MAR 20090013: BORDER POTASH

Received date: May 22, 2009

Public release date: Jan 04, 2011

MAY 2 2 2009

20090013

FINAL REPORT

PERMIT TO PRACTICE
Dahrouge Geological Consulting Ltd.
Signature
Date May 22, 2009
PERMIT NUMBER: P 6793
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

1248630 ALBERTA LTD.

2008/2009 POTASH EVALUATION AND SEISMIC ANALYSIS OF THE BORDER POTASH PROPERTY, EAST-CENTRAL ALBERTA

PART B

Metallic and Industrial Minerals Permits
9307010907 and 9307010908

Geographic Coordinates

52°08' N to 52°21' N
110°01' W to 110°15' W

NTS Sheets 73 D/01 and D/08

Owner and Operator:	MAIM Permits 9307010907 and 9307010908 1248630 Alberta Ltd. PO Box 479 Viking, Alberta T0B 4N0
Consultant:	Dahrouge Geological Consulting Ltd. 18, 10509 - 81 Avenue Edmonton, Alberta T6E 1X7
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Date Submitted:	May 22, 2009

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1. SUMMARY

Throughout the course of late 2008 and early 2009, a detailed compilation of available potash data for east-central Alberta was completed, including a literature review and comprehensive analysis of petroleum well information and geophysical logs. Following the compilation of potash data, a regional-scale 2D seismic study of the property was performed in early 2009 to evaluate the continuity of the Prairie Evaporite Formation. In addition, a short field visit was conducted in August 2008 to check the access to and within the property.

During late 2008 and early 2009, expenditures for MAIM Permits 9307010907 and 9307010908 totaled $91,439.86, calculated from the spent amount of $83,127.14, plus the allowable 10 per cent for overhead management fees of $8,312.71.

Based on the combined permit area of 17,780.72 hectares and assessment requirements of $5 per hectare, the required expenditures to keep the entirety of the two permits in good standing are $88,903.60. The balance of expenditures are to be equally divided and assigned to future assessment periods "Years 3 and 4" for the permits.

Expenditures are allocated to MAIM Permits 9307010907 and 9307010908 as follows:

MAIM Permit	Assessment Period	Expiry Date	Required Expenditures*	Assigned Expenditures*
9307010907	Years 1 and 2	01/24/2009	$45,323.40	$45,323.40
	Years 3 and 4	01/24/2011	$90,646.80	$1,268.13
9307010908	Years 1 and 2	01/24/2009	$43,580.20	$43,580.20
	Years 3 and 4	01/24/2011	$87,160.40	$1,268.13
				$91,439.86

2. INTRODUCTION

The site visit, as well as the literature review and analysis of petroleum well information and geophysical logs, was performed by personnel of Dahrouge Geological Consulting Ltd. (Dahrouge) of Edmonton, Alberta. The purpose of the literature review was to identify any historic indications of potash mineralization in East-central Alberta. The purpose of the petroleum well review was to establish the number of deep wells (wells reaching the Prairie Evaporite Formation) previously drilled on/near the Border Potash Property and to provide data on the depth of potentially potash-bearing strata. The comprehensive analysis of geophysical logs (mainly gamma ray - neutron) was performed with the intention of identifying potential potash mineralization within the Prairie Evaporite Formation underlying the property. The 2D Seismic Study was subcontracted to Boyd Petrosearch (Boyd) of Calgary, Alberta. The 2D Seismic Study was completed to determine the presence of any major discontinuities within the Prairie Evaporite Formation. The study will not be discussed in detail in this report; a detailed report from Boyd is provided as an appendix. The work described in this report was conducted between August 2008 and April 2009.

3. GEOGRAPHIC SETTING

3.1 LOCATION AND ACCESS

The Border Potash Property, which consists of MAIM Permits 9307010907 and 9307010908, is located about 250 km southeast of Edmonton, Alberta, near the Alberta - Saskatchewan border (Fig. 3.1). The property can be accessed by two major highways; Alberta Highway 13 provides excellent east-west access, while secondary highway 899 provides access to the western and southern parts of the property (Fig.'s 3.1 & 3.2). There is also a large network of municipal-maintained secondary gravel roads that provide additional year-round access to nearly every part of the property.

3.2 INFRASTRUCTURE

The infrastructure within the property is highly developed, including multiple paved highways, numerous maintained gravel roads, several railroads and a network of power, gas and various other service lines. The area is considered sparsely populated and is highly reliant on petroleum and agriculture industries. There are several villages, hamlets and towns near the property (Fig. 3.2). Provost (pop. 2,072) is the most notable town, as it is within 5 km of the property boundary and provides basic accommodation and supplies. It is the ideal choice for a base of operations for any future exploration of the property.

3.3 TOPOGRAPHY, VEGETATION AND CLIMATE

The physiography of the area is typical of the western Canadian Prairie. It is between 540 and 760 metres elevation above sea level and is located within the Western Plains physiographic region. The area is dominated by grasslands, livestock pasture lands, and agricultural croplands. Vegetation consists primarily of prairie grasses, small bushes, and agricultural crops. Large trees and extensive forests are rare. The climate is temperate with an average temperature ranging between 17.1°C in the summer months to -16.6°C in the winter months. Annual precipitation averages between 350 and 400 mm across the property and snowfall is generally moderate to light. The field season in the area can be considered to extend year round, as drilling can be performed regardless of snowfall or precipitation. Most of the roads at the property are regularly cleared of snow during winter months.

3.4 FIELD OPERATIONS

Due to the nature of the commodity of interest, the only field work conducted on the property was a one-day trip on August 2nd to check the access to and within the property. The visit was conducted by an employee of Dahrouge and consisted of one day of driving to, and exploring access within, the Border Potash Property.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 MAIM PERMITS 9307010907 AND 9307010908

In early 2007, 1248630 Alberta Ltd. acquired MAIM permits 9307010907 and 9307010908, along the Alberta-Saskatchewan border, near the town of Provost, Alberta (Fig.'s 3.1 & 3.2). The permits cover expanses of the Prairie Evaporite Formation located 1000 m or more below surface.

MAIM Permit 9307010907 covers an area of 9064.68 hectares; Permit 9307010908 covers an area of 8716.04 hectares. The total property size is 17,780.72 ha.

The entirety of MAIM permits 9307010907 and 9307010908 will be retained.

4.2 2008 EXPLORATION SUMMARY

During late 2008 and early 2009, Dahrouge, on behalf of 1248630 Alberta Ltd., conducted a detailed review of available literature and petroleum well information and logs on/near the Border

Potash Property (Fig.'s 4.1 & 4.2). In January 2009, Boyd Petrosearch was contracted to complete a 2D Seismic Study of the top of the Prairie Evaporite Formation underlying the property. The purpose of the literature review was to identify any historic indications of potash mineralization in East-central Alberta. The analysis of historic wells and geophysical logs (mainly gamma ray - neutron) were performed with the use of geoLOGIC Systems Ltd. drillhole database and geoSCOUT^{tm} software; the overall purpose was to determine the depth of the Prairie Evaporite Formation underlying the property and to identify any potential potash mineralization within the upper 50-60 metres of the formation (Appendix 2). The purpose of the 2D Seismic Study was to identify the presence of any major geologic or collapse structures that could affect the extent and/or existence of potentially potash-bearing strata. Details on the seismic program are provided in Appendix 3.

4.3 EXPLORATION EXPENDITURES

During late 2008 and early 2009, exploration expenditures totaled $91,439.86. The entirety of MAIM Permits 9307010907 and 9307010908 will be retained.

Expenditures are allocated to MAIM permits 9307010907 and 9307010908 as follows:

MAIM Permit	Assessment Period	Expiry Date	Required Expenditures*	Assigned Expenditures*
9307010907	Years 1 and 2	39836	$45,323.40	$45,323.40
	Years 3 and 4	40566	$90,646.80	$1,268.13
9307010908	Years 1 and 2	39836	$43,580.20	$43,580.20
	Years 3 and 4	40566	$87,160.40	$1,268.13
				$91,439.86

*Based on area of 9064.68 ha for 9307010907 and 8716.04 ha for 9307010908

5. GEOLOGY

5.1 REGIONAL GEOLOGY

The Border Potash Property is located within the Western Canada Sedimentary Basin (WCSB), which is a vast sedimentary basin extending from the southeast corner of Yukon to southern Manitoba, and extending into the northern United States. Sedimentation within the basin occurred from the Paleozoic to the Cenozoic. The Paleozoic sedimentary succession is comprised of shelf-facies, clastic and carbonate rocks resting unconformably on Precambrian crystalline basement. The Lower to Middle Devonian Elk Point Group, which includes carbonates, evaporites, redbeds, and clastics, unconformably overlies either lower Paleozoic or Precambrian basement rocks. Within the Elk Point Group, the Middle Devonian Prairie Evaporite Formation includes near flat-lying sequences of interbedded halite, sylvite, carnallite, and clay, with minor anhydrite and dolomite that can be traced from east-central Alberta to Manitoba, south to Montana and North Dakota.

Potash in eastern Alberta and western Saskatchewan occurs in the Devonian Prairie Evaporite Formation, the uppermost unit in the Elk Point Group of the Western Canada Sedimentary Basin (Table 5.1). The potash usually occurs in the upper 60 m of the formation (Holter, 1969) in four distinct members, separated by salt beds and up to 7 metres thick. The individual beds have not yet been identified in Alberta; in Saskatchewan they are known as, from youngest to oldest, the Patience Lake, Belle Plaine, White Bear and Esterhazy members (Fuzesy, 1982).

TABLE 5.1: STRATIGRAPHIC NOMENCLATURE

Period	Group/Formation	
Cretaceous	Colorado Group	
	Mannville Group	Upper Mannville
		Undifferentiated Channel Sandstones
		Clearwater
		Lower Mannville
		Wabiskaw/Cummings
		Ellerslie/Basal Quartz
Mississippian	Erosional Unconformity	
	Banff	
	Exshaw	
Devonian	Wabamun Group	
	Winterburn Group	Graminia
		Nisku
	Woodbend Group	Ireton
		Leduc
		Duvenay
		Cooking Lake
	Beaverhill Lake Group	Waterways
	Elk Point Group	Prairie Evaporite
		Keg River/Winnipegosis
		Ashern
Ordovician	Red River	
	Winnipeg Group	
Cambrian	Deadwood	
	Basal Sandstone	
Precambrian		

5.2 LOCAL GEOLOGY

The property is directly underlain by thin quaternary glacial deposits, which directly overlie Upper Cretaceous sediments. The geologic unit of interest, the Devonian Prairie Evaporite Formation, ranges in depth from approximately 1,200 to 1,400 metres below surface and does not outcrop at or near the Border Property. A total of three drill holes completed for oil and gas exploration have penetrated the Devonian Prairie Evaporite Formation either within the boundaries of the property, or within a few kilometres thereof. As these wells do not appear to have been analyzed for potash, there is no direct evidence of potash mineralization underlying the property.

6. RESULTS

Review of historic literature pertaining to potash exploration in Alberta has yielded several important discoveries. East-central Alberta (and west-central Saskatchewan) have been previously explored for potash, initially in the mid-1940's and again in the 1960's, primarily by petroleum companies as an additional target during exploration for oil and gas.

Two wells in east-central Alberta, and one in west-central Saskatchewan, were drilled and analyzed for potash in the mid 1940's (Fig.'s 4.1 & 4.2). The most notable, Verbata No. 2, is located approximately 50 km ENE of the property in the province of Saskatchewan and was reported to contain an intercept of approximately 21.64% K_2O equivalent over 11 feet (3.5 metres). An attempt was made in 1951 to develop a potash mine in the area, but the project was eventually abandoned due to flooding and other problems (Fuzesy, 1982).

Within east-central Alberta, two wells of interest were identified. The first, Vermilion No. 15, is located approximately 100 km NNW of the property, near the town of Vermilion, Alberta. This well was reported to contain an intercept of 4 metres of carnallite ($KMgCl_3 \cdot 6H_2O$) and up to 12 metres of a pinkish mineral (possibly sylvite - KCl; Golden, 1965). Potassium grades were reported as high as 10% K_2O, but it has been suggested that poor core handling techniques resulted in significant core loss and therefore these results are likely unreliable. Provost No. 2, located just 8 km west of the property, was also analyzed for potash (Fig. 4.1). Variable occurrences of potassium minerals were reported over a 110 metre interval of Prairie Evaporite Formation with grades up to 4% K_2O. As with Vermilion No. 15, poor core handling techniques were likely a factor and the results are probably unreliable.

Based upon the aforementioned historic drill holes, Hamilton (1971) projected the potash-bearing beds of the Prairie Evaporite Formation into east-central Alberta (Fig. 4.2). In addition, Hamilton and Olson (Geological Atlas of Western Canada Sedimentary Basin, 1994) list the Provost No. 2 intersect as a potash showing.

The analysis of historic drill information yielded important results; only a small number of wells in the area were drilled deep enough to penetrate the Prairie Evaporite (Fig 4.1). By examining the well information for the few deep wells on or near the property, it appears that the depth of the Prairie Evaporite Formation underlying the property ranges from approximately 1200 to 1400 metres.

The comprehensive analysis of historic geophysical well logs, utilizing geoSCOUT^{tm} software, also yielded important results. The three deep wells on or near the property that were identified also had gamma ray - neutron logs available for analysis (Fig. 4.1). The relevant portions of these logs are provided in Appendix 2, including thickness and peak API value interpretations. All three holes show significant gamma ray responses in the upper 10-20 metres of the Prairie Evaporite Formation, which corresponds closely to gamma ray - neutron logs from wells in Saskatchewan (such as Verbata No. 2). When analyzing gamma ray - neutron logs, the neutron log can help identify not only the start of salt strata, but also the presence of impurities. The top of the Prairie Evaporite Formation is characterized by a large increase in the neutron response that continues throughout the salt strata. When examining gamma ray "spikes", the absence of any large correlative inverse spikes in the neutron log suggests the response is the result of a sylvite-bearing bed; inverse spikes in the neutron log may indicate carnallite mineralization, a clay seam, or simply a void. An approximate correlation of 15 API = 1% K_2O is utilized in analyzing gamma ray responses in the well logs; the actual grade and thickness of potash-bearing beds can only be determined through drilling and geochemical sampling. Schlumberger (1974) states:

> "Its [gamma ray log] response, corrected for borehole effect, is practically proportional to the K_2O content, approximately 15 API units per 1% of K_2O."

There are two drill holes present within the Border Potash Property with noticeable gamma ray responses. The first well, PVR Provost 4-18-38-1, shows two very pronounced gamma ray responses near the top of the Prairie Evaporite Formation (the neutron log indicates the formation top to be placed incorrectly). The first shows a gamma ray response of 375 API, which may correspond to a peak value of 25% K_2O over 2.25 metres. The second occurs about 1 metre below the first and has a response of 230 API, which may correspond to a peak value of 15.3% K_2O over 1.75 metres. The second well, Sage et al Provost 11-20-37-1, has a pronounced gamma ray response near the top of the Prairie Evaporite Formation, but unfortunately the absence of an API, or correlative scale, limits the usefulness of the log.

Drill hole Pengrowth Cactus Lake N 7-30-36-28 is also of interest, located approximately 4 km southeast of the Border Potash Property in the province of Saskatchewan. There are two pronounced gamma ray responses in the top 20 metres of the Prairie Evaporite Formation in this well, both without a significant inverse neutron spike. The first, and strongest, gamma ray response occurs in the first 5 metres of the formation; the API value of 255 may correspond to a peak value of 17% K_2O over approximately 2.25 metres. The second response, which occurs 12 metres below the first, reaches 120 API, which may correspond to approximately 8% K_2O over 1.25 metres.

The regional 2D Seismic Study undertaken by Boyd has provided valuable information about the continuity of the Prairie Evaporite Formation. No major faults or collapse features were identified in the study, although there may be some smaller scale features off-line. Details on the methods and results of the study are provided in Appendix 3.

7. CONCLUSIONS

The literature review yielded important information regarding the history of potash exploration near the Border Property. Potash minerals were identified in two historic drill holes in east-central Alberta, although the exact grades and thickness remain unverified. One of the wells, Provost No. 2, is located less than 10 km from the property boundary. Based on these wells, Hamilton (1971) projected the potash bearing beds near Unity, Saskatchewan into east-central Alberta. Hamilton and Olson (1994) believed the Provost No. 2 potash intercept significant enough to classify it as a potash showing.

Analysis of well information has provided an approximate depth of the Prairie Evaporite Formation underlying the property from 1200 to 1400 metres. The depth range would likely be too great for any future conventional underground mining, but might be suitable for solution mining.

The analysis of geophysical logs has provided important supporting evidence of potash-bearing beds underlying the property. Significant gamma ray responses are present in three wells either within, or a few kilometres from, the property boundaries. These responses potentially indicate economic grades of potash ranging from 17-25% K_2O. They are also similar (thickness, peak value, depth interval) to the responses from the assayed potash intercept in Verbata No.2, which supports the API to % K_2O correlation used in this report.

The 2D Seismic Study has suggested that there are no major geologic structures or collapse features affecting the top of the Prairie Evaporite Formation. Although there may be smaller-scale features off-line, this suggests that potentially potash-bearing strata underlying the property are largely continuous.

The next phase of exploration should consist of the drilling of 2-3 holes, each 1500 metres deep, to test the thickness and quality of potentially potash bearing strata. These holes should be located in areas identified by the 2D Seismic Study as being underlain by relatively undisturbed and flat-lying strata. Gamma ray - neutron logs should be completed on the holes as well, focusing specifically on evaporite strata.

8. REFERENCES

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Pearson, W.J. (1963) Salt Deposits in Canada; In Symposium on Salt, Northern Ohio Geological Survey, Cleveland, Ohio, p. 197-239.

Saskatchewan Department of Mineral Resources (1965) Potash in Saskatchewan; 18 p.

9. STATEMENT OF QUALIFICATIONS

I, Jody Dahrouge, residing at 11 Country Lane, Stony Plain, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 18, 10509 - 81 Ave, Edmonton, Alberta, T6E-1X7.
- I am a graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology, 1988 and a Special Certificate (Sp.C.) in Computing Science in 1994.
- I have practiced my profession as a geologist intermittently from 1988 to 1994, and continuously since 1994.
- I am a registered professional geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, member M48123.
- I hereby consent to the copying or reproduction of this Assessment Report following the one-year confidentiality period.
- I am the author of the report entitled "2008/2009 Potash Evaluation and Seismic Analysis of the Border Potash Property, East-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 22nd day of May, 2009.

PROFESSIONAL GEOLOGIST OF ALBERTA
J.R. DAHROUGE

Jody Dahrouge, BSc, PGeol
APEGGA M48123

APPENDIX 1: COST STATEMENT FOR THE 2008 AND 2009 EXPLORATION OF THE BORDER (PROVOST) POTASH PROJECT

a) Personnel		$ 25,637.85
b) Food and Accommodation		$ 57.75
c) Transportation		$ 427.90
d) Instrument and Software Rental(s)		$ 1,683.00
e) Geophysical		$ 55,059.89
f) Analyses	n/a	
h) Other		$ 260.75
Total		$ 83,127.14
Administration (10%)		$ 8,312.71
Total + Administration		**$ 91,439.85**

C

LEGEND

- Provincial capital
- Other populated places
- Trans-Canada Highway
- Major road
- International boundary
- Provincial boundary

Scale

km 75 0 75 150 225 km

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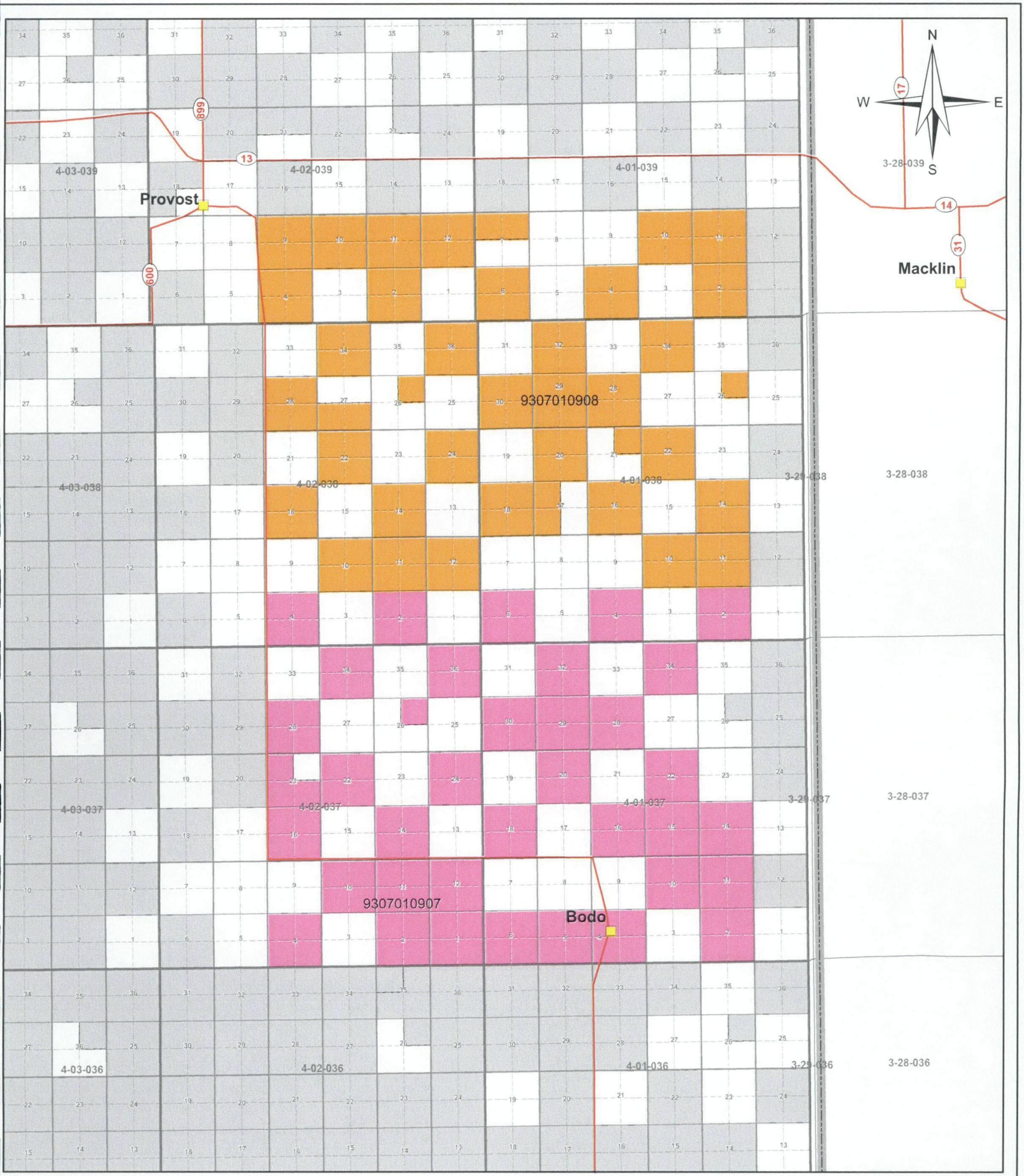
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

BORDER POTASH PROPERTY,
EAST-CENTRAL ALBERTA

Fig. 3.1
Location Map

PK 2009.05



Legend

Town/village

Major Highways

AB-SK Border

Land Holdings

1248630 Alberta Ltd. (17,780.72 ha)

9307010907 (9064.68 ha)

9307010908 (8716.04 ha)

Other permits

Kilometres

0 2 4 6 8

1:150,000

Coordinate System: UTM NAD83, Zone 12

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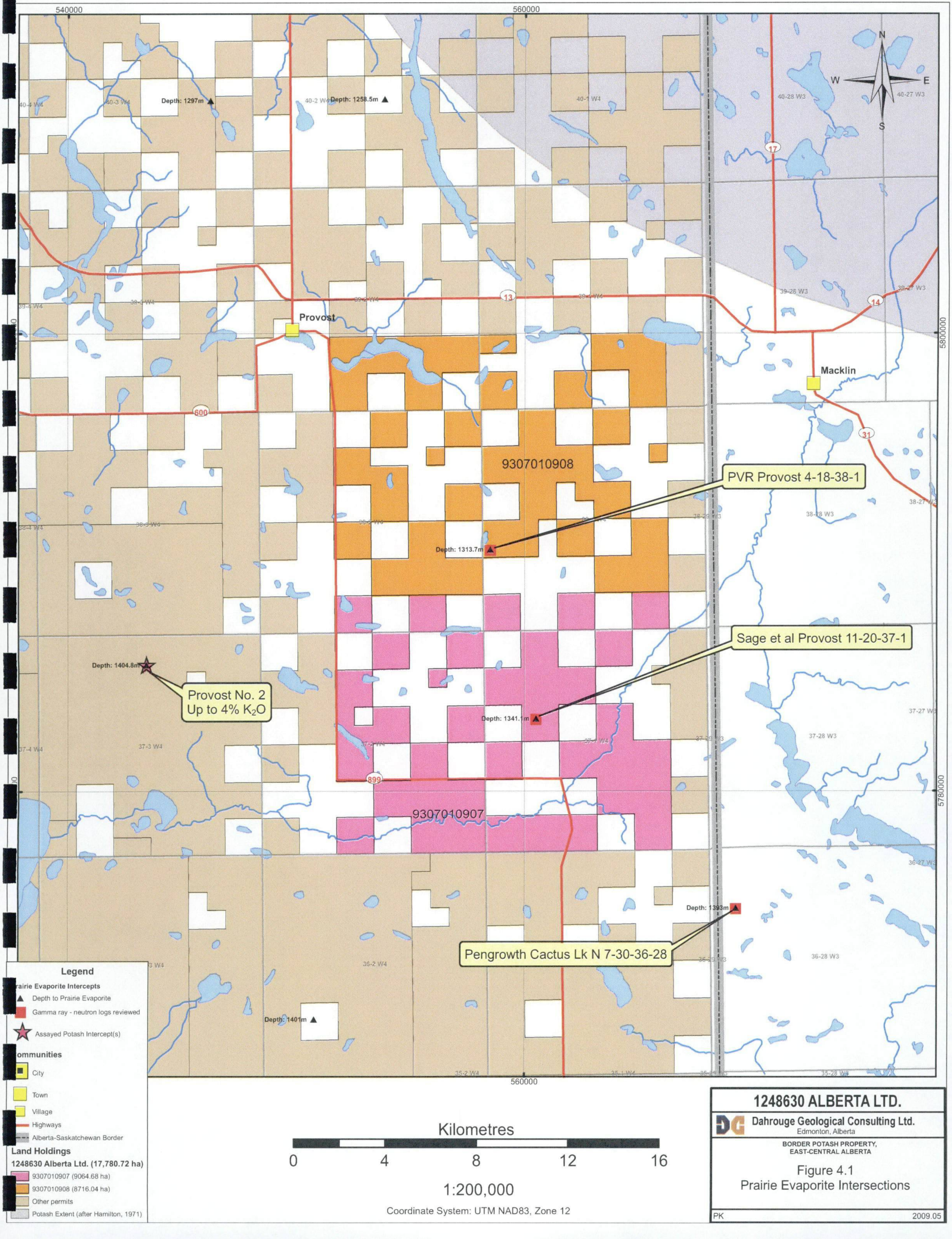
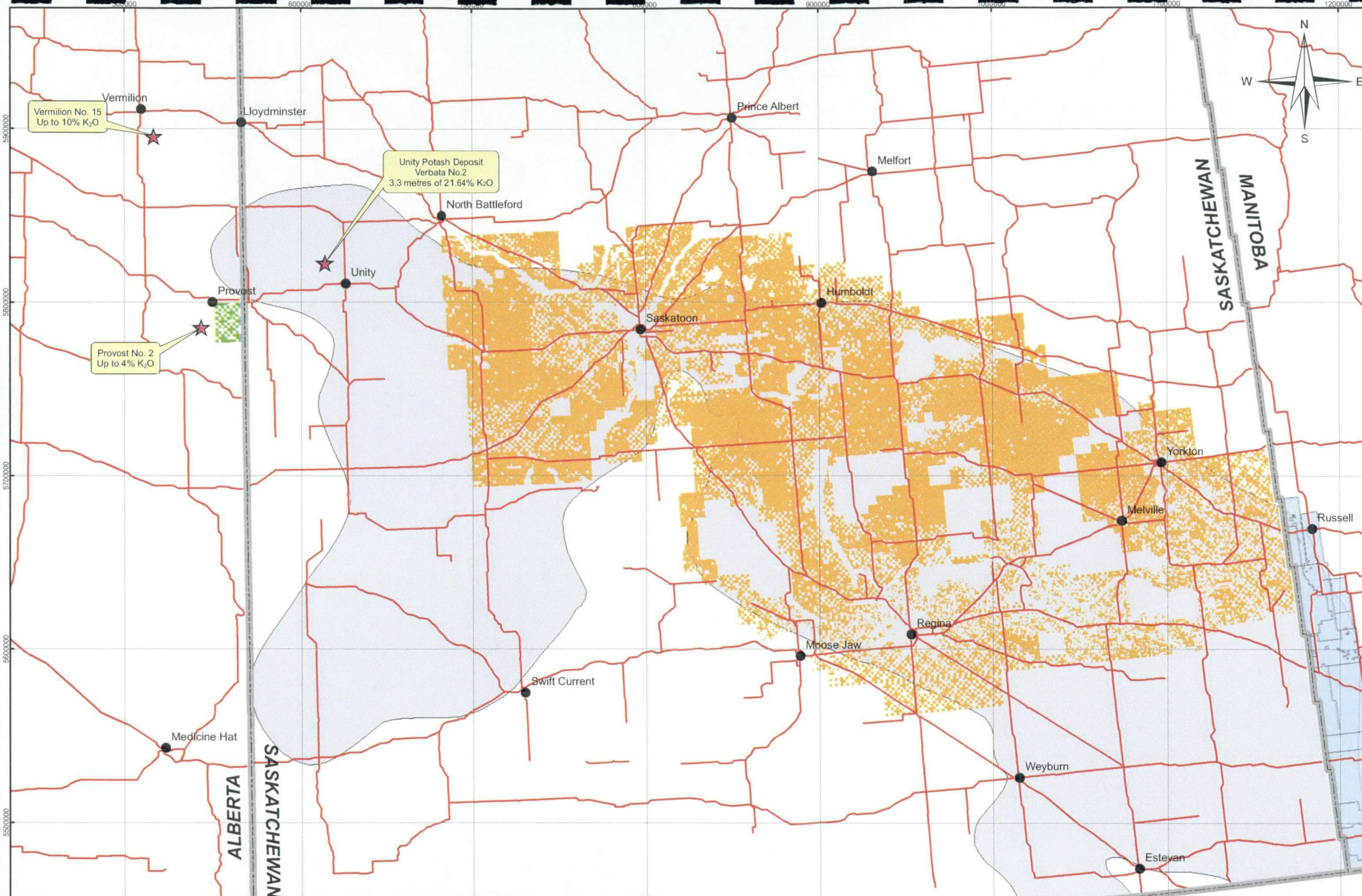
Edmonton, Alberta

BORDER POTASH PROPERTY,
EAST-CENTRAL ALBERTA

Fig. 3.2
Property Map

PK 2009.05


540000
560000
Depth: 1297m
Depth: 1258.5m
40-4 W4
40-3 W4
40-2 W4
40-1 W4
40-28 W3
40-27 W3
N
W
E
S
17
13
14
39-4 W4
39-3 W4
39-2 W4
39-1 W4
39-28 W3
39-27 W3
Provost
5800000
Macklin
600
31
9307010908
PVR Provost 4-18-38-1
38-4 W4
38-3 W4
38-2 W4
38-1 W4
38-28 W3
38-27 W3
Depth: 1313.7m
Sage et al Provost 11-20-37-1
Depth: 1404.8m
Provost No. 2
Up to 4% K_2O
Depth: 1341.1m
37-4 W4
37-3 W4
37-2 W4
37-1 W4
37-28 W3
37-27 W3
899
5780000
9307010907
36-27 W3
Depth: 1393m
Pengrowth Cactus Lk N 7-30-36-28
36-2 W4
36-28 W3
Depth: 1401m
35-2 W4
35-1 W4
35-28 W3
Legend
Prairie Evaporite Intercepts
Depth to Prairie Evaporite
Gamma ray - neutron logs reviewed
Assayed Potash Intercept(s)
Communities
City
Town
Village
Highways
Alberta-Saskatchewan Border
Land Holdings
1248630 Alberta Ltd. (17,780.72 ha)
9307010907 (9064.68 ha)
9307010908 (8716.04 ha)
Other permits
Potash Extent (after Hamilton, 1971)
Kilometres
0 4 8 12 16
1:200,000
Coordinate System: UTM NAD83, Zone 12
1248630 ALBERTA LTD.
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta
BORDER POTASH PROPERTY, EAST-CENTRAL ALBERTA
Figure 4.1
Prairie Evaporite Intersections
PK
2009.05



Legend

- Assayed Potash Intercept(s)
- Important city/town
- Major Highway
- Potash Extent (after Hamilton, 1971)
- MB Potash Dispositions
- SK Potash Dispositions
- Border Potash Property

Km

0 20 40 80 120 160

1:3,000,000

Coordinate System: UTM NAD83, Zone 12

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Edmonton, Alberta

BORDER POTASH PROPERTY, EAST-CENTRAL ALBERTA

Figure 4.2
Extent of Potash in Western Canada
after Hamilton (1971)

PK 2009.05

APPENDIX 2:

WELL LOGS

C6

100/04-18-038-01W4/00

Ø

1994/07/26

Schlumberger

COMPENSATED NEUTRON LITHO-DENSITY

COMPANY	RENAISSANCE ENERGY LTD.
WELL	RENAISSANCE PROVOST 4-18-38-1
FIELD	PROVOST
PROVINCE	ALBERTA

OPEN

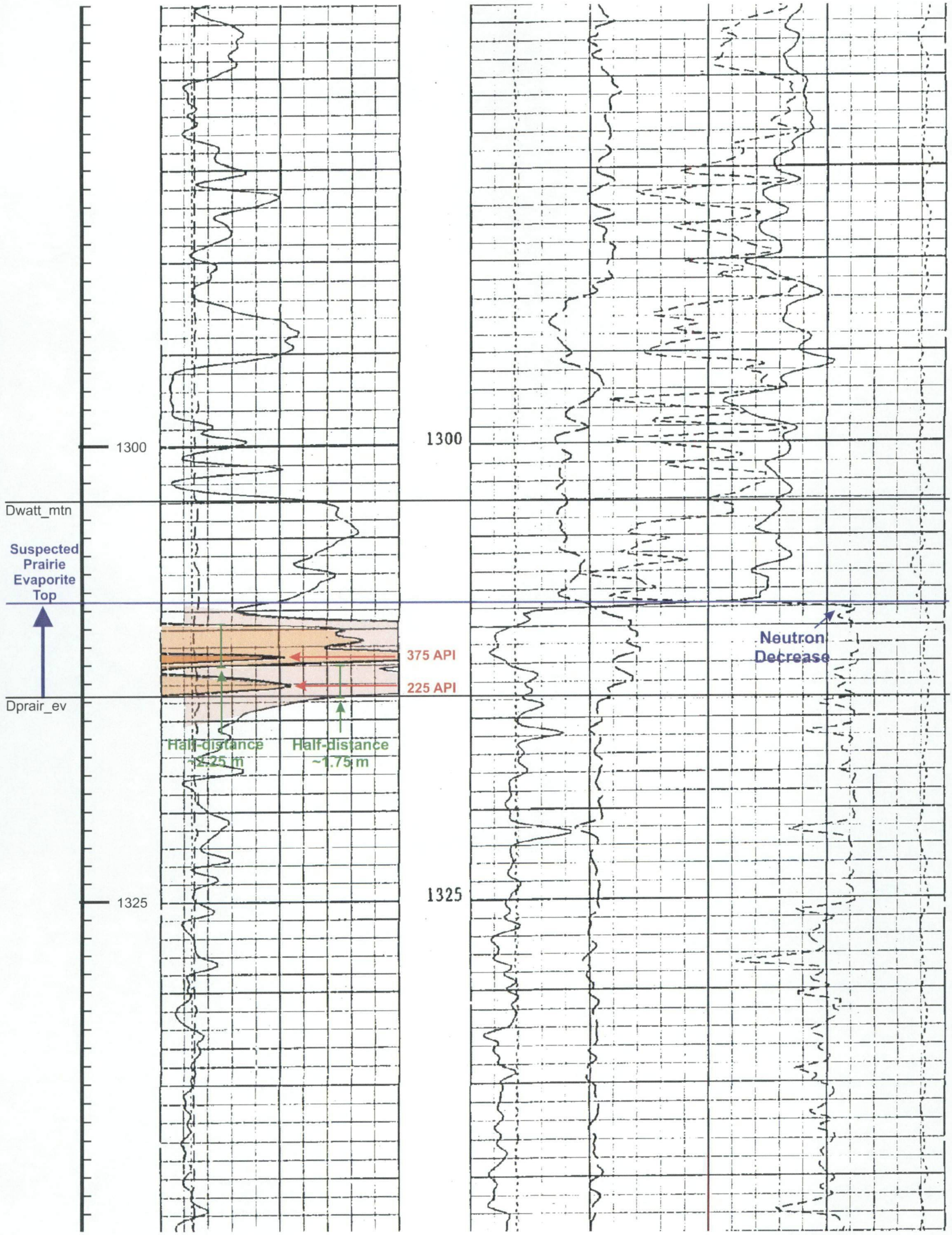
622

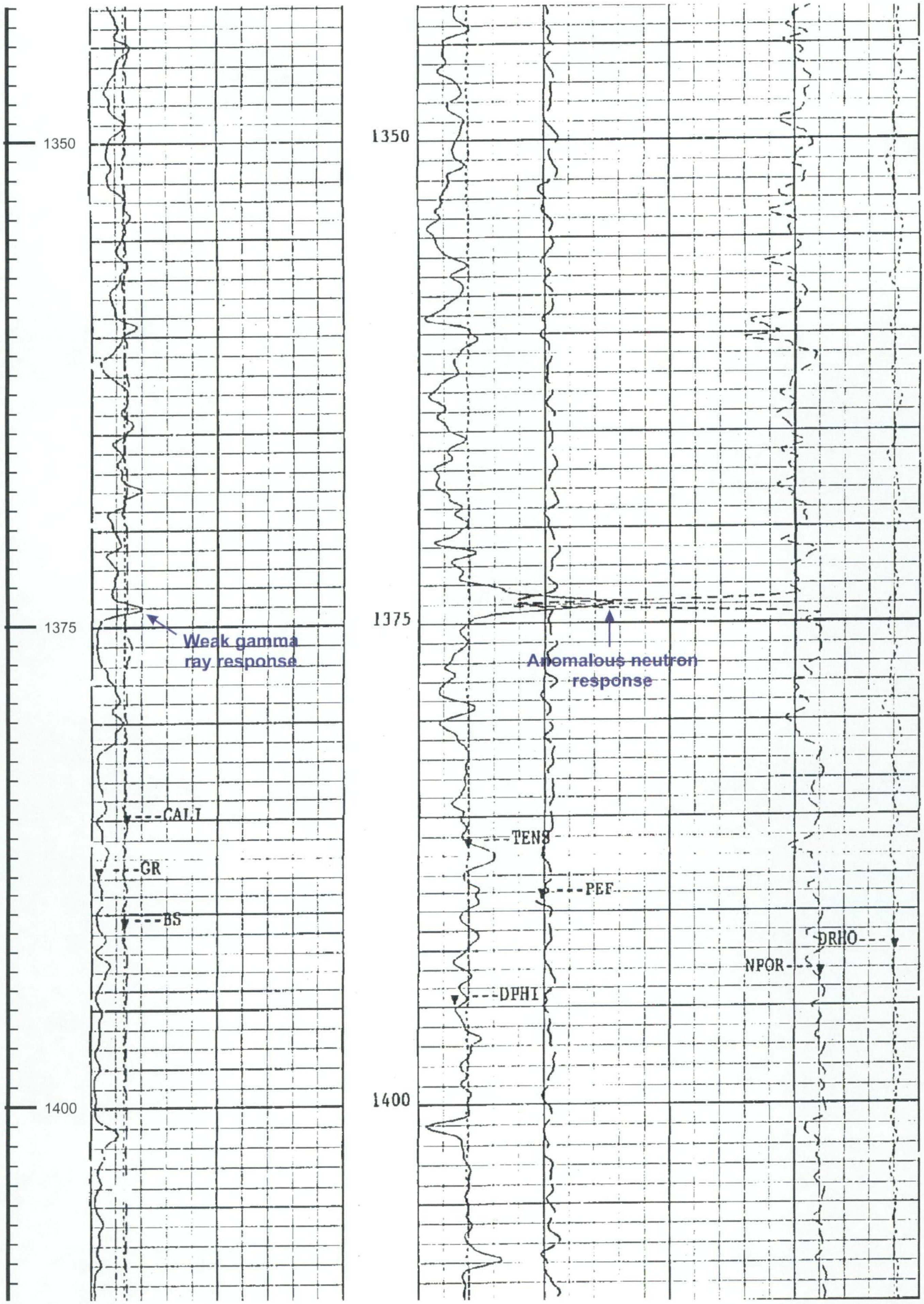
PROVINCE ALBERTA
FIELD PROVOST
LOCATION 04-18-038-01W4
WELL RENAISSANCE PROVOST 4-18-38-1
COMPANY RENAISSANCE ENERGY LTD.

LOCATION	04-18-038-01W4	314.0 M EAST		Other Services:
	100/04-18-038-01W4/00	339.5 M NORTH		PHASOR - SFL BHC-SONIC CORRING TOOL
API SERIAL NO.		SECT.	TWP.	RANGE
0168670		04-18	038	01W4

Permanent Datum	GROUND LEVEL	Elev.	691.9 M		Elev.: K.B.696.2 M
Log Measured From	KELLY BUSHING	4.3 M	above Perm. Datum		D.F.695.9 M
Drilling Measured From	KELLY BUSHING				G.L.691.9 M

Date	02-AUG-1994				
Run No.	TWO				
Depth Driller	1585.0 M				
Depth Logger (Schl.)	1581.2 M				
Btm. Log Interval	1570.8 M				
Top Log Interval	837.4 M				
Casing-Driller	177.8 MM @ 838.0 M		@		@
Casing-Logger	837.4 M				
Bit Size	159 MM @		@		@
Type Fluid in Hole	DISSOLUTE				
Dens. / Visc.	550.0 K/M3	40.0 S			
pH / Fld. Loss					
Source of Sample	FLOWLINE				
Rm @ Meas. Temp.	@		@		
Rmf @ Meas. Temp.	@		@		
Rmc @ Meas. Temp.	@		@		
Source: Rmf / Rmc	MEASURED	CALCULATED			
Rm @ BHT	@ 41.0 DEGC		@		
TIME Circulation Ended	18:00 02-AUG-1994				
TIME Logger on Bottom	22:30 02-AUG-1994				
Max. Rec. Temp.	41.0 DEGC				
Equip. / Location	8390	WAINWRIGHT ES			
Recorded By	JODY SMITH				
Witnessed By	BILL EDWARDS				


1300
Dwatt_mtn
Suspected Prairie Evaporite Top
Dprair_ev
375 API
225 API
Half-distance ~2.25 m
Half-distance ~1.75 m
1325
1300
Neutron Decrease
1325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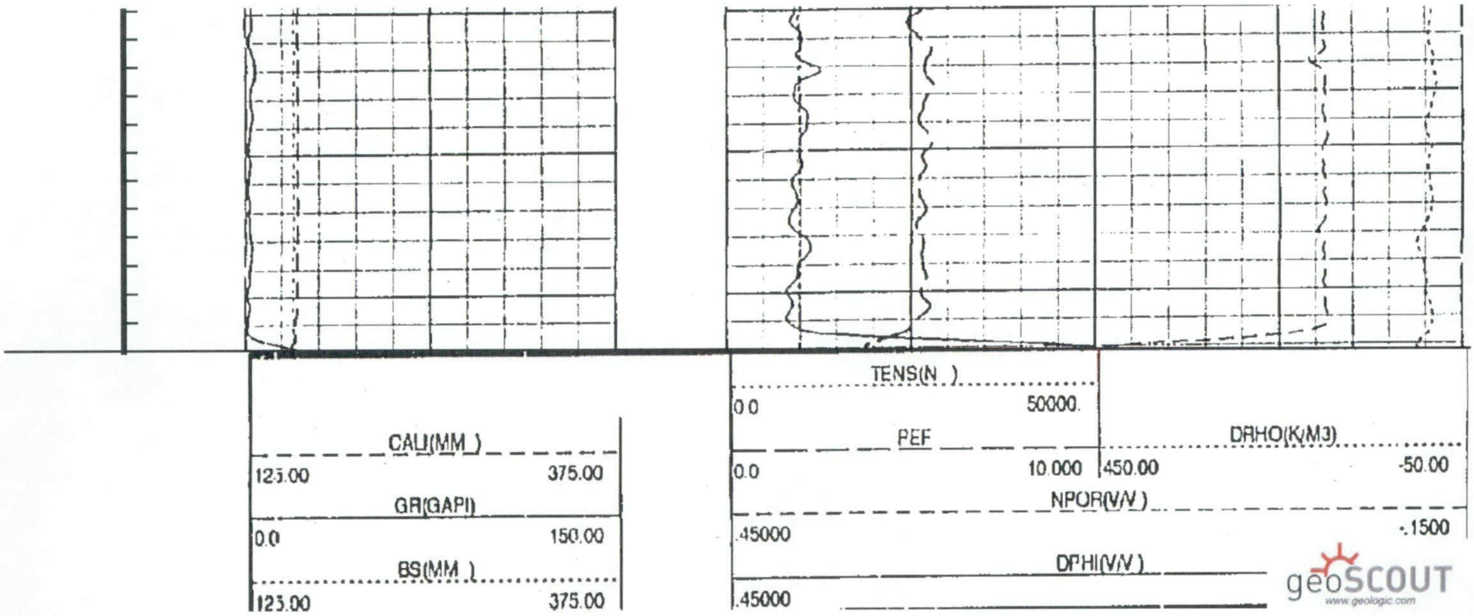
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GR(GAPI)
NPOR(V/V)
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BS(MM)
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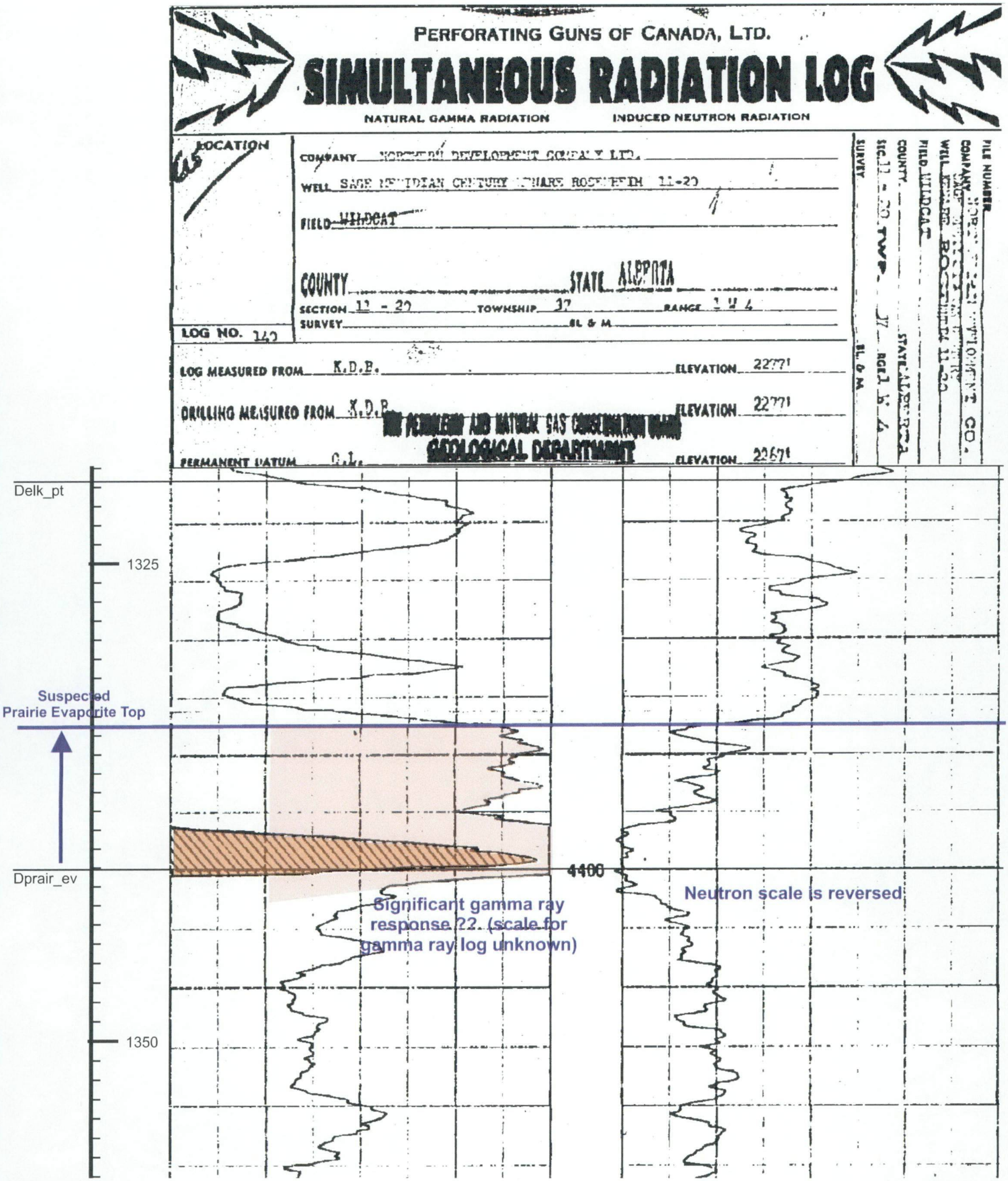

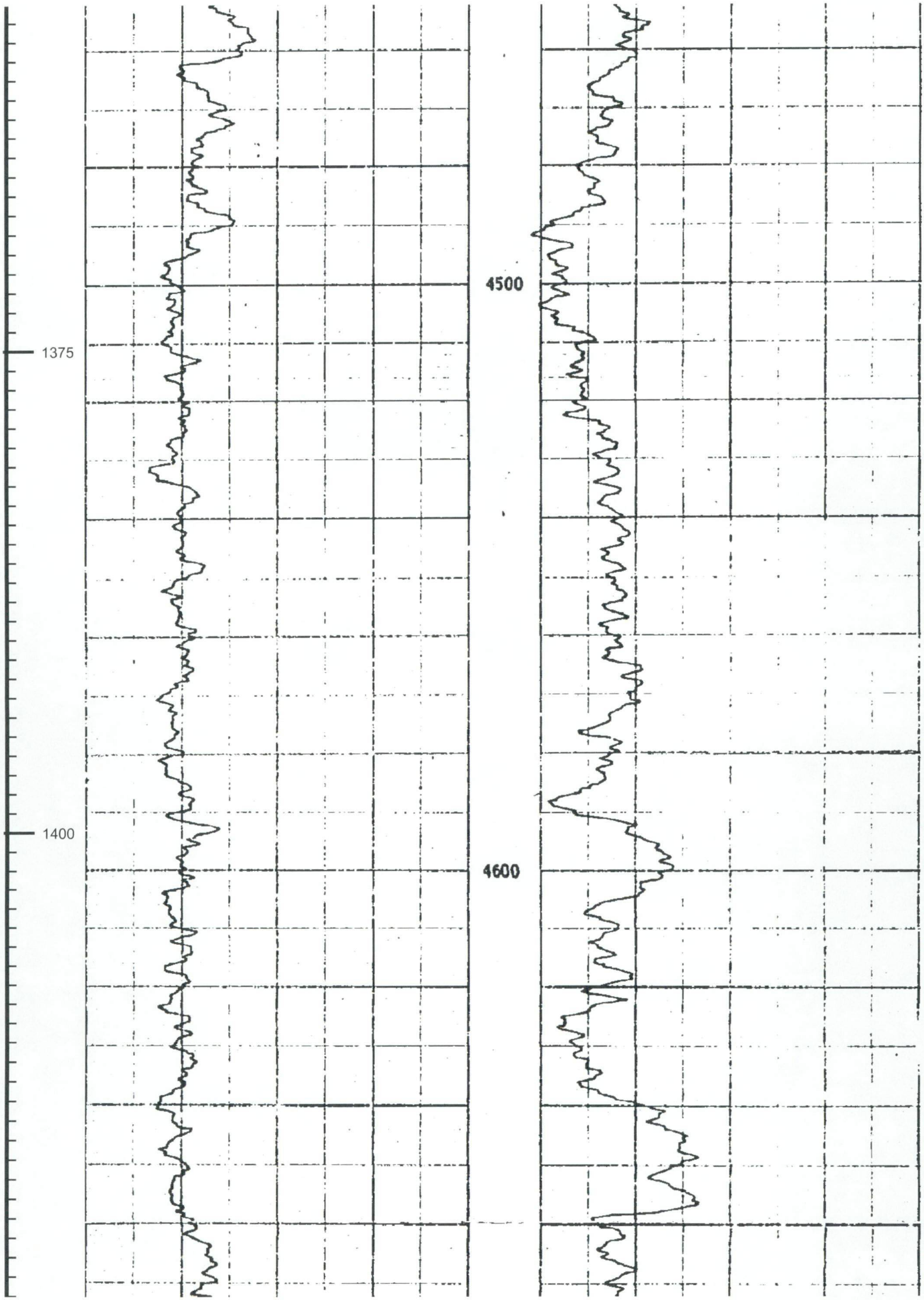
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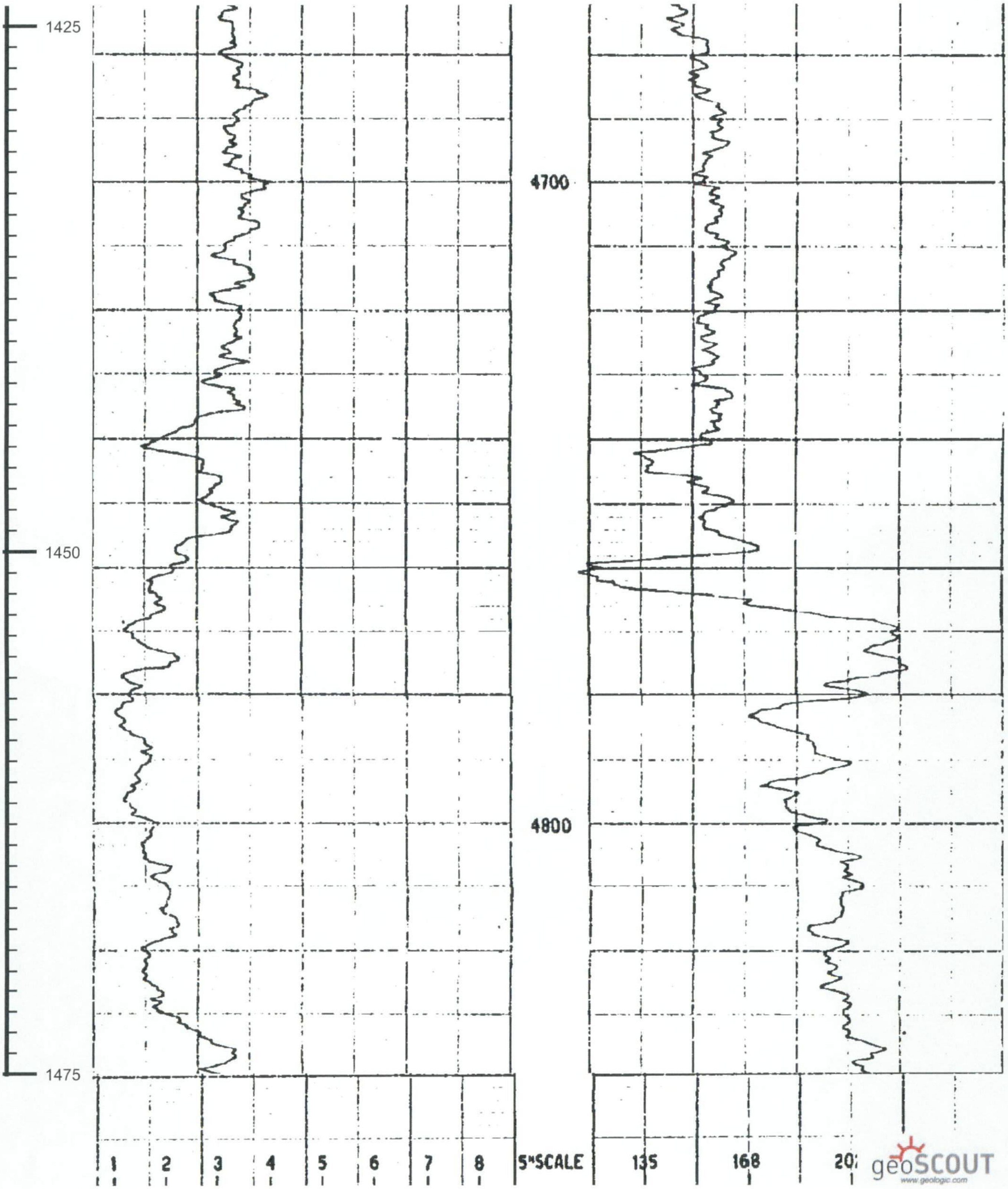

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www.geologic.com

121/07-30-036-28W3/00 (8010)

1997/03/15

COMPUTALOG — CS400

SPECTRAL PE DENSITY
COMPENSATED NEUTRON
GAMMA RAY

PROVINCE SASKATCHEWAN
FIELD CACTUS LAKE
WELL MURPHY CCTS LK N 7-30-36-28W3
COMPANY MURPHY OIL COMPANY LIMITED

COMPANY	MURPHY OIL COMPANY LIMITED
WELL	MURPHY CCTS LK N 7-30-36-28
FIELD	CACTUS LAKE
PROVINCE	SASKATCHEWAN

LSD 07 Sec. 30 Twp. 36 Rge. 28W3
Perm. Datum Ground Level Elev. 737.3
Log measured from K.B. , 5.0 m above Permanent Datum.
UWI [redacted]07-30-036-28W3/00
Licence [redacted]

Other Services: STI/SP

ELEV. K.B. 742.3
G.L. 737.3
CBF -------

Date	MARCH 18, 1997									
Run No.	ONE									
Bot. Driller	903.0									
Bot. Logger	903.5									
First Reading	893.8									
Last Reading	303.5									
Meters Meas.	590.3									
Csg. Driller	304.0									
Csg. Logger	303.5			244.5mm @ 48.1kg/m						
Bit Size	222mm									
Fluid Type	GEL CHEMICAL									
Dens. | Visc.	1090	40								
pH | Fluid Loss	9.0	18.5								
Sample Source	Flowline									
Rm	2.1	@ 14	°C	2.0	@ 15	°C		@	°C	
Rmf	1.9	@ 16	°C		@	°C		@	°C	
Rmc	1.4	@ 15	°C		@	°C		@	°C	
Rm @ BHT	1.4	@ 31	°C	1.4	@ 31	°C		@	°C	
Max Rec. Temp	31°C									
Spacing	N/A									
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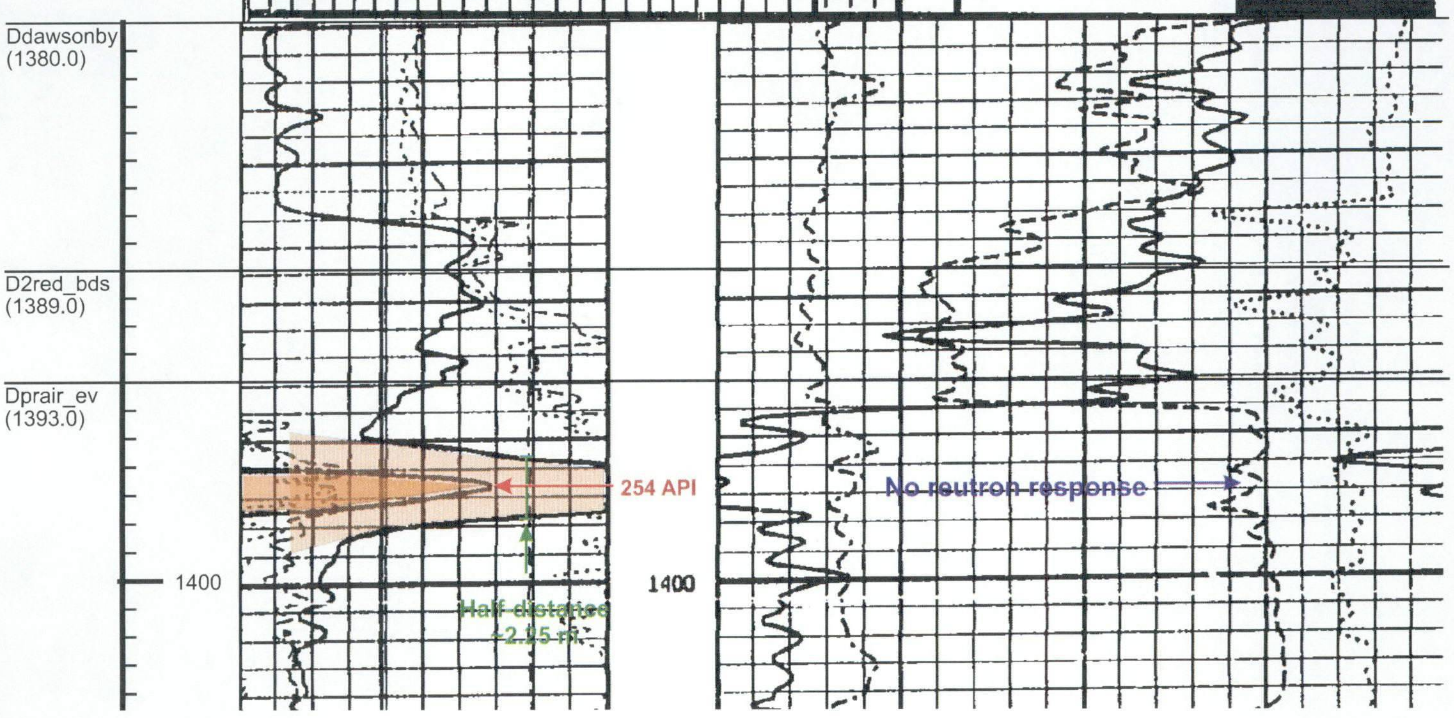
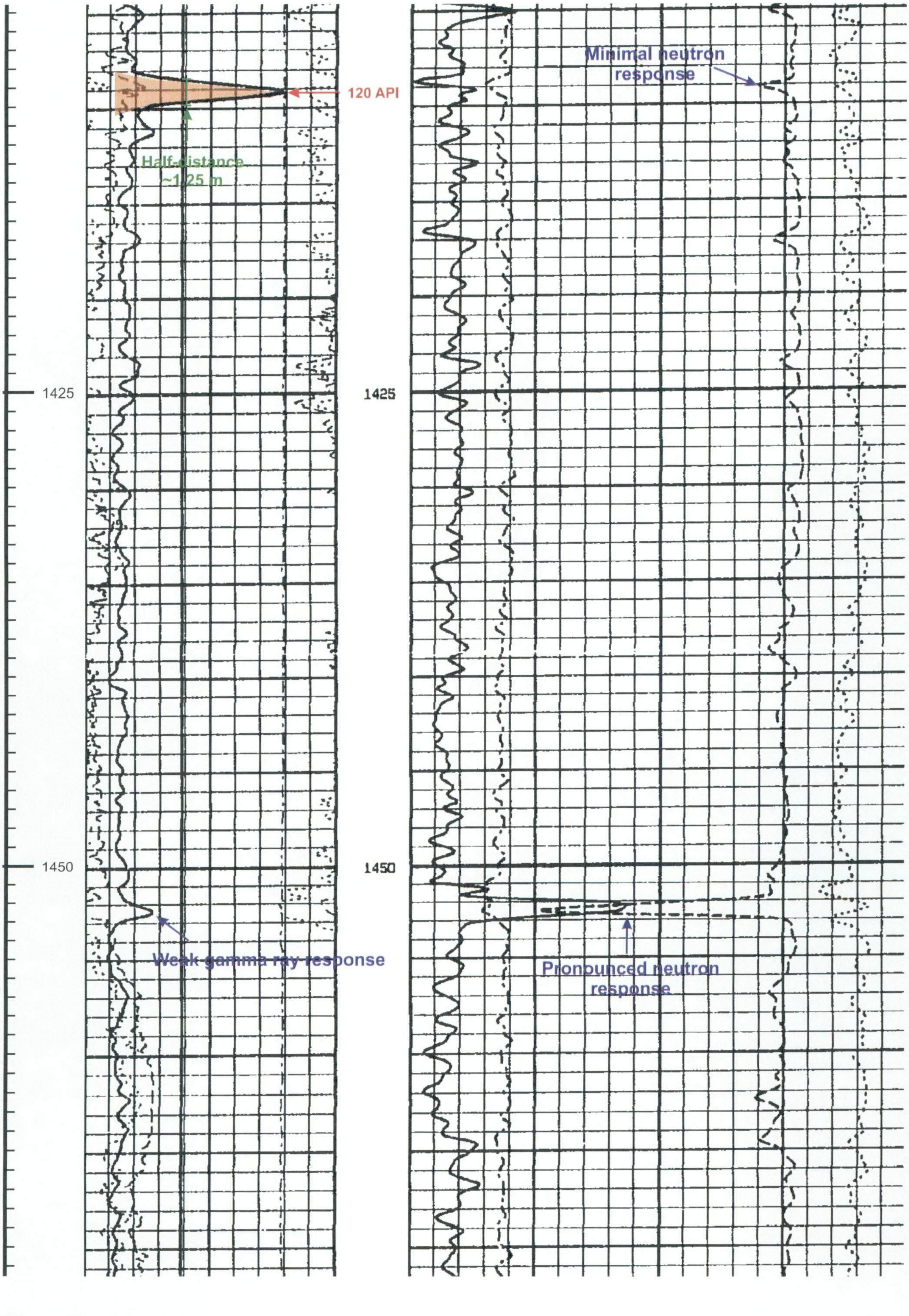
Recorded By	LAMMERS									
Witnessed By	PEZZACK									

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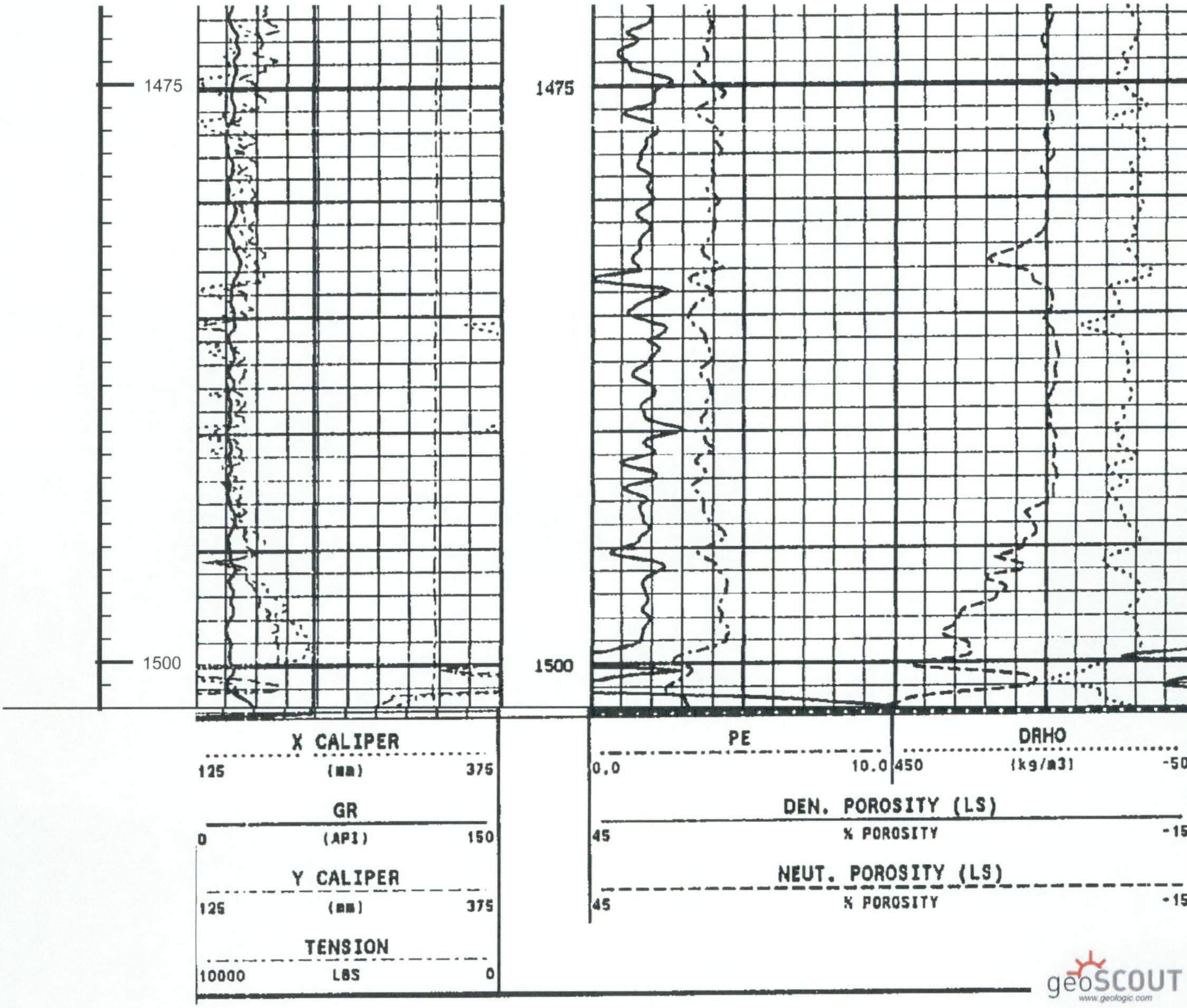
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GR
0 (API) 150
Y CALIPER
125 (mm) 375
TENSION
10000 LBS 0
PE
0.0 10.0
DRHO
450 (kg/m3) -50
DEN. POROSITY (LS)
45 % POROSITY -15
NEUT. POROSITY (LS)
45 % POROSITY -15
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APPENDIX 3:

2009 PROVOST 2D
FINAL INTERPRETATION REPORT

Boyd | PetroSearch

2009 Provost 2D
Final Interpretation Report

Provost Area, Alberta

Prepared for:

1248630 Alberta Ltd.
PO Box 479
Viking, AB T0B 4N0

Prepared by:

R. (Dick) Willott, P.Geoph.
Roger Edgecombe, P.Geo., P.Geoph.

Boyd PetroSearch
1200, 800 – 6th Ave. SW
Calgary, AB T2P 3G3

August 4, 2009

Project 20091020

Executive Summary

As part of a subsurface investigation for the development of a future mine site, 1248630 Alberta Ltd. purchased approximately 63.8 kilometres of two dimensional (2D) seismic data in the area of Provost, Alberta. The primary objective of the project was to extend the geological knowledge in an area where previous information was spatially limited, specifically with the intent of delineating the western boundary of the Prairie Evaporite sequence. The 2D seismic data provides subsurface information that facilitates the assessment of geologic conditions for potential future mining operations. Maps created from the 2D data will be used to assist mine planners in assessing potash potential in this area, direct future drilling programs and may also be used for delineating future seismic operations.

The 2009 Provost 2D seismic data were recorded between October 1982 and October 1983 within a portion of Townships 37-39, Ranges 1-2, West of the 4th Meridian. The lines were acquired with dynamite energy source, using varying source intervals and varying receiver intervals. These source and receiver intervals, combined with 96 live channels, produced 6 - 8 fold data.

Overall, data quality in the Provost area is fair to good and consistent with the era it was acquired in. The data were reprocessed by Sensor Geophysical in April 2009, has usable frequencies in excess of 90 Hz, and provides sufficient resolution for the objectives of the project.

In general, the stratigraphy in the Provost area dips regionally from northeast to southwest. The Prairie Evaporite sequence was found to vary in thickness very little, generally maintaining a thickness between 106 and 112 metres.

The Davidson Salt member of the Souris River formation is important in the Saskatchewan part of the Western Canada Sedimentary Basin, but is not present in this report area.

The Prairie Evaporite horizon appears to be mostly stable with one possible exception. Line 83-2235, the north-south tie line, encountered one area of disturbed Prairie Evaporite which might be indicative of an off-line collapse. The variance identified on this line, however, is more likely attributable to seismic noise. Off-line collapses are speculative in nature because there is no way of knowing their position or size based on 2D data. They may actual exist on either side of a 2D line, since there is no way to determine their true origin. Further 2D and/or 3D delineation is required before the full effects of off-line collapse features can be determined.

No Winnipegosis mounds are identified throughout the dataset. The presence of these mounds does not directly influence mining; however, historically they have had an effect on mine elevations and ore grade. In areas where the subsurface structure varies rapidly, as observed near the edges of Winnipegosis mounds, there exists an increased probability of potash leaching and elevation changes at the mining level. The leaching is thought to be associated with fracturing at the inflection point of dipping stratigraphy and the ensuing vertical migration of fluid. Seismic cannot currently delineate potash ore grade anomalies.

Further geological/geophysical interpretation of the area is required, both with surface drilling and additional 2D and/or 3D data acquisition. Future programs would be used to locate anomalies that may not have been observed within the existing 2D dataset, and to direct drilling programs.

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A) INTRODUCTION

Over the last decade, the surface seismic method has gained widespread recognition in the potash industry; both as a valuable mine planning tool and as an analytical tool for anomalous underground encounters at the mining level. Today, problems such as analysis of site-specific solution collapse anomalies, void space mapping, and brine inflow site identification are being solved through the use of surface seismic investigations.

Historically, the seismic method was first employed in the potash industry in Canada during the 1950's and 1960's. Despite slow acceptance, the potash industry began to recognize the seismic method as a useful tool. By incorporating regional two dimensional (2D) studies over large areas, mine planning progressed from simple geological extrapolation between test holes to more detailed evaluation of the subsurface. These initial 2D programs allowed for the identification and mapping of regional collapses as well as larger Winnipegosis mound features.

As the demand for seismic increased, the acceptance of the seismic method's ability to answer questions about the subsurface grew and, in turn, the ability of the seismic method to resolve smaller and smaller features evolved. From the initial regional density of two mile grids to seismic lines every 400 metres, the two dimensional seismic method evolved to be used for the identification of smaller and smaller features. In the mid 1980's, the three dimensional (3D) seismic method was introduced and the ability to create fine detailed, spatially correct images of the subsurface gained popularity. Today, five to seven 3D seismic surveys are acquired each year for potash mines in Canada.

The recognition of the on-going potential of seismic to contribute to the success of a mining operation by earth scientists and mining engineers has driven the continual evolution of the method. Today, the seismic method is used in a considerable variety of applications in the potash industry, some proven by successes and some in the research and development stage.

This report presents the results of a data evaluation completed by Boyd PetroSearch for 1248630 Alberta Ltd. As illustrated in Figure 1, a total of six 2D lines were purchased through Divestco as a means of evaluating the Prairie Evaporite salt sequence as it extends into Alberta. These lines were originally acquired between 1982 and 1983 with receiver intervals ranging from 25 m to 33.5 m and source intervals from 150 m to 268 m, recording 96 traces. The data were provided to Boyd PetroSearch, which undertook to evaluate, reprocess and interpret them. The data were reprocessed in April 2009 by Sensor Geophysical.

The primary goal of this project was to contribute to the subsurface knowledge in an area where geological information was spatially limited to existing well control. The Provost 2D data provides information that facilitates the assessment of subsurface geologic conditions in order to direct future drilling programs and to determine whether future mining operations may be developed in the area.

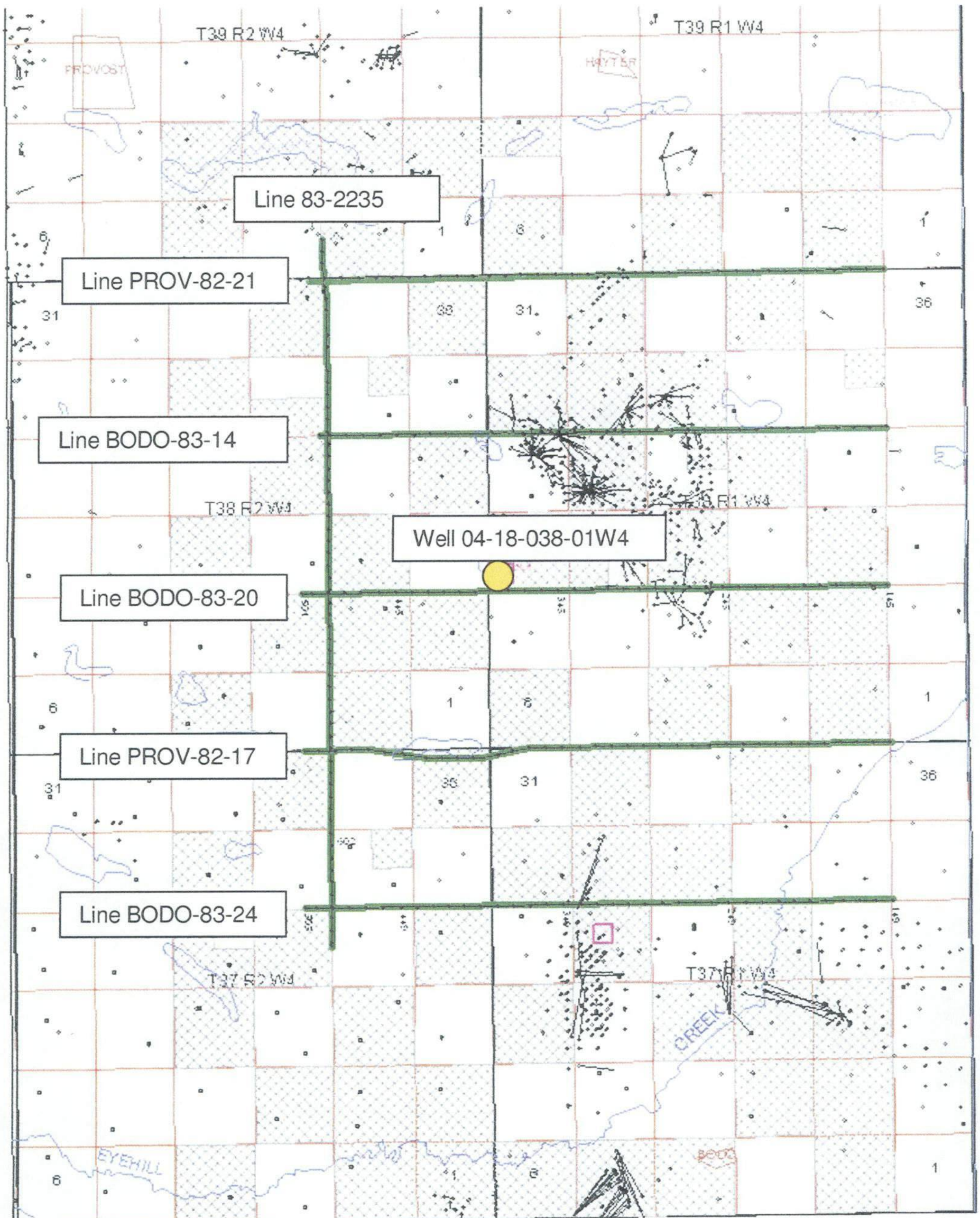

FIGURE 1: MAP ILLUSTRATING THE LOCATION OF THE WELLS AND REPROCESSED LINES FOR THE 2009 PROVOST 2D PROJECT IN RELATION TO LEASE BOUNDARIES.

B) POTASH INDUSTRY SEISMIC EXPERIENCE

Boyd PetroSearch is qualified to respond and perform the services outlined. Boyd PetroSearch (BPS) has been involved with seismic acquisition and interpretation since 1977. Specifically BPS has been involved with potash mine development, salt mine development and gas and chemical storage facilities since 1984. BPS has conducted similar potash projects for Potash Corporation of Saskatchewan, International Minerals Corporation, Mosaic Potash and Agrium Potash.

Boyd PetroSearch has been the primary seismic consulting firm for all operators in the Canadian potash industry since 1986. As the preferred seismic technology services provider for Potash Corporation of Saskatchewan, Mosaic Potash and Agrium Potash, BPS has an unprecedented understanding of the Prairie Evaporite geological section gleaned from thousands of kilometres of 2D and hundreds of square kilometres of 3D seismic in the vicinity of Saskatoon and Esterhazy, Saskatchewan.

During this time BPS has undertaken in excess of 70 projects at 13 different mine sites. Mining depths on these projects have ranged from over 1200 meters too less than 450 meters. Geological conditions have included both horizontally layered Western Canadian sites and highly structured sites in Canada's Maritime Provinces. Projects have included high priority, fast track seismic imaging to resolve critical, time sensitive, operational concerns. Re-evaluating seismic interpretations subsequent to mining operations has helped our clients 'calibrate' seismic signatures to actual mined geology.

Projects typically involve all facets of seismic exploration: survey design, acquisition, processing, interpretation, reporting and final presentation. For each mine site, all available seismic data (current and historic) is maintained on-line in a single interpretation project for reference when mine operations requires immediate information. Final reports and maps are delivered in hard copy and digital formats.

B-1) Geology

Alberta - Manitoba potash deposits exist in near horizontal beds at the top of a thick sequence of halite and anhydrite known as the Prairie Evaporite Formation. The Prairie Evaporite Formation varies between 150 and 200 metres in thickness and is underlain by limestones of the Winnipegosis Formation and overlain by limestones of the Dawson Bay Formation (Fig. 2).

Within any mining area there is the possibility of delineating carbonate. The mounds can rise to half the full height of the Prairie Evaporite Formation and are capped by a bed of anhydrite and dolomite, known as the Shell Lake Member. The occurrences of mounds are important to the mine engineers for three reasons: 1) there are often poor ground conditions coincident with the mound edge, 2) there are occasional salt anomalies due to solutioning and 3) there are typically elevation changes at the mining level.

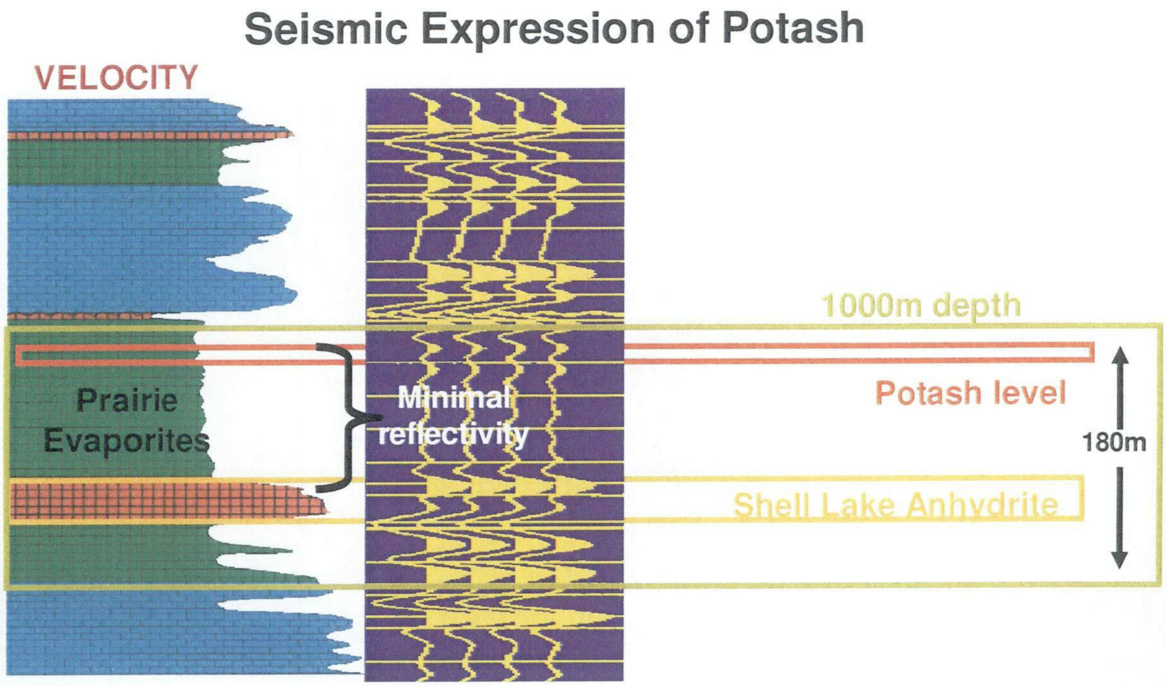

FIGURE 2: SCHEMATIC DIAGRAM ILLUSTRATING THE RELATIONSHIP BETWEEN GEOLOGY AND SEISMIC REFELECTIVITY.

B-2) Seismic Investigation Techniques

The seismic technique involves generating a wave of energy which is transmitted downward through the earth. Seismic energy is generated by small dynamite charges placed in shallow (<10m) auger holes, mechanical weight drop, or vibroseis sources. This energy is reflected upward by many rock boundaries in the subsurface, detected by sophisticated receiving devices on the surface and recorded on magnetic tape. The recorded data is processed and assembled for interpretation. The geophysicist then interprets the processed seismic data and formulates a picture of the subsurface.

The interpretation of reflection seismic data is facilitated through the use of synthetic seismograms generated from down hole sonic measurements obtained from nearby drill holes. Comparing the computer generated synthetic seismograms to the time based seismic sections allows for the identification of key geological horizons and/or layers (Fig. 2).

At the present time it is not possible to directly detect potash ore using surface seismic surveys. This is due to the similar acoustic properties in the potash ore to the surrounding salt. The application of seismic to potash mining has been primarily to map the characteristics of surrounding, seismically visible, strata and infer any changes of these strata to the mining level.

There are several methods of seismic acquisition which can be utilized in the mining industry however the two predominant techniques are the 2D and 3D seismic methods. Both of these techniques have associated strengths and weaknesses, however, the primary difference lies in the lateral spatial resolution and the cost of acquisition.

B-3) Two-Dimensional Seismic Acquisition

Two-dimensional seismic data consists of a straight-line profile, which characterizes the subsurface as a vertical plane directly beneath the line. Data is acquired as a straight line with little flexibility for bends or gaps in the line. Uninterrupted lineal surface access is important for good data, (i.e. there should be as few gaps in the line for buildings, water wells, lakes etc. as possible). Geological features that are off the line of the profile will generally not be observed, however, in areas with structurally complex geology, 2D seismic will image off line features. These artefacts are commonly referred to as 'side-swipe' features or 'off line effects'. Side swipe, even when recognized, can have adverse affects on mapping because measurements made from the seismic data must be posted at the data collection point. There is no evidence from the seismic data to determine which side of the 2D line the effect came from.

B-4) Three-Dimensional Seismic Acquisition

Three-dimensional seismic data is represented as a volume in which information about the subsurface is contained in all directions. All geological features within the resolution of the seismic tool will be observed. Data is acquired as a net of orthogonal source and receiver lines. There is great flexibility in the location of source and receiver points. Continual surface access is not required for good data, although at a minimum, access must be obtained for the recording cable.

B-5) Concepts and Methodology

Boyd PetroSearch uses a standardized procedure for the project management and interpretation and works continually with the client representatives to optimize these procedures.

1) Project Design

In conjunction and cooperation with the Client, BPS will:

- Determine project requirements and objectives
- Review budget constraints
- Review available trade seismic data and make any purchase recommendations to Client
- Design technical layout and acquisition parameters for new acquisition projects

2) Project Management

On behalf of and in conjunction with the Client, BPS will:

- Create and submit RFP documents for subcontractors for competitive bidding
- Review subcontractor bid proposals and make selections
- Provide field supervision as required to ensure contractor compliance to technical specifications
- Audit safety component of all subcontractors
- Provide daily cost tracking against budget to ensure timely cost management and risk mitigation

- Once field operations are completed, provide client with Field Operations Report

3) Data Processing

On behalf of and in conjunction with the Client, BPS will:

- Design processing run stream to ensure optimal data processing
- Supervise processing flow and select appropriate technical parameters

4) Interpretation

- Incorporate new data into existing datasets
- Load data from processor onto interpretation workstations
- Compile well information, existing maps and depth controls to assist in interpretation
- Create synthetic seismograms from available sonic log control as required to assist in reflection identification
- Where appropriate, convert seismic into depth domain and create depth maps for all key horizons
- Present results to Client
- Produce report and provide digital copies of all data and interpretation to Client

C) DATA PROCESSING

Boyd PetroSearch followed standard, industry accepted professional practice and interpretation procedures in evaluating the 2009 Provost 2D seismic program. The time domain data from the field was initially reprocessed and a preliminary interpretation was presented to 1248630 Alberta Ltd. The final interpretation of the data is presented in this report.

C-1) Data Processing in Time Domain

Seismic data is acquired in the time domain where vertical units are in two-way time from the seismic datum to a reflection. Reprocessing of the original data was performed by Sensor Geophysical Ltd. in Calgary, Alberta, during April 2009. The processing sequence and parameters used for the 2009 Provost 2D data are outlined in Figure 3.

Processing Parameters

1. Demultiplex	Sample Rate: 2 ms Record Length: 2.0 sec
2. Trace Edits, Kills, Reversals	
3. 60 Hz Notch Filter	
4. Amplitude Recovery	Exponential
5. Deconvolution	Type: Spiking Pre-Whitening: 0.1% Design Window: 250 – 1550 ms Operator Length: 100 ms Application Window: 0 – 2.0 sec
6. T-V Spectral Whitening	500 ms window
7. Structural Corrections	Elevation, Weathering, Drift Datum Elevation: 800 m Datum Velocity: 2100 m/sec
8. Statics	Surface Consistent Residual Window: 400 – 1500 ms Maximum Allowed Shift: +/- 20 ms
9. Velocity Analysis	
10. Normal Moveout	
11. Statics	CDP Cross Correlation Window: 500 – 1600 ms Maximum Allowed Shift: +/- 6 ms
12. First Break Muting	
13. AGC scaling	Mean scalar, 500 ms window
14. Bandpass Filter	10 /15 – 65 / 75
15. CDP Stack	6-fold & 8-fold
16. F-X noise attenuation filter	
17. T-V Filter	
18. Time Migration	Finite Difference, 100% stacking velocities
19. Bandpass Filter	8 / 12 – 90 / 110
20. T-V Scaling	500 ms window

FIGURE 3: DATA PROCESSING RUN STREAM FOR THE 2009 PROVOST 2D DATA.

D) INTERPRETATION PROCEDURES

D-1) General Comments

The analysis and interpretation of the 2D dataset was completed using Seisware seismic interpretation software on a PC workstation.

In general, the data quality of the 2009 Provost 2D acquisition is fair to good. The reprocessed datasets are characterized by a good signal-to-noise ratio and good frequency content with useful signal over 90 Hz (Fig. 4).

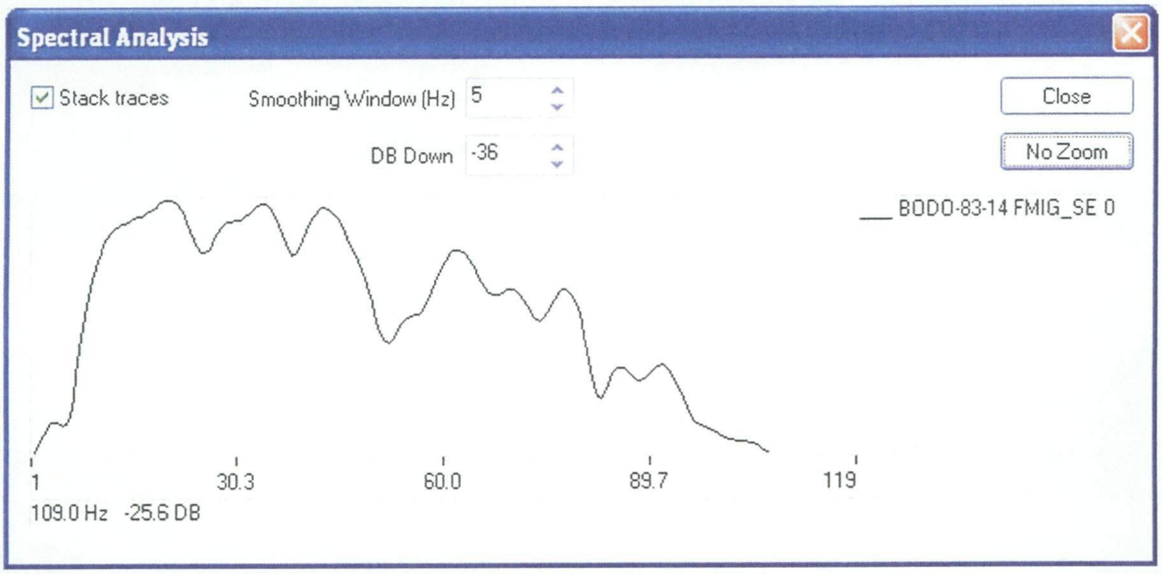

FIGURE 4: FREQUENCY SPECTRUM OF A REPRESENTATIVE LINE FROM THE 2009 PROVOST 2D DATASET.

The broad frequency bandwidth of the reprocessed Provost data provided sufficient resolution to meet the objectives of the project. It should be noted that the higher frequencies of new data may allow for the interpretation of more subtle features at potential mining levels.

D-2) Interpretation Risk Assessment

Although all efforts are made to ensure that the interpretation is correct, some level of uncertainty is always present in the interpretation of any remote sensing data. This level of uncertainty is termed interpretation risk and is discussed in the following sub-sections.

D-2.1) Structural Errors

During the processing of 2D and/or 3D seismic data several factors can contribute to structural error. Interactive processing procedures such as velocity analysis and surface static corrections affect the accuracy of the structural interpretation.

When working in the time domain inherent structural error may occur as a result of lateral velocity changes. As such, it is often beneficial to work in the depth domain. The primary objective of a depth conversion is to remove any velocity anomalies/artefacts that may arise in the time domain. Because the use of inaccurate velocity models can directly contribute to incorrect depth conversions, sonic logs, which contain in-situ rock velocities, are used to strengthen velocity models. The 2009 Provost 2D data was not depth corrected.

Refraction analysis of the seismic data attempts to resolve long wavelength statics caused by velocity and thickness variations in the near surface lithology. Measurements of these near surface variations can be resolved by analyzing waves refracted in the bedrock layer beneath the layer of glacial till. In areas where the bedrock can occur at depths of over 100 metres, a source to receiver distance greater than 1200 m is required to resolve surface statics. In the 2D case, these effects can be minimized with the use of recording systems capable of recording greater than 144 channels. These larger channel recording systems allow for the use of close receiver groups while still providing significant far offsets.

D-2.2) Seismic Horizon Picking

The identification of the various seismic events is accomplished with the use of synthetic seismograms generated from down-hole density and sonic logs from nearby drill holes. Comparing the synthetic seismograms to the time-based seismic sections allows for the identification of geological layers and the determination of depth conversion functions.

Following the identification of the seismic signature of individual geological layers from the synthetic seismograms, the seismic events are picked on the stacked processed data. The time structure information of the seismic data has very little inherent interpretive risk where the quality of the reflection is good. An example of a good reflection is the Winnipegosis peak, which is continuous and coherent throughout the survey area. Picked horizons, where the quality of the reflection is not as strong or consistent, may have greater inherent interpretive risk.

Seismic horizon picking is itself based on decisions made by the interpreting geophysicist.

D-3) Seismic Events

Based on previous experience with the geological sequence, as well as with local synthetic well ties, geological markers were extrapolated to the 2009 Provost dataset (Fig. 5). As illustrated on Figure 5, the following horizons, where possible, were interpreted on the workstation:

- i) Colorado Group
- ii) Second White Specks
- iii) Mannville
- iv) Dina
- v) Prairie Evaporite
- vi) Winnipegosis
- vii) Cambrian
- viii) PreCambrian

Following Figure 5 is a brief description of the seismic events identified within the 2009 Provost 2D data.

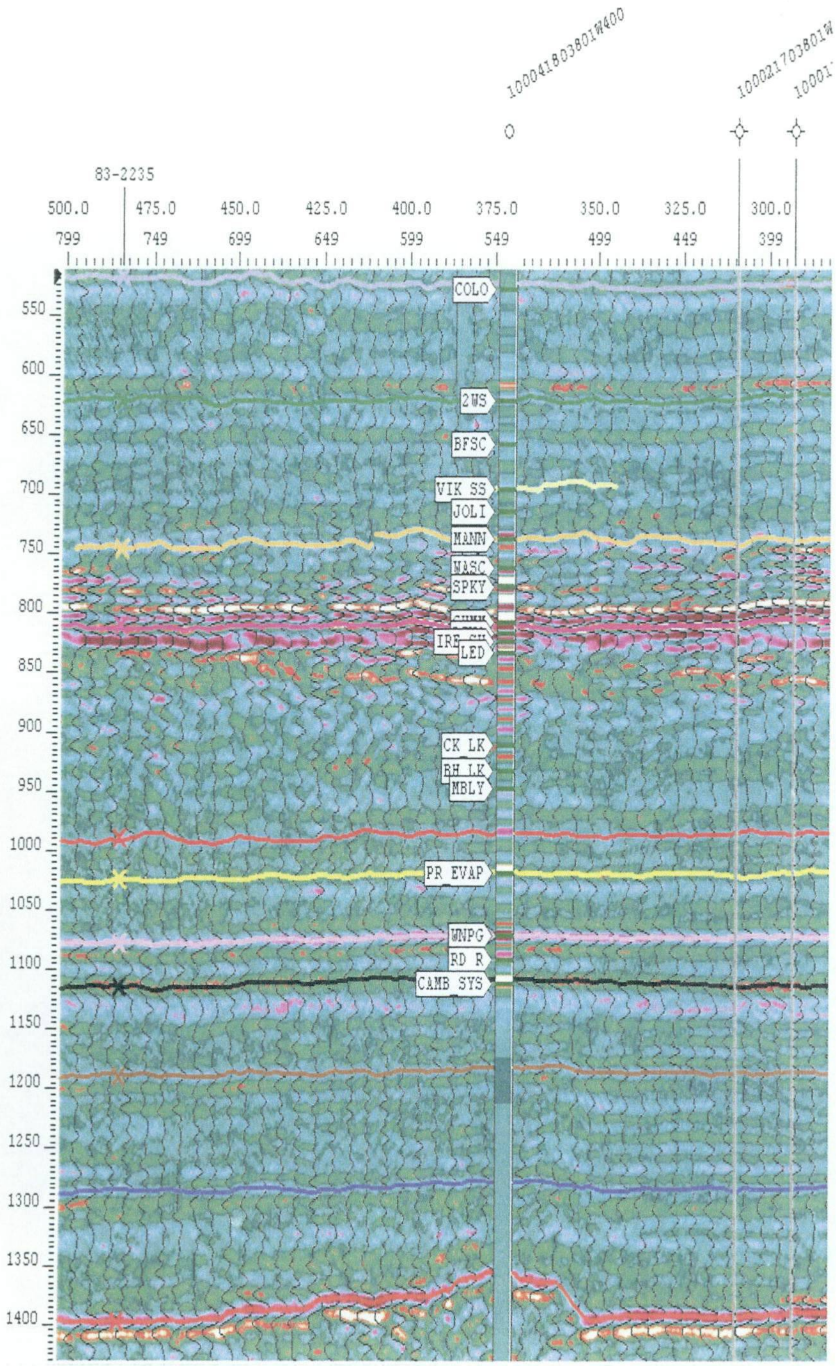

FIGURE 5: SYNTHETIC TIE WITH WELL 04-18-038-01W4AND SEISMIC LINE BODO-83-20.

Identification of horizons was achieved using the synthetic seismogram generated for the 04-18 well. It was found to be a good match to the seismic, enabling a confident identification of horizons. The well is 350 metres from the seismic line; projecting the synthetic onto the seismic line causes a small time shift at the Top of Devonian, where there is considerable structural variation, but the tie was excellent for the majority of the horizons.

The Watt Mtn Fm. (equiv. to Dawson Bay) and the Prairie Evaporite have the same seismic characteristics, and the separation is only 10 metres in Well 04-18. Given that the seismic response for this vintage of data has a maximum frequency of approximately 80 Hz, this is less than 1/4 of a cycle, therefore these events cannot be separated.

Accordingly, the strong trough was picked and identified as the Prairie Evaporite top. The Winnipegosis reflection, being the contrast between the thick overlying salt and the platform carbonates, gives a strong, clear uniform peak.

D-3.1) Colorado Group

The reflection from the Colorado Group is the shallowest horizon that can be regionally picked with confidence; it is picked as a peak located at approximately 525 milliseconds (ms). This horizon is a strong, continuous reflector that represents the top of the Upper Cretaceous shaly units.

D-3.2) Second White Specks

This horizon is a good regional geological marker which lies within the upper Cretaceous, about halfway between the top of the Colorado and the top of the Mannville. This horizon is picked as a strong peak at about 620 ms on the seismic data.

D-3.3) Mannville Group

The top of the Lower Cretaceous is represented by the Mannville Group, which is much sandier, and therefore higher velocity, than the overlying section. This horizon is picked as a strong peak at about 740 ms on the seismic data.

D-3.4) Dina

The Dina Formation is at the base of the Mannville sequence, and is the lowest coherent reflector in the Cretaceous. Sediments from the Jurassic, Triassic and Mississippian periods are not present in this area, so this most nearly represents the boundary between the Cretaceous and the Devonian sequences. It is picked as a strong trough at approximately 810 ms.

D-3.5) Prairie Evaporite

The Prairie Evaporite is the potash bearing sequence which includes all beds below the basal strata of the Watt Mountain Formation and above the Winnipegosis Formation. The upper contact is a strong trough reflection, found at approximately 1020 ms.

D-3.6) Winnipegosis

The Winnipegosis horizon includes both a regional dip component and a secondary, more dominant, component reflecting the changes in Winnipegosis geology associated with mound complexes. In the western part of the basin, Winnipegosis mounds are less common, with the Winnipegosis being essentially a platform carbonate. The Winnipegosis is picked here as a strong peak at about 1070 ms.

D-3.7) Cambrian

Below the Lower Devonian, the Cambrian System is quite a thick and largely undifferentiated section. The top is picked as a consistent trough, at about 1110 ms at the Well 04-18.

D-3.8) PreCambrian

The PreCambrian was picked as strong consistent peak at about 1360 ms. This pick was 'jump-correlated' from some distance away, because no wells in the vicinity went deep enough to penetrate it.

E) INTERPRETATION RESULTS

Analysis of the seismic data illustrates a number of anticipated regional features, typical seismic responses, and two anomalous features which are identified in Figure 6. These anomalies are discussed in greater detail later in this section.

The results of the 2009 Provost 2D seismic program are presented as a series of cross sectional views of individual lines. Plan view maps of surface grids and/or isopach maps are included where possible. Full scale, PDF copies of the maps are provided as enclosures to this report (Appendix 1). To follow is a detailed description of features observed within the 2009 Provost 2D dataset which may have implications on future mine development.

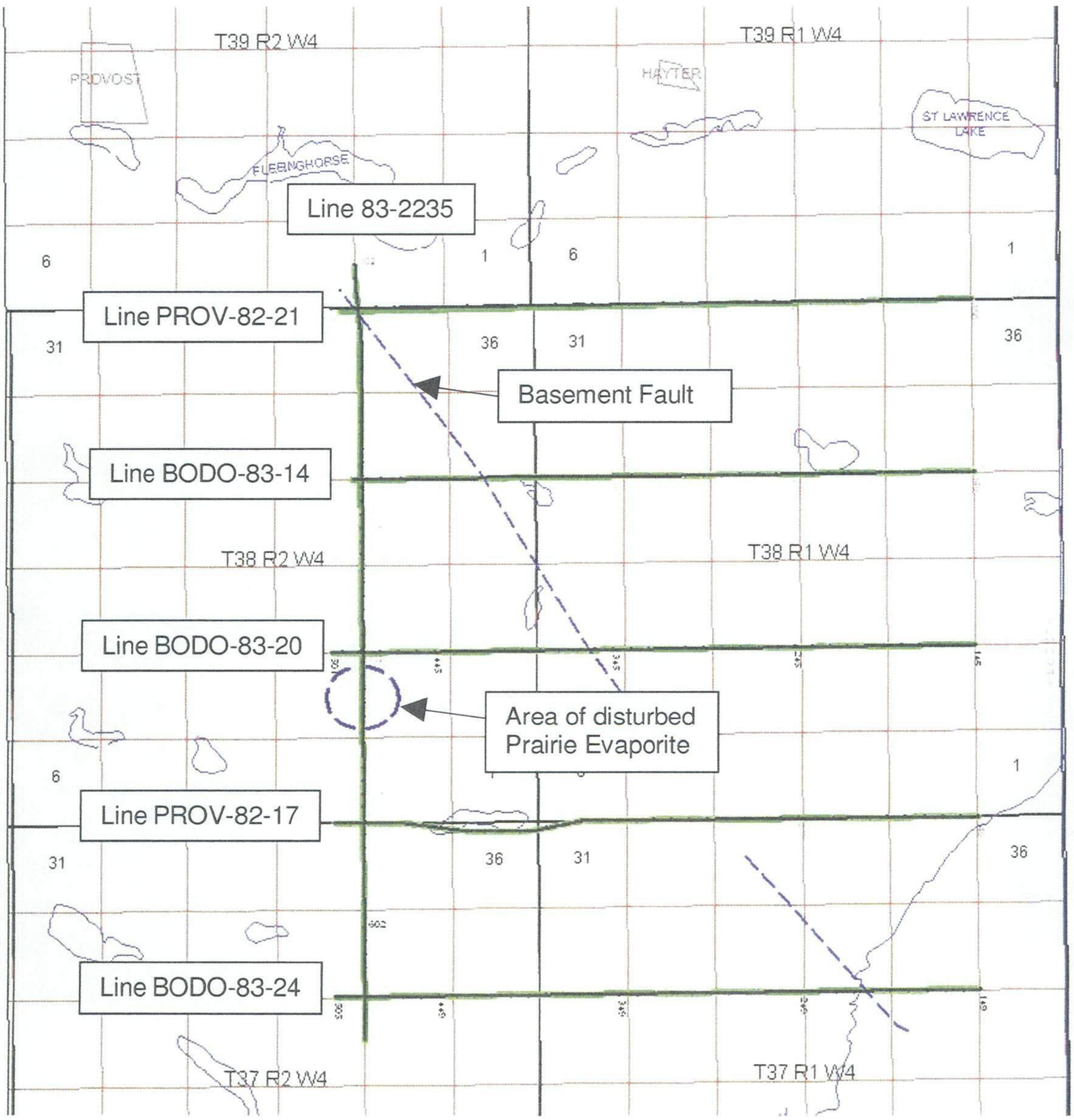

FIGURE 6: MAP IDENTIFYING ANOMALOUS FEATURE FROM THE PROVOST 2D DATASET.

E-1) Davidson Salt

The presence of halite in the Souris River Formation is interpreted by many Saskatchewan potash geoscientists and engineers to infer that any Dawson Bay porosity is salt plugged (termed "dry") thereby imposing less risk for brine inflow to the mining level. As such, the Davidson and/or Harris Halite isopach is often mapped so that mine planners can avoid areas where the salt is thin or presumably absent. In this part of the basin, however, there is no indication that this salt is present. Well control supports this finding.

E-2) Prairie Evaporite Time Structure

As a result of the proximity of the top of the Prairie Evaporite to potential potash members, the Prairie Evaporite time structure map best represents the anticipated structure at mining levels. Regionally, the Prairie Evaporite Formation shows a decrease in elevation from northeast to southwest across the survey area (Fig. 7).

In other potash bearing areas, a strong correlation typically exists between the presence of Winnipegosis mounds and structural sagging of the overlying Prairie Evaporite. However, in the Provost 2D dataset, there was no evidence of Winnipegosis mounds seen on the seismic lines, but with such sparse control, there is a distinct possibility that there could be some undetected off-line mounds, with the concurrent possibility of collapse features in the Prairie Evaporite.

Changes in Prairie Evaporite structure have implications for topography at the underlying potash level. However, aside from collapse areas, there is no indication that ore grade would be affected by normal structural undulations.

E-3) Prairie Evaporite Collapse Interpretation

Collapse features tend to have a great deal of vertical extent and significant salt loss at the Prairie Evaporite level. The removal of the salt and its subsequent replacement with slow velocity fragmented rock from above has implications on the time structure of the underlying layers. A velocity push-down effect occurs in the strata beneath the collapse.

Off-line collapse features differ in seismic character. These collapse features are only partially imaged and can appear as a weakening of the reflection amplitude at the Prairie Evaporite elevation while the true collapse may exist on either side of the 2D line. It should be noted that without a 3D survey the extents of these features cannot be accurately mapped.

Within the Provost 2D area, only one area has been identified where the upper Prairie Evaporite may be significantly disturbed. There is insufficient evidence to attribute this disturbance directly to a collapse feature, but it could be an indicator of the presence of such a feature existing off-line. This area is identified in Figure 6, and illustrated on the north-south seismic Line 83-2235 in Figure 8. Flattening the section on the Winnipegosis, however, demonstrates that there is no significant thinning of the Prairie Evaporite section. Therefore, the most likely cause for the disturbance is seismic "noise" caused by near surface conditions and/or loss of fold.

Currently there is uncertainty amongst potash geoscientists as to the origin of collapses features. Consensus is that they appear to be the result of dissolution of the upper Prairie Evaporite Halite, resulting in fracturing and eventual collapse of the overlying sediments. Regardless of the origin, it is clear that fracturing of the overlying sediments has occurred and that in itself poses a potential hazard. Experience with similar collapse anomalies leads the authors to believe that there is a high risk of developing brine inflows and unstable mining conditions in the immediate vicinity of these features. Mining in the vicinity of the collapse features is likely to induce eventual reactivation and reopening of the fractures associated with the collapses. As such, a buffer around the perimeter of the collapse features at a predetermined minimum setback distance from all collapse anomalies is recommended.

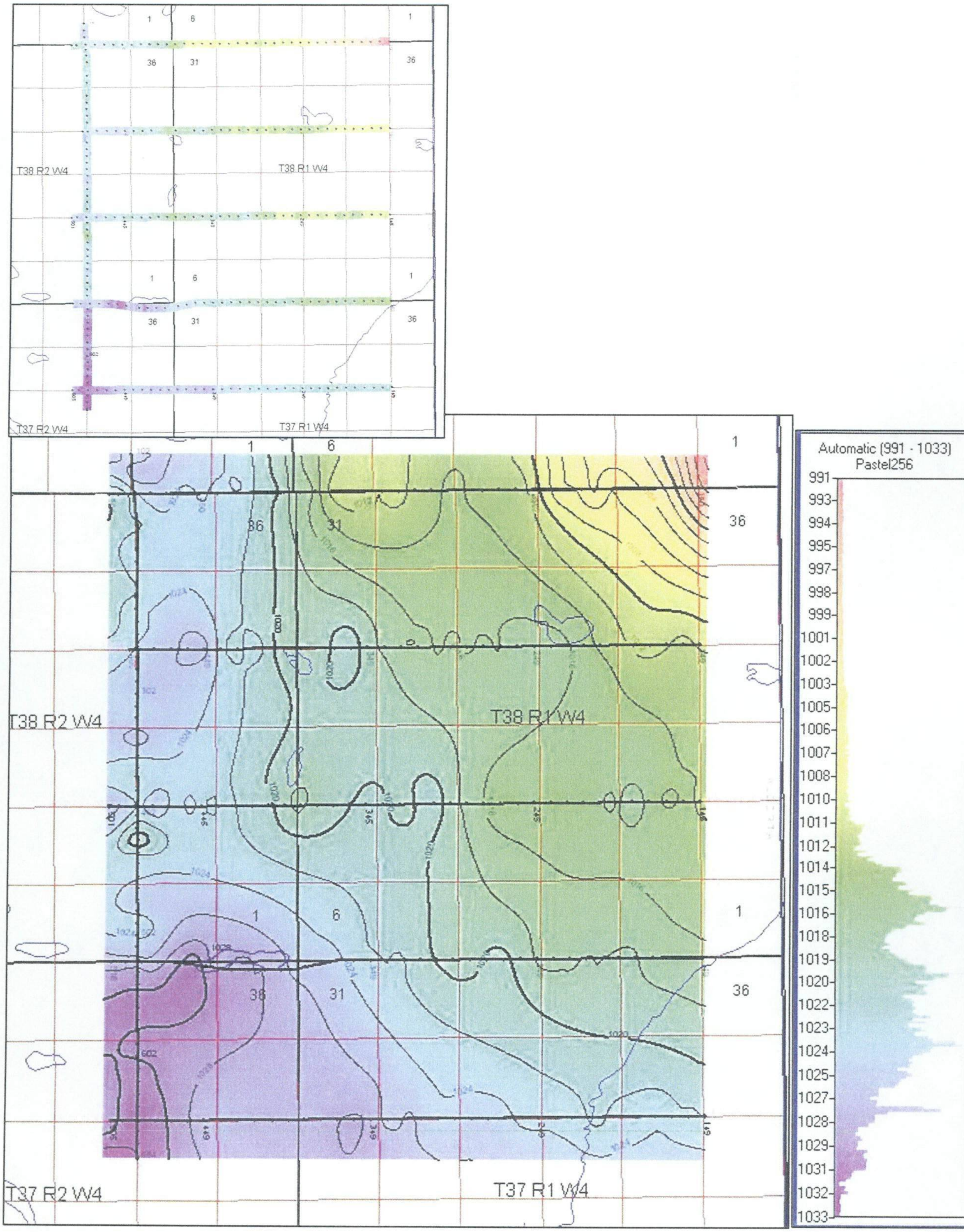

FIGURE 7: TIME STRUCTURE MAP OF THE PRAIRIE EVAPORITE FORMATION.

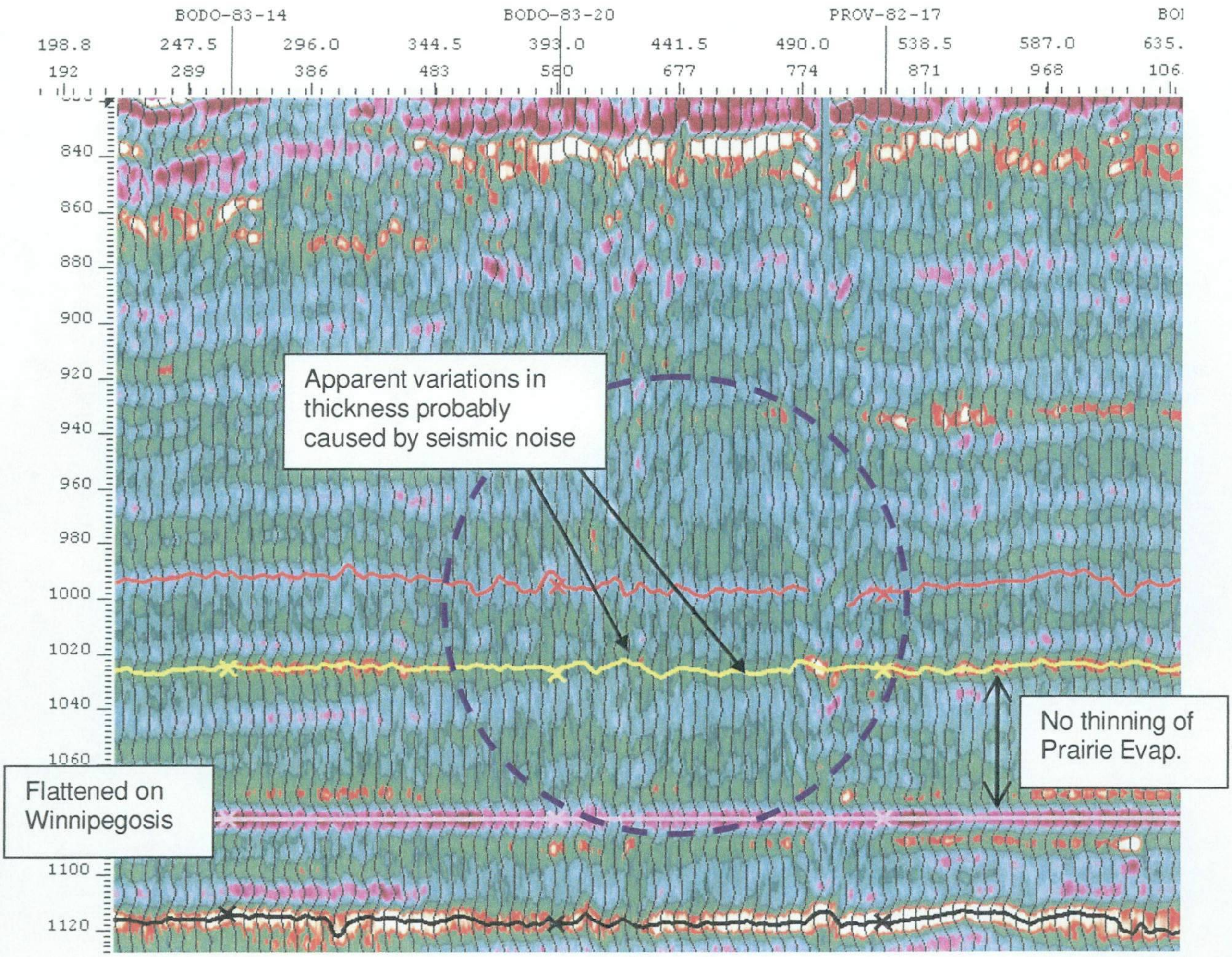

FIGURE 8: AREA OF DISTURBED PRAIRIE EVAPORITE ON LINE 83-2235 (NO THINNING IS OBSERVED).

E-4) Prairie Evaporite Salt Loss

One of the primary objectives of the 2009 Provost 2D data evaluation project was to delineate the western edge of the potash bearing Prairie Evaporite salt section.

The seismic data indicate that the western salt edge has not been reached with this survey. The Prairie Evaporite was found to be very uniform in thickness, between 106 and 112 metres across the area (Fig. 9). It should be noted that the absolute range of thickness is from 100 to 118 metres (Fig. 9). These small variations away from the norm are more likely caused by seismic noise in the data and/or low fold (6 to 8 fold) areas rather than by real thickness changes.

Although variations in the thickness of the Prairie Evaporite are thought to be the result of data quality issues, it is worth noting (as was noted in the previous section), that areas of think salt may actually be indicators of the presence of larger off-line anomalies which are not properly imaged by the 2D data. The true nature of the salt thickness variations could be ruled out by the acquisition of infill data, preferably 3D data.

E-5) Winnipegosis Mounds

In the Western Canada Sedimentary Basin, the Winnipegosis Formation often is characterized by large carbonate mound buildups, especially in the Saskatchewan part of the basin. Where this occurs, the mounds serve as a conduit for circulating fluids, which results in the dissolution of overlying beds. Commonly, the Prairie Evaporite is greatly reduced in thickness, or even lost, over these mounds.

There are no observed Winnipegosis mounds on the 2D lines from the Provost survey area. The Winnipegosis Time Structure Map in Figure 10 illustrates that the Winnipegosis follows the regional structural trend and therefore may be a platform carbonate. Mounds may exist in areas between lines that are not imaged by the 2D. A 3D seismic survey would provide a more detailed analysis of the Winnipegosis structure.

E-6) Basement Faulting

As indicated on Figure 6 a basement fault has been identified within the Provost 2D dataset. The fault trends NW/SE and has high displacement just east of Well 04-18 on seismic Line BODO-83-20. As illustrated on Figure 11 the fault does not appear to break the overlying Winnipegosis. Vertical throw along the fault varies from line to line, which could indicate a significant strike-slip movement. The Cambrian, Winnipegosis and Prairie Evaporite all appear to drape over the underlying structure, but the isopach of the salt is not affected to a significant degree, as can be seen by the constant thickness along Line BODO-83-20 in Figure 11. Well 04-18 was drilled to Cambrian; it is likely that it was drilled to test this closure. The fault trace has been put on the Winnipegosis map in Figure 10 to show its location, and the apparent drape effect that the fault appears to have caused.

With the limited seismic coverage, it is impossible to confidently map this basement fault, but it is highly likely that significant faulting exists along the trend shown on the Winnipegosis map. Faulting too subtle to be detected by seismic likely exists higher in the section, and it has been observed that mining in an area over basement faults may lead to fault reactivation and result in potential brine inflow. The lack of collapse features is reassuring, but their presence cannot be ruled out. Infill 2D shooting, or better, a 3D survey would provide more information.

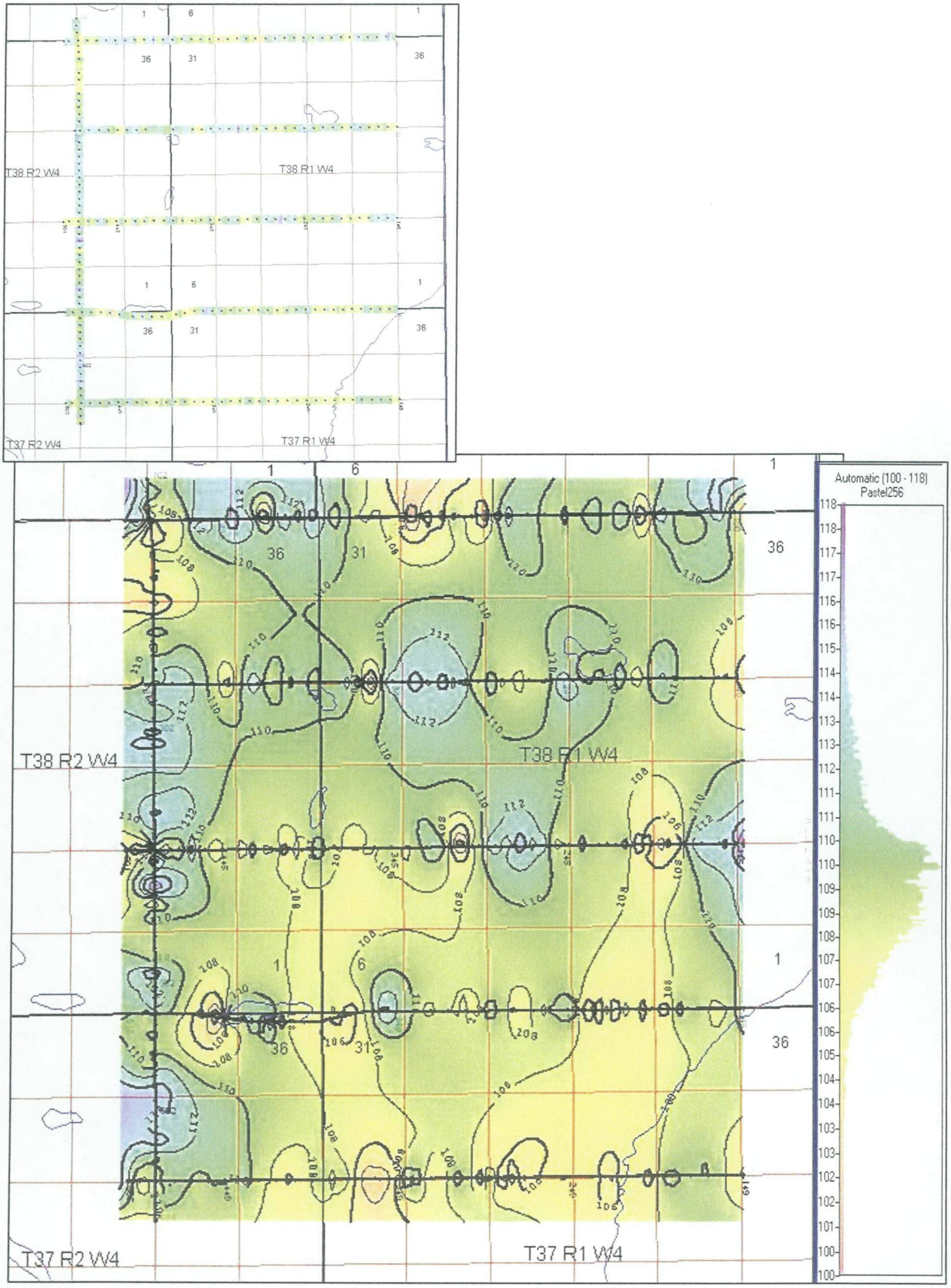

FIGURE 9: TOTAL SALT ISOPACH MAP ILLUSTRATING REGIONAL SALT THICKNESS (M).

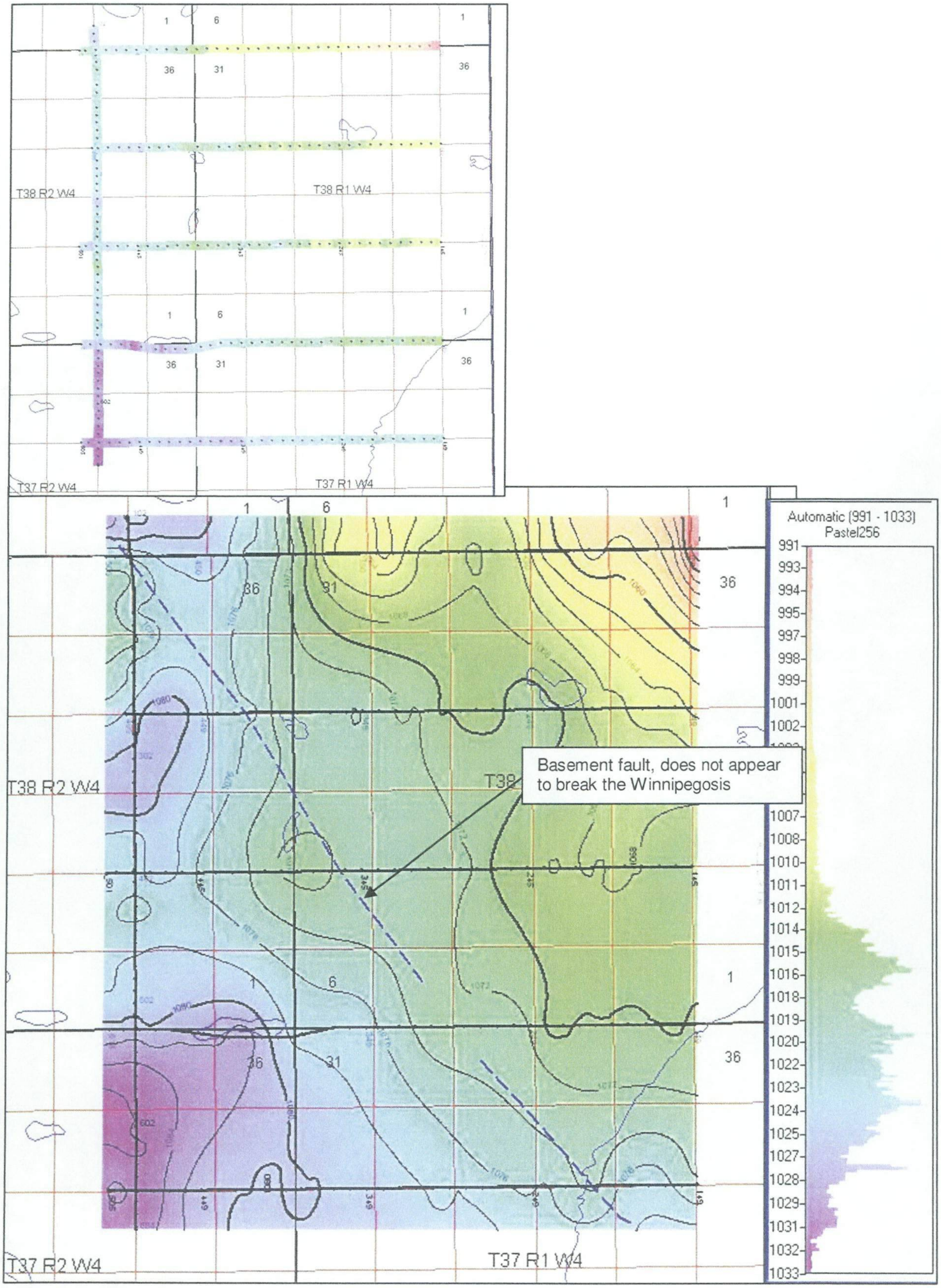

FIGURE 10: WINNIPEGOSIS TIME STRUCTURE MAP.

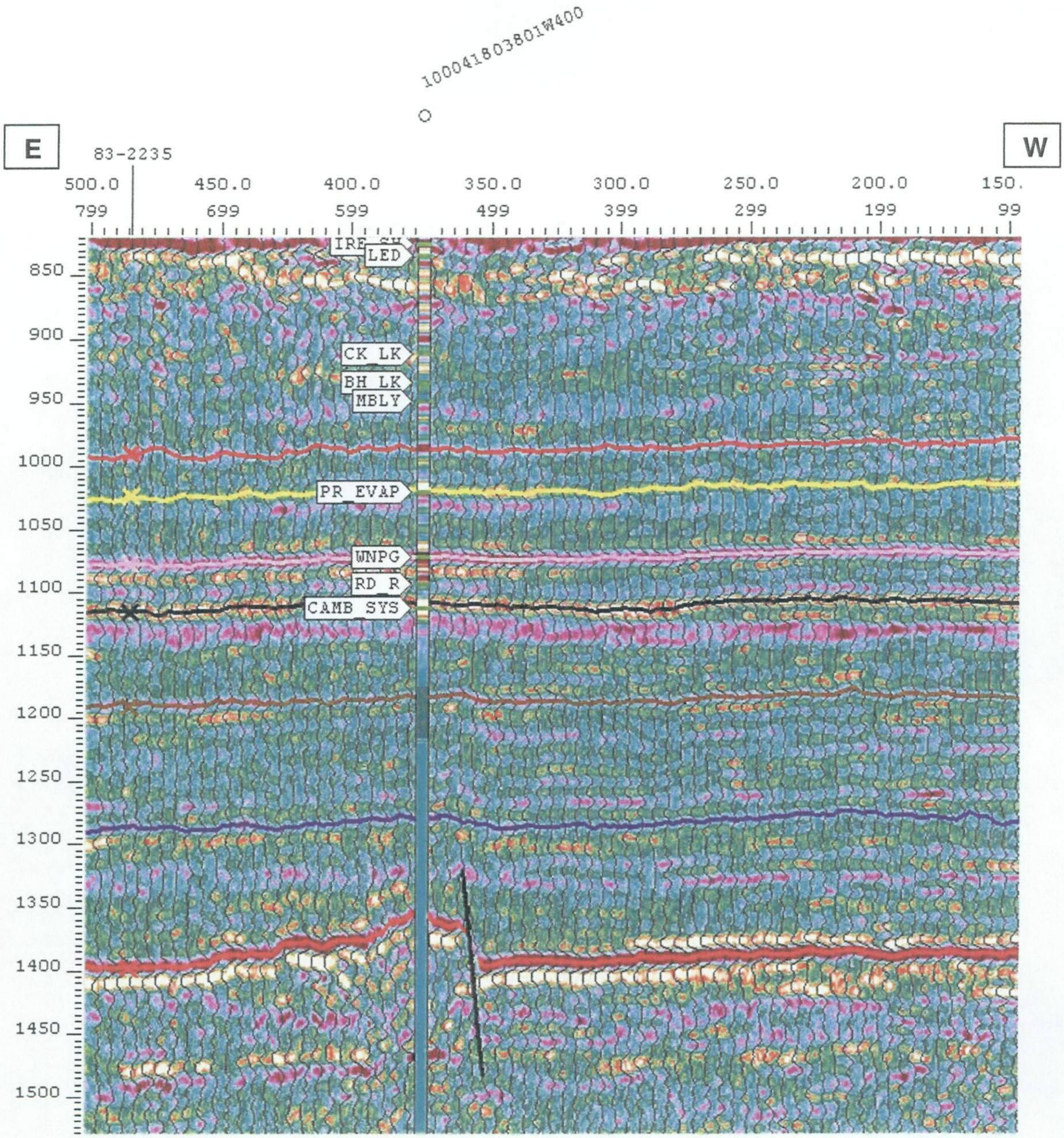

FIGURE 11: SEISMIC LINE BODO-83-20 ILLUSTRATING BASEMENT FAULT.

F) CONCLUSIONS

Based on the well control, the Davidson Halite is not present in this vicinity.

In general, there are few disturbances in the Prairie Evaporite sequence in this area. The formation was found to be very uniform in thickness, from about 106 metres to 112 metres thick, with minor variations probably attributable to seismic noise.

A disturbed area on Line 83-2235 may be interpreted to be the side swiped view of an off-line collapse feature. Judging by the constant thickness of the Prairie Evaporite Formation in the vicinity of this disturbed area, however, it is probable that the anomaly is simply an expression of low data fold.

There was no evidence of Winnipegosis mounds seen on the seismic lines, but with such sparse control, there is a distinct possibility that there could be some undetected off-line mounds, with the concurrent possibility of Prairie Evaporite collapse features.

There appears to be a trend of significant basement faulting. This faulting does not seem to have resulted in changes of isopach of the Prairie Evaporite Formation. Basement faults may be associated with subtle, undetected fractures in layers above which may be reactivated during mining.

G) RECOMMENDATIONS

The following recommendations are made based on the interpretation of the seismic data:

1. A drilling and/or coring program is recommended in order to further calibrate the seismic data.

2. As a result of the sparse spatial sampling of the 2D data, it is possible that geological events that exist between the lines of the survey have gone undetected. For this reason, it is suggested that an infill 2D survey be undertaken, followed by a regional 3D survey over the most prospective acreage, prior to initiating any mine workings in the area.

3. Mining in the vicinity of the collapse features is likely to induce reactivation and reopening of the fractures associated with them. As such, a buffer at a predetermined minimum setback distance for all collapse anomalies is recommended, if any are identified through follow-up work.

4. There is an increased likelihood of finding subtle, small scale fracturing in the areas above basement faults. Faults, therefore, should be considered during mine planning.

H) DIGITAL INFORMATION

H-1) Final Products

A DVD has been included with the original copy of this report, which contains the archived data for this project. The project archive DVD is organized into seven main directories and are listed as follows:

1. **Report** – contains the final report in Microsoft Word and Adobe PDF file formats and the larger 11"x17" report figures in Microsoft Power Point and Adobe PDF file formats.

2. **Images** – contains all preliminary Power Point files, screen captures and scanned images.

3. **Plots** – A PDF version of all the full sized plots created for this report as listed in the map enclosures.

4. **Archive** – contains horizon ASCII files and SEG-P1 survey files.

5. **Shape Files** – contains individual Shape files for the interpreted anomalies as well as key overlay drawing files used in the creation of maps used within this report.

6. **SEGY** – contains a copy of the Provost 2D data in SEGY format.

7. **SeisWare** – contains an updated SeisWare seismic data archive including all seismic data interpreted by Boyd PetroSearch.

This final report of the 2009 Provost 2D Seismic Project is respectfully submitted August 2009.

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Senior Geophysicist

Roger Edgecombe, P.Geo, P.Geoph.
Manager Potash Division

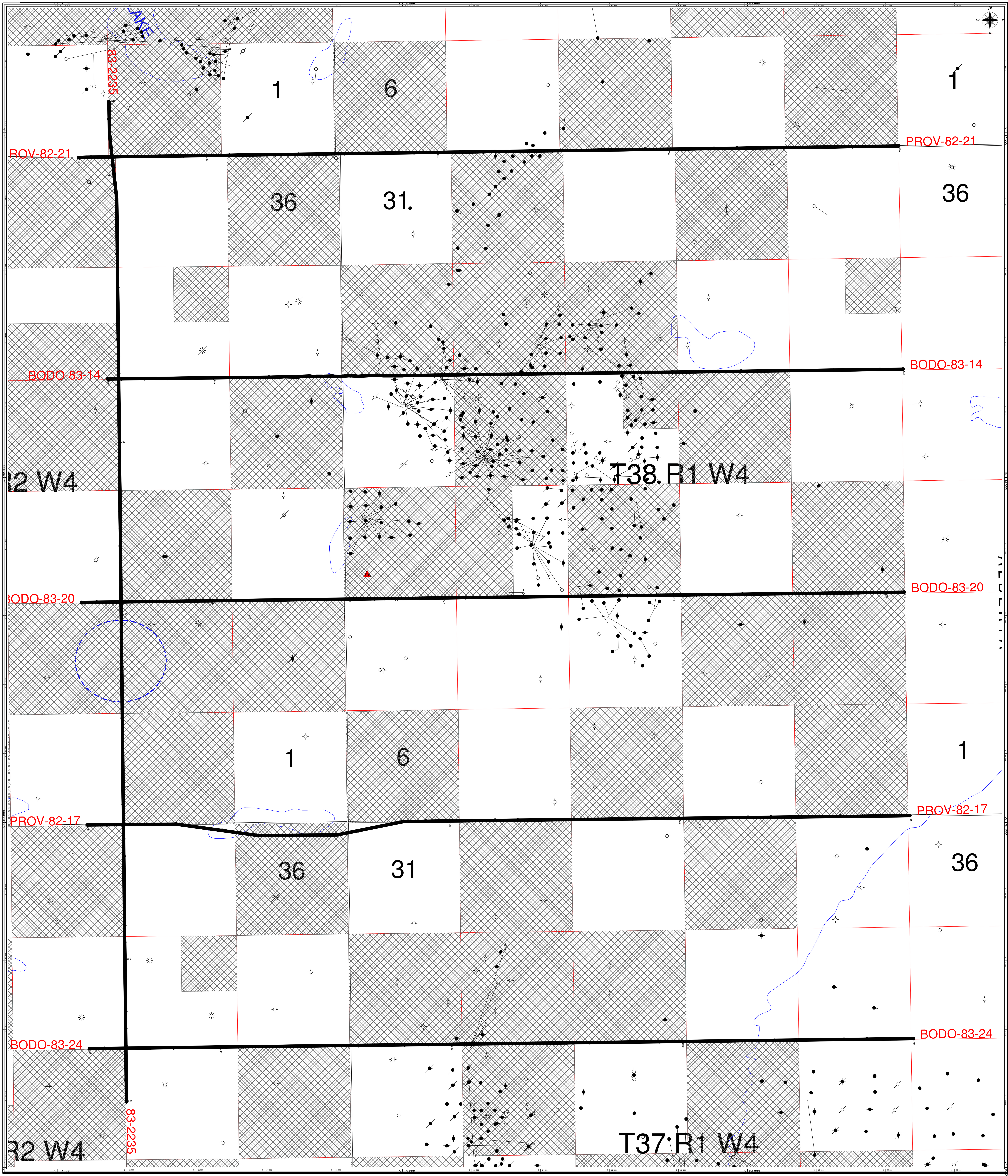
Boyd PetroSearch
Boyd Exploration Consultants Ltd.

Appendix 1 – Map Enclosures

A-1) Map Enclosures

Below is a list of maps included with the 2009 Provost 2D report. These maps are provided as support to the work completed. Structure maps and isochron maps are in milliseconds (ms) and isopach maps are in meters (m).

1. Anomaly Map
2. Prairie Evaporite Time Structure Map
3. Prairie Evaporite Isopach Map
4. Winnipegosis Time Structure Map



1248630 Alberta Ltd.
2009 Provost 2D
Anomaly Map

2009 Provost 2D_NAD83Z12

Scale: 1:20000

Date: Tuesday August 04, 2009

Scale: 1:20000

0 1 2 3 4 5 6 7 8 9 10 x100 m

0 1 2 3 4 5 6 7 8 9 10 x0.1 mi

WELL LEGEND

Bottom Hole Locations:

Unknown	Location
Drilling	Suspended
Service Well	Oil
Gas	Dry Abandoned
Heavy Oil	Suspended Oil
Abandoned Oil	Suspended Gas
Abandoned Gas	Abandoned Service Well
Oil & Gas Well	Suspended Heavy Oil
Abandoned Heavy Oil	Abandoned Oil & Gas
Suspended Oil & Gas	Test
Injection	Gas Injector
Proposed Well	Standing

WELL CRITERIA LEGEND

Has Sonic Curve

Legend

Disturbed Prairie Evaporite

Basement Faults

Potash Leases

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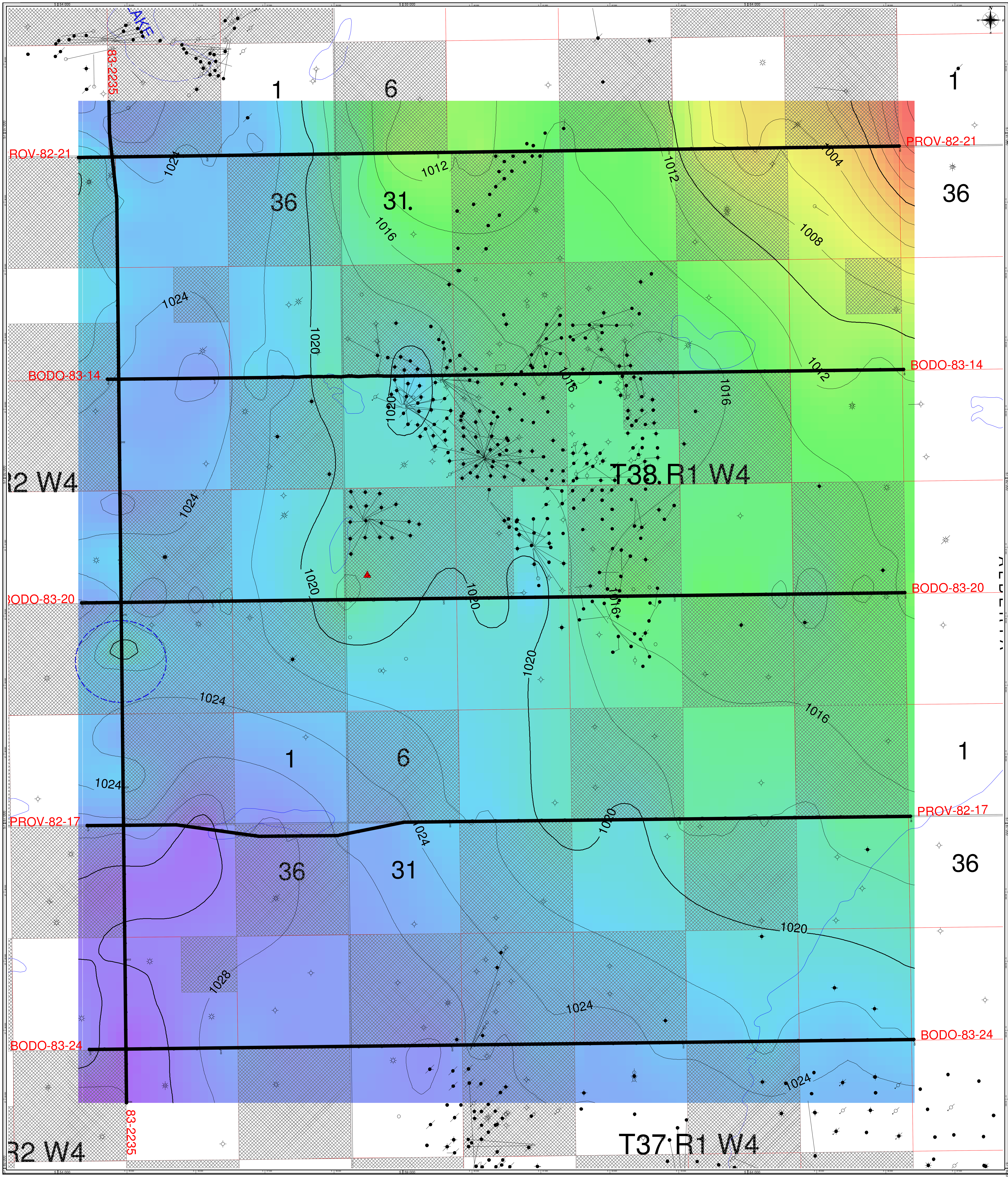

1248630 Alberta Ltd.
2009 Provost 2D

Prairie Evaporite Time Structure Map

2009 Provost 2D_NAD83Z12
Scale: 1:20000
Date: Wednesday August 05, 2009

Scale: 1:20000

Grid(s) Displayed: PrairieEvap SM Grid
Colour Lightness: 10%

Automatic (991 - 1033)
Pastel256

WELL LEGEND

Bottom Hole Locations:

Unknown	Location
Drilling	Suspended
Service Well	Oil
Gas	Dry Abandoned
Heavy Oil	Suspended Oil
Abandoned Oil	Suspended Gas
Abandoned Gas	Abandoned Service Well
Oil & Gas Well	Suspended Heavy Oil
Abandoned Heavy Oil	Abandoned Oil & Gas
Suspended Oil & Gas	Test
Injection	Gas Injector
Proposed Well	Standing

WELL CRITERIA LEGEND

Has Sonic Curve

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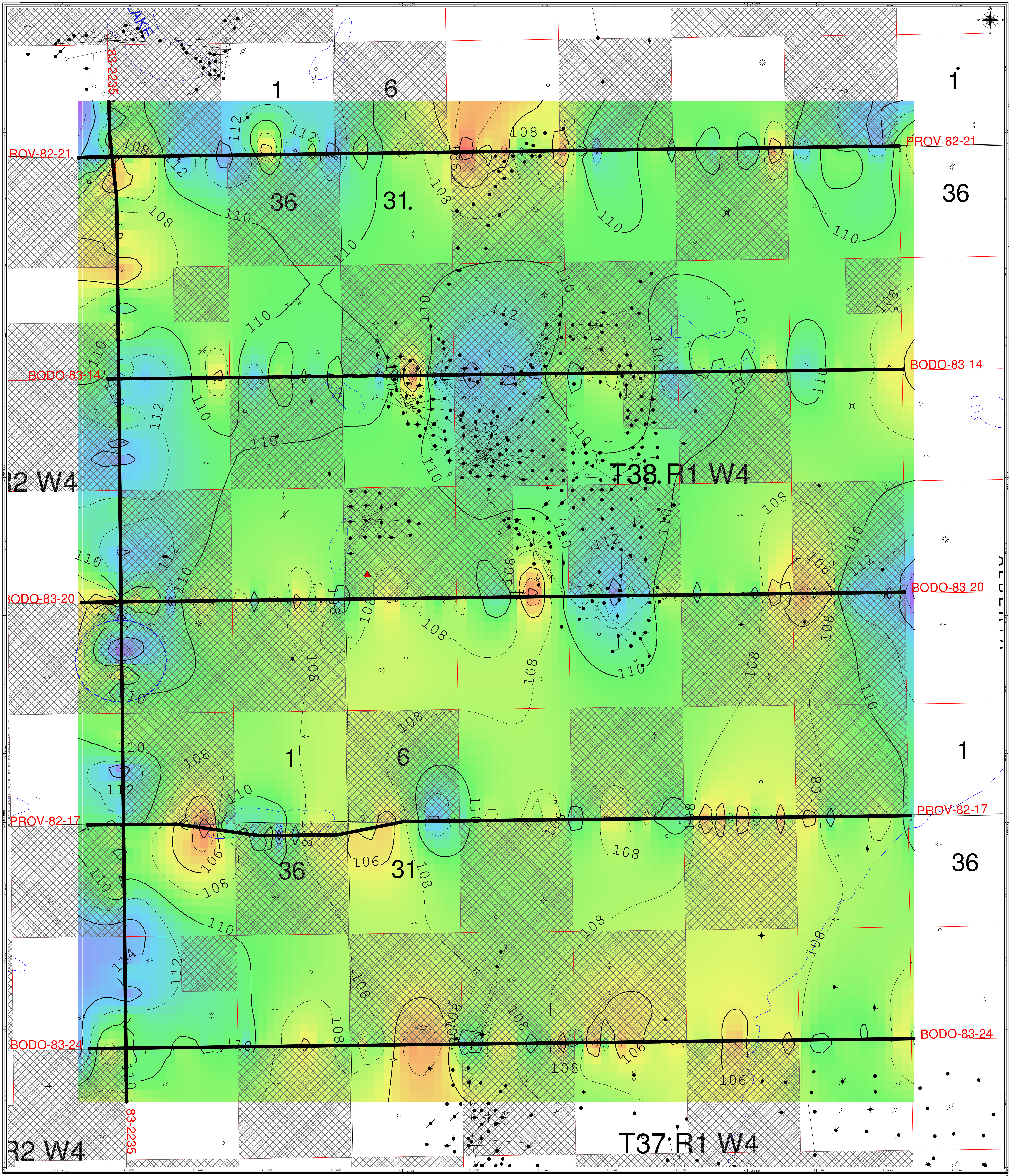

1248630 Alberta Ltd.
2009 Provost 2D
Prairie Evaporite Isopach Map

2009 Provost 2D_NAD83Z12
Scale: 1:20000
Date: Wednesday August 05, 2009

Scale: 1:20000
0 1 2 3 4 5 6 7 8 9 10 x100 m
0 1 2 3 4 5 6 7 8 9 10 x0.1 mi

Grid(s) Displayed: Isopach_PrairieEvap
Colour Lightness: 10%

Automatic (100 - 118)
Pastel256
100 101 102 103 104 106 107 108 109 110 111 113 114 115 116 117 118

WELL LEGEND

Bottom Hole Locations:

Unknown	Location
Drilling	Suspended
Service Well	Oil
Gas	Dry Abandoned
Heavy Oil	Suspended Oil
Abandoned Oil	Suspended Gas
Abandoned Gas	Abandoned Service Well
Oil & Gas Well	Suspended Heavy Oil
Abandoned Heavy Oil	Abandoned Oil & Gas
Suspended Oil & Gas	Test
Injection	Gas Injector
Proposed Well	Standing

WELL CRITERIA LEGEND

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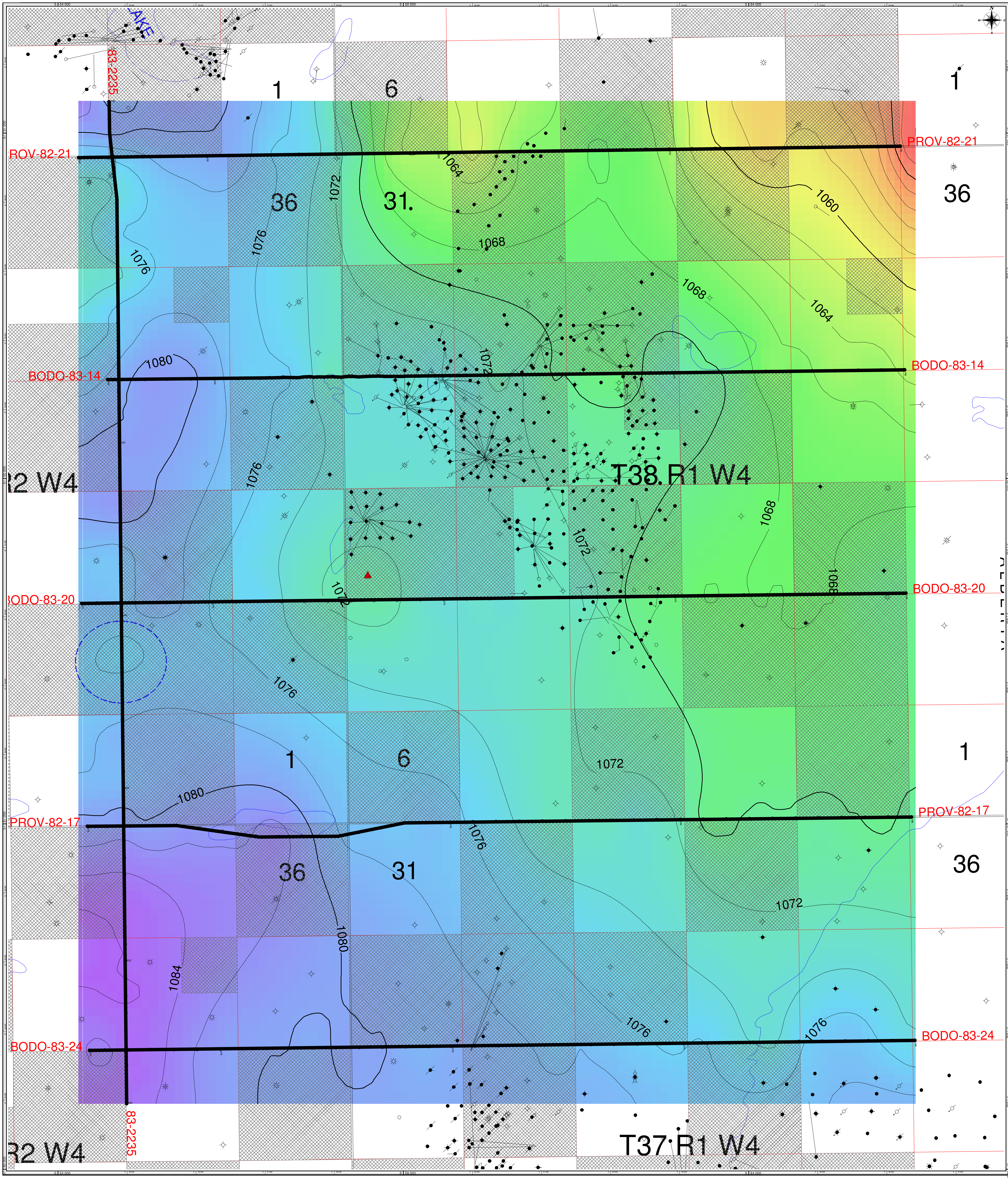

1248630 Alberta Ltd.
2009 Provost 2D
Winnipegosis Time Structure Map

2009 Provost 2D_NAD83Z12
Scale: 1:20000
Date: Wednesday August 05, 2009

Scale: 1:20000
0 1 2 3 4 5 6 7 8 9 10x100 m
0 1 2 3 4 5 6 7 8 9 10x0.1 mi

Grid(s) Displayed: Winnipegosis SM Grid
Colour Lightness: 10%

Automatic (1046 - 1087)
Pastel256
1046 1051 1056 1061 1066 1071 1076 1082 1087

WELL LEGEND

Bottom Hole Locations:

Unknown	Location
Drilling	Suspended
Service Well	Oil
Gas	Dry Abandoned
Heavy Oil	Suspended Oil
Abandoned Oil	Suspended Gas
Abandoned Gas	Abandoned Service Well
Oil & Gas Well	Suspended Heavy Oil
Abandoned Heavy Oil	Abandoned Oil & Gas
Suspended Oil & Gas	Test
Injection	Gas Injector
Proposed Well	Standing

WELL CRITERIA LEGEND

Has Sonic Curve

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