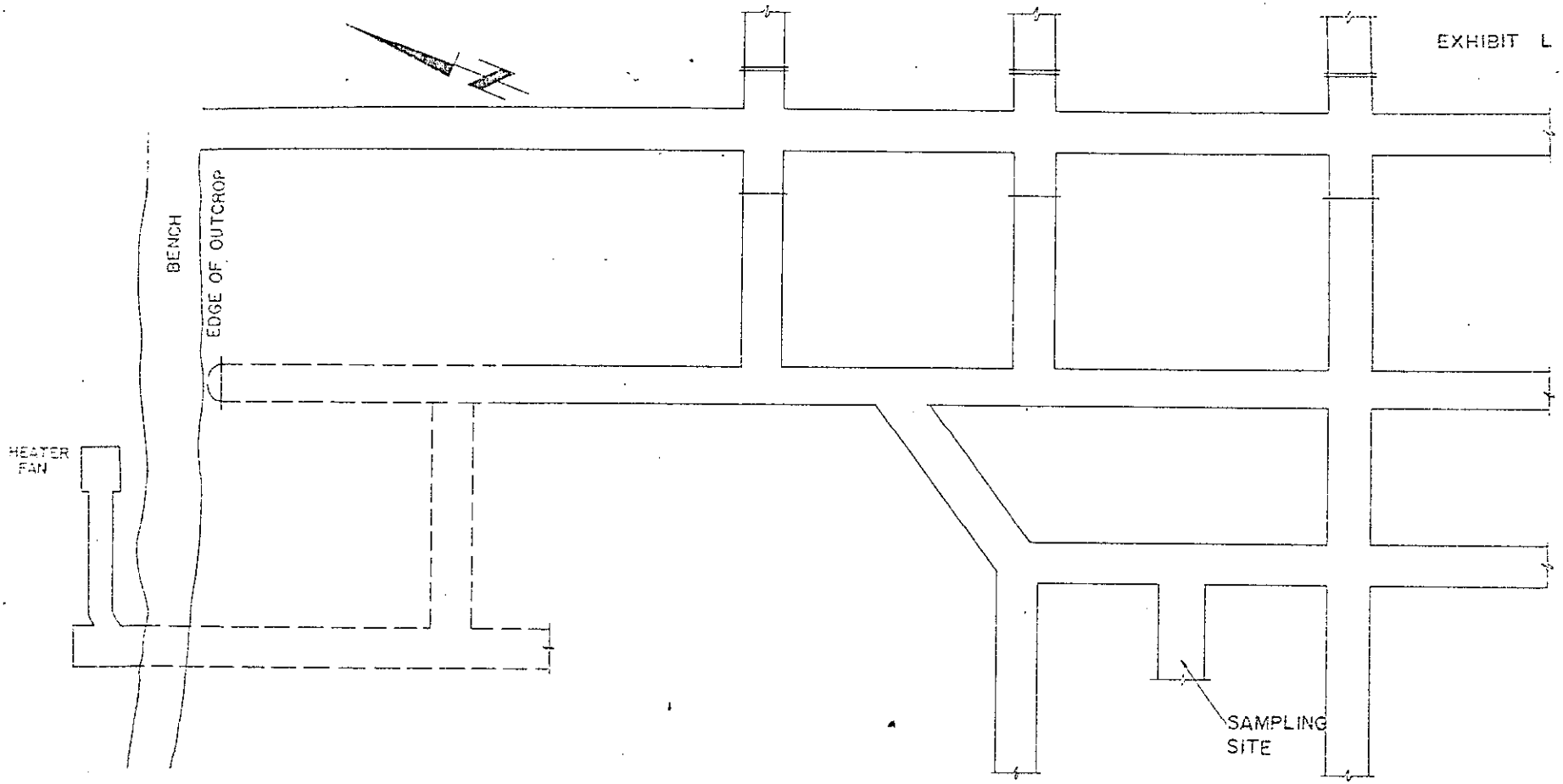
SUKUNKA COAL MINE PROJECT PHASE I

SUKUNKA No. 1 MINE

CHAMBERLAIN SEAM

INTERMIN CONSULTANTS LTD. JANUARY, 1978

EXHIBIT L




0 50 FEET 100 150

SCALE

B P CANADA

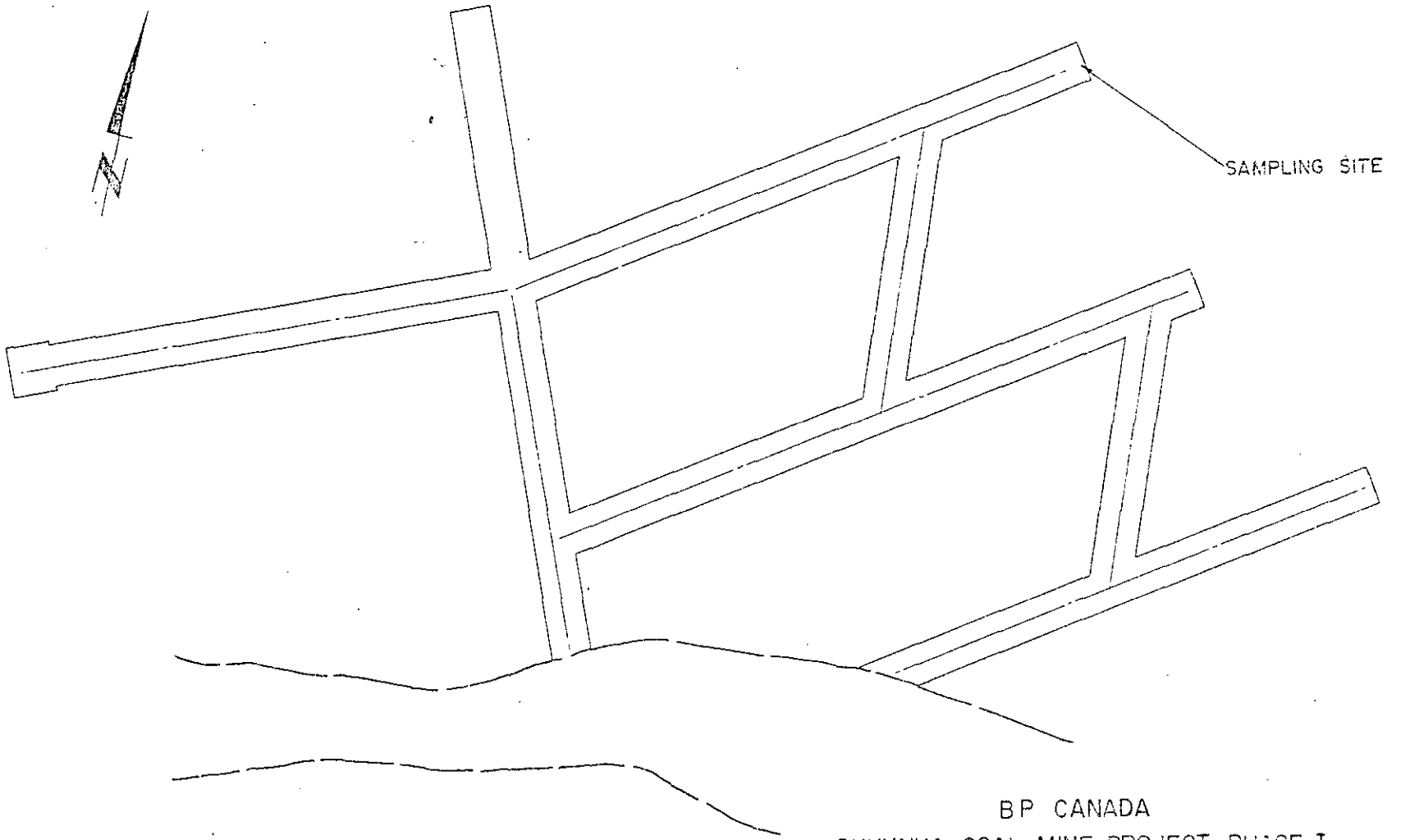
SUKUNKA COAL MINE PROJECT PHASE I

SUKUNKA No. I MINE

SKEETER SEAM

INTERMIN CONSULTANTS LTD. JANUARY, 1976

EXHIBIT M




BP CANADA

SUKUNKA COAL MINE PROJECT PHASE I

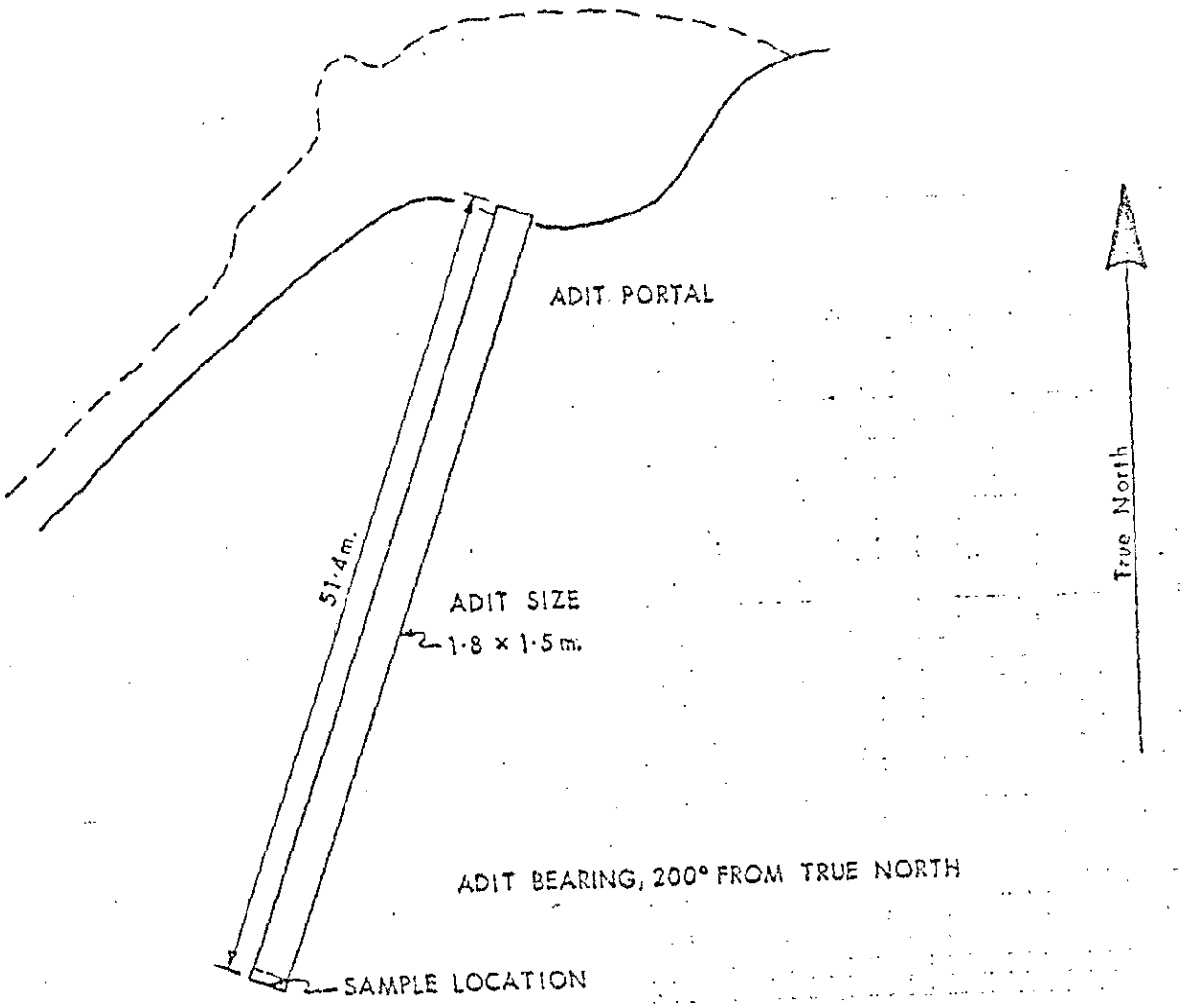
SUKUNKA MAIN MINE

CHAMBERLAIN SEAM

INTERMIN CONSULTANTS LTD. JANUARY, 1978


EXHIBIT N
TO SUKUNKA MAIN 16 km
CHAMBERLAIN ADIT
GAS WELL
BP EXPLORATION CAMP
BIRD ADIT
SADDLE CREEK ADIT LOCATION PLAN
1:10,000

EXHIBIT O




BP Exploration Canada Limited

COAL DIVISION

BIRD SEAM ADIT

APPENDIX 2

TABLE 79

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

COKING TESTS DURING ADIT DRIVAGE

Seam: Bird

Sample Site: Saddle Creek Adit  Grab Samples

| No. | Distance From Adit Mouth (Meters) | DILATATION TEST | | | | | F.S.I. |
|---|---|---|---|---|---|---|---|
| | | S.T. (°C) | M.D.T. (°C) | M.C.% | M.D.% | G. No. | |
| | 0 | 412 | - | 5 | - | -- | 1½ |
| | 4.55 | 380 | 473 | 18 | -13 | 0.674 | 4½ |
| | 10.0 | 368 | 465 | 27 | 150 | 1.088 | 8½ |
| | 15.0 | 371 | 467 | 26 | 83 | 1.064 | 7½ |
| | 20.0 | 371 | 462 | 27 | 184 | 1.089 | 9 |
| | 25.0 | 374 | 468 | 26 | 159 | 1.087 | 8½ |
| | 27.5 | 374 | 467 | 23 | 178 | 1.093 | 8½ |
| | 30.0 | 368 | 458 | 27 | 120 | 1.074 | 8½ |
| 3 | 33.5 | 365 | 456 | 26 | 103 | 1.071 | 8½ |
| 5 | 35.0 | 368 | 461 | 27 | 110 | 1.073 | 8½ |
| 4 | 40.0 | 369 | 464 | 29 | 147 | 1.083 | 9 |
| 6 | 44.0 | 372 | 463 | 24 | 107 | 1.074 | 9 |

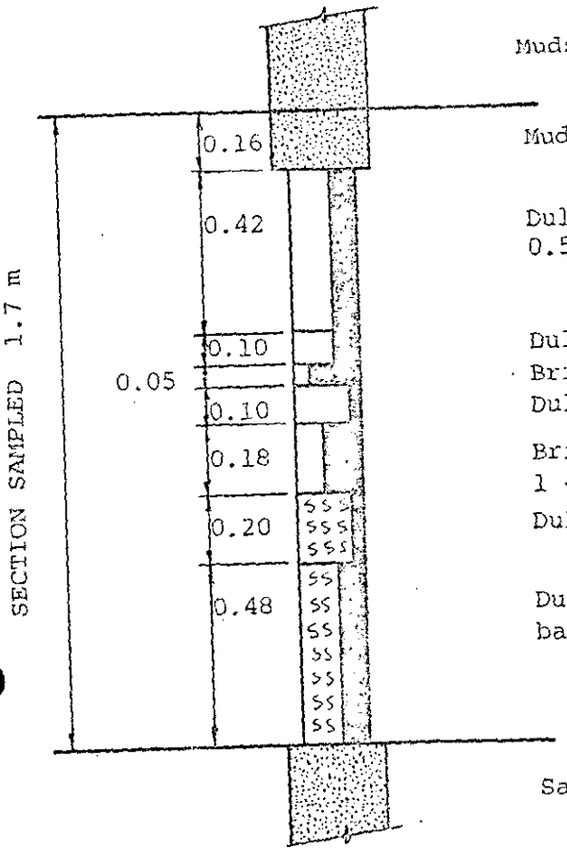
S.T. - Softening Temperature

M.D.T. - Temperature at Maximum Dilatation

M.C. - Maximum Contraction

M.D. - Maximum Dilatation

EXHIBIT P




Mudstone roof

Mudstone, laminated, some shearing

cm

Dull metallic lustre with bright bands
0.5 - 1.5 cm thick

Dull with bright bands
Bright with dull bands
Dull sub metallic lustre, 0.1 - 5 cm bands

Bright and dull, cleat well developed,
1 - 2cm bands

Dull, sheared

Dull with bright bands, hard, minor shearing,
bands 0.5 - 1 cm

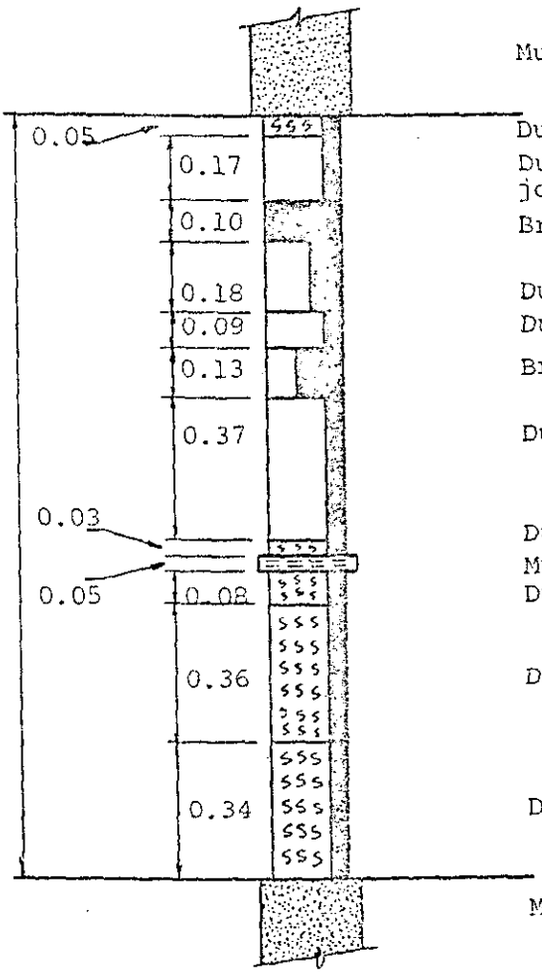
Sandstone floor

APPENDIX 2

SUKUNKA #1 MINE - CHAMBERLAIN SEAM

BP CANADA
BULK SAMPLE PROGRAM

EXHIBIT Q



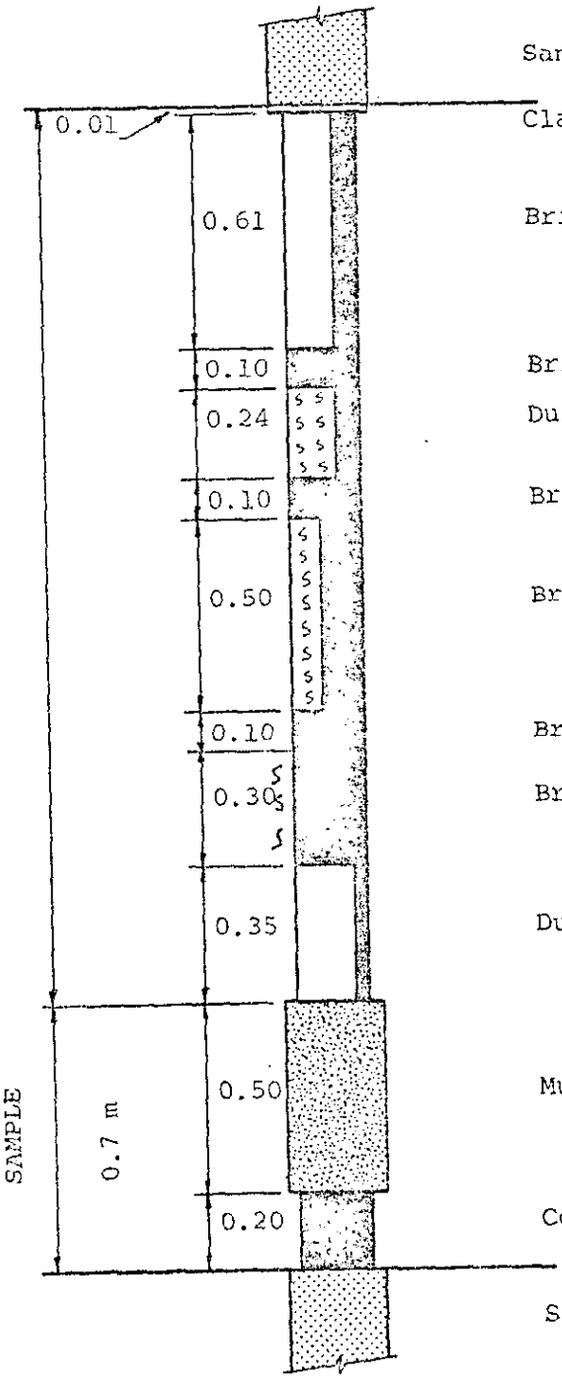

SUKUNKA #1 MINE SKEETER SEAM

BP CANADA

BULK SAMPLE PROGRAM

APPENDIX 2

EXHIBIT R



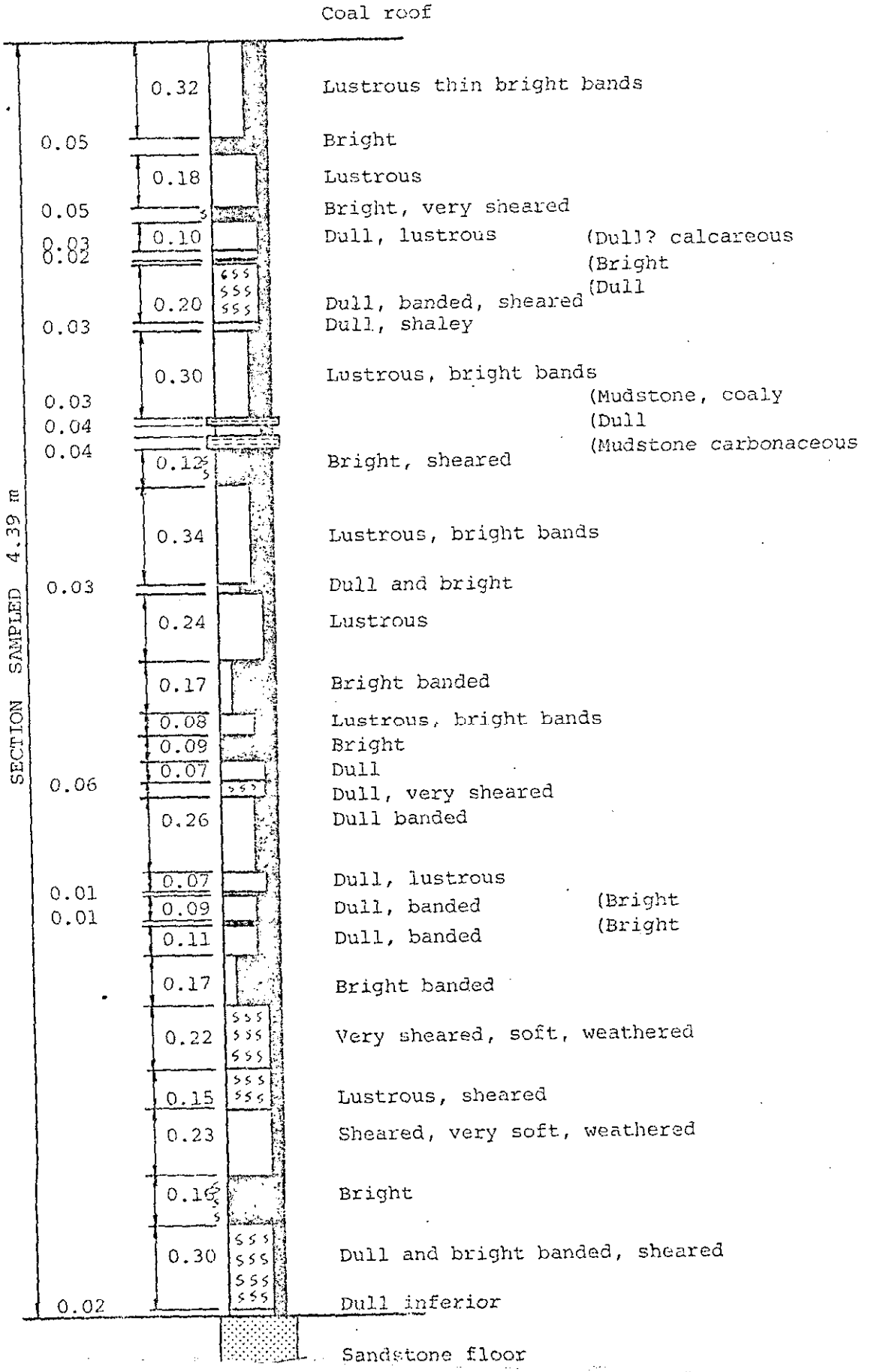

SADDLE CREEK BIRD SEAM ADIT

B P CANADA

BULK SAMPLE PROGRAM

APPENDIX 2

SADDLE CREEK CHAMBERLAIN ADIT



SECTION 3 APPENDIX 2

## BULK SAMPLE PROGRAM

## INDEX TO TABLES

| Table # | Analysis | | Mine or Adit/Seam |
|---|---|---|---|
| 80 | Raw Coal | 4" x 0 | Sukunka #1/Chamberlain |
| 81, 82 | Float-Sink | 4" x 2" | " " |
| 83, 84 | Float-Sink | 2" x 1½" | " " |
| 85, 86 | Float-Sink | 1½" x 1" | " " |
| 87, 88 | Float-Sink | 1" x ½" | " " |
| 89, 90 | Float-Sink | ½" x ¼" | " " |
| 91, 92 | Float-Sink | ¼" x 1/8" | " " |
| 93, 94 | Float-Sink | 1/8" x 10M | " " |
| 95, 96 | Float-Sink | 10M x 28M | " " |
| 97, 98 | Float-Sink | 28M x 100M | " " |
| 99 | Flotation tests | 28M x 0 and 100M x 0 | " " |
| 100, 101 | Clean Coal | 4" x 0 | " " |
| 102 | Raw Coal | 4" x 0 | Sukunka Main/Chamberlain |
| 103, 104 | Float-Sink | 4" x 2" | " " |
| 105, 106 | Float Sink | 2" x 1½" | " " |
| 107, 108 | Float-Sink | 1½" x 1 | " " |
| 109, 110 | Float-Sink | 1" x ½" | " " |
| 111, 112 | Float-Sink | ½" x ¼" | " " |
| 113, 114 | Float-Sink | ¼" x 1/8" | " " |
| 115, 116 | Float-Sink | 1/8" x 10M | " " |
| 117, 118 | Float-Sink | 10M x 28M | " " |
| 119, 120 | Float-Sink | 28M x 100M | " " |
| 121 | Flotation tests | 28M x 0 and 100M x 0 | " " |
| 122, 123 | Clean Coal | 4" x 0 | " " |

| Table # | Analysis | | Mine or Adit/Seam |
|---|---|---|---|
| 124 | Raw Coal | 4" x 0 | Sukunka #1/Skeeter |
| 125, 126 | Float-Sink | 4" x 2" | " " |
| 127, 128 | Float-Sink | 2" x 1½" | " " |
| 129, 130 | Float-Sink | 1½" x 1" | " " |
| 131, 132 | Float-Sink | 1" x ½" | " " |
| 133, 134 | Float-Sink | ½" x ¼" | " " |
| 135, 136 | Float-Sink | ¼" x 1/8" | " " |
| 137, 138 | Float-Sink | 1/8" x 10M | " " |
| 139, 140 | Float-Sink | 10M x 28M | " " |
| 141, 142 | Float-Sink | 28M x 100M | " " |
| 143 | Flotation tests | 28M x 0 and 100M x 0 | " " |
| 144, 145 | Clean Coal | 4" x 0 | " " |
| 146 | Raw Coal | 4" x 0 | Saddle Creek/Bird |
| 147, 148 | Float-Sink | 4" x 2" | " " |
| 149, 150 | Float-Sink | 2" x 1½" | " " |
| 151, 152 | Float-Sink | 1½" x 1" | " " |
| 153, 154 | Float-Sink | 1" x ½" | " " |
| 155, 156 | Float-Sink | ½" x ¼" | " " |
| 157, 158 | Float-Sink | ¼" x 1/8" | " " |
| 159, 160 | Float-Sink | 1/8" x 10M | " " |
| 161, 162 | Float-Sink | 10M x 28M | " " |
| 163, 164 | Float-Sink | 28M x 100M | " " |
| 165 | Flotation tests | 28M x 0 and 100M | " " |
| 166, 167 | Clean Coal | 4" x 0 | " " |
| 168 | Size | 4" x 0 | Saddle Creek/Bird Floor |
| | Float-Sink | 4" x 28M | " " |
| | Raw Proximate | 4" x 0 | " " |

| Table # | Analysis | | Mine or Adit/Seam |
|---|---|---|---|
| 169 | Raw Coal | 1½" x 0 | Saddle Creek/Chamberlain |
| | Float-Sink | 1½" x 28M | " " |
| | Flotation test | 28M x 0 | " " |
| 170 | Clean Coal Composite | 1½" x 0 | " " |

## Index to Exhibits - Ruhr Dilatometer Tests

| | |
|---|---|
| AA | Sukunka # 1 Mine - Chamberlain Seam |
| BB | Sukunka Main Mine - Chamberlain Seam |
| CC | Sukunka # 1 Mine - Skeeter Seam |
| DD | Saddle Creek Adit - 3rd Seam |
| EE | Saddle Creek Adit - Chamberlain Seam |

CLIENT: BP EXPLORATION CANADA LTD.

TABLE 80

SAMPLE: 1 - CH BULK SAMPLE

LAB. NO.: 9588

HEAD RAW ANALYSIS

| ADL% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | REMARKS |
|---|---|---|---|---|---|---|---|
| 1.8 | 0.8 | 10.7 | 20.6 | 67.9 | 0.73 | 7 | air dried basis |
| | 2.6 | 10.5 | 20.2 | 66.7 | 0.72 | -- | as rec'd basis |
| | | 10.8 | 20.8 | 68.4 | 0.74 | -- | dry basis |

SIZE & RAW ANALYSES

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4" x 2" | 4.3 | 0.9 | 9.6 | 20.4 | 69.1 | 0.65 | 6 | 4.3 | 9.6 | 0.65 | WT% AND ANALYSES ARE ON AN A.D.B. BASIS. AMT. OF +4" FRACTION CRUSHED TO PASS 4" = 1.2 OF TOTAL |
| 2"x1 1/2" | 1.8 | 0.8 | 10.4 | 20.2 | 68.6 | 0.81 | 5 | 6.1 | 9.8 | 0.70 | |
| 1 1/2"x1" | 6.3 | 1.0 | 16.8 | 18.7 | 63.5 | 0.92 | 3 | 12.4 | 13.4 | 0.81 | |
| 1"x1/2" | 9.6 | 0.9 | 15.7 | 18.9 | 64.5 | 0.86 | 3 | 22.0 | 14.4 | 0.83 | |
| 1/2"x1/4" | 15.4 | 1.0 | 15.4 | 19.3 | 64.3 | 0.83 | 3 1/2 | 37.4 | 14.8 | 0.83 | |
| 1/4"x1/8" | 12.8 | 0.8 | 10.6 | 20.8 | 67.8 | 0.76 | 7 | 50.2 | 13.7 | 0.81 | |
| 1/8"x10M | 14.4 | 0.8 | 7.7 | 21.6 | 69.9 | 0.60 | 7 1/2 | 64.6 | 12.4 | 0.76 | |
| 10Mx28M | 19.3 | 0.9 | 5.1 | 22.1 | 71.9 | 0.54 | 8 1/2 | 83.9 | 10.7 | 0.71 | |
| 28Mx100M | 9.0 | 0.6 | 4.5 | 22.4 | 72.5 | 0.59 | 8 1/2 | 92.9 | 10.1 | 0.70 | |
| 100Mx0 | 7.1 | 0.7 | 5.4 | 22.3 | 71.6 | 0.58 | 8 1/2 | 100.0 | 9.8 | 0.69 | |

SIZE (WET SCREEN) & RAW ANALYSES: 28M x 0

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28Mx65M | 42.8 | 0.5 | 4.4 | 22.9 | 72.2 | 0.54 | 8 1/2 | 42.8 | 4.4 | 0.54 | A.D.B. WT.% OF -28M = 16.1 OF TOTAL |
| 65Mx100M | 11.0 | 0.5 | 3.9 | 23.3 | 72.3 | 0.50 | 8 1/2 | 53.8 | 4.3 | 0.53 | |
| 100Mx200M | 16.7 | 0.5 | 4.2 | 23.3 | 72.0 | 0.52 | 8 1/2 | 70.5 | 4.3 | 0.53 | |
| 200Mx325M | 7.0 | 0.5 | 4.7 | 22.8 | 72.0 | 0.51 | 8 1/2 | 77.5 | 4.3 | 0.53 | |
| 325Mx0 | 22.5 | 0.6 | 8.0 | 22.0 | 69.4 | 0.59 | 7 | 100.0 | 5.1 | 0.54 | |
| 28Mx0 | 100.0 | 0.7 | 4.9 | 22.4 | 72.0 | 0.56 | 8 1/2 | | | | |

TABLE 81

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 4" x 2"

Sample site: SUKUNKA NO. 1 MINE

Wt. % of head sample: 4.3

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | | |
| 1.25 - 1.30 | 92500.0 | 58.1 | 0.9 | 2.2 | 22.1 | 0.47 | 8 | 58.1 | 2.2 | 41.9 | 19.8 |
| 1.30 - 1.35 | 39500.0 | 24.8 | 0.9 | 3.4 | 21.1 | 0.50 | 4 | 82.9 | 2.6 | 17.1 | 43.5 |
| 1.35 - 1.40 | 2598.8 | 1.6 | 0.6 | 9.2 | 19.4 | 0.84 | 3 1/2 | 84.5 | 2.7 | 15.5 | 47.1 |
| 1.40 - 1.45 | 1349.3 | 0.8 | 0.6 | 15.3 | 19.2 | 0.69 | 1 1/2 | 85.3 | 2.8 | 14.7 | 49.0 |
| 1.45 - 1.50 | 876.9 | 0.6 | 0.6 | 22.6 | 17.2 | 1.11 | 1 1/2 | 85.9 | 2.9 | 14.1 | 50.3 |
| 1.50 - 1.55 | 517.2 | 0.3 | 0.6 | 25.6 | 17.0 | 0.73 | 1 | 86.2 | 3.0 | 13.8 | 50.7 |
| 1.55 - 1.60 | 1134.3 | 0.7 | 0.7 | 30.8 | 16.6 | 1.17 | 1 | 86.9 | 3.2 | 13.1 | 52.0 |
| 1.60 - 1.65 | 1205.7 | 0.8 | 0.7 | 33.5 | 16.1 | 1.56 | 1 | 87.7 | 3.5 | 12.3 | 53.0 |
| 1.65 - 1.70 | 654.8 | 0.4 | 0.8 | 37.4 | 14.7 | 1.54 | 1 | 88.1 | 3.7 | 11.9 | 53.2 |
| 1.70 - 1.80 | 8500.0 | 5.3 | 0.8 | 46.7 | 12.7 | 1.06 | 1/2 | 93.4 | 6.1 | 6.6 | 58.9 |
| 1.80 - 1.90 | 8000.0 | 5.0 | 0.8 | 51.8 | 12.0 | 2.04 | 1/2 | 98.4 | 8.4 | 1.6 | 82.6 |
| 1.90 - 2.00 | 235.2 | 0.2 | 0.7 | 54.1 | 11.9 | 5.51 | 1/2 | 98.6 | 8.5 | 1.4 | 86.2 |
| S @ 2.00 | 2235.1 | 1.4 | 1.0 | 84.1 | 8.1 | 1.88 | N.A. | 100.0 | 9.6 | -- | -- |
| TOTAL | 159307.3 | 100.0 | 0.9 | 9.6 | 20.4 | 0.65 | 6 | -- | -- | -- | -- |

REMARKS:

TABLE 81

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Sample Site: SUKUNKA NO. I MINE

Dates Analyzed: October 21 - 28, 1977

Size Fraction: 4" x 2"

Wt. % of Head Sample: 4.3

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 58.1 | 0.9 | 2.2 | 22.1 | 0.47 | 41.9 | 0.8 | 19.8 | 18.1 | 0.89 |
| 1.30 - 1.35 | 82.9 | 0.9 | 2.6 | 21.8 | 0.48 | 17.1 | 0.8 | 43.5 | 13.6 | 1.46 |
| 1.35 - 1.40 | 84.5 | 0.9 | 2.7 | 21.8 | 0.49 | 15.5 | 0.8 | 47.1 | 13.0 | 1.53 |
| 1.40 - 1.45 | 85.3 | 0.9 | 2.8 | 21.7 | 0.49 | 14.7 | 0.8 | 49.0 | 12.7 | 1.57 |
| 1.45 - 1.50 | 85.9 | 0.9 | 2.9 | 21.7 | 0.49 | 14.1 | 0.8 | 50.3 | 12.5 | 1.59 |
| 1.50 - 1.55 | 86.2 | 0.9 | 3.0 | 21.7 | 0.49 | 13.8 | 0.8 | 50.7 | 12.4 | 1.61 |
| 1.55 - 1.60 | 86.9 | 0.9 | 3.2 | 21.6 | 0.50 | 13.1 | 0.8 | 52.0 | 12.2 | 1.63 |
| 1.60 - 1.65 | 87.7 | 0.9 | 3.5 | 21.6 | 0.51 | 12.3 | 0.8 | 53.0 | 11.9 | 1.64 |
| 1.65 - 1.70 | 88.1 | 0.9 | 3.7 | 21.6 | 0.51 | 11.9 | 0.8 | 53.2 | 11.9 | 1.64 |
| 1.70 - 1.80 | 93.4 | 0.9 | 6.1 | 21.1 | 0.54 | 6.6 | 0.8 | 58.9 | 11.2 | 2.11 |
| 1.80 - 1.90 | 98.4 | 0.9 | 8.4 | 20.6 | 0.62 | 1.6 | 1.0 | 82.6 | 8.6 | 2.33 |
| 1.90 - 2.0 | 98.6 | 0.9 | 8.5 | 20.6 | 0.63 | 1.4 | 1.0 | 86.2 | 8.1 | 1.88 |
| S @ 2.0 | 100.0 | 0.9 | 9.6 | 20.4 | 0.65 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 82

TABLE 83

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 2" x 1 1/2"

Sample site: SUKUNKA NO. 1 MINE

Wt. % of head sample: 1.8

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | | |
| 1.25 - 1.30 | 31000.0 | 45.8 | 0.8 | 2.0 | 22.3 | 0.41 | 7 1/2 | 45.8 | 2.0 | 54.2 | 17.5 |
| 1.30 - 1.35 | 23000.0 | 34.0 | 0.8 | 3.2 | 21.5 | 0.54 | 3 1/2 | 79.8 | 2.5 | 20.2 | 41.7 |
| 1.35 - 1.40 | 1231.9 | 1.8 | 0.8 | 8.3 | 20.6 | 0.54 | 1 1/2 | 81.6 | 2.6 | 18.4 | 45.1 |
| 1.40 - 1.45 | 676.8 | 1.0 | 0.7 | 14.8 | 20.3 | 0.58 | 1 1/2 | 82.6 | 2.8 | 17.4 | 46.6 |
| 1.45 - 1.50 | 922.4 | 1.4 | 0.7 | 22.1 | 17.3 | 0.86 | 1 | 84.0 | 3.1 | 16.0 | 48.9 |
| 1.50 - 1.55 | 485.0 | 0.7 | 0.7 | 26.2 | 16.8 | 1.04 | 1 | 84.7 | 3.3 | 15.3 | 49.9 |
| 1.55 - 1.60 | 542.3 | 0.8 | 0.7 | 30.1 | 16.8 | 1.31 | 1 | 85.5 | 3.5 | 14.5 | 51.3 |
| 1.60 - 1.65 | 204.1 | 0.3 | 0.7 | 34.5 | 14.9 | 1.20 | 1 | 85.8 | 3.7 | 14.2 | 51.7 |
| 1.65 - 1.70 | 161.6 | 0.3 | 0.7 | 38.7 | 14.2 | 1.14 | 1 | 86.1 | 3.8 | 13.9 | 52.0 |
| 1.70 - 1.80 | 2455.6 | 3.6 | 0.7 | 47.9 | 13.0 | 2.29 | 1/2 | 89.7 | 5.6 | 10.3 | 52.5 |
| 1.80 - 1.90 | 6087.0 | 9.0 | 0.6 | 51.1 | 12.8 | 3.68 | 1/2 | 98.7 | 9.7 | 1.3 | 65.7 |
| 1.90 - 2.00 | 610.0 | 0.9 | 0.6 | 55.9 | 11.3 | 1.36 | 1/2 | 99.6 | 10.1 | 0.4 | 92.0 |
| S @ 2.00 | 276.9 | 0.4 | 0.8 | 86.6 | 6.0 | 0.69 | N.A. | 100.0 | 10.4 | -- | -- |
| TOTAL | 67653.6 | 100.0 | 0.9 | 10.4 | 20.4 | 0.85 | 5 | -- | -- | -- | -- |

REMARKS:

TABLE 83

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 2" x 1 1/2"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 1.8

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 45.8 | 0.8 | 2.0 | 22.3 | 0.41 | 54.2 | 0.7 | 17.5 | 18.8 | 1.23 |
| 1.30 - 1.35 | 79.8 | 0.8 | 2.5 | 22.0 | 0.47 | 20.2 | 0.7 | 41.7 | 14.4 | 2.38 |
| 1.35 - 1.40 | 81.6 | 0.8 | 2.6 | 21.9 | 0.47 | 18.4 | 0.7 | 45.1 | 13.8 | 2.56 |
| 1.40 - 1.45 | 82.6 | 0.8 | 2.8 | 21.9 | 0.47 | 17.4 | 0.7 | 46.6 | 13.4 | 2.68 |
| 1.45 - 1.50 | 84.0 | 0.8 | 3.1 | 21.8 | 0.47 | 16.0 | 0.7 | 48.9 | 13.0 | 2.83 |
| 1.50 - 1.55 | 84.7 | 0.8 | 3.3 | 21.8 | 0.48 | 15.3 | 0.7 | 49.9 | 12.9 | 2.92 |
| 1.55 - 1.60 | 85.5 | 0.8 | 3.5 | 21.7 | 0.49 | 14.5 | 0.7 | 51.3 | 12.6 | 3.00 |
| 1.60 - 1.65 | 85.8 | 0.8 | 3.7 | 21.7 | 0.49 | 14.2 | 0.7 | 51.7 | 12.6 | 3.04 |
| 1.65 - 1.70 | 86.1 | 0.8 | 3.8 | 21.7 | 0.49 | 13.9 | 0.7 | 52.0 | 12.6 | 3.08 |
| 1.70 - 1.80 | 89.7 | 0.8 | 5.6 | 21.3 | 0.56 | 10.3 | 0.7 | 52.5 | 12.4 | 3.36 |
| 1.80 - 1.90 | 98.7 | 0.8 | 9.7 | 20.6 | 0.85 | 1.3 | 0.7 | 65.7 | 9.7 | 1.16 |
| 1.90 - 2.0 | 99.6 | 0.8 | 10.1 | 20.5 | 0.85 | 0.4 | 0.8 | 92.0 | 6.0 | 0.70 |
| S @ 2.0 | 100.0 | 0.8 | 10.4 | 20.4 | 0.85 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 84

TABLE 85

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1 1/2" x 1"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 6.3

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 70000.0 | 55.4 | 0.6 | 2.3 | 22.6 | 0.47 | 7 | 55.4 | 2.3 | 44.6 | 35.3 |
| 1.30 - 1.35 | 17500.0 | 13.9 | 0.6 | 4.5 | 20.5 | 0.54 | 1 1/2 | 69.3 | 2.7 | 30.7 | 49.4 |
| 1.35 - 1.40 | 1147.0 | 0.9 | 0.7 | 9.4 | 20.4 | 0.64 | 1 1/2 | 70.2 | 2.8 | 29.8 | 50.5 |
| 1.40 - 1.45 | 697.1 | 0.6 | 0.5 | 14.3 | 20.1 | 0.72 | 1 | 70.8 | 2.9 | 29.2 | 51.3 |
| 1.45 - 1.50 | 630.0 | 0.5 | 0.5 | 21.8 | 18.2 | 0.81 | 1 | 71.3 | 3.1 | 28.7 | 51.6 |
| 1.50 - 1.55 | 447.4 | 0.3 | 0.7 | 25.7 | 17.6 | 0.97 | 1 | 71.6 | 3.2 | 28.4 | 51.9 |
| 1.55 - 1.60 | 629.1 | 0.5 | 0.7 | 30.5 | 15.9 | 0.97 | 1 | 72.1 | 3.3 | 27.9 | 52.5 |
| 1.60 - 1.65 | 654.4 | 0.5 | 0.7 | 34.9 | 14.9 | 1.03 | 1 | 72.6 | 3.6 | 27.4 | 52.6 |
| 1.65 - 1.70 | 636.1 | 0.5 | 0.8 | 40.3 | 14.0 | 1.16 | 1/2 | 73.1 | 3.8 | 26.9 | 53.0 |
| 1.70 - 1.80 | 16000.0 | 12.7 | 0.8 | 48.5 | 12.8 | 1.77 | 1/2 | 85.8 | 10.4 | 14.2 | 57.0 |
| 1.80 - 1.90 | 14000.0 | 11.1 | 0.8 | 51.8 | 12.7 | 2.28 | 1/2 | 96.9 | 15.2 | 3.1 | 74.0 |
| 1.90 - 2.00 | 1396.0 | 1.1 | 0.7 | 55.4 | 11.7 | 3.83 | 1/2 | 98.0 | 15.6 | 2.0 | 86.8 |
| S @ 2.00 | 2610.6 | 2.0 | 1.0 | 86.0 | 6.5 | 1.60 | N.A. | 100.0 | 17.0 | -- | -- |
| TOTAL | 126347.7 | 100.0 | 0.7 | 17.0 | 19.3 | 0.92 | 3 | -- | -- | -- | -- |

REMARKS:

TABLE 85

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1 1/2" x 1"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 6.3

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 55.4 | 0.6 | 2.3 | 22.6 | 0.47 | 44.6 | 0.7 | 35.3 | 15.3 | 1.48 |
| 1.30 - 1.35 | 69.3 | 0.6 | 2.7 | 22.2 | 0.48 | 30.7 | 0.8 | 49.4 | 12.9 | 1.91 |
| 1.35 - 1.40 | 70.2 | 0.6 | 2.8 | 22.2 | 0.49 | 29.8 | 0.8 | 50.5 | 12.7 | 1.94 |
| 1.40 - 1.45 | 70.8 | 0.6 | 2.9 | 22.1 | 0.49 | 29.2 | 0.8 | 51.3 | 12.5 | 1.97 |
| 1.45 - 1.50 | 71.3 | 0.6 | 3.1 | 22.1 | 0.49 | 28.7 | 0.8 | 51.6 | 12.4 | 1.99 |
| 1.50 - 1.55 | 71.6 | 0.6 | 3.2 | 22.1 | 0.49 | 28.4 | 0.8 | 51.9 | 12.4 | 2.00 |
| 1.55 - 1.60 | 72.1 | 0.6 | 3.3 | 22.0 | 0.50 | 27.9 | 0.8 | 52.5 | 12.3 | 2.02 |
| 1.60 - 1.65 | 72.6 | 0.6 | 3.6 | 22.0 | 0.50 | 27.4 | 0.8 | 52.6 | 12.3 | 2.04 |
| 1.65 - 1.70 | 73.1 | 0.6 | 3.8 | 21.9 | 0.50 | 26.9 | 0.8 | 53.0 | 12.2 | 2.05 |
| 1.70 - 1.80 | 85.8 | 0.6 | 10.4 | 20.6 | 0.69 | 14.2 | 0.8 | 57.0 | 11.7 | 2.30 |
| 1.80 - 1.90 | 96.9 | 0.7 | 15.2 | 19.7 | 0.87 | 3.1 | 0.9 | 74.0 | 8.3 | 2.39 |
| 1.90 - 2.0 | 98.0 | 0.7 | 15.6 | 19.6 | 0.91 | 2.0 | 1.0 | 86.8 | 6.5 | 1.60 |
| S @ 2.0 | 100.0 | 0.7 | 17.0 | 19.3 | 0.92 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 86

TABLE 87

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1" x 1/2"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 9.6

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 27239.4 | 41.5 | 0.6 | 2.4 | 21.8 | 0.47 | 7 | 41.5 | 2.4 | 58.5 | 25.9 |
| 1.30 - 1.35 | 16342.6 | 24.9 | 0.6 | 3.5 | 20.7 | 0.45 | 2 1/2 | 66.4 | 2.8 | 33.6 | 42.6 |
| 1.35 - 1.40 | 2425.6 | 3.7 | 0.5 | 6.6 | 20.2 | 0.50 | 1 1/2 | 70.1 | 3.0 | 29.9 | 47.1 |
| 1.40 - 1.45 | 1047.8 | 1.6 | 0.7 | 11.1 | 20.1 | 0.52 | 1 | 71.7 | 3.2 | 28.3 | 49.0 |
| 1.45 - 1.50 | 329.0 | 0.5 | 0.7 | 20.2 | 18.8 | 0.66 | 1 | 72.2 | 3.3 | 27.8 | 49.6 |
| 1.50 - 1.55 | 457.3 | 0.7 | 0.7 | 25.2 | 17.6 | 0.75 | 1 | 72.9 | 3.5 | 27.1 | 50.3 |
| 1.55 - 1.60 | 589.1 | 0.9 | 0.7 | 31.4 | 16.0 | 1.44 | 1/2 | 73.8 | 3.9 | 26.2 | 50.8 |
| 1.60 - 1.65 | 390.7 | 0.6 | 0.7 | 35.1 | 14.9 | 0.92 | 1/2 | 74.4 | 4.1 | 25.6 | 51.3 |
| 1.65 - 1.70 | 461.3 | 0.7 | 0.6 | 40.5 | 14.0 | 1.02 | 1/2 | 75.1 | 4.6 | 24.9 | 51.5 |
| 1.70 - 1.80 | 7943.2 | 12.1 | 0.8 | 47.5 | 13.0 | 1.77 | 1/2 | 87.2 | 10.4 | 12.8 | 55.5 |
| 1.80 - 1.90 | 6753.1 | 10.3 | 0.7 | 51.3 | 12.5 | 2.30 | 1/2 | 97.5 | 14.7 | 2.5 | 73.7 |
| 1.90 - 2.00 | 659.1 | 1.0 | 0.6 | 54.8 | 11.7 | 3.28 | 1/2 | 98.5 | 15.2 | 1.5 | 80.2 |
| S @ 2.00 | 988.2 | 1.5 | 0.7 | 83.5 | 5.9 | 2.60 | N.A. | 100.0 | 16.2 | -- | -- |
| TOTAL | 65626.4 | 100.0 | 0.6 | 16.2 | 18.9 | 0.89 | 3 | -- | -- | -- | -- |

REMARKS:

TABLE 87

TABLE 88

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1" x 1/2"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 9.6

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 41.5 | 0.6 | 2.4 | 21.8 | 0.47 | 58.5 | 0.7 | 25.9 | 16.8 | 1.19 |
| 1.30 - 1.35 | 66.4 | 0.6 | 2.8 | 21.4 | 0.46 | 33.6 | 0.7 | 42.6 | 13.9 | 1.74 |
| 1.35 - 1.40 | 70.1 | 0.6 | 3.0 | 21.3 | 0.46 | 29.9 | 0.7 | 47.1 | 13.2 | 1.89 |
| 1.40 - 1.45 | 71.7 | 0.6 | 3.2 | 21.3 | 0.47 | 28.3 | 0.7 | 49.0 | 12.8 | 1.97 |
| 1.45 - 1.50 | 72.2 | 0.6 | 3.3 | 21.3 | 0.47 | 27.8 | 0.7 | 49.6 | 12.7 | 1.99 |
| 1.50 - 1.55 | 72.9 | 0.6 | 3.5 | 21.2 | 0.47 | 27.1 | 0.7 | 50.3 | 12.5 | 2.02 |
| 1.55 - 1.60 | 73.8 | 0.6 | 3.9 | 21.2 | 0.48 | 26.2 | 0.7 | 50.8 | 12.4 | 2.04 |
| 1.60 - 1.65 | 74.4 | 0.6 | 4.1 | 21.1 | 0.49 | 25.6 | 0.7 | 51.3 | 12.4 | 2.07 |
| 1.65 - 1.70 | 75.1 | 0.6 | 4.6 | 21.1 | 0.49 | 24.9 | 0.7 | 51.5 | 12.3 | 2.10 |
| 1.70 - 1.80 | 87.2 | 0.6 | 10.4 | 19.9 | 0.67 | 12.8 | 0.7 | 55.5 | 11.7 | 2.41 |
| 1.80 - 1.90 | 97.5 | 0.6 | 14.7 | 19.2 | 0.84 | 2.5 | 0.7 | 73.7 | 8.2 | 2.87 |
| 1.90 - 2.0 | 98.5 | 0.6 | 15.2 | 19.1 | 0.86 | 1.5 | 0.7 | 80.2 | 5.9 | 2.60 |
| S @ 2.0 | 100.0 | 0.6 | 16.2 | 18.9 | 0.89 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 88

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/2" x 1/4"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 15.4

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 13648.2 | 52.4 | 0.6 | 2.1 | 22.0 | 0.50 | 7 1/2 | 52.4 | 2.1 | 47.6 | 31.2 |
| 1.30 - 1.35 | 3405.8 | 13.1 | 0.8 | 3.7 | 21.3 | 0.48 | 2 | 65.5 | 2.4 | 34.5 | 41.6 |
| 1.35 - 1.40 | 1221.7 | 4.7 | 0.6 | 7.1 | 20.6 | 0.40 | 1 1/2 | 70.2 | 2.7 | 29.8 | 47.1 |
| 1.40 - 1.45 | 340.5 | 1.3 | 0.6 | 10.8 | 19.9 | 0.44 | 1/2 | 71.5 | 2.9 | 28.5 | 48.7 |
| 1.45 - 1.50 | 208.3 | 0.8 | 0.8 | 19.8 | 19.5 | 0.65 | 1 1/2 | 72.3 | 3.1 | 27.7 | 49.5 |
| 1.50 - 1.55 | 129.2 | 0.5 | 0.7 | 23.1 | 19.4 | 0.60 | 1 1/2 | 72.8 | 3.2 | 27.2 | 50.0 |
| 1.55 - 1.60 | 131.2 | 0.5 | 0.7 | 29.0 | 17.3 | 0.94 | 1 | 73.3 | 3.4 | 26.7 | 50.4 |
| 1.60 - 1.65 | 232.3 | 0.9 | 0.9 | 37.7 | 15.0 | 0.94 | 1 | 74.2 | 3.8 | 25.8 | 50.9 |
| 1.65 - 1.70 | 106.1 | 0.4 | 1.0 | 40.6 | 14.4 | 1.04 | 1/2 | 74.6 | 4.0 | 25.4 | 51.0 |
| 1.70 - 1.80 | 2574.6 | 9.9 | 0.9 | 46.5 | 13.1 | 1.61 | 1/2 | 84.5 | 9.0 | 15.5 | 53.8 |
| 1.80 - 1.90 | 3413.8 | 13.1 | 0.8 | 51.3 | 12.6 | 2.21 | 1/2 | 97.6 | 14.7 | 2.4 | 66.3 |
| 1.90 - 2.00 | 233.3 | 0.9 | 1.0 | 55.6 | 11.7 | 3.26 | 1/2 | 98.5 | 15.0 | 1.5 | 77.6 |
| S @ 2.00 | 391.6 | 1.5 | 1.3 | 75.7 | 8.3 | 3.07 | N.A. | 100.0 | 15.9 | -- | -- |
| TOTAL | 26036.6 | 100.0 | 0.7 | 15.9 | 19.3 | 0.90 | 3 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 89

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/2" x 1/4"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 15.4

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 52.4 | 0.6 | 2.1 | 22.0 | 0.50 | 47.6 | 0.8 | 31.2 | 16.2 | 1.34 |
| 1.30 - 1.35 | 65.5 | 0.6 | 2.4 | 21.9 | 0.50 | 34.5 | 0.8 | 41.6 | 14.3 | 1.66 |
| 1.35 - 1.40 | 70.2 | 0.6 | 2.7 | 21.8 | 0.49 | 29.8 | 0.9 | 47.1 | 13.3 | 1.86 |
| 1.40 - 1.45 | 71.5 | 0.6 | 2.9 | 21.7 | 0.49 | 28.5 | 0.9 | 48.7 | 13.0 | 1.93 |
| 1.45 - 1.50 | 72.3 | 0.6 | 3.1 | 21.7 | 0.49 | 27.7 | 0.9 | 49.5 | 12.8 | 1.97 |
| 1.50 - 1.55 | 72.8 | 0.6 | 3.2 | 21.7 | 0.49 | 27.2 | 0.9 | 50.0 | 12.7 | 1.99 |
| 1.55 - 1.60 | 73.3 | 0.6 | 3.4 | 21.7 | 0.49 | 26.7 | 0.9 | 50.4 | 12.6 | 2.01 |
| 1.60 - 1.65 | 74.2 | 0.6 | 3.8 | 21.6 | 0.50 | 25.8 | 0.9 | 50.9 | 12.5 | 2.05 |
| 1.65 - 1.70 | 74.6 | 0.6 | 4.0 | 21.6 | 0.50 | 25.4 | 0.9 | 51.0 | 12.5 | 2.06 |
| 1.70 - 1.80 | 84.5 | 0.7 | 9.0 | 20.7 | 0.63 | 15.5 | 0.9 | 53.8 | 12.1 | 2.35 |
| 1.80 - 1.90 | 97.6 | 0.7 | 14.7 | 19.5 | 0.84 | 2.4 | 1.2 | 66.3 | 9.6 | 3.14 |
| 1.90 - 2.0 | 98.5 | 0.7 | 15.0 | 19.4 | 0.87 | 1.5 | 1.3 | 77.6 | 8.3 | 3.07 |
| S @ 2.0 | 100.0 | 0.7 | 15.9 | 19.3 | 0.90 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 90

TABLE 91

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/4" x 1/8"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 12.8

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 3417.8 | 60.2 | 0.6 | 1.8 | 22.6 | 0.51 | 8 | 60.2 | 1.8 | 39.8 | 25.0 |
| 1.30 - 1.35 | 992.8 | 17.5 | 0.7 | 3.8 | 20.9 | 0.45 | 1 1/2 | 77.7 | 2.3 | 22.3 | 41.5 |
| 1.35 - 1.40 | 164.5 | 2.9 | 0.7 | 7.9 | 20.5 | 0.51 | 1 1/2 | 80.6 | 2.5 | 19.4 | 46.6 |
| 1.40 - 1.45 | 55.3 | 1.0 | 0.7 | 12.9 | 20.2 | 0.46 | 1 1/2 | 81.6 | 2.6 | 18.4 | 48.5 |
| 1.45 - 1.50 | 31.1 | 0.5 | 0.6 | 18.0 | 19.4 | 0.55 | 1 1/2 | 82.1 | 2.7 | 17.9 | 49.4 |
| 1.50 - 1.55 | 27.6 | 0.5 | 0.7 | 24.3 | 19.0 | 0.58 | 1 1/2 | 82.6 | 2.8 | 17.4 | 50.2 |
| 1.55 - 1.60 | 20.0 | 0.3 | 0.8 | 29.8 | 18.0 | 0.63 | 1/2 | 82.9 | 2.9 | 17.1 | 50.6 |
| 1.60 - 1.65 | 34.2 | 0.6 | 0.9 | 35.4 | 16.2 | 0.83 | 1/2 | 83.5 | 3.1 | 16.5 | 51.3 |
| 1.65 - 1.70 | 45.4 | 0.8 | 1.0 | 43.0 | 13.9 | 1.24 | 1/2 | 84.3 | 3.5 | 15.7 | 51.6 |
| 1.70 - 1.80 | 392.5 | 6.9 | 0.8 | 47.5 | 12.9 | 1.70 | 1/2 | 91.2 | 6.8 | 8.8 | 55.1 |
| 1.80 - 1.90 | 410.0 | 7.2 | 0.8 | 51.0 | 12.5 | 2.12 | 1/2 | 98.4 | 10.1 | 1.6 | 69.6 |
| 1.90 - 2.00 | 33.6 | 0.6 | 1.0 | 56.0 | 11.4 | 2.73 | 1/2 | 99.0 | 10.4 | 1.0 | 75.6 |
| S @ 2.00 | 54.5 | 1.0 | 1.0 | 80.2 | 7.4 | 3.28 | N.A. | 100.0 | 11.1 | -- | -- |
| TOTAL | 5679.3 | 100.0 | 0.7 | 11.1 | 20.4 | 0.75 | 7 | -- | -- | -- | -- |

REMARKS:

TABLE 91

TABLE 9

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/4" x 1/8"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 12.8

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 60.2 | 0.6 | 1.8 | 22.6 | 0.51 | 39.8 | 0.8 | 25.0 | 17.1 | 1.10 |
| 1.30 - 1.35 | 77.7 | 0.6 | 2.3 | 22.2 | 0.50 | 22.3 | 0.8 | 41.5 | 14.3 | 1.62 |
| 1.35 - 1.40 | 80.6 | 0.6 | 2.5 | 22.2 | 0.50 | 19.4 | 0.8 | 46.6 | 13.3 | 1.78 |
| 1.40 - 1.45 | 81.6 | 0.6 | 2.6 | 22.1 | 0.50 | 18.4 | 0.8 | 48.5 | 13.0 | 1.86 |
| 1.45 - 1.50 | 82.1 | 0.6 | 2.7 | 22.1 | 0.50 | 17.9 | 0.8 | 49.4 | 12.8 | 1.89 |
| 1.50 - 1.55 | 82.6 | 0.6 | 2.8 | 22.1 | 0.50 | 17.4 | 0.8 | 50.2 | 12.6 | 1.93 |
| 1.55 - 1.60 | 82.9 | 0.6 | 2.9 | 22.1 | 0.50 | 17.1 | 0.8 | 50.6 | 12.5 | 1.95 |
| 1.60 - 1.65 | 83.5 | 0.6 | 3.1 | 22.0 | 0.50 | 16.5 | 0.8 | 51.3 | 12.4 | 1.99 |
| 1.65 - 1.70 | 84.3 | 0.6 | 3.5 | 22.0 | 0.51 | 15.7 | 0.8 | 51.6 | 12.3 | 2.03 |
| 1.70 - 1.80 | 91.2 | 0.6 | 6.8 | 21.3 | 0.60 | 8.8 | 0.8 | 55.1 | 11.8 | 2.29 |
| 1.80 - 1.90 | 98.4 | 0.7 | 10.1 | 20.6 | 0.71 | 1.6 | 1.0 | 69.6 | 8.9 | 3.07 |
| 1.90 - 2.0 | 99.0 | 0.7 | 10.4 | 20.6 | 0.72 | 1.0 | 1.0 | 75.6 | 7.4 | 3.28 |
| S @ 2.0 | 100.0 | 0.7 | 11.1 | 20.4 | 0.75 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 92

TABLE 93

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/8" x 10M

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 14.4

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 2498.8 | 65.6 | 0.6 | 1.6 | 22.6 | 0.51 | 9 | 65.6 | 1.6 | 34.4 | 19.5 |
| 1.30 - 1.35 | 734.9 | 19.3 | 0.7 | 3.4 | 20.9 | 0.43 | 1 1/2 | 84.9 | 2.0 | 15.1 | 40.2 |
| 1.35 - 1.40 | 90.5 | 2.4 | 0.7 | 8.7 | 19.4 | 0.40 | 1 1/2 | 87.3 | 2.2 | 12.7 | 46.0 |
| 1.40 - 1.45 | 30.1 | 0.8 | 0.7 | 15.0 | 19.6 | 0.48 | 1 1/2 | 88.1 | 2.3 | 11.9 | 48.2 |
| 1.45 - 1.50 | 20.0 | 0.5 | 0.9 | 22.6 | 18.9 | 0.60 | 1 | 88.6 | 2.4 | 11.4 | 49.4 |
| 1.50 - 1.55 | 22.6 | 0.6 | 0.8 | 30.9 | 18.0 | 1.08 | 1/2 | 89.2 | 2.6 | 10.8 | 50.4 |
| 1.55 - 1.60 | 25.8 | 0.7 | 1.0 | 39.4 | 16.5 | 1.19 | 1/2 | 89.9 | 2.9 | 10.1 | 51.1 |
| 1.60 - 1.65 | 16.6 | 0.4 | 1.0 | 41.5 | 15.4 | 1.11 | 1/2 | 90.3 | 3.0 | 9.7 | 52.1 |
| 1.65 - 1.70 | 26.2 | 0.7 | 1.1 | 44.8 | 14.2 | 1.31 | 1/2 | 91.0 | 3.4 | 9.0 | 52.2 |
| 1.70 - 1.80 | 159.7 | 4.2 | 1.1 | 47.3 | 13.4 | 1.63 | 1/2 | 95.2 | 5.3 | 4.8 | 56.6 |
| 1.80 - 1.90 | 137.7 | 3.6 | 1.1 | 51.4 | 12.2 | 2.13 | 1/2 | 98.8 | 7.0 | 1.2 | 70.6 |
| 1.90 - 2.00 | 19.3 | 0.5 | 1.2 | 56.9 | 10.5 | 2.69 | 1/2 | 99.3 | 7.3 | 0.7 | 73.5 |
| S @ 2.00 | 26.6 | 0.7 | 1.1 | 79.1 | 8.1 | 3.07 | N.A. | 100.0 | 7.8 | -- | -- |
| TOTAL | 3808.8 | 100.0 | 0.7 | 7.8 | 21.1 | 0.64 | 7 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 93

TABLE 94

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/8" x 10M

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 14.4

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 65.6 | 0.6 | 1.6 | 22.6 | 0.51 | 34.4 | 0.8 | 19.5 | 18.2 | 0.90 |
| 1.30 - 1.35 | 84.9 | 0.6 | 2.0 | 22.2 | 0.49 | 15.1 | 1.0 | 40.2 | 14.7 | 1.49 |
| 1.35 - 1.40 | 87.3 | 0.6 | 2.2 | 22.1 | 0.49 | 12.7 | 1.0 | 46.0 | 13.8 | 1.70 |
| 1.40 - 1.45 | 88.1 | 0.6 | 2.3 | 22.1 | 0.49 | 11.9 | 1.1 | 48.2 | 13.4 | 1.78 |
| 1.45 - 1.50 | 88.6 | 0.6 | 2.4 | 22.1 | 0.49 | 11.4 | 1.1 | 49.4 | 13.1 | 1.83 |
| 1.50 - 1.55 | 89.2 | 0.6 | 2.6 | 22.1 | 0.49 | 10.8 | 1.1 | 50.4 | 12.8 | 1.87 |
| 1.55 - 1.60 | 89.9 | 0.6 | 2.9 | 22.0 | 0.50 | 10.1 | 1.1 | 51.1 | 12.6 | 1.92 |
| 1.60 - 1.65 | 90.3 | 0.6 | 3.0 | 22.0 | 0.50 | 9.7 | 1.1 | 52.1 | 12.5 | 1.95 |
| 1.65 - 1.70 | 91.0 | 0.6 | 3.4 | 21.9 | 0.51 | 9.0 | 1.1 | 52.2 | 12.3 | 2.00 |
| 1.70 - 1.80 | 95.2 | 0.7 | 5.3 | 21.6 | 0.56 | 4.8 | 1.1 | 56.6 | 11.4 | 2.33 |
| 1.80 - 1.90 | 98.8 | 0.7 | 7.0 | 21.2 | 0.61 | 1.2 | 1.1 | 70.6 | 9.1 | 2.91 |
| 1.90 - 2.0 | 99.3 | 0.7 | 7.3 | 21.2 | 0.63 | 0.7 | 1.1 | 73.5 | 8.1 | 3.07 |
| S @ 2.0 | 100.0 | 0.7 | 7.8 | 21.1 | 0.64 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 94

TABLE 96

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 10M x 28M

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 19.3

Dates analyzed: October 21 - 28, 1977

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | 183.2 | 6.0 | 0.8 | 1.0 | 23.7 | 0.58 | 9 | 6.0 | 1.0 | 94.0 | 5.5 |
| 1.20 - 1.25 | 806.7 | 26.5 | 0.7 | 1.6 | 23.5 | 0.48 | 8 1/2 | 32.5 | 1.5 | 67.5 | 7.0 |
| 1.25 - 1.30 | 1342.1 | 44.1 | 0.7 | 1.8 | 23.4 | 0.48 | 8 1/2 | 76.6 | 1.7 | 23.4 | 16.8 |
| 1.30 - 1.35 | 404.6 | 13.3 | 0.6 | 2.7 | 22.6 | 0.44 | 4 1/2 | 89.9 | 1.8 | 10.1 | 35.8 |
| 1.35 - 1.40 | 73.6 | 2.4 | 0.8 | 7.2 | 19.8 | 0.42 | 2 | 92.3 | 2.0 | 7.7 | 44.0 |
| 1.40 - 1.45 | 15.7 | 0.5 | 0.7 | 15.5 | 19.6 | 0.54 | 1 1/2 | 92.8 | 2.0 | 7.2 | 46.9 |
| 1.45 - 1.50 | 14.5 | 0.5 | 0.8 | 19.1 | 18.5 | 0.58 | 1 1/2 | 93.3 | 2.1 | 6.7 | 48.8 |
| 1.50 - 1.55 | 8.6 | 0.3 | 0.9 | 25.3 | 18.1 | 0.61 | 1 1/2 | 93.6 | 2.2 | 6.4 | 49.6 |
| 1.55 - 1.60 | 12.2 | 0.4 | 1.0 | 33.5 | 16.9 | 0.87 | 1 1/2 | 94.0 | 2.3 | 6.0 | 51.1 |
| 1.60 - 1.65 | 16.2 | 0.5 | 1.0 | 40.1 | 15.4 | 1.23 | 1 | 94.5 | 2.5 | 5.5 | 52.1 |
| 1.65 - 1.70 | 16.0 | 0.5 | 1.0 | 43.6 | 13.8 | 1.40 | 1 | 95.0 | 2.7 | 5.0 | 53.3 |
| 1.70 - 1.80 | 52.9 | 1.7 | 1.2 | 45.3 | 13.3 | 1.57 | 1/2 | 96.7 | 3.5 | 3.3 | 55.9 |
| 1.80 - 1.90 | 63.9 | 2.1 | 1.1 | 50.0 | 12.7 | 1.92 | 1/2 | 98.8 | 4.5 | 1.2 | 65.4 |
| 1.90 - 2.00 | 15.2 | 0.5 | 1.3 | 56.4 | 12.3 | 1.98 | 1/2 | 99.3 | 4.7 | 0.7 | 80.5 |
| S @ 2.00 | 20.7 | 0.7 | 1.0 | 73.9 | 11.1 | 2.13 | N.A. | 100.0 | 5.2 | -- | -- |
| TOTAL | 3046.1 | 100.0 | 0.7 | 5.2 | 22.5 | 0.56 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 95

TABLE 96

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Sample Site: SUKUNKA NO. 1 MINE

Dates Analyzed: October 21 - 28, 1977

Size Fraction: 10M x 28M

Wt. % of Head Sample: 19.3

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | 6.0 | 0.8 | 1.0 | 23.7 | 0.58 | 94.0 | 0.7 | 5.5 | 22.5 | 0.56 |
| 1.20 - 1.25 | 32.5 | 0.7 | 1.5 | 23.5 | 0.50 | 67.5 | 0.7 | 7.0 | 22.1 | 0.59 |
| 1.25 - 1.30 | 76.6 | 0.7 | 1.7 | 23.5 | 0.49 | 23.4 | 0.8 | 16.8 | 19.5 | 0.79 |
| 1.30 - 1.35 | 89.9 | 0.7 | 1.8 | 23.3 | 0.48 | 10.1 | 1.0 | 35.8 | 15.5 | 1.25 |
| 1.35 - 1.40 | 92.3 | 0.7 | 2.0 | 23.2 | 0.48 | 7.7 | 1.1 | 44.0 | 14.2 | 1.51 |
| 1.40 - 1.45 | 92.8 | 0.7 | 2.0 | 23.2 | 0.48 | 7.2 | 1.1 | 46.9 | 13.8 | 1.57 |
| 1.45 - 1.50 | 93.3 | 0.7 | 2.1 | 23.2 | 0.48 | 6.7 | 1.1 | 48.8 | 13.4 | 1.65 |
| 1.50 - 1.55 | 93.6 | 0.7 | 2.2 | 23.2 | 0.48 | 6.4 | 1.1 | 49.6 | 13.2 | 1.69 |
| 1.55 - 1.60 | 94.0 | 0.7 | 2.3 | 23.2 | 0.48 | 6.0 | 1.1 | 51.1 | 13.0 | 1.75 |
| 1.60 - 1.65 | 94.5 | 0.7 | 2.5 | 23.1 | 0.49 | 5.5 | 1.1 | 52.1 | 12.7 | 1.80 |
| 1.65 - 1.70 | 95.0 | 0.7 | 2.7 | 23.1 | 0.49 | 5.0 | 1.1 | 53.3 | 12.6 | 1.84 |
| 1.70 - 1.80 | 96.7 | 0.7 | 3.5 | 22.9 | 0.51 | 3.3 | 1.1 | 55.9 | 12.3 | 1.97 |
| 1.80 - 1.90 | 98.8 | 0.7 | 4.5 | 22.7 | 0.54 | 1.2 | 1.1 | 65.4 | 11.6 | 2.07 |
| 1.90 - 2.0 | 99.3 | 0.7 | 4.1 | 22.6 | 0.55 | 0.7 | 1.0 | 80.5 | 11.1 | 2.13 |
| S @ 2.0 | 100.0 | 0.7 | 5.2 | 22.5 | 0.56 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 96

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Sample site: SUKUNKA MAIN MINE

Dates analyzed: October 21 - 28, 1977

Size Fraction: 28M x 100M

Wt. % of head sample: 9.0

Lab No.: 9588

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | 12.3 | 1.7 | 0.7 | 1.1 | 26.3 | 0.50 | 9 | 1.7 | 1.1 | 98.3 | 4.3 |
| 1.25 - 1.30 | 361.5 | 50.8 | 0.7 | 1.3 | 24.0 | 0.54 | 8 1/2 | 52.5 | 1.3 | 47.5 | 7.5 |
| 1.30 - 1.35 | 223.4 | 31.4 | 0.8 | 1.7 | 23.5 | 0.50 | 8 | 83.9 | 1.4 | 16.1 | 19.2 |
| 1.35 - 1.40 | 63.0 | 8.8 | 0.8 | 3.6 | 21.6 | 0.45 | 1 1/2 | 92.7 | 1.7 | 7.3 | 36.7 |
| 1.40 - 1.45 | 10.0 | 1.4 | 0.9 | 8.7 | 19.4 | 0.44 | 1 1/2 | 94.1 | 1.8 | 5.9 | 43.5 |
| 1.45 - 1.50 | 4.8 | 0.7 | 0.9 | 14.1 | 18.6 | 0.50 | 1 1/2 | 94.8 | 1.8 | 5.2 | 49.1 |
| 1.50 - 1.55 | 3.7 | 0.5 | 0.9 | 19.5 | 18.1 | 0.38 | N.S.S. | 95.3 | 1.9 | 4.7 | 52.1 |
| 1.55 - 1.60 | 2.3 | 0.3 | 0.9 | 28.0 | 16.9 | 0.70 | N.S.S. | 95.6 | 2.0 | 4.4 | 53.3 |
| 1.60 - 1.65 | 2.9 | 0.4 | 0.9 | 33.1 | 16.5 | 0.88 | N.S.S. | 96.0 | 2.2 | 4.0 | 53.7 |
| 1.65 - 1.70 | 4.6 | 0.6 | 0.9 | 43.7 | 14.2 | 1.11 | 1/2 | 96.6 | 2.4 | 3.4 | 57.1 |
| 1.70 - 1.80 | 6.2 | 0.9 | 1.0 | 45.0 | 14.0 | 1.42 | 1/2 | 97.5 | 2.8 | 2.5 | 61.1 |
| 1.80 - 1.90 | 7.8 | 1.1 | 0.9 | 49.6 | 12.7 | 1.82 | 1/2 | 98.6 | 3.3 | 1.4 | 71.8 |
| 1.90 - 2.00 | 2.9 | 0.4 | 0.9 | 55.1 | 12.6 | 1.65 | 1/2 | 99.0 | 3.5 | 1.0 | 79.3 |
| S @ 2.00 | 6.9 | 1.0 | 0.7 | 76.1 | 17.7 | 1.69 | N.A. | 100.0 | 4.3 | -- | -- |
| TOTAL | 712.3 | 100.0 | 0.8 | 4.3 | 23.1 | 0.56 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 97

TABLE 98

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 28M x 100M

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 9.0

Dates Analyzed: October 21 - 28, 1977

Lab. No.: 9588

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | 1.7 | 0.7 | 1.1 | 26.3 | 0.50 | 98.3 | 0.8 | 4.3 | 23.1 | 0.56 |
| 1.25 - 1.30 | 52.5 | 0.7 | 1.3 | 24.1 | 0.54 | 47.5 | 0.8 | 7.5 | 22.0 | 0.58 |
| 1.30 - 1.35 | 83.9 | 0.7 | 1.4 | 23.9 | 0.52 | 16.1 | 0.8 | 19.2 | 19.2 | 0.74 |
| 1.35 - 1.40 | 92.7 | 0.7 | 1.7 | 23.6 | 0.52 | 7.3 | 0.8 | 36.7 | 16.3 | 1.10 |
| 1.40 - 1.45 | 94.1 | 0.7 | 1.8 | 23.6 | 0.52 | 5.9 | 0.8 | 43.5 | 15.5 | 1.25 |
| 1.45 - 1.50 | 94.8 | 0.7 | 1.8 | 23.5 | 0.52 | 5.2 | 0.8 | 49.1 | 15.1 | 1.36 |
| 1.50 - 1.55 | 95.3 | 0.7 | 1.9 | 23.5 | 0.52 | 4.7 | 0.8 | 52.1 | 14.8 | 1.46 |
| 1.55 - 1.60 | 95.6 | 0.7 | 2.0 | 23.5 | 0.52 | 4.4 | 0.8 | 53.3 | 14.6 | 1.51 |
| 1.60 - 1.65 | 96.0 | 0.7 | 2.2 | 23.5 | 0.52 | 4.0 | 0.8 | 53.7 | 14.5 | 1.57 |
| 1.65 - 1.70 | 96.6 | 0.7 | 2.4 | 23.4 | 0.52 | 3.4 | 0.8 | 57.1 | 14.5 | 1.66 |
| 1.70 - 1.80 | 97.5 | 0.8 | 2.8 | 23.3 | 0.53 | 2.5 | 0.8 | 61.1 | 14.7 | 1.74 |
| 1.80 - 1.90 | 98.0 | 0.8 | 3.3 | 23.2 | 0.54 | 1.4 | 0.8 | 71.8 | 16.2 | 1.68 |
| 1.90 - 2.0 | 99.0 | 0.8 | 3.5 | 23.2 | 0.55 | 1.0 | 0.7 | 79.3 | 17.7 | 1.70 |
| S @ 2.0 | 100.0 | 0.8 | 4.3 | 23.1 | 0.56 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 98

TABLE 99

CLIENT: B.P. EXPLORATION CANADA LTD.

SAMPLE: 1-CH BULK SAMPLE

LAB. NO.: 9588

DATES ANALYSED: Oct. 21-28, 1977

| FROTH FLOTATION TEST: 28M x 0 (WT.% = 16.1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CUMULATIVE | | |
| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | WT.% | ASH% | S% |
| STAGE I | 82.9 | 1.1 | 2.6 | 23.1 | 0.49 | 8 1/2 | 82.9 | 2.6 | 0.49 |
| STAGE II | 11.0 | 0.7 | 5.9 | 22.7 | 0.55 | 8 | 93.9 | 3.0 | 0.50 |
| STAGE III | 1.7 | 0.8 | 13.9 | 21.4 | 0.66 | 5 1/2 | 95.6 | 3.2 | 0.50 |
| TAILS | 4.4 | 0.8 | 40.7 | 18.3 | 1.00 | 1 1/2 | 100.0 | 4.8 | 0.52 |

| FROTH FLOTATION TEST: 100M x 0 (WT.% = 7.1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CUMULATIVE | | |
| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | WT.% | ASH% | S% |
| STAGE I | 90.7 | 0.5 | 3.1 | 23.0 | 0.55 | 8 1/2 | 90.7 | 3.1 | 0.55 |
| STAGE II | 5.3 | 0.6 | 12.2 | 21.0 | 0.79 | 5 1/2 | 96.0 | 3.6 | 0.56 |
| STAGE III | 1.5 | 0.8 | 26.4 | 19.5 | 2.80 | 3 | 97.5 | 4.0 | 0.60 |
| TAILS | 2.5 | 0.6 | 43.5 | 17.1 | 2.86 | 1 1/2 | 100.0 | 4.9 | 0.65 |

FROTH FLOTATION PARAMETERS

| | |
|---|---|
| Pulp Density: | 10% |
| Reagent: | 4:1=Kerosene:MIBC |
| Dosage: | 0.48 lb/Ton |
| Conditioning: | 2 minutes |
| Stage I: | Froth for first minute |
| Stage II: | Froth for second minute |
| Stage III: | Froth for third minute |

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (1)

TABLE 100

Seam: Chamberlain

Sample Site: Sukunka No. 1

Date Sampled: Oct. 5, 1977

Date Analyzed: Nov./Dec. 1977

Size: 4" x 0

Composite No.: 1 - CH

Lab No.: 244

| Proximate Analysis (Air-dried) | | | | Miscellaneous (Air-dried Basis) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inherent Moist.% | Ash% | V.M.% | F.C.% | Total S.% | $CO_2$ | Cl | P | C.V. B.T.U./LB | S.G. |
| 0.7 | 5.8 | 21.3 | 72.2 | 0.60 | 0.35 | Trace | 0.01 | 14,641 | 1.32 |

| Ultimate Analysis % (Air-dried Basis) | | | | | | |
|---|---|---|---|---|---|---|
| % $H_2O$ | % C | % $H_2$ | % $N_2$ | % S | % Ash | % $O_2$ (by diff.) |
| 0.73 | 84.23 | 4.62 | 1.21 | 0.60 | 5.78 | 2.83 |

| Coking Properties | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Caking indices | | Gieseler Plastometer values | | | | | Ruhr Dilatometer values | | | |
| F.S.I. | Gray-King coke type | Initial softening temp. (°C) | Max. fluidity (d.d.m.) | Max. fluidity temp (°C) | Solidification temp. (°C) | Temp. range soften to solidification (°C) | Initial softening temp. (°C) | Temp. of maximum Dilatation (°C) | Maximum contraction % | Maximum dilatation % |
| 7½ | G3 | 442 | 82 | 475 | 509 | 67 | 389 | 458 | 24 | 30 |

SUKUNKA PROJECT

TABLE 101

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (2)

Seam: Chamberlain

Sample Site: Sukunka No. 1

Date Sampled: Oct. 5th 1977

Date Analysis: Nov./Dec. 1977

Size: 4" x 0

Composite No.: 1 - CH

Sample No.: 1 - CH

Lab No.: 244

| PETROGRAPHIC ANALYSIS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Maceral Analysis Volume % | | | | | Mean Max. Reflectance of Vitrinite | Strength Index | Composition Balance Index |
| Vitrinite | Macrinite | Micrinite | Semi Fusinite | Fusinite | | | |
| 51.76 | 8.51 | 3.28 | 24.90 | 7.73 | 1.3584 | 5.68 | 2.67 |

| ASH FUSION TEMPERATURES (°F) | | | | |
|---|---|---|---|---|
| Atmosphere | Initial Deformation | Softening | Hemispheric | Flow |
| Oxidizing | 2210 | 2290 | 2320 | 2400 |
| Reducing | 2080 | 2260 | 2310 | 2380 |

| ANALYSIS OF ASH CONSTITUENTS % | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | $Al_2O_3$ | $Fe_2O_3$ | $TiO_2$ | CaO | MgO | $Na_2O$ | $K_2O$ | $P_2O_5$ | $SO_3$ |
| 42.22 | 17.13 | 9.22 | 0.60 | 10.91 | 1.99 | 1.31 | 0.21 | 1.44 | 12.20 |

| | |
|---|---|
| Hardgrove Grindability Index | 7 6 |

EXHIBIT A A

Lab. No. 244 Date December 2, 1977

Client: B.P. EXPLORATION CANADA LTD.

Sample Identification: CLEAN COAL COMP.

Starting Temperature °C: 320

Softening Temperature °C: 389

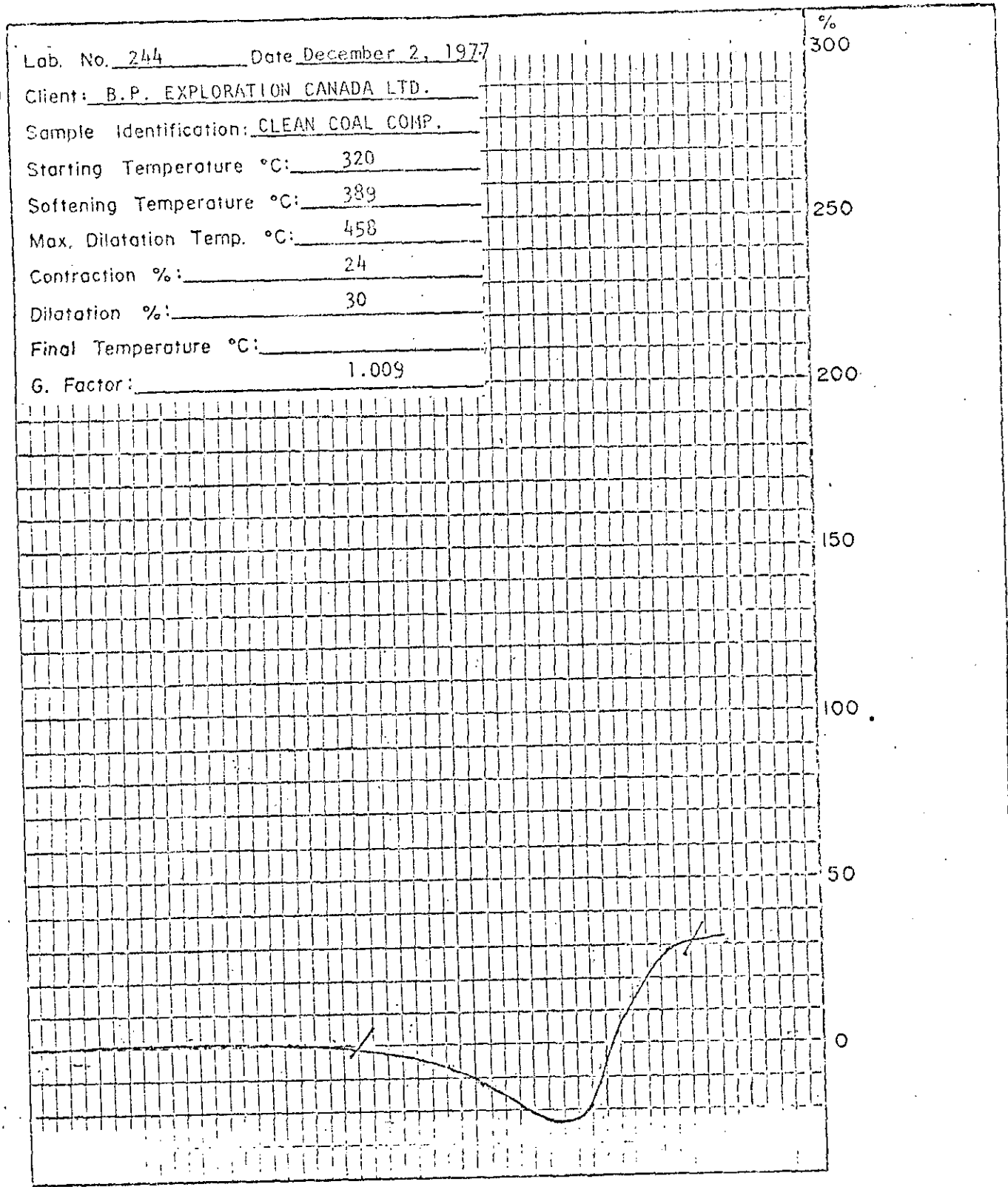
Max. Dilatation Temp. °C: 458

Contraction %: 24

Dilatation %: 30

Final Temperature °C:

G. Factor: 1.009




BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CLIENT: BP EXPLORATION CANADA LTD. TABLE 102

SAMPLE: 3 - CH BULK SAMPLE

LAB. NO.: 9587 October, 1977

HEAD RAW ANALYSIS

| ADL% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | REMARKS |
|---|---|---|---|---|---|---|---|
| 2.8 | 0.6 | 11.0 | 20.5 | 67.9 | 0.58 | 7 1/2 | air dried basis |
| | 3.4 | 10.7 | 19.9 | 66.0 | 0.56 | -- | as rec'd basis |
| | | 11.1 | 20.6 | 68.3 | 0.58 | -- | dry basis |

SIZE & RAW ANALYSES

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4" x 2" | 12.0 | 0.7 | 18.8 | 17.8 | 62.7 | 0.73 | 4 | 12.0 | 18.8 | 0.73 | WT% AND ANALYSES ARE ON AN A.D.B. BASIS. AMT. OF +4" FRACTION CRUSHED TO PASS 4"= 5.7% OF TOTAL |
| 2"x1 1/2" | 3.8 | 0.7 | 18.7 | 17.8 | 62.8 | 0.63 | 4 | 15.8 | 18.8 | 0.71 | |
| 1 1/2"x1" | 6.2 | 1.1 | 14.8 | 19.8 | 64.3 | 0.57 | 5 | 22.0 | 17.7 | 0.67 | |
| 1"x1/2" | 11.1 | 0.9 | 13.1 | 19.3 | 66.7 | 0.58 | 5 1/2 | 33.1 | 16.1 | 0.64 | |
| 1/2"x1/4" | 12.1 | 0.9 | 12.3 | 20.7 | 66.1 | 0.64 | 6 1/2 | 45.2 | 15.1 | 0.64 | |
| 1/4"x1/8" | 10.9 | 1.0 | 10.0 | 20.6 | 68.4 | 0.58 | 7 1/2 | 56.1 | 14.1 | 0.63 | |
| 1/8"x10M | 13.1 | 0.6 | 7.6 | 21.5 | 70.3 | 0.57 | 8 1/2 | 69.2 | 12.9 | 0.62 | |
| 10Mx28M | 16.6 | 1.1 | 6.5 | 22.2 | 70.2 | 0.59 | 8 1/2 | 85.8 | 11.6 | 0.61 | |
| 28Mx100M | 9.4 | 0.9 | 6.4 | 21.8 | 70.9 | 0.58 | 8 1/2 | 95.2 | 11.1 | 0.61 | |
| 100Mx0 | 4.8 | 1.1 | 6.9 | 22.7 | 69.3 | 0.57 | 9 | 100.0 | 10.9 | 0.61 | |

SIZE (WET SCREEN) & RAW ANALYSES: 28M x 0

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28Mx65M | 46.6 | 0.6 | 5.3 | 22.0 | 72.1 | 0.54 | 8 1/2 | 46.6 | 5.3 | 0.54 | A.D.B. WT.% OF -28M = 14.2% OF TOTAL |
| 65Mx100M | 11.1 | 0.6 | 5.6 | 22.1 | 71.7 | 0.56 | 8 1/2 | 57.7 | 5.4 | 0.54 | |
| 100Mx200M | 18.1 | 0.6 | 5.9 | 22.6 | 70.9 | 0.60 | 8 1/2 | 75.8 | 5.5 | 0.56 | |
| 200Mx325M | 8.0 | 0.6 | 6.8 | 22.4 | 70.2 | 0.65 | 8 1/2 | 83.8 | 5.6 | 0.57 | |
| 325Mx0 | 16.2 | 0.7 | 13.3 | 21.6 | 64.4 | 0.69 | 7 | 100.0 | 6.9 | 0.59 | |
| 28Mx0 | 100.0 | 1.2 | 6.5 | 22.1 | 70.2 | 0.57 | 8 1/2 | | | | |

TABLE 103

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 4" x 2"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 12.0

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 87000.0 | 26.4 | 0.8 | 3.1 | 21.8 | 0.55 | 9 | 26.4 | 3.1 | 73.6 | 24.4 |
| 1.30 - 1.35 | 115000.0 | 35.0 | 0.9 | 6.0 | 20.4 | 0.56 | 6 1/2 | 61.4 | 4.8 | 38.6 | 41.0 |
| 1.35 - 1.40 | 13304.0 | 4.1 | 0.8 | 11.8 | 19.6 | 0.54 | 4 | 65.5 | 5.2 | 34.5 | 44.5 |
| 1.40 - 1.45 | 6942.1 | 2.1 | 0.8 | 16.9 | 18.5 | 0.44 | 2 1/2 | 67.6 | 5.6 | 32.4 | 46.2 |
| 1.45 - 1.50 | 1663.6 | 0.5 | 0.7 | 21.9 | 16.3 | 0.48 | 1 1/2 | 68.1 | 5.7 | 31.9 | 46.6 |
| 1.50 - 1.55 | 2998.4 | 0.9 | 0.7 | 28.8 | 15.1 | 0.48 | 1 | 69.0 | 6.0 | 31.0 | 47.2 |
| 1.55 - 1.60 | 5214.2 | 1.6 | 0.6 | 32.6 | 14.5 | 0.65 | 1 | 70.6 | 6.6 | 29.4 | 48.0 |
| 1.60 - 1.65 | 5587.7 | 1.7 | 0.6 | 39.9 | 13.7 | 0.55 | 1 | 72.3 | 7.4 | 27.7 | 48.4 |
| 1.65 - 1.70 | 2965.3 | 0.9 | 0.7 | 42.4 | 13.4 | 1.19 | 1/2 | 73.2 | 7.8 | 26.8 | 48.7 |
| 1.70 - 1.80 | 81034.7 | 24.6 | 0.8 | 45.3 | 13.1 | 1.47 | 1/2 | 97.8 | 17.2 | 2.2 | 88.2 |
| 1.80 - 1.90 | 742.8 | 0.2 | 0.8 | 52.4 | 11.9 | 1.08 | 1/2 | 98.0 | 17.3 | 2.0 | 90.4 |
| 1.90 - 2.00 | 137.6 | 0.1 | 0.7 | 59.5 | 10.5 | 1.02 | 1/2 | 98.1 | 17.3 | 1.9 | 94.2 |
| S @ 2.00 | 6412.2 | 1.9 | 1.2 | 91.9 | 5.0 | 0.14 | N.A. | 100.0 | 18.3 | -- | -- |
| TOTAL | 329002.6 | 100.0 | 0.8 | 18.8 | 18.2 | 0.78 | 4 | -- | -- | -- | -- |

REMARKS:

TABLE 103

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 4" x 2"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 12.0

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 26.4 | 0.8 | 3.1 | 21.8 | 0.55 | 73.6 | 0.8 | 24.4 | 17.0 | 0.86 |
| 1.30 - 1.35 | 61.4 | 0.9 | 4.8 | 21.0 | 0.56 | 38.6 | 0.8 | 41.0 | 13.9 | 1.13 |
| 1.35 - 1.40 | 65.5 | 0.9 | 5.2 | 20.9 | 0.55 | 34.5 | 0.8 | 44.5 | 13.2 | 1.20 |
| 1.40 - 1.45 | 67.6 | 0.9 | 5.6 | 20.8 | 0.55 | 32.4 | 0.8 | 46.2 | 12.8 | 1.25 |
| 1.45 - 1.50 | 68.1 | 0.9 | 5.7 | 20.8 | 0.55 | 31.9 | 0.8 | 46.6 | 12.8 | 1.26 |
| 1.50 - 1.55 | 69.0 | 0.8 | 6.0 | 20.7 | 0.55 | 31.0 | 0.8 | 47.2 | 12.7 | 1.28 |
| 1.55 - 1.60 | 70.6 | 0.8 | 6.6 | 20.6 | 0.55 | 29.4 | 0.8 | 48.0 | 12.6 | 1.32 |
| 1.60 - 1.65 | 72.3 | 0.8 | 7.4 | 20.4 | 0.55 | 27.7 | 0.8 | 48.4 | 12.5 | 1.37 |
| 1.65 - 1.70 | 73.2 | 0.8 | 7.8 | 20.3 | 0.56 | 26.8 | 0.8 | 48.7 | 12.5 | 1.37 |
| 1.70 - 1.80 | 97.8 | 0.8 | 17.2 | 18.5 | 0.79 | 2.2 | 1.1 | 88.2 | 5.9 | 0.27 |
| 1.80 - 1.90 | 98.0 | 0.8 | 17.3 | 18.5 | 0.79 | 2.0 | 1.2 | 90.4 | 5.3 | 0.18 |
| 1.90 - 2.0 | 98.1 | 0.8 | 17.3 | 18.5 | 0.79 | 1.9 | 1.2 | 94.2 | 5.0 | 0.14 |
| S @ 2.0 | 100.0 | 0.8 | 18.8 | 18.2 | 0.78 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 104

TABLE ___

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 2" x 1 1/2"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 3.8

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 55000.0 | 34.6 | 0.8 | 2.9 | 21.2 | 0.45 | 8 1/2 | 34.6 | 2.9 | 65.4 | 27.0 |
| 1.30 - 1.35 | 42000.0 | 26.4 | 0.7 | 5.6 | 20.7 | 0.51 | 5 | 61.0 | 4.1 | 39.0 | 41.4 |
| 1.35 - 1.40 | 10000.0 | 6.3 | 0.7 | 11.5 | 19.6 | 0.45 | 3 | 67.3 | 4.8 | 32.7 | 47.2 |
| 1.40 - 1.45 | 3992.4 | 2.5 | 0.7 | 16.4 | 19.5 | 0.49 | 2 1/2 | 69.8 | 5.2 | 30.2 | 49.7 |
| 1.45 - 1.50 | 2945.8 | 1.9 | 0.6 | 20.5 | 18.2 | 0.48 | 1 1/2 | 71.7 | 5.6 | 28.3 | 51.7 |
| 1.50 - 1.55 | 4685.0 | 2.9 | 0.6 | 29.0 | 15.4 | 0.59 | 1 1/2 | 74.6 | 6.5 | 25.4 | 54.3 |
| 1.55 - 1.60 | 2107.8 | 1.3 | 0.6 | 33.0 | 14.2 | 0.41 | 1 1/2 | 75.9 | 7.0 | 24.1 | 55.3 |
| 1.60 - 1.65 | 3493.4 | 2.2 | 0.6 | 39.1 | 14.0 | 1.16 | 1 1/2 | 78.1 | 7.9 | 21.9 | 57.0 |
| 1.65 - 1.70 | 1591.2 | 1.0 | 0.7 | 42.0 | 13.4 | 1.49 | 1 1/2 | 79.1 | 8.3 | 20.9 | 57.8 |
| 1.70 - 1.80 | 23000.0 | 14.5 | 0.6 | 45.7 | 13.1 | 1.63 | 1 | 93.6 | 14.1 | 6.4 | 85.2 |
| 1.80 - 1.90 | 499.5 | 0.3 | 0.6 | 53.7 | 11.5 | 1.67 | 1 | 93.9 | 14.2 | 6.1 | 87.2 |
| 1.90 - 2.00 | 349.4 | 0.2 | 0.4 | 64.1 | 9.2 | 0.71 | 1/2 | 94.1 | 14.3 | 5.9 | 88.1 |
| S @ 2.00 | 9323.5 | 5.9 | 1.0 | 87.8 | 4.8 | 0.53 | N.A. | 100.0 | 18.7 | -- | -- |
| TOTAL | 158988.0 | 100.0 | 0.7 | 18.7 | 18.2 | 0.68 | 4 | -- | -- | -- | -- |

REMARKS:

TABLE 105

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 2" x 1 1/2"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 3.8

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 34.6 | 0.8 | 2.9 | 21.2 | 0.45 | 65.4 | 0.7 | 27.0 | 16.6 | 0.80 |
| 1.30 - 1.35 | 61.0 | 0.8 | 4.1 | 21.0 | 0.48 | 39.0 | 0.7 | 41.4 | 13.8 | 0.99 |
| 1.35 - 1.40 | 67.3 | 0.8 | 4.8 | 20.9 | 0.47 | 32.7 | 0.7 | 47.2 | 12.7 | 1.10 |
| 1.40 - 1.45 | 69.8 | 0.7 | 5.2 | 20.8 | 0.47 | 30.2 | 0.7 | 49.7 | 12.1 | 1.15 |
| 1.45 - 1.50 | 71.7 | 0.7 | 5.6 | 20.7 | 0.47 | 28.3 | 0.7 | 51.7 | 11.7 | 1.19 |
| 1.50 - 1.55 | 74.6 | 0.7 | 6.5 | 20.5 | 0.48 | 25.4 | 0.7 | 54.3 | 11.3 | 1.26 |
| 1.55 - 1.60 | 75.9 | 0.7 | 7.0 | 20.4 | 0.48 | 24.1 | 0.7 | 55.3 | 11.1 | 1.30 |
| 1.60 - 1.65 | 78.1 | 0.7 | 7.9 | 20.2 | 0.50 | 21.9 | 0.7 | 57.0 | 10.8 | 1.32 |
| 1.65 - 1.70 | 79.1 | 0.7 | 8.3 | 20.2 | 0.51 | 20.9 | 0.7 | 57.8 | 10.7 | 1.31 |
| 1.70 - 1.80 | 93.6 | 0.7 | 14.1 | 19.1 | 0.68 | 6.4 | 1.0 | 85.2 | 5.3 | 0.59 |
| 1.80 - 1.90 | 93.9 | 0.7 | 14.2 | 19.0 | 0.69 | 6.1 | 1.0 | 87.2 | 4.9 | 0.54 |
| 1.90 - 2.0 | 94.1 | 0.7 | 14.3 | 19.0 | 0.69 | 5.9 | 1.0 | 88.1 | 4.8 | 0.53 |
| S @ 2.0 | 100.0 | 0.7 | 18.7 | 18.2 | 0.68 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 106

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Sample site: SUKUNKA MAIN MINE

Dates analyzed: October 14 - 20, 1977

Size Fraction: 1 1/2" x 1"

Wt. % of head sample: 6.2

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 22839.1 | 21.1 | 0.7 | 2.3 | 22.1 | 0.52 | 8 1/2 | 21.1 | 2.3 | 78.9 | 18.9 |
| 1.30 - 1.35 | 41000.0 | 37.9 | 0.7 | 3.9 | 21.2 | 0.47 | 6 | 59.0 | 3.3 | 41.0 | 32.8 |
| 1.35 - 1.40 | 9739.0 | 9.0 | 0.7 | 9.8 | 19.8 | 0.48 | 2 1/2 | 68.0 | 4.2 | 32.0 | 39.2 |
| 1.40 - 1.45 | 4497.0 | 4.2 | 0.7 | 15.1 | 19.6 | 0.47 | 2 1/2 | 72.2 | 4.8 | 27.8 | 42.9 |
| 1.45 - 1.50 | 2947.7 | 2.7 | 0.8 | 20.2 | 19.2 | 0.41 | 1 1/2 | 74.9 | 5.4 | 25.1 | 45.2 |
| 1.50 - 1.55 | 3894.2 | 3.6 | 0.7 | 27.4 | 16.1 | 0.46 | 1 | 78.5 | 6.4 | 21.5 | 48.3 |
| 1.55 - 1.60 | 2396.5 | 2.2 | 0.7 | 31.9 | 15.6 | 0.48 | 1 | 80.7 | 7.1 | 19.3 | 50.1 |
| 1.60 - 1.65 | 1556.3 | 1.4 | 0.6 | 36.0 | 14.7 | 0.80 | 1 | 82.1 | 7.6 | 17.9 | 51.2 |
| 1.65 - 1.70 | 948.8 | 0.9 | 0.7 | 42.3 | 13.4 | 1.10 | 1 | 83.0 | 7.9 | 17.0 | 52.0 |
| 1.70 - 1.80 | 14076.0 | 13.0 | 0.7 | 45.6 | 13.4 | 1.63 | 1/2 | 96.0 | 13.0 | 4.0 | 73.0 |
| 1.80 - 1.90 | 1622.5 | 1.5 | 0.6 | 53.7 | 11.5 | 1.49 | 1/2 | 97.5 | 13.7 | 2.5 | 81.7 |
| 1.90 - 2.00 | 427.9 | 0.4 | 0.7 | 62.1 | 11.0 | 0.98 | 1/2 | 97.9 | 13.9 | 2.1 | 85.4 |
| S @ 2.00 | 2202.0 | 2.1 | 0.8 | 86.7 | 5.7 | 0.39 | N.A. | 100.0 | 15.4 | -- | -- |
| TOTAL | 108147.0 | 100.0 | 0.7 | 15.4 | 19.1 | 0.66 | 5 | -- | -- | -- | -- |

REMARKS:

TABLE 107

TABLE 108

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1 1/2" x 1"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 6.2

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 21.1 | 0.7 | 2.3 | 22.1 | 0.52 | 78.9 | 0.7 | 18.9 | 18.4 | 0.69 |
| 1.30 - 1.35 | 59.0 | 0.7 | 3.3 | 21.5 | 0.49 | 41.0 | 0.7 | 32.8 | 15.7 | 0.90 |
| 1.35 - 1.40 | 68.0 | 0.7 | 4.2 | 21.3 | 0.49 | 32.0 | 0.7 | 39.2 | 14.6 | 1.02 |
| 1.40 - 1.45 | 72.2 | 0.7 | 4.8 | 21.2 | 0.49 | 27.8 | 0.7 | 42.9 | 13.8 | 1.10 |
| 1.45 - 1.50 | 74.9 | 0.7 | 5.4 | 21.1 | 0.48 | 25.1 | 0.7 | 45.2 | 13.3 | 1.17 |
| 1.50 - 1.55 | 78.5 | 0.7 | 6.4 | 20.9 | 0.48 | 21.5 | 0.7 | 48.3 | 12.8 | 1.29 |
| 1.55 - 1.60 | 80.7 | 0.7 | 7.1 | 20.7 | 0.48 | 19.3 | 0.7 | 50.1 | 12.5 | 1.39 |
| 1.60 - 1.65 | 82.1 | 0.7 | 7.6 | 20.6 | 0.49 | 17.9 | 0.7 | 51.2 | 12.3 | 1.43 |
| 1.65 - 1.70 | 83.0 | 0.7 | 7.9 | 20.6 | 0.49 | 17.0 | 0.7 | 52.0 | 12.2 | 1.45 |
| 1.70 - 1.80 | 96.0 | 0.7 | 13.0 | 19.6 | 0.65 | 4.0 | 0.7 | 73.0 | 8.4 | 0.86 |
| 1.80 - 1.90 | 97.5 | 0.7 | 13.7 | 19.5 | 0.66 | 2.5 | 0.8 | 81.7 | 6.5 | 0.48 |
| 1.90 - 2.0 | 77.9 | 0.7 | 13.9 | 19.4 | 0.66 | 2.1 | 0.8 | 85.4 | 5.7 | 0.39 |
| S @ 2.0 | 100.0 | 0.7 | 15.4 | 19.1 | 0.66 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 108

TABLE 109

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1" x 1/2"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 11.1

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 16794.0 | 27.5 | 0.6 | 2.2 | 22.1 | 0.49 | 8 1/2 | 27.5 | 2.2 | 72.5 | 17.1 |
| 1.30 - 1.35 | 22525.0 | 36.9 | 0.6 | 4.4 | 20.3 | 0.42 | 4 1/2 | 64.4 | 3.5 | 35.6 | 31.1 |
| 1.35 - 1.40 | 5499.7 | 9.0 | 0.6 | 9.9 | 19.9 | 0.41 | 2 1/2 | 73.4 | 4.3 | 26.6 | 37.0 |
| 1.40 - 1.45 | 2152.7 | 3.5 | 0.6 | 15.2 | 19.5 | 0.43 | 1 1/2 | 76.9 | 4.7 | 23.1 | 40.7 |
| 1.45 - 1.50 | 2316.8 | 3.8 | 0.5 | 19.4 | 19.2 | 0.49 | 1 | 80.7 | 5.4 | 19.3 | 44.8 |
| 1.50 - 1.55 | 1700.0 | 2.8 | 0.6 | 26.0 | 17.9 | 0.51 | 1 | 83.5 | 6.1 | 16.5 | 47.8 |
| 1.55 - 1.60 | 1127.1 | 1.8 | 0.5 | 31.7 | 16.7 | 0.54 | 1 | 85.3 | 6.7 | 14.7 | 49.6 |
| 1.60 - 1.65 | 1330.7 | 2.2 | 0.5 | 37.9 | 15.3 | 0.97 | 1 | 87.5 | 7.5 | 12.5 | 51.6 |
| 1.65 - 1.70 | 551.2 | 0.9 | 0.6 | 41.7 | 14.0 | 1.09 | 1 | 88.4 | 7.8 | 11.6 | 52.7 |
| 1.70 - 1.80 | 5162.9 | 8.4 | 0.7 | 45.8 | 13.7 | 1.63 | 1 | 96.8 | 11.1 | 3.2 | 70.8 |
| 1.80 - 1.90 | 595.3 | 1.0 | 0.6 | 53.9 | 11.4 | 1.22 | 1/2 | 97.8 | 11.5 | 2.2 | 80.1 |
| 1.90 - 2.00 | 220.2 | 0.4 | 0.6 | 61.5 | 11.3 | 0.74 | 1/2 | 98.2 | 11.7 | 1.8 | 84.5 |
| S @ 2.00 | 1100.4 | 1.8 | 0.7 | 82.3 | 7.4 | 0.39 | N.A. | 100.0 | 13.0 | -- | -- |
| TOTAL | 61076.0 | 100.0 | 0.6 | 13.0 | 19.5 | 0.57 | 5 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 109

TABLE 110

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1" x 1/2"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 11.1

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 27.5 | 0.6 | 2.2 | 22.1 | 0.49 | 72.5 | 0.6 | 17.1 | 18.5 | 0.61 |
| 1.30 - 1.35 | 64.4 | 0.6 | 3.5 | 21.1 | 0.45 | 35.6 | 0.6 | 31.1 | 16.5 | 0.80 |
| 1.35 - 1.40 | 73.4 | 0.6 | 4.3 | 20.9 | 0.45 | 26.6 | 0.6 | 37.0 | 15.6 | 0.93 |
| 1.40 - 1.45 | 76.9 | 0.6 | 4.7 | 20.9 | 0.44 | 23.1 | 0.6 | 40.7 | 14.9 | 1.01 |
| 1.45 - 1.50 | 80.7 | 0.6 | 5.4 | 20.8 | 0.45 | 19.3 | 0.6 | 44.8 | 14.0 | 1.11 |
| 1.50 - 1.55 | 83.5 | 0.6 | 6.1 | 20.7 | 0.45 | 16.5 | 0.6 | 47.8 | 13.4 | 1.21 |
| 1.55 - 1.60 | 85.3 | 0.6 | 6.7 | 20.6 | 0.45 | 14.7 | 0.7 | 49.6 | 13.0 | 1.29 |
| 1.60 - 1.65 | 87.5 | 0.6 | 7.5 | 20.5 | 0.46 | 12.5 | 0.7 | 51.6 | 12.6 | 1.35 |
| 1.65 - 1.70 | 88.4 | 0.6 | 7.8 | 20.4 | 0.47 | 11.6 | 0.7 | 52.7 | 12.4 | 1.37 |
| 1.70 - 1.80 | 96.8 | 0.6 | 11.1 | 19.8 | 0.57 | 3.2 | 0.7 | 70.8 | 9.1 | 0.70 |
| 1.80 - 1.90 | 97.8 | 0.6 | 11.5 | 19.7 | 0.58 | 2.2 | 0.7 | 80.1 | 8.1 | 0.45 |
| 1.90 - 2.0 | 98.2 | 0.6 | 11.7 | 19.7 | 0.58 | 1.8 | 0.7 | 84.5 | 7.4 | 0.39 |
| S @ 2.0 | 100.0 | 0.6 | 13.0 | 19.5 | 0.57 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 110

TABLE 111

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/2" x 1/4"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 12.1

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 15700.0 | 54.8 | 0.5 | 3.0 | 22.3 | 0.55 | 8 | 54.8 | 3.0 | 45.2 | 25.1 |
| 1.30 - 1.35 | 3785.4 | 13.2 | 0.5 | 7.0 | 19.6 | 0.53 | 2 1/2 | 68.0 | 3.8 | 32.0 | 32.5 |
| 1.35 - 1.40 | 1334.3 | 4.7 | 0.5 | 11.0 | 19.2 | 0.49 | 2 | 72.7 | 4.2 | 27.3 | 36.4 |
| 1.40 - 1.45 | 1336.7 | 4.7 | 0.5 | 15.1 | 19.0 | 0.48 | 1 1/2 | 77.4 | 4.9 | 22.6 | 40.7 |
| 1.45 - 1.50 | 1185.2 | 4.1 | 0.5 | 21.8 | 18.9 | 0.49 | 1 | 81.5 | 5.8 | 18.5 | 44.7 |
| 1.50 - 1.55 | 576.3 | 2.0 | 0.8 | 25.6 | 17.5 | 0.52 | 1 | 83.5 | 6.2 | 16.5 | 47.4 |
| 1.55 - 1.60 | 711.5 | 2.5 | 0.7 | 29.6 | 17.4 | 0.57 | 1 | 86.0 | 6.9 | 14.0 | 50.4 |
| 1.60 - 1.65 | 446.4 | 1.6 | 0.6 | 34.0 | 16.6 | 0.80 | 1 | 87.6 | 7.4 | 12.4 | 52.5 |
| 1.65 - 1.70 | 547.3 | 1.9 | 0.7 | 40.0 | 15.8 | 1.18 | 1 | 89.5 | 8.1 | 10.5 | 54.7 |
| 1.70 - 1.80 | 1592.1 | 5.6 | 0.8 | 44.9 | 13.2 | 1.58 | 1 | 95.1 | 10.3 | 4.9 | 65.3 |
| 1.80 - 1.90 | 505.4 | 1.8 | 0.7 | 51.0 | 13.0 | 1.27 | 1 | 96.9 | 11.0 | 3.1 | 75.4 |
| 1.90 - 2.00 | 115.1 | 0.4 | 0.8 | 57.1 | 11.9 | 0.92 | 1 | 97.3 | 11.2 | 2.7 | 77.7 |
| S @ 2.00 | 791.9 | 2.7 | 0.9 | 77.4 | 8.3 | 0.57 | 1/2 | 100.0 | 13.0 | -- | -- |
| TOTAL | 28627.6 | 100.0 | 0.5 | 13.0 | 20.0 | 0.63 | 6 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 111

TABLE 112

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/2" x 1/4"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 12.1

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 54.8 | 0.5 | 3.0 | 22.3 | 0.55 | 45.2 | 0.6 | 25.1 | 17.2 | 0.72 |
| 1.30 - 1.35 | 68.0 | 0.5 | 3.8 | 21.8 | 0.55 | 32.0 | 0.7 | 32.5 | 16.1 | 0.80 |
| 1.35 - 1.40 | 72.7 | 0.5 | 4.2 | 21.6 | 0.54 | 27.3 | 0.7 | 36.4 | 15.6 | 0.85 |
| 1.40 - 1.45 | 77.4 | 0.5 | 4.9 | 21.5 | 0.54 | 22.6 | 0.7 | 40.7 | 14.9 | 0.93 |
| 1.45 - 1.50 | 81.5 | 0.5 | 5.8 | 21.3 | 0.54 | 18.5 | 0.8 | 44.7 | 14.0 | 1.03 |
| 1.50 - 1.55 | 83.5 | 0.5 | 6.2 | 21.2 | 0.54 | 16.5 | 0.8 | 47.4 | 13.6 | 1.09 |
| 1.55 - 1.60 | 86.0 | 0.5 | 6.9 | 21.1 | 0.54 | 14.0 | 0.8 | 50.4 | 12.9 | 1.18 |
| 1.60 - 1.65 | 87.6 | 0.5 | 7.4 | 21.0 | 0.54 | 12.4 | 0.8 | 52.5 | 12.5 | 1.23 |
| 1.65 - 1.70 | 89.5 | 0.5 | 8.1 | 20.9 | 0.56 | 10.5 | 0.8 | 54.7 | 11.9 | 1.24 |
| 1.70 - 1.80 | 95.1 | 0.5 | 10.3 | 20.5 | 0.62 | 4.9 | 0.8 | 65.3 | 10.3 | 0.85 |
| 1.80 - 1.90 | 96.9 | 0.5 | 11.0 | 20.3 | 0.63 | 3.1 | 0.9 | 75.4 | 8.8 | 0.61 |
| 1.90 - 2.0 | 97.3 | 0.5 | 11.2 | 20.3 | 0.63 | 2.7 | 0.9 | 77.7 | 8.3 | 0.57 |
| S @ 2.0 | 100.0 | 0.5 | 13.0 | 20.0 | 0.63 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 112

TABLE 113

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/4" x 1/8"

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 10.9

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 3418.7 | 57.5 | 0.7 | 2.1 | 22.9 | 0.46 | 9 | 57.5 | 2.1 | 42.5 | 19.4 |
| 1.30 - 1.35 | 1187.8 | 20.0 | 0.6 | 5.2 | 19.6 | 0.48 | 2 1/2 | 77.5 | 2.9 | 22.5 | 32.1 |
| 1.35 - 1.40 | 278.5 | 4.7 | 0.6 | 10.7 | 19.2 | 0.52 | 1 1/2 | 82.2 | 3.3 | 17.8 | 37.9 |
| 1.40 - 1.45 | 237.7 | 4.0 | 0.6 | 17.7 | 19.0 | 0.54 | 1 1/2 | 86.2 | 4.0 | 13.8 | 43.6 |
| 1.45 - 1.50 | 110.4 | 1.9 | 0.6 | 20.7 | 18.6 | 0.56 | 1 1/2 | 88.1 | 4.4 | 11.9 | 46.9 |
| 1.50 - 1.55 | 107.7 | 1.8 | 0.6 | 26.5 | 18.0 | 0.57 | 1 | 89.9 | 4.8 | 10.1 | 51.0 |
| 1.55 - 1.60 | 101.1 | 1.7 | 0.6 | 33.5 | 17.6 | 0.70 | 1 | 91.6 | 5.3 | 8.4 | 54.9 |
| 1.60 - 1.65 | 64.9 | 1.1 | 0.6 | 37.4 | 16.6 | 0.92 | 1 | 92.7 | 5.7 | 7.3 | 57.3 |
| 1.65 - 1.70 | 65.6 | 1.1 | 0.6 | 42.0 | 15.2 | 1.25 | 1 | 93.8 | 6.2 | 6.2 | 58.8 |
| 1.70 - 1.80 | 169.3 | 2.8 | 0.6 | 46.1 | 13.8 | 1.48 | 1 | 96.6 | 7.3 | 3.4 | 70.9 |
| 1.80 - 1.90 | 41.8 | 0.7 | 0.5 | 53.3 | 13.6 | 1.08 | 1 | 97.3 | 7.6 | 2.7 | 76.6 |
| 1.90 - 2.00 | 23.9 | 0.4 | 0.7 | 61.3 | 13.3 | 0.30 | 1/2 | 97.7 | 7.9 | 2.3 | 77.5 |
| S @ 2.00 | 135.2 | 2.3 | 0.6 | 77.5 | 10.0 | 0.52 | 1/2 | 100.0 | 9.5 | -- | -- |
| TOTAL | 5942.6 | 100.0 | 0.7 | 9.5 | 20.8 | 0.53 | 7 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 113

TABLE 114

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/4" x 1/8"

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 10.9

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 57.5 | 0.7 | 2.1 | 22.9 | 0.46 | 42.5 | 0.6 | 19.4 | 18.8 | 0.61 |
| 1.30 - 1.35 | 77.5 | 0.7 | 2.9 | 22.0 | 0.46 | 22.5 | 0.6 | 32.1 | 16.7 | 0.73 |
| 1.35 - 1.40 | 82.2 | 0.7 | 3.3 | 21.9 | 0.47 | 17.8 | 0.6 | 37.9 | 16.0 | 0.79 |
| 1.40 - 1.45 | 86.2 | 0.7 | 4.0 | 21.8 | 0.47 | 13.8 | 0.6 | 43.6 | 15.2 | 0.86 |
| 1.45 - 1.50 | 88.1 | 0.7 | 4.4 | 21.7 | 0.47 | 11.9 | 0.6 | 46.9 | 14.6 | 0.91 |
| 1.50 - 1.55 | 89.9 | 0.7 | 4.8 | 21.6 | 0.48 | 10.1 | 0.6 | 51.0 | 14.0 | 0.97 |
| 1.55 - 1.60 | 91.6 | 0.7 | 5.3 | 21.5 | 0.48 | 8.4 | 0.6 | 54.9 | 13.3 | 1.02 |
| 1.60 - 1.65 | 92.7 | 0.7 | 5.7 | 21.5 | 0.48 | 7.3 | 0.6 | 57.3 | 12.8 | 1.04 |
| 1.65 - 1.70 | 93.8 | 0.7 | 6.2 | 21.4 | 0.49 | 6.2 | 0.6 | 58.8 | 12.3 | 1.00 |
| 1.70 - 1.80 | 96.6 | 0.7 | 7.3 | 21.2 | 0.52 | 3.4 | 0.6 | 70.9 | 11.1 | 0.61 |
| 1.80 - 1.90 | 97.3 | 0.7 | 7.6 | 21.1 | 0.53 | 2.7 | 0.6 | 76.6 | 10.5 | 0.49 |
| 1.90 - 2.0 | 97.7 | 0.7 | 7.9 | 21.1 | 0.53 | 2.3 | 0.6 | 77.5 | 10.0 | 0.52 |
| S @ 2.0 | 100.0 | 0.7 | 9.5 | 20.8 | 0.53 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 114

TABLE 115

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Sample site: SUKUNKA MAIN MINE

Dates analyzed: October 14 - 20, 1977

Size Fraction: 1/8" x 10M

Wt. % of head sample: 13.1

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 2932.7 | 74.6 | 0.5 | 2.4 | 23.4 | 0.48 | 9 | 74.6 | 2.4 | 25.4 | 22.5 |
| 1.30 - 1.35 | 448.6 | 11.4 | 0.5 | 6.5 | 19.8 | 0.47 | 3 | 86.0 | 2.9 | 14.0 | 35.8 |
| 1.35 - 1.40 | 77.0 | 2.0 | 0.5 | 11.9 | 18.9 | 0.50 | 1 1/2 | 88.0 | 3.1 | 12.0 | 39.9 |
| 1.40 - 1.45 | 101.9 | 2.6 | 0.5 | 18.2 | 18.7 | 0.52 | 1 1/2 | 90.6 | 3.6 | 9.4 | 45.2 |
| 1.45 - 1.50 | 70.0 | 1.8 | 0.6 | 24.0 | 17.6 | 0.57 | 1 | 92.4 | 4.0 | 7.6 | 50.2 |
| 1.50 - 1.55 | 40.3 | 1.0 | 0.6 | 28.5 | 17.6 | 0.61 | 1 | 93.4 | 4.2 | 6.6 | 54.4 |
| 1.55 - 1.60 | 33.5 | 0.8 | 0.6 | 33.5 | 17.1 | 0.70 | 1 | 94.2 | 4.5 | 5.8 | 56.5 |
| 1.60 - 1.65 | 26.1 | 0.7 | 0.6 | 37.9 | 16.2 | 0.93 | 1 | 94.9 | 4.7 | 5.1 | 59.9 |
| 1.65 - 1.70 | 39.5 | 1.0 | 0.5 | 43.0 | 15.1 | 1.25 | 1 | 95.9 | 5.1 | 4.1 | 64.0 |
| 1.70 - 1.80 | 52.2 | 1.3 | 0.5 | 47.3 | 13.8 | 1.40 | 1/2 | 97.2 | 5.7 | 2.8 | 70.5 |
| 1.80 - 1.90 | 23.0 | 0.6 | 0.8 | 54.6 | 13.6 | 1.11 | 1/2 | 97.8 | 6.0 | 2.2 | 74.8 |
| 1.90 - 2.00 | 18.1 | 0.5 | 0.8 | 63.9 | 11.9 | 0.79 | 1/2 | 98.3 | 6.3 | 1.7 | 77.7 |
| S @ 2.00 | 65.9 | 1.7 | 0.6 | 78.2 | 10.0 | 0.48 | N.A. | 100.0 | 7.5 | -- | -- |
| TOTAL | 3923.8 | 100.0 | 0.5 | 7.5 | 22.0 | 0.51 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 115

TABLE 116

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 1/8" x 10M

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 13.1

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9598

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 74.6 | 0.5 | 2.4 | 23.4 | 0.48 | 25.4 | 0.5 | 22.5 | 17.7 | 0.61 |
| 1.30 - 1.35 | 86.0 | 0.5 | 2.9 | 22.9 | 0.48 | 14.0 | 0.6 | 35.8 | 16.1 | 0.72 |
| 1.35 - 1.40 | 88.0 | 0.5 | 3.1 | 22.8 | 0.48 | 12.0 | 0.6 | 39.9 | 15.6 | 0.76 |
| 1.40 - 1.45 | 90.6 | 0.5 | 3.6 | 22.7 | 0.48 | 9.4 | 0.6 | 45.2 | 14.7 | 0.83 |
| 1.45 - 1.50 | 92.4 | 0.5 | 4.0 | 22.6 | 0.48 | 7.6 | 0.6 | 50.2 | 14.0 | 0.89 |
| 1.50 - 1.55 | 93.4 | 0.5 | 4.2 | 22.6 | 0.48 | 6.6 | 0.6 | 54.4 | 13.5 | 0.93 |
| 1.55 - 1.60 | 94.2 | 0.5 | 4.5 | 22.5 | 0.49 | 5.8 | 0.6 | 56.5 | 13.0 | 0.96 |
| 1.60 - 1.65 | 94.9 | 0.5 | 4.7 | 22.5 | 0.49 | 5.1 | 0.6 | 59.9 | 12.6 | 0.97 |
| 1.65 - 1.70 | 95.9 | 0.5 | 5.1 | 22.4 | 0.50 | 4.1 | 0.6 | 64.0 | 12.0 | 0.90 |
| 1.70 - 1.80 | 97.2 | 0.5 | 5.7 | 22.3 | 0.51 | 2.8 | 0.6 | 70.5 | 11.1 | 0.67 |
| 1.80 - 1.90 | 97.8 | 0.5 | 6.0 | 22.2 | 0.51 | 2.2 | 0.6 | 74.8 | 10.4 | 0.55 |
| 1.90 - 2.0 | 98.3 | 0.5 | 6.3 | 22.2 | 0.51 | 1.7 | 0.6 | 77.7 | 10.0 | 0.48 |
| S @ 2.0 | 100.0 | 0.5 | 7.5 | 22.0 | 0.51 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 116

TABLE 117

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 10M x 28M

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 16.6

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 2461.1 | 73.5 | 0.5 | 1.8 | 23.8 | 0.49 | 9 | 73.5 | 1.8 | 26.5 | 19.1 |
| 1.30 - 1.35 | 437.7 | 13.1 | 0.6 | 5.0 | 20.8 | 0.47 | 4 | 86.6 | 2.3 | 13.4 | 32.7 |
| 1.35 - 1.40 | 79.2 | 2.4 | 0.5 | 9.9 | 18.8 | 0.48 | 2 | 89.0 | 2.5 | 11.0 | 37.8 |
| 1.40 - 1.45 | 85.0 | 2.5 | 0.6 | 16.6 | 18.5 | 0.56 | 2 | 91.5 | 2.9 | 8.5 | 43.8 |
| 1.45 - 1.50 | 60.0 | 1.8 | 0.9 | 22.5 | 17.4 | 0.61 | 1 1/2 | 93.3 | 3.3 | 6.7 | 49.2 |
| 1.50 - 1.55 | 35.9 | 1.1 | 1.0 | 27.7 | 17.0 | 0.65 | 1 | 94.4 | 3.5 | 5.6 | 54.9 |
| 1.55 - 1.60 | 28.6 | 0.9 | 1.0 | 33.8 | 16.4 | 0.74 | 1 | 95.3 | 3.8 | 4.7 | 58.7 |
| 1.60 - 1.65 | 21.0 | 0.6 | 0.9 | 39.3 | 15.7 | 0.92 | 1 | 95.9 | 4.0 | 4.1 | 62.0 |
| 1.65 - 1.70 | 26.7 | 0.8 | 1.0 | 43.2 | 14.3 | 1.15 | 1 | 96.7 | 4.4 | 3.3 | 64.4 |
| 1.70 - 1.80 | 28.4 | 0.8 | 1.0 | 48.1 | 13.9 | 1.26 | 1/2 | 97.5 | 4.7 | 2.5 | 71.8 |
| 1.80 - 1.90 | 20.0 | 0.6 | 1.1 | 55.5 | 12.9 | 1.04 | 1/2 | 98.1 | 5.0 | 1.9 | 77.5 |
| 1.90 - 2.00 | 11.4 | 0.3 | 1.5 | 64.9 | 10.9 | 0.84 | 1/2 | 98.4 | 5.2 | 1.6 | 78.9 |
| S @ 2.00 | 55.1 | 1.6 | 1.0 | 77.5 | 10.4 | 0.67 | N.A. | 100.0 | 6.4 | -- | -- |
| TOTAL | 3350.1 | 100.0 | 0.6 | 6.4 | 22.4 | 0.51 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 117

TABLE 118

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 10M x 28M

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 16.6

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 73.5 | 0.5 | 1.8 | 23.8 | 0.49 | 26.5 | 0.7 | 19.1 | 18.4 | 0.59 |
| 1.30 - 1.35 | 86.6 | 0.5 | 2.3 | 23.3 | 0.49 | 13.4 | 0.8 | 32.7 | 16.1 | 0.69 |
| 1.35 - 1.40 | 89.0 | 0.5 | 2.5 | 23.2 | 0.49 | 11.0 | 0.9 | 37.8 | 15.5 | 0.75 |
| 1.40 - 1.45 | 91.5 | 0.5 | 2.9 | 23.1 | 0.49 | 8.5 | 1.0 | 43.8 | 14.6 | 0.81 |
| 1.45 - 1.50 | 93.3 | 0.5 | 3.3 | 23.0 | 0.49 | 6.7 | 1.0 | 49.2 | 13.9 | 0.87 |
| 1.50 - 1.55 | 94.4 | 0.5 | 3.5 | 22.9 | 0.49 | 5.6 | 1.0 | 54.9 | 13.3 | 0.91 |
| 1.55 - 1.60 | 95.3 | 0.5 | 3.8 | 22.9 | 0.50 | 4.7 | 1.0 | 58.7 | 12.7 | 0.94 |
| 1.60 - 1.65 | 95.9 | 0.5 | 4.0 | 22.8 | 0.50 | 4.1 | 1.0 | 62.0 | 12.2 | 0.94 |
| 1.65 - 1.70 | 96.7 | 0.5 | 4.4 | 22.7 | 0.50 | 3.3 | 1.0 | 64.4 | 11.7 | 0.89 |
| 1.70 - 1.80 | 97.5 | 0.5 | 4.7 | 22.7 | 0.51 | 2.5 | 1.0 | 71.8 | 11.1 | 0.78 |
| 1.80 - 1.90 | 98.1 | 0.5 | 5.0 | 22.6 | 0.51 | 1.9 | 1.0 | 77.5 | 10.5 | 0.70 |
| 1.90 - 2.0 | 98.4 | 0.6 | 5.2 | 22.6 | 0.51 | 1.6 | 1.0 | 78.9 | 10.4 | 0.67 |
| S @ 2.0 | 100.0 | 0.6 | 6.4 | 22.4 | 0.52 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 118

TABLE 119

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 28M x 100M

Sample site: SUKUNKA MAIN MINE

Wt. % of head sample: 9.4

Dates analyzed: October 14 - 20, 1977

Lab No.: 9587

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 520.7 | 58.4 | 0.8 | 1.4 | 23.9 | 0.56 | 9 | 58.4 | 1.4 | 41.6 | 12.6 |
| 1.30 - 1.35 | 209.4 | 23.5 | 0.9 | 2.6 | 22.8 | 0.54 | 8 | 81.9 | 1.6 | 18.1 | 26.3 |
| 1.35 - 1.40 | 55.8 | 6.3 | 0.8 | 7.1 | 19.9 | 0.58 | 2 1/2 | 88.2 | 2.0 | 11.8 | 36.6 |
| 1.40 - 1.45 | 25.9 | 2.9 | 1.0 | 13.1 | 18.8 | 0.58 | 2 1/2 | 91.1 | 2.4 | 8.9 | 43.7 |
| 1.45 - 1.50 | 11.6 | 1.3 | 0.9 | 19.3 | 17.9 | 0.61 | 2 1/2 | 92.4 | 2.6 | 7.6 | 48.4 |
| 1.50 - 1.55 | 11.5 | 1.3 | 0.6 | 24.0 | 17.6 | 0.65 | 2 1/2 | 93.7 | 2.9 | 6.3 | 53.4 |
| 1.55 - 1.60 | 8.0 | 0.9 | 0.9 | 28.9 | 17.1 | 0.73 | 1 1/2 | 94.6 | 3.1 | 5.4 | 58.3 |
| 1.60 - 1.65 | 7.4 | 0.8 | 1.0 | 33.5 | 16.7 | 0.77 | 1 1/2 | 95.4 | 3.4 | 4.6 | 61.6 |
| 1.65 - 1.70 | 4.7 | 0.5 | 0.8 | 39.9 | 16.1 | 0.98 | 1 | 95.9 | 3.6 | 4.1 | 64.1 |
| 1.70 - 1.80 | 10.0 | 1.1 | 0.8 | 45.2 | 14.4 | 1.10 | 1 | 97.0 | 4.1 | 3.0 | 70.1 |
| 1.80 - 1.90 | 5.5 | 0.6 | 0.9 | 50.0 | 14.3 | 1.02 | 1/2 | 97.6 | 4.3 | 2.4 | 78.4 |
| 1.90 - 2.00 | 3.0 | 0.3 | 1.3 | 57.7 | 13.2 | 0.92 | 1/2 | 97.9 | 4.5 | 2.1 | 79.7 |
| S @ 2.00 | 19.0 | 2.1 | 0.9 | 74.4 | 14.3 | 1.11 | 1/2 | 100.0 | 6.0 | -- | -- |
| TOTAL | 892.5 | 100.0 | 0.8 | 6.1 | 22.5 | 0.59 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 119

TABLE 120

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: CHAMBERLAIN

Size Fraction: 28M x 100M

Sample Site: SUKUNKA MAIN MINE

Wt. % of Head Sample: 9.4

Dates Analyzed: October 14 - 20, 1977

Lab. No.: 9587

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 58.4 | 0.8 | 1.8 | 23.9 | 0.56 | 41.6 | 0.9 | 19.1 | 20.6 | 0.63 |
| 1.30 - 1.35 | 81.9 | 0.8 | 2.3 | 23.6 | 0.55 | 18.1 | 0.9 | 32.7 | 17.7 | 0.75 |
| 1.35 - 1.40 | 88.2 | 0.8 | 2.5 | 23.3 | 0.56 | 11.8 | 0.9 | 37.8 | 16.6 | 0.84 |
| 1.40 - 1.45 | 91.1 | 0.8 | 2.9 | 23.2 | 0.56 | 8.9 | 0.9 | 43.8 | 15.9 | 0.93 |
| 1.45 - 1.50 | 92.4 | 0.8 | 3.3 | 23.1 | 0.56 | 7.6 | 0.9 | 49.2 | 15.5 | 0.98 |
| 1.50 - 1.55 | 93.7 | 0.8 | 3.5 | 23.0 | 0.56 | 6.3 | 0.9 | 54.9 | 15.1 | 1.05 |
| 1.55 - 1.60 | 94.6 | 0.8 | 3.8 | 23.0 | 0.56 | 5.4 | 0.9 | 58.7 | 14.8 | 1.10 |
| 1.60 - 1.65 | 95.4 | 0.8 | 4.0 | 22.9 | 0.56 | 4.6 | 0.9 | 62.0 | 14.4 | 1.16 |
| 1.65 - 1.70 | 95.9 | 0.8 | 4.4 | 22.9 | 0.56 | 4.1 | 0.9 | 64.4 | 14.2 | 1.18 |
| 1.70 - 1.80 | 97.0 | 0.8 | 4.7 | 22.8 | 0.57 | 3.0 | 0.9 | 71.8 | 14.2 | 1.22 |
| 1.80 - 1.90 | 97.6 | 0.8 | 5.0 | 22.7 | 0.58 | 2.4 | 0.9 | 77.5 | 14.2 | 1.14 |
| 1.90 - 2.0 | 97.9 | 0.8 | 5.2 | 22.7 | 0.58 | 2.1 | 0.9 | 78.9 | 14.3 | 1.17 |
| S @ 2.0 | 100.0 | 0.8 | 6.4 | 22.5 | 0.59 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 120

TABLE 121

CLIENT: B.P. EXPLORATION CANADA LTD.

SAMPLE: 3-CH BULK SAMPLE

LAB. NO: 9587

DATES ANALYSED: Oct. 14-20, 1977

FROTH FLOTATION TEST: 28M x 0 (WT.% = 14.2)

| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% |
|---|---|---|---|---|---|---|---|---|---|
| STAGE I | 77.3 | 0.9 | 4.0 | 22.4 | 0.57 | 8 1/2 | 77.3 | 4.0 | 0.57 |
| STAGE II | 11.4 | 0.7 | 6.2 | 22.2 | 0.57 | 8 1/2 | 88.7 | 4.3 | 0.57 |
| STAGE III | 2.0 | 0.7 | 7.3 | 22.0 | 0.62 | 8 1/2 | 90.9 | 4.3 | 0.58 |
| TAILS | 9.3 | 0.8 | 27.3 | 19.7 | 0.89 | 4 | 100.0 | 6.5 | 0.60 |

FROTH FLOTATION TEST: 100M x 0 (WT.% = 4.8)

| PRODUCT | WT.% | FM.% | ASH% | VM.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% |
|---|---|---|---|---|---|---|---|---|---|
| STAGE I | 76.8 | 0.5 | 5.0 | 22.8 | 0.58 | 8 1/2 | 76.8 | 5.0 | 0.58 |
| STAGE II | 8.1 | 0.6 | 6.1 | 22.3 | 0.61 | 8 1/2 | 84.9 | 5.1 | 0.58 |
| STAGE III | 7.6 | 0.5 | 6.7 | 22.2 | 0.66 | 8 1/2 | 92.5 | 5.2 | 0.59 |
| TAILS | 7.5 | 0.7 | 31.0 | 20.8 | 1.07 | 4 | 100.0 | 7.2 | 0.63 |

FROTH FLOTATION PARAMETERS

Pulp Density: 10%
Reagent: 4:1=Kerosene:MIBC
Dosage: 0.48 lb/Ton
Conditioning: 2 minutes
Stage I: Froth for first minute
Stage II: Froth for second minute
Stage III: Froth for third minute

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (1)

TABLE 122

Seam: Chamberlain — Size: 4" x 0

Sample Site: Sukunka Main — Composite No.: 3-CH

Date Sampled: Oct. 3, 1977 — Lab No.: 243

Date Analyzed: Nov./ Dec. 1977

| Proximate Analysis (Air-dried) | | | | Miscellaneous (Air-dried Basis) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inherent Moist.% | Ash% | V.M.% | F.C.% | Total S.% | $CO_2$ | Cl | P | C.V. B.T.U./LB | S.G. |
| 0.7 | 5.7 | 21.4 | 72.2 | 0.57 | 0.57 | Trace | 0.05 | 14,697 | 1.31 |

| Ultimate Analysis % (Air-dried Basis) | | | | | | |
|---|---|---|---|---|---|---|
| % $H_2O$ | % C | % $H_2$ | % $N_2$ | % S | % Ash | % $O_2$ (by diff.) |
| 0.68 | 84.50 | 4.71 | 1.23 | 0.57 | 5.67 | 2.64 |

| Coking Properties | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Caking indices | | Gieseler Plastometer values | | | | | Ruhr Dilatometer values | | | |
| F.S.I. | Gray-King coke type | Initial softening temp. (°C) | Max. fluidity (d.d.m.) | Max. fluidity temp (°C) | Solidification temp. (°C) | Temp. range soften to solidification (°C) | Initial softening temp. (°C) | Temp. of maximum Dilatation (°C) | Maximum contraction % | Maximum dilatation % |
| 8 | G3 | 440 | 72 | 472 | 502 | 62 | 380 | 452 | 29 | 38 |

SUKUNKA PROJECT

TABLE 123

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (2)

Seam: Chamberlain
Sample Site: Sukunka Main
Date Sampled: Oct. 3rd, 1977
Date Analysis: Nov./Dec. 1977

Size: 4" x 0
Composite No.: 3:CH
Sample No.: 3:CH
Lab No.: 243

| PETROGRAPHIC ANALYSIS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Maceral Analysis Volume % | | | | | Mean Max. Reflectance of Vitrinite | Strength Index | Composition Balance Index |
| Vitrinite | Macrinite | Micrinite | Semi Fusinite | Fusinite | | | |
| 52.95 | 8.51 | 3.28 | 24.90 | 7.73 | 1.3653 | 5.68 | 2.67 |

| ASH FUSION TEMPERATURES (°F) | | | | |
|---|---|---|---|---|
| Atmosphere | Initial Deformation | Softening | Hemispheric | Flow |
| Oxidizing | 2180 | 2240 | 2340 | 2380 |
| Reducing | 2090 | 2180 | 2240 | 2310 |

| ANALYSIS OF ASH CONSTITUENTS % | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | $Al_2O_3$ | $Fe_2O_3$ | $TiO_2$ | CaO | MgO | $Na_2O$ | $K_2O$ | $P_2O_5$ | $SO_3$ |
| 50.74 | 16.92 | 4.50 | 1.36 | 8.96 | 1.82 | 2.32 | 0.48 | 2.00 | 8.58 |

| Hardgrove Grindability Index | 8 1 |
|---|---|

EXHIBIT B B

Lab. No. 243 Date December 2, 1977

Client: B.P. EXPLORATION CANADA LTD.

Sample Identification: CLEAN COAL COMP.

Starting Temperature °C: 320

Softening Temperature °C: 380

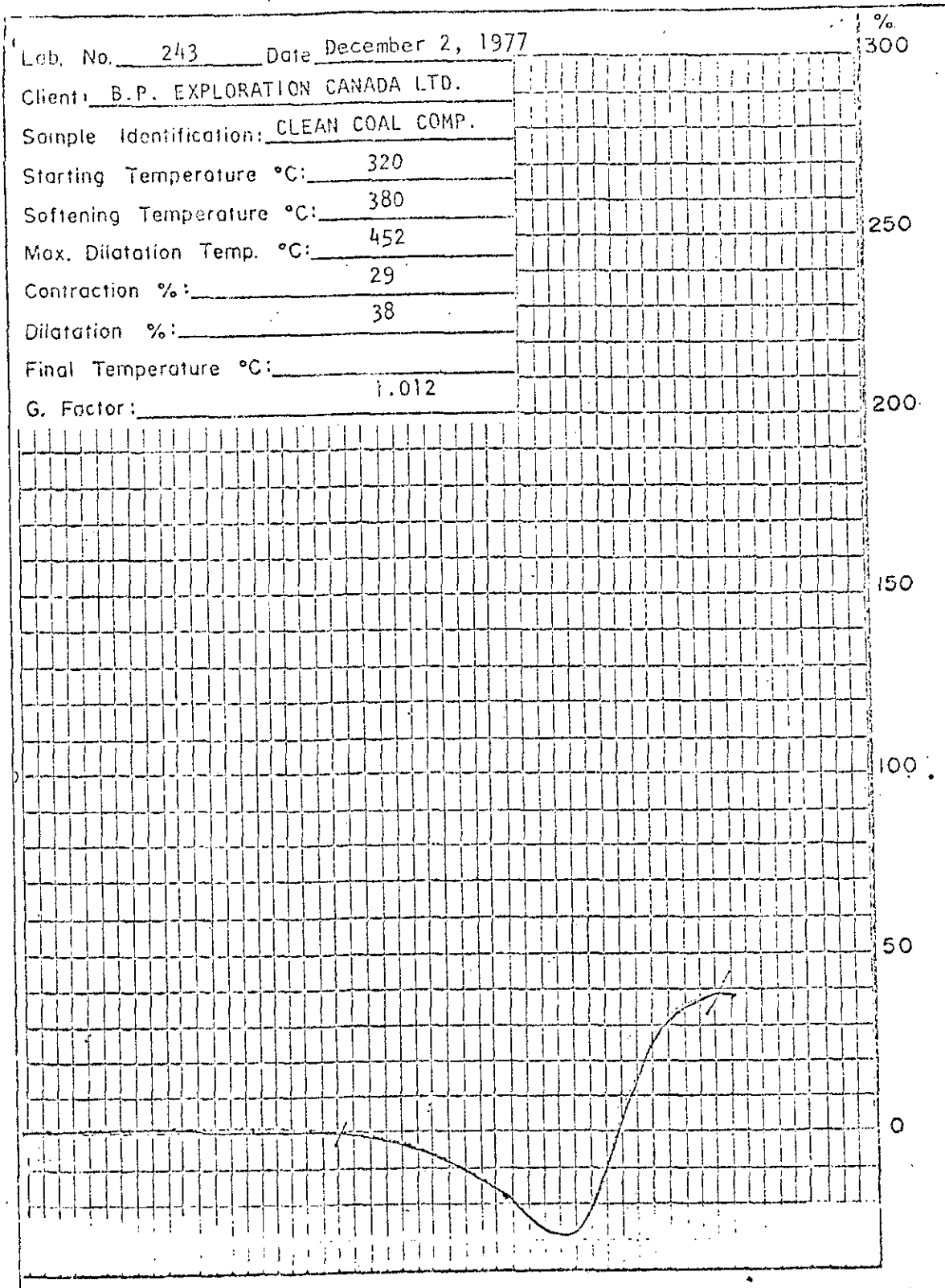
Max. Dilatation Temp. °C: 452

Contraction %: 29

Dilatation %: 38

Final Temperature °C:

G. Factor: 1.012




BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

CLIENT: BP EXPLORATION CANADA LTD. TABLE 124

SAMPLE: 2 - SK BULK SAMPLE

LAB. NO.: 9586 October, 1977

| HEAD RAW ANALYSIS | | | | | | | |
|---|---|---|---|---|---|---|---|
| ADL% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | REMARKS |
| 4.7 | 1.0 | 24.5 | 18.7 | 55.6 | 0.51 | 6 1/2 | air dried basis |
| | 5.7 | 23.3 | 18.0 | 53.0 | 0.49 | -- | as rec'd basis |
| | | 24.7 | 19.1 | 56.2 | 0.52 | -- | dry basis |

SIZE & RAW ANALYSES

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4" x 2" | 6.5 | 0.9 | 51.8 | 13.2 | 34.1 | 0.35 | 1 | 6.5 | 51.8 | 0.35 | WT% AND ANALYSES ARE ON AN A.D.B. BASIS. AMT. OF +4" FRACTION CRUSHED TO PASS 4"= 3.9% OF TOTAL |
| 2"x1 1/2" | 2.3 | 0.8 | 48.2 | 13.8 | 37.2 | 0.34 | 1 | 8.8 | 50.9 | 0.35 | |
| 1 1/2"x1" | 2.8 | 1.1 | 44.0 | 14.3 | 40.6 | 0.39 | 1 | 11.6 | 49.2 | 0.36 | |
| 1"x1/2" | 8.3 | 0.7 | 32.0 | 17.1 | 50.2 | 0.49 | 3 | 19.9 | 42.0 | 0.41 | |
| 1/2"x1/4" | 11.9 | 0.7 | 30.5 | 17.5 | 51.3 | 0.41 | 5 | 31.8 | 37.7 | 0.41 | |
| 1/4"x1/8" | 12.5 | 0.8 | 25.1 | 18.3 | 55.8 | 0.48 | 5 1/2 | 44.3 | 34.2 | 0.43 | |
| 1/8"x10M | 10.9 | 0.8 | 22.0 | 19.5 | 57.7 | 0.51 | 6 1/2 | 55.2 | 31.8 | 0.45 | |
| 10Mx28M | 17.5 | 0.8 | 17.7 | 20.4 | 61.1 | 0.48 | 8 | 72.7 | 28.4 | 0.45 | |
| 28Mx100M | 17.4 | 0.8 | 15.2 | 21.2 | 62.8 | 0.53 | 8 | 90.1 | 25.8 | 0.47 | |
| 100Mx0 | 9.9 | 0.8 | 17.0 | 21.1 | 61.1 | 0.64 | 7 1/2 | 100.0 | 25.0 | 0.49 | |

(Total bulk sample screened (5.209M.T.) was 30 drums)

SIZE (WET SCREEN) & RAW ANALYSES: 28M x 0

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28Mx65M | 45.8 | 0.6 | 16.2 | 21.2 | 62.0 | 0.53 | 8 | 45.8 | 16.2 | 0.53 | A.D.B. WT.% OF -28M = 27.3% OF TOTAL |
| 65Mx100M | 12.5 | 0.4 | 13.1 | 22.2 | 64.3 | 0.55 | 8 | 58.3 | 15.5 | 0.53 | |
| 100Mx200M | 17.8 | 0.5 | 14.2 | 21.8 | 63.5 | 0.62 | 8 | 76.1 | 15.2 | 0.55 | |
| 200Mx325M | 7.0 | 0.5 | 15.3 | 21.4 | 62.8 | 0.65 | 8 | 83.1 | 15.2 | 0.56 | |
| 325Mx0 | 16.9 | 0.5 | 26.6 | 19.4 | 53.5 | 0.60 | 5 | 100.0 | 17.2 | 0.57 | |
| 28Mx0 | 100.0 | 0.8 | 16.4 | 21.2 | 61.6 | 0.58 | 7 1/2 | | | | |

TABLE 125

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 4" x 2"

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 6.5%

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 59432 | 18.4 | 0.9 | 4.9 | 23.5 | 0.58 | 8 | 18.4 | 4.9 | 81.6 | 62.3 |
| 1.30 - 1.35 | 42313 | 13.1 | 0.7 | 6.6 | 22.3 | 0.57 | 6 | 31.5 | 5.6 | 68.5 | 73.0 |
| 1.35 - 1.40 | 41344 | 12.8 | 0.8 | 8.1 | 21.1 | 0.51 | 2 | 44.3 | 6.3 | 55.7 | 87.9 |
| 1.40 - 1.45 | 8075 | 2.5 | 0.9 | 13.8 | 19.9 | 0.59 | 1 | 46.8 | 6.7 | 53.2 | 91.4 |
| 1.45 - 1.50 | 1292 | 0.4 | 0.9 | 18.5 | 19.7 | 0.57 | 1 | 47.2 | 6.8 | 52.8 | 92.0 |
| 1.50 - 1.55 | 969 | 0.3 | 0.9 | 24.0 | 17.8 | 0.50 | 1 | 47.5 | 6.9 | 52.5 | 92.4 |
| 1.55 - 1.60 | 939 | 0.3 | 0.8 | 30.4 | 16.2 | 0.77 | 1 | 47.8 | 7.1 | 52.2 | 92.7 |
| 1.60 - 1.65 | 646 | 0.2 | 0.9 | 39.1 | 15.7 | 0.20 | 1 | 48.0 | 7.2 | 52.0 | 92.9 |
| 1.65 - 1.70 | 612 | 0.2 | 0.8 | 42.7 | 14.2 | 0.14 | 1 | 48.2 | 7.4 | 51.8 | 93.1 |
| 1.70 - 1.80 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.80 - 1.90 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.00 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.00 | 167314 | 51.8 | 0.9 | 93.1 | 4.9 | 0.15 | N.A. | 100.0 | 51.8 | -- | -- |
| TOTAL | 322936 | 100.0 | 0.9 | 51.8 | 13.2 | 0.35 | 1 | -- | -- | -- | -- |

REMARKS:

TABLE 125

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 4" x 2"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 6.5%

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 18.4 | 0.9 | 4.9 | 23.5 | 0.58 | 81.6 | 0.9 | 62.3 | 10.9 | 0.29 |
| 1.30 - 1.35 | 31.5 | 0.8 | 5.6 | 23.0 | 0.58 | 68.5 | 0.9 | 73.0 | 8.7 | 0.24 |
| 1.35 - 1.40 | 44.3 | 0.8 | 6.3 | 22.5 | 0.56 | 55.7 | 0.9 | 87.9 | 5.9 | 0.18 |
| 1.40 - 1.45 | 46.8 | 0.8 | 6.7 | 22.3 | 0.56 | 53.2 | 0.9 | 91.4 | 5.2 | 0.16 |
| 1.45 - 1.50 | 47.2 | 0.8 | 6.8 | 22.3 | 0.56 | 52.8 | 0.9 | 92.0 | 5.1 | 0.16 |
| 1.50 - 1.55 | 47.5 | 0.8 | 6.9 | 22.3 | 0.56 | 52.5 | 0.9 | 92.4 | 5.0 | 0.15 |
| 1.55 - 1.60 | 47.8 | 0.8 | 7.1 | 22.2 | 0.56 | 52.2 | 0.9 | 92.7 | 5.0 | 0.15 |
| 1.60 - 1.65 | 48.0 | 0.8 | 7.2 | 22.2 | 0.56 | 52.0 | 0.9 | 92.9 | 4.9 | 0.15 |
| 1.65 - 1.70 | 48.2 | 0.8 | 7.4 | 22.2 | 0.56 | 51.8 | 0.9 | 93.1 | 4.9 | 0.15 |
| 1.70 - 1.80 | -- | -- | | -- | -- | -- | -- | -- | -- | -- |
| 1.80 - 1.90 | -- | -- | | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.0 | -- | -- | | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.0 | 100.0 | 0.9 | 51.8 | 13.2 | 0.35 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 126

TABLE 127

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 2" x 1 1/2"

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 2.3

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 23184 | 20.7 | 0.7 | 3.2 | 23.7 | 0.57 | 8 | 20.7 | 3.2 | 79.3 | 60.0 |
| 1.30 - 1.35 | 17136 | 15.3 | 0.7 | 6.1 | 21.1 | 0.53 | 5 | 36.0 | 4.4 | 64.0 | 72.9 |
| 1.35 - 1.40 | 11984 | 10.7 | 0.7 | 8.5 | 20.4 | 0.51 | 1 1/2 | 46.7 | 5.4 | 53.3 | 85.7 |
| 1.40 - 1.45 | 3360 | 3.0 | 0.7 | 14.1 | 20.2 | 0.71 | 1 1/2 | 49.7 | 5.9 | 50.3 | 90.0 |
| 1.45 - 1.50 | 789 | 0.7 | 0.8 | 18.9 | 19.9 | 0.87 | 1 | 50.4 | 6.1 | 49.6 | 91.0 |
| 1.50 - 1.55 | 441 | 0.4 | 0.8 | 21.0 | 18.2 | 0.46 | 1 | 50.8 | 6.2 | 49.2 | 91.6 |
| 1.55 - 1.60 | 336 | 0.3 | 0.8 | 26.9 | 17.1 | 0.49 | 1 | 51.1 | 6.3 | 48.9 | 92.0 |
| 1.60 - 1.65 | 238 | 0.2 | 0.8 | 35.8 | 15.9 | 0.36 | 1 | 51.3 | 6.4 | 48.7 | 92.3 |
| 1.65 - 1.70 | 224 | 0.2 | 0.6 | 42.4 | 13.6 | 0.22 | 1 | 51.5 | 6.6 | 48.5 | 92.4 |
| 1.70 - 1.80 | 218 | 0.2 | 0.7 | 54.8 | 11.9 | 0.24 | 1/2 | 51.7 | 6.8 | 48.3 | 92.5 |
| 1.80 - 1.90 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.00 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.00 | 54117 | 48.3 | 0.8 | 92.6 | 5.3 | 0.12 | N.A. | 100.0 | 48.2 | -- | -- |
| TOTAL | 112027 | 100.0 | 0.8 | 48.2 | 13.8 | 0.34 | 1 | -- | -- | -- | -- |

REMARKS:

TABLE 127

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 2" x 1 1/2"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 2.3

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 20.7 | 0.7 | 3.2 | 23.7 | 0.57 | 79.3 | 0.8 | 60.0 | 11.3 | 0.28 |
| 1.30 - 1.35 | 36.0 | 0.7 | 4.4 | 22.6 | 0.55 | 64.0 | 0.8 | 72.9 | 8.9 | 0.23 |
| 1.35 - 1.40 | 46.7 | 0.7 | 5.4 | 22.1 | 0.54 | 53.3 | 0.8 | 85.7 | 6.6 | 0.17 |
| 1.40 - 1.45 | 49.7 | 0.7 | 5.9 | 22.0 | 0.55 | 50.3 | 0.8 | 90.0 | 5.8 | 0.14 |
| 1.45 - 1.50 | 50.4 | 0.7 | 6.1 | 21.9 | 0.56 | 49.6 | 0.8 | 91.0 | 5.6 | 0.13 |
| 1.50 - 1.55 | 50.8 | 0.7 | 6.2 | 21.9 | 0.56 | 49.2 | 0.8 | 91.6 | 5.5 | 0.12 |
| 1.55 - 1.60 | 51.1 | 0.7 | 6.3 | 21.9 | 0.56 | 48.9 | 0.8 | 92.0 | 5.4 | 0.12 |
| 1.60 - 1.65 | 51.3 | 0.7 | 6.4 | 21.9 | 0.56 | 48.7 | 0.8 | 92.3 | 5.4 | 0.12 |
| 1.65 - 1.70 | 51.5 | 0.7 | 6.6 | 21.8 | 0.55 | 48.5 | 0.8 | 92.4 | 5.3 | 0.12 |
| 1.70 - 1.80 | 51.7 | 0.7 | 6.8 | 21.8 | 0.55 | 48.3 | 0.8 | 92.5 | 5.3 | 0.12 |
| 1.80 - 1.90 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.0 | 100.0 | 0.7 | 48.2 | 13.8 | 0.34 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 128

TABLE 129

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 1 1/2" x 1"

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 2.8

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 28806 | 31.3 | 0.8 | 4.5 | 22.5 | 0.53 | 8 | 31.3 | 4.5 | 68.7 | 60.8 |
| 1.30 - 1.35 | 11512 | 12.5 | 0.8 | 6.5 | 20.5 | 0.46 | 1 1/2 | 43.8 | 5.1 | 56.2 | 72.8 |
| 1.35 - 1.40 | 8375 | 9.1 | 0.9 | 8.4 | 19.5 | 0.51 | 1 1/2 | 52.9 | 5.6 | 47.1 | 85.3 |
| 1.40 - 1.45 | 1936 | 2.1 | 0.8 | 14.4 | 19.5 | 0.73 | 1 1/2 | 55.0 | 6.0 | 45.0 | 88.6 |
| 1.45 - 1.50 | 915 | 1.0 | 0.8 | 18.6 | 19.5 | 0.90 | 1 1/2 | 56.0 | 6.2 | 44.0 | 90.2 |
| 1.50 - 1.55 | 372 | 0.4 | 0.8 | 20.6 | 19.0 | 0.69 | 1 | 56.4 | 6.3 | 43.6 | 90.8 |
| 1.55 - 1.60 | 282 | 0.3 | 0.7 | 24.9 | 18.8 | 0.93 | 1 | 56.7 | 6.4 | 43.3 | 91.3 |
| 1.60 - 1.65 | 274 | 0.3 | 0.7 | 30.8 | 18.1 | 0.35 | 1 | 57.0 | 6.5 | 43.0 | 91.7 |
| 1.65 - 1.70 | 97 | 0.1 | 0.7 | 41.0 | 17.3 | 0.35 | 1 | 57.1 | 6.6 | 42.9 | 91.8 |
| 1.70 - 1.80 | 89 | 0.1 | 0.7 | 51.5 | 14.9 | 0.39 | 1/2 | 57.2 | 6.7 | 42.8 | 91.9 |
| 1.80 - 1.90 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.00 | -- | nil | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.00 | 39368 | 42.8 | 1.1 | 91.9 | 5.2 | 0.15 | N.A. | 100.0 | 43.1 | -- | -- |
| TOTAL | 92026 | 100.0 | 0.9 | 43.1 | 14.4 | 0.37 | 1 | -- | -- | -- | -- |

REMARKS:

TABLE 129

TABLE 130

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 1 1/2" x 1"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 2.8

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 31.3 | 0.8 | 4.5 | 22.5 | 0.53 | 68.7 | 1.0 | 60.8 | 10.8 | 0.29 |
| 1.30 - 1.35 | 43.8 | 0.8 | 5.1 | 21.9 | 0.51 | 56.2 | 1.0 | 72.8 | 8.6 | 0.25 |
| 1.35 - 1.40 | 52.9 | 0.8 | 5.6 | 21.5 | 0.51 | 47.1 | 1.1 | 85.3 | 6.5 | 0.20 |
| 1.40 - 1.45 | 55.0 | 0.8 | 6.0 | 21.4 | 0.52 | 45.0 | 1.1 | 88.6 | 5.9 | 0.18 |
| 1.45 - 1.50 | 56.0 | 0.8 | 6.2 | 21.4 | 0.53 | 44.0 | 1.1 | 90.2 | 5.6 | 0.16 |
| 1.50 - 1.55 | 56.4 | 0.8 | 6.3 | 21.4 | 0.53 | 43.6 | 1.1 | 90.8 | 5.4 | 0.16 |
| 1.55 - 1.60 | 56.7 | 0.8 | 6.4 | 21.4 | 0.53 | 43.3 | 1.1 | 91.3 | 5.3 | 0.15 |
| 1.60 - 1.65 | 57.0 | 0.8 | 6.5 | 21.4 | 0.53 | 43.0 | 1.1 | 91.7 | 5.3 | 0.15 |
| 1.65 - 1.70 | 57.1 | 0.8 | 6.6 | 21.3 | 0.53 | 42.9 | 1.1 | 91.8 | 5.2 | 0.15 |
| 1.70 - 1.80 | 57.2 | 0.8 | 6.7 | 21.3 | 0.53 | 42.8 | 1.1 | 91.9 | 5.2 | 0.15 |
| 1.80 - 1.90 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.90 - 2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S @ 2.0 | 100.0 | 0.9 | 43.1 | 14.4 | 0.37 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 130

TABLE 131

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 1" x 1/2"

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 8.3

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 30432 | 50.5 | 0.8 | 3.9 | 23.0 | 0.57 | 7 | 50.5 | 3.9 | 49.5 | 61.6 |
| 1.30 - 1.35 | 5125 | 8.5 | 0.8 | 7.8 | 21.3 | 0.49 | 1 1/2 | 59.0 | 4.5 | 41.0 | 72.7 |
| 1.35 - 1.40 | 3014 | 5.0 | 0.8 | 10.4 | 20.5 | 0.65 | 1 1/2 | 64.0 | 4.9 | 36.0 | 81.4 |
| 1.40 - 1.45 | 1567 | 2.6 | 0.7 | 15.2 | 20.1 | 0.78 | 1 1/2 | 66.6 | 5.3 | 33.4 | 86.6 |
| 1.45 - 1.50 | 726 | 1.2 | 0.8 | 20.0 | 19.9 | 0.86 | 1 | 67.8 | 5.6 | 32.2 | 89.0 |
| 1.50 - 1.55 | 306 | 0.5 | 0.7 | 22.3 | 19.9 | 0.63 | 1 | 68.3 | 5.7 | 31.7 | 90.1 |
| 1.55 - 1.60 | 243 | 0.4 | 0.7 | 25.9 | 19.7 | 0.82 | 1 | 68.7 | 5.8 | 31.3 | 90.9 |
| 1.60 - 1.65 | 121 | 0.2 | 0.7 | 30.9 | 19.5 | 0.77 | 1 | 68.9 | 5.9 | 31.1 | 91.3 |
| 1.65 - 1.70 | 68 | 0.1 | 0.7 | 38.3 | 18.5 | 0.42 | 1 | 69.0 | 5.9 | 31.0 | 91.5 |
| 1.70 - 1.80 | 61 | 0.1 | 0.7 | 43.8 | 17.6 | 0.45 | 1 | 69.1 | 6.0 | 30.9 | 91.6 |
| 1.80 - 1.90 | 66 | 0.1 | 0.7 | 52.0 | 14.9 | 0.31 | 1/2 | 69.2 | 6.1 | 30.8 | 91.6 |
| 1.90 - 2.00 | 58 | 0.1 | 1.1 | 63.4 | 12.9 | 0.55 | 1/2 | 69.3 | 6.1 | 30.7 | 91.9 |
| S @ 2.00 | 18590 | 30.7 | 1.0 | 91.8 | 5.3 | 0.15 | N.A. | 100.0 | 32.4 | -- | -- |
| TOTAL | 60296 | 100.0 | 0.9 | 32.4 | 17.1 | 0.45 | 3 | -- | -- | -- | -- |

REMARKS:

TABLE 131

TABLE 132

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 1" x 1/2"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 8.3

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 50.5 | 0.8 | 3.9 | 23.0 | 0.57 | 49.5 | 0.9 | 61.6 | 11.1 | 0.32 |
| 1.30 - 1.35 | 59.0 | 0.8 | 4.5 | 22.8 | 0.56 | 41.0 | 0.9 | 72.7 | 9.0 | 0.29 |
| 1.35 - 1.40 | 64.0 | 0.8 | 4.9 | 22.6 | 0.57 | 36.0 | 1.0 | 81.4 | 7.4 | 0.24 |
| 1.40 - 1.45 | 66.6 | 0.8 | 5.3 | 22.5 | 0.57 | 33.4 | 1.0 | 86.6 | 6.4 | 0.20 |
| 1.45 - 1.50 | 67.8 | 0.8 | 5.6 | 22.4 | 0.58 | 32.2 | 1.0 | 89.0 | 5.9 | 0.17 |
| 1.50 - 1.55 | 68.3 | 0.8 | 5.7 | 22.4 | 0.58 | 31.7 | 1.0 | 90.1 | 5.7 | 0.17 |
| 1.55 - 1.60 | 68.7 | 0.8 | 5.8 | 22.4 | 0.58 | 31.3 | 1.0 | 90.9 | 5.5 | 0.16 |
| 1.60 - 1.65 | 68.9 | 0.8 | 5.9 | 22.4 | 0.58 | 31.1 | 1.0 | 91.3 | 5.4 | 0.15 |
| 1.65 - 1.70 | 69.0 | 0.8 | 5.9 | 22.4 | 0.58 | 31.0 | 1.0 | 91.5 | 5.4 | 0.15 |
| 1.70 - 1.80 | 69.1 | 0.8 | 6.0 | 22.4 | 0.58 | 30.9 | 1.0 | 91.6 | 5.4 | 0.15 |
| 1.80 - 1.90 | 69.2 | 0.8 | 6.1 | 22.4 | 0.58 | 30.8 | 1.0 | 91.6 | 5.3 | 0.15 |
| 1.90 - 2.0 | 69.3 | 0.8 | 6.1 | 22.4 | 0.58 | 30.7 | 1.0 | 91.9 | 5.3 | 0.15 |
| S @ 2.0 | 100.0 | 0.9 | 32.4 | 17.1 | 0.45 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 132

TABLE 133

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 1/2" x 1/4"

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 11.9

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 8517 | 32.1 | 0.5 | 2.4 | 23.3 | 0.51 | 8 1/2 | 32.1 | 2.4 | 67.9 | 43.8 |
| 1.30 - 1.35 | 7405 | 27.9 | 0.5 | 5.7 | 20.9 | 0.49 | 3 | 60.0 | 3.9 | 40.0 | 70.5 |
| 1.35 - 1.40 | 1542 | 5.8 | 0.6 | 10.7 | 19.9 | 0.56 | 1 1/2 | 65.8 | 4.5 | 34.2 | 80.6 |
| 1.40 - 1.45 | 481 | 1.8 | 0.7 | 15.2 | 19.7 | 0.78 | 1 1/2 | 67.6 | 4.8 | 32.4 | 84.2 |
| 1.45 - 1.50 | 347 | 1.3 | 0.7 | 18.2 | 19.5 | 0.76 | 1 | 68.9 | 5.1 | 31.1 | 86.9 |
| 1.50 - 1.55 | 163 | 0.6 | 0.5 | 20.7 | 19.2 | 0.65 | 1 | 69.5 | 5.2 | 30.5 | 88.3 |
| 1.55 - 1.60 | 159 | 0.6 | 0.5 | 23.5 | 19.0 | 0.58 | 1 | 70.1 | 5.4 | 29.9 | 89.5 |
| 1.60 - 1.65 | 82 | 0.3 | 0.5 | 27.3 | 18.9 | 0.94 | 1 | 70.4 | 5.5 | 29.6 | 90.1 |
| 1.65 - 1.70 | 60 | 0.2 | 0.5 | 30.9 | 18.8 | 0.77 | 1 | 70.6 | 5.5 | 29.4 | 90.7 |
| 1.70 - 1.80 | 53 | 0.2 | 0.6 | 43.7 | 18.3 | 0.47 | 1/2 | 70.8 | 5.6 | 29.2 | 91.0 |
| 1.80 - 1.90 | 29 | 0.1 | 0.7 | 47.3 | 18.0 | 0.61 | 1/2 | 70.9 | 5.7 | 29.1 | 91.1 |
| 1.90 - 2.00 | 25 | 0.1 | 0.8 | 55.1 | 16.4 | 0.40 | 1/2 | 71.0 | 5.8 | 29.0 | 91.1 |
| S @ 2.00 | 7698 | 29.0 | 1.0 | 91.2 | 5.4 | 0.12 | N.A. | 100.0 | 30.5 | -- | -- |
| TOTAL | 26561 | 100.0 | 0.7 | 30.5 | 17.0 | 0.41 | 5 | -- | -- | -- | -- |

REMARKS:

TABLE 133

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 1/2" x 1/4"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 11.9

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 32.1 | 0.5 | 2.4 | 23.3 | 0.51 | 67.9 | 0.7 | 43.8 | 14.1 | 0.36 |
| 1.30 - 1.35 | 60.0 | 0.5 | 3.9 | 22.2 | 0.50 | 40.0 | 0.9 | 70.5 | 9.3 | 0.26 |
| 1.35 - 1.40 | 65.8 | 0.5 | 4.5 | 22.0 | 0.51 | 34.2 | 0.9 | 80.6 | 7.5 | 0.21 |
| 1.40 - 1.45 | 67.6 | 0.5 | 4.8 | 21.9 | 0.51 | 32.4 | 1.0 | 84.2 | 6.8 | 0.18 |
| 1.45 - 1.50 | 68.9 | 0.5 | 5.1 | 21.9 | 0.52 | 31.1 | 1.0 | 86.9 | 6.3 | 0.16 |
| 1.50 - 1.55 | 69.5 | 0.5 | 5.2 | 21.9 | 0.52 | 30.5 | 1.0 | 88.3 | 6.1 | 0.15 |
| 1.55 - 1.60 | 70.1 | 0.5 | 5.4 | 21.8 | 0.52 | 29.9 | 1.0 | 89.5 | 5.8 | 0.14 |
| 1.60 - 1.65 | 70.4 | 0.5 | 5.5 | 21.8 | 0.52 | 29.6 | 1.0 | 90.1 | 5.7 | 0.13 |
| 1.65 - 1.70 | 70.6 | 0.5 | 5.5 | 21.8 | 0.52 | 29.4 | 1.0 | 90.7 | 5.6 | 0.13 |
| 1.70 - 1.80 | 70.8 | 0.5 | 5.6 | 21.8 | 0.52 | 29.2 | 1.0 | 91.0 | 5.5 | 0.12 |
| 1.80 - 1.90 | 70.9 | 0.5 | 5.7 | 21.8 | 0.52 | 29.1 | 1.0 | 91.1 | 5.4 | 0.12 |
| 1.90 - 2.0 | 71.0 | 0.5 | 5.8 | 21.8 | 0.52 | 29.0 | 1.0 | 91.1 | 5.4 | 0.12 |
| S @ 2.0 | 100.0 | 0.7 | 30.5 | 17.0 | 0.41 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 134

TABLE 135

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

*Float-Sink Analysis*

Seam: SKEETER

Size Fraction: 1/4" x 1/8"

Sample site: Sukunka No. Mine

Wt. % of head sample: 12.5

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 2096.3 | 34.2 | 0.7 | 1.8 | 23.8 | 0.57 | 9 | 34.2 | 1.8 | 65.8 | 38.4 |
| 1.30 - 1.35 | 1575.3 | 25.7 | 0.8 | 4.4 | 21.4 | 0.54 | 6 1/2 | 59.9 | 2.9 | 40.1 | 60.3 |
| 1.35 - 1.40 | 600.8 | 9.8 | 0.7 | 8.7 | 20.3 | 0.53 | 1 1/2 | 69.7 | 3.7 | 30.3 | 77.0 |
| 1.40 - 1.45 | 127.2 | 2.1 | 0.9 | 14.9 | 20.2 | 0.64 | 1 | 71.8 | 4.1 | 28.2 | 81.4 |
| 1.45 - 1.50 | 70.5 | 1.1 | 1.0 | 19.8 | 20.2 | 0.78 | 1 | 72.9 | 4.3 | 27.1 | 84.0 |
| 1.50 - 1.55 | 53.5 | 0.9 | 0.9 | 24.3 | 20.0 | 0.76 | 1 | 73.8 | 4.5 | 26.2 | 86.2 |
| 1.55 - 1.60 | 30.9 | 0.5 | 0.8 | 30.5 | 20.0 | 0.74 | 1 | 74.3 | 4.7 | 25.7 | 87.2 |
| 1.60 - 1.65 | 29.6 | 0.5 | 0.7 | 35.5 | 19.4 | 0.78 | 1 | 74.8 | 4.9 | 25.2 | 88.3 |
| 1.65 - 1.70 | 20.5 | 0.3 | 0.7 | 41.1 | 19.3 | 0.76 | 1 | 75.1 | 5.1 | 24.9 | 88.7 |
| 1.70 - 1.80 | 32.0 | 0.4 | 0.7 | 45.0 | 18.4 | 0.65 | 1 | 75.5 | 5.3 | 24.5 | 89.4 |
| 1.80 - 1.90 | 24.0 | 0.5 | 0.8 | 55.6 | 16.1 | 0.49 | 1 | 76.0 | 5.6 | 24.0 | 90.2 |
| 1.90 - 2.00 | 36.6 | 0.6 | 0.9 | 70.5 | 11.5 | 0.35 | 1 | 76.6 | 6.1 | 23.4 | 90.7 |
| S @ 2.00 | 1433.9 | 23.4 | 0.9 | 90.7 | 6.0 | 0.19 | N.A. | 100.0 | 25.9 | -- | -- |
| TOTAL | 6131.1 | 100.0 | 0.8 | 25.9 | 18.3 | 0.48 | 5 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 135

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 1/4" x 1/8"

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 12.5

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 34.2 | 0.7 | 1.8 | 23.8 | 0.57 | 65.8 | 0.8 | 38.4 | 15.5 | 0.43 |
| 1.30 - 1.35 | 59.9 | 0.7 | 2.9 | 22.8 | 0.56 | 40.1 | 0.8 | 60.3 | 11.7 | 0.35 |
| 1.35 - 1.40 | 69.7 | 0.7 | 3.7 | 22.4 | 0.55 | 30.3 | 0.9 | 77.0 | 8.9 | 0.30 |
| 1.40 - 1.45 | 71.8 | 0.7 | 4.1 | 22.4 | 0.56 | 28.2 | 0.9 | 81.4 | 8.1 | 0.27 |
| 1.45 - 1.50 | 72.9 | 0.7 | 4.3 | 22.3 | 0.56 | 27.1 | 0.9 | 84.0 | 7.6 | 0.25 |
| 1.50 - 1.55 | 73.8 | 0.7 | 4.5 | 22.3 | 0.56 | 26.2 | 0.9 | 86.2 | 7.2 | 0.23 |
| 1.55 - 1.60 | 74.3 | 0.7 | 4.7 | 22.3 | 0.56 | 25.7 | 0.9 | 87.2 | 6.9 | 0.22 |
| 1.60 - 1.65 | 74.8 | 0.7 | 4.9 | 22.3 | 0.56 | 25.2 | 0.9 | 88.3 | 6.7 | 0.21 |
| 1.65 - 1.70 | 75.1 | 0.7 | 5.1 | 22.3 | 0.57 | 24.9 | 0.9 | 88.7 | 6.5 | 0.21 |
| 1.70 - 1.80 | 75.5 | 0.7 | 5.3 | 22.2 | 0.57 | 24.5 | 0.9 | 89.4 | 6.3 | 0.20 |
| 1.80 - 1.90 | 76.0 | 0.7 | 5.6 | 22.2 | 0.57 | 24.0 | 0.9 | 90.2 | 6.1 | 0.19 |
| 1.90 - 2.0 | 76.6 | 0.7 | 6.1 | 22.1 | 0.56 | 23.4 | 0.9 | 90.7 | 6.0 | 0.19 |
| S @ 2.0 | 100.0 | 0.8 | 25.9 | 18.3 | 0.48 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 137

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 1/8" x 10M

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 10.9

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 1603.8 | 51.5 | 1.1 | 2.1 | 23.7 | 0.55 | 8 1/2 | 51.5 | 2.1 | 48.5 | 41.3 |
| 1.30 - 1.35 | 490.0 | 15.7 | 0.9 | 4.5 | 22.3 | 0.49 | 6 | 67.2 | 2.7 | 32.8 | 58.8 |
| 1.35 - 1.40 | 247.2 | 7.9 | 0.9 | 9.0 | 21.0 | 0.48 | 1 1/2 | 75.1 | 3.3 | 24.9 | 74.8 |
| 1.40 - 1.45 | 60.7 | 2.0 | 1.0 | 16.8 | 20.3 | 0.64 | 1 1/2 | 77.1 | 3.7 | 22.9 | 79.7 |
| 1.45 - 1.50 | 34.0 | 1.1 | 1.0 | 26.5 | 20.2 | 0.45 | 1 | 78.2 | 4.0 | 21.8 | 82.4 |
| 1.50 - 1.55 | 32.3 | 1.0 | 1.1 | 31.0 | 20.1 | 0.80 | 1 | 79.2 | 4.3 | 20.8 | 85.1 |
| 1.55 - 1.60 | 13.4 | 0.4 | 1.0 | 33.4 | 18.8 | 0.90 | 1 | 79.6 | 4.5 | 20.4 | 85.9 |
| 1.60 - 1.65 | 12.3 | 0.4 | 1.0 | 38.4 | 17.3 | 0.73 | 1 | 80.0 | 4.7 | 20.0 | 86.7 |
| 1.65 - 1.70 | 13.1 | 0.4 | 1.0 | 44.9 | 16.7 | 0.61 | 1 | 80.4 | 4.9 | 19.6 | 87.5 |
| 1.70 - 1.80 | 10.0 | 0.3 | 1.1 | 48.5 | 15.8 | 0.70 | 1 | 80.7 | 5.0 | 19.3 | 88.4 |
| 1.80 - 1.90 | 14.5 | 0.5 | 1.0 | 57.3 | 15.3 | 0.61 | 1 | 81.2 | 5.3 | 18.8 | 89.3 |
| 1.90 - 2.00 | 18.4 | 0.6 | 1.1 | 63.5 | 12.9 | 0.55 | 1 | 81.8 | 5.8 | 18.2 | 89.8 |
| S @ 2.00 | 566.2 | 18.2 | 0.9 | 90.0 | 6.4 | 0.22 | N.A. | 100.0 | 21.1 | -- | -- |
| TOTAL | 3115.9 | 100.0 | 1.0 | 21.1 | 19.8 | 0.48 | 6 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 137

TABLE 138

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 1/8" x 10M

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 10.9

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 51.5 | 1.1 | 2.1 | 23.7 | 0.55 | 48.5 | 0.9 | 41.3 | 15.6 | 0.41 |
| 1.30 - 1.35 | 67.2 | 1.1 | 2.7 | 23.4 | 0.54 | 32.8 | 0.9 | 58.8 | 12.4 | 0.37 |
| 1.35 - 1.40 | 75.1 | 1.0 | 3.3 | 23.1 | 0.53 | 24.9 | 0.9 | 74.8 | 9.7 | 0.33 |
| 1.40 - 1.45 | 77.1 | 1.0 | 3.7 | 23.1 | 0.53 | 22.9 | 0.9 | 79.7 | 8.7 | 0.31 |
| 1.45 - 1.50 | 78.2 | 1.0 | 4.0 | 23.0 | 0.53 | 21.8 | 0.9 | 82.4 | 8.2 | 0.30 |
| 1.50 - 1.55 | 79.2 | 1.0 | 4.3 | 23.0 | 0.54 | 20.8 | 0.9 | 85.1 | 7.6 | 0.28 |
| 1.55 - 1.60 | 79.6 | 1.0 | 4.5 | 23.0 | 0.54 | 20.4 | 0.9 | 85.9 | 7.4 | 0.26 |
| 1.60 - 1.65 | 80.0 | 1.0 | 4.7 | 22.9 | 0.54 | 20.0 | 0.9 | 86.7 | 7.2 | 0.25 |
| 1.65 - 1.70 | 80.4 | 1.0 | 4.9 | 22.9 | 0.54 | 19.6 | 0.9 | 87.5 | 7.0 | 0.25 |
| 1.70 - 1.80 | 80.7 | 1.0 | 5.0 | 22.9 | 0.54 | 19.3 | 0.9 | 88.4 | 6.8 | 0.24 |
| 1.80 - 1.90 | 81.2 | 1.0 | 5.3 | 22.8 | 0.54 | 18.8 | 0.9 | 89.3 | 6.6 | 0.23 |
| 1.90 - 2.0 | 81.8 | 1.0 | 5.8 | 22.7 | 0.54 | 18.2 | 0.9 | 89.8 | 6.4 | 0.22 |
| S @ 2.0 | 100.0 | 1.0 | 21.1 | 19.8 | 0.48 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 138

TABLE 139

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 10M x 28M

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 17.5

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 1150.3 | 49.1 | 1.1 | 1.6 | 24.6 | 0.55 | 9 | 49.1 | 1.6 | 50.9 | 35.0 |
| 1.30 - 1.35 | 513.4 | 21.9 | 1.0 | 5.1 | 22.2 | 0.49 | 5 1/2 | 71.0 | 2.7 | 29.0 | 57.5 |
| 1.35 - 1.40 | 135.4 | 5.8 | 1.1 | 9.3 | 19.4 | 0.51 | 1 1/2 | 76.8 | 3.2 | 23.2 | 69.5 |
| 1.40 - 1.45 | 49.9 | 2.1 | 1.2 | 19.6 | 19.3 | 0.63 | 1 1/2 | 78.9 | 3.6 | 21.1 | 74.6 |
| 1.45 - 1.50 | 34.6 | 1.5 | 1.2 | 28.5 | 18.2 | 0.69 | 1 | 80.4 | 4.1 | 19.6 | 78.0 |
| 1.50 - 1.55 | 23.9 | 1.0 | 1.1 | 34.4 | 18.1 | 0.69 | 1 | 81.4 | 4.5 | 18.6 | 80.2 |
| 1.55 - 1.60 | 18.0 | 0.8 | 1.2 | 38.6 | 16.8 | 0.71 | 1 | 82.2 | 4.8 | 17.8 | 82.2 |
| 1.60 - 1.65 | 18.4 | 0.8 | 1.1 | 45.2 | 16.5 | 0.68 | 1 | 83.0 | 5.2 | 17.0 | 83.9 |
| 1.65 - 1.70 | 17.3 | 0.8 | 1.1 | 49.9 | 13.8 | 0.70 | 1 | 83.8 | 5.6 | 16.2 | 85.7 |
| 1.70 - 1.80 | 16.9 | 0.7 | 1.1 | 56.7 | 12.7 | 0.64 | 1 | 84.5 | 6.0 | 15.5 | 87.2 |
| 1.80 - 1.90 | 17.0 | 0.7 | 1.0 | 61.0 | 12.3 | 0.67 | 1 | 85.2 | 6.5 | 14.8 | 88.1 |
| 1.90 - 2.00 | 14.8 | 0.6 | 1.2 | 65.7 | 11.2 | 0.48 | 1 | 85.8 | 6.9 | 14.2 | 89.1 |
| S @ 2.00 | 331.8 | 14.2 | 1.3 | 89.2 | 6.1 | 0.22 | N.A. | 100.0 | 18.6 | -- | -- |
| TOTAL | 2341.7 | 100.0 | 1.1 | 18.6 | 20.4 | 0.50 | 8 | -- | -- | -- | -- |

REMARKS:

TABLE 139

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 10M x 28M

Sample Site: SUKUNKA NO.1 MINE

Wt. % of Head Sample: 17.5

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 49.1 | 1.1 | 1.6 | 24.6 | 0.55 | 50.9 | 1.1 | 35.0 | 16.4 | 0.45 |
| 1.30 - 1.35 | 71.0 | 1.1 | 2.7 | 23.9 | 0.53 | 29.0 | 1.2 | 57.5 | 12.0 | 0.41 |
| 1.35 - 1.40 | 76.8 | 1.1 | 3.2 | 23.5 | 0.53 | 23.2 | 1.2 | 69.5 | 10.1 | 0.39 |
| 1.40 - 1.45 | 78.9 | 1.1 | 3.6 | 23.4 | 0.53 | 21.1 | 1.2 | 74.6 | 9.2 | 0.37 |
| 1.45 - 1.50 | 80.4 | 1.1 | 4.1 | 23.3 | 0.54 | 19.6 | 1.2 | 78.0 | 8.5 | 0.34 |
| 1.50 - 1.55 | 81.4 | 1.1 | 4.5 | 23.2 | 0.54 | 18.6 | 1.3 | 80.2 | 8.0 | 0.32 |
| 1.55 - 1.60 | 82.2 | 1.1 | 4.8 | 23.2 | 0.54 | 17.8 | 1.3 | 82.2 | 7.6 | 0.30 |
| 1.60 - 1.65 | 83.0 | 1.1 | 5.2 | 23.1 | 0.54 | 17.0 | 1.3 | 83.9 | 7.2 | 0.29 |
| 1.65 - 1.70 | 83.8 | 1.1 | 5.6 | 23.0 | 0.54 | 16.2 | 1.3 | 85.2 | 6.8 | 0.27 |
| 1.70 - 1.80 | 84.5 | 1.1 | 6.0 | 22.9 | 0.54 | 15.5 | 1.3 | 87.2 | 6.6 | 0.25 |
| 1.80 - 1.90 | 85.2 | 1.1 | 6.5 | 22.9 | 0.54 | 14.8 | 1.3 | 88.1 | 6.3 | 0.23 |
| 1.90 - 2.0 | 85.8 | 1.1 | 6.9 | 22.8 | 0.54 | 14.2 | 1.3 | 89.1 | 6.1 | 0.22 |
| S @ 2.0 | 100.0 | 1.1 | 18.6 | 20.4 | 0.50 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 141

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: SKEETER

Size Fraction: 28M x 100M

Sample site: Sukunka No. 1 Mine

Wt. % of head sample: 17.4

Dates analyzed: October 11 - 17, 1977

Lab No.: 9586

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Floats | | Cumulative Sinks | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 383.1 | 51.8 | 0.6 | 1.6 | 24.4 | 0.55 | 9 | 51.8 | 1.6 | 48.2 | 29.5 |
| 1.30 - 1.35 | 140.7 | 19.0 | 0.7 | 4.0 | 22.3 | 0.54 | 7 1/2 | 70.8 | 2.2 | 29.2 | 46.1 |
| 1.35 - 1.40 | 65.9 | 8.9 | 0.7 | 9.7 | 20.4 | 0.52 | 3 1/2 | 79.7 | 3.1 | 20.3 | 61.8 |
| 1.40 - 1.45 | 13.3 | 1.8 | 0.8 | 14.3 | 20.3 | 0.59 | 2 1/2 | 81.5 | 3.3 | 18.5 | 66.7 |
| 1.45 - 1.50 | 8.9 | 1.2 | 0.9 | 20.1 | 19.5 | 0.61 | 2 1/2 | 82.7 | 3.6 | 17.3 | 69.6 |
| 1.50 - 1.55 | 7.4 | 1.0 | 0.8 | 24.5 | 19.1 | 0.65 | 2 1/2 | 83.7 | 3.8 | 16.3 | 72.7 |
| 1.55 - 1.60 | 8.1 | 1.1 | 0.8 | 29.2 | 19.1 | 0.65 | 1 1/2 | 84.8 | 4.1 | 15.2 | 76.0 |
| 1.60 - 1.65 | 7.3 | 1.0 | 0.9 | 35.5 | 17.8 | 0.67 | 1 | 85.8 | 4.5 | 14.2 | 78.6 |
| 1.65 - 1.70 | 4.5 | 0.6 | 0.8 | 39.9 | 17.6 | 0.69 | 1 | 86.4 | 4.8 | 13.6 | 80.0 |
| 1.70 - 1.80 | 6.7 | 0.9 | 0.8 | 46.5 | 15.9 | 0.68 | 1 | 87.3 | 5.2 | 12.7 | 82.6 |
| 1.80 - 1.90 | 6.4 | 0.9 | 0.9 | 54.0 | 15.2 | 0.69 | 1 | 88.2 | 5.7 | 11.8 | 84.7 |
| 1.90 - 2.00 | 4.4 | 0.6 | 1.0 | 61.6 | 12.6 | 0.67 | 1 | 88.8 | 6.1 | 11.2 | 85.8 |
| S @ 2.00 | 82.9 | 11.2 | 0.8 | 86.1 | 8.0 | 0.32 | N.A. | 100.0 | 15.0 | -- | -- |
| TOTAL | 739.6 | 100.0 | 0.7 | 15.0 | 21.2 | 0.53 | 8 | -- | -- | -- | -- |

REMARKS:

TABLE 141

TABLE 142

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: SKEETER

Size Fraction: 28M x 100M

Sample Site: SUKUNKA NO. 1 MINE

Wt. % of Head Sample: 17.4

Dates Analyzed: October 11 - 17, 1977

Lab. No.: 9586

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 51.8 | 0.6 | 1.6 | 24.4 | 0.55 | 48.2 | 0.8 | 29.5 | 17.8 | 0.51 |
| 1.30 - 1.35 | 70.8 | 0.6 | 2.2 | 23.8 | 0.55 | 29.2 | 0.8 | 46.1 | 14.9 | 0.48 |
| 1.35 - 1.40 | 79.7 | 0.6 | 3.1 | 23.5 | 0.54 | 20.3 | 0.8 | 61.8 | 12.5 | 0.47 |
| 1.40 - 1.45 | 81.5 | 0.6 | 3.3 | 23.4 | 0.55 | 18.5 | 0.8 | 66.7 | 11.7 | 0.45 |
| 1.45 - 1.50 | 82.7 | 0.6 | 3.6 | 23.3 | 0.55 | 17.3 | 0.8 | 69.6 | 11.2 | 0.44 |
| 1.50 - 1.55 | 83.7 | 0.6 | 3.8 | 23.3 | 0.55 | 16.3 | 0.8 | 72.7 | 10.7 | 0.43 |
| 1.55 - 1.60 | 84.8 | 0.6 | 4.1 | 23.2 | 0.55 | 15.2 | 0.8 | 76.0 | 10.1 | 0.41 |
| 1.60 - 1.65 | 85.8 | 0.6 | 4.5 | 23.2 | 0.55 | 14.2 | 0.8 | 78.6 | 9.6 | 0.40 |
| 1.65 - 1.70 | 86.4 | 0.7 | 4.8 | 23.1 | 0.55 | 13.6 | 0.8 | 80.0 | 9.2 | 0.38 |
| 1.70 - 1.80 | 87.3 | 0.7 | 5.2 | 23.0 | 0.55 | 12.7 | 0.8 | 82.6 | 8.7 | 0.36 |
| 1.80 - 1.90 | 88.2 | 0.7 | 5.7 | 23.0 | 0.55 | 11.8 | 0.8 | 84.7 | 8.2 | 0.34 |
| 1.90 - 2.0 | 88.8 | 0.7 | 6.1 | 22.9 | 0.55 | 11.2 | 0.8 | 85.8 | 8.0 | 0.32 |
| S @ 2.0 | 100.0 | 0.7 | 15.0 | 21.2 | 0.53 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 142

TABLE 143

CLIENT: B.P. EXPLORATION CANADA LTD.

SAMPLE: 2-SK BULK SAMPLE

LAB. NO.: 9586

DATES ANALYSED: Oct. 11-17, 1977

FROTH FLOTATION TEST: 28M x 0 (WT.% = 27.3)

| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% |
|---|---|---|---|---|---|---|---|---|---|
| STAGE I | 74.7 | 1.1 | 5.6 | 23.4 | 0.64 | 8 | 74.7 | 5.6 | 0.64 |
| STAGE II | 8.3 | 0.5 | 14.9 | 21.3 | 0.75 | 7 | 83.0 | 6.5 | 0.65 |
| STAGE III | 2.7 | 0.6 | 30.7 | 18.4 | 0.61 | 3 1/2 | 85.7 | 7.3 | 0.65 |
| TAILS | 14.3 | 0.8 | 68.3 | 11.8 | 0.61 | 1/2 | 100.0 | 16.0 | 0.64 |

FROTH FLOTATION TEST: 100M x 0 (WT.% = 9.9)

| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% |
|---|---|---|---|---|---|---|---|---|---|
| STAGE I | 80.7 | 0.6 | 7.3 | 23.4 | 0.63 | 8 1/2 | 80.7 | 7.3 | 0.63 |
| STAGE II | 5.3 | 0.6 | 26.5 | 19.3 | 0.73 | 5 | 86.0 | 8.5 | 0.64 |
| STAGE III | 2.3 | 0.6 | 44.1 | 16.3 | 0.67 | 1 | 88.3 | 9.4 | 0.64 |
| TAILS | 11.7 | 0.7 | 74.7 | 11.5 | 0.91 | N.A. | 100.0 | 17.0 | 0.67 |

FROTH FLOTATION PARAMETERS

Pulp Density: 10%
Reagent: 4:1=Kerosene:MIBC
Dosage: 0.48 lb/Ton
Conditioning: 2 minutes
Stage I: Froth for first minute
Stage II: Froth for second minute
Stage III: Froth for third minute

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (1)

TABLE 144

Seam: Skeeter

Sample Site: Sukunka No. 1

Date Sampled: Sept. 30th, 1977

Date Analyzed: Nov./Dec. 1977

Size: 4" x 0

Composite No.: 2-SK

Lab No.: 242

| Proximate Analysis (Air-dried) | | | | Miscellaneous (Air-dried Basis) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inherent Moist.% | Ash% | V.M.% | F.C.% | Total S.% | $CO_2$ | Cl | P | C.V. B.T.U./LB | S.G. |
| 1.0 | 5.9 | 22.3 | 70.8 | 0.64 | 0.50 | 0.02 | 0.02 | 14,539 | 1.33 |

| Ultimate Analysis % (Air-dried Basis) | | | | | | |
|---|---|---|---|---|---|---|
| % $H_2O$ | % C | % $H_2$ | % $N_2$ | % S | % Ash | % $O_2$ (by diff.) |
| 1.03 | 83.12 | 4.58 | 1.27 | 0.64 | 5.91 | 3.45 |

| Coking Properties | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Caking indices | | Gieseler Plastometer values | | | | | Ruhr Dilatometer values | | | |
| F.S.I. | Gray-King coke type | Initial softening temp. (°C) | Max. fluidity (d.d.m.) | Max. fluidity temp (°C) | Solidification temp. (°C) | Temp. range soften to solidification (°C) | Initial softening temp. (°C) | Temp. of maximum Dilatation (°C) | Maximum contraction % | Maximum dilatation % |
| 7½ | G4 | 431 | 134 | 469 | 512 | 81 | 374 | 452 | 28 | 56 |

SUKUNKA PROJECT

TABLE 145

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (2)

Seam: Skeeter
Sample Site: Sukunka No. 1
Date Sampled: Sept. 30th, 1977
Date Analysis: Nov./Dec. 1977

Size: 4" x 0
Composite No.: 2-SK
Sample No.: 2-SK
Lab No.: 242

| PETROGRAPHIC ANALYSIS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Maceral Analysis Volume % | | | | | Mean Max. Reflectance of Vitrinite | Strength Index | Composition Balance Index |
| Vitrinite | Macrinite | Micrinite | Semi Fusinite | Fusinite | | | |
| 50.26 | 8.97 | 3.50 | 26.41 | 6.75 | 1.3308 | 5.41 | 2.63 |

| ASH FUSION TEMPERATURES (°F) | | | | |
|---|---|---|---|---|
| Atmosphere | Initial Deformation | Softening | Hemispheric | Flow |
| Oxidizing | 2230 | 2310 | 2390 | 2480 |
| Reducing | 2140 | 2240 | 2320 | 2440 |

| ANALYSIS OF ASH CONSTITUENTS % | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | $Al_2O_3$ | $Fe_2O_3$ | $TiO_2$ | CaO | MgO | $Na_2O$ | $K_2O$ | $P_2O_5$ | $SO_3$ |
| 55.14 | 17.78 | 4.22 | 1.24 | 7.84 | 1.91 | 1.21 | 0.96 | 0.78 | 7.05 |

| | |
|---|---|
| Hardgrove Grindability Index | 8 6 |

EXHIBIT C.C

Lab. No. 242 Date December 2, 1977

Client: B.P. EXPLORATION CANADA LTD.

Sample Identification: CLEAN COAL COMP.

Starting Temperature °C: 320

Softening Temperature °C: 374

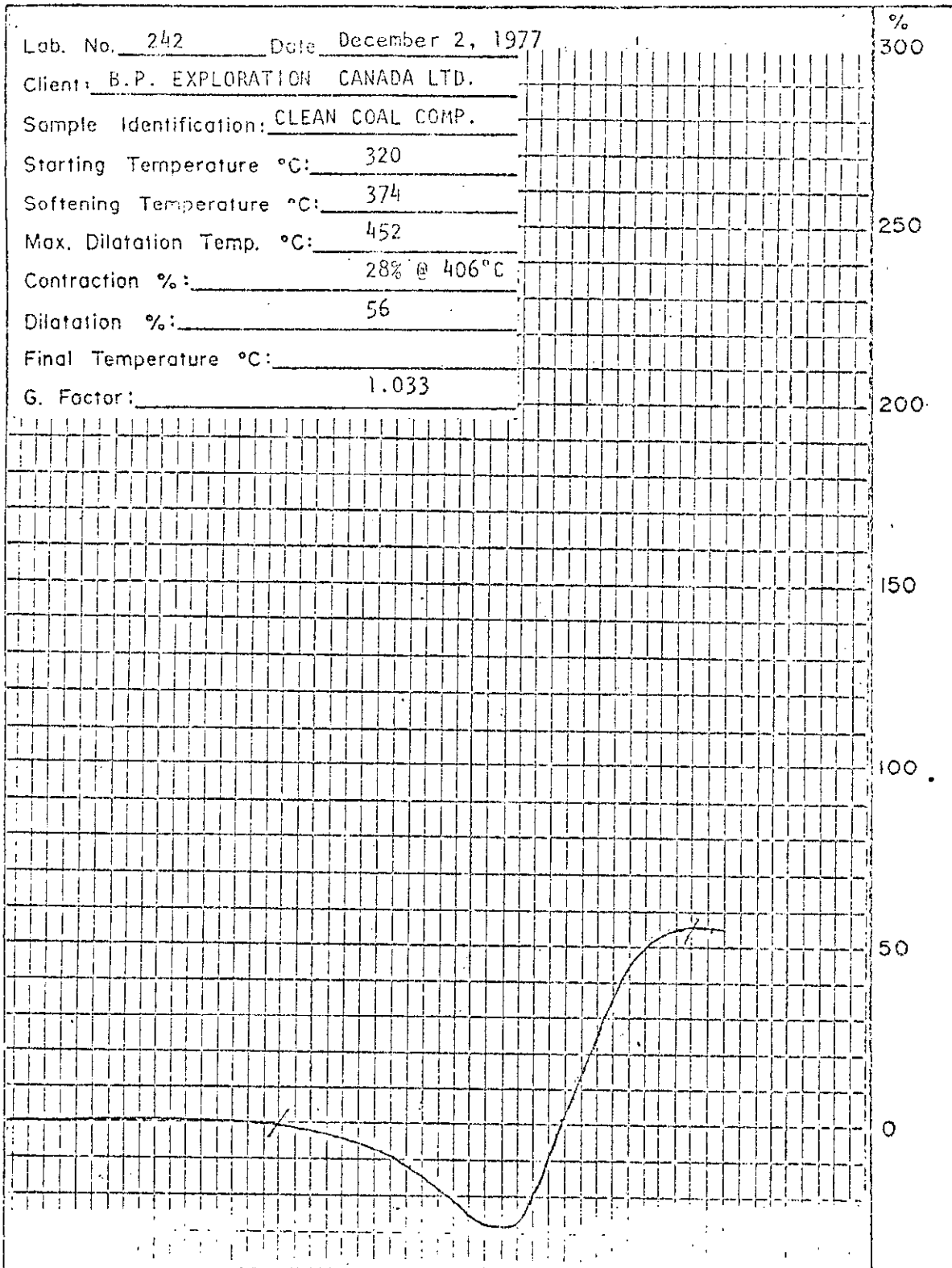
Max. Dilatation Temp. °C: 452

Contraction %: 28% @ 406°C

Dilatation %: 56

Final Temperature °C:

G. Factor: 1.033




BIRTLEY ENGINEERING (CANADA) LTD.

| Title | Date |
|---|---|
| RUHR DILATOMETER TEST | |
| | Drawn |

CLIENT: BP EXPLORATION CANADA LTD.

SAMPLE: B - 4 BULK SAMPLE

LAB. NO.: 9635

TABLE 146

DATES ANALYZED: Nov. 1 - 8, 1977

HEAD RAW ANALYSIS

| ADL% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | REMARKS |
|---|---|---|---|---|---|---|---|
| 2.1 | 0.8 | 8.5 | 21.7 | 69.0 | 2.48 | 8 1/2 | air dried basis |
| | 2.9 | 8.3 | 21.2 | 67.6 | 2.43 | -- | as rec'd basis |
| | | 8.6 | 21.9 | 69.5 | 2.50 | -- | dry basis |

SIZE & RAW ANALYSES

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4" x 2" | 4.3 | 0.6 | 12.4 | 21.7 | 65.3 | 3.07 | 8 | 4.3 | 12.4 | 3.07 | WT% AND ANALYSES ARE ON AN A.D.B. BASIS. AMT. OF +4" FRACTION CRUSHED TO PASS 4"=1.1 OF TOTAL |
| 2"x1 1/2" | 2.1 | 0.5 | 15.0 | 20.8 | 63.7 | 4.56 | 8 | 6.4 | 13.3 | 3.56 | |
| 1 1/2"x1" | 6.1 | 0.5 | 12.9 | 20.9 | 65.7 | 3.76 | 9 | 12.5 | 13.1 | 3.66 | |
| 1"x1/2" | 9.9 | 0.6 | 8.7 | 20.9 | 69.8 | 2.30 | 9 | 22.4 | 11.1 | 3.06 | |
| 1/2"x1/4" | 11.7 | 0.5 | 9.0 | 21.0 | 69.5 | 2.42 | 7 1/2 | 34.1 | 10.4 | 2.84 | |
| 1/4"x1/8" | 11.4 | 0.4 | 8.0 | 21.1 | 70.5 | 2.30 | 8 1/2 | 45.5 | 9.8 | 2.70 | |
| 1/8"x10M | 12.5 | 0.4 | 7.7 | 21.9 | 70.0 | 2.26 | 8 1/2 | 58.0 | 9.4 | 2.61 | |
| 10Mx28M | 19.5 | 0.4 | 6.6 | 22.3 | 70.7 | 2.08 | 8 1/2 | 77.5 | 8.7 | 2.48 | |
| 28Mx100M | 13.9 | 0.4 | 6.8 | 22.8 | 70.0 | 2.04 | 9 | 91.4 | 8.4 | 2.41 | |
| 100Mx0 | 8.6 | 0.5 | 8.7 | 22.4 | 68.4 | 2.27 | 9 | 100.0 | 8.4 | 2.40 | |

SIZE (WET SCREEN) & RAW ANALYSES: 28M x 0

| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | CUMULATIVE WT.% | CUMULATIVE ASH% | CUMULATIVE S% | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28Mx65M | 44.1 | 0.4 | 5.9 | 22.6 | 71.1 | 2.02 | 9 | 44.1 | 5.9 | 2.02 | A.D.B. WT.% OF -28M = 22.5 OF TOTAL |
| 65Mx100M | 12.5 | 0.5 | 6.1 | 22.3 | 71.1 | 2.03 | 9 | 56.6 | 5.9 | 2.02 | |
| 100Mx200M | 18.9 | 0.5 | 7.3 | 22.4 | 69.8 | 2.30 | 9 | 75.5 | 6.3 | 2.09 | |
| 200Mx325M | 8.3 | 0.5 | 8.2 | 22.4 | 68.9 | 2.32 | 9 | 83.8 | 6.5 | 2.11 | |
| 325Mx0 | 16.2 | 0.7 | 13.6 | 21.9 | 63.8 | 2.09 | 8 | 100.0 | 7.6 | 2.11 | |
| 28Mx0 | 100.0 | 0.5 | 7.3 | 22.0 | 70.2 | 2.07 | 9 | | | | |

TABLE 147

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 4" x 2"

Sample site: ADIT

Wt. % of head sample: 4.3

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 67000.0 | 52.3 | 0.4 | 4.7 | 21.8 | 1.54 | 8 1/2 | 52.3 | 4.7 | 47.7 | 21.0 |
| 1.30 - 1.35 | 12910.0 | 10.1 | 0.5 | 6.2 | 21.3 | 1.73 | 8 | 62.4 | 4.9 | 37.6 | 25.1 |
| 1.35 - 1.40 | 5835.0 | 4.6 | 0.5 | 9.7 | 22.5 | 2.07 | 8 | 67.0 | 5.3 | 33.0 | 27.1 |
| 1.40 - 1.45 | 15964.0 | 12.5 | 0.4 | 14.3 | 24.5 | 1.61 | 7 | 79.5 | 6.7 | 20.5 | 35.0 |
| 1.45 - 1.50 | 3964.0 | 3.1 | 0.5 | 18.2 | 25.9 | 1.56 | 7 | 82.6 | 7.1 | 17.4 | 38.1 |
| 1.50 - 1.55 | 8581.0 | 6.7 | 0.5 | 21.6 | 26.1 | 1.96 | 6 1/2 | 89.3 | 8.2 | 10.7 | 48.3 |
| 1.55 - 1.60 | 2469.1 | 1.9 | 0.6 | 23.5 | 26.4 | 2.86 | 2 | 91.2 | 8.5 | 8.8 | 53.9 |
| 1.60 - 1.65 | 1791.7 | 1.4 | 0.5 | 30.5 | 23.5 | 3.18 | 1 | 92.6 | 8.9 | 7.4 | 57.4 |
| 1.65 - 1.70 | 368.8 | 0.3 | 0.5 | 35.3 | 1.97 | 5.38 | 1 | 92.9 | 8.9 | 7.1 | 59.5 |
| 1.70 - 1.80 | 1308.1 | 1.0 | 0.5 | 38.3 | 17.3 | 8.44 | 1 | 93.9 | 9.3 | 6.1 | 61.6 |
| 1.80 - 1.90 | 387.0 | 0.3 | 0.5 | 45.4 | 15.4 | 8.21 | 1 | 94.2 | 9.4 | 5.8 | 62.7 |
| 1.90 - 2.00 | 952.9 | 0.7 | 0.4 | 52.7 | 18.8 | 10.35 | 1 | 94.9 | 9.7 | 5.1 | 64.4 |
| S @ 2.00 | 6485.0 | 5.1 | 0.4 | 64.6 | 15.7 | 25.34 | 1/2 | 100.0 | 12.5 | -- | -- |
| TOTAL | 128016.6 | 100.0 | 0.4 | 12.5 | 22.2 | 3.04 | 8 | -- | -- | -- | -- |

REMARKS:

TABLE 147

TABLE 148

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Size Fraction: 4" x 2"

Sample Site: ADIT

Wt. % of Head Sample: 4.3

Dates Analyzed: November 1 - 8, 1977

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 52.3 | 0.4 | 4.7 | 21.8 | 1.54 | 47.7 | 0.5 | 21.0 | 22.7 | 4.70 |
| 1.30 - 1.35 | 62.4 | 0.4 | 4.9 | 21.7 | 1.57 | 37.6 | 0.5 | 25.1 | 23.1 | 5.49 |
| 1.35 - 1.40 | 67.0 | 0.4 | 5.3 | 21.8 | 1.61 | 33.0 | 0.5 | 27.1 | 23.2 | 5.97 |
| 1.40 - 1.45 | 79.5 | 0.4 | 6.7 | 22.2 | 1.61 | 20.5 | 0.5 | 35.0 | 22.4 | 8.63 |
| 1.45 - 1.50 | 82.6 | 0.4 | 7.1 | 22.3 | 1.60 | 17.4 | 0.5 | 38.1 | 21.8 | 9.89 |
| 1.50 - 1.55 | 89.3 | 0.4 | 8.2 | 22.6 | 1.63 | 10.7 | 0.5 | 48.3 | 19.1 | 14.85 |
| 1.55 - 1.60 | 91.2 | 0.4 | 8.5 | 22.7 | 1.66 | 8.8 | 0.4 | 53.9 | 17.5 | 17.44 |
| 1.60 - 1.65 | 92.6 | 0.4 | 8.9 | 22.7 | 1.68 | 7.4 | 0.4 | 57.4 | 16.4 | 20.13 |
| 1.65 - 1.70 | 92.9 | 0.4 | 8.9 | 22.7 | 1.69 | 7.1 | 0.4 | 59.5 | 16.2 | 20.76 |
| 1.70 - 1.80 | 93.9 | 0.4 | 9.3 | 22.6 | 1.76 | 6.1 | 0.4 | 61.6 | 16.0 | 22.78 |
| 1.80 - 1.90 | 94.2 | 0.4 | 9.4 | 22.6 | 1.78 | 5.8 | 0.4 | 62.7 | 16.1 | 23.53 |
| 1.90 - 2.0 | 94.9 | 0.4 | 9.7 | 22.6 | 1.85 | 5.1 | 0.4 | 64.4 | 15.7 | 25.34 |
| S @ 2.0 | 100.0 | 0.4 | 12.5 | 22.2 | 3.05 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 148

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD
Size Fraction: 2" x 1 1/2"
Sample site: ADIT
Wt. % of head sample: 2.1
Dates analyzed: November 1 - 8, 1977
Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 32424.0 | 49.9 | 0.6 | 4.2 | 21.4 | 1.48 | 8 1/2 | 49.9 | 4.2 | 50.1 | 25.7 |
| 1.30 - 1.35 | 8991.0 | 13.8 | 0.7 | 6.5 | 20.4 | 1.56 | 7 1/2 | 63.7 | 4.7 | 36.3 | 32.9 |
| 1.35 - 1.40 | 3652.7 | 5.6 | 0.6 | 9.8 | 22.1 | 2.21 | 7 1/2 | 69.3 | 5.1 | 30.7 | 37.2 |
| 1.40 - 1.45 | 3941.1 | 6.1 | 0.7 | 14.8 | 24.2 | 2.21 | 7 | 75.4 | 5.9 | 24.6 | 42.7 |
| 1.45 - 1.50 | 3784.5 | 5.8 | 0.5 | 19.6 | 26.0 | 1.08 | 6 | 81.2 | 6.9 | 18.8 | 49.7 |
| 1.50 - 1.55 | 1012.5 | 1.6 | 0.5 | 21.8 | 24.4 | 2.89 | 5 1/2 | 82.8 | 7.2 | 17.2 | 52.3 |
| 1.55 - 1.60 | 1253.3 | 1.9 | 0.4 | 24.2 | 25.7 | 2.73 | 2 1/2 | 84.7 | 7.5 | 15.3 | 56.2 |
| 1.60 - 1.65 | 571.8 | 0.9 | 0.5 | 30.3 | 23.9 | 2.67 | 2 1/2 | 85.6 | 7.8 | 14.4 | 57.4 |
| 1.65 - 1.70 | 551.3 | 0.8 | 0.5 | 33.7 | 20.3 | 5.28 | 2 | 86.4 | 8.0 | 13.6 | 59.1 |
| 1.70 - 1.80 | 1092.9 | 1.7 | 0.4 | 37.1 | 19.4 | 8.12 | 1 1/2 | 88.1 | 8.6 | 11.9 | 62.0 |
| 1.80 - 1.90 | 534.4 | 0.8 | 0.4 | 47.0 | 16.0 | 8.31 | 1 | 88.9 | 8.9 | 11.1 | 63.4 |
| 1.90 - 2.00 | 827.2 | 1.3 | 0.4 | 56.8 | 19.2 | 8.50 | 1 | 90.2 | 9.6 | 9.8 | 64.2 |
| S @ 2.00 | 6380.1 | 9.8 | 0.4 | 64.0 | 17.4 | 29.47 | N.A. | 100.0 | 14.9 | -- | -- |
| TOTAL | 65016.8 | 100.0 | 0.6 | 14.9 | 21.4 | 4.64 | 8 | -- | -- | -- | -- |

REMARKS:

TABLE 149

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Size Fraction: 2" x 1 1/2"

Sample Site: ADIT

Wt. % of Head Sample: 2.1

Dates Analyzed: November 1 - 8, 1977

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 49.9 | 0.6 | 4.2 | 21.4 | 1.48 | 50.1 | 0.6 | 25.7 | 21.4 | 7.79 |
| 1.30 - 1.35 | 63.7 | 0.6 | 4.7 | 21.2 | 1.50 | 36.3 | 0.5 | 32.9 | 21.7 | 10.16 |
| 1.35 - 1.40 | 69.3 | 0.6 | 5.1 | 21.3 | 1.55 | 30.7 | 0.5 | 37.2 | 21.7 | 11.61 |
| 1.40 - 1.45 | 75.4 | 0.6 | 5.9 | 21.5 | 1.61 | 24.6 | 0.4 | 42.7 | 21.0 | 13.94 |
| 1.45 - 1.50 | 81.2 | 0.6 | 6.9 | 21.8 | 1.57 | 18.8 | 0.4 | 49.7 | 19.5 | 17.91 |
| 1.50 - 1.55 | 82.8 | 0.6 | 7.2 | 21.9 | 1.60 | 17.2 | 0.4 | 52.3 | 19.1 | 19.31 |
| 1.55 - 1.60 | 84.7 | 0.6 | 7.5 | 22.0 | 1.62 | 15.3 | 0.4 | 56.2 | 13.2 | 21.37 |
| 1.60 - 1.65 | 85.6 | 0.6 | 7.8 | 22.0 | 1.63 | 14.4 | 0.4 | 57.4 | 17.9 | 22.54 |
| 1.65 - 1.70 | 86.4 | 0.6 | 8.0 | 22.0 | 1.67 | 13.6 | 0.4 | 59.1 | 17.7 | 23.55 |
| 1.70 - 1.80 | 88.1 | 0.6 | 8.6 | 21.9 | 1.79 | 11.9 | 0.4 | 62.0 | 17.5 | 25.76 |
| 1.80 - 1.90 | 88.9 | 0.6 | 8.9 | 21.9 | 1.85 | 11.1 | 0.4 | 63.4 | 17.6 | 27.01 |
| 1.90 - 2.0 | 90.2 | 0.6 | 9.6 | 21.8 | 1.95 | 9.8 | 0.4 | 64.2 | 17.4 | 29.47 |
| S @ 2.0 | 100.0 | 0.6 | 14.9 | 21.4 | 4.64 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 150

TABLE 151

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 1 1/2" x 1"

Sample site: ADIT

Wt. % of head sample: 6.1

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 43000.0 | 44.3 | 0.5 | 3.6 | 21.9 | 1.44 | 9 | 44.3 | 3.6 | 55.7 | 19.4 |
| 1.30 - 1.35 | 25125.0 | 25.9 | 0.4 | 5.5 | 20.5 | 1.44 | 7 1/2 | 70.2 | 4.3 | 29.8 | 31.4 |
| 1.35 - 1.40 | 5484.0 | 5.7 | 0.4 | 8.5 | 20.2 | 1.97 | 7 | 75.9 | 4.6 | 24.1 | 36.9 |
| 1.40 - 1.45 | 4844.0 | 5.0 | 0.5 | 14.2 | 22.5 | 2.27 | 7 | 80.9 | 5.2 | 19.1 | 42.8 |
| 1.45 - 1.50 | 2396.1 | 2.5 | 0.6 | 17.5 | 23.9 | 2.21 | 6 1/2 | 83.4 | 5.6 | 16.6 | 46.5 |
| 1.50 - 1.55 | 3094.7 | 3.2 | 0.5 | 20.4 | 25.3 | 2.74 | 6 | 86.6 | 6.1 | 13.4 | 53.0 |
| 1.55 - 1.60 | 800.0 | 0.8 | 0.4 | 25.3 | 23.9 | 3.80 | 6 | 87.4 | 6.3 | 12.6 | 54.6 |
| 1.60 - 1.65 | 1275.3 | 1.3 | 0.5 | 30.5 | 21.7 | 5.86 | 3 1/2 | 88.7 | 6.7 | 11.3 | 57.0 |
| 1.65 - 1.70 | 377.6 | 0.4 | 0.4 | 34.4 | 19.4 | 7.41 | 3 | 89.1 | 6.8 | 10.9 | 58.1 |
| 1.70 - 1.80 | 1121.3 | 1.2 | 0.4 | 38.6 | 17.3 | 8.35 | 3 | 90.3 | 7.2 | 9.7 | 60.7 |
| 1.80 - 1.90 | 1098.8 | 1.1 | 0.4 | 45.9 | 13.5 | 8.72 | 1 1/2 | 91.4 | 7.7 | 8.6 | 62.2 |
| 1.90 - 2.00 | 1344.3 | 1.4 | 0.5 | 56.6 | 12.6 | 7.68 | 1 | 92.8 | 8.4 | 7.2 | 63.8 |
| S @ 2.00 | 6976.0 | 7.2 | 0.4 | 63.7 | 7.0 | 29.89 | N.A. | 100.0 | 12.4 | -- | -- |
| TOTAL | 96937.1 | 100.0 | 0.5 | 12.4 | 20.3 | 3.97 | 9 | -- | -- | -- | -- |

REMARKS:

TABLE 151

TABLE 152

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: BIRD
Size Fraction: 1 1/2" x 1"
Sample Site: ADIT
Wt. % of Head Sample: 6.1
Dates Analyzed: November 1 - 8, 1977
Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 44.3 | 0.5 | 3.6 | 21.9 | 1.44 | 55.7 | 0.4 | 19.4 | 19.0 | 5.98 |
| 1.30 - 1.35 | 70.2 | 0.5 | 4.3 | 21.4 | 1.44 | 29.8 | 0.4 | 31.4 | 17.7 | 9.93 |
| 1.35 - 1.40 | 75.9 | 0.5 | 4.6 | 21.3 | 1.48 | 24.1 | 0.4 | 36.9 | 17.1 | 11.82 |
| 1.40 - 1.45 | 80.9 | 0.5 | 5.2 | 21.4 | 1.53 | 19.1 | 0.4 | 42.8 | 15.7 | 14.32 |
| 1.45 - 1.50 | 83.4 | 0.5 | 5.6 | 21.4 | 1.55 | 16.6 | 0.4 | 46.5 | 14.4 | 16.14 |
| 1.50 - 1.55 | 86.6 | 0.5 | 6.1 | 21.6 | 1.59 | 13.4 | 0.4 | 53.0 | 11.8 | 19.34 |
| 1.55 - 1.60 | 87.4 | 0.5 | 6.3 | 21.6 | 1.61 | 12.6 | 0.4 | 54.6 | 11.1 | 20.33 |
| 1.60 - 1.65 | 88.7 | 0.5 | 6.7 | 21.6 | 1.68 | 11.3 | 0.4 | 57.0 | 9.9 | 21.99 |
| 1.65 - 1.70 | 89.1 | 0.5 | 6.8 | 21.6 | 1.70 | 10.9 | 0.4 | 58.1 | 9.5 | 22.53 |
| 1.70 - 1.80 | 90.3 | 0.5 | 7.2 | 21.5 | 1.79 | 9.7 | 0.4 | 60.7 | 8.5 | 24.28 |
| 1.80 - 1.90 | 91.4 | 0.5 | 7.7 | 21.4 | 1.87 | 8.6 | 0.4 | 62.2 | 7.9 | 26.27 |
| 1.90 - 2.0 | 92.8 | 0.5 | 8.4 | 21.3 | 1.96 | 7.2 | 0.4 | 63.8 | 7.0 | 29.89 |
| S @ 2.0 | 100.0 | 0.5 | 12.4 | 20.3 | 3.97 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 152

TABLE 153

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 1" x 1/2"

Sample site: ADIT

Wt. % of head sample: 9.9

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 17762.0 | 39.2 | 0.6 | 3.5 | 22.2 | 1.96 | 9 | 39.2 | 3.5 | 60.8 | 12.1 |
| 1.30 - 1.35 | 17388.0 | 38.4 | 0.6 | 5.0 | 21.0 | 1.42 | 8 | 77.6 | 4.2 | 22.4 | 24.3 |
| 1.35 - 1.40 | 3574.5 | 7.9 | 0.6 | 10.3 | 19.5 | 1.73 | 6 1/2 | 85.5 | 4.8 | 14.5 | 31.7 |
| 1.40 - 1.45 | 1783.0 | 3.9 | 0.6 | 16.7 | 21.7 | 2.30 | 6 1/2 | 89.4 | 5.3 | 10.6 | 37.4 |
| 1.45 - 1.50 | 1375.6 | 3.0 | 0.5 | 21.3 | 22.6 | 3.00 | 6 1/2 | 92.4 | 5.8 | 7.6 | 44.0 |
| 1.50 - 1.55 | 580.4 | 1.3 | 0.4 | 25.8 | 23.4 | 3.61 | 5 | 93.7 | 6.1 | 6.3 | 47.5 |
| 1.55 - 1.60 | 233.1 | 0.5 | 0.5 | 27.2 | 22.5 | 4.30 | 4 1/2 | 94.2 | 6.2 | 5.8 | 49.4 |
| 1.60 - 1.65 | 245.2 | 0.5 | 0.5 | 30.9 | 22.0 | 5.01 | 4 | 94.7 | 6.4 | 5.3 | 49.9 |
| 1.65 - 1.70 | 257.2 | 0.6 | 0.5 | 36.1 | 18.9 | 7.39 | 3 1/2 | 95.3 | 6.5 | 4.7 | 53.5 |
| 1.70 - 1.80 | 540.4 | 1.2 | 0.4 | 39.3 | 16.4 | 11.75 | 3 | 96.5 | 7.0 | 3.5 | 55.8 |
| 1.80 - 1.90 | 294.9 | 0.7 | 0.4 | 45.4 | 15.3 | 9.68 | 2 1/2 | 97.2 | 7.2 | 2.8 | 64.0 |
| 1.90 - 2.00 | 279.8 | 0.6 | 0.4 | 54.3 | 10.2 | 7.74 | 1 1/2 | 97.8 | 7.5 | 2.2 | 62.4 |
| S @ 2.00 | 1011.7 | 2.2 | 0.4 | 61.5 | 11.0 | 25.46 | 1/2 | 100.0 | 8.7 | -- | -- |
| TOTAL | 45325.8 | 100.0 | 0.6 | 8.7 | 21.1 | 2.58 | 9 | -- | -- | -- | -- |

REMARKS:

TABLE 153

TABLE 154

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Sample Site: ADIT

Dates Analyzed: November 1 - 8, 1977

Size Fraction: 1" x 1/2"

Wt. % of Head Sample: 9.9

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 39.2 | 0.6 | 3.5 | 22.2 | 1.96 | 60.8 | 0.6 | 12.1 | 20.4 | 2.98 |
| 1.30 - 1.35 | 77.6 | 0.6 | 4.2 | 21.6 | 1.69 | 22.4 | 0.5 | 24.3 | 19.2 | 5.67 |
| 1.35 - 1.40 | 85.5 | 0.6 | 4.8 | 21.4 | 1.70 | 14.5 | 0.5 | 31.7 | 19.1 | 7.81 |
| 1.40 - 1.45 | 89.4 | 0.6 | 5.3 | 21.4 | 1.72 | 10.6 | 0.4 | 37.4 | 18.2 | 9.84 |
| 1.45 - 1.50 | 92.4 | 0.6 | 5.8 | 21.5 | 1.76 | 7.6 | 0.4 | 44.0 | 16.4 | 12.54 |
| 1.50 - 1.55 | 93.7 | 0.6 | 6.1 | 21.5 | 1.79 | 6.3 | 0.4 | 47.5 | 15.0 | 14.38 |
| 1.55 - 1.60 | 94.2 | 0.6 | 6.2 | 21.5 | 1.80 | 5.8 | 0.4 | 49.4 | 14.3 | 15.25 |
| 1.60 - 1.65 | 94.7 | 0.6 | 6.4 | 21.5 | 1.82 | 5.3 | 0.4 | 49.9 | 13.6 | 16.22 |
| 1.65 - 1.70 | 95.3 | 0.6 | 6.5 | 21.5 | 1.86 | 4.7 | 0.4 | 53.5 | 12.9 | 17.35 |
| 1.70 - 1.80 | 96.5 | 0.6 | 7.0 | 21.4 | 1.98 | 3.5 | 0.4 | 55.8 | 11.7 | 19.27 |
| 1.80 - 1.90 | 97.2 | 0.6 | 7.2 | 21.4 | 2.04 | 2.8 | 0.4 | 61.0 | 10.8 | 21.66 |
| 1.90 - 2.0 | 97.8 | 0.6 | 7.5 | 21.3 | 2.07 | 2.2 | 0.4 | 62.4 | 11.0 | 25.46 |
| S @ 2.0 | 100.0 | 0.6 | 8.7 | 21.1 | 2.58 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 154

TABLE 155

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 1/2" x 1/4"

Sample site: ADIT

Wt. % of head sample: 11.7

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 9970.4 | 39.9 | 0.5 | 3.8 | 22.2 | 1.43 | 9 | 39.9 | 3.8 | 60.1 | 12.5 |
| 1.30 - 1.35 | 9430.0 | 37.7 | 0.4 | 5.5 | 21.0 | 1.44 | 8 | 77.6 | 4.6 | 22.4 | 24.2 |
| 1.35 - 1.40 | 1926.9 | 7.7 | 0.6 | 11.4 | 19.7 | 1.67 | 7 1/2 | 85.3 | 5.2 | 14.7 | 31.1 |
| 1.40 - 1.45 | 1098.0 | 4.4 | 0.6 | 16.4 | 19.9 | 2.58 | 7 | 89.7 | 5.8 | 10.3 | 36.9 |
| 1.45 - 1.50 | 546.5 | 2.2 | 0.6 | 20.4 | 19.9 | 3.26 | 7 | 91.9 | 6.1 | 8.1 | 41.9 |
| 1.50 - 1.55 | 320.5 | 1.3 | 0.5 | 24.1 | 20.3 | 4.36 | 7 | 93.2 | 6.4 | 6.8 | 44.7 |
| 1.55 - 1.60 | 255.3 | 1.0 | 0.5 | 27.1 | 19.6 | 4.99 | 6 1/2 | 94.2 | 6.6 | 5.8 | 48.0 |
| 1.60 - 1.65 | 195.1 | 0.8 | 0.4 | 31.1 | 16.9 | 6.65 | 6 | 95.0 | 6.8 | 5.0 | 50.8 |
| 1.65 - 1.70 | 100.0 | 0.4 | 0.5 | 33.8 | 16.3 | 7.85 | 6 | 95.4 | 6.9 | 4.6 | 52.6 |
| 1.70 - 1.80 | 243.3 | 1.0 | 0.5 | 37.7 | 16.0 | 8.97 | 3 | 96.4 | 7.2 | 3.6 | 57.2 |
| 1.80 - 1.90 | 230.0 | 0.9 | 0.5 | 43.9 | 13.3 | 10.17 | 2 | 97.3 | 7.6 | 2.7 | 59.5 |
| 1.90 - 2.00 | 99.5 | 0.4 | 0.5 | 51.6 | 13.1 | 10.12 | 1 | 97.7 | 7.8 | 2.3 | 60.0 |
| S @ 2.00 | 570.4 | 2.3 | 0.4 | 61.6 | 15.0 | 24.21 | 1/2 | 100.0 | 9.0 | -- | -- |
| TOTAL | 24985.9 | 100.0 | 0.5 | 9.0 | 20.9 | 24.0 | 7 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 155

TABLE 156

SUKUNKA PROJECT
BULK SAMPLING PROGRAM
Float-sink Analysis

Seam: BIRD
Sample Site: ADIT
Dates Analyzed: November 1 - 8, 1977

Size Fraction: 1/2" x 1/4"
Wt. % of Head Sample: 11.7
Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 39.9 | 0.5 | 3.8 | 22.2 | 1.43 | 60.1 | 0.5 | 12.5 | 20.1 | 3.04 |
| 1.30 - 1.35 | 77.6 | 0.5 | 4.6 | 21.6 | 1.43 | 22.4 | 0.6 | 24.2 | 18.6 | 5.73 |
| 1.35 - 1.40 | 85.3 | 0.5 | 5.2 | 21.4 | 1.46 | 14.7 | 0.5 | 31.1 | 18.0 | 7.86 |
| 1.40 - 1.45 | 89.7 | 0.5 | 5.8 | 21.4 | 1.51 | 10.3 | 0.5 | 36.9 | 17.2 | 10.11 |
| 1.45 - 1.50 | 91.9 | 0.5 | 6.1 | 21.3 | 1.55 | 8.1 | 0.5 | 41.9 | 16.5 | 11.97 |
| 1.50 - 1.55 | 93.2 | 0.5 | 6.4 | 21.3 | 1.59 | 6.8 | 0.5 | 44.7 | 15.8 | 13.43 |
| 1.55 - 1.60 | 94.2 | 0.5 | 6.6 | 21.3 | 1.63 | 5.8 | 0.4 | 48.0 | 15.1 | 14.88 |
| 1.60 - 1.65 | 95.0 | 0.5 | 6.8 | 21.3 | 1.67 | 5.0 | 0.4 | 50.8 | 14.8 | 16.20 |
| 1.65 - 1.70 | 95.4 | 0.5 | 6.9 | 21.2 | 1.70 | 4.6 | 0.4 | 52.6 | 14.7 | 16.92 |
| 1.70 - 1.80 | 96.4 | 0.5 | 7.2 | 21.2 | 1.77 | 3.6 | 0.4 | 57.2 | 14.4 | 19.13 |
| 1.80 - 1.90 | 97.3 | 0.5 | 7.6 | 21.1 | 1.85 | 2.7 | 0.4 | 59.5 | 14.7 | 22.12 |
| 1.90 - 2.0 | 97.7 | 0.5 | 7.8 | 21.1 | 1.88 | 2.3 | 0.4 | 60.0 | 15.0 | 24.21 |
| S @ 2.0 | 100.0 | 0.5 | 9.0 | 20.9 | 2.40 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 156

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD
Size Fraction: 1/4" x1/8"
Sample site: ADIT
Wt. % of head sample: 11.4
Dates analyzed: November 1 - 8, 1977
Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 1962.6 | 43.4 | 0.9 | 2.7 | 23.1 | 1.44 | 8 1/2 | 43.4 | 2.7 | 56.6 | 12.1 |
| 1.30 - 1.35 | 1538.1 | 34.0 | 0.7 | 5.3 | 20.6 | 1.44 | 7 1/2 | 77.4 | 3.8 | 22.6 | 22.4 |
| 1.35 - 1.40 | 338.2 | 7.5 | 0.7 | 10.2 | 19.2 | 1.67 | 6 | 84.9 | 4.4 | 15.1 | 28.3 |
| 1.40 - 1.45 | 281.1 | 6.2 | 0.7 | 16.2 | 17.7 | 1.96 | 4 1/2 | 91.1 | 5.2 | 8.9 | 36.8 |
| 1.45 - 1.50 | 86.2 | 1.9 | 0.7 | 20.6 | 18.5 | 2.94 | 4 1/2 | 93.0 | 5.5 | 7.0 | 41.4 |
| 1.50 - 1.55 | 48.3 | 1.1 | 0.5 | 24.2 | 19.1 | 4.19 | 4 1/2 | 94.1 | 5.7 | 5.9 | 44.9 |
| 1.55 - 1.60 | 37.8 | 0.8 | 0.5 | 27.6 | 19.5 | 5.97 | 4 1/2 | 94.9 | 5.9 | 5.1 | 47.3 |
| 1.60 - 1.65 | 38.7 | 0.9 | 0.4 | 31.1 | 18.4 | 6.60 | 4 | 95.8 | 6.2 | 4.2 | 49.4 |
| 1.65 - 1.70 | 23.0 | 0.5 | 0.5 | 33.5 | 18.0 | 11.86 | 3 | 96.3 | 6.3 | 3.7 | 52.6 |
| 1.70 - 1.80 | 36.9 | 0.8 | 0.6 | 37.8 | 14.6 | 9.93 | 2 1/2 | 97.1 | 6.6 | 2.9 | 55.3 |
| 1.80 - 1.90 | 29.0 | 0.6 | 0.8 | 44.3 | 14.0 | 10.66 | 2 | 97.7 | 6.8 | 2.3 | 59.5 |
| 1.90 - 2.00 | 17.1 | 0.4 | 0.7 | 49.5 | 12.4 | 9.31 | 1 1/2 | 98.1 | 7.0 | 1.9 | 60.3 |
| S @ 2.00 | 88.9 | 1.9 | 0.6 | 62.0 | 10.8 | 25.02 | N.A. | 100.0 | 8.0 | -- | -- |
| TOTAL | 4525.9 | 100.0 | 0.8 | 8.0 | 21.0 | 2.29 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 157

TABLE 158

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Size Fraction: 1/4" x 1/8"

Sample Site: ADIT

Wt. % of Head Sample: 11.4

Dates Analyzed: November 1 - 8, 1977

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 43.4 | 0.9 | 2.7 | 23.1 | 1.44 | 56.6 | 0.7 | 12.1 | 19.4 | 2.93 |
| 1.30 - 1.35 | 77.4 | 0.8 | 3.8 | 22.0 | 1.44 | 22.6 | 0.7 | 22.4 | 17.5 | 5.18 |
| 1.35 - 1.40 | 84.9 | 0.8 | 4.4 | 21.8 | 1.46 | 15.1 | 0.6 | 28.3 | 16.7 | 6.93 |
| 1.40 - 1.45 | 91.1 | 0.8 | 5.2 | 21.5 | 1.49 | 8.9 | 0.6 | 36.8 | 16.1 | 10.39 |
| 1.45 - 1.50 | 93.0 | 0.8 | 5.5 | 21.4 | 1.52 | 7.0 | 0.6 | 41.4 | 15.4 | 12.41 |
| 1.50 - 1.55 | 94.1 | 0.8 | 5.7 | 21.4 | 1.56 | 5.9 | 0.6 | 44.9 | 14.7 | 13.94 |
| 1.55 - 1.60 | 94.9 | 0.8 | 5.9 | 21.4 | 1.59 | 5.1 | 0.6 | 47.3 | 13.0 | 15.19 |
| 1.60 - 1.65 | 95.8 | 0.8 | 6.2 | 21.3 | 1.64 | 4.2 | 0.6 | 49.4 | 13.0 | 17.03 |
| 1.65 - 1.70 | 96.3 | 0.8 | 6.3 | 21.3 | 1.69 | 3.7 | 0.6 | 52.6 | 12.3 | 17.73 |
| 1.70 - 1.80 | 97.1 | 0.8 | 6.6 | 21.3 | 1.76 | 2.9 | 0.6 | 55.3 | 11.7 | 19.88 |
| 1.80 - 1.90 | 97.7 | 0.8 | 6.8 | 21.2 | 1.81 | 2.3 | 0.6 | 59.5 | 11.1 | 22.29 |
| 1.90 - 2.0 | 98.1 | 0.8 | 7.0 | 21.3 | 1.85 | 1.9 | 0.6 | 60.3 | 10.8 | 25.02 |
| S @ 2.0 | 100.0 | 0.8 | 8.0 | 21.0 | 2.29 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 158

TABLE 159

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 1/8" x 10M

Sample site: ADIT

Wt. % of head sample: 12.5

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 1684.6 | 55.1 | 0.4 | 2.7 | 23.3 | 1.51 | 9 | 55.1 | 2.7 | 44.9 | 12.6 |
| 1.30 - 1.35 | 705.6 | 23.1 | 0.6 | 5.4 | 21.2 | 1.49 | 8 | 78.2 | 3.5 | 21.8 | 20.3 |
| 1.35 - 1.40 | 269.1 | 8.8 | 0.6 | 9.3 | 19.5 | 1.53 | 5 | 87.0 | 4.1 | 13.0 | 27.6 |
| 1.40 - 1.45 | 136.3 | 4.5 | 0.6 | 14.4 | 18.7 | 1.83 | 4 1/2 | 91.5 | 4.6 | 8.5 | 34.7 |
| 1.45 - 1.50 | 70.7 | 2.3 | 0.8 | 19.1 | 17.6 | 2.65 | 4 | 93.8 | 4.9 | 6.2 | 41.3 |
| 1.50 - 1.55 | 39.0 | 1.3 | 0.7 | 23.7 | 17.0 | 3.92 | 4 | 95.1 | 5.2 | 4.9 | 45.2 |
| 1.55 - 1.60 | 18.8 | 0.6 | 0.6 | 26.2 | 19.1 | 4.51 | 4 | 95.7 | 5.3 | 4.3 | 48.5 |
| 1.60 - 1.65 | 21.8 | 0.7 | 0.6 | 29.0 | 17.0 | 6.17 | 3 1/2 | 96.4 | 5.5 | 3.6 | 51.6 |
| 1.65 - 1.70 | 11.7 | 0.4 | 0.7 | 31.7 | 17.9 | 7.60 | 3 1/2 | 96.8 | 5.6 | 3.2 | 54.3 |
| 1.70 - 1.80 | 20.6 | 0.7 | 0.7 | 35.5 | 16.6 | 8.39 | 3 1/2 | 97.5 | 5.8 | 2.5 | 60.1 |
| 1.80 - 1.90 | 12.0 | 0.4 | 0.7 | 41.5 | 14.7 | 9.74 | 3 | 97.9 | 6.0 | 2.1 | 61.1 |
| 1.90 - 2.00 | 7.2 | 0.2 | 0.7 | 46.8 | 13.1 | 10.02 | 1 1/2 | 98.1 | 6.1 | 1.9 | 61.8 |
| S @ 2.00 | 59.5 | 1.9 | 0.6 | 63.9 | 13.8 | 22.34 | N.A. | 100.0 | 7.2 | -- | -- |
| TOTAL | 3056.9 | 100.0 | 0.5 | 7.2 | 21.7 | 2.15 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 159

TABLE 160

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Size Fraction: 1/8" x 10M

Sample Site: ADIT

Wt. % of Head Sample: 12.5

Dates Analyzed: November 1 - 8, 1977

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 55.1 | 0.4 | 2.7 | 23.3 | 1.51 | 44.9 | 0.6 | 12.6 | 19.7 | 2.93 |
| 1.30 - 1.35 | 78.2 | 0.5 | 3.5 | 22.7 | 1.50 | 21.8 | 0.6 | 20.3 | 18.1 | 4.46 |
| 1.35 - 1.40 | 87.0 | 0.5 | 4.1 | 22.4 | 1.51 | 13.0 | 0.7 | 27.6 | 17.2 | 6.44 |
| 1.40 - 1.45 | 91.5 | 0.5 | 4.6 | 22.2 | 1.52 | 8.5 | 0.7 | 34.7 | 16.4 | 8.88 |
| 1.45 - 1.50 | 93.8 | 0.5 | 4.9 | 22.1 | 1.55 | 6.2 | 0.6 | 41.3 | 16.0 | 11.19 |
| 1.50 - 1.55 | 95.1 | 0.5 | 5.2 | 22.0 | 1.58 | 4.9 | 0.6 | 45.2 | 15.7 | 13.12 |
| 1.55 - 1.60 | 95.7 | 0.5 | 5.3 | 22.0 | 1.60 | 4.3 | 0.6 | 48.5 | 15.2 | 14.32 |
| 1.60 - 1.65 | 96.4 | 0.5 | 5.5 | 21.9 | 1.63 | 3.6 | 0.6 | 51.6 | 14.9 | 15.90 |
| 1.65 - 1.70 | 96.8 | 0.5 | 5.6 | 21.9 | 1.66 | 3.2 | 0.6 | 54.3 | 14.5 | 16.94 |
| 1.70 - 1.80 | 97.5 | 0.5 | 5.8 | 21.9 | 1.71 | 2.5 | 0.6 | 60.1 | 13.9 | 19.34 |
| 1.80 - 1.90 | 97.9 | 0.5 | 6.0 | 21.9 | 1.74 | 2.1 | 0.6 | 61.1 | 13.7 | 21.16 |
| 1.90 - 2.0 | 98.1 | 0.5 | 6.1 | 21.8 | 1.76 | 1.9 | 0.6 | 61.8 | 13.8 | 22.34 |
| S @ 2.0 | 100.0 | 0.5 | 7.2 | 21.7 | 2.15 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 160

TABLE 161

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD

Size Fraction: 10M x 28M

Sample site: ADIT

Wt. % of head sample: 19.5

Dates analyzed: November 1 - 8, 1977

Lab No.: 9635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 1297.7 | 66.0 | 0.5 | 2.4 | 23.1 | 1.46 | 9 | 66.0 | 2.4 | 34.0 | 13.8 |
| 1.30 - 1.35 | 347.9 | 17.7 | 0.6 | 5.6 | 20.3 | 1.49 | 8 1/2 | 83.7 | 3.1 | 16.3 | 22.6 |
| 1.35 - 1.40 | 125.9 | 6.4 | 0.6 | 10.0 | 19.1 | 1.65 | 5 1/2 | 90.1 | 3.6 | 9.9 | 30.6 |
| 1.40 - 1.45 | 57.1 | 2.9 | 0.6 | 15.2 | 18.5 | 2.02 | 5 | 93.0 | 3.9 | 7.0 | 37.8 |
| 1.45 - 1.50 | 35.1 | 1.8 | 0.7 | 18.2 | 18.2 | 2.67 | 4 1/2 | 94.8 | 4.2 | 5.2 | 44.1 |
| 1.50 - 1.55 | 15.5 | 0.8 | 0.7 | 20.8 | 17.9 | 3.18 | 4 1/2 | 95.6 | 4.3 | 4.4 | 49.2 |
| 1.55 - 1.60 | 11.1 | 0.6 | 0.8 | 23.8 | 17.8 | 4.19 | 4 | 96.2 | 4.5 | 3.8 | 51.2 |
| 1.60 - 1.65 | 10.0 | 0.5 | 0.7 | 38.8 | 17.5 | 5.55 | 3 1/2 | 96.7 | 4.6 | 3.3 | 55.3 |
| 1.65 - 1.70 | 5.9 | 0.3 | 0.8 | 31.6 | 17.3 | 6.41 | 3 | 97.0 | 4.7 | 3.0 | 57.2 |
| 1.70 - 1.80 | 7.8 | 0.4 | 0.7 | 35.1 | 17.0 | 7.63 | 2 1/2 | 97.4 | 4.8 | 2.6 | 61.5 |
| 1.80 - 1.90 | 6.1 | 0.3 | 0.8 | 41.2 | 15.3 | 8.69 | 2 1/2 | 97.7 | 4.9 | 2.3 | 64.6 |
| 1.90 - 2.00 | 3.8 | 0.2 | 0.8 | 47.3 | 13.1 | 9.47 | 1 | 97.9 | 5.0 | 2.1 | 65.7 |
| S @ 2.00 | 42.2 | 2.1 | 0.9 | 65.9 | 15.4 | 17.64 | N.A. | 100.0 | 6.3 | -- | -- |
| TOTAL | 1966.1 | 100.0 | 0.5 | 6.3 | 21.8 | 1.98 | 8 1/2 | -- | -- | -- | -- |

REMARKS:

TABLE 161

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Size Fraction: 10M x 28M

Sample Site: ADIT

Wt. % of Head Sample: 19.5

Dates Analyzed: November 1 - 8, 1977

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 66.0 | 0.5 | 2.4 | 23.1 | 1.46 | 34.0 | 0.6 | 13.8 | 19.2 | 3.00 |
| 1.30 - 1.35 | 83.7 | 0.5 | 3.1 | 22.5 | 1.47 | 16.3 | 0.7 | 22.6 | 18.0 | 4.64 |
| 1.35 - 1.40 | 90.1 | 0.5 | 3.6 | 22.3 | 1.48 | 9.9 | 0.7 | 30.6 | 17.3 | 6.57 |
| 1.40 - 1.45 | 93.0 | 0.5 | 3.9 | 22.1 | 1.50 | 7.0 | 0.8 | 37.8 | 16.9 | 8.45 |
| 1.45 - 1.50 | 94.8 | 0.5 | 4.2 | 22.1 | 1.52 | 5.2 | 0.8 | 44.1 | 16.4 | 10.45 |
| 1.50 - 1.55 | 95.6 | 0.5 | 4.3 | 22.0 | 1.53 | 4.4 | 0.8 | 49.2 | 16.1 | 11.78 |
| 1.55 - 1.60 | 96.2 | 0.5 | 4.5 | 22.0 | 1.55 | 3.8 | 0.8 | 51.2 | 15.9 | 12.97 |
| 1.60 - 1.65 | 96.7 | 0.5 | 4.6 | 22.0 | 1.57 | 3.3 | 0.9 | 55.3 | 15.6 | 14.10 |
| 1.65 - 1.70 | 97.0 | 0.5 | 4.7 | 22.0 | 1.58 | 3.0 | 0.9 | 57.2 | 15.5 | 14.86 |
| 1.70 - 1.80 | 97.4 | 0.5 | 4.8 | 22.0 | 1.61 | 2.6 | 0.9 | 61.5 | 15.2 | 15.98 |
| 1.80 - 1.90 | 97.7 | 0.5 | 4.9 | 21.9 | 1.63 | 2.3 | 0.9 | 64.6 | 15.2 | 16.93 |
| 1.90 - 2.0 | 97.9 | 0.5 | 6.0 | 21.9 | 1.65 | 2.1 | 0.9 | 65.7 | 15.4 | 17.64 |
| S @ 2.0 | 100.0 | 0.5 | 6.3 | 21.8 | 1.98 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 162

SUKUNKA PROJECT
BULK SAMPLING PROGRAM

Float-Sink Analysis

Seam: BIRD
Size Fraction: 28M x 100M
Sample site: ADIT
Wt. % of head sample: 13.9
Dates analyzed: November 1 - 8, 1977
Lab No.: 3635

| Specific Gravity Fraction | Fractional Analysis | | | | | | | Cumulative Float | | Cumulative Sink | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weight gm | Weight % | Moist. % | Ash % | V.M. % | Tot.S. % | F.S.I. | Weight % | Ash % | Weight % | Ash % |
| F @ 1.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.20 - 1.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.25 - 1.30 | 509.2 | 55.5 | 1.1 | 2.3 | 23.5 | 1.81 | 8 1/2 | 55.5 | 2.3 | 44.5 | 11.8 |
| 1.30 - 1.35 | 233.2 | 25.4 | 1.1 | 4.0 | 21.9 | 1.51 | 8 1/2 | 80.9 | 2.8 | 19.1 | 22.4 |
| 1.35 - 1.40 | 72.6 | 7.9 | 1.1 | 8.6 | 19.3 | 1.57 | 5 1/2 | 88.8 | 3.3 | 11.2 | 32.3 |
| 1.40 - 1.45 | 35.3 | 3.8 | 0.8 | 13.2 | 18.1 | 1.74 | 4 1/2 | 92.6 | 3.8 | 7.4 | 40.9 |
| 1.45 - 1.50 | 16.1 | 1.8 | 0.9 | 16.9 | 18.0 | 2.06 | 4 | 94.4 | 4.0 | 5.6 | 49.4 |
| 1.50 - 1.55 | 4.8 | 0.5 | 1.1 | 22.7 | 17.9 | 2.85 | 3 1/2 | 94.9 | 4.1 | 5.1 | 52.0 |
| 1.55 - 1.60 | 6.2 | 0.7 | 1.2 | 24.3 | 17.1 | 3.03 | 3 1/2 | 95.6 | 4.2 | 4.4 | 57.5 |
| 1.60 - 1.65 | 4.3 | 0.5 | 1.2 | 27.9 | 17.5 | 3.67 | 3 | 96.1 | 4.3 | 3.9 | 61.8 |
| 1.65 - 1.70 | 2.6 | 0.3 | 1.0 | 32.9 | 17.0 | 4.48 | 2 1/2 | 96.4 | 4.5 | 3.6 | 61.9 |
| 1.70 - 1.80 | 4.6 | 0.5 | 1.1 | 37.2 | 17.3 | 5.42 | 2 1/2 | 96.9 | 4.6 | 3.1 | 67.3 |
| 1.80 - 1.90 | 2.7 | 0.3 | 1.2 | 45.6 | 15.5 | 6.21 | 1 | 97.2 | 4.8 | 2.8 | 67.9 |
| 1.90 - 2.00 | 2.2 | 0.2 | 1.4 | 52.1 | 13.7 | 6.57 | 1/2 | 97.4 | 4.9 | 2.6 | 68.1 |
| S @ 2.00 | 24.0 | 2.6 | 0.8 | 69.9 | 16.0 | 16.86 | N.A. | 100.0 | 6.5 | -- | -- |
| TOTAL | 917.8 | 100.0 | 1.1 | 6.5 | 22.1 | 2.18 | 9 | -- | -- | -- | -- |

REMARKS:

TABLE 163

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

Float-sink Analysis

Seam: BIRD

Sample Site: ADIT

Dates Analyzed: November 1 - 8, 1977

Size Fraction: 28M x 100M

Wt. % of Head Sample: 13.9

Lab. No.: 9635

| Specific Gravity Fraction | Cumulative Floats | | | | | Cumulative Sinks | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Weight % | Moisture % | Ash % | V.M. % | Total S. % | Weight % | Moisture % | Ash % | V.M. % | Total S. % |
| F @ 1.20 | | | | | | | | | | |
| 1.20 - 1.25 | | | | | | | | | | |
| 1.25 - 1.30 | 55.5 | 1.1 | 2.3 | 23.5 | 1.81 | 44.5 | 1.1 | 11.8 | 20.3 | 2.64 |
| 1.30 - 1.35 | 80.9 | 1.1 | 2.8 | 23.0 | 1.72 | 19.1 | 1.0 | 22.4 | 18.1 | 4.15 |
| 1.35 - 1.40 | 88.8 | 1.1 | 3.3 | 22.7 | 1.70 | 11.2 | 0.9 | 32.3 | 17.3 | 5.96 |
| 1.40 - 1.45 | 92.6 | 1.1 | 3.8 | 22.5 | 1.70 | 7.4 | 1.0 | 40.9 | 16.9 | 8.13 |
| 1.45 - 1.50 | 94.4 | 1.1 | 4.0 | 22.4 | 1.71 | 5.6 | 1.0 | 49.4 | 16.5 | 10.08 |
| 1.50 - 1.55 | 94.9 | 1.1 | 4.1 | 22.4 | 1.72 | 5.1 | 1.0 | 52.0 | 16.4 | 10.79 |
| 1.55 - 1.60 | 95.6 | 1.1 | 4.2 | 22.3 | 1.73 | 4.4 | 0.9 | 57.5 | 16.2 | 12.02 |
| 1.60 - 1.65 | 96.1 | 1.1 | 4.3 | 22.3 | 1.74 | 3.9 | 0.9 | 61.8 | 16.1 | 13.09 |
| 1.65 - 1.70 | 96.4 | 1.1 | 4.5 | 22.3 | 1.75 | 3.6 | 0.9 | 61.9 | 16.0 | 13.81 |
| 1.70 - 1.80 | 96.9 | 1.1 | 4.6 | 22.3 | 1.76 | 3.1 | 0.9 | 67.3 | 15.8 | 15.16 |
| 1.80 - 1.90 | 97.2 | 1.1 | 4.8 | 22.2 | 1.78 | 2.8 | 0.8 | 67.9 | 15.8 | 16.12 |
| 1.90 - 2.0 | 97.4 | 1.1 | 4.9 | 22.2 | 1.79 | 2.6 | 0.8 | 68.1 | 16.0 | 16.86 |
| S @ 2.0 | 100.0 | 1.1 | 6.5 | 22.1 | 2.18 | -- | -- | -- | -- | -- |
| TOTAL | | | | | | | | | | |

TABLE 164

TABLE 165

CLIENT: B.P. EXPLORATION CANADA LTD.

SAMPLE: B - 4 BULK SAMPLE

LAB. NO.: 9635

DATES ANALYZED: Nov. 1 - 8, 1977

| FROTH FLOTATION TEST: 28M x 0 (WT.% = 22.5) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CUMULATIVE | | |
| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | WT.% | ASH% | S% |
| STAGE I | 89.1 | 0.4 | 4.8 | 23.1 | 1.74 | 9 | 89.1 | 4.8 | 1.74 |
| STAGE II | 6.5 | 0.4 | 10.6 | 21.8 | 2.29 | 8 1/2 | 95.6 | 5.2 | 1.78 |
| STAGE III | 1.0 | 0.8 | 22.4 | 20.0 | 3.05 | 7 | 96.6 | 5.4 | 1.79 |
| TAILS | 3.4 | 1.1 | 55.3 | 19.8 | 8.00 | 1/2 | 100.0 | 7.1 | 2.00 |

| FROTH FLOTATION TEST: 100M x 0 (WT.% = 8.6) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CUMULATIVE | | |
| PRODUCT | WT.% | RM.% | ASH% | VM.% | S% | F.S.I. | WT.% | ASH% | S% |
| STAGE I | 92.0 | 0.5 | 5.4 | 22.9 | 1.90 | 9 | 92.0 | 5.4 | 1.90 |
| STAGE II | 3.9 | 0.7 | 20.4 | 20.3 | 3.58 | 7 1/2 | 95.9 | 6.0 | 1.97 |
| STAGE III | 0.9 | 1.1 | 40.0 | 20.2 | 5.53 | 1 | 96.8 | 6.3 | 2.00 |
| TAILS | 3.2 | 1.2 | 68.7 | 19.2 | 8.99 | N.A. | 100.0 | 8.3 | 2.23 |

FROTH FLOTATION PARAMETERS

| | |
|---|---|
| Pulp Density: | 10% |
| Reagent: | 4:1=Kerosene:MIBC |
| Dosage: | 0.48 lb/Ton |
| Conditioning: | 2 minutes |
| Stage I: | Froth for first minute |
| Stage II: | Froth for second minute |
| Stage III: | Froth for third minute |

SUKUNKA PROJECT

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (1)

TABLE 166

Seam: Bird

Sample Site: Saddle Creek Adit

Date Sampled: Oct. 17, 1977

Date Analyzed:

Size: 4" x 0

Composite No.: 4-B

Lab No.: 245

| Proximate Analysis (Air-dried) | | | | Miscellaneous (Air-dried Basis) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inherent Moist.% | Ash% | V.M.% | F.C.% | Total S.% | $CO_2$ | Cl | P | C.V. B.T.U./LB | S.G. |
| 1.2 | 6.0 | 21.4 | 71.4 | 1.83 | 0.50 | Trace | 0.04 | 14,574 | 1.33 |

| Ultimate Analysis % (Air-dried Basis) | | | | | | |
|---|---|---|---|---|---|---|
| % $H_2O$ | % C | % $H_2$ | % $N_2$ | % S | % Ash | % $O_2$ (by diff.) |
| 1.21 | 83.33 | 4.62 | 1.21 | 1.83 | 5.98 | 1.82 |

| Coking Properties | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Caking indices | | Giesecler Plastometer values | | | | | Ruhr Dilatometer values | | | |
| F.S.I. | Gray-King coke type | Initial softening temp. (°C) | Max. fluidity (d.d.m.) | Max. fluidity temp (°C) | Solidification temp. (°C) | Temp. range soften to solidification (°C) | Initial softening temp. (°C) | Temp. of maximum Dilatation (°C) | Maximum contraction % | Maximum dilatation % |
| 8½ | G7 | 429 | 373 | 467 | 509 | 80 | 374 | 459 | 28 | 110 |

APPENDIX 3

SUKUNKA PROJECT

TABLE 167

BULK SAMPLING PROGRAM

CLEAN COAL ANALYSIS (2)

Seam: Bird

Size: 4" x 0

Sample Site: Saddle Creek Adit

Composite No.: B4

Date Sampled: Oct. 17th, 1977

Sample No.: B4

Date Analysis: Nov./Dec. 1977

Lab No.: 245

| PETROGRAPHIC ANALYSIS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Maceral Analysis Volume % | | | | | Mean Max. Reflectance of Vitrinite | Strength Index | Composition Balance Index |
| Vitrinite | Macrinite | Micrinite | Semi Fusinite | Fusinite | | | |
| 53.76 | 8.00 | 2.12 | 22.94 | 7.88 | 1.3201 | 5.38 | 2.27 |

| ASH FUSION TEMPERATURES (°F) | | | | |
|---|---|---|---|---|
| Atmosphere | Initial Deformation | Softening | Hemispheric | Flow |
| Oxidizing | 2220 | 2320 | 2360 | 2440 |
| Reducing | 2070 | 2240 | 2260 | 2390 |

| ANALYSIS OF ASH CONSTITUENTS % | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | $Al_2O_3$ | $Fe_2O_3$ | $TiO_2$ | CaO | MgO | $Na_2O$ | $K_2O$ | $P_2O_5$ | $SO_3$ |
| 55.34 | 17.78 | 6.29 | 1.36 | 5.04 | 2.07 | 1.21 | 1.38 | 0.45 | 5.24 |

| | |
|---|---|
| Hardgrove Grindability Index | 1 0 4 |

APPENDIX 5

Lab. No. 245 Date December 2, 1977

Client: B.P. EXPLORATION CANADA LTD.

Sample Identification: CLEAN COAL COMP.

Starting Temperature °C: 320

Softening Temperature °C: 374

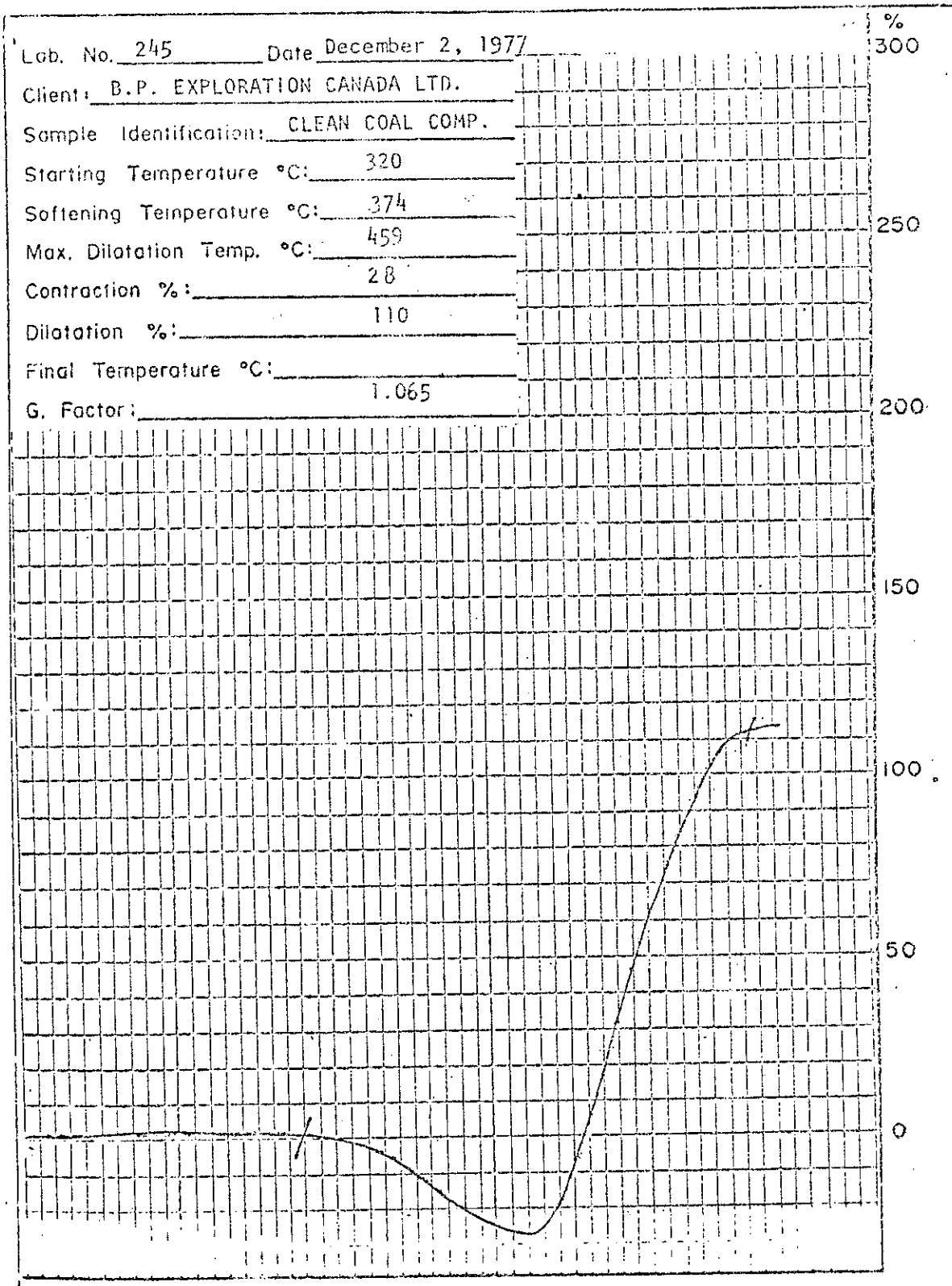
Max. Dilatation Temp. °C: 459

Contraction %: 28

Dilatation %: 110

Final Temperature °C:

G. Factor: 1.065




BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

TABLE 168

CLIENT: B.P. EXPLORATION CANADA LTD.

PROJECT: BIRD ADIT FLOOR SAMPLES

LAB. NO.: 9770

November 4, 1977

| SIZE ANALYSIS | | | |
|---|---|---|---|
| SIZE FRACTION | WT.% | CUM. WT.% | |
| 4" x 1" | 49.6 | 49.6 | % +4" = 6.8 crushed to pass 4" |
| 1" x 1/2" | 9.7 | 59.3 | |
| 1/2"x1/4" | 11.4 | 70.7 | |
| 1/4" x 28M | 22.4 | 93.1 | |
| 28M x 0 | 6.9 | 100.0 | |

| SINK FLOAT ANALYSIS: 4" x 28M | | | | |
|---|---|---|---|---|
| | | | CUMULATIVE | |
| S.G. FRACTION | WT.% | ASH% | WT.% | ASH% |
| -1.40 | 6.3 | 5.0 | 6.3 | 5.0 |
| 1.40-1.60 | 2.2 | 21.6 | 8.5 | 9.3 |
| 1.60-1.80 | 4.4 | 31.8 | 12.9 | 17.0 |
| 1.80-2.00 | 30.4 | 60.1 | 43.3 | 47.3 |
| + 2.00 | 56.7 | 66.1 | 100.0 | 57.9 |

| RAW ANALYSIS | | | | |
|---|---|---|---|---|
| SIZE FRACTION | RM | ASH | VM | FC |
| 4" x 28M | 1.0 | 57.7 | 10.6 | 30.7 |
| 28M x 0 | 0.8 | 29.4 | 18.0 | 51.8 |

TABLE 169

CLIENT: B.P. EXPLORATION (CANADA) LTD.

SAMPLE: SADDLE CREEK CHAMBERLAIN ADIT SAMPLE

LAB. NO.: 9946

November, 1977

| SIZE & RAW ANALYSES, a.d.b. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CUMULATIVE | | |
| SIZE FRACTION | WT.% | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | WT.% | ASH% | REMARKS |
| 1 1/2" x 28M | 88.2 | 0.6 | 12.7 | 19.0 | 67.7 | 0.51 | 3 | 88.2 | 12.7 | +1 1/2"=21.8% |
| 28M x 0 | 11.8 | 0.9 | 13.1 | 19.2 | 66.8 | 0.62 | 4 | 100.0 | 12.7 | crushed to |
| HEAD RAW | 100.0 | 0.7 | 12.2 | 19.6 | 67.5 | 0.53 | 3 | | | pass 1 1/2" |

| SINK-FLOAT ANALYSIS: 1 1/2 x 28M | | | | | | |
|---|---|---|---|---|---|---|
| | | | | CUMULATIVE | | |
| S.G. FRACTION | WT.% | ASH% | F.S.I. | WT.% | ASH% | REMARKS |
| -1.30 | 10.5 | 2.2 | 9 | 10.5 | 2.2 | a.d.b. |
| 1.30-1.40 | 66.4 | 5.6 | 3 1/2 | 76.9 | 5.1 | a.d.b. |
| 1.40-1.50 | 10.2 | 16.0 | 1 1/2 | 87.1 | 6.4 | a.d.b. |
| 1.50-1.60 | 4.1 | 24.2 | 1 | 91.2 | 7.2 | a.d.b. |
| 1.60-1.70 | 1.6 | 31.3 | 1/2 | 92.8 | 7.6 | a.d.b. |
| 1.70-1.80 | 0.7 | 37.2 | 1/2 | 93.5 | 7.8 | a.d.b. |
| 1.80-1.90 | 0.4 | 46.8 | 1/2 | 93.9 | 8.0 | a.d.b. |
| 1.90-2.00 | 0.3 | 54.9 | 1/2 | 94.2 | 8.2 | a.d.b. |
| + 2.00 | 5.8 | 85.4 | N.A. | 100.0 | 12.6 | a.d.b. |

| FROTH FLOTATION TEST: 28M x 0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | CUMULATIVE | | |
| PRODUCT | WT.% | ASH% | F.S.I. | WT.% | ASH% | REMARKS |
| STAGE I | 71.6 | 6.7 | 7 | 71.6 | 6.7 | 10% PD, 0.48 lb/T 4:1=Ker: MIBC. 1 & 2 min. froths |
| STAGE II | 5.4 | 16.8 | 1 1/2 | 77.0 | 7.4 | |
| TAILS | 23.0 | 30.9 | 1 | 100.0 | 12.8 | |

TABLE 170

CLIENT: B.P. EXPLORATION (CANADA) LTD.

SAMPLE: SADDLE CREEK CHAMBERLAIN ADIT SAMPLE

LAB. NO.: 9946

November, 1977

ANALYSES OF CLEAN COAL COMPOSITE: (+28M) FLOAT @ 1.40 + 2 STAGE (-28) FROTH

| % YIELD | RM.% | ASH% | VM.% | FC.% | S% | F.S.I. | REMARKS |
|---|---|---|---|---|---|---|---|
| 76.9 | 0.6 | 4.9 | 20.1 | 74.4 | 0.42 | 6 | a.d.b. |
| | | | | | | | d.b. |

DILATATION TEST

| S.T. | M.D.T. | M.C.% | M.D.% | G. NO. |
|---|---|---|---|---|
| 398 | 470 | 25 | -8 | 0.861 |

GIESELER PLASTICITY

| | DDPM | TEMP. (°C) |
|---|---|---|
| START | 1 | 425 |
| MAXIMUM | 3 | 470 |
| FINAL | | 499 |
| | RANGE = | 74 |

APPENDIX 3

Birtley Engineering

Subsidiary of Great West Steel Industries

EXHIBIT E E

Lab. No. 9946 Date December 7, 1977

Client: B.P. EXPLORATION CANADA LTD.

Sample Identification: CLEAN MIX

Starting Temperature °C: 320

Softening Temperature °C: 398

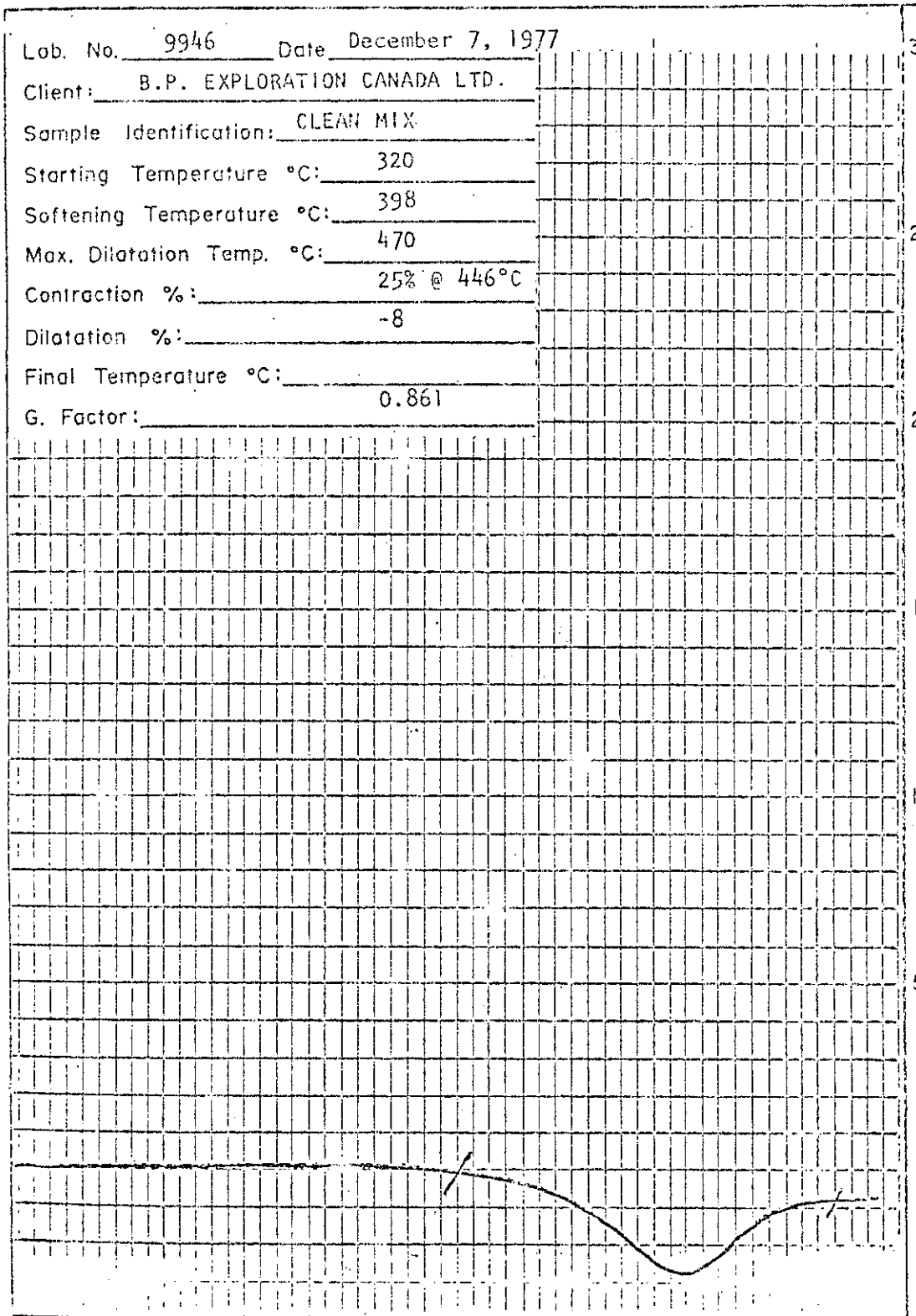
Max. Dilatation Temp. °C: 470

Contraction %: 25% @ 446°C

Dilatation %: -8

Final Temperature °C:

G. Factor: 0.861




BIRTLEY ENGINEERING (CANADA) LTD.

Title

RUHR DILATOMETER TEST

Date

Drawn

SECTION 3 APPENDIX 3

BULK SAMPLE PROGRAM

PETROGRAPHIC ANALYSIS

## SAMPLE IDENTIFICATION

| BIRTLEY TESTING NO. | INTERMIN REFERENCE | CASCADE COAL NO. |
|---|---|---|
| # 9587 | 3-CH (R) | CCP 234 - 235 |
| # 242 | 2-SK | CCP 132 - 133 |
| # 243 | 3-CH | CCP 134 - 135 |
| # 244 | 1-CH | CCP 136 - 137 |
| # 245 | 4-B | CCP 138 - 139 |

## SAMPLE RECEPTION

All samples from Birtley Testing arrived in plastic boxes and crushed to -20 mesh

## SAMPLE PREPARATION

Each sample was coned and quartered till approx eight (8) grams of coal was obtained. This was mixed with a thermo-plastic and pelletized. The remaining sample was then reconstituted and a second sample was also pelletized.

## METHOD OF ANALYSIS

On each pellet, fifty (50) reflectance measurements and five hundred (500) maceral determinations were obtained, for a total of one hundred (100) reflectance points and one thousand (1000) maceral determinations on each sample.

To obtain the Calculated Coke Stability Factor, the Schapiro, Gray et al method, using reflectance and macerals, was used.

## COMMENTS

In the following samples some oxidized particles were observed, but were felt to be too small in number to affect the predicted coke stability.

| | | |
|---|---|---|
| # 242 | CCP 132 - 133 | 0.59% |
| # 243 | CCP 134 - 135 | 0.20% |
| # 244 | CCP 136 - 137 | 0.39% |
| # 245 | CCP 138 - 139 | 0.46% |

Results

Table 171 summarizes the reflectance data

Exhibits FF to JJ show the reflectance histograms

Table 172 summarizes the maceral data, and the derived indices.

Exhibit KK is the chart of Composition Balance Index against Strength Index used by Matsuoka to predict the approximate J.I.S. Drum Indices for Nippon Steel.

Exhibit LL shows the position of the samples on the chart of maximum fluidity against mean maximum reflectance of vitrinite (in oil) as used by Dr. A. Miyazu for N.K.K. to formulate coking coal blends.

# REFLECTANCE DATA

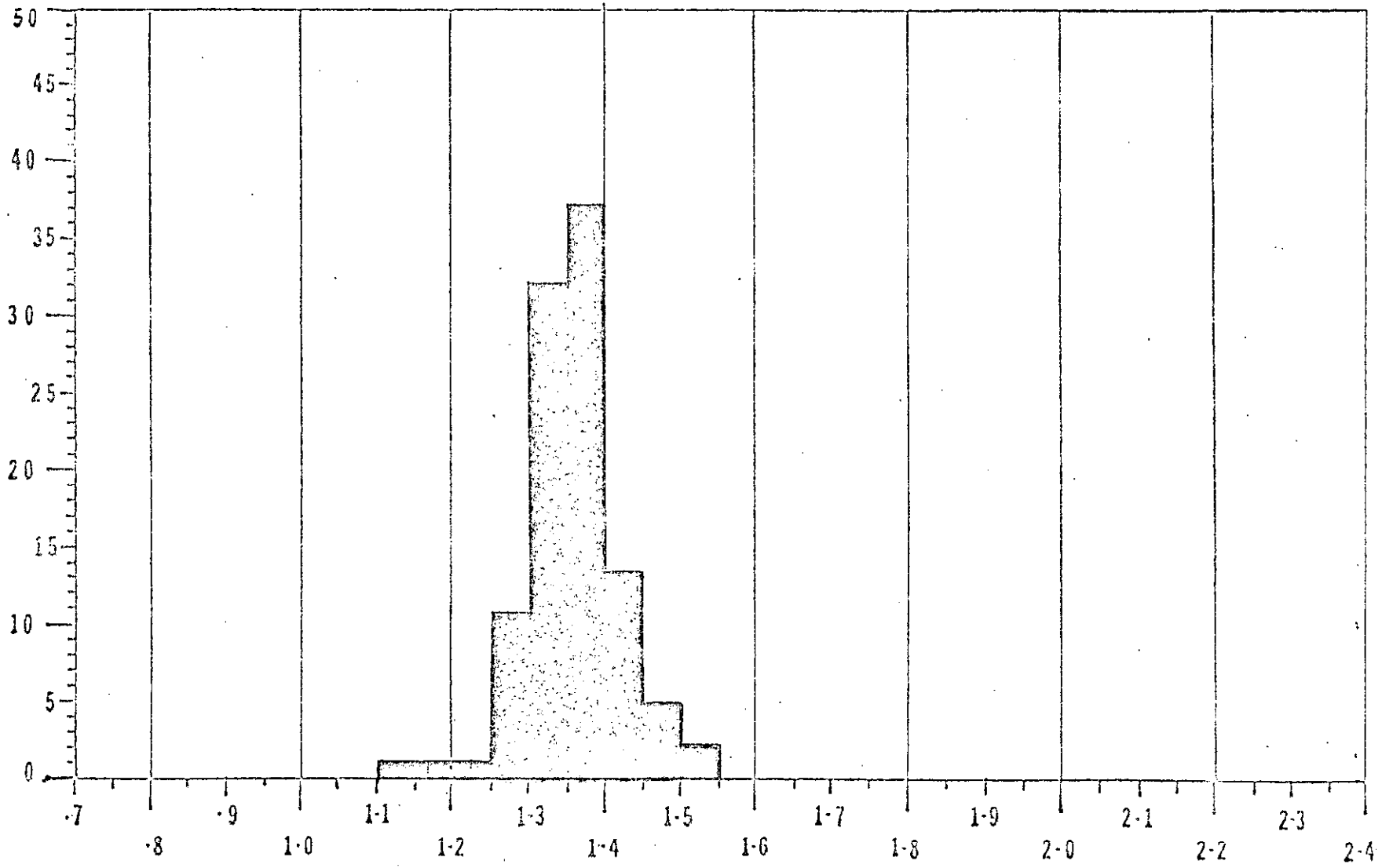
| SAMPLE No / CCP No | MEAN MAX. REFLECTANCE | V-TYPES | | | | | | | | | | | | | VM% | ASH | SUL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | V-7 | V-8 | V-9 | V-10 | V-11 | V-12 | V-13 | V-14 | V-15 | V-16 | V-17 | V-18 | V-19 | | | |
| Birtley # 9587 CCP # 234 - 235 | 1.3670 | | | | - | 2 | 7 | 65 | 24 | 2 | | | | | 23 | 6.0 | 0.56 |
| Birtley # 242 CCP # 132 - 133 | 1.3308 | | | | - | 1 | 22 | 65 | 12 | - | | | | | 24 | 5.9 | 0.64 |
| Birtley # 243 CCP # 134 - 135 | 1.3653 | | | | - | 1 | 9 | 61 | 29 | - | | | | | 23 | 5.7 | 0.57 |
| Birtley # 244 CCP # 136 - 137 | 1.3584 | | | | 1 | 1 | 11 | 62 | 25 | - | | | | | 23 | 5.8 | 0.60 |
| Birtley # 245 CCP # 138 - 139 | 1.3201 | | | | - | 1 | 27 | 67 | 5 | - | | | | | 24 | 6.0 | 1.83 |

TABLE 171

EXHIBIT F F

SAMPLE BIRTLEY #9587

CCP 234 & 235




VITRINITE REFLECTANCE HISTOGRAM

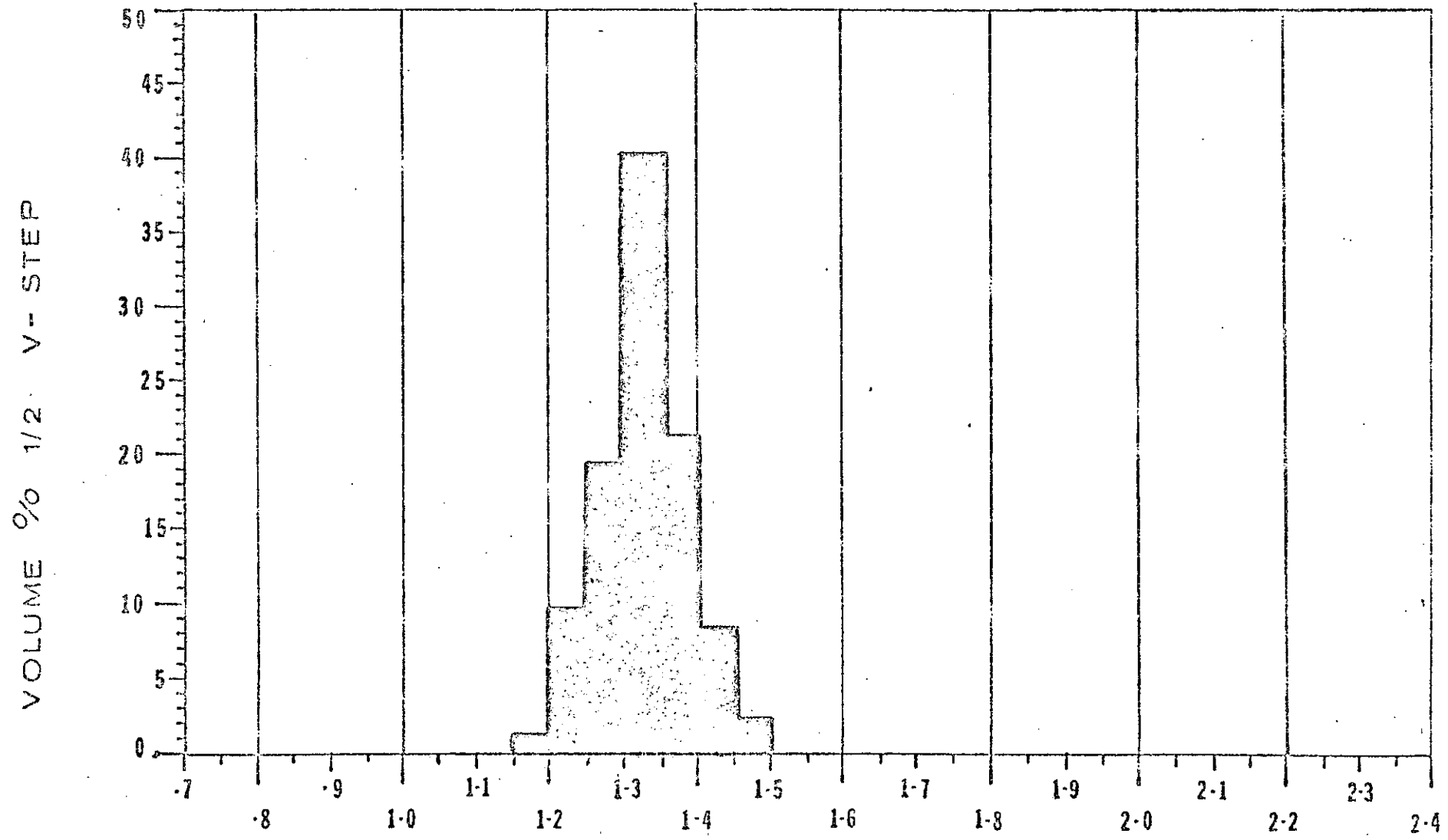
EXHIBIT FF

CASCADE COAL PETROGRAPHY LIMITED

EXHIBIT G G

SAMPLE BIRTLEY # 242

CCP 132 - 133




VITRINITE REFLECTANCE HISTOGRAM

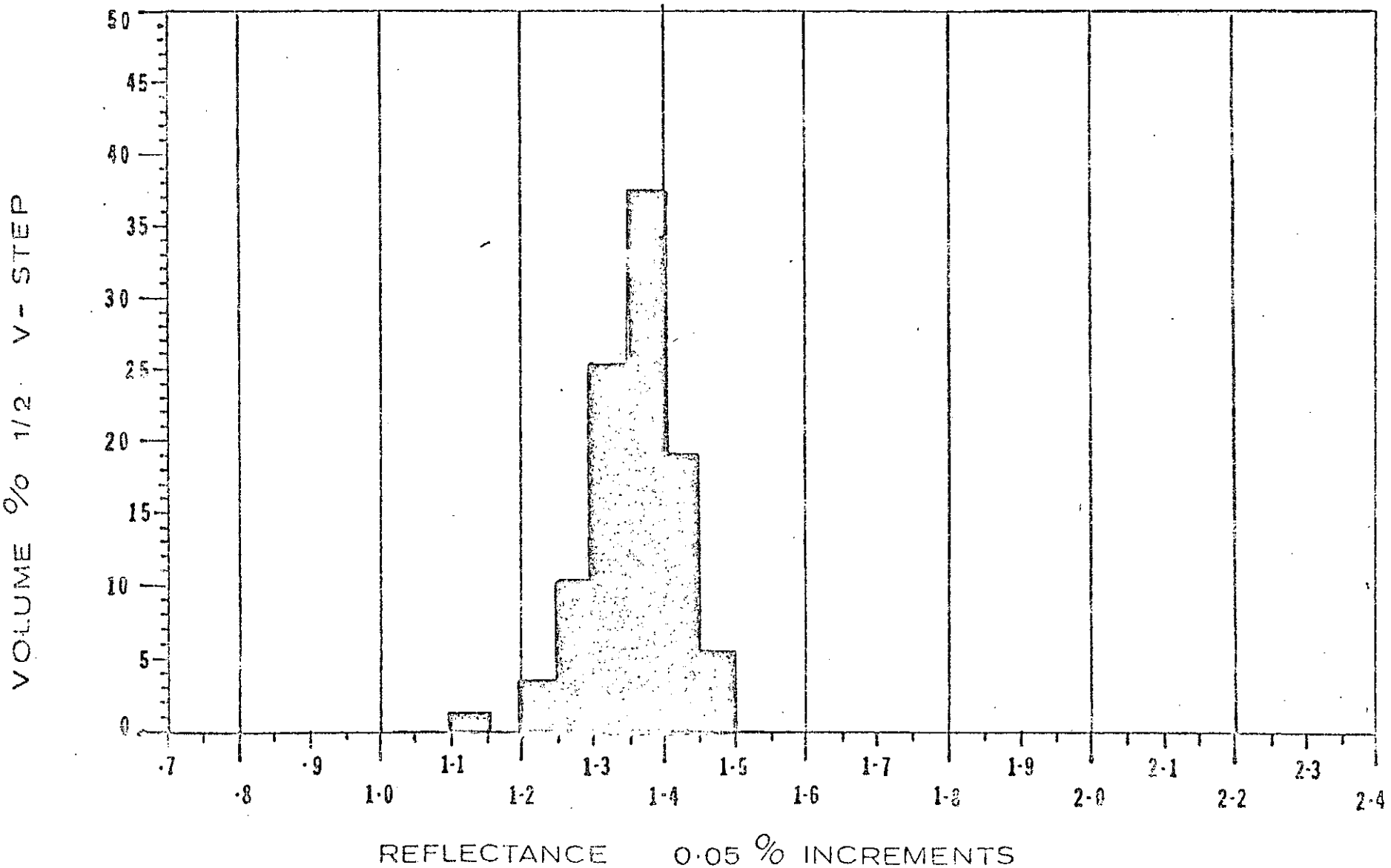
EXHIBIT GG

CASCADE COAL PETROGRAPHY LIMITED

EXHIBIT HH

SAMPLE BIRTLEY #243

CCP 134 - 135




VITRINITE REFLECTANCE HISTOGRAM

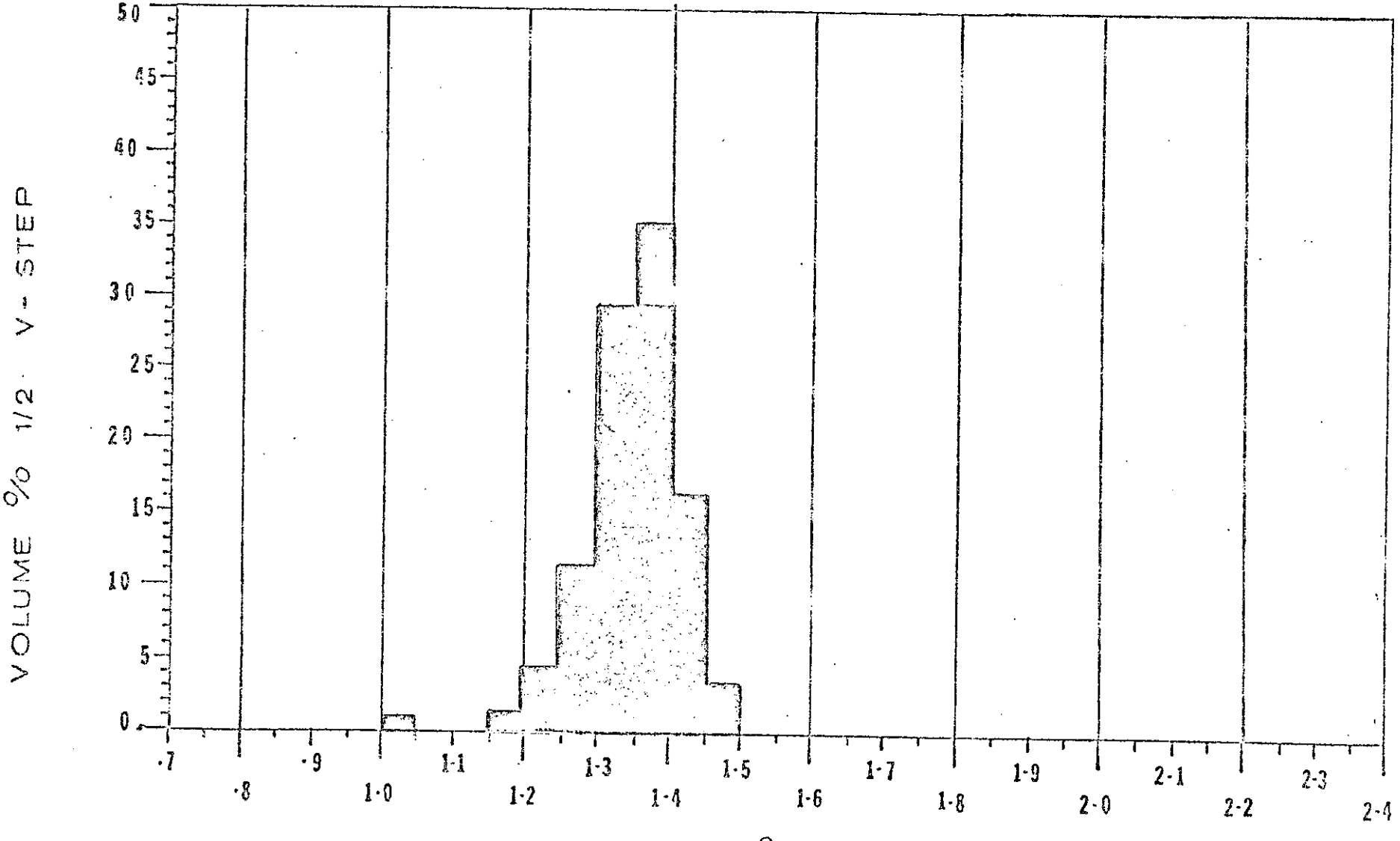
EXHIBIT HH

CASCADE COAL PETROGRAPHY LIMITED

EXHIBIT II

SAMPLE BIRTLEY #244

CCP 136 - 137




VITRINITE REFLECTANCE HISTOGRAM

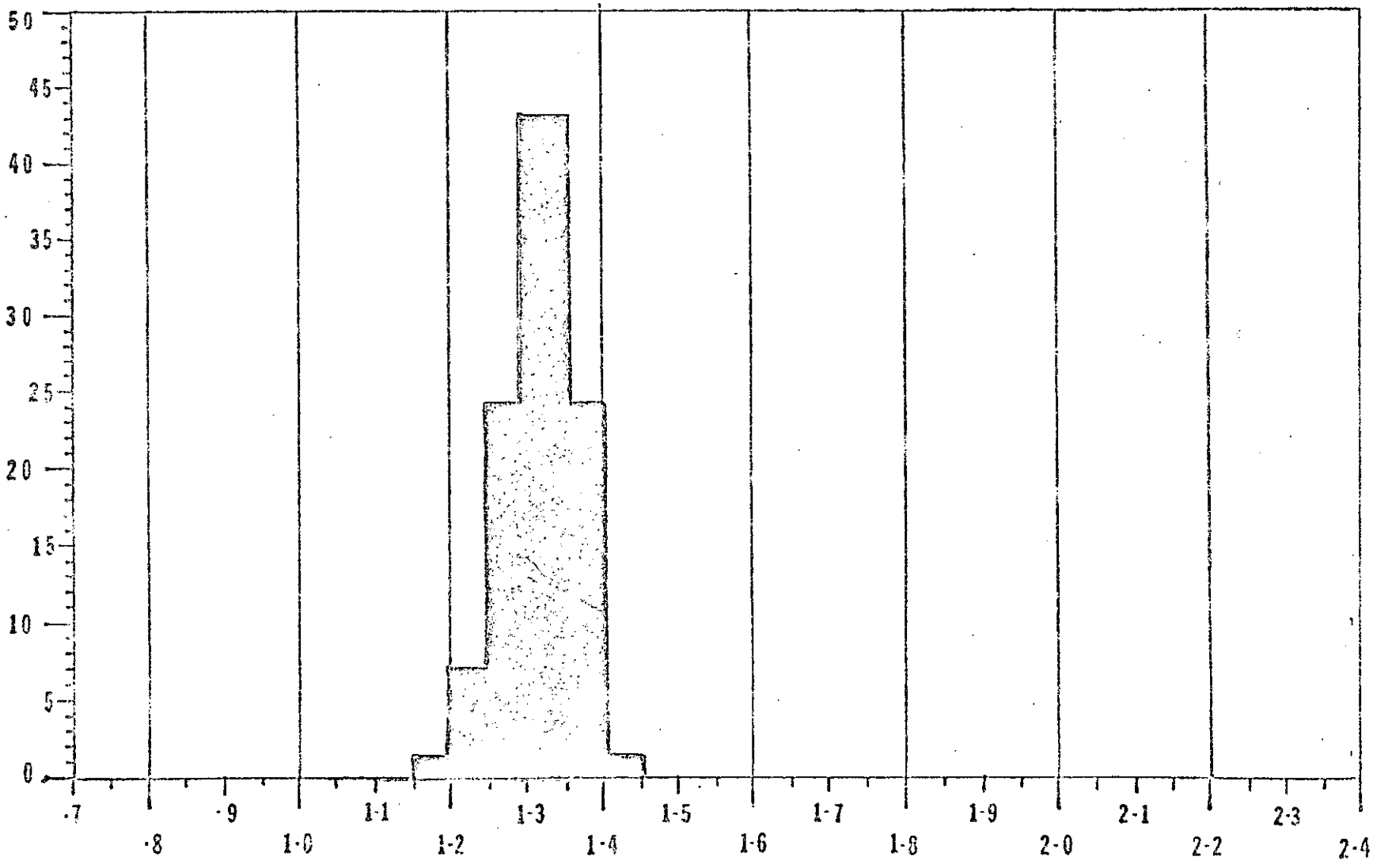
EXHIBIT I I

CASCADE COAL PETROGRAPHY LIMITED

EXHIBIT J J'

SAMPLE BIRTLEY #245

CCP 138 - 139




VITRINITE REFLECTANCE HISTOGRAM

EXHIBIT J J -

CASCADE COAL PETROGRAPHY LIMITED

TABLE 172

## MACER... DATA.

| SAMPLE No / CCP No | VITRINITE | EXINITE | SEMIFUSINITE | MACRINITE | MICRINITE | FUSINITE | MINERAL MATTER | REACTIVES % | INERTS % | COMPOSITIONAL BALANCE INDEX | STRENGTH INDEX | PREDICTED COKE STABILITY | APPROX. JIS DRUM INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Birtley #242 CCP 132 - 133 | 50.26 | - | 26.41 | 8.97 | 3.50 | 6.75 | 4.02 | 59.57 | 40.43 | 2.63 | 5.41 | 52 | 91 |
| Birtley #243 CCP #134-135 | 52.95 | - | 23.98 | 8.33 | 2.95 | 8.13 | 3.66 | 61.22 | 38.78 | 2.53 | 5.99 | 55 | 92 |
| Birtley #244 CCP #136-137 | 51.76 | - | 24.90 | 8.51 | 3.28 | 7.73 | 3.80 | 60.41 | 39.59 | 2.67 | 5.68 | 53 | 91 |
| Birtley #245 CCP #138-139 | 53.76 | - | 22.94 | 8.00 | 2.12 | 7.88 | 5.29 | 62.43 | 37.57 | 2.27 | 5.38 | 53 | 92 |
| BIRTLEY #9587 CCP #234-235 | 61.93 | - | 16.71 | 7.73 | 3.57 | 6.67 | 3.39 | 67.69 | 32.31 | 1.98 | 5.92 | 59 | 92 |

TABLE 172

EXHIBIT KK

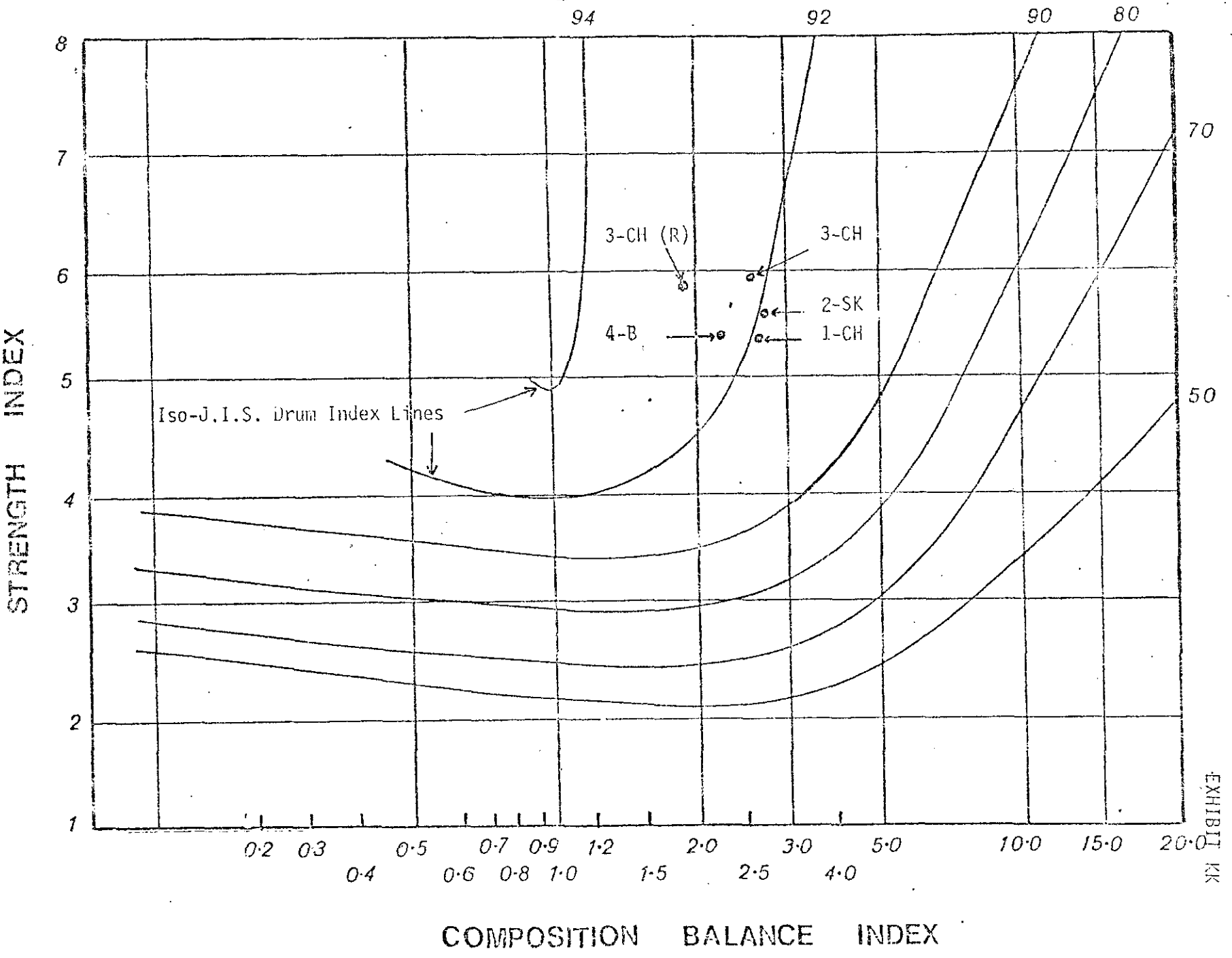
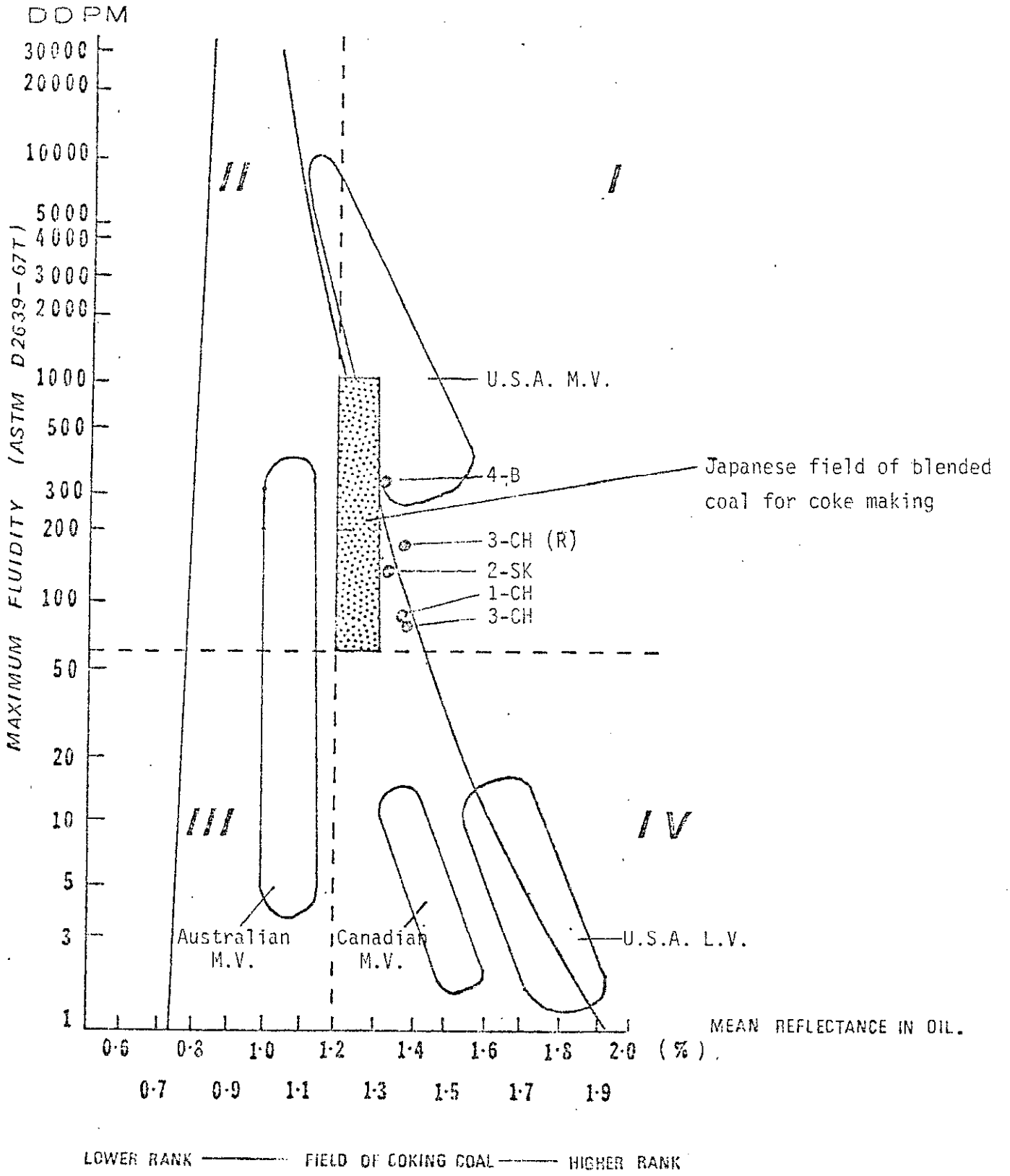



EXHIBIT KK

EXHIBIT LL

# RELATION BETWEEN MAXIMUM FLUIDITY AND COAL RANK




LOWER RANK ——— FIELD OF COKING COAL ——— HIGHER RANK

SECTION 3

# BULK SAMPLING & TESTING PROGRAM

## I N D E X



Tables



(see Appendix 2 for detailed list of tables)

Cont'd.

Petrographic Testing Results Appendix 3



Exhibits



Photographs

# SECTION 3

## BULK SAMPLING & TESTING PROGRAM

### 1. Introduction

The bulk sampling program required Intermin Consultants to organize and supervise the sampling and analysis of coal from: -

| | | |
|---|---|---|
| Chamberlain Seam | - | Sukunka No. 1 Mine |
| Chamberlain Seam | - | Sukunka Main Mine |
| Skeeter Seam | - | Sukunka No. 1 Mine |
| Chamberlain Seam | - | Saddle Creek Adit |
| Bird Seam | - | Saddle Creek Adit |

The bulk samples were required for washability tests, with the data generated to be used in coal preparation plant design and in predicting yield-ash relationships.

In practice only four bulk samples were obtained, the exception being the Saddle Creek Adit sample from the Chamberlain Seam. On driving this adit, the seam section was found to be untypical of the seam in the property as a whole and so the adit was aborted after approximately 50 feet of drivage from the portal. The details of the channel sample taken from this adit are reported.

The program of sampling and testing was drawn up as a result of discussions between BP Canada, BP Coal (London) and Intermin Consultants. Some modifications to the program were agreed in light of circumstances arising during the sampling and testing.

Intermin have implemented the program and report in this section the procedures adopted and results obtained. Discussion and interpretation of the program results, in relation to the proposed temporary preparation plant design, are included in our report entitled, "Coal Preparation Plant Design".

## 2. Sampling Procedures

For the Sukunka #1 and Main mines, the original intention was to obtain the underground samples using continuous miners and shuttle cars available at the mines, as this was the most likely method of working to be adopted when the mine commenced production. Subsequent handling of the samples was designed to simulate the effect of stockpiling and retrieving coal prior to washing.

However, in the event it was not possible to use the continuous miner and shuttle cars for the underground sampling, so BP Canada contracted Thyssen Mining Construction of Canada Ltd. to mine the samples. Thyssen supplied a Dosco Mk.II heading machine for the purpose together with a load-haul-dumper for transport of the samples to the surface. Consequently, it was recognized that the size consist of the samples produced would not be representative of the coal as it would be mined by continuous miner. The planned method of subsequent handling the sample was slightly modified in the light of this fact, and also to take account of the practical limitations prevailing on-site.

Between 15 and 20 tons of coal was mined in each instance, and was subdivided into two 5 ton samples, each of which was loaded into drums and transported to Calgary for testing.

For the Bird Seam adit in Saddle Creek, some 10 tons of coal were loaded from the adit face, and transferred to drums at the adit mouth for transporting to Calgary, where subdivision into 2 samples of approximately 5 tons was done. The coal was produced by drilling and blasting methods, and no subsequent attempts were made to simulate the effects of actual mining production methods.

A separate smaller sample was obtained from the floor of the Bird Seam adit, and transported to Calgary for testing. It was

considered that in actual mining conditions, some of the floor would be mined with the coal, so the floor sample was taken to permit a simulated run-of-mine coal to be made up if necessary.

At the Chamberlain Seam adit at Saddle Creek, a channel sample was obtained by BP geologists and transported to Calgary.

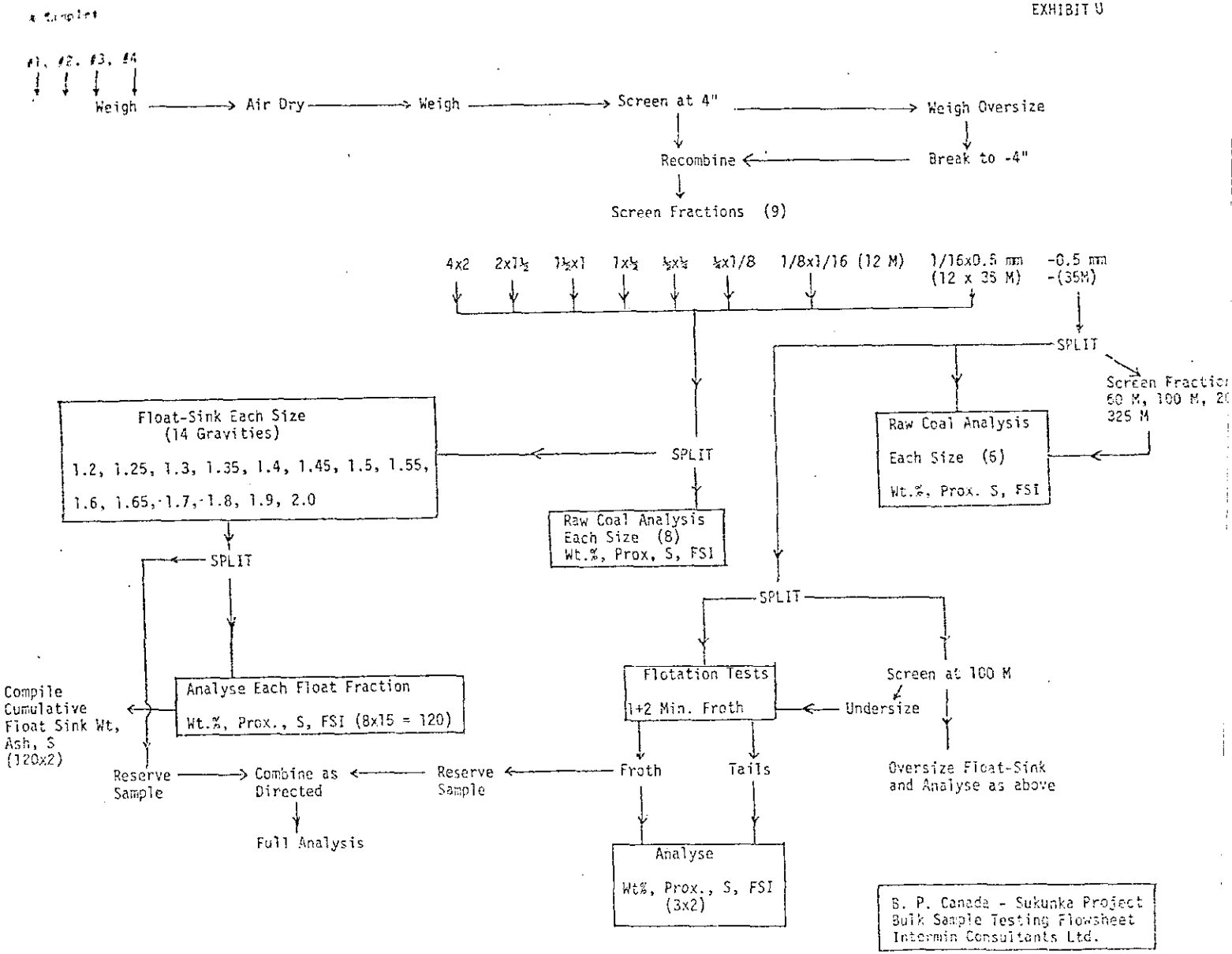
A detailed description of the sampling procedure and subsequent handling to the laboratory is given in Appendix 1. (In Volume II of this report.)

## 3. Analytical Work Description

The analytical work was performed by Birtley Engineering (Canada) Ltd., at their Coal Science and Testing Laboratories in Calgary.

Exhibit U (overleaf) illustrates the analytical work performed.

EXHIBIT U


#1, #2, #3, #4
Weigh
Air Dry
Weigh
Screen at 4"
Weigh Oversize
Break to -4"
Recombine
Screen Fractions (9)
4x2
2x1½
1½x1
1x½
½x⅜
⅜x1/8
1/8x1/16 (12 M)
1/16x0.5 mm (12 x 35 M)
-0.5 mm -(35M)
SPLIT
Screen Fractio
60 M, 100 M, 2
325 M
Raw Coal Analysis
Each Size (6)
Wt.%, Prox. S, FSI
Float-Sink Each Size
(14 Gravities)
1.2, 1.25, 1.3, 1.35, 1.4, 1.45, 1.5, 1.55,
1.6, 1.65, 1.7, 1.8, 1.9, 2.0
SPLIT
Raw Coal Analysis
Each Size (8)
Wt.%, Prox, S, FSI
SPLIT
SPLIT
Flotation Tests
1+2 Min. Froth
Undersize
Screen at 100 M
Analyse Each Float Fraction
Wt.%, Prox., S, FSI (8x15 = 120)
Compile
Cumulative
Float Sink Wt,
Ash, S
(120x2)
Reserve
Sample
Combine as
Directed
Reserve
Sample
Froth
Tails
Oversize Float-Sink
and Analyse as above
Full Analysis
Analyse
Wt%, Prox., S, FSI
(3x2)
B. P. Canada - Sukunka Project
Bulk Sample Testing Flowsheet
Intermin Consultants Ltd.

## 4. Results

The following reference numbers were assigned to the bulk samples:

| Seam | Location | Reference Number |
|---|---|---|
| Chamberlain | Sukunka No. 1 Mine | 1-CH |
| Chamberlain | Sukunka Main Mine | 3-CH |
| Skeeter | Sukunka No. 1 Mine | 2-SK |
| Bird | Saddle Creek Adit | 4-B |
| Chamberlain | Saddle Creek Adit | 5-CH |

The size analyses, float-sink analyses, froth flotation test results and analyses of clean coal composites are given in the following tables, which constitute Appendix 2. (in Volume II of this report).

| | | | |
|---|---|---|---|
| Tables | 80 to 101 | - | 1-CH |
| Tables | 102 to 123 | - | 3-CH |
| Tables | 124 to 145 | - | 2-SK |
| Tables | 146 to 167 | - | 4-B |
| Table | 168 | - | Bird Floor |
| Table | 169 and 170 | - | 5-CH |

Petrographic analyses on clean coal composites as determined by Cascade Coal Petrography Ltd., are shown separately in Appendix 3. (in Volume II of this report).

For each of the bulk samples a clean coal composite was made up. The float-sink data for each bulk sample was examined and conditions chosen to give a target of approximately 6% ash (a.d.) in the clean coal, with a representative size distribution. In each case the 4" x 28 Mesh material was floated at a chosen specific gravity and combined with the 28M x 0 coal separated by froth flotation. The following conditions applied:

| | 4" x 28M | 28M x 0 |
|---|---|---|
| 1-CH | Float at 1.80 S.G. | Froth for 3 minutes |
| 3-CH | Float at 1.65 S.G. | Froth for 3 minutes |
| 2-SK | Float at 1.80 S.G. | Froth for 2 minutes |
| 4-B | Float at 1.65 S.G. | Froth for 3 minutes |
| 5-CH | Float at 1.40 S.G. | Froth for 2 minutes |

The froth flotation conditions were:

| | | |
|---|---|---|
| Conditioning Time | - | 2 minutes |
| Pulp Density | - | 10% |
| Reagent | - | 4:1 = Ker: MIBC |
| Reagent Dosage | - | 0.48 lbs./T. |

Again we have not attempted to summarise these results as they include washability data, froth flotation test results, and composite clean coal analyses. Summarised results may mislead the reader and we therefore, recommend that scrutiny of the results be done by reference to the contents of Appendices 2 and 3. All our comments on the results themselves, and on the proposed preparation plant design are included in our report entitled, "Coal Preparation Plant Design".