NOTE:

Coal Assessment Report 1007 consists of 2 parts:

> **Part 1*:** A 2009 NI 43-101 Technical Report - 'Geology and coal resource estimate concerning the Suquash coal deposit, Rupert land district (Nanaimo mining division), Vancouver Island, British Columbia'
> By C.G. Cathyl-Bickford October 23, 2009
>
> **An earlier posted version of this report (and the version that is available on www.sedar.com) is not the final version according to the author. The two reports are slightly different however the Resource Estimate remains the same. The version herein is the final version according to C.G. Cathyl-Huhn (nee Cathyl-Bickford).*
>
> **Part 2:** Mineral Assessment Report 31019 – 'Diamond Drill Report on the Elektra Project Suquash Area'
> By J. T. Shearer July 2, 2009

Both reports document the same drill program (for coal) conducted in 2008 at the Suquash coal deposit. Both reports are publically available and are immediately off-confidential status.

The Coal Licenses referred to in Report Part 1 forfeited to the Crown in July 25, 2014. Therefore, all submitted information is publically available.

Mineral tenure was held that overlapped the coal tenure, and the Mineral Assessment Report (31019) had been filed to advance the mineral tenure.

COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT:
Geology and coal resource estimate concerning the Suquash coal deposit

TOTAL COST: unknown

AUTHOR(S): **C.G. Cathyl-Bickford, 23 October 2009; title and summary dated 1 April 2016**
SIGNATURE(S):
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):

YEAR OF WORK: **2008-2010 license terms**

PROJECT NAME: **Suquash**

COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:
417679 and 417680
COAL LICENSE(S) IN PROJECT AREA ON WHICH NO PHYSICAL WORK WAS DONE OVER THE CURRENT REPORTING PERIOD: **417681**

BC MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: **92L 067**
MINING DIVISION: **Nanaimo**
NTS / BCGS: **NTS 92L/11 / BCGS 092L.064**
LATITUDE: **50° 37' 55.6"**
LONGITUDE: **127° 14' 12.2"** (at centre of work)
UTM Zone: **9U** EASTING: **624700** NORTHING: **5610400**

OWNER(S): **Electra Gold Ltd.**
MAILING ADDRESS: **Unit 5-2330 Tyner St., Port Coquitlam, B.C.V3C 2Z1**

OPERATOR(S): **Electra Gold Ltd.**
MAILING ADDRESS: **Unit 5-2330 Tyner St., Port Coquitlam, B.C V3C 2Z1**

REPORT KEYWORDS : **Bituminous coal, Upper Cretaceous, Nanaimo Group, Suquash Formation, Upper Division, Middle Division, Lower Division, Suquash Creek Fault, Fenlands Fault, West Fault, Keogh Fault, Suquash Colliery.**

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: **Coal Assessment Reports 92, 210, 211, 212, 213, 214, 215, 216 and 778; also see ARIS Assessment Reports 31019, 33786, and 34958; and see Petroleum Assessment Reports 1278, 1279. and 1340.**
WORK PROPOSED OVER THE NEXT YEAR (SPECIFY WHICH TENURE BLOCKS WILL SEE PHYSICAL WORK, IF KNOWN): **Additional drilling and coal-analytical work was recommended for sites within Tenures 417679, 417680, and 417681.**
RATIONALE FOR NEXT YEAR'S PROGRAM
Extension of the known coal-resource base; confirmation of coal-quality.

April 1, 2016

PROFESSIONAL
PROVINCE OF
C.G.C. HUHN
20550
BRITISH COLUMBIA
GEOSCIENTIST

SUMMARY OF TYPES OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH TENURES
GEOLOGICAL (scale, area)		
Ground, mapping	**1093 hectares**	**417679. 417680, and 417681**
Photo interpretation	**none**	**n/a**
GEOPHYSICAL (line-kilometres)		
Ground	**none**	**n/a**
Airborne	**none**	**n/a**
Borehole		
Gamma, Resistivity, **3 holes**	**523.15 metres**	**417676 and 417680**
Caliper **3 holes**	**523.15 metres**	**417676 and 417680**
Deviation	**none**	**n/a**
Dip	**none**	**n/a**
Others : **Density: 3 holes**	**523.15 metres**	**417676 and 417680**
Core: **4 boreholes**	**654.67 metres**	**417676 and 417680**
Non-core: **none**	**none**	**n/a**
SAMPLING AND ANALYSES		
Total Number of Samples:	**174**	**417676 and 417680**
Proximate	**32**	**417676 and 417680**
Ultimate	**none**	**n/a**
Petrographic	**none**	**n/a**
Vitrinite reflectance	**none**	**n/a**
Coking	**none**	**n/a**
Wash tests	**4**	**417676 and 417680**
Ash fusibility temperature	**4**	**417676 and 417680**
Mineral analysis of ash	**4**	**417676 and 417680**
PROSPECTING (scale/area)	**none**	**n/a**
PREPARATORY/PHYSICAL		
Line/grid (km)	**none**	**n/a**
Trench (number, metres)	**none**	**n/a**

Suquash-2009-cover_160401a.doc

1 Title page

Geology and coal resource estimate concerning the Suquash coal deposit,

Rupert land district (Nanaimo mining division), Vancouver Island, British Columbia,

NTS 92 L/11 E (TRIM 092L.064), 50°37' N / 127°14'

by

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website: *www.ElectraGoldLtd.com*

Fieldwork done: 2009 Report date: 23 October 2009

605.03-09

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3 Summary

Dunsmuir Geoscience was commissioned by Electra Gold Ltd. to prepare a *National Instrument 43-101* compliant technical report on their Suquash coal property, situated on Vancouver Island, British Columbia. The current report has been prepared in compliance with *Form 43-101 F1.*

This report presents a preliminary geological description and coal-resource estimate concerning Electra Gold Ltd.'s Suquash coal property, comprising Coal Tenures 417679 through 417681 inclusive, within the Rupert Land District of Vancouver Island, British Columbia, with effective date of 23 October, 2009. Verification of the geology, coal bed geometry and assurance-of-existence of coal resources has been completed by the author through site visits and data reviews, followed by construction of a geological model of the Suquash coal property. The Suquash coal property contains coal resources of measured, indicated and inferred levels-of-assurance.

3.1 Property

The Suquash coal property comprises three British Columbia provincial Crown coal licences (Coal Tenures), numbered 417679 through 417681 inclusive, within the Rupert Land District of Vancouver Island, British Columbia. The total area of the property is 1093 hectares. The coal licences were granted in June of 2009, for a one-year term expiring on June 25, 2009. The licences are presently in good standing, with annual rental fees paid-up at $7.50 per hectare.

Coal licences require the payment (to the Crown) of an annual rental of $7.00 per hectare for the first five years, increasing to $10.00 per hectare in the second five years, and further increasing at $5.00 annually per hectare per five year period thereafter, to a maximum of $25.00 per hectare. Any coal licences which in the future may be filed would start with an annual rental of $7.00 per hectare.

Provincial coal licence lands, such as the Suquash coal property, are subject to a Crown coal production royalty, the amount and terms of which are set by the provincial government. The provincial royalty is a minimum of 2% of net current proceeds, which is taken as a credit against a 13% net revenue tax which is payable after recovery of certain capital and pre-production costs.

An agreement is in place between Hanam Canada Marketing Corporation and Electra Gold Ltd., under whose terms share transfers must be made by Electra Gold as certain project milestones are met (Shearer, 2008). I am unaware of any other private agreements or encumbrances, such as coal production royalties which may affect the Suquash coal property.

Although coal-measures are exposed to view beneath intertidal lands, and old mine-workings at Suquash Colliery extend beneath the sea, these submarine lands are not included within the present extent of the coal property, which is limited by the natural boundary of Queen Charlotte Strait.

3.2 Location

The Suquash coal property is located in Canada's westernmost province, British Columbia, on the north-eastern coast of northern Vancouver Island (**Figure 3-1**), between the communities of Port McNeill and Port Hardy. In addition to the towns at Port McNeill and Port Hardy, Suquash lies near the First Nations communities of Fort Rupert and Quatsino.

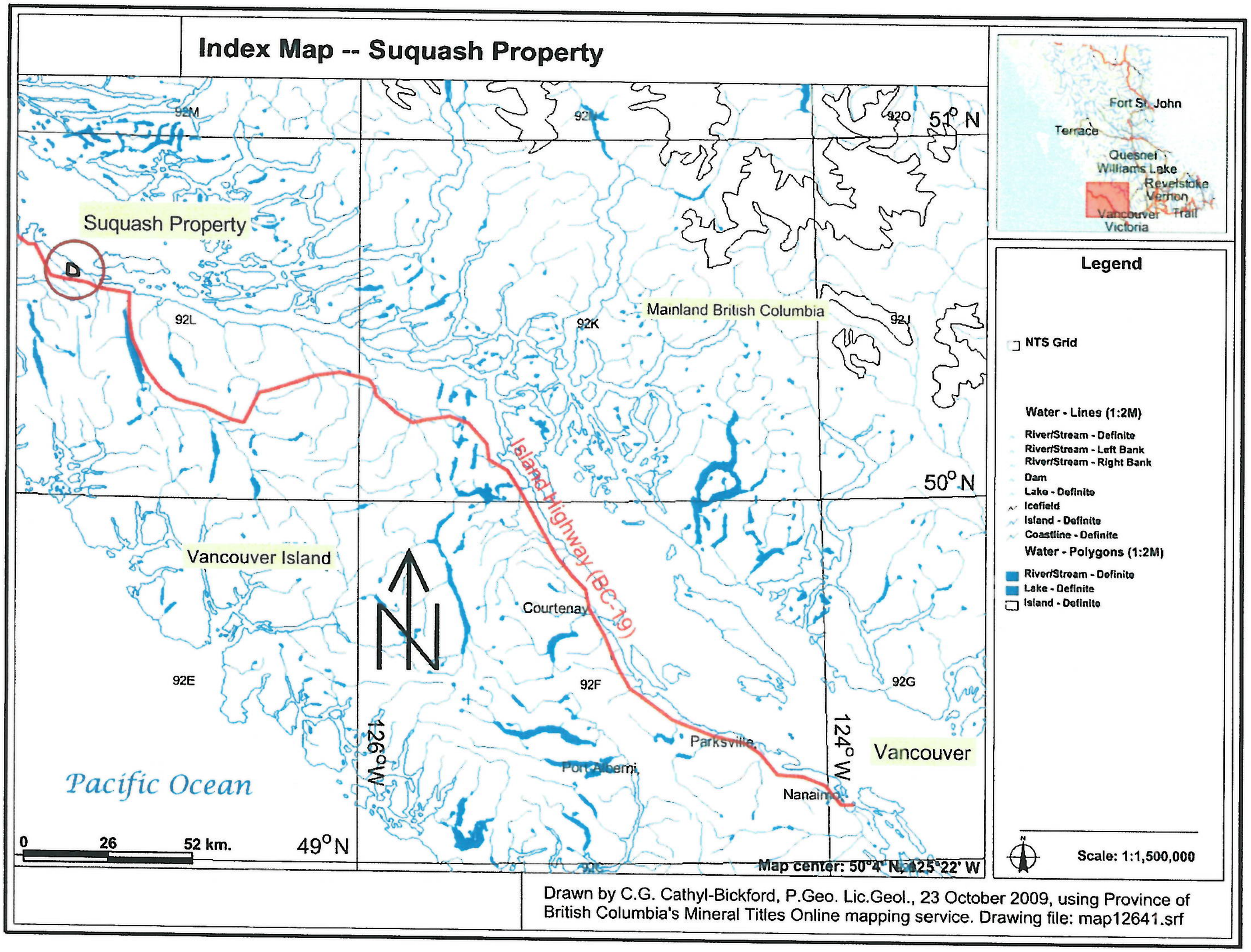


Figure 3-1: Index map

The property is bounded on the north-east side by the natural shoreline of Queen Charlotte Strait, which is an inland portion of the Pacific Ocean.

The Suquash property is easily accessed for exploration purposes, as it lies within an area that is served by an extensive network of well-constructed all-weather logging-roads, all of which connect to and cross the highway. Most of the roads can be traversed with a light truck without any further repair.

3.3 Ownership

Electra Gold Ltd. is registered as the owner of 100% of the three Suquash coal licences. Crown coal licences, as are granted by the Province of British Columbia, carry with them the sole and exclusive right to explore for coal within their boundaries, during the licences' term of activity. Coal licences do not convey the right to explore for, or produce, coalbed gas, or other forms of petroleum and natural gas.

The Suquash coal property is adjoined and overlapped by several blocks of mineral claims, some of which are controlled by Mr J.T. Shearer, who is closely-associated with Elektra Gold Ltd. Most of the coal property is overlapped with Mr. Shearer's claims, but some of the property is overlapped, and substantially adjoined, by claims held by third parties.

3.3 Geology and mineralisation

The Suquash coal property is situated in Suquash Basin, a Late Cretaceous forearc basin which covered a portion of the Pacific coastal edge of North America. Much of the basin has since been removed by erosion, but the remnant area hosts the Suquash coalfield, including the coal resources recognised in the present report.

Geology

All of the known coal resources lie within the Suquash Formation, which is approximately 330 to 350 metres thick within the Suquash coal property. Economic basement beneath the Suquash coalfield is inferred to consist of volcanic and metasedimentary rocks of Jurassic and Triassic age. Basement rocks have not been encountered in any boreholes within the Suquash coal property, but they have been reached in boreholes elsewhere within Suquash Basin.

Drilling within the upland areas of the Suquash coal property, and mapping along the shoreline of Queen Charlotte Strait, has disclosed a pervasive but variably-thick cover of unconsolidated Drift above the coal-measures of the Suquash Formation. Where penetrated by boreholes within the property, Drift cover is at least 1.5 metres thick, and locally over 48 metres thick. Drift thickness appears to increase from the coastline towards the upland south-western area.

Bedrock exposures along the shore of Queen Charlotte Strait show an apparently-simple gross geological structure, with bedding dipping gently at 3 to 10 degrees to the northeast or southeast, complicated by rare joint swarms and low-displacement faults (typically in the range of a few decimetres or less). Stratification in sandstones locally dips as steeply as 25 degrees, but such steeper dips are confined to single beds or associated groups of beds; these steep dips are therefore interpreted as due to point-bar or foreset cross-bedding.

Mineralisation

Coal of interest for underground mining lies within the Suquash No.2 coal bed, near the middle of the Suquash Formation. Within the current outlines of the Suquash coal property, the No.2 coal bed ranges in gross thickness (inclusive of internal rock partings) from 20 centimetres to 2.42 metres. The No.2 coal bed formed essentially in place, as an accumulation of peat. The peat-forming landscape comprised forested wetlands upon a coastal plain, interrupted by shallow fresh-water streams which occasionally flooded, leaving widespread deposits of sandy, silty and muddy sediment upon the surfaces of the wetlands. The No.2 coal bed therefore consists of interbedded coal and rock partings, including bands of dirty or stony coal, and coaly or carbonaceous rock.

The roof of the No.2 coal bed comprises interlaminated, thin- to medium-bedded mudstone, siltstone and sandstone. In my opinion it would make an acceptable roof for a room-and-pillar mine.

The floor of the No.2 coal bed comprises variably-carbonaceous, interbedded or interlensing mudstone and siltstone, with occasional coals up 20 centimetres thick. These 'basal shales', referred to as the No.2L bed, are 1.19 to 3.50 metres thick in the four year-2008 boreholes. The No.2L bed is moderately soft, with locally-abundant pedogenic slickensides, but it hardens somewhat as its silt content increases downward towards its base. Beneath the No.2L bed is the floor of the overall No.2 coal zone: a hard, distinctively light-coloured unit of quartzitic silty sandstone. The best floor in long-term usage, such as along main development roadways, would likely be found in the harder, quartzitic sandstones beneath the No.2L bed.

Significant analytical results

Cores taken from the No.2 coal bed and the No.2L 'basal shale' bed during the year-2008 drilling programme were sent to Birtley Coal & Minerals Testing in Calgary, Alberta, Canada. Three composite samples, numbered 1, 3 and 4, from boreholes SQ-08-2, -3 and -4 respectively (locations shown on **Figure 3-2**, and also summarised on **Table 3-1**), were assembled of the No.2 coal, and one composite sample, numbered 2, from borehole SQ-08-2, was assembled of the No.2L bed. Composites were assembled according to interpreted thickness (along the core axis) and the apparent specific gravity of each of their component ply samples. By weighting the constituent plies in such a manner, due allowance was given for the possibility of non-uniform volumetric core recoveries.

Table 3-1: Depth and thickness details for composite core samples

Composite:	Borehole:	Bed:	Depth range (m)	Net coal thickness (m)	Gross thickness (m)
No.1	SQ-08-2	No.2	70.92 to 73.13	1.55	2.21
No.2	SQ-08-2	No.2L	73.13 to 74.32	0.27	1.19 ['basal shale']
No.3	SQ-08-3	No.2	101.38 to 103.80	1.39	2.42
No.4	SQ-08-4	No.2	108.22 to 109.60	0.70	1.38

*Note: locations of boreholes are given in **Figure 3-2**.*

Summary of screen-size analysis and float-sink results

Screen-size analyses and float-sink studies were done on plus-28 mesh material from all four composites, and determinations of fusibility (**Table 3-2**) and ash chemistry (**Table 3-3**) were done on float-1.40 s.g. simulated clean coal product and sink-1.40 s.g. middlings/rock rejects from plus-28 mesh material from composites 1 and 2.

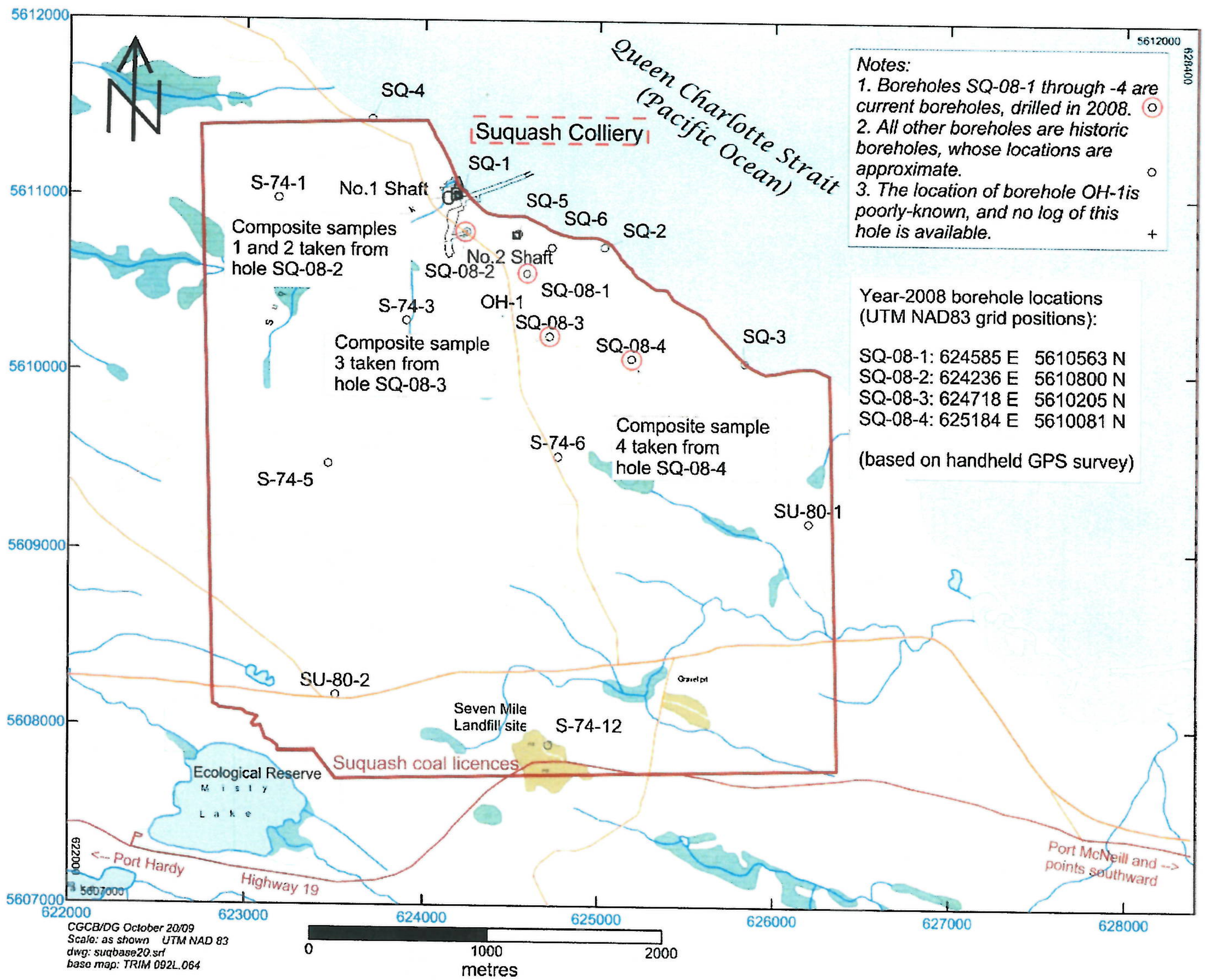


Figure 3-2: Location of boreholes, and of composite samples from year-2008 borehole cores

The No.2 coal bed, as examined in composite samples 1, 3 and 4, yielded a low amount of minus-28 mesh fine coal on screening, ranging from 7.36% to 8.44%. Ash content is high in all size fractions of the raw coal, consistent with the high proportion of rock partings in the overall section of the No.2 coal bed. The No.2L basal shale zone, as examined in composite sample 2, yielded a similar amount of minus-28 mesh material, at 8.44%. Ash content is much higher, as expected, but sulphur content is much lower.

Yields of float-1.40 s.g. clean coal are lower than the reject of sink-1.90 s.g. rock; again, this is not unexpected, given the number of rock partings within the No.2 coal bed. Float-1.40 yields range from 23.13% to 34.12% in the three composite samples of coal, at air-dried ash contents ranging from 5.52% to 6.10%, and air-dried sulphur contents ranging from 0.87% to 1.11%. Residual moisture contents are low to moderate, at 2.62% to 5.97%. Float-1.40 yield of clean coal from the No.2L basal shale zone was, as expected, very low at 5.56%.

Air-dried calorific values of the float-1.40 clean coal from the No.2 coal bed are moderate, at 6647 to 6922 calories/gram (11,965 to 12,460 BTU/pound). Corresponding moist mineral-matter-free calorific value based on the Parr formula (where mineral matter equals the sum of 1.08[ash content] and 0.55[sulphur content] is 12941 to 13317 BTU/pound (averaging 13166 BTU/pound among the three determinations), indicating an ASTM coal rank of high-volatile B to high-volatile C bituminous.

Reject amounts of sink-1.90 s.g. rock are high, ranging from 43.84% to 52.68% in the three composites of the No.2 coal bed. Air-dried ash contents of reject rock range from 76.99% to 84.38%; sulphur contents of reject rock range from 0.72% to 2.63%, at residual moisture contents of 1.19% to 2.93%. The reject amount in the basal shale (No.2L bed) is higher, at 80.78% in the one composite examined. Air-dried ash content of reject rock from the basal shale zone is 85.74%, and sulphur content is 0.06%, at a residual moisture of 1.02%.

Yield of 1.40-1.90 middlings material is moderate, at 21.26% to 24.19% in the three coal composites, and lower at 13.66% in the composite of the basal shale zone. Sulphur is concentrated in the middlings density fractions in all three of the coal composites, but not thus concentrated in the middlings from the basal shale zone.

Fusibility and ash chemistry of composites from current samples

Two of the four current +28 mesh composite samples (composite 1, of the No.2 coal bed, and composite 2, of the No.2L 'basal shale' beneath the No.2 coal) were submitted for determination of ash chemistry and ash fusibility. Two density fractions were analysed for each composite:

- float-1.40 material, representing a simulated clean coal product being floated off a screened mine-run feed, and
- sink-1.40 material, representing a simulated middlings-and-rock reject material, remaining after the clean coal had been floated off the screened mine-run feed.

Tables 3-2 and **3-3** present results for the two simulated products each, as derived from the No.2 coal (composite 1) and No.2L 'basal shale' (composite 2) samples:

The simulated clean coal (float-1.40 s.g. from plus-28 mesh size fractions of the No.2 coal bed and the No.2L basal shale zone) has moderate to high ash fusion temperatures, consistent with the low calcium oxide content of its ash. Ash fusion temperatures of the simulated middlings and rock reject material (sink-1.40 s.g. density fraction) are consistently high, again as expected given their very low calcium oxide contents.

Table 3-2: Ash fusibility temperatures (Celsius) for +28 mesh simulated clean coal and middlings/rock materials

Sample identification and yield/reject percentage	Reducing atmosphere				Oxidising atmosphere				specific gravity
	IDT	ST	HT	FT	IDT	ST	HT	FT	
Comp. 1: Float-1.40 material (float-sink yield 34.12%)	1249	1296	1330	1383	1299	1327	1362	1455	1.37 gm/cc
Comp. 2: Float-1.40 material (float-sink yield 5.56%)	1396	1442	1460	1494	1423	1448	1465	>1500	1.38 gm/cc
Comp. 1: Sink-1.40 material (float-sink reject 65.88%)	1394	1415	1456	>1500	1463	1498	>1500	>1500	2.04 gm/cc
Comp. 2: Sink-1.40 material (float-sink reject 94.44%)	1465	>1500	>1500	>1500	1484	>1500	>1500	>1500	2.35 gm/cc

Table 3-3: Mineral analysis of ash from +28 mesh simulated clean coal and middlings/rock materials

Sample identification and yield/reject percentage	Mineral analysis of ash										
	SiO_2	Al_2O_3	TiO_2	CaO	Fe_2O_3	MgO	Na_2O	K_2O	P_2O_5	SO_3	undet
Comp. 1: Float-1.40 material (float-sink yield 34.12%)	49.50	26.87	1.33	4.84	6.09	1.16	2.91	0.48	0.10	4.52	-2.20
Comp. 2: Float-1.40 material (float-sink yield 5.56%)	55.14	27.12	1.86	3.99	2.62	0.86	2.91	0.76	0.12	3.25	-1/37
Comp. 1: Sink-1.40 material (float-sink reject 65.88%)	59.87	26.06	0.94	1.74	5.39	1.13	1.67	1.64	0.06	1.25	-0.25
Comp. 2: Sink-1.40 material (float-sink reject 94.44%)	65.97	24.34	0.92	0.74	2.75	1.26	1.94	2.02	0.05	0.10	0.09

Data source: Birtley lab reports 93583 and 93584, October 2, 2009.

Silica (SiO_2) /alumina (Al_2O_3) ratios of ash from the clean coal and middlings/rock material range from 1.84 to 2.03 for the clean coal, and 2.30 to 2.71 for the middlings/rock. The middlings/rock material would need further blending with a source of high-alumina material, were it to be used as a blend component in cement-making.

Total alkali content (Na_2O and K_2O) of the ash from the clean coal and middlings/rock material range from 3.39% to 3.67% for the coal, and 3.31% to 3.96% for the middlings/rock. These are high values as compared with the target specification for cement-mill feedstock, and further work is warranted to determine whether the high alkali content is pervasive throughout the areal extent of mineable coal and associated basal shale, or whether it is local to the borehole (SQ-08-2) from which the two composites were derived.

3.4 Exploration concept

Further exploration work, as I have recommended in my report, rests upon the concept that the coal of the Suquash No.2 coal bed formed within a coastal plain environment, oriented along a northwest-trending paleoshoreline. Although I have some concerns that the apparent elongation of the known coal deposit is an artefact of non-uniform drill spacing, I also note that such paleoshoreline-associated elongate coal deposits are known from elsewhere on Vancouver Island (for example, the No.4/4L coal zone of the Quinsam Mine and Quinsam North coal properties).

3.5 Status of exploration, development and operations

Coal has been worked from locations within and adjacent to the Suquash coal property at various times in the past 160 years. Most of the workings have been underground, via the now-abandoned shaft of Suquash Colliery, whose workings extended out beneath Queen Charlotte Strait as well as into onshore areas. Some artisanal opencast workings were operated along the shoreline, at the mouth of Suquash Creek. Total reported production from all sources, between 1849 and 1952, was 24,058 tonnes.

Exploration

In 2008, Electra Gold Ltd. drilled four diamond-drill boreholes (**Figure 3-2**) within the present Suquash coal property. This drilling programme was conducted under terms of *Mineral & Coal Activities & Reclamation Permit* MX-80255, granted on September 29, 2008 to Electra Gold Ltd. All four of the year-2008 boreholes reached their target coal, the Suquash No.2 zone, and one of the boreholes (SQ-08-4) reached down past the underlying No.5 zone. Boreholes SQ-08-01 through SQ-08-04 are regarded as 'current boreholes' for the purposes of the present report.

Development and operations

Suquash is a past producer of coal, mainly from the underground workings of Suquash Colliery in the Suquash No.2 coal bed. Mining is not presently being undertaken at Suquash.

3.6 Qualified person's conclusions and recommendations

Verification of regional geology, local presence of potentially-mineable coal, lateral continuity of the Suquash No.2 coal zone, and amount of coal in place at various levels-of-assurance has been accomplished to my satisfaction, by means of geological mapping, review of historic drilling, interpretation of borehole geophysical logs, analytical work including densimetric (float-sink) studies, construction of a volumetric model of the coal deposit, and coal-resource estimation.

The Suquash No.2 coal bed within the Suquash coal property is considered to contain 4.823 million tonnes of measured and indicated resources of immediate and future interest for underground mining. Of these, 0.812 million tonnes are of immediate interest, in coal beds with a gross thickness of at least 1.5 metres, and a coal:rock ratio by thickness of at least 2:1. The remainder, 4.011 million tonnes, are of future interest, in coal beds with a gross thickness of at least 0.9 metres, and a coal:rock ratio by thickness of at least 1:1, which do not otherwise qualify as being of immediate interest.

Exploration work done to date on the Suquash coal property has been successful, in that it has disclosed the presence of potentially-mineable coal of a grade suitable for thermal-power generation (if the coal is washed at a low separating density) or for other industrial use.

I conclude that the Suquash coal property is a property of merit, and I recommend further analytical work followed by drilling of eight boreholes totalling 790 metres, with an overall estimated programme cost of $254,208, including drilling contingencies, but exclusive of taxes. I further recommend the acquisition of a bulk sample from underground workings at Suquash, contingent upon favourable results of analytical work and drilling.

Consideration of possible products

From the results of float-sink testing, I conclude that it may be feasible to scalp off a low-ash, low-sulphur, moderate-BTU clean coal at a low separating density, and that much of the unwanted sulphur from the raw coal will report to the middlings density fractions. I thus consider that raw coal from the No.2 coal bed could be washed for a modest yield of low-ash and low-sulphur coal for thermal-power markets.

Conversely, by using a higher separating density, it may be possible to produce a reject rock product with acceptably low sulphur content for industrial use such as cement-mill feedstock, but this will depend on the available proportion of low-sulphur 'basal' material from the No.2L zone, as compared with the higher-sulphur rock from the No.2 coal bed. Silica/alumina ratios of the middlings/rock material are higher than the desired 2:1 for cement-mill feedstock, but that deficiency could be readily addressed by blending with an external source of high-alumina material, such as the material which Electra Gold is presently producing from its PEM100 chalky geyserite quarry, situated northwest of Suquash.

Total alkali content of the ash from the clean coal and middlings/rock products is more of a concern. Cement mills desire the alkali content of their feedstock to be kept as low as practicable, and the two samples tested have relatively high alkali contents, at 3% to 4%. Further testwork is indicated, to determine whether the alkali content is consistent or variable across the various density fractions of the No.2 coal bed and associated basal shale zone, and whether the alkali content varies with position within the coal deposit. There is an opportunity to conduct this testwork without an immediate need for additional drilling, inasmuch as the ash-chemistry work to date has only been performed on composite samples drawn from one of the four boreholes drilled during the year-2008 drilling programme at Suquash.

Finally, consideration should be given to the possible markets for raw coal, or combinations of clean coal and middlings. The clean coal/middlings combination may be more interesting, as it affords the prospect of being able to produce 'clean rock' as a co-product, via washing at a high separating density. Further to this possibility, the clean coal/middlings and 'clean rock' concept may be extensible to combinations of the No.2 coal bed and the 'basal shale' of the underlying 2L bed, particularly if some of the higher-sulphur plies of the upper part of the No.2 coal bed could be left in place as a working roof in underground mining.

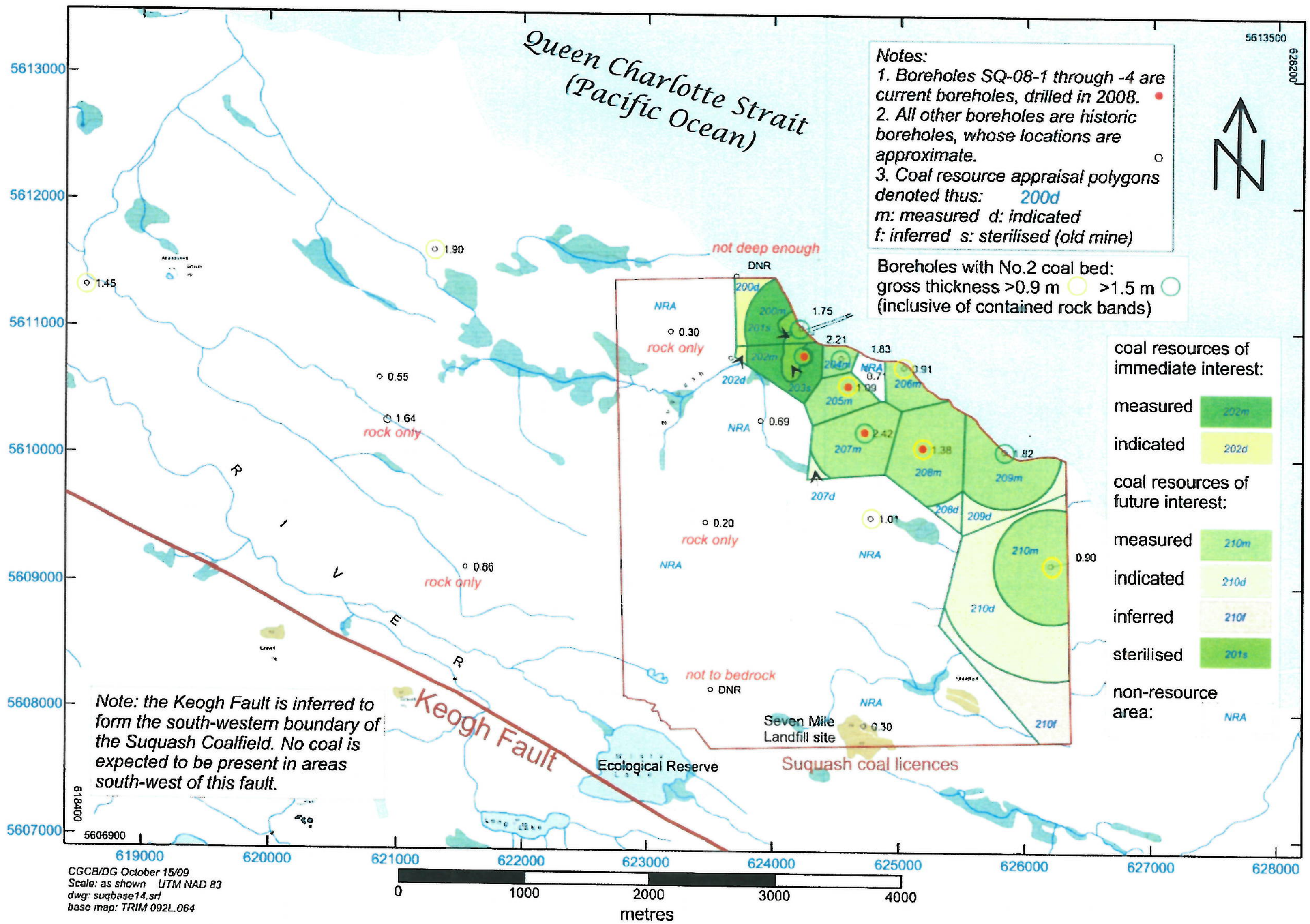


Figure 3-3: Coal resource map

Coal resource estimation for Suquash No.2 coal bed

Following completion of the year-2008 drilling programme at Suquash, coal resources of immediate and future interest for underground mining have been recognized with the coal-licence lands that comprise the Suquash coal property. No reserves of coal have yet been recognized, owing to lack of definitive engineering studies.

Coal beds have been considered to be of immediate interest for underground mining if they have a minimum gross thickness of 1.50 metres, and a minimum coal:rock ratio of 2:1 by thickness. Coal beds have been considered to be of future interest for underground mining if they have a minimum gross thickness of 0.90 metres, and a minimum coal:rock ratio of 1:1 by thickness, and if they do not otherwise meet the criteria for being of immediate interest.

In summary:

0.812 million tonnes of coal (inclusive of associated internal rock partings) are measured and indicated resources of immediate interest for underground mining. 4.011 million tones of coal (inclusive of associated internal rock partings) are measured and indicated resources of future interest for underground mining. An additional 0.243 million tonnes of coal (inclusive of associated internal rock partings) are inferred resources of future interest; these should be regarded as having significantly lower probability-of-existence. As well, 0.089 million tonnes of coal (inclusive of associated internal rock partings) are regarded as being sterilised by their proximity (within 50 metres) to flooded mine-workings of Suquash Colliery, and they therefore are accorded the status of future interest, as their mineability is dependent upon dewatering of the old workings.

Eighteen coal-resource blocks (**Figure 3-3**) have been recognised, all of them containing coal resources of immediate or future interest for underground coal mining within the Suquash No.2 coal bed, which forms part of the No.2 coal zone. Coal bed volumes within each resource block were determined by multiplying the following factors and data items:

- historic data confidence factor (0.90 for historic borehole data, 1.00 for current borehole data),
- geological continuity factor (subjectively assessed, and ranging from 0.70 to 0.90 depending upon distance from nearest relevant borehole and my perception of the likelihood of unforeseen interruptions to coal-bed continuity),
- gross thickness (in metres) of the No.2 coal bed, based on the nearest relevant borehole, and
- area (in hectares) of the resource block, as determined by grid blanking via *Surfer 9*

Tonnages (in metric tonnes of 1000 kilograms) were calculated by multiplying gross coal bed volumes (in cubic metres) by an apparent specific gravity factor of 1.50 tonnes per cubic metre for unwashed coal.

Coal resources were calculated at three levels-of-assurance:

- Measured resources are located 0 to 450 metres from the closest point of measurement.
- Indicated resources are located 450 to 900 metres from the closest point of measurement.
- Inferred resources are located 900 to 2400 metres from the closest point of measurement.

Table 3-4: Coal resources of immediate interest for underground mining in No.2 coal bed

Constraints: gross thickness ≥1.50 metres; coal:rock thickness ratio ≥2:1; maximum cover depth 250 metres; maximum rock parting 70 cm. Assumption: bulk densities: 1.50 tonnes/cubic metre for raw coal.
Scope of estimate: Suquash No.2 coal bed.

Block	Factors		Gross thickness (m)	Area (ha)	Volume (m^3)	tonnes $x10^6$ §	tonnes $x10^6$ §			
	Hist.	Geol.					measured	indicated	inferred	sterilised measured
200m	0.90	0.90	1.75	12.62	178,888	0.268	0.268			
200d	0.90	0.85	1.75	6.27	83,940	0.126		0.126		
202m	1.00	0.90	2.21	13.25	263,543	0.395	0.395			
202d	1.00	0.85	2.21	0.82	15,404	0.023		0.023		
						totals	0.663	0.149	nil	nil
						total measured and indicated	0.812			

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009.

Table 3-5: Coal resources of future interest for underground mining in No.2 coal bed

Constraints: gross thickness ≥0.9 metres; coal:rock thickness ratio ≥1:1; maximum cover depth 250 metres; maximum rock parting 80 cm. Assumption: bulk densities: 1.50 tonnes/cubic metre for raw coal.
Scope of estimate: Suquash No.2 coal bed. Excludes coals recognised as being of immediate interest.

Block	Factors		Gross thickness (m)	Area (ha)	Volume (m^3)	tonnes $x10^6$ §	tonnes $x10^6$ §			
	Hist.	Geol.					measured	indicated	inferred	sterilised measured
201s	0.90	0.85	1.75	3.38	45,250	0.068				0.068
203s	0.90	0.85	2.21	0.82	13,863	0.021				0.021
204m	0.90	0.85	1.83	5.21	72,937	0.109	0.109			
205m	1.00	0.85	1.09	13.69	126,838	0.190	0.190			
206m	0.90	0.85	0.91	10.19	70,938	0.106	0.106			
207m	1.00	0.85	2.42	30.53	628,002	0.942	0.942			
207d	1.00	0.80	2.42	1.43	27,685	0.042		0.042		
208m	1.00	0.85	1.38	38.82	455,359	0.683	0.683			
208d	1.00	0.80	1.38	3.83	42,283	0.063		0.063		
209m	0.90	0.85	1.82	31.36	436,625	0.655	0.655			
209d	0.90	0.80	1.82	9.39	123,047	0.185		0.185		
210m	0.90	0.85	0.90	42.23	290,754	0.436	0.436			
210d	0.90	0.80	0.90	61.71	399,881	0.600		0.600		
210f	0.90	0.70	0.90	28.58	162,049	0.243			0.243	
						totals	3.121	0.890	0.243	0.089
						total measured and indicated	4.011			

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009.

Table 3-6: Coal resource summary for the Suquash No.2 coal bed

Geology type: Moderate

		Resources of immediate interest			Resources of future interest		
Deposit type	ASTM coal rank	Measured (million tonnes)	Indicated (million tonnes)	Inferred (million tonnes)	Measured (million tonnes)	Indicated (million tonnes)	Inferred (million tonnes)
Surface	high-volatile B to high-volatile C bituminous	nil	nil	nil	nil	nil	nil
Under-ground		0.663	0.149	nil	3.121	0.890	0.243
Non-con-ventional		not assessed					
Sterilised		not applicable			0.089	nil	nil

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009. This table's format accords with the format recommended in GSC Paper 88-21.

For the purposes of the present study, sterilised resources are those which would otherwise qualify as being measured resources, but which lie within 50 metres of workings of Suquash Colliery. Regardless of thickness, sterilised resources are considered as being of future interest.

Locations of coal resource blocks are shown as **Figure 3-3**, and block areas, volumes and tonnages are tabulated below in **Tables 3-4** and **3-5**, and summarised in **Table 3-6.**

Coal resource estimates here presented have been prepared by myself (C.G. Cathyl-Bickford, P.Geo.(BC) Lic.Geol.(WA), acting in my capacity as an independent qualified person. In accordance with *National Instrument 43-101*, reporting of resources has used the *Definition Standards on Mineral Resources and Reserves* adopted by the Canadian Institute of Mining, Metallurgy and Petroleum in 2004. Reporting is consistent with Canadian practice as recommended by *A Standardised Coal Resource / Reserve Reporting System for Canada*, Paper 88-12 ("*GSC 88-12*") of the Geological Survey of Canada, with certain adaptations to local conditions as permitted by *GSC 88-12*. The effective date of my coal resource determination is 18 October, 2009. The effective date of this report is 23 October, 2009.

Caveats concerning coal resources

a. Coal resources (as distinguished from coal reserves) do not have demonstrated economic viability.

b. The Suquash No.2 coal bed contains partings of coaly and non-coaly rock, and sometimes also layers and lenses of 'dirty' (high-ash) coal. These impurities act to increase the overall ash content and specific gravity of the coal zone, and decrease the calorific value of the mined product. Such partings are a normal occurrence within coal beds, and their presence at Suquash is not, in the author's opinion, an unusual impediment to mining.

c. Coal resources available to mining may be adversely impacted by environmental or socio-economic policy decisions made by provincial and federal government agencies.

Discussion

Geophysical logs, which are available for some of the historic and current boreholes completed to date at Suquash, suggest that the coals of the Suquash Formation retain a consistent normal stratigraphic sequence, with no evidence of duplication by thrust-faulting. The potentially-mineable part of the No.2 coal bed appears open to extension to the north-west and south-east, beyond the limits of the Suquash coal property. Coals of mineable thickness are also known from the stratigraphically-lower Suquash No.5 coal bed, but in my present judgement these coals are not yet sufficiently explored to contribute to the coal-resource base of the Suquash coal property.

4 Introduction and terms of reference

4.1 Terms of reference

Dunsmuir Geoscience was commissioned by Electra Gold Ltd. to prepare a *National Instrument 43-101* compliant technical report on their Suquash coal property, situated on Vancouver Island, British Columbia. The current report has been prepared in compliance with *Form 43-101 F1.* This report complies with the reporting requirements of *National Instrument 43-101* for technical reports for reporting of coal resources and reserves.

This report presents a preliminary geological description and coal-resource estimate concerning Electra Gold Ltd.'s Suquash coal property, comprising Coal Tenures 417679 through 417681 inclusive, within the Rupert Land District of Vancouver Island, British Columbia, with effective date of 23 October, 2009. Verification of the geology, coal bed geometry and assurance-of-existence of coal resources has been completed by the author through site visits and data reviews, followed by construction of a geological model of the Suquash coal property. The Suquash coal property contains coal resources of measured, indicated and inferred levels-of-assurance.

Figure 4-1 is an index map, showing the location of the Suquash coal property within south-western British Columbia.

4.2 Purpose of report

This report has been prepared for Electra Gold Ltd.'s submission to regulatory agencies and potential joint-venture partners, in keeping with the disclosure requirements of *National Instrument 43-101.*

4.3 Sources

Surface geological data presented in this report are derived from my geological observations and interpretations, made in the course of my site visits in 2002 and 2009, supplemented by the regional geological framework presented by Nixon and others (2006).

Subsurface geological data were derived in part from the operational files of Electra Gold Ltd. (in the case of the year-2008 drilling and geophysical logs) and in part from archival sources, as listed in **Section 23** of my report. In the case of the year-2008 drilling, I further examined portions of the borehole cores, as stored at Electra Gold's warehouse in Port Hardy, British Columbia, and through such examination satisfied myself that the core logs provided by Electra Gold were of acceptable quality for use in the present study.

4.4 Extent of field involvement of the Qualified Person

I conducted a brief geological reconnaissance of the Suquash area in November of 2002, and spent approximately a week there in the summer of 2009, taking advantage of seasonal low tides to examine bedrock exposures within intertidal shelves and along sea-cliffs. My mapping covered the bedrock exposures available within the current extent of the Suquash coal licences, and also extended northwest to False Head and southeast to the estuary of Cluxewe River, as shown on **Map 2**. As well, I logged portions of the borehole cores recovered during the year-2008 drilling programme, which were stored off-site in the nearby town of Port Hardy.

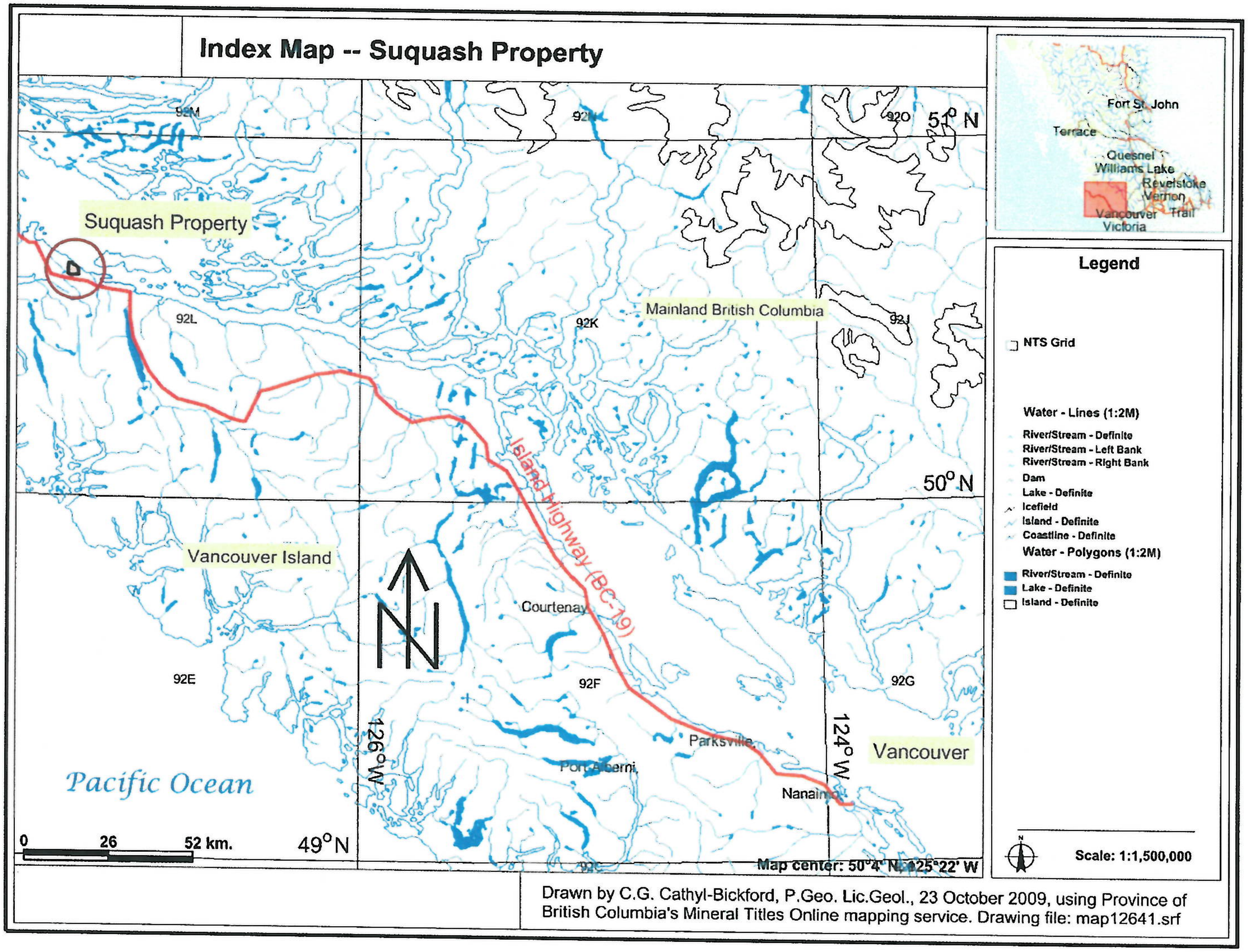


Figure 4-1: Index map

5 Disclaimer

Conclusions presented within this report are based upon my consideration of information derived from my geological investigation of the Suquash area since 2002 and upon historic data from various sources, as duly credited within this report. In addition to data which I collected during fieldwork and recent examination of drill cores, I have also relied on the results of historic exploration documented in various published and unpublished reports by others, as listed in **Section 23** of the present report. As well, I have relied upon current geological and geophysical data collected by persons whom I believe to have been fully competent to do so.

For the purposes of the present report, reliance has been placed upon mineral title information provided by the British Columbia Ministry of Sustainable Resource Management and the British Columbia Ministry of Energy, Mines and Petroleum Resources.

6 Property description and location

The Suquash coal property is located on the north-eastern coastline of northern Vancouver Island, at 50°37' north latitude and 127°14' west longitude, between the communities of Port Hardy (to the northwest of Suquash) and Port McNeill (to the southeast of Suquash), in Canada's province of British Columbia. The property covers land areas adjoining Queen Charlotte Strait, part of the Pacific Ocean. Although the coal-measures extend beneath intertidal lands below sea level (as evidenced by coal outcrops continuing downward into the intertidal zone), and old mine-workings of Suquash Colliery extend beneath the sea (as evidenced by mine plans), these submarine lands are not included within the present extent of the coal property, which is limited by the natural boundary of Queen Charlotte Strait.

6.1 Description of the Suquash coal licences

Applications for coal licences (under provincial tenure numbers 417647, 417648 and 417663) covering an area of 1038 hectares were made in April and May of 2008 by Hanam Canada Marketing Corp. (Hanam Canada) of Victoria, British Columbia.

Details of these applications follow:

Table 6-1 Coal licence applications at Suquash

Tenure	Area (hectares)	Date of application	Applicant
417647	133	April 10, 2008	Hanam Canada Marketing Corp.
417648	80	April 17, 2008	Hanam Canada Marketing Corp.
417663	825	May 20, 2008	Hanam Canada Marketing Corp.

Data source: Shearer, 2008, checked against Province of British Columbia online mapping system. Note that these three licence applications were subsequently granted as coal licences, as presented in **Table 6-2**.

Coal licences (**Figure 6-1**) covering substantially similar ground, totalling 1093 hectares, were granted to Hanam Canada by the Crown in June of 2009, and ownership was subsequently transferred to Electra Gold Ltd.

Details of the licences follow:

Table 6-2 Coal licences at Suquash, as of October 2009:

Tenure	Area (hectares)	Date of expiry	Registered owner
417679	127	June 25, 2010	Electra Gold Ltd.
Description: NTS 092L11 Block G Units 58 and 59 save and except those portions below the natural boundary of Queen Charlotte Strait.			
417680	80	June 25, 2010	Electra Gold Ltd.
Description: NTS 092L11 Block G Units 69 and 70 save and except those portions below the natural boundary of Queen Charlotte Strait.			
417681	886	June 25, 2010	Electra Gold Ltd.
Description: NTS 092L11 Block F Units 31, 41, 51 and 61, and NTS 092L11 Block G Units 38, 390, 40, 48, 49, 50 and 60 save and except those portions covered by the Misty Lake Ecological Reserve.			

Data source: Province of British Columbia online mapping system and coal tenures database.

The three coal licences at Suquash are contiguous, with no known inholdings of alienated coal rights within their boundaries. Their total area is 1093 hectares.

6.1.1 Current status of the Suquash coal licences

The three coal licences at Suquash are in good standing, with annual rental fees paid-up until June 25, 2010. Coal licences in British Columbia have a one-year renewable term. At their anniversary date each year, they may be continued by making payment of the then-applicable rental fee, on a price-per-hectare basis.

6.1.2 Survey status

Old cadastral maps, such as those presented by Daniels (1919c), show the Suquash Basin to have been parcelled-out into a series of land lots, one square mile and smaller, under a township/section subdivision scheme within the Rupert Land District.

Land parcels at and near the Suquash Mine are denoted as numbered lots, some of which have been further subdivided. Approximate locations of land parcels are shown on the Province of British Columbia's Integrated Cadastral Fabric (ICF) mapping system, accessible via the Province's Mineral Titles Online and Petroleum Titles Online websites. Although some identifying information is thus available, the ICF system does not readily support determinations of parcel ownership.

Land lot corners near Suquash Mine were surveyed by Dolmage Campbell & Associates in 1974, working at the direction of B.C. Hydro. Monuments were reportedly set at that time (Saunders, 1975a, 1975b), but I have not attempted to relocate them, owing to shortage of available time in the field.

To my knowledge, no additional survey work has been done within the area of the Suquash coal licences, since the work which was done by B.C. Hydro.

The boundaries of the Suquash coal property are defined by the provincial mineral and petroleum tenure grid system, the natural shoreline of Queen Charlotte Strait, and the boundary of the Misty Lake Ecological Reserve.

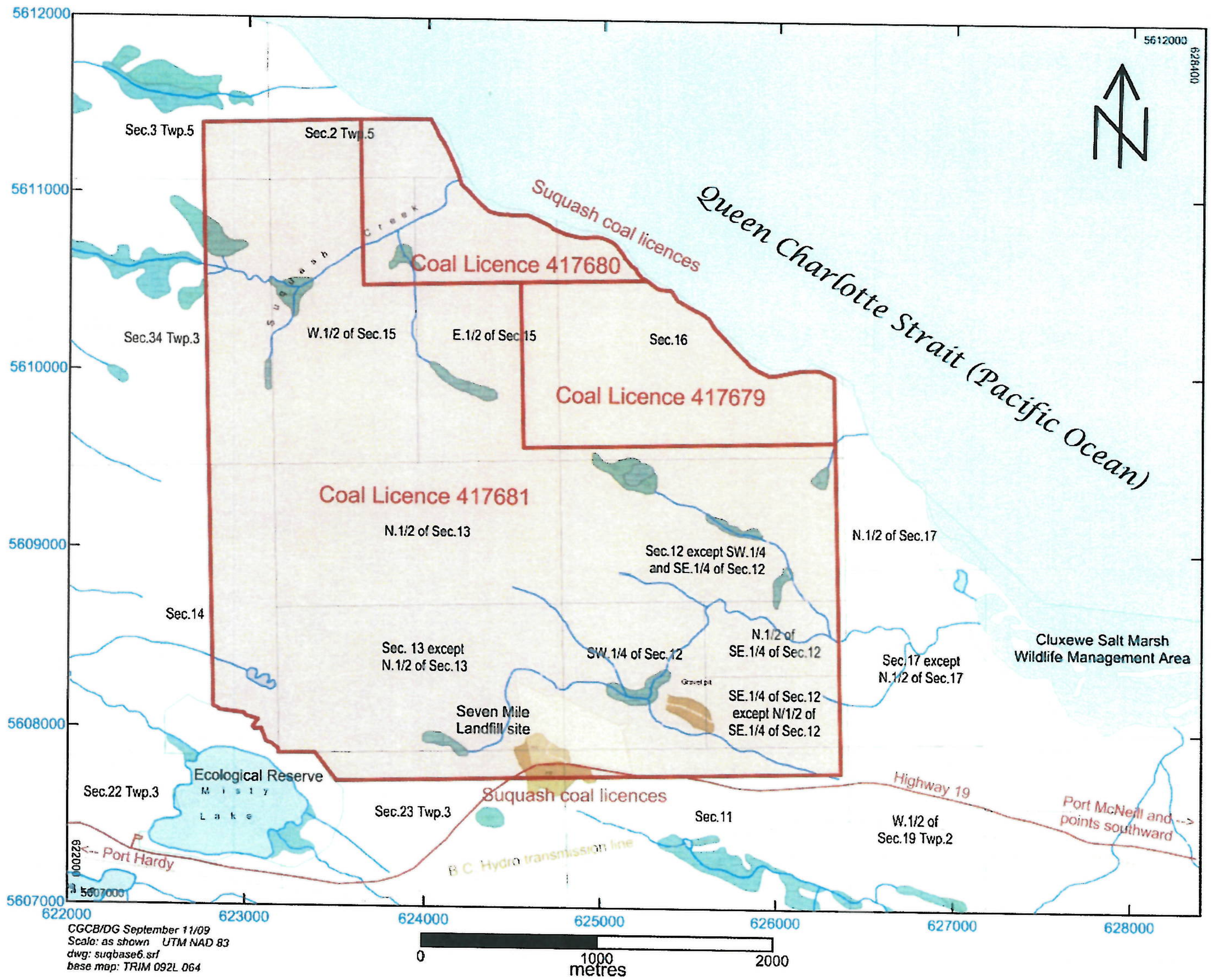


Figure 6-1: Coal tenure map

6.2 Company's interests in the property

Electra Gold Ltd. is registered as the owner of 100% of the three Suquash coal licences. Crown coal licences, as are granted by the Province of British Columbia, carry with them the sole and exclusive right to explore for coal within their boundaries, during the licences' term of activity.

Coal licences do not convey surface rights to the lands which they cover; access upon the lands must therefore be negotiated with individual land-owners. In the case of the Suquash coal property, I believe that the surface rights are held by Western Forest Products, subject to the terms of a Tree Farm Licence. Electra Gold Ltd. will be obliged to contact Western Forest Products prior to commencing exploration activities, and may be asked to pay for the costs of replacing any timber or trees damaged during such work; such payments are normal and expected in the course of conducting mineral or coal exploration within lands covered by forest tenures.

As well, part of the Suquash coal property covers the Seven Mile waste disposal site, administered by the Regional District of Mount Waddington. Electra Gold Ltd. will be obliged to negotiate a mutually-acceptable land-use agreement with the Regional District, in the event that exploration is planned within the Seven Mile site.

Coal licences do not convey the right to explore for, or produce, coalbed gas, or other forms of petroleum and natural gas.

6.3 Known mines and mineral occurrences relative to the property

Other than sand and gravel deposits, which have been worked at various times for road-building within and adjacent the Suquash coal property, coal and fireclay are the only known mineral occurrences within the property. Of these, fireclay is known only by passing mention in archival reports; small amounts of fireclay and other brick-making materials may have been extracted and used during the working of Suquash Colliery, but production has not been formally reported.

On the other hand, coal has been worked from locations within and adjacent to the Suquash coal property at various times in the past 160 years (Hope and Louttit, 1953). Coal has reported from boreholes drilled by various operators since 1907, both within and adjacent to the property. **Section 8** of this report discusses history of mining; boreholes are discussed in **Section 13**. Coal outcrops at several localities on the shoreline of Queen Charlotte Strait.

6.3.1 Mine workings

Mine workings of two eras (discussed in detail in **Section 8**) are known to be present at Suquash. The first era, spanning 1849 to 1852, was artisanal working of coal exposed along the intertidal flats at the mouth of Suquash Creek, and extending underground from an outcrop following the creekbed. No map of these workings is available.

The second era, spanning 1908 to 1924, saw extensive underground development of the coal, from a shaft sunk on the south side of Suquash Creek. Workings of this operation, known as Suquash Colliery, extended north-eastwards beneath the intertidal flats, under the waters of Queen Charlotte Strait. Suquash Colliery then lay dormant until 1952, during which year it was briefly dewatered and re-opened for mapping and sampling (James, 1953).

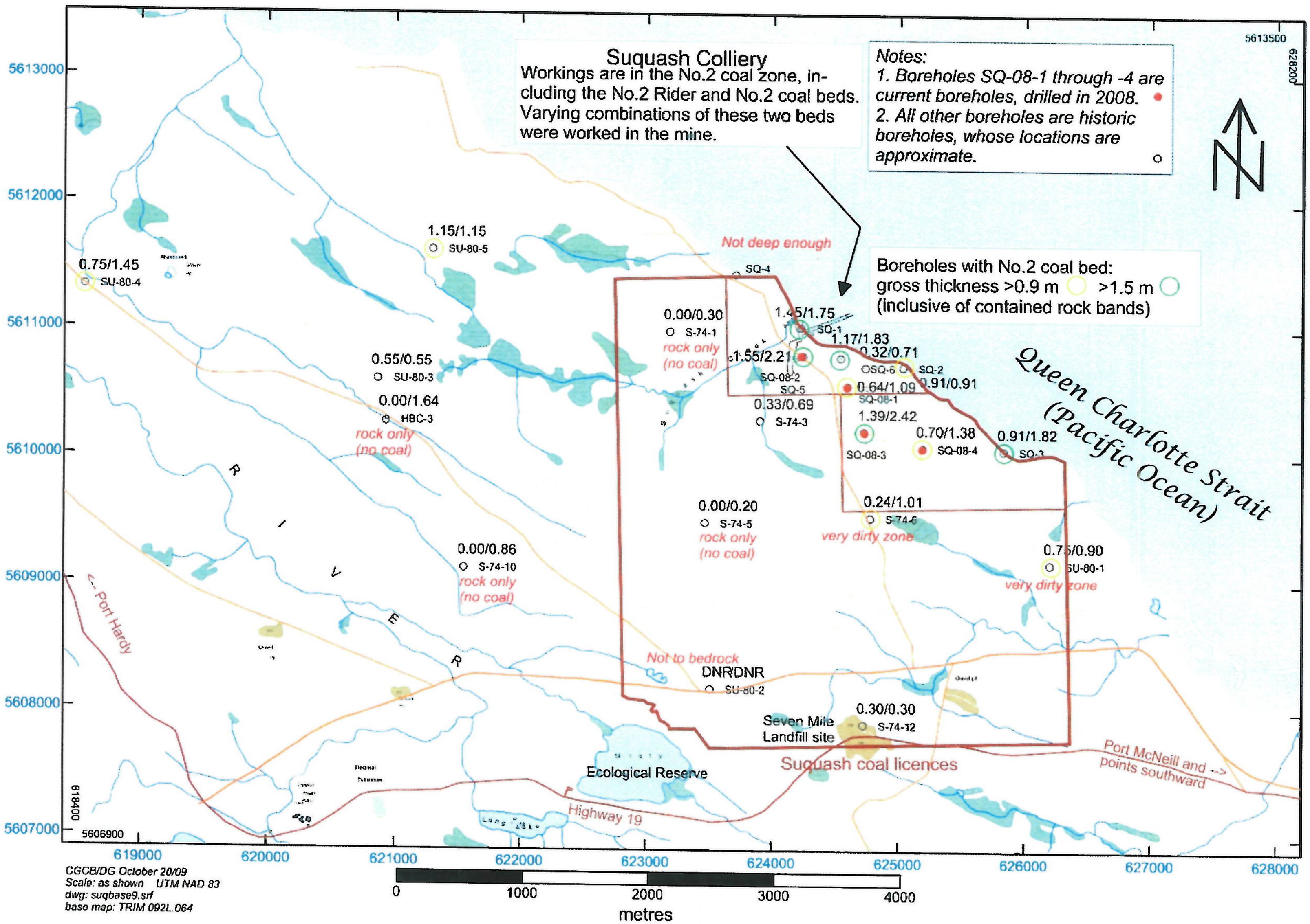


Figure 6-2: Known mine workings and subsurface coal occurrences

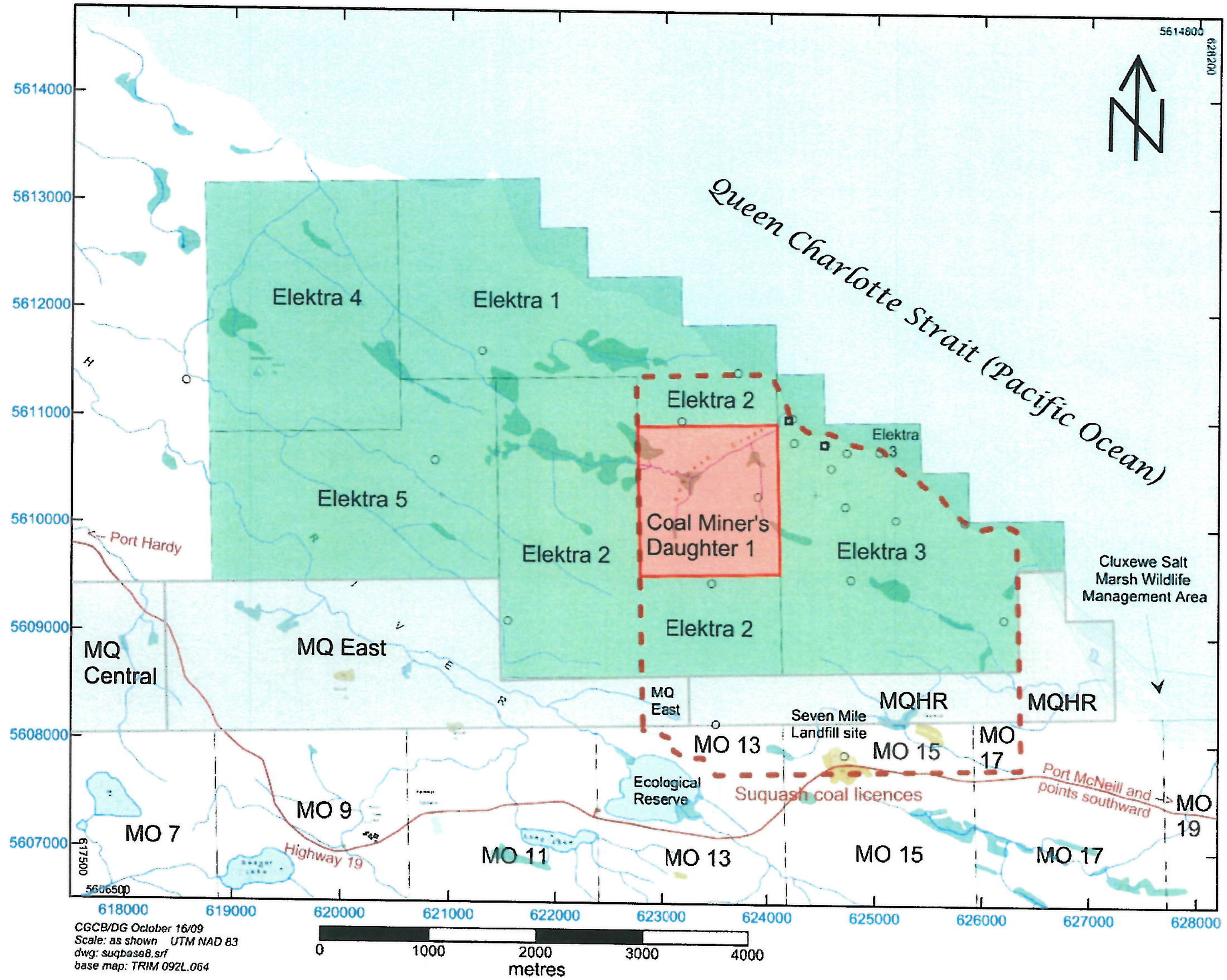


Figure 6-3: Mineral (non-coal) tenure relative to coal licence outline

6.3.2 Overlapping and adjacent mineral (non-coal) tenures

The Suquash coal property is adjoined and overlapped by several blocks of mineral claims, some of which are controlled by Mr J.T. Shearer, who is closely-associated with Elektra Gold Ltd. Most of the coal property is overlapped with Mr. Shearer's claims, but some of the property is overlapped, and substantially adjoined, by claims held by third parties, as listed below:

Table 6-3: Mineral tenures within and adjacent to Suquash coal licences

Identification		Area (ha)	Dates		Ownership	Overlaps Suquash property?
Tenure	Name		Staking	Expiry		
509471	MO 7	492.26	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	no
509474	MO 9	492.26	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	no
509476	MO 11	492.26	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	no
509480	MO 13	492.25	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	partially
509482	MO 15	492.24	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	partially
509485	MO 17	492.23	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	partially
509487	MO 19	492.37	23 Mar 2005	05 Aug 2011	Moraga Resources Ltd.	no
563391	Coal Miner's Daughter 1	184.47	20 Jul 2007	30 Nov 2009	David Amar	yes
584410	Elektra 1	491.76	16 May 2008	15 May 2012	Johan Thom Shearer	no
584411	Elektra 2	491.97	16 May 2008	15 May 2012	Johan Thom Shearer	partially
584412	Elektra 3	491.96	16 May 2008	15 May 2012	Johan Thom Shearer	partially
606666	MQ East	512.57	26 Jun 2009	26 Jun 2010	Graymont Western Canada Inc.	partially
606668	MQ Central	369.06	26 Jun 2009	26 Jun 2010	Graymont Western Canada Inc.	no
606670	MQHR	264.04	26 Jun 2009	26 Jun 2010	Graymont Western Canada Inc.	partially
646843	Elektra 4	409.80	4 Oct 2009	3 Oct 2010	Johan Thom Shearer	no
646844	Elektra 5	409.94	4 Oct 2009	3 Oct 2010	Johan Thom Shearer	no

6.3.3 Known subsurface occurrences of the Suquash No.2 coal bed

Figure 6-4 shows the known subsurface occurrences (in boreholes and in mine-workings) of the Suquash No.2 coal bed, at and adjacent to the Suquash coal licences. The No.2 coal bed is not known to outcrop or subcrop (beneath Drift cover) anywhere within the present outline of the property.

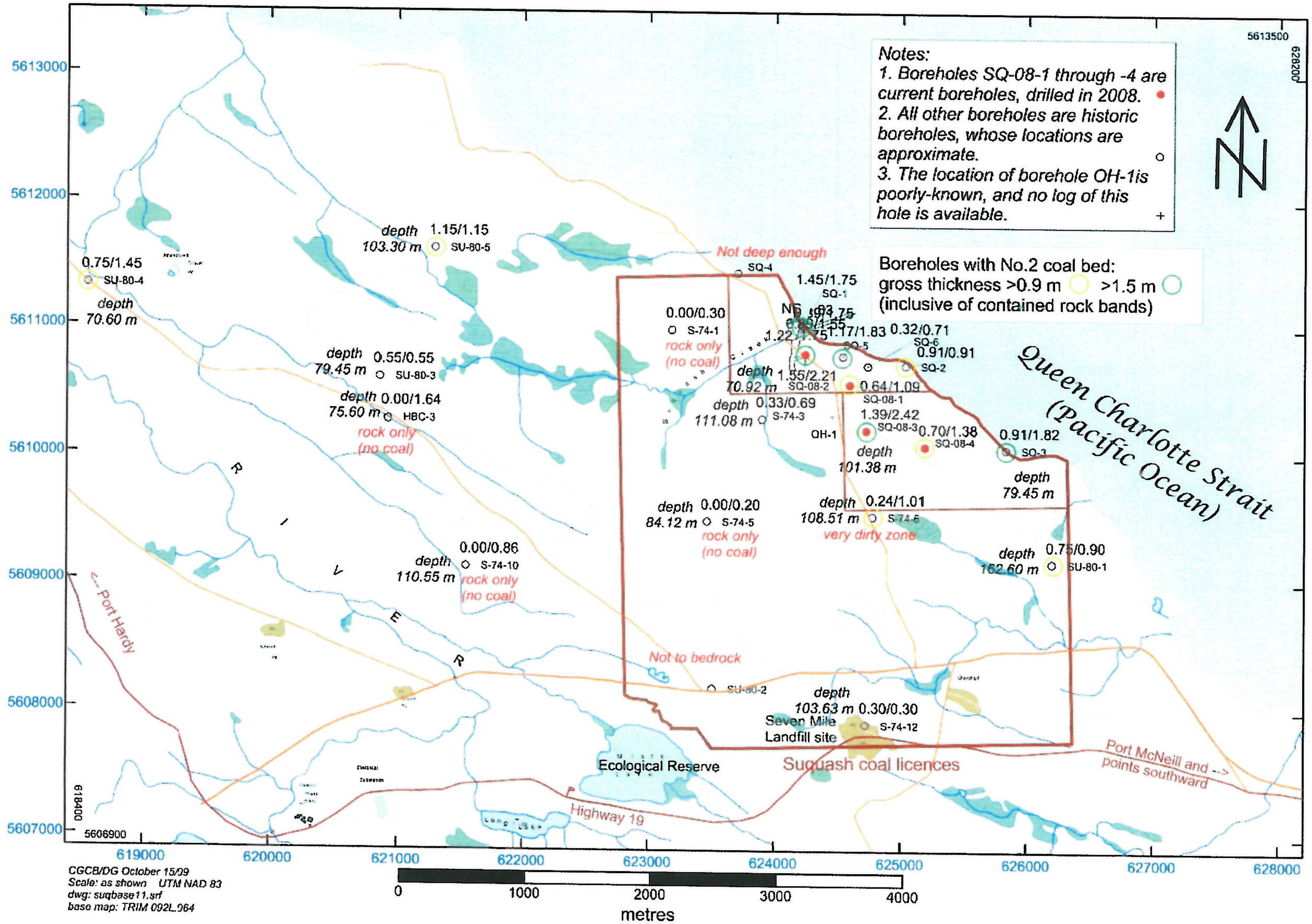


Figure 6-4: Known subsurface occurrences of Suquash No.2 coal

6.4 *Environmental liabilities*

Electra Gold is obligated, under the terms of *Mineral & Coal Activities & Reclamation Permit* MX-80255, to reclaim areas disturbed by its year-2008 drilling programme. To date, one borehole site has been returned to its previous use as a roadside turnout and parking area; three other sites remain to be restored to previous use, principally requiring some recontouring of the road surface, and the cutting-off of projecting borehole casing stubs.

None of the four boreholes drilled by Electra Gold in 2008 are flowing water to the ground surface. None of the boreholes have been cemented. Although one borehole collapsed after drilling and has had its casing withdrawn (and thus cannot further be worked upon), the other three boreholes remain open to the ground surface, and they may require cementation in order to protect future mine-workings from influx of groundwater.

Although a considerable quantity of old machinery, ruins of concrete foundations, and an old mining waste-disposal site are present at the abandoned site of Suquash Colliery, these remains far predate Electra Gold's involvement in the property, and by virtue of their great age and rarity (most other colliery sites on Vancouver Island having already been reclaimed, restored to other land-uses, or built-over by urbanisation), the old ruins of the mine (as discussed further in **Section 8** of this report) are now principally of concern as possible sites for industrial archaeology and possible conversion to low-impact (passive, non-disturbing) tourism use.

6.4.1 Acid rock drainage potential

No test work has been done to identify acid rock drainage potential from the Suquash coal property. During my fieldwork, I noted rusty stains beneath the sea-cliff exposure of the Suquash No.0 coal bed and associated carbonaceous sediments; I therefore consider it possible that some parts of the Suquash coal-measures may contain potentially acid-generating (PAG) rocks. During further work at Suquash, acid-base characterisation studies should be commenced on available drill cores taken from strata which might be disturbed during mining.

6.4.2 Acid mine drainage potential

No test work has been done to identify acid mine drainage potential within the Suquash coal property. No.1 Shaft, which is the only point of entry into the mine-workings of the Suquash No.2 coal bed, does not appear to be making obvious acid mine drainage, but such a possibility must be considered in future work on the property.

6.5 *Royalties and encumbrances*

Coal licences require the payment (to the Crown) of an annual rental of $7.00 per hectare for the first five years, increasing to $10.00 per hectare in the second five years, and further increasing at $5.00 annually per hectare per five year period thereafter, to a maximum of $25.00 per hectare. Any coal licences which in the future may be filed would start with an annual rental of $7.00 per hectare.

Provincial coal licence lands, such as the Suquash coal property, are subject to a Crown coal production royalty, the amount and terms of which are set by the provincial government. The provincial royalty is a minimum of 2% of net current proceeds, which is taken as a credit against a 13% net revenue tax which is payable after recovery of certain capital and pre-production costs.

An agreement is in place between Hanam Canada Marketing Corporation and Electra Gold Ltd., under whose terms share transfers must be made by Electra Gold as certain project milestones are met (Shearer, 2008). I am unaware of any other private agreements or encumbrances, such as coal production royalties which may affect the Suquash coal property.

6.6 Permit requirements

Under British Columbia provincial laws, exploration permits must be obtained prior to commencing exploration for coal (or for any other minerals). This requirement extends even to privately-owned mineral rights under privately-owned surface lands. Coal exploration programmes within coal tenures are regulated by the *Health, Safety and Reclamation Code for Mines in British Columbia*, including the requirement to submit proposed programmes of exploratory work and reclamation for review and approval by the British Columbia Ministry of Energy, Mines and Petroleum Resources.

Before work commences, a *Notice of Work* must be submitted to the Ministry, outlining the intended programme of work, detailing the underlying tenures and the locations at which the work is to be done, and providing a reconciliation of planned disturbance and consequent reclamation of the ground upon or within which the work is intended to be done, as well as a statement of the means by which environmental damage will be avoided or, if unavoidable, mitigated by the operator.

For surface work, such as drilling or surface geophysics, this is a relatively simple process, requiring basic documentation of the project scope, location and timing, and providing information concerning the management of the project. As well, any private land-owners or other tenure-holders, such as forestry companies, must be duly notified of the location and timing of planned work. Following review of the *Notice of Work*, the Ministry may issue an exploration permit, which may include specific conditions concerning permissible work, special environmental precautions, and times at which work may be restricted owing to noise concerns or forest-fire hazard.

For underground exploration, the documentation required is somewhat more involved, including plans and sections of the proposed developments, and documentation of steps to be taken to deal with mine-water, waste rock, and the storage and use of explosives (if required by the work being done).

For mine development and permitting, more substantial documentation is required. In usual practice, several rounds of technical meetings with staff of the provincial Ministry of Energy, Mines and Petroleum Resources would be required, accompanied by public consultation with local communities and other concerned interests. Large projects may trigger requirements for provincial and/or federal environmental review.

In order to drill coalbed gas test holes at Suquash, a *Well Authorisation* would have be obtained from the British Columbia Oil and Gas Commission. To obtain this authorisation, an application must be made, which entails the disclosure of technical details of the proposed drilling, and the payment of a fee as set by the Oil and Gas Commission. No such application has yet been made, and none is contemplated in the near future. Furthermore, appropriate oil and gas tenure would have to be obtained, as coal licences do not by themselves grant permission to explore for, or develop, coalbed gas.

6.7 Exploration permit status at Suquash

The year-2008 drilling programme at Suquash was conducted under the terms of *Mineral & Coal Activities & Reclamation Permit* MX-80255, granted on September 29, 2008 to Electra Gold Ltd., with a one-year term. The underlying tenure upon which this work was founded is the Elektra mineral claims, which were located by Mr. J.T. Shearer, an officer of Electra Gold Ltd., well before the current coal licences were granted to Electra Gold, in 2009.

Presently, the Suquash coal property is covered by active coal licences (as discussed in **Section 6.2**, above), as well as partially overlapped by mineral claims located by Mr. Shearer. Before work can recommence at Suquash, a *Notice of Work* will have to be filed; ideally, this filing should be done in relation to the Suquash coal licences rather than the Electra mineral claims. I am unaware of any reason why the Province of British Columbia would unduly delay the granting of a new or renewed *Mineral & Coal Activities & Reclamation Permit*, other than the customary requirement for due consultation with regulatory agencies and interested First Nations.

7 Accessibility, climate, local resources, infrastructure and physiography

The Suquash coal property is located on the eastern coast of northern Vancouver Island, between the communities of Port McNeill and Port Hardy. Both of these towns are served by the Island Highway (BC-19), a two-lane paved road constructed to modern highway standards. As such, the Suquash property is easily accessed for exploration purposes, as it lies within an area that is served by an extensive network of well-constructed all-weather logging-roads, all of which connect to and cross the highway. Some of these industrial roads have been deactivated by means of scarification, cross-ditching and scattering of coarse woody debris, but most of the roads can be traversed with a light truck without any further repair.

In addition to the towns at Port McNeill and Port Hardy, Suquash lies near the First Nations communities of Fort Rupert and Quatsino.

7.1 Accessibility

From the Island Highway, privately-owned, gravelled or earthen logging-roads extend across the property; these roads are owned and maintained by Western Forest Products, but are accessible for non-commercial use and casual travel during non-working hours. Commercial use of the logging-roads requires the negotiation of a road-use agreement with Western Forest Products.

Highway 19 extends north of the Suquash property to the town of Port Hardy, which has an airport from which scheduled flights via Pacific Coastal Airlines reach Vancouver. The property is also accessible via water-taxi or chartered 'sea truck' (landing-craft) service from Port Hardy, but for most practical purposes road access would be easier.

Daniels (1919c) provided contemporary photographs of the townsite and colliery buildings at Suquash Landing, including a wooden wharf extending northeastward into the sandy bay southeast of the mouth of Suquash Creek. Nothing now remains of the wharf, other than a filled area above the high-tide line, which may once have been the foreshore footing of the wharf. In some of his photographs, Daniels shows a barge and some small boats beached on the bay's floor during low water; it would be possible to beach a barge at Suquash, and recover it during high water conditions, but the rock reef offshore of Suquash (extending eastward from Single Tree Point) provides only partial shelter from storms and currents.

7.2 Climate

Suquash lies within the Submontane Very Wet Maritime Coastal Western Hemlock biogeoclimatic subzone (Green and Klinka, 1994), which is characterised by a temperate, generally-humid climate with cool, rainy winters and mild, showery or foggy summers. Most precipitation falls as rain rather than as snow, and extensive winter snow cover is rare. Summers are drier than winters at Suquash, but rain can fall in any month, and rainless periods longer than a week are probably quite rare. Annual rainfall at Port Hardy, northwest of Suquash, averages 1.766 metres/year, with most of the rain falling between September and April. The winter storm season extends from early October until March, and includes periods of high winds. A large storm in 1908 produced widespread blowdowns within the forest as Suquash, as elsewhere on Northern Vancouver Island.

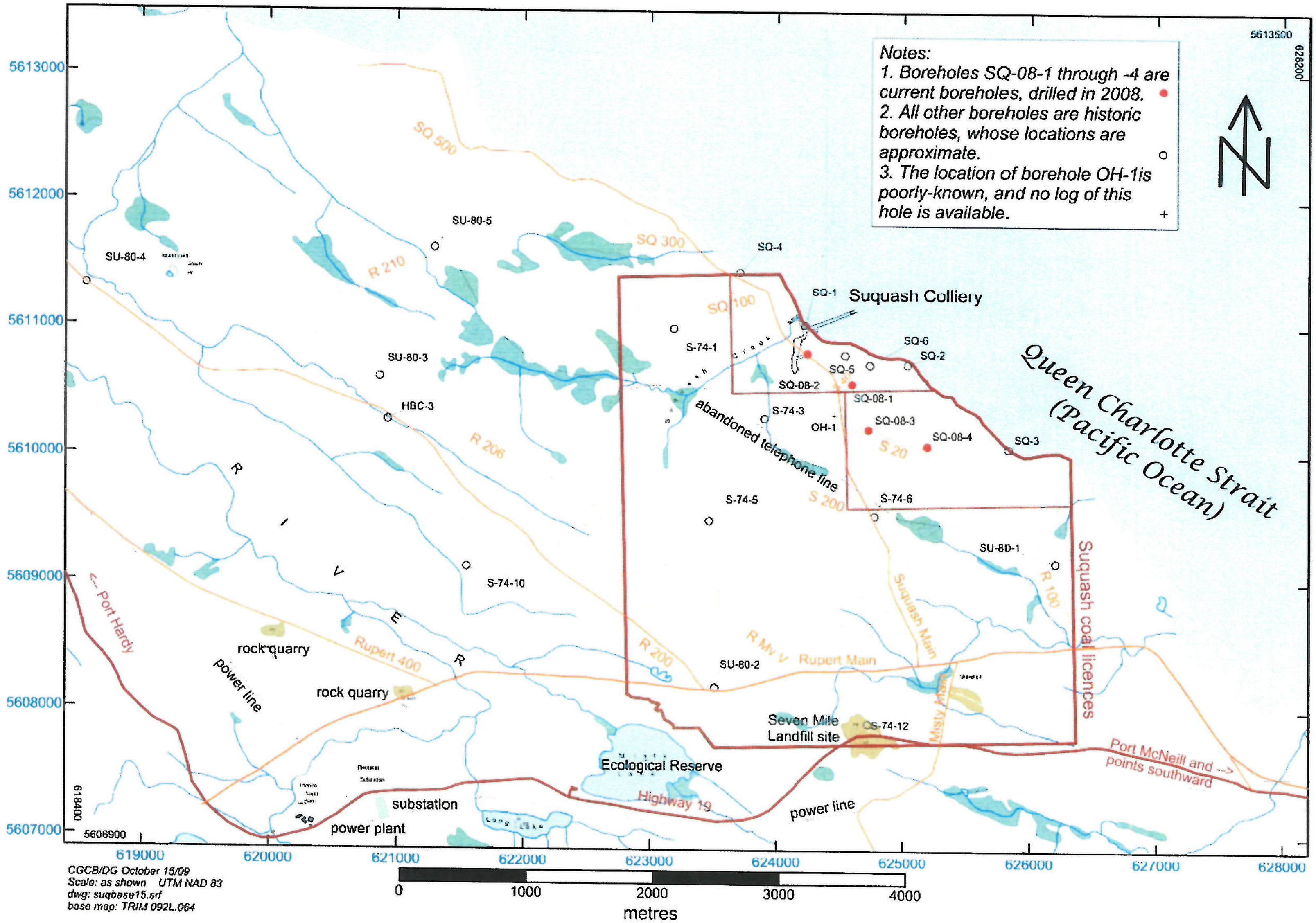
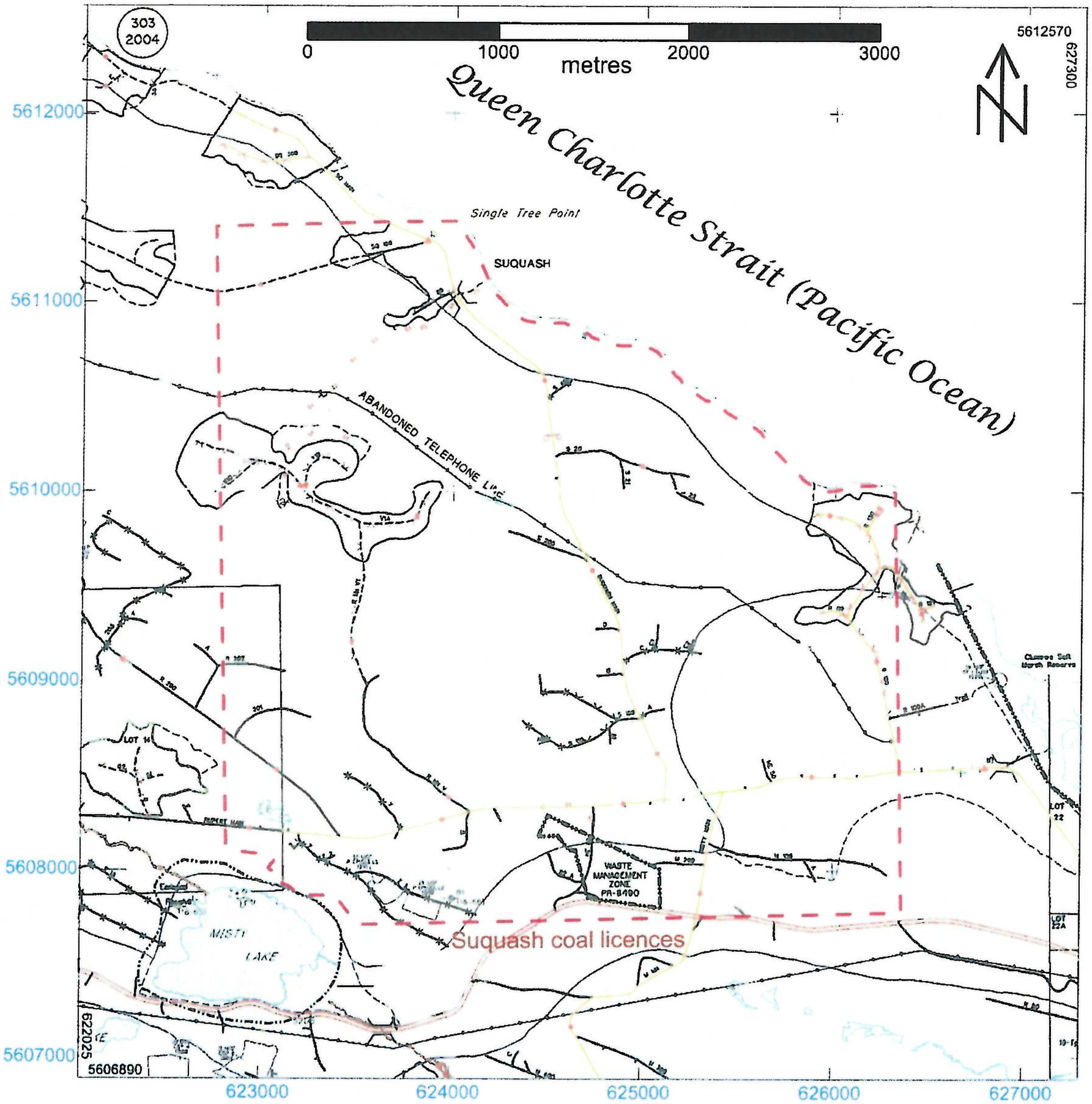


Figure 7-1: Location and infrastructure map



CGCB/DG October 16/09
Scale: as shown UTM NAD 83 dwg: suqbase10.srf
base map: Western Forest Products 1:20,000 map 092L.064

Figure 7-2: Forest road plan

7.3 Local resources

Suquash lies within an area which has long been operated as a source of forest products. Round timber, suitable for mining purposes, is readily available at Suquash, in patches of older second-growth forest. Production of mine-timbers would require negotiation with Western Forest Products, who are the local tenure-holder.

Near-surface deposits of sand and gravel are present in the south-western part of the property; although the ratio of sand to gravel is excessive for concrete-making, the local granular soils are successfully used for road-construction.

Owing to the wet climate, surface water is readily available at Suquash, but the creeks and swamps are unlikely to yield potable water, owing to the widespread presence of cedar swamps. Groundwater may locally be available at Suquash, but I am aware of no developed sources of groundwater within the property.

Other economic activities within the Suquash area include commercial and recreational fishing, and land- and water-based tourism. Suquash lies along an established route for cruise-ships, which pass along Broughton Strait and Queen Charlotte Strait on their journeys between Vancouver, B.C. and destinations within Alaska.

7.3.1 Surface land use

The Suquash coal property is overlain by forest lands, part of Tree Farm Licence No.6, granted by the Province of British Columbia and held by Western Forest Products Ltd.

7.4 Infrastructure

Northern Vancouver Island has a long history of mining development, both exploration and production, and although most of the mining-specific support activities are now situated further down-Island in Campbell River, the local forestry industry supports the ongoing availability of mining-useful services such as machine shops, weldors, and industrial-supply providers. As well, heavy construction equipment and services, including road-building capabilities, are available on Northern Vancouver Island.

7.4.1 Surface access for mining purposes

Access to Suquash is readily available via logging-roads, although as noted previously, commercial use of the roads requires the negotiation of a road-use agreement with Western Forest Products. I am not aware of any permanently- or seasonally-occupied habitations at Suquash, and so I do not consider that mining will be unduly hampered by surface-land uses.

Adequate areas for disposal of mine waste, including development rock and coal-preparation plant residues, are available within upland portions of the Suquash coal property. Areas suitable for development of minesite buildings, coal-processing plant sites, and mine entries are also available along existing roads, including the Suquash Main logging-road which passes near the old minesite. Inasmuch as northern Vancouver Island lies within an area of high seismic risk, waste-disposal facilities and other minesite structures and services must be designed for the eventuality of earthquakes.

7.4.2 Electrical power supply

No power lines extend into the body of the Suquash coal property. However, a 138-kilovolt power line, owned and operated by B.C. Hydro, passes southwest of the property. This main power line brings energy to the North Island from generating stations situated further south, outside the Suquash area. Formerly, the main power line supported the Island Copper mine, but it now provides power to communities and smaller industrial and commercial operations on the North Island. A transformer station (the Keogh Substation), connected to this main line, is located on Highway 19 near Misty Lake, and a single-circuit 25-kilovolt power line follows the highway in both directions from the transformer station. Near the transformer station, and also near Misty

Lake, are the decommissioned remnants of the Keogh Generating Station, which was an oil-fired thermal-electric power plant. The transformers and switchgear have been removed from the station, but its main building and at least one tank building remain in place.

7.4.3 Equipment, supplies and workers

Industrial equipment and supplies are available in Port Hardy, which is a local trading centre for the forest and fishery industries. Mining supplies and some mining equipment are available in Campbell River, about three hours south of Suquash via Highway 19. Major items of mining equipment such as hoists, fans and coal-cutting machinery would have to be imported from off-Island. Experienced coal-miners and other support personnel, including trades-people, are readily available on northern Vancouver Island.

7.4.4 Telecommunications

Suquash has cellular-telephone coverage, although during my site visits I found the cellular coverage was better in the upland areas along the main roads, than it was along the coastal beaches. As well, the area is served by VHF industrial radio systems. Telus provides landline telephone service via an overhead cable which follows the Island Highway.

7.4.5 Mining facilities

No active mining facilities remain at Suquash. Remains of the earlier coal-mining operation are present, as ruins and abandoned machinery; these items, which are now solely of interest as examples of industrial archaeology, are discussed in **Section 8** of this report.

A ship-loader, serving the Orca sand and gravel mine, is located 8 kilometres east of Suquash, on the southern shore of Broughton Peninsula, in the unnamed bay west of Lady Ellen Point. The haulage distance to this ship-loader, via existing industrial roads, is about 12 kilometres. As well, Electra Gold Ltd.'s Apple Bay geyserite mine uses a barge-loader located at Jensen Cove, near Port Hardy, northwest of Suquash. The loader can handle barges up to 15,000 tonnes, loading at 700 to 800 tonnes/hour (Shearer, 2008). Electra Gold also maintains a warehouse and core shed in Port Hardy.

7.5 Physiography

The Suquash coal property lies within the Suquash Basin, which is a lowland area lying along the north-eastern side of northernmost Vancouver Island, and extending offshore to include Malcolm Island and the adjoining shallow waters of Broughton Strait and Queen Charlotte Strait. To the southwest of the Suquash Basin are the low hills of the Nawhitti Lowland, which extends westward towards the western coastal fjordland of Vancouver Island.

Outside of the immediate coastal headlands of Queen Charlotte Sound, which are locally steep and cliff-bound, the ground surface within the Suquash Basin is gently rolling, with only local areas of steep slope immediately adjacent to major streams such as Cluxewe River and Keogh River. Much of the land surface is covered with wetlands, comprising extensive peat bogs, fens, and cedar-treed swamps. Ground surface elevations (**Figure 7-3**) range from zero along the coastline, to a maximum of 110 metres above mean sea level in the south-western part of the Suquash coal property. Although, as noted, steep slopes are rare within the property, the ground surface at Suquash tends to be uneven owing to the frequent presence of partially-decayed wind-thrown logs, and piles of debris from older logging operations.

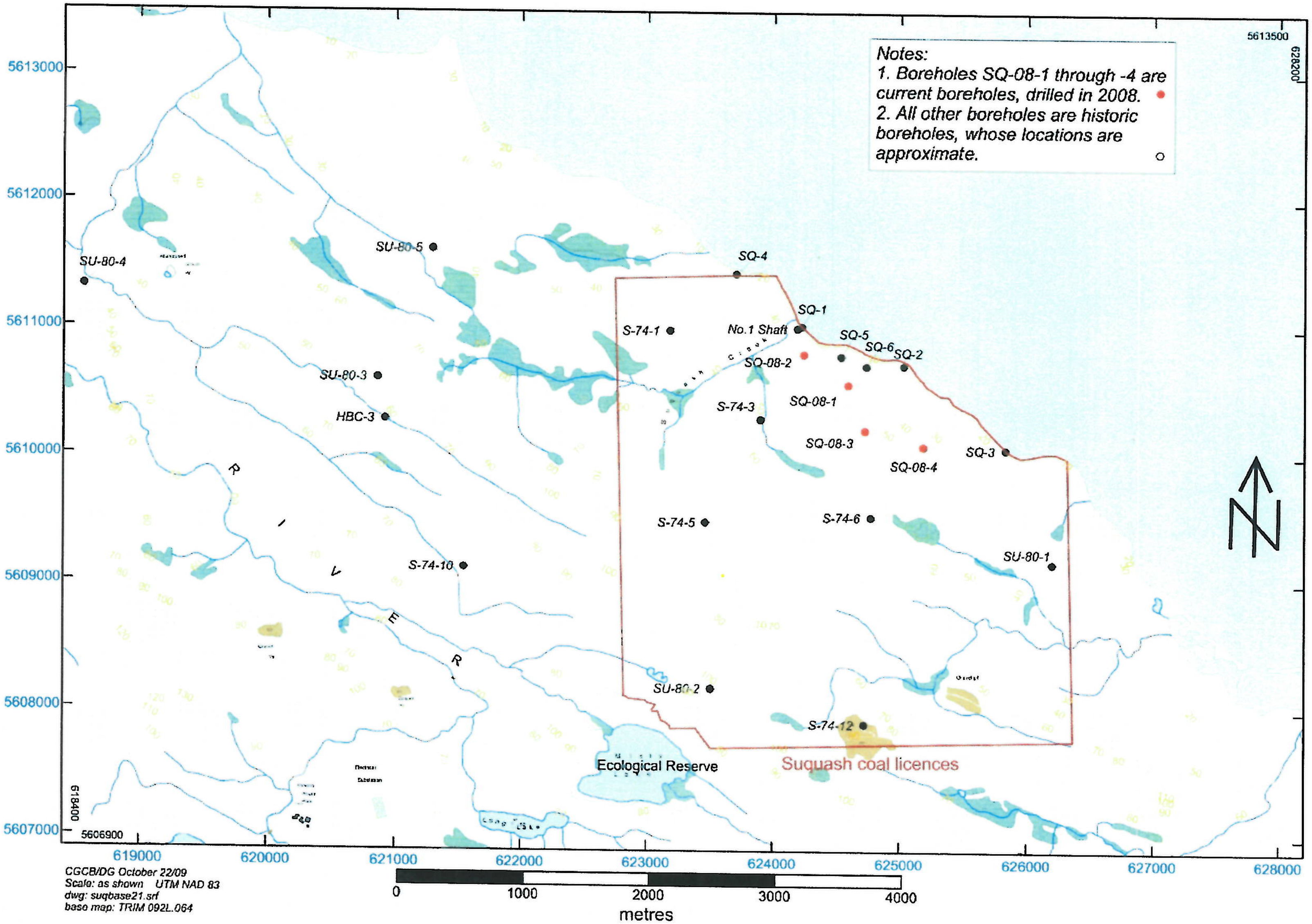


Figure 7-3 Topographic map

7.5.1 Base-mapping and imagery

Base-mapping at 1:20,000 scale is available at no charge from the Province of British Columbia's Base Map Online Store, at *http://openmaps.gov.bc.ca/imfows13/imf.jsp?site=idt* (most recently accessed on 3 September, 2009). Satellite imagery at a maximum useful scale of 1:50,000 is available from Google Earth at *earth.google.com* (also most recently accessed on 3 September, 2009). Monochrome aerial photography of the Suquash area is available from the Province of British Columbia (15BCB96017: frames 249, 250, 269, 270, acquired July 1996). Although some colour photography does extend to the north-western corner of the coal licences (30BCC96165: frames 133 and 134, acquired September 1996), the ground surface is covered by a fogbank in those images, and they are of no practical use for mapping.

7.5.2 Coordinate systems

The Suquash coal property lies within Zone 9 of the Canadian UTM coordinate system. To convert from the now-outdated NAD27 coordinates to NAD83 coordinates, add 195.34 +/- 0.33 metres to northings, and subtract 114.45 +/- 0.58 metres from eastings.

7.5.3 Drainage

Most of the Suquash coal property is drained by Suquash Creek, which arises in an extensive complex of wetlands, and runs generally northeastward to a barred mouth at Queen Charlotte Strait, north of the old coal mine site at Suquash Landing. The eastern part of the property is drained by several unnamed minor creeks which run northeastward into Queen Charlotte Strait, falling over bedrock ledges atop the coastal cliffs. The extreme south-western corner of the property is drained by Keogh River, which flows northwestward towards Port Hardy Airport and then turns northeastward into the strait.

Wetlands cover much of the upland area of the property: these range from peat bogs and shrubby fenlands to extensively-treed cedar swamps. Wetlands are bounded and locally compartmentalised by slightly higher-elevation northwest-trending ridges, which may either represent former beachlines along a postglacially-emergent coastline, or might be zones of bedrock-derived colluvium.

7.6 Forest cover

The Suquash coal property is checker-boarded by a patchwork of cut-blocks, dating from the 1980s to the past few years. Active logging is not presently taking place at Suquash, but main logging roads do pass through the property, and some haulage of logs continues. Timber harvesting is conducted under the terms of Tree Farm Licence 6, held by Western Forest Products, with some areas delineated as First Nations cut-blocks, under TSL A66259. Very few trees are older than 1908, owing to the occurrence of a severe storm that caused extensive blowdowns of the forest throughout the North Island area in that year. At Suquash Mine itself, most trees date to the 1920s or the 1950s, when the minesite area was cleared of standing timber in support of contemporary mining operations and facility construction.

7.7 Wildlife

During my site visits in 2002 and 2009 I observed black bears, deer, elk, rabbits and skunks, along with frogs, toads and snakes. Deer appear to be the most abundant of the large animals at Suquash. I also observed numerous bald eagles, ravens and gulls, with ravens being by far the most visually and acoustically-obvious birds. The intertidal rock shelves along Queen Charlotte Strait are occupied by a profusion of clams, small crabs, starfish and barnacles. On several occasions I observed recreational fishing activity, from small boats passing along the coastline.

7.8 Archaeological resources

Suquash Landing, at the mouth of Suquash Creek, is the site of a former coal-mining operation. A considerable amount of abandoned mining machinery, and ruins of some structures, are still present at the minesite. An overgrown mine dump, comprising rock, coal, and industrial debris such as bricks and pieces of timber, is also present at the minesite.

Plate 1: *Abandoned self-acting shaft-cages of Suquash Colliery*

These cages were fitted with cam-actuated clamping-arms upon their tilting decks, allowing them to lift and automatically discharge the mine-cars which would have run on the rails atop the decks. The toothed metal safety-dogs on the cages' sides indicate that consideration was given to safety as well as to productivity. These cages are too large for No.1 Shaft, so they would have been meant for No.2 Shaft, which never reached the coal. Photograph 1021a/09, by C.G. Cathyl-Bickford, 2009.

Some of the second-growth cedar trees near the minesite have been partially stripped of their bark, in a manner consistent with First Nations cultural uses. A well-travelled trail extends from the Suquash Main logging-road to the beach, reaching the shoreline about 200 metres southeast of the mouth of Suquash Creek. Lesser trails extend south-westward within the upland area above the beach, leading to some of the ruins of Suquash Colliery. The original site of the main production shaft, No.1 Shaft, is concealed within a brushy thicket south of the creek, but its associated mine-refuse dump forms a notable landmark within the wooded nearshore area west of the beach and south of the creek.

7.9 *First Nations' interests*

Suquash Colliery, and the Suquash coal property, lie within the traditional territory and area of interest of the Kwakiutl First Nation (Shearer, 2008). Electra Gold has maintained communication with this First Nation, and with other First Nations who hold interests in territories on and adjoining the North Island.

8 History

Coal was discovered in the foreshore of Queen Charlotte Strait, near Fort Rupert, in 1836. Between 1836 and 1852, the Hudson's Bay Company commissioned test-pitting, drilling and small-scale mining at Fort Rupert, Suquash and at several other sites within the Suquash Basin. Work at Suquash itself commenced in 1849, following discovery of coal on the beach near the mouth of Suquash Creek. Mining at Suquash was mainly done by members of the Kwakiutl First Nation (Sellers, 2003), with more specialised tasks such as drilling, shaft-sinking and tunnel-driveage done by indentured miners from Scotland, who had been brought over to Vancouver Island by the Hudson's Bay Company (HBC).

Following the Company's commencement of work within more readily-accessible and thicker coal deposits near Nanaimo, on the east-central coast of Vancouver Island, the workings at Suquash were gradually scaled-down in favour of the Nanaimo mines, which were more easily reached by coastal shipping serving Georgia Strait and Puget Sound.

8.1 Previous ownership

Coal rights to the Suquash Basin coal lands were initially conveyed by the British Crown to the HBC, as part of an extensive colonisation scheme in the 1830s. The HBC retained rights to the Suquash coalfield until at least the mid-1870s, but by 1890 the coal lands passed into private ownership.

In or shortly after 1890, the Oregon Improvement Company acquired coal rights to the Fort Rupert tract of the Suquash coalfield, centred on the mouth of Keogh River, between Fort Rupert itself and the present Suquash property.

In 1907, the adjoining lands to the east, including the present Suquash property, were acquired by South Wellington Coal Mines, Limited (SWCM). In 1909, the latter company was reorganised as Pacific Coast Coal Mines, Limited (PCCM). PCCM continued surface and underground development at Suquash until the outbreak of the 1914-1918 World War, at which time work was suspended. Suquash Colliery was kept in care and maintenance until PCCM was liquidated in 1923. The only work done during this time was some rehabilitation of underground workings in 1920.

In 1925, the Suquash coal property and the mine itself were acquired by West Coast Collieries, Limited, but no work is reported to have been done. Suquash Colliery was left unworked until 1951, when the property was acquired by Suquash Collieries Limited, who in turn re-opened and rehabilitated the underground workings during the summer and autumn of 1952. Work ceased in November of 1952 (Hope and Louttit, 1953), and the mine was been abandoned ever since. At some point subsequent to 1952, the private coal lands at Suquash reverted to Crown ownership.

In 1974, two coal licences covering the old minesite were obtained by Cobre Exploration Ltd.(Saunders, 1975). The Cobre property was in turn optioned to the British Columbia Hydro and Power Authority (B.C. Hydro), who explored it in conjunction with a much larger group of fifty-one coal licences covering nearly all of Suquash Basin (Cathyl-Bickford, 2002). B.C. Hydro drilled a number of boreholes, most of them within or closely adjacent to the present Suquash coal property. Although at that time, exploration work was credited towards a required annual

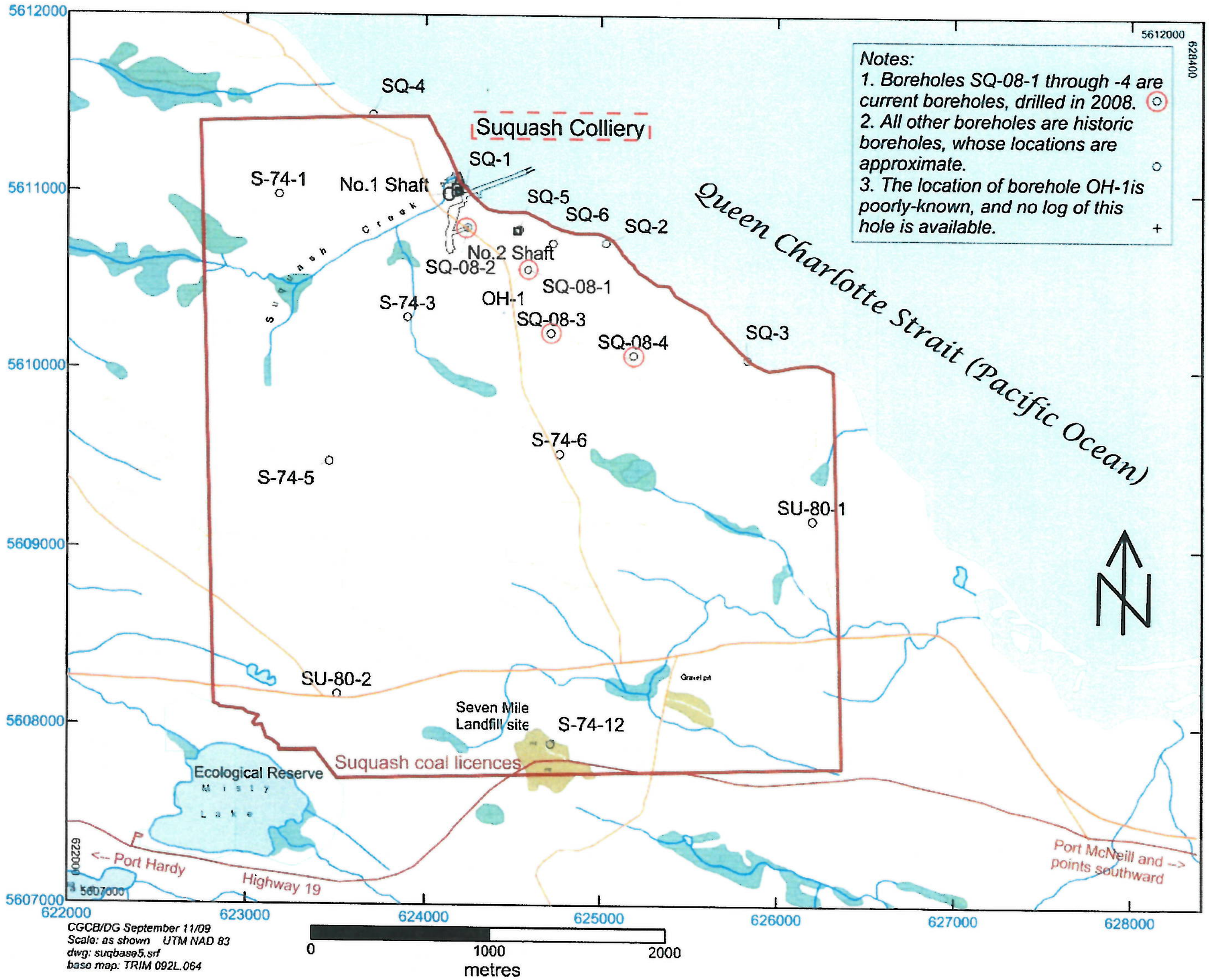


Figure 8-1: Borehole and mine location map

work commitment, by 1980 the Cobre and B.C. Hydro coal licences had expired, and the Suquash property was once again open for acquisition. In 1980, Ramm Venture Corporation (RVC) acquired sixteen coal licences covering the present extent of the Suquash coal property, and extending further to the east and west. RVC optioned their land to Filtrol Minerals Ltd., and together the two firms conducted some additional exploratory work on the property in 1980 (Summersgill, 1980; Gardner, 1984).

8.2 Exploration history

Exploration history largely follows ownership history, as briefly mentioned above. Most of the work has consisted of drilling (see **Section 13** of this report), but there has also been trenching and test-pitting near Suquash minesite (done by the HBC between 1849 and 1852), and at least one tunnel was driven (as mapped by Hope and Louttit, 1953), most likely also by the HBC.

***Plate 2:** Coal outcrop on the beach at Suquash*

The Suquash No.1, or 'Hudsons Bay' coal bed, crops out on the beach, north-west of the mouth of Suquash Creek, in a bay southeast of Single Tree Point. The view is north-eastward, across Queen Charlotte Strait. In the near distance is an intertidal reef of sandstone, which extends east-northeastward from the tip of the point, giving some shelter to the shallow bay. Photograph 980/09, by C.G. Cathyl-Bickford, 2009.

The HBC first learned of the presence of coal near Fort Rupert in 1835, when First Nations traders mentioned it to the Company. In 1846, Commander G.T. Gordon of the Royal Navy made a reconnaissance of the suspected coalfield, finding three coal beds at Ellenborough

Peninsula on the north shore of Port McNeill, and "another rich seam" (Gordon, 1846) along the shore of Queen Charlotte Strait "about eight miles further down the coast to the north-west.... [at] Baillie Hamilton Bay" – probably a former name for the shallow bay into which Suquash Creek flows. The coal found in this bay is now known as the Suquash No.1 coal bed.

In or about 1890, the Oregon Improvement Company (OIC) drilled for coal on their Fort Rupert coal property, including one borehole which went to a depth of 2100 feet (B.C. Exploration Syndicate, 1918). Buckham (1953) considered that there was evidence for a borehole at Suquash in 1890, as well as a later one in 1898. Furthermore, Hope and Louttit (1953) mapped the location of an old borehole which they found to the south of Suquash Colliery. Although I have as yet found no log for this hole, I consider it possible that it was the 2100-foot borehole drilled by OIC, and I have noted it as OH-1 (old hole No.1) on the maps and tables in the present report.

In 1907 and 1908, South Wellington Coal Mines, Limited drilled four boreholes (SQ-1 through SQ-4) along the coastline of Queen Charlotte Strait, within and adjacent to the present Suquash coal licences. In 1913, Pacific Coast Coal Mines, Limited drilled two additional boreholes (SQ-5 and -6) adjacent to the workings of Suquash Colliery. Borehole SQ-1 was a deep test, reaching well down into the coal-measures. That first borehole discovered the potentially-mineable No.2 coal bed, and the five subsequent boreholes were step-outs or infills to that discovery (Buckham, 1953; Daniels, 1919b).

In 1974, B.C. Hydro drilled ten diamond-drill boreholes (S-74 series) within and adjacent to the present Suquash coal licences. Most of these boreholes reached the No.2 coal bed (Saunders, 1975a), but some (outside the immediate vicinity of the present Suquash coal property) failed to reach the coal owing to difficulties in penetrating thick Drift deposits overlying the coal-measures.

In 1980, Filtrol Minerals Ltd. drilled five rotary-drill boreholes (SU-80-series) within and adjacent to the present Suquash coal licences. One of the boreholes (SU-80-2) failed to reach the target coal, owing to difficulties in penetrating thick Drift deposits. Of the remaining holes SU-80-5 was a deep test, reaching the Suquash No.5 coal zone; all the other holes reached the No.2 coal zone, which was the primary exploratory target.

In 2008, Electra Gold Ltd. drilled four diamond-drill boreholes (SQ-08-series) within the present Suquash coal property. This drilling programme was conducted under terms of *Mineral & Coal Activities & Reclamation Permit* MX-80255, granted on September 29, 2008 to Electra Gold Ltd. All four of the year-2008 boreholes reached their target coal, the Suquash No.2 zone, and one of the boreholes (SQ-08-4) reached down past the underlying No.5 zone. Boreholes SQ-08-01 through SQ-08-04 are regarded as 'current boreholes' for the purposes of the present report, and their findings are discussed in greater detail in **Section 13**.

In 2001, Priority Ventures commissioned a desk study of the geology at Suquash (Cathyl-Bickford, 2001), followed by a 43-101 technical report on their Suquash coal licences (Cathyl-Bickford, 2002).

In addition to the drilling mentioned above, geological mapping has been done, of which the best-documented is the work by Offshore Oil & Gas Corporation (Bell, 1966; Bakhoven and Jones, 1967), and by B.C. Hydro (Saunders, 1975a; 1975b). More recently, I conducted geological mapping on behalf of Priority Ventures Ltd. (Cathyl-Bickford, 2002), and Electra Gold Ltd. (in 2009, as presented in **Map 2** accompanying this report).

8.2.1 Government-sponsored exploration

The first governmentally-sponsored exploration of the Suquash coalfield was done in the mid-1840s by officers of the Royal Navy (Gordon, 1846), who were searching for sources of coal which could serve the Navy's newly-established coaling-station at Esquimalt, on the southern tip of Vancouver Island.

In 1886, the Geological Survey of Canada sent George Mercer Dawson to examine the coal-measures of northern Vancouver Island, including those of the Suquash area. In his report (Dawson, 1887), he published the records of some the boreholes drilled in the 1850s by the Hudson's Bay Company.

In 1911, the Geological Survey sent consulting geologist Charles Horace Clapp to make a brief examination of the coal geology at and near Suquash Mine,. His brief report (Clapp, 1912) compared the Suquash coal-measures with those of the Comox coalfield.

In the latter half of the 1960s and into the early 1970s, the Geological Survey assigned stratigrapher Jan Muller and Mesozoic palaeontologist J.A. Jeletzky to re-map the Mesozoic and Tertiary geology of northern Vancouver Island, again including the Suquash coalfield (Muller, 1967, 1969, 1970; Jeletzky, 1969, 1970; Muller and Jeletzky, 1970; Muller, Northcote and Carlisle, 1974). Although Muller and other contemporary workers did not accept all of Jeletzky's conclusions concerning the age and distribution of the Suquash coal-measures, their work taken as a whole forms the starting-point for my present understanding of the Suquash Formation.

8.3 Mining history

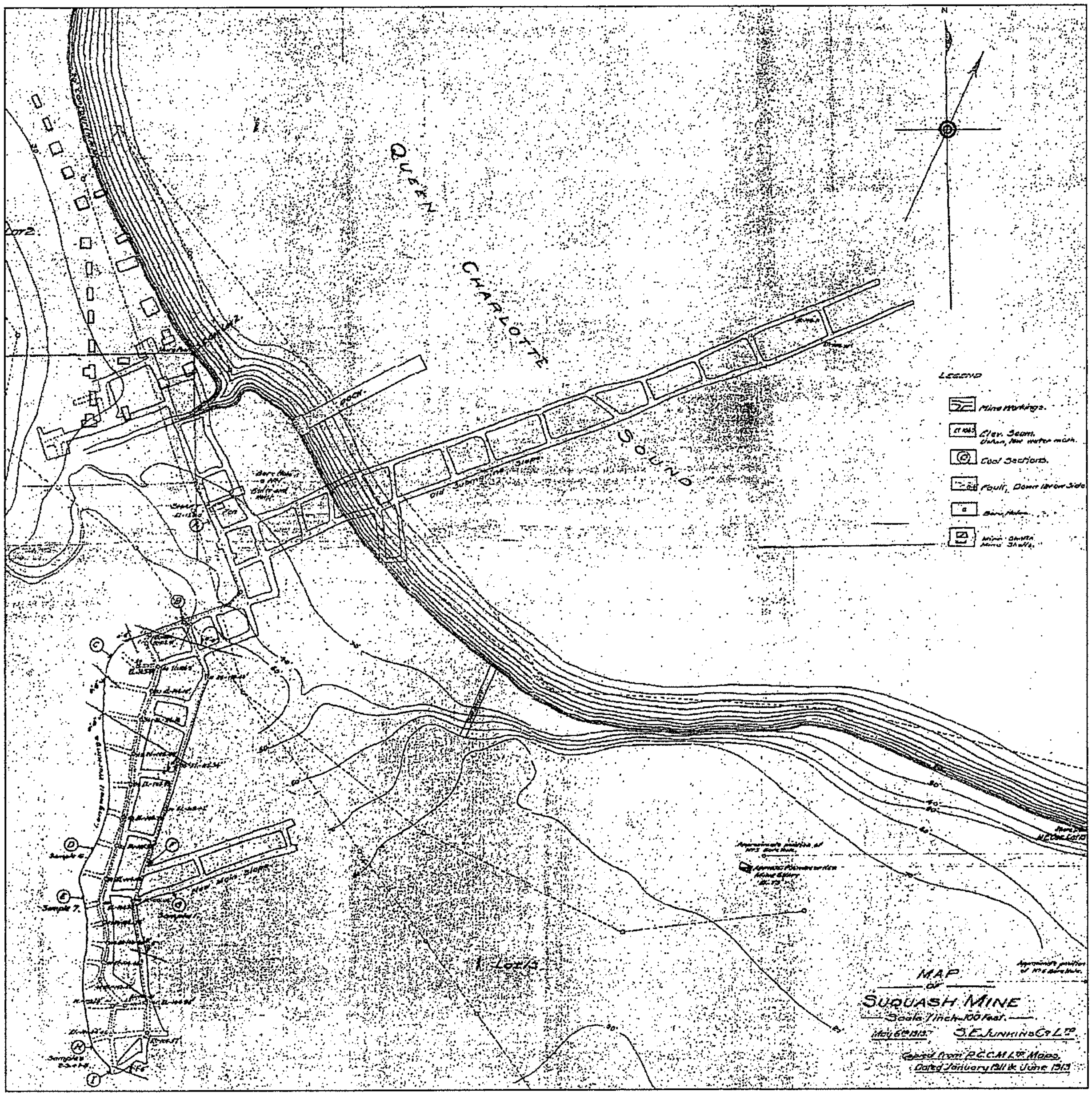
The earliest mining at Suquash was conducted by the Kwakiutl First Nation (Sellers, 2003), supported by miners contracted to the HBC (Dawson, 1887). This work commenced in 1849 and finished in 1852, concurrent with the HBC's transfer of its mining operations to the newly-discovered Nanaimo coalfield, further south on Vancouver Island. Coal was produced from the Suquash No.1 coal bed (alternatively known as the Hudson's Bay seam), which cropped out along the lower course of Suquash Creek and also formed a prominent ledge within the shallow intertidal platform southeast of Single Tree Point. As well, at least one test pit or shallow shaft was sunk at a position which would have given access to the overlying Suquash No.0 coal bed.

8.3.1 Underground development at Suquash Colliery

The next known mining at Suquash commenced in 1908, with the sinking of No.1 Shaft of Suquash Colliery by Pacific Coast Coal Mines, Limited, at a site on the southern side of Suquash Creek a short distance inland from the shore of Queen Charlotte Strait, southeast of Single Tree Point. The shaft was located close to the position of borehole SQ-1, which would presumably have provided the impetus to sink the shaft to reach then-known mineable coal of the Suquash No.2 coal bed.

No.1 Shaft was collared just above the Suquash No.1 coal bed, and passed down through and probably a short distance past the underlying Suquash No.2 coal zone (including the No.2R coal bed). The No.2 coal bed was reportedly struck at 49.4 metres (Evans, 1925), where it was found to be approximately 1.8 metres thick. No log of the shaft has yet been found, nor has a shaft-bottom pillar section been located within archival records; nonetheless, the log of nearby borehole SQ-1 may serve as a fair indication of the alternating shaly and sandy strata which were intersected by the shaft.

Map 1 is a plan of the mine-workings, based on mapping presented by Daniels (1919c) and Evans (1925). Most of the mine-workings were of an exploratory or developmental character, with the likely intention of proving-up areas of potentially-workable coal according to the standards of the time, but in the south-western quadrant of the mine, an advancing longwall face was laid-out and commenced, with workings projected westward and updip from the main level roadways that served them.



Map 1: Plan of Suquash Mine, from Joseph Daniels' 1919 report

All of the workings developed from No.1 Shaft were within the Suquash No.2 coal zone. Throughout most of the mine's workings, the overlying No.2R coal bed was worked in conjunction with the underlying main No.2 coal bed, except in those parts of the mine where the intervening rock parting was regarded as too thick to be mined.

A rectangular shaft pillar was left, with one side paralleling the shoreline of Queen Charlotte Sound. Along this edge of the shaft pillar a pair of shaft-bottom levels were driven 105 metres northwestward and 75 metres southeastward, On the north side of the shaft-pillar, a small longwall face was started in badly-split coal, but abandoned after only short progress. From the south side of the shaft, a pair of slopes with twelve crosscuts (marked as 'Old Submarine Slope' on **Map 1**) was driven 430 metres downdip and northeastward under the shallow water of Queen Charlotte Sound, heading towards but not reaching the rock reef which extends southeastward from Single Tree Point. A pair of levels was turned southward from the old slope, but they only extended 30 metres, with one crosscut. The slopes and levels were abandoned after driveage, without any reported attempt to break off production sections from them. As Daniels (1919c, page 84) notes, "it is believed that the seam was not of commercial quality in the abandoned sections."

Available mine-plans do not denote any withdrawal of pillars from the slope and levels. Elevation of the workings near the last crosscut of the slopes is shown as -148.11 feet and -149.71 feet respectively on Daniels' mine plan; elevations are noted as being relative to the low water mark, but the plan does not state whether they are roof elevations or elevations on the base of rail, near the mine floor (more common practice at that time, on Vancouver Island). Gray (1927, page 1076) reported that the dip of the coal was less than one degree beneath the foreshore area, "giving a solid cover below the sea-floor of only 130 feet below a large area of the upper seam."

From the south-western end of the shaft-bottom level, a pair of short inclines were driven updip for 60 metres to the southwest, and from the top of these inclines a pair of levels were driven 240 metres southward, with eight crosscuts. Near the southern end of these levels, a second pair of slopes (marked as 'New Main Slope' on **Map 1**) were driven at least 95 metres downdip and east-northeastward, paralleling the Old Submarine Slope.

On the updip and south-western side of the main levels, a 250 metre wide longwall face was advanced 15 to 30 metres directly updip from the levels, without any attempt to leave a starting pillar alongside the levels. Daniels (1919c, page 84) notes, "practically all of the mine production from 1912 to 1914 appears to have come from this section." The longwall face was served by 15 gate-roads, numbered '45' through '59' from the southern end of the face northwards. At the southernmost end of the longwall, some of the main level pillars were worked-out, and the level itself was partially carried forward as an advancing wide-face working.

Daniels (1919c, pages 85 to 87), notes:

> *"In 1913, an elaborate plan of future development was projected. This involved the sinking of a large, new shaft on the cliff east of the old shaft and the opening out of a large working area on the east side of the old level. The new shaft was expected to reach coal at 285 feet. The project called for levels at the new shaft bottom, 1100 feet distant from the old shaft entries, with a connecting slope between them, The old shaft was to be used as an air shaft and the coal in the intermediate area was to be lowered down the new slope to the shaft level and then hoisted up the main shaft.*
>
> *The new slopes were started at a point 500 feet inside of the fault and appear to have been driven 300 feet before the mine was closed in 1914. They had been partially dewatered during the present examination and were open for about 60 feet. The new shaft is reported to have been sunk*

18 feet into solid rock when the work was stopped by the war.

The mine has been filled with water since 1915 and consequently is not in condition to resume immediate operations, should this be decided upon, without considerable cleaning. The level workings are clear of water but the accumulated mud and silt is very thick on the level roadways. The timber cogs and the roadways from the main entry to the longwall face are in good condition, but the [p.85/86] rails have been taken up from most of these places. There are many falls of rock and loose coal along the longwall face but if these were cleared away it would not take long to reopen this section for a small production of coal.

The present shaft, which is divided by a midwall into two sections, makes it necessary to use small mine cars. One section is used for hoisting, the other for ventilation. This limits the capacity of the mine and will not permit a large tonnage to be hoisted by the present arrangement of loading single cars on the cage.

The hoisting compartment of the shaft is used as an intake for the air which circulates from the shaft bottom along the upper entry to the longwall face and then returns by way of the lower entry to the second compartment of the shaft, A small ventilating fan is used for exhausting the air.

Under normal conditions it is believed that small pumps would drain the mine. The shaft bottom is used as a sump and the water is piped to the surface through a pipe in the air compartment.

The roof of the seam is very strong and little timber appears to have been used except in the cribbing or cogs which were used to maintain the roadways or "gates" into [p.86/87] the longwall section. The method of mining the longwall face was entirely by hand, using powder to break down the coal."

In 1925, consulting mining engineer George Watkin Evans made an examination of the Suquash mine and surface plant for the Southern Pacific Company (who were conducting a large-scale survey of possible sources of coal for their railways), but did not consider it worth the expense to pump out the shaft and workings. Evans did, however, make a close inspection of the surface facilities associated with the mine (1925, p.38):

"It is reported that $17,000 to $20,000 has been spent on a very attractive bungalow, built at the edge of the bluff, over-looking the sea. It is patterned after a hunter's lodge with rustic trimmings of all kinds. This might have been a sensible thing to build after the mine has reached a tonnage of about a thousand tons a day, the mine extensively developed, and the market assured, but it stands today a monument to extravagant expenditures and inefficient planning.

To the north of the creek, there are about 15 shacks and other buildings that were intended to be used in connection with the old operations. These buildings would have served until the mine had been opened and the future of the property assured."

By 1934, the headframe and tipple of the mine were "so decayed as to be useless" (Thomson, 1934, page 4). When the mine was reopened by Suquash Collieries Limited in 1952, a new and smaller headframe and hoist were installed at the shaft-head. The then-serving District Inspector of Mines, Tony James, described the operation as follows (James, 1953, pages A309 and A310):

"The present company started operations on March 6th, 1952, at the old shaft, which had been found with some difficulty owing to a very thick overgrowth of brush. The ground was cleared for several hundred feet around the shaft and a tent camp established. A 16-foot headframe and a hoist were installed at the shaft collar. The unwatering of the shaft was then commenced, using a Knowles duplex piston pump of 50-gallons-per-minute capacity. Power was supplied using a portable compressor, but this was replaced in July by a 5- by 10-foot vertical steam boiler. By

> *June 6th the shaft and rise workings were pumped out and a start was made of reopening this portion of the mine. During the next few months 800 feet of old levels were reopened on the mine to give access to the old longwall face. Samples of the coal were taken and operations ceased on November 15th, pending a report by the company's consulting engineers."*

After describing the fittings of the shaft, James mentioned the arrangements for ventilation (op.cit, p. A310):

> *"The underground workings were ventilated by a 3-foot-diameter Sirocco exhausting fan/. After the workings had been drained of water, a considerable amount of methane was given off; this necessitated careful provision of ventilation as the reopening of the workings progressed."*

On conditions underground, he noted:

> *"The old workings have stood very well because of the very hard sandstone rood above the seam. The writer was not able to examine the seam section on the old longwall face, but a section examined on the side of the south level 360 feet from the shaft showed a total thickness of 7 feet 6 inches. This included seven rock bands totalling 3 feet 1 inch. The thickest continuous section of clean coal was only 1 foot 5 inches. The seam section is believed, however, to improve on the longwall face and toward the south."*

Consulting engineers Harry Hope and James Louttit supervised the re-opening, mapping and sampling of the workings (Hope and Louttit, 1952; Hughes, 1953). In July of 1952 they observed the condition of the mine's roof in the main level southwest of No.1 Shaft (*op.cit.*, page 1):

> *"Such inspection of the workings as we have been able to make to date indicates that the general condition of the mine is better than we expected. There has been some spalling off of the roof, at a point about 250 feet south of the present shaft. Timbering is now being done between the shaft and the cave-in which does not appear to be serious."*

Further within their report, Hope and Louttit (*op.cit.*, page 4) discussed timbering in greater detail:

> *"Referring to the mine plan you will note drifts and counters are driven north from the bottom of the shaft. As far as we have been able to explore at this date these entries were formerly timbered. Near the shaft some of these timber sets have been broken or loosened and rock material has cluttered up the drift way, however, we expect to enter these workings shortly as we know that they have been pumped dry, however, for the present we prefer to confine our exploration to the area south of the shaft as it was here that the greatest amount of coal was extracted during former operations.*
>
> *The workings south of the shaft are rather extensive; no timbering was used to any extent, but we believe posts should be placed along the drift to make the workings safe for the miners. This work is already under way and progressing rapidly"*

Work at Suquash Colliery ceased on November 15th, 1952 (James, 1954); I have found no record of any subsequent underground work at the mine.

Current conditions at Suquash

The ground at and surrounding the old surface plant and townsite of Suquash Colliery is now covered by a dense forest, consisting mainly of immature to mature second-growth western hemlock and western red-cedar trees, with isolated patches of immature Douglas-fir and alder. Occasional mature and veteran Sitka-spruce are present atop the coastal cliffs. Under this dense tree cover are scattered ruins of the surface plant and buildings. Most timber structures and other wooden constructions are gone, but brick, stone and concrete foundations of buildings remain.

Plate 3: *Typical dense second-growth forest at Suquash.*
View is northward from the beach access trail, towards the crest of the fan-shaped waste tip at No.1 Shaft. The arrow points to a survey flag atop the waste tip. Lushly-vegetated area in the foreground is a brushy wetland, covered with wind-thrown trees. This area was formerly covered with various wooden buildings, but no trace remains. Photograph 1677a/09, by C.G. Cathyl-Bickford, 2009.

The ruins of the mine manager's 'bungalow' (originally an imposing structure in the rustic style of a Scottish hunting-lodge) remain atop the cliff above the former loading-wharf site. All that now remains are the foundations of the bungalow and two large fireplaces/chimneys faced in brick and fieldstone.

The site of No.1 Shaft is marked by a northward-pointing lobate 'finger' waste-tip of rock and dirty coal, now covered by mature spruce and hemlock trees. At the north end of the waste-tip, the shaft-head itself is likely represented by a flat, low, damp area of muddy ground surrounded by thorn-bushes. Nothing remains of any of the wooden structures (including a small headframe and large bunkhouse) seen by Joseph Daniels.

No.2 Shaft remains open, but filled with water to the bedrock surface. Its concrete collar is severely decayed and falling away from the sparse reinforcing-rods within it. Some remains of cage-tending machinery (landing interlock levers?) are present atop the shaft-collar. Nothing remains of the engine-house at No.2 shaft, save the engine itself, which according to Joseph Daniels (1919c, page 89) is "a 24 inch by 36 inch duplex Vulcan Iron Works hoist with conical drums 7 feet by 9 feet in diameter and equipped with safety devices." As with the shaft-collar, the concrete bedding of the hoisting engine is disintegrating beneath the engine.

Plate 4: *Vulcan Iron Works hoisting engine, in the forest near No.2 Shaft.*

The engine rests, exposed to the elements, on a spectacularly-crumbled concrete foundation. No sign of the wooden hoist-house remains. The conical drums are grooved for wire ropes, and they are set in line with the coaming of No.2 Shaft, which is in the forest to the west (right, in this view) of the engine. Photograph 1025a/09, by C.G. Cathyl-Bickford, 2009.

Adjacent to the hoisting engine is a Washington Iron Works donkey engine with vertical boiler, sitting on wooden skids which have almost entirely rotted away.

Between the bungalow and the hoisting engine are the bricked ruins of a boiler-house, with provision for two horizontal boilers (now missing) and a riveted-iron segmental smokestack which is now lying in pieces on the forest floor. Around the boiler-house are concrete stakes which likely formerly held guy-wires to the smokestack.

To the west of the boiler-house, a sheave-wheel (10 feet in diameter, according to Joseph Daniels), such as would be installed at the top of a mine's headframe, is lying on the forest floor. The wheel is still in good condition, despite suffering surface rust. Its rim is grooved for a wire rope, such as would have been used as a hoisting-cable. There is a second sheave-wheel lying on the foreshore, directly seaward of this point; two sheave-wheels corresponds with the two drums of the hoisting-engine.

Plate 5: *Pit-wheel, intended for No.2 Shaft of Suquash Colliery.*

The pit-wheel has been abandoned here on the forest floor, a few hundred metres north-west of No.2 Shaft. Photograph 1082a/09, by Barbara Cathyl-Huhn, 2009.

Also in the forest are two self-dumping shaft-cages, whose dimensions match the remaining fittings of No.2 Shaft. The pit-rails are still in place on the decks of the cages, but all of their woodwork has rotted away.

8.4 Historical coal resource estimates

Numerous historical coal resource estimates have been done for properties within the Suquash coalfield, including areas substantially overlapping the current outline of the Suquash coal licences.

8.4.1 Joseph Daniels (1919) for Sydney E. Junkins Co. Ltd.

In 1919, Joseph Daniels estimated coal resources within an area of 3771 acres at Suquash, including 2627 acres of foreshore lease lands underlying the waters of Queen Charlotte Strait. By modern standards, Daniels' reporting was incomplete, and his estimate is not directly comparable to present work, since it includes within its scope the coal resources which he considered might extend beneath the ocean (which area is presently unavailable for exploration or mining).

Daniels considered the average thickness of coal in the "Suquash Seam" (corresponding to the Suquash No.2 coal bed of the present study) as being 3 feet 9 inches [1.14 metres], and the recoverable coal content to be 1000 tons per acre-foot [although unstated whether short tons or long tons]. On that basis, he estimated that the area contained 24,747,187 tons of coal in place, and that recoverable coal was 14,141,250 tons.

The reader is cautioned that Daniels' estimate includes within its scope both onshore and offshore areas. Offshore areas are not included within the outline of the present Suquash coal property. Furthermore, Daniels' estimate is historical in nature, was not made in keeping with modern practice, and is not 43-101 compliant.

8.4.2 George Watkin Evans (1925) for the Southern Pacific Company

In 1925, George Watkin Evans considered two areas of interest: the 3,000 acres which he regarded as having been tested by existing boreholes and by the mine-workings at Suquash, and the entire 9,312 acres which at the time constituted the Suquash coal property.

As was the case with Daniels' work in 1919, Evans did not conduct his study to modern standards, particularly in that he did not note the radii of investigation over which his points control were considered valid. He did, however, express his misgivings with refreshing candour (Evans, 1925, pages 38 and 39):

> *In a coal property that has been as little prospected as this one there is not a great deal to guide a person in arriving at a tonnage estimate. In the first place, we do not know definitely the number of commercial coal beds in the formation and if we assume that the Suquash Bed is the only one, we have make a further assumption as to its continuity and character.*
>
> *You can see, therefore, that any tonnage estimate must be based on arbitrary factors. I have indicated that so far as the mine workings are concerned the bed averages 4 feet and 3 inches. This will average about 5000 tons to the acre and allow for certain losses. There is probably 3000 acres tested by the drill holes and the mine workings, so that if we use these figures we would have in round numbers 15,000,000 tons of coal for this one bed. If we assumed that the entire 9312 acres of the holdings were underlaid with 4'3" of recoverable coal, then the tonnage would be a little over 46,000,000 tons. Any additional beds would add to the tonnage. It would probably be safe to state that the tonnage in this property might range from 10,000,000 to 45,000,000 and after being thoroughly prospected it might contain a much greater tonnage and on the other hand further underground prospecting might prove that the bed becomes so badly split with impurities as to render it of no value.*

Evans did not specify whether his estimate was in terms of short tons or long tons.

Again, the reader is cautioned that Evans' estimate includes within its scope both onshore and offshore areas. Offshore areas are not included within the outline of the present Suquash coal property. Furthermore, Evans' estimate is historical in nature, was not made in keeping with modern practice, and is not 43-101 compliant.

8.4.3 C.R. Saunders' 1975 estimate for B.C. Hydro

Working on behalf of Dolmage Campbell & Associates, C.R. Saunders calculated 'coal reserves' for the 0, 1, 1A, 2, 2A, 2B, 3, 4 and 5 coal zones within the Suquash coal deposit. Hydro's interest was in a high-tonnage, low- to moderate-BTU coal feed to a conjectured coal-fired power generating station. Saunders therefore considered a minimum mineable thickness of 3 feet [0.91 metres], with non-sampled portions of such zones being assumed to have zero calorific value and 100% ash. I concur with Saunders' opinion that such an assumption would yield conservative results.

Saunders considered three levels-of-assurance, based on distances from control points (1975a, p.19):

> *"<u>Proven reserves</u> – coal occurring in three or more boreholes spaced not more than 1600 feet apart, and for which there is a relatively high degree of confidence in the correlation of the seam or zone between holes: a maximum projection of 800 feet.*
>
> *<u>Probable reserves</u> – coal projected a maximum of 1600 feet beyond proven coal, or, coal occurring in three or more boreholes spaced not more than 3200 feet apart, and for which there is a moderate degree of confidence in the correlation of the seam or zone between holes.*
>
> *<u>Possible reserves</u> – coal projected beyond probable coal or beyond one or more borehole intersections for a minimum distance of 3200 feet. Reserves for isolated drill intersections of coal seams or zones for which correlation cannot be established."*

For reserves, Saunders (op.cit., page 20) considered three cases:

> *"1. No heat or ash quantity limits.*
>
> *2. Only those portions of the zones with calorific values greater than 4000 Btu per pound and ash content less than 60 percent.*
>
> *3. Only those portions of the zones with calorific values greater than 6000 Btu per pound and ash contents less than 50 percent."*

Saunders continued to note:

> *"It must be realized that these figures are based on somewhat sparse and irregularly spaced data and consequently averages, (which in most cases are weighted) could contain considerable bias in some instances. However, they do serve to indicate the general coal zone quality and quantity in the Suquash Basin.*
>
> *In rounded-off figures, the Suquash Basin contains the following coal zone reserves:*
>
> *(A) All correlated intersections regardless of grade*
>
> > *300 million short tons @ 4500 Btu per pound and 60 percent ash.*
>
> *(B) Correlated intersections containing over 4000 Btu per pound and under 60 percent ash*
>
> > *150 million short tons @5500 Btu per pound and 50 percent ash.*
>
> *(C) Correlated intersections containing over 6000 Btu per pound and under 50 percent ash*

> *50 million short tons @6900 Btu per pound and 44 percent ash.*
>
> *For a minimum three feet thickness the highest calorific value is 8080 Btu per pound and the lowest ash content is 33.3 percent."*

The three foot minimum thickness used by Saunders is less than the 1.5 metre minimum thickness recommended for coals of immediate interest for underground mining, as presented in GSC *Paper 88-21* (Hughes and others, 1989). Conversely, Saunders' radii-of-influence are more conservative than those recommended in *Paper 88-21*.

The reader is cautioned that Saunders' estimate includes within its scope areas where coal licences are not presently controlled by Electra Gold Ltd. Additionally, Saunders' estimate is not 43-101 compliant in that its reporting of "reserves" is unsupported by the necessary engineering studies.

8.4.4 Dolmage Campbell's 1975 estimate for B.C. Hydro

In their 1975 report to B.C. Hydro, concerning coal resources of British Columbia as a whole, Dolmage Campbell & Associates reported "possible reserves" of 50 million tons of coal [presumably short tons, given the date of reporting]. This figure appears to have been drawn from the earlier report written by Saunders (who was working on the behalf of Dolmage Campbell), and it should be interpreted with the same cautions and limitations which Saunders outlined in his estimate.

Again, the reader is cautioned that the Dolmage Campbell "reserve" estimate includes within its scope areas where coal licences are not presently controlled by Electra Gold Ltd. Additionally, this estimate is not 43-101 compliant in that its reporting of "reserves" is unsupported by the necessary engineering studies.

8.4.5 Stephen Gardner's 1984 estimate for Texaco Canada

In the course of a review of coal resources on northern Vancouver Island for Texaco Canada Resources Ltd., consulting geologist Stephen Gardner made an estimate of resources at Suquash. He considered the coal south and east of the old Suquash Mine to be 1.5 metres thick, and on that basis, he estimated that (Gardner, 1984, section 4.5.2):

> *"... the in-situ reserve potential under the land portion would be in the order of 9.1 million tonnes (assume no dip on the coal, a factor of 22,681 tonnes/hectare, and R.D. of 1.5 for coal). Using a radius of investigation equal to the distance between drillholes S-74-06 and SU-80-01 to project to the seaward side of SU-80-01, an additional 9 million tonnes is estimated as an in-situ reserve under the sea adjacent to borehole SU-80-01, bringing the total to 18.1 million tonnes."*

The reader is cautioned that Gardner's "reserve" estimate includes within its scope areas beneath the seabed, beyond the coal licences controlled by Electra Gold Ltd.. Additionally, this estimate is not 43-101 compliant in that its reporting of "reserves" is unsupported by the necessary engineering studies.

8.4.6 Cathyl-Bickford's 2002 estimate for Priority Ventures

In 2002, while acting as an independent Qualified Person for Priority Ventures, I made a coal-resource estimate (Cathyl-Bickford, 2002), conducted in keeping with *National Instrument 43-101*, which was based on data then available (chiefly the coal thicknesses reported from working of Suquash Colliery, and the 1980 drilling by Filtrol). My estimate of coal resources of immediate interest for underground mining, considering intersections of the Suquash No.2 and No.5 coal zones with minimum gross thickness of 1.5 metres, minimum coal:rock ratio of 1.5:1, and maximum contained rock-parting thickness of 30 cm, was 4.28 million tonnes of measured and indicated resources (1.67 million tonnes measured and 2.61 million tonnes of indicated), with an additional 5.73 million tonnes of inferred resources. The majority of the resources were at that time recognised to lie within the No.5 coal zone, but these resources were supported by only one successful borehole, SU-80-1.

8.5 Coal production statistics

During the period of operation by the Hudson's Bay Company, total production from the Suquash No.1 coal bed (all, or almost all of which was by open-cut methods) was approximately 10,000 tons (James, 1953). From 1908 onward into the 1920s, total production from the No.2 coal zone, via the underground workings entered by No.1 Shaft, was 14,749 tons (Evans, 1925). **Table 8-1** (below) breaks out coal production by year, and provides references in support of each year's output from Suquash.

Assuming that all of the reported production was in short tons, the overall coal production at Suquash, in metric units, was approximately 22,450 tonnes.

Table 8-1 Historic coal production at Suquash (in long tons of 2240 pounds, except as noted)

Year	Mine and zone worked	Production	Reference
1849 to 1852	Hudson's Bay Company, in No.1 coal bed	ca. 10,000 [short tons]	(James, 1953)
No coal is known to have been produced in the years 1853 to 1908			
1909	Suquash Colliery, in No.2 coal zone	2010	(Dick, 1910)
1910		2839	(Newton, 1911)
1911		3068	(Newton, 1912)
1912		4492	(Newton, 1913)
1913		2215	(Newton, 1914)
1914		nil	(Devlin, 1915)
Suquash Colliery was not worked between the outbreak of World War I and June of 1920			
1920		125	(Jackson, 1921)
1921		nil	(Jackson, 1922)
1922		nil	(Jackson, 1923)
Suquash Colliery was not worked during the years 1923 to 1951			
1952		not reported	(James, 1953)
Operations at Suquash Colliery ended on 15 November 1952			

Total reported coal production: ca. 10,000 short tons and 14,749 long tons; thus **24,058 tonnes**.

9 Geological setting

The Suquash coal property is situated in Suquash Basin, a Late Cretaceous forearc basin which covered a portion of the Pacific coastal edge of North America and extended westward above and between erosional remnants of an older continental-margin volcano-sedimentary complex, comprised of rocks ranging in age from Triassic to Early or Middle Cretaceous.

Suquash Basin, along with the more southerly Georgia Basin, is hypothesised to have formed some distance south of its present location within southern coastal British Columbia, and then have been carried northwestward along with the northwestward-migrating Wrangellia tectonic terrane. Estimates of the original location of Georgia Basin range from southern Washington state to northernmost Mexico. A corresponding position for Suquash Basin seems reasonable.

9.1 Regional geological context

Suquash Basin is the largest of several remnants of what may originally have been a larger area of Upper Cretaceous sedimentation, possibly extending as far northwestward as Queen Charlotte Sound and Haida Gwaii (the Hecate Basin as described by Haggart (1993)), and as far southeastward as Georgia Strait and northern Puget Sound (into the Nanaimo and Comox Basins of Muller and Jeletzky, 1970, now more commonly known by the collective name of Georgia Basin).

Smaller remnants of Upper Cretaceous rocks are preserved on the eastern shore of Hope Island, 25 kilometres northwest of Suquash, and in a highland area between Neroutsos Inlet and Alice Lake, 12 kilometres southwest of Suquash (Massey and others, 2003).

The Upper Cretaceous rocks of Suquash Basin may overlie and perhaps also overstep older Cretaceous rocks of the Queen Charlotte Basin (as suggested by Bell, 1966) within the central part of the basin. Along the northern margin of the basin, near Fort Rupert, the Upper Cretaceous rocks overstep the Triassic volcanic rocks of the Karmutsen Formation, as shown on recent regional geological mapping (Massey and others, 2003). Along the south-western, southern and eastern sides, the basin is bounded by faults, across which the Upper Cretaceous rocks are inferred to be downdropped against older Mesozoic volcanosedimentary rocks of the Vancouver and Bonanza groups (Nixon and others, 2006).

In latest Tertiary time, Suquash Basin was intruded by basaltic and dacitic dykes, and at least three volcanic vents erupted basaltic to rhyolitic flows and breccia of the Neogene Alert Bay Volcanics within the southeastern quadrant of the basin (Nixon and others, 2006). All known occurrences of these volcanic rocks and associated feeder dykes lie outside of the Suquash coal property, to the east and southeast.

During Pleistocene time, the entirety of northern Vancouver Island and adjoining continental shelf were overrun by ice of the Coast Range glacier system, associated with the regionally-extensive Fraser Glaciation, which commenced about 25,000 years ago. As the glacial ice advanced over the area, crustal rocks subsided in response to the weight of the ice, resulting in local apparent sea-level rise of up to 100 metres. Glacio-marine sediments (chiefly well-bedded sandy silts with drop-stones) were deposited in advance of the glaciers; these were followed and overlain by deposits of silty stony till. During deglaciation, at the end of the Fraser Glaciation between 13,000 and 9,000 years ago, patchy but locally-thick deposits of sandy and gravelly glacio-fluvial outwash were locally succeeded by silty and clayey glacio-lacustrine deposits (Kulla and others, 2008).

9.2 Basin fill

Sedimentary fill within Suquash Basin consists of Late Cretaceous coal-bearing rocks of the Suquash Formation, part of the Nanaimo Group (Muller and Jeletzky, 1970; Muller and others, 1974; Jeletzky, 1976), possibly underlain by older Cretaceous rocks of the Queen Charlotte and Coal Harbour groups (Jeletzky, 1969; 1970; 1976). **Table 9-1** summarises the stratigraphy of Suquash Basin and adjoining basement terranes, based on these studies and recent drilling.

Table 9-1: Table of formations

Age / Name		Lithology	Thickness
Quaternary			
not depicted on map	Drift	Glaciomarine, glaciofluvial, glaciolacustrine, fluvial, colluvial and beach deposits, ranging from compact silt to bouldery gravel	nil to 30 m within property; up to ca. 75 m to west
Neogene			
unknown within mapped area	Alert Bay Volcanics	Basaltic and dacitic dykes; basaltic to rhyolitic flows and breccia; not known within the Suquash coal property but known to occur to the south and east.	few m wide (dykes) to ?100 m thick (flows)
Upper Cretaceous (Campanian to ?Maestrichtian) **Nanaimo Group**			
uKS	Suquash Formation	Sandstone, shale, coal; minor conglomerate and micritic limestone (in upper portion)	330 to 350 m
Upper Cretaceous (Cenomanian to ?Turonian) **Queen Charlotte Group**			
present at depth beneath uKS?	Upper shale unit	Shale, siltstone and sandstone; possibly present at depth beneath Suquash Formation.	20 to 80 m
Lower Cretaceous (?Albian) **Coal Harbour Group**			
present at depth beneath uKS?	undivided	Siltstone and sandstone; minor conglomerate; possibly present at depth beneath Suquash Formation.	ca. 100 m
Lower and Middle Jurassic (?Rhaetian to Bajocian) **Bonanza Group**			
lmJLvs	Lemare Lake Volcanics	Volcaniclastic breccia, sandstone, siltstone and limestone; tuff and breccia.	ca. 500 m
	(Norian to Hettangian or ?Sinemurian)		
TrJBu	Parson Bay Formation	Limestone and siltstone; mudstone, shale and sandstone; minor tuff and graphitic shale; map-unit includes basal part of Lemare Lake beds	ca. 1050 m
Upper Triassic (Carnian to Early Norian) **Vancouver Group**			
uTrQ	Quatsino Formation	Micritic limestone, rare oolitic or algal limestone; locally with chert nodules.	ca. 300 m
	(Carnian)		
uTrK	Karmutsen Formation	Basaltic lava flows, generally amygdaloidal; minor limestone beds and lenses near top.	several km

Note: Cretaceous stratigraphy beneath Suquash Formation is my extrapolation from work by Jeletzky (1969; 1970; 1976). Jurassic and Triassic stratigraphy is based on work by Nixon and others (2006). See bedrock geological map (Map 2) for distribution of formations within the study area.

9.3 Local geology

The maximum drilled thickness of ?Cretaceous sedimentary rocks within the Suquash coal property is 381 metres (in historic borehole SU-80-1), and possibly as great as 644 metres if the poorly-located historic borehole OH-1, for which only a summary log exists, is accepted as being valid. Of this thickness, the uppermost 330 to 350 metres comprises the Suquash Formation, which is the unit within which the coal beds of current exploratory interest are hosted.

Table 9-2 presents formation tops and positional details for all boreholes within the area covered by **Map 2**, which presents geology of the Suquash coal property and adjoining areas. **Table 11-1** presents depth information and partial thickness details of correlatable coal beds within these boreholes; in both tables, boreholes located within the boundaries of the property are highlighted in boldface type. Thicknesses, depths and elevations within both tables are given in metres, and positional details are given within the UTM83 coordinate system, also in metres. Positions of all boreholes except for the four current SQ-08-series boreholes are based on scaling from archival maps; none of these historic boreholes have yet been relocated in the field, and I expect that it would be very difficult to relocate the sites older boreholes given the rampant vegetation, extensive forestry operations, and (in some cases) over a century of time having passed since they were drilled.

Map 2 depicts observed and inferred bedrock geology of the Suquash coal property and adjoining areas. Bedrock map-units depicted on the map may be cross-referenced to their lithological, age and thickness details presented in the Table of Formations (**Table 9-1**, above). The geological map has been compiled from two sources of information: pre-Cretaceous geology of the area southwest of Keogh Fault has been derived from a recent published geological map (Nixon and others, 2006), while the Cretaceous geology of the area northeast of Keogh Fault has been derived from my fieldwork in 2002 and 2009, with the bulk of my work having been along the coastline of Queen Charlotte Strait, where bedrock is generally well-exposed in intertidal foreshore flats, sea-cliffs, and rock reefs. I have also made some traverses along logging-roads and creeks, but have generally found them unproductive of bedrock information.

9.3.1 Basement rocks

Economic basement beneath the Suquash coalfield is inferred to consist of volcanic and metasedimentary rocks of Jurassic and Triassic age, as presented in **Table 9-1**. Basement rocks have not been encountered in any boreholes within the Suquash coal property, but they have been reached in boreholes elsewhere within Suquash Basin. The basement paleosurface, as exposed further to the northwest near Port Hardy and Fort Rupert, is known to be marked by considerable local relief, with paleohills of basement rock projecting up within the basal Cretaceous sedimentary cover. Similar unconformable geometries are likely present beneath the Suquash coal property itself, but few of the historic and current boreholes at Suquash have reached sufficient depths to be expected to approach basement.

Basement rocks are sporadically-exposed in the undulating, hilly country southwest of the Keogh Fault. Two rock-quarries along main logging-roads expose rocks of the Bonanza and Vancouver groups, and isolated exposures of these rocks also occur within rock-cuts along the Island Highway.

9.3.2 Older sedimentary rocks within Suquash Basin

Older clastic sedimentary rocks are interpreted to underlie the Suquash Formation within Suquash Basin. These rocks, assigned to the Upper shale unit (of the Queen Charlotte Group) and the undivided Coal Harbour Group, are inferred to have been struck by current borehole SQ-08-4 and historic boreholes SQ-1 and SU-80-1, as well as possibly having been reached by historic borehole OH-1 (for which no complete log exists). In none of these holes, except perhaps for OH-1, was significant coal encountered.

9.3.3 Coal-measures

All of the presently-known significant coal occurrences in Suquash Basin are contained within the Upper Cretaceous Suquash Formation, which forms bedrock beneath the virtually all of the basin's known extent. For purposes of convenience, I have divided the formation into three informal subdivisions, as tabulated in **Table 9-2**:

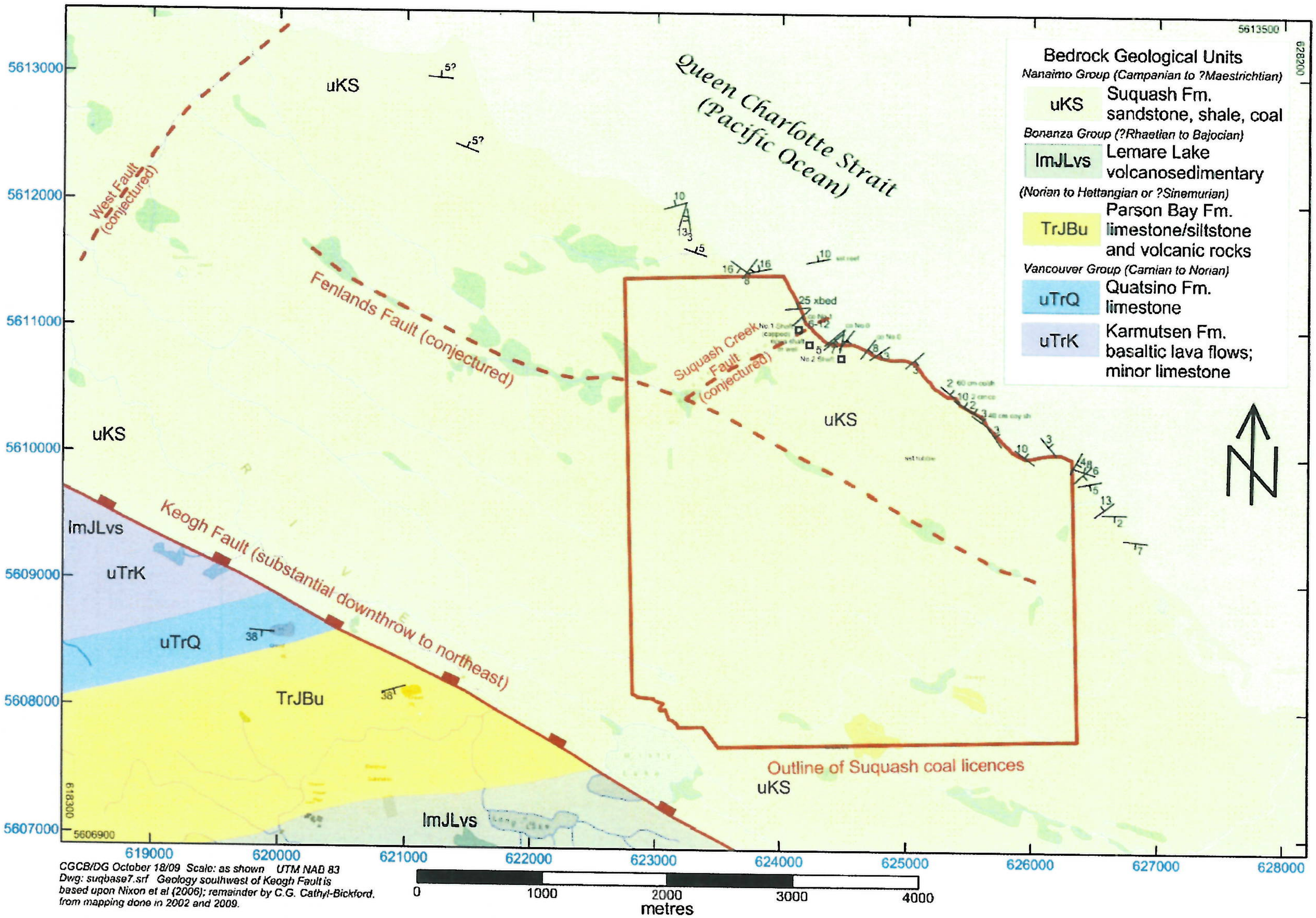
- Upper Division (up to at least 87 metres thick), containing the thin Suquash 'B' and Suquash 'A' coal beds, with its basal contact drawn at the locally-disconformable base of an extensive unit of thick-bedded sandstone;
- Middle Division (42 to 79 metres thick), containing the thin Suquash No.0, No.1 and No.1A coal beds, with its basal contact drawn at the base of a possibly-lenticular series of silty sandstone beds; and
- Lower Division (77 to 188 metres thick), containing the Suquash No.2R and No.2 coal beds near its top (along with the associated variably-carbonaceous shales and siltstones of the No.2L 'basal fine-grained zone', and also containing the No.2A, No.2B, No.3, No.4 and No.5 coal beds, along with numerous other thin and uncorrelatable coal beds, and at least one band of anomalously-radioactive shale (the 'Gamma-marker', above the No.3 coal bed).

Bedrock beneath nearly all of the Suquash coal property is formed by the Upper Division of the Suquash Formation, with a small erosional 'window' into the Middle Division along the shoreline of Queen Charlotte Strait, near the mouth of Suquash Creek. The Lower Division, containing the Suquash No.2 coal zone (the major exploratory target of the year-2008 drilling programme) is nowhere known to be exposed at the bedrock surface.

The total preserved thickness of the Suquash Formation, as observed by drilling within the Suquash coal property, is 328.6 metres (within historic borehole SU-80-1). The formation is unlikely to be thicker than 350 metres within the property, but greater thicknesses may be preserved but as-yet undrilled elsewhere within the Suquash Basin.

9.3.4 Covering rocks

No rocks younger than the Suquash Formation are known to be present within the Suquash coal property. Further to the south and east, however, intrusive and extrusive crystalline rocks (mainly dykes and volcanic flows) of the Neogene Alert Bay Volcanics are known to outcrop, with intrusive or unconformable relationship to the coal-measures. During my 2009 fieldwork, I noted basaltic dykes, carrying brecciated blocks of sandstone, within the Suquash sandstones along the shoreline of Queen Charlotte Sound, near the Orca Minerals ship-loader, east of the mouth of Cluxewe River and therefore several kilometres east of the Suquash coal property.



Map 2: Bedrock geology of the Suquash area

Table 9-2: Locations and formation tops for historic and current boreholes at and near Suquash

borehole	UTM83 E	UTM 83 N	Elevation	Drift	Rockhead	Upper Suq	Middle Suq	Lower Suq	Gamma-marker	Upper Shale	Coal Harbour	Basement	TD
SQ-08-1	624585	5610563	37.5	4.85	32.65	starts	12.30	74.34	DNR				103.33
SQ-08-2	624236	5610800	30	25.27	4.73	starts	25.42	69.46	DNR				103.89
SQ-08-3	624718	5610205	50	7.88	42.12	starts	31.76	94.78	DNR				118.09
SQ-08-4	625184	5610081	45. 5	6.10	39.40	starts	38.16	106.55	201.9	275.01	298? log	DNR	328.88
HBC-3	620920	5610280	60.5	9.60	50.90	starts	20.52	73.84	DNR				86.97
OH-1	624445	5610320	*no data available concerning this borehole*										644.1?
SQ-1	624221	5611021	2.4	1.52	0.88		starts	45.11	103.63?	196.60	274.60	DNR	366.98
SQ-2	625030	5610715	10	3.96	6.04	starts	12.80	77.42	DNR				122.22
SQ-3	625830	5610060	3	1.52	1.48	starts	31.09	97.23	DNR				111.56
SQ-4	623705	5611435	18	1.52	16.48	starts	6.71	DNR	DNR				59.13
SQ-5	624532	5610787	36	1.83	34.17	starts	18.29	77.72	DNR				91.44
SQ-6	624731	5610711	32	1.83	30.17	starts	25.30	84.73	DNR				95.10
S-74-1	623180	5610985	42.5	3.35	39.15	starts	47.55	99.97	?	DNR?			194.46
S-74-3	623900	5610290	32	4.88	27.12	starts	31.39	103.94	?	?	DNR		200.56
S-74-5	623465	5609485	69	2.74	66.26	starts	5.18	84.12	?	231.65	DNR		237.13
S-74-6	624770	5609530	54.5	7.01	47.49	starts	34.90	105.77	?	DNR			221.89
S-74-10	621545	5609120	71	23.77	47.23	starts	51.21	110.03	179.83?	DNR			182.27
S-74-12	624720	5607900	84	35.66	48.34	starts	43.59	101.19	DNR				163.98
SU-80-1	626200	5609165	37	3.35	33.65	starts	90.35	144.30	256.00	331.95	372?	DNR	384.05
SU-80-2	623510	5608175	106	>48.16	<57.84								48.16
SU-80-3	620860	5610605	77	41.50	35.50		starts	76.4	139.25	DNR			207.57
SU-80-4	618560	5611320	34	47.85	-13.85		starts	66.8	119.20	NP	143.80?	244	262.43
SU-80-5	621290	5611620	40	71.60	-31.60		starts	101.6	211.30	311.40	347.80	DNR	365.76
No.1 Shaft	624188	5611006	9.15?	*no data*			starts	?	DNR				51.82
No.2 Shaft	624521	5610780	35	0.30	34.70	starts	DNR						5.79

Note: current boreholes are SQ-08-1 to SQ-08-4. Others (including shafts) are historic. Boreholes and shafts listed in ***boldface*** *are within property.*

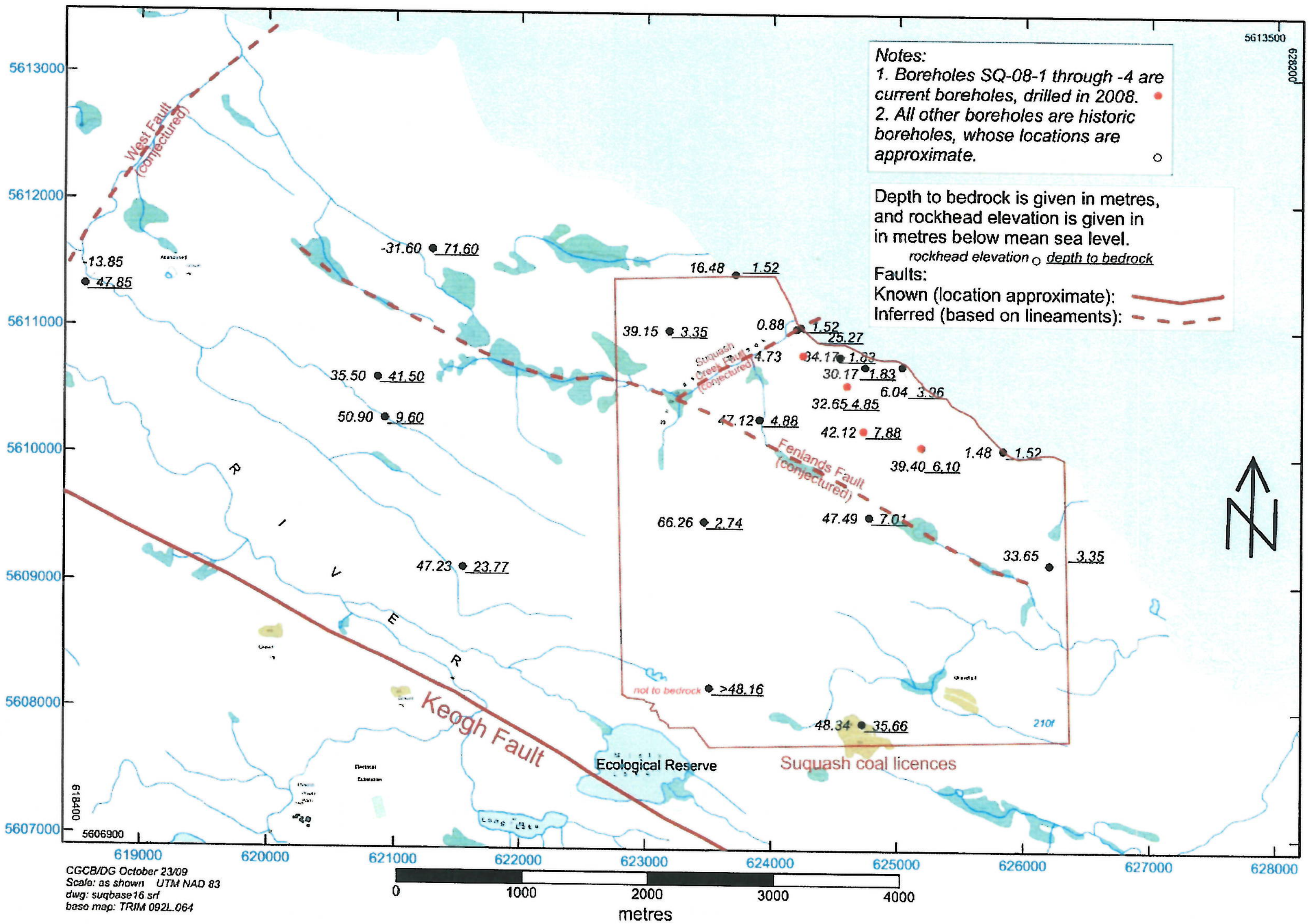


Figure 9-1: Depth to bedrock, as determined by boreholes

9.3.5 Drift cover

Drilling within the upland areas of the Suquash coal property, and mapping along the shoreline of Queen Charlotte Strait, has disclosed a pervasive but variably-thick cover of unconsolidated Drift above the coal-measures of the Suquash Formation.

Where penetrated by boreholes within the property (**Figure 9-1**), Drift cover is at least 1.5 metres thick (although some of the thinnest intersections may in fact be frost-shattered or weathered sandstone bedrock, rather than Drift), and locally over 48 metres thick (in borehole SU-80-2, within the south-western corner of the property). Drift thickness appears to increase from the coastline towards the upland south-western area, perhaps associated with a raised Pleistocene deltaic complex of Cluxewe River. Drift thickness also appears to increase to the west-northwest, perhaps associated with a postulated raised deltaic complex of Keogh River. Neither of these suppositions has been checked against available mapping of surficial geology.

9.4 Structural geology

Extensive bedrock exposures along the foreshore (and locally in sea-cliffs) of Queen Charlotte Strait show an apparently-simple gross geological structure, with bedding dipping gently at 3 to 10 degrees to the northeast or southeast, complicated by rare joint swarms and low-displacement faults (typically in the range of a few decimetres or less). Stratification in sandstones locally dips as steeply as 25 degrees, but such steeper dips are confined to single beds or associated groups of beds; these steep dips are therefore interpreted as due to point-bar or foreset cross-bedding.

9.4.1 Faults

Minor extensional faults, with displacements ranging from 15 centimetres to 1.8 metres, were mapped by Daniels (1919c) in the course of his underground mapping at Suquash Colliery. The 1.8-metre fault seen in the mine may correlate with a swarm of decimetre-scale extensional faults visible within overlying sandstone beds, along the foreshore near the mine. Strong lineaments are visible in aerial photographs, and these lineaments appear to follow channels of streams which cross-cut the regional drainage pattern, or follow chains of aligned, elongated fenlands and ponds. Three such lineaments, of which two cross the Suquash coal property, are depicted as conjectured faults on **Figures 9-1** and **9-2**, and **Map 2**. One of these, the Fenlands Fault, may have been intersected by borehole SU-80-1, which reported a 'large waterbearing fracture' at 151.7 metres' depth.

A more unequivocal fault (the Keogh Fault on **Map 2**), with inferred vertical displacement of several hundred metres to a few kilometres, forms the south-western structural boundary of Suquash Basin. Although I have not yet found an exposure of the fault zone itself, it forms a strong and regionally-extensive lineament (first noted by Dawson, 1887) on aerial photographs and topographic maps, with exclusively basement rocks outcropping along its south-western side. Extensions of the Suquash coal-measures south-west of the Keogh Fault are unlikely, but there may be isolated erosional remnants of the older Cretaceous rocks of the Queen Charlotte and Coal Harbour groups, as suggested by Bell (1966) following a photogeological study of the area.

Plate 6: *Decimetre-scale faults, dying out up-section.*
These faults cut bioturbated sandy siltstones of the Middle Division of the Suquash Formation, in the rocky foreshore of the bay south-east of Suquash Creek. The faults appear to die out up-section within intensely bioturbated hardground deposits. The roof of the No.2 coal bed is about 45 metres below these rocks. Photograph 996/09 by C.G. Cathyl-Bickford, 2009.

Figure 9-2 shows the inferred roof elevation, in metres relative to mean sea level, of the Suquash No.2 coal bed, as determined from borehole data, supported by surveyed elevations within the workings of Suquash Colliery (as mapped by Daniels, 1919c).
Figure 9-3 shows the observed total depth to the roof of the No.2 coal bed, as determined by boreholes, and further shows the calculated thickness of rock cover over the coal bed. Rock cover thicknesses shown in this map were calculated by subtracting Drift thickness from the drilled depth to the roof of the coal bed.

9.4.2 Folding

The pattern of bedding attitudes mapped along the shoreline of Queen Charlotte Strait (as shown in **Map 2**) suggests that an east-dipping, shallow, but relatively sharp-nosed syncline may be present along the foreshore southeast of Suquash Mine. However, comparison with the modelled structural contours presented in **Figure 9-2** (based upon minimum-curvature analysis of gridded borehole data) suggests that if a syncline is present, its trough would lie about two kilometres further to the southeast, near the eastern boundary of the Suquash coal licences.

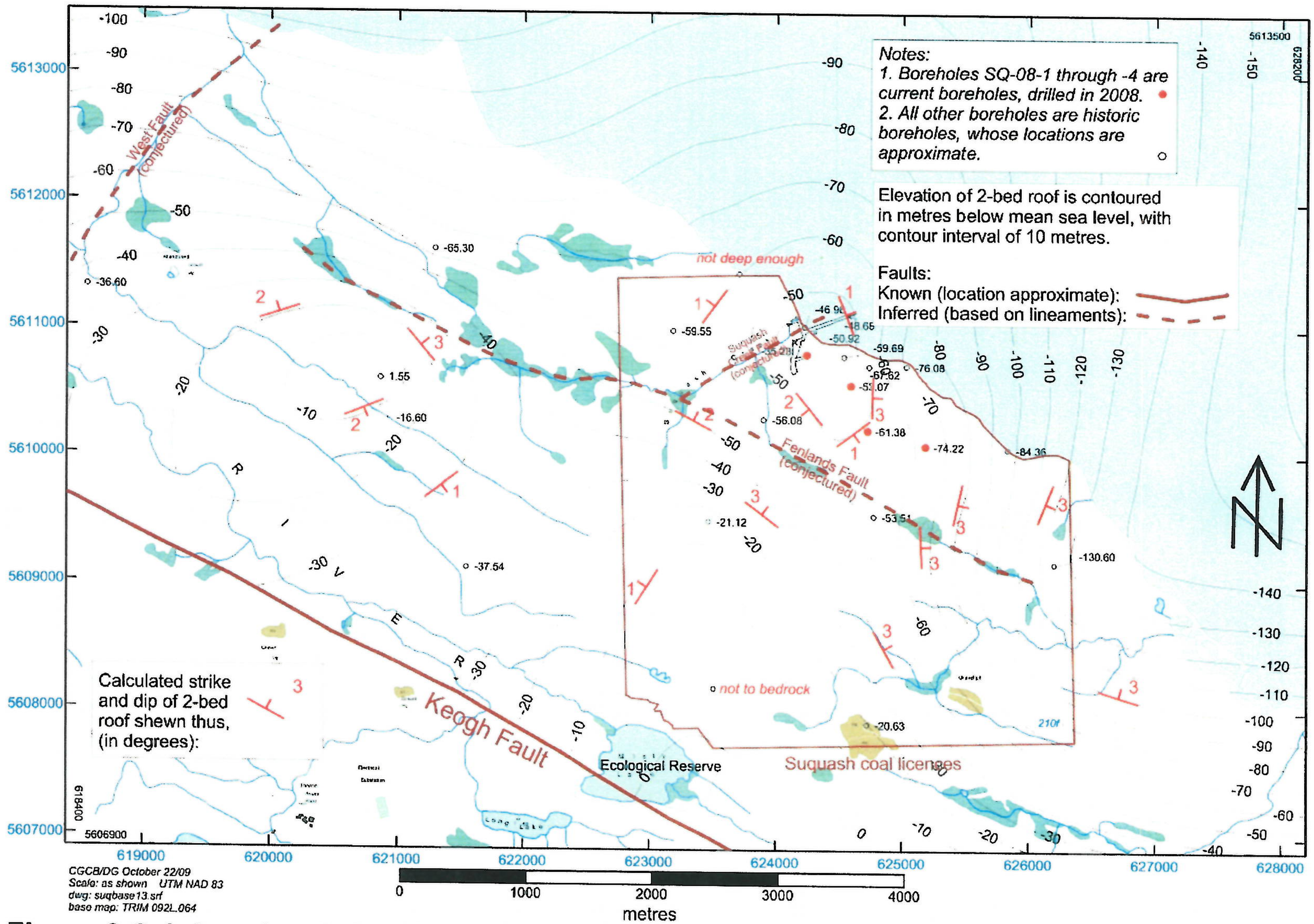


Figure 9-2: Inferred roof elevation of Suquash No.2 coal bed

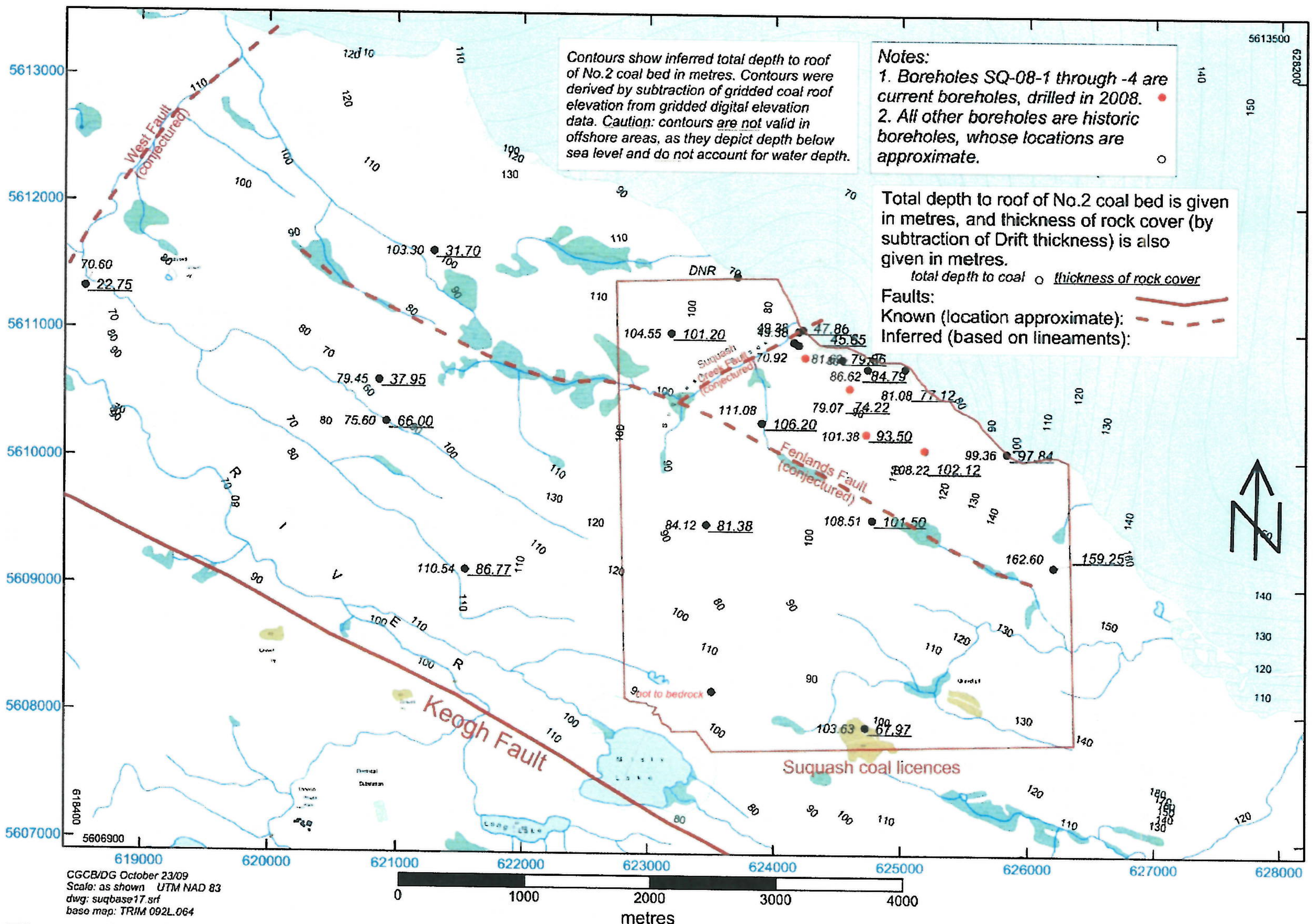


Figure 9-3: Depth to roof of Suquash No.2 coal bed, as determined by boreholes

10 Deposit types

National Instrument 43-101 calls for the application of GSC Paper 88-21, *A Standardised Coal Resource/Reserve Reporting System For Canada* (Hughes and others, 1989) when reporting on coal properties. GSC Paper 88-21 specifies the subdivision of coals by deposit type and by geology type. For coal deposits, the correct identification of deposit type and geology type is important, since these type assignments determine the criteria which should be applied during coal-resource estimation.

Deposit type, as considered in GSC Paper 88-21, refers to the anticipated means of exploitation of the coals. Possible deposit types range from 'surface mineable', 'underground mineable', and 'non-conventional' (which would include coals of interest for coalbed gas production) to 'sterilised' (which would include coals not presently accessible for exploitation owing to legal, operational or environmental constraints).

- The majority of presently-identified coal resources within the Suquash coal property fall within the 'underground mineable' deposit type, as they lie too far below the ground surface to be considered accessible by surface-mining methods.
- A small proportion of presently-identified coal resources within the Suquash coal property fall within the 'sterilised' deposit type, owing to their proximity to the abandoned and flooded underground workings of Suquash Colliery. Were the mine-workings not present, these resources would be included within the 'underground mineable' deposit type.

Geology type, as considered in GSC Paper 88-21, refers to the general geological complexity of the coals. In most Canadian instances, the amount of tectonic deformation of the coals is the main factor in assessing geology type, but sedimentological and stratigraphic complexities also come into play, particularly among coals which have undergone low to low-moderate levels of deformation.

I consider the geology type at Suquash to be 'moderate', near the midpoint of the GSC's scale from 'low' through 'moderate,' 'complex' and 'severe.' According to GSC Paper 88-21, coal deposits with 'moderate' geology have undergone some tectonic deformation, characterised by homoclines or broad open folds, with bedding dips usually less than 30 degrees from the horizontal. Faults are relatively uncommon, and generally have displacements less than 10 metres.

GSC Paper 88-21 suggests that the Obed Marsh and Bullmoose coal deposits in Canada would be considered to have 'moderate' geological complexity; to these examples, I would also add the Cumberland, Tsable River and Quinsam Mine coal deposits of Vancouver Island, which are hosted by broadly similar coal-measures to Suquash, and which have undergone similar extents of tectonic deformation.

10.1 Depositional model for coals of the Suquash Formation

Defining an appropriate depositional model for the Suquash coals is more difficult than usual, owing to the lack of accessible exposures of the coal of exploratory interest (the No.2 coal zone). That being said, cores of four current exploratory boreholes were available for my examination, and as well, I have enjoyed the benefit of reviewing detailed field-notes taken by consulting engineer Joseph Daniels during his historic examination of the then-accessible underground workings of Suquash Colliery.

From viewing the borehole cores, I note the frequent presence of fossilised rootlets beneath the No.2R and No.2 coal beds; at times, these rooted zones extend to several decimetres beneath the coal beds. Beneath the No.2 coal bed is a predominantly fine-grained 'basal shale' zone (the No.2L bed) of mainly dark-coloured, variably-carbonaceous, generally root-penetrated rocks, locally bearing compactional slips and listric slickensides consistent with soil-forming processes. As well, the rock partings between the individual coal layers that comprise these coal beds are variably-carbonaceous, occasionally root-penetrated, and at times disrupted by animal burrows consistent with episodic flooding by water.

Some of the coals (particularly within the No.2R bed) bear elevated contents of sulphur. However, major rock partings generally are low in sulphur content, although they do occasionally contain freely-separable bands of bright coal. The coals themselves are coarsely-banded to massive, with frequent alternations of bright and dull bands.

From these features, I conclude that the coals of the No.2 coal zone formed essentially in place (with minimal transport) upon a substrate of clay- and silt-rich sediments, which was exposed to intensive pedogenic (soil-forming) alteration, precursory and perhaps also synchronous with accumulation of peat derived from growth, blowdown and in-situ preservation of coarse woody plant material, including limbs and trunks of trees. I envisage the peat-forming landscape as comprising forested wetlands upon a coastal plain bounded by the rising Coast Range massif to the east, and the Pacific Ocean to the west, interrupted by shallow fresh-water streams which occasionally flooded, leaving widespread deposits of sandy, silty and muddy sediment upon the surfaces of the wetlands.

From the elevated sulphur content of the No.2 coal zone, I conclude that the peat-accumulating process was eventually terminated by relative rise in local drainage level, likely in close proximity to brackish or normally-saline sea-water, perhaps of a shallow coastal bay.

Although the pattern of recognised areas of potentially-mineable coal (see **Figure 19-1**) is suggestive of a northwest-southeast orientation of the peat-forming wetlands, this pattern is, in my opinion, influenced by the tighter spacing of boreholes alongside the present-day coastline of Queen Charlotte Strait, which also runs generally northwest-southeast. I therefore am reluctant to propose an overall palaeogeographic orientation of the coal-forming environment associated with the Suquash No.2 coal zone, in the absence of definitive paleocurrent data.

11 Mineralisation

At Suquash, 'mineralisation' consists of two closely-related lithological groups: coal and rock partings, which together form the constituent parts of coal beds. Coal and rock partings are intimately associated in horizontal and vertical proximity: this is a normal feature of coal deposits. All of the correlatable coal beds at Suquash lie within the Suquash Formation.

11.1 Principal exploratory and mining target

The zone of principal exploratory (and, potentially, mining) interest at Suquash is the Suquash No.2 coal bed (**Figure 11-1**), which consists of interbedded coal and rock partings, including bands of dirty or stony coal, and coaly or carbonaceous rock. Contemporary observations from Suquash Mine (Daniels, 1919c) underscore the presence of numerous rock partings within the No.2 coal bed, as well as within the No.2 coal zone generally. As well, year-2008 exploratory drilling has confirmed that the coal bed consists of a finely-interbedded complex of coal and rock partings, sufficiently-so that selective mining within the No.2 coal bed would be difficult, although not impossible.

Roof

The roof of the No.2 coal bed comprises interlaminated mudstone, siltstone and sandstone, ranging in thickness from 0.82 to 4.70 metres in the four year-2008 boreholes. This unit, referred to as the Rider Parting, becomes sandier as it thickens, but at no point is it known to become entirely sandstone. The Rider Parting is thin- to medium-bedded, and moderately hard; in my opinion it would make an acceptable roof for a room-and-pillar mine.

Above the Rider Parting is the thin but persistent coal of the No.2R (for 'Rider') coal bed, which is 20 to 60 centimetres thick. The roof of the No.2R coal bed (and therefore the roof of the overall No.2 coal zone) is a few decimetres to a few metres of interbedded siltstone and mudstone, overlain by silty sandstone of the Middle Division of the Suquash Formation. In those places within the old workings of Suquash Colliery, where the No.2R coal, a thin Rider Parting, and part or all of the No.2 coal bed formed the worked section of the coal zone, the Middle Suquash sandstones formed the long-term stable roof of the mine, with local spalling of the underlying siltstone and mudstone.

Coal

In core, as well as in hand-specimens seen within the pithead dump of Suquash Colliery, the No.2 coal is a normally-banded, moderately-bright, blocky, humic bituminous coal, with well-developed cleats. Core cores occasionally break easily along cleats, forming small, dice-like cubical to rhomboidal fragments. Some of the No.2 coal is duller in aspect, and distinctly stony, with elevated ash contents approaching the 40% cut-off between dirty coal and coaly rock. Pyrite streaks and disseminated fine pyrite are occasionally observed in coal cores, and bright yellow 'sulphur bloom' is evident on some of the weathered coal from the pithead dump.

Parting materials associated with the No.2 coal comprise variably-carbonaceous, root-penetrated mudstone and siltstone, and (less-commonly) fine-grained kaolinitic sandstone.

Figure 11-1 shows the interpreted thickness contours of the No.2 coal bed, inclusive of its internal rock bands. Within the current outlines of the Suquash property, drilled thickness ranges from 20 centimetres (borehole S-74-5, in the south-west, where the bed is represented solely by carbonaceous rock) to 2.42 metres (in a dirty section found in borehole SQ-2008-3, about one kilometre south-east of Suquash Colliery). The thickness contours shown in **Figure 11-1** are influenced by the clustering of boreholes along the southeast-trending coastline of Queen Charlotte Strait, but they appear to show a south-eastward elongation of the thicker portion of the No.2 coal bed.

Floor

The floor of the No.2 coal bed comprises variably-carbonaceous, interbedded or interlensing mudstone and siltstone, with occasional coals up 20 centimetres thick. These 'basal shales', referred to as the No.2L bed, are 1.19 to 3.50 metres thick in the four year-2008 boreholes. The 'shales' are extensively root-penetrated, especially at their top and beneath some of their internal coal bands; they are generally dark-coloured and on the whole they present the appearance of a well-developed paleosol upon which the peat-accumulating and hence coal-forming wetlands of the No.2 bed were founded. The No.2L bed is moderately soft, with locally-abundant pedogenic slickensides, but it hardens somewhat as its silt content increases downward towards its base. Beneath the No.2L bed is the floor of the overall No.2 coal zone: a hard, distinctively light-coloured unit of quartzitic silty sandstone.

The soft, root-penetrated mudstones of the No.2L bed would make a fair to poor floor for a room-and-pillar mine, with likely propensities towards heaving and breaking-up under traffic by mine vehicles and coal-cutting machinery. The lower parts of the No.2L bed, with higher silt content, might make a better floor, as would might any of the coal bands within the bed, provided that they were reasonably thick (20 cm?) and persistent. The best floor in long-term usage, such as along main development roadways, would likely be found in the harder, quartzitic sandstones beneath the No.2L bed.

11.2 Distribution of coal beds within the Suquash Formation

The Suquash Formation, as seen within the Suquash coal property, contains 13 correlatable and seemingly-persistent coal beds (**Table 11-1**), numbered and lettered in order from the top of the formation downwards.

- Within the Upper Division of the Suquash Formation, the 'B' and underlying 'A' coal beds are present. Other thin coals overlying the 'B' coal bed may eventually be found to be sufficiently continuous to merit naming, but the necessary studies have not been completed owing to their minimal thickness. None of the Upper Division coals are known to attain mineable thickness.
- Within the Middle Division of the Suquash Formation, the No.0, and the progressively-underlying No.1 and No.1A coal beds are present. The No.1 coal bed is alternatively known as the Hudsons Bay coal bed, owing to its having been worked on behalf of the Hudsons Bay Company during the mid-19th century. None of the Middle Division coals are known to attain mineable thickness.
- Within the Lower Division of the Suquash Formation, the No.2R and No.2 coal beds and the No.2L 'basal shale zone' (collectively, the No.2 coal zone), and the progressively-underlying No.2A, No.2B, No.3, No.4, No.4L and No.5 coal beds are present. Numerous other very thin and uncorrelatable coal beds are locally present within the Lower Division.

The No.2 (**Figure 11-1**) and No.5 coal beds locally attain gross thicknesses of immediate (at least 1.50 metres) or future (at least 0.90, but less than 1.50 metres) interest for underground mining. The No.4 coal bed locally attains a gross thickness of future interest for underground mining. Neither the No.4 nor the No.5 coal beds have yet been sufficiently studied in terms of their coal quality, nor their lateral distribution, to be considered for inclusion in the coal-resource base at Suquash.

Table 11-1: Coal bed tops and thicknesses for current and historic boreholes at and near Suquash

borehole	B-roof	A-roof	0-roof	1-roof	1A-roof	2R-roof	2-roof	2-roof-elev	2-net	2-gross	2A-roof	2B-roof	3-roof	4-roof	5-roof	5-net	5-gross	TD
SQ-08-1	beyond subcrop		16.69	40.52	62.42	74.67	79.07	-41.57	0.64	1.09	DNR							103.33
SQ-08-2	beyond subcrop		26.33	41.93	60.15	69.80	70.92	-40.92	1.55	2.21	100.43	DNR						103.89
SQ-08-3	beyond subcrop		34.80	57.20	84.94	95.63	101.38	-51.38	1.39	2.42	DNR							118.09
SQ-08-4	beyond subcrop		39.90	62.39	88.46	107.03	108.22	-62.72	0.70	1.38	146.68	153.31	206.49	218.12	235.01	0.98	1.53	328.88
HBC-3	beyond subcrop		20.52	40.13	57.45	73.84	75.60	-16.60	0?	1.64	DNR							86.97
OH-1	*no data available concerning this borehole*																	644.1?
SQ-1	beyond subcrop			3.66	27.74	47.55	49.38	-46.98	1.45	1.75	81.69	99.67	104.24	134.42	167.94	0.61	0.61	366.98
SQ-2	beyond subcrop		15.54	35.36	70.10	78.64	81.08	-76.08	0.91	0.91	111.25	116.74	DNR					122.22
SQ-3	beyond subcrop	5.49	33.22	54.10	85.95	98.45	99.36	-84.36	0.91	1.83	DNR							111.56
SQ-4	beyond subcrop		6.71	24.99	53.34	DNR												59.13
SQ-5	beyond subcrop		18.29	34.44	69.49	NP	81.69	-59.69	1.17	1.83	DNR							91.44
SQ-6	beyond subcrop		25.30	40.69	75.82	85.50	86.62	-67.62	0.32	0.71	DNR							95.10
S-74-1	beyond subcrop	20.42	48.62	65.99	84.73	100.71	104.55	-59.55	0	0.30	130.39	146.61	190.07	DNR				194.46
S-74-3	beyond subcrop	9.45	35.81	54.25	79.86	104.49	111.08	-56.08	0.33	0.69	131.06	140.82	160.63	169.04	186.08	0	2.59	200.56
S-74-5	beyond subcrop		5.18	35.36	74.68	NP	84.12	-21.12	0	0.20	114.45	142.95	163.07	177.39	194.16	0.24	2.44	237.13
S-74-6	beyond subcrop	11.58	34.90	55.47	97.54	105.82	108.51	-53.51	0.24	1.01	142.04	157.22	176.48	198.42	215.49	0.91	0.91	221.89
S-74-10	starts in floor?	30.48?	51.21	60.66	89.46	NP	110.55	-37.55	0	0.85	141.73	155.14	180.44	DNR				182.27
S-74-12	beyond subcrop		45.72	54.86	76.20	101.19	103.63	-20.63	0.30	0.30	135.03	NP	DNR					163.98
SU-80-1	65.15	75.10	95.05	120.15	132.55	157.60	162.60	-130.6	0.75	0.90	211.35	232.95	264.95	281.40	293.88	2.42	3.45	384.05
SU-80-2	*this borehole did not reach bedrock*																	48.16
SU-80-3	beyond subcrop			41.95	60.40	NP	79.45	1.55	0.55	0.55	99.05	119.60	154.25	164.90	195.75	1.70	2.55	207.57
SU-80-4	beyond subcrop					66.90	70.60	-36.60	0.75	1.45	79.90	89.85	NP	139.30	NP	0	0	262.43
SU-80-5	beyond subcrop				88.60	NP	103.30	-65.30	1.15	1.15	143.00	151.00	211.45	274.9?	295.70	0	0.70	365.76
No.1 Shaft	beyond subcrop			ND	ND	ND	49.38	-40.23	ND	1.83	DNR							51.82
No.2 Shaft	ND	DNR?	DNR	*Construction of No.2 Shaft was stopped after sinking 5.49 metres into sandstone. No coal was struck.*														5.79

Note: current boreholes are SQ-08-1 to SQ-08-4. Others (including shafts) are historic. Boreholes and shafts listed in ***boldface*** *are within property. Abbreviations: DNR = did not reach; NP = not present; ND = no data available. Zero net coal thickness indicates that entire zone consists of rock.*

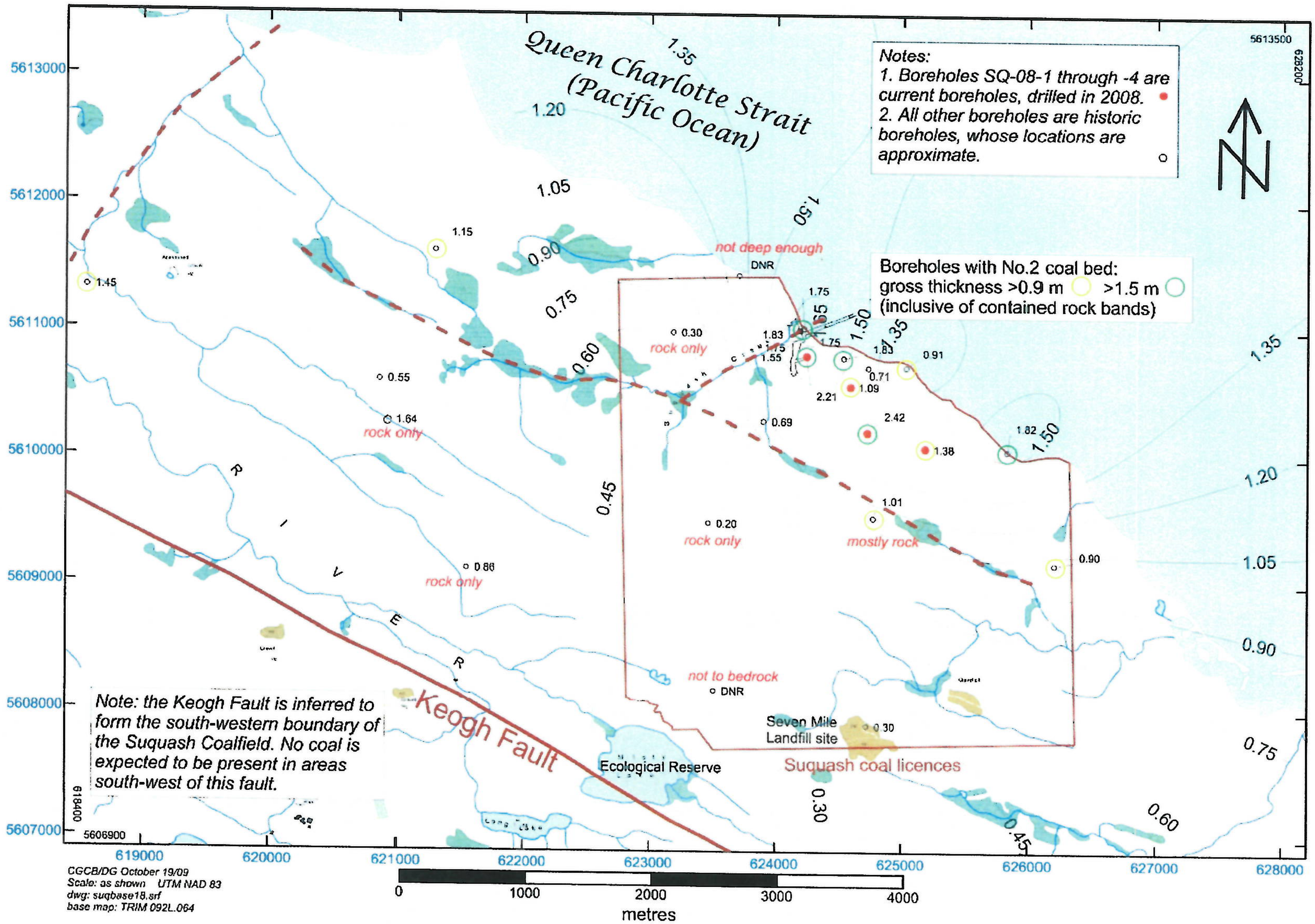


Figure 11-1: Gross thickness of Suquash No.2 coal bed (inclusive of internal rock partings)

12 Exploration

Electra Gold Ltd. carried out exploration at Suquash in 2008, under the terms of a *Notice of Work* based on its ownership of mineral claims covering the Suquash area. The purpose of this work was to investigate the quality and thickness of coal and associated rock partings, known to have been previously-worked at Suquash Colliery, and to acquire sufficient information to support the preparation of a technical report – including a resource estimate – for the property.

Electra's work consisted of a four-hole diamond-drilling programme, conducted under terms of *Mineral & Coal Activities & Reclamation Permit* MX-80255, granted on September 29, 2008 to Electra Gold Ltd. All four of the year-2008 boreholes (at locations highlighted on **Figure 8-1**, with UTM positions reported in **Table 9-2**) reached their target, the Suquash No.2 coal bed, and one of the boreholes (SQ-08-4) reached down past the underlying No.5 coal bed, testing a nearly-complete section of the Suquash coal-measures. Boreholes SQ-08-01 through SQ-08-04 are regarded as 'current boreholes' for the purposes of the present report, and their findings are discussed in greater detail in **Section 13**.

Fieldwork during 2008 also included construction of drill pads on existing logging roads, and downhole geophysical logging of the boreholes. Geophysical logging was only partially successful, as one borehole (SQ-08-2) caved altogether, and another borehole bridged within the target coal zone, preventing the geophysical sonde from reaching significantly beyond the roof of the coal.

Cores recovered from the boreholes were described and sampled (**Table 14-4**) by Mr Parviz Rajaei, who was at the time serving as Electra Gold's consulting geologist. I am fully satisfied with the high professional standard of Mr Rajaei's work, having made various checks and cross-correlations of his core descriptions, sampling notes, and the samples themselves (as detailed in **Section 16** of my report).

12.1 Exploration targets and assessment of results

The principal exploration target for Electra Gold's year-2008 drilling programme was the Suquash No.2 coal zone, which had been widely-known (Muller and others, 1974, Saunders, 1975a, Kenyon, 1991) as having been the focus of past mining activities at Suquash.

All four of Electra Gold's boreholes successfully reached and recovered cores from the No.2 coal zone. Two of the four boreholes intersected coal, with associated rock partings, having a gross thickness of at least 1.50 metres, and therefore qualifying on the basis of thickness as being of immediate interest for underground mining. The other two boreholes struck thinner coal, having gross thicknesses between 0.90 and 1.50 metres, and therefore qualifying on the basis of thickness as being of future interest for underground mining. Borehole intersections of coal are further summarised in **Table 11-1**.

12.2 Reliability of exploration results

I consider Electra Gold's current exploration results to be reliable, with the remaining concern that no geophysical log is available for the borehole (SQ-08-2) drilled nearest to the old workings of Suquash Mine. I therefore consider it important to twin, and fully log, that borehole during subsequent exploration at Suquash.

Historic exploration results are more difficult to verify, in part because of the minimal amount of information collected (consequent upon the great antiquity of some of the boreholes), but also because it has not been possible to relocate historic boreholes in the field. Consequently, I have applied a historic data confidence factor in the course of coal-resource calculations presented in **Section 19** of my report. I further recommend that subsequent exploration at Suquash include redrilling of prospective areas currently covered by historic boreholes, most notably the boreholes drilled prior to 1974.

12.3 Cross-reference to analytical results

Samples of coal and associated rock partings had not yet been submitted for analysis as of the commencement of my examination of the Suquash coal property. In the course of the present study, I have commissioned analytical work on some of the samples, specifically those related to the No.2 coal zone and certain of the overlying minor coal beds, as detailed in **Sections 14** and **18** of my report.

12.4 Exploration concept

Further exploration work, as I have recommended in **Section 22** of my report, rests upon the concept that the coal of the Suquash No.2 coal bed formed within a coastal plain environment, oriented along a northwest-trending paleoshoreline. Although I have some concerns that the apparent elongation of the known coal deposit is an artefact of non-uniform drill spacing, I also note that such paleoshoreline-associated elongate coal deposits are known from elsewhere on Vancouver Island (for example, the No.4/4L coal zone of the Quinsam Mine and Quinsam North coal properties (Cathyl-Bickford, 2008; 2009).

13 Drilling

Drilling activities carried out within the Suquash coal property are summarised in **Table 13-1**. As well, several boreholes were drilled outside, but near, the property's boundaries, as shown in **Figure 6-4**.

Table 13-1: Summary of drilling within the Suquash coal property

Year(s)	Operator	No.	Name(s)	Total depth	Logs?
Historic drilling					
1850s	Hudsons Bay Company	2*	HBC-2	99.67 m	geology#
1890	Oregon Improvement Company	1	OH-1	644.1 m?	summary only
1907-8	South Wellington Coal Company	3	SQ-1 to SQ-3	600.76 m	geology
1913	Pacific Coast Coal Mines, Ltd.	2	SQ-5, SQ-6	186.54 m	geology
1974	B.C. Hydro & Power Authority	5	S-74-1, -3, -5, -6, -12	1018.02 m	geology
1980	Filtrol Minerals Ltd.	2	SU-80-1, -2	432.21 m	geol/geop&
Current drilling					
2008	Electra Gold Ltd.	4	SQ-08-1 to -4	654.19 m	geol/geop&
Totals		16	boreholes	3635.49 m	

Notes:
* This hole was on the beach at Suquash, but its description is insufficiently precise to spot it on a map.
\# Written logs include some archaic language which is difficult to unambiguously decipher.
& Not all holes were geophysically logged.

Additional positional and geological data concerning the boreholes listed above are presented in **Tables 9-2** and **11-1**.

13.1 Borehole design

With the probable exception of hole HBC-2, all of the boreholes at Suquash had some thickness of unconsolidated Drift cover to be penetrated before bedrock was reached. Typically, a steel or iron casing tube was drilled or hammered through the Drift, and then boring commenced downwards in rock.

Most of the boreholes at and near Suquash were drilled by means of diamond-drills, but air-rotary drilling was successfully employed in the year-1980 programme. Rotary drilling is cheaper on a cost/metre basis, as well as generally also cheaper for mobilisation and demobilisation, but it has the drawback of providing poorer-quality samples of the strata through which the borehole is being drilled. This drawback can be addressed by employing a dual-purpose drilling rig, which mounts both an air-rotary drilling system and a wireline coring system. The one disadvantage of using such a rig is the high cost of tripping the drilling rods and downhole tools in and out of the borehole, since different rods and tools are used for the two different drilling methods.

- Details of core diameter taken in the 1907-1913 drilling programmes are not known. However, diamond coring rigs capable of recovering 51-mm (2-inch) cores were in common use on Vancouver Island at the time, and that is possibly what was done at that time at Suquash. The drill(s) were probably mounted on skids, and dragged about by means of a steam-powered donkey engine.

- The 1974 drilling programme used a skid-mounted Longyear 38 diamond-drill, recovering NQWL core.
- The 1980 drilling programme used two truck-mounted air-rotary drills, capable of drilling a 152-mm (6-inch) hole. The drills carried casing hammers as well as air-operated downhole hammers.
- The 2008 drilling programme used a diamond-drill, recovering HQ core. Casings for most of the year-2008 boreholes remain in place, capped by spot-welded plates.

13.2 Geophysical logging

In 1974, B.C. Hydro obtained an exemption from provincial geophysical-logging requirements, on the grounds that only thin coal beds had been struck. In the subsequent year-1980 and year-2008 exploration programmes, most boreholes were geophysically logged, unless hole conditions prevented the entry or movement of geophysical sondes.

- Filtrol's year-1980 boreholes were logged by Roke Oil Enterprises, who made two runs per borehole, with natural gamma/sidewall density/caliper and focused beam (resistivity) sondes. Deviation and dipmeter logs were not run. One borehole (SU-80-2) was not logged, owing to its having not reached bedrock.
- Electra Gold's year-2008 boreholes were logged by Century Wireline Services, who made a single run per borehole, with a combination compensated density/natural gamma/caliper/resistivity sonde. Deviation and dipmeter logs were not run. One borehole (SQ-08-2) was not logged, owing to caving. Another borehole (SQ-08-1) was only partially logged, owing to its having bridged within the No.2 coal zone, and the drilling-rig being unavailable to clean out the borehole.

13.2.1 Recommendations for future geophysical logging

The Century's combination compensated density/natural gamma/caliper/resistivity sonde produces acceptable logs, but owing to the naturally high feldspar content of the Suquash Formation, a natural gamma log alone is not sufficient for consistently distinguishing sandstones from siltstones and shales. Therefore, logging with a slimline gamma/neutron sonde is recommended as a first pass in all boreholes. Additionally, sonic logs would be helpful in correlating boreholes to seismic lines, in the event that seismic methods of exploration are eventually employed. Finally, orientation logs should be run in all boreholes, to check the verticality of the holes and provide accurate determinations of the spatial coordinates of major coal intersections.

13.3 Cross-references to historic and current borehole results

Positional details and formation tops for historic and current boreholes are presented in **Table 9-2**. Depths to coal beds, and thickness details of the No.2 and No.5 coal beds, are presented in Table **11-1**.

14 Sampling method and approach

Limited details of historic underground-mine (**Tables 14-1** and **14-2**) and diamond-drill core (**Table 14-3**) sampling are given in archived reports by Daniels (1919c, concerning Suquash Colliery) and Saunders (1975a, concerning year-1974 core drilling).

Current coal sampling (**Table 14-4**) was conducted by Mr Parviz Rajaei, consulting geologist, who described the year-2008 borehole cores, then sampled coals greater than 10 cm in thickness, along with roof and floor materials.

14.1 Historic samples

Prior to the year-2008 drilling at Suquash, a limited amount of coal-quality data were available for historic samples (**Tables 14-1** and **14-2**) taken from the workings of Suquash Mine (Daniels, 1919c) and from diamond-drill cores (**Table 14-3**) drilled by B.C. Hydro within and adjacent to the Suquash coal property (Saunders, 1975a).

14.1.1 Historic underground-mine samples

During the course of his examination of Suquash Mine for Sydney E. Junkins Co. Ltd. (Daniels, 1919c, page 77), consulting engineer Joseph Daniels took samples of coal from four points within the then-accessible workings within the Suquash No.2 coal bed. However, rock bands within the sampled intervals were excluded from samples, consistent with practices which were customary at the time.

In detail, samples 1, 2 and 6 were taken as "full cuts from the roof to the floor eliminating all bands of bone and shale". Such a sample would simulate the product which might be produced by hand-mining of a longwall face, where miners would only load out the coal bands, and would reserve the intervening rock partings for construction of stone pack-walls within the workings.

In sample 7, "only the top soft shale parting and the middle hard shale and coal band were eliminated, leaving the top coal and the entire bottom bench of coal and shale bands in the sample."

Samples 3, 4 and 5 were taken of "individual benches of coal represented by the full sample, numbered 2 at point H, with all bands of shale and bone removed".

Finally, sample 6 was "hand picked to secure as clean coal as possible in order to get a contrast with the other samples which were not cleaned." From this statement, I infer that samples 3, 4 and 5 were taken across the full thickness of their respective benches, and that the associated reference to removal of shale and bone bands refers to the major partings *between* those coals.

Summing up, and again quoting Daniels' report (loc. cit.), "Sample 7 represents the seam when only a part of the impurities in the top portion of the seam are removed. Samples 3, 4, and 5 indicate the relative character of the benches in the seam." **Table 14-1** (following) presents the measured sections at the points which were sampled, indicating the relevant sampling-intervals.

Table 14-1: Sampling-intervals and measured sections in workings of Suquash Mine, as reported by Joseph Daniels

Sample(s)	Measured section	Locality	Thickness (inches)	Description
	No.1	**A** [1919], 20 feet east of		Roof firm sandy shale
		shaft on landing	4	Coal
			1	Shale
		April 18, 1919	11	Coal
			16	Fire clay or soft shale [Rider Parting]
			10	Coal
			6	Shale hard grey
			3½	Coal
			1½	Shale hard
			15	Coal with shale band at base
			12	Shale hard brown with some coal with bone in it
			12	Shale + bone, variable
			1	Shale, grey
			8	Coal, hard
			8 or 9?	Bottom not reached? [drawing shows 'Shale bottom']
	No.2	B [1919], on entry at		Roof argillaceous sandstone?
		corner of crosscut to	2	Black carbonaceous shale band, hard
		longwall	1	Soft grey shale
			6	Coal hard
			13½	Fireclay stigmarian rootlets, bottom becoming harder for 1½" and black [Rider Parting]
			9	Coal, hard, clean
				-- Fault 65° N80W S80E --
			4	Coal and shale mixed
			4	Coal
			2	Grey shale (frozen)
			15	Coal, bony and hard at bottom
			11	Shale grey, soft frozen to coal above
			24	Bone, coal and shale:) 7" coal hard
				) 3" bone
				) 5" coal
				) 3" shale, grey, hard
				) 6" coal hard
			9	Grey moderately hard shale
			21	Hard dark shale + bone mixed
			14	Soft grey shale
				Hard dark shale and bone not measured
	No.3	F [1919], section of coal	3	Roof shale
		at inbye corner, outside	1	Soft clay
		slope N70°E dip 3° to 5°	8	Coal
			2	Hard black shale + bone
			9	Coal
			6	Brown shale [Rider Parting?]
			4	Coal) 33" bench of hard coal
			1	Bone) and bands of shaly bone
			8	Coal)
			2	Bone)
			2½	Coal)
			2½	Bone)
			5	Coal)
			2	Bone)
			6	Coal)
			16	Bone + shale

Table 14-1: Sampling-intervals and measured sections in workings of Suquash Mine, as reported by Joseph Daniels (continued)

Sample(s)	Measured section	Locality	Thickness (inches)	Description
1	No.4	G [1919], section taken		Roof hard shale
total 5'8"		inside slope, on right rib	2	Hard brown shale
[excludes		about 60 feet from entry.	½	Soft shale
rock bands			16½	Hard coal from 6" to 8½" = 2½" bone
as noted]			4½	Hard brown shale + bone [excluded] [Rider Ptg?]
			4	Coal
			2	Hard grey shale [excluded]
			7	Coal
			1½	Hard brown shale [excluded]
			8	Coal
			1	Bone [excluded]
			7	Coal
			4	Bone + shale [excluded]
			10	Coal + bone
				Bottom brown shale
	No.5	I [1919], section on		Shale grey
		longwall face at last gate	5	Coal
			2	Brown shale
			8	Coal
			3	Brown shale variable
			8 to 9	Coal variable
			5	Soft brown shale [Rider Parting?]
			5	Coal
			2	Hard grey shale) Bench hard
			16½	Coal with bone bands) will not separate
			2	Hard grey shale frozen) clean coal
			7	Bone + coal)
			14	Bottom hard brown shale with bone
	No.6	H [1919], section taken		Roof hard shale
		inside gate 45	5	Top shale and coal
			1½	Clay or shale
2 [excludes			8	Firm coal
rock bands			3	Soft grey shale [excluded]
as noted]			10	Good fine coal
			3½	Shale brown soft [Rider Parting?] [excluded]
also:			4½	Coal)
3 [8"coal]			1½	Shale grey hard) [excluded]
4 [10"coal]			7	Coal)
5 [of bottom			2	Bone+brown shale) [excluded]
bench, ex-			2½	Coal) bench
cluding rock			1½	Shale+bone variable) [excluded]
bands as			6	Coal)
noted]			½	Shale) [excluded]
			7½	Coal)
				Brown hard shale bottom

Table 14-1: Sampling-intervals and measured sections in workings of Suquash Mine, as reported by Joseph Daniels (continued)

Sample(s)	Measured section	Locality	Thickness (inches)	Description
7 [excludes rock bands as noted]	No.7	E [1919], section taken at face, near gate 50 between 50 and 51		Roof hard shale
			4	Carbonaceous? shale and coal
			2½	Soft shale [excluded]
			14	Coal soft
			12	Hard shale band made up of brown and grey shale with coal [Rider Ptg?] [excluded]
			38	Coal bench with bands of shale and bone, all taken
				Floor, shale
	No.8	C [1919], section taken on longwall face inside gate 59		Roof shale
			3½	Coal
			1½	Shale soft
			8	Coal, bottom 1" shaly
			12	Shale, soft (fireclay) [Rider]
			2	Shale, harder [Parting?]
			9	Coal
			4½	Shale, brown
			3	Coal, bony
			2	Shale
			6	Coal, bony, hard
			11	Shale or bone, sometimes contains coal
			8½	Shale grey
			3	Coal, hard
			4	Shale, hard, brown, frozen
			3	Coal, hard
			2	Shale, hard, brown, frozen
			5	Coal
			2	Shale, hard, brown, frozen
			6	Coal, at least 6", can't measure to bottom
6 [excludes rock bands as noted]	No.9	D [1919], section taken on longwall face, between [gate] 51 and 52, nearer 52		Roof shale
			4	Shale, carbonaceous, soft
			1	Shale parting
			3½	Coal
			2	Shale hard brown [excluded]
			9	Coal
			4	Shale brown [Rider Parting?]
			11½	Coal with hard shale band (shale band ordinarily 3" from top and 2" thick – [excluded])
			2	Shale hard brown [excluded]
			3	Coal
			2½	Shale hard brown [excluded]
			3½	Coal
			3	Shale hard grey [excluded]
			6	Coal
			1	Shale hard [excluded]
			2½	Coal
			1½	Shale, hard [excluded]
			5	Coal
				Bottom brown shale

*Source: Joseph Daniels (1919a: field notes; 1919c: report); all thicknesses given in inches; all distances given in feet. My tentative identification of the Rider Parting between the No.2R coal and the No.2 coal is added in square brackets. See **Map 2** for key to locations within mine.*

Table 14-2 presents results of analytical work done on the samples reported in **Table 14-1**, as reported by Joseph Daniels (1919c) .

Table 14-2: Analytical results for underground-mine samples by Joseph Daniels

Sample	Locality	Proximate analysis (on air-dried basis)					
		Moisture	Volatile matter	Fixed carbon	Ash	Sulphur	Calorific value
1	60 feet down main slope at G, of entire seam	5.79	36.02	37.93	20.26	1.75	10060 BTU/lb [5589 cal/gm]
2	Longwall face at H, of entire seam	6.71	36.80	40.46	16.03	0.96	10680 BTU/lb [5933 cal/gm]
3	Longwall face at H, of top coal 8 inches	6.05	40.95	43.34	9.66	0.80	11400 BTU/lb [5589 cal/gm]
4	Longwall face at H, of middle coal 11 inches	5.92	36.51	37.21	20.36	0.55	9883 BTU/lb [5491 cal/gm]
5	Longwall face at H, of bottom bench, coal only	5.41	37.84	38.27	18.48	0.95	10505 BTU/lb [5836 cal/gm]
6	Longwall face at D, entire seam	5.55	37.85	38.90	17.70	0.92	10683 BTU/lb [5935 cal/gm]
7	Longwall face at E, entire seam	5.92	35.18	35.27	23.83	1.55	9380 BTU/lb [5211 cal/gm]

Data source: Daniels (1919c).
Note: BTU/lb: British Thermal Units per pound. cal/gm: calories per gram.

Discussion

Joseph Daniels (1919c) arrived at the following conclusions, concerning the quality of samples taken underground by him:

> *"The analyses indicate that the coal is moderately high in moisture with a content ranging from 5.41 to 5.71 percent; the volatile matter is rather high, averaging between 36.0 and 36.50 percent; ash is normally high, in the full seam sections ranging from 16.03 to 23.83 percent; sulphur is also high. The percentage of fixed carbon approximates that of the volatile matter and is moderately low. The heat values are low, averaging 10,200 British thermal units for the full seam sections. The samples do not coke, but all cake slightly.*
>
> *The special samples such as numbers 3, 4 and 5 indicate that the individual benches of the seam are variable in character and that the top band of coal is the cleanest and best. Samples 6 and 7 show the relative difference between a cleaned and an uncleaned mine sample, the ash in the picked sample being 17.70 percent as contrasted with 23.83 percent with corresponding heat values of 10,683 and 9,380 British thermal units.*
>
> *In physical appearance, the coal is fairly bright and lustrous, especially the upper benches, but the bony coal is dull. The fracture is conchoidal, but there is some indication of cleat or parting joints at right angles to the planes of bedding. These joints contain thin white plates, which may be either lime carbonate or sulphate, and flakes of iron pyrites. The high sulphur content of the coal is [page 79/80] due in part to this material. The powder of the coal is brownish black and the streak is brown. The coal does not appear to disintegrate readily on exposure to the elements, for much of the coal in the old dumps at Suquash appears to be little affected except in lustre by its exposure of several years.*

The shale bands in the coal seam are of two kinds, the soft material which separates readily from the coal and which is called a "parting", and the harder layers which are not easily separable but which hold the bands of coal together and are consequently called "binders". Some of the harder shale bands are sandy and some carry stringers of bony coal. The inclusion or rejection of this material affects not only the analysis of the seam but also the size of the mined product. These matters will be more fully discussed under the subject of coal preparation, but they are pointed out here in their relation to the character of the coal."

14.1.2 Historic diamond-drill core samples

No record has thus far been found of sampling or analysis from the diamond-drill cores collected in 1907-1908 at Suquash, although several versions of core logs have been found in archives. However, a considerable amount of sampling and analytical work was done and reported for the 1974 drilling programme. **Table 14-3** presents an inventory and analytical results for diamond-drill core samples taken from boreholes drilled in 1974 by Dolmage Campbell & Associates Ltd., working on behalf of B.C. Hydro (as reported in Saunders, 1975a).

Samples taken in the course of the 1974 programme were taken across potentially-mineable units of interbedded coal and variably-carbonaceous rock, with a minimum sampling width of 1 foot (0.3 metres). As noted in the table, some non-carbonaceous rock parting materials (generally shale, according to Saunders) were, in some cases, excluded from samples, on the grounds that they would be rejected by a coal-preparation plant.

Analyses were done by Commercial Testing & Engineering Co. in North Vancouver, British Columbia. Facsimiles of the analytical certificates were included in Dolmage Campbell's reports to B.C. Hydro (Saunders, 1975a; 1975b).

Analytical work done was very basic: determination of proximate analysis plus calorific value and total sulphur, with a few determinations of apparent specific gravity. As-received moisture contents, sulphur contents and ash contents are all generally high. From the high ash contents, it would appear that much of the sampled material consisted of variably-carbonaceous rock rather than coal; this accords with the lithological descriptions presented in the Dolmage Campbell reports.

14.2 Current samples

During the current (year-2008) drilling programme at Suquash, cores were recovered and sampled from all four of the boreholes. Sampling was done by consultant geologist Mr Parviz Rajaei, working on contract for JHP Coal-Ex Consulting Ltd., provider of geological services to Electra Gold. At the commencement of my involvement with Electra's project, the samples taken during 2008 were being stored in Electra's warehouse in Port Coquitlam, British Columbia.

Table 14-3: Coal samples taken from year-1974 boreholes for B.C. Hydro

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)	Sample interval (ft)		Thickness (ft)			Raw head analysis (as-received basis):			
				From	To	Sampled	(Excluded rock)	Total	Specific gravity	Moist-ure%	Ash %	Total Sulphur %
S-74-1	S1-1	C 67-5286	A	67	68			1		7.07	12.61	3.51
	S1-2	C 67-5287	0	159'6	161'4			1'10		6.33	21.41	3.61
	S1-3	C 67-5288	1A	278	279'6			1'6		8.15	12.61	1.51
	S1-4	C 67-5289		285'6	288			2'6		4.89	53.65	2.76
	S1-10	C 67-6043		415	422'6		(1')	7'6		5.80	58.53	1.36
	S1-11	C 67-6044	2A	427'10	429			1'2		4.70	61.89	1.57
	S1-12	C 67-6045	2B	474'3	478'3		(0.6')	4		5.30	58.81	0.53
	S1-13	C 67-6046	3	531'4	533			1'8		7.06	41.55	0.39
	S1-14	C 67-6047	4	623'7	626'4			2'9		4.86	64.83	0.30
S-74-3	S3-1	C 67-5138	1	117'6	119'6			2		7.46	16.30	2.21
	S3-3	C 67-5140	1A	262	266			4		7.87	42.46	2.99
	S3-14	C 67-6070		293	294'3			1'3		4.20	40.56	4.57
	S3-15	C 67-6071	2R	342'10	345'2			2'4		5.11	50.75	2.93
	S3-4	C 67-5285	2	364'5	366'8			2'3		7.24	23.19	1.98
	S3-16	C 67-6072		373	375'6			2'6		5.00	55.11	3.18
	S3-2	C 67-5139	2A	430	431'4			1'4		7.32	27.79	3.35
	S3-17	C 67-6073	2B	462	463'9			1'9		4.21	41.61	6.15
	S3-10	C 67-6065	3	527	529'7			2'7		4.92	52.92	2.97
	S3-11	C 67-6066		536	538			2		5.71	26.99	3.27
	S3-12	C 67-6067	4	554'7	558		(0.6')	3'5		5.02	57.88	2.72
	S3-13	C 67-6068		591'6	595'8			4'2		4.30	44.88	2.41
	S3-5	C 67-6069	5	612	614'6			2'6		4.92	46.68	2.32
S-74-5	S5-1	C 67-4952	0	17	18			1	1.485	6.24	21.56	4.67
	S5-2	C 67-4953	1	116	117'4			1'4	1.459	7.02	20.43	1.66
	S5-3	C 67-4954	2A	375'6	377			1'6	1.765	5.80	45.91	3.09
	S5-10	C 67-6064		391'3	393			2'9		4.55	52.89	0.47
	S5-4	C 67-4955	3	535	543			8	1.572	6.94	32.97	1.89

Table 14-3: Coal samples taken from year-1974 boreholes for B.C. Hydro (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (ft)		Thickness (ft)			Raw head analysis (as-received basis):			
					From	To	Sampled	(Excluded rock)	Total	Specific gravity	Moist-ure%	Ash %	Total Sulphur %
S-74-5	S5-6	C 67-5137	4		582	587			5		5.96	53.25	4.57
(cont).	S5-5	C 67-4956	5		638	648			10	1.908	6.74	59.40	1.47
S-74-6	S6-1	C 64-4867	1A		320	321'9			1'9		6.41	25.39	0.68
	S6-2	C 64-4868	2R		347'2	353'1			5'11		6.15	47.70	2.25
	S6-3	C 64-4869	2		356	359'4			3'4		6.31	65.63	0.56
	S6-15	C 67-6053			449'1	451'4			2'3		7.24	28.84	1.71
	S6-4	C 64-4870	2A		466	472'6			6'6		5.63	34.06	3.47
	S6-14	C 67-6052	2B		515'10	517'8			1'10		6.53	46.69	0.97
	S6-13	C 67-6051			671'6	673			1'5		6.67	40.32	1.02
	S6-12	C 67-6050			683	685			2		7.35	26.90	0.32
	S6-11	C 67-6049			705'6	708			2'6		4.71	63.60	3.48
	S6-5	C 64-4871	5		707	710			3		5.70	8.26	1.09
	S6-10	C 67-6048			723	728			5		5.34	65.33	2.18
S-74-10	S10-17	C 67-6060	A		100	102'4			2'4		5.89	38.98	5.41
	S10-1	C 67-6063	0		168	172			4		5.62	46.08	1.60
	S10-18	C 67-6061	1		199	202			3		5.03	52.49	3.66
	S10-19	C 67-6062	1?		203	204'6			1'6		9.25	51.99	4.12
	S10-16	C 67-6042			229	233			4		5.35	52.16	0.81
	S10-15	C 67-6059			286'1	288'6			2'5		6.06	49.77	2.66
	S10-14	C 67-6058			288'6	292'3			3'9		7.80	67.50	0.82
	S10-13	C 67-6057	1A	includes roof	292'6	295			2'6		5.95	37.57	1.02
	S10-12	C 67-6056	2		362'8	365'6			2'10		5.45	48.51	0.59
	S10-11	C 67-6055	2A		465	468'9			3'9		4.21	47.96	0.88
	S10-10	C 67-6054	3		592	596			4		3.67	68.65	1.24
S-74-12	S12-1	C 67-6041	2?		340	341			1		8.60	19.83	1.94

Note: *Boreholes listed in* ***boldface*** *are within property. All boreholes are historic. Data source: Saunders (1975a). Correlations shown are based on the present study and differ in some cases from those previously established by Saunders.*

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m) From	To	Thickness (m) Sampled	(Missing)	Total	Composites / notes	Raw head analysis (air-dried basis): Specific gravity	Moisture%	Ash %	Total Sulphur %	Original sample weight (grams)
SQ-08-1			0	coal	16.69	16.87			0.18						
				shale	16.87	17.10			0.23						
				sandstone	17.10	17.32			0.22						
				siltstone	17.32	17.40			0.08						
				shale	17.40	17.48			0.08						
				coal	17.48	17.63			0.15						
				coal	33.09	33.24			0.15						
				coal	40.01	40.07			0.06						
				shale	40.07	40.52			0.45						
			1	coal	40.52	40.77			0.25						
				shale	40.77	41.12			0.35						
				coal	41.12	41.27			0.15						
				coal	57.86	57.90			0.04						
			1A	coaly shale	62.42	62.52			0.10						
				coal	66.08	66.17			0.09						
	SQ-01-01	B 93185		roof siltstone	74.57	74.67	0.10	no data	0.10		2.49	1.62	88.27	0.19	713
	SQ-01-02	B 93186	2R	coal	74.67	75.12	0.45	no data	0.45	Prox: VM 33.11 FC 45.86	1.43	5.15	15.88	1.15	1882
	SQ-01-03	B 93187		floor siltstone	75.12	75.24	0.12	no data	0.12		2.57	2.02	90.24	0.03	831
	SQ-01-04	B 93188		roof siltstone	78.98	79.07	0.09	no data	0.09		2.46	2.34	88.45	0.13	622
	SQ-01-05	B 93189		coal	79.07	79.24	0.17	no data	0.17		1.39	4.90	11.64	1.88	623
	SQ-01-06	B 93190		rock	79.24	79.65	0.11	(0.30)	0.41		2.40	2.51	76.34	6.09	713
	SQ-01-07	B 93191	2	stony coal	79.65	79.86	0.21	no data	0.21		1.90	3.06	51.86	5.52	1228
	SQ-01-08	B 93912		coal & rock	79.86	80.16	0.30	no data	0.30		1.59	5.00	32.23	0.16	1316
	SQ-01-09	B 93193		floor siltstone	80.16	80.26	0.10	no data	0.10		2.39	3.91	84.12	0.49	659

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-1	SQ-01-10			roof	81.69	81.79	0.10	no data	0.10						
	SQ-01-11			coal	81.79	81.90	0.11	no data	0.11						
	SQ-01-12			floor	81.90	82.00	0.10	no data	0.10						
	SQ-01-13			roof	83.81	83.91	0.10	no data	0.10						
	SQ-01-14			coal	83.91	84.00	0.09	no data	0.09						
	SQ-01-15			floor	84.00	84.08	0.08	no data	0.08						
	SQ-01-16			roof	84.84	84.94	0.10	no data	0.10						
	SQ-01-17			coal	84.94	85.02	0.06	0.02	0.08						
	SQ-01-18			floor	85.02	85.12	0.10	no data	0.10						
	SQ-01-19			roof	85.195	85.26	0.065	no data	0.065						
	SQ-01-20			coal	85.26	85.40	0.14	no data	0.14						
	SQ-01-21			mudstone	85.40	85.63	0.23	no data	0.23						
	SQ-01-22			coal	85.63	85.71	0.08	no data	0.08						
	SQ-01-23			floor	85.71	85.81	0.10	no data	0.10						
SQ-08-2	SQ-02-01	B 93194		roof	60.10	60.15	0.05	no data	0.05		2.60	2.00	89.03	1.35	316
	SQ-02-02	B 93915	1A	coal & sty co	60.15	60.52	0.37	no data	0.37		1.49	4.65	18.00	1.84	1604
	SQ-02-03	B 93916		shale	60.52	60.62	0.10	no data	0.10		2.02	2.88	61.56	0.28	542
	SQ-02-04	B 93917		coal	60.62	60.70	0.08	no data	0.08		1.56	4.67	25.72	0.58	304
	SQ-02-05	B 93918		floor	60.70	60.77	0.07	no data	0.07		2.57	2.12	87.86	0.06	453
	SQ-02-27			*flint clay?*			0.40	nil	0.40						
	SQ-02-06	B 93199		roof	69.70	69.80	0.10	no data	0.10		2.63	2.22	89.37	1.15	661

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m) From	Sample interval (m) To	Thickness (m) Sampled	Thickness (m) (Missing)	Thickness (m) Total	Composites / notes	Raw head analysis (air-dried basis): Specific gravity	Moisture%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-2	SQ-02-07	B 93200	2R	coal	69.80	69.88	0.08	no data	0.08		1.47	4.48	15.86	3.45	331
	SQ-02-08/8A	B 93201	2R	coaly shale	69.88	70.00	0.12	nil	0.12		1.98	2.76	47.82	9.77	780
	SQ-02-20	B 93202		siltstone	70.00	70.28	0.28	nil	0.28		2.71	2.66	92.08	1.23	2098
	SQ-02-21	B 93203		slst / sh lam	70.28	70.60	0.32	nil	0.32		2.66	2.61	92.70	0.42	2403
	SQ-02-22	B 93204		sh / sst lam	70.60	70.82	0.22	nil	0.22		2.57	2.67	85.10	2.67	1450
	SQ-02-09	B 93205		roof	70.82	70.92	0.10	no data	0.10		2.54	2.34	81.43	4.05	712
	SQ-02-10	B 93206	2	coal & sty co	70.92	71.54	0.62	no data	0.62	comp. no. 1 [B 93583]	1.55	4.62	22.52	3.08	2722
	SQ-02-11	B 93207	2	shale	71.54	71.71	0.17	no data	0.17	comp. no. 1 [B 93583]	2.45	2.72	81.41	0.23	1245
	SQ-02-12	B 93208	2	coal & shale	71.71	72.59	0.88	no data	0.88	comp. no. 1 [B 93583]	1.57	4.47	26.43	0.86	3798
	SQ-02-13	B 93209	2	shale	72.59	72.89	0.30	no data	0.30	comp. no. 1 [B 93583]	2.29	2.49	72.20	2.97	1914
	SQ-02-14	B 93210	2	coal & shale	72.89	73.13	0.24	no data	0.24	comp. no. 1 [B 93583]	1.83	4.13	44.48	1.48	1660
	SQ-02-15	B 93211		shale	73.13	73.63	0.44	(0.06)	0.50	comp. no. 2 [B 93584]	2.49	3.08	82.09	0.09	2794
	SQ-02-16	B 93212		coal	73.63	73.72	0.09	no data	0.09	comp. no. 2 [B 93584]	1.68	4.53	35.65	0.35	375
	SQ-02-17	B 93213		shale	73.72	74.04	0.32	no data	0.32	comp. no. 2 [B 93584]	2.40	2.79	82.72	0.09	2208
	SQ-02-18	B 93214		coal & sty co	74.04	74.22	0.18	no data	0.18	comp. no. 2 [B 93584]	1.55	5.59	25.58	0.38	771
	SQ-02-19	B 93215		siltstone	74.22	74.32	0.10	no data	0.10	comp. no. 2 [B 93584]	2.21	3.30	75.04	0.13	626
	SQ-02-23			sst, quartzitic	74.32	75.04	0.72	nil	0.72						
	SQ-02-24			slst, qtzitic	75.04	75.70	0.66	nil	0.66						
	SQ-02-25			sst, quartzitic	75.70	76.16	0.46	nil	0.46						
	SQ-02-26			coal	*check sample (lump coal from Comox Basin)*										
				coal	99.68	99.73			0.05						
				shale	99.73	100.43			0.70						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-2			2A	coal	100.43	100.56			0.13						
				stony coal	100.56	100.65			0.09						
SQ-08-3	SQ-03-15	B 93216		roof sst & sh	34.70	34.80	0.10	no data	0.10		2.40	2.07	78.44	2.30	678
	SQ-03-16	B 93217	0	coal & shale	34.80	35.22	0.42	no data	0.42	Prox VM 34.19 FC 39.77	1.52	4.95	21.09	1.88	1725
	SQ-03-17	B 93218		floor siltstone	35.22	35.32	0.10	no data	0.10		2.20	2.46	64.01	6.27	702
				coal	47.40	47.49			0.09						
				coal	50.84	50.97			0.13						
	SQ-03-01	B 93219		roof sh (ash?)	57.10	57.20	0.10	no data	0.10		2.63	3.10	91.54	0.26	354
	SQ-03-02	B 93220		coal	57.20	57.27	0.07	no data	0.07		1.58	3.78	28.11	1.66	218
	SQ-03-03	B 93221	1?	sandstone	57.27	57.52	0.25	no data	0.25		2.60	1.90	87.34	2.46	1938
	SQ-03-04	B 93222		coal	57.52	57.96	0.44	no data	0.44		1.46	3.83	13.44	3.16	1474
	SQ-03-05	B 93223		floor sst	57.96	58.065	0.105	no data	0.105		2.56	1.63	87.26	1.00	724
				stony coal	79.52	79.58			0.06						
				coal	81.29	81.36			0.07						
			1A	coal	84.94	85.05			0.11						
				coal	90.52	90.56			0.04						
	SQ-03-18	B 93224	2R	coal	95.63	96.15	0.52	nil	0.52	Prox VM 33.41 FC 48.31	1.45	4.57	13.71	0.96	2079
	SQ-03-06	B 93225		roof	100.77	100.85	0.08	no data	0.08		2.57	2.29	88.69	0.14	586
	SQ-03-07	B 93226		coal	100.85	101.00	0.13	(0.02)	0.15		1.45	4.27	14.36	1.81	535
	SQ-03-08/08A	B 93227		shale	101.00	101.38	0.38	no data	0.38		2.45	2.30	78.47	3.74	2519
	SQ-03-09	B 93228	2	coal & rock	101.38	101.86	0.48	no data	0.48	comp. 3 [B 93585]	1.62	3.49	29.70	3.79	2146
	SQ-03-10/10A	B 93229		shale and sst	101.86	102.14	0.28	no data	0.28		2.58	2.31	86.35	0.07	1850
	SQ-03-11	B 93230		coal	102.14	102.35	0.21	no data	0.21		1.50	4.34	19.03	0.64	852

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Composites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-3	SQ-03-12/12A	B 93231	2	shale	102.35	102.66	0.31	no data	0.31	Comp. no.3 (cont'd)	2.51	1.92	84.65	0.11	2189
	SQ-03-13	B 93232		coal & rock	102.66	103.80	1.14	no data	1.14		1.75	3.02	42.60	1.41	5501
	SQ-03-14	B 93233		floor	103.80	103.90	0.10	no data	0.10		2.65	2.43	89.08	0.06	669
	SQ-03-19	B 93234		shale	103.90	104.38	0.48	nil	0.48		2.66	2.32	89.20	0.09	3075
	SQ-03-20	B 93235		shale	104.38	104.60	0.22	nil	0.22		2.17	2.83	71.22	0.53	1364
	SQ-03-21	B 93236		siltstone	104.60	104.81	0.21	nil	0.21		2.64	2.96	92.67	0.04	1401
	SQ-03-22	B 93237		sandstone	104.81	105.17	0.36	nil	0.36		2.71	2.81	94.96	0.02	2438
SQ-08-4	SQ-04-01	B 93238		shale roof	39.80	39.90	0.10	no data	0.10		2.70	1.50	89.08	2.25	735
	SQ-04-02	B 93239	0	coal	39.90	40.20	0.30	no data	0.30	Prox: VM 36.00 FC 40.05	1.51	3.43	20.52	3.68	1069
	SQ-04-03	B 93240		sst floor	40.20	41.00	0.0		0.10		2.74	1.34	91.98	0.69	708
				bony coal	50.73	50.80									
				stony coal	50.80	50.90									
	Methane 1			coal	60.38	60.49	0.11	no data	0.11						
				coal	61.70	61.75			0.05						
			1	coal	62.39	62.43			0.04						
				shale	62.43	62.49			0.06						
	Methane 2			coal & sty co	62.49	62.58			0.09						
	Methane 3			coal	63.75	63.78			0.03						
				shale	63.78	63.83			0.05						
				coal	63.83	63.86			0.03						
			1A	coal	88.46	88.58		(0.06)	0.12						
				stony coal	88.58	88.66			0.08						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4	SQ-04-04	B 93241		roof	106.93	107.03	0.10	no data	0.10		2.35	2.72	71.94	6.49	632
	SQ-04-05	B 93242	2R	coal	107.03	107.40	0.37	no data	0.37		1.54	4.11	19.36	5.50	1695
	SQ-04-06/06A	B 93243		shale	107.40	108.22	0.82	no data	0.82		2.54	2.79	89.19	0.12	5756
	SQ-04-07	B 93244		coal & shale	108.22	108.64	0.42	no data	0.42	comp. no. 4 [B 93586]	1.58	3.87	28.31	2.02	1913
	SQ-04-08	B 93245		shale	108.64	108.83	0.19	no data	0.19		2.11	2.88	63.23	5.51	1325
	SQ-04-09	B 93246		coal	108.83	108.90	0.07	no data	0.07		1.45	5.21	11.47	0.84	246
	SQ-04-10	B 93247		shale	108.90	109.05	0.15	no data	0.15		2.33	2.48	79.71	0.18	997
	SQ-04-11	B 93248	2	coal	109.05	109.10	0.05	no data	0.05		1.52	4.61	23.86	0.62	226
	SQ-04-12	B 93249		sandstone	109.10	109.23	0.12	(0.01)	0.13		2.41	1.92	84.63	0.25	835
	SQ-04-13	B 93250		coal	109.23	109.32	0.09	no data	0.09		1.60	4.82	27.28	2.15	386
	SQ-04-14	B 93251		shale	109.32	109.46	0.14	no data	0.14		1.99	3.23	54.28	5.79	785
	SQ-04-15	B 93252		coal	109.46	109.60	0.14	no data	0.14		1.43	5.29	11.77	0.77	536
	SQ-04-16	B 93253		floor	109.60	109.70	0.10	no data	0.10		2.35	3.26	76.32	1.97	515
				coal	140.15	140.18			0.03						
				coal & rock	145.15	145.17			0.02						
	SQ-04-17			roof	146.55	146.68	0.13	nil	0.13						
	SQ-04-18		2A	coal	146.68	146.77	0.09	nil	0.05						combine four samples
	SQ-04-19			shale	146.77	146.89	0.12	nil	0.12						
	SQ-04-20			stony coal	146.89	146.94	0.09	nil	0.09						
	SQ-04-21			coal & shale	146.94	147.32	0.38	nil	0.38						
	SQ-04-22			coy slst floor	147.32	147.42	0.12	nil	0.12						
	SQ-04-23			coal	147.42	147.46	0.04	nil	0.04						
	SQ-04-24			floor	147.46	147.56			0.10						
				stony coal	152.60	152.72			0.12						
				coal	152.72	152.83			0.11						
				shale	152.83	152.99			0.16						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4				sandstone	152.99	153.21			0.22						
	SQ-04-25			sandstone roof	153.19	153.31	0.12	nil	0.10						
	SQ-04-26		2B	dirty coal	153.31	153.48	0.17	nil	0.17						
	SQ-04-27			shale	153.48	153.69	0.21	nil	0.21						combine three samples
	SQ-04-28			co and sty co	153.69	153.77	0.08	nil	0.08						
	SQ-04-29			shale	153.77	159.03	0.26	nil	0.26						
	SQ-04-30			dy coal	159.03	154.17	0.14	nil	0.14						
	SQ-04-31			coaly sh floor	154.17	154.24	0.07	nil	0.07						
				coal	157.15	157.18			0.03						
	SQ-04-32			sandstone roof	160.07	160.17			0.10						
	SQ-04-33			coal	160.17	160.29			0.12						
	SQ-04-34			shale	160.29	160.33			0.04						
	SQ-04-35			sandstone	160.33	161.50			0.17						
	SQ-04-36			coal	161.50	161.59			0.09						
	SQ-04-37			stony coal	161.59	161.68			0.09						
	SQ-04-38			shale floor	161.68	161.78			0.10						
	SQ-04-39			shale roof	161.78	162.06			0.28						
	SQ-04-40			coal & sty co	162.06	162.19			0.13						
	SQ-04-41			shale	162.19	162.25			0.06						
	SQ-04-42			coal	162.25	162.30			0.05						
	SQ-04-43			shale floor	162.30	162.40			0.10						
				coal	165.73	165.79			0.06						
				shale	165.79	166.14			0.35						
				coal	166.14	166.19			0.05						

Table 14-4: Sample inventory and raw head analysis of core samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Composites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moisture%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4	SQ-04-44			sandstone roof	173.31	173.41			0.10						
	SQ-04-45			coal	173.41	173.67			0.26						
	SQ-04-46			coaly shale	173.67	173.71			0.04						
				shale floor	173.71	173.81			0.10						
				coal	177.49	177.61			0.12						
	SQ-04-47			shale roof	183.24	183.34			0.10						
	SQ-04-48			coal & sty co	183.34	183.49			0.15						
	SQ-04-49			coal	183.49	183.72			0.23						
	SQ-04-50			shale floor	183.72	183.82			0.10						
				coal	198.64	198.70			0.06						
	SQ-04-98			coal	*check sample (lump coal from Comox Basin)*										
	SQ-04-99			sst/slst/mst	204.495	205.125	0.63	nil	0.63						
	SQ-04-51		immediate roof of No.3 coal	shale	205.125	205.22	0.095	nil	0.095						combine seven samples
	SQ-04-52			coal	205.22	205.27	0.05	nil	0.05						
	SQ-04-53			shale	205.27	205.60	0.33	nil	0.33						
	SQ-04-54			dirty coal	205.60	205.74	0.14	nil	0.14						
	SQ-04-55			shale	205.74	206.22	0.48	nil	0.48						
	SQ-04-56			coal	206.22	206.31	0.09	nil	0.09						
	SQ-04-57			siltstone roof	206.31	206.49	0.18	nil	0.18						
	SQ-04-58		**3**	stony coal	206.49	206.67	0.18	nil	0.18						combine five samples
	SQ-04-59			coal	206.67	206.96	0.29	nil	0.29						
	SQ-04-60			shale	206.96	207.11	0.15	nil	0.15						
	SQ-04-61			coal	207.11	207.36	0.25	nil	0.25						
	SQ-04-62			mst and coal	207.36	207.46	0.10	nil	0.10						
	SQ-04-63			shale floor	207.46	207.56	0.10	nil	0.10						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4				stony coal	209.47	209.59			0.12						
	SQ-04-64			slty rubbly sh	217.84	217.94	0.10	nil	0.10						
	SQ-04-65			coaly mst	217.94	218.12	0.18	nil	0.18						*this is roof*
	SQ-04-66		4	coal	218.12	218.44	0.32	nil	0.32						combine two samples
	SQ-04-67			stony coal	218.44	218.58	0.14	nil	0.14						
	SQ-04-68			shale	218.58	219.09	0.51	nil	0.51						
	SQ-04-69			coal	219.09	219.17	0.08	nil	0.08						combine three samples
	SQ-04-70			stony co & sh	219.17	219.23	0.06	nil	0.06						
	SQ-04-71			coal	219.23	219.29	0.06	nil	0.06						
	SQ-04-72			mst floor	219.29	219.395	0.105	nil	0.105						
				shale roof	220.12	221.02			0.90						
	SQ-04-73			coaly mst	221.02	221.14	0.12	nil	0.12						*this is roof*
	SQ-04-74		4L	coal w pyrite	221.14	221.23	0.09	nil	0.09						
	SQ-04-75			stony coal	221.23	221.56	0.33	nil	0.33						
	SQ-04-76			coal	221.56	221.75	0.19	nil	0.19						
	SQ-04-77			coaly mst	221.75	221.97	0.22	nil	0.22						
	SQ-04-78			coal & mst	221.97	222.35	0.38	nil	0.17						
	SQ-04-79			coy sst floor	222.35	222.445	0.095	nil	0.095						
				coal	229.33	229.37			0.04						
				shale	229.37	230.31			0.94						
	SQ-04-80			shale roof	230.31	230.41			0.10						
	SQ-04-81			coal	230.41	234.73			0.32						
	SQ-04-82			shale	234.73	231.27			0.54						
					234.14	234.16			0.02						
					234.16	234.19			0.03						
	SQ-04-83			shale roof	234.19	234.31			0.12						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4	SQ-04-84			coal	234.31	234.35			0.04						
	SQ-04-85			coaly sh floor	234.35	234.41			0.06						
				shale floor	234.41	234.45			0.04						
				shale	234.45	234.94			0.49						
	SQ-04-86			mst roof	234.94	235.01	0.07	nil	0.07						
	SQ-04-87		5	dirty coal	235.01	235.15	0.14	nil	0.14						
	SQ-04-88			coal w pyrite	235.15	235.46	0.31	nil	0.31						
	SQ-04-89			v dirty coal	235.46	235.61	0.15	nil	0.15						
	SQ-04-90			coal	235.61	235.66	0.05	nil	0.05						
	SQ-04-91			mst / slst	235.66	236.21	0.55	nil	0.55						
	SQ-04-92			coal w pyrite	236.21	236.54	0.33	nil	0.33						
	SQ-04-93			sdy slst floor	236.54	236.63	0.09	nil	0.09						
				shale	236.63	237.44			0.81						
				sandstone	237.44	237.59			0.15						
				coal	237.59	237.65			0.06						
	SQ-04-94			stony coal	237.65	237.86			0.21						
	SQ-04-95			coal	237.86	238.00			0.14						
	SQ-04-96			shale floor	238.00	238.10			0.10						
				stony coal	242.97	243.12			0.15						
				coal	254.02	254.15			0.13						
				coal	256.48	256.53			0.05						
				coal	258.34	258.39			0.05						
				stony coal	258.39	258.50			0.11						
				coal	267.48	267.58			0.10						

Table 14-4: Sample inventory and raw head analysis of samples from year-2008 drilling (continued)

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Compo-sites / notes	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
SQ-08-4				(core lost)	281.58	281.78		(0.20)							
				coaly shale	281.78	281.83	0.05	nil	0.05						
				canneloid sh	281.83	281.87	0.04	nil	0.04						
	SQ-04-97	B 93254	coalified log	coal	281.87	281.91	0.04	nil	0.04	Prox: VM 26.80 FC 33.43	1.69	3.44	36.33	1.50	615
				coaly shale	281.91	281.94	0.03	nil	0.03						
				coal	281.94	281.97	0.03	nil	0.03						
				coal	285.68	285.72			0.04						
				coal	288.82	288.85			0.03						
				coal	314.55	314.59			0.04						

Mr Rajaei's core descriptions, the originals of which were provided to me by Electra Gold, indicate that the year-2008 samples were taken on a detailed ply-by-ply basis, with individual bands of coal and rock as thin as 2 cm being separately sampled, although in most cases, samples covered widths of 8 cm or more.

During my cross-comparison of the bagged ply samples with the materials remaining in the core boxes, I found that some of the thicker rock partings were only partially sampled, by means of chipping a sub-sample out of the cores. In those cases where I intended to submit samples for analysis, I sampled the remainder of the core, and had the lab combine that sample with the original sample, once I was satisfied that the two samples appeared to have comparable lithologies. I further collected additional samples of roof and floor material, and (in one case) of a coal bed which had not been sampled by Mr Rajaei during the time allotted for his work in 2008.

Although many samples were thus taken from the year-2008 cores, I have thus far submitted for analysis only those samples which closely relate to the No.2 coal zone, or to overlying coal zones which might be intersected in the course of mine development; although other coals (such as the stratigraphically lower No.3, No.4/4L and No.5 coal beds) might merit analytical work, this was not practicable during the present study, owing to budgetary constraints.

Table 14-4 presents an inventory of all samples, plus results of proximate analyses of those samples which I selected for head analysis. Results of further detailed work, such as screen-size analysis, densimetric testing, ash chemistry and ash fusibility determinations are presented in **Section 18**.

14.3 Comparison of historic and current results

The historic samples taken underground by Joseph Daniels, as reported in his field notes (Daniels, 1919a) and reported to the Sydney E. Junkins Co. (Daniels, 1919c) show low to moderate ash and sulphur contents as compared with the later but still-historic samples taken from core by Saunders (1975a) for B.C. Hydro and the current samples which were taken from the year-2008 cores, composited, and analysed at my direction.

The obvious difference lies in the sampling strategy: Daniels excluded most rock bands from his sampled intervals, as would have been typical practice of his time, when coal-mining was largely conducted by hand, and also when miners were expected to stow rock partings underground within worked-out areas. On the other hand, in his 1974-1975 work, Saunders took samples which, in most cases, would correspond fairly with practicable mining units within a mechanised coal-cutting and coal-loading operation. In the current study, I have also elected to composite samples together into thicker sections which would also correspond to practicable (although in some cases rather thin) mining units, likewise as envisaged for powered mining equipment. By not rejecting rock partings (which have higher ash contents as compared with coals, and generally also have higher sulphur contents – see **Table 14-4** in the present report), the more recent and current studies show markedly higher ash and sulphur contents for the Suquash coal beds.

14.4 Recommended sampling and analytical protocols

In future work at Suquash, a similar level of detail (as has been done in the current work) should continue to be applied to the sampling and analysis of the No.2 coal zone, including the No.2R coal bed and underlying Rider Parting (neither of which is anticipated to enter into the mining section, but whose chemistry is relevant to potential acid mine drainage), the No.2 coal bed and its major internal partings, and the No.2L 'basal shale' zone, which may enter into the mining section within at least the main development roadways of an underground mine.

As far as concerns overlying strata, above the No.2 coal zone, the major analytical concern should be to identify the potential for acid rock drainage and metal leaching. Information on these subjects will be essential to any proposed programme of underground exploration or mine development; as well, knowledge of rock chemistry will be helpful in assessing whether the overlying strata hold any potential for feedstock in cement production.

The following analytical protocol is recommended for the No.2 coal bed, in particular:

- head raw analysis, including proximate analysis, total sulphur, and apparent specific gravity
- compositing on the basis of thickness and apparent specific gravity, across appropriate mining sections
- screen size analysis, at 28 mesh and 100 mesh standard sieve sizes.

On the plus-28 mesh size fraction:

- float-sink analysis, including separations at s.g. 1.4 through 1.9 by steps of 0.1 gm/cc.
- proximate analysis, total sulphur determination, calorific value assessment, and ash chemistry on all resultant density fractions, including FSI determination on material lighter than 1.6 gm/cc.
- determination of ash fusion temperatures (oxidising and reducing atmospheres), and trace element analysis on proposed coal, middlings and rock products.

On the 28 mesh x 100 mesh size fraction,

- proximate analysis, total sulphur determination, calorific value assessment, and ash chemistry;
- determination of ash fusion temperatures (oxidising and reducing atmospheres), and
- trace element analysis.

On the minus-100 mesh size fraction,

- proximate analysis, total sulphur determination, and trace element analysis.

15 Sample preparation, analyses, and security

Minimal preparation is usually done in coal sampling. In customary Canadian coal-exploration practice, samples are recovered by means of drilling, trenching or tunnelling; they are then usually subdivided according to visually-apparent geological boundaries, and submitted for analysis without any effort to pre-clean or otherwise alter the sample.

The typical core-sampling workflow is as follows:

- Wash the core to remove drilling mud, if necessary,
- Photograph the core,
- Describe and measure core,
- Mark intended sample intervals on the side or an internal divider of the core-box,
- Break the core at sample boundaries, if necessary,
- Re-measure the sample length as a check,
- Remove the sample from the core-box, taking care to collect fine particles of coal or rock, while rejecting obviously contaminants such as burlap or wood slivers,
- Mark a sample bag with a unique sample number,
- Record the sample number in the core log, or other sampling record,
- Place the sample in a plastic bag,
- Place a plastic-wrapped sample tag within the filled bag,
- Seal the bag with wire or a cable-tie, and
- Pack samples from the same hole in the same overbag(s).
- Compile a sample inventory/checklist for use in shipping and laboratory work.

Similar workflow applies to samples taken from trenches, outcrops, or underground workings, with appropriate adaptation to suit location circumstances.

15.1 Cross-reference to analytical results

Results of head raw analyses on the current (year-2008) borehole core samples, including proximate analysis, total sulphur, and apparent specific gravity, are presented in **Section 14** of this report. Results of more involved analysis, such as screen size analysis, densimetric (float-sink) testing, and determinations of ash chemistry and ash fusibility are presented in **Section 18** of this report.

15.2 Security

Special precautions are not commonly taken to ensure security of samples collected in the course of Canadian coal exploration projects, owing to the relative low value of the commodity itself (as compared with, say, gold-bearing or other high-value metallic ores). More commonly, efforts are made to ensure that samples are properly tagged and secured within bags, and that sample inventories are duly maintained and passed along to laboratories and other concerned parties.

In the case of the year-2008 samples taken by Electra's former consulting geologist, Mr Parviz Rajaei, I found the bags to be well-secured with plastic cable-ties, and the bags were properly tagged in such a manner that their markings would be unlikely to become mutilated during storage or shipment of the samples.

For future work at Suquash, and on other coal projects which Electra Gold may undertake, I recommend the use of duplicate sample tag booklets, which provide a carbonless copy of information written on the tags, and which allow for consistent serial-numbering of samples.

16 Data verification

I have been obliged to accept the archived data from historic mining and exploration on an as-found basis, as Suquash Colliery has been long-abandoned and its workings rendered inaccessible for my access with equipment and resources available to me. Similarly, the pre-2008 historic borehole sites have become overgrown with forest and brush, and in some cases they appear to have been further obliterated by road maintenance and timber harvesting operations.

To the extent reasonably possible, I have attempted to cross-check historic data against current data, and I have also made my own recorrelation of historic borehole results with those of the current (year-2008) drilling programme.

In the case of the year-1980 boreholes, I have re-interpreted the available geophysical logs, with the benefit of being able to compare them with logs acquired within the year-2008 boreholes.

Turning now to the issue of current data, my process of verification included:

- site visits, to examine the borehole locations (at Suquash), the remaining borehole core samples (held in Electra Gold's core shed in Port Hardy), and the stored samples already taken from the borehole cores (held in Electra Gold's warehouse in Port Coquitlam);
- re-logging of borehole cores through the No.2 coal zone, and also spot-checks of overlying coal zones which might be passed-through by future mining operations;
- comparison of cores, geophysical logs (where possible), and existing core logs / sample descriptions, to assess consistency of lithology and thickness; and
- checking of borehole collar elevations against topographic maps.

I was able to relocate three of the four year-2008 borehole sites (SQ-08-1, -3 and -4) in the field, thanks to the presence of their capped casings sticking up above the ground surface. I measured the positions of all three of these boreholes by means of a hand-held global positioning system (GPS) receiver.

Borehole SQ-08-2, on the other hand, was reported to have caved and had its casing withdrawn. Although some effort was made to restore its site to its previous use as a roadside turn-out, I found a drilling-chemical bag partially buried within the road prism, and I accept that the position of this borehole is known to within acceptable accuracy (plus or minus five metres) for an initial exploration programme.

I have accepted the geophysical logs as-found, considering it unlikely that they would have been interfered with in any manner. Intervals of missing core, reported as already-sampled coal and associated partings, were checked against the thickness of cores held within sample bags and also checked against geophysical logs when possible (as only two of the four boreholes had geophysical logs available across the full thickness of the No.2 coal zone).

I found no appreciable discrepancies in recorded coal and rock thickness, and in nearly all cases the lithologies logged corresponded well with those that I observed in the sampled material. Most common points of difference between my observations and those made by Mr Parviz Rajaei (the consulting geologist who preceded me at Suquash) concerned the relative brightness of individual coal plies, and the distinction between stony coal and coaly or canneloid mudstone. I found no systematic bias to be evident: this is, in any case, a difficult set of distinctions to be made visually, and the differences are now largely rendered moot by the availability of analytical data.

Core recovery, on a linear basis, appears to have been virtually complete within the zones of interest in all four of the year-2008 boreholes. Accordingly, I am not seriously concerned about the lack of geophysical logs across the full thickness of the No.2 coal zone in all of the boreholes. However, subsequent work at Suquash should include the drilling of a twinned hole to borehole SQ-08-2, so that geophysical logs can be obtained from its location, immediately adjacent to the old workings of Suquash Colliery.

17 Adjacent properties

As of the effective date of my report, I am unaware of any adjoining coal properties to Suquash. Coal licences have previously been held over adjoining parts of the Suquash Basin, and at various times in the past virtually all of the known coal-measures areas have been thus held, as for example by B.C. Hydro in the mid-1970s (Saunders, 1975a).

Some relevant exploratory data are available concerning these areas. I have made use of such data to construct the outside portions of my present geological models of the Suquash coal property, so as to reasonably depict the interpreted geological conditions along and beyond the boundaries of the property. Locations of externally-situated boreholes are shown on the maps presented in my report.

It must be borne in mind by the reader, that information gleaned from an examination of data concerning areas outside the Suquash coal property is not necessarily indicative of the thickness and quality of coal beds within the Suquash property, inasmuch as geological conditions can reasonably be expected to vary laterally.

18 Mineral processing and metallurgical testing

For the purposes of the present report, 'mineral processing' is considered to be coal preparation: the process of screening, crushing and washing raw coal in order to produce a saleable product or products. Correspondingly, 'metallurgical testing' is considered to comprise physical and densimetric testing of the coal and associated rock bands, beyond the fundamental studies such as proximate analysis, determination of sulphur contents, apparent specific gravities and calorific values which are routinely done on coal and rock samples from exploratory projects.

During the year-2009 analytical programme, this work consisted of screen size analysis and densimetric (float-sink) testing on borehole core samples recovered from the four year-2008 boreholes. Results of these studies are presented in **Section 18.2**, below.

18.1 Cross-reference to raw coal quality

Raw coal quality, as expressed by proximate analyses on core samples from historic and current boreholes, is discussed in **Section 14** of my report.

18.2 Screen-size and densimetric studies of current core samples

In the summer of 2009, I ordered screen-size and float-sink testing (**Table 18-1**) on four composites made up from core samples which had been recovered from three of the four year-2008 boreholes. One borehole (SQ-08-1) was not composited owing to the No.2 coal bed being relatively thin.

Three of the four composites were formed from ply samples of the No.2 coal bed, and one of the composites was formed from ply samples of the No.2L basal shale zone, immediately underlying the No.2 coal bed. Head raw analyses had previously been conducted on each of the plies, using aliquots of material which had been split out by means of a rotary sample divider. The head raw analyses included determination of apparent specific gravity, which (along with ash and sulphur content information) was used to guide assembly of the composites, as well as selection of the upper and lower stratigraphic boundaries of each composite.

Composites were assembled according to interpreted thickness (along the core axis) and the apparent specific gravity of each of their component ply samples. By weighting the constituent plies in such a manner, due allowance was given for the possibility of non-uniform volumetric core recoveries.

Compositing details are thus:

- ***Composite No.1*** *(lab number B93583): No.2 coal bed, from borehole SQ-08-2, comprising plies 02-10 through 02-14 (lab numbers B93206 through B93210).*
- ***Composite No.2*** *(lab number B93584): No.2L (basal) zone, from borehole SQ-08-2, comprising plies 02-15 through 02-19 (lab numbers B93211 through B93215).*
- ***Composite No.3*** *(lab number B93585): No.2 coal bed, from borehole SQ-08-3, comprising plies 03-09 through 03-13 (lab numbers B93228 through B93232).*
- ***Composite No.4*** *(lab number B93586): No.2 coal bed, from borehole SQ-08-4, comprising plies 04-07 through 04-15 (lab numbers B93244 through B93252).*

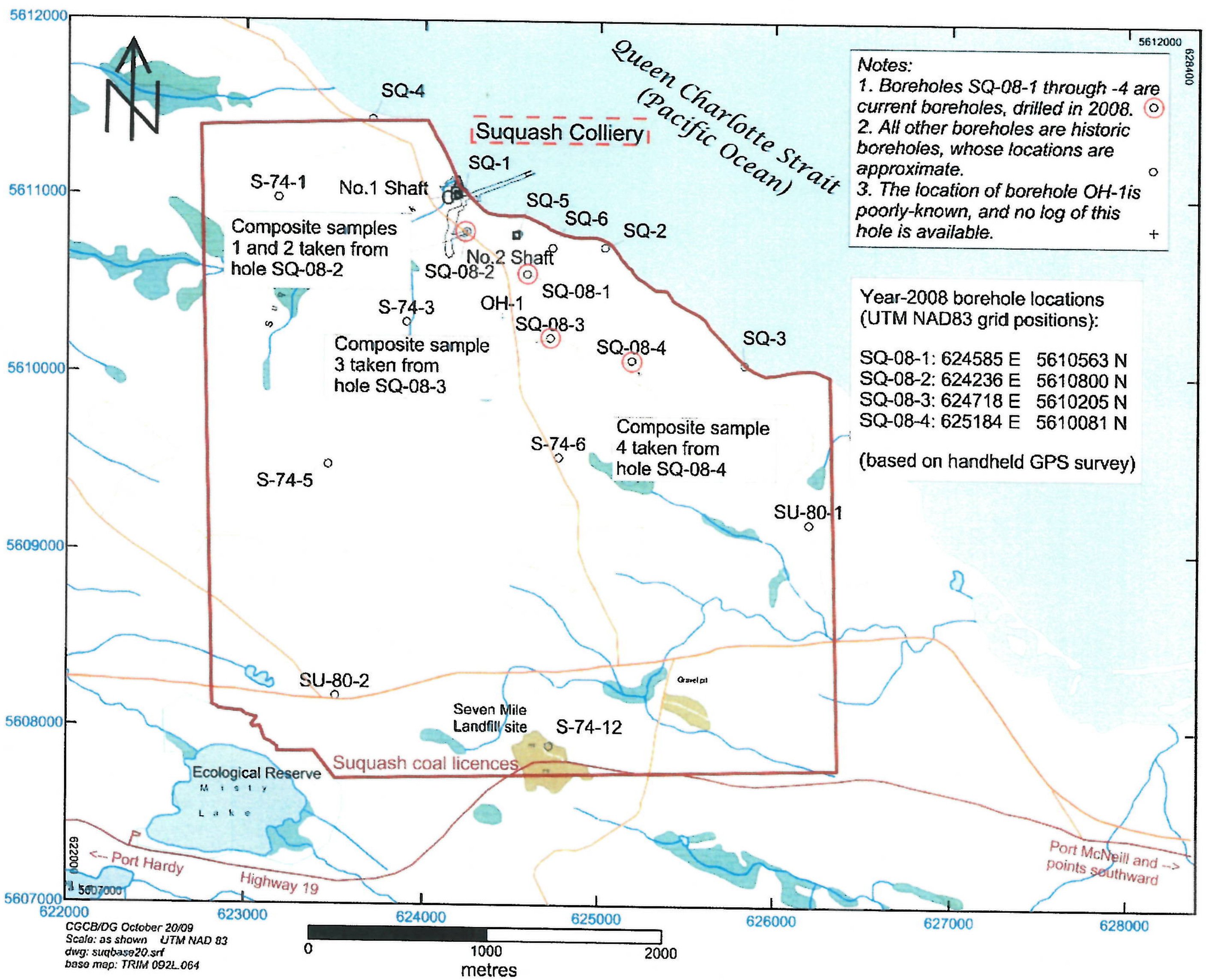


Figure 18-1: Location of boreholes, and of composite samples from year-2008 borehole cores

Table 18-1: Screen-size analyses and float-sink results for year-2008 composite samples

COMPOSITE ID: **C1- Coal Bed 2008-2** LAB#: 93583 RECEIVED DATE: August 27, 2009 REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis

Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
+28M	92.64	4.32	42.69	24.10	28.89	1.75	3700	-	92.64	42.69	1.75
28M x 100M	5.56	4.03	38.37	25.61	31.99	1.89	3930	0	98.20	42.44	1.75
100M x 0	1.80	3.41	50.24	23.17	23.18	1.95	2994	-	100.00	42.58	1.76

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis

Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
1.40 Flt	34.12	5.97	6.10	35.77	52.16	1.02	6647	0.5	34.12	6.10	1.02
1.40 - 1.50	7.38	5.04	17.61	33.32	44.03	1.76	5805	0.5	41.50	8.15	1.15
1.50 - 1.60	4.59	4.64	29.63	30.06	35.67	2.48	4920	0.0	46.09	10.29	1.28
1.60 - 1.70	5.10	4.34	36.37	27.20	32.09	3.66	4263	0.0	51.19	12.88	1.52
1.70 - 1.90	4.97	3.81	47.04	22.82	26.33	4.21	3324	0.0	56.16	15.91	1.76
1.90 Snk	43.84	2.93	76.99	12.29	7.79	1.73	901	-	100.00	42.69	1.75

Composite: 02-10 to 02-14 (lab# 93206-10)

COMPOSITE ID: **C2- Basal Zone 2008-2** LAB#: 93584 RECEIVED DATE: August 27, 2009 REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis

Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
+28M	93.04	1.26	74.89	12.15	-	0.12	1318	-	93.04	74.89	0.12
28M x 100M	5.22	3.65	65.14	14.59	16.62	0.19	2038	0	98.26	74.37	0.12
100M x 0	1.74	3.41	70.25	13.21	13.13	0.24	1608	-	100.00	74.30	0.12

cumulative values from float sink

Table 18-1: Screen-size analyses and float-sink results for year-2008 composite samples (continued)

C2- Basal Zone 2008-2 (cont'd)

FLOAT SINK ANALYSIS +28M, air dried basis

Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
1.40 Flt	5.56	2.60	7.26	33.30	56.84	0.51	6729	0.5	5.56	7.26	0.51
1.40 - 1.50	3.49	2.34	17.98	32.34	47.34	0.45	5867	0.0	9.05	11.39	0.49
1.50 - 1.60	2.52	2.30	31.13	26.92	39.65	0.37	4842	0.0	11.57	15.69	0.46
1.60 - 1.70	2.75	1.90	42.57	23.56	31.97	0.30	3975	0.0	14.32	20.85	0.43
1.70 - 1.90	4.90	1.97	53.86	18.95	25.22	0.23	2907	0.0	19.22	29.27	0.38
1.90 Snk	80.78	1.02	85.74	8.56	4.68	0.06	452	-	100.00	74.89	0.12

Composite: 02-15 to 02-19 (lab# 93211-15)

COMPOSITE ID: **C3- Coal Bed 2008-3** LAB#: 93585 RECEIVED DATE: August 27, 2009 REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis

Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
+28M	91.56	1.82	53.93	20.30	-	1.31	2993	-	91.56	53.93	1.31
28M x 100M	6.33	3.22	51.74	20.18	24.86	1.18	3022	0.5	97.89	53.79	1.30
100M x 0	2.11	2.82	61.56	18.62	17.00	1.47	2179	-	100.00	53.95	1.30

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis

Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
1.40 Flt	23.13	3.04	5.97	35.78	55.21	1.11	6836	0.5	23.13	5.97	1.11
1.40 - 1.50	8.99	2.24	17.69	34.51	45.56	2.36	5931	0.0	32.12	9.25	1.46
1.50 - 1.60	4.46	2.03	29.59	30.65	37.73	3.28	4972	0.0	36.58	11.73	1.68
1.60 - 1.70	4.79	1.83	39.49	27.27	31.41	3.28	4185	0.0	41.37	14.94	1.87
1.70 - 1.90	5.95	1.91	55.44	20.91	21.74	2.64	3045	0.0	47.32	20.04	1.96
1.90 Snk	52.68	1.19	84.38	9.39	5.04	0.72	523	-	100.00	53.93	1.31

Composite: 03-09 to 03-13 (lab# 93228-32)

Table 18-1: Screen-size analyses and float-sink results for year-2008 composite samples (continued)

COMPOSITE ID: **C4- Coal Bed 2008-4** LAB#: 93586 RECEIVED DATE: August 27, 2009 REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis

Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
+28M	91.76	1.78	50.01	22.12	26.09	2.31	3250	-	91.76	50.01	2.31
28M x 100M	6.16	3.56	43.89	23.70	28.85	1.75	3603	0	97.92	49.62	2.28
100M x 0	2.08	2.74	58.63	19.20	19.43	1.51	2349	-	100.00	49.81	2.26

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis

Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
1.40 Flt	26.31	2.62	5.52	36.86	55.00	0.87	6922	0.5	26.31	5.52	0.87
1.40 - 1.50	6.65	1.88	17.56	34.58	45.98	1.86	5937	0.5	32.96	7.95	1.07
1.50 - 1.60	3.79	2.05	29.55	30.87	37.53	2.53	4999	0.0	36.75	10.18	1.22
1.60 - 1.70	3.60	2.10	38.28	27.30	32.32	3.67	4252	0.0	40.35	12.68	1.44
1.70 - 1.90	7.22	1.90	49.39	23.48	25.23	4.86	3255	0.0	47.57	18.26	1.96
1.90 Snk	52.43	1.28	78.82	11.96	7.94	2.63	870	-	100.00	50.01	2.31

Composite: 04-07 to 04-15 (lab# 93244-52)

Note: data from Birtley Coal & Minerals Testing, reported on 14 September 2009

18.2.1 Comments on screen size analysis and float-sink results

The No.2 coal bed, as examined in composite samples 1, 3 and 4, yielded a low amount of minus-28 mesh fine coal on screening, ranging from 7.36% to 8.44%. No consistent relation exists between sulphur content and size fraction, but ash content is slightly higher in the minus-100 mesh size fraction. Ash content is high in all size fractions of the raw coal, consistent with the high proportion of rock partings in the overall section of the No.2 coal bed.

The No.2L basal shale zone, as examined in composite sample 2, yielded a similar amount of minus-28 mesh material, at 8.44%. Ash content is much higher, as expected, but sulphur content is much lower.

Yields of float-1.40 s.g. clean coal are lower than the reject of sink-1.90 s.g. rock; again, this is not unexpected, given the number of rock partings within the No.2 coal bed. Float-1.40 yields range from 23.13% to 34.12% in the three composite samples of coal, at air-dried ash contents ranging from 5.52% to 6.10%, and air-dried sulphur contents ranging from 0.87% to 1.11%. Residual moisture contents are low to moderate, at 2.62% to 5.97%. Float-1.40 yield of clean coal from the No.2L basal shale zone was, as expected, very low at 5.56%.

Air-dried calorific values of the float-1.40 clean coal from the No.2 coal bed are moderate, at 6647 to 6922 calories/gram (11,965 to 12,460 BTU/pound). Corresponding moist mineral-matter-free calorific value based on the Parr formula (where mineral matter equals the sum of 1.08[ash content] and 0.55[sulphur content] is 12941 to 13317 BTU/pound (averaging 13166 BTU/pound among the three determinations), indicating an ASTM coal rank of high-volatile B to high-volatile C bituminous.

Reject amounts of sink-1.90 s.g. rock are high, ranging from 43.84% to 52.68% in the three composites of the No.2 coal bed. Air-dried ash contents of reject rock range from 76.99% to 84.38%; sulphur contents of reject rock range from 0.72% to 2.63%, at residual moisture contents of 1.19% to 2.93%. The reject amount in the basal shale (No.2L bed) is higher, at 80.78% in the one composite examined. Air-dried ash content of reject rock from the basal shale zone is 85.74%, and sulphur content is 0.06%, at a residual moisture of 1.02%.

Yield of 1.40-1.90 middlings material is moderate, at 21.26% to 24.19% in the three coal composites, and lower at 13.66% in the composite of the basal shale zone. Sulphur is concentrated in the middlings density fractions in all three of the coal composites, but not thus concentrated in the middlings from the basal shale zone.

18.3 Fusibility and ash chemistry of composites from current samples

Two of the four current +28 mesh composite samples (composite 1, of the No.2 coal bed, and composite 2, of the No.2L 'basal shale' beneath the No.2 coal – both of these composites coming from borehole SQ-08-2, nearest the old mine) were submitted for determination of ash chemistry and ash fusibility. Two density fractions were analysed for each composite:

- float-1.40 material, representing a simulated clean coal product being floated off a screened mine-run feed, and
- sink-1.40 material, representing a simulated middlings-and-rock reject material, remaining after the clean coal had been floated off the screened mine-run feed.

Results were as follows (**Tables 18-2** and **18-3**), for each density fraction of the No.2 coal (composite No.1) and No.2L 'basal shale' (composite 2) samples:

Table 18-2: Ash fusibility temperatures (Celsius) for +28 mesh simulated clean coal and middlings/rock materials

Sample identification and yield/reject percentage	Reducing atmosphere				Oxidising atmosphere				specific gravity
	IDT	ST	HT	FT	IDT	ST	HT	FT	
Comp. 1: Float-1.40 material (float-sink yield 34.12%)	1249	1296	1330	1383	1299	1327	1362	1455	1.37 gm/cc
Comp. 2: Float-1.40 material (float-sink yield 5.56%)	1396	1442	1460	1494	1423	1448	1465	>1500	1.38 gm/cc
Comp. 1: Sink-1.40 material (float-sink reject 65.88%)	1394	1415	1456	>1500	1463	1498	>1500	>1500	2.04 gm/cc
Comp. 2: Sink-1.40 material (float-sink reject 94.44%)	1465	>1500	>1500	>1500	1484	>1500	>1500	>1500	2.35 gm/cc

Table 18-3: Mineral analysis of ash from +28 mesh simulated clean coal and middlings/rock materials

Sample identification and yield/reject percentage	Mineral analysis of ash										
	SiO_2	Al_2O_3	TiO_2	CaO	Fe_2O_3	MgO	Na_2O	K_2O	P_2O_5	SO_3	undet
Comp. 1: Float-1.40 material (float-sink yield 34.12%)	49.50	26.87	1.33	4.84	6.09	1.16	2.91	0.48	0.10	4.52	-2.20
Comp. 2: Float-1.40 material (float-sink yield 5.56%)	55.14	27.12	1.86	3.99	2.62	0.86	2.91	0.76	0.12	3.25	-1/37
Comp. 1: Sink-1.40 material (float-sink reject 65.88%)	59.87	26.06	0.94	1.74	5.39	1.13	1.67	1.64	0.06	1.25	-0.25
Comp. 2: Sink-1.40 material (float-sink reject 94.44%)	65.97	24.34	0.92	0.74	2.75	1.26	1.94	2.02	0.05	0.10	0.09

Data source: Birtley lab reports 93583 and 93584, October 2, 2009.

18.3.1 Comments on fusibility and ash chemistry

The simulated clean coal (float-1.40 s.g. from plus-28 mesh size fractions of the No.2 coal bed and the No.2L basal shale zone) has moderate to high ash fusion temperatures, consistent with the low calcium oxide content of its ash. Ash fusion temperatures of the simulated middlings and rock reject material (sink-1.40 s.g. density fraction) are consistently high, again as expected given their very low calcium oxide contents.

Silica (SiO_2) /alumina (Al_2O_3) ratios of ash from the clean coal and middlings/rock material range from 1.84 to 2.03 for the clean coal, and 2.30 to 2.71 for the middlings/rock. The middlings/rock material would need further blending with a source of high-alumina material, were it to be used as a blend component in cement-making.

Total alkali content (Na_2O and K_2O) of the ash from the clean coal and middlings/rock material range from 3.39% to 3.67% for the coal, and 3.31% to 3.96% for the middlings/rock. These are high values as compared with the target specification for cement-mill feedstock, and further work is warranted to determine whether the high alkali content is pervasive throughout the areal extent of mineable coal and associated basal shale, or whether it is local to the borehole (SQ-08-2) from which the two composites were derived.

18.4 Consideration of possible products

From the results of float-sink testing, I conclude that it may be feasible to scalp off a low-ash, low-sulphur, moderate-BTU clean coal at a low separating density, and that much of the unwanted sulphur from the raw coal will report to the middlings density fractions. I thus consider that raw coal from the No.2 coal bed could be washed for a modest yield of low-ash and low-sulphur coal for thermal-power markets.

Conversely, by using a higher separating density, it may be possible to produce a reject rock product with acceptably low sulphur content for industrial use such as cement-mill feedstock, but this will depend on the available proportion of low-sulphur 'basal' material from the No.2L zone, as compared with the higher-sulphur rock from the No.2 coal bed. Silica/alumina ratios of the middlings/rock material are higher than the desired 2:1 for cement-mill feedstock, but that deficiency could be readily addressed by blending with an external source of high-alumina material, such as the material which Electra Gold is presently producing from its PEM100 chalky geyserite quarry, situated northwest of Suquash.

Total alkali content of the ash from the clean coal and middlings/rock products is more of a concern. Cement mills desire the alkali content of their feedstock to be kept as low as practicable, and the two samples tested have relatively high alkali contents, at 3% to 4%. Further testwork is indicated, to determine whether the alkali content is consistent or variable across the various density fractions of the No.2 coal bed and associated basal shale zone, and whether the alkali content varies with position within the coal deposit. There is an opportunity to conduct this testwork without an immediate need for additional drilling, inasmuch as the ash-chemistry work to date has only been performed on composite samples drawn from one of the four boreholes drilled during the year-2008 drilling programme at Suquash.

Finally, consideration should be given to the possible markets for raw coal, or combinations of clean coal and middlings. The clean coal/middlings combination may be more interesting, as it affords the prospect of being able to produce 'clean rock' as a co-product, via washing at a high separating density. Further to this possibility, the clean coal/middlings and 'clean rock' concept may be extensible to combinations of the No.2 coal bed and the 'basal shale' of the underlying 2L bed, particularly if some of the higher-sulphur plies of the upper part of the No.2 coal bed could be left in place as a working roof in underground mining.

18.4.1 Recommendation for additional testwork

To date, three composite samples of the No.2 coal bed have been assembled from cores recovered from three of the four year-2008 boreholes at Suquash. The fourth hole did not generate a composite sample, owing to lower coal-bed thickness and incomplete core recovery. One composite sample of the underlying 'basal shale' of the No.2L bed was also assembled.

One of the three coal composites, and the one basal shale composite, were submitted for determination of fusibility and ash chemistry. These composites were both assembled from cores recovered from borehole SQ-08-2, nearest to the old workings of Suquash Colliery.

Considerable scope remains for additional analytical work, whether from material remaining in the core-boxes (in the case of the basal shale zone in two of the other boreholes), or already held as residual head samples at the coal laboratory. As well, work done to date has considered only one density separation, at 1.40 s.g., between a clean coal product and a middlings/rock product.

I therefore consider it worthwhile to conduct further testwork at a range of separating densities, from samples drawn from other boreholes already drilled, in order to determine whether the alkali content of the coal and associated rock of the No.2/No.2L beds exhibits partitioning on a densimetric basis, and whether it varies laterally from hole to hole within the recently-drilled part of the Suquash coal property.

19 Coal resource estimation for Suquash No.2 coal bed

Following completion of the year-2008 drilling programme at Suquash, coal resources of immediate and future interest for underground mining have been recognized with the coal-licence lands that comprise the Suquash coal property. No reserves of coal have yet been recognized, owing to lack of definitive engineering studies. The Suquash study area, as here discussed, substantially overlaps the same portion of the Suquash coalfield as was covered in my year-2002 geological report. Resource estimates currently presented therefore supersede those presented in 2002.

Four current boreholes (2008-programme) have been drilled into the coal-measures of the Suquash Formation within the currently-known coal resource blocks at Suquash. Upon the basis of these four current holes and five pre-2008 (historic) boreholes, eighteen coal-resource blocks have been recognised, all of them containing coal resources of immediate or future interest for underground coal mining within the Suquash No.2 coal bed, which forms part of the No.2 coal zone.

These eighteen coal-resource blocks are disposed as a tessellation of irregular polygons, most of them consisting of two or three concentric areas surrounding a single borehole. The concentric areas are defined by distance from the controlling borehole, upon which each resource block is based, or (in two cases, within the north-eastern part of the property) these areas are defined by proximity to the abandoned and water-filled mine-workings of Suquash Colliery.

No outcrops or subcrops of the Suquash No.2 coal zone are known within the Suquash coal property, but it remains possible that the coal might approach surface as a subcrop beneath Drift cover, somewhere outside the property, either to the south or west of the property boundaries. From past workings of Suquash Colliery, the No.2 coal zone is known to extend northeastward beneath the waters of Queen Charlotte Strait, but these previously-known submarine extensions are not included within the present resource base, since the north-eastern boundary of the property is formed by the natural shoreline of Queen Charlotte Strait. Although submarine areas were historically leased by the Province of British Columbia to coal operators, there is no present indication as to whether the Province would make such leases available again in the future.

Coals of mineable thickness are also known from the stratigraphically-lower Suquash No.5 coal bed, but in my present judgement these coals are not yet sufficiently explored to contribute to the coal-resource base of the Suquash coal property.

19.1 Bounding conditions

Paper 88-21 provides for the option of local amendment of the bounding conditions concerning coals of immediate or future interest for mining. In the case of the Suquash No.2 coal bed, I accept and have used the suggested minimum gross thickness of 1.50 metres for coals of immediate interest for underground mining, but I have considered a minimum thickness of 0.90 metres for coals of future interest, since that would be practicable with low-profile mining equipment. Also, I have adapted the net:gross coal content minima, , in that I consider a coal bed to be of immediate interest if its coal:rock ration is at least 2:1 by thickness (no change from 88-21), and of future interest if its coal:rock ratio is at least 1:1, rather than the 1.5:1 ratio suggested in Paper 88-21. I have made these adaptations in keeping with my consideration that the

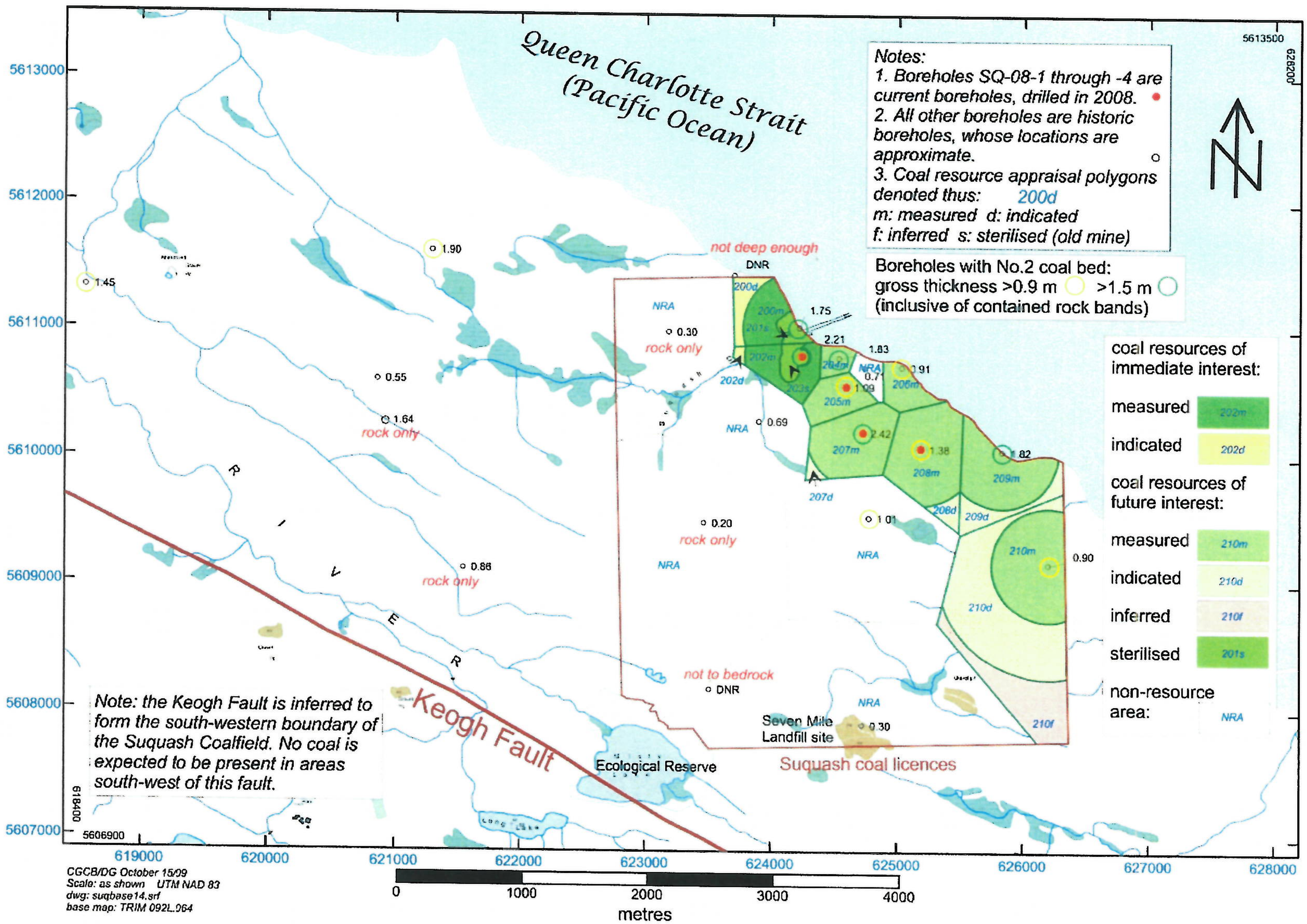


Figure 19-1: Coal resource map

resource proposition of the Suquash No.2 coal lies in being able to mine it and ship it in as close to an as-mined ('raw') state as possible. Such a possibility is contingent on both the coal and associated rock being of appropriate chemical and calorific quality for available markets; I have discussed this matter further in **Section 18** of my report.

19.2 Coal resource estimates

Results of current and historic drilling, within the Suquash study area, serve as the basis for coal resource estimates. The effective date of my estimate is 18 October 2009. Coal resource calculations are based on borehole intersections as I have interpreted and correlated them. The procedure set forth in GSC Paper 88-21 (Hughes and others, 1989) was used to define coal resources at Suquash, with certain adaptations to bounding conditions, as discussed above.

Estimates have been made for coal of immediate interest for underground mining and coal of future interest for underground mining. Resource estimates are tabulated below.

To summarise:

0.812 million tonnes of coal (inclusive of associated internal rock partings) are measured and indicated resources of immediate interest for underground mining. 4.011 million tones of coal (inclusive of associated internal rock partings) are measured and indicated resources of future interest for underground mining. An additional 0.243 million tonnes of coal (inclusive of associated internal rock partings) are inferred resources of future interest; these should be regarded as having significantly lower probability-of-existence. As well, 0.089 million tonnes of coal (inclusive of associated internal rock partings) are regarded as being sterilised by their proximity (within 50 metres) to flooded mine-workings of Suquash Colliery, and they therefore are accorded the status of future interest, as their mineability is dependent upon dewatering of the old workings.

In all, 18 coal-resource blocks (**Figure 19-1**) have been identified within the No.2 coal bed at Suquash. Block boundaries have been defined on the basis of distance from control points, the natural shoreline of Queen Charlotte Strait, limits of the existing Suquash coal licences, and proximity to the old workings of Suquash Colliery. All points of measurement are based on coal-exploration boreholes; only a minority of these boreholes have been geophysically logged, and positions of most of the boreholes are based upon archived maps, without the benefit present-day survey ties within the field.

19.2.1 Methodology

Surfer 9 mapping software was used to determine the areal extent and volume of coal within each resource block, as laid out on a map. Resource blocks were determined by means of gridding the gross thickness of the Suquash No.2 coal bed with a nearest-neighbour algorithm, which produced a polygonal tessellation of the blocks, based upon equidistance from pairs of boreholes. Grid cell size of 10 metres provided an adequately-fine mesh of resultant contour lines. The tessellation was then converted to a set of adjoining and partially-concentric blanking files, based in part upon the polygonal boundary mesh, the natural shoreline of Queen Charlotte Strait and other boundaries of the Suquash coal licences, and in part upon proximity to the old workings of Suquash Colliery. Resource blocks have further been constrained by a series of concentric arcs at appropriate distances from each borehole, as discussed below.

Coal bed volumes within each resource block were determined by multiplying the following factors and data items:

- historic data confidence factor (0.90 for historic borehole data, 1.00 for current borehole data),
- geological continuity factor (subjectively assessed, and ranging from 0.70 to 0.90 depending upon distance from nearest relevant borehole and my perception of the likelihood of unforeseen interruptions to coal-bed continuity),
- gross thickness (in metres) of the No.2 coal bed, based on the nearest relevant borehole, and
- area (in hectares) of the resource block, as determined by grid blanking via *Surfer 9*

Tonnages (in metric tonnes of 1000 kilograms) were calculated by multiplying gross coal bed volumes (in cubic metres) by an apparent specific gravity factor of 1.50 tonnes per cubic metre for raw (unwashed) coal. This factor was determined by cross-plotting ash yield versus specific gravity (as shown in **Figure 19-2**), as discerned from analytical results for numerous individual samples of coal and rock taken from current borehole cores.

Coal resources were calculated at three levels-of-assurance, following the recommendations of GSC Paper 88-21 (Hughes and others, 1989) and in keeping with CIMDS best practices:

- Measured resources are located 0 to 450 metres from the closest point of measurement.
- Indicated resources are located 450 to 900 metres from the closest point of measurement.
- Inferred resources are located 900 to 2400 metres from the closest point of measurement.

For the purposes of the present study, sterilised resources are those coal resources which would otherwise qualify as being measured resources, but which lie within 50 metres of the old workings of Suquash Colliery. Regardless of thickness, sterilised resources are considered as being of future interest, since the existence of the old workings requires certain remediative steps to be taken before the coal could be mined.

19.3 Coal resource details and summary

Coal resource blocks were given unique designations, in keeping with good practice. All block designations commence with the number '2' to reflect their attribution to the Suquash No.2 coal bed. Locations of blocks are shown as **Figure 19-1**, and block areas, volumes and tonnages are tabulated below in **Tables 19-1** and **19-2**.

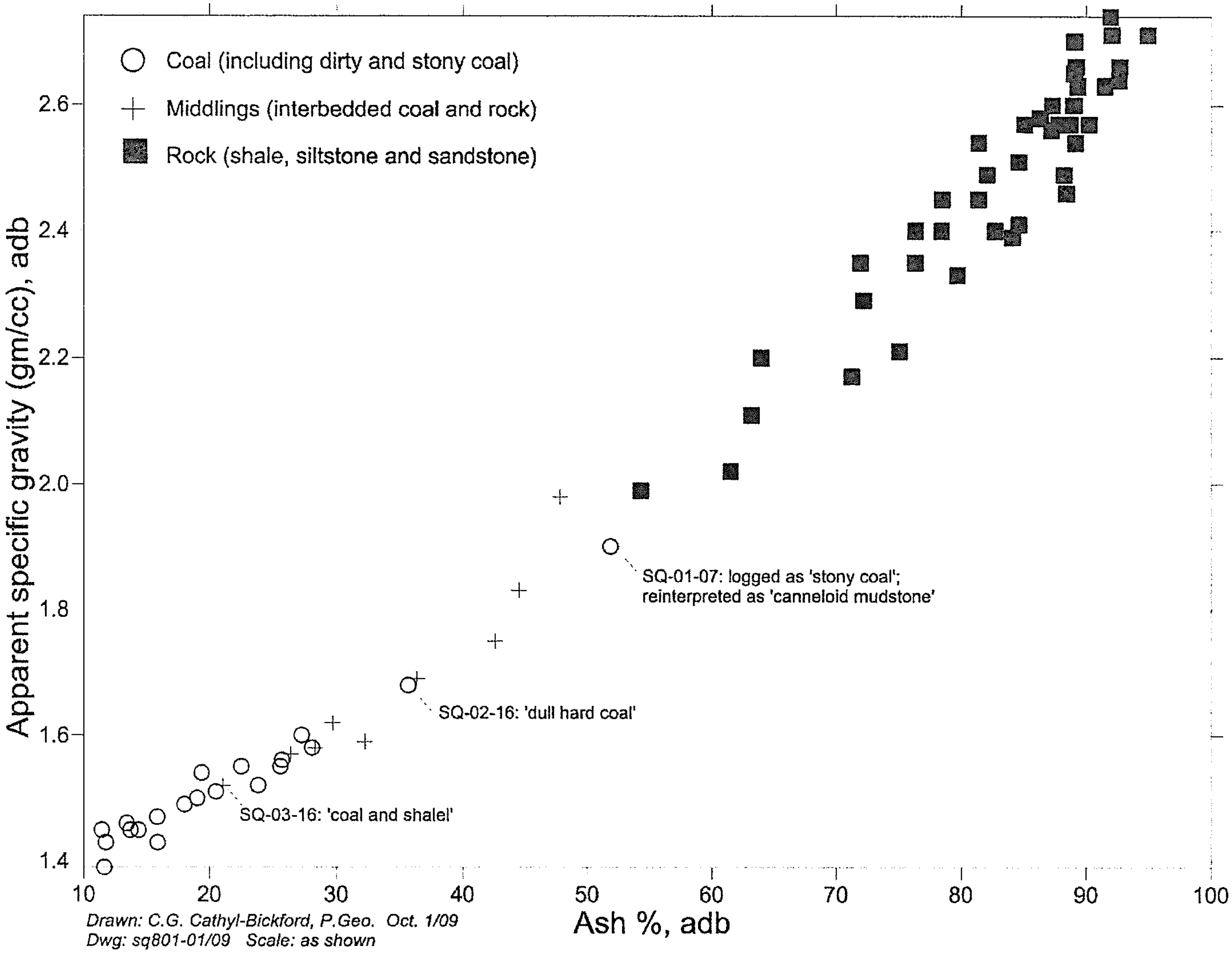


Figure 19-2: Cross-plot of as-received ash and apparent specific gravity of year-2008 core samples

Table 19-1: Coal resources of immediate interest for underground mining in No.2 coal bed

Constraints: gross thickness ≥1.50 metres; coal:rock thickness ratio ≥2:1; maximum cover depth 250 metres; maximum rock parting 70 cm. Assumption: bulk densities: 1.50 tonnes/cubic metre for raw coal.
Scope of estimate: Suquash No.2 coal bed.

Block	Factors		Gross thickness (m)	Area (ha)	Volume (m^3)	tonnes $x10^6$ §	tonnes $x10^6$ §			
	Hist.	Geol.					measured	indicated	inferred	sterilised measured
200m	0.90	0.90	1.75	12.62	178,888	0.268	0.268			
200d	0.90	0.85	1.75	6.27	83,940	0.126		0.126		
202m	1.00	0.90	2.21	13.25	263,543	0.395	0.395			
202d	1.00	0.85	2.21	0.82	15,404	0.023		0.023		
						totals	0.663	0.149	nil	nil
						total measured and indicated	0.812			

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009.

Table 19-2: Coal resources of future interest for underground mining in No.2 coal bed

Constraints: gross thickness ≥0.9 metres; coal:rock thickness ratio ≥1:1; maximum cover depth 250 metres; maximum rock parting 80 cm. Assumption: bulk densities: 1.50 tonnes/cubic metre for raw coal.
Scope of estimate: Suquash No.2 coal bed. Excludes coals recognised as being of immediate interest.

Block	Factors		Gross thickness (m)	Area (ha)	Volume (m^3)	tonnes $x10^6$ §	tonnes $x10^6$ §			
	Hist.	Geol.					measured	indicated	inferred	sterilised measured
201s	0.90	0.85	1.75	3.38	45,250	0.068				0.068
203s	0.90	0.85	2.21	0.82	13,863	0.021				0.021
204m	0.90	0.85	1.83	5.21	72,937	0.109	0.109			
205m	1.00	0.85	1.09	13.69	126,838	0.190	0.190			
206m	0.90	0.85	0.91	10.19	70,938	0.106	0.106			
207m	1.00	0.85	2.42	30.53	628,002	0.942	0.942			
207d	1.00	0.80	2.42	1.43	27,685	0.042		0.042		
208m	1.00	0.85	1.38	38.82	455,359	0.683	0.683			
208d	1.00	0.80	1.38	3.83	42,283	0.063		0.063		
209m	0.90	0.85	1.82	31.36	436,625	0.655	0.655			
209d	0.90	0.80	1.82	9.39	123,047	0.185		0.185		
210m	0.90	0.85	0.90	42.23	290,754	0.436	0.436			
210d	0.90	0.80	0.90	61.71	399,881	0.600		0.600		
210f	0.90	0.70	0.90	28.58	162,049	0.243			0.243	
						totals	3.121	0.890	0.243	0.089
						total measured and indicated	4.011			

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009.

Table 19-3: Coal resource summary for the Suquash No.2 coal bed

Geology type: Moderate

		Resources of immediate interest			Resources of future interest		
Deposit type	ASTM coal rank	Measured (million tonnes)	Indicated (million tonnes)	Inferred (million tonnes)	Measured (million tonnes)	Indicated (million tonnes)	Inferred (million tonnes)
Surface		nil	nil	nil	nil	nil	nil
Under-ground	high-volatile B to high-volatile C bituminous	0.663	0.149	nil	3.121	0.890	0.243
Non-con-ventional		not assessed					
Sterilised		not applicable			0.089	nil	nil

Note: coal resource calculations in this table were done by C.G. Cathyl-Bickford P.Geo. Lic. Geol., a Qualified Person under *National Instrument 43-101*, on 18 October 2009. This table's format accords with the format recommended in GSC Paper 88-21.

Coal resource estimates here presented have been prepared by myself (C.G. Cathyl-Bickford, P.Geo.(BC) Lic.Geol.(WA), acting in my capacity as an independent qualified person. In accordance with *National Instrument 43-101*, reporting of resources has used the *Definition Standards on Mineral Resources and Reserves* adopted by the Canadian Institute of Mining, Metallurgy and Petroleum in 2004. Reporting is consistent with Canadian practice as recommended by *A Standardised Coal Resource / Reserve Reporting System for Canada*, Paper 88-12 ("*GSC 88-12*") of the Geological Survey of Canada, with certain adaptations to local conditions as permitted by *GSC 88-12*. The effective date of my coal resource determination is 18 October, 2009. The effective date of this report is 23 October, 2009.

19.4 Caveats concerning coal resources

a. Coal resources (as distinguished from coal reserves) do not have demonstrated economic viability.

b. The Suquash No.2 coal bed contains partings of coaly and non-coaly rock, and sometimes also layers and lenses of 'dirty' (high-ash) coal. These impurities act to increase the overall ash content and specific gravity of the coal zone, and decrease the calorific value of the mined product. Such partings are a normal occurrence within coal beds, and their presence at Suquash is not, in the author's opinion, an unusual impediment to mining.

c. Coal resources available to mining may be adversely impacted by environmental or socio-economic policy decisions made by provincial and federal government agencies.

19.5 Discussion

Geophysical logs, which are available for some of the historic and current boreholes completed to date at Suquash, suggest that the coals of the Suquash Formation retain a consistent normal stratigraphic sequence, with no evidence of duplication by thrust-faulting. However, the more closely-spaced year-2008 boreholes show that the coals of the No.2 zone, including the Suquash No.2 coal bed, split and rejoin, as well as pinching and swelling. Most of the effective drilling to date has been clustered within the coastal area southeast of Suquash Colliery, and likewise the potentially-mineable coals are clustered within a southeast-trending part of that area.

The potentially-mineable part of the No.2 coal bed appears open to extension to the north-west and south-east, beyond the limits of the Suquash coal property. I am unaware of any reason why coal tenures would not be made available in these adjoining areas, save the obvious issue of possible prior staking by third parties.

No effective exploratory drilling has occurred close to the Suquash coal property in either of these two directions, so there is no certainty that any such postulated extensions would occur within onshore areas accessible to coal-mining operations.

The potentially-mineable part of the No.2 coal bed also may extend north-eastward beneath Queen Charlotte Strait, subject to the additional caveats that:

- *the existing Suquash coal licences are bounded by the natural shoreline of Queen Charlotte Strait, and they do not extend into submarine areas.*
- *historically, rock cover may not have been sufficient to encourage continuation of down-dip submarine development of Suquash Colliery;*
- *no drilling has occurred offshore, and therefore there is no proof of such conjectured extension; and*
- *Queen Charlotte Strait is covered by a mineral reserve and not presently available for acquisition of coal tenures.*

However, a borehole drilled on Malcolm Island (about five kilometres east of Suquash) found coal, possibly correlative to the Suquash No.2 coal, at 242 metres' depth (Daniels, 1919b). This greater depth to coal suggests that cover over the No.2 coal bed might locally reach sufficient thickness to safely allow undersea mining, subject to the other caveats given above.

20 OTHER RELEVANT DATA AND INFORMATION

Form 43-101F1 of *National Instrument 43-101* calls for the presentation, under the heading of this section, of additional information or explanations needed to increase understanding of a technical report.

20.1 Glossary

Some of the technical terms used within this report may be unfamiliar to the lay reader. The following list of definitions is adapted from, and expanded beyond, glossaries provided by the Department of Trade and Industry (2003) and Evolution Markets LLC (2005).

Anticline: a fold in the rock volume along which the beds are up-arched.

Aquifer: a rock sequence that contains water in a quantity that has commercial value, or which contains water sufficient in quantity to cause underground problems.

Ash: the inorganic residue after the incineration of coal to constant weight under standard conditions. The ash yield of a coal is less than its mineral-matter content because of the chemical changes which take place during incineration

Ash analysis: the ash which is produced by incinerated coal consists of very complex oxides and the ash analysis expresses this composition in terms of its component oxides. In most coals, the ash consists mostly of silica (SiO_2) and alumina (Al_2O_3). The presence of low amounts of the oxides of iron (Fe_2O_3), calcium (CaO), sodium (Na_2O) and/or potassium (K_2O) generally indicates an ash with high ash-fusion temperatures. The ash analysis differs from the composition of the minerals in the parent coal, owing mainly to loss of water of hydration, loss of carbon dioxide, and loss of sulphurous gases from sulphides.

Ash fusion temperatures: when samples of laboratory-prepared coal ash are progressively heated in oxidising or reducing atmospheres, they soften and eventually melt. The temperature range generally used is 900°C up to 1600°C. Temperatures which are customarily recorded are initial deformation temperature, softening temperature, hemisphere temperature and fluid (flow) temperature. Nearly always, the ash-fusion temperatures recorded under reducing atmosphere are lower or equal to those recorded under oxidising atmospheres.

Bone: miner's term for compact, black, canneloid or coaly mudstone, found as a rock band within a coal bed or coal zone.

Calorific value: a measurement determined by complete combustion of a known quantity of coal within a sealed vessel, and measurement of the amount of heat evolved. In commercial practice, calorific value is used to determine the suitability of coal for thermal use. The higher the calorific value, all other factors being equal, the higher the saleability of a thermal coal.

Cleat: cleavage or fine-scale jointing in coal.

Coal: a naturally-occurring solid, carbonaceous rock containing less than 50% by volume of mineral matter, formed by compaction and biogeochemical alteration of plant-derived organic matter. Coal consists of admixed particles of organic matter termed 'macerals', analogous to (but more complex than) the minerals which comprise an inorganic rock. As such, coal lacks a simple molecular chemistry.

Coal bed: a geological body of coal, or of coal admixed with rock bands, that is regionally recognisable and mappable.

Coal measures: geological sequences that are coal-bearing.

Coal petrography: microscopic visual or automated electro-optical examination of a polished pellet made from crushed coal, bound together by a cold-setting resin (Davis, 1984). Coal petrography is useful in determining the maceral composition and microfabric of a coal, which information in turn can be used to help assess the coal's economic value. Petrographic results are reported on a volume basis, with the most common metrics being relative proportion of reactive versus inert macerals.

Coal rank: a measure of a coal's level of 'maturation' or organic metamorphism (analogous to the metamorphic grade of a non-carbonaceous rock). Coal rank is one of several means to assess the commercial potential of a property for thermal coal development. In broad terms, coal rank progresses from low-rank lignite and sub-bituminous coals, through medium-rank bituminous coals, to high-rank anthracites. Increased rank is associated with decreased volatile-matter content, as volatiles are expelled from the coal during the advancing process of coalification. Coal rank is customarily determined by measuring the calorific value and fixed-carbon content of the coal, or by measuring the reflectance of vitrinite particles within the coal. Chemical and optical measures of coal rank generally agree fairly well, with significant divergence occurring in coals of unusual physical or chemical constitution.

Coal zone: a closely-associated group of coal beds and intervening rock bands, which may locally be mined together as one.

Dip: the angle, measured in degrees from the horizontal, of any geological surface.

Dirt band: miner's term for any band of rock (found within a coal bed or a coal zone) which has an ash content greater than 40 percent by weight (and therefore cannot be considered as coal). Where a dirt band is laterally continuous, it may be considered as a 'parting' within a coal bed.

Fault: a planar discontinuity within the rock volume, along which geological sequences are displaced. The 'throw' of a fault is the generalised elevation difference of the same bed on the opposing sides of the fault. If smaller faults are mined through, this produces excess dirt in the run-of-mine product. Faults may also cause local instabilities in the walls of open-cast mines.

Fault zone: a complex array of related faults.

Formation: a body of strata which may comprise similar or differing lithologies, which may be traced by surface or subsurface geological mapping. A formation is the basic building-block of lithostratigraphic classification.

Free-swelling index (FSI): The free-swelling index of a coal is an empirical measure of the volumetric increase of a sample of powdered coal, when heated in a crucible under controlled conditions (standardised as ASTM D-270) in which the coal is not physically hindered from swelling. The cross-sectional appearance of the swollen mass of coal is compared against a chart of standard profiles, and an index number ranging from 0 (non-agglomerating) to 9 (very highly swelling) is noted.

Grindability: a measure of how easy it is to pulverise a particular coal. Grindability is customarily reported as the Hardgrove Grindability Index (HGI), which is a comparative measure against a standardised coal whose HGI is set at 100. High HGI values are usually desirable for metallurgical coal, as they make it easier to crush the coal to the desired fine size for coke-making. High HGI values are also desirable for some thermal-power uses, where fine coal may be preferred for ease of feeding into the furnace. On the other hand, low HGI values are preferred for niche markets such as domestic heating, where lump coal is expected to stand up to handling without excessive generation of fines.

Horizon: in a sequence of sedimentary rocks, a horizon is a particular layer of rock, or its correlative erosional surface or weathering surface, that is consistent enough to be recognised over a significant area.

Inbye: the direction inwards, or the overall inner areas of a mine.

Interval: in mining, the thickness of the strata between one horizon and another.

Methane: a naturally-occurring gaseous hydrocarbon (with the chemical formula CH_4) that occurs within coal measures, and is liberated from coal beds during the mining process. The methane content of a coal bed is measured typically in cubic metres per tonne (in Canadian practice) or cubic feet per ton (in American practice).

Mudstone: a sedimentary rock composed mainly of mineral grains that are of mud size.

Parting: miner's term for a rock band within a coal bed or a coal zone, which can be visually distinguished from the coal, and which displays lateral continuity.

Pillar: a volume of coal left unmined, for the purposes of supporting overlying strata, or to prevent disruption of buildings or other site works at the ground surface.

Proximate analysis: a commonly-performed set of coal analyses, which reports the division of a coal sample into four components (moisture, volatile matter, fixed carbon and ash) by weight.

Rider: a laterally-continuous body of coal which overlies a generally-thicker coal bed, and is separated from the underlying coal by a rock parting which may be thin enough that the rider and the underlying coal can be mined together as one.

Rock: a general coal-mining term for any non-coaly material associated with (or lying between) coal beds or coal zones.

Rock band: a layer of non-coaly material contained within a coal bed or a coal zone. Where the rock band displays lateral continuity, it may be referred to as a 'parting'.

Roof: the rocks immediately overlying a coal zone, or the greater volume of rock lying above that. The roof of a coal bed corresponds to the 'hanging-wall' of a metallic-mineral ore deposit.

Run-of-mine (ROM): output of 'raw' coal mixed with incidental rock, which is produced by coal-cutting machinery within a coal mine. ROM coal production is typically greater than clean coal production, owing to the removal of rock from the raw coal during its processing within a coal-preparation plant.

Sandstone: a sedimentary rock in which the constituent mineral grains are mostly sand-sized. Most sandstones within the Comox Formation were deposited in river channels and delta-front sand-flats.

Siltstone: a sedimentary rock in which the constituent mineral grains are mostly silt-sized.

Split: a linear geological feature along which a coal zone divides into two (or sometimes more) individual coal beds, which are so far separated that they cannot be mined as one. Splits may be mapped from a minimum interval of a few centimetres (where their fill typically consists of fine-grained lithologies such as mudstone or siltstone) through to a maximum (typically around 10 metres) where their fill commonly consists of sandstone. The rate of lateral opening of a split varies, and may be quite rapid (opening to several metres interval, over a distance of a few tens of metres).

Strata: the overall sequence of sedimentary rocks.

Structural geology: the study of geological deformation of the overall rock volume, irrespective of the type of rock involved. The main structural features relevant to mining are faults, folds and joints (termed 'cleat' in coal).

Syncline: a fold in the rock volume along which the beds are down-arched.

Synclinorium: a syncline of larger, more regional extent, within which may be contained several small synclines and anticlines.

Ultimate analysis: determination of the moisture, carbon (C), hydrogen (H), nitrogen (N), sulphur (S), ash and oxygen (O) contents of a coal. Chlorine is sometimes determined as well, as it is of particular interest to some industrial users of coal. The oxygen content of a coal is usually determined by difference once the other constituents of the ultimate analysis have been determined. Ultimate analyses may assist to solve correlation problems amongst multiple structurally-complex coal beds; as well, they may be requested by potential purchasers of coal, as part of a basic set of coal-quality data.

Vitrinite reflectance: Vitrinite reflectance is a measure of how advanced the coalification process has gone for a particular coal; it may thus be used to assess the coal's rank. As well, empirical correlations are available between vitrinite reflectance and the range of coking characteristics of coals. Coals with higher vitrinite reflectances have achieved higher levels of organic metamorphism (broadly put: 'coalification'). Reflectance is determined photometrically, by measuring the amount of a particular wavelength of light, from a stabilised light source, which is reflected back from vitrinite particles which are immersed in oil. Reflectance of vitrinite is often measured during petrographic studies of coal.

Washout: a washout occurs where an ancient river has eroded into underlying or laterally-adjacent coal (which was then peat). Washouts are typically elongate in plan, with lengths and widths measuring metres to hundreds of metres. Within a washout, the coal is partly or entirely replaced by other sediment, often sandstone. Apart from the problems resulting from loss of coal, washouts present a higher frictional ignition risk in underground mining, together with causing excess wear on coal-cutting machine picks.

21 INTERPRETATION AND CONCLUSIONS

Verification of regional geology, local presence of potentially-mineable coal, lateral continuity of the Suquash No.2 coal zone, and amount of coal in place at various levels-of-assurance has been accomplished to my satisfaction, by means of geological mapping, review of historic drilling, interpretation of borehole geophysical logs, analytical work including densimetric (float-sink) studies, construction of a volumetric model of the coal deposit, and coal-resource estimation.

Coal resources of immediate interest for underground mining include those coals which have a minimum gross thickness of 1.50 metres, and a minimum coal:rock ratio of 2:1 by thickness. Coal resources of future interest for underground mining include those coals which have a minimum gross thickness of 0.90 metres, and a minimum coal:rock ratio of 1:1 by thickness, and which are otherwise not qualified to be of immediate interest.

Coal resources were calculated at three levels-of-assurance, following the recommendations of GSC Paper 88-21 and in keeping with CIMDS best practices:

- Measured resources are located 0 to 450 metres from the closest measurement;
- Indicated resources are located 450 to 900 metres from the closest measurement; *and*
- Inferred resources are located 900 to 2400 metres from the closest measurement.

Coal resources lying within 50 metres of abandoned workings of Suquash Colliery are considered to be sterilised, and therefore only of future interest for underground mining, since provision would have to be made for dewatering and ventilating the old workings.

The Suquash coal deposit has 'moderate' geological complexity, using the criteria suggested in Geological Survey of Canada Paper 88-21 (Hughes and others, 1989); its level of complexity is likely to be similar to that of the existing Quinsam Mine, further south on Vancouver Island (Cathyl-Bickford, 2008).

The Suquash No.2 coal bed within the Suquash coal property is considered to contain 4.823 million tonnes of measured and indicated resources of immediate and future interest for underground mining. Of these, 0.812 million tonnes are of immediate interest, in coal beds with a gross thickness of at least 1.5 metres, and a coal:rock ratio by thickness of at least 2:1. The remainder, 4.011 million tonnes, are of future interest, in coal beds with a gross thickness of at least 0.9 metres, and a coal:rock ratio by thickness of at least 1:1, which do not otherwise qualify as being of immediate interest.

The Suquash coal deposit remains open to extension along strike and (less likely) updip from the area underlain by currently-defined resources. It also remains open to infill drilling, with the object of increased level-of-confidence in the lateral and vertical variations of coal quality parameters (particularly sulphur content) within the Suquash No.2 coal zone.

Exploration work done to date on the Suquash coal property has been successful, in that it has disclosed the presence of potentially-mineable coal of a grade suitable for thermal-power generation (if the coal is washed at a low separating density) or for other industrial use. These possibilities are discussed in greater detail within **Section 18** of this report. I conclude that the Suquash coal property is a property of merit, and I recommend further confirmatory and exploratory work as set forth in **Section 22** of this report, with an overall estimated programme cost of $254,208, including drilling contingencies, but exclusive of taxes, and exclusive of the costs of underground bulk-sampling work.

22 RECOMMENDATIONS

In my opinion, the Suquash coal property is worthy of further confirmatory and exploratory work, to be done in that order. As well, additional coal tenure should be sought (see **Figure 22-1**), covering areas adjoining the Suquash coal property, inasmuch as the current and historic exploratory work suggests the possibility of extensions of the coal resource base, to the north-west and south-east of the present property boundaries. Coal-tenure acquisition is the highest priority; this should be done as soon as practicable, with an emphasis on lands north-west of the existing coal licences.

In this section of my report, I recommend analytical work, drilling, and underground work, with the underground work being contingent upon favourable results from the analytical work and drilling.

22.1 Confirmatory analytical work

Confirmatory analytical work, which should be undertaken first, comprises further investigations of coal-quality, mainly of the No.2 coal bed (but also extending to potentially-mineable coals elsewhere within the Suquash Formation) as well as analytical work on shale beds which might be mined in association with the No.2 coal bed. Work should also be done to characterise raw-coal quality, along with some screening and densimetric work, on other coal beds which may attain mineable thickness within the Suquash coal property. The No.5 coal bed is the most promising candidate for this work, but some attention should also be paid to the No.3, No.4 and No.4L coal beds.

No new drilling will be needed for this confirmatory work, as the majority of the coal and rocks of interest have already been sampled, and are held in Electra Gold's warehouse awaiting release for further analytical work. Confirmatory work is estimated to cost $35,000, exclusive of taxes.

22.1.1 Studies of the No.2 and No.2L beds

The major part of this work should be devoted to the coals of the Suquash No.2 coal bed, and the rocks of the associated No.2L 'basal shale' bed.

For the No.2 coal, the current programme of compositing, densimetric testing and quality characterisation of simulated clean coal and middlings/rock products should be extended to the separation of middlings from rock, and the separate characterisation of these two density fractions. Depending on the outcome from this study, it may be possible to better establish the marketability of 'clean rock' products (i.e., rock from which middlings materials have been floated off) as cement-mill feedstock, and a better understanding of the quality and saleability of middlings materials would also be gained.

In the coal-quality study, consideration should be given to the possibility of increasing clean coal yield by selecting a higher separating density (say, 1.45 or 1.50 gm/cc) than the 1.40 gm/cc currently used for separation of simulated clean coal product. Increased yield would likely come at a trade-off of higher ash and sulphur contents, and reduced calorific value, of the clean coal.

To date, densimetric work has only been done on the plus-28 mesh size fraction of the No.2 coal bed; this work should be extended to the 28x100 mesh size fraction, in order to establish whether washing of this finer coal would be beneficial. Float-sink work on this finer coal should be consider two separating densities, corresponding to those selected for separation of clean coal from middlings from rock in the plus-28 mesh size fraction. I consider that this part of the confirmatory work will cost $20,000, exclusive of taxes.

22.1.2 Studies of other coal beds

The deeper coal beds of the Suquash Formation, including the No.3, No.4, No.4L and No.5 coal beds, locally attain thicknesses of future interest, and occasionally of immediate interest, for underground mining. These coals have not yet been brought into the resource base for the property, owing to lack of current information on their coal quality, as well as upon practical considerations of access to these deeper beds.

In the confirmatory programme, attention should be paid to head raw analysis of already-taken samples of these coals and associated rock bands, to establish whether any of these beds contain acceptably-low to –moderate raw sulphur contents. On those of the coals whose raw head analysis is encouraging, screening and densimetric work should be done, similar to work already commenced on the No.2 coal bed. Results from such studies will help guide the planning of any subsequent additional drilling within the Suquash coal property (beyond the drilling programme outlined in **Section 22.2.1**, below), as they will help in deciding whether to explore to depths significantly beneath the No.2 coal zone. I consider that this part of the confirmatory work will cost $10,000, exclusive of taxes.

22.1.3 Overall cost for analysis (budget line-item 1)

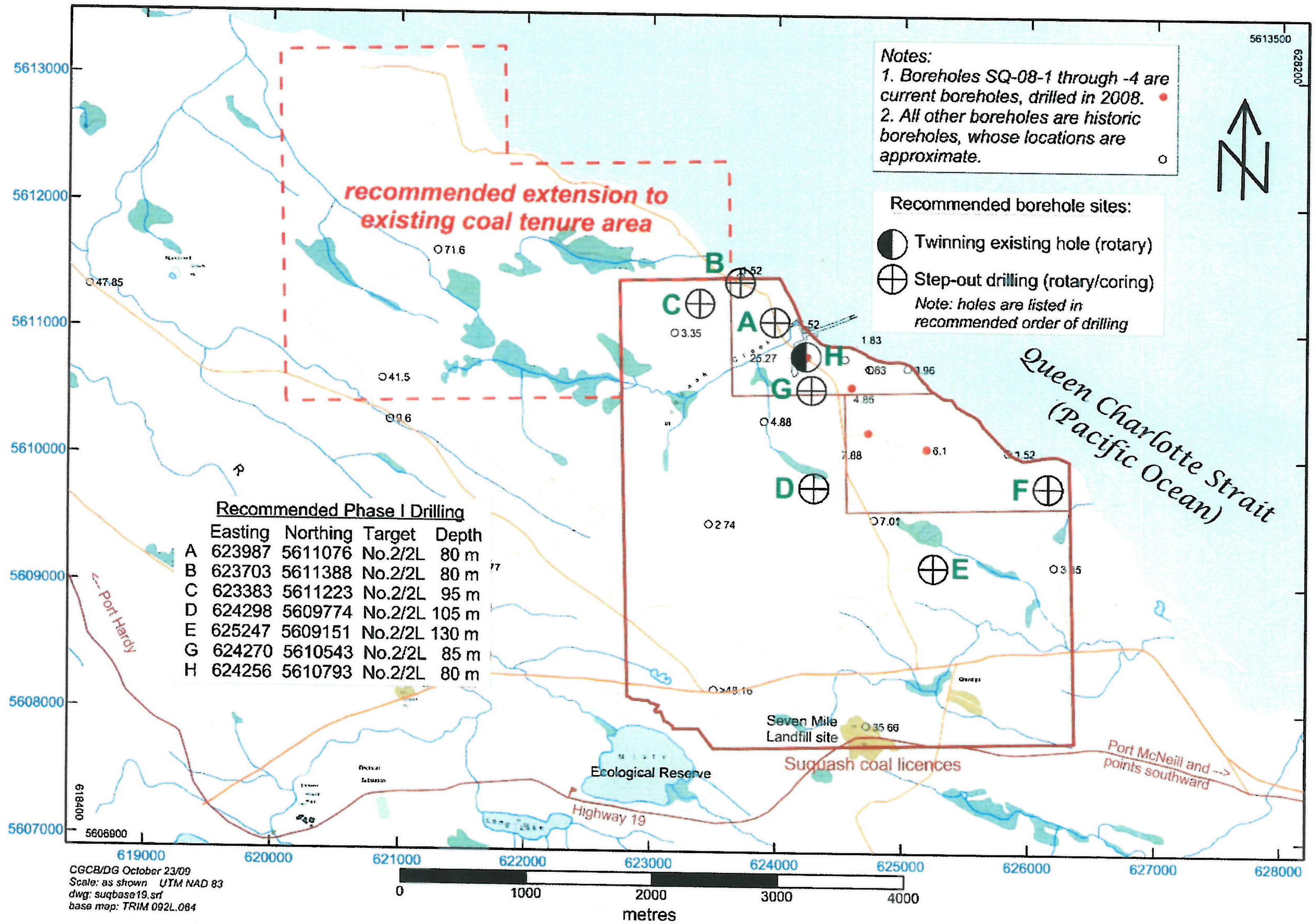
I consider an overall cost of $35,000 (exclusive of taxes) for confirmatory work to be reasonable, based on past experience. Of this amount, costs would be allocated as follows: $20,000 to further work on the No.2 coal bed and No.2L 'basal shale', versus $10,000 for work on deeper coal beds within the Suquash Formation. An allowance of $5,000 for interpretation and supervision should be made; this would also include visual description and selection of samples held in Electra Gold's warehouse, and collection of additional 'basal shale' samples from existing cores.

22.2 Exploratory work

I recommend a two-phase exploration programme for the Suquash coal property. Phase I should consist of drilling, with the aim of collecting enough information about the No.2 coal bed and No.2L 'basal shale' zone to support design, layout and permitting of an underground bulk-sample. Phase II should consist of the underground bulk-sample work, which will entail either the re-opening and rehabilitation of the No.1 Shaft of Suquash Colliery, or the construction of a new set of cross-measures driveages down from the ground surface to the No.2 coal zone (including penetration into the No.2L 'basal shale' zone.

22.2.1 Exploratory drilling to No.2 coal zone

Exploratory drilling within the present outline of the Suquash coal property should concentrate on hole-twinning and step-out drilling of the No.2 coal zone, including the 'basal shales' of the No.2L bed. Locations of recommended borehole sites are shown on **Figure 22-1**, with positional information given in **Table 22-1**.



Recommended Phase I Drilling

	Easting	Northing	Target	Depth
A	623987	5611076	No.2/2L	80 m
B	623703	5611388	No.2/2L	80 m
C	623383	5611223	No.2/2L	95 m
D	624298	5609774	No.2/2L	105 m
E	625247	5609151	No.2/2L	130 m
G	624270	5610543	No.2/2L	85 m
H	624256	5610793	No.2/2L	80 m

Figure 22-1: Recommended coal-tenure acquisition and exploratory drilling programme

Table 22-1 Recommended drilling

Site	*Easting*	*Northing*	*Target*	*Total depth*	*Comments*
A	623987	5611076	No.2/2L	80 m	Near-mine stepout/structure
B	623703	5611388	No.2/2L	80 m	North-west stepout
C	623383	5611223	No.2/2L	95 m	North-west stepout/structure
D	624298	5609774	No.2/2L	105 m	Define possible pinchout
E	625247	5609151	No.2/2L	130 m	Define possible pinchout
F	626153	5609788	No.2/2L	135 m	South-east stepout
G	624270	5610543	No.2/2L	85 m	Structure
H	624256	5610793	No.2/2L	80 m	Twinning of hole SQ-08-2 (done last to allow for logging with rig still on-site)
	Totals: eight boreholes			790 m	

Borehole sites have been selected to use existing access where possible. Three exceptions apply: site A will require re-activation of a de-activated logging road, and site G will require construction of a new trail through an existing cut-block. Site H will requite enlargement of an existing drill pad/turnout area; this work can be accommodated within a brushy area southeast of the existing clearing.

All other sites should be readily accessible. Site F will require some brushing-out of alders along its access road, which is otherwise in excellent condition. Site C will require clearing of logging debris from the landing at its end, and may need filling of an existing water-bar along the road.

Depths and locations given in **Table 22-1** are approximate, and all sites except site H (whose location is tied to the year-2008 borehole which it is twinning) could be moved a short distance to better adapt to access conditions found during site preparation.

The boreholes are lettered in their recommended order of drilling. Site G is left to near the end of the programme, to better allow for access trail construction, and a chance for the new trail to dry out enough to be trafficable. Site H is left for last, in order to allow for the geophysical logging unit to log it while the rig is still on the hole, owing to concerns that this hole might encounter the same difficult ground conditions that caused borehole SQ-08-2 to collapse before it could be logged. Site H is solely in the programme on the basis that it will allow acquisition of borehole geophysical logs close to borehole SQ-08-2.

If costs or time become a concern, owing to drilling difficulties or inclement weather, sites E and F could be deleted from the programme. Both of these sites represent higher-risk exploratory situations; as well, these are deeper and therefore likely to be more expensive to drill and log, as compared with their possible impact on the coal-resource base of the Suquash coal property.

I recommend the use of a truck-mounted, dual-purpose rotary/coring drill, of the class which is readily available on Vancouver Island. Suquash is suitable terrane for truck-mounted drills, now that an extensive network of roads is in place; as well, a dual-purpose drill can readily switch from more rapid (and less expensive per unit length) air-rotary drilling to air- or mud-based coring. I consider the use of air-based coring systems to be practicable given the relatively shallow drilling depths to the No.2 coal zone, throughout most of the recommended work programme. The No.2 coal zone, including the No.2R, No.2 and No.2L beds, should be cored; ideally, coring should start 10 metres above the roof of the No.2R coal, and extend to 3 metres below the base of the No.2L 'basal shale' – this coverage should be sufficient for coal-quality, acid-base and rock-mechanics purposes.

Boreholes should be geophysically logged, with the standard combination coal sonde(s), supported by gamma/neutron logging as a first pass for correlation and backup purposes. Gamma/neutron logs can be run within a string of drilling rods; this is a useful method for situations where broken ground or soft strata have been encountered. Sites A, B and H may merit running sonic logs, as well – this would allow subsequent generation of synthetic sonograms, useful in the event that a later decision is taken to acquire seismic-reflection profile data along the nearby main logging-road.

The principal outcome of this recommended drilling programme will be a much better understanding of coal quality within the No.2 coal zone, and sufficient information to allow a pre-feasibility study of underground mining at Suquash, including support for necessary geochemical and rock-mechanics work on core samples.

Overall cost for drilling (budget line-item 2)

Drilling, geophysical, supervisory and associated analytical costs are assumed to be unchanged from those paid for similar work, elsewhere on Vancouver Island during the years 2007 and 2008, since drilling costs are relatively stable, given the current economic conditions. Overall drilling cost (all-in except for taxes) is estimated at $219,208, inclusive of contingencies.

In detail, the confirmatory programme of eight boreholes will entail:

• Mobilisation and demobilisation costs:	$10,000
• 79 metres of 6-inch butt-welded steel casing driven to bedrock, at $130/m:	$10,270
• 531 metres of air-rotary drilling with downhole hammer, at $66/m:	$35,046
• 180 metres of coring, at $135/m:	$24,300
• Drilling consumables, surveys and sitework, for eight holes at $2000/hole:	$16,000
• Geophysical logging, for eight holes at $2500/hole	$20,000
• Analytical work, for seven holes at $6000/hole:	$42,000
• Daywork and supervision, for 30 days at $700/day:	$21,000
• Reclamation and abandonment, for eight holes at $1500/hole:	$12,000
Subtotal (for 790 metres overall, in eight holes):	$190,616
Contingency, at 15%:	$28,592
Expected overall drilling cost: $277.48/metre **Total for drilling programme:**	**$219,208**

This estimate excludes taxes, and furthermore it excludes costs associated with subsequent reporting, as well as engineering studies, such as installation and monitoring of piezometers, rock-strength testing, sampling and testing of cores for ABA/ML studies, or geotechnical logging of cores in support of detailed mine design.

Contingencies allow for unexpected difficulties in drilling, short of major problems such as a need for consolidation grouting, or fishing operations on lost or stuck drilling tools.

Overall costs of analytical work and Phase I drilling
In **Section 22.1**, above, I outlined a confirmatory analytical programme, comprising detailed work on the No.2 coal zone, and broader preliminary studies on deeper coal zones as found in boreholes drilled during the year-2008 drilling programme. Anticipated overall cost of this work, including supervision and reporting, is estimated to be $35,000, exclusive of taxes.

In **Section 22.2**, above, I laid out a Phase I exploratory drilling programme of eight boreholes, with supporting studies such as geophysical logging and analytical work on coal and shale cores. Anticipated overall drilling cost, at $277.48/metre, is estimated to be $219,208, exclusive of taxes.

Overall programme cost is therefore estimated at $254,208, inclusive of drilling contingencies and exclusive of taxes.

22.3 Phase II underground work

Provided that the analytical work outlined in **Section 22.1** and drilling (with further analytical work as appropriate) as recommended in **Section 22.2** yield acceptable results, I recommend collecting a bulk sample from underground workings within the Suquash No.2 coal zone.

Two options are available:

- Reopen, rehabilitate, and re-enter the old workings of Suquash Colliery via No.1 Shaft. The advantage of this approach is that it will be possible to re-examine the workings and therefore effectively assess and possibly verify historic data concerning working sections, coal quality, and roof and floor performance within the mine. The disadvantage is that the requirements for shaft rehabilitation under the *Health, Safety and Reclamation Code of Mines in British Columbia* are stringent, especially in the context of No.1 Shaft being the single historic point-of-egress from the workings of Suquash Colliery. As well, the location of No.1 Shaft is inconvenient in terms of access from existing roads.
- Construct and equip a pair of exploratory cross-measures driveages (declines) down from the ground surface to the Suquash No.2 coal zone. The advantage of this approach is that the driveages, if appropriately designed and constructed, may be re-used as permanent production entries to underground mine-workings. As well, a pair of driveages would provide the statutorily-required second means of egress from underground workings. The disadvantage is that the driveages will entail the unavoidable production of larger quantities of waste rock during their construction, since they must pass through the strata overlying the No.2 coal zone.

Further discussion of means, comparative merits, and anticipated costs of underground work is beyond the scope of this technical report. I have not attempted to define a specific location for underground driveages, other than to note that a location near Suquash Main logging-road, and south of Suquash Colliery, may be most convenient in terms of surface access and the presently-known outline of potentially-workable coal and/or shale within the No.2 coal zone.

23 References

The principal reference sources for this document were my previous technical report (Cathyl-Bickford, 2002). As well, I have made extensive use of reports by Daniels (1919c), and Evans (1925). Other reports, as listed below, were found to contain relevant information.

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24 DATE

This report is dated 23 October, 2009. I have signed this report as shown on the signature page at the end of the report.

25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

This item is not applicable to the Suquash coal property at its present state of exploration.

26 ILLUSTRATIONS

Illustrations for this report consist of figures which are placed at appropriate locations within the text of the report. For convenience, lists of illustrations are reproduced below, from **Section 2.**

Illustrations

TRANSMITTAL

This report has been prepared for Electra Gold Ltd.'s use in accordance with *National Instrument 43-101*. Every effort has been made to follow the provisions of *Form 43-101 F1* as closely as practicable. Herewith my report No. 605.03-09, dated 23 October, 2009, including assessment of coal resources effective 18 October, 2009.

I consent to the public filing of this report, or extracts therefrom, or a summary of this report in any written disclosure, with any stock exchange or other regulatory authority, and furthermore I consent to any publication by them including electronic publication in the public company files on their websites accessible by the public, of this report.

Respectfully submitted:

Sealed 23 October, 2009

"Original signed and sealed by"

C. G. (Gwyneth) Cathyl-Bickford, P.Geo.(BC) Lic.Geol.(WA)

P.O. Box 699
Cumberland, B.C.
(250) 336-2895

CERTIFICATE OF AUTHOR

I, C.G. (Gwyneth) Cathyl-Bickford, P.Geo., of Cumberland, Vancouver Island, British Columbia do hereby certify that:

a. I am currently principal of:
Dunsmuir Geoscience, 2719 Dunsmuir Avenue (P.O. Box 699), Cumberland,
British Columbia V0R 1S0 Canada

b. This certificate applies to my technical report, *Geology and coal resource estimate concerning the Suquash coal deposit, Rupert land district (Nanaimo mining division), Vancouver Island, British Columbia,* dated 23 October 2009.

c. I graduated with a B.Sc. degree in geological science from the University of British Columbia in 1978. In addition, I have earned a M.Sc. degree in geological science from the University of British Columbia in 1993. Furthermore, I am a member (professional geoscientist #20550) of the Association of Professional Engineers and Geoscientists of British Columbia, and the Coal Division of the Canadian Institute of Mining and Metallurgy and Petroleum (#91183). As well, I am a registered member (#518350) of the Society for Mining, Metallurgy and Exploration, and I am licensed as a geologist (#2089) in the State of Washington, USA. I have worked as a geologist for over 31 years since my graduation from university in the spring of 1978. I have read the definition of "qualified person" set out in *National Instrument 43-101* ("NI 43-101") and certify that by reason of my graduate and post-graduate education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience (as a consultant on coal geology to corporate and governmental clients, having conducted geological mapping of coalfields on Vancouver Island and elsewhere within the world for various clients, and having written or co-authored numerous published scientific papers and unpublished technical reports on coalfield geology and coal-mining geology), I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

d. My most recent visits to the Suquash property prior to the submission of my report were to conduct geological mapping and borehole site reconnaissance during the summer and autumn of 2009.

e. I am the sole author of this report, *Geology and coal resource estimate concerning the Suquash coal deposit, Rupert land district (Nanaimo mining division), Vancouver Island, British Columbia)*, concerning the Suquash property.

f. As of the date of the writing and submission of this report, I am independent of the issuer, pursuant to Section 1.4 of *National Instrument 43-101*.

g. I have had prior involvement with the Suquash property, which is the subject of this report. During February of 2001, I reviewed archival technical and geological reports concerning Suquash, for Priority Ventures Ltd. In November of 2002 I conducted geological mapping at Suquash, and wrote a technical report concerning the Suquash coal deposit, for Priority Ventures Ltd.

h. I have read *National Instrument 43-101*, and this report has been prepared in compliance with that instrument.

i. As of the date of this certificate, to the best of my knowledge, information and belief, this report contains all scientific and technical information that is required to be disclosed to make this technical report not misleading.

"Original signed and sealed by"

Dated this 23rd day of October, 2009. C.G. (Gwyneth) Cathyl-Bickford, P.Geo. Lic.Geol.

CONSENT OF AUTHOR

To: British Columbia Securities Commission
Alberta Securities Commission
Saskatchewan Financial Services Commission
Manitoba Securities Commission
Ontario Securities Commission
Autorité des marchés financiers
Nova Scotia Securities Commission
New Brunswick Securities Commission
Securities Commission of Newfoundland and Labrador
Prince Edward Island Securities Office
Northwest Territories Securities Commission
Government of Yukon Securities Registrar
Registrar of Securities, Legal Registries Division, Department of Justice, Nunavut

I, C.G. (Gwyneth) Cathyl-Bickford, P.Geo. Lic.Geol., do hereby consent to the public filing of the Technical Report titled "*Geology and coal resource estimate concerning the Suquash coal deposit, Rupert land district (Nanaimo mining division), Vancouver Island, British Columbia*" dated 23 October, 2009 (the Technical Report).

Dated this 23rd day of October, 2009.

"Original signed and sealed by'

____
Signature of Qualified Person

C.G. (Gwyneth) Cathyl-Bickford, P.Geo. (BC) Lic.Geol. (WA)
Print name of Qualified Person

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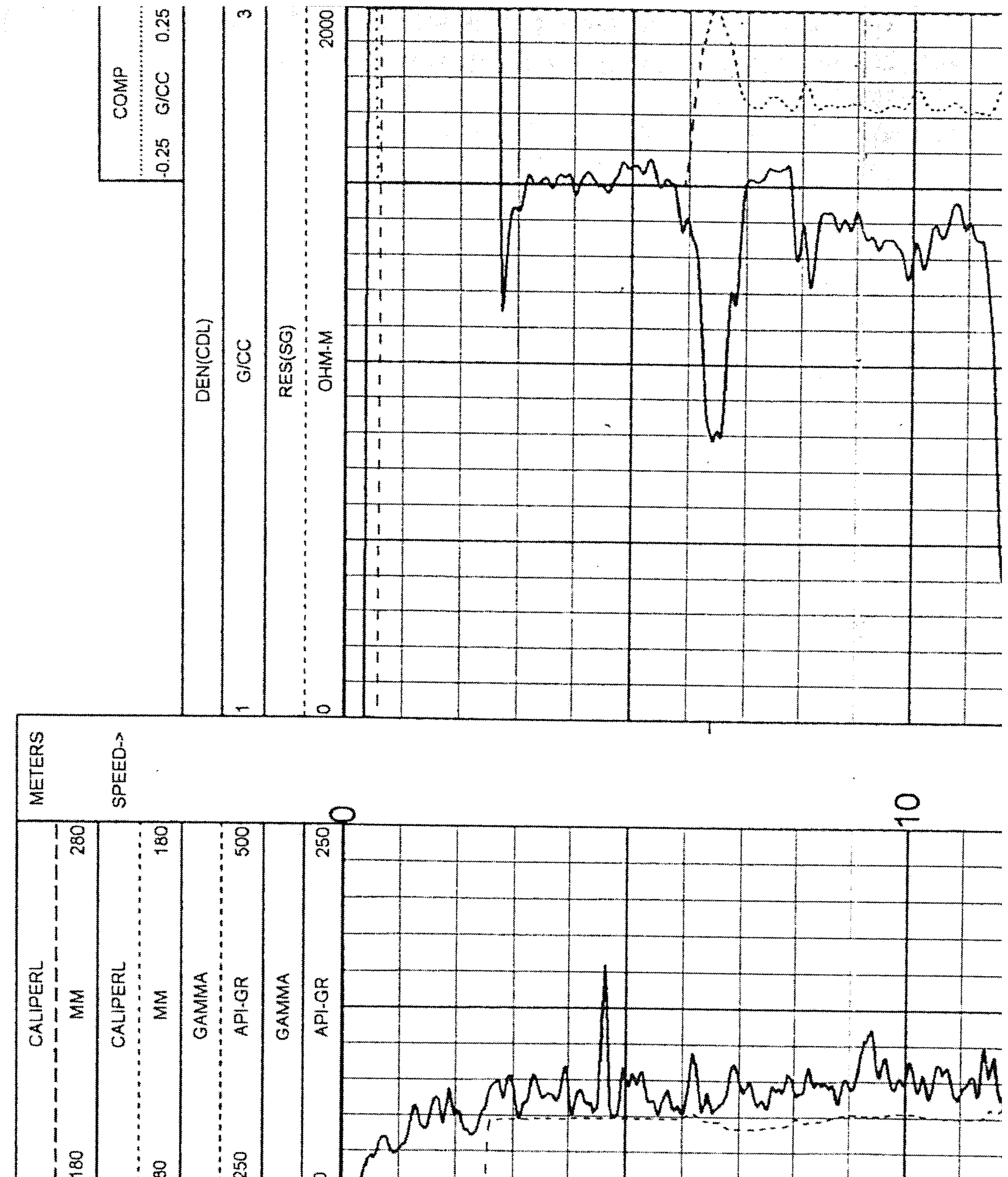
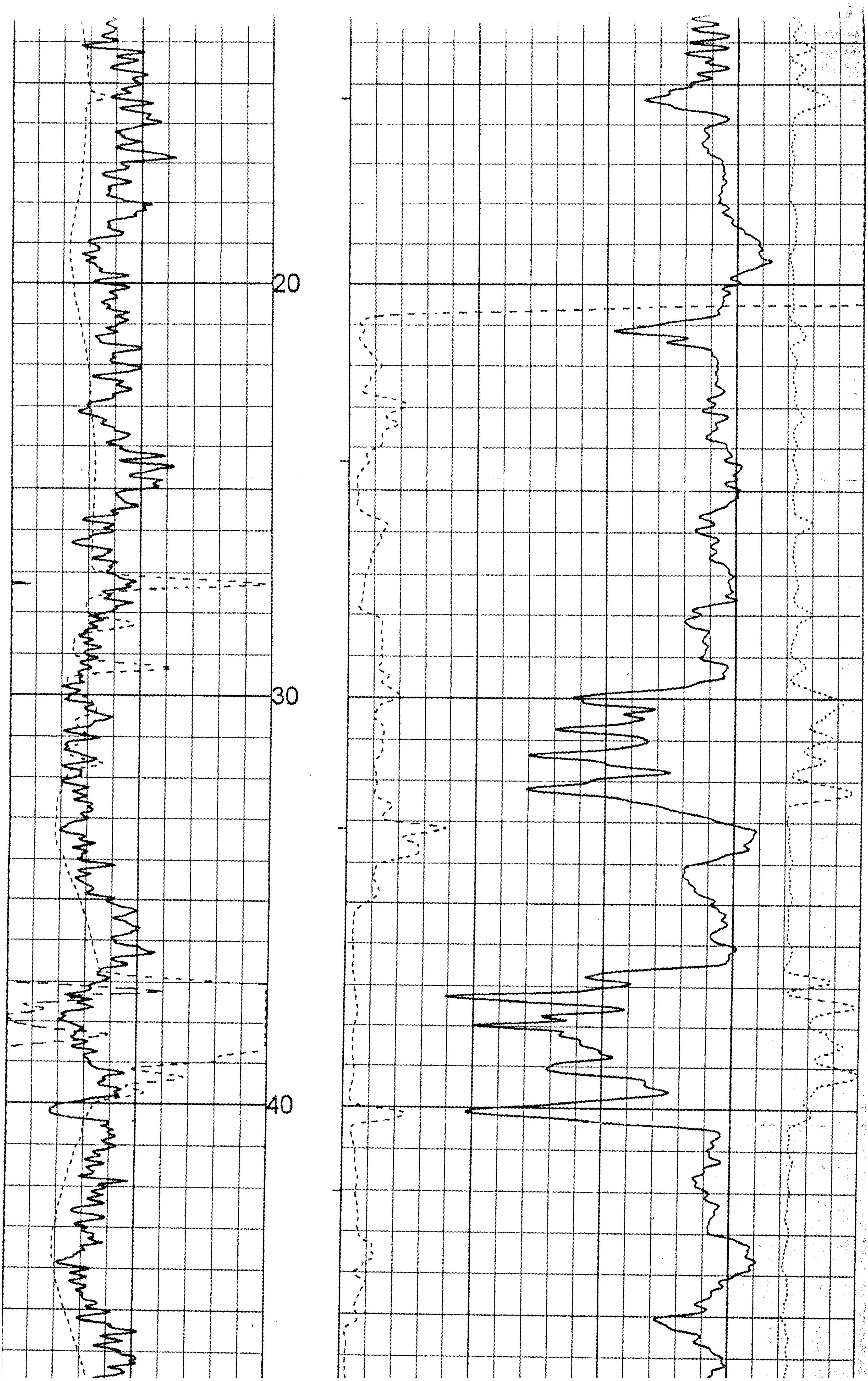
LOCATION	NA		
SECTION	NA		
TOWNSHIP	NA		
RANGE	NA		
LICENCE NO.	NA		
UNIQUE WELL ID.	NA		
PERMANENT DATUM	GL	ELEVATION KB NA	
LOG MEASURED FROM	GL	ELEVATION DF NA	
DRL MEASURED FROM	GL	ELEVATION GL NA	
DATE	11/01/08		
DEPTH DRILLER	328.88M		
BIT SIZE	9.52		
LOG TOP	0.33		
LOG BOTTOM	325.44		
CASING LOGGER	6.1M		
CASING DRILLER	6.1M		
CASING TYPE	SURFACE		
BOREHOLE FLUID	POLY		
RM TEMPERATURE	NA		
MUD RES	NA		
MUD WEIGHT	1.00		
WITNESSED BY	JO SHEARER		
RECORDED BY	B. SNELL		
REMARKS 1	90 DEGREE HOLE		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





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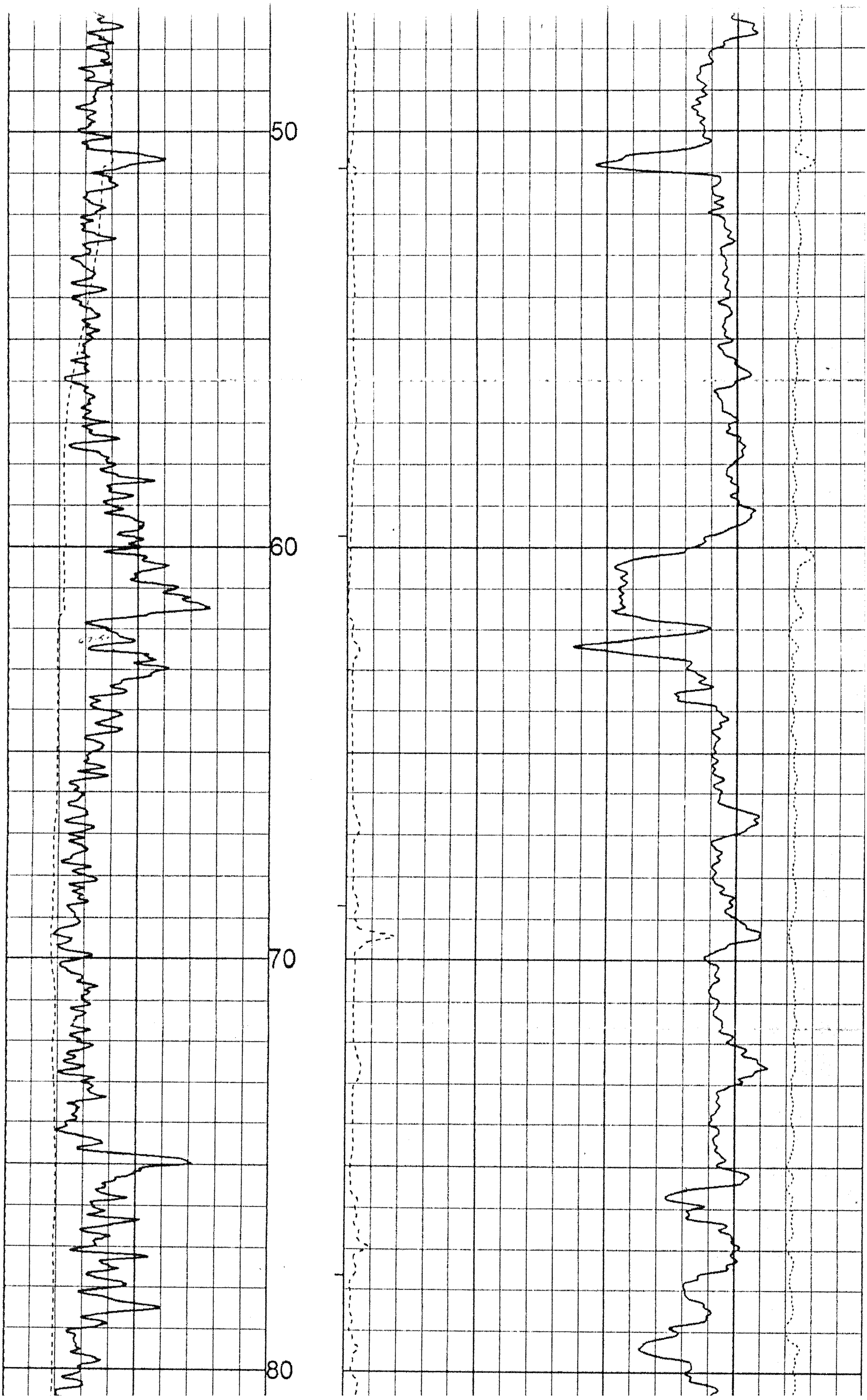
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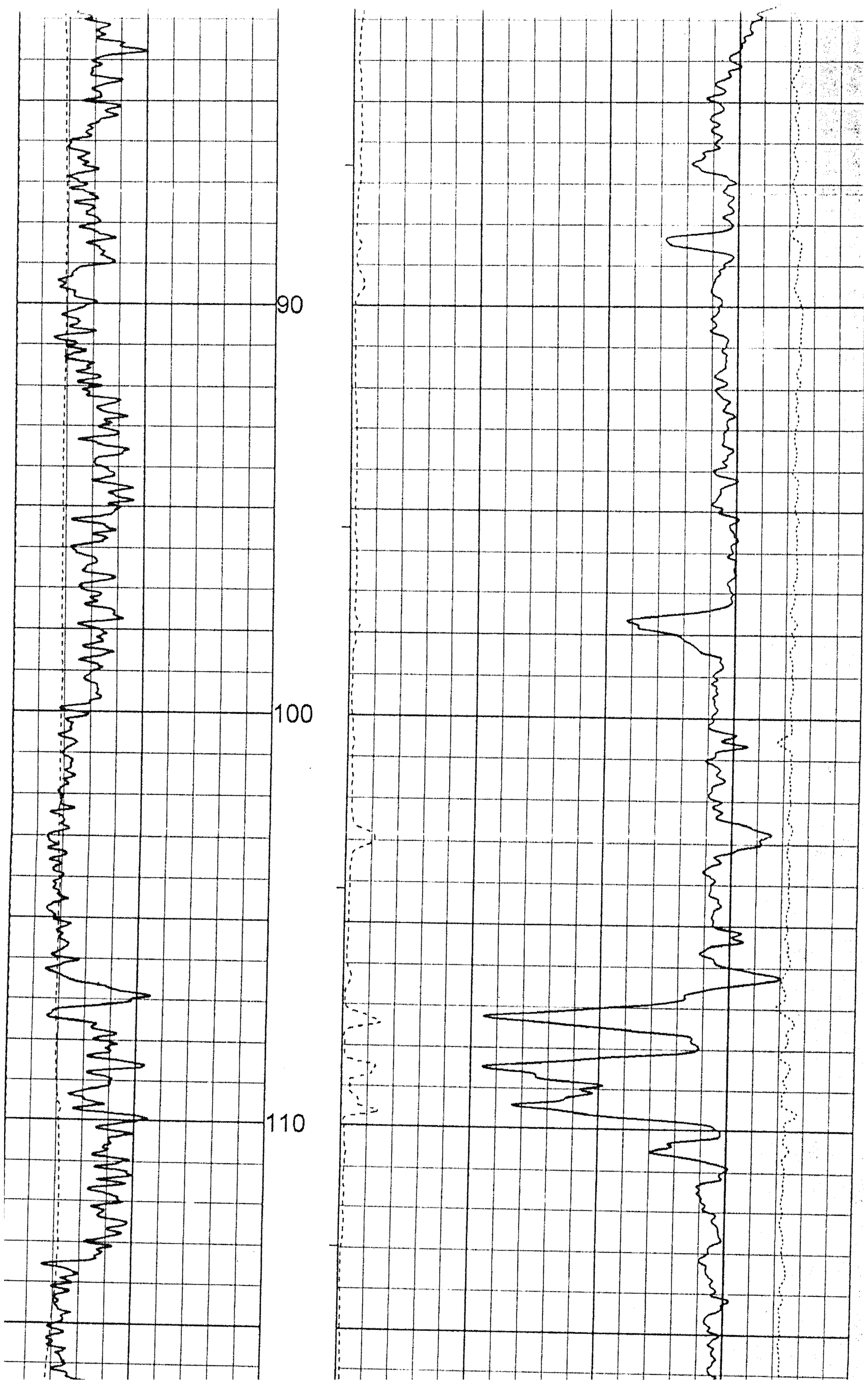
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100
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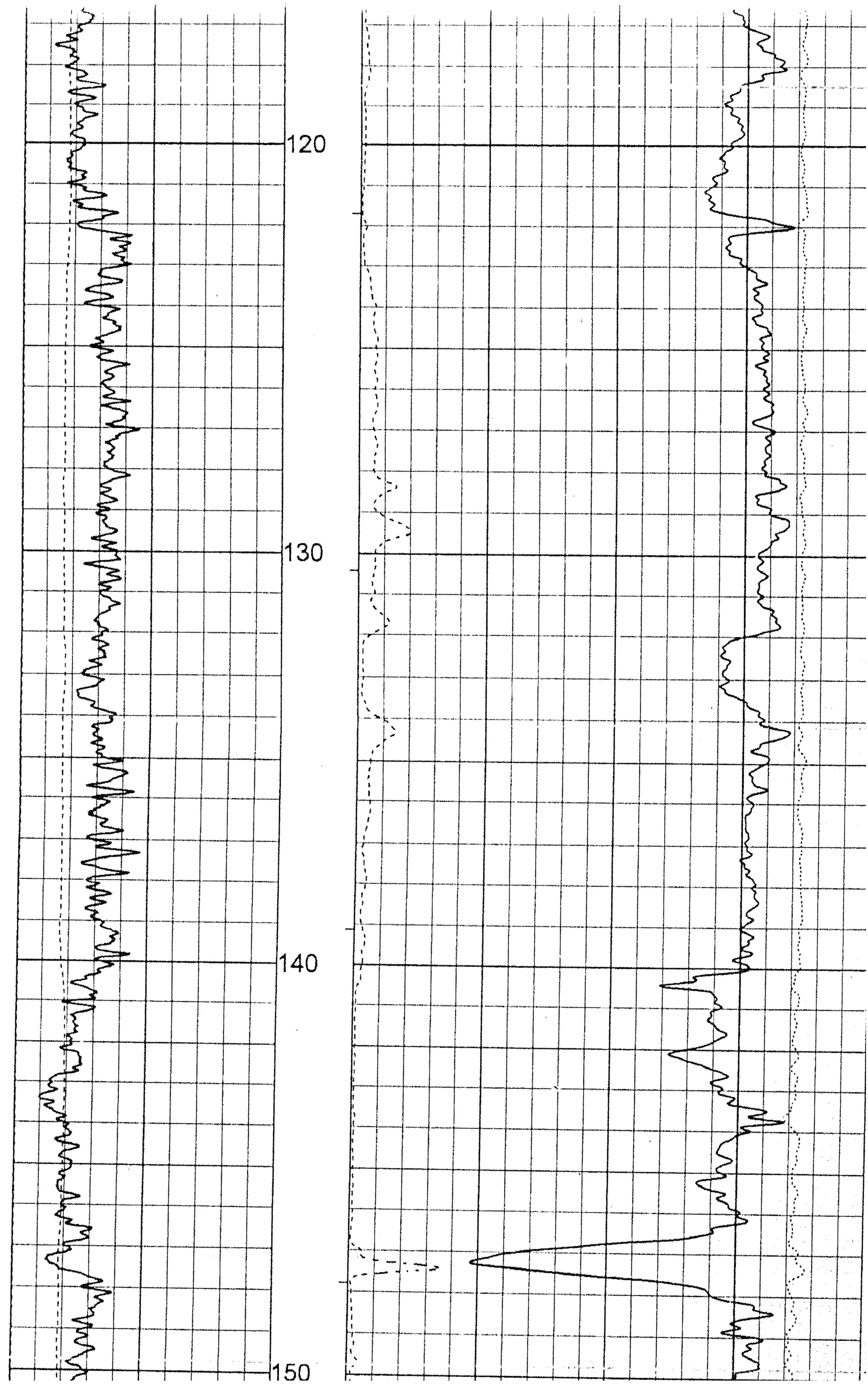
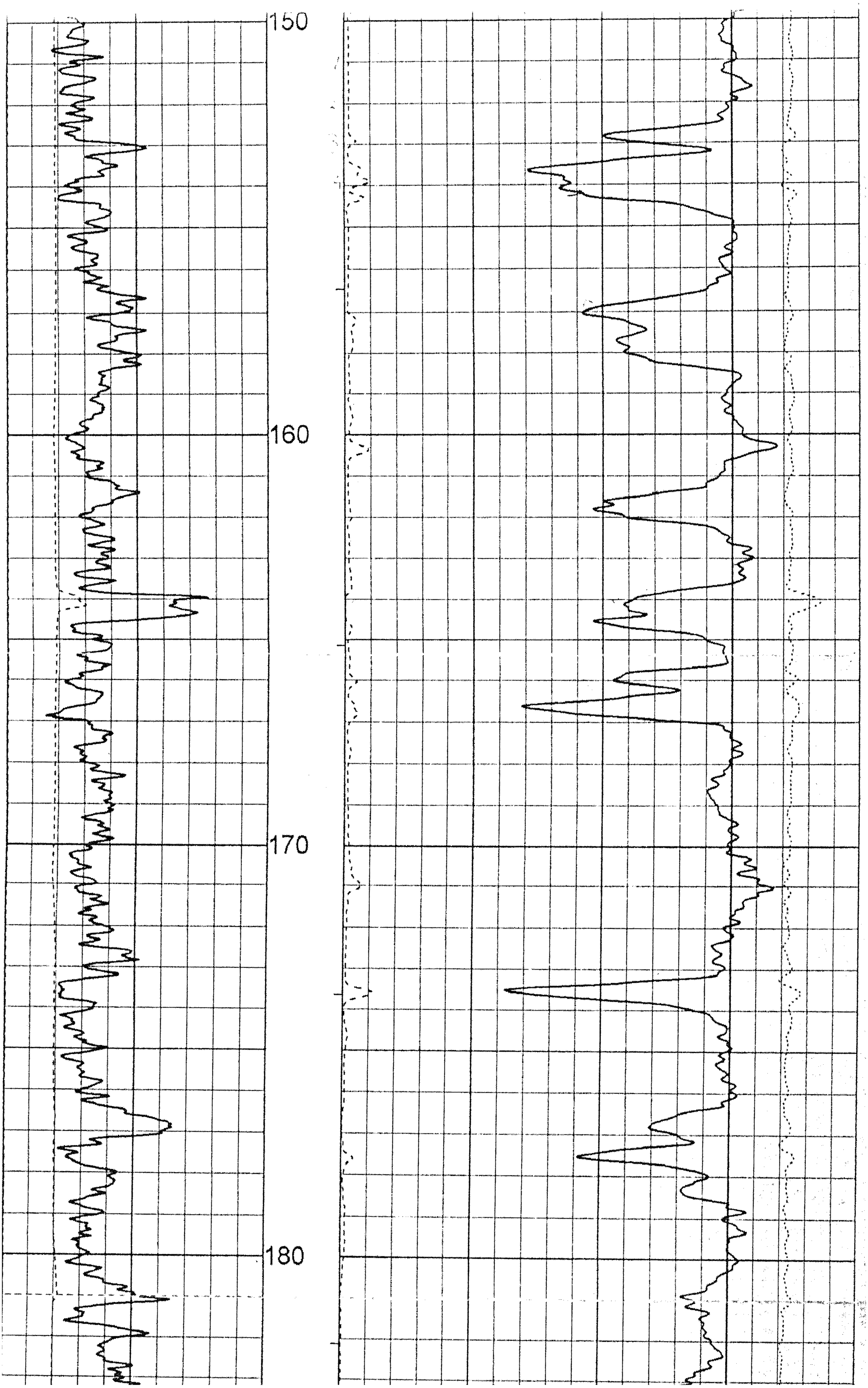
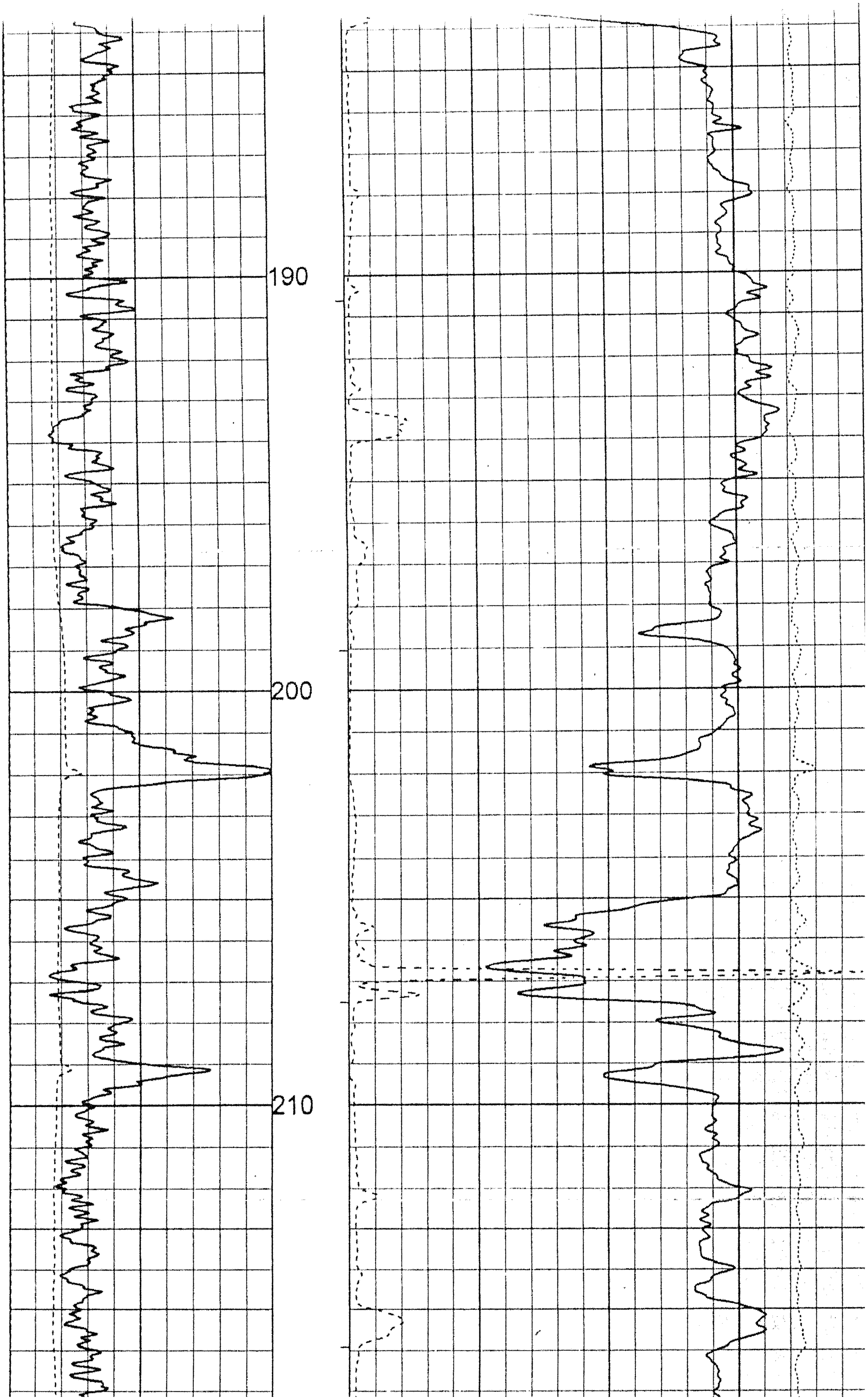

120
130
140
150


150
160
170
180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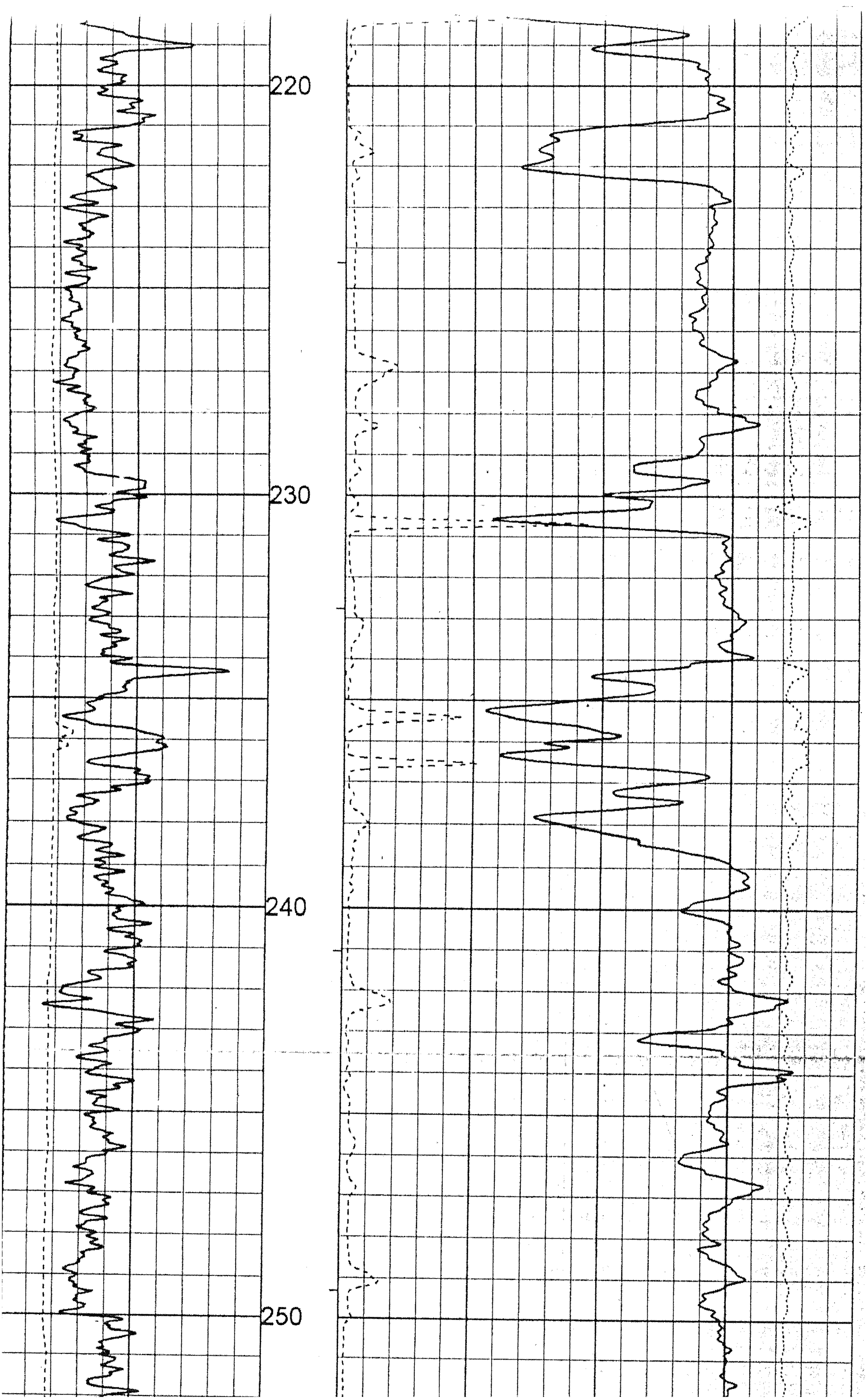
200
210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230
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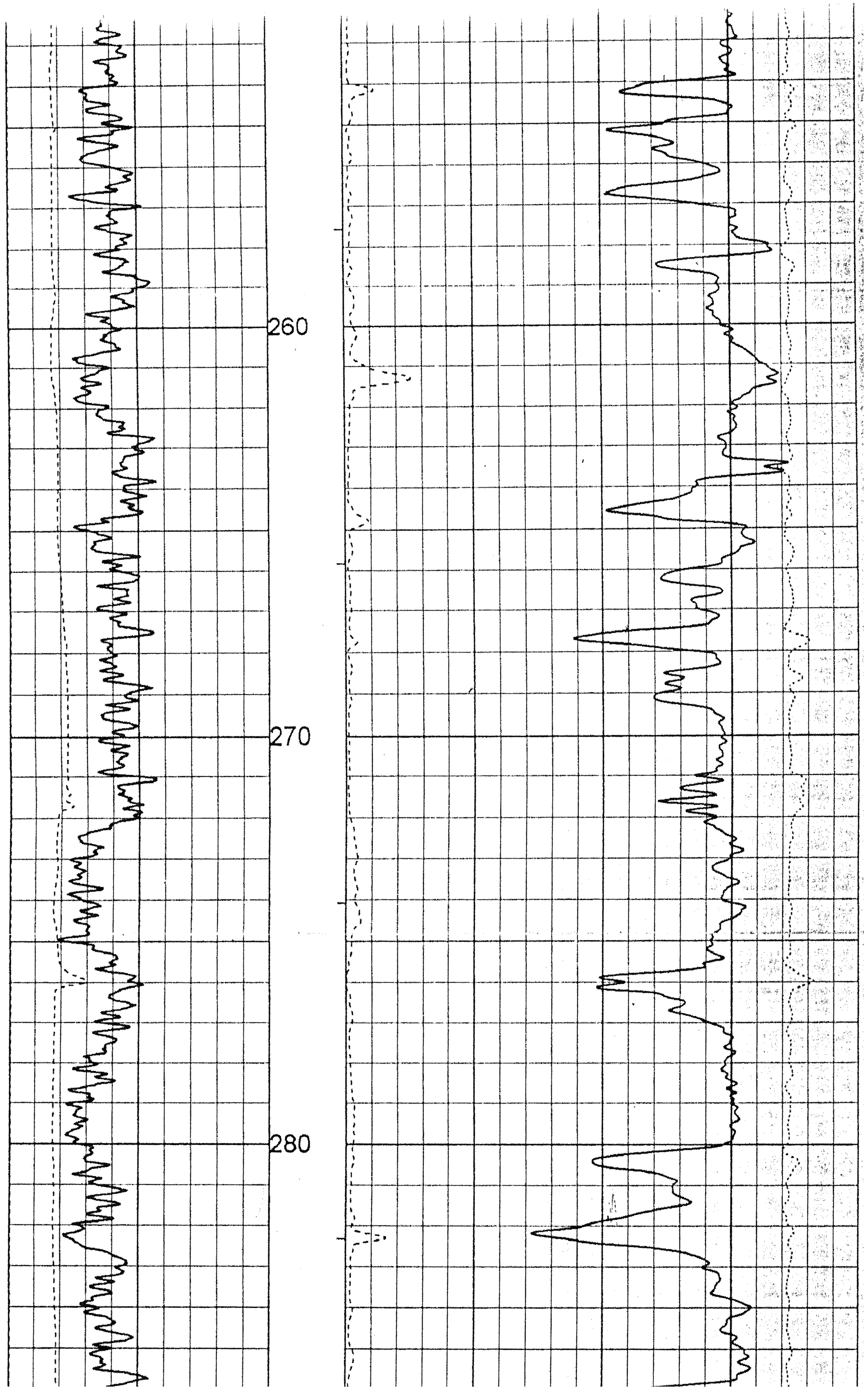
250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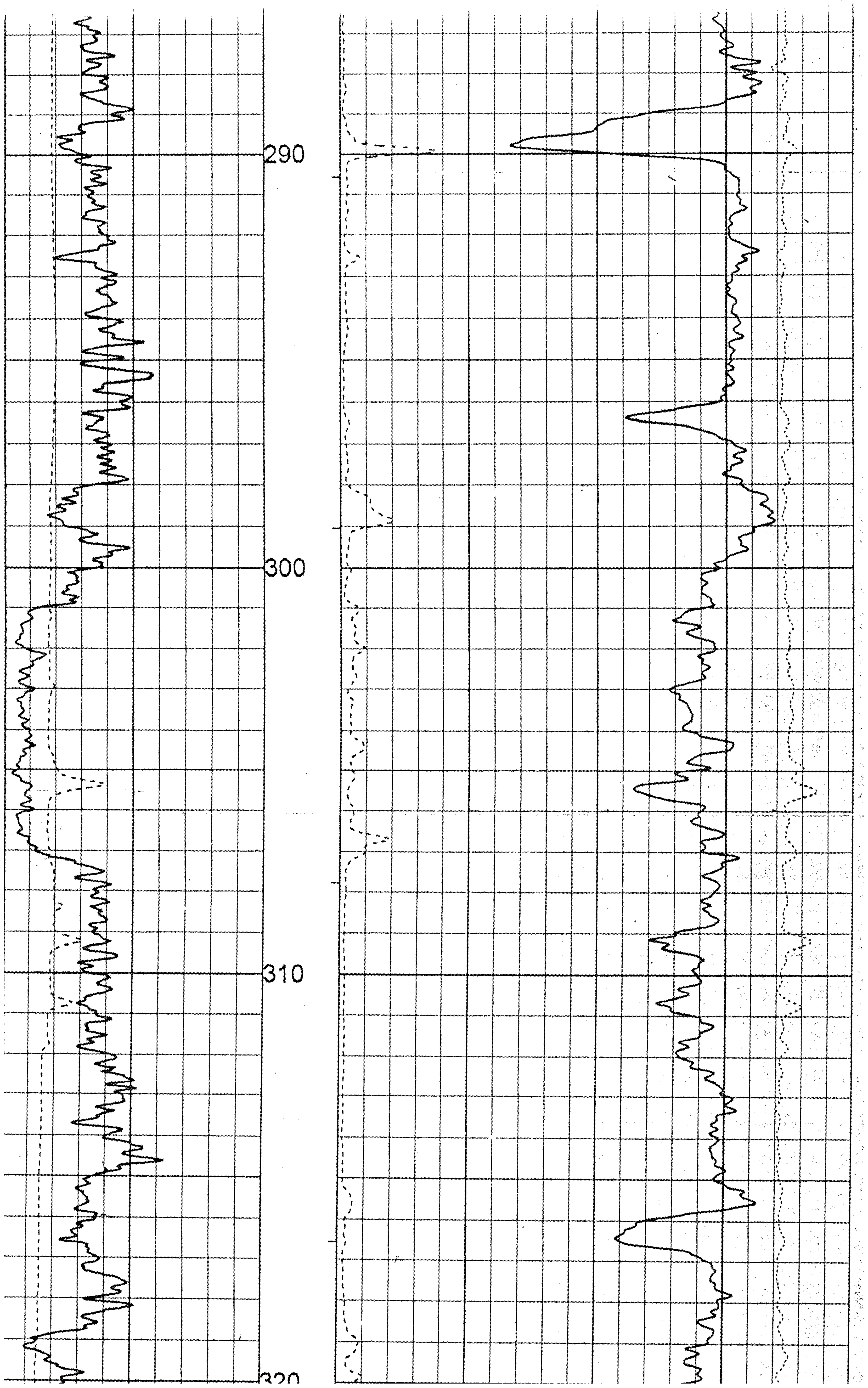
270
280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300
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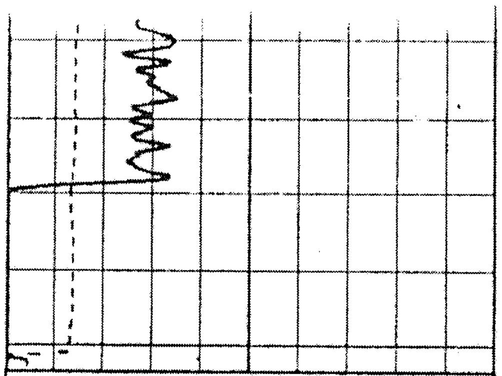
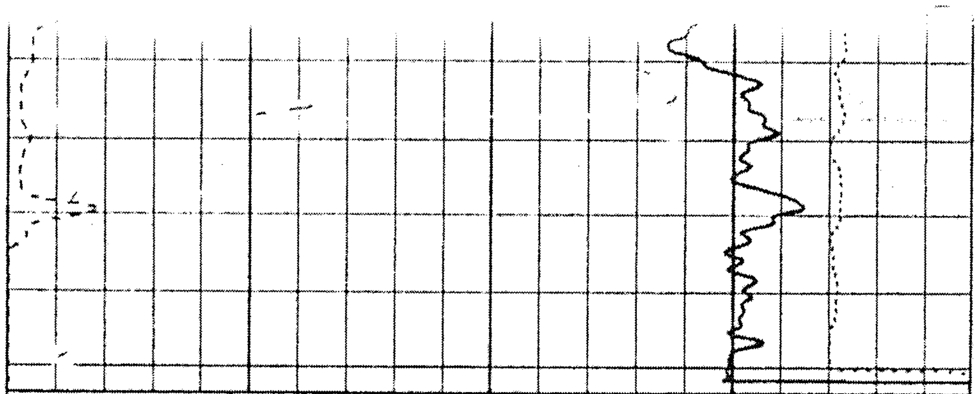




0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
80	MM	180
	CALIPERL	
180	MM	280
	CALIPERL	

SPEED->

METERS

0	OHM-M	2000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	

-0.25	G/CC	0.25
	COMP	

DENSITY DETAIL 1:50 SQ-08-04 11/01/08

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177

MAGNETIC DECL : 0 ELECT. CUTOFF : 50000 BIT SIZE : 9.52

PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY.0 11/01/2008 VERSION = 3.64EK

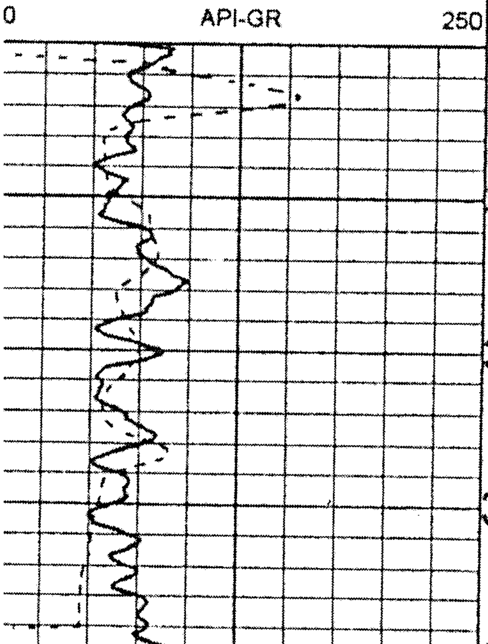
	CALIPERL	
180	MM	280
	CALIPERL	
80	MM	180
	GAMMA	
250	API-GR	500
	GAMMA	
0	API-GR	250

METERS

SPEED->

	COMP	
-0.25	G/CC	0.25

	DEN(CDL)	
1	G/CC	3
	RES(SG)	
0	OHM-M	2000



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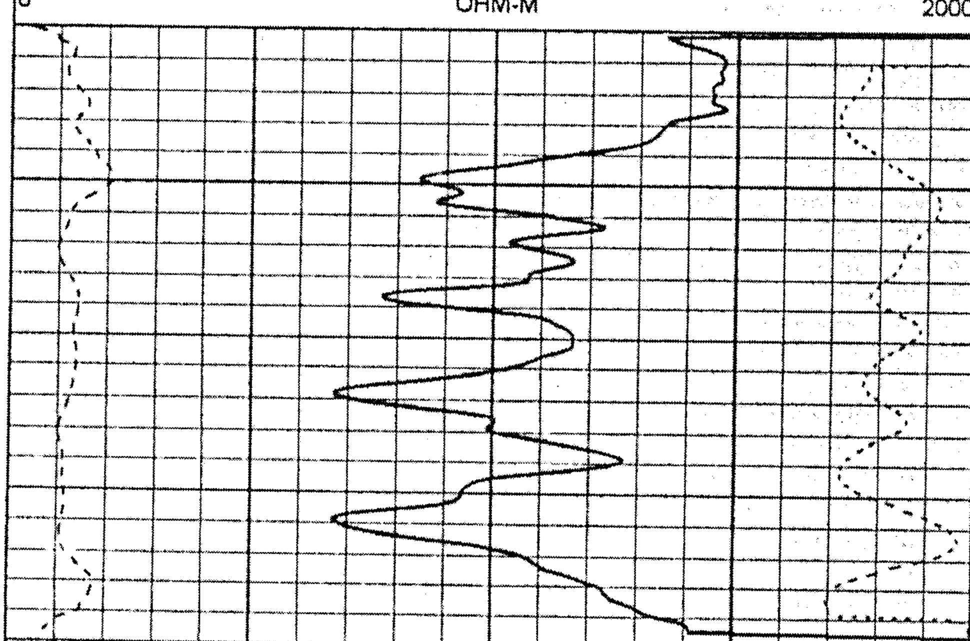
30

31

32

33



)	API-GR	250
	GAMMA	
'50	API-GR	500
	GAMMA	

0	OHM-M	2000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	

CALIPERL	SPEED->
180 MM 280	
CALIPERL	METERS

0.25
COMP

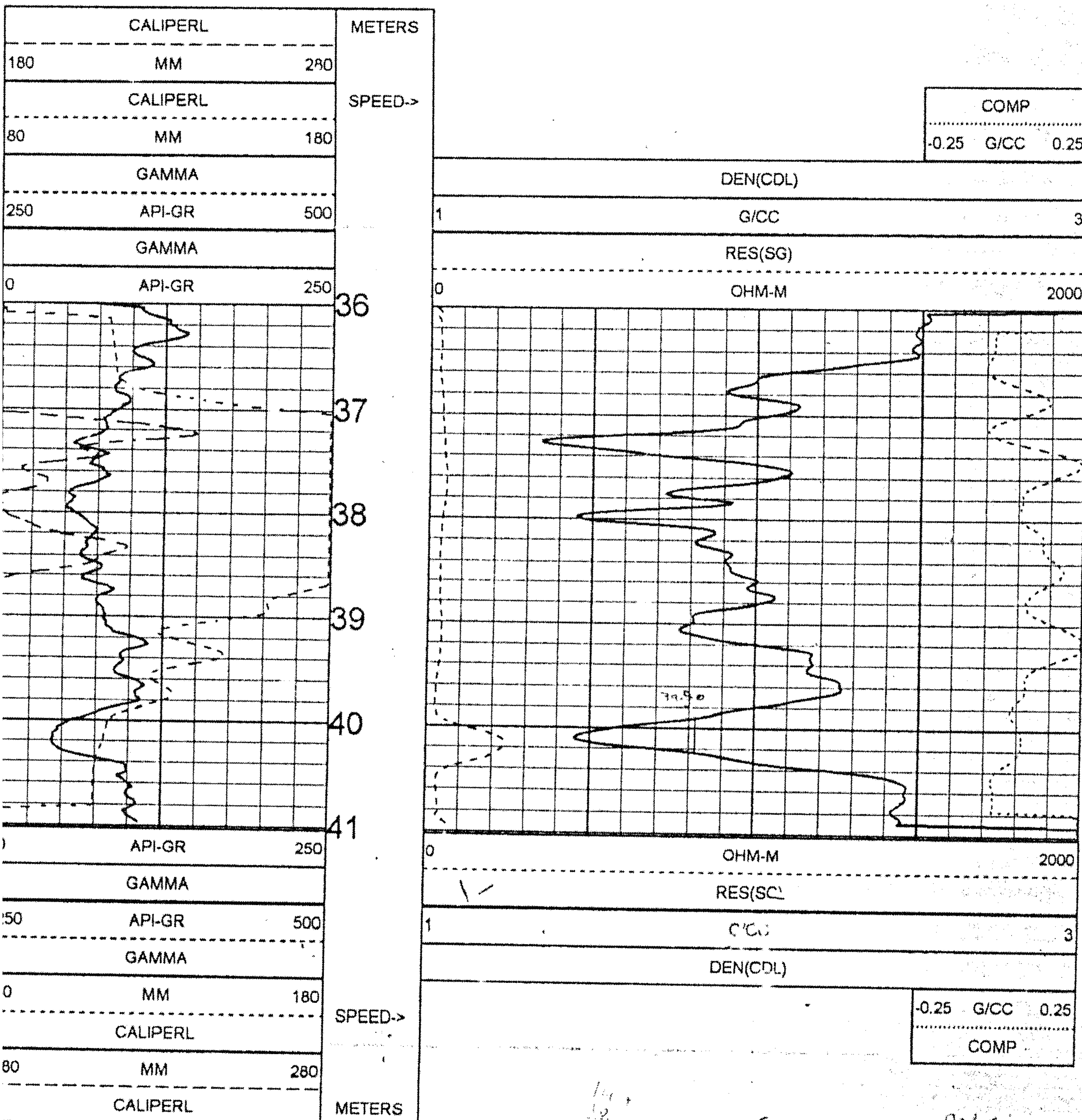
DENSITY DETAIL 1:50 SQ-08-04 11/01/08

LOG PARAMETERS

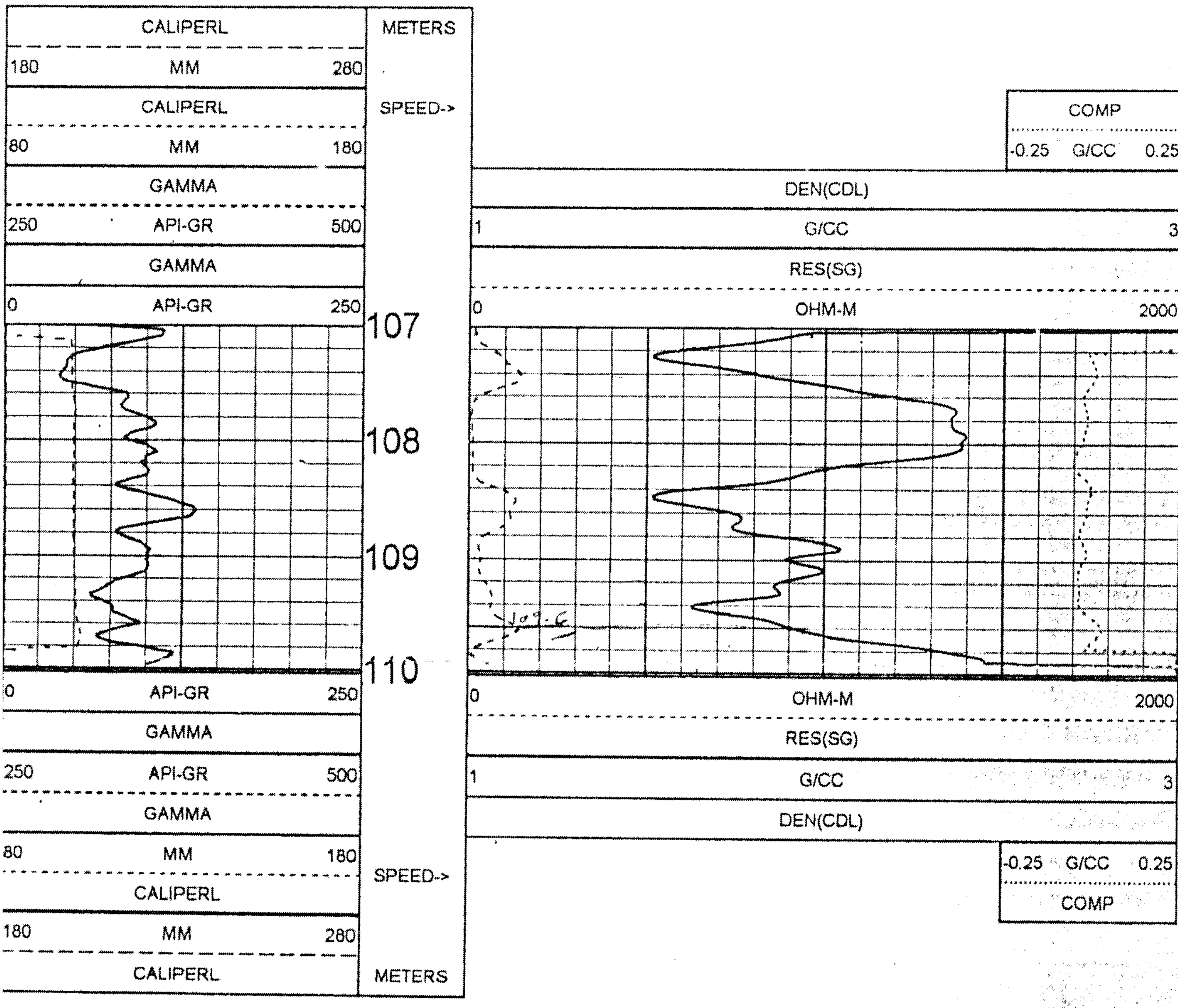
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177

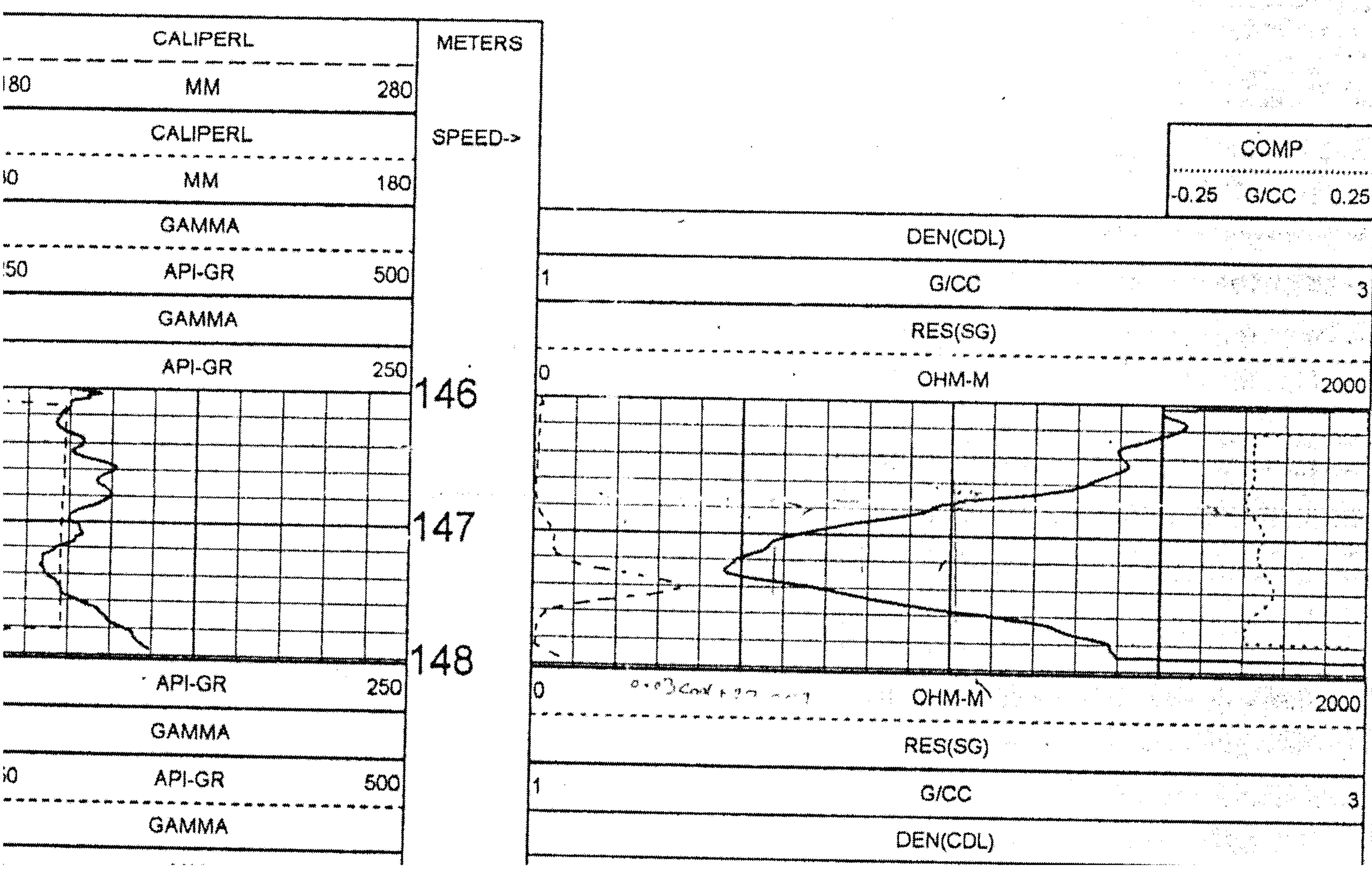
MAGNETIC DECL : 0 ELECT. CUTOFF : 50000 BIT SIZE : 9.52

PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY.0 11/01/2008 VERSION = 3.64EK



0.15

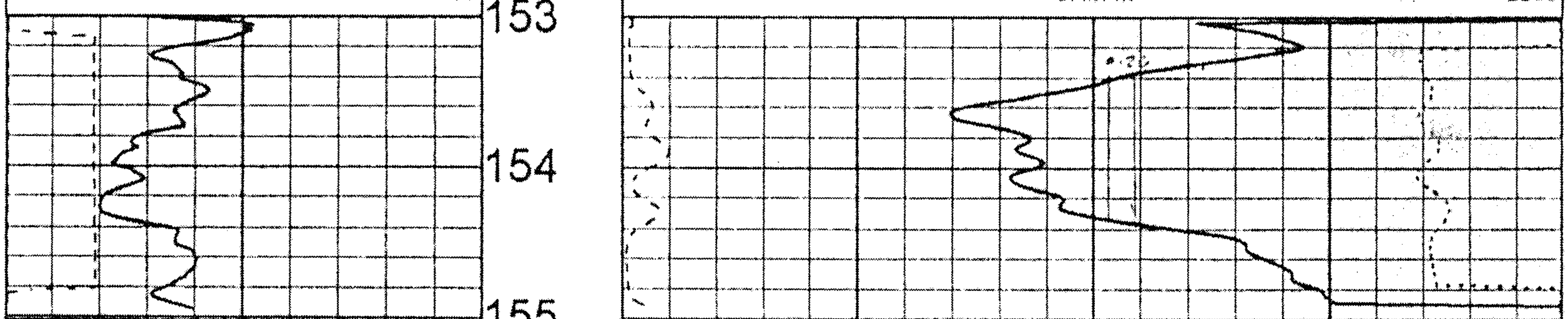

CALIPERL
180 MM 280
CALIPERL
80 MM 180
GAMMA
250 API-GR 500
GAMMA
0 API-GR 250
METERS
SPEED->
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000
107
108
109
109.6
110
0 API-GR 250
GAMMA
250 API-GR 500
GAMMA
80 MM 180
CALIPERL
180 MM 280
CALIPERL
SPEED->
METERS
0 OHM-M 2000
RES(SG)
1 G/CC 3
DEN(CDL)
-0.25 G/CC 0.25
COMP


CALIPERL
180 MM 280
CALIPERL
MM 180
GAMMA
API-GR 500
GAMMA
API-GR 250
METERS
SPEED->
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000
146
147
148
API-GR 250
GAMMA
API-GR 500
GAMMA
0 OHM-M 2000
RES(SG)
1 G/CC 3
DEN(CDL)

CALIPERL			
180	MM	280	
CALIPERL			METERS

COMP

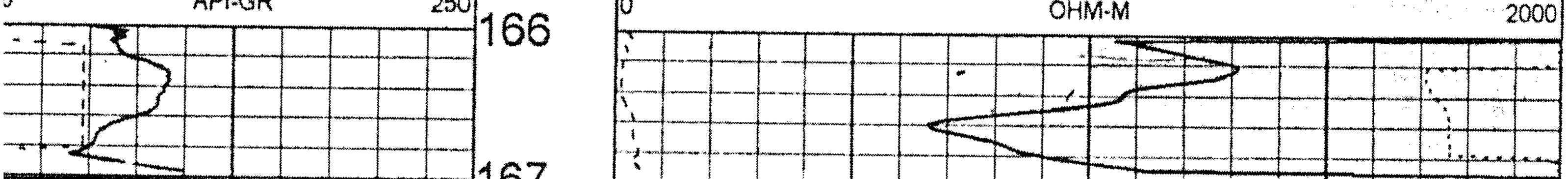
CALIPERL			METERS			
180	MM	280				
CALIPERL			SPEED->		COMP	
80	MM	180		-0.25	G/CC	0.25
GAMMA				DEN(CDL)		
250	API-GR	500		1	G/CC	3
GAMMA				RES(SG)		
0	API-GR	250		0	OHM-M	2000



0	API-GR	250		0	OHM-M	2000
GAMMA				RES(SG)		
250	API-GR	500		1	G/CC	3
GAMMA				DEN(CDL)		
80	MM	180	SPEED->	-0.25	G/CC	0.25
CALIPERL				COMP		
180	MM	280				
CALIPERL			METERS			

[illegible] match very good o/loc

CALIPERL			METERS			
180	MM	280				
CALIPERL			SPEED->		COMP	
80	MM	180		0.25	G/CC	0.25
GAMMA				DEN(CDL)		
250	API-GR	500		1	G/CC	3
GAMMA				RES(SG)		
0	API-GR	250		0	OHM-M	2000

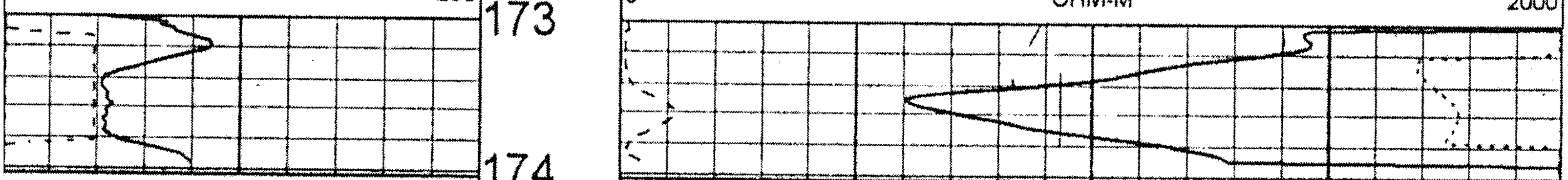


0	API-GR	250		0	OHM-M	2000
GAMMA				RES(SG)		
250	API-GR	500		1	G/CC	3
GAMMA				DEN(CDL)		
80	MM	180				

CALIPERL | METERS

CALIPERL | METERS
180 MM 280
CALIPERL | SPEED->
80 MM 180
GAMMA
250 API-GR 500
GAMMA
0 API-GR 250

COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000

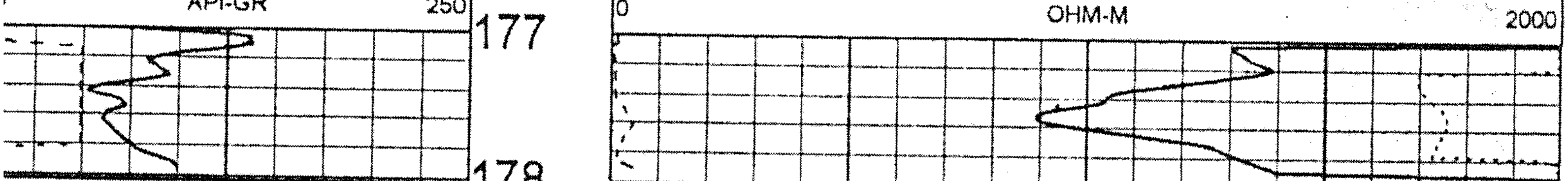


0 API-GR 250
GAMMA
250 API-GR 500
GAMMA
80 MM 180
CALIPERL | SPEED->
180 MM 280
CALIPERL | METERS

0 OHM-M 2000
RES(SG)
1 G/CC 3
DEN(CDL)
-0.25 G/CC 0.25
COMP

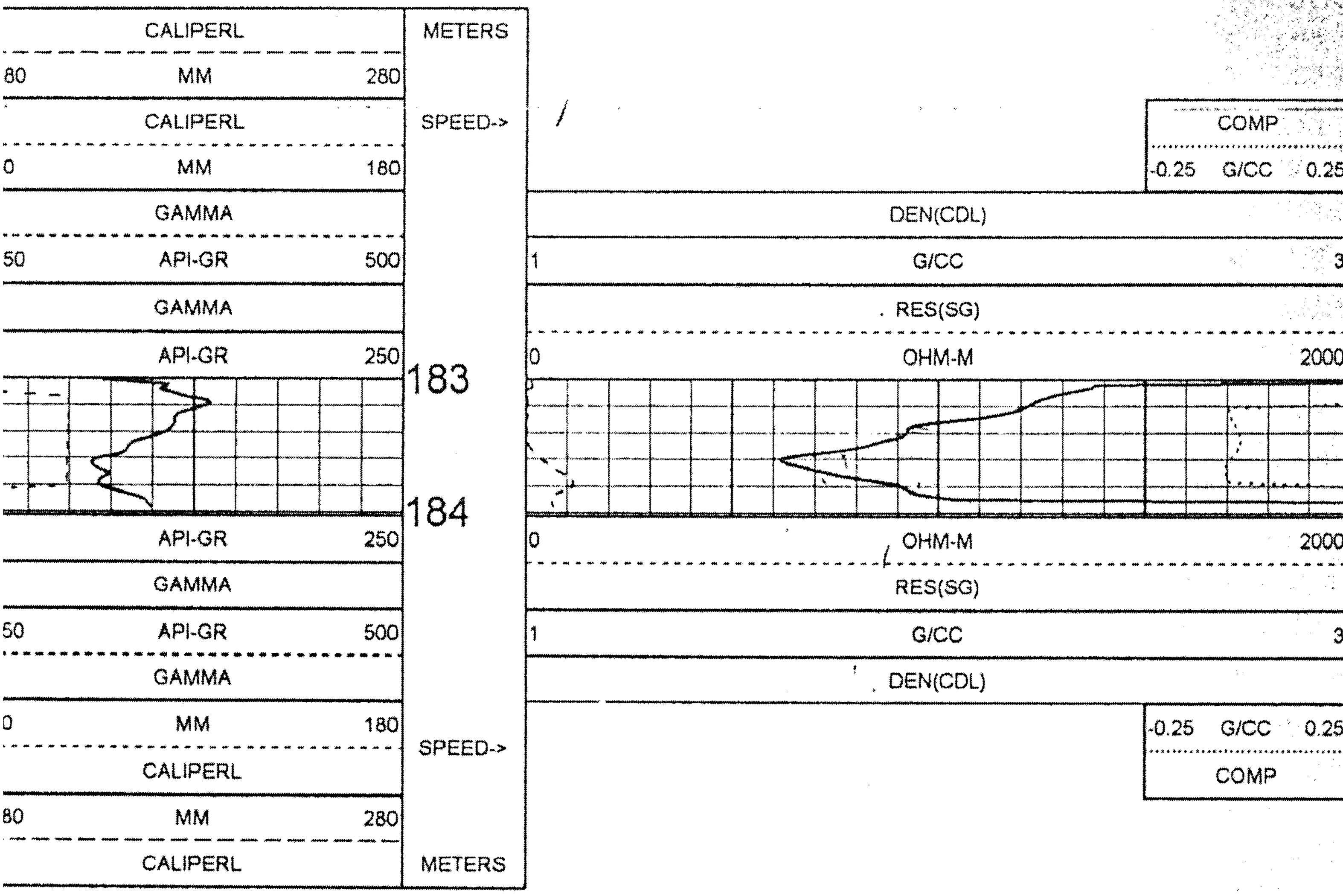
CALIPERL | METERS
180 MM 280
CALIPERL | SPEED->
30 MM 180
GAMMA
250 API-GR 500
GAMMA
API-GR 250

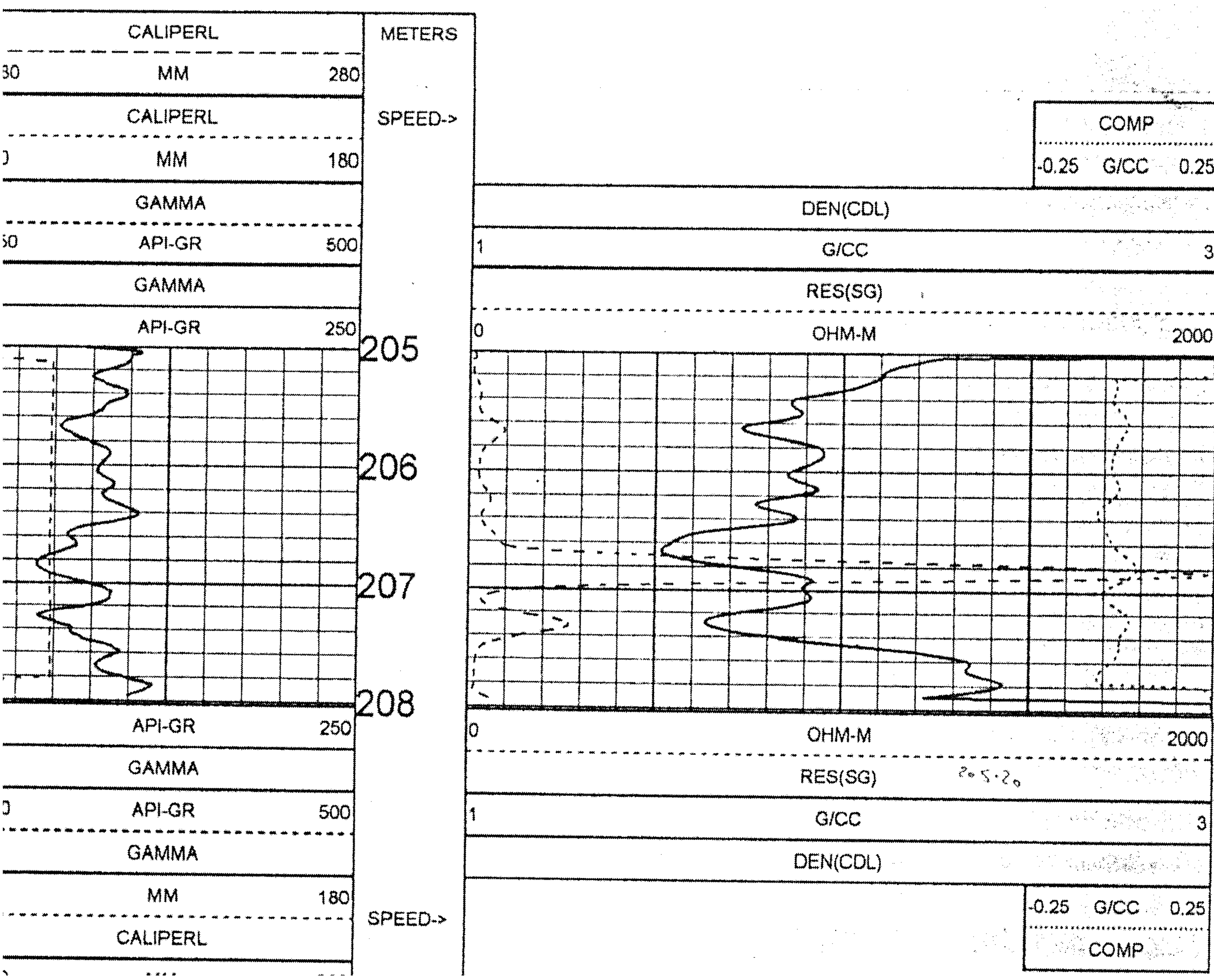
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000

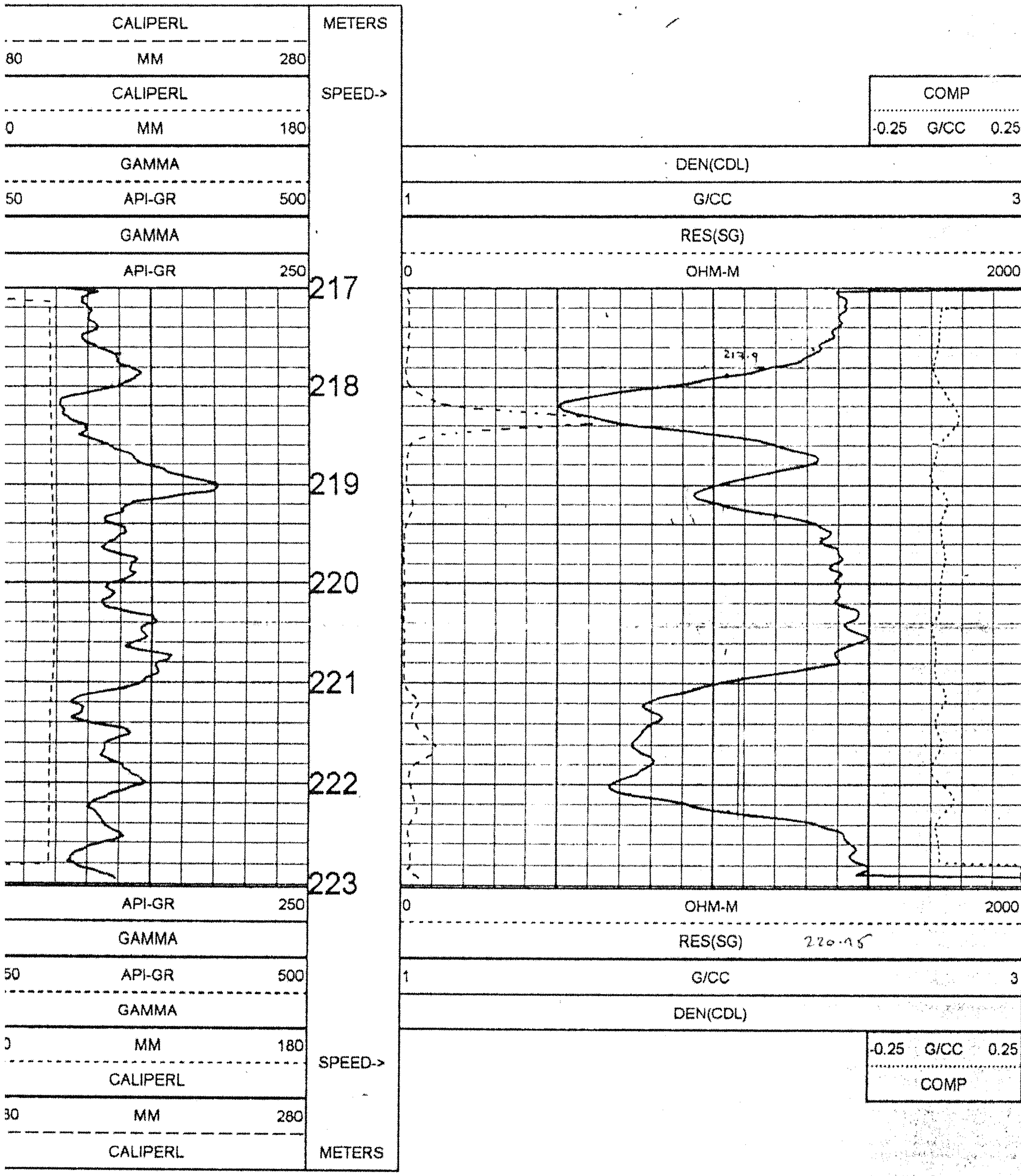


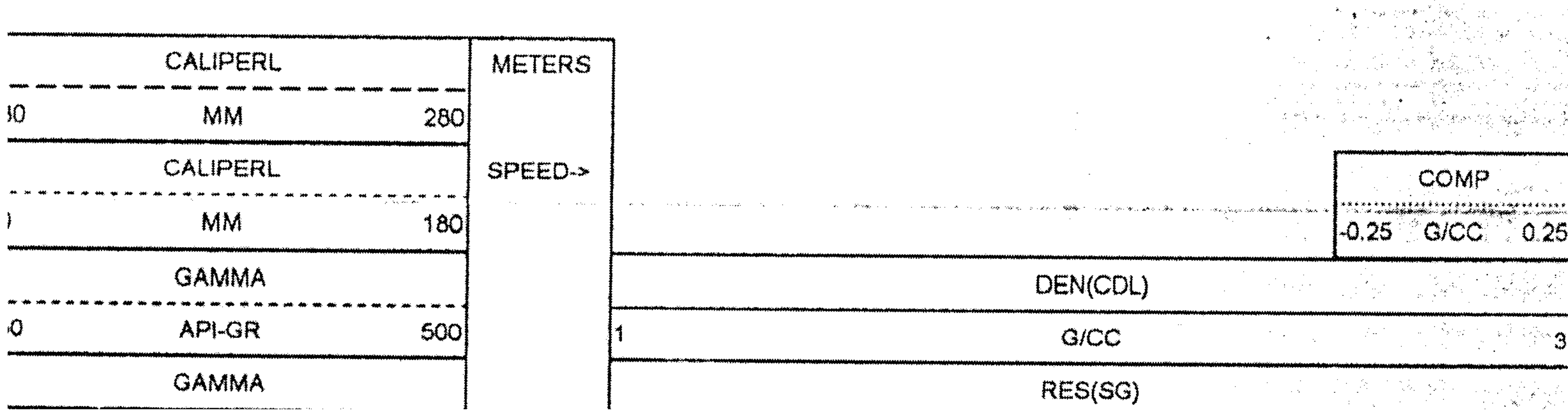
API-GR 250
GAMMA
50 API-GR 500
GAMMA
MM 180
CALIPERL | SPEED->
30 MM 280
CALIPERL | METERS

0 OHM-M 2000
RES(SG)
1 G/CC 3
DEN(CDL)
-0.25 G/CC 0.25
COMP

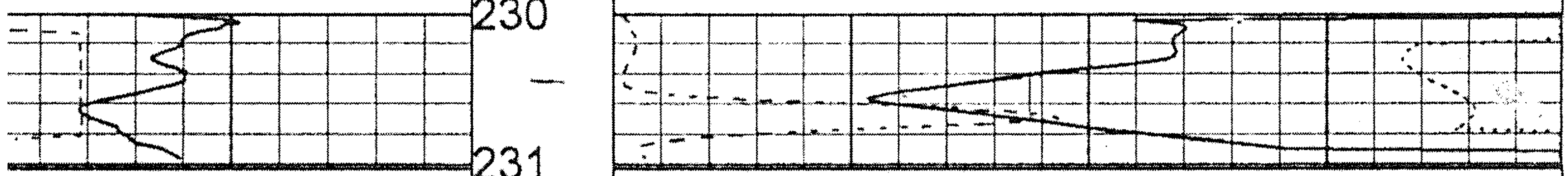

CALIPERL
METERS
80 MM 280
CALIPERL
SPEED->
0 MM 180
COMP
-0.25 G/CC 0.25
GAMMA
DEN(CDL)
50 API-GR 500
1 G/CC 3
GAMMA
RES(SG)
API-GR 250
0 OHM-M 2000
183
184
API-GR 250
0 OHM-M 2000
GAMMA
RES(SG)
50 API-GR 500
1 G/CC 3
GAMMA
DEN(CDL)
0 MM 180
-0.25 G/CC 0.25
SPEED->
CALIPERL
COMP
80 MM 280
CALIPERL
METERS


CALIPERL
METERS
80 MM 280
CALIPERL
SPEED->
0 MM 180
COMP
-0.25 G/CC 0.25
GAMMA
DEN(CDL)
50 API-GR 500
1 G/CC 3
GAMMA
RES(SG)
API-GR 250
0 OHM-M 2000
205
206
207
208
API-GR 250
0 OHM-M 2000
GAMMA
RES(SG)
205.20
0 API-GR 500
1 G/CC 3
GAMMA
DEN(CDL)
MM 180
-0.25 G/CC 0.25
SPEED->
CALIPERL
COMP


CALIPERL
80 MM 280
CALIPERL
0 MM 180
GAMMA
50 API-GR 500
GAMMA
API-GR 250
METERS
SPEED->
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000
217
218
219
220
221
222
223
217.9
API-GR 250
GAMMA
50 API-GR 500
GAMMA
0 MM 180
CALIPERL
80 MM 280
CALIPERL
METERS
SPEED->
0 OHM-M 2000
RES(SG)
220.95
1 G/CC 3
DEN(CDL)
-0.25 G/CC 0.25
COMP

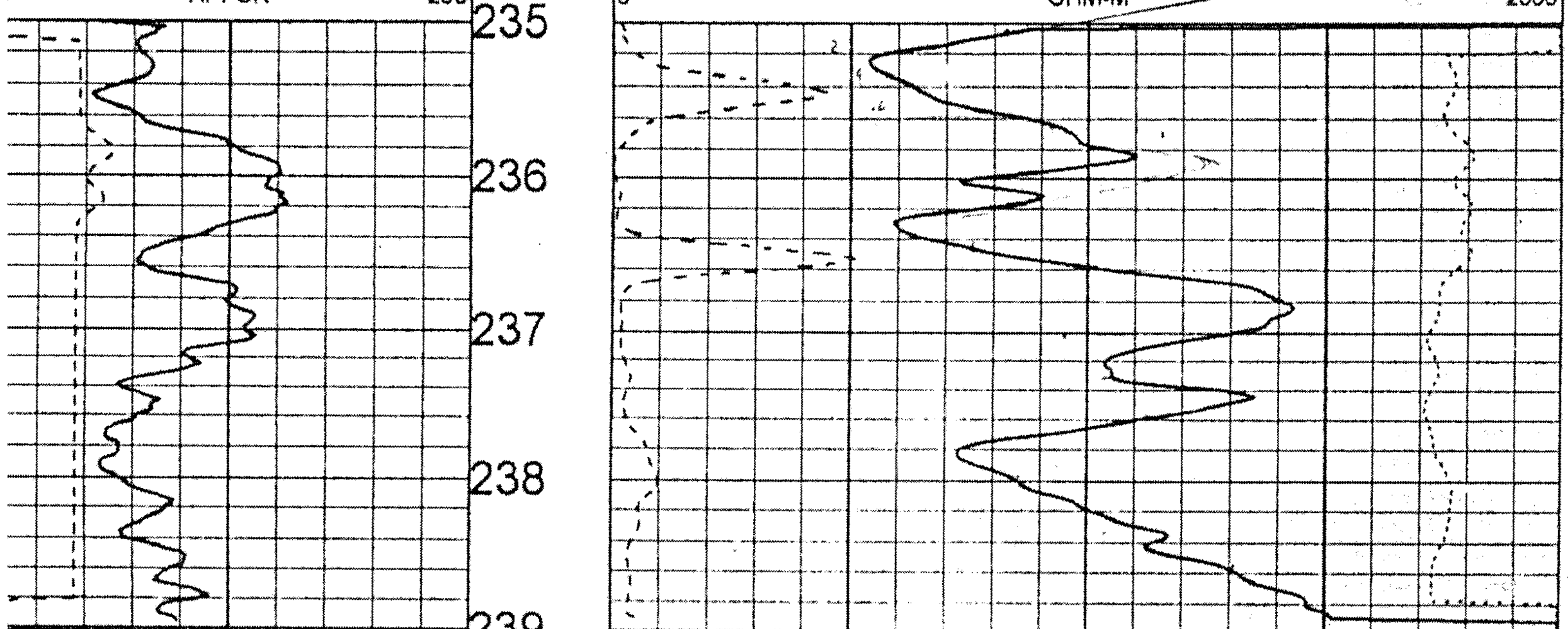

CALIPERL
80 MM 280
CALIPERL
0 MM 180
GAMMA
0 API-GR 500
GAMMA
METERS
SPEED->
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)

API-GR	250		0	OHM-M	2000



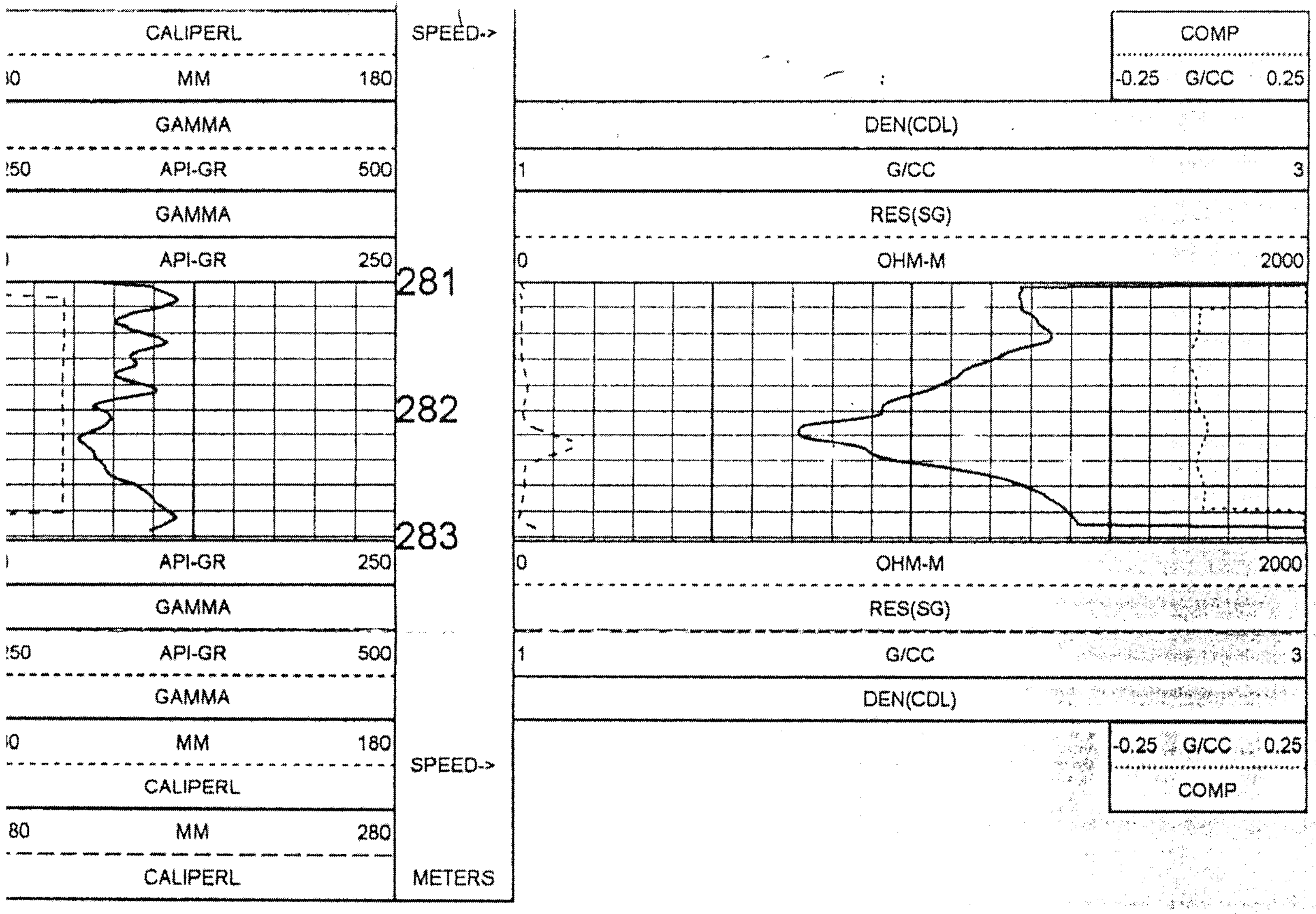
API-GR	250		0	OHM-M	2000
GAMMA				RES(SG)	
250 API-GR	500		1	G/CC	3
GAMMA				DEN(CDL)	
0 MM	180	SPEED->	-0.25	G/CC	0.25
CALIPERL				COMP	
80 MM	280				
CALIPERL		METERS			

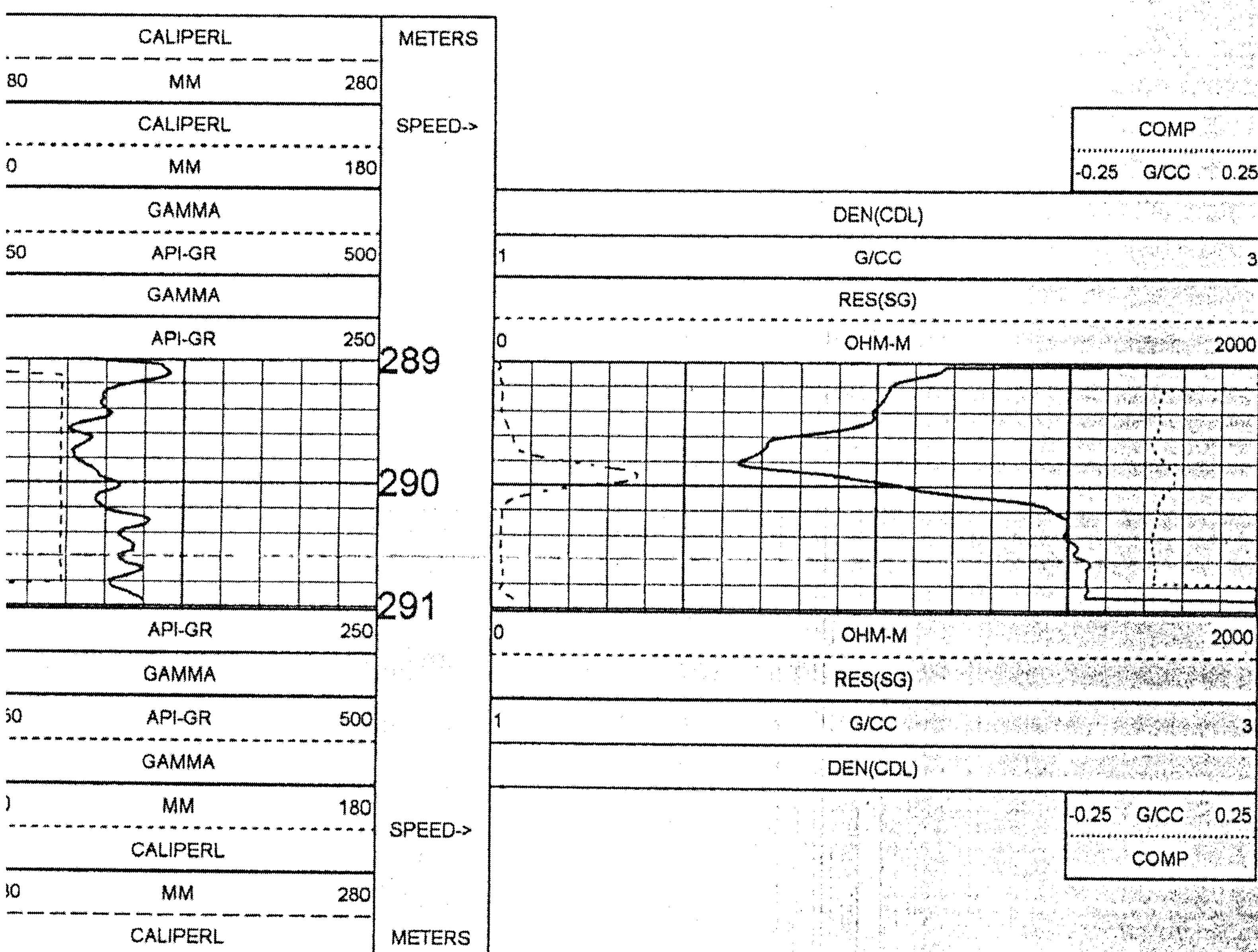
CALIPERL		METERS			
80 MM	280				
CALIPERL		SPEED->		COMP	
0 MM	180		-0.25	G/CC	0.25
GAMMA				DEN(CDL)	
250 API-GR	500		1	G/CC	3
GAMMA				RES(SG)	
API-GR	250		0	OHM-M	2000



API-GR	250		0	OHM-M	2000
GAMMA				RES(SG)	
50 API-GR	500		1	G/CC	3
GAMMA				DEN(CDL)	
0 MM	180	SPEED->	-0.25	G/CC	0.25
CALIPERL				COMP	
80 MM	280				
CALIPERL		METERS			

CALIPERL		METERS
0 MM	280	


CALIPERL
MM 180
GAMMA
API-GR 500
GAMMA
API-GR 250
SPEED->
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000
281
282
283
API-GR 250
GAMMA
API-GR 500
GAMMA
MM 180
CALIPERL
80 MM 280
CALIPERL
METERS

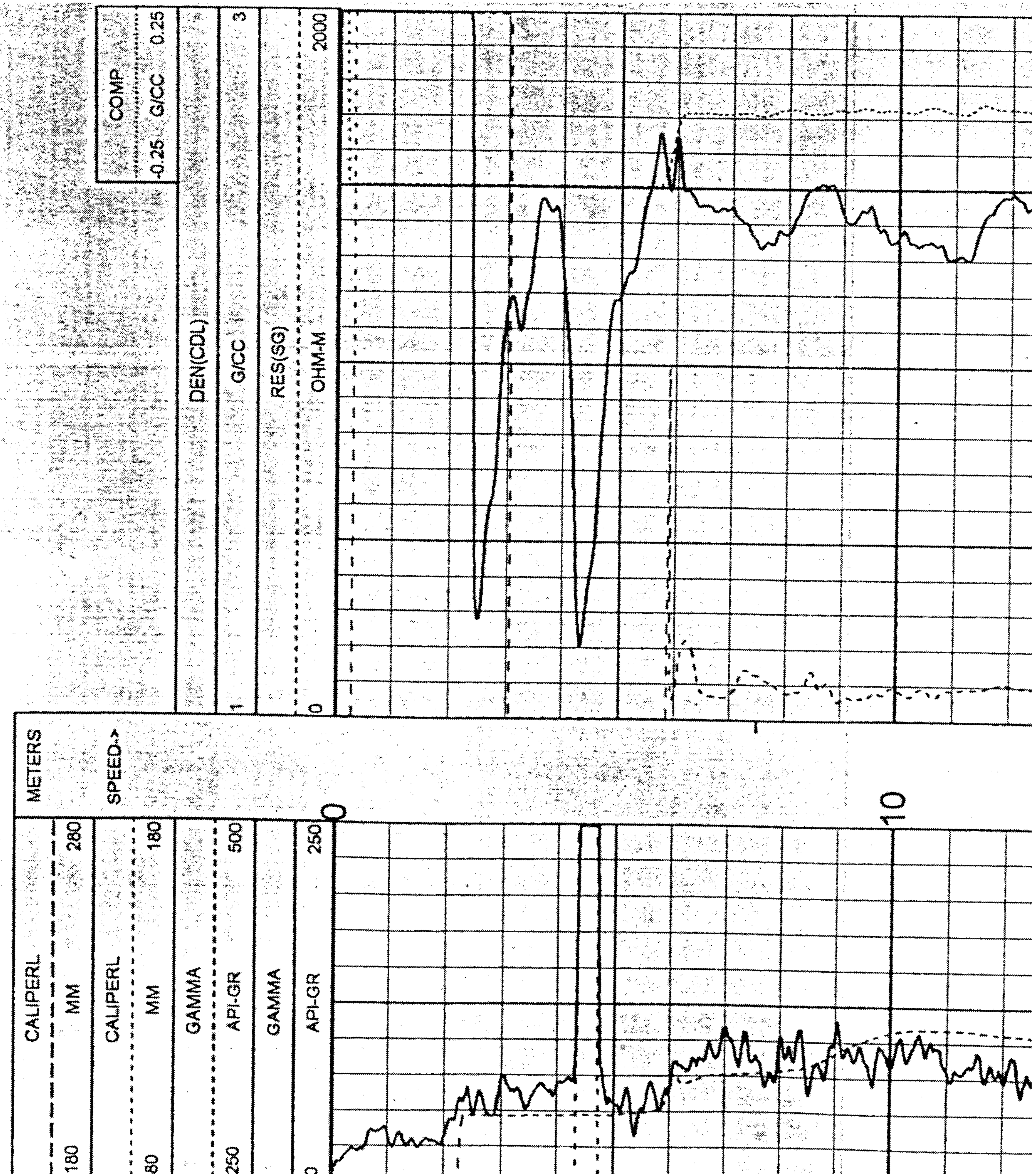

CALIPERL
METERS
80 MM 280
CALIPERL
SPEED->
0 MM 180
GAMMA
50 API-GR 500
GAMMA
API-GR 250
COMP
-0.25 G/CC 0.25
DEN(CDL)
1 G/CC 3
RES(SG)
0 OHM-M 2000
289
290
291
API-GR 250
GAMMA
API-GR 500
GAMMA
MM 180
CALIPERL
MM 280
CALIPERL
METERS

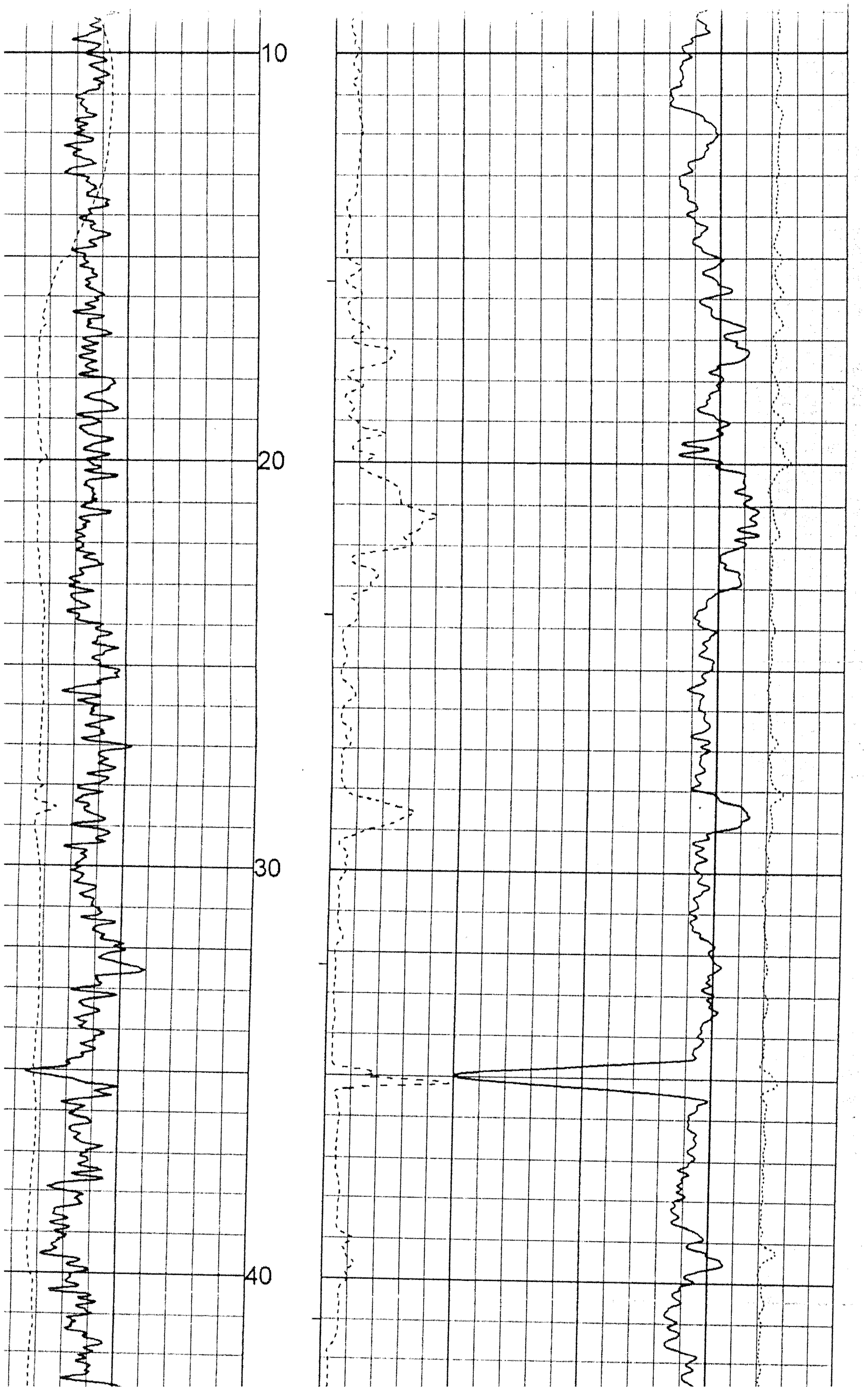
Century WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
SQ-08-03

COMPANY	ELEKTRA GOLD LTD	OTHER SERVICES:
WELL	SQ-08-03	
FIELD	PORT HARDY	
COUNTRY	CANADA	
PROVINCE	B.C.	
LOCATION	NA	
SECTION	NA	
TOWNSHIP	NA	
RANGE	NA	
LICENCE NO.	NA	
UNIQUE WELL ID.	NA	
PERMANENT DATUM	GL	ELEVATION KB NA
LOG MEASURED FROM	GL	ELEVATION DF NA
DRL MEASURED FROM	GL	ELEVATION GL NA
DATE	10/28/08	
DEPTH DRILLER	118.57M	
BIT SIZE	9.52	
LOG TOP	-0.03	
LOG BOTTOM	117.81	
CASING LOGGER	6.1M	
CASING DRILLER	6.1M	
CASING TYPE	SURFACE	
BOREHOLE FLUID	POLY	
RM TEMPERATURE	NA	
MUD RES	NA	
MUD WEIGHT	1.00	
WITNESSED BY	JO SHEARER	
RECORDED BY	B. SNELL	
REMARKS 1	90 DEGREE HOLE	
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

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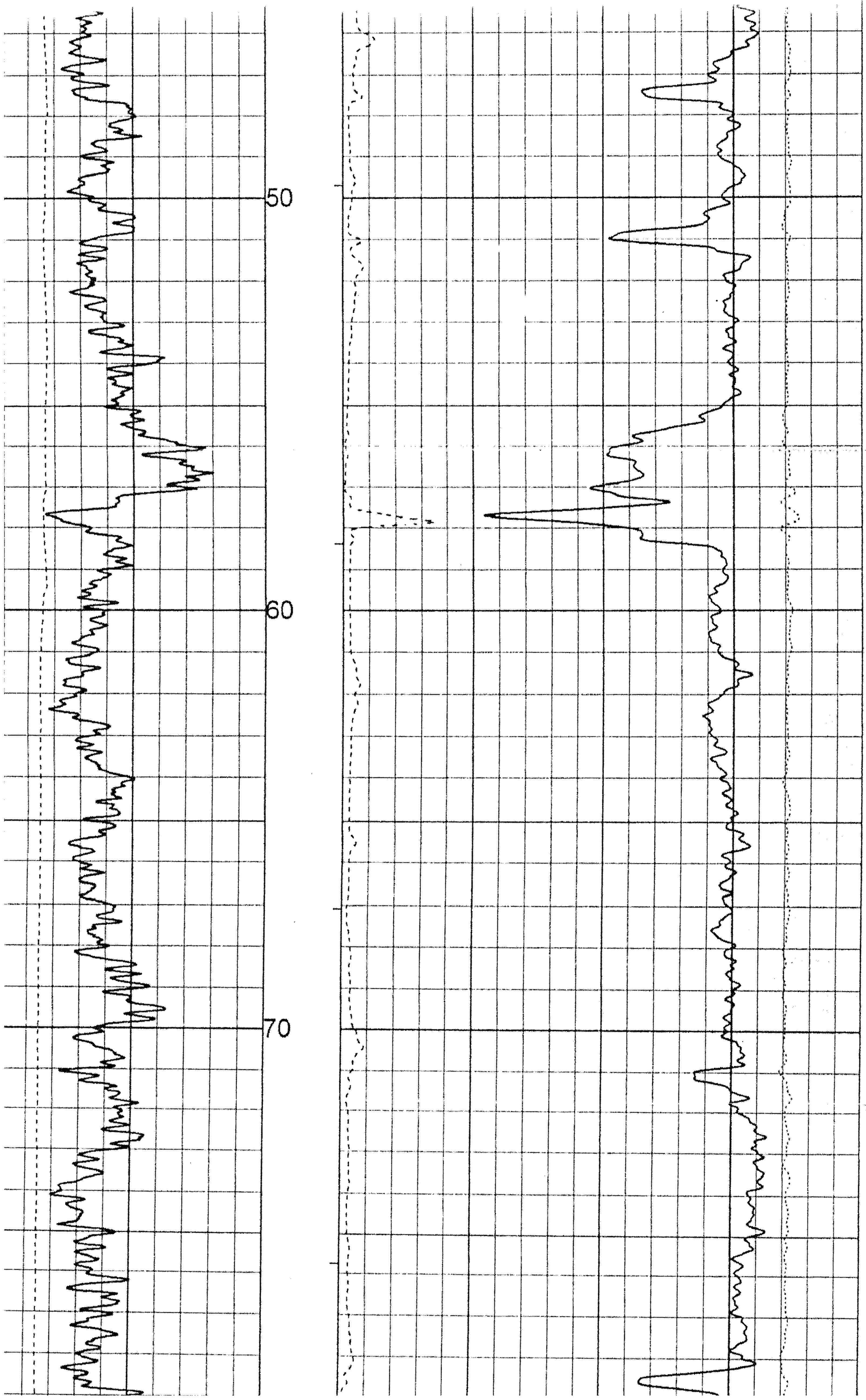
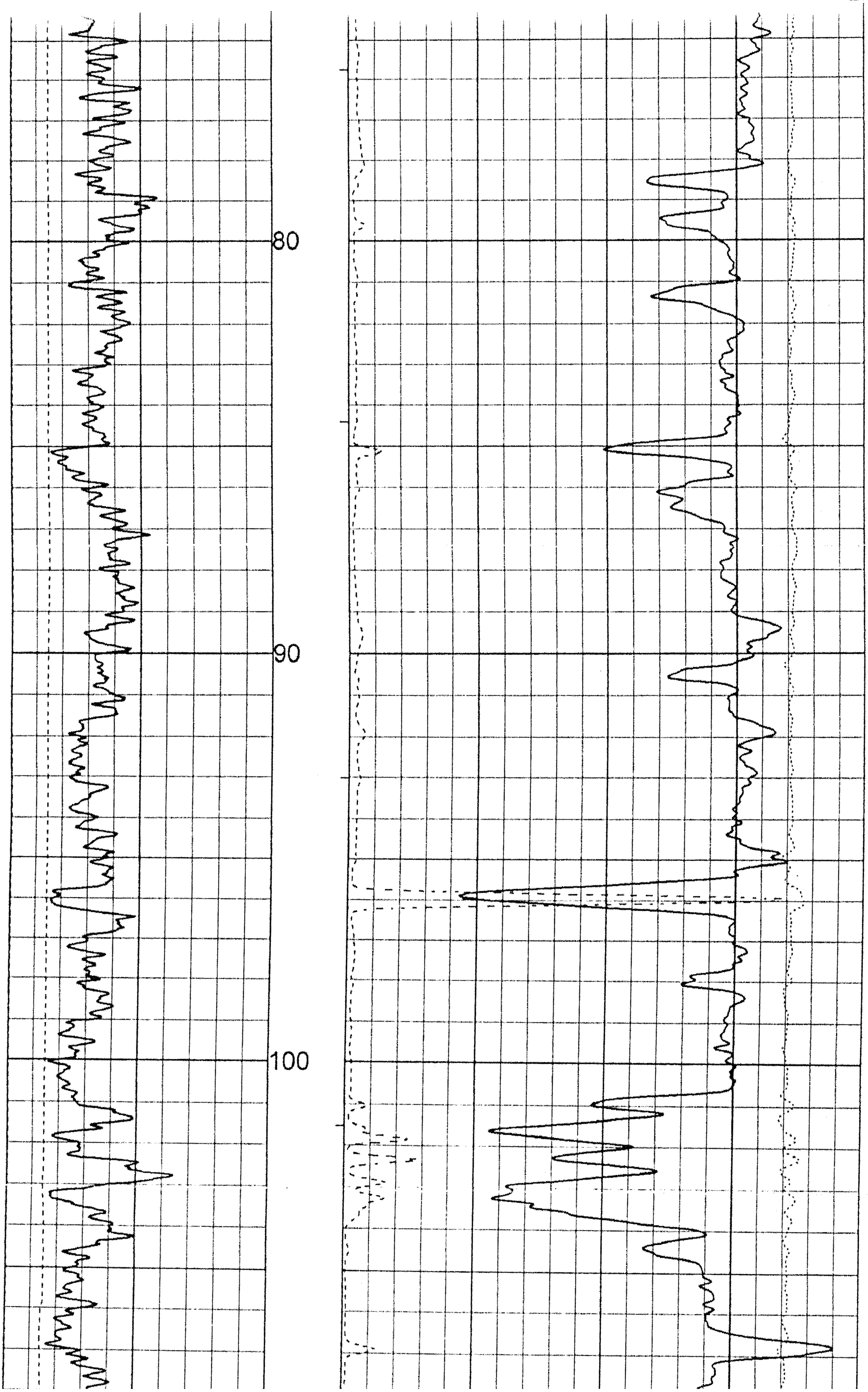
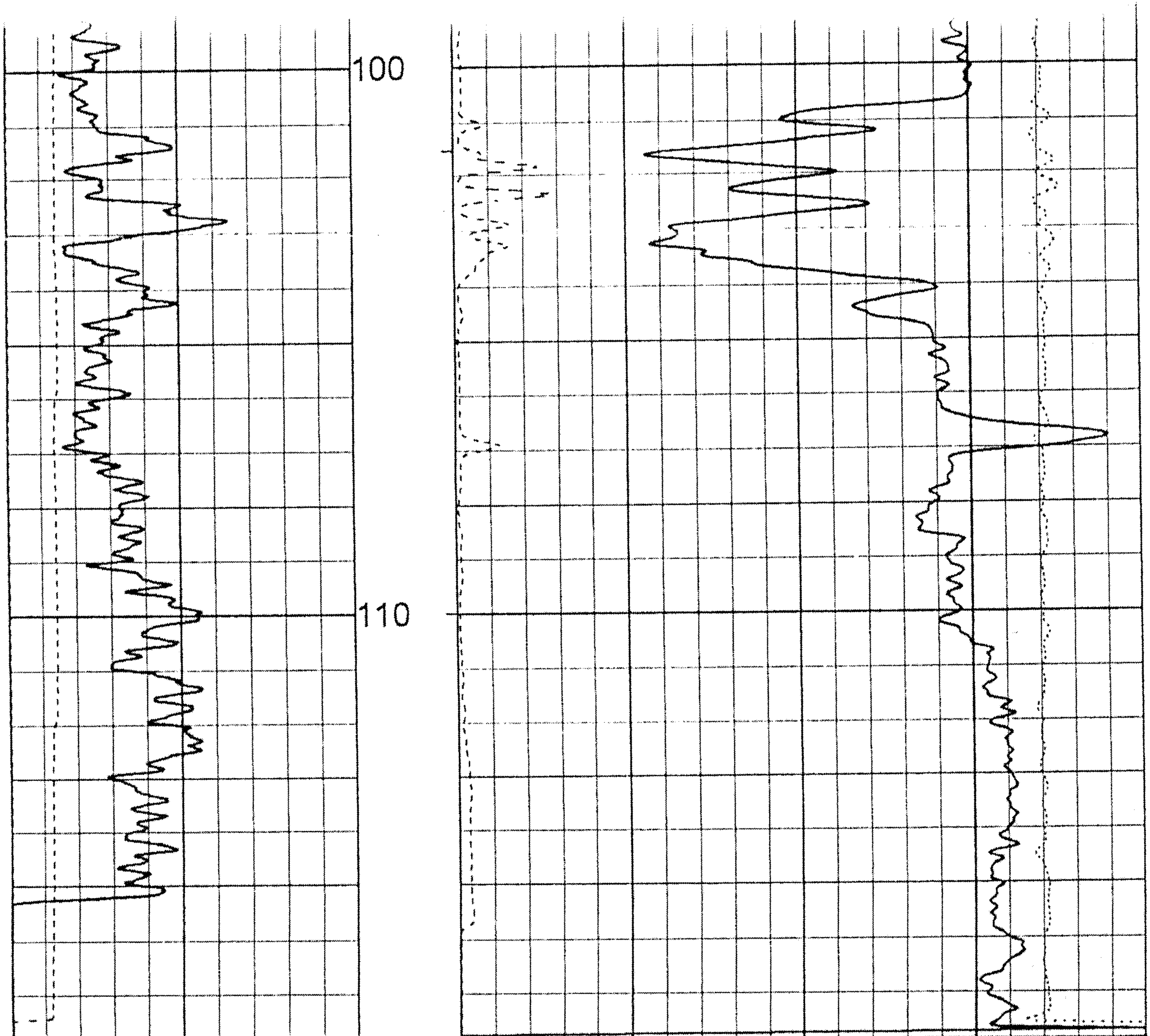

50
60
70


80
90
100



0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
80	MM	180
	CALIPERL	
180	MM	280
	CALIPERL	

SPEED->

METERS

0	OHM-M	2000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
-0.25	G/CC	0.25
	COMP	

DETAILED DENSITY 1:50 SQ-08-03 10/28/08

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177

MAGNETIC DECL : 0 ELECT. CUTOFF : 99999 BIT SIZE : 9.52

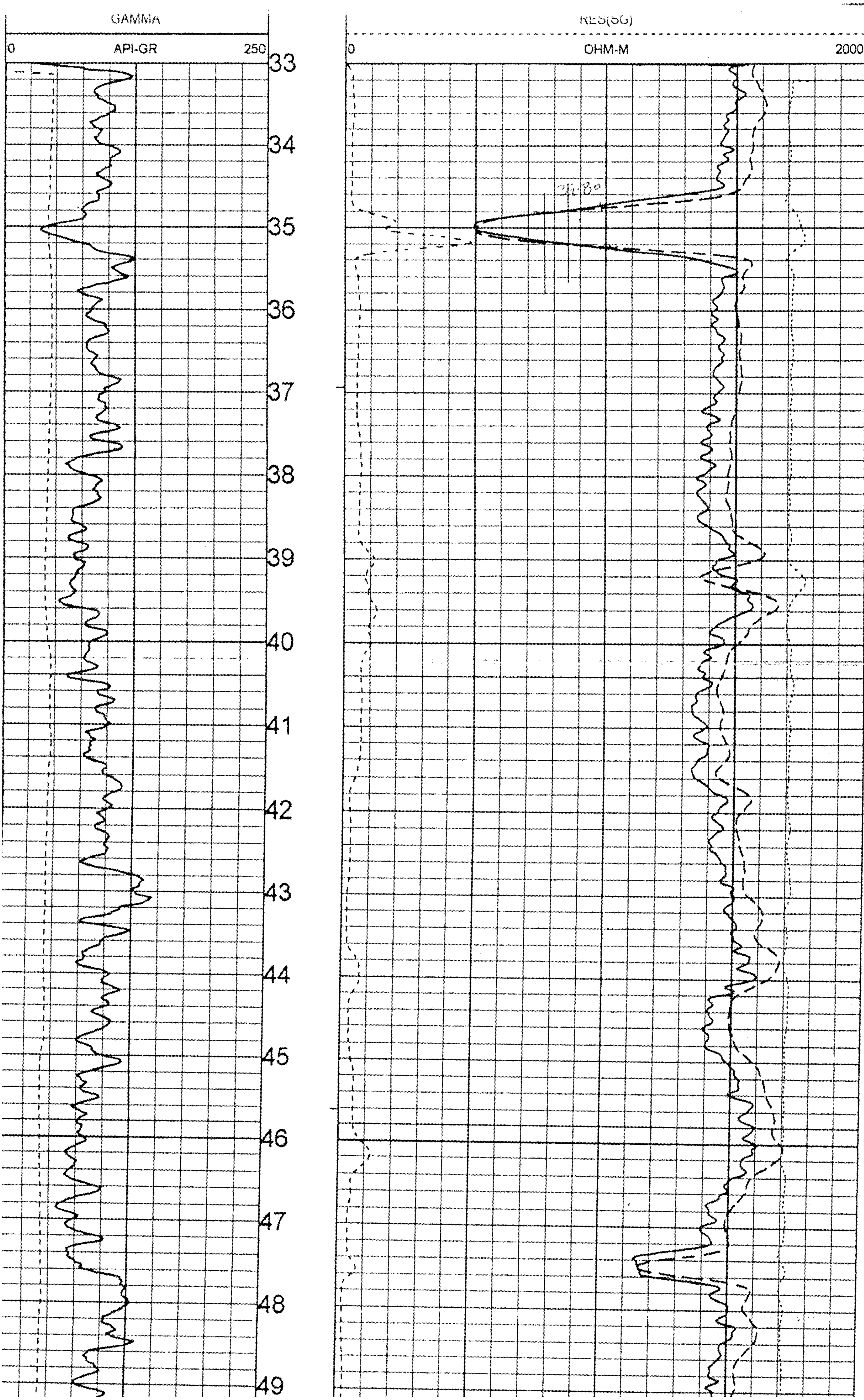
PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY_SS.0 11/01/2(VERSION = 3.64EK

	CALIPERL	
180	MM	280
	CALIPERL	
80	MM	180

METERS

SPEED->

	COMP	
-0.25	G/CC	0.25
	DEN(SS)	
1	G/CC	3


GAMMA
0
API-GR
250
RES(SG)
0
OHM-M
2000
33
34
35
36
37
38
39
40
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42
43
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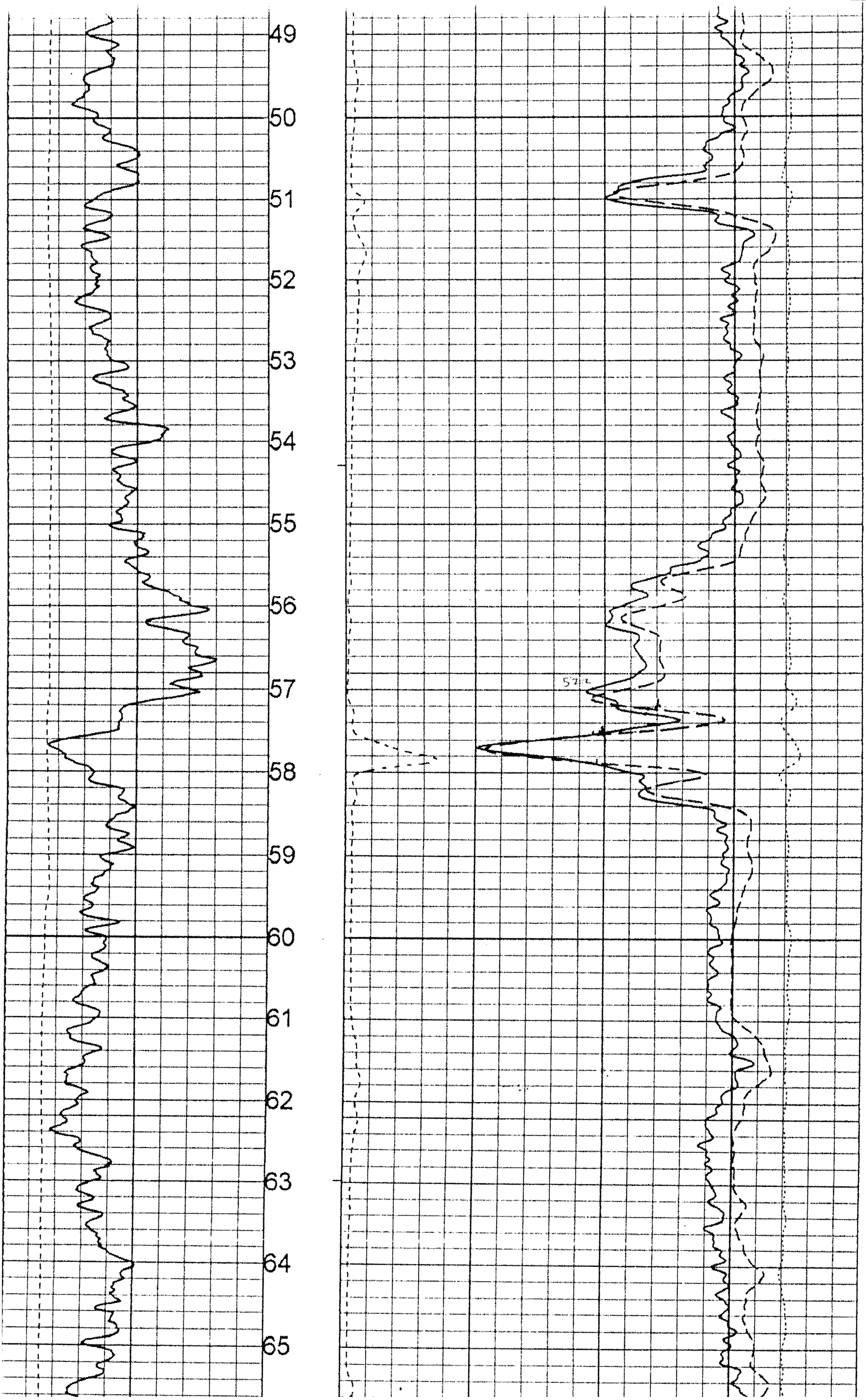
45
46
47
48
49


49
50
51
52
53
54
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57
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59
60
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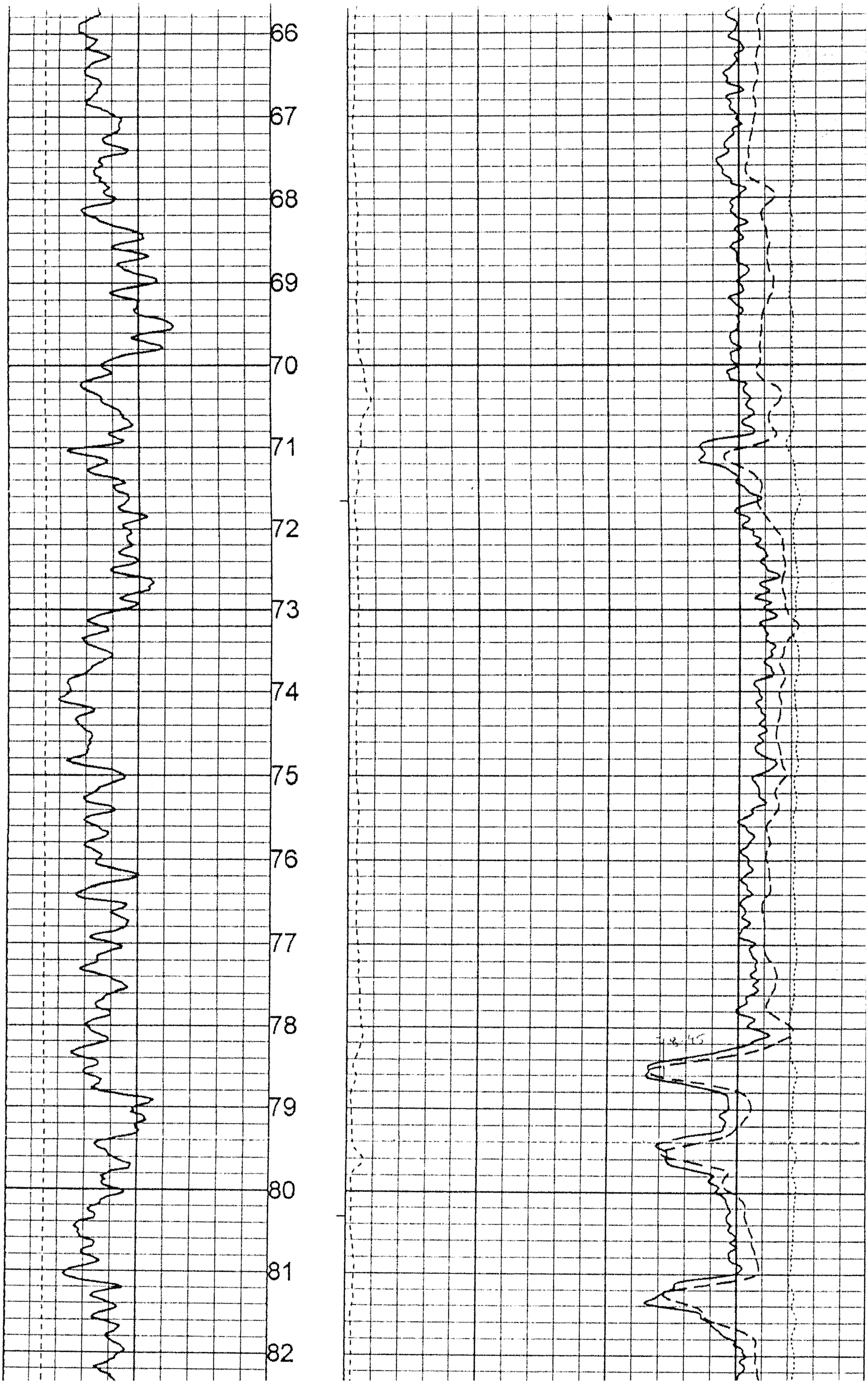
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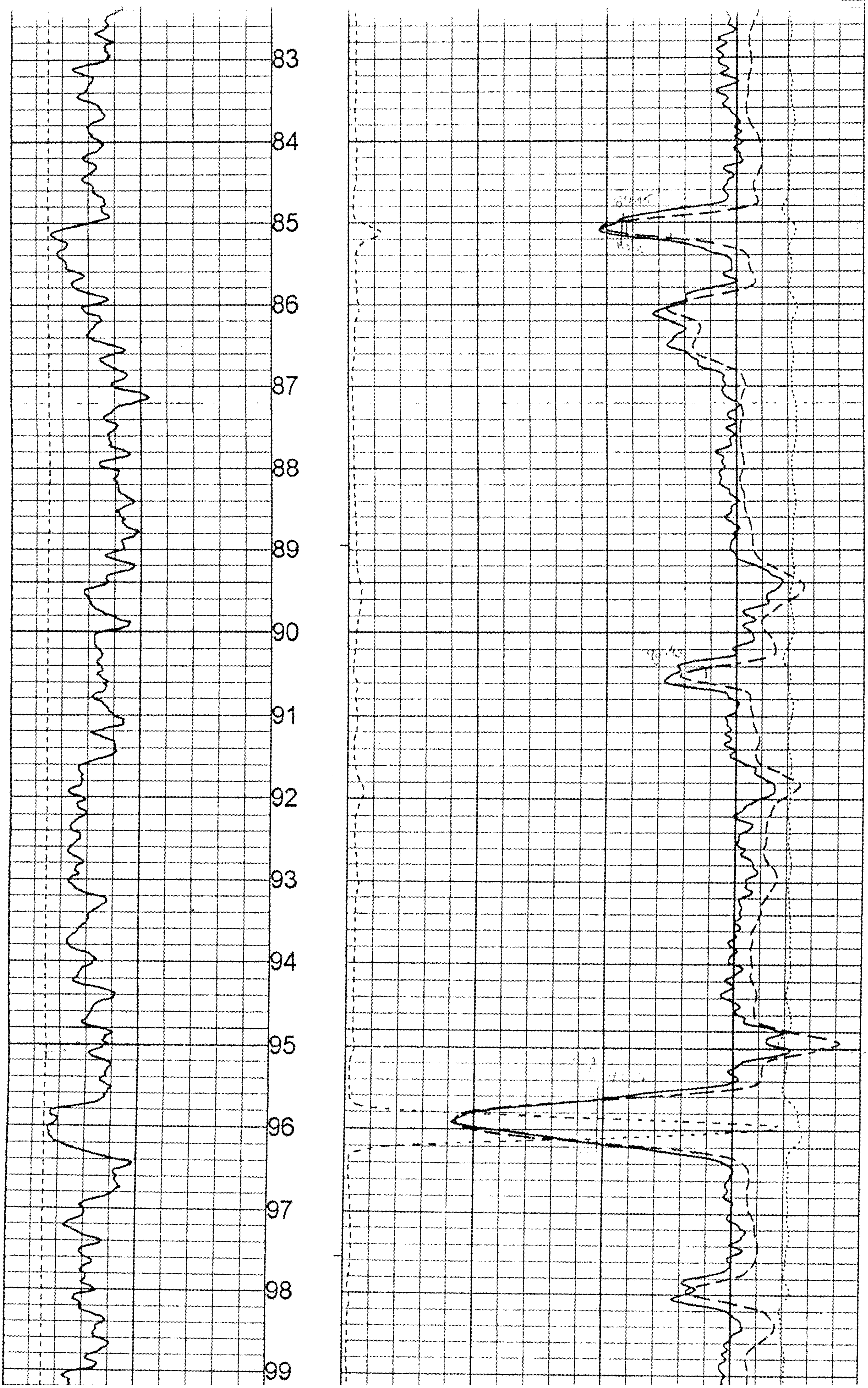
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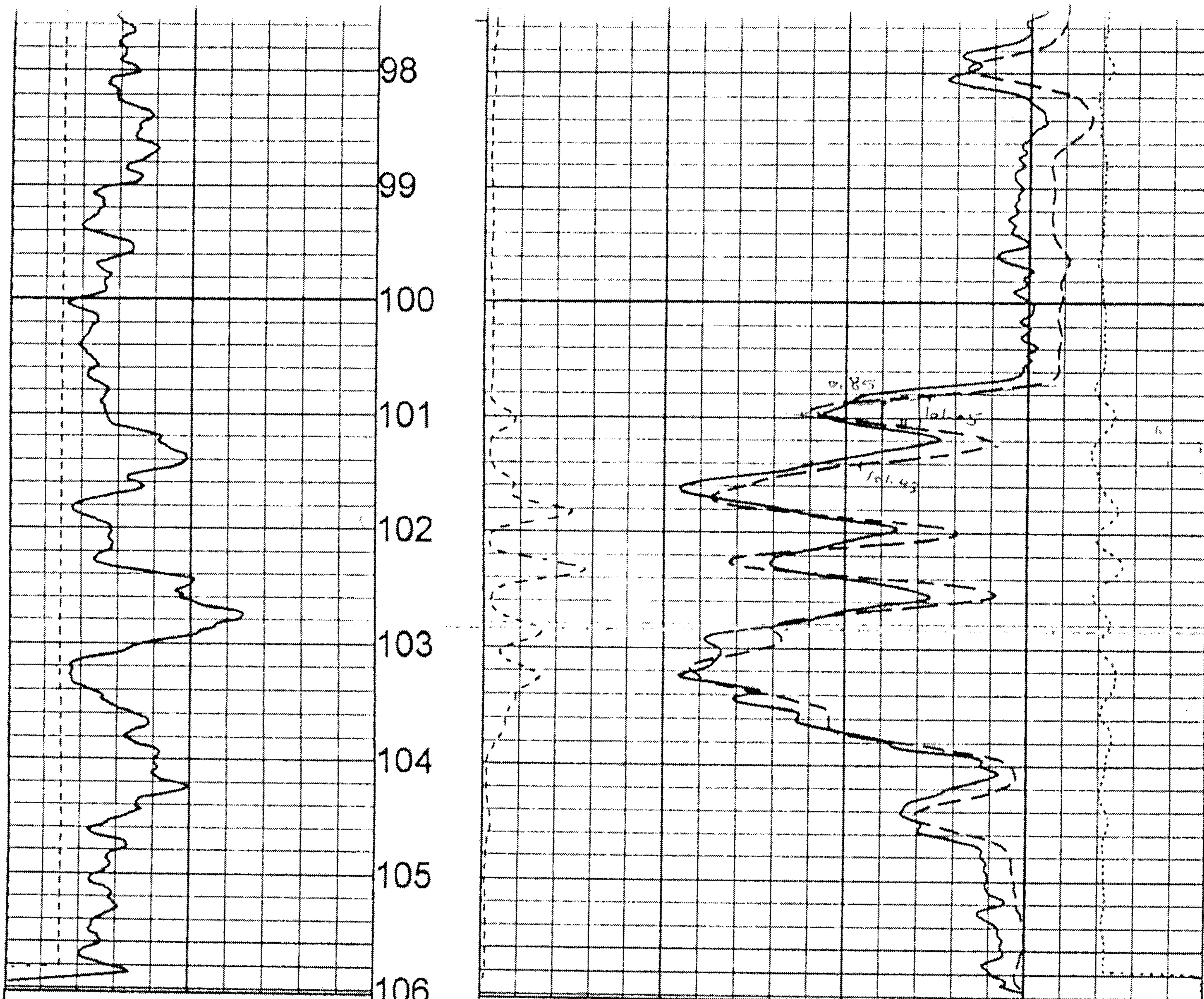


0	API-GR	250	
	GAMMA		
250	API-GR	500	
	GAMMA		
80	MM	180	SPEED->
	CALIPERL		
180	MM	280	
	CALIPERL		METERS

0	OHM-M	2000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
1	G/CC	3
	DEN(SS)	
-0.25	G/CC	0.25
	COMP	

DETAILED DENSITY 1:50 SQ-08-03 10/28/08

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 0 ELECT. CUTOFF : 99999 BIT SIZE : 9.52
PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY_SS.0 11/01/2(VERSION = 3.64EK

TOOL CALIBRATION SQ-08-03 10/28/08 14:43
TOOL 9239C1 TM VERSION 2019
SERIAL NUMBER 1268

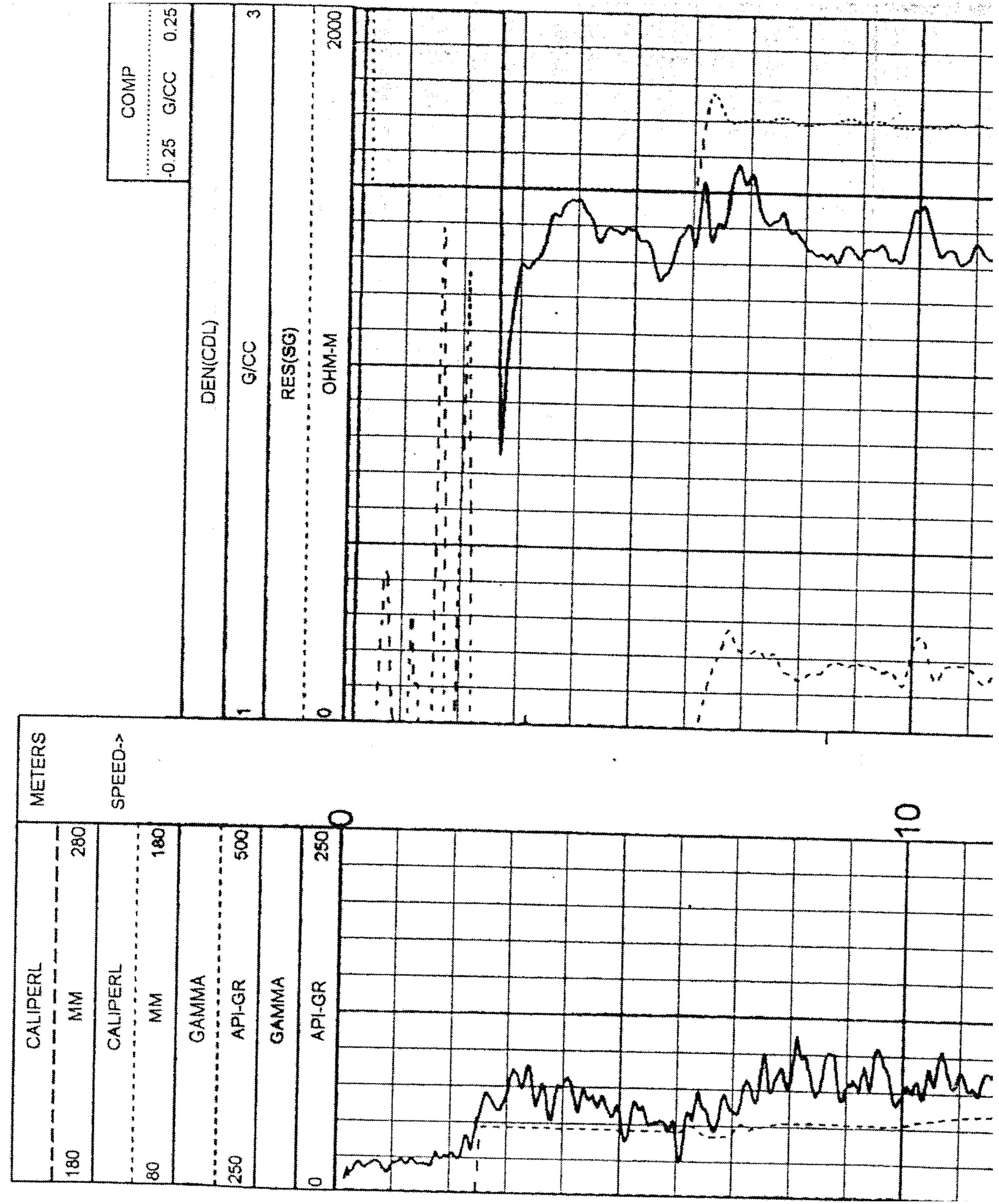
	DATE	TIME	SENSOR	STANDARD		RESPONSE	
1	May09,08	10:50:11	GAMMA	2.000	[API-GR]	0.00	[CPS]
	May09,08	10:50:11	GAMMA	150.000	[API-GR]	170.00	[CPS]
2	Oct14,08	14:25:31	VOLTAGE	30.800	[MV]	9017.10	[CPS]
	Oct14,08	14:25:31	VOLTAGE	234.000	[MV]	36075.20	[CPS]
3	Apr15,07	13:12:08	CALIPER	Default	[CPS]	Default	[CPS]
	Apr15,07	13:12:08	CALIPER	Default	[CPS]		

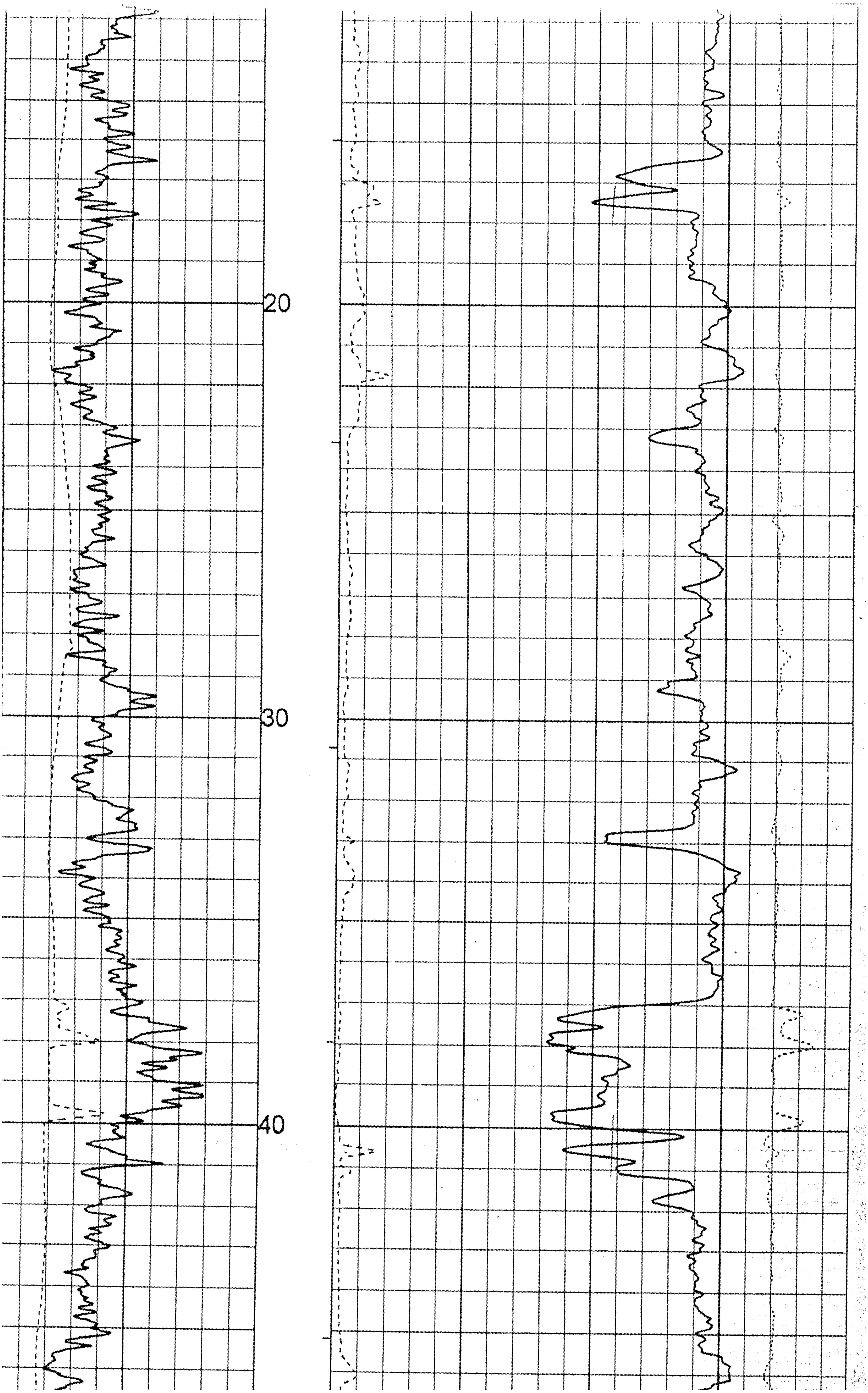
COMPENSATED DENSITY
GAMMA - CALIPER - RES.
SQ-08-01

Century WIRELINE SERVICES

COMPANY	ELEKTRA GOLD LTD	OTHER SERVICES:
WELL	SQ-08-01	
FIELD	PORT HARDY	
COUNTRY	CANADA	
PROVINCE	B.C.	
LOCATION	NA	
SECTION	NA	
TOWNSHIP	NA	
RANGE	NA	
LICENCE NO.	NA	
UNIQUE WELL ID.	NA	
PERMANENT DATUM	GL	ELEVATION KB NA
LOG MEASURED FROM	GL	ELEVATION DF NA
DRL MEASURED FROM	GL	ELEVATION GL NA
DATE	10/28/08	
DEPTH DRILLER	103.3M	
BIT SIZE	9.52	
LOG TOP	0.18	
LOG BOTTOM	79.90	
CASING LOGGER	11.0CM	
CASING DRILLER	6.1M	
CASING TYPE	SURFACE	
BOREHOLE FLUID	POLY	
RM TEMPERATURE	NA	
MUD RES	NA	
MUD WEIGHT	1.00	
WITNESSED BY	JO SHEARER	
RECORDED BY	B. SNELL	
REMARKS 1	90 DEGREE HOLE	
REMARKS 2	HOLE BRIDGED AT 80M	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

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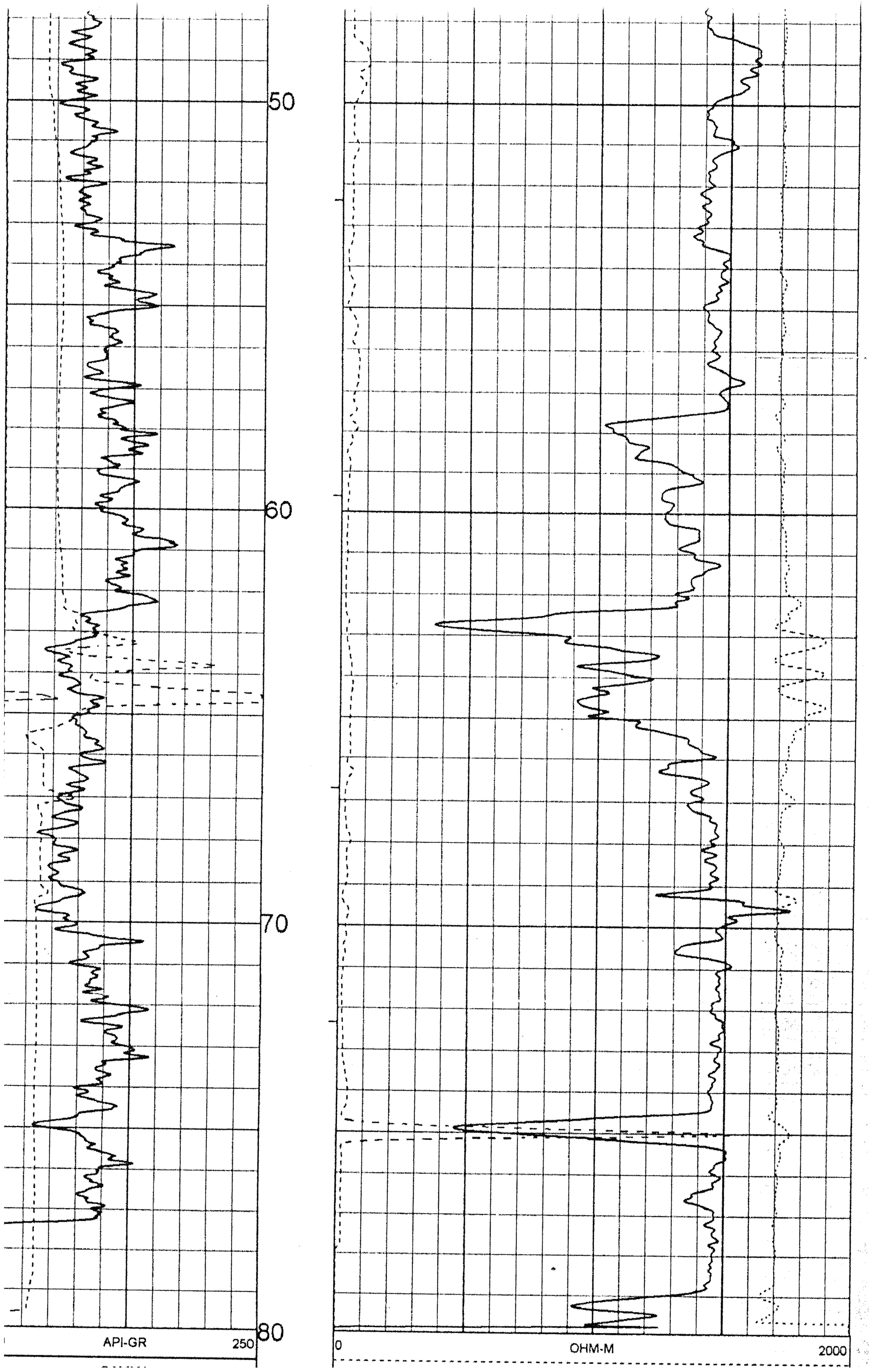


50
60
70
80
API-GR
250
0
OHM-M
2000

	GAMMA	
80	MM	180
	CALIPERL	
180	MM	280
	CALIPERL	

SPEED->

METERS

DEN(CDL)

-0.25	G/CC	0.25
	COMP	

DETAILED DENSITY 1:50 SQ-08-01 10/28/08

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY_SS.0 11/01/2VERSION = 3.64EK

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 9.52

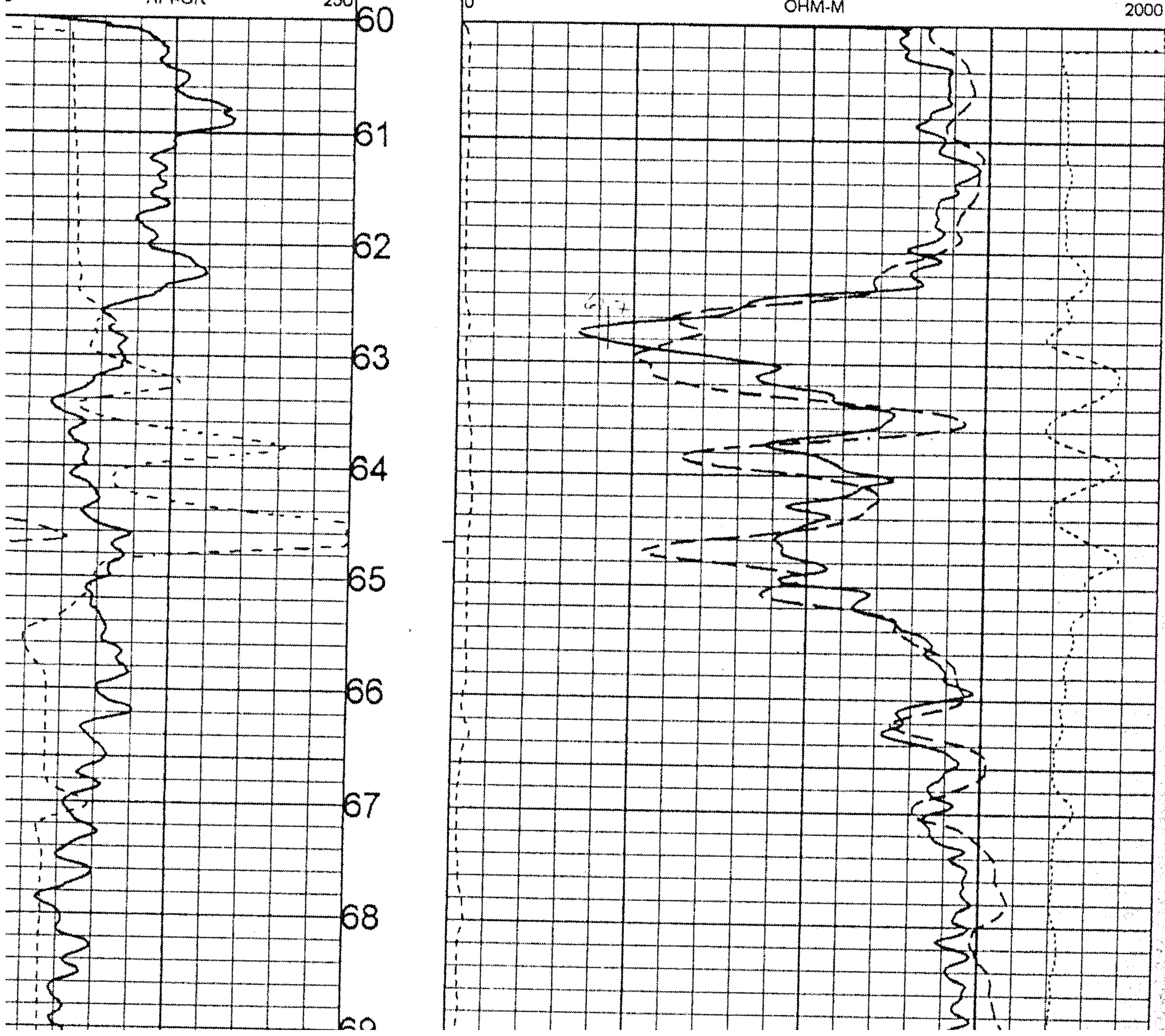
	CALIPERL	
180	MM	280
	CALIPERL	
80	MM	180
	GAMMA	
250	API-GR	500
	GAMMA	
0	API-GR	250

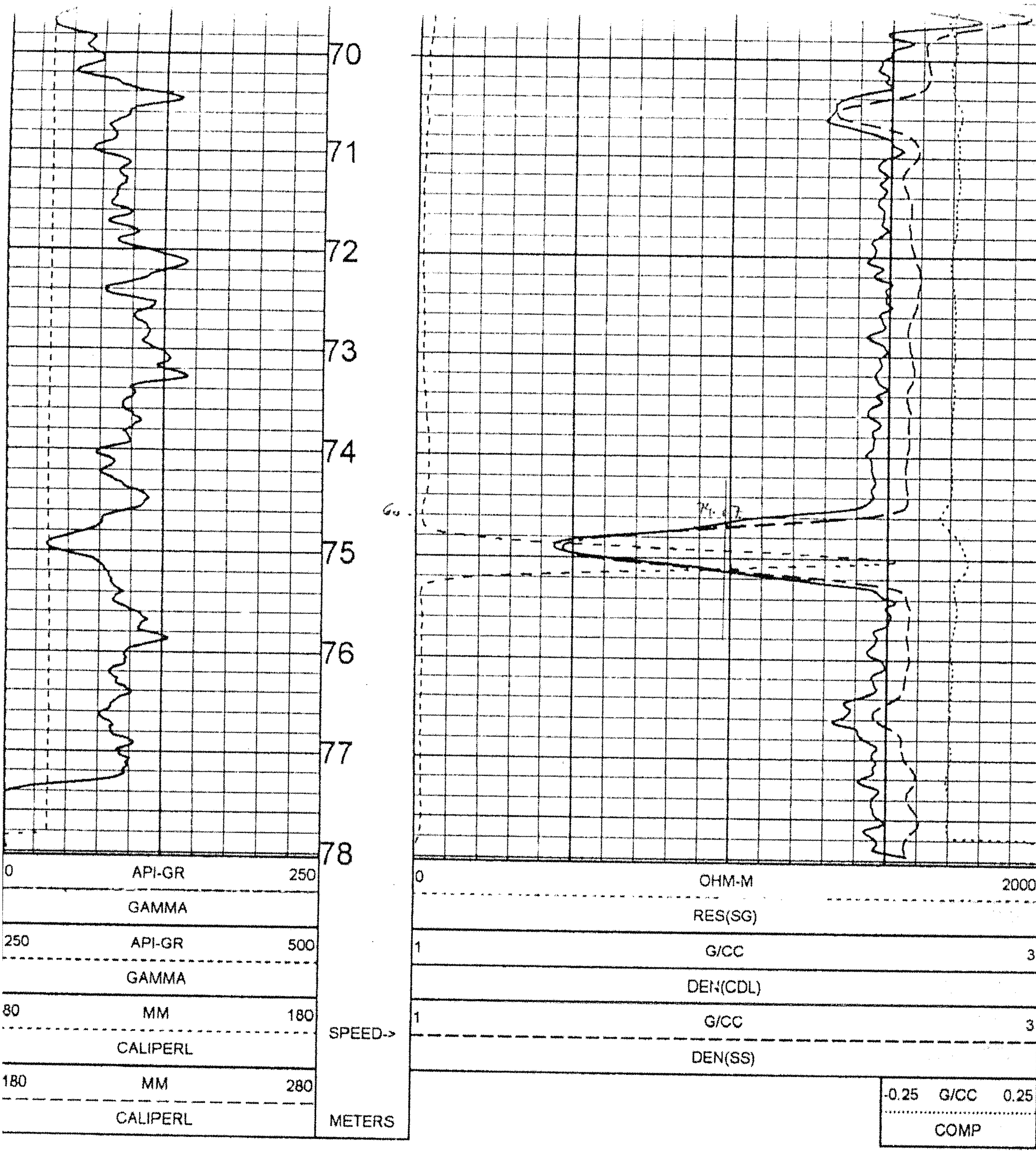
METERS

SPEED->

	COMP	
-0.25	G/CC	0.25

	DEN(SS)	
1	G/CC	3
	DEN(CDL)	
1	G/CC	3
	RES(SG)	
0	OHM-M	2000





DETAILED DENSITY 1:50 SQ-08-01 10/28/08

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 0
PRESENTATION NAME/DATE = 9239_ELEKTRA_DETAILED_DENSITY_SS.0 11/01/2VERSION = 3.64EK

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 9.52

TOOL CALIBRATION SQ-08-01 10/28/08 13:38
TOOL 9239C1 TM VERSION 2019
SERIAL NUMBER 1268

	DATE	TIME	SENSOR	STANDARD		RESPONSE	
1	May09,08	10:50:11	GAMMA	2.000	[API-GR]	0.00	[CPS]
	May09,08	10:50:11	GAMMA	150.000	[API-GR]	170.00	[CPS]
2	Oct14,08	14:25:31	VOLTAGE	30.800	[MV]	9017.10	[CPS]
	Oct14,08	14:25:31	VOLTAGE	234.000	[MV]	36075.20	[CPS]
3	Apr15,07	13:12:08	CALIPER	Default	[CPS]	Default	[CPS]
	Apr15,07	13:12:08	CALIPER	Default	[CPS]		

GWIL INDUSTRIES Birtley Coal & Minerals Testing Division

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Tel: (403) 253-8273
Email: info@birtley.ca
www.birtley.ca

CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

SAMPLE ID: Suquash Project

LAB#: 93185-54

RECEIVED DATE: July 28, 2009

REPORT DATE: August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

HEAD RAW ANALYSIS, air dried basis												
LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93185	SQ-01-01	738	713	3,39	1,62	88,27	-	-	0,19	2,49	-	adb
					4,95	85,28	-	-	0,18			arb
	retain weight		623			89,72	-	-	0,19			db
93186	SQ-01-02	1934	1882	2,69	5,15	15,88	33,11	45,86	1,15	1,43	0,5	adb
					7,70	15,45	32,22	44,63	1,12			arb
	retain weight		1647			16,74	34,91	48,35	1,21			db
93187	SQ-01-03	847	831	1,89	2,02	90,24	-	-	0,03	2,57	-	adb
					3,87	88,54	-	-	0,03			arb
	retain weight		727			92,10	-	-	0,03			db
93188	SQ-01-04	641	622	2,96	2,34	88,45	-	-	0,13	2,46	-	adb
					5,23	85,83	-	-	0,13			arb
	retain weight		544			90,57	-	-	0,13			db
93189	SQ-01-05	638	623	2,35	4,90	11,64	-	-	1,88	1,39	0,5	adb
					7,14	11,37	-	-	1,84			arb
	retain weight		545			12,24	-	-	1,98			db
93190	SQ-01-06	729	713	2,19	2,51	76,34	-	-	6,09	2,40	-	adb
					4,65	74,66	-	-	5,96			arb
	retain weight		624			78,31	-	-	6,25			db
93191	SQ-01-07	1250	1228	1,76	3,06	51,86	-	-	5,52	1,90	-	adb
					4,77	50,95	-	-	5,42			arb
	retain weight		1074			53,50	-	-	5,69			db
93192	SQ-01-08	1351	1316	2,59	5,00	32,23	-	-	0,16	1,59		adb
					7,46	31,40	-	-	0,16			arb
	retain weight		1151			33,93	-	-	0,17			db
93193	SQ-01-09	688	659	4,22	3,91	84,12	-	-	0,49	2,39	-	adb
					7,96	80,57	-	-	0,47			arb
	retain weight		577			87,54	-	-	0,51			db
93194	SQ-02-01	327	316	3,36	2,00	89,03	-	-	1,35	2,60	-	adb
					5,30	86,04	-	-	1,30			arb
	retain weight		276			90,85	-	-	1,38			db
93195	SQ-02-02	1663	1604	3,55	4,65	18,00	-	-	1,84	1,49	0,5	adb
					8,03	17,36	-	-	1,77			arb
	retain weight		1403			18,88	-	-	1,93			db
93196	SQ-02-03	554	542	2,17	2,88	61,56	-	-	0,28	2,02	-	adb
					4,98	60,23	-	-	0,27			arb
	retain weight		474			63,39	-	-	0,29			db
93197	SQ-02-04	317	304	4,10	4,67	25,72	-	-	0,58	1,56		adb
					8,58	24,67	-	-	0,56			arb
	retain weight		266			26,98	-	-	0,61			db

Veena Bhardwaj
Laboratory Supervisor
GWIL Industries

Heather Dexter
Operations Manager
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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

SAMPLE ID: Suquash Project

LAB#: 93185-54

RECEIVED DATE: July 28, 2009

REPORT DATE: August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

HEAD RAW ANALYSIS, air dried basis													
LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93198	SQ-02-05	461	453	1,74	2,12	87,86	-	-	0,06	2,57	-	adb
					3,82	86,34	-	-	0,06			arb
	retain weight		396			89,76	-	-	0,06			db
93199	SQ-02-06	686	661	3,64	2,22	89,37	-	-	1,15	2,63	-	adb
					5,78	86,11	-	-	1,11			arb
	retain weight		578			91,40	-	-	1,18			db
93200	SQ-02-07	338	331	2,07	4,48	15,86	-	-	3,45	1,47	0,5	adb
					6,46	15,53	-	-	3,38			arb
	retain weight		290			16,60	-	-	3,61			db
93201	SQ-02-08/8A	796	780	2,01	2,76	47,82	-	-	9,77	1,98	-	adb
					4,71	46,86	-	-	9,57			arb
	retain weight		682			49,18	-	-	10,05			db
93202	SQ-02-20	2134	2098	1,69	2,66	92,08	-	-	1,23	2,71	-	adb
					4,30	90,53	-	-	1,21			arb
	retain weight		1836			94,60	-	-	1,26			db
93203	SQ-02-21	2448	2403	1,84	2,61	92,70	-	-	0,42	2,66	-	adb
					4,40	91,00	-	-	0,41			arb
	retain weight		2103			95,18	-	-	0,43			db
93204	SQ-02-22	1471	1450	1,43	2,67	85,10	-	-	2,67	2,57	-	adb
					4,06	83,89	-	-	2,63			arb
	retain weight		1269			87,43	-	-	2,74			db
93205	SQ-02-09	720	712	1,11	2,34	81,43	-	-	4,05	2,54	-	adb
					3,43	80,53	-	-	4,01			arb
	retain weight		623			83,38	-	-	4,15			db
93206	SQ-02-10	2768	2722	1,66	4,62	22,52	-	-	3,08	1,55	-	adb
					6,21	22,15	-	-	3,03			arb
	retain weight		2381			23,61	-	-	3,23			db
93207	SQ-02-11	1271	1245	2,05	2,72	81,41	-	-	0,23	2,45	-	adb
					4,71	79,74	-	-	0,23			arb
	retain weight		1089			83,69	-	-	0,24			db
93208	SQ-02-12	3919	3798	3,09	4,47	26,43	-	-	0,86	1,57	-	adb
					7,42	25,61	-	-	0,83			arb
	retain weight		3323			27,67	-	-	0,90			db
93209	SQ-02-13	1951	1914	1,90	2,49	72,20	-	-	2,97	2,29	-	adb
					4,34	70,83	-	-	2,91			arb
	retain weight		1675			74,04	-	-	3,05			db
93210	SQ-02-14	1716	1660	3,26	4,13	44,48	-	-	1,48	1,83	-	adb
					7,26	43,03	-	-	1,43			arb
	retain weight		1452			46,40	-	-	1,54			db

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CERTIFICATE OF ANALYSIS

CLIENT:	Electra Gold
SAMPLE ID:	Suquash Project
LAB#:	93185-54
RECEIVED DATE:	July 28, 2009
REPORT DATE:	August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

HEAD RAW ANALYSIS, air dried basis													
LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93211	SQ-02-15	2868	2794	2,58	3,08	82,09	-	-	0,09	2,49	-	adb
					5,58	79,97	-	-	0,09			arb
	retain weight		2445			84,70	-	-	0,09			db
93212	SQ-02-16	376	375	0,27	4,53	35,65	-	-	0,35	1,68	-	adb
					4,78	35,56	-	-	0,35			arb
	retain weight		328			37,34	-	-	0,37			db
93213	SQ-02-17	2265	2208	2,52	2,79	82,72	-	-	0,09	2,40	-	adb
					5,24	80,64	-	-	0,09			arb
	retain weight		1932			85,09	-	-	0,09			db
93214	SQ-02-18	788	771	2,16	5,59	25,58	-	-	0,38	1,55	-	adb
					7,63	25,03	-	-	0,37			arb
	retain weight		675			27,09	-	-	0,40			db
93215	SQ-02-19	632	626	0,95	3,30	75,04	-	-	0,13	2,21	-	adb
					4,22	74,33	-	-	0,13			arb
	retain weight		548			77,60	-	-	0,13			db
93216	SQ-03-15	685	678	1,02	2,07	78,44	-	-	2,30	2,40	-	adb
					3,07	77,64	-	-	2,28			arb
	retain weight		593			80,10	-	-	2,35			db
93217	SQ-03-16	1767	1725	2,38	4,95	21,09	34,19	39,77	1,88	1,52	-	adb
					7,21	20,59	33,38	38,82	1,84			arb
	retain weight		1509			22,19	35,97	41,84	1,98			db
93218	SQ-03-17	710	702	1,13	2,46	64,01	-	-	6,27	2,20	-	adb
					3,56	63,29	-	-	6,20			arb
	retain weight		614			65,62	-	-	6,43			db
93219	SQ-03-01	448	354	20,98	3,10	91,54	-	-	0,26	2,63	-	adb
					23,43	72,33	-	-	0,21			arb
	retain weight		310			94,47	-	-	0,27			db
93220	SQ-03-02	228	218	4,39	3,78	28,11	-	-	1,66	1,58	-	adb
					8,00	26,88	-	-	1,59			arb
	retain weight		191			29,21	-	-	1,73			db
93221	SQ-03-03	1989	1938	2,56	1,90	87,34	-	-	2,46	2,60	-	adb
					4,42	85,10	-	-	2,40			arb
	retain weight		1696			89,03	-	-	2,51			db
93222	SQ-03-04	1554	1474	5,15	3,83	13,44	-	-	3,16	1,46	0,5	adb
					8,78	12,75	-	-	3,00			arb
	retain weight		1290			13,98	-	-	3,29			db
93223	SQ-03-05	735	724	1,50	1,63	87,26	-	-	1,00	2,56	-	adb
					3,10	85,95	-	-	0,99			arb
	retain weight		633			88,71	-	-	1,02			db

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CERTIFICATE OF ANALYSIS

CLIENT:	Electra Gold
SAMPLE ID:	Suquash Project
LAB#:	93185-54
RECEIVED DATE:	July 28, 2009
REPORT DATE:	August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

HEAD RAW ANALYSIS, air dried basis

LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93224	SQ-03-18	2148	2079	3,21	4,57	13,71	33,41	48,31	0,96	1,45	0,0	adb
					7,64	13,27	32,34	46,76	0,93			arb
	retain weight		1819			14,37	35,01	50,62	1,01			db
93225	SQ-03-06	598	586	2,01	2,29	88,69	-	-	0,14	2,57		adb
					4,25	86,91	-	-	0,14			arb
	retain weight		513			90,77	-	-	0,14			db
93226	SQ-03-07	553	535	3,25	4,27	14,36	-	-	1,81	1,45	0,5	adb
					7,39	13,89	-	-	1,75			arb
	retain weight		468			15,00	-	-	1,89			db
93227	SQ-03-08/8A	2589	2519	2,70	2,30	78,47	-	-	3,74	2,45	-	adb
					4,94	76,35	-	-	3,64			arb
	retain weight		2204			80,32	-	-	3,83			db
93228	SQ-03-09	2249	2146	4,58	3,49	29,70	-	-	3,79	1,62	-	adb
					7,91	28,34	-	-	3,62			arb
	retain weight		1878			30,77	-	-	3,93			db
93229	SQ-03-10/10A	1917	1850	3,50	2,31	86,35	-	-	0,07	2,58	-	adb
					5,72	83,33	-	-	0,07			arb
	retain weight		1619			88,39	-	-	0,07			db
93230	SQ-03-11	892	852	4,48	4,34	19,03	-	-	0,64	1,50	0,0	adb
					8,63	18,18	-	-	0,61			arb
	retain weight		745			19,89	-	-	0,67			db
93231	SQ-03-12/12A	2253	2189	2,84	1,92	84,65	-	-	0,11	2,51	-	adb
					4,71	82,25	-	-	0,11			arb
	retain weight		1915			86,31	-	-	0,11			db
93232	SQ-03-13	5731	5501	4,01	3,02	42,60	-	-	1,41	1,75	-	adb
					6,91	40,89	-	-	1,35			arb
	retain weight		4813			43,93	-	-	1,45			db
93233	SQ-03-14	694	669	3,60	2,43	89,08	-	-	0,06	2,65	-	adb
					5,94	85,87	-	-	0,06			arb
	retain weight		585			91,30	-	-	0,06			db
93234	SQ-03-19	3177	3075	3,21	2,32	89,20	-	-	0,09	2,66	-	adb
					5,46	86,34	-	-	0,09			arb
	retain weight		2691			91,32	-	-	0,09			db
93235	SQ-03-20	1409	1364	3,19	2,83	71,22	-	-	0,53	2,17	-	adb
					5,93	68,95	-	-	0,51			arb
	retain weight		1194			73,29	-	-	0,55			db
93236	SQ-03-21	1455	1401	3,71	2,96	92,67	-	-	0,04	2,64	-	adb
					6,56	89,23	-	-	0,04			arb
	retain weight		1226			95,50	-	-	0,04			db

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

SAMPLE ID: Suquash Project

LAB#: 93185-54

RECEIVED DATE: July 28, 2009

REPORT DATE: August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

HEAD RAW ANALYSIS, air dried basis													
LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93237	SQ-03-22	2561	2438	4,80	2,81	94,96	-	-	0,02	2,71	-	adb
					7,48	90,40	-	-	0,02			arb
	retain weight		2133			97,71	-	-	0,02			db
93238	SQ-04-01	776	735	5,28	1,50	89,08	-	-	2,25	2,70	-	adb
					6,70	84,37	-	-	2,13			arb
	retain weight		643			90,44	-	-	2,28			db
93239	SQ-04-02	1158	1069	7,69	3,43	20,52	36,00	40,05	3,68	1,51	-	adb
					10,85	18,94	33,23	36,97	3,40			arb
	retain weight		935			21,25	37,28	41,47	3,81			db
93240	SQ-04-03	728	708	2,75	1,34	91,98	-	-	0,69	2,74	-	adb
					4,05	89,45	-	-	0,67			arb
	retain weight		619			93,23	-	-	0,70			db
93241	SQ-04-04	633	632	0,16	2,72	71,94	-	-	6,49	2,35	-	adb
					2,87	71,83	-	-	6,48			arb
	retain weight		553			73,95	-	-	6,67			db
93242	SQ-04-05	1695	1616	4,66	4,11	19,36	-	-	5,50	1,54	0,5	adb
					8,58	18,46	-	-	5,24			arb
	retain weight		1414			20,19	-	-	5,74			db
93243	SQ-04-06/6A	5755	5489	4,62	2,79	89,19	-	-	0,12	2,54	-	adb
					7,28	85,07	-	-	0,11			arb
	retain weight		4802			91,75	-	-	0,12			db
93244	SQ-04-07	1913	1857	2,93	3,87	28,31	-	-	2,02	1,58	-	adb
					6,68	27,48	-	-	1,96			arb
	retain weight		1625			29,45	-	-	2,10			db
93245	SQ-04-08	1325	1281	3,32	2,88	63,23	-	-	5,51	2,11	-	adb
					6,11	61,13	-	-	5,33			arb
	retain weight		1121			65,11	-	-	5,67			db
93246	SQ-04-09	246	241	2,03	5,21	11,47	-	-	0,84	1,45	0,0	adb
					7,14	11,24	-	-	0,82			arb
	retain weight		211			12,10	-	-	0,89			db
93247	SQ-04-10	997	962	3,51	2,48	79,71	-	-	0,18	2,33	-	adb
					5,90	76,91	-	-	0,17			arb
	retain weight		842			81,74	-	-	0,18			db
93248	SQ-04-11	226	222	1,77	4,61	23,86	-	-	0,62	1,52	-	adb
					6,30	23,44	-	-	0,61			arb
	retain weight		194			25,01	-	-	0,65			db
93249	SQ-04-12	835	817	2,16	1,92	84,63	-	-	0,25	2,41	-	adb
					4,03	82,81	-	-	0,24			arb
	retain weight		715			86,29	-	-	0,25			db

*volatile checked

Disclaimer:

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

SAMPLE ID: Suquash Project

LAB#: 93185-54

RECEIVED DATE: July 28, 2009

REPORT DATE: August 11, 2009

Samples were crushed to pass 1/4", 1/8th portion split out for Head raw analysis using the Rotary Sample Divider

		HEAD RAW ANALYSIS, air dried basis											
LAB NO:	Sample No.	Weight (grams) Wet	Air Dried	ADM%	MOIST%	ASH%	VOL%	F.C.%	%S	S.G.	FSI	BASIS
93250	SQ-04-13	392	386	1,53	4,82	27,28	-	-	2,15	1,60	-	adb
					6,28	26,86	-	-	2,12			arb
	retain weight		338			28,66	-	-	2,26			db
93251	SQ-04-14	796	785	1,38	3,23	54,28	-	-	5,79	1,99	-	adb
					4,57	53,53	-	-	5,71			arb
	retain weight		687			56,09	-	-	5,98			db
93252	SQ-04-15	545	536	1,65	5,29	11,77	-	-	0,77	1,43	0,0	adb
					6,85	11,58	-	-	0,76			arb
	retain weight		469			12,43	-	-	0,81			db
93253	SQ-04-16	530	515	2,83	3,26	76,32	-	-	1,97	2,35	-	adb
					6,00	74,16	-	-	1,91			arb
	retain weight		451			78,89	-	-	2,04			db
93254	SQ-04-97	627	615	1,91	3,44	36,33	26,80	33,43	1,50	1,69	-	adb
					5,29	35,63	26,29	32,79	1,47			arb
	retain weight		538			37,62	27,75	34,62	1,55			db

	MINERAL ANALYSIS OF ASH										
LAB#	SiO_2	Al_2O_3	TiO_2	CaO	Fe_2O_3	MgO	Na_2O	K_2O	P_2O_5	SO_3	Undet.
93186	51,98	28,82	1,38	3,39	6,03	1,03	1,62	0,84	0,11	2,82	-1,98
93217	50,99	23,77	0,97	4,73	9,55	2,39	1,06	1,78	0,15	4,67	0,06
93224	51,98	27,23	1,17	5,33	5,00	2,12	1,73	0,72	0,09	4,42	-0,21
93239	38,03	19,18	0,84	7,29	20,42	2,79	1,32	1,18	0,19	8,22	-0,54

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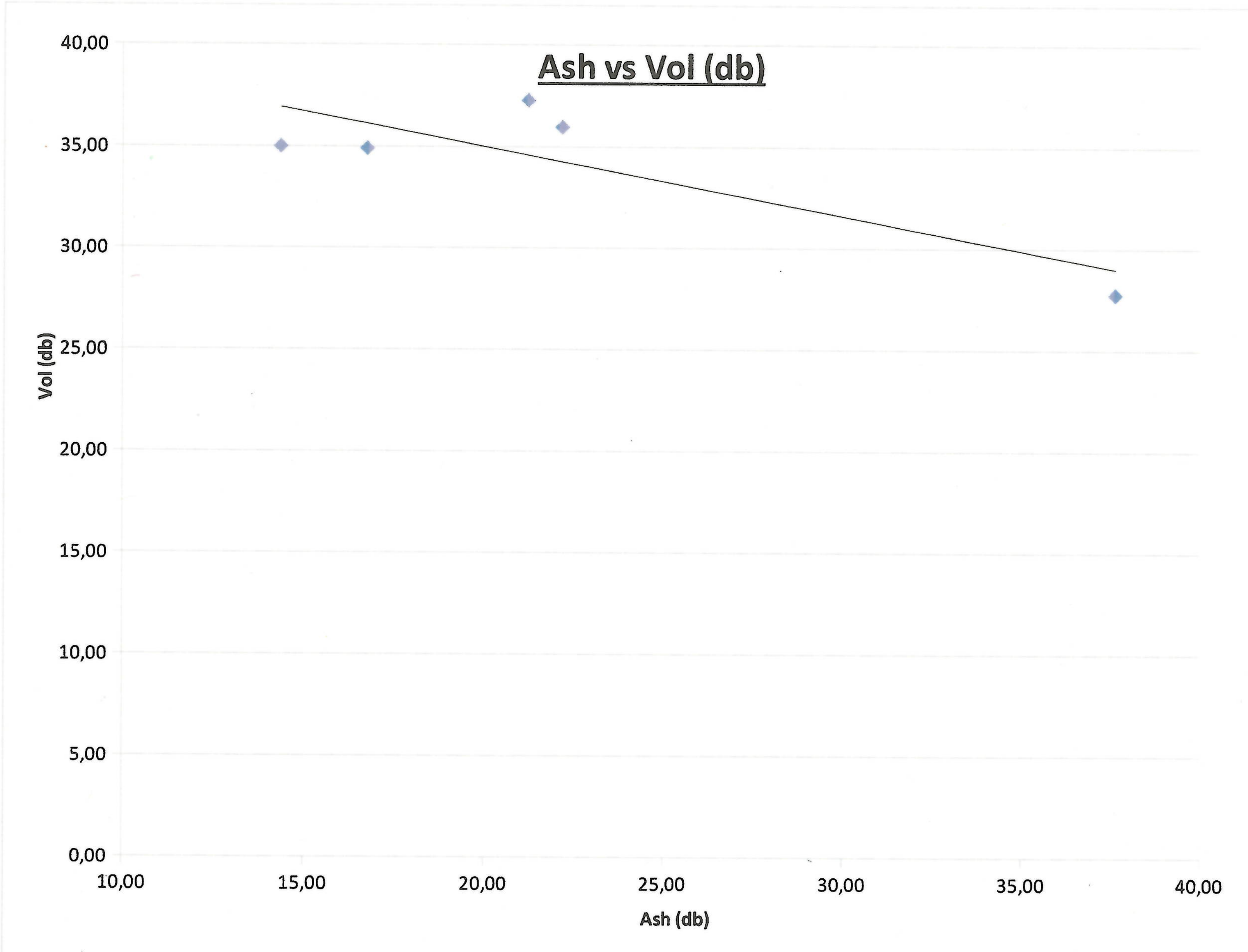
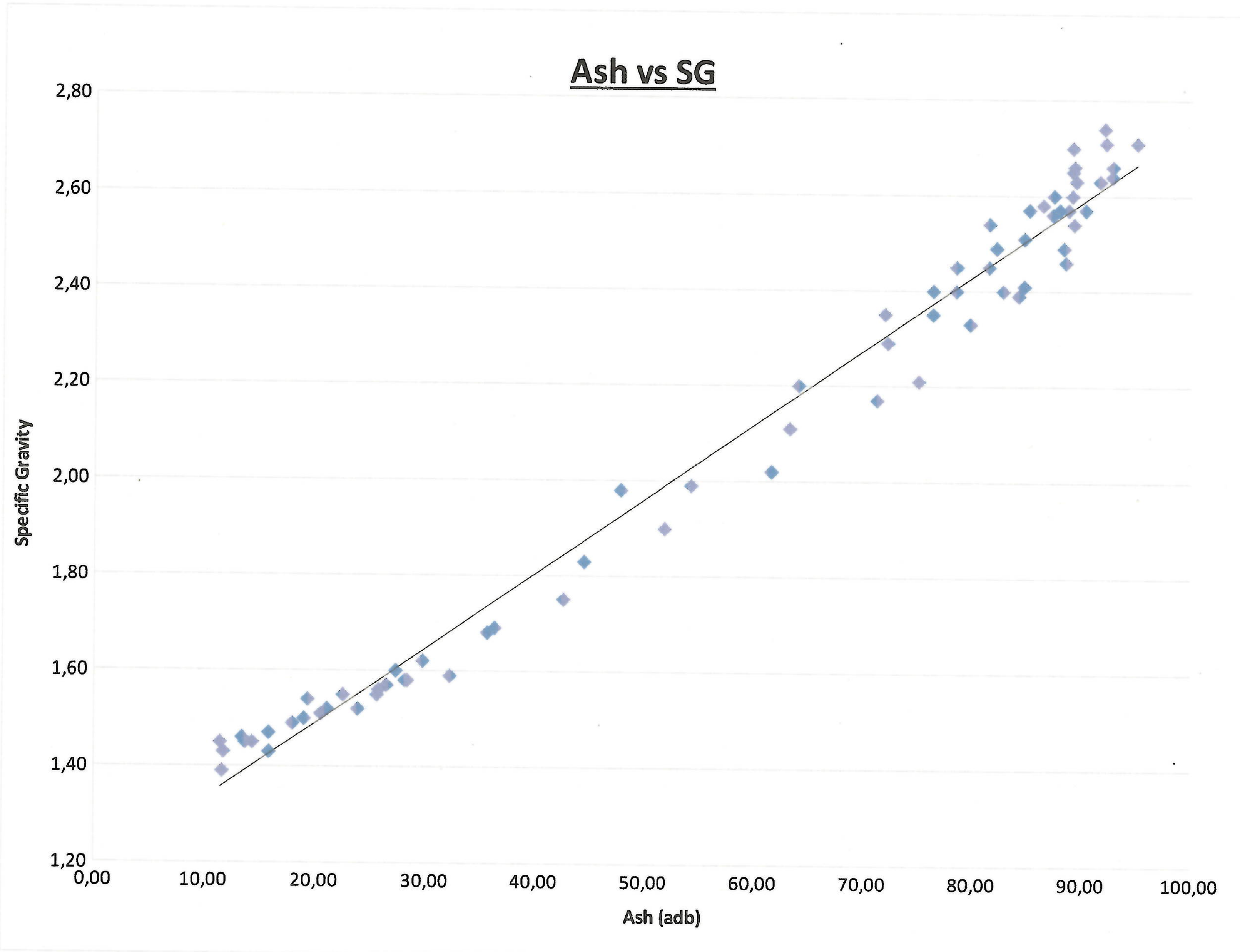

Ash vs Vol (db)
Vol (db)
40,00
35,00
30,00
25,00
20,00
15,00
10,00
5,00
0,00
10,00
15,00
20,00
25,00
30,00
35,00
40,00
Ash (db)


Ash vs SG
Specific Gravity
2,80
2,60
2,40
2,20
2,00
1,80
1,60
1,40
1,20
0,00
10,00
20,00
30,00
40,00
50,00
60,00
70,00
80,00
90,00
100,00
Ash (adb)

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

PROJECT: Suquash Project

COMPOSITE ID: C1- Coal Bed 2008-2

LAB#: 93583

RECEIVED DATE: August 27, 2009

UPDATED: October 2, 2009

SCREEN SIZE ANALYSIS, air dried basis												
Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
+28M	92,64	4,32	42,69	24,10	28,89	1,75	3700	-	92,64	42,69	1,75
28M x 100M	5,56	4,03	38,37	25,61	31,99	1,89	3930	0	98,20	42,44	1,75
100M x 0	1,80	3,41	50,24	23,17	23,18	1,95	2994	-	100,00	42,58	1,76

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis											
Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S%
1.40 Flt	34,12	5,97	6,10	35,77	52,16	1,02	6647	0,5	34,12	6,10	1,02
1.40 - 1.50	7,38	5,04	17,61	33,32	44,03	1,76	5805	0,5	41,50	8,15	1,15
1.50 - 1.60	4,59	4,64	29,63	30,06	35,67	2,48	4920	0,0	46,09	10,29	1,28
1.60 - 1.70	5,10	4,34	36,37	27,20	32,09	3,66	4263	0,0	51,19	12,88	1,52
1.70 - 1.90	4,97	3,81	47,04	22,82	26,33	4,21	3324	0,0	56,16	15,91	1,76
1.90 Snk	43,84	2,93	76,99	12,29	7,79	1,73	901	-	100,00	42,69	1,75

Composite: 02-10 to 02-14 (lab# 93206-10)

ASH FUSION TEMPERATURES °C - +28M									
	REDUCING				OXIDIZING				
Sample ID	IDT	ST	HT	FT	IDT	ST	HT	FT	Specific Gravity
-1.40 float	1249	1298	1330	1383	1299	1327	1362	1455	1,37
+1.40 sink	1394	1415	1456	+1500	1463	1498	+1500	+1500	2,04

MINERAL ANALYSIS OF ASH - +28M										
Sample ID	SiO_2	Al_2O_3	TiO_2	CaO	Fe_2O_3	MgO	Na_2O	K_2O	P_2O_5	SO_3	Undet.
-1.40 float	49,50	26,87	1,33	4,84	6,09	1,16	2,91	0,48	0,10	4,52	-2,20
+1.40 sink	59,87	26,06	0,94	1,74	5,39	1,13	1,67	1,64	0,06	1,25	-0,25

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

PROJECT: Suquash Project

COMPOSITE ID: C2- Basal Zone 2008-2

LAB#: 93584

RECEIVED DATE: August 27, 2009

UPDATED: October 2, 2009

SCREEN SIZE ANALYSIS, air dried basis												
Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
+28M	93,04	1,26	74,89	12,15	-	0,12	1318	-	93,04	74,89	0,12
28M x 100M	5,22	3,65	65,14	14,59	16,62	0,19	2038	0	98,26	74,37	0,12
100M x 0	1,74	3,41	70,25	13,21	13,13	0,24	1608	-	100,00	74,30	0,12

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis											
Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
1.40 Flt	5,56	2,60	7,26	33,30	56,84	0,51	6729	0,5	5,56	7,26	0,51
1.40 - 1.50	3,49	2,34	17,98	32,34	47,34	0,45	5867	0,0	9,05	11,39	0,49
1.50 - 1.60	2,52	2,30	31,13	26,92	39,65	0,37	4842	0,0	11,57	15,69	0,46
1.60 - 1.70	2,75	1,90	42,57	23,56	31,97	0,30	3975	0,0	14,32	20,85	0,43
1.70 - 1.90	4,90	1,97	53,86	18,95	25,22	0,23	2907	0,0	19,22	29,27	0,38
1.90 Snk	80,78	1,02	85,74	8,56	4,68	0,06	452	-	100,00	74,89	0,12

Composite: 02-15 to 02-19 (lab# 93211-15)

ASH FUSION TEMPERATURES °C - +28M									
	REDUCING				OXIDIZING				
Sample ID	IDT	ST	HT	FT	IDT	ST	HT	FT	Specific Gravity
-1.40 float	1396	1442	1460	1494	1423	1448	1465	+1500	1,38
+1.40 sink	1465	+1500	+1500	+1500	1484	+1500	+1500	+1500	2,35

MINERAL ANALYSIS OF ASH - +28M										
Sample ID	SiO_2	Al_2O_3	TiO_2	CaO	Fe_2O_3	MgO	Na_2O	K_2O	P_2O_5	SO_3	Undet.
-1.40 float	55,14	27,12	1,86	3,99	2,62	0,86	2,91	0,76	0,12	3,25	-1,37
+1.40 sink	65,97	24,34	0,92	0,74	2,75	1,26	1,94	2,02	0,05	0,10	0,09

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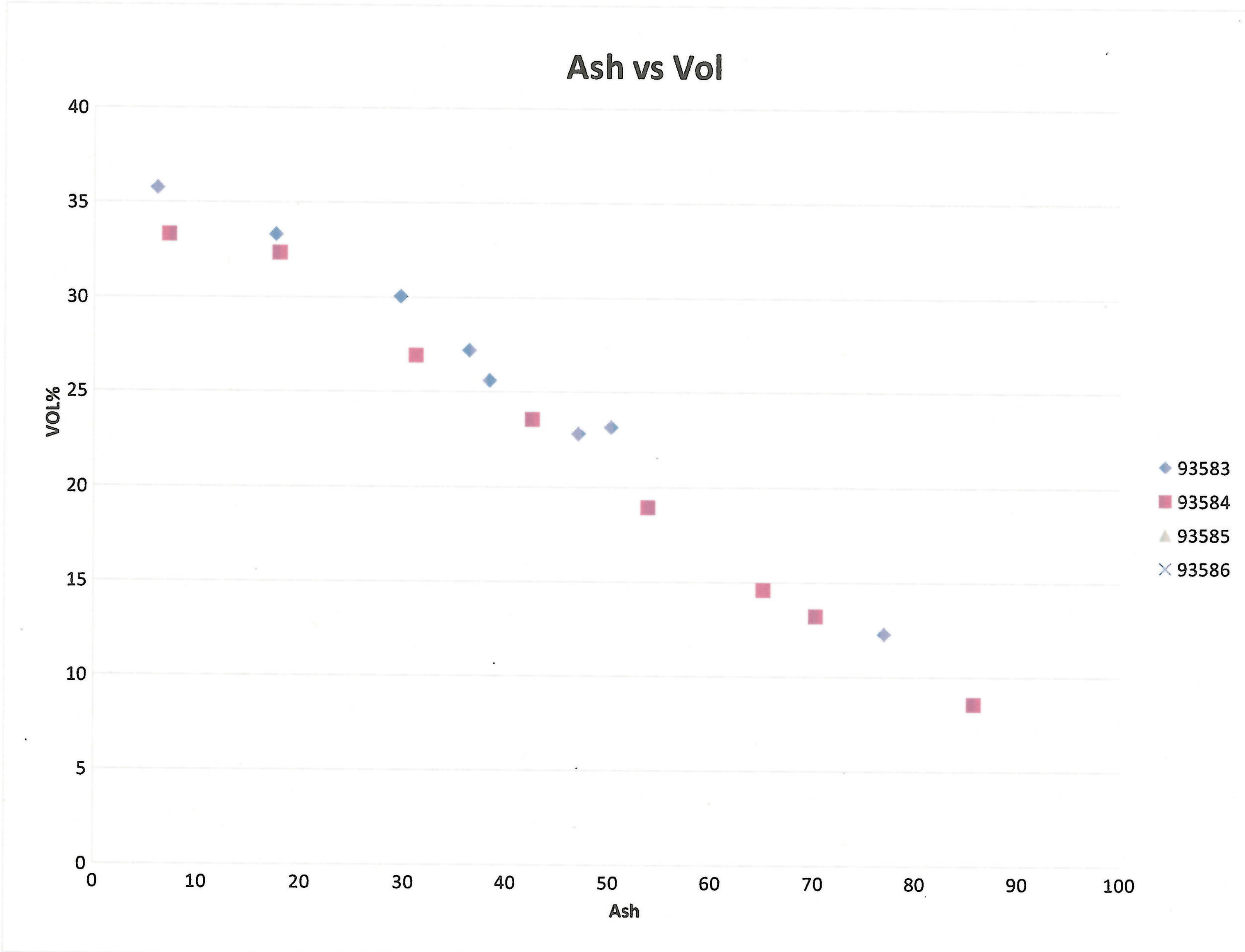
Ash vs Vol
VOL%
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
Ash
93583
93584
93585
93586

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

PROJECT: Suquash Project

COMPOSITE ID: C2- Basal Zone 2008-2

LAB#: 93584

RECEIVED DATE: August 27, 2009

REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis											
Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
+28M	93,04	1,26	74,89	12,15	-	0,12	1318	-	93,04	74,89	0,12
28M x 100M	5,22	3,65	65,14	14,59	16,62	0;19	2038	0	98,26	74,37	0,12
100M x 0	1,74	3,41	70,25	13,21	13,13	0,24	1608	-	100,00	74,30	0,12

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis											
Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
1.40 Flt	5,56	2,60	7,26	33,30	56,84	0,51	6729	0,5	5,56	7,26	0,51
1.40 - 1.50	3,49	2,34	17,98	32,34	47,34	0,45	5867	0,0	9,05	11,39	0,49
1.50 - 1.60	2,52	2,30	31,13	26,92	39,65	0,37	4842	0,0	11,57	15,69	0,46
1.60 - 1.70	2,75	1,90	42,57	23,56	31,97	0,30	3975	0,0	14,32	20,85	0,43
1.70 - 1.90	4,90	1,97	53,86	18,95	25,22	0,23	2907	0,0	19,22	29,27	0,38
1.90 Snk	80,78	1,02	85,74	8,56	4,68	0,06	452	-	100,00	74,89	0,12

Composite: 02-15 to 02-19 (lab# 93211-15)

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

PROJECT: Suquash Project

COMPOSITE ID: C3- Coal Zone 2008-3

LAB#: 93585

RECEIVED DATE: August 27, 2009

REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis											
Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
+28M	91,56	1,82	53,93	20,30	-	1,31	2993	-	91,56	53,93	1,31
28M x 100M	6,33	3,22	51,74	20,18	24,86	1,18	3022	0,5	97,89	53,79	1,30
100M x 0	2,11	2,82	61,56	18,62	17,00	1,47	2179	-	100,00	53,95	1,30

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis											
Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
1.40 Flt	23,13	3,04	5,97	35,78	55,21	1,11	6836	0,5	23,13	5,97	1,11
1.40 - 1.50	8,99	2,24	17,69	34,51	45,56	2,36	5931	0,0	32,12	9,25	1,46
1.50 - 1.60	4,46	2,03	29,59	30,65	37,73	3,28	4972	0,0	36,58	11,73	1,68
1.60 - 1.70	4,79	1,83	39,49	27,27	31,41	3,28	4185	0,0	41,37	14,94	1,87
1.70 - 1.90	5,95	1,91	55,44	20,91	21,74	2,64	3045	0,0	47,32	20,04	1,96
1.90 Snk	52,68	1,19	84,38	9,39	5,04	0,72	523	-	100,00	53,93	1,31

Composite: 03-09 to 03-13 (lab# 93228-32)

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CERTIFICATE OF ANALYSIS

CLIENT: Electra Gold

PROJECT: Suquash Project

COMPOSITE ID: C4- Coal Zone 2008-4

LAB#: 93586

RECEIVED DATE: August 27, 2009

REPORT DATE: September 14, 2009

SCREEN SIZE ANALYSIS, air dried basis

Screen Size	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
+28M	91,76	1,78	50,01	22,12	26,09	2,31	3250	-	91,76	50,01	2,31
28M x 100M	6,16	3,56	43,89	23,70	28,85	1,75	3603	0	97,92	49,62	2,28
100M x 0	2,08	2,74	58,63	19,20	19,43	1,51	2349	-	100,00	49,81	2,26

cumulative values from float sink

FLOAT SINK ANALYSIS +28M, air dried basis

Specific Gravity	WT%	RM%	ASH%	VOL%	F.C.	S%	Cal/g	FSI	CUM WT%	CUM ASH%	CUM S
1.40 Flt	26,31	2,62	5,52	36,86	55,00	0,87	6922	0,5	26,31	5,52	0,87
1.40 - 1.50	6,65	1,88	17,56	34,58	45,98	1,86	5937	0,5	32,96	7,95	1,07
1.50 - 1.60	3,79	2,05	29,55	30,87	37,53	2,53	4999	0,0	36,75	10,18	1,22
1.60 - 1.70	3,60	2,10	38,28	27,30	32,32	3,67	4252	0,0	40,35	12,68	1,44
1.70 - 1.90	7,22	1,90	49,39	23,48	25,23	4,86	3255	0,0	47,57	18,26	1,96
1.90 Snk	52,43	1,28	78,82	11,96	7,94	2,63	870	-	100,00	50,01	2,31

Composite: 04-07 to 04-15 (lab# 93244-52)

Veena Bhardwaj
Laboratory Supervisor

Heather Dexter
Operations Manager

DIAMOND DRILL REPORT
ON THE
ELEKTRA PROJECT
SUQUASH AREA

Port Hardy/Port McNeill Area
Northern Vancouver Island British Columbia
Nanaimo Mining Division
Permit MX-8-255, Approval 08 1610420-0926

NTS 92L1E (092L.064)
50°37'59"N/127°15'06"W

For

Electra Gold Ltd.
Unit 5 – 2330 Tyner St.
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by

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Unit 5 – 2330 Tyner St.
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July 2, 2009
Fieldwork completed between June 1, 2008 and March 15, 2009

BRITISH COLUMBIA

Ministry of Energy & Mines
Energy & Minerals Division
Geological Survey Branch

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]	TOTAL COST
DIAMOND DRILL REPORT	$ 131,000

AUTHOR(S) J. T. SHEARER, M.Sc, P.Geo SIGNATURE(S) [signature]

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S) MX-8-255 YEAR OF WORK 2008

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S) 08 16 10420-0926 Event # 4281579
MAY 12/09

PROPERTY NAME ELEKTRA.

CLAIM NAME(S) (on which work was done) Elektra 3 tenure 584412

COMMODITIES SOUGHT Kaolin, Fire Clay, Cement raw materials

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN

MINING DIVISION NANIAMO NTS 92L/11E

LATITUDE 50 ° 37 ' 59 " LONGITUDE 127 ° 15 ' 06 " (at centre of work)

OWNER(S)

1) ELectra Gold Ltd. 2)

MAILING ADDRESS

Unit 5 - 2330 Tyner St.
PORT COQUITLAM, B.C. V3C 2Z1

OPERATOR(S) [who paid for the work]

1) As above. 2)

MAILING ADDRESS

As above.

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Lower Cretaceous Nanaimo Group sandstone, conglomerate, shale and minor Coal, dipping about 4° to the east. Four drillholes in 2008 intersected typical sedimentary section.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS Borovic 1980 Coal Rpt 216, Gardner 1984 Coal Rpt 778

(OVER)

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST	159,961

Table of Contents

TABLES

FIGURES

SUMMARY

Electra Gold Ltd. owns mineral claims in the Suquash area 25 km east of Port Hardy as shown in *Figure 1. The claims have been made in accordance with all the regulations set forth by the* government's Title Division.

The Company drilled 4 diamond drill holes in October-November 2008 and intersected a typical sandstone-shale-minor coal sequence of Lower Cretaceous Nanaimo Group sedimentary rocks. Total footage drilled in the 4 2008 holes was 672.36m.

Figure 1 Map of Suquash Coal Mine, near Port Hardy, BC

The company may drive a decline to reach near the former mine workings about 50 meters below grade. The purpose of the decline is to mine a bulk sample for testing at a local cement plant. In order to locate the decline in the most cost effective way, three or four test diamond drill holes are proposed in the vicinity of the proposed decline and the former number 2 shaft of the Suquash mine.

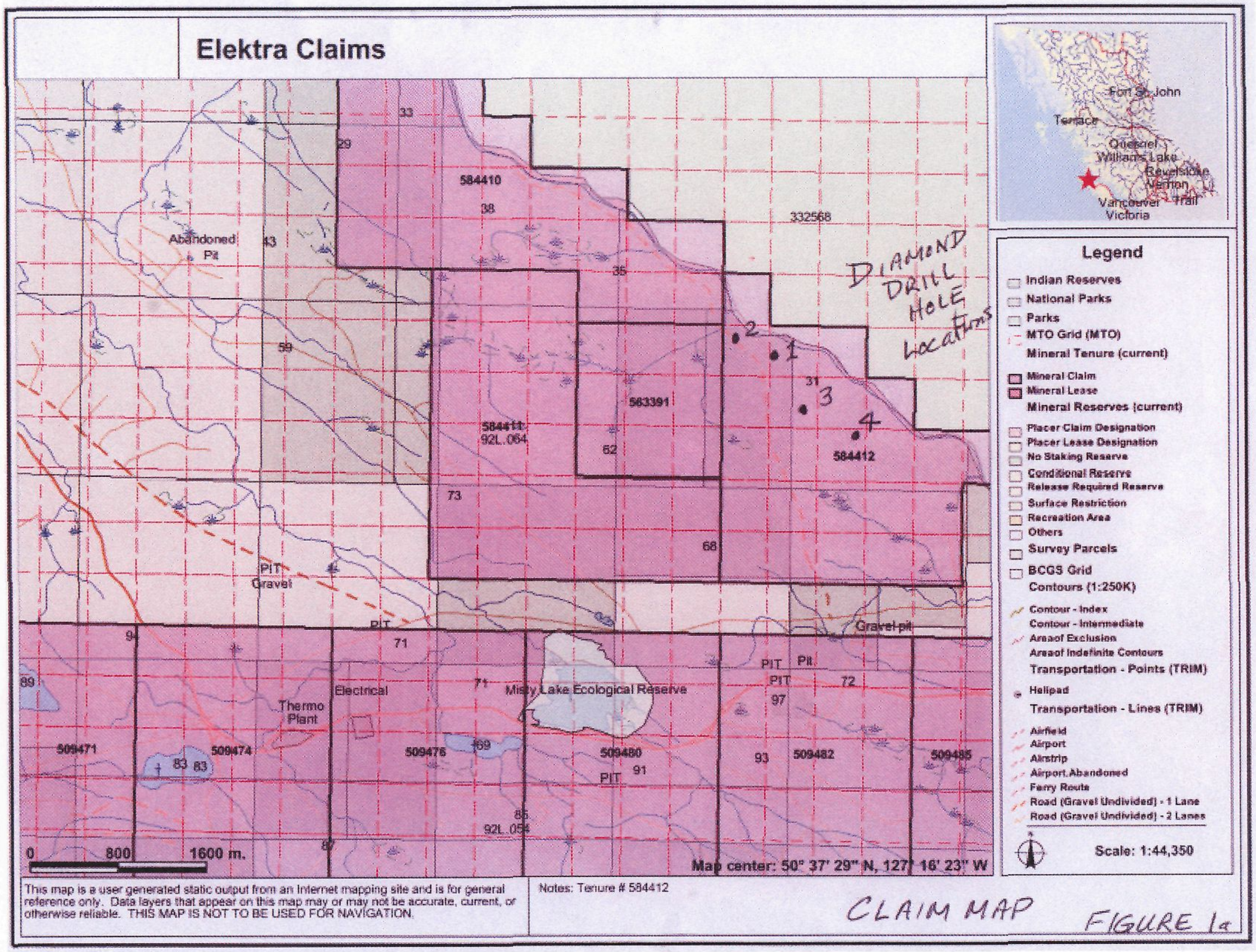
The mine is of historical interest because it was first operated by the Kwakiutl First Nation and is by far *the first mine in British Columbia. To begin engaging with the Kwakiutl, Electra has met* with the Chief and Council in Fort Rupert. At this introductory meeting, the Chief and Council indicated that they will support an exploratory diamond drill program. Electra's goal in the consultation process is to ultimately achieve a Project agreement that provides, among other items, both economic and social benefits to the Kwakiutl First Nation by working together and following consultation protocols as we move through the exploration phase.

Subsequently permits have been obtained from the Ministry of Energy, Mines and Petroleum Resources to conduct an exploratory diamond drill program as described in this report. Upon completion of the drilling and sampling results, Electra would then apply for driving an exploration decline to extract a bulk sample for testing by the company and by potential customers.

Samples collected from the 2008 drilling will be submitted soon for chemistry and other parameters.

Respectfully submitted,

J. T. Shearer, M.Sc., P.Geo.



CLAIM MAP FIGURE 1a

INTRODUCTION AND TERMS OF REFERENCE

This report was prepared at the request of the Board of Directors of Electra Gold Ltd. ("Electra") to summarize historic data, document the 2008 to 2009 work by the company, and recommend an exploration program for other future work to further evaluate the property. The purpose of the report is to provide background information for raising funds on the Toronto Venture Exchange.

The author, Jo T. Shearer, M.Sc., P.Geo., was retained by Electra to write this Technical Report, visited the property in May, July, August and November 2008, and to make recommendations for an appropriate exploration program to be conducted in 2009.

Preamble

Electra Gold Ltd., Port Coquitlam, is a Toronto Venture Exchange listed company with the trading symbol ELT. Electra operates a chalky geyserite mine and a barge loading terminal near Port Hardy. Electra has formed a wholly owned subsidiary Suquash Coal Ltd. to restart the former coal mine. The Suquash Coal Property is known from historical exploration and mining since 1835. The Kwakiutl First Nation first produced coal for sale to the Hudson's Bay Company, US shipping companies and others. Later, the mine was operated by the Pacific Coast Coal Company between 1908 and 1922 on Seam #2 totaling 12,000 feet of development at the mine's 52 meter elevation. Subsequently has mine has been reentered on several occasions for sampling and mine planning purposes.

There have been 10 historic holes drilled on the property with a total length of 6,718 feet. In addition there were two holes drilled in the vicinity of number 2 shaft for which the data has been lost. There were also other holes drilled adjacent to the property between Port McNeil and Port Hardy and on Malcolm Island. In November 2008, Electra completed 4 diamond drill holes which is the subject of this assessment report.

This Study
Terms of Reference

Electra Gold Ltd. retained Jo T. Shearer, M.Sc., P.Geo. to review the project, draw conclusions, make recommendations, and propose an appropriate exploration program to evaluate the property in 2008. The company commissioned a summary report to file with the TSX Exchange to document the merit of the property.

Purpose of the Report

Jo T. Shearer was advised by company officers that this report is intended to establish the property as one of merit for submission to the TSX Ventures Exchange and document the results of the 4 diamond drill holes completed in November 2008. This report complies with the 43-101 format and may be used for disclosure in fundraising over $250,000.

Sources of Information

A major source of information has been the numerous historical assessment reports on the area within the B.C. Government Ministry of Mines Minfile database. These reports are readily available from Ministry reports dating back to 1934 on work conducted for various companies up to 1986. Prior information is contained in the Annual Reports of the Minister of Mines 1909-1921. In addition, Electra has obtained past mining data from the BC Archives and records of Kwakiutl historical interests in the area. We also have an underground coal mine engineering feasibility report by Hope Engineering in 1953.

The 4 holed diamond drill program was logged by Parvez Rajgei, B.Sc. an experienced coal geologist under the direct supervision of John Perry and J. T. Shearer, M.Sc., P.Geo.

Field Activity of the Qualified Person

Jo T. Shearer, M.Sc., P.Geo. visited the property in May, July, August and November, 2008 to examine the surface exposures, general geological conditions and overview of the 4 hole diamond drill program.

RELIANCE ON OTHER EXPERTS

The author in writing this report used as sources of information those reports and files listed in the bibliography, sampling of surface Seam 1 on May 22, 2008 and July 11, 2008, the results of previous exploration and testing programs, and previous mine operating reports. Most of the reports were prepared by persons holding a university degree in Geological Sciences or Engineering. I also include some references to people that were involved in previous coal mining at the site. Based on the author's assessment by field checks, the information in these reports is accurate.

The author relied most significantly on a 1984 report by Stephen Gardner, P.Geo., Campbell River, the Vice President, Exploration, for the Quinsam Coal Mine. Mr. Gardiner's report for Texaco Canada Resources Ltd., Calgary, includes his resource estimates that are quite close to the author's own general assessment. The author also reviewed three other independent estimates of the coal resource by geological and mining consultants and by the former coal mining company at the site. These estimates are all higher than those by Mr. Gardiner. However, all these estimates rely greatly on inferences as to the extent of the coal beds. They do not include sufficient information on underground and clean coal recovery. In particular, a 10 hole exploration program and extensive feasibility study for BC Hydro was based on using run of mine coal for an on-site power plant and thus the much higher resource estimates by this consultant are not directly useful for estimating saleable coal.
Exploration on properties containing coal can be a divisive political and environmental issue in British Columbia. Electra has begun an on-going process of educating and communicating with

Exploration on properties containing coal can be a divisive political and environmental issue in British Columbia. Electra has begun an on-going process of educating and communicating with the general public and First Nations about exploration and mining issues. Electra's goal in a First Nations consultation process is to ultimately achieve a Project Agreement that provides, among other items, both economic and social benefits to the Kwakiutl First Nation by working together and following consultation protocols as Electra moves through the exploration phase.

PROPERY DESCRIPTION AND LOCATION (CLAIM LIST)

Preamble

The mine is 25 km east of Port Hardy by the Island Highway 19 and 3.3 km of Suquash Main logging road. This road joins the highway immediately east of the Mount Waddington Regional District's 7-Mile Landfill. The property has been cleared as shown in Figure 2. Coal from the number 1 surface seam is scattered along the beach and is easily visible in the cliff and along the creek.

Figure 2 Suquash Coal Mine Site

The site is designated in the Vancouver Island Land Use Plan as an Enhanced Forestry Area. It is within Western Forest Products' Tree Farm License Number 6 and is included in the company's Wildlife Management Strategy as part of their Sustainable Forest Management Plan for the North Vancouver Island Region.

The company has also applied for the coal licenses for 1,038 hectares of mine property as listed in Table 1. The BC Ministry of Energy, Mines and Petroleum Resources, Titles Division, Mineral Titles Branch description is: Number 92L064 Block G Units 58, 59, 69 and 70 and 92L11 Block G Units 38, 39, 40, 48, 49, 50, and 60 and 92L11 Block F Units 41, 51, 61 and 71. The property is in the Rupert Land District and Nanaimo Mining Division. The license applications were made in April and May 2008. The licenses are issued only after a public review process. Annual renewals are required once the licences are issued.

Table 1 List of Claims

Name	Tenure #	Area (ha)	Date	Owner
Elektra 1	584410	491.76	May 16, 2012	J. T. Shearer
Elektra 2	584411	491.97	May 16, 2012	J. T. Shearer
Electra 3	584412	491.96	May 16, 2012	J. T. Shearer

The core claims have been purchased from Hanam Canada Marketing Corporation, in an agreement dated May 16, 2008, to Electra Gold Ltd. under the following terms and conditions:

- $8,500 Down Payment Paid
- 500,000 shares on issue of Mine Exploration Permit (for decline) and support of Fort Rupert Band Council
- 500,000 shares by April 30, 2009
- 1,000,000 shares on completion of a NI 43-101 Technical Report documenting reserves of at least 5 million tonnes of 11,000 BTU coal (as per CIMM best practises guidelines) acceptable to the TSX-V exchange and the BC Securities Commission;
- 1,000,000 shares on the extraction and sale of a 10,000 tonne bulk sample with 50,000 tonnes developed.

Electra has reimbursed Hanam for all of the licence application fees. Hanam Canada and Electra have each notified the Kwakiutl First Nation and BC Energy Mines and Petroleum Resources, Title Division, about the agreement and the name of the applicant will be changed from Hanam Canada to Electra at an appropriate time.

Heritage and Environmental Responsibilities

Coal mining at the site is historically significant and investments will be made to preserve these resources. The mouth and banks of Suquash Creek are historically significant and will not be disturbed. There is a trail to the old shafts and equipment in the second growth forest indicating this equipment is of recreational interest. Electra has met with Ministry of Tourism, Sport and the Arts, Archaeological Branch, representatives to obtain input and several reports relating to historical values on the site. Electra has obtained input and budget quotations for archaeological consulting work to address potential concerns.

Permits

The company and property will be subject to Mine Permit regulations of British Columbia Ministry of Energy, Mines and Petroleum Resources. A permit has been received for the drilling program.

The Suquash area is within the Kwakiutl First Nation Traditional Territory and area of interest. The company has acknowledged the legal requirements for consultation and accommodation of First Nation Rights, Title and Interest. The Kwakiutl First Nation has developed standard agreements for other projects in their traditional territory that can be used as a template for this project. Suquash Coal seeks long term agreements to ensure that Kwakiutl people benefit from the potential mine and are compensated for the negative impacts of the mine on their communities, land, and traditional way of life. Aboriginal management of mining revenues is intended to contribute to a sustainable community, direct community benefits, revenues for community projects, and support for traditional skills and lifestyles.

A preliminary project description will be delivered to key stakeholders including local government officials, provincial and federal agencies. We will meet with regulatory reviewers and support the mine and environmental permitting process. Since the mine will have a production capacity of less than 250,000 tonnes per year of raw coal the project may not be subject to review by BC's Environmental Assessment Office.[1] Applications will be made for a Mine Permit and an Environmental Permit. Public meetings would be held to answer questions, identify areas of concern, and to address any issues.

Applications for a Mine Permit, Water License, Waste Management Permit, and other related permits for the mine, plant site and required infrastructure must be made to the BC government as summarized in Table 2. One of the key requirements is for a life of project design, sizing and reclamation of the waste rock dump.

Table 2 Regulatory Approvals Required For Suquash Mine Restart

Impact Benefit Agreement- Kwakiutl First Nation- Signifies Kwakiutl people will benefit and support the project. Required for land tenure approvals.
Exploration Permit (Minex) – for diamond drilling and bulk sampling
Mine and Reclamation Permit- Ministry of Energy & Mines (MEM)- Approves the mine plan (layout, geotechnical assessment and engineering design for underground workings, pits, dumps, plant, mine roads, other key facilities), mine operations, acid drainage prediction and management plans, and reclamation plan.
MEM and Waste Management Permit- Ministry of Environment (MOE)- Approves permitted solid waste disposal plans, liquid effluent quality, structural designs, and waste management and monitoring plans (pond effluents, tailings seepage, sewage, other). Approves air emission standards, equipment and dust control and other management and monitoring plans.
MEM and Water License- Ministry of Environment (MOE)- Grants approvals to withdraw, divert and use water (i.e. domestic and process water supply, drainage management plans, site water balance).
Land Tenure Approvals- *Various*- Grants rights to occupy land, including Coal Lease for underground workings and pits, plant site (**MEM**); License of Occupation for road and power line (**Land and Water BC**); others as required.
Road Use Permits- Ministry of Forests- Authorizes use of Ministry of Forests' roads and Western Forest Products road use agreement.
Other Permits, Licenses- Various- Approves potable water supply if required (Ministry of Health)

[1] Environmental Assessment Act, Reviewable Projects Regulation, Part 3, Mine projects http://www.qp.gov.bc.ca/statreg/reg/E/EnvAssess/370_202.htm

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access

The mine site is easily accessible by paved highway from Port Hardy, Fort Rupert, Port McNeil and Port Alice. Access to the mine is by 3.3 km of Suquash Main logging road. This road joins the highway immediately east of the Mount Waddington Regional District's 7-Mile Landfill 22 km south of Port Hardy.

Previous coal transport was exclusively by barge. There was a pier at the mine site and coal was delivered to customers initially by canoe and later by barge. A short small gage rail track operated between the mine portal and the barges. Since Electra has an existing barge ramp nearby it is proposed that coal be transported by truck to the existing loading facility in the initial stages.

There is a deep water private port nearby for loading gravel and there is deep water directly off the project site. However, transport to and from the site is more convenient and lower cost using existing facilities.

Port Hardy has an airport with regular scheduled service to Vancouver.

Climate

The average temperature and rainfall based on data compiled for a major nearby mining project is summarized in Table 3. The average temperature is 8.5 degrees C. The average daily minimum temperature in January is 1.0 degrees C and in December 1.3 degrees C. The average monthly rainfall is 131 mm. The wettest month is November with an average of 284 mm of rain. The average evaporation at the project site is expected to be 463 mm per year. The average wind speed in the project area is 4.5 m/s with a maximum of 22.4 m/s. The mean wind direction is predominantly from the north-northeast from November to February and from the west from March through April. The air quality is high throughout the area.

Table 3 Climate Data (Mean)

		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Avg
Temperature	°C	3.5	4.2	5.5	7.6	9.9	12.0	14.0	14.2	12.4	9.1	5.5	3.7	8.5
Precipitation	Mm	188	178	99	72	76	71	43	80	82	192	284	207	131

Physiography

The Project Area is located within the Coast Mountains and Islands physiographic region of British Columbia. The region, which includes Vancouver Island, consists largely of glacial landforms and remnant erosion surfaces.

Northern Vancouver Island consists of two major physiographic units: the Nahwitti Lowland and the Vancouver Island Mountains. The Project Area lies in the Suquash Basin subunit of the Nahwitti Lowland. This subunit is a triangular shaped area located along the eastern margin of the Nahwitti Lowland. The lowlands are underlain by gently dipping Cretaceous sedimentary rocks whereas the hills are made up of Karmutsen Volcanics. Erosion of the soft Cretaceous sediments within the basin has caused the lowland topography to be in contact with the harder, more resistant volcanic bedrock of the uplands. Within the lowlands, the Quaternary deposits tend to be relatively thick, and dominated by fluvial, glacial-fluvial, and marine sediments. These sediments are distributed along the eastern margin of the basin and range up to 30 meters in thickness.

Elevations in the licence area range from 10 to 50 meters above sea level with small undulating mounds present from the decomposition of wind thrown trees. The project area consists primarily of a gently sloping hillside of glacial drift which lies between the foreshore and Suquash Road. Suquash Creek flows through the northwest corner of the property. There are many minor seasonal streams that flow across the property and the beach directly to Queen Charlotte Sound. Misty Lake is near the south boundary of the property.

East of the road across the property in the cleared area there is 2 to 4 meters of gravel on the surface followed by shale and sandstone. West of the road, there is a marsh with deep mud.

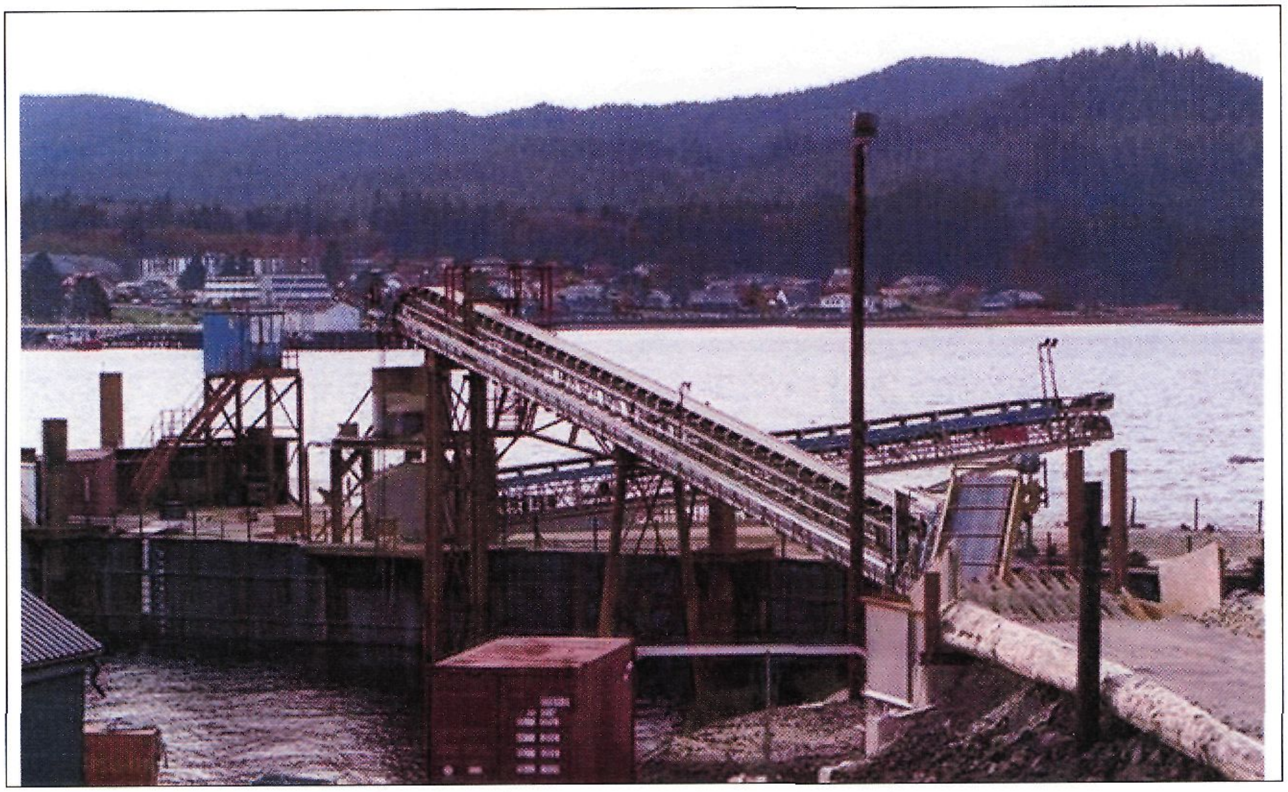
Infrastructure and Local Resources

All parts of the property are accessible from the Suquash Logging Road and several branches. BC Hydro's main power line is 3 km away at Highway 19. It is possible that a hydro line could be extended to the waterfront properties along Suquash Road independently of the coal project. The Mount Waddington Regional District Landfill is 3 km away and could possibly be used for disposal of non-organic fill.

Cell network coverage on the property. Services from Port Hardy and Port McNeill are equally convenient. There is an extensive history of underground coal mining in nearby Campbell River and a variety of contractors and suppliers are available to service the mine.

Electra Gold has an office in Port Hardy and at the PEM100 Quarry and operates a barge loading terminal nearby at Jensen Cove as shown in Figure 3. The existing rock conveyors would be covered to minimize dusting. All coal deliveries to customers would be barge.

Figure 3 Coal Loading at Jensen Cove, Port Hardy



From right to left:

(a) dump pocket grizzly for trucks
(b) white shore conveyor
(c) transfer point
(d) blue radiating stacking conveyor
(e) small control booth (blue)

Up to 15,000 tonne barges can be loaded at a rate between 700 to 800 tonnes per hour.

PROPERTY HISTORY

From 1836 to 1852 the Kwakiutl people mined and transported coal to customers including the British Navy, the Hudson's Bay Company, European and US shipping companies.[2,3] Payment was for coal delivered not just for labor. Although miners were brought from Scotland, there were labor disputes and all the coal mining, transport and loading was by the Kwakiutl people. During the three years from 1849 to 1852 they mined and sold about 9,000 tonnes of coal. After 1852 new more competitive mines started up in Nanaimo and Seattle.

In 1908, Pacific Coast Coal Company drilled 4 holes on the property that intersected a lower coal seam about 48 meters below sea level. The company acquired coal licenses for 6 by 11 kilometers of foreshore.[4] They sunk the 2X3 meter shaft near the mouth of Suquash Creek and began mining the number 2 seam. About 3,600 meters of lateral development work was done. A longwall face 240 meters long was opened up to the south of the shaft. The company built a small town with 20 houses, bunkhouse, store, electricity generator, and buildings for mining equipment. The pit-head and screening system was capable of handling 180 tonnes per day. Between 1909 and 1914 13,274 tonnes were mined but all work was suspended with the outbreak of World War 1 in 1914.

In 1914 the company started work on a larger 3X7 meter shaft 460 meters east of the first one and 60 meters from the shoreline. The shaft had a concrete collar, automated hinged cover, guides for two cages, and a lifting head frame. The shaft was not completed and is only 4 meters deep. It is designed with an access compartment, 1.8 by 1.2 meters, fitted with ladders, and a pumping and hoisting compartment, 1.8 meters square. A lot of machinery was delivered to the site but much of it was not. Photos of the two shafts and some of the machinery still on the mine site are shown in Figure 4.

Two winding engines, 600 x 900 mm diameter, and a 2.7 meter diameter drum were installed on a concrete base but were never used.[5] A tipper for coal rail cars, two Vulcan hoist engines, a 100 HP and two 150 HP high pressure Goldie McCulloch boilers were delivered to the site. Ventilation was to be with a steam driven Sheldon fan, 1,200 by 760 mm turning at 125 revolutions per minute with a capacity of 400 cubic meters per minute. There were two duplex water pumps with a capacity of 230 liters per minute each.

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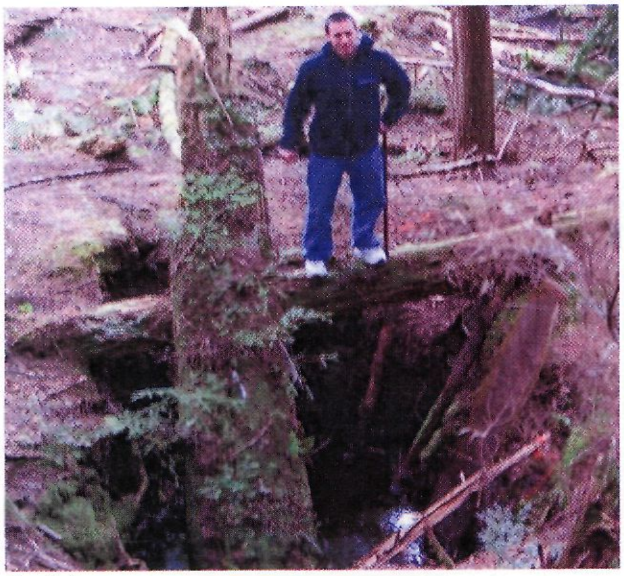
[2] Marki Sellers, Simon Fraser University, *Negotiations for Control and Unlikely Partnerships: Fort Rupert*, 1849-1851, BC Historical News, Winter 2002/2003.

[3] David Lewis, *Yesterday's Promises: A History of the District of Port Hardy*, Victoria, BC, Robinson Press, 1978.

[4] BC Ministry of Energy & Mines Annual Report, 1908.

[5] BC Energy & Mines, Annual Report 1921

Figure 4 Photos of Pacific Coast Coal remnants


Shaft 1


Shaft 1 Hoist


Shaft 1 Pulley


Shaft 2


Shaft 2 Hoist


Shaft 2 Boiler

After the war, from 1920 to 1922 two more holes were drilled, the mine was pumped out and more work was done on the surface and underground from shaft number 1. In 1920, 6 people were employed and 113 tonnes of coal were produced. However, in 1922 the entire operations of the company including coal mines in Nanaimo and Princeton ceased and the company went out of business. A reasonable average production for non-mechanized underground coal production is about 3 tonnes per person per day.

In 1952 Suquash Collieries acquired the licenses, erected a 4X5 meter office on site, dewatered the longwall, and commissioned a feasibility report.[6] Six men were employed during the summer. Access to the property was by boat and barge. The company installed a 5 meter head frame and hoist at the old shaft collar and pumped out the mine using a 230 liters per minute Knowles duplex piston pump. Initially power was supplied by a portable air compressor, but this was replaced by a 1.5 by 3.0 meter vertical steam boiler. About 240 meters of old levels were reopened to provide access to the longwall face and to take samples. A small steam-driven geared hoist and a 10 millimeter diameter rope and system of pull bell signals was used at the shaft. The shaft was lined by 300 by 300 millimeter timbers. Ventilation was with a 910 millimeter diameter Sirocco exhaust fan. As the reopening of the workings progressed a considerable amount of methane was given off necessitating careful ventilation including a circuit along the south level and temporary walls in the crosscuts off this level. No explosives were used underground.

The old workings have a very hard sandstone roof above the seam. In 1952, the BC Mines inspector examined a section on the side of the south level 110 meters from the shaft and measured a total thickness of 2.3 meters. This included seven rock bands with a total thickness of 1.0 meter. The thickest continuous section of clean coal was 0.43 meters. The seam section is believed, however, to improve on the longwall face and toward the south. Conditions were found to be generally satisfactory in the course of inspections. While work was in progress a stretcher and first-aid equipment were kept at the camp and communications were by radio-telephone.

This test work was followed by a report by Harry Hope Engineering in April 1953 for a 450,000 tonne per year mine with a short rail line and ship loading system approximately where the gravel ship loader is now. For Hope Engineering to recommend this major project, the results of the underground investigations in 1952 must have been considered satisfactory but the detail sample results are not available to the current author.

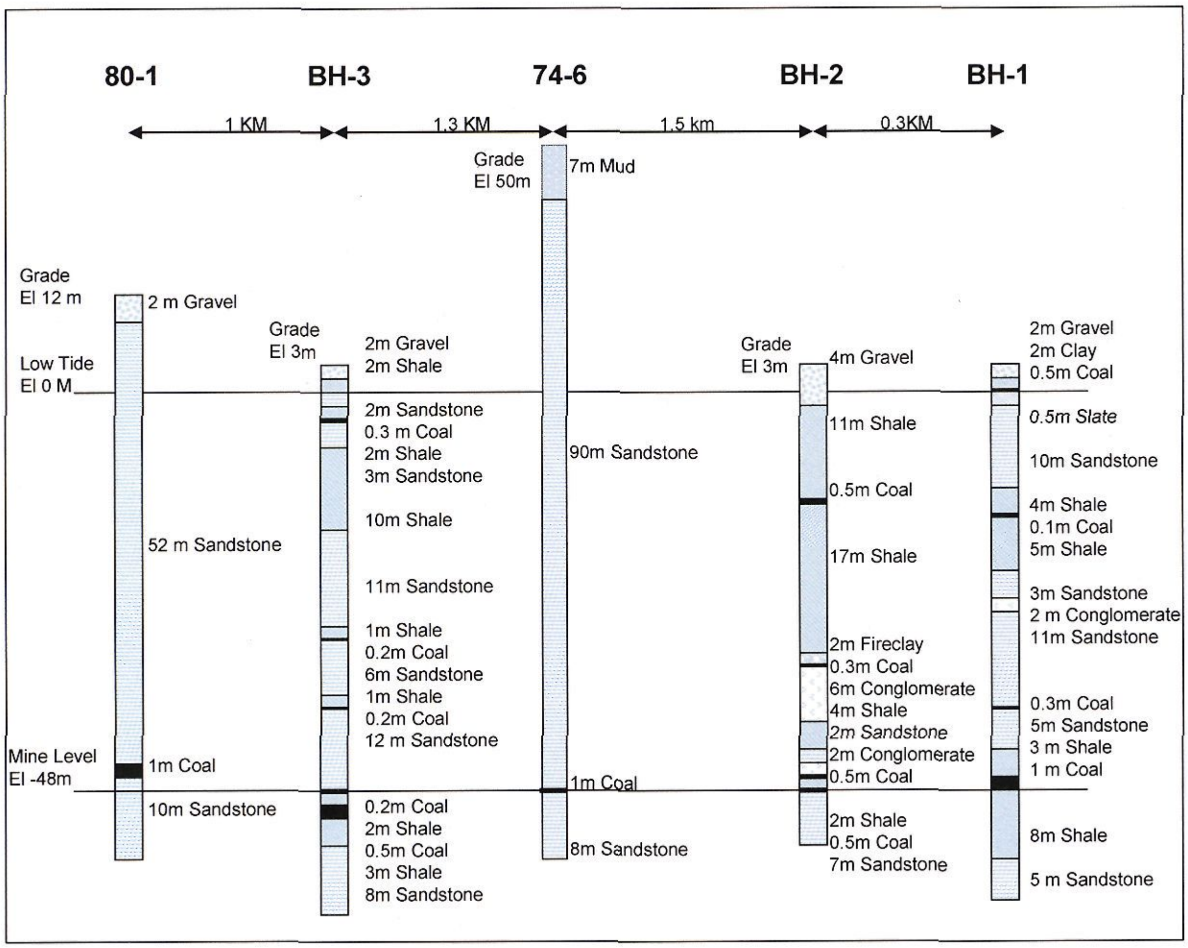
There are many reports posted on the BC Energy & Mines website describing past mining operations. http://webmap.em.gov.bc.ca/mapplace/coal/coal_reports.asp?area=sq Since Suquash Collieries dewatered the mine and carried out its engineering studies the licenses have been held by Cobre Exploration Ltd. and BC Hydro who studied a large thermal power station, Ramm Ventures who were proposing to supply a Bellingham cement plant, and Priority

[6] BC Ministry of Energy & Mines, Report of the Minister of Mines, 1952

Ventures who planned a coal bed methane project. BC Hydro spent more than $300,000 on exploration work in the early 70s.

The results of five test holes on the property that intersect the coal mining zone are shown in Figure 9. The mining zone coal seam is quite level from the mine to borehole 74-6 1.5 km to the south and to borehole 80-1 2.8 kilometers to the southeast. There are several minor coal seams above the main seam. The number two coal seam is overlain with a massive sandstone structure that provided a reliable roof for mining operations. The main workings south of the shaft did not use support timbers although Hope Engineering set timbers in place during dewatering of the mine in 1952. The floor of the coal seam is sandstone or shale.

Figure 5 Drill core correlations



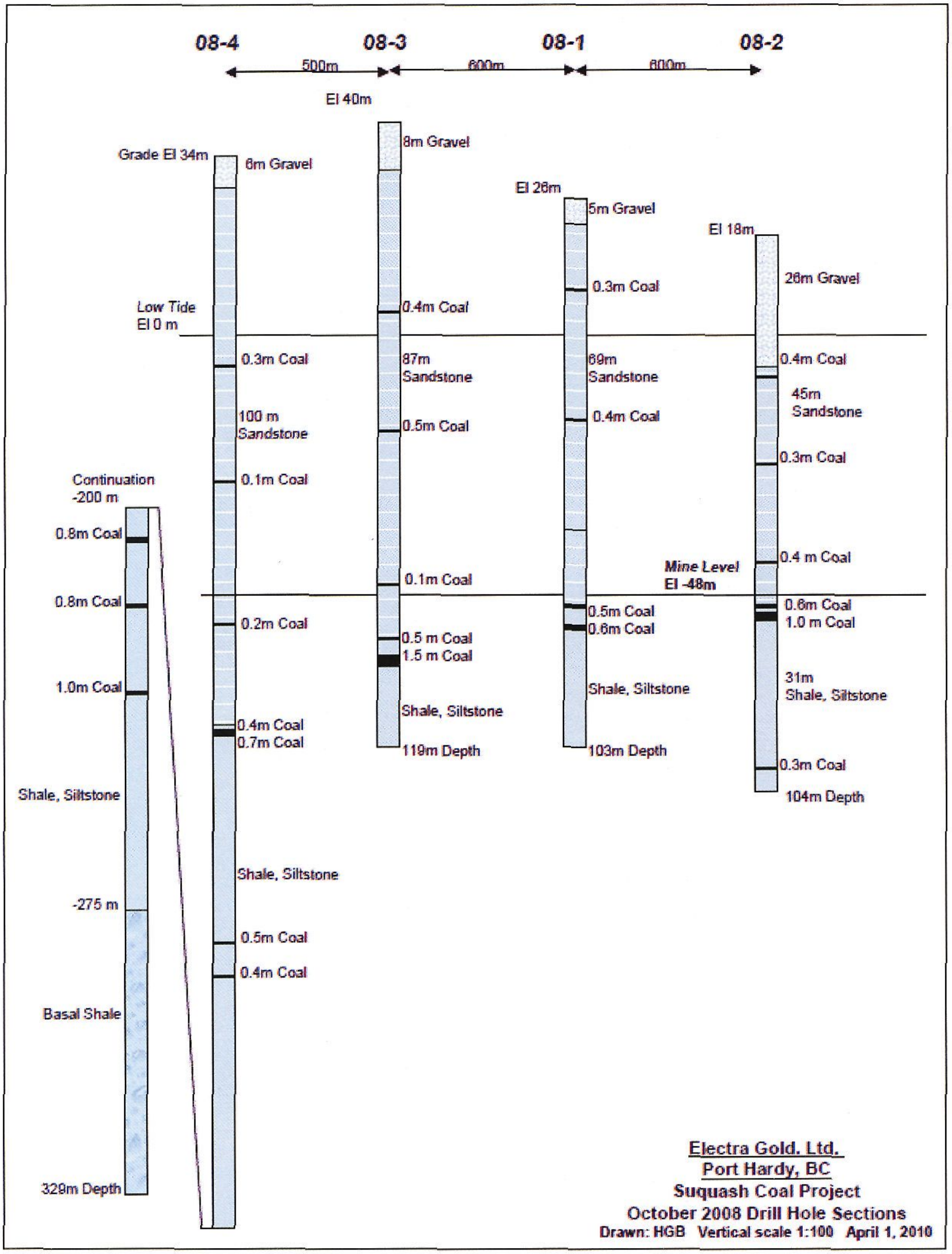


FIGURE 5A
Current Drill Hole Cross Sections and Correlations

In 1852, the Hudson's Bay Company drilled three holes: one at Keogh River, one on the peninsula at Port McNeil, and a third two miles inland.[7] In 1890 there was some drilling by Lyman Banks near Fort Rupert but we the results are not currently available. An English company struck a 5 foot seam between Port McNeill and Alert Bay in 1898. Pacific Coast Coal also drilled close to Port McNeill and a deep hole on Malcom Island without discovering a significant coal seam. In 1921, the company held 1,500 hectares of crown grants and foreshore leases near Port McNeill.

Pacific Coast Coal drilled at least 6 holes on the property between 1908 and 1922 but we have access to only four of the results, BH-1 to 4. These holes were drilled along the beach at an elevation of 3 meters. Drill holes 5 and 6 were in the vicinity of shaft number 2 and the author does not have the results. However, the company purchased a great deal of mining equipment and planned to mine from a new shaft near these bore holes.

In 1974 BC Hydro completed 10 holes in the vicinity and commissioned a feasibility study by Dolmage Campbell & Associates, Vancouver, for a coal mine and electricity generating station. A test hole 1 km west of the mine, 74-1, intersected coal at minus 44 meters elevation. South of the mine, the zone 2 seam is thinner. Test hole 74-3, 1.0 km southwest of the mine intersected coal at minus 26m and minus 62 meters elevation. Test hole, 74-5, 1.7 km southwest of the mine intersected coal at minus 107 meters. One zone designated zone 3 is at elevation minus 100 meters. Previous drilling also found a thicker coal seam in hole 74-05 at a depth of 190 meters and in hole 74-6 at 220 meters. However, the study concluded a coal fired electricity generating station was uneconomic at that time.

In 1977, Imperial Oil Ltd., Calgary, reviewed past studies and operations. The company concluded the higher cost of underground mining and coal cleaning did not make the coal basin economically attractive at that time.

In 1980 Ramm Ventures Corp. and Filtrol Minerals Ltd., Vancouver, commissioned further feasibility studies by Abcon Engineering, Calgary. Five exploration holes were drilled. The intent was to supply coal to the cement plant in Bellingham, WA. This drilling program encountered seam 2 in hole 80-1 at 42 meters below sea level but it was only 0.9 meters thick. The same hole had 3.3 meter thick coal seam at a depth of 290 meters.

In 1984, Gardner Exploration Consultants, prepared a report on the coal deposit for Texaco Canada Resources Ltd. This study was optimistic about the potential for restarting the mine. Mr. Gardiner, other geologists and mining engineers have concluded that the most promising direction for future mining is southeast of the former mine. Although coal was found in all directions, there is a fault to the west along Suquash Creek.

Based on past drill holes and measurements at the number 2 coal seam face of past mining operations. Previous coal reserves are shown in Table 6.

[7] BC Archives MSS 436 Box 48 File 1 Pacific Coast Coal

Table 4 Coal Resource Estimate Using Historic Data (Not a current resource)

Parameter	Unit	Seam 2	Seam 3	Total
Total drill holes	Number	10	2	
Total intersections	Number	6	1	
Depth below sea level	Meters	50	282	
Average thickness	Meters	2.0	3.3	
Lease area	Hectares	1,038	1,038	
Coal area	Hectares	400	400	
	Million square meters	4.0	4.0	
Volume	Cubic meters	8.0	13.2	
Bulk Density	Tonnes per cubic meter	1.4	1.4	
In-situ coal reserves	Tonnes	11.2	18.5	29.7
Underground recovery	% (may be much higher)	55	55	
Raw coal mined	Tonnes	6.2	10.2	16.4
Wash plant recovery	%	60	60	
Saleable coal		3.7	6.1	9.8

Mr. Gardner, P.Geo., estimated the coal reserves under the land portion of the deposit at 9.1 million tonnes.[8] He estimated an additional 9.0 million tonnes in-situ reserve under the sea adjacent to borehole SU-80-1 bringing the total to 18.1 million tonnes. Mr. Garner noted there are some indications that the thickness and number of individual coal bands is increasing in a southeasterly direction towards the sea.

In 1975, C.R. Saunders, P. Eng., and Dr. R.K. Germundson, of Dolmage Campbell & Associates Ltd., Consulting Geological & Mining Engineers, Vancouver, estimated in-situ reserves at 45 million tonnes over 3,800 kilocalories per kilogram and under 50% ash. At 55% underground recovery and 60% wash plant yield this is equivalent to about 15 million tones of saleable coal. Pacific Coast Coal estimated the reserves in 1912 at 47 million tonnes. James McEvoy, who wrote a report for Coniagas Mines, Toronto, in 1921 estimated the reserves at 21 million tonnes.

The conclusion of Ignacije Borovic, P.Eng., following Ram Ventures' drill program in 1980 was: "Because of the increase in the number and thickness of coal bands from holes 74-6 to 80-1, it would appear that the basinal environment for the generation of coal is enhanced to the south and east of the abandoned Suquash Mine. Most of this area is covered by the sea except for a 960 acre area (to the south and east). If future explotration is contemplated, it is recommended that it be concentrated in this area."

Electra has not undertaken any independent investigation of the resource estimate nor has it independently analyzed the results of the previous exploration work in order to verify the classification of the resources, and therefore the historical estimates should not be relied

[8] Stephen Gardner, P.Geo., Campbell River, BC, for Texaco Resources Ltd., *Geological Reconnaissance of Vancouver Island Coal Areas- Suquash Coal Bain and Outliers*, Northern Vancouver Island, BC, May, 1984, p.35.

upon. However, the author believes that the historical estimates, particularly those of Mr. Gardiner, provide a conceptual indication of the potential of the property and are relevant to ongoing exploration.

The calculation for the seam 3 resource is based on results from the Ram Ventures Corp. exploration program in 1980. The author believes that without further drilling the resource estimate for seam 3 is highly speculative since it is based on results for only one drill hole. Although this hole indicated a total coal zone of 3.3 meters with clean coal of 1.6 meters, there are no other nearby holes drilled to this depth. Furthermore since this seam was intersected at 282 meters below sea level it would be more difficult to access.

The current conclusions are shown in Table 6 does not include any coal under the sea. About half the coal mined in the past was from areas under the sea. The undersea land adjacent to the coal licenses drops off gradually into Queen Charlotte Sound. Past mine workings extended 330 meters out beyond the shore as shown in the mine plan. Based on hydrographic surveys, coal from seam 2 should outcrop about 3 kilometers offshore. However, the author does not include undersea reserves because further study would be required to evaluate safety and regulatory issues.

Mr. Gardner did not indicate an estimate for underground recovery or wash plant recovery. The author estimates that that the underground recovery will be at least 55% by the proposed room and pillar mining method and perhaps up to 75%. This estimate is based on consultation with former underground mine managers at the Quinsam Coal Mine in Campbell River and the former Wolf Mountain Coal Mine in Nanaimo. Electra's proposed mining method is similar to these mines and the characteristics of the coal are similar.

The Suquash mine has a massive sandstone roof indicating that underground recoveries could be higher, up to 75%. With a massive sandstone roof less coal may need to be left behind to support the roof. The original mine used a long wall mining method for about half of the production and past mining engineers have recommended both room and pillar and longwall methods. The most comprehensive modern mining plan, by Hope Engineering, was for a room and pillar system very similar to that used by Quinsam Coal in Campbell River. However others have proposed that it may be possible to increase underground recovery by using a retreating longwall. Set-up costs for such a system would be higher. One of the purposes of driving a decline to seam number 2 is to gain first hand experience with the seam and to then evaluate competitive mining methods and equipment.

The wash plant recovery estimate of 60% for seam 2 is based on the coal face intersections measured in the former mine. This clean coal recovery estimate is uncertain and could be as low as 45%. We did not find any record of coal washing tests. Previously only run of mine coal was produced and sold. The possible higher underground recovery may offset the potentially lower wash plant recovery rate. Mr. Borovic examined drill cuttings for seam 3 and found the coal to be dull and bright banded with abundant shale bands throughout. He concluded that a complex wash plant would be required to recover clean coal from this material and estimated the overall coal recovery rate from seam 3 (the lowest seam known) would be only 50%.

The largest uncertainty in the author's resource calculation is the area that the coal extends on the property license. Although Electra has applied for licenses on 1,038 hectares the author anticipates that the coal will extend to only a portion of this property. Although there have been 10 previous holes drilled on the property only six holes provided data for seam two and only one hole for seam 3.

GEOLOGICAL SETTING

Regional Geology

The area is located within the Coast Mountains and islands region of British Columbia that consists largely of glacial landforms and remnants of surface erosion. It is in the Suquash Basin subunit of the Nahwitti Lowlands which are underlain by gently dipping Cretaceous sedimentary rocks. The soft Cretaceous sediments within the lowland basin are in contact with the harder, more resistant volcanic bedrock of the uplands. The lowland Quaternary deposits tend to be relatively thick, and are dominated by fluvial, glacial-fluvial and marine sediments along the eastern margin of the basin up to 30 meters thick.

A table of geological formations on Vancouver Island and are depicted in Figure 5 and their relationships are depicted in Figure 6. Because of its location at the margin of the continent, the geological history of Vancouver Island is chiefly related to massive crust movements on the Pacific margin of North America. Vancouver Island represents submarine and later terrestrial volcanism associated with rifting along an ocean floor subduction zone, formed from the Pacific Ocean plate colliding with the western edge of the North American continent and being pushed beneath the continental margin. These crustal movements began in Paleozoic time and have continued to the present. Most of the volcanism associated with rifting, however, took place in early Mesozoic time.

During the Jurassic and Triassic periods massive outpourings of pillow and flow lavas, and aquagene tufts formed volcanic island arcs which eventually formed the Insular Mountain Belt which covers Vancouver Island, the Queen Charlotte Islands, the Alaska panhandle and the Wrangell and St. Elias ranges of Alaska. These volcanic buildups are represented on northern Vancouver Island by the thick basalts of the Triassic Karmutsen Formation, Quatsino Limestone, the Bonanza Volcanics and the acidic Island Intrusions of Lower to Middle Jurassic. These volcanic complexes form the basement rock upon which later clastic sedimentary wedges of Lower and Upper Cretaceous Age were deposited.

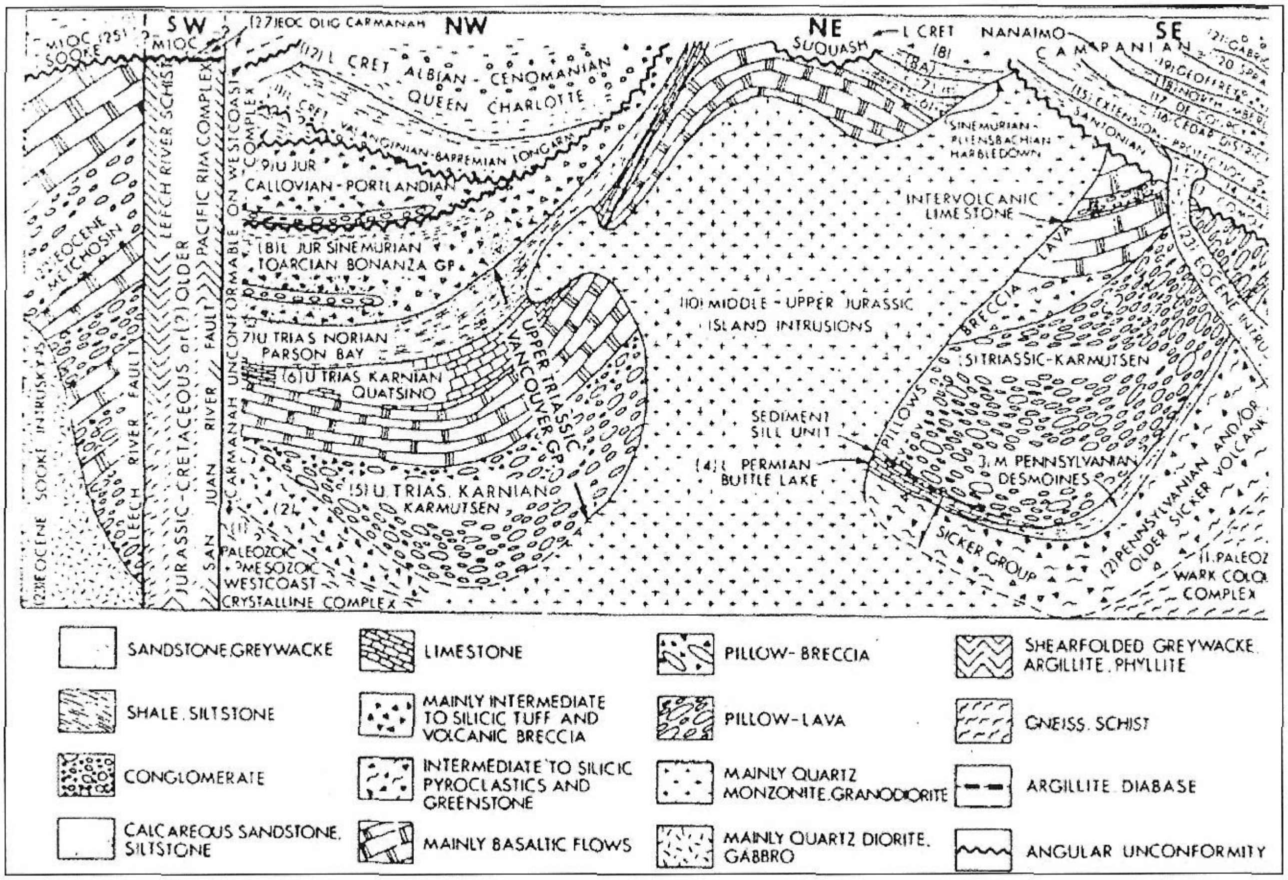
Post-Cretaceous structural deformation in the northern Vancouver Island area is responsible for the preservation of the late Cretaceous sediments of the Suquash area on the northeast coast. This structural deformation manifests itself in the form of major normal (gravity) faults which in many cases are bounding features of sedimentary areas. The sediments of the Cretaceous are preserved on the down-dropped structural blocks. In many cases, this faulting occurs as a number of related step faults. This is best exemplified along the southwest edge of the Suquash area, where two or possibly more sub-parallel normal faults, trending in a northwesterly direction, form the edge of the basin.

Figure 6 Table of Formations of Vancouver Island

	PERIOD		STAGE	GROUP	FORMATION	SYMBOL	AVERAGE THICKNESS IN m. ±	LITHOLOGY
CENOZOIC					late Tert. volc's of Port McNeill	Tvs		
					SOOKE BAY	mpTSB		conglomerate, sandstone, shale
			EOCENE to OLIGOCENE		CARMANAH	eoTC	1,200	sandstone, siltstone, coglomerate
					ESCALANTE	eTE	300	conglomerate, sandstone
			early EOCENE		METCHOSIN	eTM	3,000	basaltic lava, pillow lava, breccia, tuff
MESOZOIC		LATE	MAESTRICHTIAN	NANAIMO	GABRIOLA	uKGA	350	sandstone, conglomerate
					SPRAY	uKS	200	shale, siltstone
			CAMPANIAN		GEOFFREY	uKG	150	conglomerate, sandstone
					NORTHUMBERLAND	uKN	250	siltstone, shale, sandstone
					DE COURCY	uKDC	350	conglomerate, sandstone
					CEDAR DISTRICT	uKCD	300	shale, siltstone, sandstone
					EXTENSION - PROTECTION	uKEP	300	conglomerate, sandstone, shale, coal
			SANTONIAN		HASLAM	uKH	200	shale, siltstone, sandstone
					COMOX	uKC	350	sandstone, conglomerate, shale, coal
		EARLY	CENOMANIAN ALBIAN APTIAN?	QUEEN CHARLOTTE	conglomerate unit	lKQC	900	conglomerate, greywacke
					siltstone shale unit	lKQP	50	siltstone, shale
			VALANGINIAN BARREMIAN		LONGARM	lKL	250	greywacke, conglomerate, siltstone
	JURASSIC	MID to LATE	TITHONIAN CALLOVIAN		Upper Jurassic sediment unit	uJs	500	siltstone, argillite, conglomerate
		EARLY	TOARCIAN? PLIENSBACHIAN SINEMURIAN	BONANZA	volcanics	lJB	1,500	basaltic to rhyolitic lava, tuff, breccia minor argillite, greywacke
					HARBLEDOWN	lJH	-	argillite, greywacke, tuff
	TRIASSIC	LATE	NORIAN	VANCOUVER	PARSON BAY	uTrPB	450	calcareous siltstone, greywacke, silty-limestone, minor conglomerate, breccia
			KARNIAN		QUATSINO	uTrQ	400	limestone
					KARMUTSEN	muTrK	4,500	basaltic lava, pillow lava, breccia, tuff
		MID	LADINIAN		sediment - sill unit	Trds	750	metasiltstone, diabase, limestone
PALEOZOIC	PENN. and ? PERM.			SICKER	BUTTLE LAKE	CPBL	300	limestone, chert
					sediments	CPSS	600	metagreywacke, argillite, schist, marble
					volcanics	CPSV	2,000	basaltic to rhyolitic metavolcanic flows, tuff, agglomerate
	DEV. or EARLIER							

Source: Muller, G.E. Geology of Vancouver Island, Geological Survey of Canada no. O.F. 463, 1977.

Figure 7 Relationship of Formations of Vancouver Island



Source: Muller, G.E. Geology of Vancouver Island, Geological Survey of Canada no. O.F. 463, 1977.

In addition to the predominant faulting, Post-Cretaceous movements have resulted in minor folding. This folding is not clearly evident in surface exposures because the folds are generally gentle and broad with shallow dips. However, drilling in the Suquash area has confirmed their presence. *The Post-Cretaceous structural deformation evident in the area is chiefly the result* of Tertiary Volcanic activity and uplift. However fault movements in Tertiary time also occur along pre-existing fault and fracture planes that originated during major rifting that occurred during the Triassic. Late Tertiary volcanic rocks are exposed in small areas south of Port McNeill. They are basalt, almost unconsolidated tuff and breccias, volcanic boulder conglomerate and light-colored dacite tuff.

These rocks are also evident 5.6 km southwest and 6.4 km west of Port McNeill as two peaks including Cluxewe Mountain and an unnamed smaller hill approximately 2.4 km to the northwest. These tertiary volcanics have affected the sediments as a vertical volcanic dyke was observed on the beach south of the Suquash mine striking at 30 degrees east of north or directly in line with the smaller peak. This dyke intruded the sediments probably through a joint or fracture plane resulting from stress placed on the sediments as a result of Tertiary uplift. Frequent parallel joint sets in adjacent sandstones also exhibited similar orientation. It is probable that additional dykes not exposed occur in a radial fashion from the centers of the Tertiary volcanic occurrences.

The northern part of Vancouver Island has been subject to glaciation during the Pleistocene and also some earlier period, when Georgia Strait, Queen Charlotte Strait and the entire island were covered with a continuous ice sheet originating on the mainland and flowing southwest. Also, during the Pleistocene a number of glacial sequences originated from centres on Vancouver Island and ice flowed in all directions from these centres especially down the major valleys such as the Nimkish Valley south of Port McNeill.

Glacial erosion and scour occurred on the higher elevations while varying thickness of glacial debris and outwash material were deposited on the lowland areas, in particular the relatively flat-lying basins. This glacial deposition has masked the underlying sediments very effectively on northern Vancouver Island, especially in the Suquash area, where unconsolidated overburden is known to be up to 30 meters thick. There are a few surface exposures of Cretaceous sediments along the tide line where erosive action of the sea has uncovered the bedrock and along major fault contacts where scarp lines occur.

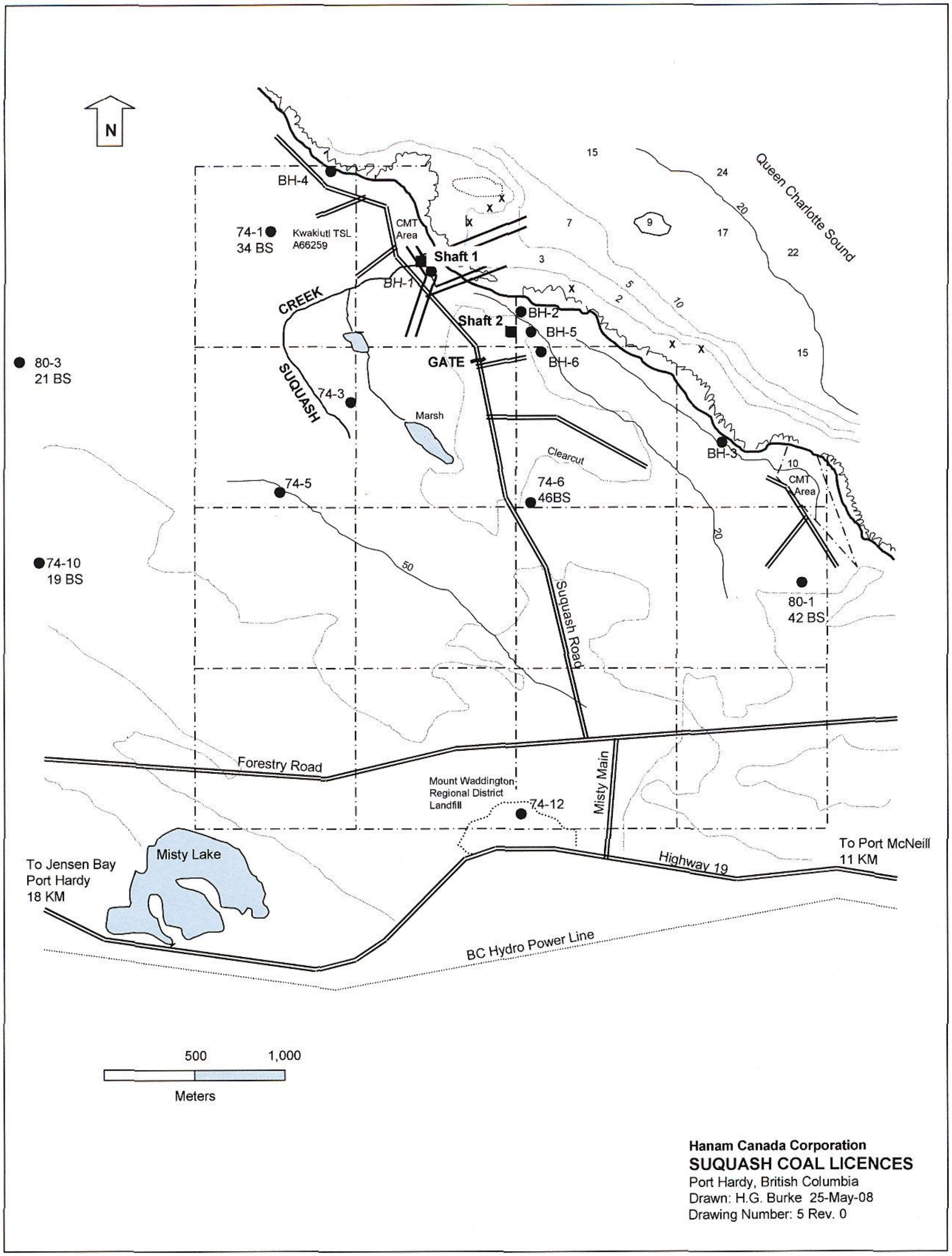
Property Geology

The Suquash property is central to an area of Upper Cretaceous beds situated on the northeast coast of Vancouver Island, between the towns of Port McNeill and Port Hardy. The Suquash Basin includes an area roughly 4 km wide by 32 km long. In addition, a large portion of the basin lies beneath the waters of Queen Charlotte Straight, Broughton Straight and the western part of Malcolm Island. The Suquash coal area is confined to the southwest by a major normal fault which has its down throw side to the northeast. The displacement of this fault is about 300 meters. Smaller northeast trending cross faults occur at both ends of the sedimentary area. Lone Tree Point and the point directly south of Suquash Creek are in a line of fault planes. The barrier reef to the east of Suquash Creek seems to be a north-south break and fault.

Most of the basin is bounded by faults but the amount of internal faulting is essentially unknown due to the paucity of rock exposures and marker horizons. However, general basin configuration and the results of past drilling suggest that faulting within the basin is not severe.

The site plan including the location of drill holes on the property are shown in Figure 7. The coal measures of the Suquash field are relatively flat. The coal seam mined dips slightly, about 4 degrees toward the north east. The roof and floor of the mine were practically level. The mine was relatively dry and required very little pumping. Water in the mine drained towards the bottom of the shaft. Ditches were cut along the underground haulage ways and cross cuts to keep the mine dry. Some dripping through the sides of the shaft was pumped out. When Suquash Colleries pumped water out of the mine in 1952, there was little water seepage into the mine.

Figure 8 Site Plan



Google Image FIGURE 8a

BC Ministry of Energy & Mines geologists calculated that the Suquash mine area has the potential to generate significant quantities of coal bed methane. However the author's review of records of past operations and ventilation fan capacities indicates there were relatively small amounts of methane gas generated and the mine was easily ventilated.

The most recent past owner of the Suquash coal licenses tried to raise financing for gas exploration on the property. The Suquash Sub-basin is on the southern end of the Queen Charlotte Basin and is the only part of the basin that is partly on land. This basin has previously been identified as having a high potential for oil and gas.[9] The basin has been compared to the Cook Inlet, Alaska, and southern California continental borderland based on similarities in tectonic history and structural characteristics. Oil bearing Neogene strike-slip basins occur in the California borderland region. However, differences in types of petroleum source rocks in the California and Queen Charlotte basins preclude making direct petroleum endowment comparisons between the two regions.

Electra has reviewed the drill core logs of deep wells drilled offshore in the Queen Charlotte Basin. All of these wells encountered multiple layers of coal down to a depth of 4,800 meters. An offshore well drilled by Shell in 1966, Sockeye B-10, found many coal seams and natural gas containing 78% methane, 12% ethane, 5% propane with no sulfur at a depth of 910 meters. This well also penetrated 40 meters of live-oil-stained Miocene sandstone. Oil staining was also found in Tertiary volcanic rocks and Neogene sandstones in wells drilled on the Queen Charlotte Islands. Indications of possible deep gas accumulations in Neogene strata have been identified on conventional seismic profiler in several offshore locations at a stratigraphic level similar to the Sockeye B-10 well show. The deepest hole so far drilled on the property was only 384 meters.

[9] Hannigan, P.K,, Dietrich, J.R., Lee, P.J, and Osadetz, K.G., Petroleum Resource Potential of Sedimentary Basins on the Pacific Margin of Canada, Geological Survey of Canada, Bulletin 564, July 12, 2001.

COAL DEPOSIT MODEL CONSIDERATION

The sediments in the Suquash area are from the Upper Cretaceous Nanaimo Group and belong to the Northumberland and DeCourcy Formations of Campanian age.[10] These two formational divisions belong to the third depositional cycle in the Nanaimo Group sequence, occurring above the Extension-Protection and Comox Formations, which are well known and highly coal-bearing formations of the Nanaimo and Comox areas of east-central Vancouver Island. In the field the drab coloured sandstones and buff-weathering pebble conglomerates of the Nanaimo Group are not easily relegated to their respective formational units.

Earlier workers have correlated the coal-bearing sequence in this area to the Extension-Protection Formation. Steve Gardiner assumed that Muller relied on fossil dating to place the age of the Suquash coal-bearing sediments as slightly younger than the Extension Protection Formation. The quality of the coal at Suquash as documented by D.B. Dowling and others is that of slightly lower rank than Comox and Extension-Protection Formations which would tend to support Muller's conclusions[11] but definitive fossil evidence is lacking.

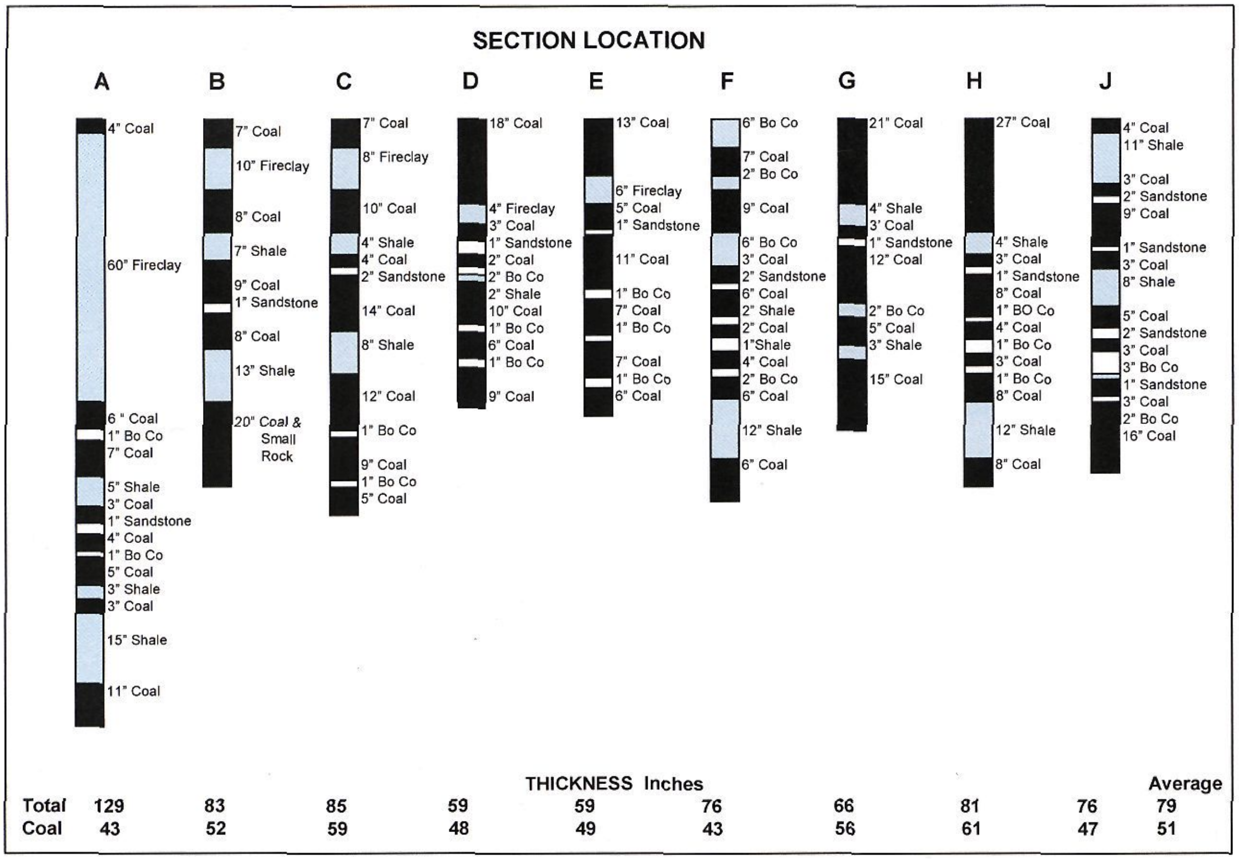
The drill records and the underground seam sections from the old mine workings indicate the coal was formed in a constantly changing depositional environment that caused numerous shale and dirt bands to appear throughout the seam section. The drilling shows that characteristic was not a localized feature that was coincidental with the original mine location. Based on drill core results it would appear that coal quality is enhanced to the south and east of the former mine.

COAL MINE FACE SECTIONS

The coal face cross sections along the existing long wall and in two of the tunnels towards the sea are shown in Figure 8. The average coal thickness in these sections is 1.3 meters in a total seam of 2.0 meters. The seams are interspersed with beds of fireclay, shale, sandstone, and bone coal. Processing is required to produce coal that meets market specifications.

[10] Muller, J.E., *The Geology of Vancouver Island*, 1977.
[11] Dowling, D.B., *Coalfields of British Columbia*, Geological Survey of Canada Memoir 69, 1915, p. 123.

Figure 9 Suquash Coal Mine Face Sections



DIAMOND DRILLING 2008

Four diamond drill holes were completed for a total of 1,085 metres HQ core as shown in Table 5 and Figure 5A in cross section form with correlations.

TABLE 5

Drillhole Data

Hole No.	Location		Elevation	Length	Dip
	Northing	Easting			
SQ-08-01	5610573	624585	14	121.61	-90
SQ-08-02	5610800	624236	12	103.32	-90
SQ-08-03	5610205	624718	18	118.56	-90
SQ-08-04	5610081	625184	17	328.87	-90
			Total:	672.36	

Geological correlation consideration includes:

Older sedimentary rocks within Suquash Basin

Older clastic sedimentary rocks are interpreted to underlie the Suquash Formation within Suquash Basin. These rocks, assigned to the Upper shale unit (of the Queen Charlotte Group) and the undivided Coal Harbour Group, are inferred to have been struck by current borehole SQ-08-4 and historic boreholes SQ-1 and SU-80-1, as well as possibly having been reached by historic borehole OH-1 (for which no complete log exists). In none of these holes, except perhaps for OH-1, was significant coal encountered.

Coal-measures

All of the presently-known significant coal occurrences in Suquash Basin are contained within the Upper Cretaceous Suquash Formation, which forms bedrock beneath the virtually all of the basin's known extent. For purposes of convenience, I have divided the formation into three informal subdivisions, as tabulated in **Table 9-2**:

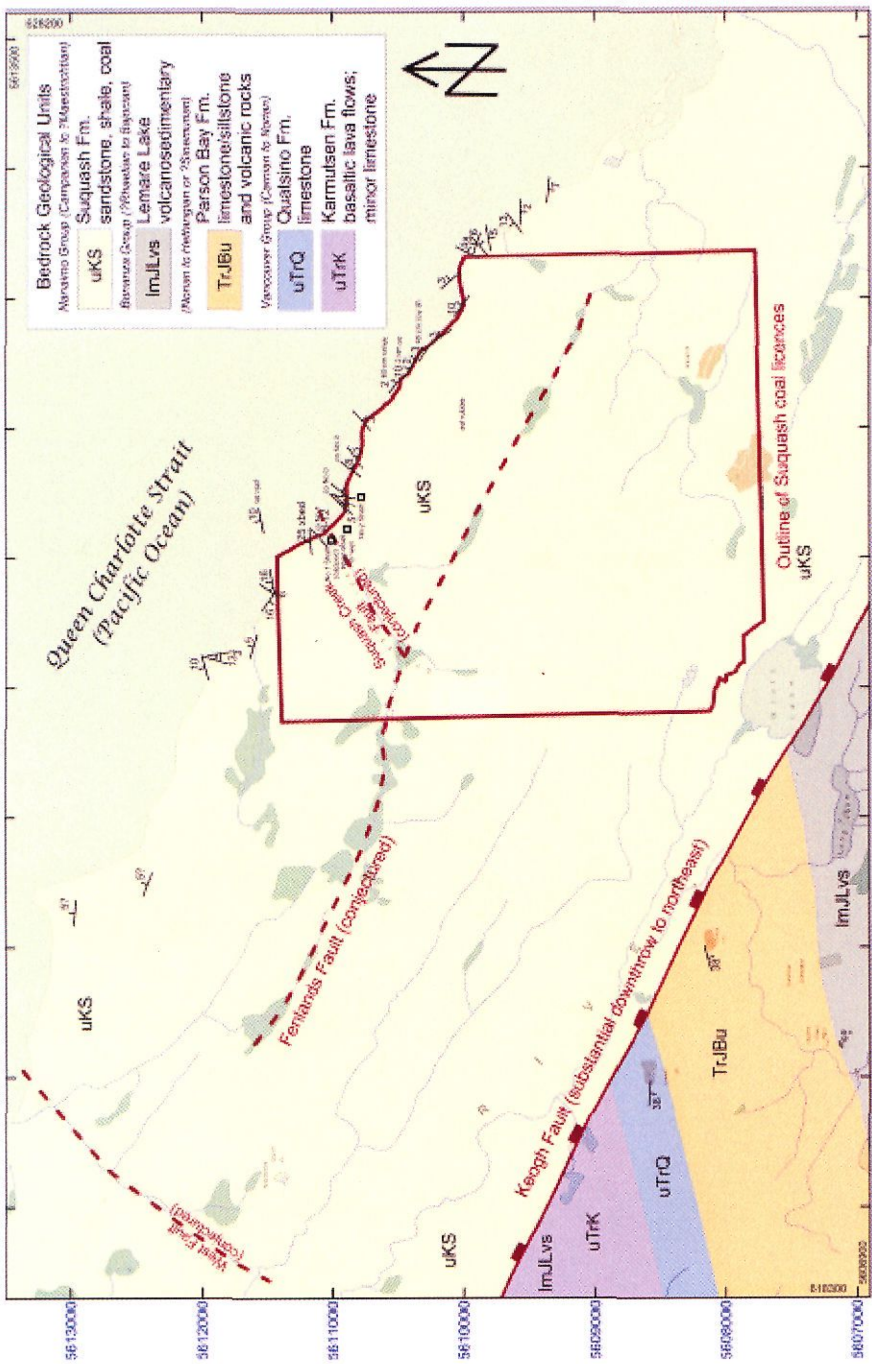
- Upper Division (up to at least 87 metres thick), containing the thin Suquash 'B' and Suquash 'A' coal beds, with its basal contact drawn at the locally-disconformable base of an extensive unit of thick-bedded sandstone;
- Middle Division (42 to 79 metres thick), containing the thin Suquash No.0, No.1 and No.1A coal beds, with its basal contact drawn at the base of a possibly-lenticular series of silty sandstone beds; and
- Lower Division (77 to 188 metres thick), containing the Suquash No.2R and No.2 coal beds near its top (along with the associated variably-carbonaceous shales and siltstones of the No.2L 'basal fine-grained zone', and also containing the No.2A, No.2B, No.3, No.4 and No.5 coal beds, along with numerous other thin and uncorrelatable coal beds, and at least one band of anomalously-radioactive shale (the 'Gamma-marker', above the No.3 coal bed).

Bedrock beneath nearly all of the Suquash coal property is formed by the Upper Division of the Suquash Formation, with a small erosional 'window' into the Middle Division along the shoreline of Queen Charlotte Strait, near the mouth of Suquash Creek. The Lower Division, containing the Suquash No.2 coal zone (the major exploratory target of the year-2008 drilling programme) is nowhere known to be exposed at the bedrock surface.

The total preserved thickness of the Suquash Formation, as observed by drilling within the Suquash coal property, is 328.6 metres (within historic borehole SU-80-1). The formation is unlikely to be thicker than 350 metres within the property, but greater thicknesses may be preserved but as-yet undrilled elsewhere within the Suquash Basin.

Covering rocks

No rocks younger than the Suquash Formation are known to be present within the Suquash coal property. Further to the south and east, however, intrusive and extrusive crystalline rocks (mainly dykes and volcanic flows) of the Neogene Alert Bay Volcanics are known to outcrop, with intrusive or unconformable relationship to the coal-measures. During my 2009 fieldwork, I noted basaltic dykes, carrying brecciated blocks of sandstone, within the Suquash sandstones along the shoreline of Queen Charlotte Sound, near the Orca Minerals ship-loader, east of the mouth of Cluxewe River and therefore several kilometres east of the Suquash coal property.



Map 2: Bedrock geology of the Suquash area

Table 9-2: Locations and formation tops for historic and current boreholes at and near Suquash

borehole	UTM83 E	UTM 83N	Elevation	Drift	Rockhead	Upper Suq	Middle Suq	Lower Suq	Gamma-marker	Upper Shale	Coal Harbour	Basement	TD
SQ-08-1	624585	5610563	37.5	4.85	32.15	starts	12.30	74.34	DNR				103.33
SQ-08-2	624236	5610800	30	25.27	4.73	starts	25.42	69.46	DNR				103.89
SQ-08-3	624718	5610205	50	7.88	42.12	starts	31.76	94.78	DNR				118.09
SQ-08-4	625184	5610081	5	6.10	-1.10	starts	38.16	106.55	201.9	275.01	298? log	DNR	328.88
HBC-3	620920	5610280	60.5	9.60	50.90	starts	20.52	73.84	DNR				86.97
OH-1	624445	5610320	*no data available concerning this borehole*										644.1?
SQ-1	624221	5611021	2.4	1.52	0.88		starts	45.11	103.63?	196.60	274.60	DNR	366.98
SQ-2	625030	5610715	10	3.96	6.04	starts	12.80	77.42	DNR				122.22
SQ-3	625830	5610060	3	1.52	1.48	starts	31.09	97.23	DNR				111.56
SQ-4	623705	5611435	18	1.52	16.48	starts	6.71	DNR	DNR				59.13
SQ-5	624532	5610787	36	1.83	34.17	starts	18.29	77.72	DNR				91.44
SQ-6	624731	5610711	32	1.83	30.17	starts	25.30	84.73	DNR				95.10
S-74-1	623180	5610985	42.5	3.35	39.15	starts	47.55	99.97	?	DNR?			194.46
S-74-3	623900	5610290	32	4.88	27.12	starts	31.39	103.94	?	?	DNR		200.56
S-74-5	623465	5609485	69	2.74	66.26	starts	5.18	84.12	?	231.66	DNR		237.13
S-74-6	624770	5609530	54.5	7.01	47.49	starts	34.90	105.77	?	DNR			221.89
S-74-10	621545	5609120	71	23.77	47.23	starts	51.21	110.03	179.83?	DNR			182.27
S-74-12	624720	5607900	84	35.66	48.34	starts	43.59	101.19	DNR				163.98
SU-80-1	626200	5609165	37	3.35	33.65	starts	90.35	144.30	256.00	331.96	372?	DNR	384.06
SU-80-2	623510	5608175	106	>48.16	<57.84								48.16
SU-80-3	620860	5610605	77	41.50	35.50		starts	76.4	139.25	DNR			207.57
SU-80-4	618560	5611320	34	47.85	-13.85		starts	66.8	119.20	NP	143.80?	244	262.43
SU-80-5	621290	5611620	40	71.60	-31.60		starts	101.6	211.30	311.40	347.80	DNR	365.76
No.1 Shaft	624188	5611006	9.15?	*no data*			starts	?	DNR				51.82
No.2 Shaft	624521	5610780	35	0.30	34.70	starts	DNR						5.79

Note: current boreholes are SQ-08-1 to SQ-08-4. Others (including shafts) are historic. Boreholes and shafts listed in boldface are within property.

Mineralization

At Suquash, 'mineralization' consists of two closely-related lithological groups: coal and rock partings, which together form the constituent parts of coal beds. Coal and rock partings are intimately associated in horizontal and vertical proximity: this is a normal feature of coal deposits. All of the correlatable coal beds at Suquash lie within the Suquash Formation.

Principal exploratory and mining target

The zone of principal exploratory (and, potentially, mining) interest at Suquash is the Suquash No.2 coal bed (**Figure 11-1**), which consists of interbedded coal and rock partings, including bands of dirty or stony coal, and coaly or carbonaceous rock. Contemporary observations from Suquash Mine (Daniels, 1919c) underscore the presence of numerous rock partings within the No.2 coal bed, as well as within the No.2 coal zone generally. As well, year-2008 exploratory drilling has confirmed that the coal bed consists of a finely-interbedded complex of coal and rock partings, sufficiently-so that selective mining within the No.2 coal bed would be difficult, although not impossible.

Roof

The roof of the No.2 coal bed comprises interlaminated mudstone, siltstone and sandstone, ranging in thickness from 0.82 to 4.70 metres in the four year-2008 boreholes. This unit, referred to as the Rider Parting, becomes sandier as it thickens, but at no point is it known to become entirely sandstone. The Rider Parting is thin- to medium-bedded, and moderately hard; in my opinion it would make an acceptable roof for a room-and-pillar mine.

Above the Rider Parting is the thin but persistent coal of the No.2R (for 'Rider') coal bed, which is 20 to 60 centimetres thick. The roof of the No.2R coal bed (and therefore the roof of the overall No.2 coal zone) is a few decimetres to a few metres of interbedded siltstone and mudstone, overlain by silty sandstone of the Middle Division of the Suquash Formation. In those places within the old workings of Suquash Colliery, where the No.2R coal, a thin Rider Parting, and part or all of the No.2 coal bed formed the worked section of the coal zone, the Middle Suquash sandstones formed the long-term stable roof of the mine, with local spalling of the underlying siltstone and mudstone.

Coal

In core, as well as in hand-specimens seen within the pithead dump of Suquash Colliery, the No.2 coal is a normally-banded, moderately-bright, blocky, humic bituminous coal, with well developed cleats. Core cores occasionally break easily along cleats, forming small, dice-like cubical to rhomboidal fragments. Some of the No.2 coal is duller in aspect, and distinctly stony, with elevated ash contents approaching the 40% cut-off between dirty coal and coaly rock. Pyrite streaks and disseminated fine pyrite are occasionally observed in coal cores, and bright yellow 'sulphur bloom' is evident on some of the weathered coal from the pithead dump.

Parting materials associated with the No.2 coal comprise variably-carbonaceous, rootpenetrated mudstone and siltstone, and (less-commonly) fine-grained kaolinitic sandstone.

Figure 11-1 shows the interpreted thickness contours of the No.2 coal bed, inclusive of its internal rock bands. Within the current outlines of the Suquash property, drilled thickness ranges from 20 centimetres (borehole S-74-5, in the south-west, where the bed is represented solely by carbonaceous rock) to 2.42 metres (in a dirty section found in borehole SQ-2008-3, about one kilometre south-east of Suquash Colliery). The thickness contours shown in **Figure 11-1** are influenced by the clustering of boreholes along the southeast-trending coastline of Queen Charlotte Strait, but they appear to show a south-eastward elongation of the thicker portion of the No.2 coal bed.

Floor

The floor of the No.2 coal bed comprises variably-carbonaceous, interbedded or interlensing mudstone and siltstone, with occasional coals up 20 centimetres thick. These 'basal shales', referred to as the No.2L bed, are 1.19 to 3.50 metres thick in the four year-2008 boreholes. The 'shales' are extensively root-penetrated, especially at their top and beneath some of their internal coal bands; they are generally dark-coloured and on the whole they present the appearance of a well-developed paleosol upon which the peat-accumulating and hence coal-forming wetlands of the No.2 bed were founded. The No.2L bed is moderately soft, with locally-abundant pedogenic slickensides, but it hardens somewhat as its silt content increases downward towards its base. Beneath the No.2L bed is the floor of the overall No.2 coal zone: a hard, distinctively lightcoloured unit of quartzitic silty sandstone.

The soft, root-penetrated mudstones of the No.2L bed would make a fair to poor floor for a room-and-pillar mine, with likely propensities towards heaving and breaking-up under traffic by mine vehicles and coal-cutting machinery. The lower parts of the No.2L bed, with higher silt content, might make a better floor, as would might any of the coal bands within the bed, provided that they were reasonably thick (20 cm?) and persistent. The best floor in long-term usage, such as along main development roadways, would likely be found in the harder, quartzitic sandstones beneath the No.2L bed.

Distribution of coal beds within the Suquash Formation

The Suquash Formation, as seen within the Suquash coal property, contains 13 correlatable and seemingly-persistent coal beds (**Table 11-1**), numbered and lettered in order from the top of the formation downwards.

- Within the <u>Upper Division</u> of the Suquash Formation, the 'B' and underlying 'A' coal beds are present. Other thin coals overlying the 'B' coal bed may eventually be found to be sufficiently continuous to merit naming, but the necessary studies have not been completed owing to their minimal thickness. None of the Upper Division coals are known to attain mineable thickness.

- Within the Middle Division of the Suquash Formation, the No.0, and the progressively underlying No.1 and No.1A coal beds are present. The No.1 coal bed is alternatively known as the Hudsons Bay coal bed, owing to its having been worked on behalf of the Hudsons Bay Company during the mid-19th century. None of the Middle Division coals are known to attain mineable thickness.
- Within the Lower Division of the Suquash Formation, the No.2R and No.2 coal beds and the No.2L 'basal shale zone' (collectively, the No.2 coal zone), and the progressively underlying No.2A, No.2B, No.3, No.4, No.4L and No.5 coal beds are present. Numerous other very thin and uncorrelatable coal beds are locally present within the Lower Division.

The No.2 (**Figure 11-1**) and No.5 coal beds locally attain gross thicknesses of immediate (at least 1.50 metres) or future (at least 0.90, but less than 1.50 metres) interest for underground mining. The No.4 coal bed locally attains a gross thickness of future interest for underground mining. Neither the No.4 nor the No.5 coal beds have yet been sufficiently studied in terms of their coal quality, nor their lateral distribution, to be considered for inclusion in the coal-resource base at Suquash.

Table 11-1: Coal bed tops and thicknesses for current and historic boreholes at and near Suquash

borehole	B-roof	A-roof	0-roof	1-roof	1A-roof	2R-roof	2-roof	2-roof-elev	2-net	2-gross	2A-roof	2B-roof	3-roof	4-roof	5-roof	5-net	5-gross	TD
SQ-08-1	beyond subcrop		16.69	40.52	62.42	74.67	79.07	-53.07	0.64	1.09	DNR							103.33
SQ-08-2	beyond subcrop		26.33	41.93	60.15	69.80	70.92	-50.92	1.55	2.21	100.43	DNR						103.89
SQ-08-3	beyond subcrop		34.80	57.20	84.94	95.63	101.38	-61.38	1.39	2.42	DNR							118.09
SQ-08-4	beyond subcrop		39.90	62.39	88.46	107.03	108.22	-74.22	0.70	1.38	146.68	153.31	206.49	218.12	235.01	0.98	1.53	328.88
HBC-3	beyond subcrop		20.52	40.13	57.45	73.84	75.60	-16.60	0?	1.64	DNR							86.97
OH-1	*no data available concerning this borehole*																	644.1?
SQ-1	beyond subcrop			3.66	27.74	47.55	49.38	-46.98	1.45	1.75	81.69	99.67	104.24	134.42	167.94	0.61	0.61	366.98
SQ-2	beyond subcrop		15.54	35.36	70.10	78.64	81.08	-76.08	0.91	0.91	111.25	116.74	DNR					122.22
SQ-3	beyond subcrop	5.49	33.22	54.10	85.95	98.45	99.36	-84.36	0.91	1.83	DNR							111.56
SQ-4	beyond subcrop		6.71	24.99	53.34	DNR												59.13
SQ-5	beyond subcrop		18.29	34.44	69.49	NP	81.69	-59.69	1.17	1.83	DNR							91.44
SQ-6	beyond subcrop		25.30	40.69	75.82	85.50	86.62	-67.62	0.32	0.71	DNR							95.10
S-74-1	beyond subcrop	20.42	48.62	65.99	84.73	100.71	104.55	-59.55	0	0.30	130.39	146.61	190.07	DNR				194.46
S-74-3	beyond subcrop	9.45	35.81	54.25	79.86	104.49	111.08	-56.08	0.33	0.69	131.06	140.82	160.63	169.04	186.08	0	2.59	200.56
S-74-5	beyond subcrop		5.18	35.36	74.68	NP	84.12	-21.12	0	0.20	114.45	142.95	163.07	177.39	194.16	0.24	2.44	237.13
S-74-6	beyond subcrop	11.58	34.90	55.47	97.54	105.82	108.51	-63.51	0.24	1.01	142.04	157.22	176.48	198.42	215.49	0.91	0.91	221.89
S-74-10	uncertain floor?	30.48?	51.21	60.66	89.46	NP	110.55	-37.55	0	0.85	141.73	155.14	180.44	DNR				182.27
S-74-12	beyond subcrop		45.72	54.86	76.20	101.19	103.63	-20.63	0.30	0.30	135.03	NP	DNR					163.98
SU-80-1	65.15	75.10	95.05	120.15	132.55	157.60	162.60	-130.6	0.75	0.90	211.35	232.95	264.95	281.40	293.88	2.42	3.45	384.05
SU-80-2	*this borehole did not reach bedrock*																	48.16
SU-80-3	beyond subcrop			41.95	60.40	NP	79.45	1.55	0.55	0.55	99.05	119.60	154.25	164.90	195.75	1.70	2.55	207.57
SU-80-4	beyond subcrop					66.90	70.60	-36.60	0.75	1.45	79.90	89.85	NP	139.30	NP	0	0	262.43
SU-80-5	beyond subcrop				88.60	NP	103.30	-65.30	1.15	1.15	143.00	151.00	211.45	274.9?	295.70	0	0.70	365.76
No.1 Shaft	beyond subcrop			ND	ND	ND	49.38	-40.23	ND	1.83	DNR							51.82
No.2 Shaft	ND	DNR?	DNR	*Construction of No.2 Shaft was stopped after sinking 5.49 metres into sandstone. No coal was struck.*														5.79

Note: current boreholes are SQ-08-1 to SQ-08-4. Others (including shafts) are historic. Boreholes and shafts listed in ***boldface*** *are within property.*
Abbreviations: DNR = did not reach; NP = not present; ND = no data available. Zero net coal thickness indicates that entire zone consists of rock.

Detail coal and rock samples from the core are listed on the following pages.

Samples collected are shown as follows:

Sample transmittal note

Suquash Project

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Comp-osites	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
EG-1	SQ-01-01			roof siltstone	74.57	74.67	0.10	no data	0.10						
	SQ-01-02		**2R**	coal	74.67	75.12	0.45	no data	0.45	Prox +					
	SQ-01-03			floor siltstone	75.12	**75.24**	**0.12**	**no data**	**0.12**						
	SQ-01-04			roof siltstone	78.98	79.07	0.09	no data	0.09						
	SQ-01-05		**2**	coal	79.07	79.24	0.17	no data	0.17						
	SQ-01-06			rock	79.24	79.65	**0.11**	**(0.30)**	**0.41**						
	SQ-01-07			stony coal	79.65	79.86	0.21	no data	0.21						
	SQ-01-08			coal & rock	79.86	80.16	0.30	no data	0.30						
	SQ-01-09			floor siltstone	80.16	80.26	0.10	no data	0.10						
EG-2	SQ-02-01			roof	**60.10**	60.15	**0.05**	**no data**	**0.05**						
	SQ-02-02		**1A**	*coal & sty co*	*60.15*	*60.52*	0.37	*no data*	0.37	Prox +					
	SQ-02-03			shale	60.52	60.62	0.10	no data	0.10						
	SQ-02-04			coal	60.62	60.70	0.08	no data	0.08						
	SQ-02-05			floor	60.70	**60.77**	**0.07**	**no data**	**0.07**						
	SQ-02-06			roof	69.70	69.80	0.10	no data	0.10						
	SQ-02-07			coal	69.80	69.88	0.08	no data	0.08	Prox +					
	SQ-02-08 **SQ-02-8A**			**coaly shale**	69.88	**70.00**	**0.12**	**nil**	**0.12**					combine these two sub-samples before head analysis	
	SQ-02-20			**siltstone**	**70.00**	**70.28**	**0.28**	**nil**	**0.28**						

Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m) From	To	Thickness (m) Sampled	(Missing)	Total	Comp-osites	Raw head analysis (air-dried basis): Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
	SQ-02-21			**slst / sh lam**	**70.28**	**70.60**	**0.32**	**nil**	**0.32**						
	SQ-02-22			**sh / sst lam**	**70.60**	**70.82**	**0.22**	**nil**	**0.22**						
	SQ-02-09			roof	70.82	70.92	0.10	no data	0.10	Comp. No.2A					
	SQ-02-10		2R	coal & sty co	70.92	71.54	0.62	no data	0.62						
	SQ-02-11			shale	71.54	71.71	0.17	no data	0.17						
	SQ-02-12		2	coal & shale	71.71	72.59	0.88	no data	0.88						
	SQ-02-13			shale	72.59	72.89	0.30	no data	0.30						
EG-2	SQ-02-14		2	*coal & shale*	72.89	73.13	*0.24*	*no data*	*0.24*						
	SQ-02-15			shale	73.13	73.63	**0.44**	**(0.06)**	**0.50**	Prox+					
	SQ-02-16			coal	73.63	73.72	0.09	no data	0.09						
	SQ-02-17			shale	73.72	74.04	0.32	no data	0.32						
	SQ-02-18			coal & sty co	74.04	74.22	0.18	no data	0.18						
	SQ-02-19			floor	74.22	74.32	0.10	no data	0.10						
EG-3	SQ-03-15			roof sst & sh	34.70	34.80	0.10	no data	0.10						
	SQ-03-16		0	coal & shale	34.80	35.22	0.42	no data	0.42	Prox +					
	SQ-03-17			floor siltstone	35.22	35.32	0.10	no data	0.10						
	SQ-03-01			roof sh (ash?)	57.10	57.20	0.10	no data	0.10						
	SQ-03-02			coal	57.20	57.27	0.07	no data	0.07	Prox+					
	SQ-03-03		1?	sandstone	57.27	57.52	0.25	no data	0.25						
	SQ-03-04			coal	57.52	57.96	0.44	no data	0.44						
	SQ-03-05			floor sst	57.96	**58.065**	**0.105**	**no data**	**0.105**						

	SQ-03-18		**2R**	coal	95.63	96.15	**0.52**	**nil**	0.52	Prox+					
	SQ-03-06			roof	**100.77**	100.85	**0.08**	**no data**	**0.08**	Comp. No.3A					
	SQ-03-07			coal	100.85	101.00	**0.13**	**(0.02)**	0.15						
	SQ-03-08 **SQ-03-08A**			shale	101.00	101.38	0.38	no data	0.38					combine these two sub-samples before head analysis	
	SQ-03-09		**2**	coal & rock	101.38	101.86	0.48	no data	0.48						
	SQ-03-10 **SQ-03-10A**			shale and sst	101.86	102.14	0.28	no data	0.28					combine these two sub-samples before head analysis	
	SQ-03-11			coal	102.14	102.35	0.21	no data	0.21						
Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Composites	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moisture%	Ash %	Total Sulphur %	Sample weight (grams)
EG-3	SQ-03-12 **SQ-03-12A**		**2**	shale	102.35	102.66	0.31	no data	0.31	No.3A (cont.)				combine these two sub-samples before head analysis	
	SQ-03-13			coal & rock	102.66	103.80	1.14	no data	1.14						
	SQ-03-14			floor	103.80	103.90	0.10	no data	0.10						
	SQ-03-19			shale	103.90	104.38	0.48	nil	0.48						
	SQ-03-20			shale	104.38	104.60	0.22	nil	0.22						
	SQ-03-21			siltstone	104.60	104.81	0.21	nil	0.21						
	SQ-03-22			sandstone	104.81	105.17	0.36	nil	0.36						
EG-4	SQ-04-01			shale roof	39.80	39.90	0.10	no data	0.10						
	SQ-04-02		**0**	coal	39.90	40.20	0.30	no data	0.30	Prox +					
	SQ-04-03			sst floor	40.20	41.00	0.0		0.10						
	SQ-04-04			roof	106.93	107.03	0.10	no data	0.10	Comp					

	SQ-04-05		**2R**	coal	107.03	107.40	0.37	no data	0.37	No.4A					
	SQ-04-06 **SQ-04-6A**			shale	107.40	108.22	0.82	no data	0.82					combine these two sub-samples before head analysis	
	SQ-04-07			coal & shale	108.22	108.64	0.42	no data	0.42	Comp. No.4B					
	SQ-04-08			shale	108.64	108.83	0.19	no data	0.19						
	SQ-04-09			coal	108.83	108.90	0.07	no data	0.07						
	SQ-04-10			shale	108.90	109.05	0.15	no data	0.15						
	SQ-04-11			coal	109.05	109.10	0.05	no data	0.05						
	SQ-04-12		**2**	sandstone	109.10	109.23	**0.12**	**(0.01)**	**0.13**						
	SQ-04-13			coal	109.23	109.32	0.09	no data	0.09						
	SQ-04-14			shale	109.32	109.46	0.14	no data	0.14						
Site	Sample No.	Lab No.	Coal bed designation (local nomenclature)		Sample interval (m)		Thickness (m)			Comp-osites	Raw head analysis (air-dried basis):				
					From	To	Sampled	(Missing)	Total		Specific gravity	Moist-ure%	Ash %	Total Sulphur %	Sample weight (grams)
EG-4	SQ-04-15		**2**	coal	109.46	109.60	0.14	no data	0.14	No.4B					
	SQ-04-16			floor	109.60	109.70	0.10	no data	0.10						
	SQ-04-97		coalified log	coal	**281.87**	**281.91**			0.04	Prox +					
				coaly shale	**281.91**	**281.94**			0.03						
				coal	**281.94**	281.97			**0.03**						

Each drill hole intersected a conformable sequence of sandstone-shale-conglomerate with minor coaly beds (refer to Appendix III for drill logs) Downhole geophysical surveys are shown in Appendix IV. See locations of 08 drill holes on Figure 11 and Fig. 1a.

SAMPLING METHOD AND APPROACH

Schedule

Electra's initial emphasis has been on obtaining input and support from the Kwakiutl First Nation. The exploration schedule depends greatly on on-going and continued timely support from the Kwakiutl First Nation. Early engagement with the Kwakiutl First Nation has begun. In this regard Electra has met with the Chief and Council in Fort Rupert. At this introductory meeting, the Chief and Council indicated that they will support an exploratory diamond drill program. Electra's goal in the consultation process is to ultimately achieve a Project agreement that provides both economic and social benefits to the Kwakiutl First Nation by working together and following consultation protocols as we move through the exploration phase.

Electra's next step will be obtaining approval from government departments for the coal license applications. The three year project schedule is shown in Figure 10. The target is to complete a test slope and to take out a test shipment in August 2009. There is significant environmental data for the mine area but more data will be collected. An extended public input process is proposed. Electra's office in Port Hardy would be relocated for easier access to for people to review project information and provide input.

Figure 10 Project schedule

Task	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Kwakiutl support			X	X	X	X						
Customer support		x		X					x			x
Coal tenure approval				X								
Mapping, surveys				X								
Exploration drilling				X								
Pump out mine & inspect					X							
Construct access slope							X					
Mine planning		X	x	X	X	X	X	X				
Gather environmental data				X	X	X	X	X				
Draft environmental application.						X						
Public input				X								
Environmental application					x							
Public input			x	X	x	X						
Decision							X					
Detailed engineering							X	X				
Economic review								X				
Quality Tests				X			X	X				
Contracts								X				
Financing								X				
Equipment purchasing								X	X			
Construction								x	x	x	x	
Training											x	
Start-up												x

Site Plan

The recommended proposal to collect a bulk sample from the same coal seam previously mined that is about 52 meters underground as shown in the Mine Plan, Figure 9. Three to four new exploration drill holes, 08-1, 08-2, 08-3 and 08-4 are proposed in the vicinity of the former mine's partially completed number 2 shaft as shown. The results for boreholes BH 5 and BH6 near this shaft have been lost and the proposed drilling would provide new design information for a slope to access this part of the previous mine.

Figure 11 **Mine Plan**

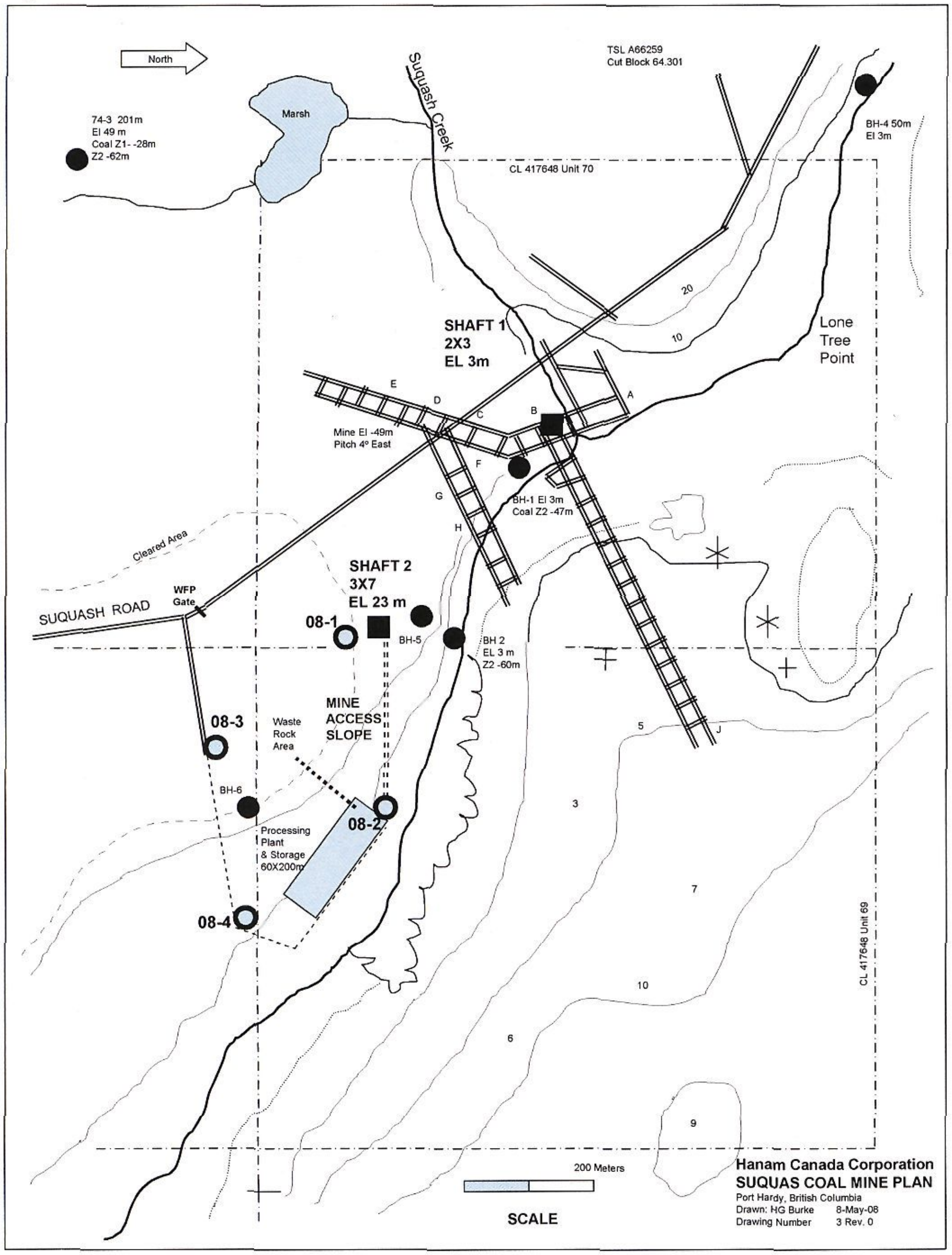
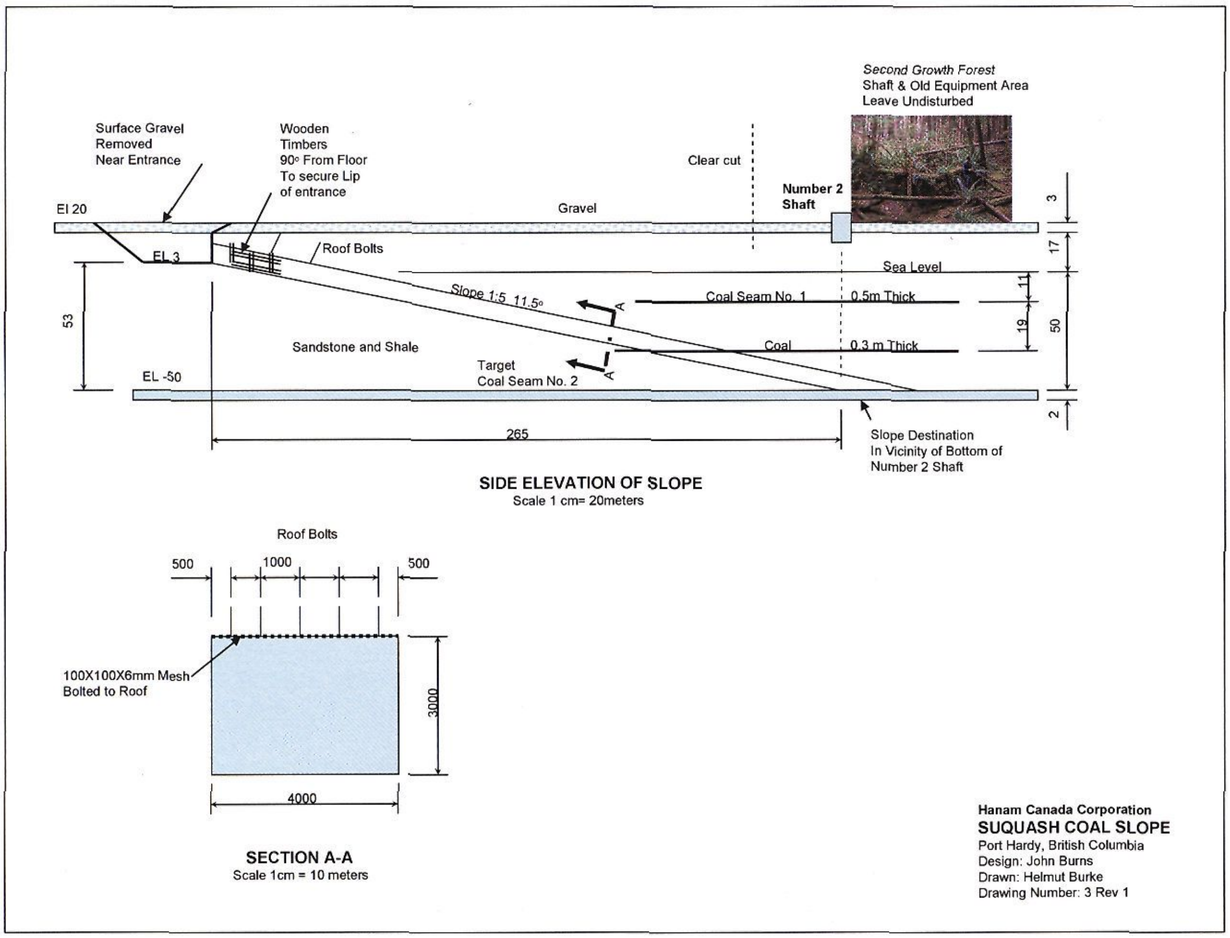


FIGURE 11 Location of 08 Drillholes

The seam mined is about 2 meters thick overall with 1.3 meters of coal. The coal layers are interspersed with layers of shale, fireclay, bone coal, sandstone. These extraneous materials will be removed from the coal in a processing system.

Hope Engineering and H.N. Freeman proposed two parallel access tunnels as shown in figure 12.[12] The tunnels would each be about 3x3 meters in cross section and 25 meters apart. One tunnel would serve as the exit for the coal conveyor. The other would be the entry for personnel and equipment. Ventilation shafts would be from the surface. The length of the slopes would be 220 meters with the entrances located 3 meters above sea level and the coal seam 50 meters below sea level.

Figure 12 Mine Section



[12] Hope Engineering, Report for Suquash Collieries, Vancouver, April, 1953.

Drill core sampling and analysis

A total of 75 samples were collected from the four drill holes and have recently been sent to a recognized Laboratory for proximate analyses. Samples should be collected on the basis of coal content and physical characteristics wherever possible. Short sections of waste shale within a zone should be omitted from a sample (as might occur in a cleaning plant). For two samples an analysis of the coal ash should be made.

Wash tests for a representative sample from seam two should be conducted. These tests would include estimates of coal recovery as a function of ash content. The washability tests include data for coal characteristics at gradually increasing flotation medium specific gravity from 1.3 to 1.8. The fraction of coal recovered at each density of flotation medium is measured and an optimum medium density and coal recovery can be calculated for a particular sample. The ash quantity and composition is also affected by washing. Such tests can involve hundreds of proximate analyses including each coal fraction recovered but at this stage Electra is proposing to gather only some initial data.

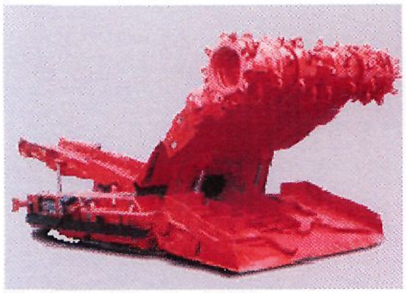
The ash composition may determine the washing requirements for the coal. Some of the ash constituents are beneficial for cement making provided that the ash content is consistent and reliable. Sulfur in the coal often relates to strata immediately above and below the coal seams and can possibly be reduced by coal washing. Other chemically significant constituents: sodium/potassium, chlorine, phosphorus, magnesium and mercury will also be measured. Coking properties are not expected for this coal and therefore only a single Free Swelling Index test is required and other coking parameters will not be measured. Petrographic analyses are also not required at this stage.

Bulk Sample Mining Equipment

In driving the decline and mining the sample the same equipment would be used as required for subsequent coal mining operations. Hope Engineering proposed electrically driven all rubber tired equipment: a loader, two shuttle cars, a mining machine, drill, and car puller. Four operating units of this combination of equipment were proposed with each unit capable of producing 110,000 tonnes per year operating two shifts and 250 days per year. It was planned to remove heavy partings underground and to use them for roof support. A 900 mm belt conveyor was proposed to carry coal up the inclined tunnel to the mine portal.

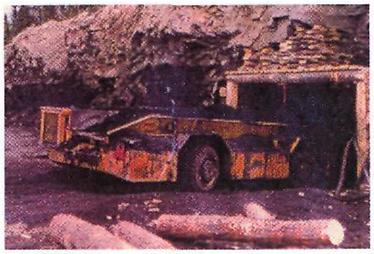
A modern low clearance radio controlled continuous Joy mining machine is shown in Figure 13. It is equipped with a methane sensor, an explosion proof electrical motor and an integral roof bolting system. The machine requires up to 560 kw total power including two 150 kw cutting heads. There would be two 19 tonne capacity battery powered electric shuttle cars supplied by Phillips Machine Services Inc., Beckley, W.V. Each car operates a full shift without recharging. For the sampling operation coal would be driven to the service. Later coal would be conveyed from the mine to storage piles on the surface. A suitable brake would be used to hold the belt in place during a power failure or other upset.

Figure 123 Mining equipment



Continuous Miner Joy 14CM
Source: http://www.phillipsmachine.com/

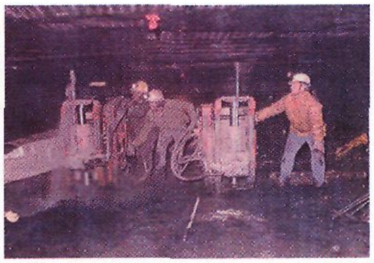
Battery Powered Coal Car
Source: http://www.phillipsmachine.com/



Mine entrance

Coal miner cutting drum

Coal car



Freeman calculated that the mine could be kept free of water by pumping four hours per day with a 200x100x200 millimeter (230 liter per minute) duplex pump and small auxiliary pumps in dip workings.[13] The mine would have a dual air supply system with a capacity of 600 cubic meters per minute each. The air would be supplied by a forced draft fan and exhausted through a shaft to the surface with an induced draft fan. The air flow velocity would be reduced to less than 0.25 meters per second in the underground belt road. Safety interlocks would shut down mining if the fans fail.

Water will be used in various processes, dust suppression, and possibly domestic uses of mine personnel. Rain water from the process building roof, drainage from underground workings, and well water will be stored in a reservoir. Clean water overflowing from the reservoir would be released at a controlled rate to an existing intermittent creek.

For the proposed exploration and sampling program electricity would be generated on site. For subsequent mining, electricity would be purchased from BC Hydro's transmission line located 3.3 km from the mine. BC Hydro's line is this area has ample excess capacity for up to 70 MW of electricity load that was formerly used by the copper mine in Port Hardy. The main transformer for the underground equipment would be 5 MVA. The voltage of underground equipment is usually 1000 volts. All underground wiring, transformers, safety circuit center equipment, motors, lighting fixtures, air regulating devices will be of permissible design and installation as required by BC Department of Mines' regulations.

[13] H.N. Freeman, Report to Suquash Collieries, Vancouver, Nov. 7, 1952.

The underground equipment including the continuous miner, roof bolter, shuttle cars, and conveyors, would operate at 600 volts. The electrical equipment at the face and the coal returns is explosion proof, Class I, Division 1. The other electrical equipment is Class I Zone 2. A gas monitoring system is used at the mining machine and throughout the mine. The continuous miners automatically shut down if the methane concentration exceeds 1%. Modern starters including soft start systems and multi frequency motors would be used to reduce the peak power demand. The mine ventilation fans, crushers, screens, cleaning plant, offices and shop would operate at 600 volts.

Waste management

An environmental management system, waste management plan, water management plan, and reclamation plan will be prepared. The main waste will be sandstone and shale partings in the coal seam separated from the coal. A plan will developed for suitable disposal of this material. Previous mining plans proposed that a significant proportion of this material can be left underground. At the Quinsam Coal mine in Campbell River, this waste material is stored under water in shallow lagoons. One possibility being considered is to dispose of this waste material in a separate cell or inorganic filler within the Mount Waddington Regional District's landfill 3 kilometers away.

Sprinklers will be used to minimize dust from the waste rock area. Contained conveyors and chutes will minimize dust for similar barge loading. The BC dust fall guideline is a maximum of 1.75 $mg/dm^2/day$.

Hazardous materials such as used oil, antifreeze, hydraulic fluid, solvents and other special wastes will be contained in appropriate holding tanks prior to disposal according to regulatory requirements. An outside recycler will be contracted to collect and recycle as many of these fluids as possible. A disposal plan that meets the requirements and regulations of the Province will be developed for the fluids that are not recycled.

Domestic waste accumulated from the mine operations will be taken to the Regional District's landfill. Recyclable material including scrap metal, batteries, and tires will be recycled by outside contractors. Liquid waste sewage from the offices, shops the wash plant, and camp site will be collected and treated in a sewage treatment plant. The design of the sewage treatment system will conform to the requirements and regulations governing sewage disposal systems in the Province of BC.

SAMPLE PREPARATION, ANALYSES AND SECURITY

Coal processing and storage would be in a building near the mine portal. The building would include offices, a wash house, repair shops, and first aid station. Coal will be conveyed to a feed hopper and crusher. In addition to sizing the coal, the crusher simultaneously removes any material that resists breakage such as rock, slate, tramp iron or timber. A grizzly screen with an aperture of less than 200 mm would be installed above the hopper to stop large rocks and for safety. Coal from the crusher would be conveyed to a raw coal pile. Water sprays would be used to minimize dust.

Coal cleaning will be simulated in the laboratory using lab air separation and flotation apparatus. In Phase 2 the coal sample would be cleaned in on-site leased equipment. Raw coal for the cleaning plant will be screened into three sizes. Coal would be reclaimed from the pile, screened and cleaned in a test model of an air cleaning system shown in Figure 14 developed in by Tangshan Shenzou Machinery Co. Ltd., Tangshan, Hebei, China. Coal fines would be cleaned by column flotation.

The fine coal would be cleaned by flotation and then added to the other fractions. All coal would be combined and sent to two storage piles. Clean coal would be loaded onto trucks and delivered to the barge loading site. Rejects from the crusher, air cleaners and flotation cells would be conveyed to outside piles and trucked to a waste rock disposal site. A zero discharge water storage, treatment and recirculation system will be designed for closed loop water recirculation.

Figure 134 Coal screening and cleaning equipment

Coal Screen
Source: http://www.tsganxuan.com

Air cleaning system
Source: http://www.tsganxuan.com

Coal Fines Wash column
http://www.cpti.bc.ca/files/coalpro.html

DATA VERIFICATION

The author's work on the property and research for this report included:

1. Three site visits in May, July, August and September and October-November, 2008.
2. Reviewed all past Assessment Reports, which are available from the BC government website
3. Reviewed the results from the ten past drill holes which are given in a previous section of this report.
4. Reviewed the geological mapping done in the past and verified the location of the coal showings.
5. Compared some of the coal samples taken in 2008 with past assay results.
6. Examined outcrops of seam 1 on the beach , in Suquash Creek, and in the cliff along the beach.
7. Supervised the logging of the 2008 drill core.

None of the core from past drilling is presently available but some reports of Suquash core being stored in the Charlie Lake facility will be investigated.

As a result of this review, the author has no concerns about the reliability or of the samples taken or the assays completed. Future sample programs should include wash tests for the coal and ash analyses.

ADJACENT PROPERTIES

The property immediately to the north of Electra's tenures is held by Offshore Oil & Gas Corp. Ltd. of Vancouver. This company appears defunct. The property is 8.6 by 8.3 km and has been issued Oil and Gas Title number 21557 by BC Energy & Mines Oil Titles Division. The title was issued in 1966 and has not been required to be kept current because there is a provincial and federal government moratorium on offshore oil and gas exploration. About 10% of the property is on land adjoining the Suquash Licenses and the remainder is in Queen Charlotte Straight.

Mineral rights for most of the coal license area are held by Electra. However, a 75 hectare block in the northwest corner of the licence area including the part of Suquash Creek that is west of Suquash Road is held by Amar, Worldwide Graphite Producers Ltd., Toronto. The Amar tenure includes a marshy area that is drained by Suquash Creek. No surface operations are planned in the vicinity of this tenure and it should have no impact on coal exploration or mining.

MINERAL PROCESSING AND METALLURGICAL TESTING

Historical Coal Quality Laboratory Testing

Available coal quality data are summarized in Table 5. The grab sample was taken at the foot of the coal shaft. The channel sample of coal represented 119 cm in the total seam thickness of 198 cm. All heavy partings were discarded. The coal has a high volatile content, medium ash content, and less than 1% sulfur. It is jet black with a bright luster. The sandstone and clay partings do not adhere too hard to the coal and can be separated physically or by crushing and washing. Based on past physical and chemical analysis the Suquash coal is very similar to coal mined near Campbell River. The author did not find any coal ash analyses and the ash analysis shown in Table 4 is for coal mined at Campbell River not Suquash Coal. Coal ash composition is an important quality criterion for cement plant customers.

There are 69 coal test reports from Commercial Testing, North Vancouver, done for Dolmage Campbell and Associates Ltd., for BC Hydro, in 1974. These results were for blends of drill cores on or near the property. Most of the drill cores were taken some distance away and at lower elevations than the previous mine. Since there are many partings in the coal, the results for a combined core give much higher ash and sulfur contents.

Table 6 **Average Coal Quality Seam 2**

	Units	Pacific Coast Coal 1912	BC Mines Report[14] 1915	Coniagas Mines 1921	Coniagas Mines 1921	Suquash Colleries Channel Sample[15] 1952	Suquash Colleries Sample Shaft 1952
Depth	m		52			52	52
Thickness	m					1.2	-
Bulk Density	t/m^3	1.2					
Moisture (as received)	%	3.5	5.0	5.0	5.7	8.7	5.7
Volatile Matter	%	47.4	41.5	37.6	36.7	36.0	36.2
Fixed Carbon	%	31.9	46.5	46.3	43.1	46.3	47.1
Heating Value	BTU/lb					11,200	11,580
	Kcal/kg					6,220	6,430
Ash	%	16.0	6.9	10.7	14.5	9.0	11.0
Sulfur	%	1.2		1.0	1.3	0.4	0.98
Chlorine (dry ash free basis)	%					<0.02	
Phosphorus (dry ash free)	%					<0.04	
FSI	-					1.5	-
Hargrove index	-					42.9	
Yield	-					-	74.9
Ash Fusion	°C						1354
Ash Analysis							
SiO_2	%					35.0	
Al_2O_3						25.3	
Fe_2O_3						15.7	
CaO						16.6	
MgO						0.3	
Na_2O						0.2	
K_2O						0.1	
TiO_2						1.6	
P_2O_5						0.6	
SO_3						4.1	
Undetermined							
							100.0

Proposed Coal Quality Lab testing

Drill core sample analyses at an independent coal testing laboratory are recommended for both the coal characteristics and ash characteristics.

Tests are required to determine the washing characteristics of the coal. The BC Hydro studies seem not to have considered washing the coal and no wash test results were found. Pacific Coast Coal reported the coal can be easily washed although they did not need to use a wash plant. They manually separated the coal from the waste. The wash tests are important in predicting the marketable coal recovery from the coal brought to the surface.

[14] Dowling, D.B., *Coalfields of British Columbia*, Geographical Society of Canada Memoir 69, 1915, Suquash Coal, p. 123

[15] Hope Engineering ltd., *Report on Vancouver Island Coal Holdings of Suquash Collieries Ltd.*, 1953 p. 26.

For planning purposes the author estimates an underground recovery of 55% to 75% and a wash plant recovery of 60%. This results in an overall recovery of 33% of the number 2 coal seam. Although these forecast recovery rates seem reasonable they should be confirmed by testing.

Coal Testing by Customers

Historical reports from past customers indicate the coal burns into a light flowery ash of grayish color. It burns with a light longish hot flame with very little smoke. People who burned run-of-mine samples taken from the mine in 1952 in their boilers, such as H.N. Freeman, of Vancouver, found the coal to very satisfactory. It produced relatively little ash and clinker. The coal is firm and hard in structure and was suitable for producing the more valuable stoker and lump coal. A ready market was found for mine-run coal. Tests were run on tow boats and other boats and satisfactory performance was achieved.

Electra is proposing to obtain a 5% share of the 4.4 million tonnes, $216 million per year coal purchases by customers in the Pacific Northwest. Potential customers, competitors, quantities and prices are summarized in Table 5. The most dominant buyer is Transalta Utilities' large power station at Centralia, WA, 85 km south of the Port of Tacoma. The three cement companies, LaFarge, Lehigh, and Ashgrove, receive part of their coal by barge. Electra is trying to win the support of one of these companies for testing coal samples. The company already supplies raw materials to two cement companies.

Table 7 Potential customers for samples 2009

Customer	Current supplier	Amount 1000 t/y	Price $US/t	$US Million/y
Barge deliveries				
Transalta Utilities, Centralia	Peabody, Rio Tinto	4,000	47	188
LaFarge, Seattle, Richmond, Kamloops	Hillsborough, Peabody	150	65	10
Lehigh Cement, Delta	Hillsborough	120	65	8
Ashgrove Cement, Seattle	Hillsborough	80	65	5
Graymont Lime, Clinton, Tacoma	Elk Valley, Peabody	20	70	2
Catalyst, Campbell River	Hillsborough	10	45	1
Other	Hillsborough, Compliance, Elk Valley	30	70	2
Subtotal		4,410		216

COAL RESOURCE ESTIMATES

Electra has not undertaken any independent investigation of the resource estimate nor has it independently analyzed the results of the previous exploration work in order to verify the classification of the resources, and therefore the historical estimates should not be relied upon. However, the author believes that the historical estimates, particularly those of Mr. Gardiner, provide a conceptual indication of the potential of the property and are relevant to ongoing exploration.

OTHER RELEVANT DATA AND INFORMATION

Soils and leaching potential

The Podozilic soils in the area are formed under cold and temperate coniferous forests from the degradation of needles. The acidic needles results in acidic soils best suited to the growth of similar species of trees. The organic horizons consist of a thin litter comprised of needles and discolored mosses, a thin non-compacted matter layer with some mycelia and a horizon of variable thickness comprised of fine substances and numerous pieces of decomposing wood or logs. Roots are frequently present ranging in size from 1mm to 30 mm in diameter. Roots are usually limited to depths of 2 to 20 cm as fine materials restricted deeper root penetration. Past mine operations have not generated acids or significant metal leaching. Site drainage will be planned so that sediment ponds control seepage and waste dump drainage. At nearby underground coal mines, metal concentrations are below Canadian guidelines for the protection of aquatic life.

Vegetation and forest cover

Part of the project area is covered by second growth western hemlock and Amabilis fir forest. Shrubs, flowering plants, ferns, sedges, grasses, lichens and mosses comprise the understory plants. Salal occupies a high percentage of the ground cover. Early vegetation stages (.e.g. shrubs, sedges) produce deer forage in early spring and later summer. Preliminary inquiries indicate there are no known occurrences of rare, threatened and endangered species in the project study area. One blue-listed community Western red cedar, Sitka spruce skunk cabbage, occurs on the south side of the property in the vicinity of small ponds.

Wildlife and birds

Suquash Creek and its estuary provide wildlife and bird habitat and would not be disturbed. Existing trees and vegetation would be left as is providing a buffer separating the creek from above ground mining activities. The marshes between the road and Suquash Creek may provide habitat for amphibians and other species. To protect this habitat, there would be no construction west of the road. Part of the project area consists of young forest habitat which offers black-tailed deer shelter from predators, precipitation and wind. Bears may forage when salmon enter the creek and in the intertidal zone.

The most common breeding bird species in the area are: Winter Wren, Golden Crowned Kinglet, Chestnut-backed Chickadee, Swainson's Thrush, American Robin, Townsend's Warbler, Pacific-slope Flycatcher, Hermit Thrush, Orange-crowned Warbler, and the Fox Sparrow. Additional breeding bird species observed included Bald Eagle, Canada Goose, Common Loon, Common Raven, Common Yellowthroat, Glaucous-winged Gull, Great Horned Owl, Northern Flicker, Northwestern Crow and red-breasted Nuthatch. Harlequin Ducks are present in nearby bays and river estuaries. It is possible they may also use areas near the former mine. This species may soon be listed as being of Special Concern.

Aquatic setting, surface and ground water

There are two small marshes located about 1 kilometer south of the mine that drain westward to the Creek. Most of the property is about 20 meters above sea level. There is gentle drop from 10 meters elevation to the ocean over about 200 meters. The surface water south of the - sandstone below.

INTERPRETATION AND CONCLUSIONS

This documents the results of drilling 4 holes totalling 672.36m which all intersected a typical Lower Cretaceous sandstone-shale-minor coal sections in each hole. The author's interpretation of past exploration data is that there may be an in-situ coal resource of 11.2 million tonnes that should provide 3.7 million tonnes of saleable coal. This resource is sufficient to supply two cement plant customers for about 15 years. Whether such a small scale mining operation would be economic depends on a variety of factors beyond the scope of this report.

There are a number of environmental issues that require further investigation most notably the location and method of disposal of waste rock and tailings from coal cleaning.

The author concludes:

1) Further drilling is warranted in order to provide more data to design and construct an exploration decline for bulk sampling the former Suquash Coal mine 25 km east of Port Hardy. This conclusion depends on the company obtaining a letter of support from the Kwakiutl First Nation subject to a number of social, economic, and environmental conditions.

2) A bulk sample from the former coal workings at 50 meters below sea level should be extracted in order that customers can test the coal and measure its performance relative to competitive supplies. The sample would also provide a basis for estimating saleable coal recovery rates.

3) Baseline environmental information is needed in order to plan for waste rock and tailings disposal.

RECOMMENDATIONS

Mapping

An initial mapping project should be undertaken for the lease area as far south as Highway 19 and the parallel BC Hydro Power line approximately as shown in Figure 8 and 8a. A larger scale map should be made for the area near the existing two shafts and underground workings including data from the historical mine survey maps approximately as shown in Figure 11. The maps should include:

- Coal licence grid and boundaries
- Portion of adjacent oil and gas license boundary
- Surface mineral titles boundaries on the coal property
- Undersea outcrop about 3 kilometers from shore
- Former access shafts, mining equipment still in place, and trails
- The underground tunnel locations based on historical maps confirmed by surface tests
- Land and hydrographic contours
- Seasonal marshes and small unnamed creeks
- The extent of past logging operations and logging roads
- Archaeological information
- Past drill hole locations
- Suquash Road, Misty Main, and the Western Forest Products' Road

Drilling program

An initial diamond drill program of six more holes each 100 meters and one hole totalling 300 metres should be undertaken in the vicinity of the number 2 shaft. Data from these holes would be used to assist in determining the optimum location for the decline to the number 2 coal seam. The specific locations of the proposed holes would be determined following the mapping program.

If Electra can acquire the subsurface oil and gas rights to the coal license area, then an industry partner should be recruited to extend the depth of one well to 1,000 meters in order to penetrate potential gas bearing strata. This deeper well should be a separately funded venture.

Seismic Program

Although the Ministry of Energy & Mines normally issues oil and gas subsurface titles by a public auction process Electra has submitted an Expression of Interest to acquire the subsurface rights in exchange for conducting a seismic exploration program. This program would supplement coal drilling results and is recommended in order to secure the subsurface oil and gas rights to the property.

The seismic testing would consist of setting off dynamite charges on the surface or using vibrating head at the surface and recording seismic waves at detectors placed at bottom of the coal exploration drill holes. Results on underground formations would be obtained for a distance around the wells equal to about half their depth.

Budget

An exploration program including: geological compilation, mapping of all previous work to common scales, grid, and diamond drilling. Some preliminary archaeological and environmental baseline studies are also proposed.

For the nearby Orca Sand & Gravel project seismic surveys were carried out by Frontier Geosciences Inc. Drilling and sampling was by Lane Christensen Co., drilling contractor. Past coal testing was by Commercial Testing & Engineering Co., North Vancouver. We have obtained unit prices site preparation, road work, drilling and blasting from Rockpro, Port Hardy. This company is a contractor for other Electra projects in the area.

Table 8 Exploration Budget

STAGE 1		
Geological mapping	10,000	
Base map detail	8,000	
Planning, selection and site confirmation	7,500	
Compilation, digitization	4,000	
Characterization and analysis of coal	3,500	
Consulting, supervision and reports	8,000	
		45,000
Surface diamond drilling	54,000	
600 meters @$90/meter, Includes drill moves & Mob & demob,		
consumables, grease, boxes	6,000	
Characterization, coal analyses and washability tests	10,000	
Consulting, supervision and reports	24,000	
Access road improvements and excavator standby	20,000	
Trenching	5,000	
Report Preparation, Program Supervision	25,000	
		125,000
Stage 1 Total		195,000
(Seismic Testing if required - $50,000)		
STAGE 2 Contingent on results of Stage 1		
Access to slope	20,000	
Drive decline 250 meters X $2,000/meter (probably high)	435,000	
Coal sample extraction	240,000	
Coal crushing and washing	90,000	
Coal transport	20,000	
Coal quality testing	10,000	
First Nations consultation and studies	35,000	
Archaeological and environmental studies	20,000	
Consulting, Supervision, Reports, Permitting	30,000	
Stage 2 Total		900,000
Stage 1 & 2 Total		$ 1,095,000

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APPENDIX I

STATEMENT of QUALIFICATIONS

July 2, 2009

STATEMENT OF QUALIFICATIONS

I, J. T. (Jo) Shearer, M.Sc.., P.Geo., of Unit 5 – 2330 Tyner St., Port Coquitlam, B.C. V3C 2Z1 do hereby certify that:

I am an independent consulting geologist and principal of Homegold Resources Ltd.

This Certificate applies to the Technical Report titled: DIAMOND DRILL ASSESSMENT REPORT ON THE ELEKTRA PROJECT, SUQUASH AREA, NANAIMO MINING DIVISION, Prepared for Electra Gold Ltd.., Port coquitlam, B.C., Prepared by myself, J. T. SHEARER, M.Sc., P.Geo., Consulting Geologist, #5-2330 Tyner St., Port Coquitlam, B.C., V3C 2Z1 dated July 2, 2009.

My academic qualifications are as follows: Bachelor of Science, (B.Sc.) in Honours Geology from the University of British Columbia, 1973, Associate of the Royal School of Mines (ARSM) from the Imperial College of Science and Technology in London, England in 1977 in Mineral Exploration, and Master of Science (M.Sc.) in Geology from the University of London, UK, 1977

I am a Member in good standing of the Association of Professional Engineers and Geoscientists in the Province of British Columbia (APEGBC) Canada, Member No.19279 and a Fellow of the Geological Association of Canada, (Fellow No. F439)

I have been professionally active in the mining industry continuously for over 30 years since initial graduation from university and have worked on several nearby mineral properties.,

I inspected the Suquash Coal Property on September 25, 2008 and supervised the diamond drill program between October 20, 2008 to November 1, 2008.

I have read the definition of "Qualified Person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

I am responsible for the preparation of all sections of the technical report entitled "Diamond Drill Assessment Report on the Elektra Project, Suquash Area" dated July 2, 2009.

I am independent of the Issuer in all respects with reference to NI 43-101, Section 1.4

I have not had prior involvement with the property, which is the subject of the technical report.

I have read the NI 43-101 and this technical report has been prepared in compliance with this Instrument

That as of the date of the certificate, to the best of the my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signed and dated in Vancouver B.C.

July 2 2009

Date

J.T. (Jo) Shearer, M.Sc., P.Geo.

APPENDIX II

STATEMENT of COSTS

July 2, 2009

Statement of Costs
Elektra Project
2008

Wages		
	J.T. Shearer, M.Sc., P.Geo., 14 days @ $700/day October 20 to November 2, 2008	$ 9,800.00
	Parvez Rajai-Anarak., 11 days @ $400/day October 26 to November 6, 2008	$ 4,400.00
	GST on Wages	710.00
	Total Wages	$ 14,910.00
Expenses		
	Fully equipped 4x4 truck, 12 days @ $98 /day	1,176.00
	Fully equipped 4x4 truck, 17 days @ $75/day	1,275.00
	Hotel	1,000.00
	RV in Lieu of Hotel	1,000.00
	Core Shack Rental	500.00
	Meals	600.00
	Contract Diamond Drilling, DJ Drilling Invoice, Oct. 20-Nov. 1/08	107,000.00
	Geophysical Logs	26,000.00
	Core Catcher, A. Brotchie, 12 days @ $300/day	3,600.00
	Report Preparation	2,100.00
	Reproduction and Drafting	800.00
	Total Expenses	$ 145,051.00
	Grand Total	**$ 159,961.00**

Event # 4281579
Filed May 12/09 for 131,000.00
Applied $17,708.20

APPENDIX III

DRILL LOGS

July 2, 2009

KEY TO CORE LOGGING SHEET - ABBREVIATIONS			
ATTRIBUTE	ABB	ATTRIBUTE	ABB
COLOR		COAL TYPE	
Black	BL	Bright	Br
Gray	GR	Bright banded	BrB
Dark gray	DGR	Dull and bright	D&Br
Medium gray	MGR	Dull banded	DBdd
Light gray	LGR	Dull	Dull
Brown	BR	Boney Coal	Bn
Dark brown	DBR	Stoney Coal	St
Medium brown	MBR	Coaly Stone	CSt
Light brown	LBR	Coal (undefined)	Coal
Reddish brown	RBR		
Orange brown	OBR	ROCK TYPE	
		Conglomerate	CGL
WEATHERING		Sandstone	SST
Slightly weathered	SWE	Siltstone	SLT
Moderately weathered	MWE	Claystone	CST
Highly weathered	HWE	Limestone	LST
		Carbonaceous sandstone	CSST
GRAIN SIZE		Carbonaceous claystone	CCST
Fine grain	FGR	Highly carbonaceous sandstone	HCSST
Medium grain	MGR	Highly carbonaceous claystone	HCCST
Coarse grain	CGR		
		STRUCTURE	
BEDDING, SED STRUCTURE		Fold	FO
Laminated	LA	Upside-down	UPD
Thinly laminated	TLA	Fault	FA
Irregularly laminated	ILA	Breccia	BX
Massive bedding	MBE	Fault zone	FAZ
Cross-bedding	CBE	Gouge	GO
Wavey bedding	WBE	Slightly Fractured	WFR
Ripple Marks	RMA	Moderately Fractured	MFR
Rip-up Clasts	RCL	Highly Fractured	HFR
Worm burrows	WBU	Slightly Sheared	SSH
Slump structures (soft sed deformation)	SLS	Moderately Sheared	MSH
Fossil (specify type)	FS	Highly Sheared	HSH
CORE QUALITY		REACTION TO HCL	
Solid	SO	None	
Intact	IN	Weak fizz	WFI
Slightly Broken	SBN	Moderate fizz	MFI
Moderately Broken	MBN	Strong fizz	SFI
Highly Broken	HBN		

KEY TO CORE LOGGING SHEET - DESCRIPTIONS		
ATTRIBUTE	ABB	DESCRIPTION
COLOR		Color should be taken from DRY fresh rock face or break
Black	BL	
Gray	GR	
Dark Gray	DGR	
Medium Gray	MGR	
Light Gray	LGR	
Brown	BR	
Dark Brown	DBR	
Medium Brown	MBR	
Light Brown	LBR	
Reddish Brown	RBR	
Orange Brown	OBR	
WEATHERING		Weathered alongside joint plane or fracture
Slightly Weathered	SWE	<20% of rock fragments oxidized
Moderately Weathered	MWE	20% - 50% of rock fragments oxidized
Highly Weathered	HWE	>50% of rock fragments is oxidized
BEDDING, SED STRUCTURE		
Thinly laminated	TLA	individual layers <5mm thick
Irregularly laminated	ILA	wavy or non-planar layers
Massive bedding	MBE	no apparent thin individual bed/s
Cross-bedding	XBE	laminations oblique to the bed containing them
CORE QUALITY		
Solid	SO	no break in the entire core or if present, is an induced break
Intact	IN	although broken, the pieces can be put or made to fit together and
		with no indication of core loss
Slightly broken	SBK	core is broken into at least 3 pieces and cannot be made
		to fit together
Moderately broken	MBK	core is broken into 4-8 pieces and cannot be put or made to fit together
Highly broken	HBK	core is broken into more than 8 pieces and cannot be put or made
		to fit together
COAL AND CARBONACEOUS ROCK		
Bright	Br	>80% bright coal
Bright banded	BrB	>60% - 80% bright coal
Dull and bright	D&Br	40% - 60% bright coal
Dull banded	DBdd	20% - 40% bright coal
Dull	Dull	<20% bright coal
Boney	Bn	
Stoney	St	highly carbonaceous claystone with black streak
Coaly Stone	CSt	highly carbonaceous claystone with brownish streak
Highly Carbonaceous Claystone	HCCSt	dark gray to black, less carbonaceous than coaly stone
Carbonaceous claystone	CCSt	dark gray, less carbonaceous than HCCSt
Coal	Coal	undefined as per above

KEY TO CORE LOGGING SHEET - DESCRIPTIONS		
ATTRIBUTE	ABB	DESCRIPTION
ROCK TYPE		
Conglomerate	CGL	grain size >2mm
Sandstone	SST	grain size 1/16mm - 2mm
Siltstone	SLT	grain size 1/256mm - 1/16mm (gritty)
Claystone	CST	grain size < 1/256mm (smooth)
Limestone	LST	
GRAIN SIZE - SANDSTONE		
Fine Grain	FGR	grain size 1/16 - 1mm
Medium Grain	MGR	grain size >1mm - 1.50mm
Coarse Grain	CGR	grain size >1.50mm - 2mm
GRAIN SIZE - SILTSTONE		
Fine Grain	FGR	grain size 1/256mm - 1/150mm
Medium Grain	MGR	grain size >1/150mm - 1/50mm
Coarse Grain	CGR	grain size >1/50mm - 1/16mm
GRAIN SIZE - CONGLOMERATE		For other notes, see below
Granule	GRN	grain size 2mm - 4mm
Pebble	PEB	grain size 4mm - 64mm
Cobble	COB	grain size 64mm - 256mm
SPACING (OF COAL AND ROCK BEDS)		
Closely Spaced	CSP	beds are <10mm apart
Medium Spaced	MSP	beds are 10mm - 20mm apart
Widely Spaced	WSP	beds are >20mm apart
STRUCTURE		
Fold	FO	indicate additional feature/s in Additional Description column
Upside-down	UPD	indicate additional feature/s in Additional Description column
Fault	FA	indicate thickness of fault in Additional Description column
Breccia	BX	indicate thickness of breccia/zone in Additional Description column
Fault zone	FAZ	indicate thickness of fault zone in Additional Description column
Gouge	GO	indicate thickness of gouge in Additional Description column
Slickensides	SL	indicate nature, attitude in Additional Description column
Polished Surfaces (listric)	POS	indicate nature, attitude in Additional Description column
Slightly Fractured	WFR	with 1 - 3 structural breaks (fault, joint)
Moderately Fractured	MFR	with 4 - 8 structural breaks (fault, joint)
Highly Fractured	HFR	with > 8 structural breaks (fault, joint)
Slightly Sheared	SSH	with 1 - 3 sheared planes
Moderately Sheared	MSH	with 4 - 8 sheared planes
Highly Sheared	HSH	with >8 sheared planes

Abbreviations used in drill logs.

Borehole Summary for: Electra Gold Ltd. Suquash borehole **SQ-08-01**

Revised: *2 August 2009*
Location: Spur S-40 off Suquash Main; at end of spur
Coordinates (UTM Zone 9 NAD 83): 624585 E, 5610563 N +/- 7 m (GPS)

Collar elevation: *26 m (map)* Azimuth: Dip: *-90°*
Drilled by:
Commenced: Completed:
Casing or drill pipe left in ground: *none* Borehole fluid: *polymer*
Cemented: *NO* Total depth (driller): *103.33 m* (logger): *79.9 m*

Drilling difficulties: *Borehole bridged at 79.9 m; logs not run below this depth.*

Bit size: *95.2 mm* Core size: *HQ* Logs run: *Cdens/Gamma/Cal/Res*
Logged: *28 October 2009* Log scale(s): *1:100 and 1:50*
Logged by: *Century Wireline Services*

Core descriptions by: *Parviz Rajaei*

Formation tops:

Rockhead: *4.85 m*	Rockhead elevation: *21.15 m*		Starts in: *Upper Suquash*
Middle Suquash:	*12.3 m*		
Lower Suquash:	*74.34 m*		
Gamma-marker:	*not reached*		
Basal Shale:	*not reached*		

Coal zones and coal beds:

Coal:	Net/gross thickness:	Roof depth:	Roof elevation:
0	0.33/0.94	16.69	
1	0.40/0.75	40.52	
1A ≡	0/0.10	62.42	
2R <ptg 3.95>	0.45/0.45 } 1.09/5.49	74.67	
2	0.64/1.09 }	79.07	-53.07
2A	not reached	not reached	

Borehole Summary for: Electra Gold Ltd. Suquash borehole **SQ-08-02**

Revised: *2 August 2009*
Location: Suquash Main at landing, approx. Sta, 27+30
Coordinates (UTM Zone 9 NAD 83): 624236 E, 5610800 N +/- 7 m (GPS)

Collar elevation: *18 m (map)* Azimuth: Dip: *-90°*
Drilled by:
Commenced: Completed:
Casing or drill pipe left in ground: Borehole fluid: *polymer*
Cemented: *NO* Total depth (driller): *103.89 m* (logger): *not logged*

Drilling difficulties: *Borehole collapsed at base of casing, in broken ground.*

Bit size: *95.2 mm* Core size: *HQ* Logs run: *none*
Logged: *28 October 2009* Log scale(s):
Logged by:

Core descriptions by: *Parviz Rajaei*

Formation tops:

Rockhead: *25.27 m*	Rockhead elevation: *-7.27 m*	Starts in: *Upper Suquash*
Middle Suquash:	*25.42 m*	
Lower Suquash:	*69.46 m*	
Gamma-marker:	*not reached*	
Basal Shale:	*not reached*	

Coal zones and coal beds:

Coal:	Net/gross thickness:	Roof depth:	Roof elevation:
0	0.42/0.62	26.33	
1	0.26/0.26	41.93	
1A	0.45/0.55	60.15	
2R <ptg 0.17>	0.62/0.62 } 1.59/2.21	70.92	
2	0.97/1.42 }	71.71	-53.71
2A	0.31/0.37	100.43	
2B	not reached	not reached	

Borehole Summary for: Electra Gold Ltd. Suquash borehole **SQ-08-03**

Revised: *2 August 2009*
Location: Spur S-20 off Suquash Main, west of Spur S-21; approx. Sta. 1+95
Coordinates (UTM Zone 9 NAD 83): 624718 E, 5610205 N +/- 7 m (GPS)

Collar elevation: *40 m (map)* Azimuth: Dip: *-90°*
Drilled by:
Commenced: Completed:
Casing or drill pipe left in ground: *6.1 m casing* Borehole fluid: *polymer*
Cemented: *NO* Total depth (driller): *118.57 m* (logger): *117.81 m*

Drilling difficulties:

Bit size: *95.2 mm* Core size: *HQ* Logs run: *Cdens/Gamma/Cal/Res*
Logged: *28 October 2008* Log scale(s): *1:100 and 1:50*
Logged by: *Century Wireline Services*

Core descriptions by: *Parviz Rajaei*

Formation tops:

Rockhead: *7.88 m*	Rockhead elevation: *32.12 m*		Starts in: *Upper Suquash*
Middle Suquash:	*31.76 m*		
Lower Suquash:	*94.78 m*		
Gamma-marker:	*not reached*		
Basal Shale:	*not reached*		

Coal zones and coal beds:

Coal:	Net/gross thickness:	Roof depth:	Roof elevation:
0	0.38/0.42	34.80	
1	0.51/0.76	57.20	
1A	0.11/0.11	84.94	
2R < ptq 4.707	0.52/0.52 } 2.06/8.17	95.63	~~-60~~
2	1.54/2.95 }	100.85	-60.85
2A	not reached	not reached	

Borehole Summary for: Electra Gold Ltd. Suquash borehole **<u>SQ-08-04</u>**

Revised: *2 August 2009*
Location: Spur S-20 off Suquash Main, east of Spur S-21; approx. Sta. 6+60
Coordinates (UTM Zone 9 NAD 83): 625184 E, 5610081 N +/- 7 m (GPS)

Collar elevation: *34 m (map)* Azimuth: Dip: *-90°*
Drilled by:
Commenced: Completed:
Casing or drill pipe left in ground: *6.1 m* Borehole fluid: *polymer*
Cemented: *NO* Total depth (driller): *328.88 m* (logger): *325.44 m*

Drilling difficulties:
Bit size: *95.2 mm* Core size: *HQ* Logs run: *Cdens/Gamma/Cal/Res*
Logged: *1 November 2008* Log scale(s): *1:100 and 1:50*
Logged by: *Century Wireline Services*

Core descriptions by: *Parviz Rajaei*

Formation tops:

Rockhead: *6.1 m*	Rockhead elevation: *27.9 m*		Starts in: *Upper Suquash*
Middle Suquash:	*38.16 m*		
Lower Suquash:	*106.55 m*		
Gamma-marker:	*201.9 m*		
Basal Shale:	*275.01 m*		
Coal Harbour Gp:	*298? m*		
Basement:	*not reached*		

Coal zones and coal beds:

Coal:	Net/gross thickness:	Roof depth:	Roof elevation:
0	0.30/0.30	39.90	
1	0.13/0.19	62.39	
1A	0.20/0.20	88.46	
2R <ptg.0.82>	0.37/0.37 } 1.11/2.57	107.03	
2	0.74/1.38	108.22	- 74.22
2A	0.51/0.64	146.68	
2B	0.39/0.86	153.31	
3	0.78/0.97	206.49	
4	0.82/1.35	217.94	
5	0.98/1.53	235.01	

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DRILL E LOG

Hole No: SQ- -01

Area: Suquash Basin

Logged By: PARVIZ

Page 1 of

Date Begun:

Collar Bearing:

Date Logged: 27, OCT, 08

ELEKTRA PROJECT

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

See Table 5 page 30

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
1			4.85	5.85	1			LGR		MGR						MBN		SST	Sandstone Crossbedded 0.40 cm at the bottom
		19/5.79																	
				8.85	3			LGR		MGR			7			SBK		SST	SST partly laminated @ 7° BCN @ 8m, from 5.79, 0.40 m way broken
		29/8.84																	
				9.05	0.20			LGR		MGR						So		SST	
2				10.48	1.43			LGR		MGR			5			So		SST	partly laminated at 5° BCN 11.30 m
		39/11.89																	
				12.03	1.55			LGR		MGR						IN		SST	lower contact erosional
				13.33	1.30			DGR		FGR						So		SLT	
3			13.33	13.63	0.30			DGR		FGR				(10)		So		SLT	0.30 cm at the bottom into Sandy contact gradational

Core Logging Form_r36_p1

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DRILL LOG

Hole No: SQ-C .01 | Area: | Logged By: | 8 | Page 2 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			13.63	14.97	1.28			LGR		MGR	LA					So		SST	
		49/14.93																	
				16.25	1.34			LGR		FGR	LA		0			So		SST	BCN 0, at 15 m
				16.69	0.44			DGR		FGR					—	So		CST	
				16.74	0.05			BL								SBN		Coal, BR	Bright Coal
				16.87	0.13			BL								So		Coal, BN	Coal Bony with lamination of
																			Br coal
				17.1	0.23			DGR		FGR	LA					S G		CST	CST with Thin lamination of
																			Bright Coal
			17.1	17.32	0.22			LGR		MGR						So		SST	with lamination of Coal
				17.40	0.08			LGR		FGR						So		SLT	
				17.48	0.08			DGR		FGR	TLA				MF1	So		CST	with lamination of Coal

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DRILL LOG

Hole No: SQ-C [illegible]-01 | Area: | Logged By: | Page 3 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			17.48	17.57	0.09			BL								SBN		Coal, Dull	
				17.63	0.06			BL								So		Coal, Bn	
				17.68	0.05			DGR		FGR						So		CST	
				17.72	0.04			DGR		FGR					–	So		SST	
4				17.97	0.25			DGR		MGR					–	So		SST	
		59/17.98																	
				20.97	3.00			LGR		MGR	LA		3		–	So		SST	3° @ 20.30 m
				22.01	1.04			LGR		MGR	TLA		5			So		SST	5° @ 69.5 m
5				23.06	1.05			LGR		CGR	LA					So		SST	Lower contact irregular
				23.21	0.15			DGR		FGR						So		SST	Partly silty

23.13

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DRILL C OG

Hole No: SQ-0 ·01

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			23.21	23.47	0.26			DGR		FGR					^	So		CCST	with Coal lamination
				23.98	0.51			LGR		FGR	LA		3		-	So		SLT	3° @ 23.5 m
				24.04	0.06			LGR		FGR					-	So		CST	
		79/24.07																	
				24.96	0.92			LGR		FGR					-	So		CST	
				26.24	1.28			LGR		MGR					-	So		SST	
6																			
				27.05	0.81			LGR		MGR						So		SST	
		89/27.12																	
				29.39	2.34			LGR		MGR						So	MFI	SST	with some calcite vein.
				29.71	0.32			DGR		FGR						So		CCST	with 2 cm coal at the top
				30.26	0.55			LGR		MGR	LA					So		SST	upper contact graditional
		99/30.17																	

30.18

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DRILL C OG

Hole No: SQ-0 c-01 | Area: | Logged By: | Page 5 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			30.26	30.76	0.50			LGR		MGR					—	So		SST	
7																			
				32.4	1.64			LGR		MGR	LA		3			So		SST	weakly laminated 3° @ 31.84
				32.87	0.47			MGR		FGR			3			So		SLT	with lamination of CCST
				33.09	0.22			DGR		FGR						So		CCST	
				33.24	0.15			BL								IN		Coal, Dull	
				33.35	0.11			DGR		FGR						So		CCST	
		109/33.22																	
				33.54	0.19			DGR		FGR						So		CCST	
				35.14	1.60			LGR		CGR						So		SST	SST, 0.15 m at top fine grained
																			with tiny coal stringers
																			and 20cm turbidity channel
																			at 1.15 from the top
8																			

35.06

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DRILL (.OG

Hole No: SQ-08 | Area: | Logged By: | Page 6 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			35.14	35.62	0.48			LGR		FGR				3		SO		SST	
				36.34	0.72			MGR		FGR						IN		SLT	
				36.44	0.10			MGR		FGR						So.		CST	
		119/36.27																	
				37.39	0.95			MGR		FGR				0		So		CST	
				38.29	0.90			DGR		FGR				3		MBN		HCCST	
																		" " T	
				39.04	0.75			DGR		FGR						SBN		CCST	
		129/39.31																	
				39.31	0.27			LGR		FGR						SO		CST	
9																			

39.23

Core Logging Form_r36_p1

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DRILL (.OG

C

Hole No: SQ-OE 1

Page 7 of

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			39.31	40.01	0.70			LGR		FGR						IN		CST	
				40.04	0.03			BL								SO		Coal/BN	
		[illegible]		40.07	0.03			BL								So		Coal/BR	
			40.07	40.52	0.45			DGR								IN		CCST	0.10 Cm at The TOP Broken
				40.68	0.16			BL								MBN		Coal/Dull	
				40.77	0.09			BL								So		Coal/BRB	
				41.12	0.35			DGR								MBN		CCST	
				41.27	0.15			BL								SBN		Coal/DBdd	
				41.59	0.32			LGR		FGR				3		So		SST	
				42.08	0.49			DGR		FGR						So		CCST	0.010 Cm at The bottom is broken

Core Logging Form_r36_p1

42.07

COAL-EX CONSULTING LTD.

DRILL [illegible]OG

Hole No: SQ-08 | Area:______ | Logged By:______ | Page 8 of____

Date Begun:______ | Collar Bearing:______ | Date Logged:______

Date Finished:______ | Collar Elev. (m):______ | Northing:______

Hole Size:______ | Hole Angle:______ | Easting:______

Total Depth (m):______ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			42.08	42.30	0.22			LGR		MGR						IN		SST	0.05 m at the TOP broken
		139/42.36																	
				43.40	1.19			LGR		MGR	MBE				-	So		SST	0.20 m at the TOP Carbonaceous
10															–				
				45.44	1.95			LGR		MGR	MBE				-	So		SST	
		149/36.27																	
				47.83	2.39			LGR		MGR	LA					So		SST	Partly laminate with irregular
																			Coal stringers
11																			
				48.58	0.75			LGR		MGR	MBE					So		SST	
		159/48.46																	
				51.58	3.00			LGR		MGR	MBE					So		SST	
		169/51.51		52.16	0.58			LGR		MGR	MBE					So		SST	
12																			

52.09

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-08-

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			52.16	53.64	1.48			LGR		MGR	LA-			3		IN		SST	Coal stringers, mostly at 50 cm
																			near bottom
				54.26	0.62			DGR		FGR	MBE					SO		SLT	
				54.67	0.41			LGR		MGR	MBE					SO		SST	
		179/54.56																	
				54.9	0.23			LGR		MGR	LA			3		SO		SST	
				55.24	0.34			DGR		FGR						IN		CCST	
				56.57	1.33			LGR		MGR	LA					SO		SST	
13																			
				57.68	1.11			LGR		MGR	LA			3				SST	lower contact irregular
		189/57.61																	
				57.78	0.10			LGR		MGR								SST	
				57.86	0.08			DGR		FGR								CCST	

57.79

COAL-EX CONSULTING LTD.

DRILL C .OG

Hole No: SQ- 0ε)

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			57.86	57.9	0.04			BL					3					Coal, Dull	
				60.6	2.70			DGR		FGR	MBE					MBR		CCST	
		199/60.65																	
				60.70	0.10			DGR		FGR	MBE					HBR		CCST	
14																			
				62.42	1.72			DGR		FGR	MBG					MBR		CCST	
				62.52	0.10			BL		FGR						HBR		HCCST	Very soft, crumbled
				62.88	0.36			MGR		FGR	MBE					MBR		CCST	
				63.58	0.70			LGR	SWE	MGR	MBE					MBR		SST	
		209/63.7																	
				65.0	1.42			LGE	HWE	MGR	MBE	FA				MBR		SST	Highly Weathered SST.
																			Possible in Fault Zone, Gouge
																			at 63.90m and 70.30m

64.73

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-0__))
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Page 11 of

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
15																			
			65.0	65.75	0.75			LGR		CGR	MBE					So		SST	Lower Contact Irregular
				66.08	0.33			LGR		FGR	LA		3			So		SLT	
				66.17	0.09			BL								So		Coal/Bn	
				66.56	0.39			LGR		CGR	MBG					So		SST	o/o at the bottom Broken
		219/66.75																	
				69.01	2.45			LGR		CGR						SBN		SST	From 67.15 / 0.40m Conglomerate
				69.21	0.20			DGR		FGR	MBE					So		CCST	Both Conta Irregular
				69.44	0.23			LGR		MGR	MBE					So		SST	
16																			
				69.72	0.28			LGR		MGR	MBE					So		SST	
		229/69.80																	

69.65

COAL-EX CONSULTING LTD.

DRILL (LOG

Hole No: SQ-C-01 | Area: | Logged By: | Page 12 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			69.72	70.17	0.45			LGR		MGR	CBE					SG		SST	
				70.47	0.30			MGR		FGE	L.A			3				CCST	
				70.62	0.15			DGR		FGR						SBN		HCCST	With Stringers of Coal, MSP
				72.12	1.50			LGR		FGR						So		SLT	0.20 Cm at the bottom more clayish
				72.72	0.60			LGR						4		SO		SLT/SST	interbedding o SLT/SST, 0.20m at the bottom Sandy
		239 / 72.85																	
			72.7	72.81	0.09			LGR		MGR	MBE					So		SST	
				73.24	0.43			DGR		FGR	MBE					So		CCST	
				73.79	0.55			LGR		MGR				0		SG		SST	0.45m at the Top interbedd with bands of SLT up to 2 cm
17				74.34	0.55			LGR		MGR	MBE			11		So		SST	lower contact at 11°

74.27

COAL-EX CONSULTING LTD.

DRILL C[illegible]OG

0.45 DULL
0.16

Hole No: SQ-08 | Area: | Logged By: | Page 13 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			74.34	74.67	0.33		SQ-01-01	DGR		FGR						IN		CCST	0.10m Roof
			[illegible]	75.02	0.35			BL					3	3		So		Coal Dull	
							SQ-01-02										1		
			[illegible]	75.12	0.10			BL								So		Coal DBdd	
			[illegible]	75.29	0.17		SQ-01-03	DGR		FGR						So		CCST	0.10 Floor
			[illegible]	75.81	0.52			MGR		FGR	MBE					So		SLT	
		~~249~~ 75.89																	
			75.81	76.49	0.68			LGR		FGR	LA			4		So		SST	0.40m at the bottom with laminations of SLT
			76.49	77.24	0.75			MGR		FGR	LA					So		SLT	0.20m at the top CCST
			77.42	77.48	0.24			MGR		FGR	LA					So		SST	with some laminations of SLT
			77.48	77.80	0.32			DGR		FGR	MBE					So		CCST	
			77.80	78.13	0.33			LGR		FGR	MBE					So		SST	

COAL-EX CONSULTING LTD.

DRILL [illegible] LOG

0.05 Dull

0.16

Hole No: SQ-08

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
18																			
			78.13	78.74	0.61			LGR		MGR	MBE			0		SO		SST	Lower contact at
			78.74	78.80	0.06			LGR		FGR	MBE					SO		CST	
		259/78.94																	
			78.[illegible]	78.98	0.18			LGR		FGR	MBE					SO		CST	
				79.07	0.09		SQ-01-04	DGR		FGR	MBE					SBN		CCST	0%
				79.24	0.17		SQ-01-05						3	6		SO		Coal/Dull	upper contact
				79.65	0.41		SQ-01-06	DGR		FGR			3			SO	2	CCST	0.05m at the bottom with stringers of coal CSP 10%
				79.86	0.21		SQ-01-07									SO		Coal/Stony	with some stringers of Br coal
				79.93	0.07		↑									SO		Coal Dull	
				79.97	0.04		SQ-01-08									SO		CST	
				80.16	0.19		↓									SO		Coal/Dull	
																		T	

COAL-EX CONSULTING LTD.

DRILL C[illegible]OG

Hole No:____________ Area:______________ Logged By:______________

Date Begun:__________ Collar Bearing:__________ Date Logged:______________

Date Finished:__________ Collar Elev. (m):__________ Northing:______________

Hole Size:____________ Hole Angle:____________ Easting:______________

Total Depth (m):________ Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			80.16	80.39	0.23		SQ-01-09	MGR		FGR						SO		CST	0.10 [illegible]
			[illegible]	81.79	1.40		SQ-01-10	LGR		FGR						SO		SLT	Roof - 0.10 m sample
		?																	
			8[illegible]	81.90	0.11		SQ-01-11											Br Bdd	
		269/81.99																	

COAL-EX CONSULTING LTD.

DRILL [illegible] LOG

Hole No: SQ-0[illegible] 01 | Area: | Logged By: | Page 16 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			81.9	82.42	0.52		SQ-01-12	LGR		MGR	MBE		3			SO		SST	0.10 Cmat the Top with Coal Stringers
19																			
				82.82	0.40			LGR		MGR	MBE		0			SO		SST	lower contact irregular with few Lamin.
			[illegible]	83.18	0.36			LGR		FGR	MBE					SO		SLT	
			[illegible]	83.55	0.37			LGR		MGR						SO		SST	Turbidity SST lower contact 26°
																			°
			[illegible]	83.91	0.36		SQ-01-13	MGR		FGR	MBE					SO		CST	0.10 Roof
				83.94	0.03		↑											Coal, Br	
							SQ-01-14												
				84.00	0.06		↓											Coal, Dull	High ash
										F									
			[illegible]	84.08	0.08		SQ-01-15	LGR		FGR								CST	
			[illegible]	84.42	0.34			DGR										CCST with Coal Stringers	
			[illegible]	84.45	0.03													Coal, Br	
			[illegible]	84.78	0.33			DGR										CCST with Coal Stringer	
		279/85.03																	

COAL-EX CONSULTING LTD.

DRIL. E LOG

Hole No: SQ-0 01

Area: ____________

Logged By: ____________

Page 16-1 of ____

Date Begun: ____________

Collar Bearing: ____________

Date Logged: ____________

Date Finished: ____________

Collar Elev. (m): ____________

Northing: ____________

Hole Size: ____________

Hole Angle: ____________

Easting: ____________

Total Depth (m): ____________

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			84.78	84.94	0.16		SQ-01-16	DGR								SO		CST	Roof Sample
				85.02	0.06		SQ-01-17									So		Coal Dull	
				85.06	0.06		SQ-01-18	DGR								SO		CCST	0.10 m, Floor Sample
				85.12	0.06			LGR		MGR						SBT		SST	
				85.26	0.14		SQ-01-19	DGR								So		CCST	With Coal Stringers at the top 0.10 [illegible]
				85.40	0.14		SQ-01-20									SBN		Coal Dull & Br	
				85.63	0.23		SQ-01-21	DGR								So		CCST	With Coal Stringers
			E	85.71	0.08		SQ-01-22									So		Coal D Bdd	
				85.81	0.10		SQ-01-23	DGR										CCST	

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

DRILL [illegible] LOG

Page 17 of ____

Hole No: SQ-[illegible]1 | Area: ____ | Logged By: ____
Date Begun: ____ | Collar Bearing: ____ | Date Logged: ____
Date Finished: ____ | Collar Elev. (m): ____ | Northing: ____
Hole Size: ____ | Hole Angle: ____ | Easting: ____
Total Depth (m): ____ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			85.81	86.66	0.35			MGR		FGR						So		C SLT	Carb. silstone 0.34 m from top
																			0.20 m with Coal stringer
20																			and 10 cm with SST
				86.96	0.30			MGR		FGR						So		CCST	at the bottom with 1 cm Coal
				87.28	0.32			DGR		FGR				3		So		HCCST	with stringers of Coal, especially
																			at 7 cm at the bottom part.
				87.64	0.36			LGR		FGR						So		CST	with Tiny Coal lenses
				87.70	0.06			BL						5		So		Coal Dull hard	with 0.5 cm band at the Top
		289/88.08																	
				87.75	0.08			DGR		FGR						So		CST	
				89.72	1.97			LGR		FGR	MBE					So		SST	Partly with SLST
				90.74	1.02			MGR		FGR	MBE					MB[illegible]		CST	0.08 m at the Top and 6 cm.
																			at 48 cm from Top Very broken
																			8 cm at the bottom HCCST with
																			Coal stringers
		299/91.13																	

COAL-EX CONSULTING LTD.

DRILL CORE LOG

Hole No: SQ-OC 01 | Area: | Logged By: | Page 18 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
21																So		CST	
			90.74	90.88	0.14			MGR		FGR									
				93.59	2.71			LGR		MGR	LA, MSP			(7°)		So		SST	SST interbedded with SLST, 7°
																			at 92.80m BCN
				93.75	0.16			DGR		FGR						So		CCST	with coal stringers
		309/94.1																	
				94.98	1.23			DGR		FGR						MBN		CST	0.36 m at the top with coal stringers
22																			
				95.11	0.13			LGR		FGR						So		CST	
				96.08	0.97			LGR		MGR	MBE					So		SLT	Partly with SST
				96.79	0.71			LGR		MGR	MBE					So		SST	
		319/97.23																	
				99.36	2.57			LGR		MGR	MBE		2			So		SST	2° BCN @ 98
													3						3° at 98.60 m

COAL-EX CONSULTING LTD.

DRIL: : LOG

Hole No: SQ-0 01

Area:

Logged By:

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
23																			
			99.36	99.89	0.53			LGR		MGR	MBE					SO		SST	
		329/10028																	
			99.89	102.85	2.96			LGR		MGR	MBE		4			SO		SST	Partly laminated, 4° at 100.38
													40						40 at 120.8
		399/																	
		121.61					EOH at 121.61												

COAL-EX C LTING LTD.

DRILL CORE LOG

The depTh was fixed at 57.6 above Seam 1

ELEKTRA PROVECT

Hole No: SQ-08-02 | Area: Suquash Basin | Logged By: PARVIZ
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
	1			This hole cored in and lata put casing To The DePhT of 27.4 m															
					0.63			LGR		MGR						HBN		SST	
		39/11.88																	
																SO		SST	at The TOP slightly broken
			11.88	14.21	2.33			LGR		MGR				(30)					
		49/14.93																	
			14.21	15.01	0.80			LGR		MGR				45°					0.63 at The Top very broken
																			(Gouge), the bottom with
	2																	Rock(GS)	stringers of coal at 45
			15.01	16.83		0.82													
			16.83	17.81	0.98			LGR		MGR				45				SST	0.33 m at The top solid with coal-
																			stringer at 45°, The rest
																			very broken, weathered (Gouge)
				17.98	0.17			MGR		FGR								CCSI	
		59/17.98			This hole was stopped at this depth and put casing To The dephT of 27.4m														

COAL-EX CC TING LTD.

DRILL CORE LOG

31

Hole No: SQ-08-02 **Area:** ______ **Logged By:** ______ **Page** 2 **of** ____

Date Begun: ______ **Collar Bearing:** ______ **Date Logged:** ______

Date Finished: ______ **Collar Elev. (m):** ______ **Northing:** ______

Hole Size: ______ **Hole Angle:** ______ **Easting:** ______

Total Depth (m): ______ **Projection: NAD 83 Zone 10**

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			25.27	25.42	0.15			MGR		MGR						HBN		SST	
				25.99	0.57			LGR		FGR		(Go)				HBN		CST	very soft and crumbley
				26.03	0.04			BL					3			So		Coal, Dull	hard
				26.33	0.30			DGR		FGR						So		CCST	
														3		So		Coal, Dull	
				26.52	0.19			BL											
				26.72	0.20			DGR		FGR						So		CCST	at the TOP with coal stringers
			26.72	26.95	0.23			BL								So		Coal, DULL	

COAL-EX CO TING LTD.

DRILL CORE LOG

Hole No: SO-08-02 | Area: | Logged By: | Page 3 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			26.95	27.04	0.09			LGR		FGR	CA.		7°			So		SST	
				27.65	0.61			DGR		FGR	MBG					So		CCST	With 2cm band of SST at 25cm
																			from [illegible]
		89/27.13																	
				27.98	0.33			MGR		MGR	MBE					So		SLT	
				28.14	0.16			LGR		MGR						So		SST	
	3																		
				30.75	2.61			LGR		MGR	MBE					So		SST	
		99/30.17																	
				32.51	1.76			LGR		MGR	MBE		0			So		SST	with some stringers of coal
																			0 at 30.77m
4																			
				33.29	0.78			LGR		MGR	MBE		2			So		SST	2° at 33
		109/33.22																	

COAL-EX CO TING LTD.

DRILL CORE LOG

Hole No: SQ-08-02 Area: Logged By: Page 4 of

Date Begun: Collar Bearing: Date Logged:

Date Finished: Collar Elev. (m): Northing:

Hole Size: Hole Angle: Easting:

Total Depth (m): Projection: NAD 83 Zone 10

Box No.		Driller's Marker ~ (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			33.29	36.39	3.10			LGR		MGR	MBE		0			SO		SST	0.10 Cm at The TOP very broken
																			0° at 34.70 m
		119/36.27																	
				36.79	0.40			LGR		MGR	MBE					So		SST	
5																			
				37.91	1.12			LGR		MGR	MBE					So		SST	
				39.54	1.63			MGR		FGR	MBE		0			So		CCST	0.37 m laminated on The TOP
		129/39.32																	at 0 BCN, 0.43 m from TOP
																			0.20 m of Core very broken
				39.74	0.20			MGR		FGR	MBE					MBN		CST	
				40	0.26			LGR		MGR						So		SST	
				40.10	0.10			BL						0		So		Coal Dull	
				40.15	0.05			DGR		FGR						So		HCCST	
			40.15	40.73	0.58			LGR		MGR	MBE					So		SST	

COAL-EX CO TING LTD.

DRILL CORE LOG

Hole No: SQ-08-02 | Area: | Logged By: | Page 5 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			40.73	40.97	0.24			DGR		FGR						SO		CCST	
				41.09	0.12			LGR		MGR						So		SST	
6																			
				41.33	0.24			LGR		MGR				0		So		SST	
				41.93	0.60			LGR		FGR	LA, CSP			2		So		SLT	W.
				42.04	0.11											So		Coal, Dull	
				42.07	0.03											So		Coal, Bony	
				42.13	0.06											So		Coal, D & B	
			42.13	42.17	0.04											So		Coal, Stony	
			42.17	42.19	0.02											So		Coal, Dull	

Core Logging Form_r36_p1

COAL-EX CO TING LTD.

DRILL CORE LOG

Hole No: SQ-08-02

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			42.19	42.49	0.30			DGR		FGR	MBE					SBN		CCST	with some stringers of coal
																			at the top
		139/42.36																	
				43.81	1.32			DGR		FGR						So		CCST	
				44.93	1.12			MGR		FGR	MBE					So		SLST	
				45.52	0.59			DGR		FGR	MBE					So		CCST	with few coal stringers
		149/45.41																	
7																			
				45.65	0.13			MGR		FGR						So		SLT	
				47.12	1.47			LGR		MGR	LA			5		So		SST	5° at 1.3 from top
			47.12	48.56	1.44			LGR		FGR						So		SLT	at the top more sandy
		159/48.46																	

COAL-EX CO[illegible]TING LTD.

DRILL CORE LOG

Hole No: SO-08-02

Area: ____

Logged By: ____

Date Begun: ____

Collar Bearing: ____

Date Logged: ____

Date Finished: ____

Collar Elev. (m): ____

Northing: ____

Hole Size: ____

Hole Angle: ____

Easting: ____

Total Depth (m): ____

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			48.56	49.92	1.36			LGR		PEB						MBN		CGL	
8																			
				51.52	1.60			LGR		PEB						SO		CGL	
		169/51.51																	
				51.91	0.39			LGR		PEB						SO		CGL	
				52.26	0.35			LGR		CGR						SO		SST	
				52.48	0.22			BL								SO		DBdd	Coal
																SO			
				52.81	0.33			DGR		FGR						SO		CCST	
				53.72	0.91			LGR		CGR			0			SO		SST	0.20 mat The laminated
				54.12	0.40			DGR		FGR						SO		SLT	
				54.30	0.18			LGR		MGR			2			SO		SST	

COAL-EX CO[illegible]TING LTD.

DRILL C[illegible] LOG

Hole No: SQ-08-02 | Area: | Logged By: | Page 8 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
9																			
			54.30	54.62	0.32			LGR		MGR	LA			4		So		SST	
		179/54.56																	
				54.82	0.20			LGR		MGR	LA					So		SST	
				55.44	0.62.			MGR		FGR	MBE					So		CST	
				55.88	0.44			LGR		MGR	MBG					So		SST	0.22m at Top highly Carb SST
			5[illegible]	56.45	0.57			MGR		FGR						So		SLT	0.18m from The Top 0.10m of
																			sample with Stringers of Coal
				57.61	1.16			MGR		MGR	MBE			0		So		SST	0.40cm at The Top laminated
																			next 0.34m High Carb SST,
		189.57.61																	
			57.61	58.63	1.02			MGR		MGR	MBE			3		So		SST	0.50m from The Top, 0.30m
																			interbed with bands of CST
10																			up To 10cm
				59.11	0.48			LGR		MGR						So		SSt	0.20 at The Top CST

COAL-EX CO[illegible]TING LTD.

DRILL CORE LOG

Hole No: SQ-08-02
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Page 9 of

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			59.11	~~59~~ 59.62	0.51			DGR		FGR	LA			5		Solid		CST	interbedded with SST
				60.08	0.46			LGR		MGR	MBE					SO		SST	
				60.15	0.07		SQ.02-01	LGR		FGR						SBN		CST	SQ-02-01 = 10 cms.
																			SEAM 1 = 60.15 to 60.70 m.
			60.15	60.48	0.33											SO		Coal, Dull	
							SQ-02-02												
				60.52	0.04											SO		Coal, Bright	Coal
				60.62	0.10		SQ02-03	DGR								SO		CCST	with Coal Stringers

COAL-EX CON ING LTD.

DRILL CORE LOG

Hole No: SQ-08-02 | Area: ____ | Logged By: ____
Date Begun: ____ | Collar Bearing: ____ | Date Logged: ____
Date Finished: ____ | Collar Elev. (m): ____ | Northing: ____
Hole Size: ____ | Hole Angle: ____ | Easting: ____
Total Depth (m): ____ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
		199/6065															|		
			60.62	60.7	0.08		SQ-02-04	Bl								So		DBdd	
				60.77	0.07		SQ-02-05	DGR		FGR						So		C CST	SQ-02-05 = 10 cms.
				61.12	0.35			LGR		MGR						So		SST	
				61.58	0.46			MGR		FGR						So		SLT	
				63.02	1.44			LGR		MGR				5		So		SST	0.85m from the Top 0.10m
																			HCCST with Coal's Stringers
11																			1m from Top 5° BCN
				63.64	0.62			LGR		MGR						So		SST	with some bands of SLT
		209/637																	
				64.01	0.37			LGR		MGR						So		SST	with bands of SLT
				64.67	0.66			LGR		FGR	LA			5		So		SLT	with bands of SST

COAL-EX CON TING LTD.

DRILL C. LOG

Hole No: SQ-08-02 | Area: | Logged By: | Page 11 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			64.67	66.70	2.03			LGR		MGR	LA			2		SO		SST	
		219/66.75																	
				67.12	0.42			LGR		MGR	LA					So		SST	
				67.44	0.32			LGR		FGR	MBE					So		CST	Fire clay?
12																			
				68.03	0.59			LGR		FGR	LA					SO		SLT	With SST bands up To 0.8m
				69.46	1.43			LGR		MGR	LA			4		So		SST	0.60m at The Top mostly laminate
				69.8	0.34		SQ-02-06	MGR		FGR	MBE					SBN		CCST	0.10 Cm at The Top more sandy (Pool
		229/69.80																	
				69.88	0.08		SQ-02-07									So		Coal Dull	

COAL-EX CO TING LTD.

DRILL C , LOG

Hole No: SQ-08-02 | Area:______ | Logged By:______ | Page 12 of____

Date Begun:______ | Collar Bearing:______ | Date Logged:______

Date Finished:______ | Collar Elev. (m):______ | Northing:______

Hole Size:______ | Hole Angle:______ | Easting:______

Total Depth (m):______ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			69.88	70.92	1.04		SQ-02-08	DGR		FGR	MBE					SO		CCST	0.12 Coal at The Top with Coal Stringers
							SQ-02-09	Roof											0.10 Floor Sample, 0.10 Roof Sample
			70.92	71.24	0.32											SO		Coal, Dull hard	
				71.29	0.05		SQ-02-10									So		Coal, Stony	
																	2		
				71.54	0.25											So		Coal, Dull	
																			Coal Zone
				71.71	0.17		SQ-02-11									So		CCST	
				71.78	0.07											MBN		Coal, Dull	
							SQ-02-12												
																	2		

COAL-EX CO[illegible]TING LTD.

DRILL C[illegible] LOG

Hole No: SQ-08-02 | Area: | Logged By: | Page 13 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
13																			
			71.78	71.82	0.04											MBN		Coal, Dull	
		0??		71.87	0.05			LGR								So	2	CST	
				72.05	0.18											So		Coal, Dull	
				72.09	0.04			DGR								So		Coal Stony	
				72.14	0.05			DGR								So		CCST	
				0.13												S			
				72.38	0.24											So		Coal, Dull	
				72.40	0.02			DGR								So	2	Coal Stony	
				72.59	0.19											So		Coal, Dull	
				72.79	0.20											So		CCST	
		239/72.84																	

COAL-EX CON ING LTD.

DRILL CO... LOG

Hole No: SQ-08-02 | Area: | Logged By: | Page 14 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			72.79	72.89	0.10											So		CCST	
				72.94	0.05											So		Coal, Dull	
				72.99	0.05		SQ-02-14									So		CST	
				73.13	0.14											So	2	Coal, Dull	
				73.63	0.50		SQ-02-15									SBN		CCST	
																			0.25.
				73.72	0.09		SQ-02-16									SBN		Dull hard	
				74.04	0.32		SQ-02-17									So		CCST	
																			0.30
				74.16	0.12													Coal, Dull	
							SQ-02-18												
				74.22	0.06											So		Coal, Stony	
				74.37	0.15		SQ-02-19									So		CCST	with coal stringer 0.10 Floor samp

COAL-EX CON[illegible]TING LTD.

DRILL [illegible] LOG

Page 15 of ____

Hole No: SQ-08-02	Area:	Logged By:
Date Begun:	Collar Bearing:	Date Logged:
Date Finished:	Collar Elev. (m):	Northing:
Hole Size:	Hole Angle:	Easting:
Total Depth (m):		Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			74.37	75.04	0.67			LGR		MGR	MBE					SO		SST	
				75.74	0.70			MGR		FGR	MBE					So		SLT	
		249/75.89																	
				76.12	0.38			LGR		MGR	MBE					So		SST	0.63 m at The SLT broken
14																			
				76.92	0.80			LGR		MGR	MBE	GO				HBN		SST	Broken Zone of SST, Gouge 0.08 m at, 0.35 m from toP
				78.74	1.82			MGR		FGR	MBE					HBN		SLT	0.65 m of Core Very broken, Therest MBN
		259/78.94																	
				80.46	1.72			MGR		FGR	MBE					So		SLT	
15																			
				81.49	1.03			LGR		FGR	MBE					So		SLT	

COAL-EX CONSULTING LTD.

DRILL E LOG

Hole No: SO-05 - 2

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			81.49	82.52	1.03			MGR		FGR	MBE					So		SLT	at The bottom more Sandy
		269/81.99																	
			[illegible]	85.6	3.08			LGR		MGR	MBE					So		SST	
		279/85.03																	
				85.67	0.07			LGR		MGR	MBE					So		SST	
16																			
				88.64	2.97			LGR		MGR	MBE			3°		So		SST	3° BCN at 1.40m from Top
		289/88.08																	
				90.1	1.46			LGR		MGR	MBE			3		So		SST	0.52 m from Top Stringers CST
17																			
				91.76	1.66			LGR		MGR	LA		4			So		SST	Partly laminated with CST Stringers
		299/91.13																	
				92.53	0.77			LGR		PEB	MBE					So		CGL	
				94.15	1.62			LGR		CGR	MBE			3		So		SST	with Coal Stringers at The bottom

COAL-EX CONSULTING LTD.

DRILI E LOG

Hole No: SQ-0v-02 | Area: | Logged By: | Page 17 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			94.15	94.45	0.30			LGR		PEB	MBE					So		CGL	
18																			
				94.79	0.34			LGR		PEB	MBE					So		CGL	
		309/94.18																	
				97.77	2.98			LGR		PEB	MBE					SBN		CGL	0.80 m from Top, 0.20 m SST
		319/97.23																	
				98.74	0.97			LGR		PEB	MBE					SBN		CGL	
19																			
				99.68	0.94			LGR		PEB	MBE					SBN		CGL	
				99.73	0.05											So		Coal Dull	
		1.09																	
				100.43	0.70											So		CCST	
				100.56	0.13											So		Coal	

COAL-EX CONSULTING LTD.

DRIL .E LOG

Hole No: SQ-0_ 02

Area:

Logged By:

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Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			100.56	100.65	0.09											SO		Coal Stony	
				100.71	0.06											MBK		CCST	
				100.8	0.09											SO		Coal, Stony	
				100.85	0.05			DGR		FGR	MBG					MBN		HCCST	
		329/100.28																	
				101.55	0.70			DGR		FGR	MBE					MBN		CCST	0.15 m at The Top HCCST with
																			Coal stringers.

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-07-02 | Area: | Logged By: | Page 19 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			101.55	103.12	1.57			LGR		MGR	MBE			4		SO		SST	0.70 m at the bottom FGR, SST
																			with CST Lamination
20																			
				103.89	0.77			LGR		MGR	MBE					SBN		SST	
		339/103.32																	

EOH 103.32

COAL-EX CONSULTING LTD.

DRIL E LOG

Hole No: SQ-06 v3   **Area:** Suquash Coal   **Logged By:** PARNiZ   ELEKTRA PROJECT   **Page** 1 **of** 21

Date Begun: **Collar Bearing:**   **Date Logged:**

Date Finished: **Collar Elev. (m):**   **Northing:**

Hole Size: **Hole Angle:** −90   **Easting:**

Total Depth (m): 118.09 m   **Projection: NAD 83 Zone 10**

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
1			0	7.88	7.88													No CORE	− CASING −
			7.88	8.36	0.48			LGR		MGR						SO		SST	
			8.36	9.06	0.70			MGR		FGR						SO		SLT	
			9.06	10.37	1.31			MGR		FGR				3		SO		SST	0.50m at The boTTom CST lamination
		29/8.83																	
				12.24	1.87			MGR		FGR				3		SO		SST	With some laminations and Pebble
																			size CST
2																			
				13.06	0.82			MGR		MGR						SO		SST	
		39/11.89																	
				16.1	3.04			MGR		MGR						SO		SST	0.80m at the bottom cross bedded
																			with Pebbles of CST upto 4 cm
		49/14.93																	
				16.51	0.41			MGR		MGR						SO		SST	Dominationed with big chunks
																			angular shapes , Pebble size of
																			CST

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-08-03 | Area: | Logged By: | Page 2 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
3																			
			16.51	16.76	0.25			LGR		PEB						MBN		CGL	
				17.41	0.65			LGR		MGR						SO		SST	
				19.01	1.60			LGR		PEB						HBN		CGL	
		59/17.98																	
				20.13	1.12			LGR		PEB						MBN		CGL	0.15m at The Top very broken
4																			
				20.77	0.64			LGR		PEB						MBN		CGL	
		69/21.03																	
				23.07	2.30			LGR		PEB						MBN		CGL	at The Top and few Portion in the middle very broken
			23.07	23.80	0.73			LGR		MGR						SO		SST	
		79/24.07																	

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-08-03

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
5																			
			23.80	24.17	0.37			LGR		MGR						SO		SST	
				24.73	0.56			MGR		MGR						MBN		SST	with Pebble chunks of CST
																			and Partly CGL
				25.58	0.85			MGR		FGR						So		SLT	
				26.26	0.68			LGR		MGR						So		SST	0.30cm at the bottom CGL with
																			Pebb chunchs of CST
				26.63	0.37			MGR		FGR						So		CST	(Double check 3.11m)
				26.93	0.30			MGR		MGR						So		SST	with chuncks of CST upt 7cm
		89/27.12																	
				27.83	0.90			MGR		FGR						So		SLT	0.20m at The Top CGL / MBN
				28.11	0.28			LGR		PEB						So		CGL	
6																			
				29.11	1.00			LGR		PEB						HBN		CGL	

0.71

COAL-EX CONSULTING LTD.

DRILL LOG

Hole No: SQ-08-03 Area:______ Logged By:______ Page 4 of ___

Date Begun:______ Collar Bearing:______ Date Logged:______

Date Finished:______ Collar Elev. (m):______ Northing:______

Hole Size:______ Hole Angle:______ Easting:______

Total Depth (m):______ Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			29.11	29.82	0.71			LGR		MGR				4		So		SST	Partly Laminated at the bottom
		99/30.17																	
				31.76	1.94			LGR		MGR	LA			4		So		SST	
				32.14	0.38			MGR		FGR	MBE					So		SLT	
7																			
				32.86	0.72			MGR		FGR						So		SLT	Sandy SLT
		109/33.22																	
				34.67	1.81			MGR		FGR	LA			4		So		SLT	lamination of fine SST CSP 0.75m
																			of the bottom
				34.80	0.13		SQ03-15	MGR		FGR						So		CST	
			34.80	34.93	0.13											SBN		Coal/Dull	Coal
		0.97																	
				34.96	0.03		SQ-03-16									HBN		Coal/Dull	
				35	0.04											So		CST	
				35.05	0.05											So		Coal/Dull	
				35.08	0.03											So		Coal DBdd	

COAL-EX CC LTING LTD.

DRILL .E LOG

Hole No: SQ-06-03
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			35.08	35.22	0.14											So		Coal, Dull	
				35.82	0.60		SQ03-17	LGR		MGR						So		SST	0.05 m at The Top HCCST, 0.6 Flo..
		119/36.27																	
3.03	03			36.51	0.69			LGR		MGR						So		SST	
8																			
				38.87	2.36			LGR		MGR				5		So		SST	
		129/39.31																	
				41.06	2.13			LGR		MGR			4			So		SST	0.30 m from TOP 40 BCN
3.03 9																			
				41.53	0.53			LGR		MGR						So		SST	with laminations of coal stringers
				41.91	0.38			MGR		FGR						So		SLT	0.07m HCCST at The TOP
		139/42.36																	
3.06				43.33	1.42			MGR		FGR	LA		3			So		SLT	

COAL-EX CC LTING LTD.

DRILL . E LOG

Hole No: SQ-09-03 | Area: ______ | Logged By: ______ | Page 6 of ____

Date Begun: ______ | Collar Bearing: ______ | Date Logged: ______

Date Finished: ______ | Collar Elev. (m): ______ | Northing: ______

Hole Size: ______ | Hole Angle: ______ | Easting: ______

Total Depth (m): ______ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			43.33	44.96	1.63			LGR		MGR	MBG					So		SST	
		149/45.41																	
				45.30	0.34			LGR		MGR						So		SST	
10																			
x	3.12			47.40	2.10			LGR		MGR	MBE			4		So		SST	
																			3.12 Run(Double checked)
				47.49	0.09											So		Coal, Dull	
				48.08	0.59			MGR		FGR						So		SLT(sandy)	0.06, HCCST at Top and 0.23 m
																			c SLT
		159/48.45																	
x		2.99		48.23	0.15			MGR		FGR						So		SLT	
				49.73	1.50			LGR		MGR	MBE			4		So		SST	4° at the bottom
11																			

COAL-EX CO[illegible]LTING LTD.

DRILL [illegible] LOG

Hole No: SQ-08-3

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			49.73	50.26	0.53			LGR		MGR						So		SST	
				50.84	0.58			MGR		FGR	LA			3		So		CST	
				50.97	0.13											So		Coal, Dull	
				51.07	0.10			DGR		FGR						So		HCCST	
		169/51.51																	
				51.23	0.16			DGR		FGR						So		CCST	
3				53.38	2.15			LGR		CGR	MBE					So		SST	0.70m at The bottom MGR
				54.12	0.74			MGR		FGR	MBE					So		SLT	at The Top mor Sandy 0.30m
		179/54.56																	
				54.16	0.04			MGR		FGR						So		SLT	
12																			
				54.44	0.28			MGR		FGR						So		SLT	

COAL-EX CO[illegible]LTING LTD.

DRILL [illegible] LOG

Hole No: SQ-08-03
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			54.44	55.59	1.15			MGR		FGR	MBE					SO		CST	
				56.18	0.59			DGR		FGR	MBE					MBN		HCCST	with few Coal Stringers
				56.28		0.10												Rock loss	
				57.17	0.89			LGR		FGR	MBE					SO		CST	Fire clay? 0.10m To the bottom HBN, 0.06 Roof Sample
		189/57.61																	
							SQ-03-01												
				57.20	0.03			LGR		FGR	MBE					HBN		CST	
			57.2	57.27	0.06		SQ-03-02									HBN		Coal D&BR	
				57.52	0.25		SQ-03-03	MGR		FGR						SO		SST	0.10 at The Top, 0.05 at The bottom CST
				57.96	0.44		SQ-03-04									HBN		Coal Dull	
				58.24	0.28		SQ-03-05	LGR		FGR						SO		SST	0.05m at Top and 0.03 m at The bottom HCCST, 0.10 Floor
				58.33	0.09											SBN		CCST	

33

58.38 0.05 HBN Coal Dull

COAL-EX CO[illegible]LTING LTD.

DRILL [illegible] LOG

Hole No: SQ-08-03

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			58.38	58.56	0.18			DGR		FGR	MBE					So		HCCST	
				58.63	0.07			LGR		MGR	MBE					So		SST	
13																			
				60.3	1.67			LGR		MGR	MBE		3			So		SST	at the top with few bands of SLT
		199/60.65																	
				63.02	2.72			LGR		MGR	MBE			3		So		SST	3° at the bottom
14																			
				63.34	0.32			LGR		MGR				3		So		SST	
		209/63.70																	
				66.42	3.08			LGR		MGR						So		SST	with some CLST lamination
																			very irregular
		219/66.75																	
				66.79	0.37			LGR		MGR						So		SST	

COAL-EX CO[illegible]LTING LTD.

DRILL [illegible]E LOG

Hole No: SQ-08-03 | Area: | Logged By: | Page 10 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			66.79	67.39	0.60			MGR		FGR						So		SST	
15																			
				68.41	1.02			LGR		FGR	LA		0			SBN		SST	0° at 0.80 m from TOP
				69.43	1.02			MGR		FGR	LA		5			So		SLT	with lamination of SST/WSP
		229/69.79																	
				69.88	0.45			MGR		FGR	LA		3			So		SLT	as above
				71.08	1.20			LGR		MGR	LA		3			So		SST	
				71.78	0.70			MGR		FGR						So		SLT	0.50cm carb. SLT
16																			
				72.49	0.71			LGR		PGB						SBN		CGL	
		239/72.84																	
				73.91	1.42			LGR		PGB						So		CGL	

COAL-EX CO[illegible]LTING LTD.

DRILL [illegible] LOG

Hole No: 39-00-03

Area:

Logged By:

Page 11 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			73.91	74.71	0.80			LGR		CGR	MBE					So		SST	
				75.51	0.80			LGR		PEB						So		CGL	
		249/75.89																	
				76.12	0.61			LGR		PEB						So		CGL	
17																			
				78.19	2.07			LGR		CGR	MBE					So		SST	
				78.43	0.24			LGR		PEB						So		CGL	
				78.59	0.16			MGR		FGR						MBN		CCST	
		259/78.94																	
				78.69	0.10											SBN		Coal(Dull)	
				79.52	0.83			DGR		FGR						SBN		CCST	
				79.58	0.06											So		Coal(BON)	

Core Logging Form_r36_p1

3.95

COAL-EX C[illegible]LTING LTD.

DRILL [illegible]E LOG

Hole No: SQ-0[illegible]-03 Area:______ Logged By:______ Page 12 of ____

Date Begun:______ Collar Bearing:______ Date Logged:______

Date Finished:______ Collar Elev. (m):______ Northing:______

Hole Size:______ Hole Angle:______ Easting:______

Total Depth (m):______ Projection: NAD 83 Zone 10

?

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			79.58	79.86	0.28			DGR		FGR			5			SO		CST	0.15m at The TOP, HCCST
																			With Coal STringers
				80.57	0.71			LGR		CGR	MBE					SO		SST	
18																			
				81.15	0.58			LGR		CGR	MBE					SO		SST	
			81.19	81.29	0.14			DGR		FGR						MBN		CST	0.05m at The bottom HCCST
				81.36	0.07											SBN		Coal Dull	
				81.69	0.33			DGR		FGR						MBN		HCCST	
		269/81.99																	
				82.54	0.85			MGR		FGR				3		SBN		SLT	at The boTTom 0.10m Laminated
				84.51	1.97			LGR		CGR						SO		SST	
				84.60	0.09			MGR		FGR						SO		CST	

COAL-EX C ULTING LTD.

DRILL …E LOG

Hole No: SQ-08-03

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

0.28

(K)

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
		279/85.04																	
				84.94	0.34			MGR		FGR						So		CST	0.04m at The bottom with bands of
																			Coal
19																			
			84.95	85.05	0.11											So		Coal, DBdd	
				85.19	0.14			DGR		FGR						So		HCCSi	with Coal stringers
				85.74	0.55			LGR		MGR				3		So		SST	
				85.92	0.18			DGR										SLT	?
				86.21	0.29 0.28			MG		FGR						MBN		CST	0.10 Cm at The bottom with
																			Coal Stringers
				87.8	1.59 1.58			MGR		FGR						MBN		SLT	0.59 Cm at The ToP with Coal
																			stringer and Highly Carb.
		289/88.08																	

87.90 ... .92

COAL-EX CO[illegible]ULTING LTD.

DRILL [illegible]E LOG

Hole No: SQ-08-03 | Area: | Logged By: | Page 14 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

X

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			87.8	88.76	0.96			DGR		FGR	LA KSP			3		50		SLT	
				89.42	0.66			LGR		MGR	MBE					50		SST	
20																			
				90.52	[illegible]			LGR		MGR	[illegible]					50		SST	050 Cn To The bottom, 0.20m SLT
				90.56	0.04											50		Coal	(K)
				90.68	0.12			DGR		FGR						[illegible]		HCCST	with Coal stringers
				90.75	0.07			MGR		FGR						50		SLT	
		299/91.13																	
				90.87	0.12			MGR		FGR						50		SLT	
				93.82	2.95			LGR		MGR						50		SST	
		309/94.18																	

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

DRIL. E LOG

Hole No: SQ-00-03

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
21																			
			93.82	94.78	0.96			LGR		MGR	MBE					SO		SST	
				95.63	0.85			MGR		FGR	MBE					MBN		CST	
			95.63	96.15	0.52								3				1	Coal, Dull	
				96.61	0.46			MGR		FGR	MBE					SO		CST	0.05 at The Top HCCST with Coal stringers
				96.95	0.34			LGR		MGR	MBE					SO		SST	
		319/9816																	
				97.73	0.78			LG		MGR	MBE						SO	SST	
				98.31	0.58			MGR		FGE			3			SBN		CST	0.24m at The top laminated SLT, Then next to m HCCST with Coal stringers
22																			
				98.8	0.49			MGR		FGR								CST	
				99.82	1.07			LGR		MGR				3		SBN		SST	0.40 Cm from bottom, 0.25m SLT

COAL-EX C ULTING LTD.

DRIL RE LOG

Hole No: SΦ-03-03
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

K

Page 16 of

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
		329/100.28																	
			99.87	100.71	0.84			LGR		MGR	MBG					So		SST	
				100.85	0.14		SΦ03-06	MGR		FGR						So		CST	
			100.85	100.96	0.11		SΦ-03-07											DBdd	Coal at the Top has a len 0.04 [illegible]
				101	0.04													BrBdd	
																	2		
				101.38	0.38		SΦ-03-08	MGR		FGR						So		CarbSILTY ClayStone	
				101.46	0.08											So		Coal DBdd	
				101.48	0.02													HCCST	
				101.55	[illegible]													Coal DBdd	marcasite lens at Center
							SΦ-03-09												
				101.57	0.02													Coal, Dull	
																		SST	[illegible] Pyr
				101.61	0.04													Coal, Stony	
				101.65	0.04			MGR		MGR								SST[illegible]	

COAL-EX ULTING LTD.

DRIL_ ORE LOG

Hole No: SQ-08-03 | Area: | Logged By: | Page 17 of
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: ✓ | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			101.65	101.84	0.19											So		Coal, Dull	
				101.85	0.01											So		Coal ST	
				101.86	0.01											So		Coal Dull	
																	2		
				102.14	5.28		SΦ-03-10	MGR								So		CST	0.05 SST. With 1.5cm Coal
																			Wedg
				102.17	0.03													DBdd	with 2mm. CCST at Top
				102.25	0.08		SΦ-2-11									S o		Coal Dull	
				10235	0.10											So		Coal D Bdd	
				102.66	0.31		SΦ-0?-12	MG								So	2	CST	

COAL-EX CONSULTING LTD.

DRILL CORE LOG

Hole No: SQ- 3-03	Area:	Logged By:	Page 18 of
Date Begun:	Collar Bearing:	Date Logged:	
Date Finished:	Collar Elev. (m):	Northing:	
Hole Size:	Hole Angle:	Easting:	
Total Depth (m):		Projection: NAD 83 Zone 10	

6 CST
149 CST
~~0.07 Coal~~
0.05 CST
~~0.04 HCCST with Coal~~
~~0.15 Coal Dull~~
0.12 Coal Dull Band
0.13 { 0.03 Coal Dull
0.10 CST

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
23																			
			102.66	102.71	0.05											So		Coal Dull	
				102.75	0.04			LGR								So		SST	
				102.88	0.13											So		Coal Dull	
		339/103.32																	
				102.9	0.02		SQ-03-W									MBR		Coal Dull	
				102.98	0.08			DGR								So		CCST ✓	
				103.05	0.07											So		Coal Dull	
				103.1	0.05			DGR								So		CST	
				103.12	0.02													HCCST with Coal	
				103.14	0.02			LGR								So		SST	
				103.29	0.15											So		Coal Dull	

COAL-EX C SULTING LTD.

DRI RE LOG

Hole No: SQ-06 03

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

K

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			103.29	103.46	0.17											So	1	Coal, D Bdd	
																		Coal	
				103.55	0.09											So		H CCST	
				103.65	0.10		S00343									So	2	Coal, DaBr	
				103.73	0.08											So		CCST	
				103.8	0.07											So		Coal, Dull	
				104.34	0.54		S00344									SBN		CST	0.10 cm Floor
				104.46	0.12			MGR								So		CCST	With Coal stringers
				105.12	0.66			LGR								So		CST	
				105.99	0.87			LGR		MGR						So		SST	
		349/106.37																	
				106.53	0.53			LGR		MGR						So		SST	

COAL-EX C ILTING LTD.

DRILL ..RE LOG

Hole No: SQ-08-03 | Area: | Logged By: | Page 20 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			106.52	107.02	0.50			LGR		FGR				4		SO		SLT	
24																			
				107.74	0.72			LGR		MGR						SO		SST	0.20 Cm at The bottom SLT
				108.32	0.58			MGR		FGR						SO		CST	
				108.44	0.12			DGR		|						SO		CCST	With Stringer of Coal
				108.95	0.51			LGR		FGR						SBN		SLT	
		359/109.42																	
				109.27	0.32			LGR		FGR						SO		SILTY SST	
				111.39	2.12			MLGR								SO		CST	
25																			
				111.97	0.58			MLGR		FGR						MBN		CST	0.40m from bottom 10cm SST
		369/112.47																	
				112.37	0.40			LGR		FGR						SO		SLT	0.14m at The TOP CST

COAL-EX CONSULTING LTD.

DRIL E LOG

Hole No: SQ-CJ-03 | Area: | Logged By: | Page 21 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			112.37	115.05	2.68			LGR		MGR	MBE							SST	
		379/115.19																	
				115.79	0.74			LGR		MGR	MBE							SST	
26																			
				116.56	0.77			LGR		MGR	MBE							SST	
				118.09	1.53			LGR		PEB	MBE							CGL	
		389/118.56																	
							GOH												

CORE LOG

Hole No: SQ 4

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Page 1 of

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
1			0.0	6.1														Casing	
		10.60	10.81	2.7				LGR		MGR						MBN		SST	0.85m at the TOP HBN
		29/8.84																	
		10.81	12.35	1.54				LIGR		MGR						MBN		SST	
2																			
		12.35	13.84	1.49				LGR		MGR						MBN		SST	
		39/11.89																	
		13.84	14.97	1.13				LGR		MGR						HBN		SST	
				R															
2.5																			
		14.97	16.26	1.39				MGR		FGR	LA			2				SLT	
3																			
		16.26	16.36	0.10				MGR		FGR								SLT	
		16.36	18.86	2.50				LGR		MGR	LA		3			MBN		SST	0.6m from TOP, 0.40m HBN

3.03

3.10

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SC 8-04

Area:

Logged By:

Page 2 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			18.86	19.36	0.50			MGR		FGR						SO		SLT	
		59/17.98																	
			19.36	19.86	0.32			MGR		FGR						So		SLT	
			19.86	20.18	0.80			LGR		MGR						So		SST	
4																			
			20.18	21.11	0.92			LGR		MGR						SBN		SST	
			21.11	21.63	0.53			MGR		FGR						So		SLT	
			21.63	22.08	0.45			LGR		MGR						So		SST	
		69/21.03																	
			22.08	22.87	0.79			MGR								MBN		CST	0.05 SST at The Top
																			0.6 Cm Pvon TOP, 0.18 Cm HCCST
			22.87	24.55	1.68			LGR		MGR				3		So		SST	0.8 om at The Top Laminated

1

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: Sc-309 | Area: | Logged By: | Page 5 of
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
5																			
			24.55	25.08	0.53			LGR		MGR						SBN		SST	
		79/24.07																	
			25.08	25.25	0.17			LGR		MGR						So		SST	
			25.25	26.68	1.43			MGR		FGR	LA				3	SBN		SLT	0.80m at The Top Laminate
			26.68	28.09	1.41			LGR		MGR						So		SST	
		89/27.12																	
			28.09	28.86	0.77			LGR		FGR						So		SST	
		27																	
6																			
			28.86	30.80	1.94			LGR		MGR		Go				HBN		SST	Gouge located 30.7 m
		99/30.17																	
			30.8	32.60	1.80			LGa		MGR		GO				MBN		SST	Gouge at 33.12m) 0.20m

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ -04

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
7																			
		[illegible]	32.6	35.09	2.49			LGR		MGR						SO		SST	([illegible] log. block)
			35.09	36.04	0.95			DGR		FGR						SO		Carb SLST	
		119/36.27																	
			36.04	36.91	0.87			DGR		FGR						SO		Carb SLT	
	2.80																		
8			36.91	37.06		0.15												Rock Loss	
			37.06	38.16	1.10			MGR		MGR						HBN		SST	FAULT Zone
			38.16	39.08	0.92			MGR		FGR						HBN		SLT	
		129/39.37																	
			39.08	39.90	0.82		SQ-04-01	DGR		FGR						MBN		SLT	0.30 on all the TOP HBN
						0.10													
			39.96	40.20	0.30		SQ-04-02									HBN	0	Coal Dull	
						0.10												Rock Loss	
				41.00	0.80		SQ-04-03	LGR		MGR						MBN		SST	
9				41.10		0.10												Rock Loss	
			41.[illegible]	42.11	1.01			LGR		MGR						SBN		SST	
		139/42.36																	

-93

1.81

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SC 0-04 | Area: | Logged By: | Page 7 of
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			42.11	45.16	3.05			LGR		MGR				3		So		SST	with 3 Cm coal at the bottom
		149/45.41																	
			44.66	45.42	0.26			MGR								MBN		CCST	
10																			
			[illegible]	45.67	0.25			MGR								SBN		CCST	with coal stringers
			[illegible]	46.37	0.70			MGR								So		SLT	
			[illegible]	48.21	1.84			LGR		MGR	MBE					So		SST	.85m from bottom / 0.20m SLT
		159/48.46																	
			[illegible]	48.83	1.62			LGR		MGR						So		SST	
11																			
			[illegible]	50.55	0.72			LGR		MGR						So		SST	
				50.73	0.18			MGR								MBN		CCST	
				50.8	0.07											SO		Coal, Bony	
			50.[illegible]	50.9	0.10											SO		Coal Stony	

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ -04 | Area: | Logged By: | Page 8 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			50.9	51.27	0.37			LGR		MGR						So		SST	0.65 met The TOP CCST
		169/51.51														So			
	4		[illegible]	54.33	3.06			LGR		MGR			3			So		SST	0.30 m from TOP, 0.60 m laminated
12																			
		179/54.56																	
	5		[illegible]	57.39	3.06			LGR		MGR			3			So		SST	
		189/57.61																	
			[illegible]	57.81	0.42			LGR		MGR						So		SST	
			[illegible]	58.75	0.94			MGR					3			SBN		SLT	0.50 m sandy SLT, The rest
																			Laminated
13																			
			[illegible]	59.91	1.16			MGR		FGR						So		SLT	
				60.38	0.47			MGR								SBN		CST	0.05 CCST with Coal Stringers
			[illegible]	60.44	0.06											So		Coal	Methan Samples * (Sample 1)

0.03

Core Logging Form_r36_p1

0-0 9

1

COAL-EX CONSULTING LTD.

ORE LOG

Hole No: SQ- .04 | Area: | Logged By: | Page 9 of

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
		199/60.65																	
			60.44	60.82	0.38											MBN		HCCST	Coal Stringers
								LGR		FGR									
			[illegible]	61.68	0.86											So		CST	(Fire Clay)?
			[illegible]	61.76	0.02			DGR								SO		HCCST	
			[illegible]	61.75	0.05													Coal D&Br	
			[illegible]	62.21	0.46			DGR								So		SST	0.20m at The bottom SILTY SST
			[illegible]	62.391	0.18			DGR								SBN		CCST	
			[illegible]	62.45	0.04													Coal Dull	
			[illegible]	62.49	0.06			DGR								So	1	CST	
				62.54	0.02											So		Coal Br	
			[illegible]	62.55	0.04			BL								So		Coal ST	Sample 2, Methane TST
			[illegible]	62.58	0.03											So		Coal Dull	

COAL-EX CONSULTING LTD.

CORE LOG

Page 10 of ____

Hole No: SQ-04 | Area: ____ | Logged By: ____
Date Begun: ____ | Collar Bearing: ____ | Date Logged: ____
Date Finished: ____ | Collar Elev. (m): ____ | Northing: ____
Hole Size: ____ | Hole Angle: ____ | Easting: ____
Total Depth (m): ____ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
18																			
			62.58	63.22	0.64			DGR		-						So		CCST	
14		3.13		63.39	0.17			DGR								So		CCST	
				63.57	0.18			LGR	LA, WSP	MGR			3			So		SST	
		209/63.70																	
				63.75	0.18			LA	LA, CSP	FGR			3			So		SST	0.03cm at the bottom CST
				63.78	0.03											MBN		Coal, Dull	
				63.83	0.05			DGR								So		CST	Sample 3, Methan Test
3.08				63.86	0.03											MBN		Coal Dull	
				63.94	0.08			DGR								So		CCST	
				66.65	2.71			LGR								So		SST	
		219/66.75																	

CORE LOG

Hole No: SQ. 4 | Area: | Logged By: | Page 11 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			66.65	67.71	1.06			LGR		MGR	MBE						S0	SST	
23 15																			
			67.71	69.71	2.00			LGR		MGR	MBE			3			S0	SST	with few coal stringers at the bottom
		229/69.80																	
				72.14	2.43			LGR		MGR	MBE		3				S0	SST	with some coal stringers at the top
21 16		3.03																	
				72.77	0.63			LGR		MGR	MBG						S0	SST	
		239/72.81																	
				74.83	2.06			LGR		MGR	MBE			3			S0	SST	Lower contact at 30
				75.76	0.93			LGR		DGR	MBE						S0	CST	0.05m at the botto SST
				75.8	0.04			DGR									S0	CCST	
				75.9	0.10			DGR						3			S0	Coal/ST	0.01Cm DULL at The Top

CORE LOG

Hole No: SQ 64 | Area: | Logged By:

Page 12 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			75.90	76.54	0.64			LGR		FGR						SO		SST	0.03 CCST on The TOP
														3					0.25 m from TOP 0.05 Cm CCST
17																			
			[illegible]	77.78	1.24			LGR		MGR	LAM		3			SBN		SST	
			[illegible]	78.83	1.05			DGR		FGR						SBN		CCST	
		254/78.94																	
			[illegible]	80.22	1.39			DGR		FGR				3		SBN		CCST	with feldspar grains? and Coal Stringers
			[illegible]	80.9	0.68			MGR		MGR						SO		SST	
18																			
			[illegible]	81.2	0.30			MGR		MGR						SO		SST	
		3.04																	
				81.68	0.48			LGR		PEB						SO		CGL	
			[illegible]	81.89	0.21			MGR		MGR						SO		SST	
		269/81.99																	

CORE LOG

Hole No: SC -04 | Area: | Logged By: |

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
22			81.89	82.96	1.07			LGR		MGR						So		SST	
	3.			83.45	0.49			LGR		PEB						So		CGL	
				84.95	1.50			LGR		MGR						So		SST	
		279/85.03																	
				85.02		0.07												Rock Loss	
				85.39	0.37			LGR		MG						So		SST	
		2.98																	
19																			
				88.1	2.61			LGR		MGR				3		So		SST	with Coal, Stringer 0.84 m from
																			Top CGR, SST with coal Stringer
		289/89.01																	The rest medium grained
				88.23	0.23			LGR		MCR						So		SST	
				88.46	0.23			MGR								So		CST	
				88.52	0.06													Coal Loss	
				88.58	0.06											So	1A	Coal BV	
				88.66	0.08											So		Coal ST	

CORE LOG

Hole No: SC 34 Page 14 of

Date Begun:
Date Finished:
Hole Size:
Total Depth (m):
Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:
Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			88.66	89.18	0.52			DGR									So	CCST	0.20m at The bottom more silty
				89.75	0.57			LGR		CGR							So	SST	With Coal Stringers
20																			
				91.05	1.30			MGR		MGR							So	SST	
		299/91.13																	
		2.97		94.07	3.02			MGR		LGR				3			So	SST	With Coal Stringers at The bottom
		309/94.18																	
				94.19	0.12			MGR		LGR							So	SST	
21																			
				97.12	2.93			MGR		LGR							So	SST	0.47m from Top, 0.46m Coarse
																			grained
		319/97.23		97.61	0.49			MGR		LGR							So	SSN	
				98.55	0.94			DGR									SBN	CCST	0.26m from Top, 0.10m with
																			Coal Stringers
22																			

CORE LOG

Hole No: | Area: | Logged By: | Page 15 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
		?97	98.55	100.09	1.54			MGR		MGR						So		SST	0.70m from Top, 0.40m SLT
		329/100.28																	
				102.89	2.80													SST	
23		3.0?																	
				103.12	0.23			MGR		MGR						So		SST	
		339/103.32																	
				106.20	3.08			MGR		MGR						So		SST	
		349/106.37																	
				106.55	0.35			M GR		MGR						So		SST	
0.48				107.03	0.48		SQ-04-04	DGR		MDN		2R				MBN		HCCST	with Coal stringers, 0.10 Roof
			107.03	107.13	0.10											So		Coal / DX BY	Check Solid Coal Struc(?) TOC
																	2		
24							SQ-04-05												

COAL-EX CONSULTING LTD.
CORE LOG

.33

108.32 CST
108.60 coal

Hole No: | Area: | Logged By:
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			107.13	107.40	0.27											SO		DBdd	
		0.29																	
			107.40	108.22	0.82		S9-04-06	MGR	Rider Parting							SBN		CST	Split in half, half samples were taken in the bag
			108.22	108.40	0.18					2						SO		Coal Dull	
			108.4	108.47	0.07		S9-04-07									SO		CST	
			108.47	108.64	0.17											SO		Coal Dull	
			108.64	108.83	0.19		S9-04-08	DGR								SO		CST	with stringers of coal
			108.83	108.9	0.07		S9-04-09									SO		coal Dull	
			108.9	109.05	0.15		S9-04-10	DGR								SO		CST	
			109.05	109.1	0.05		S9-04-11									SO		coal Dull	
			109.1	109.16	0.06		S9-04-12	LGR		MGR						SO		SST	
		359'/109.42																	

Core Logging Form_r36_p1

CORE LOG

Hole No: SC 3-04
Date Begun: ____
Date Finished: ____
Hole Size: ____
Total Depth (m): ____

Area: ____
Collar Bearing: ____
Collar Elev. (m): ____
Hole Angle: ____

Logged By: ____
Date Logged: ____
Northing: ____
Easting: ____
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			109.16	109.23	007			LGR		MGR						50		SST	
			109.23	109.32	0.09		SQ-04-13									50		Coal Dull	
																	2		
			109.32	109.46	0.14		SQ-04-14	DGR											
																50		HCCST	Striggers of Coal
			109.46	109.6	0.14		SQ-04-15												
																50		Coal Dull	
									— Floor 109.60 —										

1

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ- 04　　Area: ______　　Logged By: ______　　

Date Begun: ______　　Collar Bearing: ______　　Date Logged: ______

Date Finished: ______　　Collar Elev. (m): ______　　Northing: ______

Hole Size: ______　　Hole Angle: ______　　Easting: ______

Total Depth (m): ______　　Projection: NAD 83 Zone 10

	Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
2.54				109.6	111.40	1.80		SQ-04-16	MGR								SBN		CST	0.7m From TOP, 0.17m HCCST
				111.40	111.46		0.06													with Coal Stringers / 0.10 Floor
	25																			
				111.46	112.26	0.74			MGR								SO		CST	
			369/112.47																	
																	SO		CST	
				112.26	113.16	0.90			LGR											
3.0																				
				113.16	115.24	2.10			LGR		MGR						SO		SST	
			379/115.52																	
3.13				115.2	115.86	0.66			MGR		MGR						SO		SST	
	26																			
				115.86	118.33	2.47			LMG		CGR						SO		SST	at The bottom with Few PEB
			389/118.56																	
3.64				118.33	120.25	1.92			LGR		MGR						SO		SST	

10.59

CORE LOG

Hole No: SQ- 04 | Page 19 of

Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
27																			
			120.25	121.04	0.79			LGR		MGR						SO		SST	
			121.04	121.37	0.33			MGR		FGR						SO		CST	
		399/121.61																	
			121.37	122.96	1.59			LGR		CGR			3			SO		SST	0.30m at The ToP. with CST
3..																			and PartLY laminaTed at Top
			122.96	124.39	1.43			LGR		PED						MBN		CGL	
		409/124.66																	
			124.39	124.56	0.17			LGR		PEB						MBN		CGL	
3.05 28																			
			124.56	127.44	2.88			LGN		PEB						MBN		CGL	
		419/127.71																	
:03			127.44	128.54	1.10			LGR		PEB						MBN		CGL	

Core Logging Form_r36_p1

8.29

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ-00-04 | Area: | Logged By:
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

	Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
1.93	29																			
				128.54	130.47	1.93			LGR		PEB						MBN		CGL	
			429/130.75																	
				130.47	131.87	1.40			LGR		PEB						MBN		CGL	
3.02				131.87	132.56	0.69			LGR		MGR						SG		SST	
	30																			
				132.56	133.54	0.98			LGR		MGR				3		So		SST	laminated at the bottom
			439/133.8																	
2.86				133.54	136.4	2.86			LGR		PEB						MBN		CGL	
				136.4	136.60	0.	0.20													
			449/136.85																	
				136.60	136.77	0.17			LGR		PEB						SDN		CGL	
.96	31			136.77	136.87		0.10													
				136.87	139.66	2.79			LGR		PEB						SBN		CGL	
			459/139.9																	

10.77

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ. _ 64 | Area: | Logged By: | Page 21 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			139.66	140.15	0.49			LGR		PEB						SBN		CGL	
			140.15	140.18	0.03											So		Coal, Dull	
			140.18	140.40	0.22											So		CCST	
2	92		140.46	140.71	0.31			MGR						3		MBN		CST	0.22 CCST, with coal stringer
			140.71	141.05	0.34			MGR											
																So		SLT	
32																			
			141.05	142.58	1.53			LGR		FGR	LA			3		SBN		SLT	0.69m from top 10.35m Carb.
																			SLST
		469/142.95																	
			142.58	145.15	2.57			LGR		MGR						So		SST	
			145.15	145.17	0.02											So		Coal, Dull	with 2mm rockband
			145.17	145.44	0.27			LGR		MGR						So		SST	
33																		LT	
			145.44	145.64	0.20			LGR		FGR						So		SST	
		479/146																	

5.98

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

E LOG

Hole No: SQ -04

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			145.64	146.24	0.60			LGR		FGR						So		SST	
			146.24	146.68	0.44		SQ-04-17	MGR								So		CST	0.16 Cm ROOF Samp
			146.68	146.73	0.05		SQ-04-18									So	2A	Coal, Dull	
			146.73	146.85	0.12		SQ-04-19									So		HCCST	With Coal stringers
			146.85	146.94	0.09		SQ-04 20									So		Coal, Stony	
			146.94	146.99	0.05											So		Coal, Dull	
			146.99	147.0	0.01		SQ-04-21									MHB		CST	
			147.0	147.32	0.32											So		Coal, Dull	
			147.32	147.44	0.12		SQ-04-22	MGR										CST	
			147.44	147.48	0.04		SQ-04-23									So		Coal	Coal stringers With rock band

0.64

Hole No: SQ - 04 | Area: | Logged By: | Page 23 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.			Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
				147.48	147.58	0.10		SQ-04-24	MGR								SBN		CCST	
					148.72	1.14			LGR		MGR						SO		SST	
			489/149.04																	
					149.86	1.14			LGR		MGR						SO		SST	
34																				
					151.8	1.94			LGR		MGR			3			SO		SST	
			499/152.09																	
					152.60	0.80			LGR		MGR						SO		SST	
					152.72	0.12			BL								SO		Stony Coal	
					152.83	0.11											SO		Coal, DBdd	
					152.99	0.16			MGR								SO		CCST	0.05 at the Top HCCST
					153.31	0.32		SQ-04-25	LGR		MGR						SO		SST	0.6m, Roof

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ - 04

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

X

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			153.31	153.48	0.17		SQ-04-26									SO	↑	Coal/DF&BY	
																	2B		
				153.69	0.21	x	SQ-04-27	DGR								So		HCCST	
				153.77	0.08	x	SQ-04-28									So		Coal Dull	1cm Band of CST
				154.03	0.26		SQ-04-29	DGR								So		CCST	
				154.17	0.14	x	SQ-04-30									So	↓	Coal Dull	
				154.34	0.17		SQ-04-31	MGR								SBN		HCCST	o.lo Floor sample
35																		CST	
				154.59	0.25														
								MGR		FGR	LA		3			So		SST	
				154.91	0.32														
		509/155.14																	

Core Logging Form_r36_p1

DRILL CORE LOG

Hole No.: Sc [illegible] 4

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

2.97

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			154.91	156.70	1.79			MGR	-	FGR	LA			3		SO		SST	
				157.15	0.45			MGR								So		CCST	with coal stringers
				157.18	0.03											So		Coal	
				157.91	0.72			MGR						3		SBN		HCCST	0.25 cm at the bottom with
				6		0.08													lamination of SST
		519/158.19																	
				158.13	0.23			MGR								MBN		CCST	
				158.66	0.53			MGR								So		CST	
		L25		158.78	0.12			LGR		MGR						So		SST	
36																			
				159.37	0.59			LGR		MGR				4		So		SST	
				159.71	0.34			LGR								So		CST	

COAL-EX CONSULTING LTD.

II RE LOG

Hole No: SQ 04

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
		539/164.28																	
		[illegible]	159.71	160.05	0.34			LGR								SO		CST	
		[illegible]		160.17	0.12		SQ-04-32	LGR		FGR						SO		SST	Roof 0.10m
		[illegible]		160.29	0.12		SQ04-33									SO		Coal, DBd	
																		[illegible]	
				160.33	0.04		SQ-04-34	MGR								SO		CCST	0.10 m Floor
		[illegible]		161.50	1.17		SQ-04-35	LGR		MGR						SO		SST	0.10 m Roof
				161.59	0.09		SQ-04-36									SO		Coal Dull	
				161.68	0.09		SQ-04-37	DGR								SO		Coal, Stony	
				162.06	0.38		SQ-04-38	DGR								SO		CCST	with Coal stringers, 0.10 Floor
							SQ-04-39	Roof											
				162.19	0.13		SQ-04-40									SO		Coal Dull	0.02 at the Top and bottom
		[illegible]																	Stony
				162.25	0.06		SQ-04-41	DGR								SO		CCST	

163.36

0.13

ILL CORE LOG

Hole No: S : 04 X

Area:

Logged By:

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			162.25	162.3	0.05		SQ-08-42									HBN		Coal, DαBY	
	07																		
				162.44	0.14		SQ-08-48	DGR								So		HCCST	with Coal Stringers CSP 0.104F
				162.79	0.35			MGR								So		SLT	
		549/167.37																	
				162.97	0.18			MGR								So		SLT	
				163.17	0.20			LGR		MG						So		SST	
		2.48																	
37																			
				165.49	2.32			LGR		MG				3		So		SST	0.6m at The Bottom laminated
		559/170.38																	
				165.73	0.24			LGR		MG						So		SST	
				165.79	0.06											So		Coal DαBV	
				166.14	0.35			DGR								So		CCST	with Coal Stringer WSP
				166.19	0.05											So		Coal DULL	

COAL-EX CONSULTING LTD.

IL' ORE LOG

Hole No: Sc . . -04

Date Begun: ___

Date Finished: ___

Hole Size: ___

Total Depth (m): ___

Area: ___

Collar Bearing: ___

Collar Elev. (m): ___

Hole Angle: ___

Logged By: ___

Date Logged: ___

Northing: ___

Easting: ___

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			166.19	166.45	0.26			DGR									So	CCST	0.10m at The Top 1t CCST with Coalstringers
				167.44	0.99			LGR		MGR							So	SST	
38																			
		4-6 4		168.46	1.02			LGR		MGR				3			So	SST	at The bottom laminated
				168.93	0.47			MGR									So	CCST	
				170.18	1.25			MGR		MGR							So	SST	
		569/173.43																	
				171.83	1.65			MGR		MGR				3			So	SST	laminated at The bottom
		3.8																	
39																			
				173.26	1.43			MGR		MGR							So	SST	
		579/176.48																	
				173.41	0.15		SQ-04-44	LGR		MGR							So	SST	0.10m Roof Sample

ILL CORE LOG

Hole No: SC 04

Area:

Logged By:

Page 29 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			173.41	173.67	0.26												SO	Coal, DBdd	
							SQ-04-45												
				173.71	0.04												SO	CHCCST with	Coal Stringers
				174.09	0.38		SQ-04-46	DGR									SO	CCST	0.10 Floor
				176.32	2.23			MGR		MGR							So	SST	
		589/179.53																	
40																			
				176.79	0.47			MGR		MGR							So	SST	
				177.49	0.70			MGR						3			So	CST	Laminated at the bottom
				177.61	0.12												So	Coal, BrBdd	
3 (11)																			
				177.82	0.21			DGR									So	HCCST	with Coal Stringers CSP
				178.71	0.89			MGR									SO	CCST	
				179.42	0.71			LGR		MGR							So	SST	

LL ~~C~~ORE LOG

Page 30 of

Hole No: SG 04
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area: V
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
		599/182.57																	
			179.42	180.74	1.32			LGR		MGR				3		So		SST	0.25 m at The bottom Fine grained
																			and Partly Laminate
41		2.																	
				180.94	0.20			LGR		FGR	LA			3		So		SST	
				182.39	1.45			MGR								So		CST	
		609/185.62																	
				183.34	0.95		SG-04-47	DGR								So		CST	0.20 m at The Top 0.10 m CCST, 0.10
																			m Light gray CST at The Top of The Coal 0.62 m
				183.43	0.09											So		Coal DBdd	
							SG-04-48												
				183.49	0.06			DGR								So		Coal Stony	
				183.72	0.23		SG04-49									So		Coal Dx BV	
				184.02	0.30		SG04-50	DGR								So		CCST	with Coal Stringers
																So		CCST	0.10 FL with Coal Stringers at The bottom
				184.63	0.61			LGR								So		SST	

CORE LOG

Hole No: S - -04 **Area:** **Logged By:**

Date Begun: **Collar Bearing:** **Date Logged:**

Date Finished: **Collar Elev. (m):** **Northing:**

Hole Size: **Hole Angle:** **Easting:**

Total Depth (m): **Projection: NAD 83 Zone 10**

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			184.63	184.82	0.19			DGR									So	CCST	
				184.95	0.13			MGR		MGR							So	SST	
42		42																	
				185.46	0.51			LGR		MGR							So	SST	
		619/188.67																	
				188.54	3.08			LGR		MGR							So	SST	
		629/191.27																	
				189.34	0.80			LGR		MGR							So	SST	
		3.01																	
43																			
				191.59	2.25			LGR		MGR							So	SST	
		639/194.76																	
				193.74	2.15			LGR		MG					3		So	SST	Partly laminated at the bottom
44		3.27																	

[illegible] ORE LOG

Hole No: S[illegible]-04 | Area: ____ | Logged By: ____
Date Begun: ____ | Collar Bearing: ____ | Date Logged: ____
Date Finished: ____ | Collar Elev. (m): ____ | Northing: ____
Hole Size: ____ | Hole Angle: ____ | Easting: ____
Total Depth (m): ____ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			193.74	194.7	0.96			LGR		MGR			3			SO		SST	Partly laminated at the bottom
		649/197.81																	
				197.75	3.05	3.05		LGR		CGR						SO		SST	0.40cm at TOP mediumgrained
		659/200.86																	
				198.07	0.32	1		LGR		CGR						SO		SST	
				198.2	0.13	1		MGR								SO		CST	
45																			
					.44														
3.08				198.64	0.44	1		MGR								SO		CST	0.20 m from TOP 10 cm fine
																			grained SST
				198.7	0.06	1										SO		Coal DBdd	
				198.8	0.10	1		DGR								SO		CCST	
				200.83	2.03	1		LGR		FGR				3		SBN		SST	0.18 m at The TOP carbonaceous
																			0.50 cm from bottom 10 cm
		669/203.91												3					laminated

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: S. -04 | Area: | Logged By: | Page 33 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			200.83	201.13	0.30			LGR		FGR						SO		SST	
				202.34	1.21			DGR								SO		CCST	0.40cm from bottom, 0.20m Light grey
3.71																			CST contact at 30°
				202.61	0.27			DGR		FGR						SO		SST	
46																			
				203.94	1.33			LGR		MGR				3		SO		SST	
		679/206.96																	
				204.96	0.96			LGR		FGR						SO		SST/SLT	sandst. interbedded with SLT
118																			0.22m at the top SST
				205.22	0.32		SQ-04-51	DGR								SO		CCST	0.16 Roof
				205.27	0.05		SQ-04-52									SO		Coal Dull	
				205.60	0.33		SQ-04-53	DGR								SO		CST	Coal Zone

CORE LOG

Hole No: SQ _04 | Area: | Logged By: | Page 34 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			205.60	205.74	0.14		SQ-04-54									SO		Coal Dull	
				206.22	0.48		SQ-04-55			MGR						SO		CST	
				206.31	0.09		SQ-04-56									SO		Coal Dull	
				206.49	0.18		SQ-04-57			MGR						SO		CST	
				206.67	0.18		SQ-04-58									SO	3	Stoney Coal	Coal Zone
				206.9	0.23											SO		coal Dull	
		689'/210m					SQ-04-59												
47				206.96	0.06											SO		Coal / DBDD	
				207.11	0.15		SQ-04-60									SO		silty CST	
				207.36	0.25		SQ-04-61									SO		Coal / DBDD	
				207.4	0.04	—										SO		CST	
				207.46	0.06		SQ-04-62									MBN		STGiy	
				208.21	0.75		SQ-04-63									SO		CST	0.10 m F Lor No-sampled top 0.075m

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ- 4

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
																			Coal Zone

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ- 4
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			208.21	209.35	1.14			MGR								SBN		CST	
				209.47	0.12			DGR								SO		CCST	
				209.59	0.12											SO		Coal, Stony	
				209.76	0.17			DGR								SO		CCST	
				210.03	0.27			LGR		MGR						SBN		SST	
		699/213.05																	
				211.40	1.37			LGR		MGR				3		SBN		SST	with some CST laminations
48																			
				213.13	1.73			LGR		MGR						SBN		SST	
		709/216.10																	
				215.80	2.67			LGR		MGR				3		SO		SST	

CORE LOG

Hole No: SQ 04

Area:

Logged By:

Page 37 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle: ✓

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
49																			
			215.8	216.18	0.38			LGR		MGR						SO		SST	
		719/219.15																	
				217.72	1.54			LGR		MGR	LA		3			SO		SST	
				217.94	0.22		SQ-04-64	DGR								SO		CST	a lo Roof
				218.12	0.18		SQ-04-65									SO	4	Stoney/Coal	Coal Zone
																SO		roof	
				218.44	0.32		SQ-04-66											Coa'DBdd	
																	4		
				218.58	0.14		SQ-04-67											Coal/Stony	
				219.09	0.51		SQ-04-68	DGR								SO		CST	

COAL-EX CONSULTING LTD.

[illegible] E LOG

Hole No: SQ-00-04 | Area: ______ | Logged By: ______ | Page 37-1 of ______

Date Begun: ______ | Collar Bearing: ______ | Date Logged: ______

Date Finished: ______ | Collar Elev. (m): ______ | Northing: ______

Hole Size: ______ | Hole Angle: ______ | Easting: ______

Total Depth (m): ______ | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			219.09	219.17	0.08		SQ-04-69									SO		Coal Dull	
		729'/222.19																	
				219.21	0.04		SQ-04-70									SO		Coal Stney	
																	4		
				219.23	0.02					DGR						SO		CST	
				219.29	0.06		SQ-04-71									SO		Coal D&Br	
				219.46	0.17		SQ-04-72			DGR						SO		CST	0.10 m Floor

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SC __-04

Area: ✓

Logged By:

Page 38 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			219.46	220.06	0.60			LGR		MGR			3			SO		SST	
				220.12	0.06			LGR								SO		CST	
50																			
				221.02	0.90			LGR								SO		CST	0.07 at the top more sandy
				221.14	0.12		SQ-08-73									SO		Coal stoney	
				221.27	0.09		SQ-08-74									SO		Coal Bright	Marciste
				221.56	0.33		SQ-03-75									SO		stoney coal	
				221.75	0.19		SQ-03-76									SO		coal Dull/hard	
				221.97	0.22		SQ-03-77									SO		stoney coal	
				222.18	0.21											SO		Coal Dull/hard	

COAL-EX CONSULTING LTD.

L LOG

Hole No: SQ-00-4

Area: ✓

Logged By:

Page 38-1 of

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
		222.18	2	222.21	0.03			LGR								50		CST	
				222.25	0.04		SQ-04-78									80		coal Dull/hard	
		739' 225.24																	
				222.35	0.10											80		coal Dull/hard	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ 04 | Area: V | Logged By:

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			222.35	224.46	2.11		SQ-04-79	LGR		MGR			3			SO		SST	1.40 m at The Top laminated 0.10m
51																			
				225.27	0.81			LGR		MG						SO		SST	
		749/228.29																	
				228.3	3.03			LGR		MGR				3		SO		SST	Partly laminated at The bottom
		759/231.34																	
				228.84	0.54			LGR		MGR				3		SO		SST	
52																			
				229.33	0.49			LGR		MGR						SO		SST	0.20m at The bottom with coal bands upto 1 Cm
				229.37	0.04											SO		Coal Dull	
				230.41	1.04		SQ-04-80									SO		CST	Stringers of coal / 0.10m Coal Zone
				230.73	0.32		SQ-04-81									SO		Coal Dull	

COAL-EX CONSULTING LTD.

)RE LOG

Hole No: Sc. . -04 | Area: | Logged By: | Page 40 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
																			Coal 2.5m
			230.73	231.27	0.54		SQ.04-82	MGR								So		CST	
		769/234.39																	
				231.89	0.62			MGR								So		CST	0.30m at the bottom more Sandy

COAL-EX CONSULTING LTD.

ORE LOG

Hole No: SQ-04 | Area: ✓ | Logged By: | Page 41 of

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			231.89	233.24	1.35			LGR		MGR						SO		SST	
53																			
				234.14	0.90			LGR		MGR			3			SO		SST	0.23m from TOP with SLT lamination
				234.16	0.02											SO		Coal Dull	Roof-tiny band of CST
				234.4	0.03											SO		Stoney Coal	CST
				234.31	0.12		SQ04-83	LGR		MBN						SO		CST	
		779'/237.43																	
				234.35	0.04		SQ04-84									SO		Coal Dull/Bright	
				234.41	0.06		SQ 04-85	Roof 0.1 Roof and Floor								SO		HCCST	Coal Stringers Coal Zone 0.10 Roof, 0.10 Floor
				235.01	0.60		SQ-04-86	Floor 0.1								SO		CCST	
				235.05	0.04											SO		Coal Dull	
				235.15	0.10		SQ 04-87									SO		Stoney	

COAL-EX CONSULTING LTD.

E LOG

Hole No: SQ-08-04 | Area: | Logged By: | Page 42 of

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			235.15	235.45	0.30		↑									SO		Coal Dull	Very hard
							SQ-08-88												
				235.46	0.01		↓									SO		Coal Bright	
				235.61	0.15		SQ-08-89									SO		Stoney Coal	
				235.66	0.05		SQ-08-90									So		Coal, Dull	
				236.21	0.55		SQ-08-91									So		CCST	0.07 from Top, 0.20 m light grey CST
				236.54	0.33		SQ-08-92									So		Dull hard	
				237.37	0.83		SQ-08-93									SO		CST	0.10 m Floor
		789' / 240.48																	
				237.44	0.07											SO		CCST	
				237.59	0.15			MGR		FGR						SO		SST	
54																			
				237.65	0.06											SO		Coal Dull	Coal was tiped one side
																			2 [illegible], other side [illegible]

Core Logging Form_r36_p1

COAL-EX[illegible]ULTING LTD.

DR[illegible] LOG

Hole No:______ **Area:**______ **Logged By:**______ **Page** 42-1 **of**____

Date Begun:______ **Collar Bearing:**______ **Date Logged:**______

Date Finished:______ **Collar Elev. (m):**______ **Northing:**______

Hole Size:______ **Hole Angle:**______ **Easting:**______

Total Depth (m):______ **Projection: NAD 83 Zone 10**

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			237.61	237.86	0.21		SQ-04-94									SO		Stoney Coal	
				238	0.14		SQ-04-95									SO		Bright banded Coal	
				238.64	0.64		SQ-04-96									SO		CCST with Coal Stringers	0.10

COAL-EX CONSULTING LTD.

[illegible]E LOG

Hole No: SQ- c 4

Date Begun: ___

Date Finished: ___

Hole Size: ___

Total Depth (m): ___

Area: ✓

Collar Bearing: ___

Collar Elev. (m): ___

Hole Angle: ___

Logged By: ___

Date Logged: ___

Northing: ___

Easting: ___

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			238.64	239.92	1.28			LGr		MGa				3		So		SST	0.80m from bottom laminated
																			0.30m at the bottom more SILTY
				240.03	0.11			DGr								So		CCST	
	3.1			240.17	0.14			MGr								So		CST	
				240.48	0.31			LGa								So		SST	with SST lamination
		799/	243.53																
				241.5	1.02			MGr								So		SLT	
				241.97	0.47			LGa								So		SST	
55																			
				242.76	0.79			LGr						3		So		SST	0.40m at the bottom
																			Laminated, more SILTY
				242.97	0.21			MGa								So		SLT	
				243.12	0.15											So		Coaly Stony	
				243.4	0.28			MGK								So		CST	
		809/246.58																	

Core Logging Form_r36_p1

COAL-EX CONSULTING LTD.

E LOG

Hole No: SQ-00-04 | Area: | Logged By:
Date Begun: | Collar Bearing: | Date Logged:
Date Finished: | Collar Elev. (m): | Northing:
Hole Size: | Hole Angle: ✓ | Easting:
Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			243.4	243.85	0.45			MGR		FGR						So		SLT	
				244.25	0.40			MGR								So		CST	
				245.88	1.63			LGR		MGR				4		So		SST	0.47m from TOP, 0.10cm SLT
																			0.70m from bottom Laminated
				246.07	0.19			DGR								So		CST	
				246.27	0.20			DGR		FGR						So		SLT	
56																So		SLT	
				246.5	0.23			MGR		FGR									
		819/249.63																	
				249.39	2.89			LGR		MGR	LA			4		SO		SST	0.06m at TOP CST partly
				249.54		0.15													broken
		829/252.67																Rock loss	
				249.97	0.43			LGR		MGR	La					So		SST	
	3.44			250.64	3.67			MG						3		So		SLT	with lamination of SST WSP

2.09

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ 4

Area: ✓

Logged By:

Date Begun:

Collar Bearing:

Date Logged:

Date Finished:

Collar Elev. (m):

Northing:

Hole Size:

Hole Angle:

Easting:

Total Depth (m):

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
57																			
			250.64	252.58	1.94			MGR		FGR				3		SO		SLT	WSP, SST laminations
		839/255.79																	
				253.	0.42			MGR		FGR						SO		SLT	
				253.87	0.87			MGR		|						SBN		CST	
				254.02	0.15			LGR		MGR						SBN		SST	
				254.15	0.13											SO		Coal, DBdd	
				254.28	0.13			DGR								SO		SLT	
				254.98	0.70			LGR		MGR						MBN		SST	MBN, 0.30m at the bottom
				255.02	0.04			DGR								SO		CCST	
58																			

COAL-EX CONSULTING LTD.

E LOG

Page 46 of ___

Hole No: SQ-0-04	Area: ✓	Logged By:
Date Begun:	Collar Bearing:	Date Logged:
Date Finished:	Collar Elev. (m):	Northing:
Hole Size:	Hole Angle:	Easting:
Total Depth (m):		Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			255.02	255.62	0.60			DGR								SBN		CCST	
		849/25877																	
				256.48	0.86			DGR								SBN		CCST	
				256.53	0.05													Coal Dull	
				256.74	0.21			DGR								SO		CCST	
				257.24	0.50			LGR		FGR						SO		SST	
				258.34	1.10			MGR		FGR						SO		SLT	
				258.39	0.05											SO		Coal, Dull	
				258.50	0.11			DGR								SO		Coal, Stony	
				258.69	0.19			MGR								SO		CST	
		859/261.82																	

CORE LOG

Hole No: SQ- 4 | Area: ✓ | Logged By: | Page 47 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			258.69	258.96	0.27			MGR								So		SLT	
				259.48	0.52			LGR		MGR						So		SST	
59																			
				259.58	0.10			DGR								So		CCST	
				261.66	2.08			LGR		MGR				3		So		SST	Partly laminated
		869/264.87																	
				262.76	1.10			LGR		MGR				3		So		SST/SLT	interbedded SST and SILT
				263.92	1.16			MGR								So		CST	
60																			
				264.72	0.80			DGR								So		CCST	with coal stringers at the bottom
		879/267.91																	
				265.01	0.29			LGR								So		CCST	
				265.46	0.45			LGR		MGR						So		SST	

COAL-EX CONSULTING LTD.

E LOG

Hole No:

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area: SQ-08-04

Collar Bearing: ✓

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			265.46	267.48	2.02			MGR								So		CST	
				267.58	0.10											So		Coal D Bdd	
				267.6	0.02			LGR								So		CST	
				267.63	0.03			DGR								HBN		CCST with Coal Stringers	
		889/270.96																	
				267.88	0.25			MGR								MBN		CST	0.10m at The Top HBN
				268.14	0.26			MGR		MGR						So		SST	
				268.21	0.07			MGR								So		CST	
61																			
				269.06	0.85			DGR								MBN		CCST	
				269.68	0.62			MGR		FGR						So		SLT	
				270.73	1.05			LGR		FGR						So		SST	
		899/274.01																	

COAL-EX CONSULTING LTD.

RE LOG

Hole No: SQ-04 | Area: ✓ | Logged By: | Page 49 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			270.73	272.59	1.86			MGR		FGR						MBN		SST	0.78m at the bottom MGR SST
62																			
				273.69	1.10			LGR		MGR			3			MBN		SST	
		909/277.06																	
				275.01	1.32			LGR		MGR						So		SST	
				275.31	0.30			MGR		MGR						So		SLT	
				276.59	1.28			DGR								MBN		CST	0.48m at top light gray CST
				276.73	0.14			LGR		FGR						So		SST	
		919/280.11																	
				276.87	0.14			MGR		FGR						So		SLT	
63																			
				277.27	0.40			MGR		FGR						So		SLT	
				279.77	2.50			LGR		MGR						So		SST	
		929/283.15																	

CORE LOG

Hole No: SQ -08

Date Begun:

Date Finished:

Hole Size:

Total Depth (m):

Area:

Collar Bearing:

Collar Elev. (m):

Hole Angle:

Logged By:

Date Logged:

Northing:

Easting:

Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type / Rock Type	Additional Descriptions
			279.77	279.93	0.16			LGR		MGR				3		SO		SST	
				281.15	1.22			DGR								MBN		CCST	0.10m at The Top HBN
64																			
				281.58	0.43			MGR								So		CCST	With 0.02cm Coal 0.10m From Top
				281.78		0.20													
				281.82	0.04											So		Coal Stony	
				281.86	0.04											So		Coal Bony	
				281.90	0.04											So		Coal Dull	
				281.93	0.03			MGR								So		CST	
				281.97	0.04			S								So		Coal Dul	
				282.82	0.88			DGR								So		CST	
		939/286.7																	
				283.59	0.77			MGR		FGR						SO		SLT	
				284.03	0.44			LGR	LA	MGR				3		So		SST	

... ORE LOG

Hole No: SQ -04 | Area: | Logged By: | Page 51 of

Date Begun: | Collar Bearing: / | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			284.03	284.5	0.47			MGR		FGR						So		SLT	
				285.33	0.83			LGR		MGR						So		SST	
				285.63	0.30			MGR		FGR						So		SLT	
65																			
				285.68	0.05			MGR								So		CST	
				285.72	0.04											So		Coal, Dul	
				285.89	0.17			MGR								So		CST	
		949/289.25																	
				286.36	0.47			LGR	LA					4		So		SST	
				287.05	0.69			MGR		FGR						So		SLT	
				288.24	1.19			MGR		FGR						So		SST	
				288.67	0.43			MGR								So		CST	
				288.82	0.18			DGR								MBN		CCST	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ 304 | Area: ✓ | Logged By: | Page 52 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
		959/292.30																	
			288.82	288.85	0.03											HBN		Coal Dull	
				289.27	0.42			DGR								SO		CCST with Coal Stringers	
				289.49	0.22			DGR								HBN		CST interbedded with Coal beds up to 2cm	
				289.91	0.42			MGR								SO		CST	
66																			
				291.77	1.86			LGR		FGR						SO		SST	
		969/295.35																	
				294.13	2.36			LGR		FGR				3		SO		SST	0.40 cm at the bottom laminated
				294.35	0.22			MGR								SBN		CST	
67																			
				294.78	0.43			MGR								MBN		~~B~~ SLT	
		979/298.39																	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ ?-09 | Area: | Logged By: | Page 53 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			294.78	295.98	1.20			MGR								SO		CST	
				297.86	1.88			LGR		MGR						SBN		SST	
		989/301.44																	
				298.65	0.79			LGR		MGR				3		SO		SST	Partly laminated at the bottom
68																			
				298.96	0.31			LGR	LA	MGR				3		SO		SST	
				300.16	1.20			MGR		FGR						SO		SLST	0.32 m from Top, 10 cm SST
																			0.80m from Top MBN
				300.85	0.69			LGR		MGR	LA			3		MBN		SST	With Coal Stringer lamination
		999/304.49																	
				302.9	2.05			LGR		MGR	LA			3		MBN		SST	
69																			
				303.7	0.80			LGR		MGR				(25)		SBN		SST	
		1009/307.54																	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: [illegible]-04
Date Begun:
Date Finished:
Hole Size:
Total Depth (m):

Area:
Collar Bearing:
Collar Elev. (m):
Hole Angle:

Logged By:
Date Logged:
Northing:
Easting:
Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			303.70	305.6	1.90			LGR		FGR						MBN		SST	0.60m from Top, 0.25m
																			very broken, 1.25m from Top
																			0.20m very broken.
				305.88	0.28			MGR	LA	FGR	LA			20		MBN		SLT	at The bottom very broken
		1019/310.59																	
				306.88	1.00			MGR		FGR	LA			35		HDN		SLT	at bottom of Run very
																			broken
70					2.10														
				308.98	2.10			MGR		FGR	[illegible]	GO		30		HBN		SLT	0.30m from Top / 0.50m Gauge
		1029/313.63																	
				310.84	1.86			MGR		FGR		GO				HBN		SLT	0.20m at The Top Gouge
71																			
				311.81	0.97			MGR								SBN		CST.	
		1039/316.65																	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SC 8-04 | Area: | Logged By: | Page 55 of

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
			311.81	313.21	1.40			MGR		1						MBN		CST	
				313.98	0.77			LGR		MGR				23		So		SST	
				314.55	0.57			DGR								SBN		CST	0.10m at TOP Very broken
				314.59	0.04											MBN		Coal Dull	
				314.84	0.25			MGR								MBN		CST	
		1049/319.73																	
				315.11	0.27			MGR								MBN		CST	
72																			
				315.85	0.74			MGR								So		CST	
				317.89	2.04			LGR		MGR	LA			3		SBN		SST	
		1059/322.78																	
				319.49	1.60			LGR		MGR	LA		3			SBN		SST	

COAL-EX CONSULTING LTD.

CORE LOG

Hole No: SQ 04 | Area: | Logged By: |

Date Begun: | Collar Bearing: | Date Logged:

Date Finished: | Collar Elev. (m): | Northing:

Hole Size: | Hole Angle: | Easting:

Total Depth (m): | Projection: NAD 83 Zone 10

Box No.		Driller's Marker (ft/m)	Unit From (m)	Unit To (m)	Length (m)	Lost (m)	Sample Number	Color	Weathering	Grain Size	Bedding Sedimentary Structure	Structure	BCN (°) Roof	BCN (°) Floor	HCl	Core Quality	Seam	Coal Type Rock Type	Additional Descriptions
73																			
			319.49	320.99	1.50			MGR		FGR						So		Sandy SILST	
		1069/325.33																	
				321.87	0.88			LGR		MGR						So		SST	
				323.62	1.75			MGR								So		CST	
				323.92	0.30			MGR		MGR						So		SST	
74																			
				324.00	0.08			MG		MGR						So		SST	
		1079/328.87																	

Core Logging Form_r36_p1

APPENDIX IV

GEOPHYSICAL LOGS

July 2, 2009

Century WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA-CALIPER-RES
SQ-08-01

COMPANY	:ELEKTRA GOLD LTD
WELL	:SQ-08-01
FIELD	:PORT HARDY
COUNTRY	:CANADA
PROVINCE	:B.C.

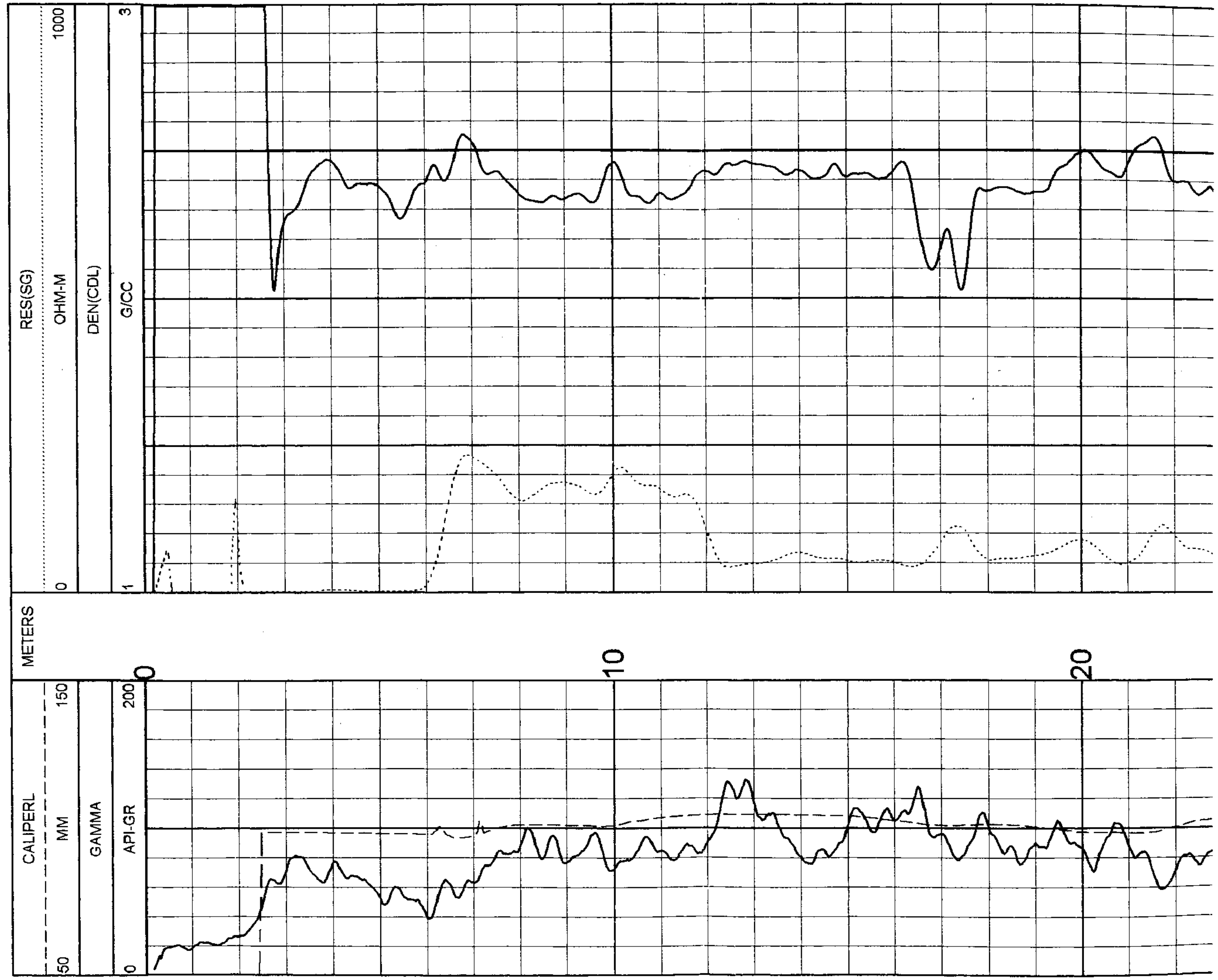
OTHER SERVICES:

LOCATION	:NA
SECTION	:NA
TOWNSHIP	:NA
RANGE	:NA
LICENCE NO.	:NA
UNIQUE WELL ID.	:NA

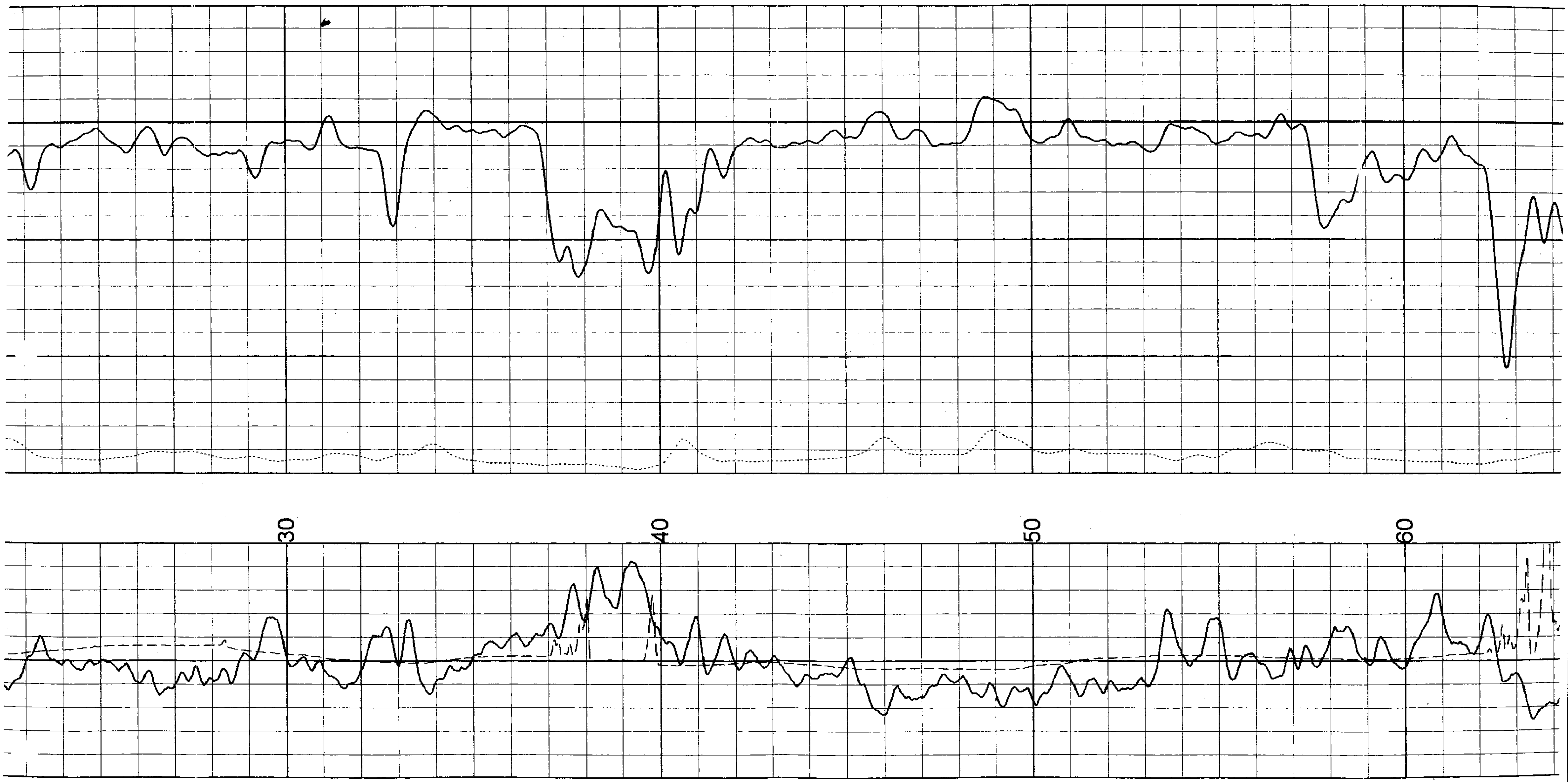
P ANENT DATUM	:GL	ELEVATION KB	:NA
LOG MEASURED FROM	:GL	ELEVATION DF	:NA
DRL MEASURED FROM	:GL	ELEVATION GL	:NA

DATE	:10/28/08
DEPTH DRILLER	:103.3M
BIT SIZE	:9.52
LOG TOP	:0.18
LOG BOTTOM	:79.90
CASING LOGGER	:11.0CM
CASING DRILLER	:6.1M
CASING TYPE	:SURFACE
BOREHOLE FLUID	:POLY
RM TEMPERATURE	:NA
MUD RES	:NA
MUD WEIGHT	:1.00
WITNESSED BY	:JO SHEARER
RECORDED BY	:B. SNELL
REMARKS 1	:90 DEGREE HOLE
REMARKS 2	:HOLE BRIDGED AT 80M

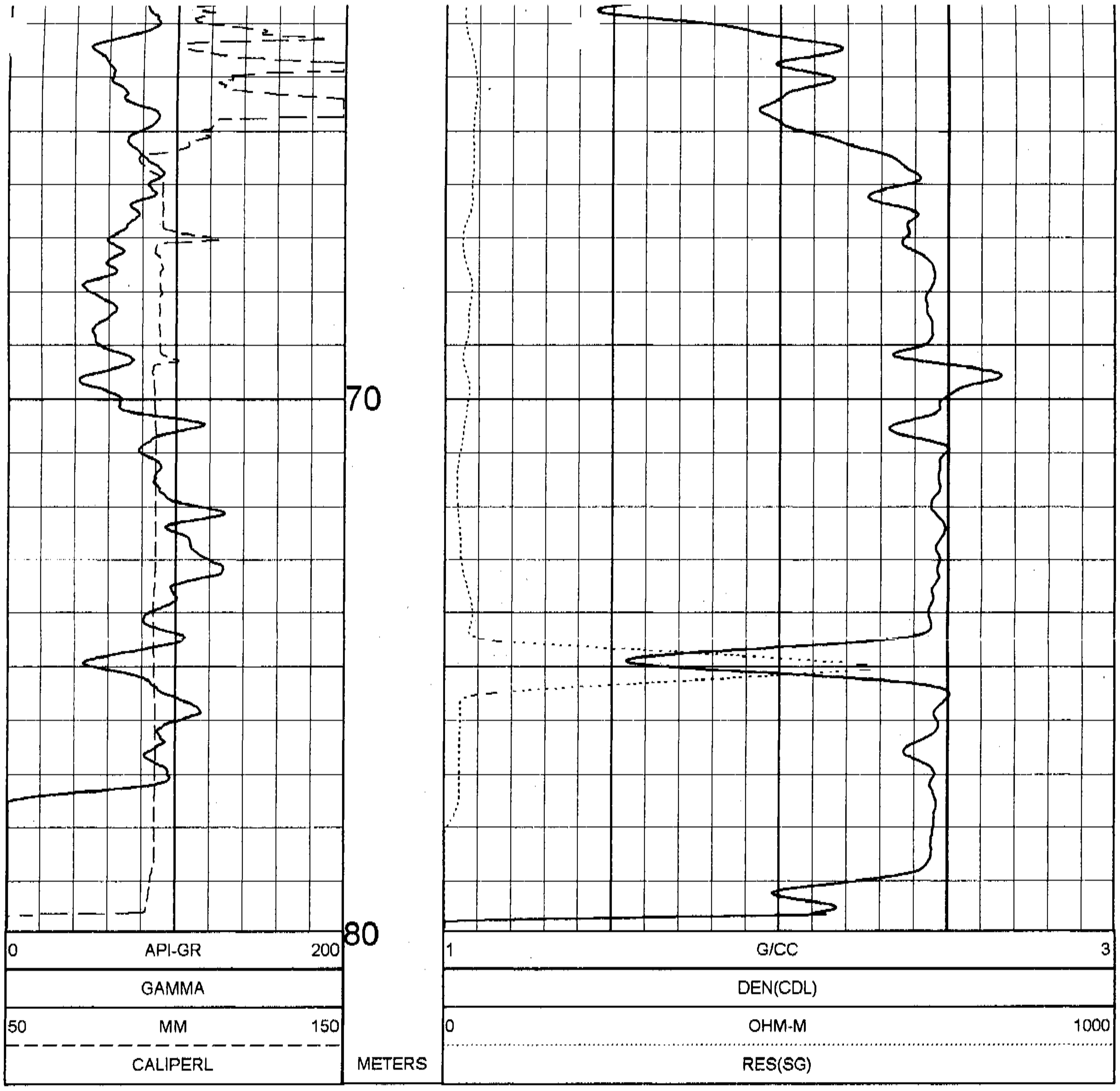
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



SQ-08-01



SQ - 08 - 01



TOOL CALIBRATION SQ-08-01 10/28/08 13:38
TOOL 9239C1 TM VERSION 2019
SERIAL NUMBER 1268

	DATE	TIME	SENSOR	STANDARD		RESPONSE	
1	May09,08	10:50:11	GAMMA	2.000	[API-GR]	0.00	[CPS]
	May09,08	10:50:11	GAMMA	150.000	[API-GR]	170.00	[CPS]
2	Oct14,08	14:25:31	VOLTAGE	30.800	[MV]	9017.10	[CPS]
	Oct14,08	14:25:31	VOLTAGE	234.000	[MV]	36075.20	[CPS]
3	Apr15,07	13:12:08	CALIPER	Default	[CPS]	Default	[CPS]
	Apr15,07	13:12:08	CALIPER	Default	[CPS]	Default	[CPS]
4	Oct15,08	10:39:33	DEN(LS)	1.000	[G/CC]	43893.60	[CPS]
	Oct15,08	10:39:33	DEN(LS)	2.323	[G/CC]	4086.00	[CPS]
5	Oct15,08	10:39:56	DEN(SS)	1.000	[G/CC]	68784.50	[CPS]
	Oct15,08	10:39:56	DEN(SS)	2.323	[G/CC]	29340.00	[CPS]
6	Oct14,08	14:18:21	CALIPERL	100.000	[MM]	137604.00	[CPS]
	Oct14,08	14:18:21	CALIPERL	200.000	[MM]	247750.00	[CPS]
7	Oct14,08	14:25:40	CURRENT	30.800	[UA]	5121.20	[CPS]
	Oct14,08	14:25:40	CURRENT	240.000	[UA]	22281.70	[CPS]
8	Apr15,07	13:12:08	F	Default	[CPS]		
9	Apr15,07	13:12:08	X	Default	[CPS]		

SQ-08-01
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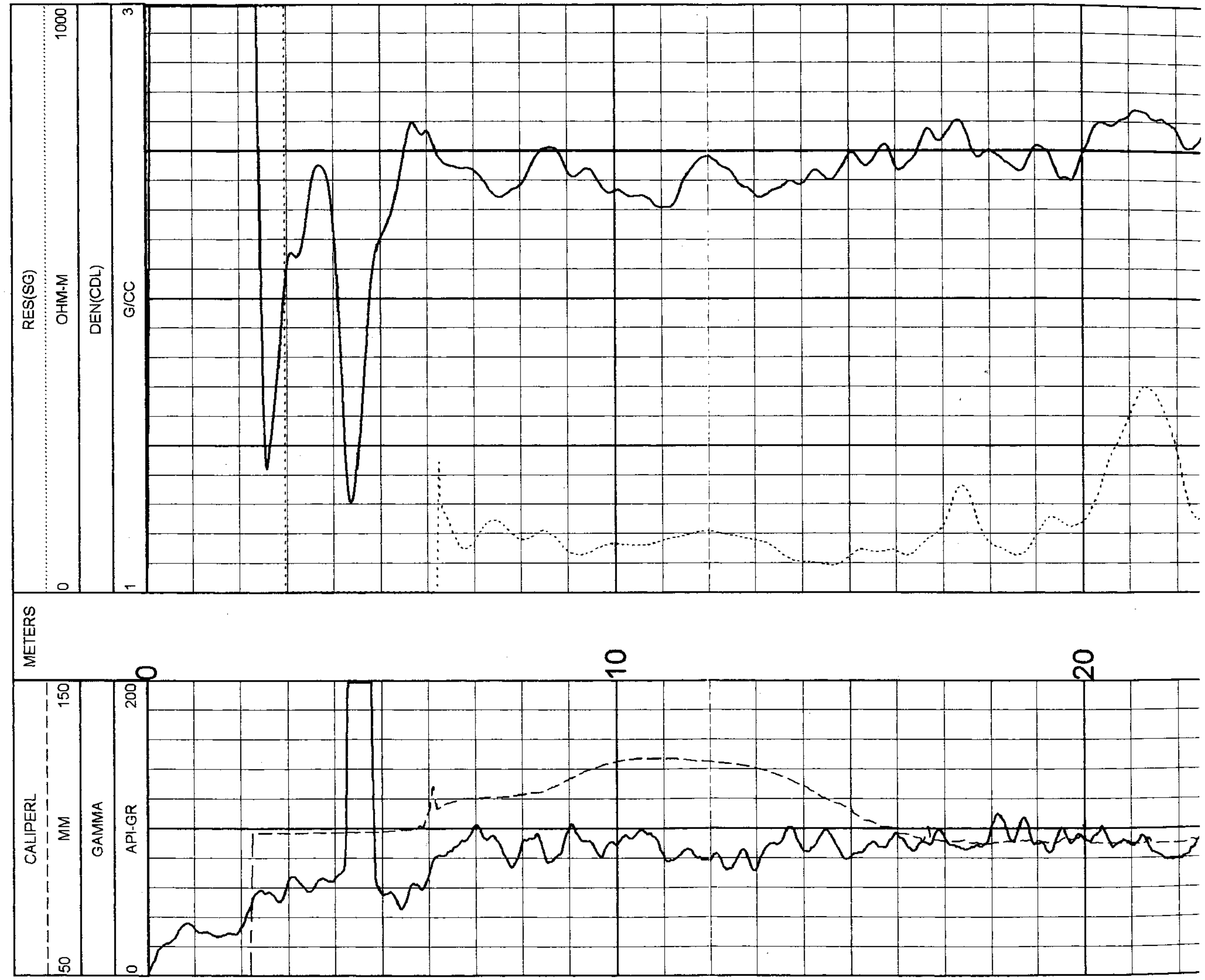
Century
WIRELINE SERVICES

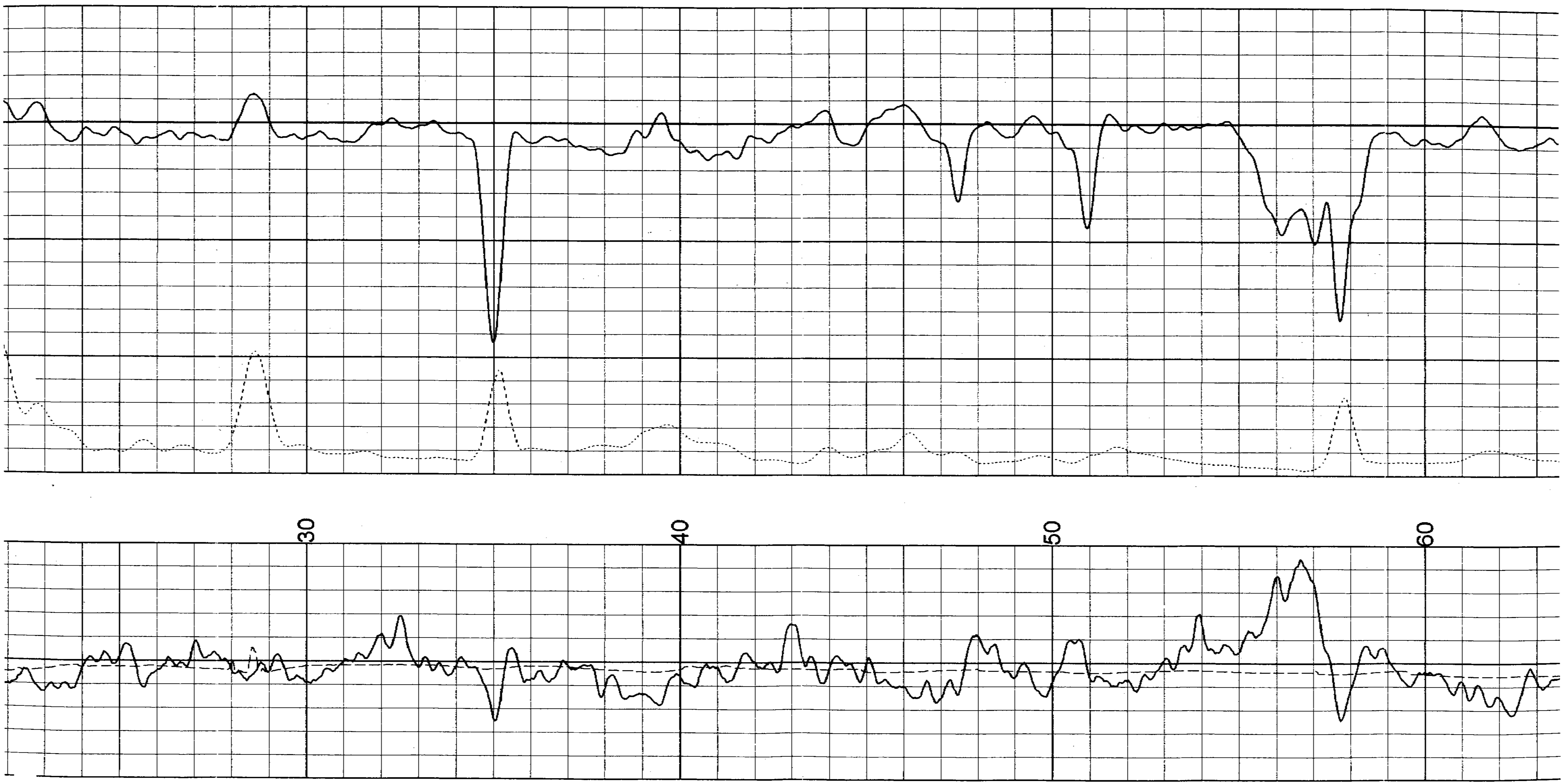
COMPENSATED DENSITY
GAMMA-CALIPER-RES
SQ-08-03

COMPANY	:ELEKTRA GOLD LTD	OTHER SERVICES:
WELL	:SQ-08-03	
FIELD	:PORT HARDY	
COUNTRY	:CANADA	
PROVINCE	:B.C.	
LOCATION	:NA	
SECTION	:NA	
TOWNSHIP	:NA	
RANGE	:NA	
LICENCE NO.	:NA	
UNIQUE WELL ID.	:NA	
PERMANENT DATUM	:GL	ELEVATION KB :NA
LOG MEASURED FROM	:GL	ELEVATION DF :NA
DRL MEASURED FROM	:GL	ELEVATION GL :NA
DATE	:10/28/08	
DEPTH DRILLER	:118.57M	
BIT SIZE	:9.52	
LOG TOP	:-0.03	
LOG BOTTOM	:117.81	
CASING LOGGER	:6.1M	
CASING DRILLER	:6.1M	
CASING TYPE	:SURFACE	
BOREHOLE FLUID	:POLY	
RM TEMPERATURE	:NA	
MUD RES	:NA	
MUD WEIGHT	:1.00	
WITNESSED BY	:JO SHEARER	
RECORDED BY	:B. SNELL	
REMARKS 1	:90 DEGREE HOLE	
REMARKS 2	:	

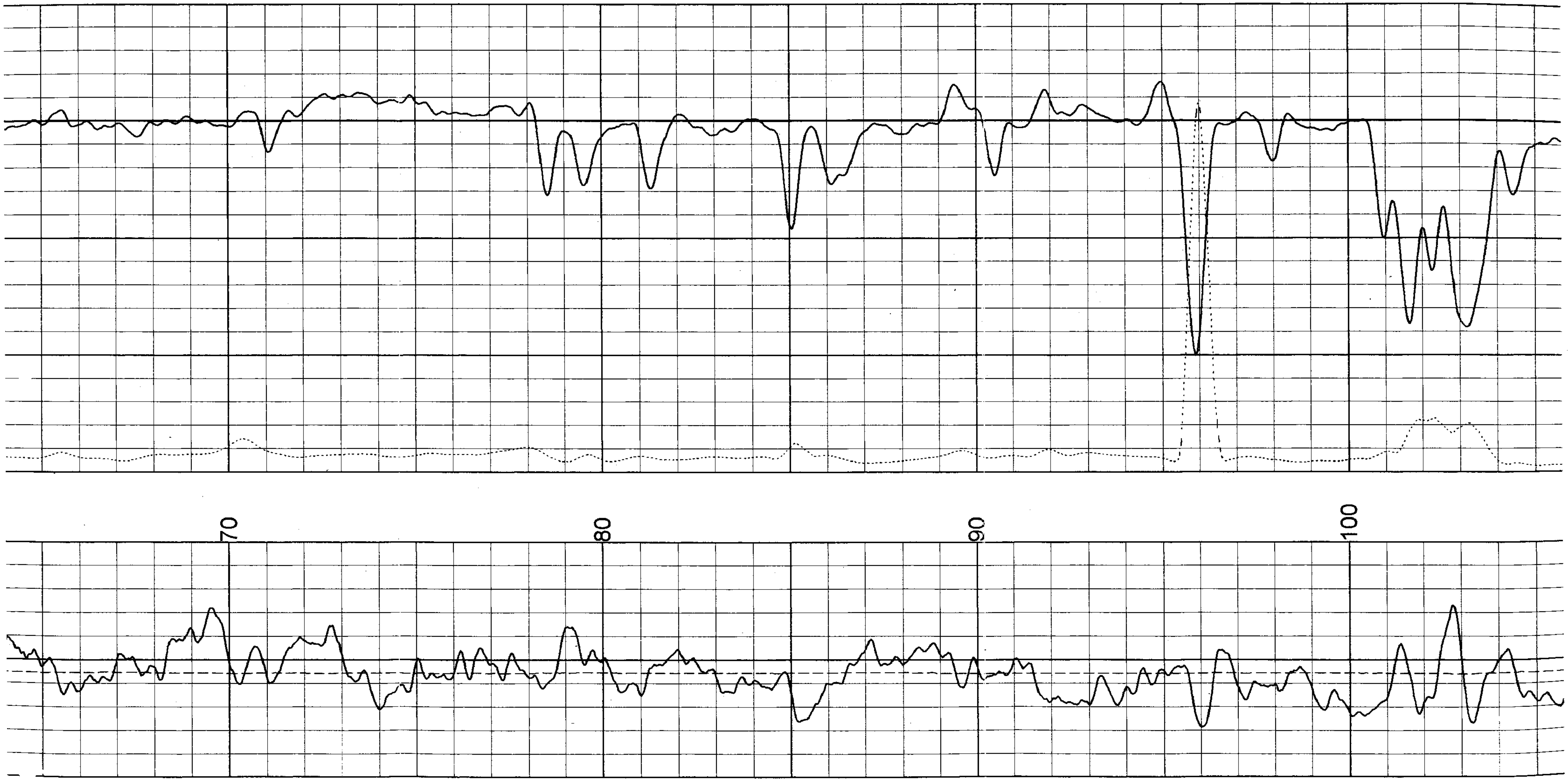
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



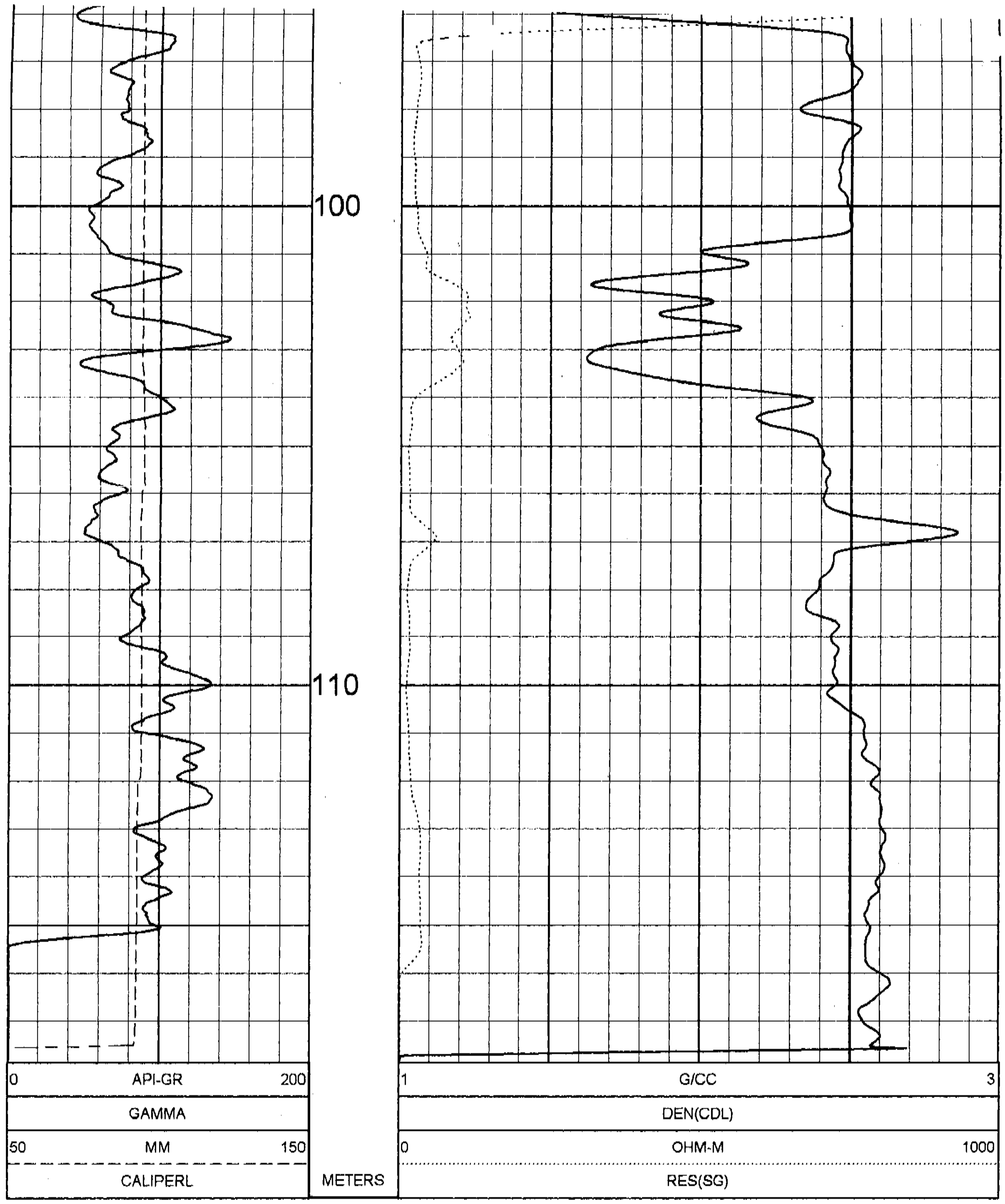
SQ-08-03



5Q-08-03



SQ-08-03



TOOL CALIBRATION SQ-08-03 10/28/08 14:43
TOOL 9239C1 TM VERSION 2019
SERIAL NUMBER 1268

	DATE	TIME	SENSOR	STANDARD		RESPONSE	
1	May09,08	10:50:11	GAMMA	2.000	[API-GR]	0.00	[CPS]
	May09,08	10:50:11	GAMMA	150.000	[API-GR]	170.00	[CPS]
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	Apr15,07	13:12:08	CALIPER	Default	[CPS]	Default	[CPS]
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	Oct15,08	10:39:56	DEN(SS)	2.323	[G/CC]	29340.00	[CPS]
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	Oct14,08	14:18:21	CALIPERL	200.000	[MM]	247750.00	[CPS]
7	Oct14,08	14:25:40	CURRENT	30.800	[UA]	5121.20	[CPS]
	Oct14,08	14:25:40	CURRENT	240.000	[UA]	22281.70	[CPS]
8	Apr15,07	13:12:08	F	Default	[CPS]		
9	Apr15,07	13:12:08	X	Default	[CPS]		

SQ-08-03
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APPENDIX V

REPORT of ANALYSIS

July 2, 2009

Intertek

17-3771 North Fraser Way
Burnaby, BC V5J 5G5

Telephone: (604) 454-9011
Fax: (604) 434-1850
E-mail: vancouver.ops@intertek.com
www.intertek.com

REPORT OF ANALYSIS

Report Number: CA100-4019 October 6, 2008

Reported To:
Hanam Canada Corporation
1165 Burdett Avenue
Victoria, BC V8V 3H3

JOB:	**Submitted Sample**
PRODUCT DESCRIBED AS:	**Coal**
CUSTOMER REFERENCE:	**N/A**
DATE RECEIVED:	**September 30, 2008**

Based on the submitted Coal sample received September 30, 2008 and subsequently tested at our laboratories, we report the following test results:

MINERAL ANALYSIS

ASTM METHOD: D6349, D5016

TEST	RESULT	UNIT
Silica, $Si0_2$	54.95	%
Alumina, Al_20_3	25.66	%
Titania, $Ti0_2$	0.93	%
Ferric Oxide, Fe_20_3	9.87	%
Lime, Ca0	0.59	%
Magnesia,Mg0	1.93	%
Potassium Oxide, K_20	2.35	%
Sodium Oxide, Na_20	0.87	%
Sulfur Trioxide, $S0_3$	1.04	%
Phos. Pentoxide, P_20_5	0.04	%
StromiumOxide, Sr0	0.03	%
Barium Oxide, Ba0	0.09	%
Manganese Oxide, Mn0	0.04	%
Undetermined	1.61	%
	100.00	
Alkalies (Coal Basis)	1.28	%
Base Acid	0.19	
Silica Value	81.59	
T250	2726	
Phosphorus (Pcoal)	0.009	%

Paul Sall
Laboratory Manager

Reviewed: DT

Intertek

17-3771 North Fraser Way
Burnaby, BC V5J 5G5

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PRODUCT DESCRIBED AS:	**Coal**
CUSTOMER REFERENCE:	**N/A**
DATE RECEIVED:	**September 30, 2008**

Based on the submitted Coal sample received September 30, 2008 and subsequently tested at our laboratories, we report the following test results:

TEST	RESULT			UNIT	METHOD
	AS RECEIVED BASIS	DRY BASIS	AIR DRY BASIS		
Moisture	8.39	---	3.41	% Wt.	ASTM D3302/D3173
Ash	48.31	52.73	50.93	% Wt.	ASTM D3174
Volatile	24.34	26.56	25.66	% Wt.	ASTM D3175
Fixed Carbon	18.96	20.71	20.00	% Wt.	ASTM D3172
	100.00	100.00	100.00		
Sulphur	2.35	2.56	2.48	% Wt.	ASTM D4239
Free Swelling Index	0.0	0.0	0.0		ASTM D720
Calorific Value Gross	5461	5961	5758	BTU/lb	ASTM D5865
Calorific Value Gross	3034	3312	3199	Kcal/kg	ASTM D5865

Paul Sall
Laboratory Manager

Reviewed: DT