PR ~~Selco~~ Rocky Creek 84(1-4)A

BP RESOURCES CANADA LIMITED

SELCO DIVISION

ROCKY CREEK COAL PROPERTY

TERRACE HILL BLOCK

1984 EXPLORATION REPORT

GEOLOGY AND COAL RESERVES 00621

CONSULTANT:

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AUTHOR:

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GEOLOGICAL BRAN
ASSESSMENT REPO

00 62

OWNER:

B.P. Resources Canada Ltd.
Selco Division

COAL LICENCES:

4030 & 4031
Licence Group 332
(licence 4029 dropped Dec. 1984)

PEACE RIVER LAND DISTRICT

NTS 93P/4

LATITUDE: 55^{0} 15', LONGITUDE: 121^{0} 45'
121° 44' BP.

November 8, 1984

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1.0 INTRODUCTION

This report provides the documentation for the exploration program completed on a 3 licence block (licence Nos. 4029, 4030 and 4031) called Terrace Hill and forming a part of the widely scattered Rocky Creek Coal Property located southeast of Chetwynd, B. C. The program was authorized by J. A. Irvine on 29 August, 1984 on Selco Inc. Purchase Order 1083. The program commenced on September 3, 1984, with all field related activities completed on 20 September. The program budget was closely keyed to the annual work requirements of the B. C. Ministry of Mines & Petroleum Resources, and consisted of surface mapping, hand trenching and EM16R Resistivity Surveys.

2.0 THE PROPERTY

2.1 History

The three coal licences, 4029, 4030 and 4031, were initially licenced in 1978 by Master Exploration and acquired by B. P. in 1980. The most recent work on the property consisted of two traverses and a single drill hole as documented in the 1981 Rocky Creek report. Licences 4029, 4030 and 4031 contain about 885 ha. and require $39,489.36 work requirements at the anniversary date of 31 December, 1984.

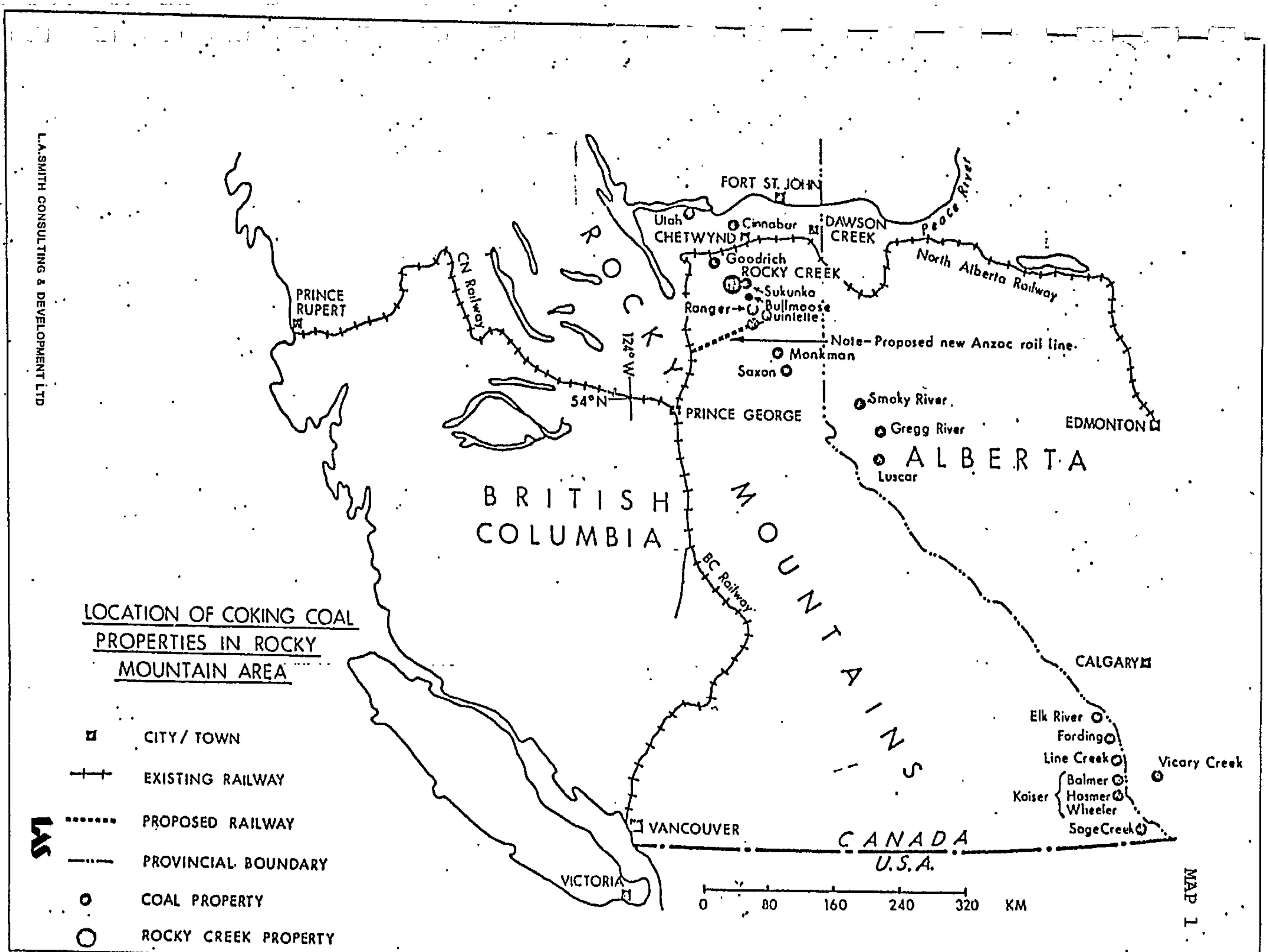
2.2 Physiography of Terrace Hill

The Terrace Hill property lies immediately west of and adjoining the Sukunka coal property, but physically separated by the Sukunka River Valley. The surface elevation varies from 650m in the river valley to 1,450m at the highest peak on the property. The property is characterized by glacially rounded slopes with locally outcropping sandstone units that form near vertical to over-hanging cliffs. The sandstones are relatively flat lying and ring the mountain, therefore these vertical cliffs are often very extensive. The numerous sandstone and conglomerate units in the Upper Jurassic and Lower Cretaceous has resulted in a terraced effect on the south and east flanks of Terrace Hill.

Glacial overburden is generally thin and varies from 0 to a maximum of about 10m (estimated) but is commonly 1 to 2 metres thick. The entire hill is forested with evergreens (spruce and pine) except for low lying swampy areas that are flat, open, grassy and very wet.

2.3 Access

The property cannot be accessed by vehicle at present, thus a Bell 206B helicopter was used to transport men and equipment to the property from Chetwynd. A very old fire



MAP 1

SOURCE: BP Rocky Creek Report, 1981

2.3 Access (cont'd)

access road up the south flank was used for a 1972(?) drill hole put in by Brameda Resources. In 1981 or 1982 a fire on the north flank of the mountain necessitated re-opening of the old fire access road and construction of a bush trail through the centre of the property. This road proved to be extremely useful for local access. With major improvements it will provide a very good transport system for future drilling programs.

3.0 THE 1984 EXPLORATION PROGRAM

3.1 Program Objectives

The 1984 exploration program was planned to achieve the following:

i) collect all available outcrop, structural and stratigraphic data,

ii) trench all known coal occurrences, log the coal seams, sample and analyse the coal samples,

iii) utilize EM16R Resistivity Survey to locate the coal zones in covered terrain,

iv) interpret the geology and coal development and provide an estimation of coal reserves and mining ratios on each coal licence.

3.3 The Program

3.3.1 General

The program was planned and managed by L. A. Smith Consulting & Development, Ltd. of Calgary, Alberta. The other primary contractors used on the program were:

Highland Helicopters, Chetwynd
The Ortho Shop, Calgary
Loring Labs Ltd., Calgary
Geonics Ltd., Toronto

The time disbursements of the consulting staff during the field program are tabulated below.

TABLE 2

STAFF TIME SPENT ON FIELD PROGRAM

	Time Disbursements, Days				
Staff Member	Travel	Map	Plot	G. P. Survey	Trench
L. A. Smith	2	9	1	3	3
C. B. Wrightson	2	12	1	3	0
D. E. Smith	0.5	0	0	0.5	3
	4.5	21	2	6.5	6

Due to extremely inclement weather, it was impractical to fly out daily from Chetwynd because low cloud cover generally did not dissipate until afternoon. Accordingly, a small fly camp was set up in the centre of the property and about 6 nights were spent camping on the property. This method of work conserved the helicopter budget and generally decreased the number of weather days.

3.3.2 Geologic Mapping

The property has less than 5% outcrop due to widespread but thin glacial overburden and persistent tree cover. Initially, 6 to 8 geologist days were spent outlining the location and orientation of the Cadomin Conglomerate that underlies the coal measures. This

3.3.2 Geologic Mapping (cont'd)

provided a marker horizon that has widespread occurrence on the property and is easily mapped. In addition, the location of the coal measures are known to lie about 190m to 230m above this reliable marker horizon.

The old road and the new fire access road provided a reasonable amount of Gething Formation exposures, including 4 coal outcrop localities. These roads were mapped and plotted. The sandstone ridges were mapped and provide quite good control for the structural interpretation. In total, over 250 rock and coal outcroppings were located, identified and multiple reading bedding orientations were measured. All data was entered into computer files and the TRIPOD package was used for data storage and data handling.

3.3.3 Resistivity Surveys

An EM16R Model EM16 VLF-EM Resistivity unit was leased from Geonics Ltd. of Toronto to conduct resistivity surveys in areas where the coal measures were expected to occur. Concentric horizontal magnetic fields are transmitted from VLF transmitting stations in the U. S. When these magnetic fields meet conductive fields in the ground, secondary fields radiate from these bodies. The EM16 VLF-EM measures the vertical components of these secondary fields.

In the EM16R mode, the resistivity of the ground between the electrodes is measured from the secondary vertical magnetic field of the ground, and measurements are in ohm-metres. The phase angle measures how much out of phase the ground induced field is from the transmitting

3.3.3 Resistivity Surveys (cont'd)

station field. This project used the Cutler, Maine transmitting station field. A potential coal anomaly is determined where there is a coincident change in both the phase angle and the resistivity.

A total of 7 surveys were carried out on the property, and are described below. The resistivity surveys confirmed coal occurrences in one area and, in several other areas, helped confirm the local structure and stratigraphy. All survey data is graphically reproduced in Appendix 10.2.

Survey Line 1 - This line runs west to east over flat lying coal occurrences exposed on the new forest fire access road about 300m southeast of the lake. The data indicates that no major anomalies occur. Subsequent trenching (Trench 5) shows the coal exposure to be 0.66m thick and likely represents the lowest coal seam in the zone.

Survey Line 2 - This line along the main access road is below the coal measures and is used as a control line. As expected, no anomalies were detected.

Survey Line 3 - This line commences at the south side of the lake and trends west and is designed to delineate the coal subcrops on the west flank of the syncline as they cross the road. Two possible anomalies indicate that only some of the coal seams have responded to the survey.

Survey Line 4 - This control line through Trench 3 area confirms two things: i) only some of the coal seams respond anomalously, and ii) the coal exposed represents the lower coal seams and not the uppermost coal seam in the coal zone. The upper coal seams subcrop down slope from the road.

Survey Line 5 - Line 5, along the cutline, identifies 4 major coal seams that may represent the 4 seams in the Gething coal zone. These anomalies represent outcrops 268, 269, 270, and 271 on Map 2.

3.3.3 Resistivity Surveys (cont'd)

Survey Line 6 - Line 6 trends east from the top of the mountain. As expected, the coal seams in the coal zone provided anomalous responses and the 4 coal seams provided 4 anomalies. These anomalies represent localities 252, 253, 254, and 255 on Map 2.

Survey Line 7 - Line 7 commenced up section from locality 250, a minor coal occurrence. The line, through difficult terrain, suggests the coal occurrence at locality 251 represents the uppermost coal seam in the major coal zone, because no anomalies were detected up section from locality 251.

3.3.4 Trenching

Coal seam outcrops were trenched in 4 localities and two other localities (outcrops 250 and 251) were examined but not trenched. All 4 localities that were trenched occur on the new fire access road. Without this new road construction, the trenching program would have been very nominal. The 2 localities examined were not trenched because difficult terrain and thick cover prohibited the location and trenching of the main seams. Outcrop 251 was slumped and the coal not in place, the other locality, outcrop 250, had a 0.45m coal seam, but the main coal seam, where located, could not be hand trenched. The trench data is discussed in Section 4.3, Coal Development, and the analytic results in Section 5.

4.0 GEOLOGY

4.1 Stratigraphy

The stratigraphy of the Upper Jurassic and Lower Cretaceous in the general Rocky Creek area is well documented in the B. P. 1981 Rocky Creek Report. Table 3 below, from the B. P. report, provides the stratigraphic section of rocks in the area.

TABLE 3

TABLE OF FORMATIONS

Group	Unit		Lithology	Thickness
Bullhead Group	Gething Fm.	Upper	sandstone	10+
		Middle	siltstone, mudstone, sst.	104
		Lower	sst. siltstone, mudstone, coal; minor conglomerate	320 - 354
	Cadomin Fm.		conglomerate, sandstone; minor fine sediments	25 - 35
Minnes Group	Bickford Fm.		sandstone, mudstone coal, conglomerate	285+
	Monach Fm.		quartzite; finer sediments as above/below	50±
	Beattie Peaks Fm.		sandstone, mudstone thin coals, conglomerate	300+
	Monteith Fm.		quartzite, sandstone	600±

Our mapping work was restricted almost exclusively to the Cadomin Formation and the Gething Formation strata, and in only a few cases were measurements taken at the top of the Bickford Formation (Minnes Group). All relative coal geology is restricted to the post-Minnes strata. Accordingly, this report will discuss only the Bullhead Group stratigraphy.

4.1 Stratigraphy (cont'd)

The Cadomin Formation consists of 2 units of thick bedded massive pebble and cobble conglomerates, and with associated sandy lens. The individual units are separated by a thin interval of argillaceous rocks. The common constituents of the pebbles and cobbles is white, black and green chert and red feldspar or granite. Commonly the pebbles are well packed in the conglomerate with sand matrix representing less than 30%, the pebbles and cobbles +60% and the quartz cement <10%. This unit is, however, very competent and very hard. The Cadomin is commonly 25 to 35m thick (+40m in drill hole BP 81-13). Also in BP81-13, the conglomerate represents 27m or 67% of the entire unit, the sand lens represent the remaining 33% or 13m.

Both the upper and lower contacts are locally unconformable, however in many places the Cadomin interfingers with the overlying and underlying units.

The Cadomin outcrops around much of the mountain top and, in places, forms a formidable vertical cliff that is easily identified but very difficult to scale.

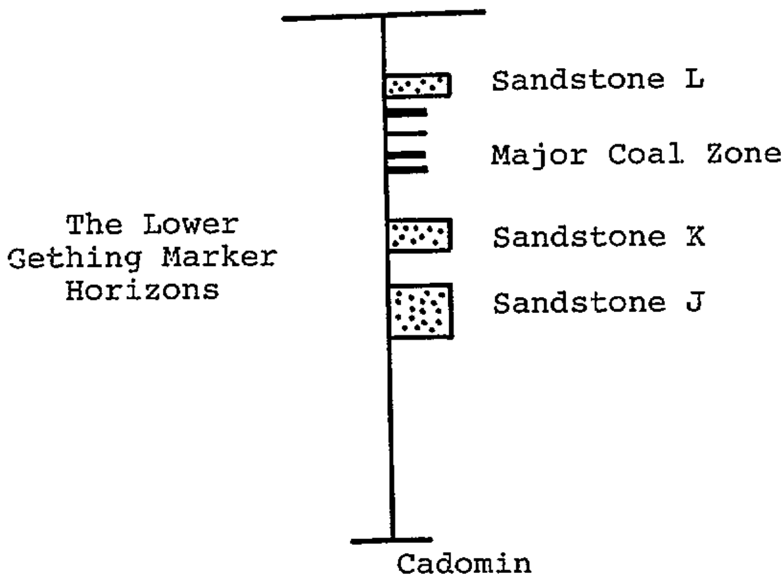
The Gething Formation is well documented in many B. P. reports and in public files, thus the detail in this report will be directed towards the stratigraphy of the coal zones. B. P. has divided the Gething into Lower, Middle and Upper units. Only the Lower unit occurs on Terrace Hill.

The Lower Gething contains about 275m of strata overlying the Cadomin and contains all of the economic coal measures on this property. The unit consists predominantly of sandstones, siltstones, mudstones and minor conglomerate with the coarser units being more common at the base. Our mapping has identified several sandstone units that provide good marker horizons and, when related to the major coal zone as show on page 12, assist greatly with mapping.

4.1 Stratigraphy (cont'd)

FIGURE 1

MAPPABLE UNITS IN THE LOWER GETHING



Although dominant sandstones do occur in older stata of the Lower Gething as well, they do not form dominant mappable ridges and are not identified separately.

Coal occurs at several locations within the Lower Gething, but most notably between Sandstone K and Sandstone L. Other thin (<1m) occurrences occur at 189m, 221m and 234m, however none of these coal seams are economic; the only economic potential lies in the major coal zone immediately below Sandstone K and correlated by B. P. staff as the B-C coal zones.

The Middle and Upper Gething apparently do not outcrop on this property due to erosion.

4.2 Structural Geology

The map sheet was divided into eight structural domains and fold axis orientations were calculated for each. Fold axis trends vary from about 300° to over 330° with plunges from 3° to the southeast to 5° to the northwest. The data in these domains were subsequently projected parallel to their respective fold axes onto cross sections positioned at 500m spacing. The cross section base line originates at 80000E 20000N and trends 330°. Cross sections at 250m spacing were also drawn for additional control within the coal reserve area.

The main structural feature in the Terrace Hill area is an asymmetric syncline which trends at approximately 330°. The outcrop of the Cadomin Formation and sandstone units J and L define the geometry and position of this syncline.

The shape of the syncline changes from south to north. On cross section 1000 near the south end, the syncline is an open symmetric structure with limbs dipping at about 30°. Further north the structure becomes asymmetric with the eastern limb almost flat-lying and the western limb dipping steeply and locally near vertical. In addition the trend and plunge of the fold axis varies from south to north over the property.

A shallow dipping thrust fault bounds the steeply dipping western limb of the syncline and brings Cadomin and Minnes strata over Lower Gething and Cadomin rocks.

4.2 Structural Geology (cont'd)

The Cadomin Formation lying above the thrust rings Terrace Hill to the south, north and west. The thrust is shallow-dipping and approximately parallels the dip of the Cadomin. The fault is a thrust zone and an upper splay repeats the Cadomin Formation above the main thrust. Gething strata subcrops in a broad open syncline which lies above the thrust. The syncline is terminated by the thrust to both the south and north.

A series of tight, steep limbed fault drag folds are present in the strata just below the thrust. These small scale structures are poorly defined with the data points generally limited to outcrops exposed along the road. Coal zones in these folds appear to be structurally thickened.

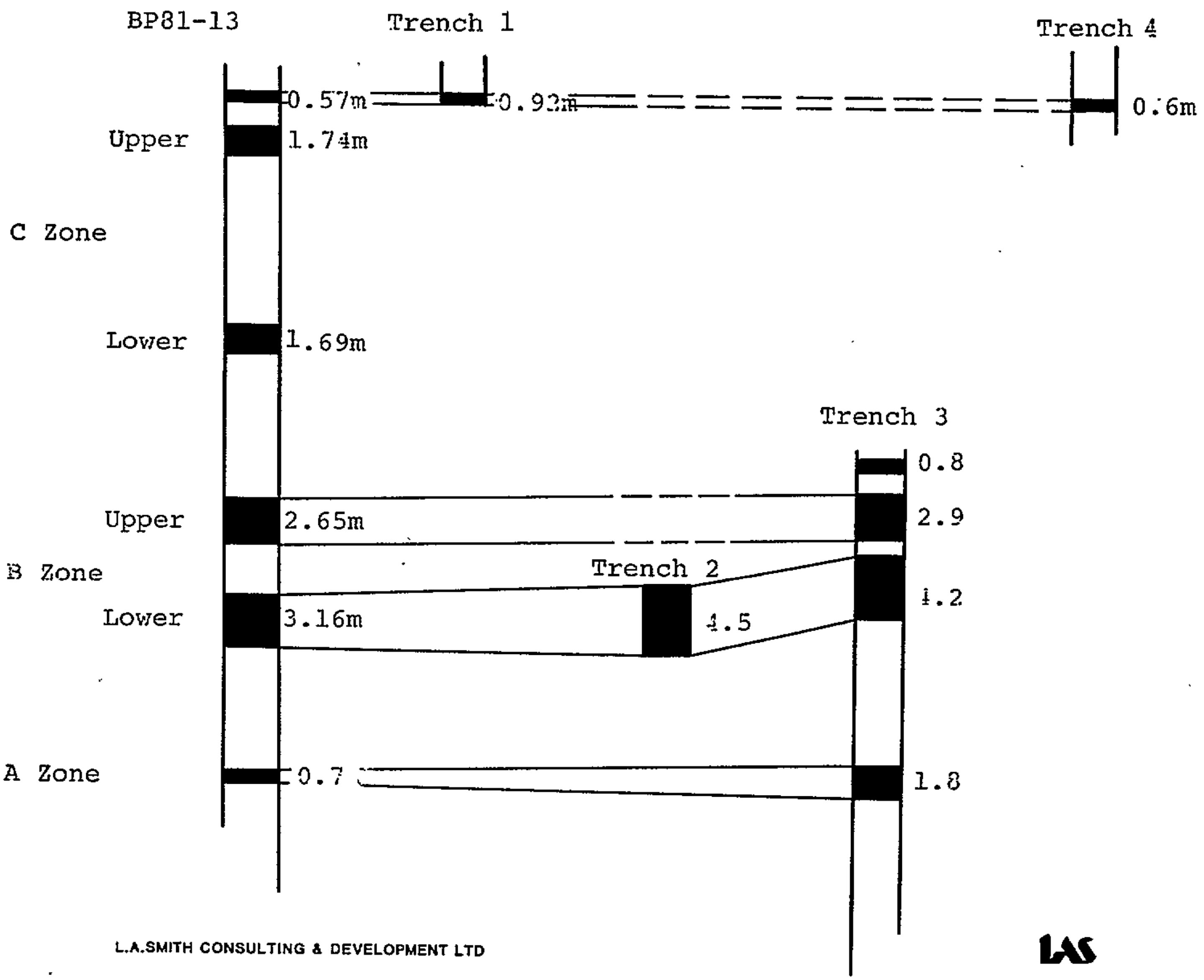
4.3 Coal Development

The major coal development is indicated by Drillhole BP81-13 to be the multiple seam coal zone that lies in the upper part of the Lower Gething about 200m above the Cadomin. This zone contains 4 coal seams that total 9.8m of mineable coal within a 34m section between 37m and 81m depth in the drillhole.

Figure 2 shows graphically the coal zones intersected in Drillhole BP81-13. Four trenches in the current program also were logged and sampled and their tentative correlation is given on Fig. 2.

FIGURE 2

CORRELATION OF TERRACE HILL COAL EXPOSURES



4.3 Coal Development (cont'd)

Assuming the correlation on Fig. 2 to be correct, it is obvious that coal seam development in this area varies considerably over small areas for most seams.

In keeping with the B. P. correlation of the coal zones being the B Zone and the C Zone in BP81-13, LAS has termed the coal zones A, B, and C from oldest to youngest. The occurrence and extent of the coal zones are as follows:

A Zone - This tentative coal seam is 1.8 metres thick in Trench 3 about 105m from the major thrust fault, and 0.5m in Drillhole BP81-13. The thickened zone in Trench 3 may represent structurally thickened coal or it may represent true thickness. The data is inconclusive.

B Zone - The B Zone contains 2 coal seams of mineable thickness in Drillhole BP81-13 (2.65m and 3.16m) and in Trench 3 (2.9m and 4.2m). Where exposed in Trench 2, the lower seam only was exposed and it is 4.5m thick. This zone shows an apparent thickening to the west.

C Zone - The single lower C Zone occurrence is in the drillhole where it has a thickness of 1.69m. Other localities were not exposed.

This upper zone contains a minor and a major coal seam in the drillhole, however the trenching program apparently trenched only the minor thin zone in two localities, and did not expose the major 1.7m coal zone.

The total mineable coal in drillhole BP81-13 is about 9.8 metres of coal. The apparent trends indicate that the A Zone, both coal seams in the B Zone and the minor coal seam in the Upper C Zone thickens to the west (on the west flank of the syncline). There is insufficient data to establish trends for the C Zone major coal seams.

5.0 COAL RANK AND QUALITY

Coal rank and quality data is derived from Drillhole BP81-13 and the 1984 trench sample analyses. For completeness, the drillhole summarized data is reproduced in Table 4 below.

TABLE 4

BP81-13 DRILLHOLE COAL QUALITY DATA

DATA POINT	RAW ASH	CLEAN COAL								
		M	ASH	VM	FC	CV/ BTU	S	S.G.	F.S.I	H.G.I
B SEAM BP13	21.6	0.72	8.16	25.60	65.52	13,998	0.35	1.31	2.3	105
B LOWER SEAM BP13	25.8	0.84	15.11	22.30	61.75	12,797	0.38	1.40	1.49	N.S.S
C SEAM BP13	11.4	0.68	5.52	24.62	69.15	14,376	0.34	1.32	2.3	120
C LOWER SEAM BP13	21.2	0.67	10.80	22.54	65.99	13,452	0.29	1.37	2.19	91
ALL SEAMS										
Average (Blk. E)	20.0	0.70	9.9	23.8	65.6	13,656	0.34	1.35	2.07	105

Note: All Results on Air-Dried Basis

N.S.S. - Not Sufficient Sample
N.A. - Non Agglomerating

This data indicates that the coal is a relatively low raw ash, medium volatile bituminous weakly coking coal. The heat content is very high, as is the H.G.I. which indicates a very soft coal. The low FSI values indicate the coal will likely be more attractive for the thermal coal market than the metallurgical coal market.

5.0 COAL RANK AND QUALITY (cont'd)

The summarized results of the 1984 trench program are given below in Table 5. The data provides several interesting items.

TABLE 5

SUMMARIZED RAW COAL QUALITY
(AIR DRIED BASIS)

Coal Zone	Trench	Thick. (m)	H_2O	VM	Ash	FC	S	BTU/ lb	Kcal/ kg
A	3	1.8	4.1	28.7	16.5	50.7	0.55	10,196	5,664
B Lower	3	4.2	11.1	26.7	7.9	53.9	0.17	9,290	5,161
	2	4.5	12.1	29.7	7.5	50.7	0.23	9,525	5,291
B Upper	3	2.9	12.0	25.5	21.3	41.2	0.16	7,866	4,370
C Part of Upper	1	0.9	7.2	21.4	40.0	31.4	-	-	-
	4	0.6	2.9	23.5	20.8	52.9	0.39	10,006	5,558

The ash analyses confirm the results of Drillhole BP81-13 that the ash content of the coals is low. Several aspects of these analyses are, however, very anomalous. The air dry moisture content is, for many samples, very much too high. The bituminous coals in BP81-13 contain less than 1% moisture. The anomalous moisture is likely caused by severe weathering.

The high volatile contents do not correlate with BP81-13 analyses and also indicate analytic abnormalities caused by weathering. Similarly, the abnormally low heat content values registered in the trench samples is not indicative of the unweathered bituminous coal.

Upon receipt of the analytic work, Loring Labs were contacted and the apparent anomalies were discussed with them. Loring re-analyzed sample 9877 and found no anomalous results. Accordingly, it is concluded that the anomalous analyses are the result of the coal samples being collected from near surface (about 1m depth).

5.0 COAL RANK AND QUALITY (cont'd)

There are several conclusions that can be drawn from these analyses:

i) the raw ash content of these coals appears to be quite low,

ii) the coal is a low sulphur coal,

iii) surface samples from shallow trenches cannot be considered an effective source of data for determination of rank, heat content and true proximate analyses.

6.0 COAL RESERVES AND RESOURCES

6.1 Measurement and Estimation of Coal

Coal amenable to open pit mining occurs in an oblong area in coal licences 4030 and 4031 (see Map 2 and the cross sections). The coal occurs in at least 4 separate seams, and possibly 5 coal seams if the A Zone is correct as interpreted, within the main coal zone between the K Sandstone and the L Sandstone in the Lower Gething. A lower seam, located 140m below the main coal zone and about 50m above the Cadomin Conglomerate, appears to be only 0.6m thick and is not considered to represent mineable coal reserves.

Drillhole BP81-13 intersected the A, B, and C Coal Zones and contains the following mineable coal seams:

TABLE 6

COAL SEAMS INTERSECTED IN BP81-13

Coal Zone	Interval (metres) From	To	Thickness (m)	
C	46.77	47.34	0.57	
	48.86	50.60	1.74	
	61.22	62.91	1.69	
				4.00
B	71.94	74.59	2.65	
	77.81	80.97	3.16	
				5.81
A	88.7	90.2	0.5	

The trench data provides additional information for seam development on the west flank of the syncline.

TABLE 7

TRENCH SEAM DEVELOPMENT DATA

Coal Zone	Trench	Seam Thickness (m)	Average Thickness (m)
C (Upper part of Upper Seam)	1	0.9	
	4	0.6	0.75
C Upper (main seam)	no data		
C Lower	no data		
B Upper	3	2.9	2.9
B Lower	3	4.5	
	2	4.2	4.35
A	3	1.8	1.8

For reserve calculation purposes, the seam thicknesses in BP81-13 will be used for the eastern syncline. For the drag folds on the west side, the following seam thicknesses will be utilized:

TABLE 8

WEST FLANK ASSUMED COAL DEVELOPMENT

Coal Zone	Coal Seam	Thick. (m)	Source
C Zone	Upper seam of Upper Zone	0.75	Table 7
	Main seam of Upper Zone	1.74	Table 6
	Lower Zone	1.69	Table 6
		4.18	
B Zone	Upper Seam	2.9	Table 7
	Lower Seam	4.35	Table 7
		7.25	
A Zone		1.8	Table 7

6.1 Measurement and Estimation of Coal (cont'd)

Reserves are estimated from the cross sections in the following method:

T = Seam thickness - taken from Table 6 for the east syncline and Table 8 for the drag folds on the west side.

W = Seam width - measured from fold axis to 5m below surface.

L = Seam length - taken as 250m (the sum of distances to the next cross section divided by 2).

SG = Coal specific gravity - 1.35 (from Table 4).

Coal reserve for each section is T (m) x W (m) x L (m) x SG (tonnes/m^3).

The total reserve is the summation of the reserves in each cross section.

Overburden measurements are determined for each cross section by use of a planimeter for the total rock and coal volume above the lowest mineable coal seam and multiplied by the width of influence (usually 250m). The coal volume is then extracted for each section to arrive at in-place waste volumes. All coal and rock volumes are in-place.

7.0 PROPOSED EXPLORATION PROGRAM

The property has been mapped in sufficient detail that a two stage program can now be undertaken with good efficiency. The recommended program is as follows:

1) Prepare an outline grid around the coal subcrop zone and run resistivity surveys over the subcrops in order to better delineate the coal zones.
2) Complete a rotary drill program of 10 or more drill holes to provide seam development data and to fully delineate the nature and potential of the coal in the drag folded area. This program would require upgrading the existing roads and construction of about 1 to 2 km of new road.

8.0 CONCLUSIONS

1. Coal occurs in a 40 metre zone about 190 metres above the Cadomin Conglomerate within the Gething Formation. Four or five coal seams occur within the three coal zones and total 9.8 metres of mineable coal and as much as 12 metres in the western structured area (near the thrust fault). There are no other coal seams that contain mineable coal on the property.
2. The area consists of a broad flat syncline containing the bulk of the reserves, and an area with small scale drag folds on the west flank. The drag folds are caused by a major flat-lying thrust fault that brings Cadomin and Minnes strata over the Lower Cretaceous coal measures.

4. Based upon the mapping interpretation and the coal reserve measurements, it is concluded that Licence 4029 should be relinquished.
5. Follow-up programs should include resistivity surveys over the coal subcrop areas, and a rotary drill program that utilizes the forestry access road.

9.0 APPENDICES

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Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

MINERAL RESOURCES DIVISION
INSPECTION AND ENGINEERING BRANCH

NOTICE OF WORK ON A COAL LICENCE

(Section 6 of the *Coal Mine Regulation Act*)

NOTE: Changes have been made to the *Coal Mines Regulation Act* replacing it with the *Coal Mine Regulation Act*. There has been no change with the intent of the legislation.

This notice is to be completed by all companies or individuals carrying out exploration work prior to commencement of work and at cessation of work and forwarded to the Chief Inspector of Mines with a copy to the District Inspector of Mines. If mechanical equipment is used in surface work, Form 8 overleaf must be completed.

1. NAME OF PROPERTY ..... Rocky Creek ....
Coal Licence Numbers .... 4029, 4030, 4031 ....

2. LOCATION .... West side of Sukunka River .... NTS map sheet no. ....
Lat. ....°........' Long. ....°........' Access via .. Helicopter from Chetwynd ....

3. OWNER'S NAME ..... B. P. Selco ....
Address .. 333 - 5th Ave. S.W., Calgary, Alberta Canada .... Telephone no. (403) 237-1234

4. OPERATOR'S NAME ..... L. A. Smith Consulting & Development, Ltd. ....
Address .. #201, 701 - 14 St. N. W., CALGARY, Alta. .... Telephone no. (403) 270-3254

5. ESTIMATED DURATION OF WORK: From .... August 28, 1984 ..... to .. September 30, 1984 ....
OR: ACTUAL DATE WORK COMPLETED: From .... to ....

6. DESCRIPTION OF WORK (Use metric measure — 1 metre = 3.3 feet.) (Show on 1:50 000-scale map.)
Linecutting (distance, width, method) ....

(Requires approval of Ministry of Forests, 'Licence to Cut' or 'Free Use Permit' may be withheld until reclamation program is approved.)

(a) Road Construction: Total length .... m Approximate width .... m Area .... m^2

(b) Test Pits: No. ...... Maximum dimensions: Width ...... m Length .... m Depth .... m
Total disturbed area of test pits .... m^2

(c) Drilling: No. of holes ...... Type ...... Size ...... Maximum hole length .... m
Approximate size of drill pads .... x ...... m Total disturbed area of drillsites .... m^2
(Were all holes recorded and sealed in compliance with the Chief Inspection's instructions?)

(d) Adits: No. rising at ....° is .... No. level .... No. dipping at ......° is ....
Maximum length adit .... m Total disturbed area of adits .... m^2

(e) Trenches: No. 20 .. Maximum dimensions: Width .... 1 m Length ... 5 .. m Depth ..... 1.5 .. m
Total disturbed area of trenches .... 100 .. m^2

(f) Other (for example, please specify underground work) ...... geologic mapping ....

GRAND TOTAL OF AREA DISTURBED ..... 100 ..... m^2
..... 0.1 ..... ha

7. APPROXIMATE NUMBER OF MEN EMPLOYED .... 4 ....

8. DATE FOREST SERVICE ADVISED BY OPERATOR ....
Name of Official .... Title ....
Address ....

SIGNATURE OF APPLICANT .... TITLE . Geologist ....
PRINT NAME .... L. A. Smith .... DATE . August 22, 1984 ..

NOTE: Owner, agent, or manager is responsible for ensuring the Contractor complies with pertinent regulations [*see* section 27(6), *Coal Mine Regulation Act*]. Pursuant to section 8, subsection 2(a) of the *Coal Mine Regulation Act*, 'where the employment of mechanical equipment is likely to disturb the surface of the land in clearing, stripping, trenching,' the reclamation program on the reverse side is also to be submitted.

Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

Parliament Buildings
Victoria
British Columbia
V8V 1X4

Rm. 105, 525 Superior St., Victoria, B.C. V8V 1T7 387-3781

September 13, 1984

Mr. L.A. Smith, Geologist
L.A. Smith Consulting &
Development Ltd.
#201, 701 - 14 St. N.W.
Calgary, Alberta
T2N 2A4

Dear Mr. Smith:

Re: Notice of Work
Proposed Coal Exploration
Rocky Creek Project

Thank you for forwarding the above form dated August 22, 1984, which describes your proposed work.

This form has been reviewed and is approved subject to work being done in compliance with the Mines Act and "Guidelines for Coal Exploration". Hand trenches are to be backfilled prior to the end of the season.

Please advise the following of any change in plans:

Inspector of Mines and Resident Engineer, Mr. T. Vaughan-Thomas
1652 Quinn Street, Prince George, B.C., V2N 1X3.

Reclamation Inspector-Technician, Mr. E.J. Hall
P.O. Box 7438, Fort St. John, B.C., V1J 4M9.

Yours very truly,

W.C. Robinson

W.C. Robinson, P.Eng.
Chief Inspector of Mines

WCR:DMG:sf

cc: T. Vaughan-Thomas
E.J. Hall

DRAW LISTING

ROCKY CREEK, TERRACE HILL AREA

SEPT. 1984

ID	COORDINATES			ORIENTATION		HRZN
1	81560.	22845.	1241.	0.	0.	C
2	81575.	22740.	1241.	0.	0.	C
3	81585.	22645.	1242.	122.	5.	C
4	81580.	22545.	1242.	270.	5.	C
5	81570.	22445.	1243.	121.	3.	C
6	81565.	22345.	1235.	218.	3.	C
7	81555.	22180.	1221.	126.	5.	C
8	81345.	22210.	1243.	30.	26.	C
9	81215.	22215.	1264.	12.	28.	C
10	81180.	22140.	1280.	11.	21.	C
11	81120.	22035.	1302.	286.	14.	C
12	81185.	21985.	1290.	249.	12.	C
13	81150.	21870.	1290.	264.	13.	C
14	81125.	21780.	1276.	280.	15.	C
15	81135.	21695.	1270.	256.	21.	C
16	81125.	21595.	1260.	232.	21.	C
17	81100.	21495.	1245.	237.	16.	C
18	81085.	21395.	1225.	248.	22.	C
19	81105.	21300.	1209.	252.	25.	C
20	81135.	21210.	1200.	228.	16.	C
21	81335.	21205.	1232.	262.	21.	C
22	81315.	21090.	1213.	247.	23.	C
23	81320.	21005.	1193.	174.	27.	C
24	81305.	20855.	1147.	220.	16.	C
25	81265.	20765.	1122.	221.	22.	C
26	81200.	20690.	1103.	246.	14.	C
27	81075.	20645.	1100.	0.	0.	C
28	79915.	22305.	1362.	65.	61.	G
29	79815.	22395.	1360.	63.	85.	G
30	79710.	22490.	1373.	191.	46.	G
31	79395.	22855.	1340.	208.	51.	G
32	79325.	22860.	1352.	39.	69.	G
33	79145.	23065.	1353.	230.	65.	G
34	79110.	23120.	1354.	189.	76.	G
35	79060.	23195.	1349.	0.	0.	G
36	79020.	23240.	1350.	243.	48.	G
37	79925.	22255.	1367.	69.	80.	G
38	80055.	21970.	1363.	0.	0.	G
39	80080.	21965.	1362.	82.	46.	G
40	80020.	21990.	1368.	244.	81.	G
41	80265.	21930.	1369.	0.	0.	S
42	80275.	21935.	1370.	0.	0.	S
43	80285.	21935.	1369.	0.	0.	S
44	80310.	21955.	1370.	0.	0.	S
45	80385.	21915.	1355.	300.	22.	G
46	80455.	21935.	1352.	291.	20.	G
47	80530.	21900.	1330.	326.	9.	G
48	80590.	21930.	1321.	285.	5.	K
49	80650.	21805.	1302.	263.	10.	J
50	80675.	21840.	1301.	247.	13.	J
51	80680.	21880.	1302.	265.	3.	J
52	80690.	21925.	1304.	321.	5.	J
53	80720.	21955.	1303.	272.	8.	J
54	80745.	22140.	1346.	291.	9.	J

>	63	55	80840.	22255.	1330.	255.	34.	J
>	64	56	80870.	22285.	1328.	236.	30.	J
>	65	57	80960.	22260.	1291.	0.	0.	G
>	66	58	80970.	22265.	1290.	298.	27.	G
>	67	59	80980.	22345.	1300.	269.	34.	G
>	68	60	80995.	22340.	1304.	29.	7.	G
>	69	61	81115.	22425.	1302.	0.	0.	G
>	70	62	81180.	22430.	1297.	173.	17.	G
>	71	63	81275.	22380.	1286.	236.	8.	G
>	72	64	81325.	22400.	1285.	191.	6.	G
>	73	65	81264.	22550.	1301.	154.	8.	G
>	74	66	81278.	22591.	1299.	140.	6.	G
>	75	67	81000.	22110.	1298.	307.	6.	G
>	76	68	81040.	21605.	1254.	207.	12.	G
>	77	69	81050.	21635.	1258.	0.	0.	C
>	78	70	81045.	21520.	1247.	265.	8.	G
>	79	71	81015.	21345.	1213.	238.	20.	G
>	80	72	81015.	21290.	1205.	235.	13.	G
>	81	73	81055.	21235.	1198.	270.	26.	G
>	82	74	81065.	21185.	1193.	274.	22.	G
>	83	75	81050.	21120.	1182.	241.	19.	G
>	84	76	81025.	21070.	1173.	260.	28.	G
>	85	77	80980.	20880.	1144.	242.	17.	G
>	86	78	80950.	20770.	1118.	226.	28.	G
>	87	79	80975.	20610.	1104.	326.	13.	C
>	88	80	80905.	20575.	1088.	267.	6.	G
>	89	81	80880.	20520.	1078.	291.	11.	C
>	90	82	80845.	20485.	1070.	295.	14.	C
>	91	83	80800.	20450.	1068.	0.	0.	C
>	92	84	78450.	22065.	1451.	352.	6.	C
>	93	85	78480.	22010.	1451.	59.	3.	C
>	94	86	78405.	21925.	1453.	35.	13.	C
>	95	87	78360.	22000.	1452.	123.	12.	C
>	96	88	78445.	21860.	1451.	108.	15.	C
>	97	89	78515.	21810.	1451.	62.	17.	C
>	98	90	78635.	21765.	1451.	195.	20.	C
>	99	91	78790.	21745.	1442.	80.	10.	C
>	100	92	78915.	21745.	1422.	141.	14.	C
>	101	93	78990.	21750.	1413.	35.	1.	C
>	102	94	79080.	21785.	1408.	0.	0.	C
>	103	95	79205.	21815.	1392.	81.	12.	C
>	104	96	79400.	21795.	1385.	0.	0.	C
>	105	97	79440.	21790.	1385.	0.	0.	C
>	106	98	79495.	21755.	1380.	60.	13.	C
>	107	99	79630.	21680.	1372.	0.	0.	C
>	108	100	79705.	21615.	1364.	39.	14.	C
>	109	101	79760.	21570.	1360.	76.	22.	C
>	110	102	79810.	21515.	1346.	112.	18.	C
>	111	103	79870.	21465.	1328.	0.	0.	C
>	112	104	79900.	21420.	1322.	51.	9.	C
>	113	106	80065.	21450.	1316.	252.	20.	C
>	114	107	80050.	21410.	1303.	226.	31.	C
>	115	108	80055.	21426.	1307.	217.	26.	C
>	116	109	80610.	21550.	1292.	223.	26.	G
>	117	110	79940.	21400.	1316.	125.	20.	C
>	118	111	80040.	21375.	1300.	316.	6.	C
>	119 *	112	80545.	22550.	1455.	262.	20.	L
>	120	113	80540.	22595.	1455.	262.	26.	L
>	121	114	80535.	22645.	1455.	286.	25.	L
>	122	115	80530.	22680.	1454.	267.	21.	L
>	123	116	80480.	22705.	1435.	282.	28.	L
>	124	117	80430.	22685.	1424.	246.	26.	G
>	125	118	80545.	22495.	1455.	277.	23.	L
>	126	119	80545.	22420.	1450.	252.	21.	L
>	127	120	80535.	22345.	1445.	254.	17.	L
>	128	121	80525.	22295.	1436.	295.	12.	L

>	129	122	80495.	22210.	1425.	281.	19.	L
>	130	123	80460.	22150.	1418.	305.	17.	L
>	131	124	80350.	22055.	1403.	326.	16.	L
>	132	125	80305.	22030.	1400.	239.	14.	L
>	133	126	80640.	22960.	1383.	229.	28.	K
>	134	127	80545.	22960.	1376.	229.	23.	M
>	135	128	80515.	22990.	1374.	246.	24.	M
>	136	129	80470.	23060.	1372.	237.	20.	M
>	137	130	80410.	23115.	1366.	249.	22.	M
>	138	131	80395.	23245.	1345.	265.	26.	M
>	139	132	80460.	23245.	1356.	223.	19.	M
>	140	133	80495.	23315.	1353.	267.	4.	M
>	141	134	80550.	23350.	1350.	239.	7.	M
>	142	135	80605.	23310.	1358.	147.	10.	M
>	143	136	80645.	22850.	1390.	214.	17.	K
>	144	137	80745.	22720.	1384.	239.	14.	K
>	145	138	80765.	22625.	1380.	245.	15.	K
>	146	139	80770.	22525.	1371.	276.	17.	K
>	147	140	80735.	22290.	1367.	229.	14.	K
>	148	141	80715.	22075.	1375.	264.	27.	J
>	149	142	80695.	22000.	1318.	243.	27.	J
>	150	143	80145.	22130.	1392.	21.	8.	L
>	151	144	80135.	22190.	1390.	167.	5.	L
>	152	145	80120.	22240.	1386.	125.	5.	L
>	153	146	80095.	22235.	1376.	94.	6.	G
>	154	147	80100.	20640.	1138.	31.	20.	N
>	155	148	80360.	20815.	1161.	65.	32.	C
>	156	149	80310.	20875.	1165.	50.	25.	C
>	157	150	80240.	20950.	1172.	70.	34.	C
>	158	151	80190.	21015.	1183.	40.	15.	C
>	159	152	80460.	20720.	1142.	58.	26.	C
>	160	153	80510.	20650.	1134.	57.	28.	C
>	161	154	80555.	20595.	1130.	50.	30.	C
>	162	155	80615.	20515.	1125.	0.	0.	
>	163	156	80630.	20480.	1115.	67.	50.	C
>	164	157	80645.	20435.	1105.	75.	49.	C
>	165	158	80660.	20380.	1100.	76.	59.	C
>	166	159	80695.	20345.	1090.	47.	70.	C
>	167	160	80715.	20350.	1090.	215.	54.	C
>	168	161	80760.	20390.	1095.	187.	27.	C
>	169	162	80835.	20445.	1095.	344.	30.	C
>	170	163	80870.	20480.	1095.	333.	28.	C
>	171	164	80645.	20705.	1115.	246.	25.	G
>	172	165	80685.	20790.	1145.	239.	31.	G
>	173	166	80695.	20875.	1168.	230.	28.	G
>	174	167	79375.	21325.	1137.	249.	27.	C
>	175	168	78420.	22285.	1453.	24.	10.	C
>	176	169	78375.	22395.	1453.	67.	10.	C
>	177	170	78365.	22525.	1451.	0.	0.	C
>	178	171	78325.	22475.	1449.	347.	9.	C
>	179	172	79765.	23235.	1229.	303.	4.	G
>	180	173	79740.	23355.	1206.	262.	6.	G
>	181	174	79790.	23275.	1220.	206.	14.	G
>	182	175	79805.	23265.	1223.	179.	8.	G
>	183	176	79835.	23235.	1229.	243.	18.	G
>	184	177	79900.	23170.	1245.	216.	16.	G
>	185	178	80020.	22965.	1290.	230.	7.	G
>	186	179	80075.	22805.	1346.	0.	0.	S
>	187	180	80085.	22790.	1352.	218.	10.	S
>	188	181	80155.	22845.	1345.	188.	7.	G
>	189	182	80105.	23000.	1287.	202.	12.	S
>	190	183	79985.	23075.	1267.	254.	14.	S
>	191	184	79715.	23410.	1196.	279.	13.	G
>	192	185	79765.	23740.	1137.	251.	20.	C
>	193	186	79775.	23780.	1128.	243.	18.	C
>	194	187	80325.	22825.	1362.	234.	40.	G

>	195	188	80205.	22800.	1305.	0.	0.	S
>	196	189	80275.	22795.	1370.	0.	0.	S
>	197	190	80280.	22775.	1375.	295.	3.	G
>	198	191	80235.	22885.	1332.	0.	0.	S
>	199	192	80055.	22515.	1333.	119.	3.	G
>	200	193	79390.	22930.	1319.	0.	0.	S
>	201	194	79445.	23000.	1300.	45.	61.	G
>	202	195	79515.	23110.	1267.	185.	8.	G
>	203	196	79550.	23225.	1244.	233.	15.	G
>	204	197	79560.	23260.	1235.	0.	0.	S
>	205	199	80095.	21455.	1317.	221.	33.	G
>	206	200	79820.	22090.	1420.	258.	16.	G
>	207	201	79760.	22230.	1430.	279.	8.	G
>	208	202	79725.	22320.	1425.	11.	20.	G
>	209	203	79680.	22405.	1417.	251.	24.	G
>	210	204	79810.	22140.	1426.	259.	13.	G
>	211	205	79840.	21955.	1420.	274.	10.	G
>	212	206	79925.	21850.	1400.	223.	29.	G
>	213	207	79910.	21755.	1392.	221.	15.	G
>	214	208	80020.	21670.	1380.	265.	13.	G
>	215	209	80060.	21680.	1375.	251.	8.	C
>	216	210	80070.	21630.	1372.	205.	12.	C
>	217	211	80075.	21585.	1364.	183.	14.	C
>	218	212	80110.	21580.	1354.	267.	7.	C
>	219	213	80120.	21555.	1341.	212.	24.	C
>	220	214	80070.	21560.	1350.	149.	36.	C
>	221	215	80020.	21565.	1354.	207.	13.	C
>	222	216	79940.	21605.	1366.	233.	15.	C
>	223	217	79835.	21585.	1338.	280.	16.	C
>	224	218	79840.	21605.	1350.	237.	23.	C
>	225	219	79900.	21565.	1346.	0.	0.	C
>	226	220	79960.	21525.	1340.	0.	0.	C
>	227	221	79965.	21510.	1334.	10.	54.	C
>	228	222	80085.	21490.	1331.	185.	30.	C
>	229	223	80625.	21555.	1292.	252.	9.	J
>	230	224	80570.	21465.	1280.	221.	13.	J
>	231	225	80630.	21605.	1295.	219.	7.	J
>	232	226	80635.	21675.	1302.	308.	2.	J
>	233	227	80645.	21725.	1302.	187.	25.	J
>	234	228	80480.	21525.	1287.	200.	9.	C
>	235	229	80370.	21505.	1290.	0.	0.	G
>	236	232	79895.	22215.	1383.	188.	7.	G
>	237	233	79855.	22255.	1384.	245.	9.	G
>	238	234	79815.	22295.	1388.	274.	6.	G
>	239	235	79305.	22840.	1360.	48.	47.	G
>	240	236	79295.	22825.	1370.	46.	82.	G
>	241	237	79285.	22815.	1374.	227.	48.	G
>	242	238	79270.	22795.	1379.	205.	80.	G
>	243	239	79260.	22780.	1383.	242.	26.	C
>	244	240	79215.	22725.	1395.	0.	0.	C
>	245	241	78275.	22585.	1440.	0.	0.	C
>	246	242	78275.	22840.	1420.	0.	0.	C
>	247	243	78430.	23100.	1396.	0.	0.	C
>	248	244	78955.	23205.	1415.	0.	0.	C
>	249	245	79925.	22245.	1372.	73.	71.	S
>	250	246	79650.	22585.	1372.	0.	0.	S
>	251	247	79390.	22860.	1340.	230.	83.	S
>	252	248	79370.	22850.	1340.	43.	90.	S
>	253	249	80270.	21945.	1370.	128.	7.	S
>	254	250	80085.	22800.	1350.	0.	0.	S
>	255	251	80270.	22800.	1369.	0.	0.	S
>	256	252	80620.	22545.	1420.	0.	0.	S
>	257	253	80650.	22555.	1410.	0.	0.	S
>	258	254	80675.	22565.	1390.	0.	0.	S
>	259	255	80715.	22575.	1378.	0.	0.	S
>	260	260	80030.	23050.	1272.	0.	0.	S

```
      262   80015.  21995. 1368.     0.   0.     U
      265   79900.  22080. 1388.     0.   0.     U
      267   79400.  22865. 1340.     0.   0.     S
      268   79270.  22825. 1375.     0.   0.     S
      269   79315.  22865. 1353.     0.   0.     S
      270   79350.  22895. 1340.     0.   0.     S
      271   79380.  22920. 1325.     0.   0.     S
      272   79645.  22550. 1373.     0.   0.     S
      273   78930.  23390. 1342.     0.   0.     S
   DRAW LISTING

    ROCKY CREEK, TERRACE HILL AREA

    SEPT. 1984

       ID        COORDINATES        ORIENTATION  HRZN

       13   80250.  22460. 1425.        BORE
#End of file
#T=0.244 DR=692   $1.15,   $1.33T
#
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L.A. SMITH CONSULTANTS

JOB # 9410
B.P. SALKO PROJECT

LORING LABORATORIES LTD

CERTIFICATE of COAL TESTING

L.A.SMITH CONSULTING & DEVELOPMENT LTD

SAMPLE NO.	IDENTIFICATION	SAMPLE TYPE	% RECOVERY			REC'D % H_2O	% H_2O	% VCL MATTER	% ASH	% FIXED CARBON	% S
			SINK	FLOAT							
9876	Trench 1 0.92m	Raw Coal			As Received	32.10	-	15.66	29.26	22.98	
					Air Dried	-	7.16	21.41	40.01	31.42	
					Dry Basis	-	-	23.06	43.10	33.84	
9877	Trench 3 0.1m to 0.88m	Raw Coal			As Received	33.33	-	20.87	9.26	36.54	
					Air Dried	-	7.24	29.04	12.88	50.84	
					Dry Basis	-	-	31.31	13.89	54.80	
9878	Trench 3 2.08m to 3.25m	Raw Coal			As Received	31.03	-	19.36	20.24	28.87	
					Air Dried	-	8.13	25.79	27.63	38.45	
					Dry Basis	-	-	28.07	30.08	41.85	
9879	Trench 3 3.25m to 4.95m	Raw Coal			As Received	29.83	-	20.84	13.95	35.38	
					Air Dried	-	14.66	25.35	16.96	43.03	
					Dry Basis	-	-	29.70	19.87	50.43	
9880	Trench 3 5.70 to 6.02m	Raw Coal			As Received	22.12	-	20.10	23.91	33.87	
					Air Dried	-	4.94	24.54	29.18	41.34	
					Dry Basis	-	-	25.82	30.70	43.48	
9881	Trench 3 6.02m to 8.50m	Raw Coal			As Received	26.28	-	22.22	6.61	44.89	
					Air Dried	-	11.46	26.69	7.94	53.91	
					Dry Basis	-	-	30.14	8.97	60.89	

APPENDIX 3

A. SMITH CONSULTANTS

LORING LABORATORIES LTD

JOB # 8410
[illegible] PROJECT

CERTIFICATE of COAL TESTING

Page # 2

A.SMITH CONSULTING & DEVELOPMENT LTD

SAMPLE NO.	IDENTIFICATION	SAMPLE TYPE	% RECOVERY			REC'D % H_2O	% H_2O	% VCL MATTER	% ASH	% FIXED CARBON	% S	BTU /LB
			SINK	FLOAT								
9882	Trench 3 8.5m to 9.88m	Raw Coal			As Received	30.53	-	20.74	12.62	36.11		
					Air Dried	-	11.87	26.31	16.01	45.81		
					Dry Basis	-	-	29.85	18.17	51.98		
9883	Trench 3 11.72m to 12.17m	Raw Coal			As Received	18.66	-	19.56	36.50	25.28		
					Air Dried	-	7.00	22.36	41.73	28.91		
					Dry Basis	-	-	24.04	44.87	31.09		
9884	Trench 3 19.30 to 19.85m	Raw Coal			As Received	26.19	-	22.33	13.64	37.84		
					Air Dried	-	3.70	29.14	17.80	49.36		
					Dry Basis	-	-	30.26	18.48	51.26		
9885	Trench 3 19.85 to 21.10m	Raw Coal			As Received	33.30	-	19.94	11.11	35.65		
					Air Dried	-	4.29	28.61	15.94	51.16		
					Dry Basis	-	-	29.89	16.65	53.46		
9886	Trench 2 0 to 2.5m	Raw Coal			As Received	36.35	-	21.68	5.03	36.94		
					Air Dried	-	13.15	29.58	6.86	50.41		
					Dry Basis	-	-	34.06	7.90	58.04		
9887	Trench 2 2.5m to 4.5m	Raw Coal			As Received	39.76	-	20.12	5.70	34.42		
					Air Dried	-	10.69	29.83	8.45	51.03		
					Dry Basis	-	-	33.40	9.46	57.14		

LAS

L.A. SMITH CONSULTANTS

LORING LABORATORIES LTD

JOB # 8410
B.P. SALKO PROJECT

CERTIFICATE of COAL TESTING

SAMPLE NO.	IDENTIFICATION	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT		REC'D % H_2O	% H_2O	% VCL MATTER	% ASH	% FIXED CARBON	% S	BT /L
9888	Trench 4 0.58m to 1.17m	Raw Coal			As Received	12.28	-	21.18	18.82	47.72		
					Air Dried	-	2.85	23.46	20.84	52.85		
					Dry Basis	-	-	24.15	21.45	54.40		

L.A. SMITH CONSULTING & DEVELOPMENT LTD

LAS

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L.A. SMITH CONSULTING & DEVELOPMENT LTD

LORING LABORATORIES LTD

B.P. SALKO PROJECT

CERTIFICATE of COAL TESTING

Job # 8410.

SAMPLE NO.	IDENTIFICATION	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT		REC'D % H_2O	% H_2O	% VCL MATTER	% ASH	% FIXED CARBON	% S	BTU /LB.
9877		RAW COAL			Air Dried	-	7.24				.22	9612
					Dry Basis	-	-				.24	10362
9878-9879	41 = 59%	COMP			Air Dried	-	11.44				.16	7866
					Dry Basis	-	-				.18	8882
9880-9882	7.7 = 59.3 = 33%	COMP			Air Dried	-	10.51				.17	9290
					Dry Basis	-	-				.19	10381
9884-9885	31 = 69%	COMP			Air Dried	-	3.96				.35	10196
					Dry Basis	-	-				.36	10616
9886-9887	55 = 45%	COMP			Air Dried	-	11.92				.23	9525
					Dry Basis	-	-				.26	10814
9888		RAW COAL			Air Dried	-	2.85				.39	10006
					Dry Basis	-	-				.40	10300

LAS

GEOPHYSICAL LOGS

RESISTIVITY	LOG OF CORE	BULK DENSITY 1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80	R%	INTERVAL METRES	SAMPLE NO.	SAMPLE COMP.
		CARBONACEOUS SHALE				
		COAL - C4				
		SHALE CARBON. AT TOP 128°-3°, 315°-3°				
		CARB. SHALE				
		COAL - C2				
		COAL - C3		0.59	9888	
		CARB. SHALE 137°-9°, 134°-6°, 131°-5°, 123°-9°				

ANALYTICAL DATA (A.D.B.)

PROXIMATE ANALYSIS

M%	A%	VM%	FC%	S%	BTU/lb	S.G.
2.9	20.8	23.5	52.9	0.39	10.006	

ANALYSIS OF COMPOSITE

M%	A%	VM%	FC%	S%	BTU/lb	S.G.

RESISTIVITY
BULK DENSITY
RECOVERY - R%

LEGEND

COAL , C1 Ash <10%
COAL , C2 Ash 10-20%
COAL , C3 Ash 20-30%
COAL , C4 Ash 30-40%
BONEY / STONEY COAL

COAL & BANDS
CARBONACEOUS MUDSTONE
MUDSTONE
BENTONITE
SANDSTONE
SILTSTONE
CORE LOSS

SELCO INC.

ROCKY CREEK , TERRACE HILL PROPERTY

TRENCH 4

UPPER PART of "C" ZONE - UPPER SEAM

Drawn:		Date:
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS L. A. SMITH CONSULTING & DEVELOPMENT LTD	Dwg. No:	

GEOPHYSICAL LOGS RESISTIVITY	LOG OF CORE	BULK DENSITY 1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80	R%	INTERVAL METRES	SAMPLE NO.	SAMPLE COMP.	ANALYTICAL DATA (A.D.B.) PROXIMATE ANALYSIS M% A% VM% FC% S% BTU/lb S.G.
17.0		SILKSTONE					
		CLAYSTONE					
19.3		"A" ZONE COAL-C2 WITH CARB. SHALE STRINGERS	3055	0.55	9884		3.7 17.8 29.1 49.4
19.85		COAL-C3		1.25	9885		4.3 15.9 28.6 55.2 0.35 10,196
21.1							
21.22		CLAYSTONE					
		SILKSTONE					
							4.1 16.5 28.7 50.7 0.55 10,196

LEGEND

RESISTIVITY ______
BULK DENSITY — — —
RECOVERY - R%

- COAL, C1
- COAL, C2
- COAL, C3
- COAL, C4
- BONEY / STONEY COAL
- COAL & BANDS
- CARBONACEOUS MUDSTONE
- MUDSTONE
- BENTONITE
- SANDSTONE
- SILTSTONE
- CORE LOSS

SELCO INC.

ROCKY CREEK, TERRACE HILL PROPERTY

TRENCH 3

Sheet 3

Drawn:		Date:
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS L. A. SMITH CONSULTING & DEVELOPMENT LTD.	Dwg. No:	

GEOPHYSICAL LOGS			INTERVAL	SAMPLE		ANALYTICAL DATA (A.D.B.)
RESISTIVITY	BULK DENSITY					
LOG OF CORE	1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80	R%	METRES	NO.	COMP.	41
	DETAILED ON PAGE 1 of 3					PROXIMATE ANALYSIS
8.50	COAL - C4					M% A% VM% FC% S% BTU/lb S.G.
	COAL - C2		1.48	9882	↓	11.9 16.0 26.3 45.8 0.17 9290
	CARBONACEOUS CLAYSTONE CARBONACEOUS SHALE CARBONACEOUS CLAYSTONE					
11.72	COAL - C3		0.45	9883		7.0 41.7 22.4 28.9 - - - -
12.17	CLAYSTONE 43°-90° SILKSTONE					ANALYSIS OF COMPOSITE M% A% VM% FC% S% BTU/lb S.G.
17.0						

LEGEND

RESISTIVITY ————
BULK DENSITY — — — —
RECOVERY - R%

- COAL, C1
- COAL, C2
- COAL, C3
- COAL, C4
- BONEY / STONEY COAL
- COAL & BANDS
- CARBONACEOUS MUDSTONE
- MUDSTONE
- BENTONITE
- SANDSTONE
- SILTSTONE
- CORE LOSS

SELCO INC.

ROCKY CREEK , TERRACE HILL PROPERTY

TRENCH 3

Sheet 2

Drawn:		Date:
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS L.A. SMITH CONSULTING & DEVELOPMENT LTD	Dwg. No:	

RESISTIVITY	GEOPHYSICAL LOGS — BULK DENSITY (1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80)	R%	INTERVAL METRES	SAMPLE NO.	COMP.	M%	A%	VM%	FC%	S%	BTU/lb	S.G.
	MUDSTONE 221-90°, 220-76° (ONE TURNER)											
0.10	BONEY COAL											
	COAL-C2 WITH THIN (0.01m) ROCK PARTINGS		0.78	9877		7.24	12.9	29.0	50.8	0.22	9612	
0.88	CLAYSTONE WITH ERATIC CARBONACEOUS ZONES		1.20									
	"B" ZONE - UPPER SEAM											
2.08	COAL-C2 WITH BONY COAL STRINGERS COAL-C2 BONY COAL CARBONACEOUS SHALE COAL-C3 BONY COAL		1.17	9878	↑	8.1	27.6	25.8	38.5			
3.25	COAL-C2 DULL WITH BRIGHT BANDS COAL-C4		1.70	9879	↓	14.7	17.0	25.3	43.0	0.16	7866	
4.95	CARBONACEOUS SHALE CLAYSTONE 248°-83° 245°-81°		0.75									
	"B" ZONE. LOWER SEAM											
5.70	COAL - C4		0.32	9880	↑	4.9	29.2	24.5	41.3			
6.02	COAL-C2 215°-89°		2.49	9881		11.5	7.9	26.7	53.9	0.27	9290	
8.50	COAL - C4		1.48	9882		11.9	16.0	26.3	45.8			

ANALYTICAL DATA (A.D.B.)

PROXIMATE ANALYSIS

LEGEND

RESISTIVITY ————
BULK DENSITY — — — —
RECOVERY - R%

COAL, C1 Ash <10%	COAL & BANDS
COAL, C2 Ash 10-20%	CARBONACEOUS MUDSTONE
COAL, C3 Ash 20-30%	MUDSTONE
COAL, C4 Ash 30-40%	BENTONITE
	SANDSTONE
BONEY/STONEY COAL	SILTSTONE
	CORE LOSS

SELCO INC.

ROCKY CREEK , TERRACE HILL PROPERTY

TRENCH 3

Sheet 1

Drawn:		Date:
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS L. A. SMITH CONSULTING & DEVELOPMENT LTD	Dwg. No:	

GEOPHYSICAL LOGS

RESISTIVITY | BULK DENSITY | LOG OF CORE | 1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80 | R% | INTERVAL METRES | SAMPLE NO. | SAMPLE COMP.

ANALYTICAL DATA (A.D.B.)

PROXIMATE ANALYSIS

Depth	Log of core	Description	R%	Interval (metres)	Sample No.	Comp.	M%	A%	VM%	FC%	S%	BTU/lb	S.G.
	?	ROOF ROCKS NOT EXPOSED TRENCH COMMENCED IN COAL											
0 – 0.3		COAL - C1											
0.3 – 0.4		COAL - C3											
0.4 – 1.8		COAL - C2		2.5	9886		13.1	6.7	29.6	50.4			
1.8 – 2.5		COAL - C1 WEATHERED END OF TRENCH 1A		2.0	9887		10.7	8.5	29.8	51.0			
2.5 – 4.5		TRENCH 1B CONTINUATION OF SECTION FROM BOTTOM OF TRENCH 1A COAL - C1 WEATHERED - MAY NOT REPRESENT TRUE THICKNESS, BUT RATHER PARTIALLY SLOUGHED COAL					11.8	7.8	29.7	50.7			
4.5	?	FLOOR ROCKS NOT EXPOSED											

RESISTIVITY ————
BULK DENSITY — — — —
RECOVERY - R%

LEGEND

- COAL, C1 Ash < 10%
- COAL, C2 Ash 10-20%
- COAL, C3 Ash 20-30%
- COAL, C4 Ash 30-40%
- BONEY / STONEY COAL
- COAL & BANDS
- CARBONACEOUS MUDSTONE
- MUDSTONE
- BENTONITE
- SANDSTONE
- SILTSTONE
- CORE LOSS

SELCO INC.

ROCKY CREEK , TERRACE HILL PROPERTY

TRENCH 2

"B" ZONE, LOWER SEAM

Drawn: Bb		Date: OCT. 84
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS L.A. SMITH CONSULTING & DEVELOPMENT LTD	Dwg. No:	

APPENDIX 4

GEOPHYSICAL LOGS

RESISTIVITY	LOG OF CORE	BULK DENSITY (1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.20 2.40 2.60 2.80) LOG DESCRIPTION	R%	INTERVAL METRES	SAMPLE NO.	SAMPLE COMP.
0 – 0.92		COAL - C2		0.92	9876	

ANALYTICAL DATA (A.D.B.) 38

PROXIMATE ANALYSIS

M%	A%	VM%	FC%	S%	BTU/lb	S.G.
7.2	40.0	21.4	31.4	/	/	/

ANALYSIS OF COMPOSITE

M%	A%	VM%	FC%	S%	BTU/lb	S.G.

LEGEND

RESISTIVITY ————
BULK DENSITY — — — —
RECOVERY - R%

COAL, C1, Ash <10%
COAL, C2, Ash 10-20%
COAL, C3 Ash 20-30%
COAL, C4 Ash 30-40%
BONEY / STONEY COAL

COAL & BANDS
CARBONACEOUS MUDSTONE
MUDSTONE
BENTONITE
SANDSTONE
SILTSTONE
CORE LOSS

SELCO INC.

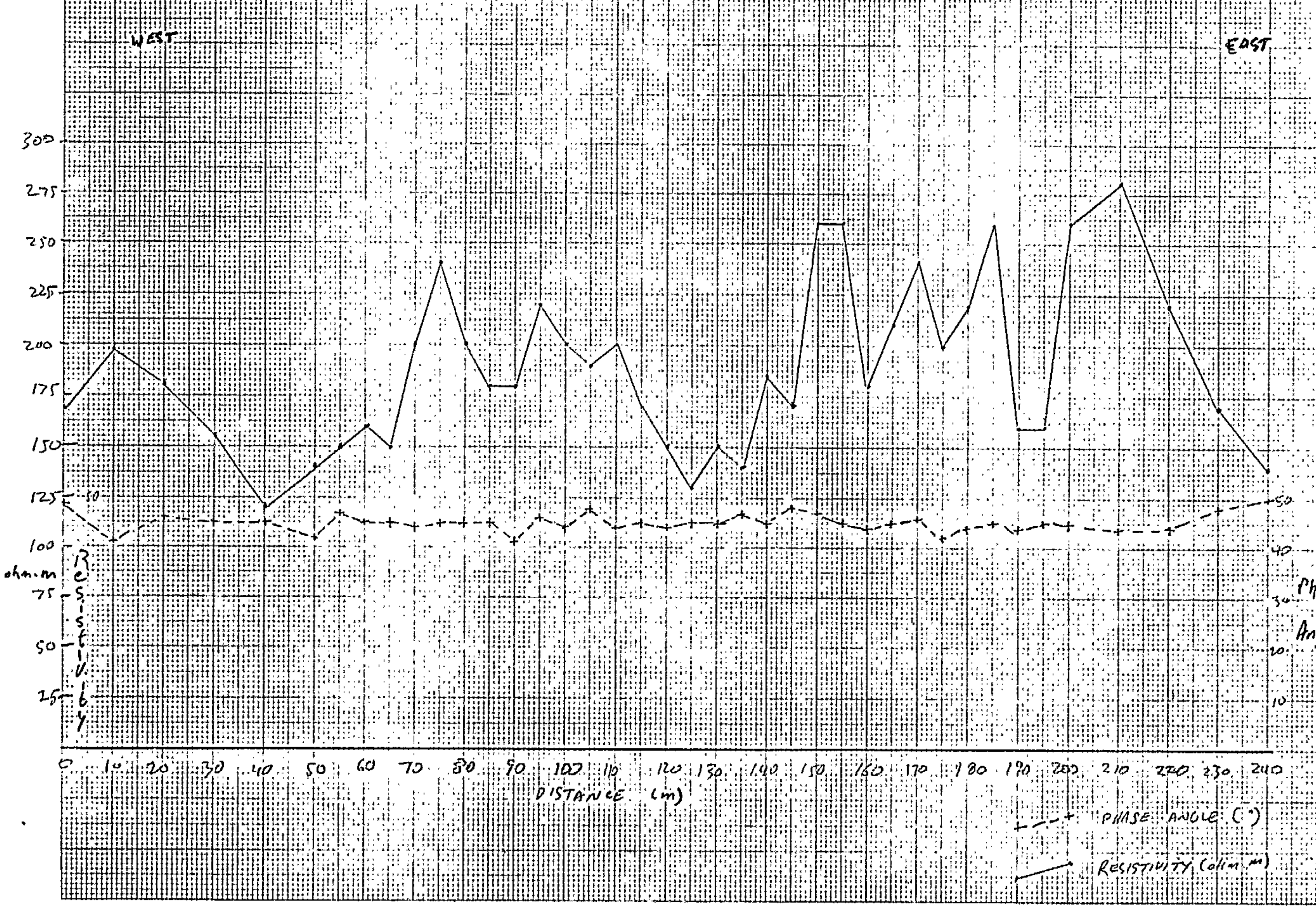
ROCKY CREEK , TERRACE HILL PROPERTY

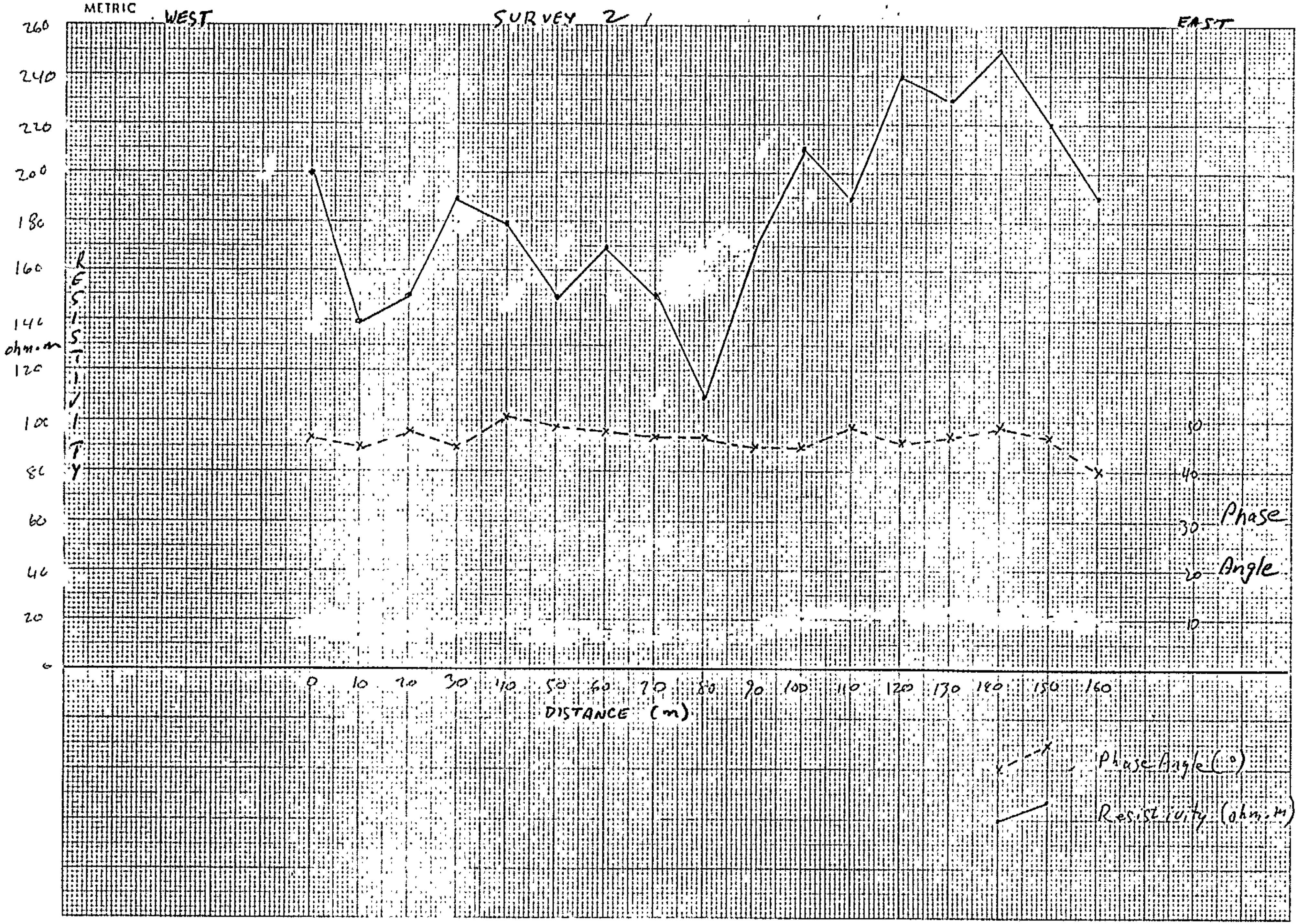
TRENCH 1

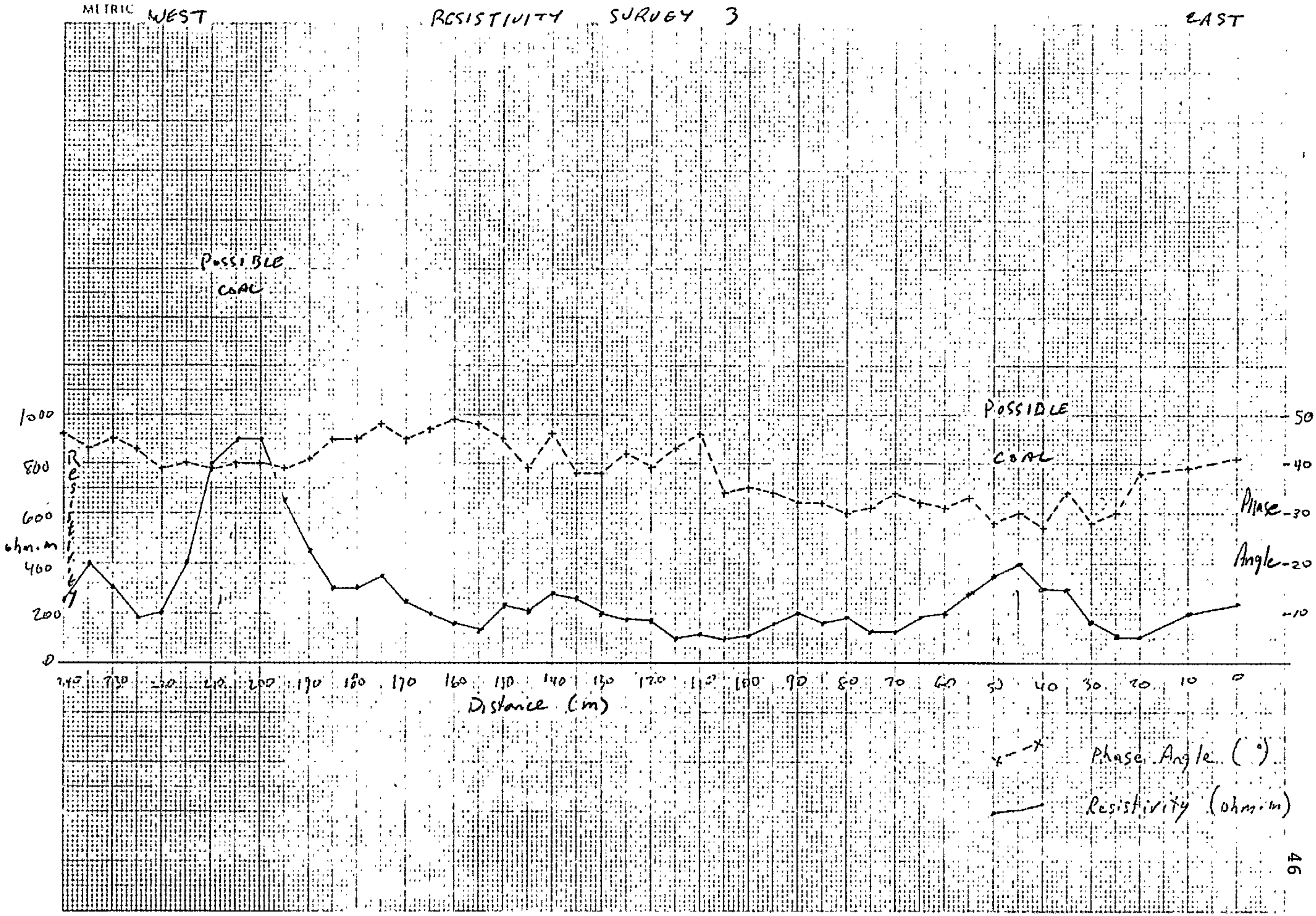
PART of "C" ZONE, UPPER COAL

Drawn: Bb		Date: OCT/84
Checked:	Client App.	Scale:
Author:	Revised:	File No:
LAS A. SMITH CONSULTING & DEVELOPMENT LTD	Dwg. No:	

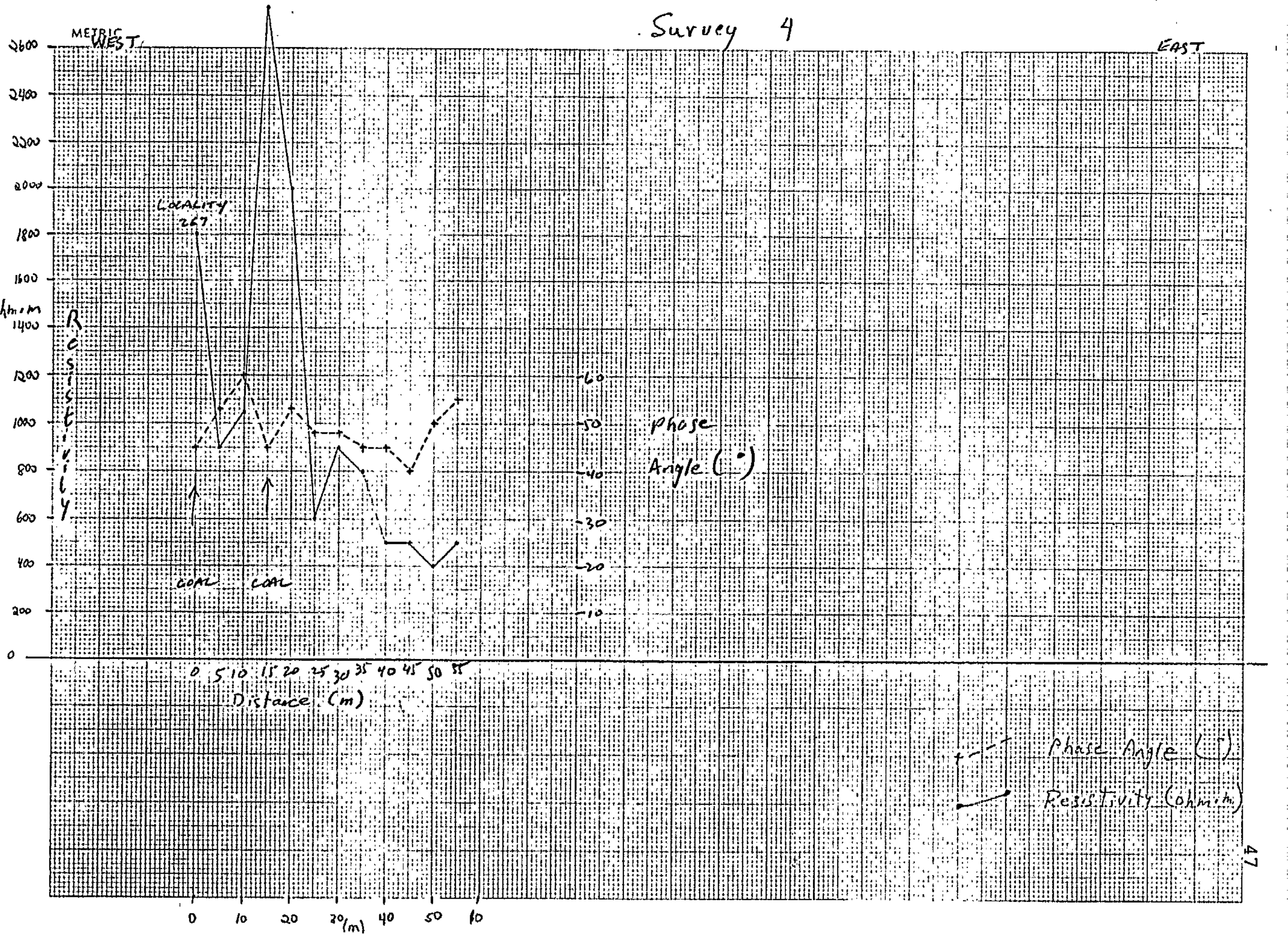
RESISTIVITY SURVEY 1.



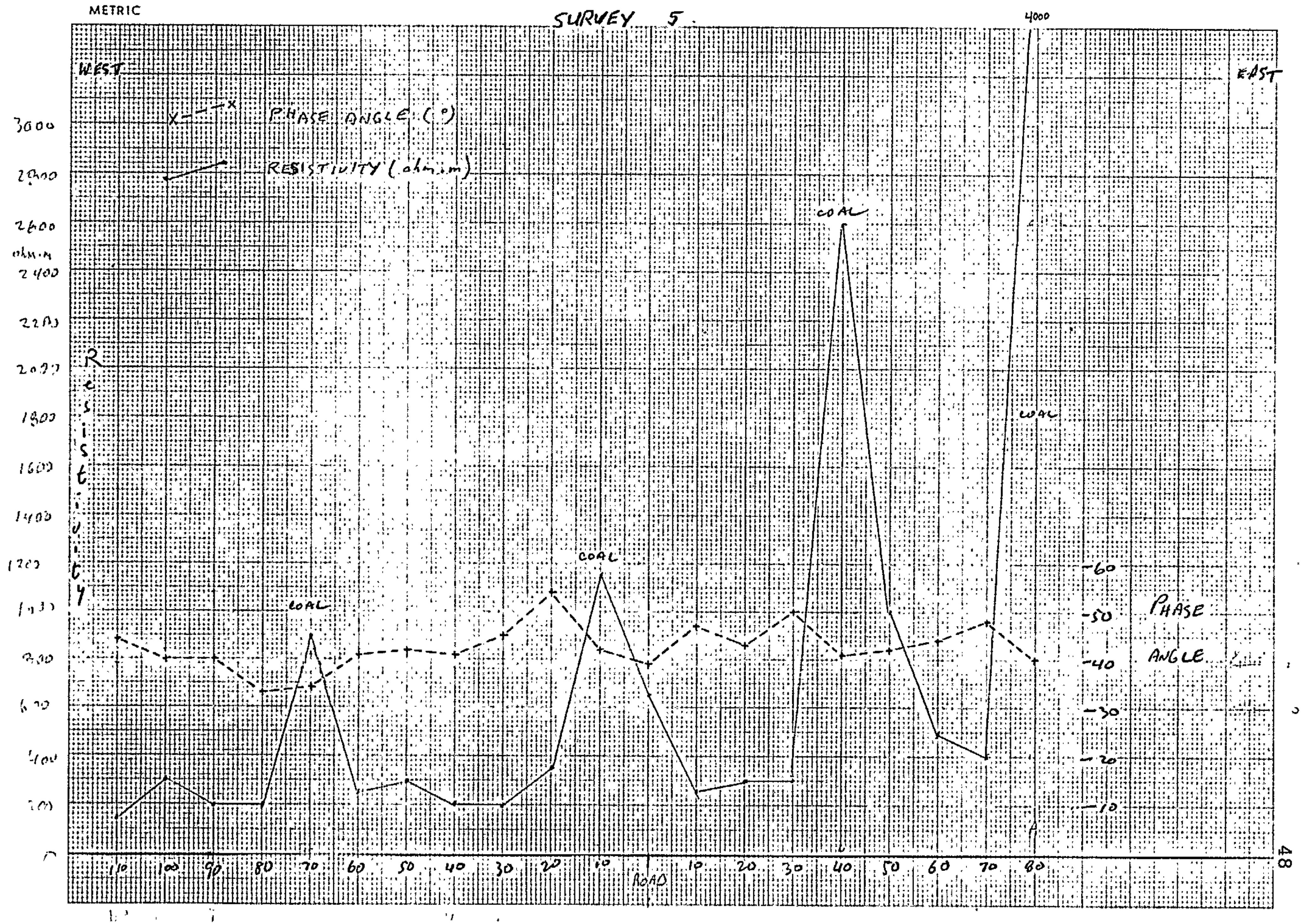

METRIC
WEST
SURVEY 2
EAST
RESISTIVITY
ohm.m
260
240
220
200
180
160
140
120
100
80
60
40
20
0
50
40
30
20
10
Phase Angle
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
DISTANCE (m)
Phase Angle (°)
Resistivity (ohm.m)



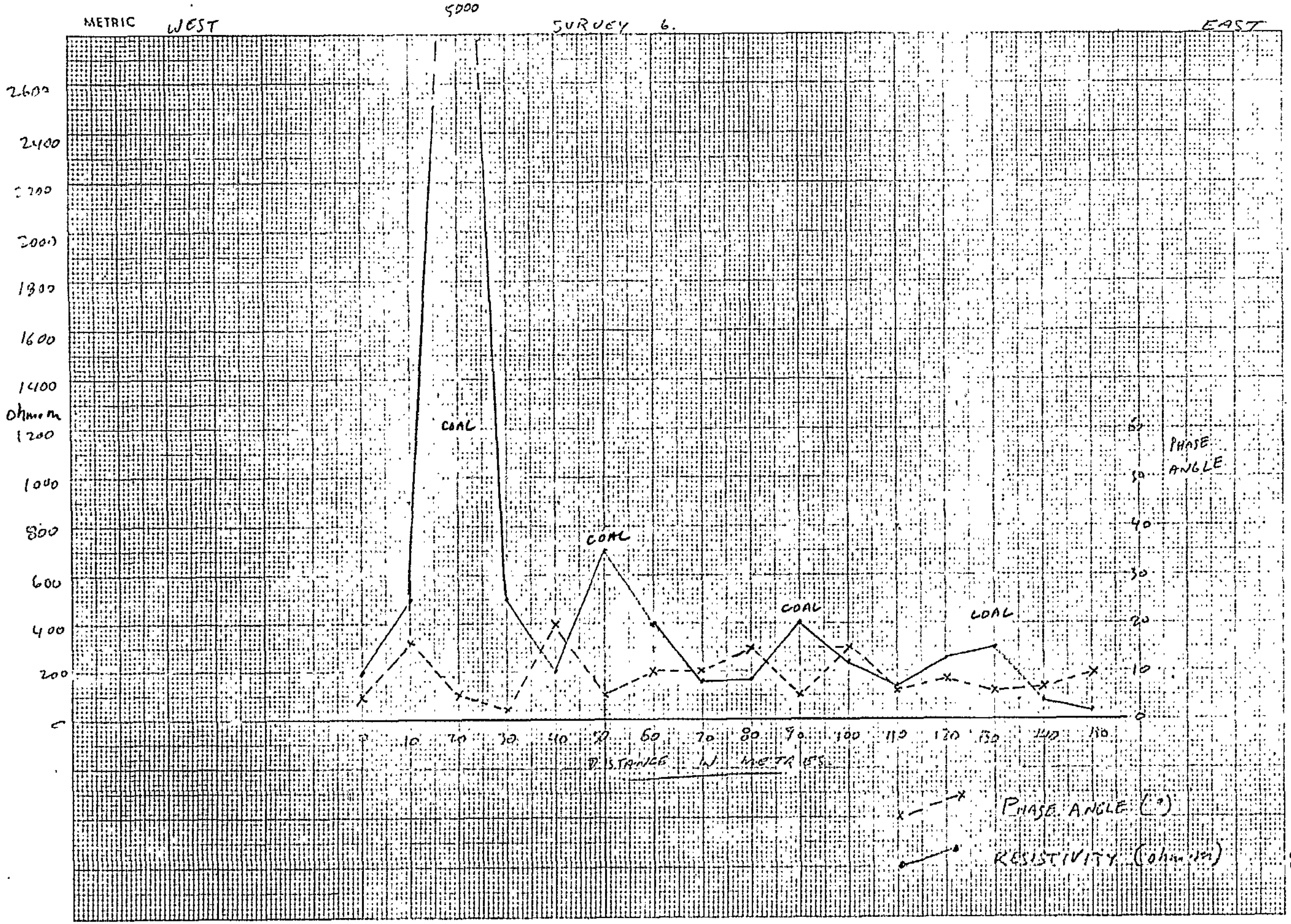
METRIC
WEST
RESISTIVITY SURVEY 3
EAST
POSSIBLE COAL
POSSIBLE COAL
Resistivity
ohm.m
1000
800
600
400
200
0
50
40
30
20
10
Phase Angle
240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
Distance (m)
Phase Angle (°)
Resistivity (ohm·m)



Survey 4
METRIC
WEST
EAST
Resistivity
ohm.m
Phase Angle (°)
LOCALITY 267
COAL
COAL
Distance (m)
Phase Angle (°)
Resistivity (ohm.m)
47

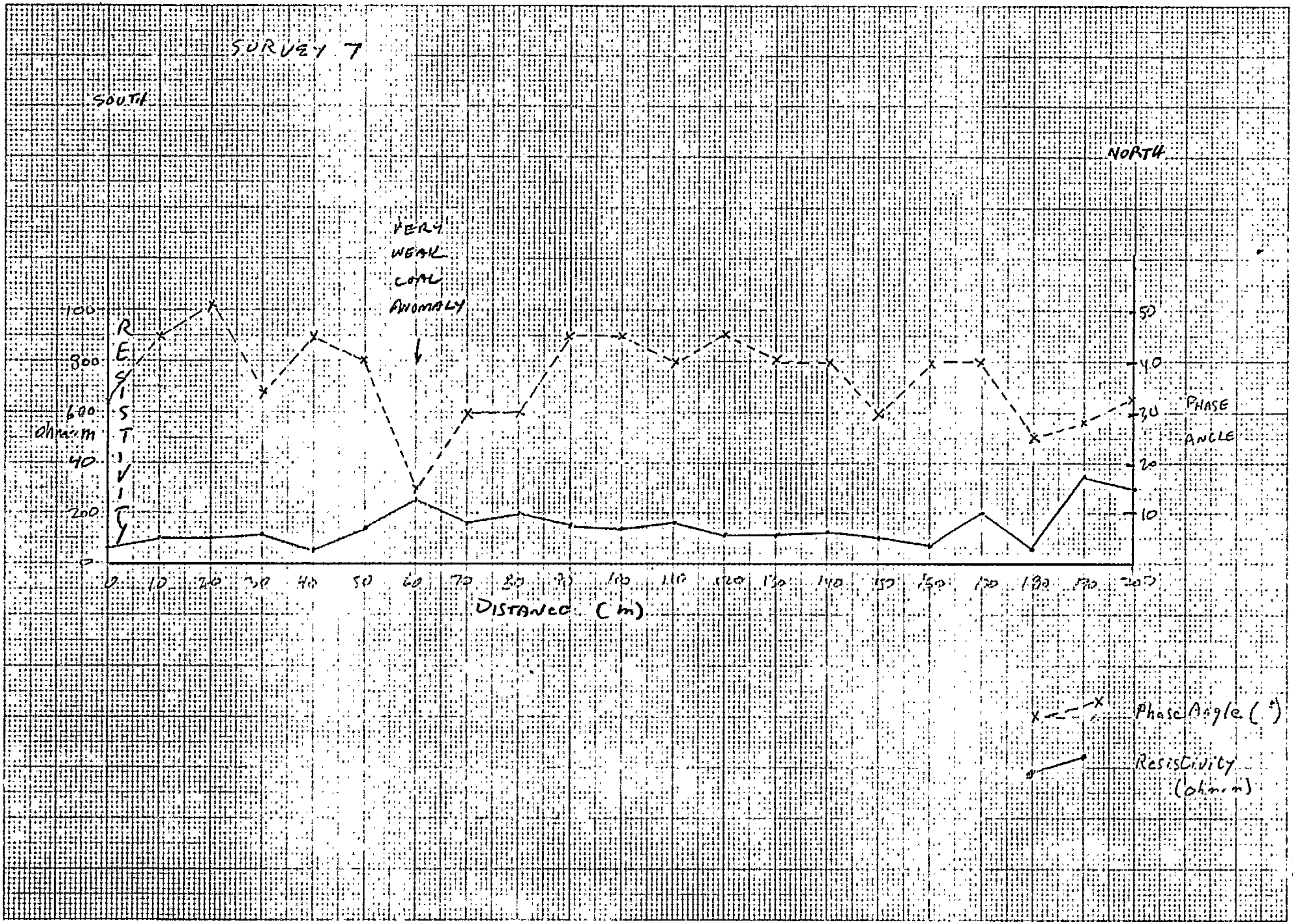


METRIC
SURVEY 5.
WEST
EAST
X---X PHASE ANGLE (°)
RESISTIVITY (ohm.m)
COAL
COAL
COAL
COAL
4000
Resistivity
ohm.m
3000
2600
2400
1800
1600
1400
400
PHASE ANGLE
-60
-50
-40
-30
-20
-10
110
100
90
80
70
60
50
40
30
20
10
ROAD
10
20
30
40
50
60
70
80
48



METRIC
WEST
SURVEY 6.
EAST
5000
ohm m
COAL
COAL
COAL
COAL
PHASE ANGLE
DISTANCE IN METRES
PHASE ANGLE (°)
RESISTIVITY (ohm m)

METRIC



SURVEY 7
SOUTH
NORTH
VERY WEAK COAL ANOMALY
RESISTIVITY
ohm-m
PHASE ANGLE
DISTANCE (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
0 200 400 600 800 1000
10 20 30 40 50
Phase Angle (°)
Resistivity (ohm-m)

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE -
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 1000

DRAWN BY Bb CHECKED LAS DATE OCT/84

SCALE HOR. VERT. 1:5000 FILE NO

LAS L.A. SMITH CONSULTING & DEVELOPMENT LTD

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 1500

DRAWN BY Bb LAS DATE OCT/84

1:5000

FILE NO

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 1750

DRAWN BY Bb LAS OCT/84

SCALE 1:5000

FILE NO

LAS

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 3000

DRAWN BY Bb LAS DATE OCT/84

SCALE 1:5000 FILE NO

LAS

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 2750

DRAWN BY Bb LAS DATE OCT/84
SCALE 1:5000
FILE NO

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE -
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A, B, C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 2500

DRAWN BY BB | LAS | DATE OCT/84

SCALE 1:5000 | FILE NO

LAS L.A. SMITH CONSULTING & DEVELOPMENT LTD

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 2250

DRAWN BY BB LAS DATE OCT/84

SCALE 1:5000 FILE NO

LAS

NOTE:
MEASUREMENT IN METRES

Legend

KG	GETHING FORMATION
KGl	L. SANDSTONE
KGj	J. SANDSTONE
KC	CADOMIN FORMATION
JKm	MINNES GROUP
A,B,C	COAL SEAMS

SELCO INC.

ROCKY CREEK
TERRACE HILL PROPERTY

CROSS-SECTION 2000

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SCALE 1:5000 — FILE NO

LAS

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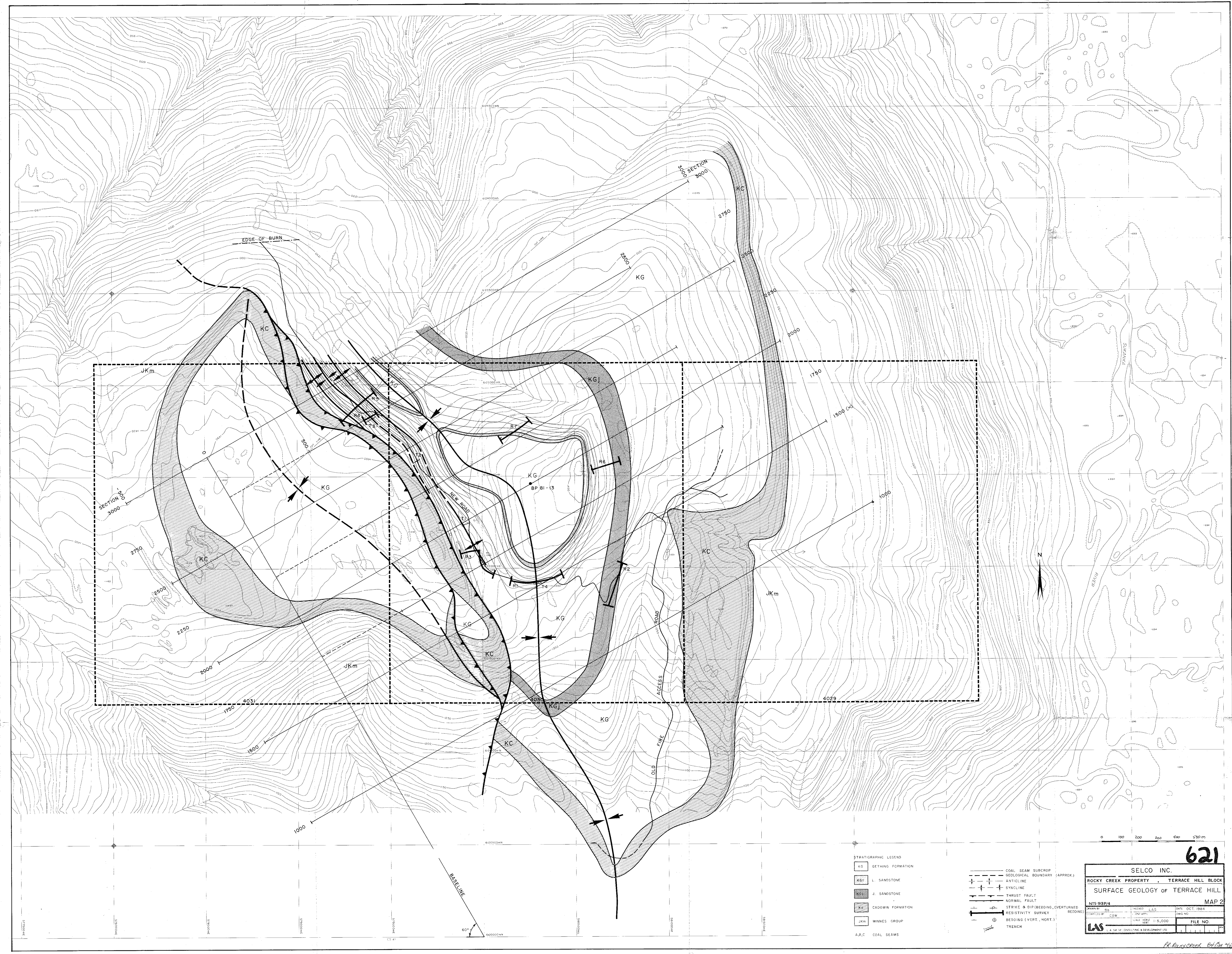
3. BP Exploration Canada Limited, Coal Division, Report on the North East B.C. Thermal Coal Exploration Program, 1980.



EDGE OF BURN
SECTION
NEW ROAD
OLD FIRE ACCESS ROAD
BASELINE
BP 81-13
KG
KC
KG1
JKm
R1
R2
R3
R4
R5
R6
R7
4031
4030
4029
1500 (m)
0 100 200 300 400 500m
621
STRATIGRAPHIC LEGEND
KG GETHING FORMATION
KG1 L. SANDSTONE
KG1 J. SANDSTONE
KC CADOMIN FORMATION
JKm MINNES GROUP
A,B,C COAL SEAMS
COAL SEAM SUBCROP
GEOLOGICAL BOUNDARY (APPROX.)
ANTICLINE
SYNCLINE
THRUST FAULT
NORMAL FAULT
STRIKE & DIP (BEDDING, OVERTURNED BEDDING)
RESISTIVITY SURVEY
BEDDING (VERT., HORT.)
TRENCH
SELCO INC.
ROCKY CREEK PROPERTY , TERRACE HILL BLOCK
SURFACE GEOLOGY OF TERRACE HILL
NTS: 93P/4
MAP 2
DRAWN BY Bb
CHECKED LAS
DATE OCT. 1984
COMPILED BY CBW
DWG NO
SCALE HORIZ VERT 1:5,000
FILE NO.
REV
LAS
L. A. SMITH CONSULTING & DEVELOPMENT LTD.
PR. ROCKY CREEK 84(1)A #(2)