MAR 20140004: IDLEWILDE MOUNTAIN

Idlewilde Mountain-A report on limestone exploration near Rocky Mountain House, west-central Alberta.

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GRAYMONT WESTERN CANADA INC.
877384 ALBERTA LTD.

2013 EXPLORATION AND FIELDWORK WITHIN THE IDLEWILDE MOUNTAIN METALLIC AND INDUSTRIAL MINERALS PERMIT, WEST-CENTRAL ALBERTA

PART B

Metallic and Industrial Minerals Permit
9310060379

Geographic Coordinates

51°55 N to 52°04' N
115°24' W to 115°34' W

NTS Sheets
82O/13, 82O/14, 83B/03, 83B/04

Owner:	877384 Alberta Ltd. Suite 18, 10509 - 81 Avenue Edmonton, Alberta T6E 1X7
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Date Submitted:	May 9, 2014

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

PART C

1. SUMMARY

During June 2013, parts of Limestone Range, west of Rocky Mountain House and within Metallic and Industrial Minerals (MAIM) Permit 9310060379, were explored for high-quality carbonate rocks. The 2013 exploration was a follow-up to previous exploration conducted in the area.

Access routes and outcrops were mapped, and a total of 59 rock samples were collected within the Idlewilde Mountain Permit, representing approximately 185.5 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 15°54' 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 2013 exploration within the Idlewilde Mountain Permit was conducted by Dahrouge Geological Consulting Ltd. (Dahrouge), on behalf of Graymont Western Canada Inc. (Graymont) and 877384 Alberta Ltd. This assessment report describes the exploration conducted within MAIM Permit 9310060379, which encompass parts of Limestone Range of the Alberta Foothills. Bob Robison, exploration manager for Graymont Western U.S. Inc., authorized this work.

The objectives of the 2013 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 9310060379 encompasses areas within Limestone Range, surrounding and including Idlewilde Mountain and Limestone Mountain, Corkscrew Mountain and Simon Ridge within west-central Alberta (Fig. 3.1).

Approximately 7 km northwest of Burnco Quarry along Forestry Trunk Road 734 or 75 km southwest from Rocky Mountain House via Secondary Highway 752, Cutoff Creek Forestry Road heads westerly and provides access to the central part of Limestone Range, between

Idlewilde and Limestone mountains. A secondary route to the Limestone Mountain area involves following Forestry Trunk Road 734 south and west from the Secondary Highway 591 intersection for approximately 45 km. At this point the Limestone Mountain Service Road, which is maintained by Shell Canada Ltd., can be followed north for approximately 30 km to reach the southwestern part of the property.

Limestone Range can also be accessed from Caroline, by travelling about 35 km west on Secondary Highway 591, and then utilizing Forestry Trunk Road 734.

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.

Several creeks, mountains, and other features presently without names on published maps have been assigned informal names in this report to facilitate references to geographic locations.

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 6,500, 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 Idlewilde Mountain 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 1,280 m along Clearwater River to about 2,200 m atop Limestone Mountain. The property is cut by a number of creeks and rivers, including Cutoff, Rocky, and Limestone creeks, and Clearwater River.

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 62S instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 15°54' east.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 PROPERTY SUMMARY

MAIM Permit 9310060379 (Idlewilde Mountain) was acquired in 2010 to cover limestone exposures within Limestone Range, and is currently 4,736 ha in size.

Based on the 2013 exploration, the entirety of the Idlewilde Mountain Permit will be retained (Section 4.3, Fig. 4.1).

4.2 2013 EXPLORATION SUMMARY

From June 19 to 26, 2013, Dahrouge, on behalf of 877384 Alberta Ltd. and 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 59 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 surrounding and including Limestone Mountain and Idlewilde Mountain, along Limestone Range.

4.3 EXPLORATION EXPENDITURES

Expenditures for 2013 totaled $33,038.38. The entirety of the Idlewilde Mountain (MAIM Permit 9310060379) Permit will be retained. Excess expenditures are to be assigned to future exploration periods.

Expenditures are allocated to MAIM Permit 9310060379 as follows:

MAIM Permit	Permit Area (ha)	Required Expenditures[1]	Assigned Expenditures	New Expiry Date
9310060379	4,736	$23,985.63	$33,038.38	June 8, 2016

[1] Calculated from $47,360.00 - previous credit of $23,374.37

5. REGIONAL GEOLOGY

5.1 STRATIGRAPHY

At Limestone Range, carbonate lithologies are known to occur within both Paleozoic and Mesozoic sequences (Table 5.1, Fig. 4.2). 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 Idlewilde Mountain 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 group 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*

System or Subsystem	Stratigraphic Unit		
	Assemblage / Group	Formation	
		S	N
Lower Carboniferous	Rundle Assemblage	Mount Head	
		¹ Livingstone	Turner Valley
			Shunda
			Pekisko
	Banff Assemblage	Banff	
		Exshaw	
Upper Devonian		¹ Palliser	
		Alexo	
	Fairholme Group°	Southesk	Mount Hawk
		Cairn	
Cambrian		Pika	
		Eldon	
		Stephen	
		Cathedral	

*Compiled from MacKenzie 1969, Richards et al. 1994, Switzer et al., 1994., and Holter, 1994.
° 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 Idlewilde Mountain 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 anhydrite 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 Idlewilde Mountain 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

Seven days were spent checking property access and outlining carbonate outcrops in detail. The 2013 exploration concentrated on defining stratigraphic unit locations and contacts within previously under-explored areas of the Idlewilde Mountain Permit.

Carbonate lithologies of the Rundle Assemblage, Banff Formation and Palliser Formation were examined and sampled within Limestone Range, northeast of Simon Ridge near Cutoff Creek and along the flanks of Limestone Mountain (Fig. 4.2). A total of 59 discrete intervals were examined and sampled, representing approximately 185.5 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.

Five sections of Palliser Formation were examined in 2013 to test for high-calcium limestone potential (Fig. 4.2). Sample Section 2013-12, located north of Cutoff Creek, averaged 92.06% $CaCO_3$, 5.19% $MgCO_3$, and 2.10% SiO_2 over 26 m. Based on these and historic borderline results, the Palliser Formation has some high-calcium limestone potential; however, further work is required.

One interval of Banff Formation was examined in 2013, at the base of a large sample section of Pekisko Formation limestone, on the eastern flank of Limestone Mountain. Unsurprisingly, the results from this interval, Section 2013-24, were poor (Fig. 4.2). Banff Formation rocks averaged 67.20% $CaCO_3$, 18.18% $MgCO_3$, and 9.95% SiO_2 over 11 m, and consisted of tan-grey, variably dolomitic and/or siliceous lime mudstones to wackestones. The Banff Formation is not considered a unit of interest due to its low $CaCO_3$ values and high SiO_2 content.

The majority of the outcrops visited in 2013 were within the Pekisko Formation. Analytical results were variable, presumably due to the fact that different members within the formation were sampled. The best sample interval was within Section 2013-20, which averaged 98.08% $CaCO_3$, 1.04% $MgCO_3$ and 0.34% SiO_2 over approximately 8.5 m, and was collected above Section 2013-19, on the eastern flank of Limestone Mountain (Fig. 4.2). Several other sample sections and isolated intervals returned values in excess of 95% $CaCO_3$ over several metres; however, $MgCO_3$, and minor SiO_2 impurities were common in many intervals. The high-quality Pekisko intervals generally consist of resistant, thick-bedded to massive, light- to medium-brownish-grey, fine- to coarse-grained crinoidal lime wackestone to grainstone. Lower quality intervals generally consist of less resistant, moderate to well-bedded, medium-brownish-grey,

micritic to fine-grained lime mudstone to packstone. Overall, the Pekisko Formation has the greatest high-calcium limestone potential in the area.

The Shunda Formation 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 2013 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 2013 exploration project.

7. CONCLUSIONS

Carbonate units of the Palliser, Banff and Pekisko formations were examined and measured along Limestone Range, on the eastern flank of Limestone Mountain and near Cutoff Creek, within MAIM Permit 9310060379. A total of 59 discrete intervals were sampled and described in detail. Based on the samples collected during the 2013 exploration and overall property assessment, the entirety of the Idlewilde Mountain 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 redefining 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.

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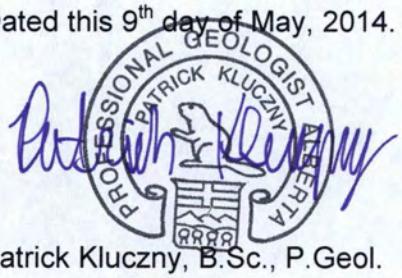
9. STATEMENT OF QUALIFICATIONS

I, Patrick Kluczny, residing at [redacted] Edmonton, 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 2006 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2006.
- I am a registered Professional Geologist with the Association of Professional Engineers and Geoscientists of Alberta, member M81985.
- 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 "2013 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 9th day of May, 2014.



Patrick Kluczny, B.Sc., P.Geol.

APEGA M81985

APPENDIX 1: COST STATEMENT FOR THE 2013 EXPLORATION WITHIN THE IDLEWILDE METALLIC AND INDUSTRIAL MINERALS PERMIT

a) **Personnel**		$ 15,869.50
b) **Food and Accommodation**		$ 5,807.55
c) **Transportation**		$ 5,815.98
d) **Instrument Rental**		$ 330.98
e) **Drilling**	n/a	$ -
f) **Analyses**		$ 1,740.50
g) **Other** (Software Rental, Data, Field maps, Courier & Shipping)		$ 470.38
Total		$ 30,034.89
Administration (10%)		$ 3,003.49
Total + Administration		**$ 33,038.38**

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APPENDIX 2: SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE IDLEWILDE PERMIT

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. Sample locations are shown in Figure 4.2. Stratigraphy Abbreviations: Dpa - Devonian Palliser Formation; Mbf - Mississippian Banff Formation; Mpk - Mississippian Pekisko Formation; Msh - Mississippian Shunda Formation; Mtv - Mississippian Turner Valley Formation

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Isolated Samples											
77317	Dpa	3	**Dolomitic Mudstone**, very-dark grey weathered, medium brown-grey fresh, resistant, vuggy, weak fetid odour, weak HCl reaction, structure(s): calcite vein weak	55.29	43.87	0.82	0.189	0.097	122	37	50
77318	Dpa	3	**Dolomitic Mudstone**, very-dark grey weathered, medium brown-grey fresh, massive, resistant, vuggy, weak fetid odour, weak HCl reaction, structure(s): calcite vein weak	54.56	44.29	0.95	0.216	0.116	120	43	50
Section 2013-01 (UTM 605724E, 5761490N)											
77251	Dpa	3.5	**Slightly Dolomitic Lime Mudstone**, medium brown-grey weathered, fossils: solitary rugose coral; gastropod; fragment (indeterminate); crinoid ossicle; colonial coral; brachiopod, moderately-bedded, resistant, pockety, structure(s): bedding (definite) 198/19 NW	92.18	3.91	2.68	0.456	0.323	506	120	256
77252	Dpa	4.5	**Dolomitic Lime Mudstone**, medium brown-grey weathered, fossils: solitary rugose coral; gastropod; fragment (indeterminate); crinoid ossicle; colonial coral; brachiopod, resistant, structure(s): bedding (definite) 198/19 NW	91.63	5.52	1.95	0.377	0.285	456	95	155
Section 2013-12 (UTM 604639E, 5763016N)											
77307	Dpa	2.5	**Dolomitic Lime Mudstone**, light grey to tan weathered, medium grey fresh, micritic, thinly-bedded, resistant, pockety, strong HCl reaction, structure(s): bedding (definite) 168/32 SW	93.01	4.58	1.87	0.220	0.109	204	45	50
77308	Dpa	1.5	**Argillaceous Lime Mudstone**, light grey to tan weathered, medium grey fresh, micritic, thinly-bedded, resistant, pockety, alteration: oxide, fracture-related, 0-20% intensity, very strong HCl reaction, structure(s): fracture	96.33	2.15	1.08	0.112	0.077	238	47	50
77309	Dpa	2.5	**Slightly Dolomitic Lime Mudstone**, light grey to tan weathered, tan fresh, micritic, thinly-bedded, resistant, pockety, vuggy, strong HCl reaction, structure(s): bedding (definite) 137/20 SW	91.04	2.97	5.32	0.247	0.137	219	60	50
77310	Dpa	3.5	**Slightly Dolomitic Lime Mudstone**, light grey to tan weathered and fresh, micritic, laminated to moderately-bedded, vuggy, strong HCl reaction, structure(s): bedding (definite) 154/17 SW	92.79	4.10	2.25	0.293	0.226	329	112	50
77311	Dpa	2	**Dolomitic Mudstone to Lime Mudstone**, tan to medium grey weathered, medium brown to medium grey fresh, fossils: crinoid ossicle, thickly-bedded, resistant, no HCl reaction,	91.45	5.98	1.80	0.292	0.183	372	79	50
77312	Dpa	2	**Lime Mudstone to Lime Wackestone**, light grey weathered, medium grey fresh, micritic to very fine-grained, fossils: fragment (indeterminate); crinoid ossicle, rare, massive, resistant, very strong HCl reaction, structure(s): calcite vein weak	96.58	1.26	1.70	0.174	0.118	350	104	50
77313	Dpa	3	**Lime Mudstone to Lime Wackestone**, light grey weathered, medium grey fresh, micritic to very fine-grained, fossils: crinoid ossicle, rare, thickly-bedded, resistant, very strong HCl reaction, structure(s): calcite vein weak	96.74	1.11	1.63	0.159	0.171	356	147	50

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
77314	Dpa	3	**Lime Mudstone to Lime Wackestone**, light grey weathered, medium grey fresh, micritic to very fine-grained, fossils: fragment (indeterminate); crinoid ossicle, rare, massive, resistant, very strong HCl reaction, structure(s): fracture moderate; calcite vein strong	96.81	1.05	1.61	0.184	0.146	349	138	50
77315	Dpa	3	**Strongly Dolomitic Lime Mudstone**, light grey to tan weathered, medium grey fresh, micritic, resistant, strong HCl reaction, structure(s): fracture moderate; calcite vein weak; bedding (definite)	76.53	20.65	1.96	0.276	0.198	1374	107	50
77316	Dpa	3	**Dolomitic Lime Mudstone to Dolomitic Lime Wackestone**, light grey to tan weathered, fresh, fossils: crinoid ossicle; brachiopod, thickly-bedded to massively-bedded, resistant, very strong HCl reaction, structure(s): fracture moderate; bedding (undulatory) 122/38 SW	92.61	5.19	1.52	0.291	0.142	333	79	50
Section 2013-13 (UTM 605528E, 5761534N)											
77319	Dpa	3	**Dolomitic Mudstone**, medium brown-grey weathered, tan fresh, cryptocrystalline, moderately-bedded, resistant, hard, very weak HCl reaction, structure(s): bedding (definite) 165/32 SW	23.27	18.01	49.38	1.606	0.271	69	100	286
77320	Dpa	3	**Dolomitic Mudstone**, medium brown-grey weathered, tan fresh, cryptocrystalline, moderately-bedded, resistant, hard, very weak HCl reaction, structure(s): calcite vein moderate	56.85	41.88	1.11	0.139	0.166	128	152	50
77321	Dpa	3	**Dolomitic Mudstone**, dark grey weathered, medium grey to tan fresh, cryptocrystalline, moderately-bedded, resistant, hard, very weak HCl reaction, structure(s): calcite vein strong	53.03	42.11	4.32	0.483	0.292	96	143	50
77322	Dpa	3	**Dolomitic Mudstone**, medium brown-grey weathered, tan fresh, cryptocrystalline, moderately-bedded, resistant, hard, weak HCl reaction, structure(s): calcite vein moderate; bedding (definite) 130/34 SW	56.56	42.80	1.03	0.118	0.143	129	128	50
77323	Dpa	3	**Dolomitic Mudstone**, medium brown-grey weathered, tan fresh, cryptocrystalline, moderately-bedded, resistant, hard, weak HCl reaction	56.29	42.07	1.58	0.202	0.185	133	142	50
Section 2013-19 (UTM 608289E, 5754575N)											
77340	Mpk	3	**Lime Grainstone**, light grey weathered, light grey to medium grey fresh, very fine-grained to medium-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded to massively-bedded, resistant, very strong HCl reaction, structure(s): bedding (definite) 128/14 SW	97.72	1.09	0.52	0.072	0.084	273	43	50
77341	Mpk	3	**Lime Grainstone**, light grey weathered, light grey to medium grey fresh, very fine-grained to medium-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded to massively-bedded, resistant, very strong HCl reaction	98.20	1.21	0.31	0.040	0.041	273	31	50
77342	Mpk	4	**Lime Grainstone**, light grey weathered, light grey to medium grey fresh, very fine-grained to medium-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded to massively-bedded, resistant, strong HCl reaction, structure(s): fracture moderate	97.47	2.11	0.32	0.040	0.068	246	32	50
77343	Mpk	3	**Slightly Dolomitic Lime Grainstone**, light grey weathered, light grey to light tan-grey fresh, very fine-grained to medium-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded to massively-bedded, resistant, strong HCl reaction	95.70	4.20	0.30	0.033	0.089	213	35	50
77344	Mpk	3	**Dolomitic Lime Grainstone**, light grey weathered, light grey to medium grey fresh, very fine-grained to medium-grained, fossils: crinoid stem, abundant; crinoid ossicle, abundant, thickly-bedded to massively-bedded, resistant, very strong HCl reaction, structure(s): bedding (definite) 104/25 SW	92.72	6.49	0.49	0.049	0.095	235	37	50

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Section 2013-20 (UTM 608270E, 5754545N)											
77345	Mpk	3	**Lime Wackestone to Lime Packstone,** light grey weathered, light grey to medium grey fresh, very fine-grained, fossils: solitary rugose coral, rare; crinoid ossicle, moderately-bedded, resistant, strong HCl reaction, structure(s): joint strong; fracture moderate; bedding (approximate) 25/8 E; bedding (approximate) 16/11 E	97.93	1.07	0.43	0.043	0.096	372	29	50
77346	Mpk	3	**Lime Wackestone to Lime Packstone,** light grey weathered, light grey to medium grey fresh, very fine-grained, fossils: solitary rugose coral, rare; crinoid ossicle, moderately-bedded, resistant, strong HCl reaction, structure(s): joint strong; fracture moderate	98.16	0.98	0.32	0.030	0.080	352	27	50
77347	Mpk	2.5	**Lime Wackestone to Lime Packstone,** light grey weathered, light grey to medium grey fresh, very fine-grained, fossils: solitary rugose coral, rare; fragment (indeterminate); crinoid ossicle, moderately-bedded, resistant, strong HCl reaction, structure(s): joint strong, 275/78 NE; fracture moderate; bedding (possible) 88/12 S	98.18	1.07	0.26	0.030	0.092	339	32	50
Section 2013-21 (UTM 608237E, 5754543N)											
77348	Mpk	3	**Dolomitic Lime Mudstone,** light grey weathered, light brown-grey to medium grey fresh, micritic, moderately-bedded, resistant, weak fetid odour, strong HCl reaction, structure(s): joint strong; fracture strong; bedding (definite) 79/12 S	91.56	7.18	0.64	0.086	0.111	268	33	50
77349	Mpk	3	**Lime Mudstone to Lime Wackestone,** light grey weathered, light brown-grey to medium grey fresh, micritic to fine-grained, fossils: fragment (indeterminate); crinoid ossicle, moderately-bedded, resistant, strong HCl reaction, structure(s): joint; fracture; bedding (undulatory) 50/9 SE	97.13	1.42	0.76	0.094	0.105	336	28	50
77350	Mpk	1.5	**Lime Mudstone,** light grey weathered, medium grey fresh, micritic, resistant, very strong HCl reaction, structure(s): calcite vein weak; bedding (definite) 55/15 SE	94.22	2.18	2.78	0.277	0.107	321	29	50
77351	Mpk	3	**Lime Mudstone,** light grey weathered, light brown-grey fresh, micritic, moderately-bedded to thickly-bedded, resistant, moderate HCl reaction	96.97	1.40	1.02	0.103	0.098	276	34	50
77352	Mpk	3	**Lime Mudstone,** light grey weathered, light brown-grey fresh, micritic, moderately-bedded to thickly-bedded, resistant, moderate HCl reaction	96.90	1.15	1.32	0.147	0.149	290	44	103
Section 2013-22 (UTM 608138E, 5756238N)											
77353	Mpk	3	**Lime Grainstone,** light grey weathered and fresh, fine-grained to coarse-grained, fossils: solitary rugose coral; crinoid ossicle, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong	98.59	0.65	0.59	0.055	0.094	199	50	50
77354	Mpk	2.5	**Lime Grainstone,** light grey weathered and fresh, fine-grained to coarse-grained, fossils: solitary rugose coral; fragment (indeterminate); crinoid ossicle; brachiopod, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong; bedding (approximate) 148/64 SW; bedding (approximate) 143/75 SW	98.72	0.54	0.60	0.031	0.071	206	46	50
77355	Mpk	3.75	**Slightly Dolomitic Lime Grainstone,** light grey weathered and fresh, fine-grained to coarse-grained, fossils: solitary rugose coral; fragment (indeterminate); crinoid ossicle; bryozoan, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong; bedding (definite) 168/88 SW	94.79	4.18	0.91	0.085	0.093	201	57	50
Section 2013-23 (UTM 608098E, 5756217N)											
77356	Mpk	4.75	**Slightly Dolomitic Lime Mudstone,** light grey weathered, light grey to dark grey fresh, very fine-grained to very fine-grained, moderately-bedded, resistant, strong HCl reaction, structure(s): bedding (definite) 142/89 SW	94.65	4.08	0.87	0.104	0.090	286	29	50

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
77357	Mpk	4.25	**Lime Mudstone**, light grey weathered, dark grey fresh, very fine-grained, moderately-bedded to thickly-bedded, resistant, strong HCl reaction, structure(s): bedding (definite) 334/84 NE	98.20	1.07	0.48	0.062	0.105	301	37	50
77358	Mpk	4.5	**Lime Mudstone**, light grey weathered, light grey to dark grey fresh, very fine-grained, moderately-bedded, resistant, alteration: oxide, fracture-related, 0-20% intensity, strong HCl reaction	97.52	1.28	0.91	0.096	0.100	306	33	50
77359	Mpk	6.25	**Strongly Dolomitic Lime Mudstone**, light grey weathered, light grey to dark grey fresh, very fine-grained, moderately-bedded, resistant, strong HCl reaction	86.28	12.64	0.76	0.102	0.109	258	40	50
77360	Mpk	8.5	**Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, abundant, thickly-bedded, resistant, very strong HCl reaction	95.29	4.16	0.34	0.047	0.075	357	34	50
77361	Mpk	3.5	**Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Packstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, abundant, thickly-bedded, resistant, very strong HCl reaction	88.78	10.31	0.65	0.071	0.093	293	40	132
77362	Mpk	3.25	**Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Packstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, abundant, thickly-bedded, resistant, very strong HCl reaction, structure(s): bedding (definite) 326/74 NE	81.23	17.68	0.73	0.100	0.119	248	47	267
77363	Mpk	2.75	**Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Wackestone**, tan weathered, light grey fresh, micritic to medium-grained, thickly-bedded to massively-bedded, resistant, moderate HCl reaction	64.00	34.71	0.88	0.120	0.165	169	75	187
77364	Mpk	3.5	**Strongly Dolomitic Lime Grainstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong	88.99	10.33	0.44	0.053	0.085	231	43	50
77365	Mpk	3.5	**Lime Grainstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong	97.59	1.95	0.27	0.040	0.070	256	30	50
77366	Mpk	3.25	**Slightly Dolomitic Lime Grainstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate); crinoid ossicle; brachiopod, resistant, alteration: oxide, fracture-related, very strong HCl reaction, structure(s): joint strong; fracture strong	95.59	3.93	0.26	0.044	0.086	248	32	50
77367	Mpk	4.25	**Slightly Dolomitic Lime Grainstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate); brachiopod, resistant, very strong HCl reaction, structure(s): joint strong; fracture strong	96.38	3.10	0.32	0.054	0.065	240	34	149
77368	Mpk	4.75	**Lime Grainstone**, light grey weathered and fresh, fine-grained to coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, very strong HCl reaction, structure(s): joint strong, 232/70 NW; fracture strong; cleavage 232/70 NW; bedding (definite) 326/77 NE	98.34	1.15	0.31	0.052	0.074	324	34	50
77369	Mpk	4.75	**Lime Mudstone to Lime Wackestone**, light grey weathered, medium grey to dark grey fresh, micritic, fossils: brachiopod, abundant, moderately-bedded, resistant, moderate HCl eaction, structure(s): bedding (definite) 327/76 NE	95.52	1.51	2.22	0.291	0.220	450	74	50

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Section 2013-24 (UTM 608025E, 5756145N)											
77370	Mbf	5.25	**Calcareous Dolomitic Mudstone**, tan weathered and fresh, cryptocrystalline to micritic, thinly-bedded, slightly resistant, hard, fissile, alteration: silica, weak HCl reaction	45.82	27.47	17.36	1.856	0.608	180	187	426
77371	Mbf	5.75	**Strongly Dolomitic Lime Mudstone**, tan weathered and fresh, cryptocrystalline thinly-bedded, slightly resistant, hard, fissile, alteration: oxide, moderate HCl reaction, structure(s): calcite veinlet weak; bedding (definite) 343/75 NE	86.72	9.69	2.41	0.490	0.274	303	88	50
Section 2013-25 (UTM 605136E, 5758023N)											
77372	Dpa	1.25	**Dolomitic Mudstone**, tan-grey weathered and fresh, very fine-grained, massive, resistant, pockety, alteration: oxide, weak fetid odour, weak HCl reaction, structure(s): calcite vein; bedding (definite) 195/31 NW	55.99	42.59	0.89	0.197	0.140	114	50	50
77373	Dpa	0.25	**Dolomitic Mudstone**, tan-grey weathered and fresh, very fine-grained, massive, resistant, pockety, vuggy, alteration: oxide, weak fetid odour, weak HCl reaction, structure(s): calcite vein weak	55.22	43.47	0.96	0.091	0.134	102	65	50
77374	Dpa	0.5	**Dolomitic Mudstone**, tan-grey weathered and fresh, very fine-grained, massive, resistant, pockety, alteration: oxide, weak fetid odour, weak HCl reaction, structure(s): calcite vein weak; bedding (definite) 182/30 W	56.76	41.97	0.79	0.171	0.146	129	65	50
Section 2013-26 (UTM 605129E, 5758080N)											
77375	Dpa	2	**Dolomitic Mudstone**, light tan-grey weathered, medium brown to medium grey fresh, thickly-bedded to massively-bedded, resistant, pockety, vuggy, alteration: oxide, 60-80% intensity, moderate HCl reaction	60.00	38.89	0.68	0.146	0.136	112	58	50
77376	Dpa	0.5	**Dolomitic Mudstone**, light tan-grey weathered, medium brown to medium grey fresh, thickly-bedded to massively-bedded, resistant, pockety, vuggy, alteration: oxide, 60-80% intensity, weak HCl reaction, structure(s): bedding (undulatory) 166/20 SW	57.63	41.23	0.75	0.158	0.094	125	53	50
77377	Dpa	1.75	**Dolomitic Mudstone**, light grey to tan weathered, light grey fresh, very fine-grained, moderately-bedded to massively-bedded, resistant, alteration: oxide, 0-20% intensity, weak HCl reaction, structure(s): bedding (undulatory) 139/48 SW	56.60	41.71	1.15	0.206	0.159	114	56	50
77378	Dpa	2.25	**Dolomitic Mudstone**, light grey to tan weathered, light grey fresh, very fine-grained, moderately-bedded to massively-bedded, resistant, alteration: oxide, weak HCl reaction, structure(s): calcite vein weak; bedding (undulatory) 159/40 SW	57.18	41.61	0.82	0.160	0.087	119	43	50
77379	Dpa	1.75	**Dolomitic Mudstone**, light grey to tan weathered, light grey fresh, very fine-grained, moderately-bedded to massively-bedded, resistant, alteration: oxide, 0-20% intensity, weak HCl reaction, structure(s): calcite vein weak	56.94	41.99	0.75	0.122	0.081	120	41	50

APPENDIX 3: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

Name and Address of the Lab:

Graymont Western US Inc., Central Laboratory.
670 East 3900 South, Suite 205
Salt Lake City, Utah, 84107

Statement of Qualifications:

Jared Leikam obtained a B.S. in Chemistry from the University of Utah in the class of 2003. Jared started working for Graymont in February of 2004 and has been working with the ICP Spectrometer for two and a half years, under the direct supervision of Carl Paystrup (Lab Supervisor).

Vonda Stuart obtained a B.S. in Chemistry from Weber State University in 2004. Vonda started with Graymont in August of 2007 and started working in the ICP Lab the following September.

Sample Preparation, Procedures, Reagents, Equipment, etc.:

For the ICP sample preparation, 0.5 grams of the sample is mixed with 3 g of lithium carbonate. The sample and the lithium carbonate are then fused together in a muffle furnace at 850°C. Following the fusion process, the samples are dissolved in 1:1 HCl; a total of 40 mL 1:1 HCl is used in the dissolving process. The samples are then diluted to 200 mL and spiked with 10 ppm Co. Cobalt is used as an internal standard. At this point the samples are ready for analysis on the Perkin Elmer, Optima 7300V.

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 200 g). The stone is then dried in an oven at 120ºC. 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 12^{th} 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 (10 ppm Co) to further ensure the quality and accuracy of the analysis.

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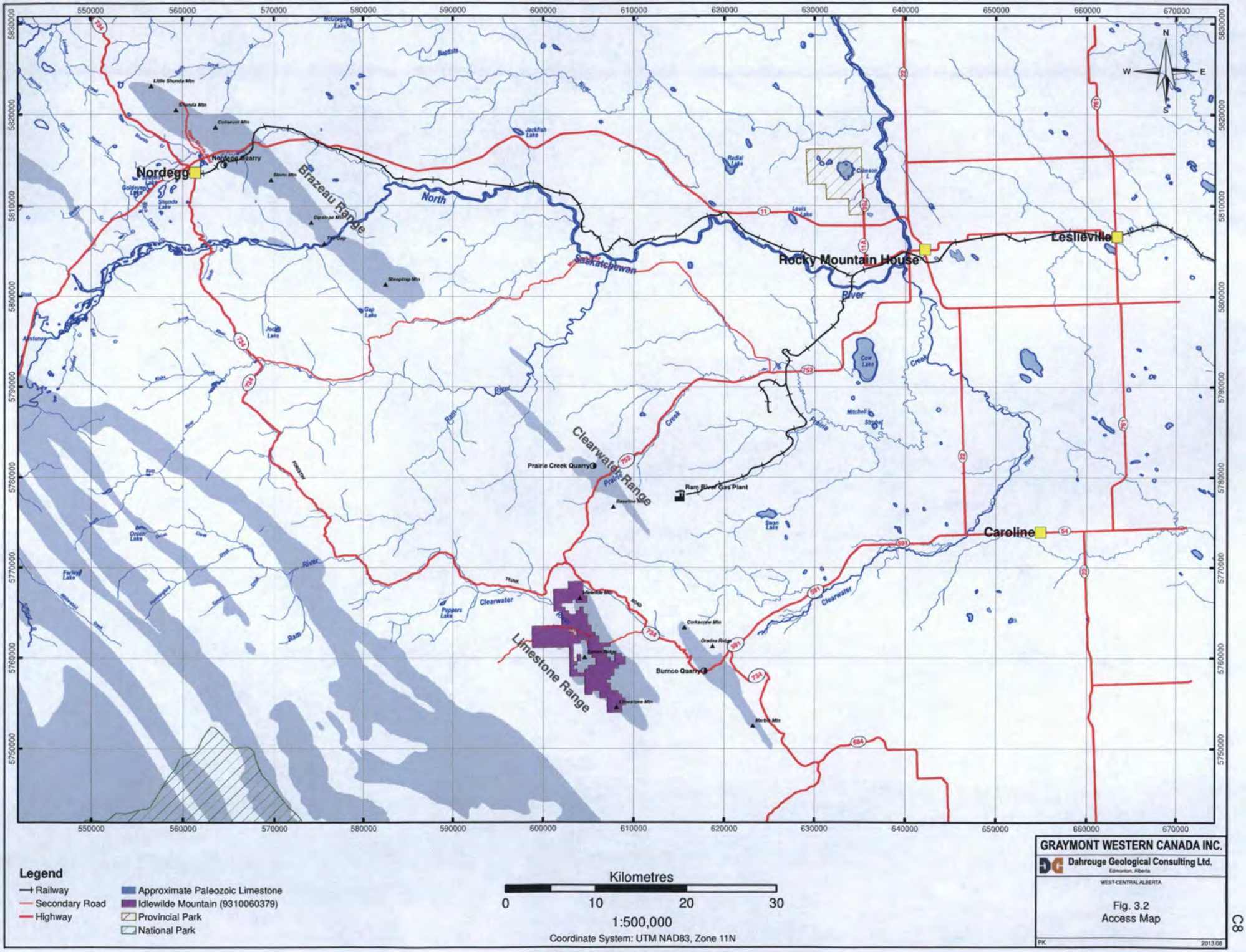
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

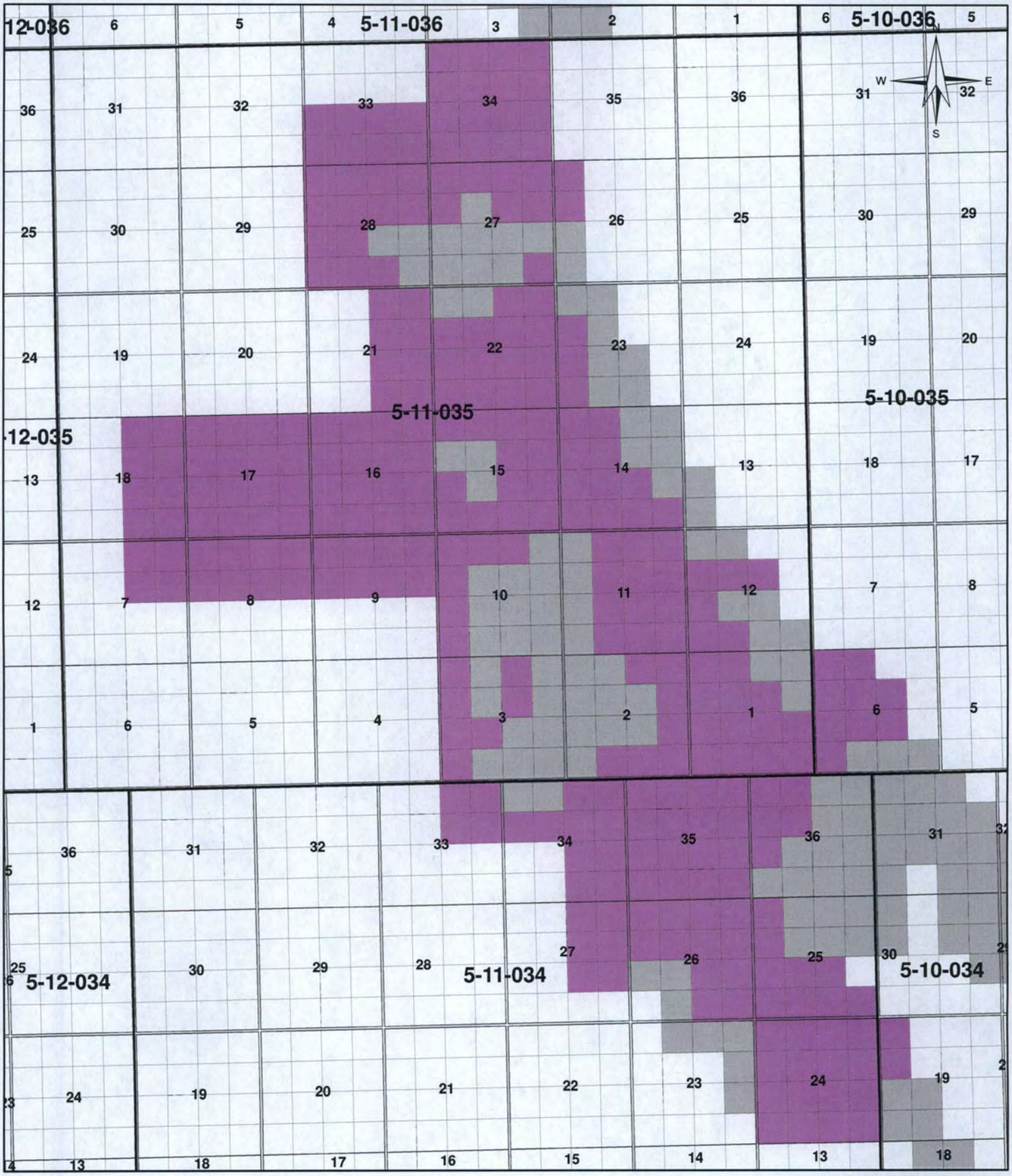
WEST-CENTRAL ALBERTA

Fig. 3.1
Property Location

PK 2013.08


Nordegg
Rocky Mountain House
Leslieville
Caroline
Brazeau Range
Clearwater Range
Limestone Range
North Saskatchewan River
Ram River
Clearwater River
Prairie Creek Quarry
Ram River Gas Plant
Burnco Quarry
Nordegg Quarry
Kilometres
0 10 20 30
1:500,000
Coordinate System: UTM NAD83, Zone 11N
Legend
Railway
Secondary Road
Highway
Approximate Paleozoic Limestone
Idlewilde Mountain (9310060379)
Provincial Park
National Park
GRAYMONT WESTERN CANADA INC.
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta
WEST-CENTRAL ALBERTA
Fig. 3.2
Access Map
PK
2013.08

C8



Legend

Graymont Land Holdings

- Permit #9310060379 (4,736 ha)
- Others

Kilometres

0 2 4

1:65,000

Coordinate System: UTM NAD83, Zone 11N

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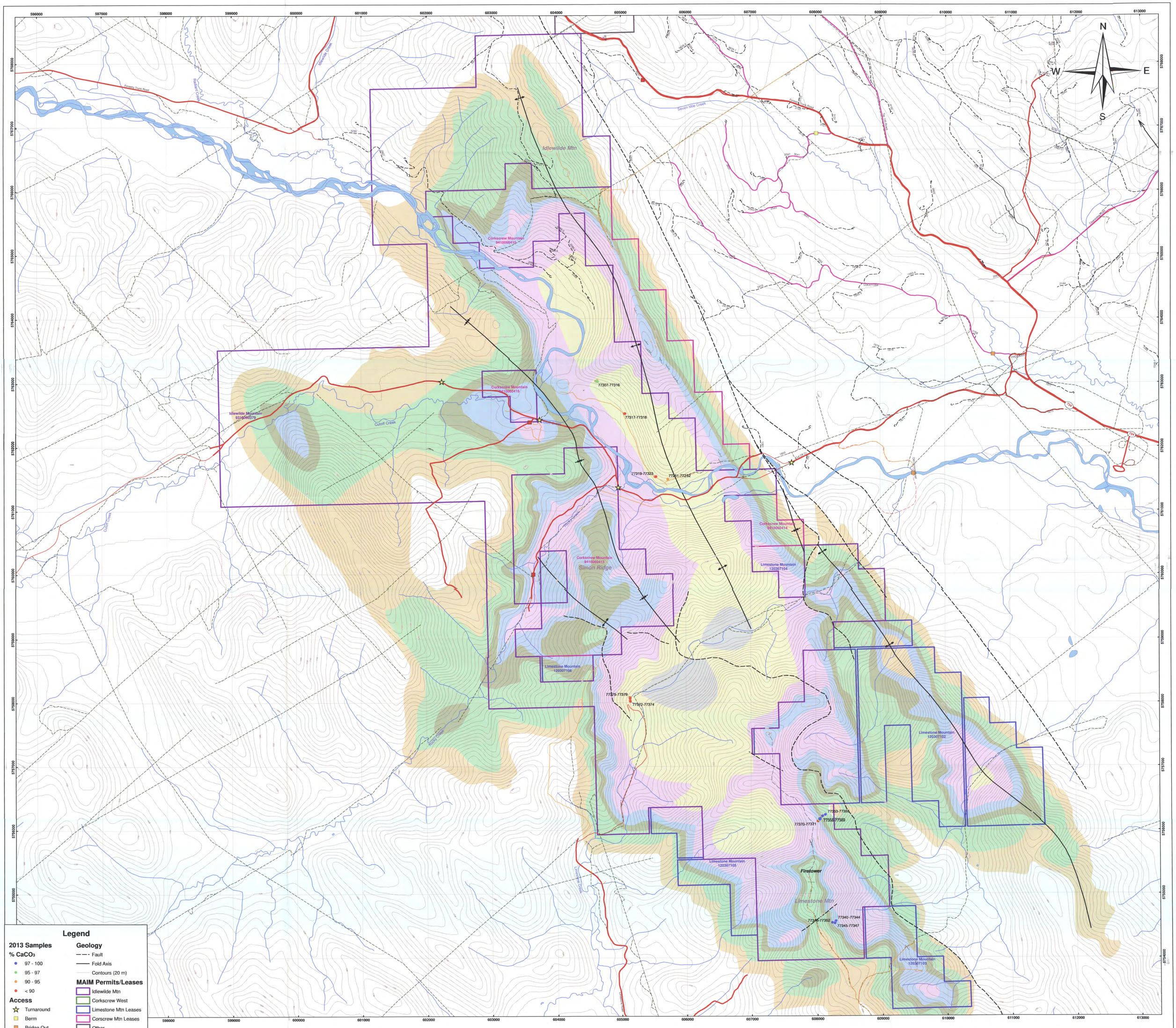
WEST-CENTRAL ALBERTA

Fig. 4.1
Permit Map

KK 2013.07



Legend

2013 Samples

% $CaCO_3$

- 97 - 100
- 95 - 97
- 90 - 95
- < 90

Access

- Turnaround
- Berm
- Bridge Out
- Gate

Roads

- Main Road
- Abandoned Road
- Under Construction
- Deferred Road
- Maintained Road
- Reclaimed Raod

Trails

- ATV
- Reclaimed
- Trail
- Cutline

Geology

- Fault
- Fold Axis
- Contours (20 m)

MAIM Permits/Leases

- Idlewilde Mtn
- Corkscrew West
- Limestone Mtn Leases
- Corscrew Mtn Leases
- Other

Bedrock Geology

- Fernie
- Turner Valley
- Shunda
- Pekisko
- Banff
- Palliser
- Alexo
- Mt Hawk

Metres

0 1,000 2,000 3,000 4,000

1:20,000

Coordinate System: UTM NAD83, Zone 11N

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IDLEWILDE MTN PROPERTY
WEST-CENTRAL ALBERTA

Fig. 4.2
Geology & Sample Locations

KK 2013.09