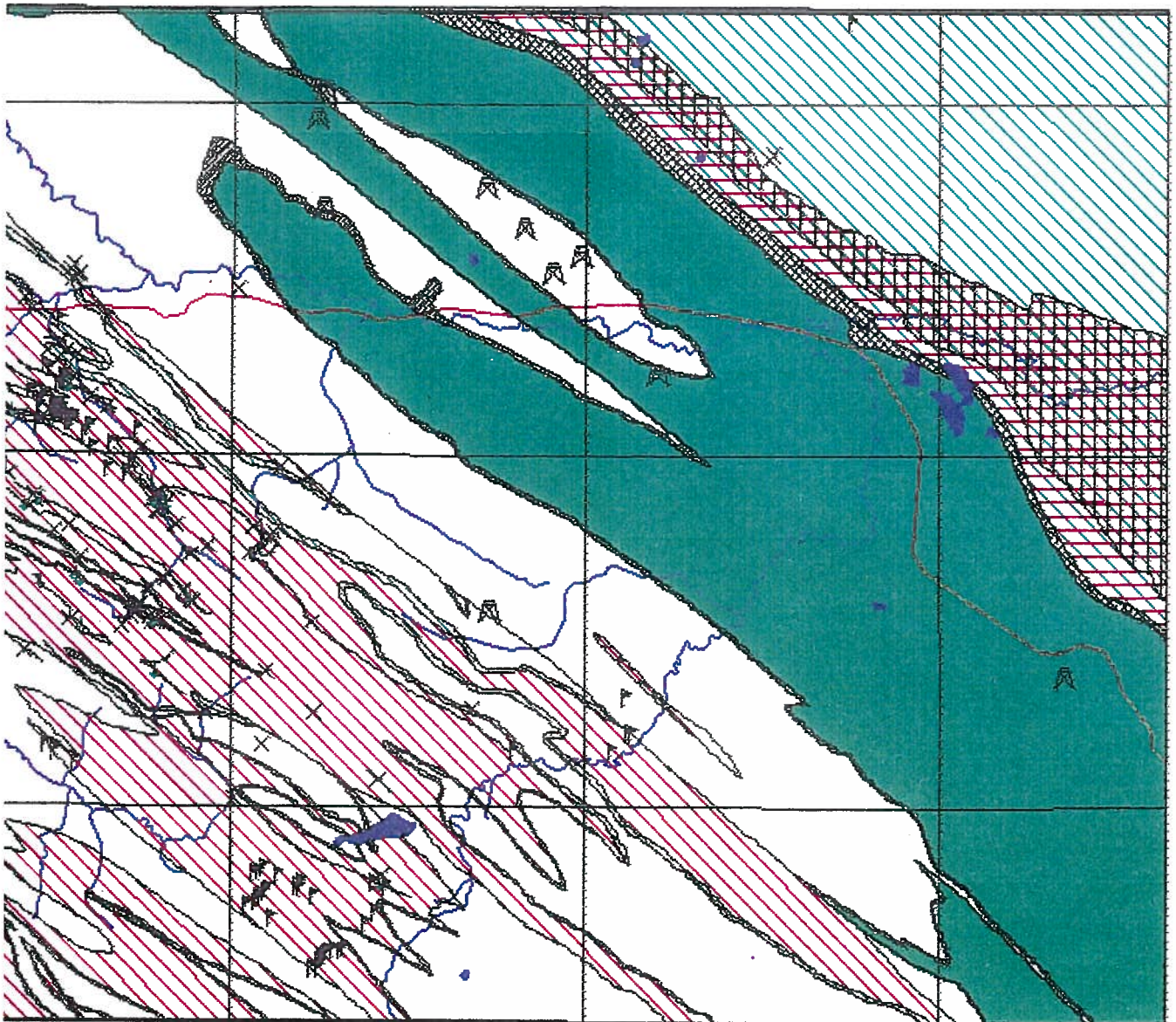


ALBERTA GEOLOGICAL SURVEY - COAL GEOLOGY

COAL COMPILATION PROJECT - PIERRE GREYS LAKES

NTS 89E/15

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Coal Compilation Project
Open File Report: 1990-4
Coal Geology Section
Alberta Geological Survey

**ALBERTA
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Foreword

The prime objective of the pilot Coal Compilation Project (CCP) is to provide coal resource maps to stimulate and support industry exploration programs, and assist government in matters of resource management. An essential feature of the program is the use of cost effective Geoscience Information System (GIS) technology that allows the database and various thematic maps to be analyzed, updated, and displayed with complete flexibility at any scale.

Each map set is intended to be a stand alone, unique product contributing to an overall synthesis of information. Maps generated will be at a regional or reconnaissance level. Collection of new data was limited. Data compiled and evaluated will be based on the following principal sources; Alberta Research Council/Alberta Geological Survey (ARC/AGS); Energy Resources Conservation Board (ERCB); Geological Survey of Canada (GSC/ISPG); and information from the coal industry sector. Industry cooperation and support is shown in the making available of unpublished corporate reports to the AGS. The availability of these reports is an essential ingredient for the success of this project.

The CCP will encompass some eighteen 1: 50 000 scale mapsheets to be completed over a three year period.

Custom maps and database searches can be obtained by contacting the Coal Geology Section, Alberta Geological Survey, Alberta Research Council. Raw coal exploration data¹ that are in the 'public' domain can, for a nominal fee, be viewed in microfiche form at the Records Center of the Energy Resources Conservation Board in Calgary, Alberta. Arrangements can also be made to acquire copies of all/selected data.

¹specifically, the geophysical logs (and other associated data) of coal exploration drillholes and, as available, analytical data relating to coal quality.

Acknowledgments

The project was partly funded by the Alberta Office of Coal Research and Technology. The Alberta Geological Survey Coal Technical Advisory Sub-Committee provided valuable guidance for the project. Wolfgang Kalkreuth of the Geological Survey of Canada (GSC/ISPG) participated in the field component of the study and provided vitrinite reflectance measurements. Alberta Forestry, Lands and Wildlife is thanked for permission to enter the Willmore Wilderness Park. D. Goulet and J. Matthie assisted with map digitization. Petro-Canada Resources Inc. and Union Oil Company of Canada are thanked for making unpublished reports available to the Alberta Geological Survey.

Executive Summary

The study area of mapsheet NTS 83E/15 (Pierre Greys Lakes) is located in west-central Alberta. The communities of Hinton (83F/5) and Grande Cache (83E/14) are the primary population centers near the study area. Almost all of the mapsheet 83E/15 is located within the Berland IRP; Willmore Wilderness Provincial Park, located in the extreme southwest corner of the mapsheet, is not part of the Berland IRP.

Within the mapsheet 83E/15, coal measures are deposited amid thick successions of sandstones, siltstones, shales and conglomerates. These coal-bearing sequences are part of the Lower Cretaceous Luscar Group, Upper Cretaceous Brazeau Formation and Paleocene Coalspur Formations.

The Luscar Group consists of sandstones, shales, conglomerates and coals, deposited predominantly in nonmarine environments. Strata of the Lower Cretaceous Luscar Group have been subjected to deformation which has produced northwesterly trending thrust faults and folds. As a result, the Luscar Group coal seams are now exposed in a series of northwest trending thrust sheets and associated folds. Often the coal seams have been further locally folded and faulted. Depending on the severity of these local structural complexities, and acknowledging a general discontinuity of coal outcrops in the Inner Foothills, coal seam correlations and evaluations can be extremely difficult. Within the mapsheet, up to eight seams are present within the Luscar Group. The seams have an average aggregate thickness of 21 meters and are contained within a 150+ meter-thick sedimentary sequence. Average seam thicknesses range from 1.5 to 3.5 meters. Seam correlations are preliminary.

The Entrance Conglomerate which normally separates the Brazeau and Coalspur Formations has not been identified within the mapsheet area. For obvious reasons, it follows that the Brazeau and Coalspur Formations have not be positively differentiated on this mapsheet. Combined, the two formations consist of primarily nonmarine sandstones, conglomerates, shales and (minor...?) coals; the formations lie conformably above the marine Wapiabi Formation.

Within the mapsheet area, three coal occurrences are believed to be from the Coalspur Formation (which contains the Coal Valley Coal Zone/Kakwa Coal Measures). The known coal occurrences include two outcrops, each 0.3 meters thick, and one 1.5 meter thick drillhole intersection. No correlations could be established for the Coalspur Formation coals.

No coal occurrences have been noted in the Brazeau Formation however, no coal exploration drilling has been done in the area of Brazeau sediments.

The undivided Upper Cretaceous Brazeau Formation are located in a series of gentle anticlines and synclines that trend in a northwesterly strike direction. In the northeastern part of the map area the Paleocene Coalspur and Paskapoo strata dip between 10 and 30 degrees towards the northeast..

In general, from a coal resource/exploration point of view, the map area has been superficially examined. Only two areas, the ERCB's A La Peche Lake Coal Field and the Sterne Creek area have a good exploration database but structural geology studies are needed for both areas. The Sterne Creek area includes the ERCB Susa Creek coal deposit; described as a 'Small Isolated Deposit'. Within the Sterne Creek area, seams # 3, 4, and 10 from the Grande Cache area can be identified and traced. Seam 3 can also be identified in the La Peche Lake area and from the Sterne Creek area southeast to the Muskeg River.

Little data is available and the coal development potential is uncertain for most of the remaining map area particularly in the northeast where the Brazeau Formation (containing the Cutbank Coal Measures) and the Coalspur Formation (which contains the Coal Valley Coal Zone/Kakwa Coal Measures) have been projected. A promising area for future work is the Coal Valley Coal Zone trend in the east part (Pierre Greys Lakes, Lone Teepee and Burleigh Creeks area) of the map area where a preglacial valley may mean lower overburden than along trend to the northwest. Additional subsurface geological studies, including the construction of regional cross-sections and seam correlations, are needed in the eastern and Sterne Creek/A La Peche Lake regions of the map area.

Introduction

Objective

The objective of the pilot Coal Compilation Project (CCP) is to provide coal resource maps on a 1: 50 000 scale, which will

- o stimulate and support industry exploration programs, and
- o assist government in matters of resource management (eg, Integrated Resource Plans) in areas that may have good coal development potential, but have a lack of data or understanding.

Each map set is intended to be a stand alone, unique product contributing to an overall synthesis of information. Maps generated will be at a regional or reconnaissance level. Collection of new data and/or actual time in the field will be limited. Data compilation and evaluation will be based on the following principal sources

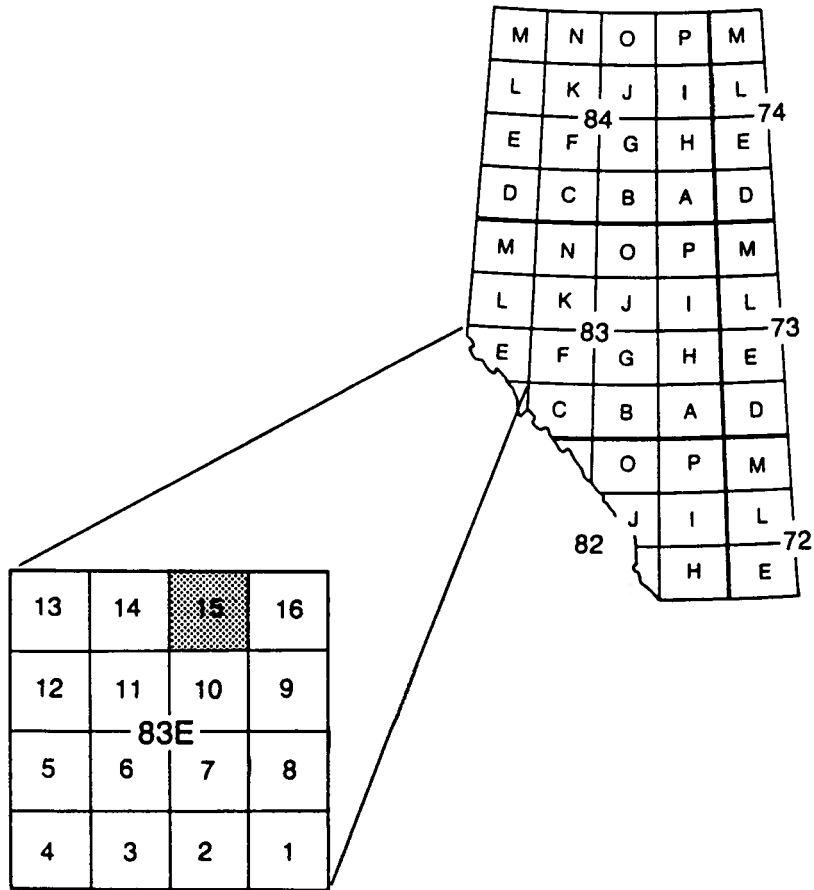
- o Alberta Research Council/Alberta Geological Survey (ARC/AGS)
- o Energy Resources Conservation Board (ERCB)
- o Geological Survey of Canada (GSC/ISPG)
- o cooperation from the coal industry sector.

The CCP will encompass some eighteen 1: 50 000 scale mapsheets to be completed over a three year period.

When completed, the CCP can be evaluated to determine if the project should be expanded province wide. As each map represents a complete product, the technical committee could monitor the progress of the research and react to changing priorities without being committed to spending funds more than one year in advance.

The fiscal year, 1989-90, was the first year of the CCP. The CCP focussed on the Hinton - Grande Cache Corridor and included four contiguous NTS mapsheets (see Figure 1). From

Figure 1. Coal Completion Project - Pierre Greys Lakes NTS 83E/15 :
Location



southeast to northwest, they are 83F/5 (Entrance), 83E/9 (Moberly Creek), **83E/15 (Pierre Greys Lakes)** and 83E/14 (Grande Cache).

For each mapsheet, a product has been generated that includes

- o a coal resource map (scale 1: 50 000)
- o 'snapshot' maps (scale 1: 250 000)
- o supplementary text.

Methodology and Discussion of GIS

Geographic Information Systems (GIS) which encompass spacial data storage, display and analysis by computer have been employed in the municipal, environmental and forestry sectors for many years. The term GIS has been applied to mainly surface or geographic studies and has not as a rule been extended to the 3rd dimension (depth) or temporal aspects (time). A Geoscience Information System (GSIS) goes beyond what is generally thought of as traditional GIS and is focused strongly on subsurface information. An essential feature of the Coal Compilation Project is the use of cost effective Geoscience Information System (GSIS) technology that allows the database and various thematic maps to be analyzed, updated, and displayed with complete flexibility at any scale. In addition custom maps can be produced from the various data and graphic elements that have been entered into the information system.

Much of the present methodology, software and hardware used in this study is described in detail in the Alberta Research Council, Open File Report 1989-03A (Richardson et al., 1989). In general both digital and hard copy data or graphic elements are entered into a GIS software product (pcARC/INFO) where they can be analyzed, displayed or plotted to hardcopy.

During this first year of the CCP, substantial time was spent in

- o developing the hardcopy, product template, and
- o replicating the above template into the electronic medium of GIS.

Assuming that all/most of the above design work will be utilized for future mapsheets, and that all other factors remain the same, the number of CCP sheets generated during a given year should increase. Rather than spending time on the design of the product, time will be spent on actual product compilation and generation.

Location and Access

The study area of mapsheet NTS 83E/15 (Pierre Greys Lakes) is located in west-central Alberta between Latitudes 53° 45' and 54° 00' North, and Longitudes 118° 30' and 119° 00' West (West of the 6th Meridian, between Townships 55 and 58 inclusive, and Ranges 4 to 7 inclusive).

The communities of Hinton (83F/5) and Grande Cache (83E/14) are the primary population centers near the study area.

Paved access to and within the area is provided by Highways No. 16 and 40 . Numerous all-weather, gravelled wellsite and logging roads also exist. Additional secondary seasonal access is provided by a network of roads, trails and seismic lines.

The area is serviced by the Canadian National Railway and the Alberta Resources Railway; the rail lines have the capacity to accomodate coal unit trains. Coal could be shipped to:

- o Ridley Island at Prince Rupert, B.C. located
 - o 1170 rail-kilometers from Hinton
 - o 1310 rail-kilometers from Grande Cache
- o Neptune Terminals at Vancouver, B.C. located
 - o 1010 rail-kilometers from Hinton
 - o 1150 rail-kilometers from Grande Cache.

Geological Setting

Within the mapsheet 83E/15, coal measures are deposited within thick successions of sandstones, siltstones, shales and conglomerates. Known coal-bearing sequences are part of the Lower Cretaceous Luscar Group and, while occurrences are limited, additional coal potential is believed to be contained within the

- o Upper Cretaceous Brazeau Formation (or Cutbank Coal Measures of Dawson et. al., 1989)
- o Paleocene Coalspur Formation (or Kakwa Coal Measures of Dawson et. al., 1989)).

Stratigraphic nomenclature for the above strata is shown in Figure 2.

Stratigraphy of Coal-Bearing Units

Luscar Group

The Luscar Group consists of sandstones, shales, conglomerates and coals that have been deposited predominantly in nonmarine environments. The strata of the Group have been divided into four formations (Langenberg and McMechan, 1985), ie:

- o Cadomin Formation, a basal conglomerate
- o Gladstone Formation, predominantly nonmarine sandstones and shales
- o Moosebar Formation, marine shales and sandstones
- o Gates Formation, nonmarine sandstones, shales and coals.

Gates Formation

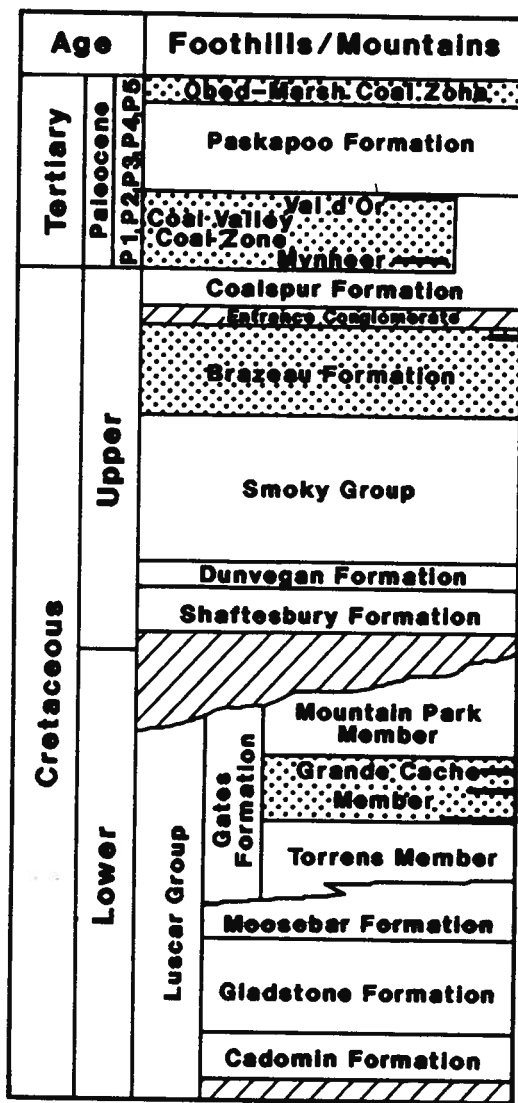
The Gates Formation can be divided into three members - the Torrens, Grande Cache and Mountain Park members. The Grande Cache Member contains the economic coal seams within the Luscar Group.

Within the mapsheet, up to eight seams are present within the Luscar Group. The seams have an average aggregate thickness of 21 meters and are contained within a 150+ meter-thick sedimentary sequence. Average seam thicknesses range from 1.5 to 3.5 meters. Seam correlations are preliminary.




Brazeau and Coalspur Formations

The Entrance Conglomerate which normally separates the Brazeau and Coalspur Formations has not been identified within the mapsheet area. For obvious reasons, it follows that the Brazeau and Coalspur Formations have not be positively differentiated on this mapsheet. Combined, the

Figure 2. Stratigraphic Nomenclature Adopted for the Coal Compilation Project
 (after Macdonald et. al. 1989)



LEGEND

-  Coal-bearing unit
-  Major seams
-  Hiatus or missing interval

Coal Valley Coal Zone	
Val d'Or	—
Arbour	—
McLeod	—
McPherson	—
Silkstone	—
Mynheer	—

two formations consist of primarily nonmarine sandstones, conglomerates, shales and (minor...?) coals; the formations lie conformably above the marine Wapiabi Formation.

Within the mapsheet area, three coal occurrences are believed to be from the Coalspur Formation (which contains the Coal Valley Coal Zone/Kakwa Coal Measures). The known coal occurrences include two outcrops, each 0.3 meters thick, and one 1.5 meter thick drillhole intersection. No correlations could be established for the Coalspur Formation coals.

No coal occurrences have been noted in the Brazeau Formation however, no coal exploration drilling has been done in the area of Brazeau sediments.

Structure

Strata of the Lower Cretaceous Luscar Group have been subjected to deformation which has produced northwesterly trending thrust faults and folds. As a result, the Luscar Group coal seams are now exposed in a series of northwest trending thrust sheets. Often the coal seams have been further locally folded and faulted. Depending on the severity of these local structural complexities, and acknowledging a general discontinuity of coal outcrops in the Inner Foothills, coal seam correlations and evaluations can be extremely difficult.

The undivided Upper Cretaceous Brazeau Formation is located in a series of gentle anticlines and synclines that trend in a northwesterly strike direction. In the northeastern part of the map area the Paleocene Coalspur and Paskapoo strata dip between 10 and 30 degrees towards the northeast.

Environmental Setting

Integrated Resource Plans (IRP's)

Almost all of the mapsheet 83E/15 is located within the Berland IRP; Willmore Wilderness Provincial Park, located in the extreme southwest corner of the mapsheet, is not part of the Berland IRP. A separate IRP, for the Willmore Wilderness Provincial Park area, may be undertaken at some time in the future.

In the January, 1990 edition of Planning in Progress (Volume 7 Number 1), the status of the Berland IRP was capsuled by the following statement...

'This plan has been deferred until completion of other projects in progress and resolution of the timber/caribou issue(s). An update will be sent to the public when the project resumes. (Contact: John Brownlee, Manager)'.

See also Figure 3 for locations/outlines of IRP's in the surrounding vicinity. On Figure 3, a bracketed letter trails the name of the IRP; this letter identifies the status of the IRP as

- o (C); completed
- o (P); in-progress or
- o (F); future.

Resource Management

Coal Dispositions

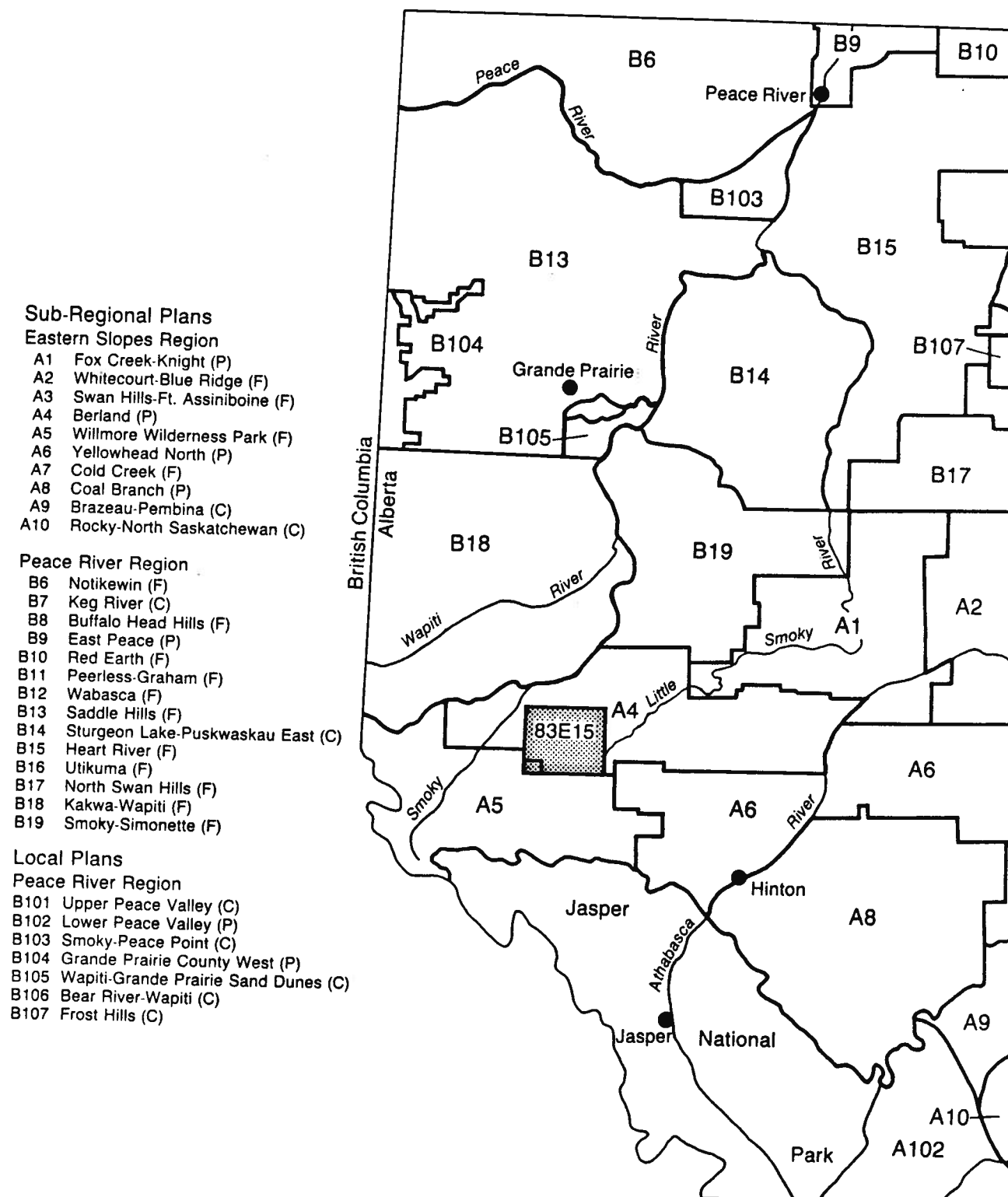
The status of the rights_to_coal within an area can generally be categorized into one of the following

- o Crown coal lease
- o Crown coal lease under application
- o Areas with registered right of first refusal
- o Freehold coal rights
- o Coal withdrawn from disposition.

According to a recent (1989-05-09) Alberta Energy Coal Disposition Map of 83E/15, the following 4 companies are involved in one or more of the above activities

- o Manalta Coal Ltd.
- o Petro-Canada Resources Inc.
- o Seaton-Jordan & Associates
- o Smoky River Coal Limited

Figure 3. Locations/Outlines of IRP's In the Surrounding Vicinity (1989)



It should be noted that most of the corporate coal lease activity is concentrated on the first two categories.

Established Coal Resources and Reserves

Coal resources and reserves have been calculated by the ERCB (1989) for the whole of Alberta.

The present mapsheet contains the:

- o A La Peche Lake Coal Field
- o Susa Creek coal deposit; a 'Small Isolated Deposit' located in the west-central part of the mapsheet.

Both of the above are located within the ERCB-designated 'Mountain Region'.

Only the Coal Field outline has been shown on the GIS plot.

Exploration History

Coal

Coal Exploration Drillholes

Some 86 coal exploration holes have been drilled by 3 companies between 1966 and 1981. Of the holes drilled, 72 holes (84%) intersected coal as per the defined criteria (see Hughes et al., 1988); it follows that 14 holes (16%) did not intersect coal. Hole depths ranged from 14 to 492 meters in depth.

Coal exploration drilling activities were carried out by a number of companies. A summary follows:

<u>COMPANY</u> _____	<u>NUMBER OF HOLES DRILLED</u>
Consolidation Coal Company of Canada	36
Manalta Coal Ltd.	49
Union Oil Company of Canada Limited	1

Based on the April, 1989 version of the ERCB Coal Hole File, details of the coal exploration drillholes are given in Appendix 1 and includes information on:

- o SITID; the assigned Site Identification Number within the AGS Coal Database
- o CAT_ID; the assigned Catalogue Identification Number within the ERCB Coal Hole File (April, 1989 version)
- o ORIG; the Original Identification Number of the Datapoint (ie, drillhole number)
- o EDITED; within the ERCB Coal Hole File, the equivalent to ORIG has been limited to 6 spaces; this, in some cases, has not been sufficient to record the ORIGINAL corporate assigned drillhole number; within the AGS Coal Database, ORIG has been allocated 11 spaces; a 'X' in the EDITED column identifies those drillholes whose ORIG's were truncated; drillholes listed in the ORIG column of the listing have been edited and now reflect the 'true' Original Identification Numbers.
- o NCinDH; a 'NC' in the column indicates that no coal thicker than 0.5m was intersected in the drillhole; this implies that thin coal seams less than 0.5m may be present.
- o M; Meridian
- o T; Township
- o R; Range
- o S; Section
- o RSEC; Reference Section
- o RCNR; Reference Corner
- o METN; Metres north or south from the reference corner
- o METE; meters east or west from the reference corner
- o ELEV; Ground or surface elevation of the datapoint (drillhole)

- o TD; Total depth of drillhole reported in meters
- o CORPNUM; the assigned Corporation Number within the AGS Coal Database
- o CPDT; completion date of the datapoint (drillhole); date coded as yymmdd
- o COMPANY; identifies the company that generated the datapoint (drillhole).

Coal Exploration Trenches/Hand Trenches

During 1982, Union Oil Company of Canada Limited conducted a field mapping program on the Sterne Creek Project area. The program was located, in part, on the mapsheet 83E/15. Seventeen hand-dug trenches were excavated to expose coal seams within the mapsheet area.

Trench locations have been shown on the GIS plot.

Oil and Gas Wells

Within the study area, 9 oil and gas wells have been drilled. Of the wells drilled,

- o 3 have been abandoned
- o 4 are capped gaswells
- o 2 are suspended gaswells.

See Appendix 2 for additional data. The Appendix is based on queries from the ERCB oil and gas database (April, 1989 version).

Coal Occurrences

Coal Exploration Drillholes

On both Appendix 1 and the map, coal exploration drillholes have been identified as either

- o coal thicker than 0.5m intersected in the drillhole

or

- o no coal thicker than 0.5m intersected in the drillhole.

Coal is defined as greater than 50% carbonaceous material by weight and more than 70% carbonaceous material by volume as estimated from geophysical logs. The exclusion of coal seams thinner than 0.5m is consistent with Hughes et al. (1988), who exclude seams thinner than 0.5m in resource determination.

Coal intersections, per coal exploration drillhole, have been included in Appendix 3. The listing includes

- o SITID; the AGS Coal Database identification number
- o CAT_ID; the ERCB catalogue identification number
- o ORIG; the original company-assigned drillhole number
- o M T R S ; Dominion Land Survey (DLS) information; ie, Meridian, Township, Range and Section
- o TOP DEPTH; depth to top of coal in meters
- o BOT DEPTH; depth to bottom of coal in meters
- o THICK; thickness of the coal seam in meters
- o SEAM; Correlated Coal Seam Name/Number (if known); a '0' indicates that the seam has not been correlated
- o MIN; Mineral Matter content of the coal (often a best-estimate from geophysical log interpretation); a '0' indicates that the mineral matter of the coal was not available and/or not derived.
- o REGOLITH; thickness, in meters, of the regolith
- o PIKNUM; the geological pick identification number as stored in the AGS Coal Database
- o REMARKS.

Coal Exploration Trenches/Hand Trenches

Seventeen hand-dug trenches were excavated to expose coal seams within the mapsheet 83E/15. Trench locations have been shown on the GIS plot.

Thicknesses of the coal seams exposed within the trenches range from 1.7 to 5.7 meters.

Coal Outcrops

Some sixty four coal outcrops have been identified within the mapsheet 83E/15. Coal seam outcrop locations have been identified on the GIS plot.

The maximum thickness of coal in outcrop is 5+ meters.

Coal Quality Summary

Coal Rank

Within the mapsheet 83E/15, the rank of the coal varies from

- o high volatile bituminous C in the Paleocene Coalspur Formation (and/or Kakwa Coal Measures) to
- o low to medium volatile bituminous in the Lower Cretaceous Luscar Group.

No coal quality information is available for coal of the Upper Cretaceous Brazeau Formation (and/or Cutbank Coal Measures) which is believed to be deposited within the mapsheet area. The rank of that coal, if present, would likely be high volatile bituminous C.

Coal Exploration Drillholes

No drillholes, within the mapsheet 83E/15, contain raw coal quality information.

One drillhole, however, does contains 1 sample of washed coal. Coal quality data generated from the washed sample includes

- o 1 complete Proximate Analysis
- o 1 analysis of Sulphur

- o 1 analysis of Heating Value (air-dried basis)
- o 1 analysis of Heating Value (dry basis)
- o 1 analysis of Equilibrium Moisture.

Coal Outcrops

Forty nine outcrops, within the mapsheet 83E/15, have been sampled. Coal quality data generated from the samples include:

- o 55 analyses of vitrinite reflectance from 47 outcrops; samples were collected by the ARC/AGS and GSC/ISPG (1988-89) and Union Oil Company of Canada Limited (1982); reflectance values range between 0.64 and 1.58%.
- o 2 analyses of palynology from 2 outcrops; information is limited to location only; samples were collected by Union Oil Company of Canada Limited during the 1980 field season.

Coal Exploration Trench/Hand Trench Data

In 1982, Union Oil Company of Canada Limited conducted a field mapping program on their Sterne Creek Project area. Within the mapsheet 83E/15, 11 hand-dug coal trenches were sampled. Coal quality data generated from the trench samples include

- o Proximate Analysis from 9 trenches
- o Sulphur analysis from 9 trenches
- o Heating Value determinations from 9 trenches
- o FSI values from 9 trenches
- o Vitrinite reflectance values from 11 trenches
- o Petrographic analysis from 4 trenches.

Operating and Abandoned Coal Mines

There are no operating or abandoned coal mines within the mapsheet.

Coal Resource Development Potential

A semiquantitative and subjective evaluation of the potential of coal development in the map area is based on limited data. It is based on mainly geological criteria and does not take into account governmental restrictions on coal development or evaluate actual economic constraints to development now or in the future. The three criteria that have been used are Coal Potential, Mining Potential, and Data Availability (discussed in more detail below). Areas in Green on the companion map (thematic inset 'Coal Development Potential') reflect higher level of knowledge and potential for development of coal than the blue (medium) or red areas (low). Areas rated in blue indicate more information is needed to determine the coal development potential. Areas colored red indicate some potential for development. The remaining uncolored areas have no data available often because the coal, if present, is at depth under non coal-bearing rocks.

Coal Potential

Resources

The amount of data is too small for a quantitative evaluation of coal resources except in those limited areas with drilling. The ERCB (1989) provides estimates of in-place resources for the A La Peche Lake Coal Field and for the 'small isolated deposit' of Susa Creek.

Coal Quality

Very little coal quality data is available but where test results are present the potential of the coal for development is strengthened. In general where a sample has been collected and analyzed the coal has an inherent development potential.

Mining Potential

Overburden

An evaluation of overburden for surface mining and depth for underground mining has been

made. (The 'Mining Potential' criteria did not take into account governmental restrictions on coal development or evaluate actual economic constraints to development now or in the future.)

Geotechnical

Geotechnical considerations included an evaluation of structural setting, both simple and complex, with the possibility of structurally thickened seams. Consideration was given to infrastructural concerns related to site, environment and potential mining problems.

Data Availability

Very little coal data is available in the map area but where present the potential of the coal for development is strengthened. In general, where a sample, drillhole, trench or outcrop is present the coal has an increased development potential. Some value was given to areas containing sediments that typically include coal.

Future Work

In general, from a coal resource/exploration point of view, the map area has been superficially examined. Additional coal quality data needs to be collected throughout the map area. Only two areas, the ERCB's A La Peche Lake Coal Field and the Sterne Creek area (north half of Township 56 and south half of Township 57, Range 7, W6) have a good exploration database but structural geology studies are needed for both areas. The Sterne Creek area includes the ERCB Susa Creek coal deposit; described as a 'Small Isolated Deposit'. Within the Sterne Creek area, seams # 3, 4, and 10 from the Grande Cache area can be identified and traced. Seam 3 can also be identified in the La Peche Lake area and from the Sterne Creek area southeast to the Muskeg River. More work will be needed to trace the other seams within the Luscar Formation outside the Sterne Creek area. The Luscar Formation within the Willmore Wilderness in the extreme southwest portion of the map has no data available although one coal outcrop has been identified.

Little data is available and the coal development potential is uncertain for most of the remaining map area, particularly in the northeast where the Brazeau Formation (containing the Cutbank Coal Measures) and the Coalspur Formation (which contains the Coal Valley Coal Zone/Kakwa Coal Measures) have been projected. A promising area for future work is the Coal Valley Coal Zone trend in the east part (Pierre Greys Lakes, Lone Teepee and Burleigh Creeks area) of the

map area where a preglacial valley may mean lower overburden than along trend to the northwest. Additional subsurface geological studies, including the construction of regional cross-sections and seam correlations, are needed in the eastern and Sterne Creek/A La Peche Lake regions of the map area.

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Appendix 1. 83E/15 - Coal Drillholes

 FILENAME: 83E15.GBM

- NOTE: 1. 'ORIG' that has been edited...ie, ERCB Coal Hole File did not present 'true' original drillhole number;
 ORIG now represents 'true' original drillhole number.
2. No coal in drillhole as per criteria of Hughes, Mudry & Nikols in GSC Paper 88-21, 'A Standardized Coal Resource/
 Reserve System for Canada'; geology picks have been modified from the AGS Coal Database April, 1989 version of
 the ERCB Coal Hole File.

DWF 891206

SITID	CAT-ID	ORIG	EDITED(1)		NCinDH(2)		R	S	RSEC	RCNR	METN	METE	ELEV	TD	CORPNUM	CPDT	COMPANY
			V	V	M	T											
1044082	525386	00000MRIV-1	NC	6	55	6	20	20	NE	-1219.200	-1005.800	1501.100	92.700	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044083	525394	00000MRIV-2	NC	6	55	6	20	20	NE	-1234.400	-838.200	1499.000	91.400	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044084	525402	00000MRIV-3		6	55	6	20	20	NE	-914.400	-746.800	1510.300	91.400	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044085	525410	00000MRIV3C		6	55	6	20	20	NE	-905.000	-735.000	1510.300	42.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044086	525428	00000MRIV-4		6	55	6	20	20	NE	-835.200	-630.900	1505.700	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044087	525436	00000MRIV-6	NC	6	55	6	20	20	NE	-701.000	-426.700	1515.000	46.300	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044088	525444	00000MRIV-7		6	55	6	20	20	NE	-877.800	-640.700	1507.200	50.300	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044089	525451	00000MRIV-8		6	55	6	20	20	NE	-993.600	-807.700	1516.400	106.700	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044090	525469	00000MRIV11		6	55	6	20	20	NE	-762.000	-566.900	1508.800	21.900	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044091	525477	00000MRIV12	NC	6	55	6	20	20	NE	-731.500	-207.300	1517.900	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044092	525485	00000MRIV13		6	55	6	20	20	NE	-658.400	-121.900	1517.900	24.300	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044093	525360	00000MRIII1		6	55	6	28	28	NE	-502.900	-949.500	1463.000	109.700	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044094	525378	00000MRIII2		6	55	6	28	28	NE	-609.600	-631.000	1460.000	35.100	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044095	525493	00000MRIV14		6	55	6	28	28	NE	-1609.300	-1158.400	1490.500	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044096	525501	00000MRIV15		6	55	6	28	28	NE	-1316.700	-905.300	1530.100	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044102	525584	00000MRVI-1		6	55	6	29	29	NE	-883.900	-975.400	1442.300	152.700	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044103	525592	00000MRVI-6		6	55	6	29	29	NE	-661.400	-1341.100	1411.200	121.900	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044104	525600	00000MRVI-7		6	55	6	29	29	NE	-609.600	-1432.600	1450.800	121.900	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044105	525618	00000MRVI-8		6	55	6	29	29	NE	-502.900	-1353.300	1399.000	122.200	34	700300	CONSOLIDATION	COAL COMPANY OF CANADA
1044106	525519	00000MRV-1	NC	6	55	6	30	30	NE	-1478.300	-533.400	1443.200	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044107	525527	00000MRV-2		6	55	6	30	30	NE	-1127.800	-1176.500	1454.200	91.400	34	700100	CONSOLIDATION	COAL COMPANY OF CANADA
1044108	525535	00000MRV-3		6	55	6	30	30	NE	-1039.400	-914.400	1447.800	146.300	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044109	525543	00000MRV-4		6	55	6	30	30	NE	-929.600	-868.700	1444.800	91.400	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044110	525550	00000MRV-5		6	55	6	30	30	NE	-877.800	-774.200	1443.200	115.500	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044111	525568	00000MRV-6	NC	6	55	6	30	30	NE	-676.600	-624.800	1438.700	121.900	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044111	525576	00000MRV-7		6	55	6	30	30	NE	-777.200	-700.000	1446.300	117.700	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044113	525626	00000MRVI11		6	55	6	30	30	NE	-289.600	-344.400	1405.100	91.400	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044114	525634	00000MRVI12		6	55	6	30	30	NE	-91.400	-731.500	1405.100	121.900	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044115	525642	00000MRVI13	NC	6	55	6	30	30	NE	-228.600	-838.200	1406.700	121.900	34	700200	CONSOLIDATION	COAL COMPANY OF CANADA
1044116	525659	00000MRVI12		6	55	6	30	30	NE	-243.800	-1005.800	1402.100	153.900	34	700300	CONSOLIDATION	COAL COMPANY OF CANADA
1044117	525303	00000MRI-1		6	56	5	6	6	NE	-100.600	-944.900	1357.900	152.700	34	691100	CONSOLIDATION	COAL COMPANY OF CANADA
1044118	525311	00000MRI-4		6	56	5	7	7	NE	-260.000	-565.000	1356.400	115.800	34	691000	CONSOLIDATION	COAL COMPANY OF CANADA
1044119	525329	00000MRI-4C	NC	6	56	5	7	7	NE	-259.100	-563.900	1357.900	91.400	34	691100	CONSOLIDATION	COAL COMPANY OF CANADA
1044120	525337	00000MRI-5		6	56	5	7	7	NE	-1237.500	-457.200	1351.800	153.300	34	691100	CONSOLIDATION	COAL COMPANY OF CANADA
1044121	525345	00000MRI-6	NC	6	56	5	7	7	NE	-1243.600	-378.000	1359.400	152.700	34	691100	CONSOLIDATION	COAL COMPANY OF CANADA
1044122	525352	00000MRII-1		6	56	6	2	2	NE	-114.300	-387.100	1377.700	97.800	34	691200	CONSOLIDATION	COAL COMPANY OF CANADA
1044123	351668	000SC302-70 X	NC	6	56	7	4	4	NE	-442.000	0.000	1310.000	18.300	66	701000	MANALTA	COAL LTD.
1044124	351700	000SC331-70 X		6	56	7	4	4	NE	-137.200	-539.500	1280.000	42.700	66	701100	MANALTA	COAL LTD.
1044125	351718	000SC332-70 X		6	56	7	4	4	NE	-189.000	-539.500	1250.000	41.100	66	701100	MANALTA	COAL LTD.
1044126	351726	000SC335-70 X		6	56	7	4	4	NE	-9.100	-819.900	1250.000	51.800	66	701100	MANALTA	COAL LTD.
1044127	351734	000SC330-70 X		6	56	7	4	4	NE	-70.100	-527.300	1280.000	51.800	66	701100	MANALTA	COAL LTD.

1044128	351692	000SC325-70	X	6	56	7	34	34	NE	-539.500	-182.900	1600.000	88.400	66	701100	MANALTA	COAL	LTD.
1044129	351676	000SC313-70	X	6	56	7	35	35	NE	-630.900	-1322.800	1550.000	59.400	66	701000	MANALTA	COAL	LTD.
1044130	351684	000SC314-70	X NC	6	56	7	35	35	NE	-371.900	-1158.200	1530.000	22.900	66	701000	MANALTA	COAL	LTD.
1044132	399568	000SC315-70	X	6	57	7	3	3	NE	-1433.000	-122.000	1432.500	50.300	66	701000	MANALTA	COAL	LTD.
1044133	399576	000SC333-70	X NC	6	57	7	9	9	NE	-155.000	-719.300	1280.100	32.000	66	701000	MANALTA	COAL	LTD.
1044134	399584	000SC334-70	X NC	6	57	7	9	9	NE	-1445.000	-777.200	1280.100	43.000	66	701100	MANALTA	COAL	LTD.
1044135	351775	000SC301-70	X	6	57	7	3	3	NE	-426.700	-1609.300	1400.000	18.300	66	701100	MANALTA	COAL	LTD.
1044136	351783	000SC303-70	X	6	57	7	3	3	NE	-420.600	-1575.800	1400.000	13.700	66	701000	MANALTA	COAL	LTD.
1044137	351791	000SC304-70	X	6	57	7	3	3	NE	-512.100	-1432.600	1415.000	18.300	66	701000	MANALTA	COAL	LTD.
1044138	351809	000SC305-70	X	6	57	7	3	3	NE	-527.300	-1463.000	1420.000	22.900	66	701000	MANALTA	COAL	LTD.
1044139	351817	000SC306-70	X	6	57	7	3	3	NE	-539.500	-1478.300	1415.000	22.900	66	701000	MANALTA	COAL	LTD.
1044140	351825	000SC307-70	X	6	57	7	3	3	NE	-542.500	-1502.700	1415.000	22.900	66	701000	MANALTA	COAL	LTD.
1044141	351833	000SC308-70	X	6	57	7	3	3	NE	-737.600	-1106.400	1495.000	36.600	66	701000	MANALTA	COAL	LTD.
1044142	351841	000SC309-70	X	6	57	7	3	3	NE	-795.500	-1133.900	1475.000	36.600	66	701000	MANALTA	COAL	LTD.
1044143	351858	000SC310-70	X	6	57	7	3	3	NE	-832.100	-1152.100	1475.000	41.100	66	701000	MANALTA	COAL	LTD.
1044144	351866	000SC311-70	X	6	57	7	3	3	NE	-1021.100	-694.900	1465.000	18.300	66	701000	MANALTA	COAL	LTD.
1044145	351874	000SC312-70	X	6	57	7	3	3	NE	-990.600	-676.700	1465.000	18.300	66	701000	MANALTA	COAL	LTD.
1044146	351890	000SC317-70	X	6	57	7	3	3	NE	-588.300	-1539.200	1430.000	22.900	66	701000	MANALTA	COAL	LTD.
1044147	351908	000SC318-70	X	6	57	7	3	3	NE	-621.800	-1585.000	1430.000	27.400	66	701000	MANALTA	COAL	LTD.
1044148	351916	000SC319-70	X	6	57	7	3	3	NE	-640.100	-1609.300	1430.000	32.000	66	701000	MANALTA	COAL	LTD.
1044149	351940	000SC322-70	X	6	57	7	3	3	NE	-859.500	-1158.200	1475.000	91.400	66	701100	MANALTA	COAL	LTD.
1044150	351957	000SC323-70	X	6	57	7	3	3	NE	-868.700	-1191.800	1475.000	83.800	66	701100	MANALTA	COAL	LTD.
1044151	351965	000SC324-70	X	6	57	7	3	3	NE	-899.200	-1252.700	1480.000	88.400	66	701100	MANALTA	COAL	LTD.
1044152	351973	000SC326-70	X	6	57	7	3	3	NE	-1188.700	-809.200	1525.000	90.200	66	701100	MANALTA	COAL	LTD.
1044153	351981	000SC327-70	X	6	57	7	3	3	NE	-1575.800	-618.700	1560.000	62.500	66	701100	MANALTA	COAL	LTD.
1044154	351999	000SC328-70	X	6	57	7	3	3	NE	-710.200	-1377.700	1450.000	42.700	66	701100	MANALTA	COAL	LTD.
1044155	352005	000SC329-70	X	6	57	7	3	3	NE	-1469.100	-73.200	1515.000	38.100	66	701100	MANALTA	COAL	LTD.
1044156	351882	000SC316-70	X	6	57	7	4	4	NE	-478.500	-51.800	1400.000	27.400	66	701000	MANALTA	COAL	LTD.
1044157	351924	000SC320-70	X	6	57	7	4	4	NE	-15.200	-518.200	1310.000	18.300	66	701100	MANALTA	COAL	LTD.
1044158	351932	000SC321-70	X	6	57	7	4	4	NE	-27.400	-679.700	1310.000	27.400	66	701100	MANALTA	COAL	LTD.
1044159	352088	0000066-119	X	6	57	7	4	4	NE	-893.100	-478.500	1428.000	62.500	66	660900	MANALTA	COAL	LTD.
1044160	352096	0000066-120	X	6	57	7	4	4	NE	-941.800	-481.600	1429.500	65.500	66	660900	MANALTA	COAL	LTD.
1044161	352104	0000066-121	X	6	57	7	4	4	NE	-466.300	-396.200	1400.600	25.900	66	660900	MANALTA	COAL	LTD.
1044162	352112	0000066-122	X	6	57	7	4	4	NE	-213.400	-304.800	1386.800	69.500	66	660900	MANALTA	COAL	LTD.
1044163	352146	0000066-125	X	6	57	7	4	4	NE	-326.100	-402.300	1389.900	35.100	66	661000	MANALTA	COAL	LTD.
1044164	352054	0000066-116	X	6	57	7	9	9	NE	-954.000	-283.500	1283.200	35.100	66	660900	MANALTA	COAL	LTD.
1044165	352120	0000066-123	X	6	57	7	9	9	NE	-975.400	-234.700	1283.200	32.000	66	660900	MANALTA	COAL	LTD.
1044166	352138	0000066-124	X	6	57	7	9	9	NE	-1011.900	-94.500	1296.900	44.200	66	661000	MANALTA	COAL	LTD.
1044167	352013	0000066-112	X NC	6	57	7	10	10	NE	-1371.600	-1417.300	1328.900	93.000	66	660800	MANALTA	COAL	LTD.
1044168	352021	0000066-113	X	6	57	7	10	10	NE	-1258.800	-1417.300	1319.800	18.300	66	660800	MANALTA	COAL	LTD.
1044169	352039	0000066-114	X	6	57	7	10	10	NE	-1277.100	-1405.100	1321.000	30.500	66	660900	MANALTA	COAL	LTD.
1044170	352047	0000066-115	X	6	57	7	10	10	NE	-1365.500	-1362.500	1328.900	44.200	66	660900	MANALTA	COAL	LTD.
1044171	352062	0000066-117	X	6	57	7	10	10	NE	-1463.000	-1517.900	1341.100	50.300	66	660900	MANALTA	COAL	LTD.
1044172	352070	0000066-118	X	6	57	7	10	10	NE	-1292.400	-1380.700	1322.800	92.000	66	660900	MANALTA	COAL	LTD.
1044233	446799	00000WST812		6	58	5	11	11	NE	-1200.000	-925.000	1577.000	492.300	96	811000	UNION OIL COMPANY	OF CANADA	LIMITED

Appendix 2. 83E/15 - Oil and Gas Wells; Status and Formation Tops

Site ID: 89474

Source ID: 00/05-16-056-04W6/0

Latitude: 53.835350

Well Length:

5498.000

Longitude: 118.542963

KB Elevation: 1526.400

Well Name: SHELL CABIN CREEK 5-16-56-4

Status: Abandoned

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
1903.500	6245.079	CARDIUM FM	CARD
1904.000	6246.719	CARDIUM FM	CARD
1926.000	6318.898	CARDIUM SD	CARD SD
1926.500	6320.538	CARDIUM SD	CARD SD
2000.000	6561.680	BLACKSTONE FM	BKST
2000.500	6563.320	BLACKSTONE FM	BKST
2299.000	7542.651	BASE FISH SCALES ZONE	BFSC
2629.000	8625.328	DUNVEGAN FM	DUNV
2632.500	8636.812	DUNVEGAN FM	DUNV
2767.000	9078.084	MOUNTAIN PARK FM	MTN PK
2771.000	9091.208	MOUNTAIN PARK FM	MTN PK
2889.000	9478.347	LUSCAR FM	LUSK
2893.500	9493.110	LUSCAR FM	LUSK
3375.000	11072.835	CADOMIN FM	CADM
3384.000	11102.362	CADOMIN FM	CADM
3394.000	11135.171	NIKANASSIN FM	NIKA
3403.500	11166.339	NIKANASSIN FM	NIKA
3405.500	11172.900	FAULT	FLT
3415.000	11204.068	FAULT	FLT
3419.100	11217.521	CADOMIN FM	CADM
3428.600	11248.688	CADOMIN FM	CADM
3439.500	11284.449	NIKANASSIN FM	NIKA
3449.000	11315.617	NIKANASSIN FM	NIKA
3695.800	12125.329	FERNIE GRP	FERN
3707.500	12163.714	FERNIE GRP	FERN
3777.900	12394.686	NORDEGG MBR	NORD
3790.000	12434.384	NORDEGG MBR	NORD
3799.800	12466.536	TRIASSIC SYSTEM	TRIA SYS
3812.400	12507.874	TRIASSIC SYSTEM	TRIA SYS
3834.100	12579.069	DOIG FM	DOIG
3847.000	12621.392	DOIG FM	DOIG
3854.800	12646.982	MONTNEY FM	MONT
3868.000	12690.289	MONTNEY FM	MONT
4041.000	13257.874	BELLOY FM	BELL
4057.000	13310.368	BELLOY FM	BELL
4141.000	13585.958	FAULT	FLT
4160.000	13648.294	FAULT	FLT
4278.100	14035.762	BELLOY FM	BELL
4299.100	14104.659	BELLOY FM	BELL
4440.000	14566.930	SHUNDA FM	SHUN
4464.000	14645.670	SHUNDA FM	SHUN
4527.500	14854.003	PEKISKO FM	PEK
4551.000	14931.103	PEKISKO FM	PEK
4646.500	15244.423	BANFF FM	BNFF
4671.500	15326.444	BANFF FM	BNFF

4762.000	15623.360	FAULT	FLT
4762.100	15623.688	PEKISKO FM	PEK
4784.500	15697.179	BANFF FM	BNFF
4787.000	15705.381	FAULT	FLT
4787.100	15705.710	PEKISKO FM	PEK
4810.000	15780.841	BANFF FM	BNFF
4911.000	16112.205	EXSHAW FM	EX
4918.000	16135.171	PALLISER FM	PALL
4936.500	16195.866	EXSHAW FM	EX
4943.500	16218.833	PALLISER FM	PALL
5327.500	17478.676	WINTERBURN GRP	WINT
5353.000	17562.336	WINTERBURN GRP	WINT

Site ID: 89475

Source ID: 00/11-23-056-06W6/0

Latitude: 53.851304

Well Length:

4395.800

Longitude: 118.783939

KB Elevation: 1622.500

Well Name: SHELL MAHON CREEK 6-23-56-6

Status: Abandoned

Depth Meters	Depth Feet	Horizon Name	
727.900	2388.124	MOUNTAIN PARK FM	MTN PK
883.900	2899.935	LUSCAR FM	LUSK
1233.500	4046.916	CADOMIN FM	CADM
1248.500	4096.129	NIKANASSIN FM	NIKA
1505.700	4939.960	PASSAGE BEDS	PAS BD
1585.000	5200.131	FAULT	FLT
1585.000	5200.131	NIKANASSIN FM	NIKA
1601.100	5252.953	PASSAGE BEDS	PAS BD
1628.900	5344.160	FAULT	FLT
1628.900	5344.160	NIKANASSIN FM	NIKA
1732.200	5683.071	PASSAGE BEDS	PAS BD
1944.600	6379.921	GREEN BEDS	GN BD
1986.100	6516.076	NORDEGG MBR	NORD
2007.400	6585.958	SCHOOLER CREEK GRP	SCH CK
2092.500	6865.158	HALFWAY FM	HFWD
2103.100	6899.935	DOIG FM	DOIG
2132.100	6995.079	MONTNEY FM	MONT
2328.700	7640.092	BELLOY FM	BELL
2334.500	7659.121	MOUNT HEAD FM	MT HD
2416.500	7928.150	TURNER VALLEY FM	TV
2482.600	8145.014	SHUNDA FM	SHUN
2552.400	8374.016	PEKISKO FM	PEK
2600.200	8530.840	FAULT	FLT
2600.200	8530.840	FERNIE GRP	FERN
2609.700	8562.008	NORDEGG MBR	NORD
2617.000	8585.958	FAULT	FLT
2617.000	8585.958	NIKANASSIN FM	NIKA
3038.900	9970.145	FAULT	FLT
3038.900	9970.145	LUSCAR FM	LUSK
3198.600	10494.095	CADOMIN FM	CADM
3210.500	10533.137	NIKANASSIN FM	NIKA
3677.400	12064.961	PASSAGE BEDS	PAS BD
3800.900	12470.145	NORDEGG MBR	NORD
3823.400	12543.963	SCHOOLER CREEK GRP	SCH CK
3899.300	12792.979	HALFWAY FM	HFWD
3908.500	12823.163	DOIG FM	DOIG
3937.400	12917.979	MONTNEY FM	MONT
4194.700	13762.141	MOUNT HEAD FM	MT HD
4239.800	13910.104	TURNER VALLEY FM	TV
4335.500	14224.082	SHUNDA FM	SHUN

Site ID: 90878

Source ID: 00/05-08-057-05W6/0

Latitude: 53.909000

Well Length:

3788.700

Longitude: 118.714279

KB Elevation: 1267.100

Well Name: PCP ET AL FINDLEY 5-8-57-5

Status: Capped Gaswell (771010)

Depth Meters	Depth Feet	Horizon Name	
673.900	2210.958	CARDIUM FM	CARD
716.300	2350.066	CARDIUM SD	CARD SD
755.300	2478.018	BLACKSTONE FM	BKST
1081.100	3546.916	FAULT	FLT
1081.400	3547.900	BLACKSTONE FM	BKST
1505.100	4937.992	DUNVEGAN FM	DUNV
1583.400	5194.882	MOUNTAIN PARK FM	MTN PK
1728.200	5669.948	LUSCAR FM	LUSK
2224.400	7297.900	CADOMIN FM	CADM
2248.200	7375.984	NIKANASSIN FM	NIKA
2525.600	8286.090	FERNIE GRP	FERN
2616.100	8583.006	NORDEGG MBR	NORD
2639.000	8658.137	TRIASSIC SYSTEM	TRIA SYS
2904.700	9529.855	DEBOLT FM	DBLT
3148.000	10328.084	SHUNDA FM	SHUN
3161.700	10373.031	PEKISKO FM	PEK
3219.600	10562.993	BANFF FM	BNFF
3397.600	11146.982	EXSHAW FM	EX
3403.100	11165.027	PALLISER FM	PALL

Site ID: 90879

Source ID: 00/14-13-057-06W6/0

Latitude: 53.933714

Well Length: 3264.100

Longitude: 118.757516

KB Elevation: 1275.900

Well Name: MUSKEG #1

Status: Abandoned

Depth Meters	Depth Feet	Horizon Name	
1537.700	5044.947	MANNVILLE GRP	MANN
2083.600	6835.958	JURASSIC SYSTEM	JUR SYS
2542.900	8342.848	TRIASSIC SYSTEM	TRIA SYS
2936.400	9633.858	RUNDLE GRP	RUND
3244.600	10645.014	BANFF FM	BNFF

Site ID: 90880

Source ID: 00/16-23-057-06W6/0

Latitude: 53.945426

Well Length:

3511.300

Longitude: 118.770380

KB Elevation: 1328.300

Well Name: PCP ET AL FINDLEY 16-23-57-6

Status: Capped Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
603.500	1979.987	FAULT	FLT
603.800	1980.971	KASKAPAU FM	KPAU
1089.700	3575.131	DUNVEGAN FM	DUNV
1091.200	3580.052	DUNVEGAN FM	DUNV
1140.300	3741.142	SHAFTESBURY FM	SHFT
1141.800	3746.063	SHAFTESBURY FM	SHFT
1225.000	4019.029	FAULT	FLT
1225.300	4020.013	SHAFTESBURY FM	SHFT
1226.500	4023.950	FAULT	FLT
1226.800	4024.935	SHAFTESBURY FM	SHFT
1290.500	4233.924	FAULT	FLT
1290.800	4234.908	SHAFTESBURY FM	SHFT
1292.400	4240.158	FAULT	FLT
1292.700	4241.142	SHAFTESBURY FM	SHFT
1346.900	4418.963	MOUNTAIN PARK FM	MTN PK
1348.700	4424.869	MOUNTAIN PARK FM	MTN PK
1498.100	4915.026	LUSCAR FM	LUSK
1500.500	4922.900	LUSCAR FM	LUSK
1930.600	6333.990	CADOMIN FM	CADM
1935.500	6350.066	CADOMIN FM	CADM
1944.900	6380.906	NIKANASSIN FM	NIKA
1949.800	6396.982	NIKANASSIN FM	NIKA
2287.000	7503.281	FERNIE GRP	FERN
2293.600	7524.935	FERNIE GRP	FERN
2365.600	7761.155	NORDEGG MBR	NORD
2372.000	7782.152	NORDEGG MBR	NORD
2384.800	7824.147	TRIASSIC SYSTEM	TRIA SYS
2391.500	7846.129	TRIASSIC SYSTEM	TRIA SYS
2454.600	8053.150	DOIG FM	DOIG
2461.900	8077.100	DOIG FM	DOIG
2473.700	8115.814	MONTNEY FM	MONT
2481.100	8140.092	MONTNEY FM	MONT
2715.200	8908.137	DEBOLT FM	DBLT
2724.300	8937.992	DEBOLT FM	DBLT
2900.500	9516.076	FAULT	FLT
2900.800	9517.061	DEBOLT FM	DBLT
2910.500	9548.885	FAULT	FLT
2910.800	9549.869	DEBOLT FM	DBLT

3143.400	10312.992	SHUNDA FM	SHUN
3154.700	10350.065	SHUNDA FM	SHUN
3169.900	10399.935	PEKISKO FM	PEK
3181.500	10437.992	PEKISKO FM	PEK
3234.200	10610.893	FAULT	FLT
3234.500	10611.877	PEKISKO FM	PEK
3246.100	10649.935	FAULT	FLT
3246.400	10650.919	PEKISKO FM	PEK
3278.100	10754.922	BANFF FM	BNFF
3290.000	10793.964	BANFF FM	BNFF
3423.500	11231.956	FAULT	FLT
3423.800	11232.940	SHUNDA FM	SHUN
3432.000	11259.843	PEKISKO FM	PEK
3436.300	11273.950	FAULT	FLT
3436.600	11274.936	SHUNDA FM	SHUN
3444.800	11301.838	PEKISKO FM	PEK

Site ID: 90881

Source ID: 00/08-24-057-06W6/0

Latitude: 53.937953

Well Length:

2331.700

Longitude: 118.745561

KB Elevation: 1274.000

Well Name: PCP ET AL FINDLEY 8-24-57-6

Status: Capped Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
399.300	1310.039	KASKAPAU FM	KPAU
1151.500	3777.887	DUNVEGAN FM	DUNV
1154.300	3787.074	DUNVEGAN FM	DUNV
1174.400	3853.019	FAULT	FLT
1174.700	3854.003	KASKAPAU FM	KPAU
1177.700	3863.845	FAULT	FLT
1178.000	3864.830	KASKAPAU FM	KPAU
1204.300	3951.116	DUNVEGAN FM	DUNV
1207.900	3962.927	DUNVEGAN FM	DUNV
1248.800	4097.113	SHAFTESBURY FM	SHFT
1252.700	4109.908	SHAFTESBURY FM	SHFT
1464.600	4805.118	MOUNTAIN PARK FM	MTN PK
1469.100	4819.882	MOUNTAIN PARK FM	MTN PK
1580.400	5185.040	LUSCAR FM	LUSK
1585.000	5200.131	LUSCAR FM	LUSK
1969.000	6459.974	CADOMIN FM	CADM
1975.100	6479.987	CADOMIN FM	CADM
1987.900	6521.982	NIKANASSIN FM	NIKA
1993.100	6539.042	FAULT	FLT
1993.200	6539.370	CADOMIN FM	CADM
1994.300	6542.979	NIKANASSIN FM	NIKA
1999.500	6560.040	FAULT	FLT
1999.800	6561.024	CADOMIN FM	CADM
2005.300	6579.069	FAULT	FLT
2005.600	6580.053	NIKANASSIN FM	NIKA
2011.700	6600.065	FAULT	FLT
2012.000	6601.050	NIKANASSIN FM	NIKA
2146.100	7041.011	FERNIE GRP	FERN
2153.400	7064.960	FERNIE GRP	FERN

Site ID: 90882

Source ID: 00/08-24-057-06W6/2

Latitude: 53.937953

Well Length:

2331.700

Longitude: 118.745561

KB Elevation: 1274.000

Well Name: PCP ET AL FINDLEY 8-24-57-6

Status: Capped Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
399.300	1310.039	KASKAPAU FM	KPAU
1151.500	3777.887	DUNVEGAN FM	DUNV
1154.300	3787.074	DUNVEGAN FM	DUNV
1174.400	3853.019	FAULT	FLT
1174.700	3854.003	KASKAPAU FM	KPAU
1177.700	3863.845	FAULT	FLT
1178.000	3864.830	KASKAPAU FM	KPAU
1204.300	3951.116	DUNVEGAN FM	DUNV
1207.900	3962.927	DUNVEGAN FM	DUNV
1248.800	4097.113	SHAFTESBURY FM	SHFT
1252.700	4109.908	SHAFTESBURY FM	SHFT
1464.600	4805.118	MOUNTAIN PARK FM	MTN PK
1469.100	4819.882	MOUNTAIN PARK FM	MTN PK
1580.400	5185.040	LUSCAR FM	LUSK
1585.000	5200.131	LUSCAR FM	LUSK
1969.000	6459.974	CADOMIN FM	CADM
1975.100	6479.987	CADOMIN FM	CADM
1987.900	6521.982	NIKANASSIN FM	NIKA
1993.100	6539.042	FAULT	FLT
1993.200	6539.370	CADOMIN FM	CADM
1994.300	6542.979	NIKANASSIN FM	NIKA
1999.500	6560.040	FAULT	FLT
1999.800	6561.024	CADOMIN FM	CADM
2005.300	6579.069	FAULT	FLT
2005.600	6580.053	NIKANASSIN FM	NIKA
2011.700	6600.065	FAULT	FLT
2012.000	6601.050	NIKANASSIN FM	NIKA
2146.100	7041.011	FERNIE GRP	FERN
2153.400	7064.960	FERNIE GRP	FERN

Site ID: 90883 Source ID: 00/11-26-057-06W6/0

Latitude: 53.955058 Well Length: 3749.000
Longitude: 118.786030
KB Elevation: 1415.500

Well Name: PCP ET AL FINDLEY 11-26-57-6

Status: Suspended Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
641.300	2104.003	FAULT	FLT
641.600	2104.987	BLACKSTONE FM	BKST
641.900	2105.971	FAULT	FLT
642.200	2106.956	BLACKSTONE FM	BKST
796.100	2611.877	FAULT	FLT
796.400	2612.861	BLACKSTONE FM	BKST
797.400	2616.142	FAULT	FLT
797.700	2617.126	BLACKSTONE FM	BKST
1122.000	3681.103	FAULT	FLT
1122.300	3682.087	BLACKSTONE FM	BKST
1124.100	3687.992	FAULT	FLT
1124.400	3688.977	BLACKSTONE FM	BKST
1143.300	3750.985	DUNVEGAN FM	DUNV
1145.400	3757.874	DUNVEGAN FM	DUNV
1171.300	3842.848	FAULT	FLT
1171.700	3844.160	DUNVEGAN FM	DUNV
1173.500	3850.066	FAULT	FLT
1173.800	3851.050	DUNVEGAN FM	DUNV
1378.300	4521.982	MOUNTAIN PARK FM	MTN PK
1380.700	4529.855	MOUNTAIN PARK FM	MTN PK
1523.100	4997.047	LUSCAR FM	LUSK
1525.800	5005.906	LUSCAR FM	LUSK
1911.700	6271.981	CADOMIN FM	CADM
1915.700	6285.105	CADOMIN FM	CADM
1933.300	6342.848	NIKANASSIN FM	NIKA
1937.300	6355.972	NIKANASSIN FM	NIKA

1960.500	6432.087	FAULT	FLT
1960.800	6433.071	CADOMIN FM	CADM
1964.400	6444.882	FAULT	FLT
1964.700	6445.866	CADOMIN FM	CADM
1982.400	6503.938	NIKANASSIN FM	NIKA
1986.400	6517.061	NIKANASSIN FM	NIKA
2362.200	7750.000	NORDEGG MBR	NORD
2368.000	7769.029	NORDEGG MBR	NORD
2385.100	7825.132	TRIASSIC SYSTEM	TRIA SYS
2391.200	7845.145	TRIASSIC SYSTEM	TRIA SYS
2685.300	8810.040	DEBOLT FM	DBLT
2693.200	8835.958	DEBOLT FM	DBLT
2894.700	9497.048	FAULT	FLT
2895.000	9498.032	TRIASSIC SYSTEM	TRIA SYS
2904.700	9529.855	FAULT	FLT
2905.000	9530.840	TRIASSIC SYSTEM	TRIA SYS
3000.500	9844.160	DEBOLT FM	DBLT
3011.100	9878.938	DEBOLT FM	DBLT
3392.700	11130.905	FAULT	FLT
3393.000	11131.890	TRIASSIC SYSTEM	TRIA SYS
3409.500	11186.024	FAULT	FLT
3409.800	11187.009	TRIASSIC SYSTEM	TRIA SYS

Site ID: 90884

Source ID: 00/11-26-057-06W6/2

Latitude: 53.955058

Well Length:

3749.000

Longitude: 118.786030

KB Elevation: 1415.500

Well Name: PCP ET AL FINDLEY 11-26-57-6

Status: Suspended Gaswell

Note: Indented data lines represent true vertical depths;
Aliged data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
641.300	2104.003	FAULT	FLT
641.600	2104.987	BLACKSTONE FM	BKST
641.900	2105.971	FAULT	FLT
642.200	2106.956	BLACKSTONE FM	BKST
796.100	2611.877	FAULT	FLT
796.400	2612.861	BLACKSTONE FM	BKST
797.400	2616.142	FAULT	FLT
797.700	2617.126	BLACKSTONE FM	BKST
1122.000	3681.103	FAULT	FLT
1122.300	3682.087	BLACKSTONE FM	BKST
1124.100	3687.992	FAULT	FLT
1124.400	3688.977	BLACKSTONE FM	BKST
1143.300	3750.985	DUNVEGAN FM	DUNV
1145.400	3757.874	DUNVEGAN FM	DUNV
1171.300	3842.848	FAULT	FLT
1171.700	3844.160	DUNVEGAN FM	DUNV
1173.500	3850.066	FAULT	FLT
1173.800	3851.050	DUNVEGAN FM	DUNV
1378.300	4521.982	MOUNTAIN PARK FM	MTN PK
1380.700	4529.855	MOUNTAIN PARK FM	MTN PK
1523.100	4997.047	LUSCAR FM	LUSK
1525.800	5005.906	LUSCAR FM	LUSK
1911.700	6271.981	CADOMIN FM	CADM
1915.700	6285.105	CADOMIN FM	CADM
1933.300	6342.848	NIKANASSIN FM	NIKA
1937.300	6355.972	NIKANASSIN FM	NIKA
1960.500	6432.087	FAULT	FLT
1960.800	6433.071	CADOMIN FM	CADM
1964.400	6444.882	FAULT	FLT
1964.700	6445.866	CADOMIN FM	CADM
1982.400	6503.938	NIKANASSIN FM	NIKA
1986.400	6517.061	NIKANASSIN FM	NIKA
2362.200	7750.000	NORDEGG MBR	NORD
2368.000	7769.029	NORDEGG MBR	NORD
2385.100	7825.132	TRIASSIC SYSTEM	TRIA SYS
2391.200	7845.145	TRIASSIC SYSTEM	TRIA SYS
2685.300	8810.040	DEBOLT FM	DBLT
2693.200	8835.958	DEBOLT FM	DBLT
2894.700	9497.048	FAULT	FLT
2895.000	9498.032	TRIASSIC SYSTEM	TRIA SYS
2904.700	9529.855	FAULT	FLT
2905.000	9530.840	TRIASSIC SYSTEM	TRIA SYS
3000.500	9844.160	DEBOLT FM	DBLT
3011.100	9878.938	DEBOLT FM	DBLT
3392.700	11130.905	FAULT	FLT

3393.000	11131.890	TRIASSIC SYSTEM
3409.500	11186.024	FAULT
3409.800	11187.009	TRIASSIC SYSTEM

TRIA SYS
FLT
TRIA SYS

Site ID: 90885

Source ID: 00/10-32-057-06W6/0

Latitude: 53.971584

Well Length:

3194.300

Longitude: 118.856562

KB Elevation: 1576.700

Well Name: PCP ET AL FINDLEY 10-32-57-6

Status: Abandoned

Depth Meters	Depth Feet	Horizon Name	
1057.700	3470.144	KASKAPAU FM	KPAU
1796.500	5894.029	DUNVEGAN FM	DUNV
1842.800	6045.932	SHAFTESBURY FM	SHFT
2017.800	6620.079	MOUNTAIN PARK FM	MTN PK
2595.400	8515.092	CADOMIN FM	CADM
2607.900	8556.103	NIKANASSIN FM	NIKA
2907.800	9540.026	FERNIE GRP	FERN
3008.400	9870.079	NORDEGG MBR	NORD
3042.500	9981.956	TRIASSIC SYSTEM	TRIA SYS
3151.600	10339.896	MONTNEY FM	MONT

Site ID: 90886

Source ID: 00/10-32-057-06W6/2

Latitude: 53.971584

Well Length:

3886.200

Longitude: 118.856562

KB Elevation: 1576.700

Well Name: PCP ET AL FINDLEY 10-32-57-6

Status: Capped Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
1057.400	3469.160	KASKAPAU FM	KPAU
1057.700	3470.144	KASKAPAU FM	KPAU
1787.300	5863.846	DUNVEGAN FM	DUNV
1796.500	5894.029	DUNVEGAN FM	DUNV
1832.800	6013.124	SHAFTESBURY FM	SHFT
1842.800	6045.932	SHAFTESBURY FM	SHFT
2003.500	6573.163	MOUNTAIN PARK FM	MTN PK
2017.800	6620.079	MOUNTAIN PARK FM	MTN PK
2568.200	8425.854	CADOMIN FM	CADM
2580.400	8465.879	NIKANASSIN FM	NIKA
2595.400	8515.092	CADOMIN FM	CADM
2607.900	8556.103	NIKANASSIN FM	NIKA
2874.300	9430.118	FERNIE GRP	FERN
2907.800	9540.026	FERNIE GRP	FERN
2972.700	9752.953	NORDEGG MBR	NORD
3006.200	9862.861	TRIASSIC SYSTEM	TRIA SYS
3008.400	9870.079	NORDEGG MBR	NORD
3042.500	9981.956	TRIASSIC SYSTEM	TRIA SYS
3113.200	10213.911	MONTNEY FM	MONT
3151.600	10339.896	MONTNEY FM	MONT
3369.900	11056.103	DEBOLT FM	DBLT
3411.300	11191.930	DEBOLT FM	DBLT
3623.200	11887.140	FAULT	FLT
3666.700	12029.855	FAULT	FLT
3804.500	12481.956	SHUNDA FM	SHUN
3849.600	12629.922	SHUNDA FM	SHUN

Site ID: 92083

Source ID: 00/07-05-058-06W6/0

Latitude: 53.979451

Well Length:

3380.000

Longitude: 118.853715

KB Elevation: 1676.500

Well Name: CS ET AL FINDLEY 7-5-58-6

Status: Suspended Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
408.500	1340.223	CARDIUM SD	CARD SD
426.400	1398.950	FAULT	FLT
426.500	1399.278	WAPIABI FM	WPBI
640.000	2099.738	CARDIUM SD	CARD SD
764.000	2506.562	KASKAPAU FM	KPAU
900.900	2955.709	FAULT	FLT
901.000	2956.037	KASKAPAU FM	KPAU
901.400	2957.349	FAULT	FLT
901.500	2957.677	KASKAPAU FM	KPAU
1226.900	4025.263	FAULT	FLT
1227.000	4025.591	KASKAPAU FM	KPAU
1228.900	4031.824	FAULT	FLT
1229.000	4032.152	KASKAPAU FM	KPAU
1660.500	5447.835	DUNVEGAN FM	DUNV
1665.000	5462.599	DUNVEGAN FM	DUNV
1678.900	5508.202	FAULT	FLT
1679.000	5508.530	KASKAPAU FM	KPAU
1683.400	5522.966	FAULT	FLT
1683.500	5523.294	KASKAPAU FM	KPAU
1695.000	5561.024	DUNVEGAN FM	DUNV
1699.500	5575.788	DUNVEGAN FM	DUNV
1753.000	5751.313	SHAFTESBURY FM	SHFT
1758.000	5767.717	SHAFTESBURY FM	SHFT
1939.000	6361.549	MOUNTAIN PARK FM	MTN PK
1945.500	6382.874	MOUNTAIN PARK FM	MTN PK
2074.000	6804.462	LUSCAR FM	LUSK
2081.500	6829.068	LUSCAR FM	LUSK
2359.900	7742.454	FAULT	FLT
2360.000	7742.782	LUSCAR FM	LUSK
2372.900	7785.105	FAULT	FLT
2373.000	7785.433	LUSCAR FM	LUSK
2532.500	8308.728	CADOMIN FM	CADM
2550.000	8366.142	CADOMIN FM	CADM
2571.000	8435.040	NIKANASSIN FM	NIKA
2590.000	8497.376	NIKANASSIN FM	NIKA
2843.500	9329.068	FERNIE GRP	FERN
2870.000	9416.011	FERNIE GRP	FERN
2955.000	9694.882	NORDEGG MBR	NORD
2975.500	9762.140	SCHOOLER CREEK GRP	SCH CK
2982.500	9785.105	NORDEGG MBR	NORD

3004.000	9855.644	SCHOOLER CREEK GRP	SCH CK
3048.500	10001.641	DOIG FM	DOIG
3078.000	10098.426	DOIG FM	DOIG
3084.000	10118.110	MONTNEY FM	MONT
3114.500	10218.176	MONTNEY FM	MONT
3304.500	10841.536	BELLOU FM	BELL
3318.500	10887.468	DEBOLT FM	DBLT
3341.000	10961.286	BELLOU FM	BELL
3343.000	10967.848	TOTAL DEPTH	TD
3355.500	11008.858	DEBOLT FM	DBLT
3380.000	11089.239	TOTAL DEPTH	TD

Site ID: 92084

Source ID: 00/07-05-058-06W6/2

Latitude: 53.979451

Well Length:

3380.000

Longitude: 118.853715

KB Elevation: 1676.500

Well Name: CS ET AL FINDLEY 7-5-58-6

Status: Suspended Gaswell

Note: Indented data lines represent true vertical depths;
Aligned data lines represent as-drilled depths.

Depth Meters	Depth Feet	Horizon Name	
408.500	1340.223	CARDIUM SD	CARD SD
426.400	1398.950	FAULT	FLT
426.500	1399.278	WAPIABI FM	WPBI
640.000	2099.738	CARDIUM SD	CARD SD
764.000	2506.562	KASKAPAU FM	KPAU
900.900	2955.709	FAULT	FLT
901.000	2956.037	KASKAPAU FM	KPAU
901.400	2957.349	FAULT	FLT
901.500	2957.677	KASKAPAU FM	KPAU
1226.900	4025.263	FAULT	FLT
1227.000	4025.591	KASKAPAU FM	KPAU
1228.900	4031.824	FAULT	FLT
1229.000	4032.152	KASKAPAU FM	KPAU
1660.500	5447.835	DUNVEGAN FM	DUNV
1665.000	5462.599	DUNVEGAN FM	DUNV
1678.900	5508.202	FAULT	FLT
1679.000	5508.530	KASKAPAU FM	KPAU
1683.400	5522.966	FAULT	FLT
1683.500	5523.294	KASKAPAU FM	KPAU
1695.000	5561.024	DUNVEGAN FM	DUNV
1699.500	5575.788	DUNVEGAN FM	DUNV
1753.000	5751.313	SHAFTESBURY FM	SHFT
1758.000	5767.717	SHAFTESBURY FM	SHFT
1939.000	6361.549	MOUNTAIN PARK FM	MTN PK
1945.500	6382.874	MOUNTAIN PARK FM	MTN PK
2074.000	6804.462	LUSCAR FM	LUSK
2081.500	6829.068	LUSCAR FM	LUSK
2359.900	7742.454	FAULT	FLT
2360.000	7742.782	LUSCAR FM	LUSK
2372.900	7785.105	FAULT	FLT
2373.000	7785.433	LUSCAR FM	LUSK
2532.500	8308.728	CADOMIN FM	CADM
2550.000	8366.142	CADOMIN FM	CADM
2571.000	8435.040	NIKANASSIN FM	NIKA
2590.000	8497.376	NIKANASSIN FM	NIKA
2843.500	9329.068	FERNIE GRP	FERN

2870.000	9416.011	FERNIE GRP	FERN
2955.000	9694.882	NORDEGG MBR	NORD
2975.500	9762.140	SCHOOLER CREEK GRP	SCH CK
2982.500	9785.105	NORDEGG MBR	NORD
3004.000	9855.644	SCHOOLER CREEK GRP	SCH CK
3048.500	10001.641	DOIG FM	DOIG
3078.000	10098.426	DOIG FM	DOIG
3084.000	10118.110	MONTNEY FM	MONT
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3304.500	10841.536	BELLOY FM	BELL
3318.500	10887.468	DEBOLT FM	DBLT
3341.000	10961.286	BELLOY FM	BELL
3343.000	10967.848	TOTAL DEPTH	TD
3355.500	11008.858	DEBOLT FM	DBLT
3380.000	11089.239	TOTAL DEPTH	TD

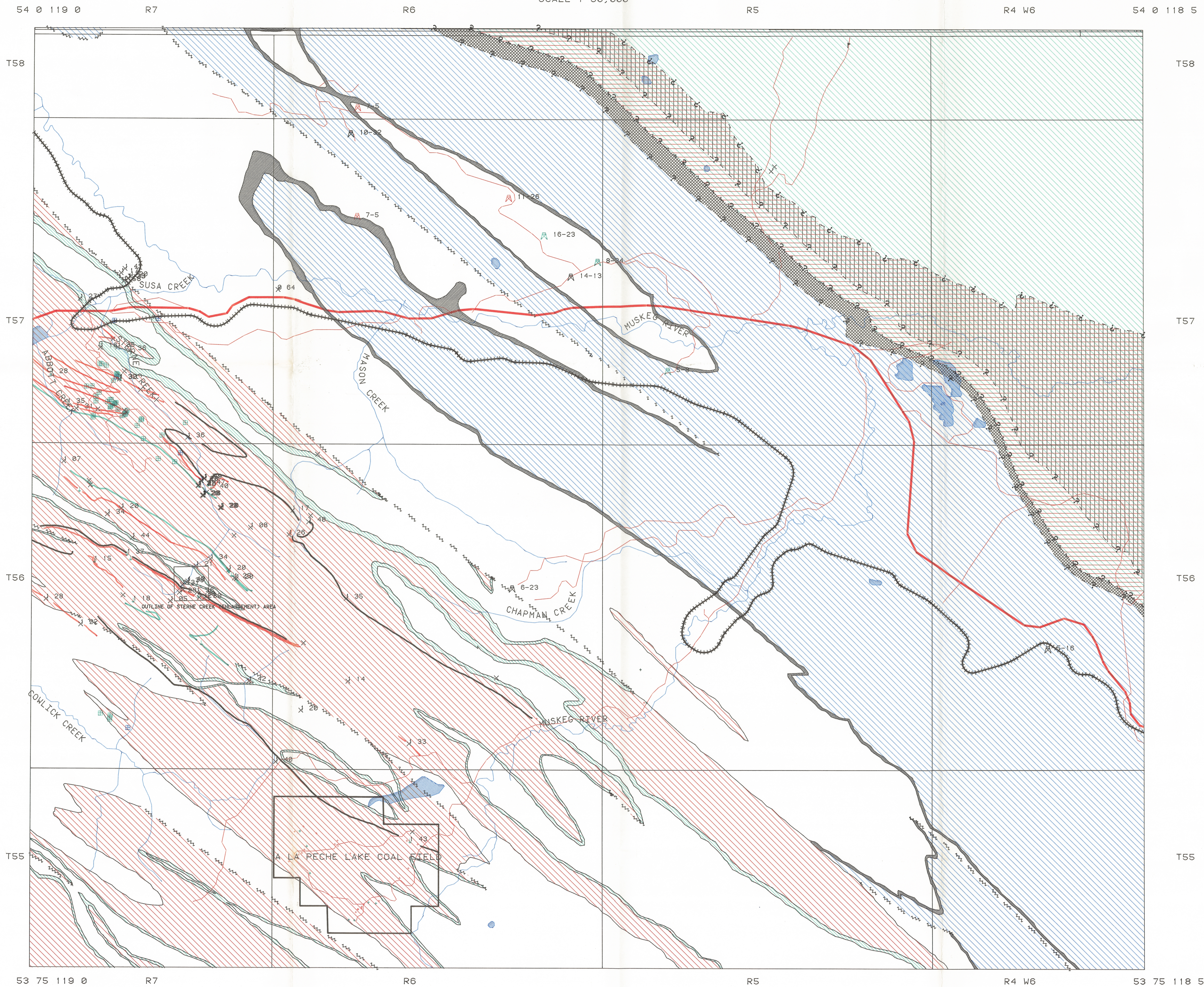
Appendix 3. 83E/15 - Coal Intersections of the Coal Drillholes

1044141	351833	SC308-70	6	57	7	3	29.720	34.440	4.720	0	0	0.000	315181	DLO
1044142	351841	SC309-70	6	57	7	3	11.770	12.980	1.210	0	0	4.000	315183	DLO
1044142	351841	SC309-70	6	57	7	3	20.730	22.800	2.070	0	0	4.000	315185	DLO
1044143	351858	SC310-70	6	57	7	3	15.850	17.160	1.310	0	0	3.000	315187	DLO
1044143	351858	SC310-70	6	57	7	3	20.420	21.090	0.670	0	0	3.000	315188	DLO
1044144	351866	SC311-70	6	57	7	3	3.840	4.600	0.760	0	0	0.000	315190	DLO
1044144	351866	SC311-70	6	57	7	3	5.670	6.770	1.100	0	0	0.000	315191	DLO
1044144	351866	SC311-70	6	57	7	3	13.410	13.870	0.460	0	0	0.000	315192	DLO
1044145	351874	SC312-70	6	57	7	3	8.230	9.050	0.820	0	0	0.000	315194	DLO
1044145	351874	SC312-70	6	57	7	3	10.520	13.560	3.040	0	0	0.000	315195	DLO
1044146	351890	SC317-70	6	57	7	3	14.330	16.920	2.590	0	0	0.000	315197	DLO
1044147	351908	SC318-70	6	57	7	3	12.250	12.710	0.460	0	0	0.000	315198	DLO
1044147	351908	SC318-70	6	57	7	3	19.510	20.360	0.850	0	0	0.000	315199	DLO
1044147	351908	SC318-70	6	57	7	3	21.400	24.380	2.980	0	0	0.000	0	DLO
1044148	351916	SC319-70	6	57	7	3	16.150	16.820	0.670	0	0	0.000	315202	DLO
1044148	351916	SC319-70	6	57	7	3	18.900	23.160	4.260	0	0	0.000	0	DLO
1044148	351916	SC319-70	6	57	7	3	25.360	25.760	0.400	0	0	0.000	315205	DLO
1044148	351916	SC319-70	6	57	7	3	26.330	28.650	2.320	0	0	0.000	315206	DLO
1044149	351940	SC322-70	6	57	7	3	17.920	19.050	1.130	0	0	4.000	315207	DLO
1044149	351940	SC322-70	6	57	7	3	49.070	49.680	0.610	0	0	4.000	315209	DLO
1044149	351940	SC322-70	6	57	7	3	53.640	56.540	2.900	0	0	4.000	315210	DLO
1044150	351957	SC323-70	6	57	7	3	25.150	26.210	1.060	0	0	3.000	315211	DLO
1044150	351957	SC323-70	6	57	7	3	54.860	57.150	2.290	0	0	3.000	315212	DLO
1044151	351965	SC324-70	6	57	7	3	77.110	78.730	1.620	0	0	1.000	0	DLO
1044151	351965	SC324-70	6	57	7	3	79.640	82.140	2.500	0	0	1.000	315215	DLO
1044152	351973	SC326-70	6	57	7	3	20.730	21.790	1.060	0	0	1.000	315216	DLO
1044152	351973	SC326-70	6	57	7	3	51.210	51.820	0.610	0	0	1.000	315217	DLO
1044153	351981	SC327-70	6	57	7	3	51.210	51.880	0.670	0	0	0.000	315218	DLO
1044154	351999	SC328-70	6	57	7	3	20.120	21.370	1.250	0	0	1.000	315220	DLO
1044154	351999	SC328-70	6	57	7	3	29.440	32.460	3.020	0	0	1.000	315222	DLO
1044155	352005	SC329-70	6	57	7	3	17.530	20.480	2.950	0	0	1.000	315224	DLO
1044156	351882	SC316-70	6	57	7	4	17.070	17.530	0.460	0	0	0.000	315226	DLO
1044156	351882	SC316-70	6	57	7	4	19.350	22.250	2.900	0	0	0.000	315228	DLO
1044157	351924	SC320-70	6	57	7	4	9.080	11.130	2.050	0	0	2.000	315229	DLO
1044158	351932	SC321-70	6	57	7	4	3.660	4.110	0.450	0	0	0.000	315230	DLO
1044158	351932	SC321-70	6	57	7	4	8.380	9.910	1.530	0	0	0.000	315231	DLO
1044158	351932	SC321-70	6	57	7	4	17.130	17.980	0.850	0	0	0.000	315232	DLO
1044159	352088	66-119	6	57	7	4	9.140	9.570	0.430	0	0	0.000	315233	DLO
1044159	352088	66-119	6	57	7	4	11.490	14.510	3.020	0	0	0.000	0	DLO
1044160	352096	66-120	6	57	7	4	25.820	26.430	0.610	0	0	0.000	315236	DLO
1044161	352104	66-121	6	57	7	4	7.380	8.720	1.340	0	0	1.000	0	DLO
1044162	352112	66-122	6	57	7	4	18.590	20.820	2.230	0	0	0.000	315240	DLO
1044163	352146	66-125	6	57	7	4	10.300	13.170	2.870	0	0	0.000	0	DLO
1044164	352054	66-116	6	57	7	9	17.680	21.030	3.350	0	0	1.000	315243	DLO
1044165	352120	66-123	6	57	7	9	13.410	15.240	1.830	0	0	0.000	315244	DLO
1044166	352138	66-124	6	57	7	9	12.070	12.560	0.490	0	0	0.000	315245	DLO
1044166	352138	66-124	6	57	7	9	38.010	39.680	1.670	0	0	0.000	315247	DLO
1044168	352021	66-113	6	57	7	10	12.500	14.020	1.520	0	0	0.000	315248	DLO
1044169	352039	66-114	6	57	7	10	24.750	27.740	2.990	0	0	3.000	315249	DLO
1044170	352047	66-115	6	57	7	10	8.990	10.910	1.920	0	0	0.000	315251	DLO
1044171	352062	66-117	6	57	7	10	13.960	14.510	0.550	0	0	0.000	315252	DLO
1044171	352062	66-117	6	57	7	10	27.340	28.590	1.250	0	0	0.000	315253	DLO
1044171	352062	66-117	6	57	7	10	38.040	38.620	0.580	0	0	0.000	315254	DLO
1044172	352070	66-118	6	57	7	10	46.940	47.490	0.550	0	0	1.000	315255	DLO
1044233	446799	WST812	6	58	5	11	417.400	418.900	1.500	0	0	54.000	0	

REGIONAL COAL MAPPING - PIERRE GREYS LAKES NTS 83E/15

R J H RICHARDSON, W LANGENBERG, D K CHAO, D FIETZ

SCALE 1 50,000

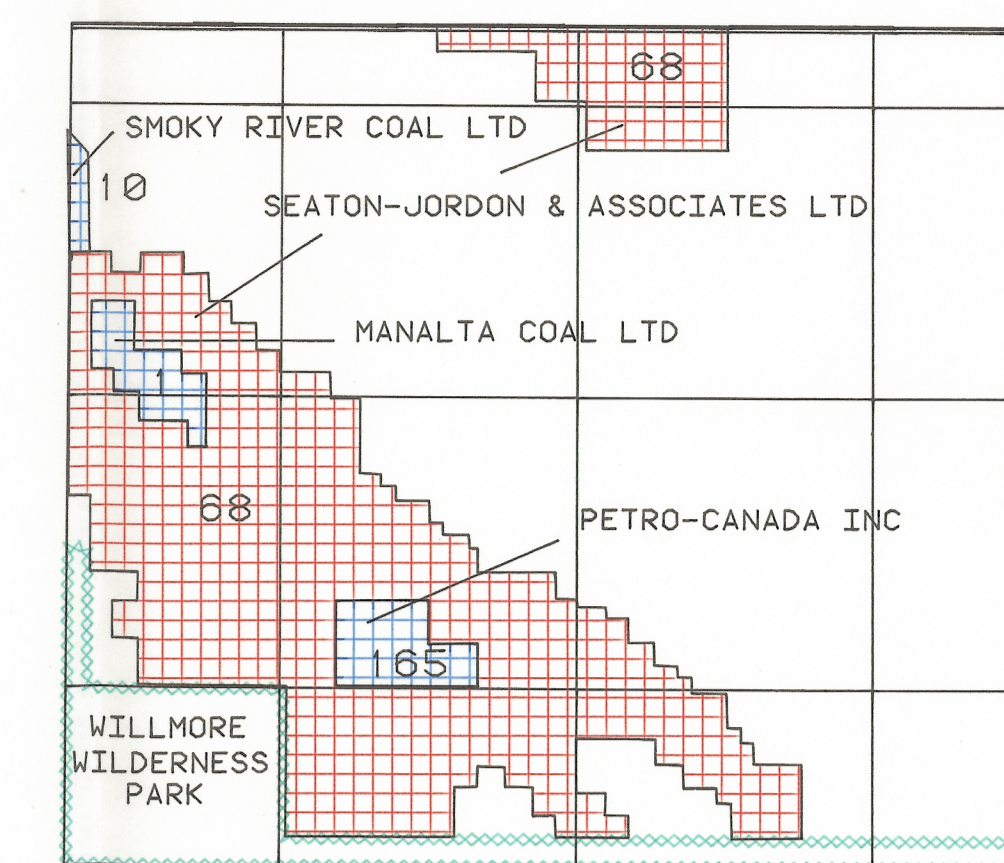


1 50,000 LEGEND

- | | | | | | | | |
|--|---|--|---|--|--|--|---|
| | COAL OUTCROP LOCATION & REFLECTANCE VALUE (%) | | FAULT (ASSUMED) | | LUSCAR FORMATION | | DRILLHOLE, CONSOLIDATION COAL CO OF CAN (COAL INTERSECTED) |
| | COAL SEAM 10 | | PASKAPOO FORMATION | | CADOMIN FORMATION | | DRILLHOLE, CONSOLIDATION COAL CO OF CAN (NO COAL INTERSECTED) |
| | COAL SEAM 4 | | COALSPUR FORMATION | | E R C B COAL FIELD OUTLINE | | DRILLHOLE, MANALTA COAL LTD (COAL INTERSECTED) |
| | COAL SEAM 3 | | COAL VALLEY COAL ZONE | | OIL & GAS LOCATION (CAPPED) | | DRILLHOLE, MANALTA COAL LTD (NO COAL INTERSECTED) |
| | COAL ZONE (ASSUMED) | | BRAZEAU FORMATION | | OIL & GAS LOCATION (ABANDONED) | | DRILLHOLE, UNION OIL CO OF CAN LTD (COAL INTERSECTED) |
| | FAULT (DEFINED) | | BRAZEAU FORMATION COAL ZONE | | OIL & GAS LOCATION (SUSPENDED) | | |
| | FAULT (APPROXIMATE) | | SOLOMON SANDSTONE (BASE OF BRAZEAU FORMATION) | | COAL TRENCH LOCATION & REFLECTANCE VALUE (%) | | |

REGIONAL COAL MAPPING - PIERRE GREYS LAKES NTS 83E/15 COAL DISPOSITIONS

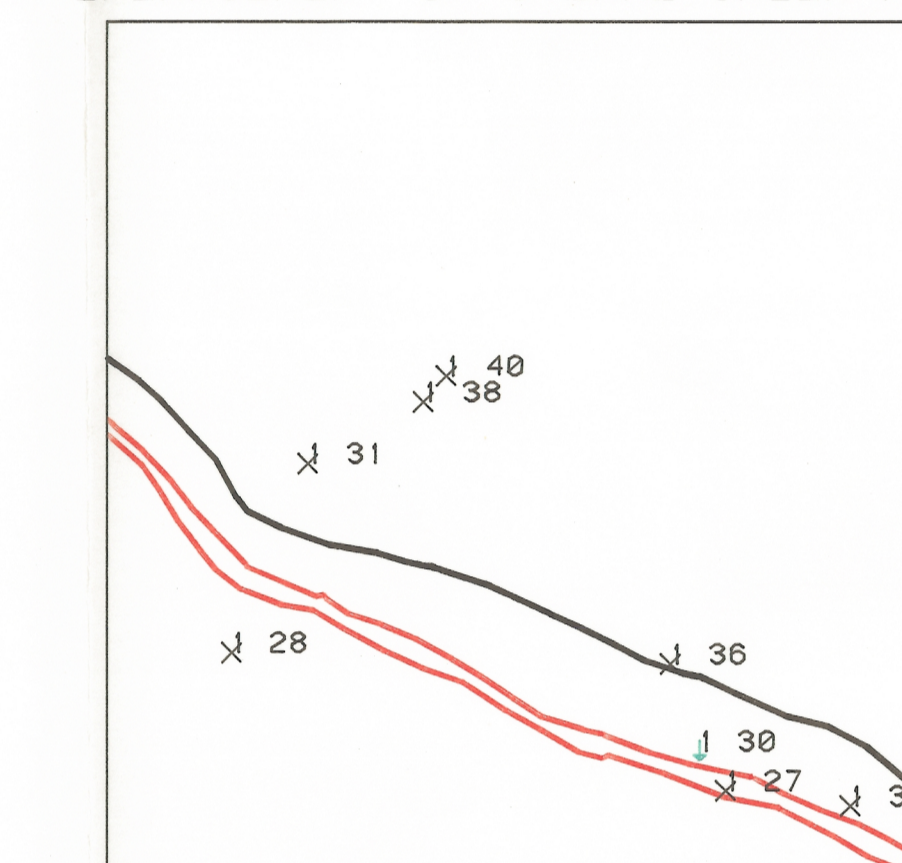
T58



- COAL LEASE
- COAL LEASE APPLICATION

T57

VITRINITE REFLECTANCE VALUES (%) ENLARGEMENT OF STERNE CREEK AREA

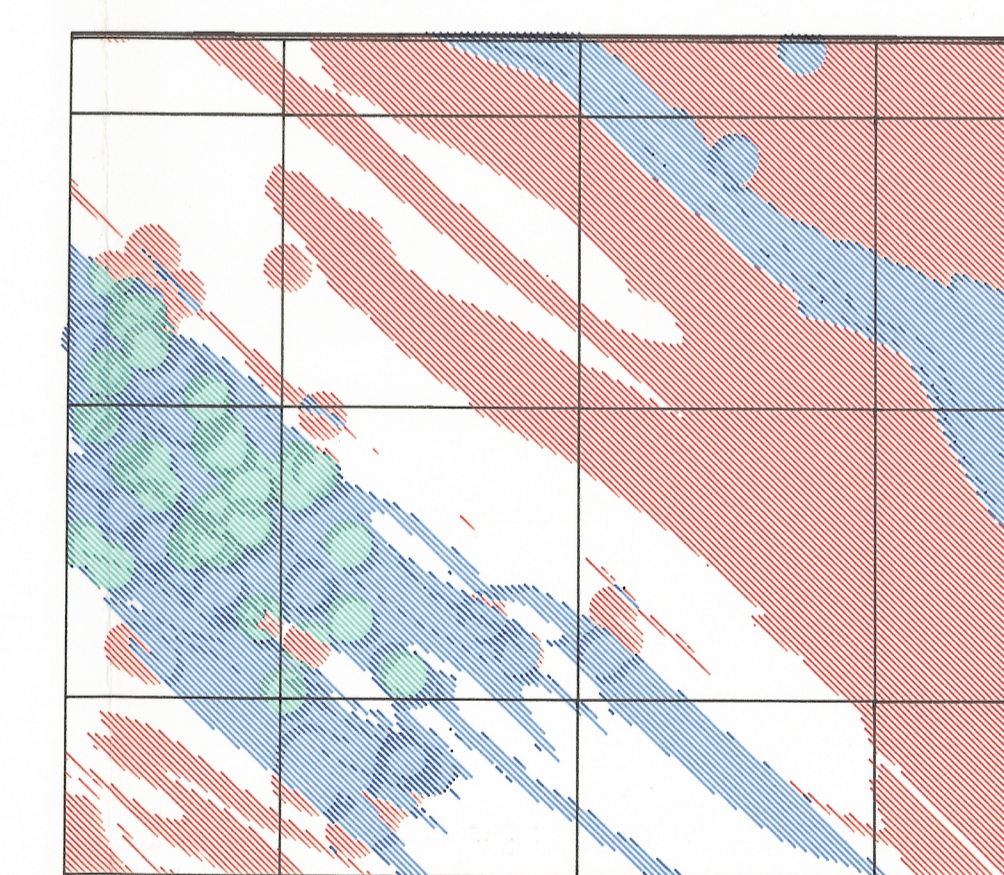


Note: The above enlargement is included to demonstrate the flexibility of the system, emphasis can be placed on any aspect of the data in any area.

T56

REGIONAL COAL MAPPING - PIERRE GREYS LAKES NTS 83E/15 COAL DEVELOPMENT POTENTIAL*

T55



- HIGH POTENTIAL
- MEDIUM POTENTIAL
- LOW POTENTIAL
- NO DATA AVAILABLE

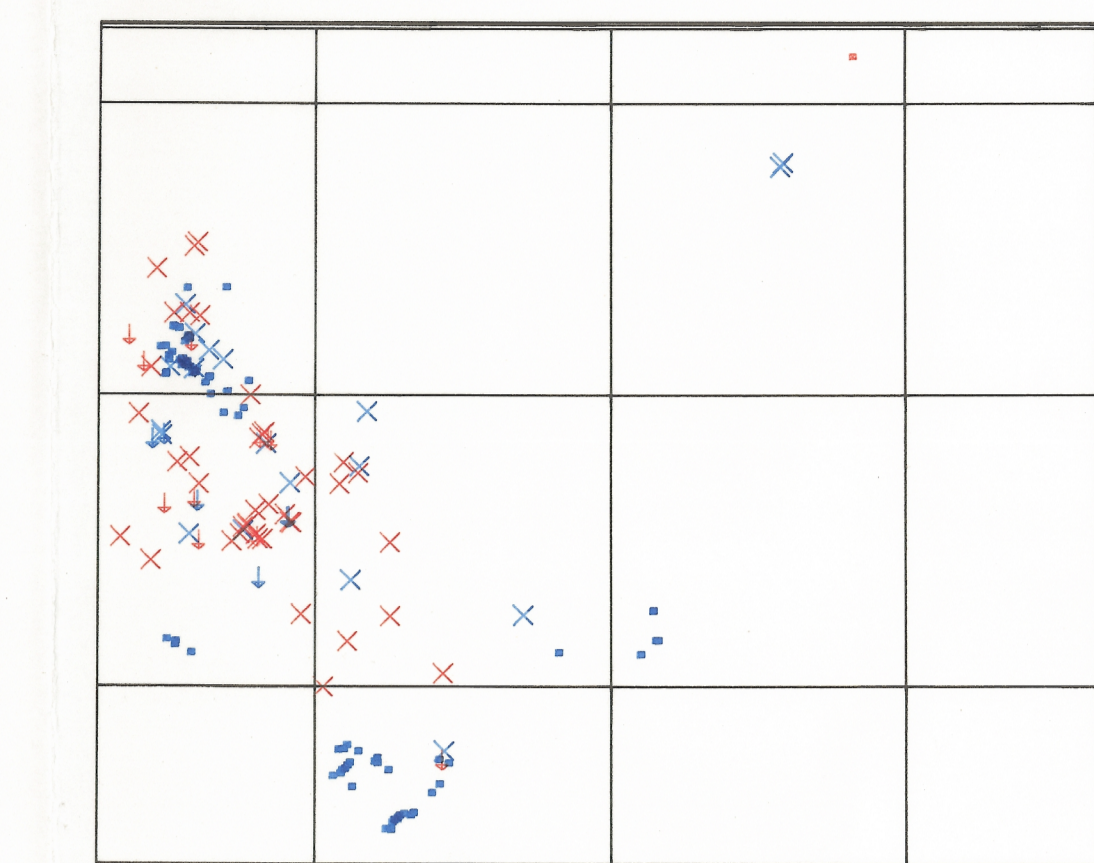
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COMPILATION MARCH, 1990
IMAGE NAME GEOPLOT15
DATE MARCH 31, 1990
ALBERTA RESEARCH MAP RCM2

RELIABILITY AND USE
Information contained on this map sheet has been derived from a large number of different sources, geology, and terrain (digital and hard copy). Every attempt has been made to accurately portray the data. However, this map is intended to provide a base compilation and overview of Coal Resources, for more specific information, please contact the Head, Coal Geology Section, Alberta Geological Survey, Alberta Research Council, P.O. Box 8338, Station F, Edmonton, Alberta.

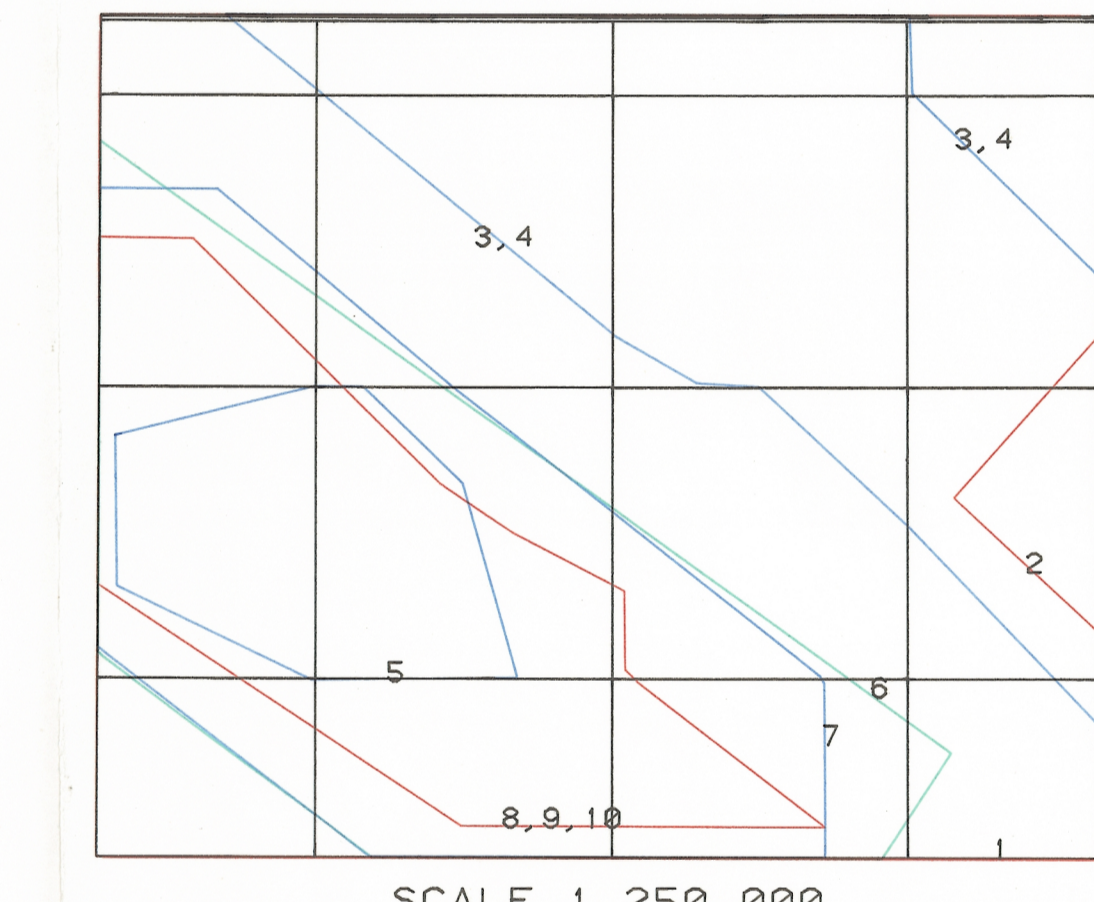
FUNDING
Funds for this project have been provided by the Alberta Office of Coal Research and Technology, Alberta Energy, and by the Alberta Research Council.

REGIONAL COAL MAPPING - PIERRE GREYS LAKES NTS 83E/15 COAL EXPLORATION DATA INFORMATION



- COAL DRILLHOLE, WITH COAL QUALITY
- COAL DRILLHOLE, NO COAL QUALITY
- TRENCH, WITH COAL QUALITY
- TRENCH, NO COAL QUALITY
- COAL OUTCROP, WITH COAL QUALITY
- COAL OUTCROP, NO COAL QUALITY

REGIONAL COAL MAPPING - PIERRE GREYS LAKES NTS 83E/15 INDEX TO SPECIFIC REFERENCE DOCUMENTS



- INDEX TO SPECIFIC REFERENCE DOCUMENTS for the MAPSHEET NTS 83E/15
- Lang, A. H. and Irish, E. J. W. 1951. Pierre Greys Lakes area. Geological Survey of Canada Map 988A. Scale 1:50,000. Outline identified as 1 on GIS plot.
 - Union Oil Company of Canada 1988-10-30. West of Sixth Project. ERCB Coal Application No. 88887. Fiche Application from ERCB Records Center. Outline identified as 2 on GIS plot.
 - Blakely, S. 1981-01. West of Sixth Project - Thermal Coal. Geological Survey of Canada. Report. Contains detailed regional geological maps. Scale 1:250,000. Outline identified as 3 on GIS plot.
 - Blakely, S. A. 1982-03. West of Sixth Project - Thermal Coal. Geological Survey of Canada. Report. Contains detailed regional geological maps. Scale 1:250,000. Outline identified as 4 on GIS plot.
 - Wilson-Clark, H. and Crabb, J. J. 1965-07-07. Report on Coal Properties - Saskatchewan Area, Alberta. Report prepared for Pacific Petroleum Ltd., Calgary, Alberta. Outline identified as 5 on GIS plot.
 - David, E. 1979. 1979 Coal Geology Work, Grande Cache, Alberta. Report prepared for Pacific Petroleum Ltd., Calgary, Alberta. Report contains 1:250,000 regional geological map. Outline identified as 6 on GIS plot.
 - McDonald, K. 1981-01. West of 6th Project - Sterne Creek, Grande Cache, Alberta. Geological Survey of Canada. Report. Contains detailed regional geological maps. Scale 1:250,000. Outline identified as 7 on GIS plot.
 - David, E. Pearson and Associates Ltd. Prepared for Union Oil Company of Canada Limited 1982-12. Report on 1982 Program Sterne Creek Project 2. Volume 1. Contains 1:250,000 geological maps C2 and C3 and cross-section (7). Outline identified as 8 on GIS plot.
 - David, E. Pearson and Associates Ltd. Prepared for Union Oil Company of Canada Limited 1982-11. Petrography of Sterne Creek Trench Samples. Outline identified as 9 on GIS plot.
 - David, E. Pearson and Associates Ltd. Prepared for Union Oil Company of Canada Limited 1982-09. Reflectance Data for Sterne Creek Coals. Outline identified as 10 on GIS plot.

* Industry cooperation and support exemplified by sharing of knowledge, unpublished reports and reports in the Alberta Geological Survey.