062134

DIAMOND DRILLING REPORT
COAL LICENCE 118
NTS 95 D-11 NE

LAT. 60°37½' TO 60°45' N
LONG. 127°00' TO 127°15' W

FOR SULPETRO MINERALS LIMITED
BY: D.C. MILLER P.ENG.

TO COVER WORK COMPLETED BETWEEN
AUGUST 1981 AND MAY 1982

SUBMITTED: MAY 26, 1982

This report has been examined; declared acceptable as Representation Work under Section 32 and Schedule B of the Canada Mining Regulations and valued in the amount of $288,917.70

for Chief, J.H. Laine

Date: July 6, 1982.

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Figure 5. D.D.H. Section No. 1 E-W In Pocket

Figure 6. D.D.H. Section No. 2 E-W In Pocket

INTRODUCTION AND SUMMARY

On July 13, 1980, company employees Paul Chung and Chris Harrison encountered coal float and a 9 metre exposure of coal on the south bank of an eastward flowing tributary of Rock River. Subsequently, coal float was identified over a large area within the Rock River Valley.

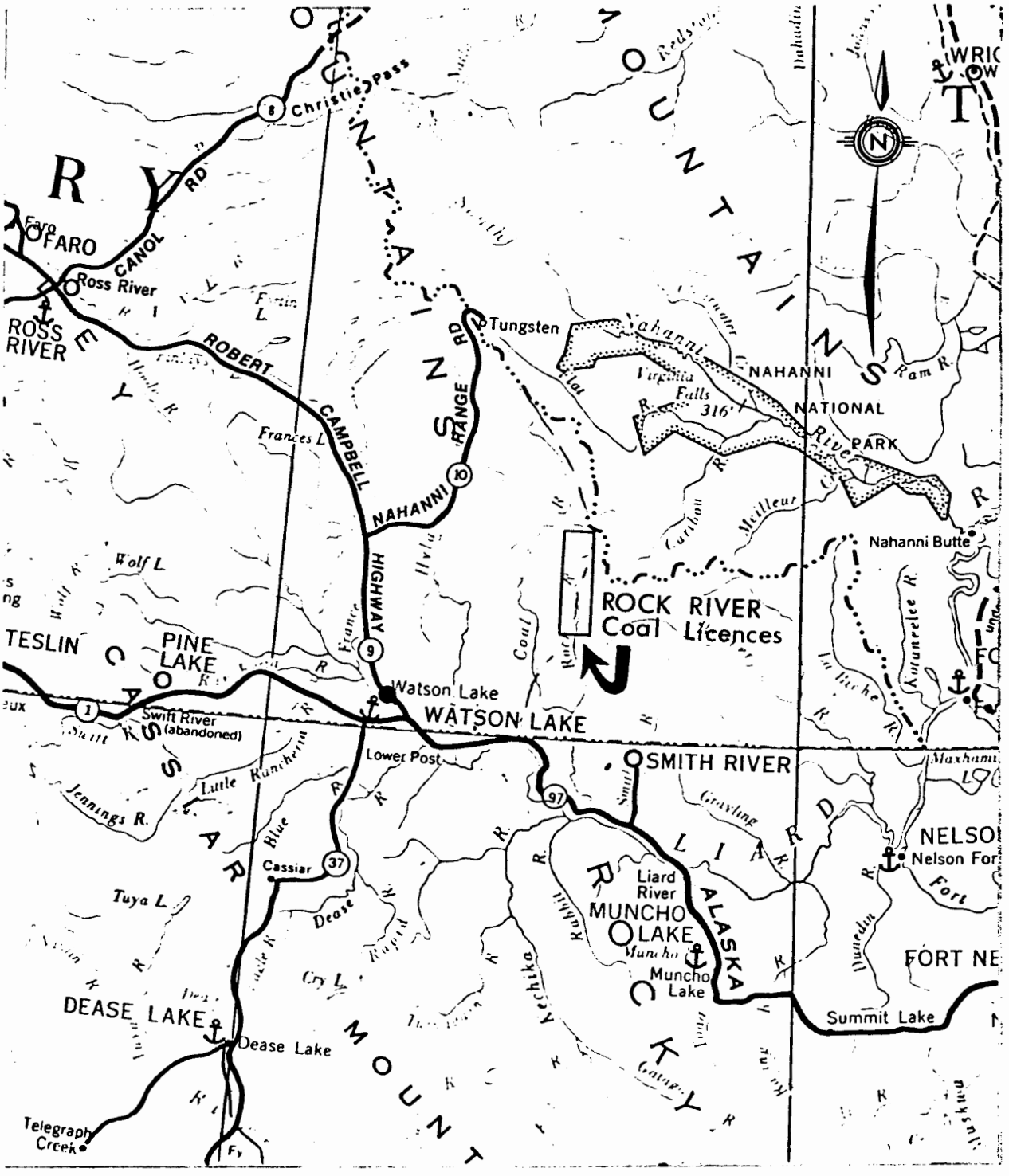
On July 25, 1980, 8 coal licences (No. 115-122) were obtained covering the area of interest. After initial field work was completed, licences 117, 118, 121 and 122 were kept and other licences were relinquished.

In early 1981, topographic maps at 1:10,000 and 1:50,000 scales (5 metre contour interval), were prepared and further prospecting and mapping were done during July 1981.

In late August, 1981, a Longyear Super 38 drill equipped for HQ and NQ drilling was moved to the property by a combination of fixed wing and helicopter aircraft. The drill contractor was E. Caron Diamond Drilling of Whitehorse, Yukon Territory.

Between August 23 and September 16, 1981, 5 HQ/NQ diamond drill holes totalling 717.81 metres were completed. Geophysical logging (density, gamma ray and neutron logs) and coal analysis were done for all holes.

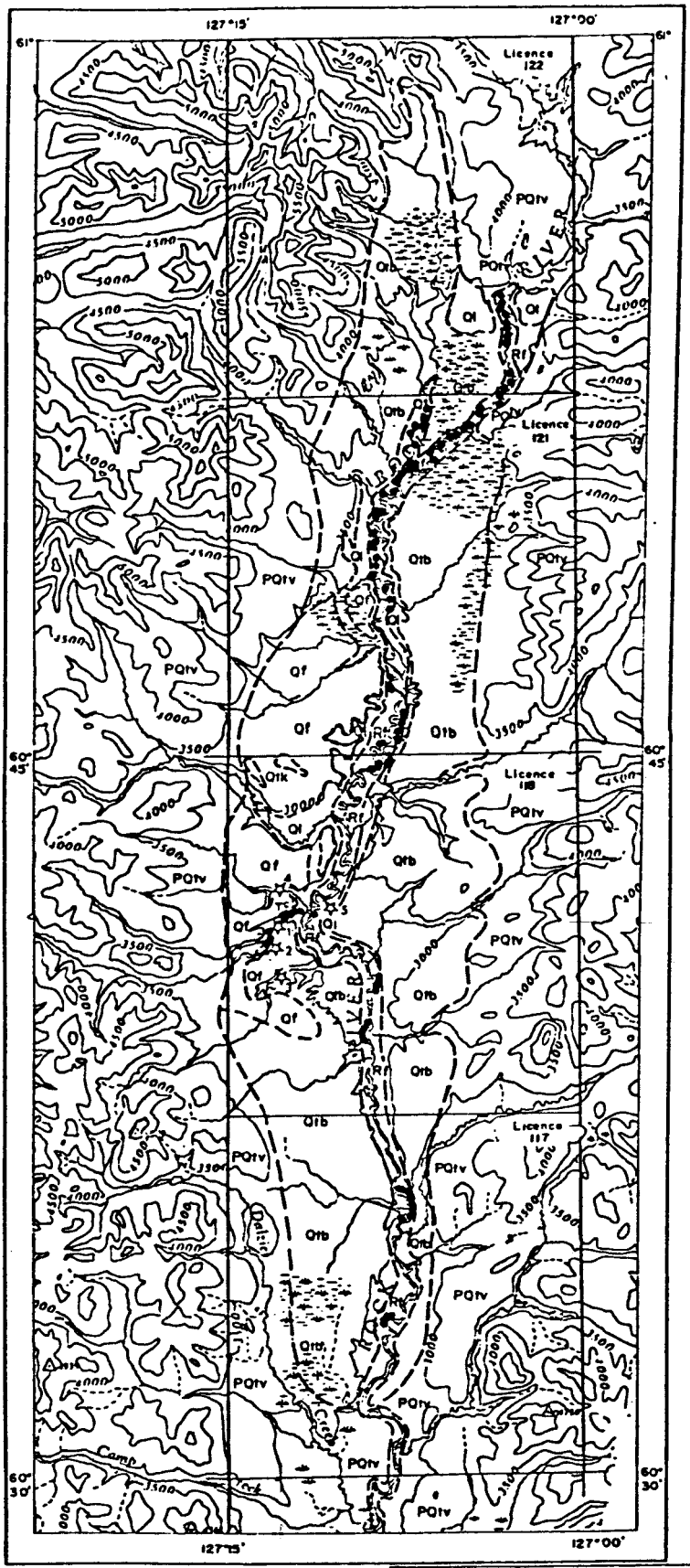
Significant coal was intersected in drill holes



SULPETRO MINERALS LIMITED
KAMLOOPS, BRITISH COLUMBIA

INDEX MAP
Rock River Coal Licences
Yukon

Drawn by: JCH	N.T.S.: 95 . 105
Date: Oct. 14, 1981	Figure No.: 1



LEGEND

Rf	RECENT -	Fluvial gravels
Qtk	QUATERNARY -	Kettle and kame terrace
Qf		Ice marginal alluvial fan
Qtb		Till blanket
Qt		Fluvio-lacustrine silt and clay
Te	TERTIARY -	Coal outcrop (60°41'35"N, 127°31'W)
•		Coal float
PQtv	PALEOZOIC -	Basement bedrock, till veneer
☆ 1,2,3,4,5		1981 Drill sites

SULPETRO MINERALS LIMITED

NTS 95D/11 & 14

ROCK RIVER COAL BASIN

YUKON

SCALE 1 : 250,000

Figure No: 2

APPROX LAT & LONG OF LOWER RIGHT COR OF MAP: 60° 29' 00" LATITUDE, 126° 28' 00" LONGITUDE

2.5 0 5 KILOMETRES

1 and 2 spaced 900 m apart near the coal outcrop. Only minor coal was intersected in other holes. Based on the upper portions of drill holes 1 and 2, coal reserves are approximately 60,000,000 tonnes with a thermal content of 6645 Btu/lb at equilibrium moisture (26.3%).

This coal would be amenable to surface mining with a stripping ratio of approximately 2:1 waste:coal.

The coal occurs as a number of thick seams (up to 4.7 m thick) separated by unlithified clay beds and a few beds of silt and sand. The coal and associated sediments are thought to be of Tertiary age based on correlation with similar coal in the Watson Lake and lower Coal River areas.

CONCLUSIONS

(1) Coal found to date is suitable for a mine-mouth coal fired electric power plant. By analogy to other power plants, sufficient reserves are now indicated to sustain a 200 megawatt power plant for approximately 40 years.

(2) If additional coal is found and economic conditions are suitable, this coal could also be converted to synthetic fuel. Additional coal may be found with additional drilling near holes 1 and 2 or in testing a number of gravity anomalies recently determined on the other coal licences.

A separate report on the gravity survey is being prepared.

(3) In eastern and southeastern Europe, similar coals are briquetted and used for domestic and industrial heating, for power generation, and for chemical and carbonization processes.

RECOMMENDATIONS

It is recommended no further major expenditures be made by Sulpetro until the economic potential of these deposits is established by marketing studies and financial commitments are made by potential users or buyers of coal.

Respectfully submitted,



D. Miller, P. Eng.

May 26, 1982

LOCATION AND ACCESS

The discovery coal outcrop is located 110 km northeastward of Watson Lake, Yukon. It is within 82 km of the Alaska Highway at Contact Creek and within 78 km of the Canada Tungsten road. The straight line distances to Canada Tungsten Mine, Howards Pass, MacMillan Pass and Faro are 150, 223, 320, and 375 km respectively.

Access to the area is by helicopter. During drilling operations, a base camp was located at Quartz Lake, 40 km westward of the coal outcrop. Drill equipment was flown to Quartz Lake from Watson Lake by Single Otter aircraft. From Quartz Lake, drill equipment was flown to drill sites by a Bell Long Ranger Helicopter.

PROPERTY

The property comprises the following coal licences:

Licence No.	NTS Area	Acres	Commencement Date (3 year period)
117	95D-11 S.E.Q.	47,107	July 25, 1980
118	95D-11 N.E.Q.	47,107	July 25, 1980
121	95D-14 S.E.Q.	46,742	July 25, 1980
122	95D-14 N.E.Q.	46,742	July 25, 1980

GEOLOGY

The coal licences are underlain by Tertiary age coal bearing sediments, Quaternary till and fluvial deposits. These sediments are bounded by Paleozoic sedimentary rocks on all sides. A recent gravity survey indicates Tertiary sediments range up to 1100 metres in depth within an elongate north-south trending basin some 50 Km long and up to 10 Km wide.

A single coal outcrop of brown to black coal, 9 m thick, is located on licence 118 on the south bank of an eastward flowing tributary of Rock River. The coal has an apparent dip of 15^{o} westward and is overlain by 24 m of clay, sand and gravel.

DIAMOND DRILLING

Between August 23 and September 16, 1981, 5 HQ/NQ diamond drill holes totalling 717.81 m were completed on a spacing of 0.9 to 1.5 km near the coal outcrop. These holes ranged from 122 to 162 metres in depth. Relatively thick seams of coal with numerous clay interbeds were intersected in holes 81-1 and 81-2. Hole 81-1 was collared near the coal outcrop and Hole 81-2 was collared 900 m south of hole 81-1 (see Fig. 2). Hole 81-3 was collared 1250 m south of hole 81-2 and intersected only

minor coal. Hole 81-4 was collared 1450 m north of hole 81-1 and also intersected only minor coal. Hole 81-5 was collared 1450 m eastward of hole 81-1 and intersected unlithified sand and silt with less than 1% coal.

GEOPHYSICAL LOGGING

Following completion of drilling, each hole was logged with down-the-hole geophysical tools by Roke Oil Enterprises of Calgary, Alberta. Because of soft ground, logging was done inside the drill rods only. For this reason, only density, gamma ray and neutron logs could be run. A combination of density and gamma ray logs distinguish coal from clay, silt or sand and also indicate possible caved areas. Neutron logs are only suitable for general correlation of units from hole to hole. The resolution of thin beds is related to the speed at which the tool is moved up the hole. Where a sequence of thin beds of differing physical properties is encountered, precise boundaries of beds are not well defined.

SAMPLING

Samples of coal were taken to determine coal quality and also for correlation purposes. Samples were sealed in double plastic bags with an electric sealing device and

shipped to General Testing Laboratories in Vancouver. In general, coal samples did not include separable clay or coaly clay partings. One or more coal beds were bagged together as a single sample and separable clay beds were omitted or sampled separately. In retrospect, more detailed sampling of better coal sections would have been preferable, however, considering field constraints of time, personnel, number of samples, and necessity of quickly sampling the coal before it dried, the sampling procedure was abbreviated as much as possible. In the future, sampling should be detailed enough to cover a range of possible mining methods.

In correlating sample intervals with geophysical logs, it is apparent that certain samples included coal with high ash. This could have been avoided if geophysical logs had been interpreted prior to sampling the core.

SUMMARY OF COAL INTERSECTIONS

The following is a summary of coal intersections based on coal analysis, lithological logs, and geophysical logs. Lithological logs for holes 1 and 2 were modified to correlate with geophysical logs. In general, more weight was placed on geophysical logs which overcome core loss, variability in driller's depth markers and subtle differences in coal quality which may be undiscernable to the core logger. Analysis results are quoted on an air dry basis.

Hole No.	Depth (Metres)	Intercept	% Coal	% Equilibrium Moisture	% Residual Moisture	% Ash	% Sulphur	Btu/lb
RR-81-1	0-12.50	12.50	0	No core, overburden.				
	12.50-16.60	4.10	0	Coaly clay, no core recovered.				
	16.60-45.70	29.10	77	26.2	23.8	17.9	0.86	6920
	45.70-60.00	14.30	53	25.7	24.1	19.9	1.44	6634
	60.00-79.55	19.55	29	23.5	21.0	20.9	1.67	6798
	79.55-88.70	9.15	21	21.2	19.5	33.0	1.21	5396
	88.70-117.70	29.00	14	24.7	22.9	21.0	1.20	6667
	117.70-153.01	35.31	71	20.8	18.8	34.3	2.11	5396
RR-81-2	0-34.14	34.14	0	No core, overburden.				
	34.14-35.00	0.86	0	Clay.				
	35.00-35.50	0.50	Clayey coal		12.77	35.6	-	5853
	35.50-56.90	21.40	52	27.7	24.9	19.3	1.25	6659
	56.90-96.15	39.25	46	23.4	19.5	33.5	1.60	5370
	96.15-110.30	14.15	69	28.3	22.7	18.1	1.29	7079
	110.30-141.73	31.43	45	19.9	13.8	43.8	2.73	4779
RR-81-3	0-25.13	25.13	0	No core, overburden.				
	25.13-85.72	60.59	15	23.9	18.6	33.4	1.33	5512
	85.72-162.15	76.43	8	19.3	15.2	44.3	1.88	-
RR-81-4	0-12.80	12.80	0	No core, overburden.				
	12.80-24.99	12.19	0	Quaternary gravel, sand and clay.				
	24.99-68.83	43.84	3	Few thin seams ranging from 2-26 cm; no analyses.				
	68.83-136.25	67.42	17	21.6	13.8	50.0	2.34	-
RR-81-5	0-8.23	8.23	0	No core overburden.				
	8.23-122.53	114.30	Less than 1% coal.					

RESERVES

Surface mining with a low stripping ratio appears feasible for coal in the upper sections of holes 1 and 2. Considering the interval 16.60-79.55 m hole 1 and 35.50-56.90 m hole 2 (including all beds containing more than 6000 Btu/lb), reserves are estimated at approximately 67,000,000 tonnes with a thermal content of 6645 Btu/lb, with 17.6% ash, and 1.09% sulphur at equilibrium moisture (26.3%). The waste to coal ratio would be approximately 2:1 (by volume). Each hole is assumed to have an area of influence of 1 square km and the coal specific gravity is calculated to be 1.38.

The following limiting parameters have been suggested by L. Halferdahl, consultant:

(1) individual seams less than 90 cm thick will not be mined;

(2) split seams as thin as 60 cm thick are mineable if the splits are separated by partings less than 90 cm thick;

(3) partings thicker than 15 cm will be selectively removed during mining;

(4) coal with greater than 30% ash on an air dry basis will not be mined.

If these parameters are applied, surface mineable reserves based on holes 1 and 2 would be about 56,000,000 tonnes with a slightly higher stripping ratio and about

the same thermal content.

Similarly, if clay partings are not selectively mined and are included with coal, coal tonnage will increase but thermal content will decrease.

With respect to a recently completed gravity survey, this survey suggests substantial new reserves will be found near the present deposit and that a number of new, similar deposits are present within a few kilometres of the present deposit.

USES FOR COAL

On a mineral matter free, moist basis this coal is classified as subbituminous C in rank. This coal is suitable for the following uses:

(1) electrical power generation;

(2) thermal uses;

(3) chemical uses;

(4) production of synthetic fuel.

Because of the deposit's location, electrical power generation is the most obvious use. In this regard it is estimated that the known deposit could sustain a 200 megawatt power plant for 40 years. This could more than supply the foreseeable needs of southeastern Yukon for this period.

SUMMARY OF COSTS AND PERSONNEL
EMPLOYED ON DIAMOND DRILLING
PROJECT 6205, ROCK RIVER COAL, YUKON
AUGUST 7, 1981 - MAY 26, 1982

(1) Wages & Salaries

D.C. Miller - c/o 1278 Dalhousie Drive, Kamloops, B.C. V2C 6G3
August 7, 20-31; September 1-4, 9, 16-21, 23-25; October 6-9, 13-14, 28-29; November 3-4, 25; December 2-4, 10-11, 16, 18, 22-23; January 5-6, 12-13, 18-19, 22, 25, 28-29; March 1-2, 26; April 1-2, 5-7, 29-30; May 4-7, 20-22, 26.

J.C. Harrison - c/o 1278 Dalhousie Drive, Kamloops, B.C. V2C 6G3
August 20; September 5, 8, 9, 11-16, 18-20, 28-30; October 9, 13-17; November 17-20, 23-27, 30; December 1-4, 7-11, 14-16, 18, 21, 22; January 12-15, 18, 20-22; February 1-2, 8-10, 22-26; March 1-5; April 28-30; May 1-2.

D.M. Windsor - c/o 1278 Dalhousie Drive, Kamloops, B.C. V2C 6G3
August 20, 21, 25; September 21, 22, 23; October 13, 15, 16; November 2-6, 9-13, 16; April 28-30; May 1-2.

P. Chung - c/o 2020, No. 4 Road, Richmond, B.C. V6X 2C3
August 16-31; September 1-10; October 5-9, 13-14.

R. Shearing - c/o 1278 Dalhousie Drive, Kamloops, B.C. V2C 6G3
August 1; September 1-24; October 8-9, 13-15.

T. Robinson - c/o Old Ferry Road, General Delivery,
Monte Creek, B.C.
August 16-25

	TOTAL	$25,550.00
(2)	Food & Accommodation (includes Sulpetro personnel, E. Caron Diamond Drilling crew, and helicopter pilot (Shirley Air Ltd.))	7,339.55
(3)	Consulting Fee Halferdahl & Associates	4,273.76
(4)	Travel Expenses	1,721.59
(5)	Diamond Drilling Direct charges. E. Caron Diamond Drilling Whitehorse, Y.T. Invoice 1070 5 NQ & HQ holes. Totalling 2355 feet Demob charges. Invoice 1163	 104,350.45 5,655.00
(6)	Helicopter Support Shirley Air Services Ltd. Invoices 3621, 4123, 4124, 5015 Frontier Helicopters Ltd. Invoice 3311 Transwest Helicopters Ltd. Invoice 1301	 67,590.81
(7)	Fixed Wing Aircraft Support B.C.-Yukon Air Services Ltd.	14,044.20
(8)	Fuel & Oil	14,898.55

(9)	Electro Logging Roke Oil Enterprises Ltd. Invoice 2360	20,784.43
(10)	Miscellaneous Hardware, lumber Sample bags, drill mud, core boxes, pipe, freight, maps, prints, typing	10,446.48
(11)	Coal Analysis General Testing Labs. - Vancouver	9,293.60
(12)	Expediter	2,541.36
(13)	Telephone	427.92
	TOTAL	$288,917.70

Mr. William C. Leuschner
Sulpetro Limited
3200 Bow Valley Square 3
255 - 5 Avenue S.W.
Calgary, Alberta
T2P 3G8

Dear Mr. Leuschner:

RE: ROCK RIVER COAL DEPOSIT, Y.T.

We are pleased to send you the enclosed information on the above deposit on the request of Mr. D. C. Miller of Sulpetro Minerals Limited in Kamloops. We shall try to answer any questions you may have concerning it.

Yours sincerely,

Lawrie Halferdahl

L.B. Halferdahl, Ph.D., P.Eng.

LBH/mt

encl.

cc Mr. D. C. Miller

18, 10509-81 AVENUE, EDMONTON, ALBERTA T6E 1X7 TEL.(403)439-9789

ROCK RIVER COAL DISCOVERY, YUKON TERRITORY, NTS Sheet 95D/11, 14

In 1981 five holes were drilled within about 3 km of an outcrop of coal about 9 m thick along a small tributary of the Rock River near the centre of a block of Tertiary sediments about 45 km long in a northerly direction by about 5½ km wide, possibly a graben. Coal float has been found along the length of the Rock River within this block of Tertiary strata. Drillhole 1 intersected the most coal, with the coal measures dipping up to about 10° westerly. The coal intersected in drillhole 2, though less, is apparently correlatable with that in drillhole 1. Coal in the other three holes was absent or almost absent. The following comments and summary are based on downhole and lithological logs, and analytical data from drillhole 1, with the following parameters:

1) All mining will be by surface methods.
2) Individual coal seams less than 90 cm thick will not be mined.
3) Split seams as thin as 60 cm thick are mineable if the splits are separated by partings less than 90 cm thick.
4) Partings thicker than 15 cm will be selectively removed during mining.
5) Coal with more than 30 per cent ash on an air-dry basis will not be mined.

These parameters result in several mineable coal intervals as listed in the accompanying table. To a depth of 79.55 m mineable coal intervals total 28.45 m averaging about 6750 Btu/lb at equilibrium moisture. For each square kilometre in-place reserves to a depth of 60.00 m are estimated at about 33 million tonnes with a stripping ratio of 1.07 bank m^3/tonne at drillhole 1, and to a depth of 79.55 m at about 38½ million tonnes with a stripping ratio of 1.32 bank m^3/tonne also at drillhole 1. Coal at greater depths or with ash contents of more than 30 per cent will increase these reserves, as will mineable coal higher in the stratigraphic section than that intersected in drillhole 1. Stripping to depths of up to 50 m to 60 m is the most economical for large draglines, as greater depths require rehandling. Stripping ratios less than 10 to 1 are often considered economical, and those less than 3 or 4 to 1 are very favorable. The extent of the coal float along the Rock River suggests reserves several times the preceding amounts.

This coal appears to be very similar to that at Hat Creek in Central British Columbia, but the seams are thinner and ultimate reserves are expected to be less but with rapid thickening in short distances. As the quality of the Rock River coal is too low to permit transporting it far from the Yukon at present, the most likely market for such coal is as fuel for a minemouth power plant. Depending on market studies of the power demands for Watson Lake, developing but not yet producing metal mines within economic distances such as the lead-zinc mine at Howards Pass, and the Lenid and Macmillan Pass tungsten mines, and the Alaska Highway pipeline, the annual production of coal from Rock River could reach the range of one-half to one million tonnes or more. Prices paid for similar coal in Alberta are based on the costs of mining plus a profit, probably of one to two dollars per tonne. In the Yukon, a somewhat higher profit might be possible, because the costs of electricity produced by alternate methods are probably much higher.

Although the quality of the Rock River coal appears suitable for the production of synthetic natural gas, exploration is required to establish reserves of at least 250 million tonnes, the minimum usually required for a synthetic natural gas operation. For

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such production the proximity of the expected Alaska Highway pipeline will be an advantage, but the large reserves of natural gas closer to markets are a disadvantage. Liquefaction is probably a better bet, but like synthetic natural gas, large reserves must be found. Not enough is known about the economics of either of these developing processes to comment here.

L. B. Halferdahl, Ph.D., P.Eng.

Edmonton, Alberta
1981 10 16

COAL SEAM DATA FROM DRILLHOLE 1; ROCK RIVER COAL PROSPECT

Seam	Depth (m)		Thickness (m)		S.G.	At Equilibrium Moisture		
	Top	Bottom	Seam	Coal	(air dry)	Ash %	Moist %	Btu/lb
J4	16.85	19.00	2.15)	)				
			0.15p)	)	1.37	16.01	26.7	6769
J3	19.15	21.90	2.75)	)				
			0.30p)	6.55				
J2	22.20	23.10	0.90)	)				
			1.50p)	)	1.45	21.89	22.8	6287
J1	23.25	24.00	0.75)	)				
H2	24.85	26.85	2.00)		1.37	18.73	24.7	6668
			0.15p)	3.05				
H1	27.00	28.05	1.05)		1.39	20.44	25.2	6409
G3	31.30	33.10	1.80)		1.33	13.64	27.9	6906*
			0.30p)					
G2	33.40	38.10	4.70)	7.30	1.31	11.09	27.5	7332
			0.20p)					
G1	38.30	39.10	0.80)		1.35	13.53	28.7	6814
F	42.20	44.05	1.85	1.85	1.38	20.45	25.9	6347
E	50.90	53.35	2.45	2.45	1.30	13.08	25.6	7329*
D2	56.30	57.35	1.05)					
			0.50p)	3.20	1.33	19.49	27.7	6208
D1	57.85	60.00	2.15)					
B2	71.95	72.80	0.85)					
			0.50p)	2.25	1.44	19.58	23.5	6611*
B1	73.30	74.70	1.40)					
A	77.65	79.55	1.80	1.80	1.44	20.18	23.0	6528
Total	-	-	-	28.45	-	-	-	-
Average	-	-	1.78	3.56	1.36	15.92	26.2	6750
Range	-	-	0.75 / 2.75	1.85 / 7.30	1.30 / 1.45	11.09 / 21.89	22.8 / 28.7	6208 / 7332

* Btu/lb will be slightly lower than those listed when a few partings less than 15 cm thick are included.

p - parting

GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE ADDRESS: SUPERVISE

CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
1278 DALHOUSIE DR.
KAMLOOPS - B.C. - V2C 6G3

NO. : 8109-0954-C
FILE :
DATE: NOVEMBER 10TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-1
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 1	AIR DRY	26.7	24.59	16.47	30.03	28.91	0.58	6964	1.37
	DRY		-	21.84	39.82	38.34	0.77	9234	-
S 2	AIR DRY	22.8	20.90	22.43	34.55	22.12	0.64	6441	1.45
	DRY	-	-	28.36	43.68	27.96	0.81	8143	-
S 3	AIR DRY	24.7	21.32	19.57	30.80	28.31	1.67	6966	1.37
	DRY	-	-	24.88	39.15	35.97	2.12	8854	-
S 4	AIR DRY	25.6	21.97	22.77	29.62	25.64	0.57	6518	1.41
	DRY	-	-	29.18	37.96	32.86	0.72	8353	-
S 5	AIR DRY	27.9	23.98	14.38	32.57	29.07	0.57	7281	1.33
	DRY	-	-	18.92	42.84	38.24	0.75	9577	-
S 6	AIR DRY	26.7	26.37	9.31	33.29	31.03	0.83	7702	1.28
	DRY	-	-	12.64	45.21	42.15	1.13	10461	-
S 7	AIR DRY	28.7	27.19	13.82	30.95	28.04	0.89	6958	1.35
	DRY	-	-	18.98	42.51	38.51	1.22	9556	-
S 8	AIR DRY	23.9	18.33	25.74	29.42	26.51	1.77	6516	1.45
	DRY	-	-	31.52	36.02	32.46	2.17	7979	-
S 9	AIR DRY	21.4	17.18	53.06	16.27	13.49	0.73	3321	1.75
	DRY	-	-	64.06	19.65	16.29	0.88	4010	-
S 10	AIR DRY	25.9	23.86	21.01	28.31	26.82	0.93	6522	1.38
	DRY	-	-	27.59	37.18	35.23	1.22	8566	-
S 11	AIR DRY	20.2	15.09	38.91	24.30	21.70	1.04	5377	1.56
	DRY	-	-	45.82	28.61	25.57	1.22	6332	-

L. Lakosil

L.M. LAKOSIL - CHIEF CHEMIST, Coal div.
SIGNATURE AND TITLE

THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE.

GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE ADDRESS: SUPERVISE

CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
1278 DALHOUSIE DR.
KAMLOOPS - B.C. - V2C 6G3

NO. : 8109-0954-C
FILE :
DATE: NOVEMBER 10TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-1
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 12	AIR DRY	26.9	24.72	9.03	33.76	32.49	1.18	8008	1.26
	DRY	-	-	12.00	44.85	43.15	1.57	10638	-
S 13	AIR DRY	25.6	24.95	13.19	31.91	29.95	1.70	7403	1.30
	DRY	-	-	17.58	42.52	39.90	2.27	9864	-
S 14	AIR DRY	27.7	27.01	19.68	27.25	26.06	1.45	6267	1.33
	DRY	-	-	26.96	37.33	35.71	1.98	8586	-
S 15	AIR DRY	18.7	14.58	28.83	29.84	26.75	2.58	6525	1.53
	DRY	-	-	33.75	34.93	31.32	3.02	7639	-
S 16	AIR DRY	25.9	22.90	19.45	29.29	28.36	1.34	6843	1.37
	DRY	-	-	25.22	37.99	36.79	1.73	8876	-
S 17	AIR DRY	23.5	21.29	20.17	32.21	26.33	2.13	6898	1.44
	DRY	-	-	25.63	40.92	33.45	2.71	8764	-
S 18	AIR DRY	23.0	21.22	20.65	30.96	27.17	1.15	6726	1.44
	DRY	-	-	26.21	39.30	34.49	1.46	8538	-
S 19	AIR DRY	21.3	19.88	34.36	22.99	22.77	0.85	5283	1.52
	DRY	-	-	42.88	28.69	28.43	1.06	6594	-
S 20	AIR DRY	21.2	19.44	32.63	26.10	21.83	1.32	5431	1.55
	DRY	-	-	40.50	32.40	27.10	1.63	6741	-
S 21	AIR DRY	24.0	19.17	21.40	29.65	29.78	1.19	7100	1.40
	DRY	-	-	26.48	36.69	36.83	1.48	8783	-
S 22	AIR DRY	25.0	24.61	20.74	28.02	26.63	1.20	6465	1.39
	DRY	-	-	27.52	37.17	35.31	1.59	8576	-

L. Lakosil

L.M. LAKOSIL - CHIEF CHEMIST - Coal div.
SIGNATURE AND TITLE

THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE.

GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
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SULPETRO MINERALS LTD.
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1278 DALHOUSIE DR.
KAMLOOPS - B.C. - V2C 6G3

NO. : 8109-0954-C
FILE :
DATE: NOVEMBER 10TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-1
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 23	AIR DRY	17.5	14.43	48.64	20.28	16.65	2.09	4165	1.66
	DRY	-	-	56.85	23.70	19.45	2.44	4868	-
S 24	AIR DRY	22.9	18.84	37.97	22.63	20.56	2.53	4891	1.51
	DRY	-	-	46.78	27.88	25.34	3.12	6026	-
S 25	AIR DRY	20.3	16.57	41.22	22.24	19.97	3.35	4737	1.63
	DRY	-	-	49.40	26.66	23.94	4.02	5678	-
S 26	AIR DRY	25.4	20.31	28.14	26.72	24.83	2.10	6063	1.44
	DRY	-	-	35.31	33.53	31.16	2.64	7608	-
S 27	AIR DRY	18.7	14.22	43.52	21.98	20.28	3.19	4761	1.62
	DRY	-	-	50.74	25.62	23.64	3.72	5550	-
S 28	AIR DRY	24.6	21.89	26.73	26.02	25.36	1.58	6062	1.44
	DRY	-	-	34.22	33.31	32.47	2.02	7760	-
S 29	AIR DRY	19.6	18.31	35.87	23.74	22.08	1.95	5291	1.52
	DRY	-	-	43.91	29.06	27.03	2.38	6477	-
S 30	AIR DRY	19.8	21.57	24.94	27.24	26.25	2.37	6487	1.38
	DRY	-	-	31.80	34.73	33.47	3.02	8271	-
S 31	AIR DRY	15.7	15.05	42.55	22.54	19.86	2.22	4861	1.60
	DRY	-	-	50.09	26.53	23.38	2.62	5722	-
S 32	AIR DRY	18.9	18.12	37.47	27.50	16.91	1.51	5192	1.54
	DRY	-	-	45.76	33.58	20.66	1.84	6341	-
S 33	AIR DRY	22.2	21.27	27.41	26.96	24.36	1.14	6036	1.41
	DRY	-	-	34.82	34.25	30.93	1.45	7667	-

L. Lakosil

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L.M. LAKOSIL - CHIEF CHEMIST Coal div.
SIGNATURE AND TITLE

GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE ADDRESS: SUPERVISE

CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
970 LAVAL CRESCENT
KAMLOOPS - B.C. - V2C 5P5

NO. : 8110-0150-C
FILE :
DATE: NOVEMBER 7TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-2
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 36	AIR DRY	26.8	25.48	17.66	30.01	26.85	1.20	6814	1.39
	DRY	-	-	23.70	40.27	36.03	1.61	9144	-
S 37	AIR DRY	28.3	24.70	18.97	29.83	26.50	1.25	6664	1.44
	DRY	-	-	25.20	39.62	35.18	1.66	8850	-
S 38	AIR DRY	28.2	24.38	21.04	28.80	25.78	1.29	6503	1.41
	DRY	-	-	27.83	38.09	34.08	1.71	8600	-
S 39	AIR DRY	23.0	22.21	33.27	25.42	19.10	1.36	4998	1.53
	DRY	-	-	42.76	32.68	24.56	1.75	6425	-
S 40	AIR DRY	23.2	20.84	33.67	26.77	18.72	1.06	5073	1.55
	DRY	-	-	42.54	33.81	23.65	1.34	6409	-
S 42	AIR DRY	22.3	21.27	33.21	29.56	15.96	1.18	5063	1.61
	DRY	-	-	42.18	37.55	20.27	1.50	6431	-
S 47	AIR DRY	25.4	17.77	40.45	23.20	18.58	1.57	4810	1.61
	DRY	-	-	49.19	28.21	22.60	1.91	5850	-
S 48	AIR DRY	25.0	17.03	31.39	27.17	24.41	2.29	6024	1.54
	DRY	-	-	37.83	32.75	29.42	2.76	7260	-
S 49	AIR DRY	21.8	18.08	32.66	27.17	22.09	2.04	5663	1.58
	DRY	-	-	39.87	33.17	26.96	2.49	6913	-
S 51	AIR DRY	24.3	18.49	28.07	27.94	25.50	1.99	6369	1.47
	DRY	-	-	34.44	34.27	31.29	2.44	7813	-

L. Lakosil

L.M. LAKOSIL - CHIEF CHEMIST, Coal div.
SIGNATURE AND TITLE

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GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE ADDRESS: SUPERVISE

CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
970 LAVAL CRESCENT
KAMLOOPS - B.C. - V2C 5P5

NO. : 8110-0150-C
FILE :
DATE: NOVEMBER 7TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-2
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 52	AIR DRY	27.8	23.03	13.34	32.83	30.80	1.13	7604	1.34
	DRY	-	-	17.33	42.65	40.02	1.47	9879	-
S 54	AIR DRY	25.6	21.54	23.82	28.10	26.54	1.12	6398	1.43
	DRY	-	-	30.36	35.82	33.82	1.43	8155	-
S 56	AIR DRY	30.8	24.07	14.94	30.73	30.26	1.31	7333	1.33
	DRY	-	-	19.68	40.47	39.85	1.73	9658	-
S 57	AIR DRY	27.0	21.01	23.79	28.70	26.50	1.55	6630	1.49
	DRY	-	-	30.12	36.33	33.55	1.96	8394	-
S 60	AIR DRY	22.6	15.19	37.51	24.83	22.47	1.86	5490	1.61
	DRY	-	-	44.23	29.28	26.49	2.19	6473	-
S 61	AIR DRY	17.2	11.43	52.47	18.81	17.29	1.86	3922	1.89
	DRY	-	-	59.25	21.24	19.51	2.10	4428	-
S 63	AIR DRY	16.4	10.69	56.41	19.10	13.80	3.17	3634	1.76
	DRY	-	-	63.16	21.39	15.45	3.55	4069	-
S 65	AIR DRY	24.3	15.50	37.80	25.01	21.69	3.39	5436	1.64
	DRY	-	-	44.74	29.60	25.66	4.01	6433	-
S 66	AIR DRY	21.3	16.41	35.42	28.36	19.81	2.57	5322	1.69
	DRY	-	-	42.37	33.93	23.70	3.07	6367	-
S 67	AIR DRY	22.2	17.66	29.34	27.53	25.47	3.33	6188	1.51
	DRY	-	-	35.63	33.43	30.94	4.04	7516	-

L. Lakosil

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L.M. LAKOSIL - CHIEF CHEMIST Coal div.
SIGNATURE AND TITLE

GENERAL TESTING LABORATORIES

A Division of SGS Supervision Services Inc.

1001 EAST PENDER STREET VANCOUVER, B.C. CANADA V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE ADDRESS: SUPERVISE

CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
970 LAVAL CRESCENT
KAMLOOPS - B.C. - V2C 5P5

NO. : 8110-0150-C
FILE :
DATE: NOVEMBER 7TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-2
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 68	AIR DRY	19.0	12.32	48.26	22.22	17.20	2.85	4207	1.77
	DRY	-	-	55.04	25.34	19.62	3.25	4798	-
S 70	AIR DRY	20.6	16.42	36.30	24.26	23.02	4.43	5465	1.70
	DRY	-	-	43.43	29.03	27.54	5.30	6539	-
S 71	AIR DRY	19.0	11.98	47.27	23.01	17.74	2.97	4506	1.72
	DRY	-	-	53.71	26.15	20.14	3.37	5119	-
S 73	AIR DRY	21.5	16.22	34.55	25.68	23.55	2.97	5777	1.59
	DRY	-	-	41.24	30.65	28.11	3.54	6896	-

L. Lakosil

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CERTIFICATE OF ANALYSIS

SULPETRO MINERALS LTD.
Attn. DAVID C. MILLER - P.ENG.
970 LAVAL CRESCENT
KAMLOOPS - B.C. - V2C 5P5

NO. : 8110-0150-C
FILE :
DATE: NOVEMBER 7TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-3
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 34	AIR DRY	21.8	17.39	39.33	24.95	18.33	0.84	5007	1.64
	DRY	-	-	47.61	30.20	22.19	1.02	6061	-
S 35	AIR DRY	24.0	19.48	31.18	30.57	18.77	0.75	5653	1.58
	DRY	-	-	38.72	37.97	23.31	0.93	7020	-
S 41	AIR DRY	27.4	23.10	23.82	28.02	25.06	2.17	6291	1.43
	DRY	-	-	30.97	36.43	32.60	2.82	8180	-
S 43	AIR DRY	21.2	14.74	42.91	21.90	20.45	1.27	4796	1.65
	DRY	-	-	50.33	25.69	23.98	1.49	5625	-
S 45	AIR DRY	23.2	16.84	36.19	25.87	21.10	1.39	5288	1.57
	DRY	-	-	43.51	31.10	25.39	1.67	6359	-
S 53	AIR DRY	22.1	18.31	38.82	23.42	19.45	1.27	0	1.60
	DRY	-	-	47.53	28.68	23.79	1.55	0	-
S 58	AIR DRY	24.5	17.90	32.44	26.26	23.40	1.99	0	1.58
	DRY	-	-	39.51	31.98	28.51	2.42	0	-
S 64	AIR DRY	16.2	10.33	54.79	18.90	15.98	1.90	0	1.86
	DRY	-	-	61.10	21.08	17.82	2.12	0	-
S 72	AIR DRY	13.7	10.06	58.32	18.13	13.49	1.99	0	2.02
	DRY	-	-	64.84	20.16	15.00	2.21	0	-
S 74	AIR DRY	10.3	6.69	71.43	13.24	8.64	2.02	0	2.17
	DRY	-	-	76.55	14.19	9.26	2.16	0	-
S 75	AIR DRY	19.6	16.85	38.59	23.42	21.14	2.41	0	1.69
	DRY	-	-	46.41	28.16	25.43	2.90	0	-

L. Lakosil

L.M. LAKOSIL - CHIEF CHEMIST, Coal div.
SIGNATURE AND TITLE

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Attn. DAVID C. MILLER - P.ENG.
970 LAVAL CRESCENT
KAMLOOPS - B.C. - V2C 5P5

NO. : 8110-0150-C
FILE :
DATE: NOVEMBER 7TH, 1981

WE HEREBY CERTIFY TO HAVE ANALYZED THE SUBMITTED SAMPLES : HRR-81-4
AS FOLLOWS :

SAMPLE NO	BASIS	EQ.M. %	R.M. %	ASH %	V.M. %	F.C. %	SULFUR %	C.V. BTU/LB	S.G. G/CM3
S 44	AIR DRY	21.2	14.37	43.74	22.64	19.25	3.01	4685	1.72
	DRY	-	-	51.08	26.43	22.49	3.52	5472	-
S 46	AIR DRY	22.3	14.34	46.08	21.90	17.68	2.56	4495	1.66
	DRY	-	-	53.80	25.56	20.64	2.99	5248	-
S 50	AIR DRY	14.0	10.11	63.25	16.42	10.22	2.32	0	2.01
	DRY	-	-	70.37	18.27	11.36	2.58	0	-
S 55	AIR DRY	21.2	13.64	52.07	19.30	14.99	2.68	0	1.74
	DRY	-	-	60.30	22.35	17.35	3.10	0	-
S 59	AIR DRY	25.2	11.90	57.59	17.83	12.68	2.07	0	1.89
	DRY	-	-	65.37	20.24	14.39	2.35	0	-
S 62	AIR DRY	21.7	14.40	47.56	20.21	17.83	2.53	0	1.79
	DRY	-	-	55.56	23.61	20.83	2.96	0	-
S 69	AIR DRY	19.6	15.87	45.24	21.42	17.47	1.43	4397	1.66
	DRY	-	-	53.77	25.46	20.77	1.70	5227	-

L. Lakosil

L.M. LAKOSIL - CHIEF CHEMIST, Coal div.
SIGNATURE AND TITLE

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General Testing Laboratories
A Division of SGS Supervision Services Inc.
1001 East Pender Street,
Vancouver, B.C. Canada V6A 1W2
Telephone: (604) 254-1647 Telex: 04-507514 Cable: Supervise

TO: S0785
SULPETRO MINERALS LIMITED
#11 - 1278 Dalhousie Drive
Kamloops, B.C. Canada
V2C 6G3

CERTIFICATE OF ANALYSIS

No.	DATE:
FILE: 8203-0150C	March 30, 1982

Att: Mr. David Miller, P. Eng. Sr. Geologist

WE HAVE ANALYZED 13 CLAY SAMPLES SUBMITTED BY YOU AND REPORT AS FOLLOWS:

	BASIS	RESIDUAL MOISTURE %	ASH %	CALORIFIC VALUE (BTU/lb.)
W - 1	Air Dry	14.61	44.36	4628
	Dry	---	51.95	5420
W - 2	Air Dry	11.92	65.60	--
	Dry	---	74.48	--
W - 3	Air Dry	10.08	53.21	--
	Dry	---	59.18	--
W - 4	Air Dry	4.02	82.96	--
	Dry	---	86.44	--
W - 5	Air Dry	4.53	78.27	--
	Dry	---	81.98	--
W - 6	Air Dry	5.75	74.49	--
	Dry	---	79.03	--
W - 7	Air Dry	9.41	62.90	--
	Dry	---	69.43	--
W - 8	Air Dry	5.12	75.29	--
	Dry	---	79.35	--
W - 9	Air Dry	11.34	45.96	4776
	Dry	---	51.84	5387
W - 10	Air Dry	7.14	65.14	--
	Dry	---	70.15	--
X - 2	Air Dry	12.77	35.58	5853
	Dry	---	40.79	6710
X - 14	Air Dry	8.90	58.63	--
	Dry	---	64.36	--
X - 15	Air Dry	10.79	50.33	4366
	Dry	---	56.42	4894

LL:at

L. Lakosil, Chief Coal Chemist.

THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE

SIGNATURE AND TITLE

General Testing Laboratories
A Division of SGS Supervision Services Inc.
1001 East Pender Street,
Vancouver, B.C. Canada V6A 1W2
Telephone: (604) 254-1647 Telex: 04-507514 Cable: Supervise

TO: S0785
SULPETRO MINERALS LIMITED
#11 - 1278 Dalhousie Drive
Kamloops, B.C. Canada
V2C 6G3

CERTIFICATE OF ANALYSIS

No.	DATE:
FILE: 8203-1054C	March 30, 1982

Mr. D. MILLER, Sr. Geol.

WE HAVE ANALYZED THE 10 COMPOSITES OF CLAY AND COAL SAMPLES AND REPORT AS FOLLOWS:

	Sample I.D.	Basis	Residual Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Calorific Value BTU/lb.
1)	W-1 + S-1	Air Dry	21.16	25.61	27.48	25.75	0.73	6122
	kg 1.75 + 6.78	Dry	---	32.48	34.85	32.67	0.92	7766
2)	W-3 + S-2	Air Dry	17.12	32.37	29.93	20.58	0.64	5547
	kg 0.40 + 2.30	Dry	---	39.05	36.11	24.84	0.77	6693
3)	W-5 + S-3	Air Dry	16.79	34.07	26.34	22.80	1.52	5502
	kg 0.60 + 2.82	Dry	---	40.94	31.65	27.41	1.83	6613
4)	W-6 + S-4	Air Dry	16.07	40.34	23.99	19.60	0.49	4988
	kg 1.65 + 3.75	Dry	---	48.06	28.59	23.35	0.59	5944
5)	W-8 + S-5	Air Dry	18.43	31.97	26.46	23.14	0.56	5725
	kg 1.00 + 3.30	Dry	---	39.19	32.44	28.37	0.68	7018
6)	W-9 + S-6	Air Dry	23.26	16.34	31.55	28.85	0.90	7073
	kg 0.50 + 3.85	Dry	--	21.30	41.11	37.59	1.17	9217
7)	W-10 + S-7	Air Dry	24.69	19.27	30.69	25.35	0.92	6432
	kg 0.30 + 4.50	Dry	---	25.59	40.75	33.66	1.22	8541
8)	X-2 + S-36	Air Dry	21.60	21.26	30.44	26.70	1.26	6593
	kg 0.22 + 2.40	Dry	---	27.12	38.83	34.05	1.61	8410
9)	X-14 + 15 + S-38	Air Dry	18.47	32.54	26.85	22.14	1.08	5670
	kg 0.9 + 0.55 + 3.55	Dry	---	39.91	32.93	27.16	1.32	6955
10)	BULK 1 thru 9	Air Dry	20.02	26.77	28.76	24.45	0.84	6098
	Equil Moisture 21.1%	Dry	---	33.47	35.96	30.57	1.06	7625
11)	ABOVE + W2+W4+W7 Equil. Moisture 19.2%	Air Dry	15.10	34.10	27.58	23.22	0.88	5784
		Dry	---	40.15	32.48	27.37	1.04	6813

L. Lakosil

THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE

L. Lakosil - Chief Coal Chemist
SIGNATURE AND TITLE

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-1

PROPERTY	TP OR AREA	AZIMUTH	DATE STARTED
Rock River Coal	95 D/11 N.E.	---	August 28, 1981
PROJECT	LOT & CONC.	DIP	DATE COMPLETED
6205		-90°	September 1, 1981
CLAIM NO.	CO-ORDINATES.	LENGTH	DRILLED BY
Licence 118	6,729,705 N	153.01 m	E. Caron
GRID NO.	597,320 E	COLLAR ELEV. 865 m	LOGGED BY D. Miller, P. Chung

CORRECTED DIP TESTS	
150 m	86°

LOCATION SKETCH OF HOLE

Metres FROM	Metres TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % Ash	% EM	% RM	% S	Btu/lb.
			Lithological log correlated with geophysical logs.									
0	12.50		Gravel, drillers report no large boulders, mostly small cobbles; casing set to 12.45 m left in hole, H W Casing, H Q Core.									
12.50	16.60		Mixed clay and coaly clay, no core recovered.	S-1	(16.60	18.85	2.25)					
					(19.40	21.85	2.45)	16.47	26.70	24.59	0.58	6964
16.60	18.85		Dull black coal with thin brown coal bands at 80°, broken core in pieces 2-20 cm, 80% recovery at 16.90-18.85, 0 recovery at 16.60-16.90.									
18.85	19.40		Soft brown clayey coal, 80% recovery.	W-1	18.85	19.40	0.55	44.36	---	14.61	---	4628
19.40	21.85		Broken coal as preceding, 80% recovery.									
21.85	22.20		Grey clay, 80% recovery.	W-2	21.85	22.20	0.35	65.60	---	11.92	---	----
22.20	23.10		Dull brown banded coal, 90° banding with 5-15 cm black coal seams, broken core, 2-5 cm pieces, 80% recovery.	S-2	(22.20	23.10	0.90)					
					(23.25	24.00	0.75)	22.43	22.80	20.90	0.64	6442
23.10	23.25		Clayey coal parting, 80% recovery.	W-3	23.10	23.25	0.15	53.21	---	10.08	---	----
23.25	24.00		Dull brown banded as preceding, broken core, 80% recovery.									
24.00	24.85		Brown-grey clay with some coal bits mixed in, 90% recovery.	W-4	24.00	24.85	0.85	82.96	---	4.02	---	----
24.85	26.85		Dull brown banded coal @ 80° grading to 90% black coal with thin brown bands, broken core, 90% recovery.	S-3	24.85	26.85	2.00	19.57	24.70	21.32	1.67	6966
26.85	27.10		Soft yellow grey clay with 10% coal.	W-5	26.85	27.10	0.25	78.27	---	4.53	---	----
27.10	28.05		Dull black coal, some brown bands, broken core, 80% recovery.	S-4	(27.10	28.05	0.95)					
					(29.25	30.15	0.90)	22.77	25.60	21.97	0.57	6518
28.05	29.25		Black coaly clay, 80% recovery.	W-6	28.05	29.25	1.20	74.49	---	5.75	---	----
29.25	30.15		Light brown (sandy ?) coal with some dark coal bands @ 70°, 90% recovery.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-1

Metres FROM	Metres TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	% Btu/lb
30.15	30.80		Soft grey-brown to black coaly clay, and clayey coal at 30.48 -31.10, 80% recovery.	W-7	30.15	30.80	0.65	62.90	--	9.41	--	----
30.80	33.10		Mostly dull brown banded coal @ 60-80° with some layers of black coal, very broken core at 32.00-33.10, 80% recovery.	S-5	30.80	33.10	2.30	14.38	27.90	23.98	0.57	7281
33.10	33.35		Coaly clay, 80% recovery.	W-8	33.10	33.35	0.25	75.29	---	5.12	--	----
33.35	36.20		Dull black and brown coal with some 70° banding, broken core, 80% recovery.	S-6	33.35	36.20	2.85	9.31	26.70	26.37	0.83	7703
36.20	36.50		Silty coal, 80% recovery.	W-9	36.20	36.50	0.30	45.96	---	11.34	--	4776
36.50	38.10		Dull black and brown coal, some 90° banding, broken core, 70% recovery.	S-7	36.50 38.30	38.10 39.10	1.60) 0.80)	13.82	28.70	27.19	0.89	6958
38.10	38.30		Grey coaly clay, 70% recovery.	W-10	38.10	38.30	0.20	65.14	---	7.14	---	---
38.30	39.10		Dull brown and black coal, broken core, 70% recovery.									
39.10	39.60		Clayey coal, very broken core, 60% recovery.									
39.60	40.80		Dull black coal (silty?) very broken, 60% recovery.	S-8	39.60	40.80	1.20	25.74	23.90	18.33	1.77	6516
40.80	42.10		Gray clay mixed with coal fragments, 60% recovery, shattered core @ 41.80-42.10.	S-9	40.80	42.10	1.30	53.06	21.40	17.18	0.73	3321
42.10	44.25		Dull black coal, broken core, 60% recovery.	S-10	42.10	45.70	3.60	21.01	25.90	23.86	0.93	6522
44.25	45.70		Similar, better core in 15 cm pieces some silty coal ?, 90% recovery.									
45.70	47.10		Grey clay with 15 to 30% coal fragments, 90% recovery.									
47.10	48.40		Dull black and brown coal, 80% banding, 90% recovery.	S-11	47.10	48.40	1.30	38.91	20.20	15.09	1.04	5377
48.40	48.90		Grey clay, 90% recovery.									
48.90	49.60		Dull black and brown coal, 90% recovery.	S-12	48.90	49.60	0.70	9.03	26.90	24.72	1.18	8008

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-1

Metres FROM	Metres TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	% Ash	% EM	% RM	% S	% Btu/lb
49.60	50.90		Grey clay, 90% recovery.									
50.90	53.35		Dull brown black coal, 80° banding, some brown woody material, 5 cm of coaly clay @ 51.4, core in pieces 8-10 cm long, 90% recovery.	S-13	50.90	53.35	2.45	13.19	25.60 (5 cm of coaly clay excluded)	24.95	1.70	7403
53.35	56.30		Mixed clay and narrow coal beds, 90% recovery.									
56.30	57.35		Dull black coal, 90% recovery.									
57.35	57.85		Coaly clay, 90% recovery.									
57.85	60.00		Dull black and brown coal, minor clay, 90% recovery.	S-14	(56.30 (57.85	57.35 60.00	(1.05) 2.15)	19.68	27.70	27.01	1.45	6267
60.00	61.40		Grey clay with 5% coal bands, 90% recovery.									
61.40	62.50		Brown coal with 50% clay, 90% recovery.									
62.50	63.00		Brown and black coal, 90% recovery.	S-15	62.50	63.00	0.50	28.83	18.70	14.58	2.58	6525
63.00	68.90		Grey clay with 15% coal bands at 80°, hard grey sandstone @ 66.20-66.50 , 90% recovery.									
68.90	69.60		Brown and black coal with some amber and 5 cm of clay @ 69.20, 90% recovery.									
69.60	70.30		Grey clay, mixed clay and brown coal, 90% recovery.									
70.30	71.00		Brown coal with 5 cm of muddy clay @ 70.60 m 90% recovery.	S-16	(68.90 (70.30	69.60 71.00	(0.70) 0.70)	19.45	25.90 (10 cm of clay excluded)	22.90	1.34	6843
71.00	71.95		Soft coal and clay mixed, 90% recovery.									
71.95	72.80		Coal, 90% recovery.									
72.80	73.30		White clay, 90% recovery.									
73.30	74.70		Dull black coal with 8 cm clay bands at 73.6 and 74.2 m; 90% recovery.	S-17	(71.95 (73.30	72.80 74.70	(0.85) 1.40)	20.17	23.50	21.29	2.13	6898

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-1

Metres FROM	Metres TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	% Btu/lb
74.70	75.30		Grey clay with 15% coal bands, 80° banding, 90% recovery.									
75.30	75.70		Brown black clayey coal, 90% recovery.									
75.70	77.70		Grey clay with 5% brown-black coal lenses, 90% recovery.									
77.70	79.55		Brown-black coal, 85° banding, 90% recovery.	S-18	77.70	79.55	1.85	20.65	23.00	21.22	1.15	6726
79.55	84.40		Grey clay grading to brown coaly mud.									
84.40	84.85		Brown black coal.	S-19	84.40	84.85	0.45	34.36	21.30	19.88	0.85	5283
84.85	85.70		Grey clay with brownish silty material and 25% coal bands.	S-20	(85.70	86.00	0.30)					
					(87.35	88.70	1.35)	32.63	21.20	19.44	1.32	5431
								17.5 cm of mud excluded				
85.70	86.00		Dull black coal.									
86.00	87.35		Grey clay with 15% coal bands at 80°									
87.35	88.70		Dull black coal with brown muddy coal layers of 2.5 cm at 87.60 and 15 cm at 88.50.									
88.70	90.35		Grey clay with 10% coal bands at 70°									
90.35	90.85		Grey fine sand with clay matrix and 20% brown coal fragments and bands.									
90.85	95.10		Yellow grey clay (sandy at 91.8 ?) with 10% black coal bands at 80°									
95.10	96.75		Grey clay with 20% coal fragments and bands at 80°;									
96.75	112.00		Yellow grey clay with 20% coal fragments and bands at 80°; 8 cm of hard yellow siltstone at 99.67 m; 13 cm band of coal at 104.00 m; 15 and 20 cm of brown coal at 109.10 and 110.50 m, both at 80°.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR 81-1

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
112.00	113.20		Black coal with bands of brown coal at 80° with 20 cm of clay and soft coal mixture at 112.50.	S-21	(112.00	113.20	1.20)					
					(113.60	113.90	0.30)	21.40	24.00	19.17	1.19	7100
								20 cm of coaly clay excluded				
113.20	113.60		Grey clay with 60% soft brown coal.									
113.60	113.90		Black coal with bands of brown coal at 80°.									
113.90	114.70		Grey clay with 20% black and brown coal fragments and bands at 90°.									
114.70	115.55		Brown and black coal bands at 80° with 5 cm of soft coal and grey clay mix at 114.90 m.	S-22	(114.70	115.55	0.85)	20.74	25.00	24.61	1.20	6465
					(115.75	117.70	1.95)					
								5 cm of clay excluded.				
115.55	115.75		Grey clay with 50% black coal fragments and bands.									
115.75	117.70		Brown banded coal with a few bands of black coal at 80°; clayey at 116.30-116.60 m.									
117.70	118.00		Soft black coal mixed with grey clay.									
118.00	118.30		Brown and black banded (clayey) coal.	S-23	(118.00	118.30	0.30)					
					(118.90	119.70	0.80)	48.64	17.50	14.43	2.09	4165
118.30	118.90		Grey and white clay with 30% coal bands at 80°.					18 cm of clay excluded.				
118.90	119.70		Brown and black coal bands at 70°; 13 cm of grey clay at 119.00 and 5 cm at 119.20.									
119.70	120.10		Grey clay with 25% black coal bands.	S-24	(120.10	121.00	0.90)					
					(121.40	122.20	0.80)					
					(122.50	123.65	1.15)	37.97	22.90	18.84	2.53	4891
120.10	121.00		Brown banded coal at 80°; clayey towards 121.00									
121.00	121.40		Grey clay and brown banded coal.									
121.40	122.20		Brown banded coal at 80°.									
122.20	122.50		Grey clay.									
122.50	123.65		Brown and black coal with brown woody material at 45° to 80°.									

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
123.65	124.05		Grey clay with 15% black coal fragments and bands.									
124.05	125.25		Brown and black banded coal at 80° with 5 cm of grey clay at 124.35 (clayey at 124.35 - 124.70).									
				S-25	124.05	125.25	1.20)					
125.25	126.05		Brown and black banded coal with woody material and 20% grey clay		126.05	126.90	0.85)					
					127.30	128.30	1.00)					
126.05	128.90		Brown and black banded coal at 80° with some woody material; grey		128.45	128.90	0.45)	41.22	20.30	16.57	3.35	4737
			clay and coal mix at 126.90-127.30 and 128.30-128.45; also clayey 127.70-128.50.					5 cm of grey clay excluded				
128.90	129.70		Grey clay; 8 cm of brown coal at 129.40.									
129.70	131.20		Brown and black banded coal with some woody material.	S-26	129.70	131.20	1.50	28.14	25.40	20.31	2.10	6063
131.20	132.30		Interlayered grey clay and brown banded coal; average clay bands 5 cm thick, coal bands 10 cm thick.	S-27	131.35	131.50	0.15)					
					131.85	132.15	0.30)	43.52	18.70	14.22	3.19	4761
132.30	135.90		Black coal with brown coal bands at 80°, 2% woody material; clay sections 132.40-132.50, 133.00-133.20, 133.70-133.80, 134.80-135.00 and 135.30-135.50.	S-28	132.30	132.40	0.10)					
					132.50	133.00	0.50)					
					133.20	134.80	1.60)	26.73	24.60	21.89	1.58	6062
					135.00	135.90	0.90)					
135.90	136.30		Grey clay; 10 cm of brown banded coal at 136.00.									
136.30	138.70		Brown black coal with some woody material (5%) and amber, silty?									
			coal at 136.50-136.90, best coal 136.90-138.00; clayey coal at	S-29	136.30	138.30	2.00)					
			138.00-139.00.		139.10	139.40	0.30)	35.87	19.60	18.31	1.95	5291
138.70	139.10		Grey clay with 5% coal.					3 cm of clay excluded				
139.10	139.40		Brown and black coal; 3 cm of grey clay at 139.25.									
139.40	139.90		Grey clay with 35% brown or black coal.									
139.90	141.75		Brown coal with black coal bands; 2.5 cm clay at 140.85.	S-30	139.90	141.85	1.95)					
					142.00	142.30	0.30)	24.94	19.80	21.57	2.37	6487
141.75	141.85		Clayey coal.					2.5 cm of clay excluded.				

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR 81-1

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
141.85	142.00		Grey clay.									
142.00	142.30		Brown and black coal.									
142.30	142.50		Grey clay.									
142.50	143.10		Brown banded coal.									
143.10	143.25		Grey clay.									
143.25	144.30		Brown banded coal.	S-31	(142.50	143.10	0.40)					
					(143.25	144.30	1.05)					
					(144.50	145.10	0.60)	42.55	15.70	15.05	2.22	4861
144.30	144.50		Grey clay with 5% coal fragments.									
144.50	145.10		Brown and black banded coal (clayey).									
145.10	145.35		Grey clay.									
145.35	146.80		Brown banded coal with some black coal at 80°.	S-32	(145.35	146.80	1.45)					
					(147.30	148.15	0.85)					
146.80	147.00		Brown silt with 10% coal bands at 70°.		(148.30	148.60	0.30)					
					(149.00	149.75	0.75)	37.47	18.90	18.12	1.51	5192
147.00	147.30		Grey coarse sand.									
147.30	148.15		Brown banded coal.									
148.15	148.30		Brown mud.									
148.30	148.60		Brown banded (clayey) coal at 80°.									
148.60	149.00		Grey clay.									
149.00	149.75		Brown banded coal at 80° with some amber.									
149.75	150.25		White grey coarse sand.									
150.25	153.01		Brown banded coal at 80° with some amber.	S-33	150.25	153.01	2.76	27.41	22.20	21.27	1.14	6036
			End of Hole									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-1

Metres FROM	Metres TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH
			Core Recovery %				
17.07	19.81		80				
	22.86		80				
	25.91		90				
	28.96		90				
	32.00		85				
	33.53		80 Broken Core				
	36.58		80				
	39.62		70				
	42.67		60				
	45.72		60 Broken, core loss @ 42.06-43.39.				
	48.77		90				
	50.29		90				
	51.82		90				
	54.86		90				
	57.91		100				
	60.96		80				
	64.01		90				
	67.06		80				
	70.10		90				
	73.15		80				
	76.20		70				
	79.25		90				
	82.30		90				
	85.34		90				
85.34	153.01		90-100%				
			Summary: Core generally broken into 2-20 cm pieces to a depth of 45 metres, then better core in pieces to 90 cm long and averaging 30 cm long.				

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

PROPERTY	TP OR AREA	AZIMUTH	DATE STARTED	CORRECTED DIP TESTS			
Rock River Coal	95 D/11NE		September 2, 1981	140 m	89°		
PROJECT	LOT & CONC.	DIP	DATE COMPLETED				
6205		90°	September 5, 1981				
CLAIM NO.	CO-ORDINATES.	LENGTH	DRILLED BY				
Coal Licence 118	6,728,840 N	141.73	E. Caron				
GRID NO.	597,320 E	COLLAR ELEV.	LOGGED BY				
		900 m	D.C.M., R.S., P.C.				

LOCATION SKETCH OF HOLE

Metres FROM	Metres TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) ASH %	EM %	RM %	S %	Btu/lb
			Lithological log correlated with geophysical logs.									
			NW casing to 34.14 m, NQ core									
34.14	35.00		Grey clay, gravel.									
35.00	35.50		Clayey coal, 40% recovery.									
				X-2	(35.00	35.50	0.50)					
35.50	38.90		Broken dull black coal, 50% recovery.		(38.90	39.10	0.20)	35.58	-	12.77	-	5853
38.90	39.10		Clayey coal, 50% recovery.									
				S-36	(35.50	38.90	3.40)					
39.10	39.90		Broken coal, as preceding, 70% recovery.		(39.10	39.90	0.80)	17.66	26.80	25.48	1.20	6814
					(40.30	40.60	0.30)					
39.90	40.30		Grey clay with minor coal bands at 80°, 70% recovery.									
40.30	40.60		Dull black coal, 70% recovery.									
40.60	41.00		Speckled sandy clay, 50% recovery.									
41.00	42.20		Dull black coal, 12 cm of coaly clay, 50% recovery.	S-37	(41.00	42.20	1.20)					
					(44.90	45.30	.40)	18.97	28.30	24.70	1.25	6664
42.20	44.90		Grey clay, 5% coal lenses, mostly 1 cm or less, 80% recovery.		(45.50	46.00	.50)					
								12 cm of coaly clay excluded				
44.90	45.30		Dull black coal, 50% recovery.									
45.30	45.50		Grey clay, 50% coal lenses, 50% recovery.									
45.50	46.00		Dull black coal, broken, mostly 3 cm pieces, 50% recovery.									
46.00	46.80		Dark grey clay and broken coal, 50% each, 50% recovery.									
46.80	51.70		Light grey clay with 5% coal bands @ 80 - 85°; some speckled sandy clay with 5% coal bands with sand grains to 1 mm size, 80% recovery.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
51.70	52.30		Dull black coal.		(51.70	52.30	0.60)					
					(52.40	53.30	0.90)					
52.30	52.40		Grey clay parting.	S-38	(53.45	54.40	0.95)	21.04	28.20	24.38	1.29	6503
					(54.60	56.00	1.40)					
52.40	53.30		Dull black coal, some caving in hole.		(56.10	56.40	0.30)					
					(56.50	56.90	0.40)					
53.30	53.45		Coaly clay parting.									
53.45	53.70		Dull black coal.		(52.30	52.40	0.10)					
				X-14	(53.30	53.45	0.15)	58.63	-	8.90	-	-
53.70	53.80		Coaly clay parting.		(54.40	54.60	0.20)					
53.80	54.10		Dull black coal, silty ? @ 54.0.									
54.10	54.40		Dull black coal.	X-15	(56.00	56.10	0.10)	50.33	--	10.79	--	4366
					(56.40	56.50	0.10)					
54.40	54.60		Coaly clay parting.									
54.60	56.00		Dull black coal, caving in hole @ 55.70 m.									
56.00	56.10		Clayey coal.									
56.10	56.40		Dull black coal.									
56.40	56.50		Clayey coal.									
56.50	56.90		Dull black coal (70% recovery 51.70 - 56.90)									
56.90	57.40		Soft brown coal banded at 80°, 40% grey clay layers (18 cm), 95% recovery.		(56.90	57.70	0.80)					
				S-39	(58.40	58.70	0.80)	33.27	23.00	22.21	1.36	4998
					(60.50	61.60	0.30)					
57.40	57.70		Black coal with 5% clay layers (2 cm), 95% recovery.					24 cm of clay excluded				
57.70	58.40		Grey clay (sandy ?) with 30% black coal band at 80°, 95% recovery.									
58.40	58.70		Soft brown coal, banded at 80° with approximately 15% grey clay (4 cm), 100% recovery.									
58.70	59.10		Grey clay, (sandy ?) 100% recovery.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
59.10	59.60		Brown coal and grey clay mix, 100% recovery.									
59.60	60.50		Grey clay (sandy ?) with 10% black coal bands @ 70°, 100% recovery.									
60.50	61.00		Black and brown coal, 100% recovery.									
61.00	61.20		Clayey coal.									
61.20	61.60		Black and brown coal, 100% recovery.									
61.60	61.80		Clayey coal, 30% clay bands, 100% recovery.									
61.80	62.60		Black coal with brown bands, some clay bands, 100% recovery.		(61.80	62.60	0.80)					
62.60	63.20		Black coal, 100% recovery.	S-40	(62.60	62.90	0.30)	33.67	23.20	20.84	1.06	5073
63.20	65.00		Black coal with some brown coal bands and minor amber, sandy @ 63.20-63.50, (cave in hole at 63.90 ?), clayey at 64.60-64.80, 100% recovery.		(62.90	65.00	2.10)	15 cm of clay excluded.				
65.00	66.00		Grey clay with approximately 5% brown coal, 100% recovery.									
66.00	67.50		Mostly black (clayey) coal with 15 cm of clay at 66.50.	S-42	(65.75	67.25	1.50)					
					(68.30	70.10	1.80)	33.21	22.30	21.27	1.18	5063
67.50	68.30		Grey clay with 10% brown coal, 100% recovery.		(72.50	73.00	0.50)					
68.30	70.10		Brown coal with approximately 18 cm of grey clay in bands, 30% recovery.					33 cm of clay excluded				
70.10	72.50		Grey clay with 5% black coal fragments, 100% recovery.									
72.50	73.00		Black coal with brown coal bands at 30°, 100% recovery.									
73.00	74.10		Grey clay with 25% black/brown coal layers and fragments, some amber is present, 90% recovery.									
74.10	74.70		Brown coal with woody material and some amber, 60% recovery.		(74.10	74.70	0.60)					
					(76.40	76.80	0.40)					
74.70	83.70		Grey (silty ?) clay with 5-50% coal bands, 20% recovery 74.70-77.70, then 90% recovery.	S-47	(83.70	84.70	1.00)	40.45	25.40	17.77	1.57	4810
					(85.30	85.70	0.40)					
					(85.80	85.95	0.15)					

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
83.70	84.70		Brown banded coal at 80°, 100% recovery.									
84.70	85.30		Grey clay (silty ?) with 20% black coal bands, 100% recovery.									
85.30	85.70		Brown banded coal at 80°, 100% recovery.									
85.70	86.00		Grey clay (silty ?) with 20% black coal fragments, 15 cm of black coal at 85.80 m, 80% recovery.									
86.00	86.50		Brown coal, 50% recovery.									
					(86.00	87.10	1.10)					
86.50	87.10		Clayey coal, 50% recovery.	S-48	(87.60	88.40	0.80)	31.39	25.00	17.03	2.29	6024
					(89.00	89.50	0.50)	5 cm of clay excluded.				
87.10	87.60		Grey clay with 30% coal fragments, 50% recovery.									
87.60	88.40		Brown banded coal with clayey coal at 87.90-88.10, 50% recovery.									
88.40	89.00		Clay with 20% black coal bands and lenses, 70% recovery.									
89.00	89.50		Brown banded coal, 70% recovery.									
89.50	89.80		Brown coal and 50% grey clay bands, 70% recovery.									
					(89.80	91.00	1.20)					
89.80	91.00		Banded brown coal at 70°, clayey at 90.60-90.80, 70% recovery.	S-49	(91.40	93.10	1.70)	32.66	21.80	18.08	2.04	5663
91.00	91.40		Brown coal, with 50% clay bands, 70% recovery.									
91.40	91.90		Brown coal, 70% recovery.									
91.90	93.10		Brown coal with black coal bands, clay layers of 15 cm at 91.90 and 5 cm at 92.90, 100% recovery.									
93.10	94.00		Grey clay with 20% coal fragments and bands, 85% recovery.									
94.00	96.15		Brown banded coal with 10 cm layers of clay at 94.60 m, 94.90 m, 95.40 m, and 96.0 m, 100% recovery.	S-51	94.00	96.15	2.15	28.07	24.30	18.49	1.99	6369
								40 cm of clay excluded.				

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DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
96.15	98.00		Black coal with minor brown coal banding and an 8 cm layer of clay with 30% coal fragments at 96.90 m, 70% recovery.	S-52	96.15	98.70	2.55	13.34	27.80	23.03	1.13	7604
								8 cm of coaly clay excluded.				
98.00	98.70		Banded brown coal (clayey at 98.00-98.30), 90% recovery.									
98.70	98.90		Grey clay with 25% coal fragments, 90% recovery.									
98.90	100.70		Black and brown banded coal with amber; clay layers of 8 cm (25% coal fragments) at 99.05, 10 cm (25% coal fragments) at 99.80, and 5 cm at 100.10, 100% recovery.	S-54	98.90	100.70	1.80	23.82	25.60	21.54	1.12	6398
								23 cm of coaly clay and clay excluded				
100.70	103.20		Mostly grey clay (silty) with 10 cm of coal @ 101.20, 30% coal bands at 102.40-103.10, 90% recovery.									
103.20	106.80		Black coal with small (5-10 cm) clay layers at 103.50, 105.60, and 105.75, 100% recovery; section from 105.60-106.00 is essentially clayey coal.	S-56	103.20	106.80	3.60	14.94	30.80	24.07	1.31	7333
								23 cm of clay excluded				
106.80	107.70		Mostly grey clay with 10 cm of black coal at 107.30, 80% recovery.									
107.70	110.30		Black coal with 8 cm of clay-coal at 108.30 and 10 cm of clayey coal (30% clay) at 109.30, 100% recovery.	S-57	107.70	110.30	2.60	23.79	27.00	21.01	1.55	6630
								18 cm of coaly clay excluded				
110.30	111.50		Interbands of clay and coal layers with average thickness of coal layers 10 cm and average clay thickness 13 cm, 100% recovery.									
111.50	113.40		Black coal with 30 cm of brown-black (clayey) coal at 112.10 and 8 cm of clay at 112.70 m, 90% recovery.	S-60	111.50	113.40	1.90	37.51	22.60	15.19	1.86	5490
								8 cm of clay excluded				
113.40	113.70		Banded clay and coal (40% coal) with 15 cm section of immature siltstone with numerous plant fragments, 90% recovery.									
113.70	115.20		Grey clay with minor coal banding and a layer of white clay at 114.05, 100% recovery.									
115.20	115.80		Dark grey black clay, 100% recovery.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
115.80	118.70		Brown and black coal (clayey) broken, 30% recovery.	S-61	115.80	118.70	2.90	52.47	17.20	11.43	1.86	3922
118.70	123.30		No core, clay and clayey coal, 0 recovery (drillers marked clay on footage markers)									
123.30	124.50		Black coal silty, clayey, broken, 20% recovery.		(123.30	124.50	1.20)					
				S-63	(125.30	126.20	0.90)	56.41	16.40	10.69	3.17	3634
124.50	125.30		Clay and brown coal fragment mixture, 60:40, broken, 30% recovery.					30 cm of coaly clay excluded				
125.30	126.20		Brown banded coal with 30 cm of clay with coal fragments at 125.70 m, 80% recovery.									
126.20	126.70		Clay and coal bands and lenses, 50:50, 80% recovery.									
126.70	127.10		Brown banded coal, minor clay lenses, 100% recovery.	S-65	126.70	128.10	1.40	37.80	24.30	15.50	3.39	5436
127.10	127.30		Brown-grey clay, 100% recovery.					35 cm of clay excluded				
127.30	128.10		Brown banded coal with coaly clay at 127.60-126.80, 100% recovery.									
128.10	129.20		Grey clay with minor coal lenses and bands, 10 cm of brown coal at 128.20.									
129.20	130.10		Black coal with minor amber, 100% recovery.		(129.20	130.10	0.90)					
				S-66	(130.30	130.60	0.30)	35.42	21.30	16.41	2.57	5322
130.10	130.30		Grey clay with 40% black coal fragments and bands.									
130.30	130.60		Black coal (clayey), 100% recovery.									
130.60	132.30		Grey clay with 35% black coal fragments and bands, the largest band is 10 cm of banded black and brown coal with woody fragments at 131.70, 100% recovery.									
132.30	133.50		Black coal with minor (3%) brown coal bands at 80° and a 10 cm clay layer at 132.90 m, 80% recovery.	S-67	132.30	133.50	1.20	29.34	22.20	17.66	3.33	6188
								10 cm of clay excluded				
133.50	135.00		Interbanded grey clay and brown/black coal layers; the average clay layer 5 cm thick and contains 20% coal fragments; the average coal layer is 8 cm thick, 100% recovery; (clayey at 133.50-134.00)	S-68	133.50	135.00	1.50	48.26	19.00	12.32	2.85	4207

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-2

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSES (AIR DRY) % ASH	% EM	% RM	% S	Btu/lb
135.00	135.35		Black coal with 2 cm of grey clay with black coal fragments at 135.16 m, 100% recovery.									
135.35	136.25		Clayey black coal with thin bands of brown coal intermixed with bands of grey clay containing coal fragments; some amber is present; overall coal makes up 60-65% of section; 100% recovery.	S-70	(135.00	135.35	0.35)	36.30	20.60	16.42	4.43	5465
					(135.35	136.25	0.90)	38 cm of coaly clay excluded				
136.25	137.20		Grey clay with 10% coal bands and fragments; the bottom 3 cm is black because of more coal fragments; 100% recovery.									
137.20	137.50		Black coal with 5 cm of yellow brown mudstone with 2% coal bands in it at 137.30, 100% recovery.									
				S-71	137.20	138.42	1.22	47.27	19.00	11.98	2.97	4506
137.50	138.42		Interbands of black coal (25%) brown coal mixed with clay (65%) and grey clay with coal fragments (10%); average thickness for the three different bands is 3 cm, 5 cm and 2 cm respectively, 100% recovery.					15 cm of clay excluded				
138.42	139.33		Mostly grey clay with coal fragments grading into interbanded grey clay with thin brown coal bands, 100% recovery.									
139.33	139.64		Black coal, 100% recovery.									
139.64	139.79		Grey clay with 20% black coal fragments and brown coal bands, 100% recovery.	S-73	(139.33	139.64	0.31)	34.55	21.50	16.22	2.97	5777
					(139.79	140.40	0.61)					
139.79	140.40		Black coal with an 8 cm band of grey clay confaining 25% black coal fragments, 100% recovery.									
140.40	141.73		Mostly grey clay with 15% black coal fragments and a band of mixed brown coal and clay.									
			End of Hole									
			Casing Pulled									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-3

Sheet 1 of 14

PROPERTY	TP OR AREA	AZIMUTH	DATE STARTED	CORRECTED DIP TESTS			
Rock River Coal	95 D/11 N.E.	-	September 6, 1981	160 m	87°		
PROJECT	LOT & CONC.	DIP	DATE COMPLETED				
6205	-	90°	September 8, 1981				
CLAIM NO.	CO-ORDINATES.	LENGTH	DRILLED BY				
Licence # 118	M.G. 6,727,600 N	162.15 m.	Caron				
GRID NO.	597,317 E	COLLAR ELEV. 905 m.	LOGGED BY RS & PC				

LOCATION SKETCH OF HOLE

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % Ash	% E.M.	% R.M.	% S	Air Dry BTU/lb
			Casing to 25.13 m Reduced to NQ at 25.13 m. All casing pulled									
			NQ Core									
0	25.13		Overburden (drillers: 0-60 clay, 18.29 - 25.13 aquifer gravel)									
25.13	26.65		Dark grey organic rich clay, coal lenses 3mm x 15mm to 10mm x 40mm, coal stringers very thin throughout, small coal seam is 8cm wide at 25.52 and 10cm wide at 25.65.					Note:	Internal clay sections within sample intervals excluded as noted.			
26.65	29.11		Light grey blue clay with a very few small (2mm x 10mm) brown coal fragments.									
29.11	29.26		Coarse sand and clay mix with 3cm wide coal layer at 29.26. Unit is 75% clay 25% sand, 5% organic material.									
29.26	29.44		Banded brown coal-banding discontinuous with black and brown coal		29.26	29.44	0.18					
29.44	29.51		Grey brown organic rich clay - some small coal fragments.									
29.51	29.67		Discontinuously banded brown coal becoming more clay rich downward.		29.51	29.67	0.16					
29.67	29.87		Grey blue clay.	s - 34								
29.87	29.95		Organic rich silty clay with some fine sand-dark grey black.									
29.95	30.00		Grey blue clay - some silt and fine grained sand.									
30.00	30.05		Organic rich silty clay - dark grey black colour.									
30.05	30.23		Grey blue clay - some organic rich layers.									
30.23	30.30		Very organic rich layer - almost brown coal - 65% coal, 35% clay - dark brown with some black coal striners present.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
30.30	30.61		Grey clay with thin organic righ layers (up to 10mm thick) and some black coal stringers or fragments present.		30.61	30.78	0.17					
						Total	.51	39.33	21.8	17.39	0.84	5007
30.61	30.78		Low grade brown coal - 65 - 70% coal with remainder clay. Some black coal fragments.					6 cm of clay excluded from 30.61-30.78.				
30.78	31.24		Grey silty clay - some organics (10 - 20%) 80 - 90% silty clay.									
31.24	31.45		Brown coal with high clay content - clay 20 - 30%.									
31.45	31.70		Grey clay with dark grey-black stringers near 31.70 becoming more organic rich near 31.70.									
31.70	32.61		Light grey-blue clay - a few coal fragments near 31.70 - clay with silt near 32.61.									
32.61	33.83		Grey clay with some dark grey black stringers and bands at 32.9 and 33.2, becoming sandy near 33.83.									
33.83	34.95		Sandy grey clay with high organics (20 - 30%) numerous coal lenses and stringers throughout and fragments, 34.1 - 34.4 is very coarse sand with clay and organics - more organic rich near 34.98									
34.95	35.18		Brown coal with high clay content - 20 - 30%.		34.95	35.18	0.23					
35.18	35.66		Dark grey silty clay with some sand - coal stringers and fragments near 35.18.	S-35	36.62	37.19	0.57					
					38.86	40.23	1.37					
					40.54	41.15	0.61					
						Total	2.78	31.18	24.0	19.48	0.75	5653
35.66	35.87		Black coal with silt and sand laminations.					17.5 cm of clay excluded from 38.86 - 40.23.				
35.87	36.07		Grey clay with some organic material - some coal banding.									
36.07	36.20		Brown coal layer.									
36.20	36.40		Sandy silt (grey) 2.5 cm of black coal at 36.40.									
36.40	36.62		Silty clay with coal lenses and laminations at 36.47m.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
36.62	37.19		Black coal with brown coal bandings									
37.19	37.34		Brown banded coal with high clay content, approximately 50% coal and 50% clay.									
37.34	38.71		Grey blue clay with plant fragments and immature coal fragments, 10 cm coal at 38.40 m.									
38.71	38.86		Grey clay with high organic content, numerous coal laminations and thin bands									
38.86	40.23		Brown coal with high clay content, 5 cm of clay at 38.86 m, 2.5 cm clay at 39.12, and 10 cm clay at 39.62 m.									
40.23	40.39		Silty clay.									
40.39	40.54		Grey clay.									
40.54	41.15		Brown banded coal.									
41.15	41.76		Silty clay with some fine sand and coal fragments, poor core recovery, core broken and crushed.									
41.76	42.01		Black coal with numerous clay laminations, coal grading into approximately 70% clay near 42.01 m.									
42.01	42.52		Sandy silt with coal laminations and fragments.									
42.52	44.81		Grey clay with organic layers at 42.98 m - 4310 m. and 43.89 - 44.12 m.									
44.81	45.06		Grey clay with numerous coal lenses and laminations, (approximately 70% clay, 30% coal and organics).									
45.06	45.31		Grey clay with some coal fragments.									
45.31	45.41		70% clay 30% coal and organics.									
45.41	46.13		Grey clay with some coal fragments.									

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METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
46.13	47.70		70% clay 30% coal.									
47.70	49.38		(40% core recovery) grey clay with coal fragments and laminations at 47.85 m. grading into relatively pure clay at 49.38 m.									
49.38	50.44		50% core recovery, 30% coarse sand, 40% clay-silt, 30% coal bands and laminations.									
50.44	52.43		Organic rich grey clay with some coal fragments near 50.9.									
52.43	53.95		No core, drillers say interval was clay.									
53.95	55.47		Clay, 20% organic and minor coal fragments near 53.95 m; 54.56-54.86m - 20 - 30% organics with some coal laminations, rest clay.									
55.47	55.78		Some clay interbanded with brown coal; clay is minor with one thin band (approximately 2 cm) and few laminations.									
55.78	56.92		(20% recovery) organic clay approximately 80% clay, 20% organics and "poor" coal bands.									
56.92	57.15		Black coal (slightly broken core)		56.92	57.15	0.23					
					59.21	59.41	0.19					
57.15	60.50		Light to dark grey clay; 57.15 - 58.83 m. contains approximately 70% clay, 20% organic material, 10% coal lenses and laminations; 59.21 - 59.41 m. is brown coal; at 59.44 m-8 cm of 90% clay with 10% coal laminations; 59.74 - 60.20 m contains approximately 70% clay, 30% organic and coal lenses.		62.18	62.33	0.15					
				S - 41	64.82	65.35	0.53					
					67.00	67.97	0.97					
						Total	2.07	23.82	27.4	23.10	2.17	6291
								5 cm of clay excluded at 67.49.				
60.50	62.00		Light grey clay with minor organic material and some coal fragments; 95% clay.									
62.00	62.79		Banded grey clay and clayey brown coal; good brown coal from 62.18 m to 62.33 m, from 62.38 to 62.48 and from 62.59 to 62.74 m.									
62.79	63.70		Grey clay.									
63.70	64.01		Silty grey clay with minor sand and some coal laminations.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
64.01	64.13		Brown banded coal with 20 - 30% clay.									
64.13	64.31		Grey clay with minor coal laminations, 20% organics									
64.31	64.82		60% grey brown clay, 40% coal and organics; 3cm of black coal at 64.41; near 64.31 (top of interval) approximately 60% organics 10% coal, 30% clay.									
64.82	65.35		Black coal.									
65.35	65.48		Mostly clay with minor coal fragments.									
65.48	65.68		Black coal with 3 cm clay seam at 65.56 m.									
65.68	66.27		Organic rich coarse sandy clay with numerous small coal fragments.									
66.27	66.45		Relatively pure clay grading down into approximately 70% clay and 30% organics and coal laminations near 66.45.									
66.45	66.75		Black coal.									
66.75	66.88		Grey coarse sandy clay with minor coal fragments.									
66.88	67.00		Clay rich brown coal (approximately 50% clay and 50% coal).									
67.00	67.97		(Broken core) black coal; one 5cm seam of grey clay with coal fragments at 67.49 m.									
67.97	69.19		Organic rich clay (approximately 50% organics) mediumly interbedded with approximately 3 cm coal seams; coal seams at 68.38m, 68.43, 69.19.									
69.19	69.49		Brown banded coal with high clay content near 69.49 m.		69.19	69.49	0.30					
					70.10	70.41	0.31					
69.49	70.10		Mostly grey clay with coal laminations and organic rich layers		71.45	71.78	0.33					
			(80 - 90% clay).	S - 43	73.15	73.35	0.20					
					74.60	74.68	0.08					
70.10	70.41		Black coal.			Total	1.22	42.91	21.2	14.74	1.27	4796

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
70.41	71.45		Mostly grey clay with coal laminations throughout; 71.12 - 71.27 contains brown coal with 20 - 30% clay.									
71.45	71.78		Black coal.									
71.78	73.15		Mostly grey brown clay with small lenses of coal; 72.24 - 72.39 m highly broken core containing mostly coal fragments with clay; 72.85 - 72.95 m contains brown coal with approximately 30% clay content.									
73.15	73.35		Black coal.									
73.35	74.07		Mostly clay with some thin coal banding; 5 cm of brown coal at 74.07.									
74.07	74.60		Grey clay with 20% coal laminations and fragments.									
74.60	74.68		Brown coal.									
74.68	74.75		Coarse sand.									
74.75	78.18		Mostly grey clay, 76.35 - 76.61 m contains a fine sandy silt with some coal fragments; organic rich layers (30 - 40% organic) at 74.80 to 74.89 and 74.98 to 75.08.									
78.18	78.44		Black coal with brown coal bands and laminations.									
78.44	79.40		Interbanded brown coal and clay; approximately 80% clay, 20% coal-coal bands at 78.69 to 78.79 m and 79.10 to 79.15 m.									
79.40	80.47		Mostly brown coal with a rusty coal layer approximately 5cm thick at 79.63 m; 3 cm clay layer at 79.76 m; 79.93 to 79.98m approximately 50% coal and 50% clay mix.		79.40	80.47	1.07					
					82.30	83.92	1.62					
				S - 45	84.20	84.43	0.23					
					85.47	85.72	0.25					
80.47	81.99		Grey clay.			Total	3.17	36.19	23.2	16.84	1.39	5288
81.99	82.09		Interbanded grey clay and brown coal.					6 cm clay excluded from 79.76 - 79.98; 27 cm excluded from 82.30 - 83.92.				
82.09	82.30		Sandy silty clay.									

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82.30	83.92		Mostly brown coal with clay rich layers at 82.60 to 82.70, 83.01-83.08, 83.16 to 83.21, and 83.77 - 83.82 m.									
83.92	84.20		Grey clay.									
84.20	84.43		Brown banded coal									
84.43	84.53		60% brown coal, 40% clay.									
84.53	85.57		Mostly grey clay with 5cm brown coal at 84.73m and 25cm brown coal at 85.47m.									
85.57	89.92		Mostly grey clay, coarse sandy clay at 86.05 m (3cm), coarse sandy clay with numerous coal laminations at 86.44 (approximately 15cm thick); darker grey brown clay at 87.48 to 88.70 m containing minor coal lenses, bands and some fragments; 88.70 to 89.00 organic rich clay with numerous coal fragments and 5cm of brown coal at 89.00 m; 89.00 m to 89.31 coarse sand with coal fragments throughout and 8 cm of blackcoal at 89.61.									
89.92	90.04		Sandy organic rich clay.									
90.04	90.53		Black and brown coal		90.04	90.53	0.49					
					94.49	95.53	1.04					
90.53	94.49		Mostly grey brown clay with laminations of coal 50% clay 50% coal and organics; clay and organics occur together mediumly bedded in grey clay; 90.53 to 91.13 m - interbanded clay (80%) and coal (20%); 91.44 to 91.54 - brown banded coal; 92.35 to 92.40m - black coal; 92.40 to 92.51 - sandy clay; 5 cm of black coal at 92.53 and 13cm at 93.47 m.		95.78	96.32	0.54					
				S - 53	97.23	97.33	0.10					
						Total	2.17	38.82	22.1	18.31	1.27	
								10 cm clay excluded at 95.10 m.				
94.49	95.53		Brown banded coal, 10 cm of 60% clay, 40% coal at 95.10 m.									
95.53	95.78		Grey clay.									
95.78	96.32		Brown banded coal with 20 - 30% clay.									
96.32	96.49		Coarse sandy clay with 10-15% organics.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
96.49	96.77		Brown clay with 40% organics and coal lenses.									
96.77	97.13		Grey clay with 10% organics.									
97.13	97.23		Interbanded brown coal and clay bands approximately 5mm thick.									
97.23	97.33		Black coal.									
97.33	97.64		Coarse sandy clay with 10% coal laminations and stringers.									
97.64	97.87		Brown banded coal.									
97.87	99.52		Mostly grey clay (80 - 90%) with thin coal bands approximately 15cm apart. 5 cm black coal at 99.29.									
99.52	99.92		Black coal.		99.52	99.92	0.40					
					100.10	100.28	0.18					
99.92	100.10		Grey clay		101.86	101.96	0.10					
				S - 58	106.17	106.32	0.15					
100.10	100.28		Black coal.		109.12	109.27	0.15					
						Total	0.98	32.44	24.5	17.90	1.99	
100.28	100.38		Coarse sandy clay.									
100.38	101.60		Mostly grey clay with approximately 20 - 30% organics; 10% coal with 5cm black coal laminations at 101.50.					5 cm of clay excluded from 109.12 - 109.27.				
101.60	101.86		Grey clay.									
101.86	101.96		Black coal.									
101.96	105.77		Mostly grey clay with som coal fragments near 101.96. 102.72m- 20% organics, 10% coal, 70% clay. 103.63 - 10cm of interbanded clay (80%), coal 20%. 105.46 - 105.77m some coarse sand with 10% coal occurring as stringers and bands.									
105.77	106.17		Grey brown clay coal and organics; approximately 50% clay 30% coal, 20% organics.									
106.17	106.32		Black coal.									

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DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
106.32	106.58		Mostly clay with 30% coal lamination and thin bands.									
106.58	108.81		Grey clay becoming dark grey due to increasing organic content near 108.81m.									
108.81	109.88		Interbanded grey clay, brown coal, brown coal with clay laminations, banding approximately 5 mm thick.									
109.88	110.49		Grey clay.									
110.49	110.72		Brown coal and clay mixture - 20 - 30% clay.		110.49	110.72	0.23					
					112.95	113.18	0.23					
110.72	111.25		Grey-brown clay with approximately 10% coal laminations		123.34	123.44	0.10					
				S - 64	126.70	126.95	0.25					
111.25	111.66		Interbedded grey clay, brown coal, black coal; clay approximately 70%, brown coal approximately 10%, black coal 20%.			Total	0.81	54.79	16.20	10.33	1.90	
111.66	111.86		Grey clay.									
111.86	112.06		Fine sandy clay with 10% coal laminations.									
112.06	112.37		Interbedded brown coal and clay approximately 50% coal and 50% clay.									
112.37	112.95		Grey clay becoming organic rich near 112.95.									
112.95	113.18		Black coal (core broken)									
113.18	114.30		Mostly grey brown clay with coal laminations and organic rich layers; 15cm brown coal at 113.69m.									
114.30	115.82		90% grey clay, 5cm clayey brown coal at 115.21m and 115.52m.									
115.82	116.13		Grey sandy clay.									
116.13	116.51		Black organic rich clay with about 15% brown coal bands.									
116.51	117.04		Interbedded grey clay and black organic rich clay, beds approximately 8cm thick; about 10% brown coal bands in dark organic beds.									

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DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
117.04	117.35		Coarse sandy clay.									
117.35	117.65		Grey clay.									
117.65	118.06		Semi-indurated grey light brown sandstone with some coal fragments.									
118.06	118.72		Grey clay.									
118.72	120.40		Interbedded clay, black coal, brown coal, brown coal and clay; 8cm brown coal at 119.25; 5cm black coal at 120m and again at 120.24; coal occurs as bands, laminations and some lenses.									
120.40	122.07		Light grey brown clay.									
122.07	123.83		Interbedded organic rich clay, brown coal, and black coal; 10cm grey clay at 122.22 m and again at 123.14. Semi-indurated grey light brown sandstone from 123.19 to 123.34 m; sandstone contains numerous coal fragments; total interval contains approximately 70% clay, 10% sandstone and 20% coal; coal occurs as bands, lenses and laminations.									
123.83	126.70		Grey clay with scattered plant fragments.									
126.70	126.95		Black coal.									
126.95	127.41		Interbedded clay and black coal, 80% clay; coal occurs as irregular bands, laminations lenses and some fragments.									
127.41	128.63		Grey clay some coal fragments.									
128.63	129.44		Interbedded clay, brown coal, black coal; 8cm of semi-indurated sandstone at 129.24m; 80% clay, 5% sandstone, 15% coal and organics.									
129.44	131.37		Mostly grey clay; 129.54 to 129.84 fine sandy clay.									
131.37	131.75		Coarse sandy clay with irregular black coal bands; sand and clay approximately 60% coal approximately 40%.									

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METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
131.75	132.38		Light chocolate brown, slightly fetid organic clay.									
132.38	132.59		Grey clay.									
132.59	133.20		Light chocolate brown fetid clay.									
133.20	134.49		Grey clay with coal fragments up to 10cm, numerous small coal fragments with few large ones.									
134.49	137.16		Interbedded grey clay, grey-brown clay, black coal and brown coal; beds from approximately 2 - 10cm thick; clay approximately 75% coal approximately 25%.		135.18	135.31	0.13					
					136.25	136.35	0.10					
					138.56	138.76	0.20					
137.16	138.56		Grey clay with minor coal fragments with 5cm sandy clay layer at 137.54 m.	S - 72		Total	0.43	58.32	13.70	10.06	1.99	
138.56	138.76		Brown coal.									
138.76	139.07		Grey silty clay.									
139.07	139.29		Coarse sand with some clay.									
139.29	140.51		Grey clay with one 20 cm irregular coal fragment; organic rich layer (approximately 45% organic) from 139.90 to 140.20.									
140.51	141.20		Interbanded clay and brown coal; 5cm brown coal at 140.97; 70% clay.		140.97	141.02	0.05					
					150.77	151.18	0.41					
141.20	144.65		Grey clay with 18 cm of coarse sand at 142.34 m.	S - 74		Total	0.46	71.43	10.3	6.69	2.02	
144.65	144.88		Interbanded clay and black coal; 80% clay, 20% coal bands and lenses.									
144.88	145.39		Grey clay.									
145.39	145.54		Brown coal with about 40% clay mix.									
145.54	146.91		Grey clay.									

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METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
146.91	147.12		Dark grey clay with coal stringers and organics; 90% clay 10% coal and organics.									
147.12	147.37		Grey clay									
147.37	147.68		Grey clay interbanded with brown coal. (coal contains about 60% clay)									
147.68	148.23		Grey clay.									
148.23	148.82		Interbanded grey clay and coaly clay; coal occurs as lenses, laminations and bands. Total Clay approximately 80%									
148.82	149.17		Grey clay with plant fragments and few coal laminations.									
149.17	149.66		Brown coal and clay mix (approximate 50% coal and 50% clay)									
149.66	150.11		Grey clay with minor dark organic laminations.									
150.11	150.77		Brown clay (high oranics); 8cm of clayey coal at 150.37m.									
150.77	151.18		Brown banded coal.									
151.18	152.58		Grey clay; 5cm brown coal seam at 151.49; clay becomes darker with minor coal near bottom of interval.									
152.58	152.70		Brown banded coal									
152.70	152.78		Grey clay with coal fragments.									
152.78	152.86		Brown banded coal.									
152.86	153.01		Coarse sandy clay.									
153.01	154.84		Interbanded grey clay, brown banded coal and black banded coal; 153.44 - 153.52m, 153.62 to 153.75 m and 154.00 - 154.20m contain brown coal.		153.31	153.92	0.61					
					154.84	155.40	0.56					
					157.81	157.90	0.09					
				S - 75	158.19	158.50	0.31					
154.84	155.40		Brown banded coal, banding at 90° to core axis			Total	1.57	38.59	19.60	16.85	2.41	

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METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
155.40	156.87		Grey clay grading into organic rich clay with minor coal bands near bottom of interval.									
156.87	157.02		Brown banded coal									
157.02	157.28		Grey brown clay.									
157.28	157.35		Brown banded coal.									
157.35	157.81		Grey clay with coal stringers.									
157.81	157.90		Brown banded coal.									
157.90	157.99		Grey clay.									
157.99	158.09		Brown banded coal.									
158.09	158.19		Sand clay.									
158.19	158.50		Brown banded coal.									
158.50	159.41		Grey clay with some coal fragments.									
159.41	159.61		Brown coal-clay mix 50% coal 50% clay.									
159.61	159.71		Coarse sand.									
159.71	159.92		Fine sandy clay.									
159.92	160.15		Grey clay.									
160.15	160.22		Organic clay some thin coal bands.									
160.22	160.27		Grey clay.									
160.27	160.32		Brown coal.									
160.32	160.73		Grey clay with numerous coal laminations approximately 70% clay 30% coal.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-3

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
160.73	162.15		Grey clay.									
			END OF HOLE 3									

CORE RECOVERY

Interval	%	Interval	%
25.13 - 26.52	100	131.67 - 140.81	100
26.52 - 28.04	50	140.81 - 142.34	75
28.04 - 29.26	100	142.34 - 143.86	100
29.26 - 30.78	100	143.86 - 146.91	80
30.78 - 32.31	95	146.91 - 154.53	100
32.31 - 34.14	90	154.53 - 156.05	70
34.14 - 35.66	90	156.05 - 162.15	100
35.66 - 37.19	90		
37.19 - 38.71	75		
38.71 - 41.76	80		
41.76 - 46.32	100		
46.32 - 47.85	80		
47.85 - 49.38	40		
49.38 - 50.90	60		
50.90 - 52.42	40		
52.42 - 55.47	0		
55.47 - 58.52	80		
58.52 - 64.62	100		
64.62 - 66.14	90		
66.14 - 67.66	80		
67.66 - 69.19	50		
69.19 - 70.71	95		
70.71 - 79.86	100		
79.86 - 84.43	90		
84.43 - 95.10	100		
95.10 - 96.62	90		
96.62 - 107.29	100		
107.29 - 108.81	90		
108.81 - 116.43	100		
116.43 - 117.96	90		
117.96 - 130.15	100		
130.15 - 131.67	86		

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

PROPERTY: Rock River Coal	TP OR AREA: 95 D/11 N.E.	AZIMUTH: -	DATE STARTED: September 10, 1981	CORRECTED DIP TESTS: 135 m 87°
PROJECT: 6205	LOT & CONC.: -	DIP: 90°	DATE COMPLETED: September 12, 1981	
CLAIM NO.: Licence #118	CO-ORDINATES. M.G.: 6,731,162 N	LENGTH: 163.25 m	DRILLED BY: Caron Drilling	
GRID NO.:	597,320 E	COLLAR ELEV.: 855 m	LOGGED BY: R.S. & JCH	

LOCATION SKETCH OF HOLE

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % Ash	% E.M.	% R.M.	% S	Air Dry BTU/lb
			Casing to 12.80 All casing pulled. HQ core									
12.80	18.90		Quaternary section - Gravel and pebbles, some clay and pebbles pale green sandy clay. Some coal float in gravels - mixed provenance.									
18.90	24.99		80% pebbly green clay 20% sandy clay with cobbles and sandy clay. Base of Quaternary section.									
24.99	39.34		Grey clay with coal partings and thin coal beds.									
			25.12 - 25.43 Brown coaly clay.									
			25.43 - 26.34 5% small coal fragments in clay.									
			26.85 - 1 cm coal seam.									
			27.08 - 27.28 Coaly clay.									
			27.28 - 27.43 Grey clay.									
			27.43 - 27.71 Coaly brown clay.									
			27.71 - 27.81 Grey brown clay.									
			27.81 - 27.89 Dark brown organic clay.									
			27.89 - 27.97 Black coal.									
			27.97 - 28.22 Dark brown coaly clay with black coal fragments. 1" grey clay layer.									
			28.22 - 28.45 Grey clay or pale brown clay - 5% coal fragments.									

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DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
			28.45 - 28.63 Coal gravel in clay.									
			28.63 - 29.16 Brown coaly clay with disrupted coal partings.									
			29.16 - 29.31 Wet grey clay - minor brown laminea (5 - 10%).									
			29.31 - 29.41 Mottled brown and grey clay; 3% fine coal fragments									
			29.41 - 29.89 Grey blue clay.									
			29.89 - 30.10 Brown coaly clay.									
			30.10 - 30.33 Grey clay - thin discontinuous brown clay partings.									
			30.33 - 30.56 Mottled brown and grey clay - 5% coal fragments and partings.									
			30.56 - 30.71 Dark brown coaly clay;									
			30.71 - 30.89 Grey to brown clay - top 5cm is brown clay.									
			30.89 - 30.91 Black coal.									
			30.91 - 31.09 Brown coaly clay grading into grey clay at 31.09.									
			31.09 - 31.24 Cobbly sandy clay with 10% black coal fragments. Clastic cobbles-very wet horizon.									
			31.24 - 31.55 Core lost.									
			31.55 - 31.70 Mottled brown and black coaly clay.									
			31.70 - 31.98 Grey clay with 5% disrupted black coal laminations - a few larger fragments of brown coal.									
			31.98 - 32.03 Grey brown clay with pebble size fragments of black coal (5 to 10%).									

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DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
			32.03 - 32.31 Damp grey clay (well compacted) with coal fragments up to 5cm.									
			32.31 - 32.49 Dry brown clay.									
			32.49 - 32.61 Wet sandy clay with disrupted coal partings up to 1cm thick.									
			32.61 - 32.82 Mottled yellow and grey clay and silt (dry).									
			32.82 - 33.38 Grey clay grading to brown clay near 33.38.									
			33.38 - 33.50 Dark brown coaly clay with 5% black coal fragments up to 1cm; some amber pellets (approximately 2mm).									
			33.50 - 33.63 Dry compacted grey clay.									
			33.63 - 33.88 Dry crumbly mottled pale brown grey organic clay- 1 cm; thick brown silty coal seam at 33.88.									
			33.88 - 34.09 Brown silty clay grading to grey silty clay down section.									
			34.09 - 35.66 Grey blue clay- 5% coal fragments at 34.42. 35.00 - 35.05 - sandy clay; 35.26 - brown woody fragments 35.28 - 35.36 - brown coaly organic laminae.									
			35.66 - 36.30 Organic silt becoming clayey downwards (approximately 50% organic clay, 50% silt).									
			36.30 - 36.83 Greenish grey clay grading to brownish grey silty clay - a few coal laminea near 36.83.									
			36.83 - 37.19 Brownish green compacted sandstone; 2 small beds of sandstone with brown organic silt between.									
			37.19 - 37.64 Lost core.									

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			37.64 - 38.86 Mostly varicoloured pale brown and grey silty clay									
			38.86 - 39.34 Greenish pale grey clay grading to off white clay - sharp contact at 39.34.									
39.34	43.98		Predominantly grey blue clay.									
			39.34 - 39.57 Dark brown organic silt grading to sandy silt.									
			39.57 - 41.70 Greenish grey silt. Some pale brown clay partings (approximately 10%)									
			41.70 - 41.88 Dark grey brown silt.									
			41.88 - 43.89 Pale grey silty clay.									
43.89	44.12		Dull green sandstone - moderately well indurated.									
44.12	46.25		Pale grey to greenish grey, silty clay. 45.29 - Coal parting approximately 1 mm. 45.41 - Coal parting approximately 1 mm.									
46.25	48.01		Interlaminated silty clay (grey and brown) with 10% coal laminations and 5% woody material; 48.01 - 3 cm thick coal seam.									
48.01	51.44		Mediumly interbedded (up to 30 cm) of alternating greenish grey silt and greenish grey clay and brown silt. 48.77 - Coaly laminations (8 cm). 50.90 - Silty coal bed (5 cm).									
51.44	56.54		Thin to medium bedded brown organic silt, brown coal, grey silty clay, minor grey sand, minor black coal.									
			51.46 - 51.64 Brown coal. 51.76 - 52.02 Brown to dark brown coal. 52.20 - 52.43 Silty brown coal. 52.43 - 53.54 Black coal. Core angle 90° 56.39 - 56.46 Brown coal.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
56.54	61.57		Medium to thickly bedded grey to pale brown silty clay; minor brown woody coal; core angle 85°.									
			59.18 - 59.31 Brown silty woody coal.									
61.57	62.69		Brown (partly woody) silt with fine organic material.									
			61.62 - 61.93 Silty coal.									
62.69	63.80		Greenish grey clay, medium bedded, minor brown silt beds grading to pale grey brown silt.									
63.80	65.23		Interbedded brown silt and silty brown coal, minor black coal.									
			63.93 - 64.03 Brown coal, minor amber pellets.									
			64.03 - 64.34 Brown silty coal with 1 - 2½% amber pellets.									
			64.54 - 64.62 Black coal.									
			64.77 - 64.85 Black coal.									
65.23	66.14		Grey clay; a few gravel size fragments of black coal near 66.14; core angle 80°.									
66.14	66.65		Compacted green fine sandstone.									
66.65	67.59		Grey clay grading to grey brown organic silt and grey brown sand at 67.59.									
67.59	68.07		Coarse grey sand with clastic coal fragments; (approximately 15%) of coarse sand to fine pebble size.									
68.07	68.96		Mediumly interbedded brown clay with lesser brown to black poor quality coal.									
			68.30 - 68.38 Coal seam.									
			68.53 - 68.60 Coal seam.									
			68.83 - 68.88 Coal seam.	S-44	68.83	68.88	0.05					
68.96	70.51		Medium to thickly bedded blue grey clay interbedded with thin brown clay and brown coal.	S-44		(Cont'd.)						
			70.14 - 70.28 Brown coal with 20% clay.									
70.51	70.79		Black coal with 10% clay intercalations.		70.51	70.79	0.28					

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
70.79	75.54		Mostly grey blue clay; top 20 cm of brown highly organic clay; organic content decreasing down section to 73.76; sharp contact between blue; brown clay and grey blue clay; section contains laminations of grey brown clay with minor wood fragments in lower section; core angle 90°.									
			72.24 - 73.61 Zero core recovery.									
75.54	78.26		Mediumly interbedded brown to dark brown clay with 25% grey clay.									
			77.04 - Coal laminations.									
			77.47 - 77.52 Brown coaly clay.									
			77.90 - Black coal laminations.									
78.26	78.64		Thinly interbedded black coal and 70% clay.		78.26	78.64	0.38					
				S-44		Total	0.71	43.74	21.2	14.37	3.01	4685
78.64	80.03		Mediumly Interbedded brown to dark brown organic clays and lesser grey clay (25%); core angle 80°.									
80.03	80.16		Green grey silty sand grading down into a brown silty coal.									
80.16	83.06		Medium to thickly interbedded grey clay, and highly organic dark brown coal (with less than 15% clay).									
			80.67 - 80.80 Brown banded coal.	S-46	80.67	80.80	0.13					
			80.00 - 81.08 Brown banded coal.		81.00	81.08	0.08					
			81.89 - 82.24 Brown and black laminated coal; core angle 85 - 90°		81.89	82.24	0.35					
					83.52	84.43	0.91					
83.06	92.38		Mediumly interbedded grey blue clays, organic rich coaly clays and brown mottled clays; clays becoming coarser (to sand size) downward; 60% grey blue clay, 25% clayey coal 15% brown organic clay, minor brown coal and black coal (approximately 5% coal); core angle 90°.		95.24	85.95	0.71					
						Total	2.18	46.08	22.3	14.34	2.56	44 95
			83.52 - 84.43 60% laminated brown coal.									
			85.24 - 85.95 60% brown coal, 10% black coal.									
			86.97 - 87.17 Black coal seam.									
			87.33 - 87.61 Brown woody coal; core angle 90°	S-50	86.97	87.17	0.20					
			87.81 - 87.88 Brown woody coal with 20% pebble size flattenedclay clasts.									
			90.07 - 90.14 Brown coal.		90.07	90.14	0.07					

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
			91.39 - 91.54 Clayey brown coal.	S-50	(Cont'd.)							
			91.11 - 91.24 Brown coal.									
			91.90 - 92.05 Clayey brown coal; core angle approximately 90°		91.11	91.24	0.13					
92.38	92.79		Mildly indurated coarse sandstone with 10% coal partings; mottled brown and dull green.									
92.79	101.86		40% brown clay, 25% grey blue clay, 35% brown coals. Mediumly bedded - 40 -60 cm.									
			94.34 - 94.51 Laminated brown coal.		94.34	94.51	0.17					
			94.72 - 94.84 Brown and black laminated coal.		94.72	94.84	0.12					
			95.00 - 95.43 80% clayey coal, 20% brown coal.			Total	0.69	63.25	14.0	10.11	2.32	-
			95.99 - 96.09 Brown coal with 10% clay intercalations.	S-55	95.00	95.24	0.24					
					95.99	96.09	0.10					
			96.22 - 96.26 Brown coal.									
			97.08 - 97.21 Brown coal.									
			98.07 - 98.40 Brown laminated coal.		98.07	98.40	0.33					
			98.98 - 99.29 Brown laminated coal.		98.98	99.29	0.31					
			99.65 - 99.90 Brown laminated coal. Core ange 90°		99.65	99.90	0.25					
			100.61 - 100.71 Brown laminated coal.			Total	1.23	52.07	21.2	13.64	2.68	-
			101.27 - 101.76 Brown laminated coal.									
101.86	105.21		85% green clay, minor grey clay, minor well indurated sandstone; core angle 90°									
			102.67 - 102.95 Sandstone marker bed (30 cm).									
			101.50 - 8cm brown laminated coal seam.									
105.21	113.29		Mediumly interbedded grey blue clay; 60% grey blue clay, 20% brown laminated coal, 20% brown organic clays.									
			105.21 - 106.02 Coal interbedded with clayey coal.	S-59	105.21	106.02	0.81					
			106.60 - 106.70 Black coal with minor amber pellets.		106.60	106.70	0.10					
			106.83 - 107.34 Brown coal with minor amber pellets.		106.83	107.34	0.51					
			107.57 - 107.95 Highly clayey coal, minor brown coal.									
			109.96 - 110.26 Clayey black coal (10 to 20% clay).		109.96	110.26	0.30					
			110.39 - 110.69 Brown laminated coal 20% thin interbeds of brown clayey coal.		110.39	110.69	0.30					
						Total	2.02	57.59	25.2	11.90	2.07	-
113.29	114.91		Good brown laminated coal scattered amber pellets less than 1%	S-62	113.29	114.91	1.62					

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
114.91	118.16		90% grey blue clay, 10% coal (insignificant coal beds).									
			117.42 - 117.65 Clayey brown laminated coal (15% clay, 85% coal).	S-62	(Cont'd.)							
118.16	120.40		70% brown laminated clayey coal; 30% brown laminated coal with less than 1% scattered amber pellets.		118.16	120.40	2.24					
						Total	3.86	47.56	21.7	14.40	2.53	-
120.40	126.26		80% grey blue silt grading to fine sand; 20% organic rich sand and sandstone, (moderately indurated), minor coarse organic rich pebbly sand; core angle 80°.									
			123.75 - 123.90 Pebbly sand.									
			125.73 - 125.88 Clayey black coal (10% clay).									
126.26	129.59		40% brown laminated coal, 40% brown laminated clayey coal, 70% grey blue clay - medium bedded.									
			126.29 - 126.74 Brown laminated coal.	S-69	126.29	126.74	0.45					
			126.85 - 126.97 Brown laminated coal.		126.85	126.97	0.12					
			128.63 - 128.98 Brown clayey coal with 5cm of good brown coal at 128.63.									
129.59	132.18		60% grey blue clay, 30% brown clay, 10% organic rich clay with minor brown coal; thinly interbedded units.									
132.18	133.40		70% brown laminated coal with minor (2 to 3%) amber pellets, 70% clayey coal, 10% grey blue clay.									
			132.18 - 132.28 Brown coal.		132.18	132.28	0.10					
			132.61 - 133.20 Brown laminated coal with amber pellets.		132.61	133.20	0.59					
133.40	136.25		60% grey clay (with 10% coal fragments) 35% grey blue clay (no inclusions, 10% brown laminated coal; clay content increases from 133.40 to 134.01 (at the expense of organics); the decreasing clay (and increasing organics) from 134.70 to 135.00; core angle 90°.									
			135.41 to 135.64 brown coal with scattered amber pellets.		135.41	135.64	0.23					
						Total	1.49	45.24	19.60	15.87	1.43	4397
			135.64 - 136.25 - organic rich clay.									
	136.25		END OF HOLE									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. RR-81-4

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
			CORE RECOVERY									
			20.4 - 22.0 - 40%									
			22.0 - 23.5 - 100%									
			23.4 - 25.0 - 90%									
			25.0 - 26.5 - 100%									
			26.5 - 28.0 - 95%									
			28.0 - 31.1 - 100%									
			31.1 - 32.6 - 80%									
			32.6 - 37.2 - 100%									
			37.2 - 38.7 - 60%									
			38.7 - 40.2 - 100%									
			40.2 - 41.8 - 60%									
			41.8 - 49.4 - 100%									
			49.4 - 50.9 - 90%									
			50.9 - 57.0 - 100%									
			57.0 - 60.0 - 70%									
			60.0 - 70.7 - 100%									
			70.7 - 72.2 - 50%									
			72.2 - 73.8 - 10%									
			73.8 - 134.7 - 100%									
			134.7 - 136.2 - 65%									

SULPETRO MINERALS LIMITED

DRILL LOG

HOLE NO. H-RR-81-5

PROPERTY	TP OR AREA	AZIMUTH	DATE STARTED	CORRECTED DIP TESTS			
Rock River Coal	95D/11 N.E.	-	September 13, 1981	120m	-85°		
PROJECT	LOT & CONC.	DIP	DATE COMPLETED				
6205	-	90°	September 15, 1981				
CLAIM NO.	CO-ORDINATES. M.G.	LENGTH	DRILLED BY				
Licence 118	6,730,120 N	122.53 m	Caron				
GRID NO.	596,285 E.	COLLAR ELEV. 825 m	LOGGED BY - JCH and RS				

LOCATION SKETCH OF HOLE

METRES FROM	METRES TO	SECTION 1"=	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS
			Casing to 8.23 m Reduced to NQ at 69.19 m.					
			Casing and HQ core barrel stuck in hole.					
			Drill winterized on site.					
0	8.23		Overburden.					
8.23	14.32		Recent stream gravels and cobbles, 10% coal fragments inbedded in clay.					
14.32	17.76		Massive bedded fine sand (20% silty beds) - coaly laminations in silt beds					
17.76	18.11		Thin bedded organic clay with black coal fragments interbedded with grey clay; core angle 70°.					
18.11	35.91		Dull brown massive bedded silt and clayey silt; coaly laminations at 18.4, 20.5, 20.8, 22.3, 23.9, and 28.8.					
35.91	37.65		Silt with 5% black coal fragments up to 1 cm; brown organic silts; 2 - 3 cm bands of yellow brown silty clay; core angle 70°. (36.25) - brown sandstone cobble on clay band. (36.40) - thin clay band. Colour of cobble similar to that in holes 1 to 4.					
37.65	49.15		Thick to massive brown to dull brown organic silts, sands and clayey silts; common mm to cm sized coal fragments down to 44.8 m; grain size fines downward. (43.4) - possible concretionary sandstone.					
49.15	49.63		Grey blue clay; (49.2) - 1 cm. thick black coal seam.					
49.63	53.24		Brown to dark brown silts and organic silts; minor brown coal and coal laminations; 20% organic silts; core angle 70°. (51.3 - 51.4) - Low grade brown coal. (51.6 - 51.7) - Dull black coal.					

SULPETRO MINERALS LIMITED

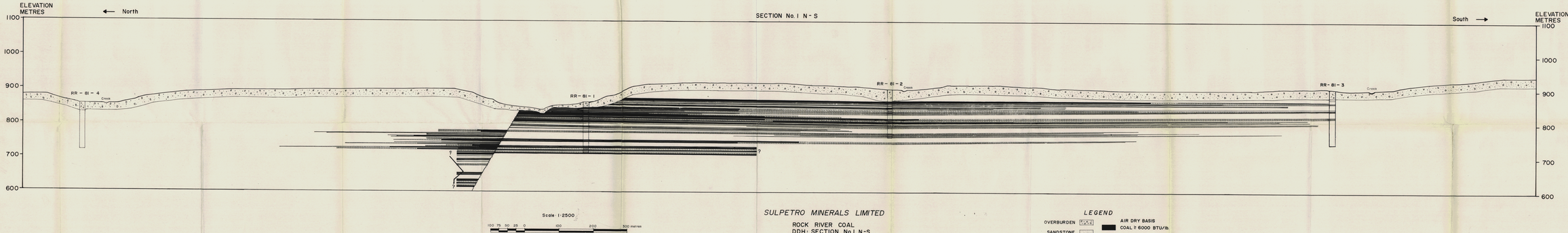
DRILL LOG HOLE NO. H-RR-81-5

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
			(51.7 - 52.1)- Organic silt (hard and brown).									
53.24	55.11		Grey silt massive bedded; on upper contact is 8 cm of coarse pebbly sand and transported coal fragments (up to 2cm.) Bottom contact marked by buff brown pebbly silt (2cm thick); core angle 80°.									
55.11	60.04		Brown organic sand and coaly laminated sand grading down into pale brown silt; core angle 80°. (56.1 - 57.0) Dominanty coaly sand.									
60.04	60.20		Unconsolidated pebbly sand; mixed clastic provenance.									
60.20	62.33		Brown silt and siltstone; organic content decreases down hole; colour from dull grey brown to grey; core angle 80°. (60.29) - black coal (possible cobble) with other black coal fragments up to 2 cm around the cobble. (61.18 - 61.67) - Mildly indurated siltstone; core angle 80°.									
62.33	67.66		Massive bedded grey brown fine sand and silt. 62.73 - mildly indurated sandstone. (62.94) - mildly indurated sandstone.									
			Sequence coarsens downward.									
			(66.4 - 67.66) - Coarse grey sand.									
67.66	69.19		Gravel and sandy gravel; high core loss; core reduced to NQ size; possible overburden gravels introduced during change of core size.									
69.19	75.28		Grey or brown sand with dastic coal fines in laminations; core angle 70°.									
75.28	84.12		Massive bedded grey brown silt - 20% fine sand beds.									
84.12	91.92		Massive bedded grey sand. (85.9 - 89.0) - 100% core loss.									
91.92	95.10		Sand with brown coal laminations; coal laminations decreasing down hole; core angle 80°. (91.4 - 95.0) - 2% coal fines - discontinuous clastic coal laminae - gradatinal lower contact.									

SULPETRO MINERALS LIMITED

DRILL LOG HOLE NO. H-RR-81-5

METRES FROM	METRES TO	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ANALYSIS % ASH	% E.M.	% R.M.	% S	Air Dry BTu/lb.
95.10	98.60		Massive bedded grey brown silt.									
98.60	99.97		Fine brown sand with discontinuous clastic coal fines (laminea).									
99.97	118.87		Massive bedded non-indurated to mildly indurated brown silt and fine sand - dark brown, core angle 70°.									
118.87	122.53		Fine grey brown sand - discontinuous coal laminations; core angle 65°.									
	122.53		Bottom Of Hole.									
			Core Recovery									
			14.3 - 15.8m 70%									
			15.8 - 18.9m 100%									
			18.9 - 20.4m 70%									
			20.4 - 21.9m 45%									
			21.9 - 23.5m 70%									
			23.5 - 25.0m 100%									
			25.0 - 26.5m 30%									
			26.5 - 28.0m 20%									
			28.0 - 66.1m 100%									
			66.1 - 67.7m 15%									
			67.7 - 69.2m 30%									
			69.2 - 70.7m 50%									
			70.7 - 72.2m 35%									
			72.2 - 73.8m 30%									
			73.8 - 75.3m 70%									
			75.3 - 76.8m 100%									
			76.8 - 78.3m 90%									
			78.3 - 84.4m 100%									
			84.4 - 86.0m 50%									
			86.0 - 89.0m 0%									
			89.0 - 90.5m 60%									
			90.5 - 92.0m 50%									
			92.0 - 105.8m 100%									
			105.8 - 107.3m 95%									
			107.3 - 108.8m 90%									
			108.8 - 122.5m 100%									



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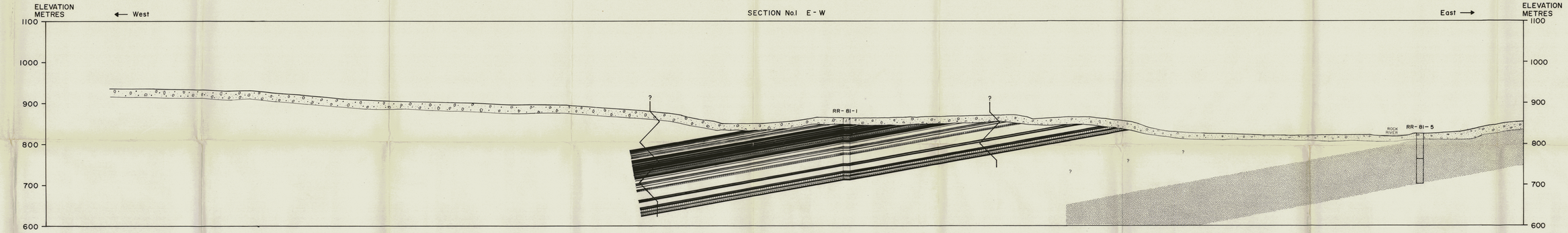
ROCK RIVER COAL
DDH: SECTION No. I N-S

PROJECT No. 6205
NTS. 95 D/11
FIGURE No. 4
To accompany drilling report dated May 26, 1982
by D.C. Miller, P.Eng.

LEGEND

OVERBURDEN
SANDSTONE
CLAY

AIR DRY BASIS
COAL ≥ 6000 BTU/lb.
COAL 5000 - 6000 BTU/lb.



Scale 1:2500

100 75 50 25 0 100 200 300 metres

SULPETRO MINERALS LIMITED

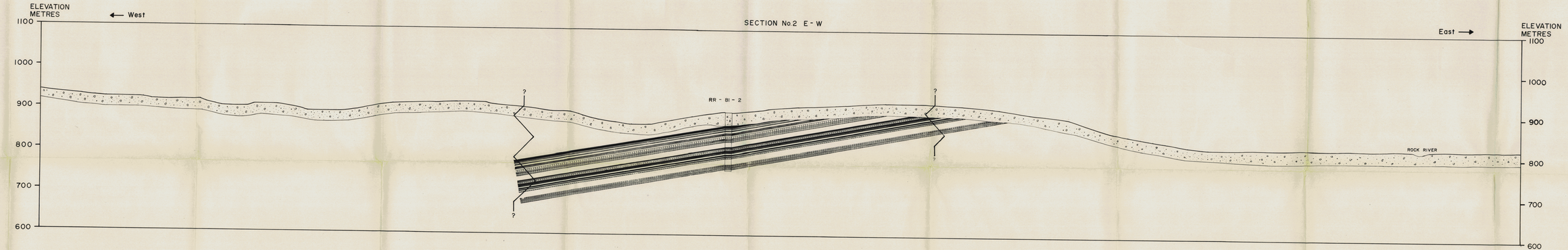
ROCK RIVER COAL
DDH: SECTION No.1 E - W
PROJECT No. 6205
NTS. 95 D/11
FIGURE No. 5

To accompany drilling report dated May 26, 1982 by D.C. Miller, P. Eng.

LEGEND

OVERBURDEN
SANDSTONE
CLAY

AIR DRY BASIS
COAL ≥ 6000 BTU/lb.
COAL 5000 - 6000 BTU/lb.



Scale - 1:2500

100 75 50 25 0 100 200 300 metres

SULPETRO MINERALS LIMITED

ROCK RIVER COAL
DDH: SECTION No.2 E - W

PROJECT No. 6205
NTS. 95 D/11
FIGURE No. 6

To accompany drilling report dated May 26,1982
by D.C.Miller, P.Eng.

LEGEND

OVERBURDEN
SANDSTONE
CLAY

AIR DRY BASIS
COAL ≥ 6000 BTU/lb.
COAL 5000 - 6000 BTU/lb.

RR-81-4

RR-81-1

RR-81-2

RR-81-3

RR-81-5

6,731,000 N

6,730,000 N

6,729,000 N

6,728,000 N

6,727,000 N

60°40'00" N

127°15'00" W

596,000 E

597,000 E

598,000 E

599,000 E

Section No.1 N-S

Section No.1 E-W

Section No.2 E-W

Section No.1 E-W

Section No.2 E-W

Section No.1 N-S

DOWN

UP

10°

?

?

?

ROCK RIVER

N

200 100 0 500 Metres

SCALE

INDEX MAP
Scale: 1:250,000 10km

LIC.122

LIC.121

LIC.118

LIC.117

No.1 Deposit

SULPETRO MINERALS LIMITED
KAMLOOPS, B.C.

ROCK RIVER No.1 DEPOSIT
DRILL HOLE LOCATION AND INTERPRETED COAL SUBCROP

— LEGEND —

AIR DRY BASIS

Coal (>6000 Btu / lb.)

Coal (5000-6000 Btu / lb.)

COAL BEDS HAVE BEEN PLOTTED ASSUMING 25 METRES OF QUATERNARY OVERBURDEN.

— SYMBOLS —

☆ 1981 Drill hole location.

..... Top of known Tertiary section

Beds dip 10° west.

GEOLOGY by : JCH	SCALE : 1:10,000
DRAWN by : JCH	NTS : 95 D/11
DATE : Dec.16, 1981	FIGURE : 3

To accompany drilling report dated May 26, 1982 by D.C. Miller, P.Eng.