MAR 20180003: PRAIRIE CREEK

A report on Limestone exploration on the Prairie Creek property near Rocky Mountain House.

Received date: March 29, 2018

Public release date: March 31, 2019

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.
GRAYMONT WESTERN CANADA INC.

2017 EXPLORATION AND FIELDWORK
WITHIN THE PRAIRIE CREEK
METALLIC AND INDUSTRIAL MINERALS PERMIT,
WEST-CENTRAL ALBERTA

PART B
Metallic and Industrial Minerals Permit
9306031167

Geographic Coordinates
52°08' N to 52°09' N
115°25' W to 115°27' W

NTS Sheet 83 B/03

Owner & Operator: Graymont Western Canada Inc.
260, 4311 - 12 Street N.E.
Calgary, Alberta T2E 4P9

Consultant: Dahrouge Geological Consulting Ltd.
18, 10509 - 81 Avenue
Edmonton, Alberta T6E 1X7

Author: K. Krueger, B.Sc., P.Geo.

Date Submitted: March 29, 2018
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Summary</td>
<td>1</td>
</tr>
<tr>
<td>2. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>3. Geographic Setting and Access</td>
<td>1</td>
</tr>
<tr>
<td>3.1 Location and Access</td>
<td>1</td>
</tr>
<tr>
<td>3.2 Infrastructure</td>
<td>2</td>
</tr>
<tr>
<td>3.3 Topography, Vegetation and Climate</td>
<td>2</td>
</tr>
<tr>
<td>3.4 Field Operations</td>
<td>3</td>
</tr>
<tr>
<td>4. Property, Exploration and Expenditures</td>
<td>3</td>
</tr>
<tr>
<td>4.1 Property Summary</td>
<td>3</td>
</tr>
<tr>
<td>4.2 2017 Exploration Summary</td>
<td>3</td>
</tr>
<tr>
<td>4.3 Exploration Expenditures</td>
<td>4</td>
</tr>
<tr>
<td>5. Regional Geology</td>
<td>4</td>
</tr>
<tr>
<td>5.1 Stratigraphy</td>
<td>4</td>
</tr>
<tr>
<td>5.1.1 Palliser Formation</td>
<td>4</td>
</tr>
<tr>
<td>5.1.2 Banff Assemblage</td>
<td>5</td>
</tr>
<tr>
<td>5.1.3 Rundle Assemblage</td>
<td>5</td>
</tr>
<tr>
<td>5.1.4 Fernie Group</td>
<td>6</td>
</tr>
<tr>
<td>5.2 Structure</td>
<td>6</td>
</tr>
<tr>
<td>6. Results</td>
<td>6</td>
</tr>
<tr>
<td>7. Conclusions</td>
<td>8</td>
</tr>
<tr>
<td>8. References</td>
<td>9</td>
</tr>
<tr>
<td>9. Statements of Qualifications</td>
<td>12</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 5.1 Generalized Paleozoic Stratigraphy
    of Foothills and Front Ranges, West-Central Alberta ......................... 5

LIST OF APPENDICES

Appendix 1: Cost Statement ........................................................................... B1

PART C

Appendix 2: Sample Descriptions and Assay Results from the Prairie Creek Permit .... C1
Appendix 3: Analytical Laboratory Information and Techniques ............................ C3

Fig. 3.1 Location Map ..................................................................................... C4
Fig. 3.2 Access Map ....................................................................................... C5
Fig. 4.1 Permit Map ....................................................................................... C6
Fig. 4.2 Geology & Sample Locations ............................................................. (In Pocket)
Fig. 5.1 Regional Geology ............................................................................. (In Pocket)
1. SUMMARY

During July 2017, parts of Clearwater Range, west of Rocky Mountain House and within Metallic and Industrial Minerals (MAIM) Permit 9306031167, were explored for high-quality carbonate rocks. The 2017 exploration was a follow-up to previous exploration conducted in the area.

Access routes and outcrops were mapped, and a total of 16 rock samples were collected within the Prairie Creek Permit, representing approximately 46.75 m of stratigraphy. Samples were sent to a laboratory for whole-rock analysis.

Throughout this report, attitudes of bedding and other planar features are given as A°/B° SW, where A° is the azimuth of the strike and B° is the amount of dip in the direction indicated (right-hand rule). A magnetic declination of 16°17' east was used. Where bedding was not evident, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation is used.

2. INTRODUCTION

The 2017 exploration within the Prairie Creek Permit was conducted by Dahrouge Geological Consulting Ltd. (Dahrouge), on behalf of Graymont Western Canada Inc. (Graymont). This assessment report describes the exploration conducted within MAIM Permit 9306031167, which encompass parts of Clearwater Range of the Alberta Foothills. Bob Robison, exploration manager for Graymont Western U.S. Inc., authorized this work.

The objectives of the 2017 exploration were to expand on the previously explored areas, and to locate and better define carbonate units throughout the Property. This report includes information on the geology and quality of carbonates encountered while mapping and sampling outcrops within the permit area.

3. GEOGRAPHIC SETTING AND ACCESS

3.1 LOCATION AND ACCESS

MAIM Permit 9306031167 encompasses the northern parts of the Clearwater Range, south of North Saskatchewan River, within west-central Alberta (Fig. 3.1).

It includes land to the southeast of the quarry of Prairie Creek Quarries Ltd. within west-central Alberta (Fig. 3.2). The quarry of Prairie Creek Quarries Ltd. is approximately 1.5 km from the northernmost boundary of the Prairie Creek Property.
The northern part of Clearwater Range lies within Prairie Creek and Ram-Clearwater Resource Management areas (Alberta Forestry and Wildlife 1986 and 1988), and is mostly within Multiple Land Use Zone 5. The northern parts of Prairie Creek are within Critical Land Use Zone 2.

The northern parts of Clearwater Range, can be accessed from Rocky Mountain House by travelling approximately 55 km southwest along Secondary Highway 752 (Fig. 3.2).

Access to and throughout the Property is by truck, all-terrain vehicles, helicopter, and extensive hiking. Several logging roads and cut lines spurring off the main roads provide valuable ATV access throughout the property area.

3.2 INFRASTRUCTURE

Accommodations, food, fuel and other necessary services are available in Caroline and Rocky Mountain House. The local economy is primarily based on agriculture, forestry, and energy-based industries.

Rocky Mountain House, with a population of about 7,000, is accessed by traveling about 67 km west of Red Deer along the David Thompson Highway (Highway 11), and then 12 km north along Highway 22.

The village of Caroline is about 49 km from Rocky Mountain House, 37 km south along Highway 22 and 12 km east along Highway 54. Caroline has a population of about 550.

3.3 TOPOGRAPHY, VEGETATION AND CLIMATE

The Prairie Creek Permit is included in the Eastern-Slope Montane Forest Ecological Region, and lies within the Rocky-Clearwater District of the Alberta Forest Reserve. In the subalpine zone, vegetation consists of stunted subalpine fir and Englemann Spruce, and alpine foliage above the treeline. Vegetation in areas of rugged limestone outcroppings is generally sparse, and commonly consists of junipers, other low brush, and grasses. Below treeline, vegetation consists of dense stands of Aspen, Lodgepole Pine, White Spruce, and less frequent stands of Douglas Fir. Areas of lowest relief are covered with dense stands of Black Spruce and thick undergrowth, with local muskegs and swamps.

The Property is comprised of a series of northwest-trending ridges and valleys where elevations range from approximately 1,320 m along Clearwater River to about 2,200 m atop Marble Mountain. The Property is cut by a number of creeks, including Prairie Creek.
Climate is sub-alpine with average summer temperatures of 20° to 25°C and winter temperatures of -15° to -20°C, with extremes of 35°C and -40°C. Rainfall averages about 35 cm per year; snowfall averages 35 to 45 cm with the majority falling in December and January.

3.4 FIELD OPERATIONS
Field operations were conducted by a four-person geological crew from Dahrouge Geological Consulting Ltd., based in a hotel in Rocky Mountain House.

Transportation to and from the Property was by four-wheel-drive truck. Access throughout the Property was by truck and ATV's where possible, and by extensive hiking.

Garmin GPSmap 64S instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 16°17' east.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 PROPERTY SUMMARY
MAIM Permit 9306031167 (Prairie Creek) was acquired on March 30, 2006, to cover limestone exposures within Clearwater Range. The permit initially encompassed 5,688 hectares and adjoined to the north of the Corkscrew West Permit (Fig.'s 3.2 & 4.1). Following exploration conducted in 2007, the permit was reduced to 2,184 hectares. Exploration in 2009 resulted in a further reduction of the permit to its current area of 316 hectares.

Based on the 2017 exploration, the entirety of the Prairie Creek Permit will be retained (Section 4.3, Fig. 4.1).

4.2 2017 EXPLORATION SUMMARY
On July 5th, Dahrouge, on behalf of Graymont, conducted exploration for carbonate lithotypes within west-central Alberta. The work was undertaken to determine the location and extent of carbonate units in the permit area.

Carbonate outcrops were examined and a total of 16 samples were collected (Fig. 4.2). Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (Appendix 2). A solution of 10% HCl was used to assess carbonate quality in the field, and rock samples were shipped to Central Lab of Graymont Western U.S. Inc. in Utah for analyses (Appendix 3). In some instances, interval thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified. Field maps were completed on 1:20,000 and 1:30,000 scale map sheets and concentrated on areas around Clearwater Range.
4.3 EXPLORATION EXPENDITURES

Expenditures for 2017 totaled $4,500.03. The entirety of the Prairie Creek (MAIM Permit 9306031167) Permit will be retained. Excess expenditures are to be assigned to future exploration periods.

Expenditures are allocated to MAIM Permit 9306031167 as follows:

<table>
<thead>
<tr>
<th>MAIM Permit</th>
<th>Permit Area (ha)</th>
<th>Required Expenditures</th>
<th>Assigned Expenditures</th>
<th>New Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>9306031167</td>
<td>316</td>
<td>$4,138.54*</td>
<td>$4,500.03</td>
<td>Mar. 30, 2020</td>
</tr>
</tbody>
</table>

* Calculated from required spending $4,740 minus previous credit of $601.46

5. REGIONAL GEOLOGY

5.1 STRATIGRAPHY

At Clearwater Range, carbonate lithologies are known to occur within both Paleozoic and Mesozoic sequences (Table 5.1, Fig. 5.1). Paleozoic limestones are described in the Upper Devonian Palliser Formation, Upper Devonian to Lower Carboniferous Banff Formation and the Lower Carboniferous Rundle Assemblage. The Paleozoic limestones encountered within Prairie Creek permit were from the Turner Valley, Shunda and Pekisko formations of the Rundle Assemblage, the Banff Formation of the Banff Assemblage, and the Palliser Formation. Mesozoic rocks of the Fernie Group have been noted within the permit area.

5.1.1 Palliser Formation

In west-central Alberta, the Upper Devonian Palliser Formation consists mainly of outer shelf and basinal carbonates of the Sassenach Basin (Halbertsma, 1994). The Palliser Formation is divisible into the Morro and overlying Costigan members, which are separated by an unconformity. The Morro Member comprises a lithologic suite dominated by carbonates with significant lateral facies variations. The Costigan Member consists of open-marine fossiliferous limestones and shales, with local evaporitic sedimentation. Within Foothills and Front Ranges of Alberta, limestones of the Palliser Formation vary from less than 180 m to more than 270 m in thickness (Holter, 1976).

The Palliser Formation is overlain by shales of the Exshaw Formation, and siliciclastics and carbonates of the Banff Assemblage.
TABLE 5.1
GENERALIZED PALEOZOIC STRATIGRAPHY
OF FOOTHILLS AND FRONT RANGES, WEST-CENTRAL ALBERTA*

<table>
<thead>
<tr>
<th>System or Subsystem</th>
<th>Stratigraphic Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assemblage Group</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Carboniferous</td>
<td>Rundle Assemblage</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Banff Assemblage</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Devonian</td>
<td>Fairholme Group*</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cambrian</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Fairholme Group of MacKenzie (1969) is partly equivalent to the Woodbend Group (Switzer et al., 1994).
1 Current limestone production (from Holter, 1994)

5.1.2 Banff Assemblage
In west-central Alberta, the Exshaw, Banff and Yohin formations comprise the Banff Assemblage (Richards et al. 1994). Only exposures of the Banff Formation appear within the Prairie Creek Permit. The Banff Formation is a heterogeneous association of carbonates and fine-grained siliciclastics deposited on poorly differentiated carbonate platforms. Westward, the uppermost Banff Formation grades laterally into the Rundle Assemblage.

5.1.3 Rundle Assemblage
The Lower Carboniferous Rundle Assemblage extends from MacKenzie Mountains in the Arctic, south through the Peace River Embayment to southeastern British Columbia. In west-
central Alberta, it comprises shallow-marine platform and ramp carbonates, which prograded westward over deeper water shales and carbonates of the Banff Assemblage. The lower Rundle Assemblage is subdivided into the transgressive carbonate Pekisko Formation, and two regressive successions of restricted-marine carbonates and subordinate anhydrites assigned to the Shunda and Turner Valley formations (Richards et al. 1994). The Turner Valley Formation extends from east-central British Columbia to southwest Alberta. According to Richards et al. (1994), the Turner Valley Formation thickens to the southwest and for most of its length is 50 m to 120 m thick. The type section near Turner Valley is 152 m thick and divisible into four beds.

Earlier work by Douglas (1958), and MacQueen and Bamber (1968) indicate that the eastern peritidal sequences of the uppermost Pekisko, Shunda and lower Turner Valley grade south and southwestward into the more open-marine sequence of the Livingstone Formation (Table 5.1).

The upper Rundle Assemblage includes the transgressive Mount Head Formation.

5.1.4 Fernie Group

The Fernie Group includes all but the uppermost Jurassic strata of western Alberta and eastern British Columbia. Although treated as a Group, the Fernie is divided into a number of members and informal units with uncertain mutual relations and continuity. The Fernie Group thickens gently and irregularly west and southwest.

Outcrops of the Fernie Group, noted within the Prairie Creek Permit, consist of large thicknesses of shale and calcareous sandstones with minor conglomerate.

5.2 STRUCTURE

In Front Ranges and Foothills of west-central Alberta, Paleozoic and Mesozoic strata are repeated along several major thrust faults. Displacements along these faults are interpreted to be tens of kilometres. Within individual thrust sheets, regional-scale folds exhibit a spatial relation to their leading edges.

6. RESULTS

One day was spent checking property access and sampling carbonate outcrops. The 2017 exploration concentrated on defining stratigraphic unit locations and contacts within previously under-explored areas of the Prairie Creek Permit.

Carbonate lithologies of the Pekisko Formation, Palliser Formation and Banff Formation were examined and sampled within the Prairie Creek Permit (Fig. 4.2). A total of 16 discrete
intervals were examined and sampled, representing approximately 46.75 m of stratigraphy (Appendix 2). Where bedding could not be identified, stratigraphic measurements were taken based on the previously determined regional trend or deduced from surrounding measurements where possible.

The majority of the outcrops visited in 2017 were within the Pekisko Formation. Analytical results were variable, presumably due to the fact that different members within the formation were sampled. The highest quality interval was within Section 2017-02, which averaged 97.99% CaCO₃, 1.40% MgCO₃ and 0.21% SiO₂ over approximately 7.5 m (Fig. 4.2). Several other isolated intervals returned values in excess of 95% CaCO₃ over several metres; however, MgCO₃, and minor SiO₂ impurities were common in many intervals. The best isolated Pekisko Formation sample, 127205, averaged 97.52% CaCO₃, 1.15% MgCO₃ and 0.48% SiO₂ over approximately 3 m. Overall, the Pekisko Formation has the greatest high-calcium limestone potential in the area.

One interval of Palliser Formation was collected during the 2017 exploration project. Section 2017-01 averaged 96.09% CaCO₃, 1.45% MgCO₃ and 1.58% SiO₂ over approximately 7 m (Fig. 4.2) and was located along Secondary Hwy 752 that runs through the Property.

Four isolated samples of Banff Formation were collected on the Property. The highest quality sample, 127204, averaged 81.55% CaCO₃, 9.69% MgCO₃ and 7.08% SiO₂ over approximately 3 m. MgCO₃ and SiO₂ values are far too high in the Banff Formation carbonates and are therefore not a unit of interest on the Prairie Creek Property.

The Shunda Formation typically consists of low-quality, recessive, argillaceous mudstones, and is not considered a unit of interest. No samples of the Shunda Formation were collected during the 2017 exploration project.

The Turner Valley Formation consists of vuggy, light-tan-grey, fine-grained, dolomitic mudstone to wackestone. Previous exploration projects have revealed the Turner Valley Formation to have high-quality dolomite potential. No samples of the Turner Valley Formation were collected during the 2017 exploration project.
Conclusions

Stratigraphy of the Pekisko, Palliser and Banff formations were examined and measured along Clearwater Range, within MAIM Permit 9306031167. A total of 16 discrete intervals were sampled and described in detail. Based on the samples collected during the 2017 exploration and overall property assessment, the entirety of the Prairie Creek Permit will be retained.

Access roads and trails were noted, which provide access to most parts of the Property.

Future exploration will expand on previously conducted work in the area, confirming or re-defining past geological interpretations and determining the potential for high-calcium limestone and/or high-quality dolomite within the permit area. Drill-testing of the Pekisko and/or Turner Valley formations would also be beneficial.
8. REFERENCES


STATEMENT OF QUALIFICATIONS

I, Kelly Krueger, residing at that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 18, 10509 - 81 Ave., Edmonton, Alberta, T6E 1X7.
- I am a 2012 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2012.
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of Alberta, member M96506.
- 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 "2017 Exploration and Fieldwork within the Prairie Creek Metallic and Industrial Minerals Permit, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 29th day of March, 2018.

Kelly Krueger, B.Sc., P.Geo.
APEGA M96506
ITEMIZED COST STATEMENT FOR THE 2017 EXPLORATION WITHIN THE PRAIRIE CREEK METALLIC AND INDUSTRIAL MINERALS PERMIT

a) Personnel

- **geologist**
  - 0.92 days field, Field management, geological mapping and sampling
  - 0.82 days office, Field preparations, budgeting, bookings
  - 1.74 days @ $590.00

- **geologist**
  - 0.92 days field, Geological mapping and rock sampling
  - 0.56 days office, Field preparations, data entry, GIS compilation
  - 1.49 days @ $480.00

- **assistant**
  - 0.79 days field, Geological mapping and rock sampling
  - 0.05 days office, Field preparations, data entry, GIS compilation
  - 0.84 days @ $350.00

- **assistant**
  - 0.92 days field, Geological mapping and rock sampling
  - 0.15 days office, Field preparations, data entry, GIS compilation
  - 1.08 days @ $350.00

- **receptionist**
  - 0.10 hours office, Logistics, shipping
  - 0.10 hours @ $42.00

b) Food and Accommodation

- 3.0 nights @ $170.16 accommodations (3 hotel rooms @ $170.16/night) $510.49
- 3.6 man-days @ $70.00 meals $249.48

Total: $759.97

c) Transportation

- 4x4 Truck Rental $132.13
- ATV (3) and trailer - Ron's rentals $481.71
- ATV (1) - Dahrouge owned $92.40
- Fuel $64.18

Total: $770.42

d) Instrument Rental

- Radio (3) $8.32
- Satellite Phone (1) $12.01
- GPS (3) $10.36

Total: $30.69

e) Drilling

n/a
f) **Analyses**

Central Lab of Graymont Western U.S. Inc.
(16 rock chip samples)

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 samples @ $ 4.50 preparation fee</td>
<td></td>
<td></td>
<td>$ 72.00</td>
</tr>
<tr>
<td>16 samples @ $ 25.00 sample analysis</td>
<td></td>
<td></td>
<td>$ 400.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$ 472.00</td>
</tr>
</tbody>
</table>

**g) Other**

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misc. Supplies</td>
<td>$ 34.59</td>
</tr>
<tr>
<td>Courier</td>
<td>$ 17.06</td>
</tr>
<tr>
<td></td>
<td>$ 51.64</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ 4,500.03</td>
</tr>
</tbody>
</table>

Edmonton, Alberta
March 29, 2018

K. Krueger, B.Sc., P.Geo.
### APPENDIX 2: 2017 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE PRAIRIE CREEK PROPERTY

**Notes:** Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations. Attitudes are strike and dip (right-hand rule). Sections are listed in numerical order of samples, which does not necessarily represent stratigraphic order. Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 11N. Section locations are shown in Figure 4.2. Stratigraphy Abbreviations: Dpa - Devonian Palliser Formation; Mbf - Mississippian Barnett Formation; Mpk - Mississippian Pekisko Formation

<table>
<thead>
<tr>
<th>Sample</th>
<th>Strat Unit</th>
<th>Strat Tkns (m)</th>
<th>Description</th>
<th>CaCO3 (%)</th>
<th>MgCO3 (%)</th>
<th>SiO2 (%)</th>
<th>Al2O3 (%)</th>
<th>Fe2O3 (%)</th>
<th>SrO (ppm)</th>
<th>MnO (ppm)</th>
<th>P2O5 (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated Samples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>127201</td>
<td>Mbf grab</td>
<td>UTM 607041E, 5778695N</td>
<td><strong>Lime Grainstone to Dolomitic Mudstone</strong>, tan to medium grey weathered and fresh, micritic to coarse-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, slightly resistant, no HCl reaction</td>
<td>60.20</td>
<td>23.81</td>
<td>12.26</td>
<td>1.864</td>
<td>0.607</td>
<td>171</td>
<td>173</td>
<td>463</td>
</tr>
<tr>
<td>127202</td>
<td>Mbf grab</td>
<td>UTM 607041E, 5778728N</td>
<td><strong>Dolomitic Lime Mudstone</strong>, tan weathered, tan to light grey fresh, to micritic, slightly resistant, hard, homogeneous, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate</td>
<td>57.10</td>
<td>27.51</td>
<td>11.48</td>
<td>2.265</td>
<td>0.825</td>
<td>199</td>
<td>225</td>
<td>448</td>
</tr>
<tr>
<td>127203</td>
<td>Mbf 2</td>
<td>UTM 607028E, 5778701N</td>
<td><strong>Dolomitic Mudstone</strong>, tan weathered and fresh, to micritic, moderately-bedded to thickly-bedded, slightly resistant, hard, homogeneous, weak (powder) HCl reaction</td>
<td>74.05</td>
<td>13.18</td>
<td>9.23</td>
<td>1.733</td>
<td>0.486</td>
<td>262</td>
<td>134</td>
<td>179</td>
</tr>
<tr>
<td>127204</td>
<td>Mbf 3</td>
<td>UTM 607016E, 5778697N</td>
<td><strong>Dolomitic Mudstone</strong>, tan weathered and fresh, to micritic, moderately-bedded to thickly-bedded, slightly resistant, hard, homogeneous, weak (powder) HCl reaction, structure(s): bedding (possible), outcrop-scale, 112/11 SW</td>
<td>81.55</td>
<td>9.69</td>
<td>7.08</td>
<td>1.111</td>
<td>0.673</td>
<td>289</td>
<td>138</td>
<td>205</td>
</tr>
<tr>
<td>127205</td>
<td>Mpk 3</td>
<td>UTM 606981E, 5778654N</td>
<td><strong>Lime Mudstone to Lime Wackestone</strong>, medium grey weathered and fresh, micritic to fine-grained, fossils: crinoid ossicle, common, massive, resistant, strong HCl reaction</td>
<td>97.52</td>
<td>1.15</td>
<td>0.48</td>
<td>0.074</td>
<td>0.037</td>
<td>294</td>
<td>19</td>
<td>135</td>
</tr>
<tr>
<td>127206</td>
<td>Mpk 4.5</td>
<td>UTM 606960E, 5778659N</td>
<td><strong>Lime Wackestone to Lime Packstone</strong>, light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, fossils: fragment (indeterminate); crinoid stem; crinoid ossicle, massive, resistant, strong HCl reaction; structure(s): fracture, outcrop-scale, weak; calcite veinlet, outcrop-scale, weak</td>
<td>93.68</td>
<td>5.38</td>
<td>0.49</td>
<td>0.059</td>
<td>0.015</td>
<td>253</td>
<td>18</td>
<td>369</td>
</tr>
<tr>
<td>127207</td>
<td>Mpk 4</td>
<td>UTM 606865E, 5778612N</td>
<td><strong>Lime Mudstone</strong>, light grey to medium grey weathered, medium grey fresh, to micritic, fossils: fragment (indeterminate), massive, resistant, moderate HCl reaction, structure(s): fracture, outcrop-scale, weak; calcite veinlet, outcrop-scale, weak; bedding (definite), outcrop-scale, 96/19 S</td>
<td>47.96</td>
<td>31.65</td>
<td>21.89</td>
<td>0.192</td>
<td>0.076</td>
<td>118</td>
<td>31</td>
<td>317</td>
</tr>
<tr>
<td>127211</td>
<td>Dpa 3</td>
<td>UTM 605920E, 5779042N</td>
<td><strong>Dolomitic Mudstone</strong>, tan weathered and fresh, to micritic, moderately-bedded to thickly-bedded, resistant, strong fetid odour, no HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak; bedding (definite), outcrop-scale, 300/21 NE</td>
<td>54.60</td>
<td>43.22</td>
<td>1.15</td>
<td>0.178</td>
<td>0.065</td>
<td>97</td>
<td>48</td>
<td>108</td>
</tr>
<tr>
<td><strong>Section 2017-01 (UTM 605993E, 5779277N)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>127208</td>
<td>Dpa 1.75</td>
<td>UTM 605993E, 5779277N</td>
<td><strong>Lime Mudstone</strong>, tan weathered, light brown to tan fresh, to micritic, thickly-bedded, blocky, strong HCl reaction, structure(s): bedding (definite), outcrop-scale, 287/13 NE</td>
<td>96.02</td>
<td>1.74</td>
<td>1.43</td>
<td>0.193</td>
<td>0.094</td>
<td>344</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>Sample</td>
<td>Strat</td>
<td>Strat Tkn (m)</td>
<td>Description</td>
<td>CaCO₃ (%)</td>
<td>MgCO₃ (%)</td>
<td>SiO₂ (%)</td>
<td>Al₂O₃ (%)</td>
<td>Fe₂O₃ (%)</td>
<td>SrO (%)</td>
<td>MnO (%)</td>
<td>P₂O₅ (%)</td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>-----------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>127209</td>
<td>Dpa</td>
<td>2</td>
<td><strong>Lime Mudstone</strong>, very-light grey to light grey weathered, medium grey to dark grey fresh, to micritic, fossils: brachiopod, rare, thickly-bedded, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak</td>
<td>96.15</td>
<td>1.36</td>
<td>1.63</td>
<td>0.244</td>
<td>0.121</td>
<td>372</td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>127210</td>
<td>Dpa</td>
<td>3.25</td>
<td><strong>Lime Mudstone</strong>, very-light grey to light grey weathered, medium grey to dark grey fresh, to micritic, fossils: brachiopod, rare, thickly-bedded, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak; bedding (undulatory), outcrop-scale, 301/19 NE</td>
<td>96.09</td>
<td>1.34</td>
<td>1.64</td>
<td>0.185</td>
<td>0.111</td>
<td>331</td>
<td>98</td>
<td>116</td>
</tr>
</tbody>
</table>

**Section 2017-02 (UTM 605430E, 5777971N)**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Strat</th>
<th>Strat Tkn (m)</th>
<th>Description</th>
<th>CaCO₃ (%)</th>
<th>MgCO₃ (%)</th>
<th>SiO₂ (%)</th>
<th>Al₂O₃ (%)</th>
<th>Fe₂O₃ (%)</th>
<th>SrO (%)</th>
<th>MnO (%)</th>
<th>P₂O₅ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>127212</td>
<td>Mpk</td>
<td>3.75</td>
<td><strong>Lime Grainstone</strong>, light grey weathered, light grey to medium grey fresh, medium-grained to coarse-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid stem, abundant; crinoid ossicle, abundant; colonial coral, abundant; brachiopod, abundant, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity; very strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak; bedding (possible), outcrop-scale, 126/38 SW</td>
<td>97.90</td>
<td>1.23</td>
<td>0.17</td>
<td>0.052</td>
<td>0.036</td>
<td>264</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>127213</td>
<td>Mpk</td>
<td>3.75</td>
<td><strong>Lime Grainstone</strong>, light grey weathered, light grey to medium grey fresh, medium-grained to coarse-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid stem, abundant; crinoid ossicle, abundant; colonial coral, abundant; brachiopod, abundant, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak</td>
<td>98.07</td>
<td>1.57</td>
<td>0.24</td>
<td>0.047</td>
<td>0.008</td>
<td>244</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td>127214</td>
<td>Mpk</td>
<td>5</td>
<td><strong>Lime Packstone to Dolomitic Mudstone</strong>, tan to light grey weathered, tan to medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; fragment (indeterminate), rare; brachiopod, rare, thickly-bedded, resistant, hard, vuggy (open), weak HCl reaction</td>
<td>79.91</td>
<td>19.62</td>
<td>0.56</td>
<td>0.078</td>
<td>0.045</td>
<td>165</td>
<td>41</td>
<td>135</td>
</tr>
<tr>
<td>127215</td>
<td>Mpk</td>
<td>4.25</td>
<td><strong>Lime Packstone to Dolomitic Mudstone</strong>, tan to light grey weathered, tan to medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; fragment (indeterminate), rare; brachiopod, rare, thickly-bedded, resistant, hard, vuggy (open), weak HCl reaction</td>
<td>62.33</td>
<td>35.50</td>
<td>1.93</td>
<td>0.376</td>
<td>0.109</td>
<td>151</td>
<td>50</td>
<td>240</td>
</tr>
<tr>
<td>127216</td>
<td>Mpk</td>
<td>3.5</td>
<td><strong>Dolomitic Mudstone to Lime Grainstone</strong>, tan weathered and fresh, to micritic, fossils: fragment (indeterminate), abundant; crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded, resistant, vuggy (open), weak HCl reaction</td>
<td>63.77</td>
<td>34.43</td>
<td>1.01</td>
<td>0.180</td>
<td>0.089</td>
<td>116</td>
<td>46</td>
<td>136</td>
</tr>
</tbody>
</table>
APPENDIX 3: ANALYTICAL LABORATORY INFORMATION
AND TECHNIQUES

Name and address of the Lab:

Graymont Western US inc, Central Laboratory,
670E 3900S. Suite 200, Salt Lake City, Utah, 84107

Statement of qualifications of the chemist:

Jared Leikam, B.S. in chemistry from the University of Utah, class of 2003. Jared started working for Graymont Western in Feb 2004 and has been working with the ICP spectrometer for one and a half years, under the direct supervision of Carl Paystrup (Lab Supervisor).

Sample preparation, procedures, reagents, equipment, etc.:

For the ICP sample preparation, 0.5 grams of the sample is mixed with 3g of lithium carbonate. The sample and the lithium carbonate are then fused together in a muffle furnace at 850C. After the fusion process the samples are dissolved in 1:1 HCl, a total of 40ml 1:1 HCl is used in the dissolving process. The samples are then diluted to 200ml and spiked with 10ppm Co. The cobalt is used as an internal standard. At this point the samples are ready for analysis on the Perkin Elmer, Optima 3000.

Mesh size fraction, split and weight of sample:

Upon receiving the samples, the prep room technician riffles and then splits the stone down to a manageable size (roughly 200g). The stone is then dried in an oven at 100C. Once the samples have been dried they get pulverized to a -200 mesh size. A split of this pulverized material is then sent for testing in the main part of the lab.

Quality control Procedures:

The ICP spectrometer is calibrated with two certified reference materials prior to analyzing a batch of samples. A batch typically contains 96 samples. Every 12th sample in a batch is a certified limestone reference sample. In addition to the 8 reference samples imbedded in the batch, there are 2 limestone reference samples analyzed at the beginning and at the end of the batch to ensure the accuracy of our Na and P numbers. Every element being analyzed in a sample is backed up by data from the certified reference materials. We also use an internal standard(10ppm Co) to further ensure the quality and accuracy of the analysis.
Legend
- Secondary Road
- Highway
- Approximate Paleozoic Limestone
- Provincial Park

MAIM Permits
- Permit # 9306031167 (316 ha)
- Others

Kilometres

Coordinate System: UTM NAD83, Zone 11N

GRAYMONT WESTERN CANADA INC.

Dahrouge Geological Consulting Ltd.

Fig. 3.2
Access Map