

MAR 20060011: EASTSIDE PERMIT

Received date: Jul 04, 2006

Public release date: Aug 14, 2007

DISCLAIMER

By accessing and using the Alberta Energy website to download or otherwise obtain a scanned mineral assessment report, you ("User") agree to be bound by the following terms and conditions:

- a) Each scanned mineral assessment report that is downloaded or otherwise obtained from Alberta Energy is provided "AS IS", with no warranties or representations of any kind whatsoever from Her Majesty the Queen in Right of Alberta, as represented by the Minister of Energy ("Minister"), expressed or implied, including, but not limited to, no warranties or other representations from the Minister, regarding the content, accuracy, reliability, use or results from the use of or the integrity, completeness, quality or legibility of each such scanned mineral assessment report;
- b) To the fullest extent permitted by applicable laws, the Minister hereby expressly disclaims, and is released from, liability and responsibility for all warranties and conditions, expressed or implied, in relation to each scanned mineral assessment report shown or displayed on the Alberta Energy website including but not limited to warranties as to the satisfactory quality of or the fitness of the scanned mineral assessment report for a particular purpose and warranties as to the non-infringement or other non-violation of the proprietary rights held by any third party in respect of the scanned mineral assessment report;
- c) To the fullest extent permitted by applicable law, the Minister, and the Minister's employees and agents, exclude and disclaim liability to the User for losses and damages of whatsoever nature and howsoever arising including, without limitation, any direct, indirect, special, consequential, punitive or incidental damages, loss of use, loss of data, loss caused by a virus, loss of income or profit, claims of third parties, even if Alberta Energy have been advised of the possibility of such damages or losses, arising out of or in connection with the use of the Alberta Energy website, including the accessing or downloading of the scanned mineral assessment report and the use for any purpose of the scanned mineral assessment report so downloaded or retrieved.
- d) User agrees to indemnify and hold harmless the Minister, and the Minister's employees and agents against and from any and all third party claims, losses, liabilities, demands, actions or proceedings related to the downloading, distribution, transmissions, storage, redistribution, reproduction or exploitation of each scanned mineral assessment report obtained by the User from Alberta Energy.

20060711

JUL 04 2006

-1-

GRAYMONT WESTERN CANADA INC.

**2004 TO 2006 EXPLORATION
OF THE EASTSIDE PERMIT**

PART B

Metallic and Industrial Mineral Permit
9304041066

Geographic Coordinates

56°54' N
111°15' W

NTS Sheets 74 D/14

Owner of MAIM Permit	9304041066 Graymont Western Canada Inc. 190, 3025 - 12 Street N.E. Calgary, AB, T2E 7J2
Operator:	Graymont Western Canada Inc. 190, 3025 - 12 Street N.E. Calgary, AB, T2E 7J2
Consultant:	Dahrouge Geological Consulting Ltd. 18, 10509 - 81 Avenue Edmonton, Alberta T6E 1X7
Authors:	J. Dahrouge, B.Sc., P.Geol.
Date Submitted:	July 4, 2006

TABLE OF CONTENTS

	<u>Page</u>
Title Page	1
Table of Contents	2
1. Summary	4
2. Introduction	4
3. Location and Access	4
4. Work Performed	5
5. Results	5
6. Conclusions	6
7. References	7
Statement of Author	8

PART C

LIST OF FIGURES

	<u>Page</u>
Fig. 3.1 Location Map	C1
Fig. 3.2 Permit Boundaries	C2
Fig. 3.3 Location of Work	C3
Fig. 5.1 Depth to the Sub-Cretaceous Unconformity	C4
Fig. 5.2 Geology of MAIM Permit 9304041066	C5

LIST OF APPENDICES

Appendix 1: Cost Statement for the 2004 thru 2006 Exploration	C6
Appendix 2A: Locations of Historic Drill Holes at the Eastside Permit	C7
Appendix 2B: Estimated Depths to the SubCretaceous Unconformity For Drill Holes at the Eastside Permit	C8
Appendix 3: Lithological Logs for Historic Core Holes From the Eastside Permit	C9

**DETAILED EXPENDITURE STATEMENT FOR THE 2004 TO 2006 EXPLORATION
CONDUCTED ON THE EASTSIDE PERMIT**

a) Personnel

J. Dahrouge, geologist

1.00 days travel and field July 29, 2004
 5.70 days planning, supervision, report preparation
 6.70 days @ \$ [REDACTED]

\$ [REDACTED]

S. Fraser, geologist

3.50 days travel to Calgary and log core April 10-13, 2006
 3.50 days @ \$ [REDACTED]

\$ [REDACTED]

S. Talwar, geologist

3.50 days travel to Calgary and log core April 10-13, 2006
 4.25 days order EUB drill hole data; compile data
 7.75 days @ \$ [REDACTED]

\$ [REDACTED]

N. McCallum, geologist

0.40 days prepare maps and figures
 0.40 days @ \$ [REDACTED]

\$ [REDACTED]

W. McGuire, technician

4.00 days travel to Calgary and log core April 10-13, 2006
 5.40 days drafting, preparing and plotting figures and maps, other
 9.40 days @ \$ [REDACTED]

\$ [REDACTED]

D. Wilson, secretary

24.00 days data entry
 24.00 days @ \$ [REDACTED]

\$ [REDACTED]

\$ 14,921.69

b) Food and Accommodation

11 man-days @ \$ 80.92 accommodations
 11 man-days @ \$ 40.82 groceries and meals

\$ 890.12

\$ 449.02

\$ 1,339.14

c) Transportation

Vehicles: Helicopter Rental July 29, 2004 (Approximately 1 hour)
 Mileage

\$ 1,294.70

\$ 793.98

\$ 2,088.68

d) Instrument Rental n/a

e) Drilling n/a

f) Analyses n/a

g) Report Reproductions and assembly

\$ 60.50

\$ 60.50

**DETAILED EXPENDITURE STATEMENT FOR THE 2004 THRU 2006 EXPLORATION
CONDUCTED ON THE EASTSIDE PERMIT (Continued)**

h) Other

Digital Data	\$ 323.62	
Long distance telephone	\$ 2.75	
Core Warehouse Rental	<u>\$ 2,767.95</u>	
		\$ 3,094.32

Total

\$ 21,504.33

Administration 10 per cent of Total

\$ 2,150.43

Total plus Administration

\$ 23,654.76



Jody Dahrouge, B.Sc., P.Geol.

Edmonton, Alberta
July 4, 2006

1.

SUMMARY

Between 2004 and early 2006, exploration of Metallic and Industrial Minerals (MAIM) Permit 9304041066 of Graymont Western Canada Inc. along Steepbank River, near Fort McMurray, included a property visit and the relogging of historic drill cores and cuttings that were stored at the core library in Calgary, Alberta.

Results of the exploration showed the permit to be underlain by significant thicknesses of Cretaceous sediments; which in turn, are unconformably underlain by variably quality limestone, dolomitic limestone, argillaceous limestone and shales of the Moberly, Christina and Calumet members of the Waterways Formation.

The 2004 thru 2006 exploration expenditures for MAIM Permit 9304041066 totaled \$23,654.76 (Part C, Appendix 1). The expenditures were insufficient to maintain the entirety of the property in good standing; hence, only portions of the property are to be retained (Fig. 3.2), as described in Part A of this report. The expenditures are to be applied towards work period years 1 and 2, and excess expenditures carried over to work period years 3 and 4 for the retained lands.

2.

INTRODUCTION

The "exploration objectives" or "scope" of the 2004 thru 2006 exploration were to map the approximate boundaries of the Moberly Member of the Waterways Formation below the sub-Cretaceous unconformity, and to locate high-quality carbonate rocks. To achieve the "exploration objectives", a visit to the property was made to search for outcrops along Steepbank River, and historic drill cores stored at the core library in Calgary, Alberta were logged.

3.

LOCATION AND ACCESS

MAIM Permit 9304041066 (Fig's. 3.1 and 3.2) is located within National Topographic System Map Sheets 74 D/14, and is centered upon approximately 56°54' N latitude, 111°15' W longitude.

Access to the property is via Highway 63 from Edmonton to Fort McMurray, thence by Helicopter to the property, which is between 10 and 30 km northeast of Fort McMurray.

In total, 13 drill historic cores and cuttings were examined from the permit. These locations are shown in Fig. 3.3.

4.

WORK PERFORMED

On July 29, 2004 Steepbank River was recontiered with the use of a helicopter. Subsequently, historic logs from core holes for tar sands exploration were examined, and depths to the subCretaceous unconformity estimated (Appendicies 2A and 2B).

From April 10 to 13, 2006, Dahrouge Geological Consulting Ltd. (Dahrouge) on behalf of Graymont Western Canada Inc. (Graymont), examined 13 historic drill cores and hole cuttings that were completed for tar sands exploration, and which were stored at the core library in Calgary, Alberta. The cores and cuttings were examined, and individual stratigraphic units described, measured, and quality assessed using a solution of 5% HCL (Appendix 3).

5.

RESULTS

On July 29, 2004 Steepbank River was reconnoitered with the use of a helicopter. Outcrops along Steepbank River consist primarily of Cretaceous sandstones and tar sands. No dolomite or limestone outcrops were located.

At the Eastside Permit, a total of 21 core holes were previously completed for tar sands exploration (Appendix 2A; Fig. 3.3). Logs from these holes were examined, and depths to the subCretaceous unconformity estimated (Appendix 2B; Fig.5.1). In general, they show that the Paleozoic sequences below the subCretaceous unconformity are between 175 and 290 m depth.

From April 10 to 13, 2006, 13 historic drill holes and hole cuttings were examined, and logged (Appendix 3; Fig. 5.2). Ten of the drill holes intersected Paleozoic sequences of either the Moberly or Calumet Members of the Waterways Formation. At the Eastside Permit the drill holes showed the Moberly Member to consist primarily of good quality lime mudstone and nodular limestone; and low quality, brecciated limestone and argillaceous limestone.

Stratigraphically below the Moberly Member are shales and argillaceous limestones of the Christina Member. This unit varies from about 23 to 37 m thick near Fort McMurray (Norris, 1963). It was not found in any of the drill holes from the Eastside Permit.

Below the Christina Member, are low quality limestones of the Calumet Member (Appendix 3). The Calumet Member generally consists of brecciated, nodular, or argillaceous limestone. This unit is fossiliferous with bivalves, mollusc's, and cephalopods.

6.

CONCLUSIONS

Depths to the subCretaceous unconformity are too great for surface mining of the thin, high-quality limestone units of the Moberly Member of the Waterways Formation.

Only those portions of the permit that are to be stripped by future Tar Sands operators should be retained. This would include parts of the permit west of Steepbank River, within Tp.91 and 92.

7.

REFERENCES

Norris, A.W. (1963) Devonian Stratigraphy of Northeastern Alberta and Northwestern Saskatchewan; Geol. Surv. Can., Mem 313.

STATEMENT OF AUTHOR

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 practised my profession as a geologist intermittently from 1998 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 Technical Report after the end of the one-year confidentiality period.
- I am the author of the report entitled "2004 To 2006 Exploration of the Eastside Permit" and accept responsibility for the veracity of technical data and results.

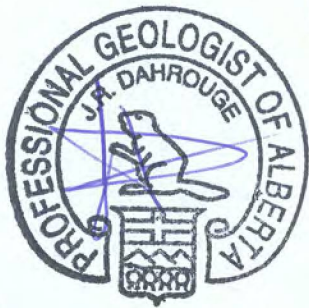
Dated this 4th day of July, 2006.



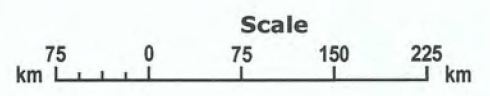
Jody Dahrouge, B.Sc., P.Geol
APEGGA M48123



Location of
MAM Permit
9304041066



- LEGEND**
- Provincial capital
 - Other populated places
 - +— Trans-Canada Highway
 - Major road
 - - - - International boundary
 - · · · · Provincial boundary

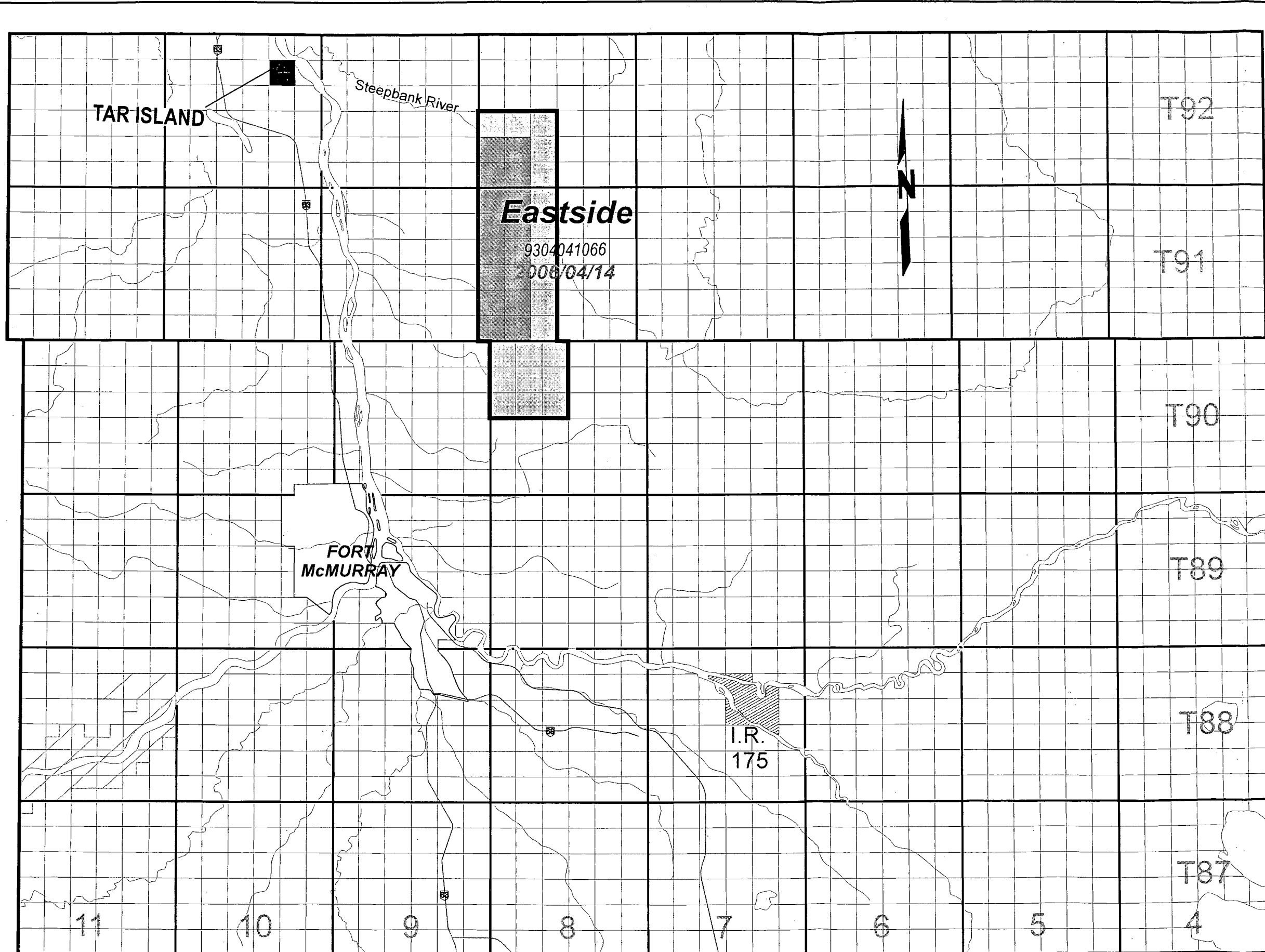


GRAYMONT WESTERN CANADA INC.
DAHROUGE GEOLOGICAL CONSULTING LTD.
Edmonton, Alberta

STEEP BANK AREA, ALBERTA

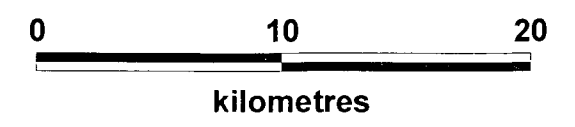
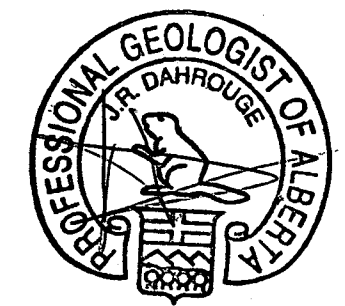
Fig. 3.1 Location Map

© 2004. Her Majesty the Queen in Right of Canada, Natural Resources Canada.



SYMBOLS

- 9304041066 MAIM Permit Boundary
- Land to be Retained
- Sections of Permit to be Surrendered
- Indian Reserve
- 2004/09/16 Expiry Date (YYYY/MM/DD)
- Oil Sands Plant Site (existing, proposed)

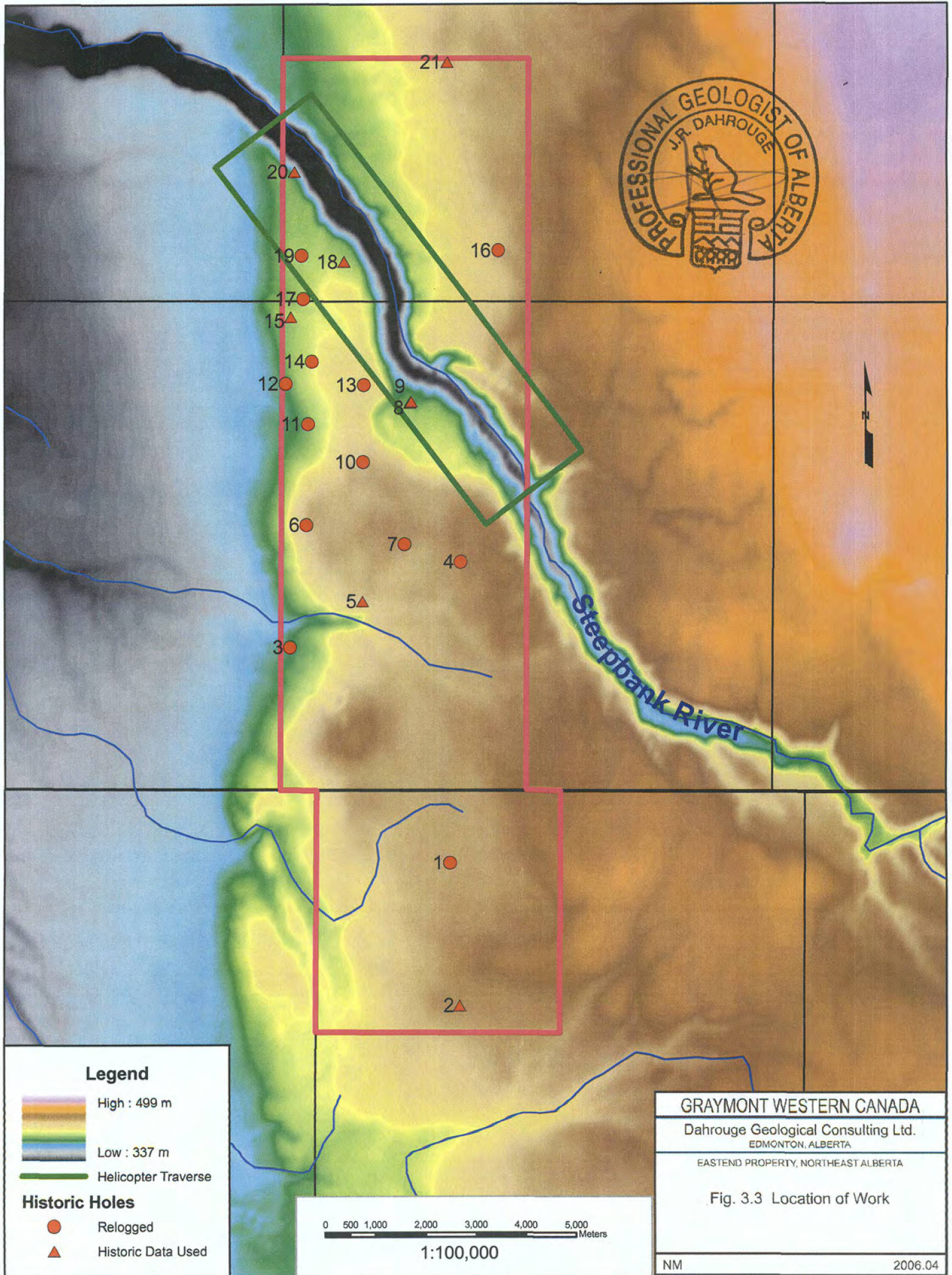


GRAYMONT WESTERN CANADA INC.
 DAHROUGE GEOLOGICAL CONSULTING LTD.
 Edmonton, Alberta
 STEEPBANK RIVER AREA, ALBERTA
 Fig. 3.2 Permit Boundaries

Rg 9

Rg 8

C3






Tp 92



Tp 91

Tp 90

Legend

-  High : 499 m
-  Low : 337 m
-  Helicopter Traverse

Historic Holes

-  Relugged
-  Historic Data Used

0 500 1,000 2,000 3,000 4,000 5,000 Meters

1:100,000

GRAYMONT WESTERN CANADA

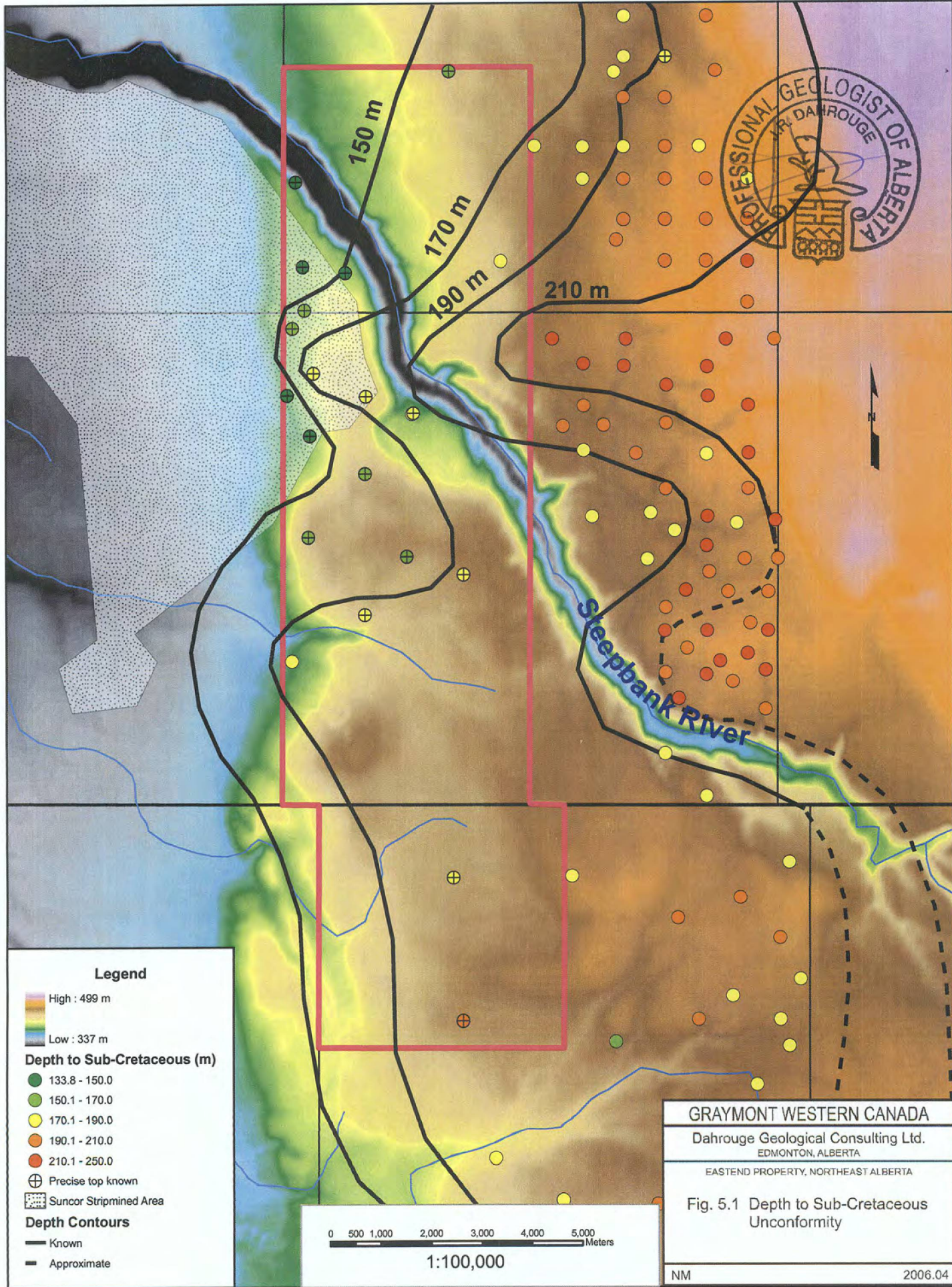
Dahrouge Geological Consulting Ltd.
EDMONTON, ALBERTA

EASTEND PROPERTY, NORTHEAST ALBERTA

Fig. 3.3 Location of Work

NM

2006.04



Tp 92

Tp 91

Tp 90

Legend

High : 499 m
 Low : 337 m

Depth to Sub-Cretaceous (m)

- 133.8 - 150.0
- 150.1 - 170.0
- 170.1 - 190.0
- 190.1 - 210.0
- 210.1 - 250.0
- ⊕ Precise top known

▨ Suncor Stripmined Area

Depth Contours

- Known
- - - Approximate

0 500 1,000 2,000 3,000 4,000 5,000 Meters
 1:100,000

GRAYMONT WESTERN CANADA

Dahrouge Geological Consulting Ltd.
EDMONTON, ALBERTA

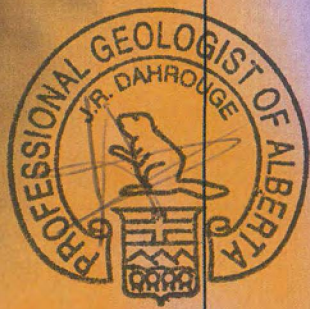
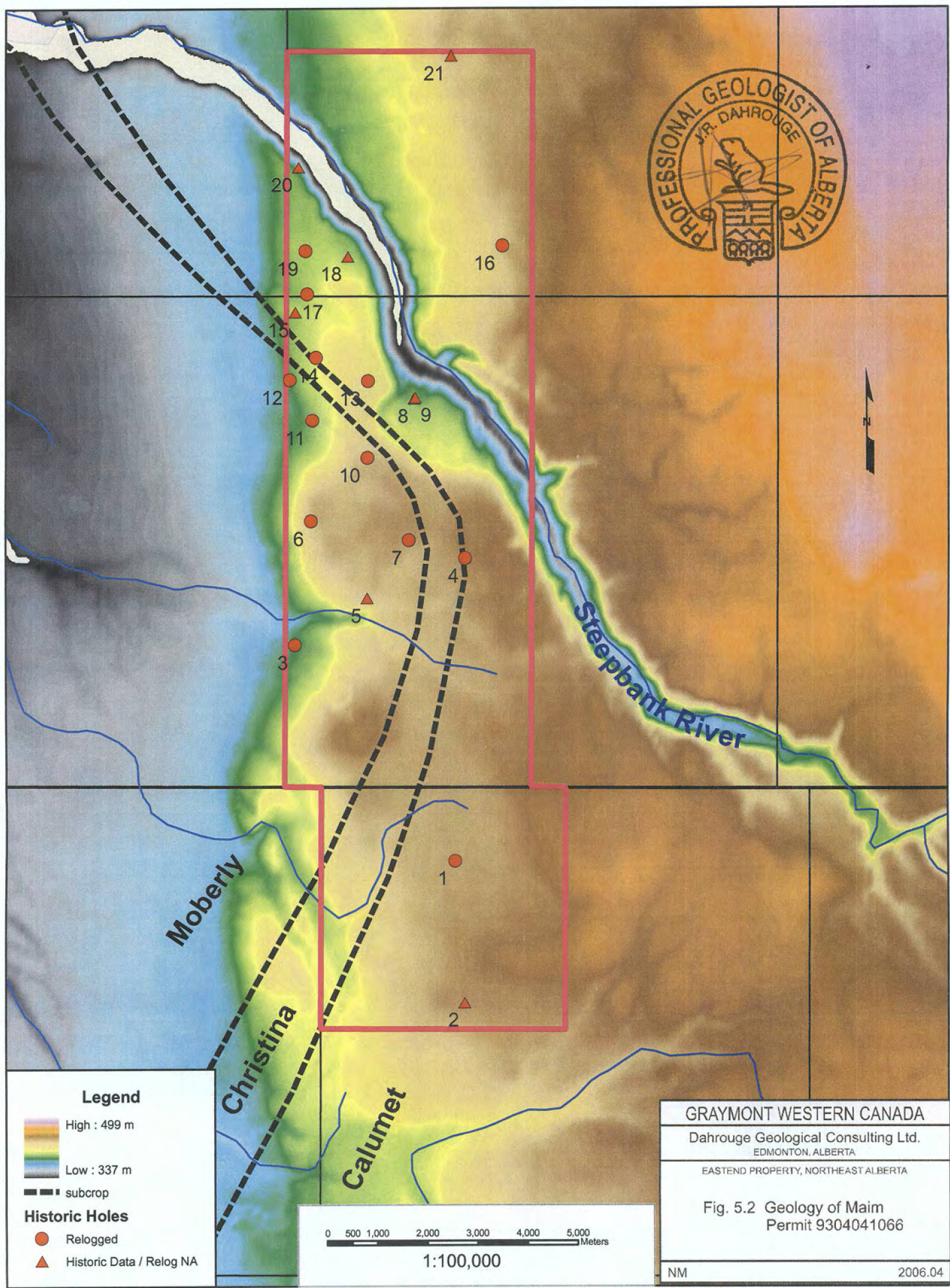
EASTEND PROPERTY, NORTHEAST ALBERTA

Fig. 5.1 Depth to Sub-Cretaceous Unconformity

Rg 9

Rg 8

C5



Tp 92

Tp 91

Tp 90

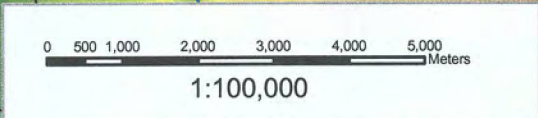
Legend

High : 499 m
Low : 337 m

--- subcrop

Historic Holes

- Relogged
- ▲ Historic Data / Relog NA



GRAYMONT WESTERN CANADA
 Dahrouge Geological Consulting Ltd.
 EDMONTON, ALBERTA
 EASTEND PROPERTY, NORTHEAST ALBERTA

Fig. 5.2 Geology of Maim
 Permit 9304041066

NM 2006.04

**APPENDIX 1: COST STATEMENT FOR THE 2004 THRU 2006 EXPLORATION
CONDUCTED ON THE EASTSIDE PERMIT**

a) <u>Personnel</u>	\$ 14,921.69
b) <u>Food and Accommodation</u>	\$ 1,339.14
c) <u>Transportation</u>	\$ 2,088.68
d) <u>Report</u>	\$ 60.50
e) <u>Other</u>	\$ 3,094.32
<u>Total</u>	<u>\$ 21,504.33</u>
<u>Administration</u>	<u>\$ 2,150.43</u>
<u>Total plus Administration</u>	<u>\$ 23,654.76</u>

APPENDIX 2A: LOCATIONS OF HISTORIC DRILL HOLES AT THE EASTSIDE PERMIT

Notes: na - not available

Well Name	Logged	Hole ID	Spud Date	Tp.	RW4	Sec.	LSD	Longitude	Latitude	Elevation(m)	
										GRD	KB
Mobil Clarke OV 2-32-90-8	Core	1	07-Feb-81	90	8	32	2	111.2382	56.8442	431.80	431.80
Mobil 4 Athabasca TH 8-20-90-8	na	2	27-Jan-59	90	8	20	8	111.2349	56.8184	438.60	438.60
Suncor Ov 03-142 Mill 12-7-91-8	Core	3	19-Mar-03	91	8	7	12	111.2908	56.8826	382.80	384.40
Baysel Steepbank 13-16-91-8	Cuttings	4	21-Aug-57	91	8	16	13	111.2353	56.8980	438.00	438.60
Bailey 9 McMurray TH 8-18-91-8	na	5	19-Aug-57	91	8	18	8	111.2672	56.8909	420.30	420.30
Suncor OV 02-165 Mill 6-19-91-8	Core	6	30-Jan-02	91	8	19	6	111.2857	56.9045	422.50	422.50
Baysel 10 Steepbank OV 3-20-91-8	Core	7	25-Feb-73	91	8	20	3	111.2537	56.9012	431.30	431.30
Baysel Steepbank 15-29-91-8	na	8	14-Sep-57	91	8	29	15	111.2521	56.9264	401.10	402.00
Test Hole # 15-29	na	9	01-Oct-57	91	8	29	15	111.2517	56.9266	402.00	402.00
Baysel 11 Steepbank OV 1-30-91-8	Core	10	24-Feb-73	91	8	30	1	111.2673	56.9158	429.80	429.80
Suncor OV 02-162 Mill 6-30-91-8	Core	11	28-Jan-02	91	8	30	6	111.2853	56.9225	390.80	391.00
Baysel 21 Steepbank OV 13-30-91-8	Core	12	01-Mar-73	91	8	30	13	111.2926	56.9297	380.40	381.60
Baysel 22 Steepbank OV 16-30-91-8	Core	13	03-Mar-73	91	8	30	16	111.2672	56.9296	417.00	418.50
Suncor OV 02-159 Mill 6-31-91-8	Core	14	14-Jan-02	91	8	31	6	111.2842	56.9337	404.20	404.20
Suncor OV 02-158 Mill 13-31-91-8	na	15	09-Jan-02	91	8	31	13	111.2910	56.9417	395.00	395.00
Suncor Firebag 10-4-92-8	Core	16	12-Feb-05	92	8	4	10	111.2234	56.9535	430.60	432.10
Union MCM 1-75 OV 4-6-92-8	Core	17	20-Jan-75	92	8	6	4	111.2871	56.9449	401.10	402.30
Union MCM 1-75 Ov 7-6-92-8	na	18	16-Jan-75	92	8	6	7	111.2739	56.9515	404.20	405.40
Suncor OV 02-155 Mill 12-6-92-8	Core	19	10-Jan-02	92	8	6	12	111.2877	56.9526	399.00	399.60
Union MCM 1-74 OV 12-7-92-8	na	20	03-Mar-74	92	8	7	12	111.2901	56.9675	394.10	395.30
Test Hole # 9	na	21	17-Mar-59	92	8	17	16	111.2403	56.9874	442.60	442.60

**APPENDIX 2B: ESTIMATED DEPTHS TO THE SUBCRETACEOUS UNCONFORMITY
FOR DRILL HOLES AT THE EASTSIDE PERMIT**

Notes: na - not available, ni- not intersected; Depth to Paleozoic is the estimated depth to the subCretaceous unconformity

Well Name	Hole ID	Elevation(m)		Depth (m)		Depth To Paleozoic*	
		GRD	KB	Total	SS		
Mobil Clarke OV 2-32-90-8	1	1981-90-8-32-2	431.80	431.80	202.00	229.80	189.50
Mobil 4 Athabasca TH 8-20-90-8	2	1959-90-8-20-8	438.60	438.60	196.30	242.30	195.70
Suncor Ov 03-142 Mill 12-7-91-8	3	2003-91-8-7-12	382.80	384.40	186.30	198.10	ni
Baysel Steepbank 13-16-91-8	4	1957-91-8-16-13	438.00	438.60	477.90	-39.30	174.00
Bailey 9 McMurray TH 8-18-91-8	5	1957-91-8-18-8	420.30	420.30	179.80	240.50	177.40
Suncor OV 02-165 Mill 6-19-91-8	6	2002-91-8-19-6	422.50	422.50	174.20	248.30	168.00
Baysel 10 Steepbank OV 3-20-91-8	7	1973-91-8-20-3	431.30	431.30	166.40	264.90	162.10
Baysel Steepbank 15-29-91-8	8	1957-91-8-29-15	401.10	402.00	438.30	-36.30	ni
Test Hole # 15-29	9	1957-91-8-29-15a	402.00	402.00	438.30	-36.30	186.90
Baysel 11 Steepbank OV 1-30-91-8	10	1973-91-8-30-1	429.80	429.80	166.70	263.40	161.50
Suncor OV 02-162 Mill 6-30-91-8	11	2002-91-8-30-6	390.80	391.00	156.50	234.50	150.00
Baysel 21 Steepbank OV 13-30-91-8	12	1973-91-8-30-13	380.40	381.60	141.40	240.20	137.00
Baysel 22 Steepbank OV 16-30-91-8	13	1973-91-8-30-16	417.00	418.50	176.80	241.70	175.90
Suncor OV 02-159 Mill 6-31-91-8	14	2002-91-8-31-6	404.20	404.20	183.30	220.90	177.50
Suncor OV 02-158 Mill 13-31-91-8	15	2002-91-8-31-13	395.00	395.00	171.10	223.90	166.00
Suncor Firebag 10-4-92-8	16	2005-92-8-4-10	430.60	432.10	181.00	251.10	ni
Union MCM 1-75 OV 4-6-92-8	17	1975-92-8-6-4	401.10	402.30	163.70	238.60	157.30
Union MCM 1-75 Ov 7-6-92-8	18	1975-92-8-6-7	404.20	405.40	156.10	249.30	149.30
Suncor OV 02-155 Mill 12-6-92-8	19	2002-92-8-6-12	399.00	399.60	150.40	249.20	143.00
Union MCM 1-74 OV 12-7-92-8	20	1974-92-8-7-12	394.10	395.30	140.80	254.50	137.80
Test Hole # 9	21	1959-92-8-17-16	442.60	442.60	167.00	275.60	164.60

APPENDIX 3: LITHOLOGICAL LOGS FOR HISTORIC CORE HOLES FROM THE EASTSIDE PERMIT

DIAMOND DRILL LOG

Hole ID: 11
 Company: Suncor
 Well Name: Suncor OV 02-162 Mill 630 918

Total Depth: 156.45 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
134.63	149.60	14.97	McMurray	-	-	mudstone, light-brown, with 15 cm of oil sand at base
149.60	149.80	0.20	Waterways	Moberly	-	mudstone, reddish-brown, slight fizz
149.80	150.60	0.80	Waterways	Moberly	-	limestone, mottled-white to cream argillaceous; gritty surface texture, fossils
150.60	150.82	0.22	Waterways	Moberly	-	missing core
150.82	151.50	0.68	Waterways	Moberly	-	lime mudstone, uniform light-tan chalky, locally fossiliferous
151.50	152.40	0.90	Waterways	Moberly	-	brecciated, nodular limestone, cryptocrystalline, abundant bitumen stain and fracture fill, light tan to white, very fossiliferous, massive, slightly dolomitic, oolitic(?)
152.40	156.45	4.05	Waterways	Moberly	-	light-grey, mottled light-brown; micritic fossiliferous

EOH

DIAMOND DRILL LOG

Hole ID: 7
 Company: ?
 Well Name: Baysel 10 Steepbank OV 3-20-91-8

Total Depth: 162.76 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
137.46	148.13	10.67	McMurray	-	-	<u>oil sand</u>
148.13	160.93	12.80	McMurray	-	-	<u>shale/mudstone</u> , brown, very fine beds, 3 to 4' of oil sand at base
160.93	162.76	1.83	Waterways	Moberly	39	<u>limestone</u> , brownish-red mottles, very light brownish grey, fossiliferous, stromatoporoids

EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 12
 Company: ?
 Well Name: Baysel 21 Steepbank OV 13-30-91-8

Total Depth: 138.68 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
117.96	128.02	10.06	McMurray	-	-	<u>oil sand</u> , with few beds of <u>mudstone</u> , brown, thin-bedded
128.02	138.68	10.66	McMurray	-	-	<u>shale or mudstone</u> , brown, thin-bedded
						EOH

DIAMOND DRILL LOG

Hole ID: 13
 Company: ?
 Well Name: Baysel 22 Steepbank OV 16-30-91-8

Total Depth: 176.48 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
152.10	176.48	24.38	McMurray	-	-	<u>oil sand</u>
164.29	176.48	12.19	McMurray	-	-	<u>mudstone or shale</u> , light-brown, thin-bedded, no
						EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 6
 Company: Suncor
 Well Name: Suncor OV 02-165 Mill 6-19-91-8

Total Depth: 174.29 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
146.98	164.44	17.46	McMurray	-	-	<u>oilsands</u> , some medium-brown-grey <u>mudstone</u>
164.44	167.64	3.20	McMurray	-	-	<u>mudstone</u> , medium-dark-grey
167.64	168.45	0.81	Waterways	Calumet(?)	-	<u>limestone</u> , very argillaceous 'transition zone', some bitumen stain, light-greenish to chalky white color, massive, top 2-5 cm very fossiliferous, mollusca and cephalopods, upper contact ~75°C, beds 80-85°C
168.45	168.80	0.35	Waterways	Calumet(?)	-	<u>limestone</u> , chalky-cream color, massive, cross-cutting 1 cm fracture at ~15°C with grey clay fill
168.80	174.29	5.49	Waterways	Calumet(?)	-	<u>limestone</u> , nodular, light-grey, thin-bedded, sub-rounded to angular fragments, brecciated(?)

EOH

DIAMOND DRILL LOG

Hole ID: 1
 Company: Mobil
 Well Name: Mobil Clarke OV 2-32-90-8

Total Depth: 189.39 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
173.05	175.13	2.08	McMurray	-	-	<u>oils sand</u> , with <u>mudstone</u> interbed to 3 cm thick
175.13	183.40	8.27	McMurray	-	-	<u>mudstone</u> , light-grey, crumbly
183.40	188.14	4.74	McMurray	-	-	<u>oil sands</u> , very rich, last ½ m lean
188.14	189.39	1.25	Waterways	Calumet(?)	-	<u>limestone</u> , micritic, top 25 cm is transitional zone, very thin bedded, platy, abundant clay partings, thin beds, core axis laminar partings, brick-like structure

EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 3
 Company: Suncor
 Well Name: Suncor Ov 03-142 Mill 12-7-91-8

Total Depth: 186.00 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
159.90	174.70	14.80	McMurray	-	-	<u>shale or mudstone</u> , black grades downward to <u>mudstone</u> , olive-grey
174.70	179.50	4.80	McMurray	-	-	missing
179.50	179.80	0.30	Waterways	Moberly	-	<u>limestone</u> , white to cream color, slight greenish tinge, micritic, soft, brecciated, good reaction to HCl
179.80	180.20	0.40	Waterways	Moberly	-	<u>limestone</u> , white to cream color, brachiopods, massive, bottom 10 cm micritic, good reaction HCl
180.20	183.10	2.90	Waterways	Moberly	-	missing core
183.10	183.90	0.80	Waterways	Moberly	-	<u>limestone</u> , light-grey, massive with abundant brecciated intervals, micritic, clay partings, core broken with numerous collapse features, good reaction to HCl, partings with slow reaction
183.90	184.50	0.60	Waterways	Moberly	-	as above; with a less competent interval to 6½ cm, of <u>argillaceous limestone</u> , platy, fossiliferous, micritic
184.50	186.00	1.50	Waterways	Moberly	-	<u>limestone</u> , light-grey, massive, micritic, some secondary calcite

EOH

DIAMOND DRILL LOG

Hole ID: 10
 Company: ?
 Well Name: Baysel 11 Steepbank OV 1-30-91-8

Total Depth: 161.54 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
140.51	160.93	20.42	McMurray	-	-	<u>oils ands</u> with interbeds of brown <u>shale</u>
160.93	161.54	0.61	Waterways	Moberly	-	<u>limestone</u> , light-brown-grey with numerous soft light-green clay partings to 2 cm thick, fossiliferous, brecciated, good reaction to HCl

EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 19
 Company: Suncor
 Well Name: Suncor OV 02-155 Mill

Total Depth: 137.82 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
114.06	137.82	23.76	McMurray	-	-	<u>oilsands</u> with minor olive-grey mudstone interbeds EOH

DIAMOND DRILL LOG

Hole ID: 14
 Company: Suncor
 Well Name: Suncor OV 02-159 Mill 6-31-91-8

Total Depth: 182.70 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
149.84	176.68	26.84	McMurray	-	-	<u>mudstone</u> , light- to medium-reddish brown, variegated colors, few <u>sand</u> beds to 1 m with carbonaceous material
176.68	177.40	0.72	Waterways	Calumet(?)	-	transition zone
177.40	178.90	1.50	Waterways	Calumet(?)	-	<u>limestone</u> , mottled, white to cream colored, mottles light-brown, good reaction to HCl
178.90	182.70	3.80	Waterways	Calumet(?)	-	<u>limestone</u> , nodular, reworked, thin beds of lime mudstone with mud matrix, grades down to light-grey <u>limestone</u> , fissle EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 16
 Company: Suncor
 Well Name: Suncor Firebag 10-4-92-8

Total Depth: 180.80 m

Date Logged: April 10-13, 2006
 Logged By: W. McGuire and S. Talwar

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
148.10	164.50	16.40	McMurray	-	-	<u>oil sand</u> with some interbeds of <u>mudstone</u>
164.50	166.60	2.10	Waterways	Calumet(?)	-	<u>mudstone</u> , tan-brown to brown color, no reaction to HCl
166.60	167.30	0.70	Waterways	Calumet(?)	-	<u>mudstone</u> , (calcareous) tan-brown to brown grades down to light-olive-green, some bitumen stain
167.30	167.60	0.30	Waterways	Calumet(?)	-	<u>limestone</u> , cream colored fossiliferous, corals and chalky mudstone
167.60	169.10	1.50	Waterways	Calumet(?)	-	missing core
169.10	176.40	7.30	Waterways	Calumet(?)	-	<u>lime mudstone</u> , nodular, light-cream to light-greyish-white, with abundant clay partings, fractures pale brown
176.40	177.90	1.50	Waterways	Calumet(?)	-	<u>lime mudstone</u> , pale-brown, with numerous light-brown clay partings, fossiliferous
177.90	180.05	2.15	Waterways	Calumet(?)	-	<u>lime mudstone</u> , nodular, light cream color, tan-brown clay partings, some small fossils
180.05	180.80	0.75	Waterways	Calumet(?)	-	<u>limestone</u> , nodular, light-grey, up to 30% medium-grey, fossiliferous, <u>mudstone</u> matrix

EOH

APPENDIX 3: CONTINUED

DIAMOND DRILL LOG

Hole ID: 17
 Company: ?
 Well Name: Union MCM 1-75 OV 4-6-92-8

Total Depth: 156.97 m

Date Logged: April 10-13, 2006

Logged By: S. Fraser

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
138.38	155.14	16.76	McMurray	-	-	<u>oil sands</u> , bottom part is medium to dove-grey <u>mudstone</u>
155.14	155.45	0.30	Waterways	Calumet(?)	-	<u>lime mudstone</u> , fossiliferous with bivalves
155.45	156.97	1.52	Waterways	Calumet(?)	-	<u>limestone</u> , pale-brown to cream color, rusty on top, irregular fractures, nodular, compact matrix, fractures filled with dark-brown material, nodules good reaction to HCl, matrix slow reaction to HCl
EOH						

DIAMOND DRILL LOG

Hole ID: 4
 Company: ?
 Well Name: Baysel Steepbank 13-16-91-8

Total Depth: 192.05 m

Date Logged: April 10-13, 2006

Logged By: S. Fraser

From (m)	To (m)	Thick. (m)	Formation	Member	Unit	Description
167.64	170.69	3.05	McMurray	-	-	<u>tar sand</u>
170.69	173.74	3.05	Waterways	-	-	<u>limestone</u> , cream color, microcrystalline, occasional crinoid stems and oscicles
173.74	179.83	6.10	Waterways	-	-	<u>limestone</u> , grey-brown to cream color, microcrystalline, partly chalky, partly vuggy, abundant crinoids
179.83	182.88	3.05	Waterways	-	-	<u>argillaceous limestone</u> , cream to brown, some grey-grey argillaceous material, abundant crinoid oscicles
182.88	185.93	3.05	Waterways	-	-	<u>limestone</u> , greenish-grey with occasional dark-grey, microcrystalline to very fine grained, massive, fossiliferous (mollusk, minor crinoids)
185.93	188.98	3.05	Waterways	-	-	<u>limestone</u> , grey to greenish-grey, fine-grained, sucrosic, possible anhydrite?
188.98	192.02	3.05	Waterways	-	-	<u>limestone</u> , cream color, trace anhydrite, sucrosic
EOH						