

TECHNICAL REPORT
MACKENZIE MOUNTAINS IRON-COPPER PROPERTY, NORTHWEST TERRITORIES, CANADA

NTS: 106F/01, 02

Mackenzie Mining District, Northwest Territories, Canada
65° 12' N and 132° 27' E

PREPARED FOR:
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And
Seahawk Ventures Inc.

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MACKENZIE MOUNTAINS IRON-COPPER PROPERTY
Northwest Territories, Canada

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1 Summary

This report was commissioned by Metallis Resources Inc. (“Metallis”) and Seahawk Ventures Inc. (“Seahawk”) and was prepared by Gary Vivian, M.Sc., P.Geol. The primary purpose of this report is to update the 43-101 Technical Report prepared in 2014. Material changes to the property include a change in property ownership and the number of mineral dispositions that comprise the property. The report is also prepared as a qualifying report for a Sales Agreement between Metallis and Seahawk. The Mackenzie Mountains Iron Copper Property (“MMICP”) remains a property of merit. Exploration completed to date shows that there is significant potential to build an iron ore deposit on the property.

The MMICP comprises nine mineral claims that collectively cover 5, 076.49 hectares of Crown land in the Northwest Territories of Canada. The property, which is 100% owned by Metallis Resources Inc., is situated 190 kilometers west of the town of Norman Wells on the Mackenzie River. It covers the Neoproterozoic Windermere Supergroup geological unit. The Windermere Supergroup includes the Rapitan Formation, which has potential for banded iron formation (IF).

The MMICP is contiguous to Chevron Canada’s Crest iron deposit, which is believed to be the second largest, undeveloped, iron-ore deposit in the world. Crest Exploration Ltd. (Crest), in their Yukon Assessment Report #017964, 1964, stated the following of the Iron Creek portion of the Crest deposit: *“within zones 1 to 9, the total amount of bedded hematite, with a grade of 35% Iron and better, is 11.5 billion tons. The average grade of this material is 43.8% iron, 0.34% phosphorus and 26.6% silica”* (Flower, 1964). **The Author (QP) has been unable to verify this information and the information is not indicative of mineralization on the property that is the subject of this report.**

Within and surrounding the property, the Proterozoic Rapitan Group is exposed over several hundred kilometers and ranges in thickness from 50 to 150 meters. It is relatively flat lying and undeformed at the Crest deposit. The iron ore is a fairly simple sedimentary deposit. Mineralogically, it consists of fine-grained specular haematite with silica distributed as bands or nodules of red jasper. The iron ore has been traced by Crest over a distance of 51.5 km.

The most recent exploration was conducted during the summer of 2011 when Coltstar Ventures Inc. (the predecessor of Metallis) carried out a multi-stage exploration program, at both regional and local scales. The regional program consisted of rock sampling, geological mapping, and a helicopter-borne magnetic survey. Detailed geological mapping, chip sampling and ground magnetic surveys, along selected traverses, were also undertaken in the immediate vicinity of the Crest iron deposit in order to determine the extent to which that deposit extended onto Metallis’s property. Specific areas of focus for the field component of the exploration program, conducted in August 2011, were based on the results of a reconnaissance-style program conducted in the summer of 2010, as well as preliminary interpretation of the data collected during the aeromagnetic program in July of 2011.

The results of the geophysical survey and rock sampling, as well as field observations, suggest that the property in the immediate vicinity of the Crest iron deposit is most prospective for economic iron

mineralization. Near the Crest deposit, the geology is characterized by normal fault blocks, which contain folded packages of the Rapitan Group. In places, outcrop mapping reveals that iron formation dips onto Metallis's property. The magnetic modeling, together with the geological mapping, supports the interpretation that the iron formation adjacent to the Chevron property is located at a shallow depth, typically between 50 and 100 meters beneath the surface.

Two outcrops of iron formation are mapped on Metallis's property (claim CV 11), very close to its northern boundary with the Crest property. Chip samples obtained from these mineralized outcrops returned 49.52% Fe₂O₃ over 2.25 meters and 48.25% Fe₂O₃ over 2.3 meters. These observations, along with the interpreted aeromagnetic results and ground magnetic data collected on the MMICP, support the proposition that iron formation occurs on Metallis's property and dips under it.

The interpreted magnetic data, coupled with the geological mapping, has proved to be the most effective technique to determine the geological setting as well as the distribution and depth of the iron formation. The interpretation shows a good correlation with the outcropping iron formation and the mapped Rapitan Group. It is also useful for inferring the different formations within the Rapitan, based on the thickness of the highly-magnetic Sayunei Formation, lying on top of the iron formation.

Preliminary interpretation of the magnetic data revealed that the geological environment comprises a series of northwest trending horsts and grabens. Each of these blocks exhibits gentle, broad, open folds with moderately plunging axes. These observations support the interpretation that iron formation may underlie large parts of Metallis's property. Some of the iron formation is interpreted to lie at a shallow depth, typically between 50 and 100 meters.

In order to test the interpreted shallow iron formation, it is recommended that a ground-based gravity survey and follow-up diamond drilling program be conducted. Initially, this work should be concentrated to the northeast of a major fault that transects the property as iron formation can be projected to depth with reasonable certainty.

A staged approach is recommended to continue exploration on the property. Initially, it is recommended that a desktop study be conducted to digitally incorporate all available Chevron data into a property-scale model. A ground gravity survey is recommended to follow the desktop study. If warranted, a second phase of exploration would include diamond drilling to test mineralization predicted by the geophysical modelling and geological investigation. A total of \$240,000 has been outlined for the next phase of exploration.

2 Introduction

This report is commissioned by Metallis Resources Inc. (“Metallis”), with offices at 515-850 West Hastings Street, Vancouver, BC, V6C 1E1, and Seahawk Ventures Inc. (“Seahawk”) with offices at 909 Bowron Street, Coquitlam, BC, V3J 7W3. The report is prepared by Gary Vivian, M.Sc., P.Geol (the “Author”) of Aurora Geosciences Ltd. This report will supersede the NI 43-101 filed for the Mackenzie Mountains Iron Copper Property (MMICP) by Coltstar Ventures Inc. (“Coltstar”) (the predecessor of Metallis) in 2013, and the NI 43-101 for the MMICP filed by Metallis and Karsten Energy Corp. in 2014. The author is asked to undertake a review of the available data as well as any relevant current exploration activity in the area, and if required, re-visit the property in order to assess the base and precious metal potential of the property in the context of any new exploration work. The mandate also calls for the author to recommend specific areas (if warranted) for further exploration. The identification of these areas would be based on his observations and interpretations.

This report is prepared to document material changes relevant to the property including exploration activities since 2011, property ownership, and property dispositions. The report will also satisfy the requirement for a National Instrument 43-101 report as part of a Sales Agreement between Metallis (vendor) and Seahawk (purchaser). The terms of the agreement are summarized in Section 4.

No new exploration activities have been conducted on the property since 2011. The property remains a property of merit. The conclusions and recommendations presented in the NI 43-101 for this property filed by Coltstar Ventures Inc. in 2013 remain valid.

Coltstar Ventures Inc. changed its name to Metallis Resources Inc. in July of 2013 (Roehlig, 2013). The name change was approved during the annual and special meeting held June 13, 2013. The company also consolidated its common shares on the basis of one new share for every five shares issued. Mr. Fiore Aliperti was appointed CEO and President.

Metallis has reduced the number of mining claims which comprise the MMICP since the last NI 43-101 report (Vivian, 2014). The property was reduced from 34 to 9 mineral claims, a reduction of approximately 15,932 hectares. Metallis has retained the ground most prospective to host significant iron mineralization; the property presently consists of claims located adjacent to the Crest iron deposit.

The author is retained to complete this report in compliance with National Instrument 43-101 of the Canadian Securities Administrators (“NI 43-101”) and the guidelines in Form 43-101 F1. The author is a “Qualified Person” within the meaning of National Instrument 43-101. This report is intended to be filed with the Ontario, Alberta, and British Columbia Securities Commissions, as well as the Toronto Stock Venture Exchange.

Although the Crest iron deposit is a significant iron deposit, and is situated immediately adjacent to the MMICP, the 2011 exploration program was considered to be grassroots in nature. It focused on determining whether Rapitan Formation, previously mapped by the Geological Survey of Canada as being located on the property, hosted iron formation. This geological hypothesis was tested by conducting an

airborne geophysical survey over the entire length of the property as well as geological mapping and sampling over selected sections.

A detailed review of all historical exploration records pertaining to the MMICP, available through the Yukon Geologic Survey and Northwest Territories Geological Survey (NTGS), has been undertaken. In the preparation of this report, the author has utilized geological maps, geological reports, claim assessment maps and claim maps prepared by the Northwest Territories Mining Recorder's Office (NTMRO), Geological Survey of Canada (GSC) and the (NTGS). Most of this information is available online.

In addition to the findings of the 2011 exploration program, the author also used the following materials to develop this report:

- A review of available geological and exploration information;
- The mineralization models which are relevant to the areas covered by the MMICP;
- Historical exploration carried out in the vicinity of the MMICP and the results of this exploration;
- The work carried out by Metallis, to date, with verification; and
- Preliminary interpretation of all of the magnetic data collected during the geophysical survey as well as the results of modeling performed on the magnetic data collected in the immediate vicinity of the Crest iron deposit.

The most significant websites, from which the author drew information, are as follows:

Northwest Territories Geological Survey: www.nwtgeoscience.ca/

NWT Mining Recorder's Office: www.ainc-inac.gc.ca/ai/scr/nt/erd/mm/mro/index-eng.asp

NWT Government and Assessment Reports: <http://gateway.nwtgeoscience.ca/>

Natural Resources Canada: http://apps1.gdr.nrcan.gc.ca/mirage/db_search_e.php

The author has no reason to doubt the reliability of the information provided by Metallis. A test audit of the Metallis database did not reveal any discrepancies with the original material filed by the original license holders for assessment purposes.

The author is familiar with the exploration techniques Coltstar applied to evaluating the potential of the MMICP. The author made several trips to the property during the last and most recent phase of exploration activity on the property. Gary Vivian visited the MMICP on August 18, 2010 and from August 1 to August 4, 2011, during which time he reviewed the geological setting and carried out an examination of the property.

3 Reliance on Other Experts

The author confirmed the tenure information supplied in this report by conducting a search of tenure data on the Northwest Territories website (<http://apps.geomatics.gov.nt.ca>). This data source allows for independent confirmation of relevant data held by the NT Mining Recorder's office that pertains to the

mineral claims which comprise the MMICP . The author has relied 100% on this source. This disclaimer pertains to *Section 4: Property Location and Description* of this report.

As of the date of this report, the author is not aware of any material fact or material change with respect to the subject matter of this technical report that is not presented in this report, which the omission to disclose would make this report misleading.

4 Property Location and Description

The Mackenzie Mountains Iron Copper Property (MMICP) is located 190 kilometers west of the town of Norman Wells (Figure 4.1), in the Northwest Territories of Canada, within the foothills of the northern Mackenzie Mountain Range. The centre of the MMICP is located at approximately 65° 12' North and 132° 27' West. The UTM (NAD 83 – Zone 8) coordinates are 7,233,751N and 619,135E. The property comprises one contiguous block of claims that abut the southeast margin of the mineral leases that define the Crest Property in the Northwest Territories.

The property is comprised of nine mineral claims in what remains of the 67 original claims that were staked in a number of stages in 2010 and 2011, which were later reduced to 34 claims by 2014. The claims are registered in the name of Metallis Resources Inc. The property covers a total area of 5,076.49 hectares. Figure 4.2 provides the location of the nine mineral claims collectively comprising the property. A summary of the mineral tenure comprising Metallis's property is provided in Table 4-1.

Through the Sales Agreement for which this report is a condition, Seahawk may acquire 100% interest in the property by meeting the following terms:

- Payments to Metallis at the time of execution of the agreement.
- Issuing 75,000 shares to Metallis

Should the property reach commercial production, Seahawk would be required to issue Metallis an additional 750,000 shares. Metallis will retain a 2% Net Smelter Return (NSR) royalty interest in the property. This royalty can be purchased by Seahawk for \$500,000 CDN for each one-half of one percent up to an aggregate purchase price of \$2,000,000 CDN.

Mineral claims staked on Crown Land in the Northwest Territories are valid for a two-year period from the date of recording. Within the first two-year period from the recording date, expenditures of \$5 per hectare per year are required to hold the claims for the next one-year period. A work assessment report must be filed with the Mining Recorder's office so that the value of the work performed can be assessed and the claim retained. A further \$5 per hectare per year in exploration expenditures is required to maintain a mineral claim for up to a maximum of ten years from the original recording date. Mineral claims can be dropped or allowed to lapse at any point without incurring further expenditures. As per Northwest Territories Mining Regulations, cash payment may be made, in lieu of exploration expenditures, to keep the claims in good standing. The payments required are at the same rate as the work expenditures listed

above.

Once the equivalent of ten years of credit has been applied to the claim, subject to a legal survey, a mineral claim can be converted to a mining lease. Mining leases are valid for an initial term of 21 years, subject to an annual rental fee of \$5 per hectare. Upon expiry of the initial term, mining leases can be renewed for a second 21-year term with an annual rental fee of \$2.50 per hectare.

The property is located within the Gwich'in Settlement area. The property is not located on surface or subsurface settled Gwich'in lands and is therefore free of legal restrictions to access. Pending the required land use permit, Metallis has sufficient surface rights and legal access to the MMICP to conduct the recommended exploration programs and related land use activities on the property.

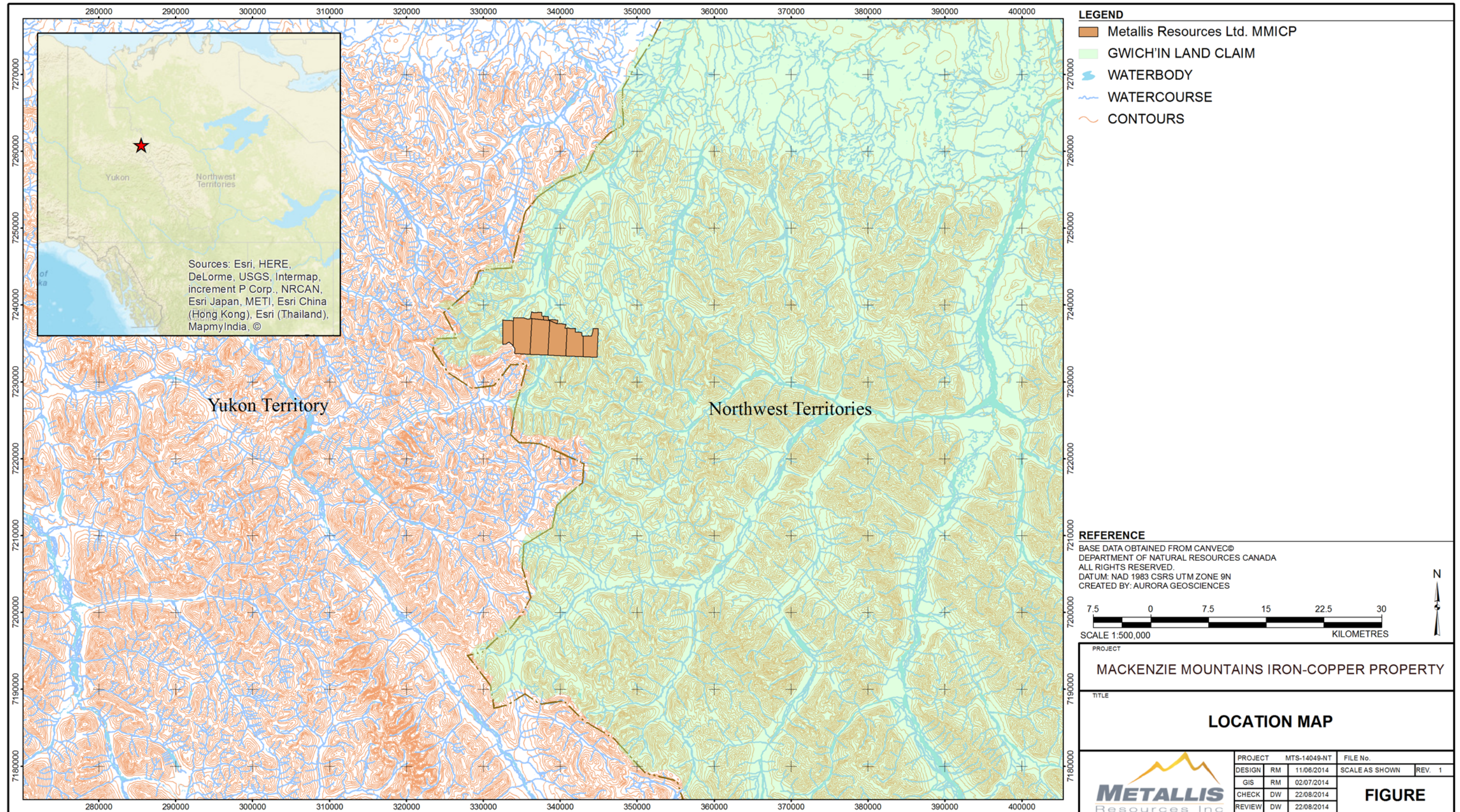


Figure 4-1. Property location map

Land use activities in the Mackenzie Mountains are governed by the Mackenzie Valley Resource Management Act (MVRMA). Under the MVRMA, the Sahtu Land and Water Board (SLWB) and Gwichin Land and Water Board (GLWB) issue and administer land use permits and water licenses in the project area. The property is not presently subject to a land use permit as the exploration conducted on the property to date is considered early stage and therefore classified below land use permit thresholds. The drill program proposed as the next stage of exploration will require a Type “B” land use permit. For additional information, a guide to the relevant land use permit application process is available at (<http://mvlwb.com/sites/default/files/documents/Guide-to-Completing-Land-Use-Applications.pdf>) In the event of a discovery on the property, more advanced exploration projects may require additional screening by the Mackenzie Valley Environmental Impact Review Board (MVEIRB).

At the present time there are no significant defined mineralised zones, mineral resources, mineral reserves or mine workings, existing tailing ponds or waste deposits known to occur on the property. There are no known environmental liabilities at the present time. Potential sites of archaeological significance may be present within the area, but these are both unknown at the present time and unlikely to be impacted by early stage exploration activities.

Table 4-1. MMICP mineral dispositions

Claim Name	Claim Number	Claim Status	Date Recorded	Anniversary Date	Hectare(s)	Ownership
CV 1	K13661	ACTIVE	5/4/2010	5/4/2016	392.06	Metallis Resources Inc. (100%)
CV 2	K13662	ACTIVE	5/4/2010	5/4/2015	1008.07	Metallis Resources Inc. (100%)
CV 4	K13664	ACTIVE	5/4/2010	5/4/2015	128.29	Metallis Resources Inc. (100%)
CV 5	K13665	ACTIVE	5/4/2010	5/4/2015	51.23	Metallis Resources Inc. (100%)
CV 6	K13666	ACTIVE	5/4/2010	5/4/2015	1045.1	Metallis Resources Inc. (100%)
CV 8	K13668	ACTIVE	5/4/2010	5/4/2015	50.34	Metallis Resources Inc. (100%)
CV 9	K13669	ACTIVE	5/4/2010	5/4/2015	992.69	Metallis Resources Inc. (100%)
CV 11	K13671	ACTIVE	5/4/2010	5/4/2015	844.98	Metallis Resources Inc. (100%)
CV 13	K13673	ACTIVE	5/4/2010	5/4/2015	563.73	Metallis Resources Inc. (100%)

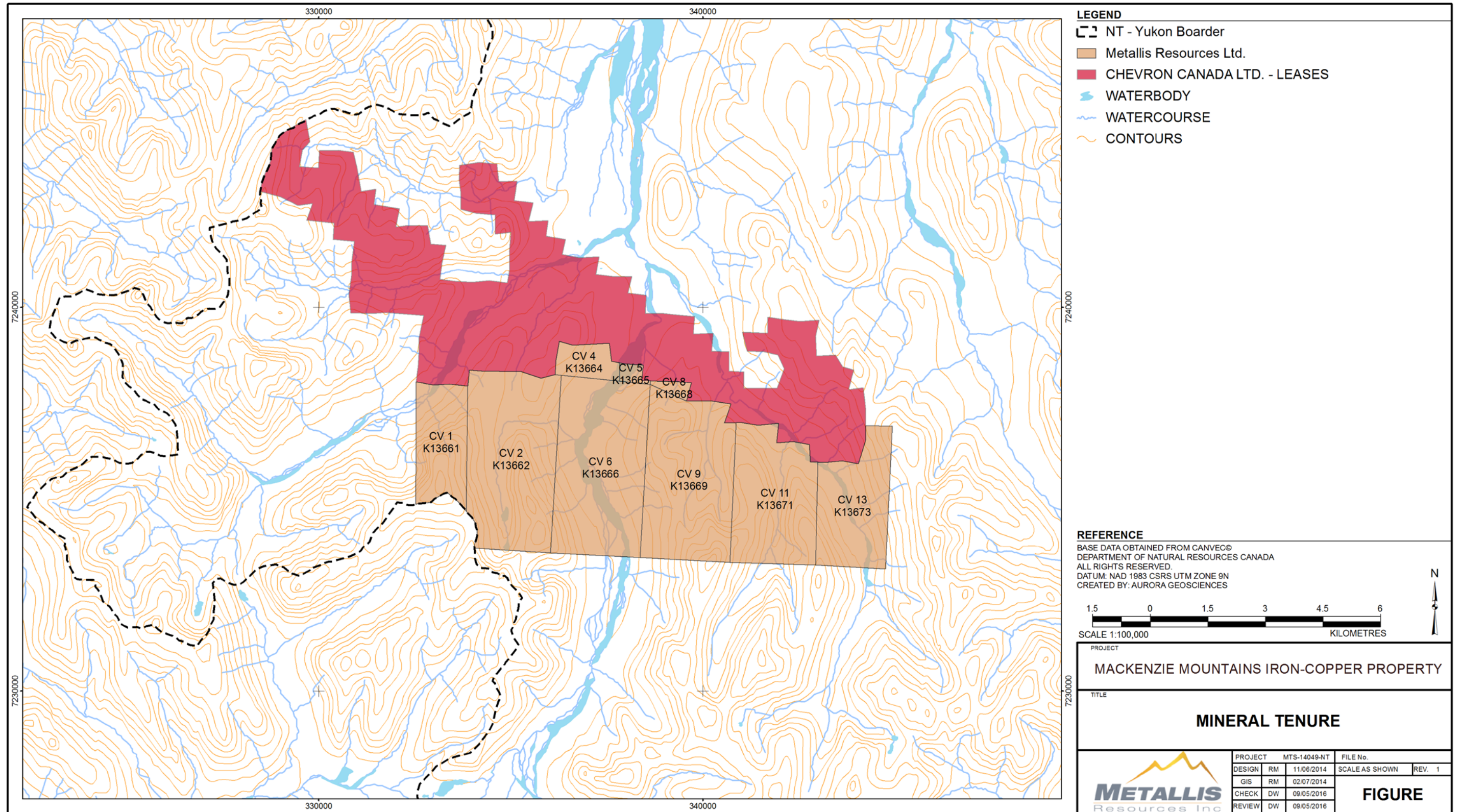


Figure 4-2 MMICP Tenure Map (June 01, 2016)

5 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

The MMICP is located in the northwestern part of the Northwest Territories. The property is 190 kilometers northwest of Norman Wells, Northwest Territories, and 280 kilometers northwest of Mayo, Yukon Territory. Norman Wells has a population of about 800. Canadian North Airlines operates scheduled daily service to Norman Wells from Calgary, Edmonton, Yellowknife and Inuvik.

The area is remote, with access by helicopter only. Chevron constructed a 4,300 foot long gravel airstrip on their claims in 1964, this is the closest location from which to utilize fixed wing support. It is located at 65° 21'45"N and 133° 21'07"W. There are several outfitting lodges near the property, which can be used as base camps. The area has a subarctic climate with summer lasting for about three months.

In addition to major oil and gas production facilities at Norman Wells, there are a wide variety of other businesses, including tourism related enterprises. Freight can be shipped to Norman Wells via barge during the summer and by truck via ice road during the winter. Although several land routes have been proposed, the only reasonable access for exploration will continue to be via aircraft to lakes and small airstrips in the area.

Annual rainfall ranges between 160 and 380 millimeters (6.2 to 14.9 inches) and snowfall 150 to 200 centimeters (59 to 79 inches). Maximum topographic elevations in the area exceed 2100 m, with prominence of mountain-tops 1000 m above valley floors. Major rivers in the area flow in steep-walled canyons from 1 to 3 kilometers in width, with tributaries often occupying narrow valleys cut into bedrock over much of their length, providing good access for stratigraphic studies. Alpine vegetation covers most of the Chevron lease except the south-central area, where there are thin strands of stunted evergreen trees. The area has a subarctic climate with summer lasting for about three months. The mean annual temperature is -5°C, although the plateau is permafrost free. Annual precipitation is low (20 - 40 centimeters) however the data available is limited. The climatological data for the nearest weather station (Norman Wells) is graphically shown below in Figure 5-1.

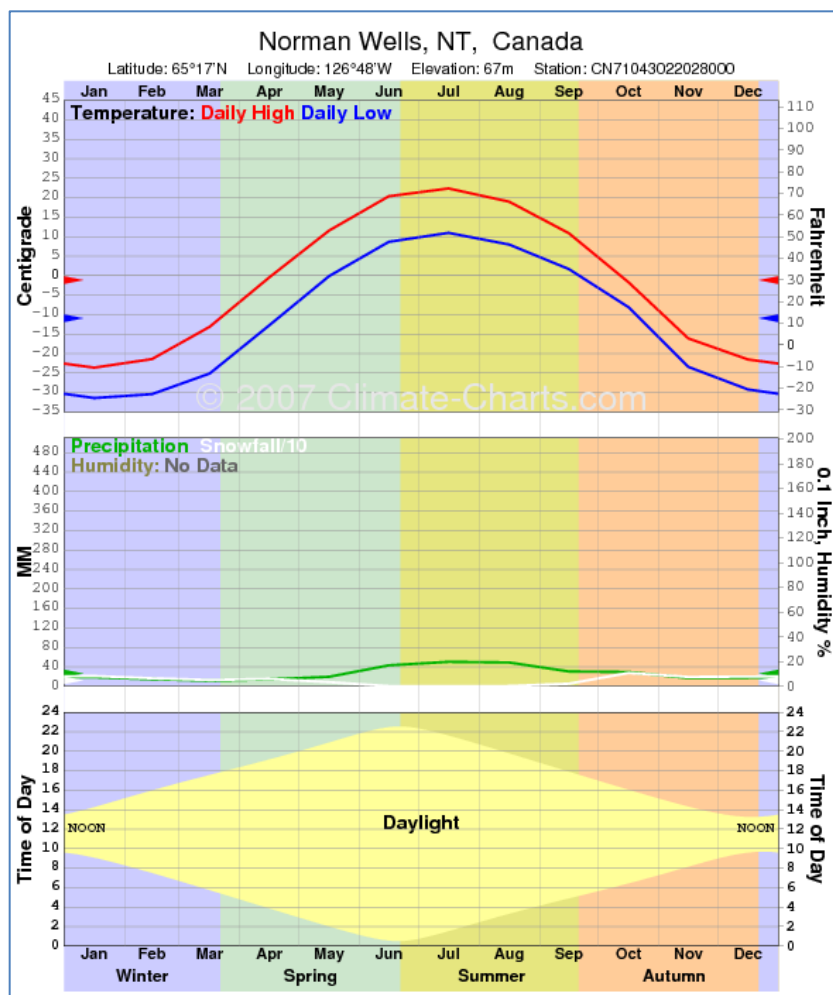


Figure 5-1 Climatological Data from Norman Wells

6 History

6.1 Pre-2010 Exploration

The first recorded work in the area was a regional prospecting program (Assessment Report # 061282) carried out by the Arctic Red Joint Venture in 1974. Several lead and zinc showings (i.e. CAB and Gayna River) were discovered during this program. There is no record of any iron formation discoveries in the area. Most of the area was covered, by regional geochemical surveys, conducted in 2008 and 2009, under a Joint Research Agreement between the Northwest Territories Geological Survey (NTGS) and Natural Resources Canada.

The southeastern part of the MMICP was covered by regional prospecting for the Nahanni Sixty Syndicate during 1961 (Gourlay, 2005). The Coates Lake copper deposit was discovered during this program. Figure 6-1 shows the historical areas worked and their assessment file numbers.

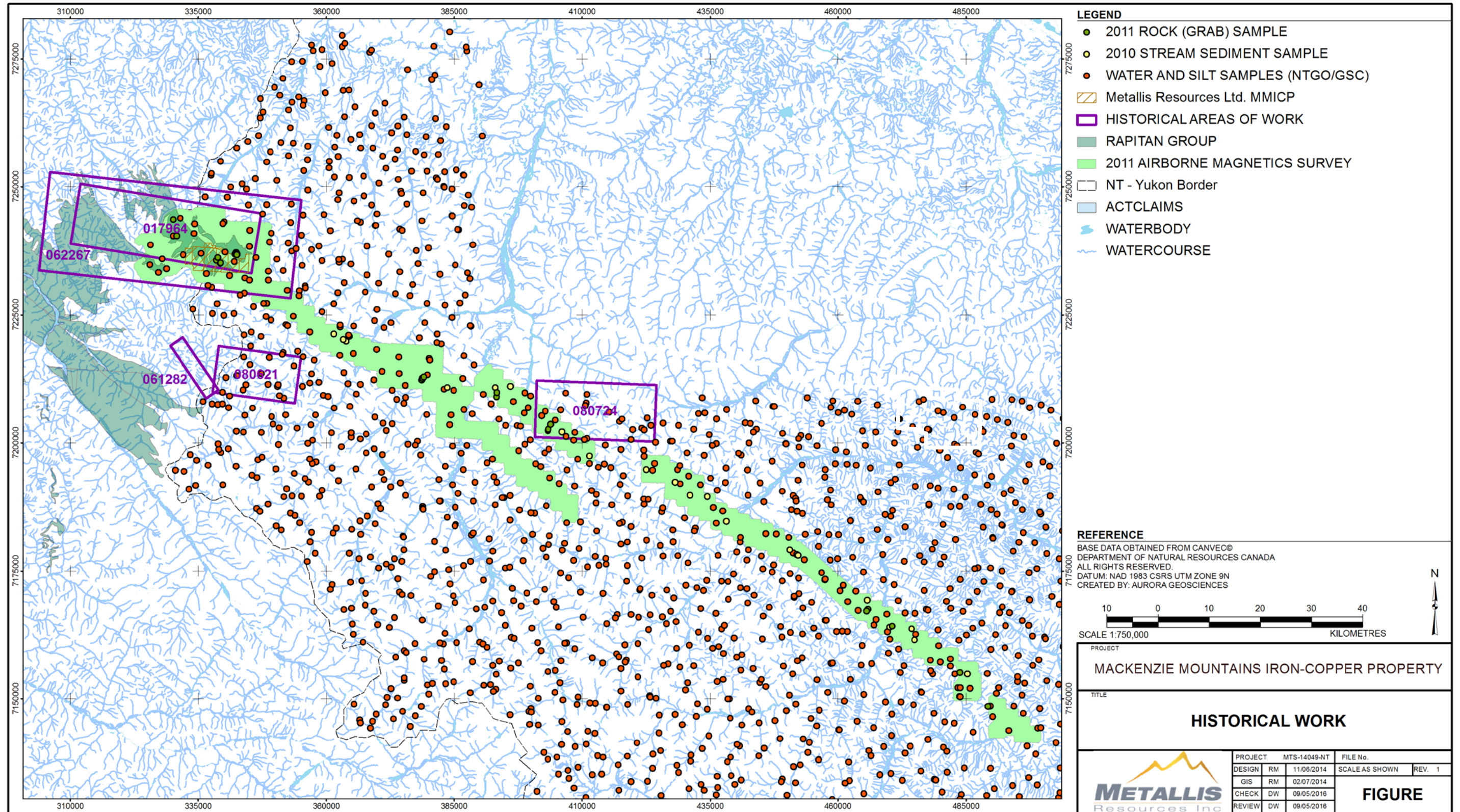


Figure 6-1 Historical Areas of Work

6.2 2010 Exploration Program

In August of 2010, Coltstar initiated a stream sediment and prospecting program to provide a preliminary assessment of the stratigraphy extending from the MMICP to the south-southeast. The area of this survey covered the 67 active claims of the MMICP in 2010. In 2010, the property covered prospective stratigraphy exposed from the current property to approximately 64° 24'9"N – 129° 0'40"W.

6.2.1 Stream Sediment Sampling

Stream silt samples were collected at 32 sites along the entire length of the MMICP (Figure 6-2). The sampling program was designed to increase sample density in areas of interest, using the 2008 and 2009 Northwest Territories Geological Survey (NTGS) National Geochemical Reconnaissance (NGR) sampling as a baseline. NGR sample protocol was followed to maintain consistency between datasets.

The geochemical program revealed that a number of stream sediment samples were collected from streams with Rapitan boulders and sediments downstream from exposed stratigraphy interpreted to be Rapitan stratigraphy. Field observations in this area are coincident with Rapitan as published in GSC maps. Observations made by personnel in the 2010 reconnaissance program are similar to Rapitan Group lithology; however, these observations are based on stream boulders and stratigraphy as viewed from the helicopter. Anomalous iron-in-silt values and Rapitan-like lithotypes could be caused by Twitya Formation and/or Sheepbed Formation outcrops. Areas of elevated iron geochemistry and coincident prospective stratigraphy were identified.

6.2.2 Prospecting

Prospecting was carried out as an adjunct to the silt sampling program. Geological observations were made at numerous locations. The examination of angular blocks in stream valleys provided valuable insight into the geological setting of the area upstream from the observation point. While flying in the helicopter, geological observations were also made and recorded. Numerous photos were taken and provided valuable insight into the physiography, access, biodiversity and geology of the property.

The reconnaissance work showed that the Rapitan Group is exposed in NTS map sheets 106A/11, /12 and south of the Crest iron deposit on 106F/01. These locations were not investigated in detail during this program. However, initial observations about the geological and structural characteristics of the Crest iron deposit suggest that iron formation mapped on Chevron's property likely dips to the south under claims CV 09, 10, and 13.

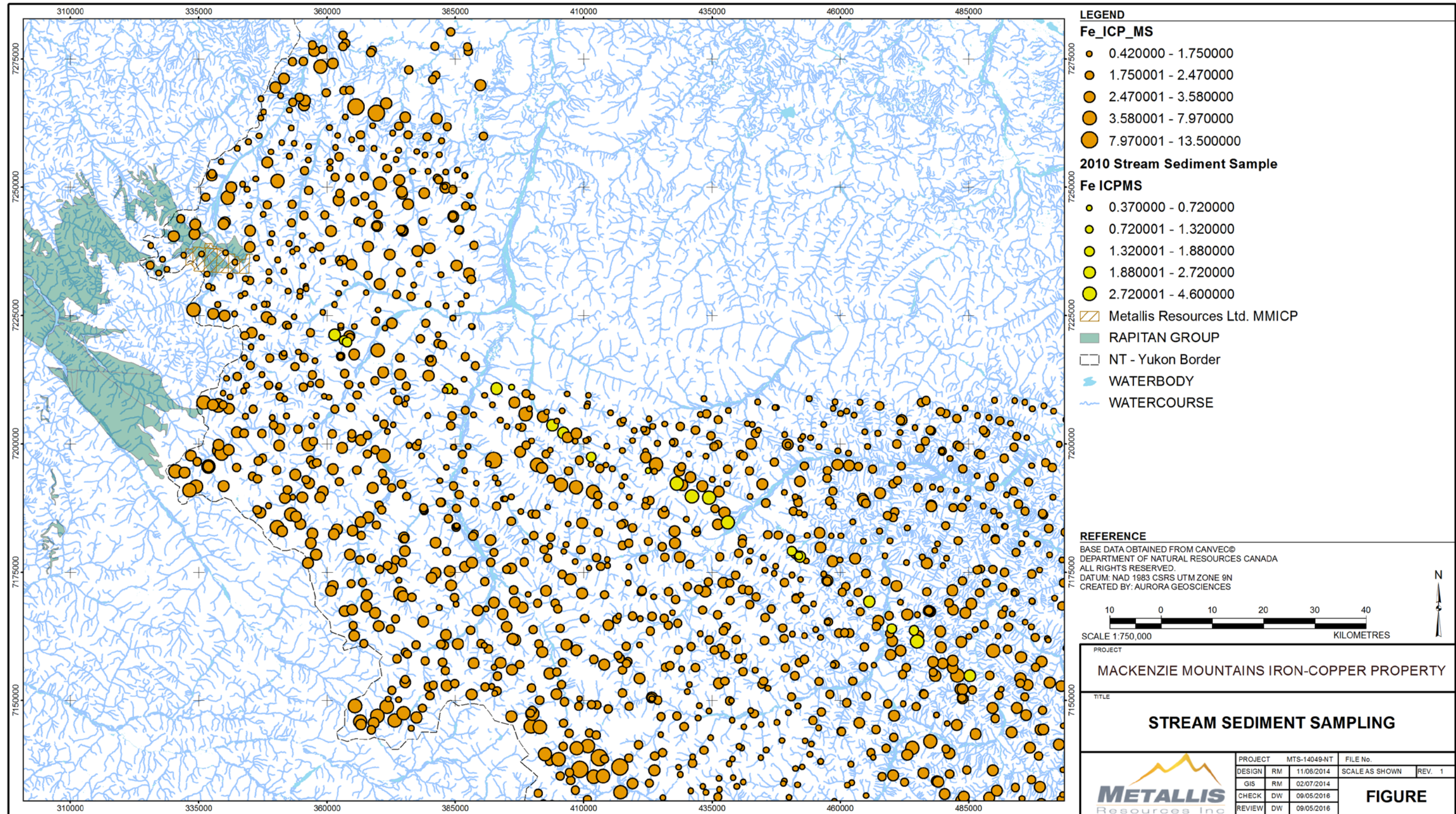


Figure 6-2. Map Showing iron in stream sediments from Metallis and Government Sediment Sampling Programs (2008-2010)

Five grab samples of iron formation were collected on the Crest Property, near its border with the MMICP. These samples were also photographed. The assay results are provided in Table 6-1. These results are similar to those obtained from a Chevron Drill hole only 75 meters to the northeast.

Table 6-1. Assay Results from Rock Samples Collected near MMICP/Crest Boundary

Sample No.	Fe %
HPIM0267	47.01
HPMI0268	45.29
HPMI0269A	60.98
HPMI0269B	32.98
HPMI0269C	60.16

6.3 2011 Exploration Program

During the summer of 2011, Colstar contracted Aurora Geosciences Ltd. to manage a multi-phase exploration program over the MMICP, at both regional and localized scales. The area investigated during this survey covered the 67 active claims of the MMICP in 2011. In 2011, the property covered prospective stratigraphy exposed from the current property to approximately 64° 24'9"N – 129° 0'40"W. The major components of the 2011 exploration program included a helicopter-borne magnetic survey, ground-based mapping, prospecting, and magnetic surveys, and related interpretation and magnetic modeling.

6.3.1 Mapping, Prospecting, and Ground Magnetic Program

Aurora Geosciences Ltd. conducted the program, which commenced on August 3, 2011 and culminated on August 18, 2011 and consisted of:

- Geological traverses and spot examinations;
- Prospecting and rock sampling (including two chip samples)
- Ground magnetic traverses to locate the source of aeromagnetic anomalies and magnetic susceptibility measurements.

6.3.1.1 Geological Mapping

The geological program was designed to follow up on areas where the Rapitan Group was mapped, or inferred on the CV claims, and ground truth magnetic anomalies identified during an aeromagnetic geophysical survey conducted over the property in July, 2011. Emphasis was placed on mapping stratigraphic sections at select locations on the MMICP that intersected Rapitan Group stratigraphy, magnetic anomalies, or both.

Following up on reconnaissance investigations conducted by Aurora Geosciences in August 2010, the program was structured to focus on stratigraphy in several areas across the belt, variably chosen by the

strength of the airborne magnetic anomalies, the quality of exposure of the Rapitan Group, and how representative the section was of the local area. Poor weather conditions, principally rain, fog, and low ceilings presented a severe impediment to productivity, limiting the total number of sections measured. Iron formation was identified on claim CV 11, and the Rapitan Group was confirmed on claims CV 49-73, although no iron formation was identified in these areas.

Traverses were conducted at key stratigraphic locations across the extent of the CV claims. Geologic observations were made along all traverses, as were ground-based magnetic and magnetic susceptibility measurements. A detailed traverse was completed across the northern part of CV 11 where iron formation was identified along the easternmost fork of the Upper Cranswick River at Crest (including iron formation outcrop exposed on the riverbank reported in previous field reports). Iron formation was sampled in detail for assay.

In addition to the detailed outcrop mapping on the known iron formation on CV 11, additional sections (Figure 9-3) were traversed to the south of the thrust fault that transects the Crest deposit, causing repeated stratigraphy and multiple exposures of iron formation units on the Chevron property. These three sections traversed ridges that bisected major magnetic anomalies documented during the aeromagnetic survey, and are roughly along strike from mapped iron formation on Chevron's Crest property.

6.3.1.2 Rock Sampling

A total of 50 chip and grab samples of target lithologies (iron formation and related iron-rich sediments) were collected from the CV claims (Figure 6-3). The assay results from this sampling program can be found in Appendix IV. Exposures of iron formation greater than 25 cm in stratigraphic thickness were chip sampled in roughly 25 cm increments, whereas representative grab samples were collected from minor exposures of iron formation and related lithologies. Samples were collected for iron assay to estimate the potential grade and tonnage of iron formation on the CV claims, particularly those surrounding the existing Chevron lease of the Crest iron deposit. Sample locations were photographed, focusing both on the lithology sampled, as well as the surrounding geology. Samples were collected, transported, and analyzed in compliance with NI 43-101. Samples were stored at a secure location at the Arctic Red River base camp and shipped to Yellowknife in sealed containers. None of the grab samples collected on the MMICP far to the southeast of Chevron's property returned any significant iron values. Sample 45296 collected from greenish purple fine-grained sandstone had the highest iron assay – 13.26% Fe.

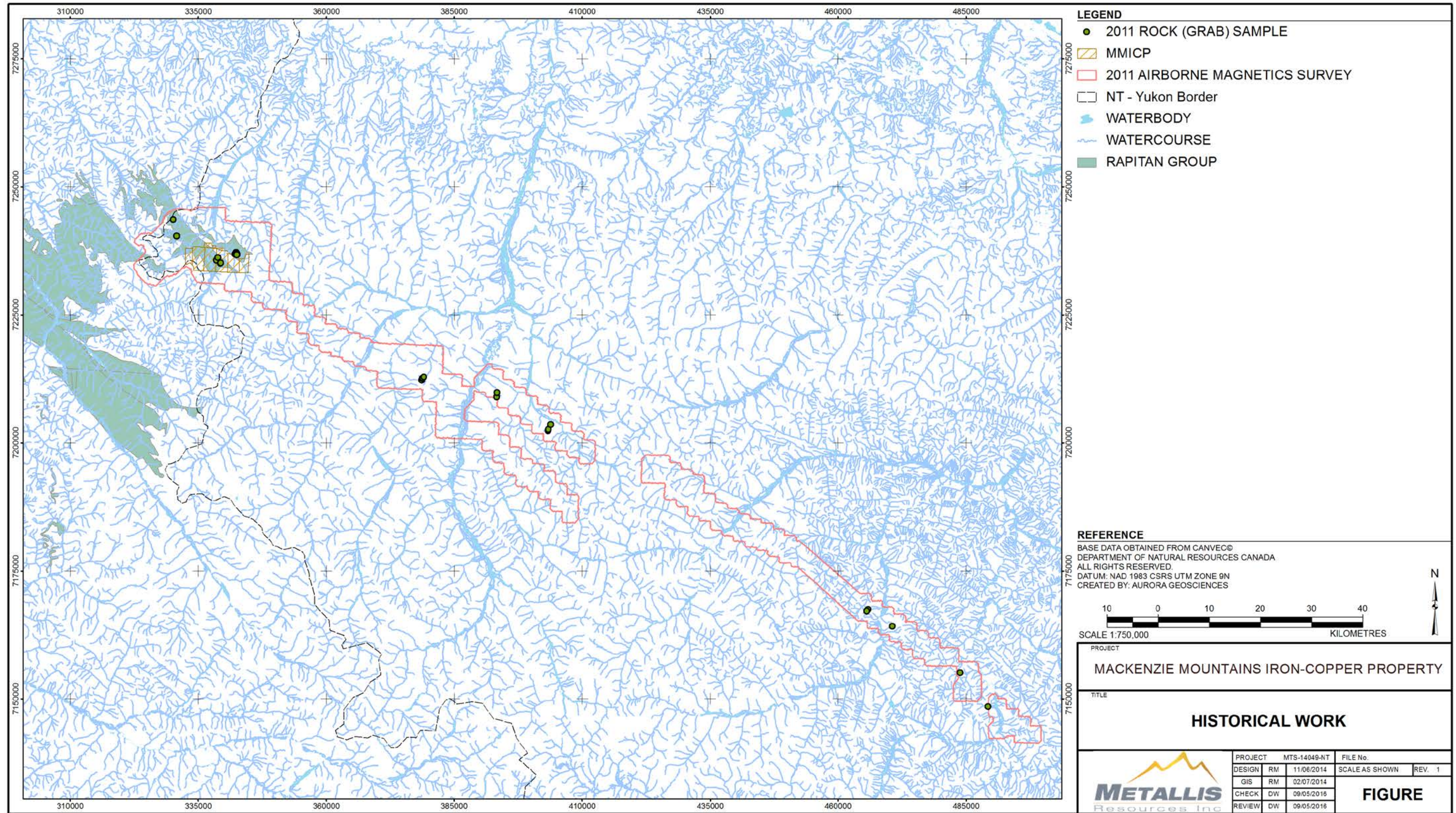


Figure 6-3 Map Showing Areas of Focus for Rock Sampling

Two outcrops of iron formation were found on the MMICP. The field crew collected chip samples from both of these mineralized outcrops. The locations of chip samples “A” and “B” from these outcrops, as well as results of the rock samples in the vicinity of the Crest iron deposit, are shown on Figure 6-6.

- Chip Sample “A” returned 49.52% Fe_2O_3 over 2.25 meters,
- Chip Sample “B” returned 48.25% Fe_2O_3 over 2.3 meters

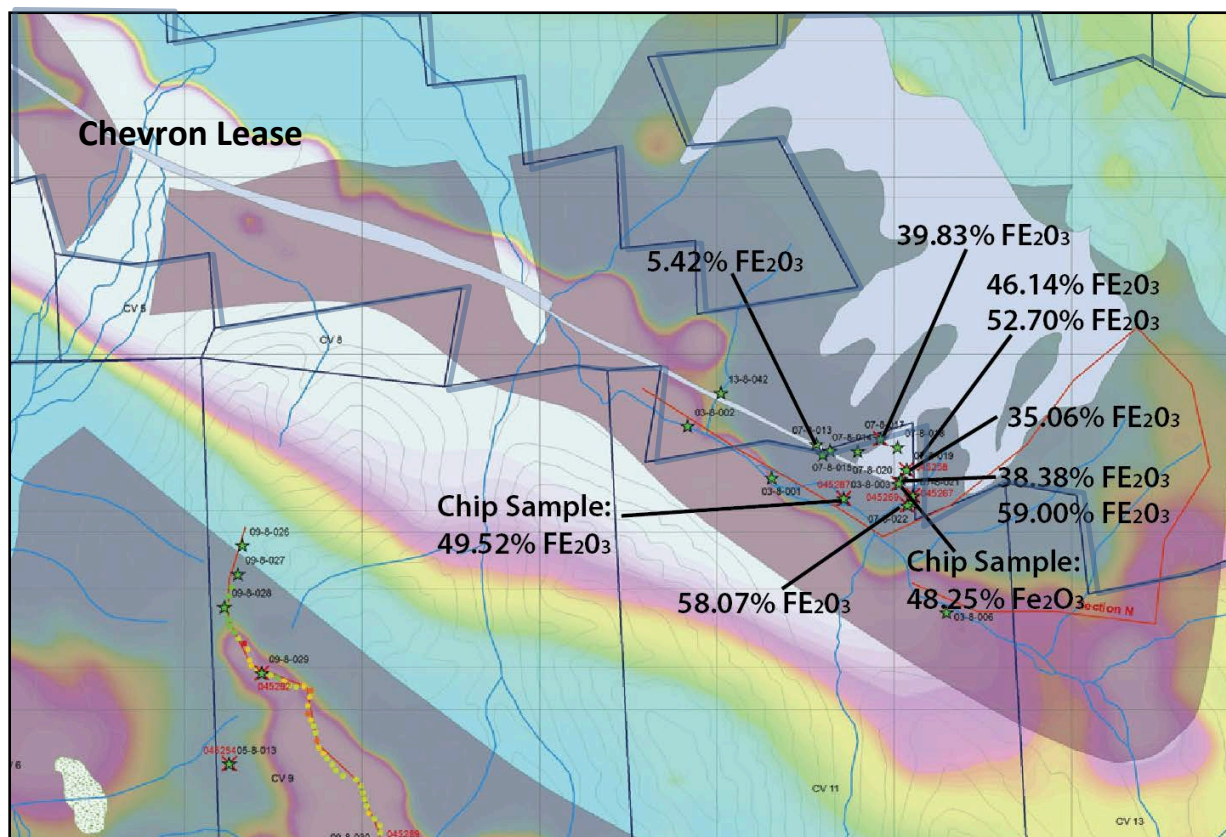


Figure 6-4 Map showing locations with chip and rock sample results in vicinity of the Crest Iron Deposit

6.3.1.3 Photographs

A total of 149 photos were taken of sample locations (50), and of property stratigraphy and geology (99). Photos of stratigraphy and geology are intended to show the regional and local lithological and structural/depositional associations of the property. GPS locations of photos not initially associated with a GPS or sample station are estimated based on flight path and physiographic features both seen and not seen in the photograph.

6.3.2 Aeromagnetic Survey and Survey Interpretation

Fugro Airborne Surveys conducted a stinger-mounted magnetic survey for Coltstar Ventures Inc., between June 29 and July 28, 2011, over the entire MMICP. The survey coverage consisted of approximately 4354 line-kms, including 641.2 line-km of tie lines. Flight lines were flown in an azimuthal direction of 45°/225°

with a line separation of 300 meters. Tie lines were flown orthogonal to the traverse lines with a variable separation.

The survey employed the stinger-mounted magnetic system. Ancillary equipment consisted of radar altimeter, a video camera, a digital recorder, and an electronic navigation system. The instrumentation was installed in an AS350B2 turbine helicopter (Registration C-GZTA) that was provided by Questral Helicopters Ltd. The helicopter flew at an average airspeed of 73 km/h with a nominal terrain clearance of 60 m.

Patterson, Grant and Watson (PGW), a geophysical consulting company, was retained by Coltstar to provide independent, real-time quality assurance and quality control. A copy of the QA/QC report, prepared by PGW, can be found in Appendix III. PGW was also retained by Coltstar to interpret the data gathered during the aeromagnetic survey.

The primary objectives of PGW's interpretation project were:

- To understand the spatial distribution of the more magnetic units within the Rapitan Formation, and establish the possible location of the Rapitan Iron formation;
- To define and map structures of importance in the area and that might have a role in iron mineralization;
- To redefine/constrain the lithological mapping done, based on the ground work done by Aurora Geosciences in August 2010; and
- To define targets and areas of interest for drill testing.

This survey delineated several lengthy, narrow sinuous bands of anomalous magnetism. The ground validation program showed that these bands are related to magnetite-bearing clastic rocks, which occur near the base of the Shezal Formation. These iron-rich rocks were not present in the same stratigraphic position as the iron formation on the Crest Property.

A mafic dyke is the source of a 36 kilometer long anomaly near the center of the property. These features are clearly shown on Figure 6-7.

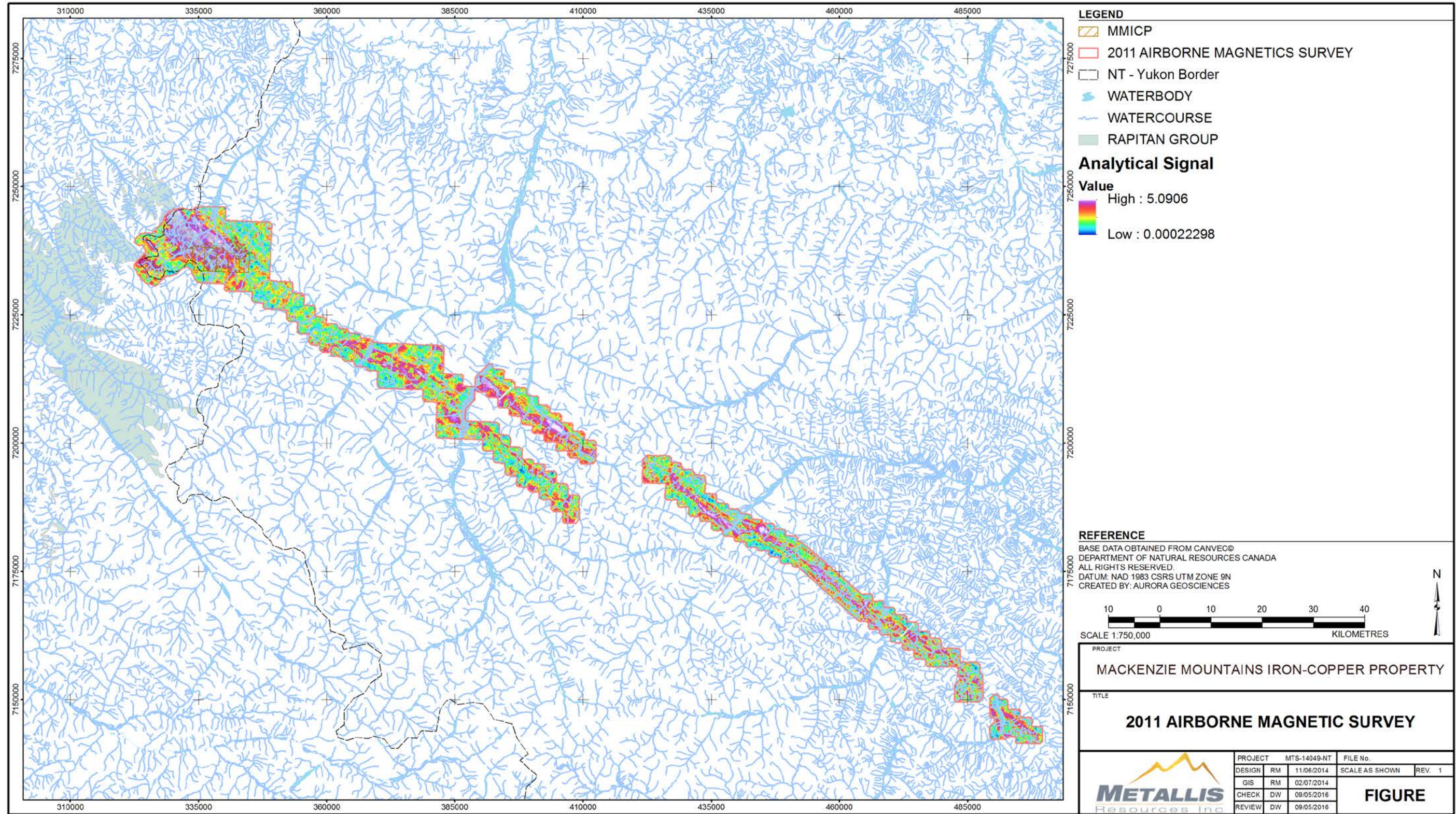


Figure 6-5 Map Showing Amplitude of the Airborne Magnetic Survey Analytical Signature

6.3.2.1 Magnetic Modeling

A total of five lines of magnetic data, in the vicinity of the Crest iron deposit (Figure 6-8) were modeled in order to gain a better understanding of overall geology in this area as well as the location and depth of iron formation. This modeling exercise delineated a number of distinct magnetic signatures. Ground observations and a ground magnetic survey program showed that highly magnetic values recorded during the airborne geophysical survey are related to magnetite-bearing clastic rocks near the base of the Shezal Formation. Once this was established, the magnetic results together with the geological mapping permitted the identification of six lithostratigraphic units. In this area it was possible to model the distribution and depth of iron formation with a degree of confidence.

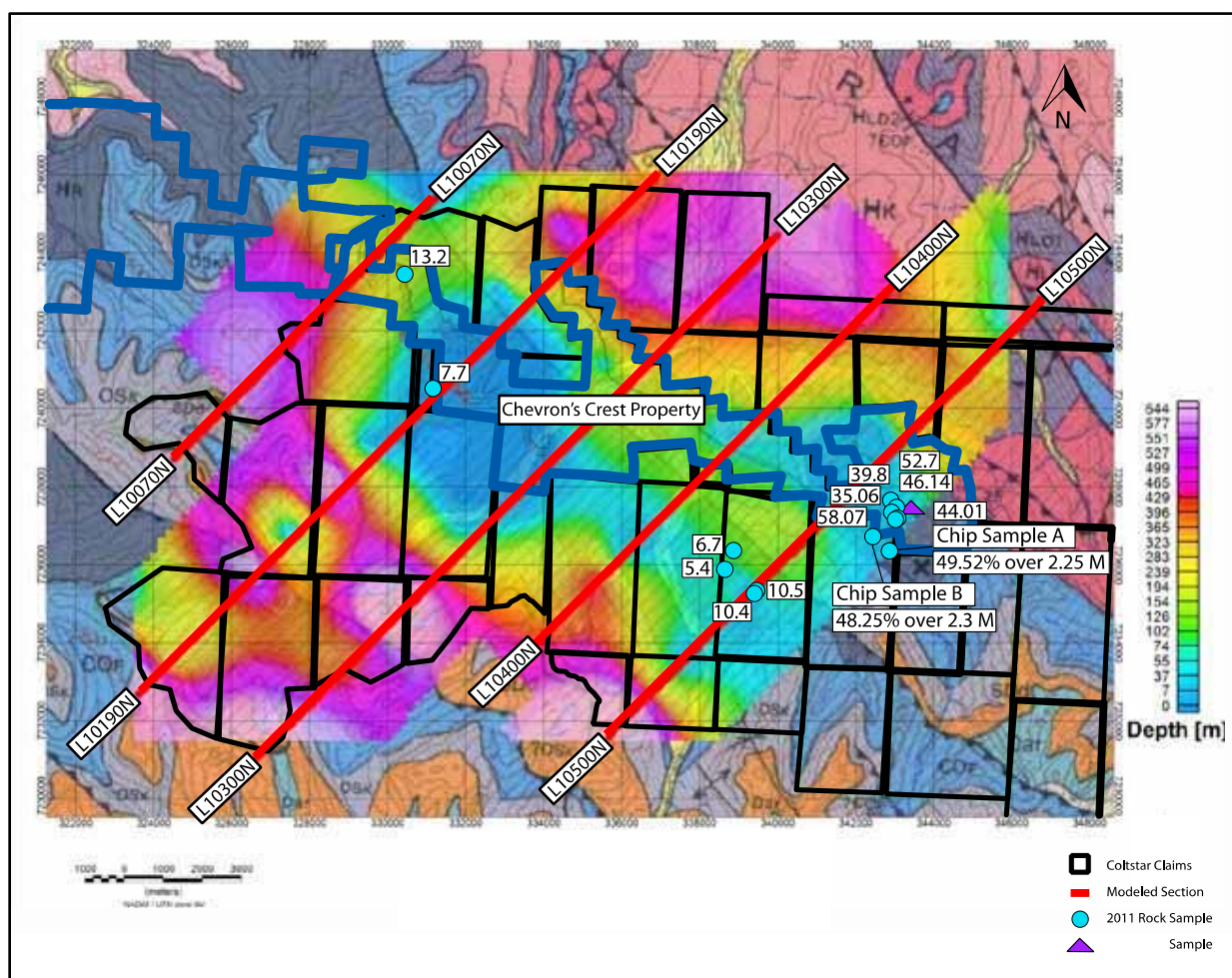


Figure 6-6 Map Showing the Depth to Bottom of the Highly Magnetic Sayunei Formation (Ugalde, H. 2012, with sample locations added by Coltstar). Note: claim boundary shows the property in 2012 and is not representative of the property described in this report.

6.4 Post 2012

There has been no new exploration conducted on the property since the 2012 airborne magnetic survey. The only material changes pertain to the ownership structure of Coltstar, the property size and the sales

agreements in force.

Coltstar Ventures Inc. changed its name to Metallis Resources Inc. in July of 2013 (Roehlig, 2013). Effective July 2013, the property is held by Metallis Resources Inc. The property has been reduced in size as outlined in Section 4.0 above, and the current sales agreement (Section 4.0) is between Metallis Resources Inc. (vendor) and Seahawk Ventures Inc. (purchaser).

7 Geological Setting and Mineralization

7.1 Regional Geology

Overall, the history of the northern Cordillera depicts the dominance of extension-related tectonics throughout the Paleozoic, followed by increasingly compression-dominated tectonics from the Late Triassic through the Paleocene, with a brief episode of crustal trans-tension in the southern Canadian Cordillera in the Late Paleocene-Eocene. Monger and Price (2002) have related this fundamental evolution in tectonic style to a change from an offshore arc system dominated by slab rollback, to one in which the overriding North American plate advanced towards its subduction zone as the Atlantic Ocean opened. The initial propagation of magmatic arcs along the western margin of Laurentia (ca. 400-360 Ma) coincided with the final closing of Iapetus. Their rapid subsequent detachment (ca. 360-345 Ma) was probably due to slab rollback, in a process comparable to the Miocene to present opening of the Japan Sea, with concurrent formation of the Kuroko and younger VMS deposits in extending arc and back-arc settings. The Middle Jurassic and younger crustal thickening event that incorporated pericratonic blocks, arcs and accretionary prisms as well as the continental margin, was coeval with the opening of the Atlantic Ocean. Thus, a megacycle driven by major changes in continental plate motion can account for the broadest aspects of Cordilleran tectonic history.

Some phases are less clearly related to global-scale plate motions (Monger and Price, 2002). The initial Permo-Triassic impingement of offshore arcs against North America – the margin-long Sonoman Orogeny – occurred some 70 m.y. before the initial opening of the Atlantic. Following this collisional event, new Late Triassic Intermontane arcs seem to have stepped seaward, perhaps due to renewal of slab rollback. At the same time, extension and widespread intraplate basaltic activity prevailed in the Insular terranes. Perhaps these crustal blocks then lay in a back-arc region, along with the Arctic terranes and the rest of the post-Sonoman continental margin. By Early Jurassic time, arcs were re-established in the Insular terranes (i.e., Bonanza, Talkeetna), signifying that probably by then they were part of the circum-Pacific arc system, along with the Hazelton and Takla arcs.

Macroscopically, the MMICP is situated within the Cordilleran deformed belt of the para-autochthonous continental margin, which is characterized by a series of separate sedimentary basins that developed after regional cratonization at ca. 1850 Ma. Mesoproterozoic to Devonian sedimentary rocks that were deposited on the western margin of Laurentia form the geological backbone of the Mackenzie Mountains. The Cretaceous to Tertiary Laramide orogeny compressed and uplifted the succession into an arcuate, concave-westward, generally northwest-trending belt marked by tight folds and northeast-verging

thrusts.

Published geology maps of parts of the area are at 1:250,000 scale and consist of preliminary, hand-drawn maps. A final colour map for sheet 106F (Norris, 1982) and a digital compilation of the Yukon and parts of the Northwest Territories (Gordey and Makepeace, 2003) are the most helpful regional maps. Figure 7-1 and Figure 7-2 (Martel, 2011) provide an excellent regional geology map of the Central Mackenzie Mountains and an excellent section within the Central Mackenzie Mountains.

Rocks in the Mackenzie Mountains are unmetamorphosed. The oldest are middle Proterozoic siliciclastic and carbonate strata of the Mackenzie Mountains Supergroup (Narbonne and Aitken, 1995). A post-rift glaciation, early sag-phase continental separation and subsidence of a passive margin on the western edge of late Neoproterozoic Laurentia are recorded by siliciclastic and carbonate strata of the overlying Windermere Supergroup (~730-750Ma). The basal unit of the Windermere Supergroup hosts the iron-bearing units of the glacial-marine Shezal Formation which, in turn, is hosted by the Rapitan Group. These strata are overlain by fluviatile and shallow-marine, quartz arenite-dominated strata of the Backbone Ranges Formation, which are related to latest Neoproterozoic to Early Cambrian crustal extension and renewed subsidence (McNaughton et al., 1997, 2008). Early Cambrian marine transgression led to development of the Selwyn Basin and, on its eastern edge, a mixed carbonate siliciclastic ramp preserved as the Sekwi Formation (Krause and Oldershaw, 1978, 1979; Fritz, 1992).

Development of the northwest-trending Misty Creek Embayment in the northeast edge of the Selwyn Basin during the Middle Cambrian coincided with uplift and exposure of the Mackenzie Arch to the east. The Sekwi ramp was flooded by this event. In the heart of the embayment, the Sekwi Formation is overlain conformably by fine siliciclastic rocks of the Middle Cambrian Hess Formation, followed by shale and silty limestone of the Cambro-Ordovician Rabbitkettle Formation, and then thin siltstone, limestone, dolostone and chert of Ordovician – Silurian Duo Lake Formation (Cecile, 1982). Overlying the Duo Lake Formation within the embayment is a package of thin-bedded, cherty limestone and shale known as the Cloudy Formation (Cecile, 1982).

Closer to the edge of the basin, the Hess River Formation is missing and the Sekwi Formation is unconformably overlain by the Rabbitkettle or Duo Lake Formations. Dolostone of the Franklin Mountain Formation represents re-establishment of a carbonate platform along the eastern margin of the basin during the late Cambrian, and growth through at least the Early Ordovician. The Franklin Mountain Formation intertongues with the lower parts of the Duo Lake Formation at the basin edge. In the northern part of the area, a sub-Upper Ordovician unconformity records another hiatus in platformal deposition, separating the Franklin Mountain Formation from Ordovician – Silurian Mount Kindle Formation dolostone. While Mount Kindle sediments were being deposited on the platform, Cloudy and upper Duo Lake sediments were being deposited in the basin.

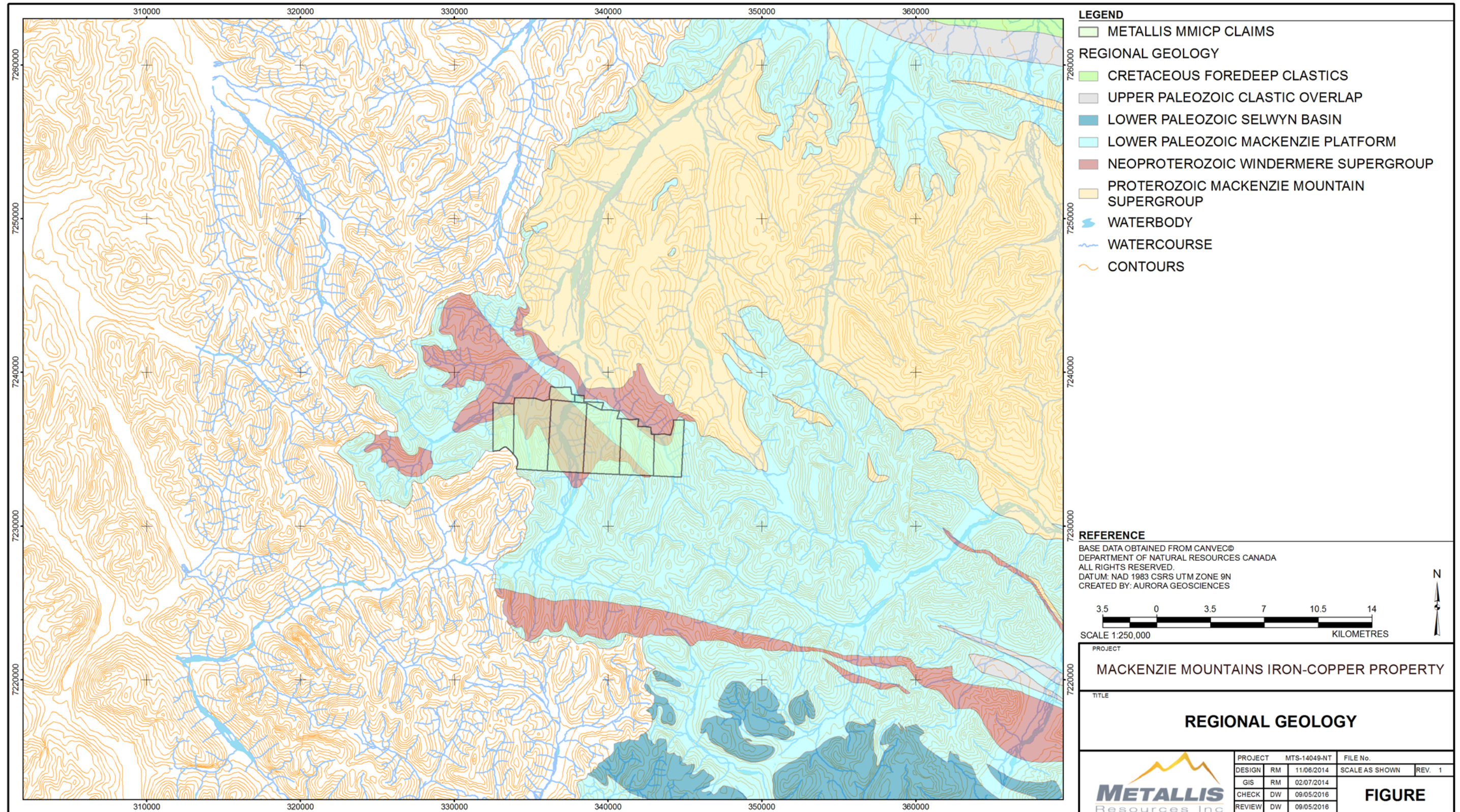


Figure 7-1. . Regional Geology Map (Geology sourced from Northwest Territories Geological Survey)

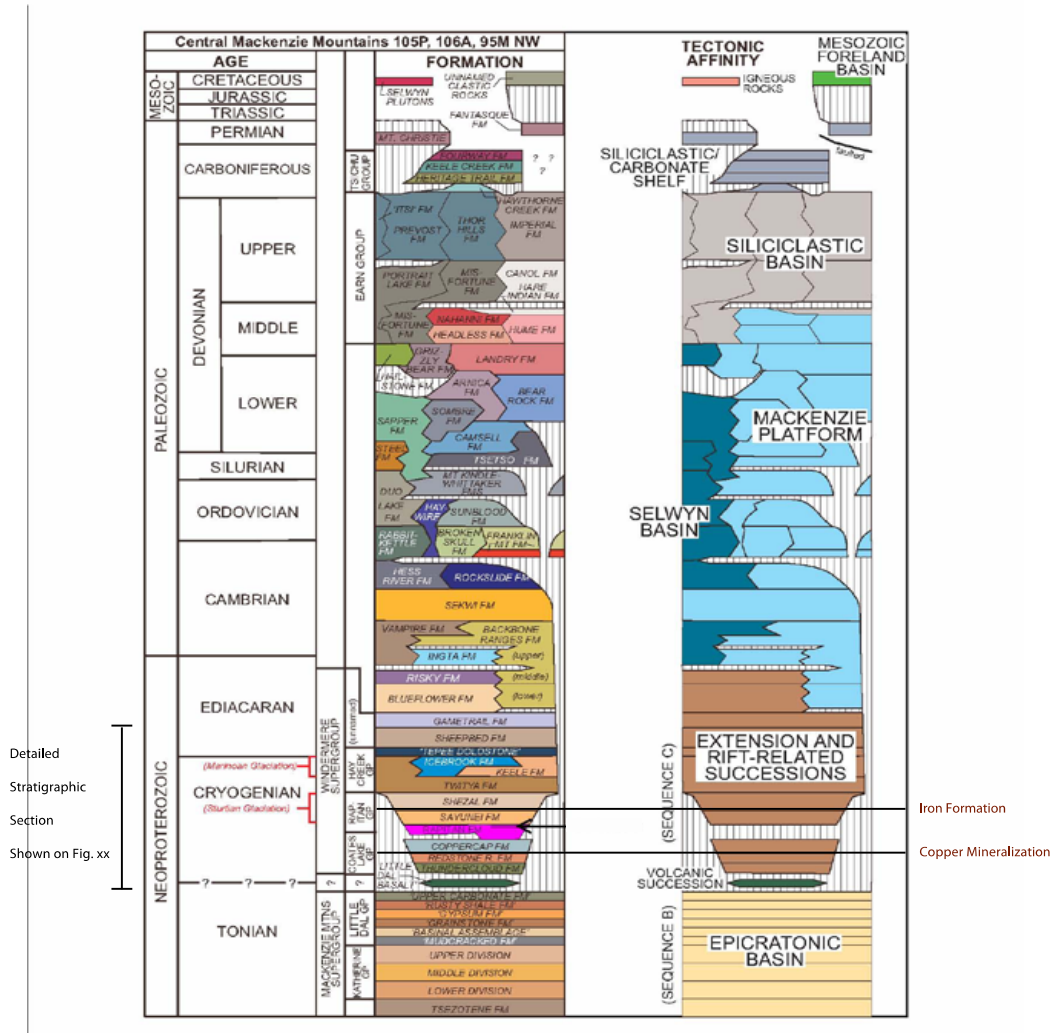


Figure 7-2 Generalized Stratigraphic-Section of Central Mackenzie Mountains 105P, 106A, 95M NW (Martel, 2011)

The overlying carbonate succession records the history of an Early to Middle Devonian platform on the subsiding margin of Laurentia. Subsequently, during the Middle to Late Devonian, a major change in tectono-sedimentary regime brought about the end of the Misty Creek Embayment and Selwyn Basin as depocentres, and initiated a regional terrigenous clastic influx from the west and north. The resulting blanket of sediments, preserved as the Earn Group, terminated carbonate deposition on the platform.

The MMICP area is underlain by Neoproterozoic to Devonian sedimentary rocks which have been transected by regional scale contractual faults. On a larger scale, the MMICP lies near the Mackenzie deflection, where the structural grain changes from northwest to west. In contrast to the southern portion of the belt, the strata exposed in the northern part of the MMICP are gently dipping to flat lying. Numerous southwest-dipping fault splays mark the northern terminus of the Plateau Fault, a major southeast-striking structure traceable over 300 kilometers. High angle oblique faults with numerous splays are also common.

The iron-bearing units of the glacial-marine Crest Formation occur within the Rapitan Group which, in

turn, is hosted by the basal unit of the Neoproterozoic Windermere Supergroup (~730-750Ma) in the Mackenzie Mountains. The iron formation is dominated by rhythmically layered specular hematite interbedded with red to maroon jasper. Discontinuous sandstone and carbonate beds and lenses of diamictite and debris flow deposits occur locally throughout the iron formation.

Regionally, the Rapitan Group is exposed over several hundred kilometers and ranges in thickness from 50 to 150 m (McBean, 2006).

7.2 Property Geology

The geological setting of the MMICP is similar to that portrayed in the regional geology discussion because of the relative continuity of the structural environment and the stratigraphic controls on deposition. The property covers rocks of the Lower Paleozoic Mackenzie Platform, Neoproterozoic Windermere Supergroup, and Proterozoic Mackenzie Mountain Supergroup (Figure 7-3; Figure 7-4). Underlying the property the Katharine, Dodo, Stone Knife, and Gayna Formations represent the Mackenzie Mountain Supergroup. The Rapitan Group represents the Windermere Supergroup (Martel et al., 2011). Stratigraphically overlying these groups are the Lower to Middle Paleozoic Mackenzie Platform successions; of which the Franklin Mountain and Mt. Kindle Formations of the Ronning Group and undifferentiated Delorme Group and Arnica Formation are mapped on the property. For the purposes of this report, the geological discussion will be limited to the economically significant Rapitan Group. Readers are encouraged to reference Martel et al. (2011) for detailed descriptions of Mackenzie Mountain Supergroup and Mackenzie Platform lithologies.

7.2.1 Rapitan Group

The Rapitan Group is a succession of red- to- green weathering diamictites, maroon turbidites, and local iron-formation. It consists of three formations: The Mount Berg, Sayunei, and Shezal. Only the Sayunei and Shezal are present on the property. Where present, iron formation consistently occurs at the base of the Shezal Formation near the contact of the Sayunei and Shezal formations.

On the property, the Sayunei Formation unconformably overlies the Little Dal Group. Sayunei Formation consists of graded, centimetre to tens of metres of thick siltstone-mudstone turbidites and massive, hematitic mudstones (Turner et al., 2011). The varying thickness of this unit defines several depocentres; however, it thins to the northwest and is absent at the Snake River in the Yukon. The Sayunei Formation is interpreted to be glacial-marine turbidites and interglacial reworked sediments (Yeo, 1981).

The Shezal Formation conformably overlies the Sayunei Formation. Like the Sayunei, the thickness of this unit is controlled by a number of depocentres. The Shezal is present with the Sayunei at the southern end of the property, but it thins and is absent northwards toward the center of the property. The Sayunei is absent in the area of the Cranswick River. In the Crest area, the Shezal consists of grey-green to maroon friable diamictites, conglomerates, sandstones and mudstones (Baldwin, 2011). These lithologies are present at the southern end of the property. The Shezal Formation diamictites are evidence of on-going glaciation at the time of deposition.

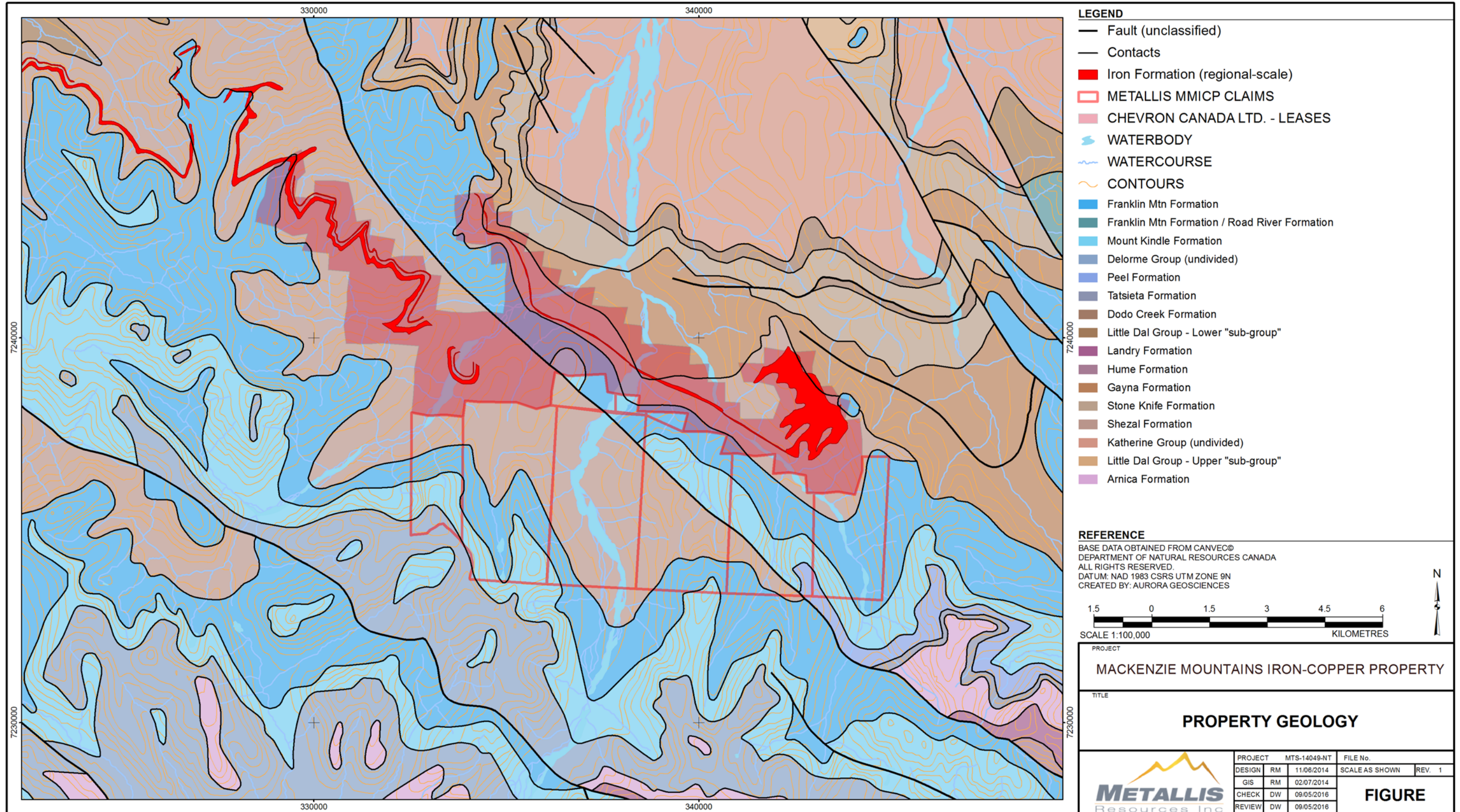


Figure 7-3. MMICP property-scale geology

The Shezal Formation is host to the Crest Iron Deposit in the NT and similar iron formation near the Snake River in the Yukon Territory. This is predominantly jasper-hematite±magnetite iron-formation located near or at the base of the Shezal (Yeo, 1981).

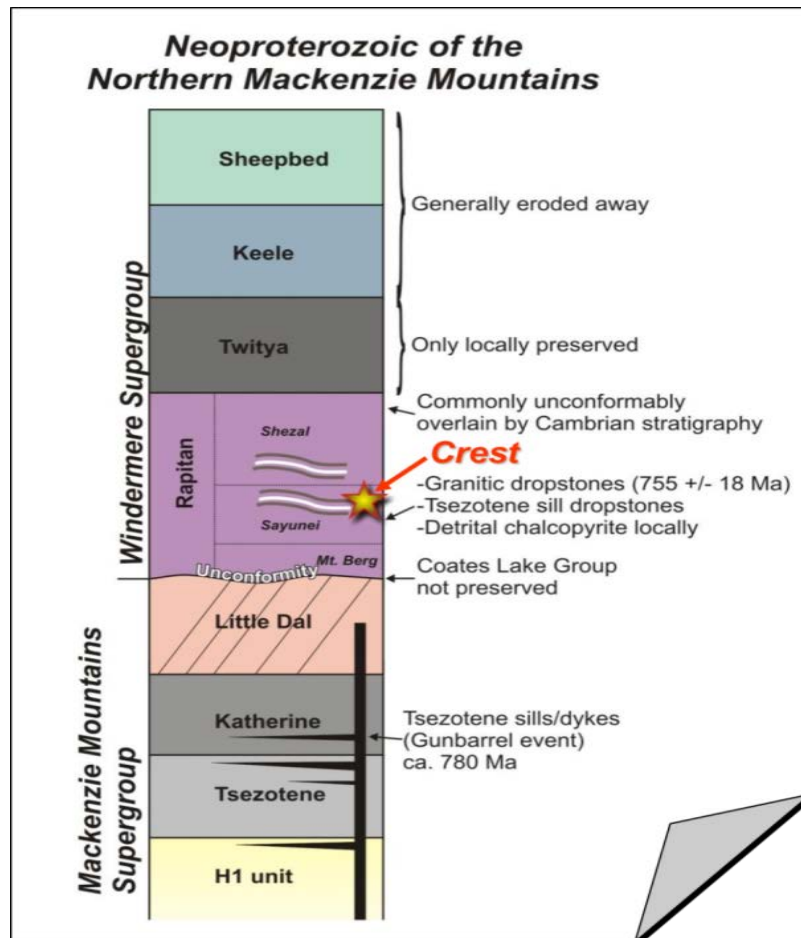


Figure 7-4. Neoproterozoic Stratigraphic Section. (Ootes and Falck, 2008)

7.3 Mineralization

The history of mineralization in the Canadian-Alaskan Cordillera is very long, spanning over 1.6 billion years, from Mesoproterozoic to the present time. The earliest events – the deep-water, rift-related hydrothermal system that gave rise to the Sullivan lead, zinc, silver deposit in southeastern British Columbia), and the Wernecke breccias – took place in intracontinental settings at unspecified distances from their margins, at a time when plate tectonics in the current sense may not have operated (Stern, 2004). The main tectonic and metallogenetic development of the Cordillera dates from the breakup of the

Rodinia supercontinent in late Neoproterozoic to Early Cambrian time. This is particularly true of the western continental margin and the peri-Laurentian terranes, but arc and rift development in the Arctic and Insular terranes also dates to this time. The Paleozoic might be called "the age of syngenetic sulphides", in the sense that VMS deposits associated with rifting arcs and SEDEX deposits associated with rifting continental margins, characterize this phase of tectonic history. In particular, both peri-Laurentian and exotic pericratonic terranes of the Cordillera contain deposits that are part of a worldwide peak in syngenetic sulphide formation and preservation during Devonian-Mississippian time, probably because of dual factors of rift-related tectonics and ocean anoxia (Goodfellow, 2007). Following a weak period (Pennsylvanian to mid-Triassic) in the generation of syngenetic deposits, a new compressional and accretionary tectonic regime led to what could be called "the age of porphyries", which became the premier style of large Cordilleran deposit beginning in Late Triassic time in the pericratonic Intermontane arcs. This trend would continue through the formation of the giant Pebble porphyry deposit in Alaska within a successor arc during Late Cretaceous time, and only diminished as subduction faltered at the end of Eocene.

Although it marks a major continental rift event, the Windermere Supergroup hosts only limited syngenetic mineralization, all of which is located in the far northern Cordillera of Yukon and Northwest Territories. Glaciogenic strata of the Rapitan Group (diamictite, mudstone) are host to one of the largest and most unusual iron deposits in North America: the Crest iron deposit. The Rapitan iron formations consist of hematite-jasper rhythmites, locally with dropstones, that are interpreted as chemical precipitates during a major marine transgression in the aftermath of the Sturtian Snowball event (Hoffman and Schrag, 2002). Iron was dissolved in the anoxic seawater that existed beneath the near-global sea-ice, and the iron formations were deposited at the end of glaciation by the oxidation of ferrous iron, when ocean and atmosphere once again interacted.

Two outcrops of iron formation have been identified on claim CV11 of the MMICP. Assay results from the two samples returned values of 49.52% Fe₂O₃ over 2.25 meters and 48.25% Fe₂O₃ over 2.3 meters. The locations of the chip samples from these outcrops, as well as results of the rock samples in the vicinity of the Crest iron deposit, are shown on Figure 6-6.

8 Deposit Types

Iron formations (IF, or if banded, BIF), are a unique type of sedimentary rock in the earth's geological record, which are as important economically as they are scientifically. They comprise the majority of the world's iron reserves, occurring in vast deposits on every continent, with bulk iron contents locally exceeding 50 per cent by weight. For example, the BIFs of the Lake Superior region of North America have been the source of most of the iron ore produced in the United States over the past 120 years and this readily available supply contributed significantly to the rapid industrialization of North America that occurred during this period. The iron formations of north-western Australia and the Transvaal in South Africa occur in layers hundreds of meters thick and are exposed over thousands of square kilometers, providing an important source of income for these countries, as well as an assured supply of iron ore for the foreseeable future.

BIFs are so named in part because of their distinctive banded or layered structure, which occurs at various scales from microscopic to macroscopic. It is notable that this layering can have extreme lateral continuity. For example, in parts of the Hamersley iron formation in north-western Australia, individual millimetre-thick chert laminations have been traced for over 300 km, and sequences of layers can be correlated over an area in excess of 50 000 km². Such fine-scale layering and extensive continuity point to a quiescent environment of deposition for the iron formation. There are other occurrences, however, where layering is locally disrupted and sedimentary structures like ripple marks, scours, and channels are recognizable, together with oolitic and peloidal textures. These features are indicative of deposition in a high-energy environment where currents vigorously rework the sea-bed sediment.

The distribution of BIF in the geological record is limited to an early period in the Earth's history. Radiometric dating reveals that BIF were primarily deposited during the Achaean through the Early Proterozoic (between 2.5 and 1.6 Ma) eras, their greatest development occurring between 2.6 and 1.8 Ga. After about 1.8 Ga, there was essentially no deposition of BIF, except for a slight resurgence of deposition that occurred between 800 and 600 Ma. These younger deposits, including the Rapitan iron formation in northwestern Canada, have a distinctly different character in comparison with the older BIFs, suggesting that they formed under different environmental conditions. Since 600 Ma ago, no true BIFs have been deposited.

8.1 Economic Factors

Iron orebodies range in size from about 1000 to less than 100 million tonnes (Mt) with grades ranging from 15 to 45% Fe, averaging 25% Fe. Precambrian deposits usually contain less than 2% Mn, but many Palaeozoic iron-formations, such as those near Woodstock, New Brunswick, contain 10 to 40 % Mn and have Fe/Mn ratios of 40:1 to 1:50 (BC Geological Survey, 2003). The largest British Columbia deposit, the Falcon, contains inferred reserves of 5.28 Mt grading 37.8% Fe (BC Geological Survey, 2003). **The Author (QP) has been unable to verify this information and the information is not indicative of mineralization on the property that is the subject of this report.**

BIF deposits are usually large-tonnage open pit mining operations. Granular, medium to coarse-grained textures with well defined; sharp grain boundaries are desirable for the concentration and beneficiation of the crude ore. Strongly metamorphosed iron formation and magnetite lithofacies are usually preferred. Oxide facies iron-formation normally has a low content of minor elements, especially Na, K, S and As, which have deleterious effects in the processing of the ore and quality of steel produced from it.

9 Exploration

The last publically documented exploration on the property was commissioned by Coltstar and conducted by Aurora Geosciences and PGW in 2011. This work was sufficient to keep the property in good standing with the NTMRO at the time of report preparation. Metallis and its predecessor Coltstar have not commissioned or conducted any exploration on the property since the work completed in 2011. There have been no Press Releases issued by Metallis, or other technical documentation released into the public

domain to indicate otherwise. The Author has queried the NTMRO and government District Geologists for any pending documentation, there is none.

Since 2011, only payments in lieu have been made to keep the property in good standing. These payments have been made by Metallis or Karsten Energy Corp., a previous optionee of the MMICP.

10 Drilling

No drilling has been carried out on the area currently covered by the MMICP.

11 Sample Preparation, Analysis and Security

11.1 Current Exploration

This report does not include any current or recent sampling or analysis of samples. Sample handling for historic work programs carried out on the property are discussed below. Metallis and Seahawk have no relationship or material interest in the labs identified in the sections to follow at the present time or at the time the analyses were conducted.

11.1.1 Analytical Methods – Crest deposit

Samples were all submitted for analysis of iron, silica, phosphorus and sulphur grades, using a number of methods. The 1962 program utilised total iron, total phosphorus, silica and sulphur, changing to soluble iron, soluble phosphorus and insolubles in 1963. Adjustments from total iron to soluble iron for the purposes of grade estimation, reporting and resource estimation were done by linear regression, based on scattergram analysis. Soluble iron was determined volumetrically by oxidation using the Zimmerman-Reinhardt method, with iron dissolved in concentrated hydrochloric acid, and then determined by reduction through addition of stannous chloride. Several samples underwent further chemical and spectrographic analyses, which gave a more comprehensive composition of the iron ore formation. Analytical methods are described in detail in Volume F of the 1964 Snake River Iron Deposit Assessment Report (Flower, 1964).

11.1.2 Coltstar (Metallis) Sampling Programs

11.1.2.1 Sample Procedure

Rock Sampling

In August 2010, Aurora Geosciences completed a brief reconnaissance and rock grab sampling program on Coltstar's claim group, while staking additional claims covering areas that research had shown to be prospective. The rock sampling methodology was designed to determine the geochemical signature of various rock types and to provide independent iron assays of attractive material.

In 2011, a total of 50 chip and grab samples of target lithologies (iron formation and related iron-rich

sediments) were collected from the CV claims (Appendix III). Exposures of iron formation greater than 25 cm in stratigraphic thickness were chip sampled in roughly 25 cm increments, whereas representative grab samples were collected from minor exposures of iron formation and related lithologies. Samples were collected for iron assay to estimate the potential grade and tonnage of iron formation on the CV claims, particularly those surrounding the existing Chevron lease over the Crest iron deposit. A sample ticket book was used to record sample numbers and a brief mineralogical description. Each sample was assigned an identifying number as printed on each ticket. A plastic sample bag was then clearly numbered with the matching ticket number placed inside with the rock sample. Photographs were taken at all sample sites. The author sealed the bagged samples with plastic “zap straps” to prevent tampering.

Samples were stored at a secure location at the Arctic Red River base camp and shipped to Yellowknife in sealed containers.

Stream Sediment Sampling

Stream sediments sampled during the 2010 program were collected in accordance with NGR protocol. This procedure was used by the NTGS during a regional sampling of NTS 106A, 106B, and parts of 106C in 2008 and 2009 (Falck and Day, 2008; Day et al., 2009). The sample methodology is outlined and can be referenced in the Falck and Day (2008) and Day et al. (2009) publications.

Samples were handled in compliance with NI 43-101 standards. Samples were stored in a secure location at the Arctic Red River Lodge and shipped to Yellowknife in sealed and tagged pails. The samples were submitted to the Acme preparation facility in Yellowknife and analysed by 45 element Aqua Regia digestion and Inductively Coupled Plasma-Mass Spectrometry or Atomic Emission Spectrometry (ICP-MS; Acme lab code Group 4B).

11.1.2.2 Sample Transportation

Aurora personnel exercised due diligence while handling and shipping the samples. Samples were transported from Arctic Red River Lodge to Norman Wells via North Wright Airways and then on to Yellowknife via Canadian North Air Cargo in sealed containers. Aurora personnel handled or supervised the handling of all containers to the extent possible with commercial transport. Samples were received by Aurora personnel in Yellowknife and delivered to the Acme preparation facility in Yellowknife.

11.1.2.3 Preparation and Analyses

The following section outlines the preparation and analytical procedures carried out by Acme (now Bureau Veritas) on all of the Coltstar’s samples at their lab facilities in Yellowknife, NT and Vancouver, BC. This is a facility that is ISO 9001:2000 certified. An extensive quality control/quality assurance program has been developed at Acme’s laboratory to ensure the production of accurate and reliable data. Each staff member undergoes a rigorous training program. They are expected to know and understand the Company's policies regarding:

a) Good Laboratory Practices

These are general practices which are common to the laboratory and include documented policies regarding

general laboratory maintenance and housekeeping, record keeping, management of sample flow, sample handling, labelling and testing of reagents or standards.

b) Good Measurement Practices

These relate to techniques such as I.C.P., A.A., titrations, weighing, etc., as well as instrument maintenance.

c) Standard Operating Procedures

These are detailed instructions for carrying out specific tasks such as documented analytical methods instrument calibration, in general, any task that is done repetitively.

11.1.2.4 Sample Preparation

Upon arrival of samples, the staff immediately proceed with documentation of the sample shipment as follows:

- checking for spillages and general sample integrity.
- verifying that samples match sample shipment requisition numbers provided by samplers.
- identifying and flagging of samples which are urgent.
- identifying and flagging of high grade samples for special handling to avoid cross contamination of samples in the bucking room.

11.1.2.5 Weigh Stations

Balances are calibrated twice during each shift using NBS reference weights.

11.1.2.6 Fire Lab

Separate fusion pots are used for assay, rock geochemical and soil geochemical. Each pot is catalogued and is not re-used until the analysis is finished. Pots, which were used for anomalous or high-grade samples, are discarded at the end of analysis.

11.1.2.7 Laboratory

Activities Preceding the Analysis

All lab ware is permanently labelled and cleaned in a manner consistent with good laboratory practice. Cleanliness of glassware is monitored daily by exposing selected glassware to a sample containing 10,000 times the detection limit for a particular parameter. The glassware, after washing, is used to prepare a reagent blank and is analysed. If the washing procedure has been performed correctly, the results should give normal background noise for the analytical procedure. All reagents, and deionized water lots are tested for purity prior to use in the laboratory. Each lot is clearly identified and labelled O.K., together with the date analysed and the analyst's initials if proved acceptable for use. A record is kept for each validation of reagents.

Calibration Control

The instrument calibration procedures for Atomic Absorption, I.C.P. and Auto-analysers are sufficiently similar that they can be described together:

All instrumentation is allowed to warm up prior to calibration. After warm up, the instrument absolute

response for a known standard is measured and recorded in the logbook. If the response is acceptable, the instrument is calibrated with appropriate standards covering the expected range of the samples. The instrument linearity is then checked and recorded for a midrange standard. If linearity is acceptable the analyst then proceeds with the analysis.

Analysis

Samples are analysed in batches of forty. Each batch will contain the following:

- thirty-five samples
- 3 duplicate samples
- one blind duplicate re-split sample from bucking room
- one CanMet Certified Reference Standard or one In-house Standard

11.1.2.8 Quality Control and Assurance

An extensive quality control/quality assurance program has been developed at Acme's laboratory to ensure the production of accurate and reliable data.

The Data Verification techniques employed by Acme Laboratories are summarized below:

a) Blank Control

Calibration blanks are analysed each time the instrument is calibrated. If the blank is greater than the detection limits for any parameter, analysis will be terminated and corrective action taken. Method blanks are prepared with the reagents used for the analysis and are processed with the samples. Two method blanks are analysed with each batch, which may contain from one to several hundred samples. If the method blank is relatively small, it can be subtracted from the results. If the method blank is large, it would indicate reagent or glassware contamination and corrective action must be taken.

b) Quality Control Standards and Certified Standards

Approximately 50 CanMet Certified reference material and In-house Standards are currently in use in Acme's laboratory. Each batch of 35 samples analysed will contain one standard of similar composition to monitor the analysis.

c) Repeat Analysis

Values obtained for repeat geochemical analyses must fall within precision limits. The only exception to the above is in the case where there is a nugget effect. In this instance a screen or "metallic" analysis will be recommended to clients.

d) Reporting

A minimum of three individuals, including two assayers, check results prior to reporting. All QC/QA data accompanies each report.

In the Author's opinion, an independent data verification protocol was not required for the present program. The author also notes that the analytical results are very similar to those published by Chevron from the Crest Property.

12 Data Verification

In 2010, five grab samples of iron formation were collected from bedrock exposures on the Crest Property by Aurora personnel and shipped to Coltstar's office in Vancouver. Mr. D.G. DuPre (QP on the 2013 NI 43-101) bagged and tagged these samples before they were picked up by a courier from Acme Laboratories (an accredited laboratory) in Vancouver, B.C. The sample locations are shown on Figure 10.1.

All sampling during the 2010 and 2011 programs was directly conducted and supervised by Aurora Geosciences personnel. To the best of the author's knowledge, there has been no additional sampling on the property. No third party sampling material from the property subject of this report has been documented in the preparation of this report or other literature since the issuance of the NI 43-101 by Coltstar in 2013.

The author does not believe that an independent QA/QC program is warranted at this stage of property evaluation. Overall, sampling of iron formation mineralization on the MMICP gives reasonably similar results to those obtained by Chevron, and, thus, the assays can be relied upon to in exploration for bedrock sources of the iron. In addition, the author considers the analytical results to be within the acceptable range of error.

13 Mineral Processing and Metallurgical Testing

The MMIC property is still considered an early stage exploration project and as such no mineralogical, metal processing or metallurgical testing has been done on mineralized material from the Mackenzie Mountains Iron-Copper property.

14 Mineral Resource Estimates

No mineral resource estimates have been performed for the area presently covered by the Mackenzie Mountains Iron-Copper property.

15 Mineral Reserve Estimates

No mineral reserve estimates have been performed for the area presently covered by the Mackenzie Mountains Iron-Copper property.

16 Adjacent Properties

16.1 Chevron Canada's Crest Property

**** All resource estimates presented in Section 16.1 are considered Historical Estimates as defined by the NI 43-101. The Historical Estimates were not prepared by independent Qualified Persons, nor has any of the information contained therein been audited by an independent Qualified Person. The Historical Estimates do not conform to the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") standards of reporting pursuant to requirements under National Instrument 43-101. As a result, the author wishes to clarify that there are no compliant mineral resources and no compliant mineral reserves on the Crest property as are defined under National Instrument 43-101.**

The Crest deposit straddles the Yukon/Northwest Territories border and is located approximately 450 kilometers north of Whitehorse, Yukon Territory. This deposit was discovered by a geological party of the Standard Oil Company of California, in 1961, during an extensive program of regional structural and stratigraphic geological mapping (Flower, 1963). During 1962 and 1963, an exploration program comprising geological mapping, surface channel sampling, 86 stratigraphic sections and 26 drill holes (total - 3,217 m) provided good stratigraphic control – particularly in the Iron Creek area (Flower, 1963). The Crest deposit is now covered by a mining lease in the name of Chevron Canada Ltd. which is the successor company to the Standard Oil Company of California. The owners of the Crest Property have publicly disclosed their information in Assessment Report #017964 (Flower, 1963). Additional information is reported in McBean's (2006) report commissioned by Chevron. No physical work has been done on the property since that time.

The Crest property comprises 525 Yukon leases (27,827 gross hectares), and 1 Northwest Territories lease (31,752 gross hectares). There are no restrictions on transfer for the Yukon leases. In the case of the NWT lease, both the transferor and transferee are required to hold a valid prospector's license at the time of transfer, and no transfer may be made if rent or royalties are outstanding. Royalties are prescribed in the applicable regulations.

The Rapitan Group is exposed over several hundred kilometers and ranges in thickness from 50 to 150 meters (McBean, 2006). The iron formation at Crest outcrops in three fault-bounded blocks over 50 kilometers, and ranges in thickness up to 150 m, is eroded to the north and disappears under younger strata to the south. It is relatively flat-lying and undeformed (Figure 16-1). The iron ore is a fairly simple sedimentary deposit. Mineralogically, it consists of fine grained specular hematite with silica distributed as bands or nodules of red jasper. The sedimentary iron ore has been traced over a distance of 51.5 km (McBean, 2006).

The jasper-hematite-type of iron-formation constitutes almost half of the lower 305 m of stratigraphy of the 915 m of hematitic conglomerate at the Snake River portion of the Crest Property (Flower, 1963) The greater part of the iron-formation occurs in a zone between 152 and 305 m above the unconformity at the base of the conglomerate. The iron-rich zone consists of varying proportions of three basic constituents: hematite, chert and clastic sedimentary rocks. Chevron distinguished 3 types of iron

formation (Flower, 1963), on the basis of the jasper-hematite inter-relationship:

1. Nodular Iron-Formation – Consists of 60%-90% dense, very fine-grained, steel-grey to maroon-tinted hematite contained small rounded or ovoid nodules of orange-red jasper.
2. Banded Iron-Formation – Interbanded hematite and jasper. Bands range from a fraction of a centimetre to a metre in thickness may be structureless or laminated and may be interbedded in any relative proportion.
3. Irregular Iron-Formation – Characterised by irregular masses and intergrowths of hematite and jasper.

Chevron, in their Yukon Assessment Report #017964 (Flower, 1963), stated that the Iron Creek portion of the Crest deposit (Fig. 16.1), “within zones 1 to 9, the total amount of bedded hematite, with a grade of 35% Iron and better, is 11.5 billion tons. The average grade of this material is 43.8% iron, 0.34% phosphorus and 26.6% silica”. **The Author (QP) has been unable to verify this information and the information is not indicative of mineralization on the property that is the subject of this report.**

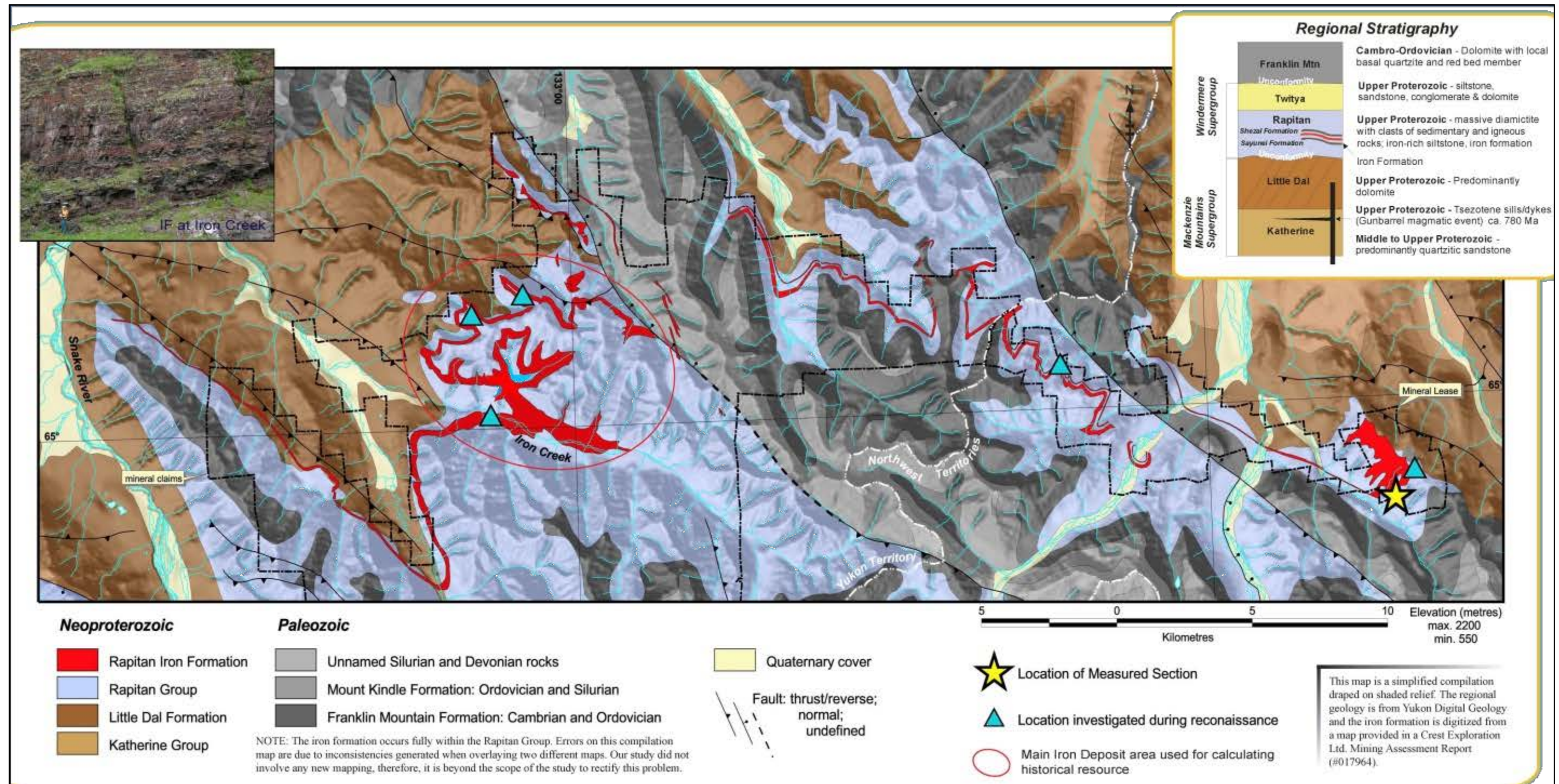


Figure 16-1. Geological Map of the Crest Property (modified after Lewis et al, 2009)

17 Other Relevant Data and Information (ITEM 24)

17.1 Bonnet Plume Basin

The Bonnet Plume Basin is located in the Northern Yukon approximately 100 km to the east of the Dempster Highway. It contains the Yukon's largest reserves of coal, 660 million tons of high volatile bituminous C, in seams of mineable thickness (McBean, 2006). The coal is of low sulphur content and is potentially clean-burning. The quantities identified are suitable for power generation to support plants up to 2,000 MW in size. The coal is potentially suitable for conversion to clean gaseous or liquid fuels. This coal deposit is located approximately 100 km from Crest, and could be considered as a potential source of electricity generation for mine and milling operations at Crest.

17.2 Mackenzie Valley Pipeline

Discussions on the Mackenzie Valley gas pipeline have been ongoing for many years. Hatch (2002) completed a high level evaluation in 2002 of a plan for a mining-steel manufacturing operation, using iron ore from the Crest deposit as one of the inputs to manufacture line pipe steel for a potential gas pipeline.

Proponents of the Mackenzie Valley Pipeline received National Energy Board (NEB) approval for the project in March 2011. The approval contained 264 conditions, including, that construction must have commenced by December 31, 2015. Market conditions were (and are) such that the project is not commercially viable. However, if the Mackenzie Valley Pipeline were to proceed, it would possibly provide another potential energy source, and furthermore, the Hatch (2002) study could be revisited.

18 Interpretation and Conclusion

Coltstar's 2010 and 2011 exploration programs were primarily designed to identify and evaluate occurrences of iron formation within areas of the current MMICP and along a significant strike length of stratigraphy to the south, previously mapped by the Geological Survey of Canada to be Rapitan Formation. A secondary objective was to explore for copper mineralization in the Coates Lake Group.

Ground exploration showed that the Rapitan Group stratigraphy is present south of the current property. In the southeastern portion of the original MMICP, the Rapitan Group is present and fully subdivided into the Sayunei (red to purple siltstones and mudstones) and Shezal (grey, tan, to pale green diamictite) Formations. Regionally, in such stratigraphy, iron formation is relatively easy to locate, as it occurs within the top 20 m (approx.) of the contact between the Sayunei Formation and the Shezal Formation, which is easily identifiable given its color. Despite the existence of the Rapitan Formation and the permissive stratigraphy, no iron formation was observed to the southeast of the Crest area during the 2011 exploration program. Upon completion of the 2011 program, a number of less prospective claims were allowed to

lapse and the property was reduced to the 34 claims that are situated around the Crest Property. In 2014, the MMICP was further reduced in size, to the most favourable ground immediately southeast and adjacent to the Crest leases and comprises 5,076.49 hectares.

In 2010, two outcrops of iron formation were discovered on the northern part of Metallis' CV 11 claim (part of the current group of claims) along the easternmost fork of the Upper Cranswick River. In 2011, two of these outcrops of iron formation were chip sampled in detail; one returned 49.52% Fe₂O₃ over 2.25 meters, while the other returned 48.25% Fe₂O₃ over 2.3 meters. This iron formation dips gently to the southeast and likely occurs in subsurface on current claims CV 1 and 2 as well.

The interpreted magnetic data, coupled with the geological mapping, proved to be the most effective technique to determine the geological setting as well as the distribution and depth of the iron formation observed during the 2011 field exploration program. The magnetic model shows a good correlation with the outcropping iron formation and the mapped Rapitan Group. The model shows distinct units within the Rapitan Group that can be used to infer the location of the iron formation as it extends to depth (Figure 19-1).

Preliminary interpretation of the magnetic data collected in 2011 reveal that the geological environment comprises a series of northwest trending horsts and grabens. Each of these blocks exhibit moderately plunging open folds. It is concluded that iron formation underlies portions of Metallis' property. Some of the iron formation is interpreted to lie at a shallow depth (Figure 19-2 and Figure 19-3), typically between 50 and 100 meters.

19 Recommendations

A staged approach is recommended to continue exploration on the property. Initially, it is recommended that a desktop study be conducted to digitally incorporate all available Chevron data into a property scale model. Such a model would assist in the interpretation and geologic constraints on gravity and magnetic modeling. Field work during this phase would include a ground gravity survey to be conducted where the Rapitan iron formation is interpreted to lie close to the surface to further refine the depth and extent of the iron formation. The gravity data would then be used to further constrain the property model.

Contingent on favorable results from the first phase, a second phase of exploration would include diamond drilling to test mineralization predicted by the geophysical modelling and geological investigation. A 2000-metre diamond drilling program should be considered in order to adequately assess mineralization on the property. Based on the data available at the time of report preparation, preliminary proposed drill collars are shown on Figures 19-1, and 19-2.

Proposed Expenditures

Phase 1	
Digitizing, Compilation, and modelling of the Crest iron data	\$40,000.00

Ground Gravity Survey, Modelling and Interpretation	\$200,000.00
Subtotal	<u>\$240,000.00</u>
Phase 2	
Diamond Drilling at \$1000/meter x 2000m	\$2,000,000.00
Subtotal	\$2,000,000.00
<hr/>	
Total Proposed program	\$2,240,000.00

Respectfully submitted,

Gary Vivian (sealed)

Gary Vivian, M.Sc., P.Geol.

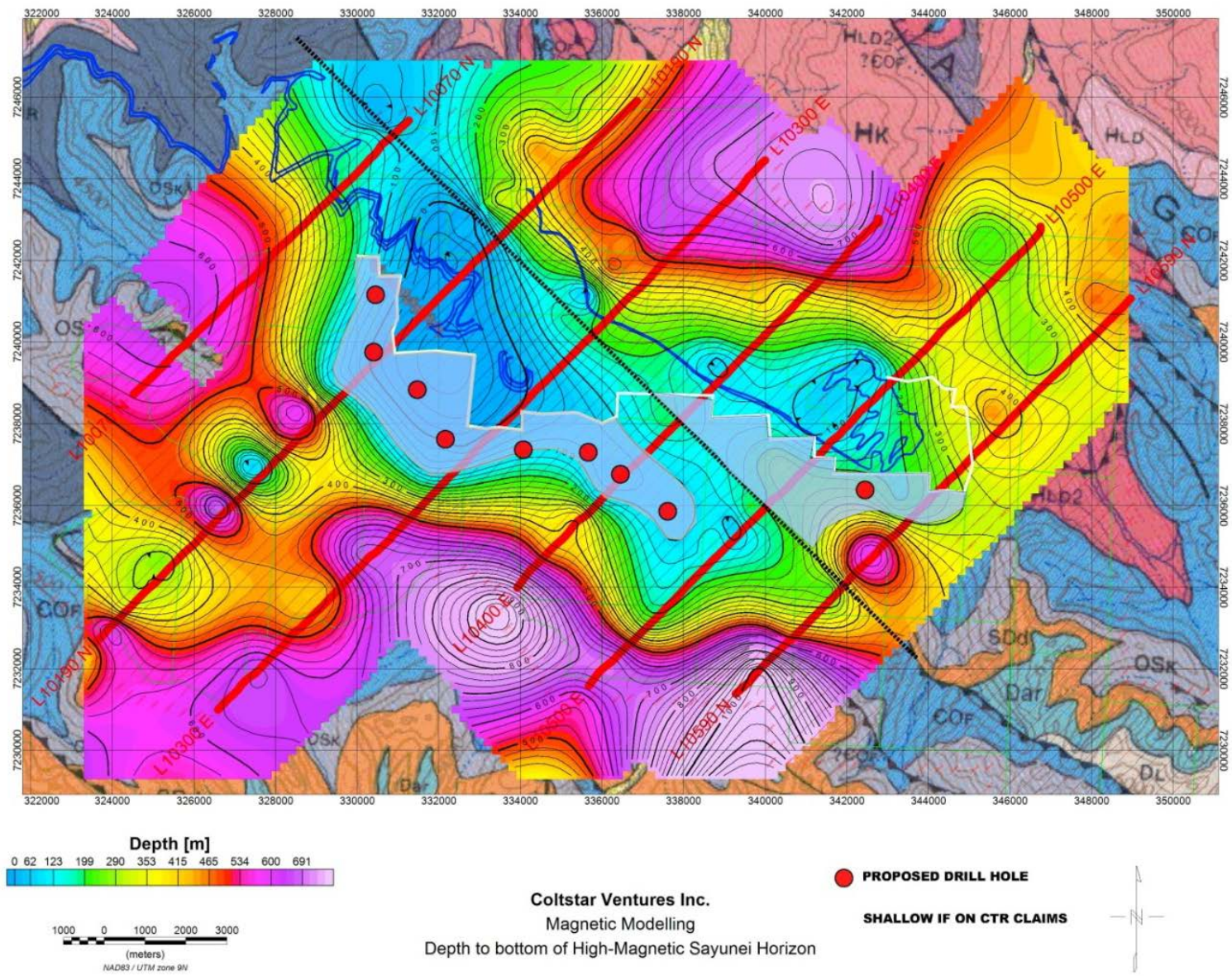


Figure 19-1. Map Showing the Proposed Drill Locations and Depth to the magnetic unit at the base of the Sayunei Formation (Ugalde, 2006)

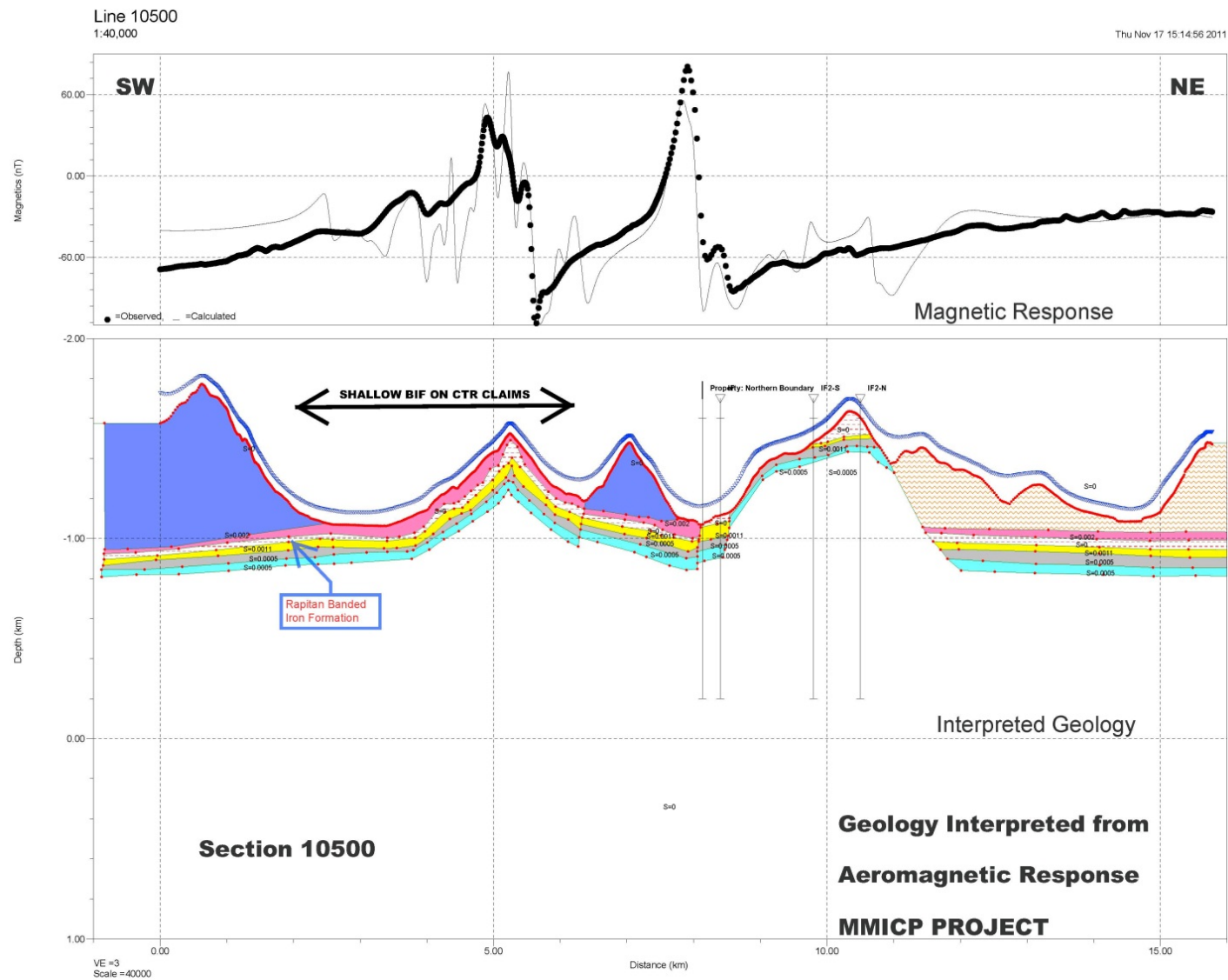


Figure 19-2. Profile showing Geology Interpreted from Magnetic Results (Ugalde, 2006)

Legend for all models:

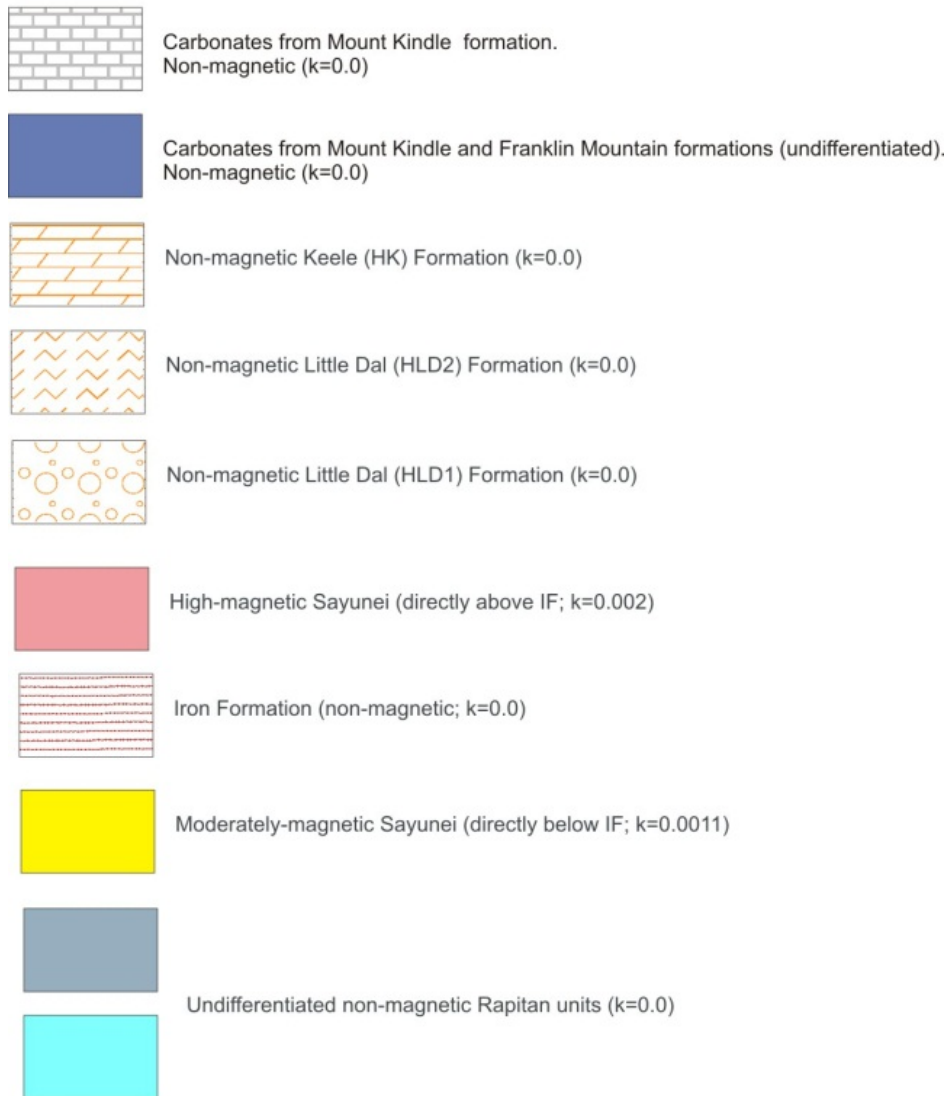


Figure 19-3. Legend for Figure 19-2 (Ugalde, 2006)

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21 Certification of author

I, Gary Vivian, of the City of Yellowknife, in the Northwest Territories, Canada,

HEREBY CERTIFY:

1. That my business address is 3506 McDonald Drive, Yellowknife, NT, X1A 2H1
2. This certificate applies to the report titled "Technical Report, Mackenzie Mountains Iron Copper Property Northwest Territories, Canada" and dated June 1, 2016.
3. That I am a graduate of Sir Sandford Fleming College as a Geophysical Technologist, 1976.
4. That I am a graduate of the University of Alberta in Geology:
 - a. B.Sc. – Specialization Geology, 1983.
 - b. M.Sc. – Geology, 1987, U of A – The Geology of Blackdome Ag-Au Deposit, BC
5. That I have been practicing Geology since 1983:
 - a) May 1983 – November 1986 Noranda Exploration Co. Ltd., Bathurst, NB
 - b) December 1986 – May 1988 Noranda Exploration Co. Ltd., Timmins, ON
 - c) May 1988 – Present Covello, Bryan and Associates Ltd.
and currently Aurora Geosciences Ltd.,
Yellowknife, NT
6. That I am a registered Professional Geologist in the Northwest Territories. I have professional designation in Manitoba, Saskatchewan, and Alberta. I am also registered with AIPG (American Institute of Professional Geologists). I have over 35 years of exploration experience concentrating in massive sulphide, magmatic sulphide, diamond, uranium and precious metal deposition. As such I am a Qualified Person for the purposes of National Instrument 43-101.
7. As a principal of Aurora, I have written this report and managed the programs on MMICP. I last visited the property on August 4, 2011, to verify the airborne survey data and to start the geology program. I am responsible for all sections of the report titled – "Technical Report-Mackenzie Mountains Iron-Copper Property - Northwest Territories, Canada".
8. That I am not aware of any material fact or material change with respect to technical aspects of the report which is not reflected in the report.
9. That I am independent of the issuer as defined by the tests set out in Section 1.5, "Standards of Disclosure for Mineral Projects", National Instrument 43-101.
10. That I am independent of the vendor Metallis Resources Inc.
11. That I have read "Standards of Disclosure for Mineral Projects", National Instrument 43-101 and read Form 43-101F1. This report has been prepared in compliance with this Instrument and Form 43-101F1.
12. That, as of June 01, 2016, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated, June 01, 2016 at Yellowknife, NT.

Gary Vivian (sealed)

Gary Vivian, M.Sc., P.Geol.

Date and Signature Page

This report titled “Technical Report, Mackenzie Mountains Iron-Copper Property, Northwest Territories, Canada” and dated June 01, 2016 is prepared by and signed by the following author:

Gary Vivian (sealed)

Gary Vivian, M.Sc., P.Geol.
President, Aurora Geosciences Ltd.

Dated at Yellowknife, Northwest Territories on June 01, 2016

Glossary of Technical Terms

Adit – common mining term for a horizontal to sub–horizontal tunnel driven into a hillside to access an ore body.

Agglomerate – a volcanic rock consisting of fragments of *pyroclastic* rocks more than 2 cm in size.

Alkaline – a term applied to igneous rocks which are characterised by relatively high concentrations of sodium and potassium.

Alluvial – deposits of sediment, usually sand and gravel, transported and deposited by a river.

Archean – period of geological time that is the older of the two main *Precambrian* divisions. Ends 2500 million years ago.

Argillaceous rocks – a group of detrital, fine grained, sedimentary rocks subdivided into silt grade (particle size range 1/16 to 1/256 mm) and clay grade (particle size < 1/256 mm).

Arsenide – a mineral formed by the combination of arsenic with another chemical.

Banded iron formation (BIF) (also known as banded ironstone formations or BIFs) is a distinctive type of rock often found in primordial (Precambrian) sedimentary rocks. The structures consist of repeated thin layers of iron oxides, either magnetite (Fe₃O₄) or hematite (Fe₂O₃), alternating with bands of iron-poor shale and chert. Some of the oldest known rock formations, formed over 3,700 million years ago, include banded iron layers, and the banded layers are a common feature in sediments for much of the Earth's early history. The formations are abundant around the time of the Great oxygenation event, 2400 million years ago (mya), and become less common after 1800 mya. The reappearance of BIF conditions at 1,900 million years ago, and in association with the Snowball Earth 750 million years ago, is problematic to explain.

The total amount of oxygen locked up in the banded iron beds is estimated to be perhaps twenty times the volume of oxygen present in the modern atmosphere. Banded iron beds are an important commercial source of iron ore, such as the Pilbara region of Western Australia and the Animikie Group in Minnesota.

Barite – a white, yellow or colourless mineral, BaSO₄. The principal ore of barium used in paints, drilling muds and as a filler for paper and textiles. Synonyms: baryte, barytes.

Basic – describes an igneous rock with a relatively low silica content (between 45–52% SiO₂). Basic rocks are relatively rich in iron, magnesium and calcium and thus include most mafic rocks.

Beneficiation – the process of concentration of the valuable components of an ore or other mineral commodity. Commonly includes multiple stages such as crushing, grinding, washing, screening, flotation, roasting, etc.

Bituminous – type of coal that contains a naturally occurring tar–like hydrocarbon mineral of indefinite composition. It ranges in consistency from a thick liquid to a brittle solid.

Breccia – a rock that has been mechanically, hydraulically or pneumatically broken into angular fragments and re–cemented.

Bulk Leach Extractable Gold - more commonly shortened to BLEG is a geochemical sampling/analysis tool used during exploration for gold. It was developed in the early 1980s to address concerns relating to the accurately measuring fine grained gold, and dealing with problems associated with sample heterogeneity.

Calcite – a very common rock forming mineral comprising calcium, carbon and oxygen (CaCO₃).

Cambrian – period of geological time from 545 to 495 million years ago. Marks the beginning of the *Paleozoic Era*.

Carbonate – a mineral characterized by a fundamental structure of CO₃. Common examples include calcite, dolomite, magnesite and siderite.

Carbonatite – a magmatic rock consisting of calcium carbonate, usually associated with nepheline–syenite systems.

Carboniferous – period of geological time from 354 to 292 million years ago. So named because of the globally extensive occurrence of coal and limestone (CaCO₃) that was formed during this time. In the UK the Lower Carboniferous is dominated by marine sediments. Upper Carboniferous rocks are almost entirely fresh–water and lacustrine sediments. The bulk of coal deposits in the UK occur in Upper Carboniferous strata.

Cenozoic Era – period of geological time extending from 65 million years ago to the present.

Chert – sedimentary rock that is ultra–fine grained and composed almost entirely of silica. May be of organic or inorganic origin.

Conglomerate - clastic sedimentary rock that contains large (greater than two millimeters in diameter) rounded clasts. The space between the clasts is generally filled with smaller particles and/or a chemical cement that binds the rock together

Core strategy: sets out the long-term spatial vision for the local planning authority area, the spatial objectives and strategic policies to deliver that vision. The core strategy will have the status of a *development plan document*.

Cretaceous – period of geological time from 142 to 65.5 million years ago. Marks the end of the *Mesozoic Era*.

Devonian – period of geological time from 417 to 354 million years ago.

Diamagnetic – having a small negative magnetic susceptibility.

Dolomite – a common rock forming mineral comprising calcium, carbon, magnesium and oxygen ($\text{CaMg}(\text{CO}_3)_2$).

Electrolytic – the process of extracting metal based on passing an electric current through a solution containing dissolved metals, causing the metals to be deposited on the cathode.

Evaporite – a sedimentary rock composed mainly of minerals produced by evaporation, normally from an enclosed body of seawater or a salt lake. Minerals formed in this way include gypsum, rock salt, and various nitrates and borates.

Extrusive – describes igneous rocks that have been formed by solidification of magma on or above the Earth's surface.

Felsic – In modern usage, the term felsic rock, although sometimes used as a synonym, refers to a high-silica-content (greater than 63% SiO_2 by weight) **volcanic rock**, such as **rhyolite**. In order to be classified as felsic, it generally needs to contain >75% felsic minerals; namely quartz, orthoclase and plagioclase. Rocks with greater than 90% felsic minerals can also be called *leucocratic*, meaning 'light-coloured'.

Ferromagnesian – describes rock-forming silicate minerals which contain essential iron (Fe) and/or magnesium (Mg). The most common ferromagnesian minerals include olivine, pyroxene, amphibole and mica.

Footwall – the name given to the host rock of an ore deposit that is physically below the ore deposit.

Gabbro – a coarse-grained mafic igneous rock consisting of plagioclase feldspar and pyroxene. Olivine may also be a major constituent, while hornblende, biotite, quartz, magnetite and ilmenite are common minor phases.

Gangue – the undesirable or unwanted minerals in an ore deposit.

Grabben - An elongated block of the earth's crust lying between two faults and displaced downward relative to the blocks on either side, as in a rift valley.

Hangingwall – the name given to the host rock of an ore deposit that is physically above the ore deposit.

Highwall mining – mining method used to maximize the output of an open-pit coal mine. Remotely operated cutting or boring machines are used to penetrate the coal seam at the foot of the highwall (the final wall in an open-pit) to extract coal.

Holocene – period of geological time from 11,500 years ago to the present day. The youngest epoch and series of the *Cenozoic Era*.

Horst - A raised elongated block of the earth's crust lying between two faults.

Hydrometallurgy – the treatment of ores by wet processes, resulting in the dissolution of a particular component and its subsequent recovery by precipitation, adsorption or electrolysis.

Igneous – one of the three main groups of rocks on Earth. They have a crystalline texture and appear to have consolidated from a silicate melt (magma).

Inductively coupled plasma mass spectrometry (ICP-MS) -- a type of mass spectrometry that is highly sensitive and capable of the determination of a range of metals and several non-metals at concentrations below one part in 10^{12} (part per trillion). It is based on coupling together an inductively coupled plasma as a method of producing ions (ionization) with a mass spectrometer as a method of separating and detecting the ions. ICP-MS is also capable of monitoring isotopic speciation for the ions of choice.

Intrusion – a body of *igneous* rock emplaced into pre-existing rocks, either along some structural feature such as a fault or by deformation and rupturing of the invaded rocks. (*intrusive, adj*).

Iron Formation - Iron-rich sedimentary rocks, mostly of Precambrian age, containing at least 15% iron. The iron occurs as an oxide, silicate, carbonate, or sulphide, deposited as laminated, deep-water, shelf-sea, and lagoonal sediments, often associated with cherts (see also BANDED IRON FORMATION). Other iron formations contain iron-rich ooids, pellets, and intraclasts, representing deposits comparable to shallow marine limestones.

Jurassic – period of geological time from 205.1–142 million years ago.

Kaolin – group of pale coloured clay minerals. In the UK kaolin is an industrial mineral extracted from kaolinised granites in south-west England. It is used as a paper filler and coater, and for high grade ceramics and pottery (china clay).

Lenticular – lens shaped body of rock.

Limestone – any sedimentary rock consisting mostly of carbonates (calcite and/or *dolomite*).

Lode – mining term for a mineralized *vein* (used irrespective of whether the *vein* can be economically extracted).

Mafic – composed of one or more *ferromagnesian* (iron–magnesium), dark-coloured minerals, such as olivine and pyroxene, in combination with quartz, feldspar or feldspathoid minerals.

Marl – a calcareous *mudstone*.

Mesozoic Era – period of geological time from 250 to 65.5 million years ago. Subdivided into the *Triassic*, *Jurassic* and *Cretaceous* periods.

Miocene – period of geological time from 23.8 to 5.32 million years ago.

Mississippi Valley type, (MVT) – a type of *stratabound* deposit of lead and/or zinc in carbonate rocks, as occurring in the Mississippi valley, USA.

Mudstone – fine grained sedimentary rocks that are similar to *shales* in their non-plasticity, cohesion and low water content but lack fissility.

Neogene – part of the *Cenozoic Era*, comprising the *Miocene* and *Pliocene* epochs from 23.8 to 1.81 million years ago.

Neoproterozoic Era - is the unit of geologic time from 1,000 to 542.0 ± 1.0 million years ago.^[1] The terminal Era of the formal Proterozoic Eon (or the informal "Precambrian"), it is further subdivided into the Tonian, Cryogenian, and Ediacaran Periods. The most severe glaciation known in the geologic record occurred during the Cryogenian, when ice sheets reached the equator and formed a possible "Snowball Earth". The earliest fossils of multicellular life are found in the Ediacaran, including the earliest animals.

Oligocene – period of geological time from 28.5 to 23.8 million years ago.

Ophiolite – a distinctive assemblage of *mafic* and *ultramafic igneous* rocks which occur in sequence from a basal *ultramafic* complex upwards to a gabbroic complex, a mafic sheeted-dyke complex and an uppermost mafic volcanic complex. Commonly associated with deep-water sediments such as *shales* and *cherts*. Generally interpreted to be derived from oceanic crust and upper mantle. Ophiolites may contain important deposits of chromite, copper and the platinum-group elements (PGE).

Ordovician – period of geological time from 495 to 440 million years ago.

Paleogene – part of the *Cenozoic Era* comprising the *Paleocene*, *Eocene* and *Oligocene* epochs, from 65.5 to 23.8 million years ago.

Paleozoic Era – period of geological time from 545 to 245 million years ago. Subdivided into the *Cambrian*, *Ordovician*, *Silurian*, *Devonian*, *Carboniferous* and *Permian Periods*.

Permian – period of geological time from 280 to 255 million years ago, marks the end of the Paleozoic Era. Globally important source of coal.

Pliocene – period of geological time from 5.3 to 1.81 million years ago.

Precambrian - an informal name for the span of time before the current *Phanerozoic* Eon, and is divided into several eons of the geologic time scale. It spans from the formation of Earth around 4600 Ma (million years ago) to the beginning of the Cambrian Period, about 542 Ma, when macroscopic hard-shelled animals first appeared in abundance. Accounts for 90% of all geological time and ends approximately 545 million years ago.

Proterozoic - a geological eon representing a period before the first abundant complex life on Earth. The Proterozoic Eon extended from 2500 Ma to 542.0 ± 1.0 Ma (million years ago), and is the most recent part of the old, informally named 'Precambrian' time.

The Proterozoic consists of 3 geologic eras, from oldest to youngest:

Paleoproterozoic

Mesoproterozoic

Neoproterozoic

The well-identified events were:

The transition to an oxygenated atmosphere during the Mesoproterozoic.

Several glaciations, including the hypothesized Snowball Earth during the Cryogenian period in the late Neoproterozoic.

The Ediacaran Period (635 to 542 Ma) which is characterized by the evolution of abundant soft-bodied multicellular organisms

Pyroclastic – fragmental volcanic material that has been blown into the atmosphere by an explosive eruption.

Pyrometallurgical – the treatment of ores by processes involving heating.

Quarrying (mining) – the extraction of rock from an open pit site.

Quaternary – the uppermost part of the *Cenozoic Era* from 1.81 million years ago to present day.

Refractory – a general term for a material that resists chemical or physical change.

Refractory ore – ore from which it is difficult to extract the valuable constituents. This material may require special treatments, such as pressure leaching, to recover the valuable minerals.

Sedimentary exhalative (Sedex) – an ore deposit formed from hydrothermal fluids discharged onto the sea-floor and hosted by sedimentary rocks such as black shale, siltstone and chert. Deposits comprise sheets or lenses of fine-grained laminated sulphides. Sedex deposits are important sources of zinc, lead and silver.

Sedimentary rocks – rocks formed from material derived from other rocks by weathering. Deposited by water, wind or ice.

Silurian – period of geological time from 440 to 417 million years ago.

Snowball Earth - the hypothesis that the Earth's surface became nearly or entirely frozen at least once, some time earlier than 650 million years ago. The geological community generally accepts this hypothesis because it best explains sedimentary deposits generally regarded as of glacial origin at tropical paleolatitudes and other otherwise enigmatic features in the geological record. Opponents to the hypothesis contested the implications of the geological evidence for global glaciation, the geophysical feasibility of an ice- or slush-covered ocean, and the difficulty of escaping an all-frozen condition. There are a number of unanswered questions, including whether the Earth was a full snowball, or a "slushball" with a thin equatorial band of open (or seasonally open) water.

The geological time frames under consideration come before the sudden multiplication of life forms on earth known as the Cambrian explosion and the most recent Snowball episode may have triggered the evolution of multi-cellular life on earth. Another, much earlier and longer, Snowball episode, the Huronian glaciation (2.4 to 2.1 billion years) may have been triggered by the oxygen catastrophe.

Stope – mining term for the underground void left after ore extraction has taken place.

Stratabound – an ore deposit that is confined to a single stratigraphical bed or horizon but which does not constitute the entire bed.

Stratiform – an ore deposit that occurs as a specific stratigraphic (i.e. sedimentary) bed.

Sulphide – a mineral formed by the combination of sulphur with another chemical element. Most economic deposits of non-ferrous metals occur as sulphide minerals e.g. galena, PbS; sphalerite, ZnS; chalcopyrite, CuFeS₂.

Triassic – period of geological time from 250 to 205.1 million years ago. This period marks the beginning of the *Mesozoic Era*.

Tuff -- (from the Italian *tuffo*) is a type of rock consisting of consolidated volcanic ash ejected from vents during a volcanic eruption.

Tuff Breccia and Volcanic Agglomerate - as distinguished from the true ashes, these tend to occur in angular fragments; and when they form a large part of the mass the rock is more properly a "volcanic breccia" than a tuff. The ashes vary in size from large blocks ten meters or more in diameter to the minutest impalpable dust. Any ash in which large angular blocks are very abundant is called an agglomerate.

Ultrabasic – describes an igneous rock containing less than 45% silica (SiO₂), including most ultramafic rocks.

Ultramafic – composed chiefly of *ferromagnesian* (Fe–Mg) minerals, such as olivine and pyroxene.

Vein – A tabular or sheet-like assemblage of minerals that has been intruded into a joint or fissure in rocks.

Volcanogenic massive sulphide, VMS – an ore deposit typically comprising a lens of massive sulphide minerals (>60% sulphide) formed by volcanic processes normally on the sea-floor. VMS deposits are important sources of copper, lead and zinc.

Wallrock – an economic geology term used to describe the rock adjacent to an accumulation of ore minerals (veins, layers, disseminations, etc.).

Workings – the current or past underground or surface openings and tunnels of a mine. More specifically, the area where the ore has been extracted.

Xenolith – a discrete and recognizable fragment of country rock in an igneous intrusion.

Zoning – in economic geology, the spatial distribution of distinct mineral assemblages or chemical elements associated with an ore-forming process.

Abbreviations

Unless otherwise indicated, the metric system of measure has been used throughout this report, including metric tons (tonnes, t), kilograms (kg) or grams (g) for weight, kilometers (km) or metres (m) for distance, hectares (ha) for area, litres (L) for volume and grams per tonne for gold (g/t Au) and silver (g/t Ag) grades. Base metal grades are usually expressed in weight percent (%). Geochemical results or precious metal grades may be expressed in parts per million (ppm) or parts per billion (ppb) (1 ppm = 1 g/t). Precious metal quantities may also be reported in troy ounces (ounces, oz), a common practice in the mining industry. In the Imperial System, significant gold concentrations are reported as troy ounces per short ton. In the metric system, gold concentration is now reported in grams per metric tonne. One troy ounce per short ton= 34.2857 grams per metric tonne. Currency values are in Canadian dollars (\$CDN).

Description	Abbreviation	Description	Abbreviation
Atomic absorption	AA		
Acme Analytical Laboratories	Acme		
Banded Iron Formation	BIF	Inductively coupled plasma mass	ICPAR-UT
Bulk Leach Extractable Gold	BLEG	Kilometres(s)	km
Canadian Dollars	\$CDN	Lead	Pb
Canadian National Instrument 43-101	NI 43-101	Methyl isobutyl ketone	MIBK
Centi(s)	Cm	Ounce(s)/Troy ounce(s)	oz
Metallis Mineral Resources	Metallis	Ounce per ton	Oz/t
Degree(s)	°	Parts per billion	ppb
Degrees Centigrade/Celsius	°c	Parts per million	ppm
Foot/feet	ft	Percent	%
Fire Assay	FA	Qualified Person(s)	QP(s)
Geological Survey of Canada	GSC	Quality Assurance/Quality Control	QA/QC
Gold	Au	Reduced Level	RL
Gram(s)	g	Rock quality designation	RQD
Gram-s per tonne, s	gm/t	Silver	Ag
Grams per tonne	g/t	Specific gravity	SG
Micron(s)	μ	Square kilometers	km ²
(s)	m	Three-dimensional	3D
Millions of years ago	Ma	Tonnes per cubic metre	t/m ³
Metres above sea level	masl	Two-dimensional	2D
Mackenzie Valley Resource Management Act	MVRMA	Very low frequency	VLF
Inch(es)	in	Volcanogenic massive sulphide deposits	VMS