

**2019 GEOLOGICAL AND GEOCHEMICAL EXPLORATION  
ON THE  
SUMMIT LAKE PROPERTY**

**WHITEHORSE MINING DISTRICT, YUKON**

Quartz Claims: WOLF 57-91(YF46062-YF46096)

Geographic Coordinates  
60°23' N to 60°25' N  
133°42' W to 133°48' W

NTS Sheet 105C05

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Field Work Completed: August 4, 2019

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## **1. INTRODUCTION**

The Summit Lake quartz claims were staked by Henry Lole in June 2014 and transferred to Jody Dahrouge in April 2019. Dahrouge Geological Consulting (Dahrouge) completed a surface sampling program on August 4<sup>th</sup>, 2019. Exploration consisted of collecting 18 rock samples and completing a 9.03 km traverse in order to map geologic units and identify outcrops. The majority of the 2019 work on the claims focused on identifying access routes, mapping geological contacts and identifying high-calcium limestone outcrops on the Summit Lake Property. This report describes the 2019 exploration and provides an interpretation of the results. Appendix 1 is an itemized cost breakdown of the 2019 work completed on the Summit Lake Property. The operator for the 2019 exploration was Graymont Western Canada Inc (Graymont).

The Summit Lake Property is comprised of 35 contiguous quartz claims; the Property has been grouped as per Grouping Certificate HW07731.

Structural measurements were obtained at stations throughout the Property. A magnetic declination of 24° 2' E was used. Attitudes of bedding and other planar features are given as A°/B° NW, where A° is the azimuth of the strike (right-hand rule) and B° is the amount of dip in the direction indicated. Where bedding has been obscured by structure, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used.

### **1.1 GEOGRAPHIC SETTING**

#### **1.1.1 Location and Access**

The Summit Lake Property is located approximately 95 km southeast of Whitehorse, Yukon and 35 km east of the small community of Tagish, Yukon. Tagish has a population of approximately 390 with minimal amenities. Access to the Summit Lake Property from Whitehorse is by driving south, then east along Alaska Hwy 1 (Klondike Hwy) for approximately 95 km. A left-turn off Hwy 1 onto the Property is located directly north of Squan Lake (Fig.'s 3.2 and 4.1). A network of ATV trails exist and can be used for access within the Property.

#### **1.1.2 Topography, Vegetation, Wildlife and Climate**

Topography in the Summit Lake area is characterized by broad U-shaped glacial valleys and ridges of relatively low relief. Elevations in the claims group range from 885 m along Highway 1 up to approximately 1,000 m in the westernmost portion.

Tree cover in the Summit Lake area is moderate to dense. The most common trees are evergreen (spruce, pine and fir), with common birch, poplar, willow, cottonwood and aspen. There is no evidence of recent clear-cutting and logging in the area.

The abundance of wetlands in the Summit Lake area make it an ideal habitat for a variety of ungulates, birds and small mammals. The Yukon Government has identified seasonal riparian raptor and year-round muskrat ranges in the Summit Lake Property area. To the authors' knowledge, there are no restrictions on the area due to the presence of these animals. During exploration, Dahrouge endeavored to minimize disturbance to local flora and fauna.

The area is part of the Boreal Cordillera Eco-zone with generally dry and cool conditions. Climate is alpine to sub-arctic with average summer temperatures of 20° to 25°C and winter temperatures of -15° to -25°C, with extremes of 32°C and -55°C. Rainfall averages about 15 cm per year and maximum snowfall occurs from November to February with an average total of 128 cm. Snow often falls as early as September and as late as April.

## 1.2 PROPERTY

The Summit Lake Property is being held in trust for Graymont Western Canada Inc. by Jody Dahrouge, based out of Edmonton, AB. The claims were staked between June 18<sup>th</sup> and 20<sup>th</sup>, 2014 by a four-person crew based out of Tagish, YT. The Summit Lake Property consists of 35 quartz claims (WOLF 57-91) with a combined area of 731.5 ha.

**TABLE 1.1 LIST OF SUMMIT LAKE CLAIMS**

<b>Grant Number</b>	<b>Claim Name</b>	<b>Original Size (ha)</b>	<b>Record Date</b>	<b>Current Good To Date</b>	<b>New Good to Date</b>	<b>Required Spending</b>
YF46062	WOLF 57	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46063	WOLF 58	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46064	WOLF 59	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46065	WOLF 60	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46066	WOLF 61	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46067	WOLF 62	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46068	WOLF 63	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46069	WOLF 64	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46070	WOLF 65	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46071	WOLF 66	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46072	WOLF 67	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46073	WOLF 68	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46074	WOLF 69	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00

YF46075	WOLF 70	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46076	WOLF 71	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46077	WOLF 72	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46078	WOLF 73	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46079	WOLF 74	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46080	WOLF 75	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46081	WOLF 76	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46082	WOLF 77	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46083	WOLF 78	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46084	WOLF 79	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46085	WOLF 80	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46086	WOLF 81	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46087	WOLF 82	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46088	WOLF 83	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46089	WOLF 84	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46090	WOLF 85	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46091	WOLF 86	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46092	WOLF 87	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46093	WOLF 88	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46094	WOLF 89	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46095	WOLF 90	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
YF46096	WOLF 91	20.9	14-Jul-14	14-Jul-2020	14-Jul-2021	\$100.00
<b>Total Area:</b>		731.5		<b>Representation Work Cost:</b>		\$3,500.00
				<b>Certification Cost:</b>		\$175.00
				<b>Total:</b>		<b>\$3675.00</b>

### 1.3 HISTORY AND PREVIOUS INVESTIGATIONS

Initial prospecting of the area was completed by Dahrouge during the summer of 2012 to assess the quality of the limestone; the Summit Lake claims were later staked in 2014. Dahrouge completed a sampling program in 2014 and 2015 to assess carbonate quality on the Property. There are no known published previous investigations for high-calcium limestone on the Property. Historic exploration in the area surrounding the Summit Lake Property has dominantly been focused on gold and copper.

The TOG Property is adjacent to the northeast boundary of the Wolf Lake Property and has been explored in previous years for vein-hosted gold deposits. The TOG claims were first staked in 1972 by prospector Gord McLeod and are currently held by Dunvegan Exploration Ltd. The Property is now comprised of the TOG and GOT claims. Investigations have been done in 1979 by Archer Cathro and Associates, in 1982 by Noranda Exploration Co. Ltd. From 1985-1988

several geologists and companies sampled the site and reported values of 0.244 ounce/ton gold and higher. Newman Exploration also sampled pits on the Property but reported low gold values. Dunvegan Exploration began their investigations of the Property in 1989 with road construction, sampling, magnetometer and VLF-EM surveys, as well as detailed mapping. In 1990, they ran an 8-hole (262.5 m) drill program and bulk sampling of the main showing vein. The bulk sample analysis returned values of 3.16 ounce/ton gold. Dunvegan's 2003 exploration program consisted of trench sampling.

The historic MUNG claims, staked in 1971, were located southeast of the Summit Lake Property, south of the Alaska Highway and west of Wolf Lake. These claims were held by the Wolf Lake Joint Venture Group and explored by induced polarization survey in 1972 and found trace copper-molybdenum mineralization.

Adjacent to the northwest corner and extending around the TOG/GOT claims is the MAG Property, which was staked by Sourdough Resources in 2011. Sourdough performed reconnaissance geological mapping, sampling and a ground magnetometer survey in 2011. The claims expired in June 2017.

Underlying portions of active quartz claims WOLF 60, 62, 81 and 82 is the historic DISCOVERY placer claim, which was staked by Dan Robert Walker in 2011 and subsequently expired in August 2012. No assessment report was submitted.

Northwest of the Summit Lake Property, a block of 32 quartz claims (JAKES 1-32) were staked in October 2014 by Nicolai Goeppel of Higher Ground Exploration Services Inc. In 2015 Higher Ground completed a summer field program to map lithologies and trench sample new and historic targets. The claims expired in October 2016.

#### **1.4 PURPOSE OF WORK**

The work described herein was undertaken to accurately identify the location and extent of limestone units throughout the Summit Lake Property; it consisted of mapping and sampling. The 2019 exploration program is a follow-up to work completed in 2014 and 2015 by Dahrouge (Krueger and Lole, 2014, Krueger and Lole, 2015).

#### **1.5 SUMMARY OF WORK**

In August 2019, Dahrouge completed a one-day geologic mapping and sampling program on the Summit Lake Property.

Two in-situ outcrop samples and 16 float samples were obtained within the Summit Lake

Property (Fig. 4.2). Samples were collected by chipping outcrops perpendicular to defined or assumed bedding. Bedding was commonly difficult to identify due to the nondescript and cryptocrystalline nature of the limestone. Where bedding was uncertain or had been obscured by structure, stratigraphic thicknesses were calculated using the best estimated orientation from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used. A 9.03 km traverse was completed on the Property to map geological units and identify outcrops.

Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (App. 4). A solution of 10% HCl was used to assess carbonate quality in the field. Samples were shipped to Graymont's lab in Sandy, Utah for preparation and analyses by standard ICP techniques, and LOI. Analytical procedures are described in Appendix 2 and assay sheets are provided in Appendix 3.

Personnel were based in a hotel in Whitehorse, Yukon, and access to and from the Property was by rented four-wheel-drive vehicle. Access throughout the Property was by extensive hiking.

## **2. REGIONAL GEOLOGY**

### **2.1 STRATIGRAPHY**

The Summit Lake Property is underlain by Carboniferous to Jurassic Cache Creek Group rocks. The Cache Creek Group is located within the central part of the morpho-tectonic Intermontane Belt of the Canadian Cordillera (Fig. 4.3). It extends almost continuously over a distance of more than 1,000 km, from south-central Yukon Territory, through the Stuart Lake Belt of Armstrong in central British Columbia, to the type area near the village of Cache Creek in the Interior Plateau of south-central British Columbia (Beyers and Orchard, 1991).

Outcrops of the Carnian to Norian Lewes River Group are also seen proximal to the Summit Lake Property.

#### **2.1.1 Cache Creek Group**

The Cache Creek Group consists of oceanic shale, siltstone, chert, carbonates and ultramafic rocks. These are overlain by Upper Triassic rocks of the Aksala Group northwest of the Property.

In the Atlin Terrane of southern Yukon and northern British Columbia, Monger (1969, 1975) included the Kedahda, French Range, Teslin, Nakina, and Horsefeed formations as part of the Cache Creek Group.

The Late Mississippian to Late Permian Horsefeed Formation generally consists of a basal, massive, pale grey-weathering calc-arenite overlain by a thick succession of pale grey, porcellanous, crinoidal, and foraminiferal calc-arenite. This member grades upwards into dark grey, very fine grained detrital limestone and dolomitic limestone. The uppermost member of the Horsefeed Formation is an aggregate of foraminiferal calcarenite and, in the lower part, locally breccia. Between Koshin and Nahlin rivers the most common lithology is pale grey, unsorted, massive limestone breccia (Monger, 1975) (Gabrielse, 1998).

The Mississippian to Permian Nakina Formation is tan or brown to green weathering, grey green or rarely maroon, very fine grained altered basalt, in places with small chlorite amygdules and calcite veins. The rocks are generally massive and the only planar structures recognizable are fractures and faults with slickensides. Other less common rock types are diabase and fine-grained basalt porphyry with small feldspar phenocrysts and very rarely, fine-grained gabbro, basaltic flow breccia and tuff (Monger, 1975).

### **2.1.2 Lewes River Group**

The Lewes River Group was determined to range in age from Carnian to Norian, based on dating of spiriferids, pelecypods, ammonites and cerioid corals. It generally consists of limestone, argillite, greywacke and sandstone. Lees (1934) recognized the presence of three units: a lower limestone sequence, middle sequence of greywacke and argillite with interbedded limestone intervals, and an upper limestone unit. The Lewes River Group is informally subdivided into the Povoas and Aksala formations. The Povoas Formation is a volcanic unit that consists of basalts and andesites, with minor carbonate rocks. It is overlain by the Carnian-Norian Aksala Formation, which has been subdivided into two main members: Casca and Hancock. Sequences of sandstones, conglomerates and mudstones comprise the Casca Member, which overlies the reefal carbonates of the Hancock Member (Colpron, 2011).

The Aksala Formation consists of mixed clastic and carbonate rocks that are divisible into three dominant facies: calcareous greywacke; thick carbonate; and red colored clastics (Shaw, 1989).

### **2.1.3 Intrusives**

The nearest known intrusive rocks occur 4 km east of the Property and are Early Cretaceous intrusions of the Teslin Suite. They are comprised of leucocratic, fine to coarse-grained, equigranular, hornblende-biotite granite, granodiorite, quartz monzonite and quartz monzodiorite

(Shaw, 1989).

## 2.2 STRUCTURE

The structural geology of the area is dominated by two major sub-parallel, north-northwest trending faults that divide and define the boundaries between the Cache Creek Terrane (to the east) and the Whitehorse Trough and between the Whitehorse Trough and the Yukon-Tanana Terrane (to the west). The Nahlin Fault more or less marks the western extent of the Cache Creek Terrane and eastern extent of the Whitehorse Trough. It is a steeply dipping to vertical fault, or series of faults and has seen intermittent activity from the Late Triassic to Tertiary time. The Llewellyn fault marks the boundary between the regionally metamorphosed Yukon-Tanana Terrane and the Whitehorse Trough. It is also steeply dipping and appears to have been active from Late Triassic to Tertiary time (Shaw, 1989).

**TABLE 2.1 STRATIGRAPHY OF THE SUMMIT LAKE AREA**

Period	Stage/Age	Stratigraphic Unit			Lithological Description	Approx. Thickness (m)
		Group	Formation/ Member			
Triassic	Norian	Lewes River Gp.	Aksala Fm.	Casca Mbr.	Sandstones, conglomerates and mudstones, limestone	unknown
				Hancock Mbr.	Massive to thick-bedded limestone	Up to 600
	Carnian		Povoas Fm.	Volcanics including basalts and andesites, minor carbonates		
Devonian to Permian		Cache Creek Gp.	Horsefeed Fm.		Massive to thick-bedded limestone, dolomitic limestone	Up to 1,500
			Nakina Fm.		Massive altered basalts, minor diabase	unknown

\*Adapted from Clapham et al., 2002.

## 3. PROPERTY GEOLOGY

### 3.1 STRATIGRAPHY AND LITHOLOGY

As only initial prospecting work has been performed on the Summit Lake Property, a detailed description of the property geology is not yet possible. During the 2015 exploration, the volcanic Nakina Formation and carbonate Horsefeed Formation were both encountered on the Summit

Lake Property. As other formations were not encountered on the Property, their detailed descriptions will not be included herein.

### **3.1.1 Horsefeed Formation**

Exposures of the Horsefeed Formation were mapped and sampled in 2012 from between 2,900 m to 3,100 m north of the Alaska Hwy within the Summit Lake Property. During the 2019 exploration program, two outcrops of the Horsefeed Formation were encountered (Fig. 4.2). The outcrops generally consist of light-grey weathered, medium-grey to dark-grey fresh, micritic to coarse-grained lime mudstones. Outcrops are typically massive and somewhat resistant with minor calcite veining.

### **3.1.2 Nakina Formation**

During previous exploration, four outcrops of the Nakina Formation have been encountered and sampled. The outcrops generally consist of orange to rusty brown weathered, light-grey to olive-grey fresh, very-fine-grained basalts. Nakina Formation outcrops are typically massive, hard and fairly resistant.

## **3.2 STRUCTURE**

Given the early stage of exploration on the Property, the structure is currently largely unknown. A previously mapped regional fault trends NE-SW along the Horsefeed-Nakina contact throughout the Property, however no evidence of this fault was found during any of Dahrouge's exploration programs.

## **4. RESULTS OF 2019 EXPLORATION**

The 2019 exploration program was completed in order to further assess the quality of the Mississippian to Permian Horsefeed Formation limestones on the Summit Lake Property. Further delineating the contact between the volcanic Nakina Formation and the high-calcium limestones of the Horsefeed Formation was also a priority.

The groundwork involved sampling at several locations on the Property and completing a 9.03 km traverse to map geologic units and identify outcrops (Fig. 4.2).

During the program, geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (App. 4). A solution of 10% HCl was used to assess carbonate quality in the field. In some instances, interval thicknesses were

determined by measuring outcrops perpendicular to bedding, where it could be identified. In many cases the interval thickness can only be considered approximate due to the lack of reliable bedding surfaces.

All samples from the 2019 program were shipped from Whitehorse, YT to Graymont's Central Lab in Sandy, Utah for preparation and analyses by standard ICP techniques, and LOI (App.'s 2 and 3). The best in-situ Horsefeed Formation sample averaged 98.40% CaCO<sub>3</sub>, 0.88% MgCO<sub>3</sub> and 0.19% SiO<sub>2</sub> over approximately 5 m. Grab samples 132702 and 132703 returned favourable results as well. Sample 132702 averaged 98.41% CaCO<sub>3</sub>, 1.59% MgCO<sub>3</sub> and 0.49% SiO<sub>2</sub> and 132703 yielded 98.43% CaCO<sub>3</sub>, 1.23% MgCO<sub>3</sub> and 0.50% SiO<sub>2</sub>. As illustrated in Fig. 4.2, the 2019 samples returned variable concentrations of CaCO<sub>3</sub>.

## **5. DISCUSSION AND CONCLUSIONS**

Within the Summit Lake Property, limestones of the Horsefeed Formation were mapped and tested by measuring and sampling stratigraphic sections. A total of 18 samples were collected from the Horsefeed Formation. Unfortunately, limited time and outcrop exposure prevented further exploration for high-calcium limestone outcrops of the Horsefeed Formation. The abundance of overburden makes it difficult to obtain conclusive results for the quality of the Horsefeed Formation limestone on the Property.

The next phase of exploration on the Summit Lake Property should consist of diamond drilling, to determine the thickness and lateral extent of the high-calcium Horsefeed Formation on the Property. As outcrop exposure is limited throughout the Property, drilling would be best to determine limestone quality.

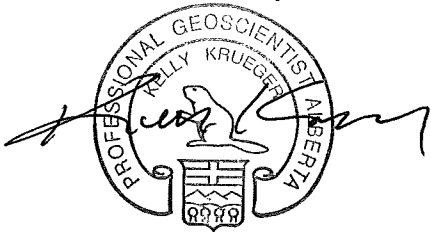
Any future ground sampling and mapping should focus on areas that have seen only limited exploration during previous exploration programs, to identify any other outcrop locations.

**6. STATEMENT OF QUALIFICATIONS**

I, Kelly Krueger, residing at 10550 Ellerslie Rd., SW, Edmonton, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 103, 10183 - 112 St., Edmonton, Alberta, T5K 1M1.
- 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 Geologist with the Association of Professional Engineers and Geoscientists of Alberta, member M96506.
- I managed the 2019 work described in this report.
- I am co-author of the report entitled "2019 Geological and Geochemical Exploration on the Summit Lake Property" and accept responsibility for the veracity of technical data and results.
- I hereby consent to the copying or reproduction of this Assessment Report following the confidentiality period.

Dated this 31<sup>st</sup> day of March, 2020.



Kelly Krueger, B.Sc., P. Geo.

APEGA M96506

I, Andrew Shumilak, residing at 7446 Ellesmere Way, Sherwood Park, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 103, 10183 - 112 St., Edmonton, Alberta, T5K 1M1.
- I am a 2016 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I am a registered Geologist in Training with the Association of Professional Engineers and Geoscientists of Alberta, member 214310
- I co-managed the 2019 work described in this report.
- I am co-author of the report entitled "2019 Geological and Geochemical Exploration on the Summit Lake Property" and accept responsibility for the veracity of technical data and results.
- I hereby consent to the copying or reproduction of this Assessment Report following the confidentiality period.

Dated this 31<sup>st</sup> day of March, 2020.



Andrew Shumilak, B.Sc., G.I.T.

APEGA 214310

## 7.

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## APPENDIX 1: ITEMIZED COST STATEMENT FOR THE 2019 EXPLORATION

a) **Personnel**

K. Krueger, geologist							
8.56	hrs			project management, field work and travel			
<u>2.73</u>	hrs			project planning & preparations, reporting			
11.29	hrs	@	\$	80.00		\$	903.31
A. Shumilak, geologist							
11.32	hrs			field work and travel			
<u>4.92</u>	hrs			project preparations, data entry			
16.25	hrs	@	\$	59.00		\$	958.48
P. Mickelsen, student							
10.29	hrs			field work and travel			
<u>0.32</u>	hrs			project preparations, data entry			
10.62	hrs	@	\$	45.00		\$	477.71
T. Anderson, student							
<u>11.32</u>	hrs			field work and travel			
11.32	hrs	@	\$	45.00		\$	509.56
J. Kerr, receptionist							
<u>0.42</u>	hrs			logistics, prepare shipments			
0.42	hrs	@	\$	39.38		\$	16.47
						\$	2,865.53

b) **Food and Accommodation**

3.47	man-days	@	\$	156.45	accommodations (hotel rooms)	\$	543.55
4.24	man-days	@	\$	70.00	meals	\$	296.60
						\$	840.15

c) **Transportation**

Vehicles:	Truck rental	Driving Force (Whitehorse)	\$	184.90			
	Fuel		\$	29.85		\$	214.76

d) **Analyses**

		Central Lab of Graymont Western U.S. Inc.					
		(18 rock samples)					
18	samples	@	\$	4.50	Preparation fee	\$	81.00
18	samples	@	\$	25.00	Sample analysis	\$	450.00
						\$	531.00

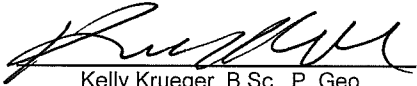
e) **Other**

	Shipping	\$	47.14				
	Disposable Supplies	\$	18.06			\$	65.20

**Total**

\$	<u>4,516.63</u>
----	-----------------

Edmonton, Alberta  
March 31, 2020

  
Kelly Krueger, B.Sc., P. Geo.

## APPENDIX 2: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

### Name and Address of the Lab:

Graymont Western US Inc., Western Region Office  
585 W Southridge Way  
Sandy, Utah, 84070

### Statement of Qualifications:

Jared Leikam, Graymont Central Lab Supervisor, 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 14 years.

### 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:

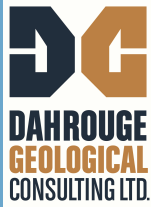
Upon receiving the samples, the prep room technician crushes the stone down to a -3/8-inch sizing. The technician then riffles and splits the stone down to a manageable size (roughly 200 g). The stone is then dried in an oven at 105°C. Once the samples have been dried, they get pulverized in a Bico Disc Mill, so that 90% of the powder is passing a 75µm screen. A split of this pulverized material is bagged up, given a barcode label and then set to the analytical lab for testing.

### 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<sup>th</sup> 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 each batch. Every element being analyzed in a sample is backed up by data that we collect from the certified reference materials being analyzed within each batch of samples. We also use an internal standard (10 ppm Co) to further ensure the quality and accuracy of the analysis.

**APPENDIX 3: ASSAY RESULTS – CENTRAL ANALYTICAL LABORATORY OF  
GRAYMONT WESTERN U.S. INC**

See Data Folder  
for Assay Results



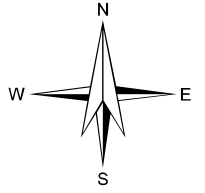
## APPENDIX 4: 2019 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE SUMMIT LAKE PROPERTY



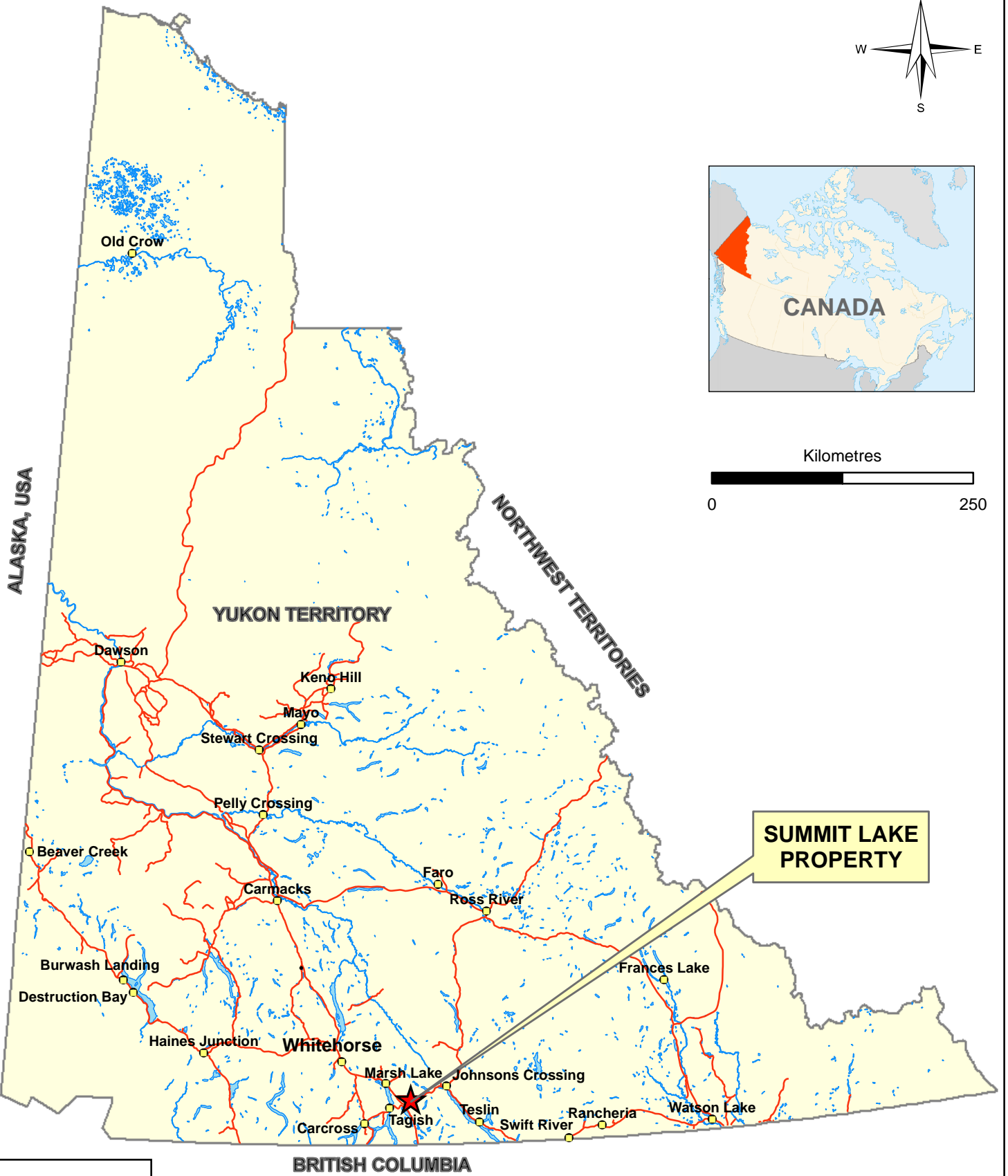
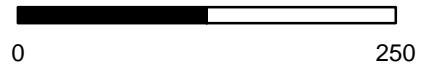
Notes: Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations. Attitudes are strike and dip (right-hand rule). Sections are listed in numerical order of samples, which does not necessarily represent stratigraphic order. Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 8N. Sample locations are shown in Figure 4.2. Stratigraphy Abbreviations: Mn - Mississippian to Permian Nakina Formation; Mh - Mississippian Horsefeed Formation

Sample	Strat Unit	Strat Tkns (m)	Description	CaCO <sub>3</sub> (%)	MgCO <sub>3</sub> (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	SrO (ppm)	MnO (ppm)	P <sub>2</sub> O <sub>5</sub> (ppm)	
<b>Isolated Samples</b>												
132677 UTM 570102E, 6697560N	Mh	grab	<b>Calcareous Mudstone</b> , medium grey weathered and fresh, micritic, resistant, alteration: silica, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	78.83	0.96	17.96	0.071	0.076	333	159	424	
132678 UTM 570106E, 6697549N	Mh	grab	<b>Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone</b> , medium grey weathered and fresh, micritic, resistant, strong fetid odour, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	95.59	2.55	1.18	0.092	0.039	303	44	267	
132679 UTM 570062E, 6697914N	Mh	grab	<b>Mudstone</b> , tan to light grey weathered, tan to medium grey fresh, micritic, resistant, alteration: silica, strong fetid odour, weak HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	15.85	1.19	17.87	0.025	0.776	15	1061	311	
132680 UTM 570087E, 6697956N	Mh	grab	<b>Dolomitic Lime Mudstone to Dolomitic Lime Wackestone</b> , light grey weathered, light grey to dark grey fresh, micritic to coarse-grained, resistant, nodular, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	92.40	5.79	0.80	0.111	0.052	239	109	283	
132681 UTM 570090E, 6697975N	Mh	5	<b>Lime Mudstone</b> , light grey weathered, light grey to tan fresh, micritic, massive, resistant, homogeneous, weak fetid odour, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	98.40	0.88	0.19	0.077	0.028	1881	12	50	
132682 UTM 570082E, 6697986N	Mh	1	<b>Mudstone</b> , medium grey weathered and fresh, micritic, massive, resistant, hard, alteration: silica; oxide, moderate intensity, moderate HCl reaction, structure(s): fracture, outcrop-scale, strong; calcite veinlet, outcrop-scale, moderate	27.22	1.97	23.65	0.609	0.949	101	887	206	
132683 UTM 570093E, 6697982N	Mh	grab	<b>Lime Wackestone to Lime Packstone</b> , tan to medium grey weathered, medium grey to dark grey fresh, micritic to medium-grained, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak; calcite vein, outcrop-scale, weak	94.60	1.88	2.76	0.084	0.021	293	32	412	
132684 UTM 570106E, 6697977N	Mh	grab	<b>Lime Mudstone</b> , very-light grey weathered, light grey to medium grey fresh, micritic, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	96.77	1.61	0.41	0.117	0.040	554	18	50	
132685 UTM 570102E, 6697988N	Mh	grab	<b>Lime Mudstone</b> , very-light grey weathered, light grey to medium grey fresh, micritic, resistant, very strong HCl reaction, structure(s): fracture, outcrop-scale, moderate; calcite veinlet, outcrop-scale, moderate	97.09	2.18	0.47	0.106	0.038	839	25	50	
132686 UTM 570108E, 6697990N	Mh	grab	<b>Lime Mudstone</b> , very-light grey weathered, light grey to medium grey fresh, micritic, resistant, alteration: oxide, weak intensity, moderate HCl reaction, structure(s): fracture, outcrop-scale, moderate; calcite veinlet, outcrop-scale, moderate	97.52	0.98	0.57	0.126	0.054	1833	21	50	
132701 UTM 569092E, 6696508N	Mh	grab	<b>Calcareous Mudstone</b> , medium grey to tan weathered, medium grey fresh, micritic to medium-grained, hard, alteration: silica, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	57.77	0.71	25.87	0.068	0.333	193	471	465	

Sample	Strat Unit	Strat Tkns (m)	Description	CaCO <sub>3</sub> (%)	MgCO <sub>3</sub> (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	SrO (ppm)	MnO (ppm)	P <sub>2</sub> O <sub>5</sub> (ppm)
132702 UTM 568936E, 6696228N	Mh	grab	<b><u>Lime Mudstone to Lime Wackestone</u></b> , light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, mottled, nodular, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	98.41	1.59	0.49	0.110	0.042	261	20	188
132703 UTM 568461E, 6696250N	Mh	grab	<b><u>Lime Mudstone to Recrystallized Limestone</u></b> , light grey to medium grey weathered and fresh, cryptocrystalline to micritic, alteration: oxide, weak intensity, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	98.43	1.23	0.50	0.115	0.049	307	19	161
132704 UTM 567698E, 6695962N	Mh	grab	<b><u>Mudstone</u></b> , dark grey weathered and fresh, cryptocrystalline to micritic, vuggy (open), alteration: silica; oxide, fracture-related, moderate intensity, very weak HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate; calcite vein, outcrop-scale, moderate	16.37	1.65	17.35	0.413	1.048	15	1210	363
132705 UTM 567576E, 6696156N	Mh	grab	<b><u>Calcareous Mudstone</u></b> , light grey to medium grey weathered and fresh, micritic to fine-grained, alteration: silica; oxide, fracture-related, moderate intensity, weak HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	55.97	2.57	28.24	0.068	0.460	187	569	1356
132706 UTM 567638E, 6696285N	Mh	grab	<b><u>Lime Mudstone to Lime Wackestone</u></b> , light grey to medium grey weathered, medium grey fresh, cryptocrystalline to coarse-grained, nodular, alteration: oxide, moderate intensity, strong HCl reaction	97.99	1.36	0.99	0.134	0.061	263	32	245
132707 UTM 567930E, 6696497N	Mh	grab	<b><u>Mudstone</u></b> , medium grey to dark grey weathered, medium grey fresh, micritic to fine-grained, alteration: silica; oxide, strong intensity, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	39.84	0.23	21.48	0.264	0.775	155	837	779
132708 UTM 568136E, 6696554N	Mh	grab	<b><u>Mudstone</u></b> , medium grey weathered, light grey to medium grey fresh, micritic to coarse-grained, alteration: silica; oxide, strong intensity, strong fetid odour, very weak HCl reaction, structure(s): calcite veinlet, outcrop-scale, moderate	6.60	0.33	24.26	0.036	0.769	15	893	1173








Kilometres



**SUMMIT LAKE  
PROPERTY**

**Legend**

-  Cities/Towns
-  Highway
-  Rivers
-  Lakes
-  Territorial Boundary

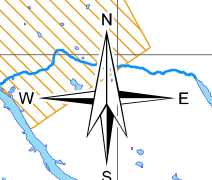
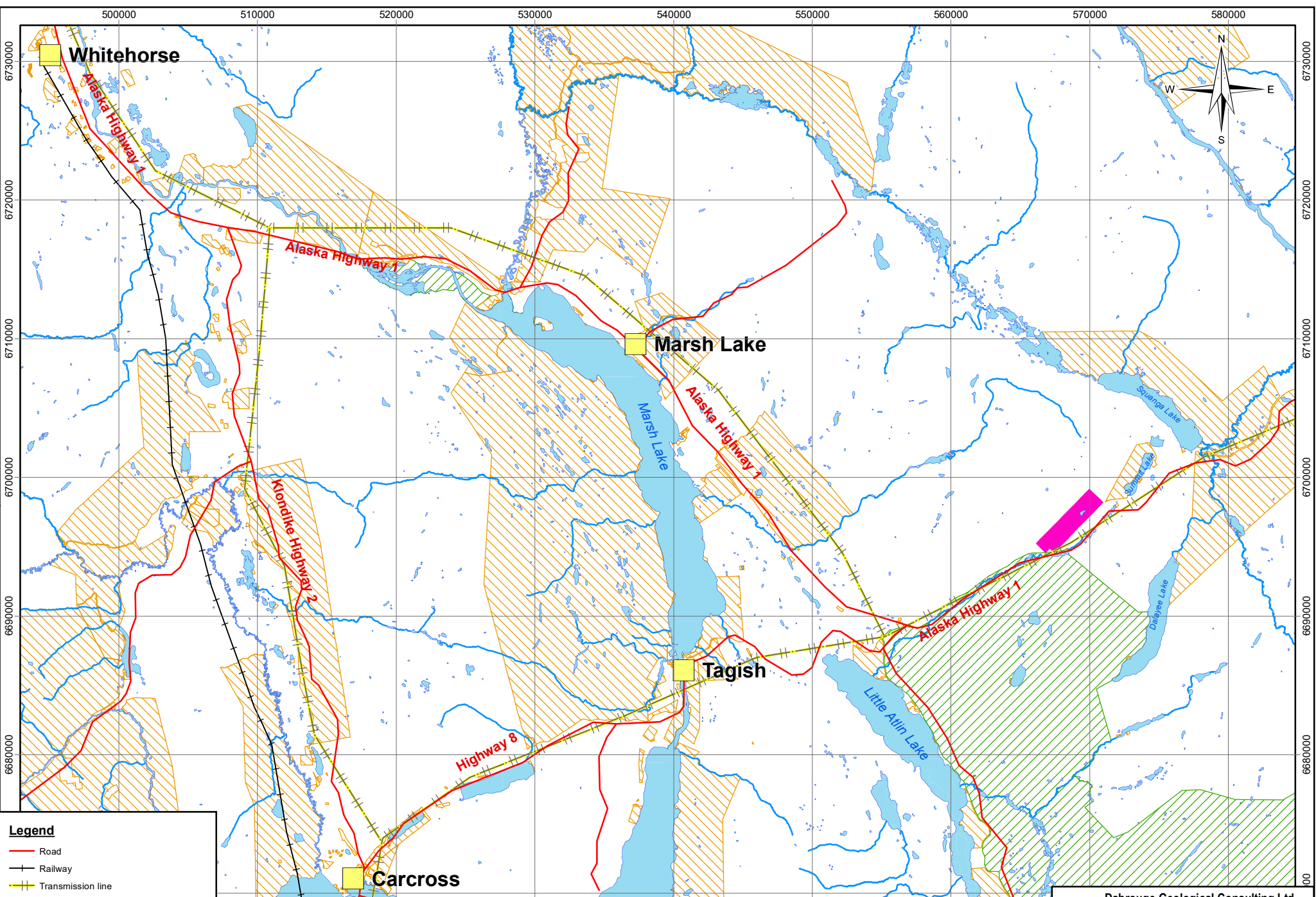
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Coordinate System: UTM NAD83, Zone 8

**DG** Dahrouge Geological Consulting Ltd.  
Edmonton, Alberta

YUKON TERRITORY, CANADA

Fig. 3.1  
Property Location

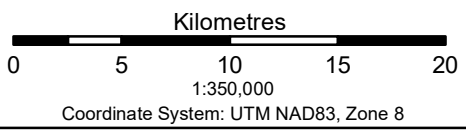


**Legend**

- Road
- +— Railway
- +— Transmission line
- River
- Lake

**Land Holdings**

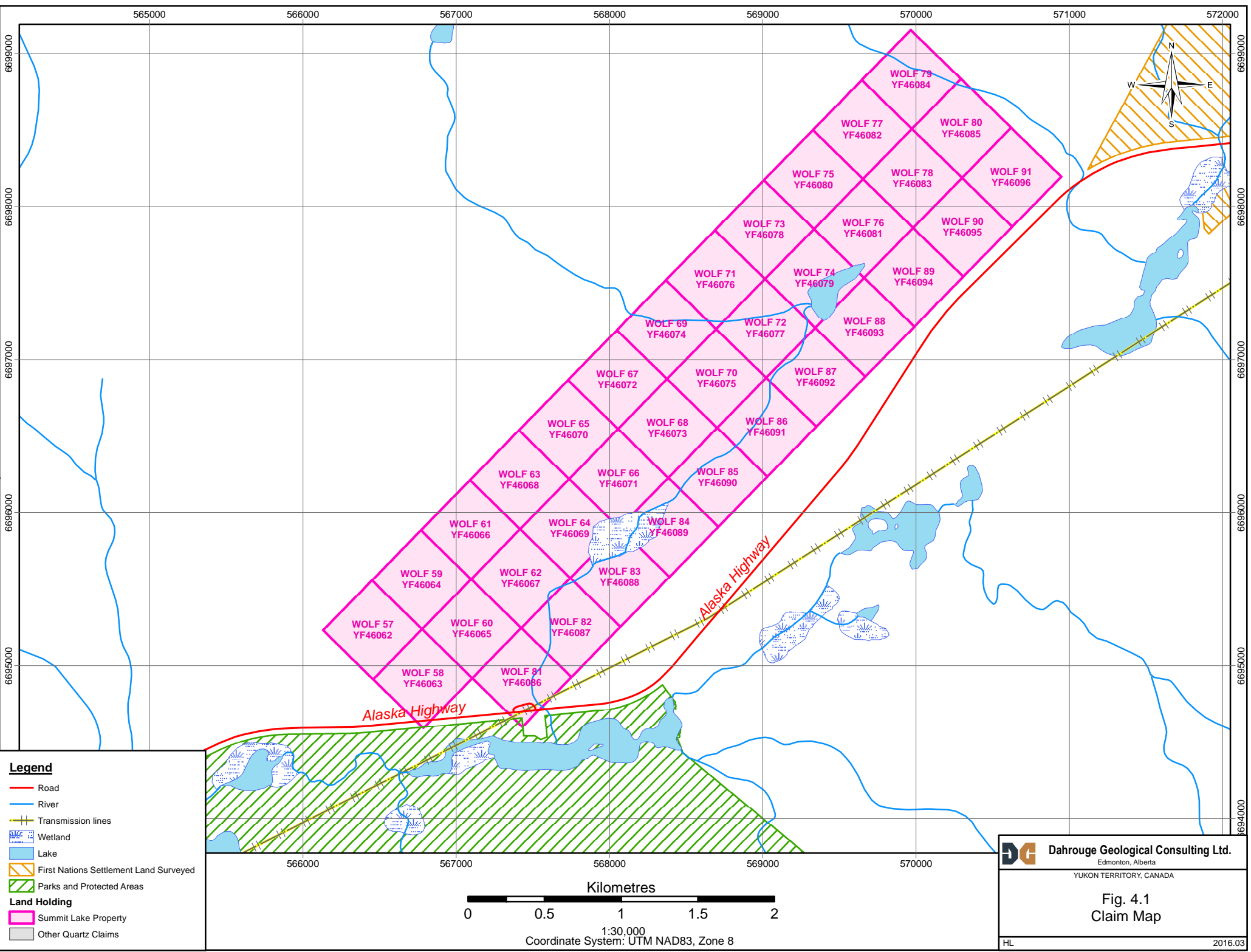
- Summit Lake Property
- First Nations Settlement Land Surveyed
- Parks and Protected Areas



**Dahrouge Geological Consulting Ltd.**  
Edmonton, Alberta  
YUKON TERRITORY, CANADA

**Fig. 3.2**  
**Access Map**

AS      2019.12

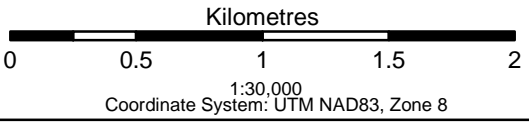


**Legend**

- Road
- River
- Transmission lines
- ▨ Wetland
- Lake
- ▨ First Nations Settlement Land Surveyed
- ▨ Parks and Protected Areas

**Land Holding**

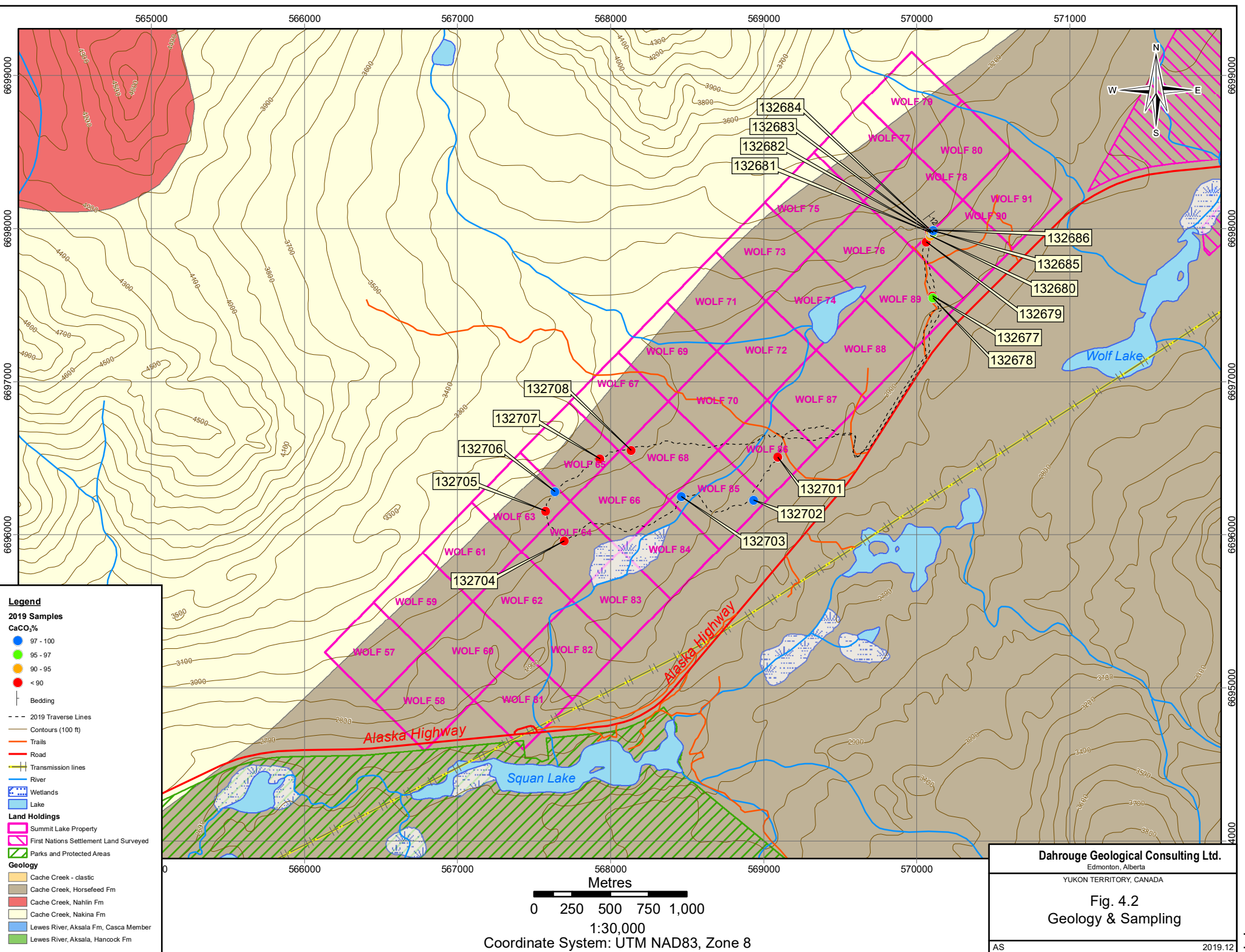
- Summit Lake Property
- Other Quartz Claims



**DG Dahrouge Geological Consulting Ltd.**  
Edmonton, Alberta  
YUKON TERRITORY, CANADA

**Fig. 4.1  
Claim Map**

HL 2016.03



**Legend**

**2019 Samples**  
 CaCO<sub>3</sub>%

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

— Bedding  
 - - - 2019 Traverse Lines  
 --- Contours (100 ft)  
 --- Trails  
 --- Road  
 --- Transmission lines  
 --- River  
 --- Wetlands  
 --- Lake

**Land Holdings**

- Summit Lake Property
- First Nations Settlement Land Surveyed
- Parks and Protected Areas

**Geology**

- Cache Creek - clastic
- Cache Creek, Horsefeed Fm
- Cache Creek, Nahlin Fm
- Cache Creek, Nakina Fm
- Lewes River, Aksala Fm, Casca Member
- Lewes River, Aksala, Hancock Fm

Metres

0 250 500 750 1,000

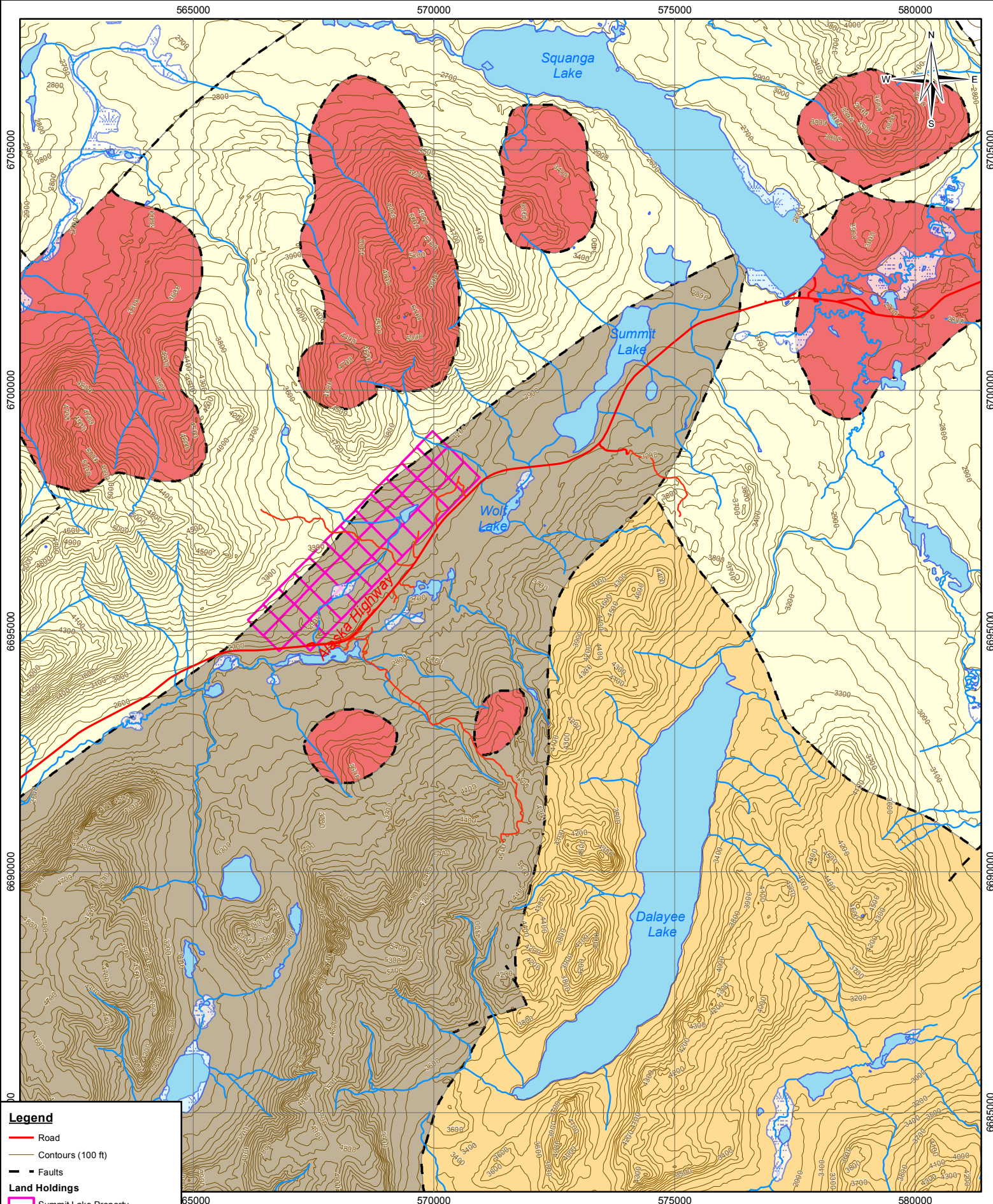
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Coordinate System: UTM NAD83, Zone 8

**Dahrouge Geological Consulting Ltd.**  
 Edmonton, Alberta  
 YUKON TERRITORY, CANADA

**Fig. 4.2**  
**Geology & Sampling**

AS 2019.12



**Legend**

- Road
- Contours (100 ft)
- Faults

**Land Holdings**

- Summit Lake Property

**Geology**

- Cache Creek Gp - clastic
- Cache Creek Gp - Horsefeed Fm
- Cache Creek Gp - Nahlin Fm
- Cache Creek Gp - Nakina Fm

Kilometres

0 2 4 6

1:100,000

Coordinate System: UTM NAD83, Zone 8

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YUKON TERRITORY, CANADA

**Fig. 4.3**  
Regional Geology Map

AS 2019.12