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GRAYMONT WESTERN CANADA INC.

2004 TO 2006 EXPLORATION ALONG ATHABASCA AND HORSE RIVERS NEAR FORT MCMURRAY, NORTHEAST ALBERTA

PART B

Metallic and Industrial Mineral Permit 9304041067, 9304050873 and 9303080878

Geographic Coordinates

56°37' N to 56°51' N 111°13' W to 111°36' W

NTS Sheets 74 D/11 to 14

Owner of MAIM Permit(s): 9304041067, 9304050873 and 9303080878 Graymont Western Canada Inc. 190, 3025 - 12 Street N.E. Calgary, AB, T2E 7J2

Operator:

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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 D. Smith, M.Sc.

Date: July 12, 2006

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SUMMARY

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Between August 4 to 11, 2005, areas proximal to Fort McMurray, along Athabasca and Horse Rivers, were explored for high-quality carbonate rocks, all within Metallic and Industrial Minerals (MAIM) permits 9304041067, 9304050873 and 9303080878. The permits are informally named Westside, Southside and Athabasca River respectively, and are grouped as the Athabasca Group. Exploration included the examination of 31 discrete stratigraphic intervals totalling 44¼ m thickness.

Results of the exploration showed that good-quality carbonates of the Moberly Member of the Devonian Waterways Formation only outcrop along Athabasca River, at two locations. The Moberly Member generally consist of fossiliferous, massive to nodular, lime mudstone, wackestone and packstone.

Exploration expenditures for the Athabasca Group permits totalled \$43,809.89 (Appendix 1). The expenditures were insufficient to maintain the entirety of the property in good standing; as described in Part A of this report, only portions of the property are to be retained (Fig. 3.2). MAIM Permit 9304041067 is reduced to 3776 ha, and expenditures of \$18,880 are applied towards assessment period Years 1 and 2. MAIM Permit 9304050873 is reduced to 2964 ha, and expenditures of \$14,820 are applied towards assessment period Years 1 and 2. MAIM Permit 9303080878 is to be maintained at 1280 ha, and expenditures of \$10,109.89 are applied towards assessment period Years 3 and 4.

INTRODUCTION

The "exploration objectives" or "scope" of the 2004 to 2006 exploration was to locate highquality carbonate rocks of the Moberly Member of the Waterways Formation below the sub-Cretaceous unconformity, and to assess its quarriability. To achieve these objectives, outcrops along portions of the Athabasca and Horse Rivers were located and mapped.

3.

2.

LOCATION AND ACCESS

MAIM permits 9304041067, 9304050873 and 9303080878 (Figs. 3.1 and 3.2) are located within National Topographic System Map Sheets 74 D/11 to 14. The permit area is bounded by geographic coordinates 56°37' N to 56°51' N and 111°13' W to 111°36' W.

Access to the property is via Fort McMurray, which is adjacent to the permit area. A series of

1.

trails and cut lines allow for good access to the river banks of Athabasca and Horse rivers. A jetboat was required to get access to some outcrops along Athabasca River.

A total of 31 stratigraphic sections were evaluated during the 2005 exploration program. Their locations are shown in Fig. 3.3.

4.

WORK PERFORMED

From August 4 to 11, 2005, Dahrouge Geological Consulting Ltd. on behalf of Graymont Western Canada Inc., evaluated 31 stratigraphic intervals totaling 44¼ m in thickness at and near the Athabasca Group MAIM permits. Individual stratigraphic intervals were measured and described in detail (Appendix 2). Stratigraphic thicknesses were determined by measuring outcrops perpendicular to bedding. Quality was assessed in the field using a solution of 5% HCL.

A jet-boat was required to get access to carbonate outcrops located along Athabasca River. Horse River and other parts of the property were traversed on foot.

5.

RESULTS

From August 4 to 11, 2005, carbonate rocks of the Moberly Member of the Waterways Formation were identified at two locations within and proximal to the Athabasca Group. Both locations are along Athabasca River, and neither are in a quarriable location (Fig. 3.3), as they are situated near the base of steep cliffs comprised of thick sequences of Cretaceous sediments. The overlying sediments are presumed to be the McMurray and Clearwater formations (Fig. 5.1).

In total, 31 discrete stratigraphic intervals were evaluated along Athabasca River (Fig. 3.3, Appendix 2). The measured sections were from the Moberly Member of the Devonian Waterways Formation and varied from less than 1 m to about 2¼ m in thickness. The measured intervals generally consist of fossiliferous, massive to nodular, lime mudstone to wackestone and packstone. The quality of the carbonate is considered good.

Given the conspicuous cliff-forming character of these beds, and the presence of stromatoporoids, they are presumed to be the stratigraphic equivalent of Norris' (1963) Unit 37.

CONCLUSIONS

High-quality carbonate rocks of the Moberly Member of the Waterways Formation were identified at two locations along Athabasca River. Both are near the permit boundaries, and neither is in a quarriable location.

Due to the poor results of the 2004 to 2006 exploration, and of previous results, sections of MAIM permits 9304041067 and 9304050873 will be surrendered. All of MAIM permit 9303080878 will be retained.

6.

REFERENCES

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Cotterill and Hamilton (1995) Geology of Devonian Limestones in Northeastern Alberta; Alta. Geol. Surv.; OFR 1995-07.

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

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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 Along Athabasca and Horse Rivers near Fort McMurray" and accept responsibility for the veracity of technical data and results.



Jody Dahrouge, BSc, PGeol APEGGA M48123




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ITEMIZED COST STATEMENT FOR THE 2004 TO 2006 EXPLORATION

a) <u>Personnel</u>	\$ 23,835.86
b) Food and Accommodation	\$ 5,752.43
c) <u>Transportation</u>	\$ 9,566.92
d) Instrument Rental	n/a
e) <u>Drilling</u>	n/a
f) <u>Analyses</u>	n/a
g) <u>Report</u>	\$ 60.50
h) <u>Other</u>	\$ 611.47
Subtotal	\$ 39,827.17
Administration (10% of subtotal)	\$ 3,982.72
Total	\$ 43,809.89

APPENDIX 2: MEASURED STRATIGRAPHIC SECTIONS

Date	Section	UTM (I	NAD 83)	Strat.	Description
	Number	Easting	Northing	Thick. (m)	·
6-Aug-05	21576	475464	6286148	1½	Wack-Packstone, light-creamy-tan weathered, light-tan fresh, beds 50 cm to massive, brachiopods, stromatoporoids, very good effervescence with HCL
6-Aug-05	21577	475464	6286148	3/4	Wack-Packstone, light-tan weathered, medium-tan fresh , beds 50 cm, brachiopods, few small crinoids, good effervescence with HCL
6-Aug-05	21578	475457	6286127	1	<u>Nodular Limestone</u> , light-tan weathered and fresh, beds 5 cm, brachiopods, bivalves (small), crinoids, resistant, moderate to good effervescence with HCL
6-Aug-05	21579	475756	6286085	1	<u>Mudstone</u> , tan-orange weathered, grey-dark brown fresh, nodular (massive), no fossils, recessive, moderate- to good effervescence with HCL
6-Aug-05	21580	475756	6286085	1½	<u>Mudstone-Wackstone</u> , light-cream tan weathered, tan with brown mottles on fresh surfaces, fine-grained matrix, beds to 25 cm, crinoids, brachiopods, very good effervescence with HCL
7-Aug-05	21581	475650	6286455	1	Wackstone, light-creamy tan with orange/brown burrows weathered, tan-grey fresh, fine-grained matrix, small crinoids, brachiopods, bivalves, beds to 5 cm
7-Aug-05	21582	475650	6286455	1½	Wackstone, light-creamy tan weathered, tan-grey fresh, massive burrows, small crinoids, few brachiopods
7-Aug-05	21583	475650	6286455	21⁄4	<u>Mudstone-Wackstone</u> , medium-tan weathered, very fine grained matrix, beds 2 cm, nodular, burrows, few brachiopods (2 cm), very fossiliferous within top 10 cm, moderate effervescence with HCL
7-Aug-05	21584	475650	6286455	1	<u>Mudstone-Wackstone</u> , dark-brown to tan weathered, brown/grey fresh, very crumbly, recessive, mottled, burrows, very small crinoids, moderate effervescence with HCL
7-Aug-05	21585	475675	6286559	1¼	<u>Wackstone</u> , dark-brown to tan weathered, brown/grey fresh, very crumbly, recessive, mottled, burrows, very small crinoids, brachiopods (5 mm), very fine grained matrix, good effervescence with HCL
7-Aug-05	21586	475675	6286559	1	Massive Wackstone, light-creamy-tan weathered, tan-grey fresh, massive burrows, small crinoids, brachiopods (1 cm), some fine 1mm shell fragments, moderate- to good effervescence with HCL
7-Aug-05	21587	475675	6286559	2	<u>Mudstone-wackstone</u> , grey-tan fresh and weathered, beds small ~ 2 cm

Note: All sections are of the Moberly Member of the Devonian Waterways Formation

APPENDIX 2: CONTINUED

7-Aug-05	21588	475693	6286633	2	<u>Mudstone-Wackstone to Packstone</u> , light-grey-tan fresh, tan-cream weathered, crinoids (few), lower 1½ m recessive, top ½-m with more fossils, good effervescence with HCL
9-Aug-05	21589	466786	6281247	1½	<u>Mudstone-Wackstone</u> , medium-grey fresh, light-grey-tan weathered, beds to 5 cm, brachiopods, crinoids, burrows, good effervescence with HCL
9-Aug-05	21590	466786	6281247	2	Wackstone, tan-orange weathered, tan-gey fresh, beds to 20 cm, crinoids, brachiopods, stromatoporoids, bivalves
9-Aug-05	21591	467670	6281299	1½	<u>Wack-Packstone.</u> brown-tan weathered, grey fresh, beds 2 to 10 cm, brachiopods, crinoids, bivalves, good to very good effervescence with HCL
9-Aug-05	21592	467670	6281299	3/4	<u>Packstone</u> , tan weatherd, grey-tan fresh, beds massive, coarse grained calcite in vugs and replacing fossils, bivalves, crinoids, brachiopods, stromatoporoids, abundant pyrite modules, gastropods, good effervescence with HCL
9-Aug-05	21593	467670	6281299	3/4	Wackstone, tan weathred, light-grey fresh, beds 5 to 10 cm, bivales, crinoids, brachiopods, good effervescence with HCL
9-Aug-05	21594	467670	6281299	2	Wackstone, tan weathered, light-grey fresh, massive, bivalves, brachiopods, crinoids, good effervescence
9-Aug-05	21595	467662	6280902	2	<u>Massive Wackstone</u> , cream-grey weathered, light-medium grey fresh, some coarse calcite crystals, few fossils, matrix fine grained, beds 5-10 cm, bivalves, brachiopods, moderate to good effervescence with HCL
9-Aug-05	21596	467662	6280902	1½	Wacktone, cream-yellow light weathered, light-grey to medium-grey fresh, crumbly-no obvious beds, slighty recessive, little to no fossils
9-Aug-05	21597	467662	6280902	1½	Wackstone, light-yellow-cream weathered, light-grey-brown fresh, few fossils ~1cm brachiopodes and bivalves, very fine grained matrix, thin bedded 2-5 cm, infilled vugs, moderate to good effervescence with HCL
10-Aug-05	21598	474816	6286342	1½	Wackstone, light-tan weathered, very light grey fresh, massive, bivalves, brachiopods, few crinoids, very good effervescence with HCL
10-Aug-05	21599	474816	6286342	2	<u>Wackstone</u> , tan-cream weathered, light-grey fresh, very fine grained matrix, coarse calcite crystals 1 cm, few fossils, good effervescence with HCL
10-Aug-05	21600	474816	6286342	1	Limestone, tan-cream weathered, light-grey fresh, very fine grained, very few fossils, massive, hard, good reaction with HCL
6-Aug-05	21601	475488	6286155	2¼	Limestone, cream-light-tan (yellow) mottled weathered, light-grey fresh, fossiliferous-shells 1 cm length, crinoids 2 mm,

stromatoporoids to 10cm, brachiopods, bivalves

APPENDIX 2: CONTINUED

6-Aug-05	21602	475488	6286155	2	<u>Limestone</u> , cream-light-tan (yellow) mottled weathered, light-grey fresh, abundant fossils, crumbly but hard, microcrystalline
6-Aug-05	21603	475756	6286085	1	<u>Limestone</u> , cream-tan-white weathered, light grey tan-cream fresh, fossiliferous, crinoids, brachiopods, bivalves, black tar sand within, matrix-microcrystalline, 30-40% fossils, really good effervescence with HCL
10-Aug-05	210604	474492	6286439	1¼	Wackstone, tan-cream weathered, light-grey fresh, brachiopods/bivalves, recessive beds 2-5 cm
10-Aug-05	21605	474492	6286439	1	Wack-Packstone, yellow-tan weathered, tan-grey fresh, massvie, stromatoporoids 10 cm, crinoids, brachiopods, bivalves
10-Aug-05	21606	474492	6286439	1	<u>Wack-Packstone</u> , tan-cream weathered, iron stain, light tan-grey fresh, stromatoproids 10-15 cm, massive, some bed/layers as 21605, good effervescence with HCL