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Ministry of Energy, Mines & Petroleum Resources
Mining & Minerals Division
BC Geological Survey

BC Geological Survey Assessment Report 37705

Assessment Report Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Magnetic

TOTAL COST: $8,885.00

AUTHOR(S): David G Mark **SIGNATURE(S):**

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): n/a **YEAR OF WORK:** 2017

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): SOW #5704190 dated July 15th, 2018

PROPERTY NAME: Haskins Reed Property

CLAIM NAME(S) (on which the work was done): tenures # 510709, 510712, 561802, and 1026212

COMMODITIES SOUGHT: zinc, gold, copper, lead, silver, molybdenum, tungsten

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 104P.021, 104P.038, 104P.039, 104P.043, 104P.056, 104P.058

MINING DIVISION: Liard **NTS/BCGS:** 104P/05, 06 ///// 104P023, 033

LATITUDE: 59 ° 19 '59.68 " **LONGITUDE:** 129 ° 27 '9.18 " **(at centre of work)**

OWNER(S):
1) Pacific Bay Minerals Ltd. 2)

MAILING ADDRESS:
733 – 510 W. Hastings Street,
Vancouver, BC, V6B 1L8

OPERATOR(S) [who paid for the work]:
1) Pacific Bay Minerals Ltd. 2)

MAILING ADDRESS:
733 – 510 W. Hastings Street,
Vancouver, BC, V6B 1L8

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Mt. Haskins, Mt. Reed, Brett Zone, McDame Synclinorium, Autochthonous Cassiar Platform, Skarn, magnetite sphalerite skarn,
Metasediments, argillites, thrust faulting, Cassiar Gold Camp, Della Mines, Canadian Superior
Rosella Boya Formation, McDame Group, Road River Group

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: ARIS Report # 48, 4481, 5721, 5121, 25254
28922, 31584, and 35088

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic	2,000 meters	510709, 510712, 561802, 1026212	$8,885.00
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	$8,885.00

GEOPHYSICAL REPORT

ON A

MAGNETIC SURVEY

ON THE

HASKINS REED PROPERTY

McDAME CREEK, DEASE LAKE AREA

LIARD MINING DIVISION, BRITISH COLUMBIA

LOCATED:	On Mount Reed 19 km east of the abandoned town of Cassiar, BC, and104 km north-northeast of the village of Dease Lake, BC Center of property - 474000 easting and 6575000 northing (NAD 83 UTM zone 9) 53˚26'39.3" N Latitude, and 122˚31'05.6" W Longitude NTS: 104P/05 and 104P/06 BCGS: 104P.023, .033
WRITTEN FOR:	**PACIFIC BAY MINERALS LTD.** #733 – 710 West Hastings Street Vancouver, British Columbia, V6B 1L8
WRITTEN BY:	David G. Mark, P.Geo. **GEOTRONICS CONSULTING INC.** 6204 – 125th Street Surrey, British Columbia V3X 2E1
DATED:	November 22, 2018
REVISED:	

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LIST OF ILLUSTRATIONS
(at back of report)

1 SUMMARY

The Haskins-Reed property of Pacific Bay Minerals Ltd. Ltd comprises 11 mineral tenures totaling 3,354 hectares. The property is located 19 km due east of the old townsite of Cassiar, British Columbia, and 104 km north-northeast of the village of Dease Lake. Road access to the property is provided from an access road departing the Stewart Cassiar Hwy at Kilometer 613 and following the well-established gravel roads previously the Old Della Mines access roads, up to the lower of Mt. Reed.

The property covers several historic mineral showings and developed prospects including: the Joe Reed polymetallic vein with silver, lead and zinc; the Mount Reed skarn/stockwork with zinc copper molybdenum and tungsten; and the B Zone skarn containing, copper, lead, zinc, silver and bismuth.

The claims are underlain by mainly thrust-imbricated strata belonging to the Boya and Rosella Formations of the Atan Group and the overlying Kechika Group. These strata are age dated at Cambrian to Ordovician. Eocene age quartz-feldspar porphyry plutons of the Mount Haskin and Mount Reed stock complex intrude these sedimentary units in the north and central portion of the property. Intrusion of these igneous bodies have created contact metamorphic aureole within the sedimentary strata in which massive sulphide mineralization has developed.

The magnetic survey was carried out within the months of August and September of 2017 along two northerly trending lines with a total survey length of 2,000 meters, and readings taken, on average, every 15 meters. The purpose of the work was to locate on the ground an airborne magnetic high in order to diamond drill it. The magnetic and GPS data was input into a computer, which was then used to produce three maps being a satellite imagery plan map, a colour-contoured plan map, and a profile plan map.

The results show a magnetic field that is fairly quiet which is explained by the underlying sedimentary rock-types. It would appear, therefore, that the magnetic survey did not encounter the airborne magnetic high.

Three lineations of magnetic lows were noted on the plan maps which are indicative of faults and/or shear zones. However, the case for these lineations actually occurring is limited since there are only two survey lines.

2 RECOMMENDATIONS

The survey area was very limited and did not extend far enough south to encounter the probable location of the airborne magnetic high and an anomalous soil sample area. Thus, it is recommended to extend the magnetic survey to the south, southwest, and southeast.

GEOPHYSICAL REPORT

ON A

MAGNETIC SURVEY

ON THE

HASKINS REED PROPERTY

McDAME CREEK, DEASE LAKE AREA

LIARD MINING DIVISION, BRITISH COLUMBIA

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3 INTRODUCTION AND GENERAL REMARKS

This report discusses survey procedure, compilation of data, interpretation methods, and the results of a magnetic survey carried out along two lines within the northern part of the of the Haskins Reed Property. The property is located on McDame Creek 19 km east of the abandoned town of Cassiar, within the Liard Mining Division, British Columbia.

The purpose of the work was to locate a magnetic high which would then provide a drilling target.

The magnetic survey was carried out on the Haskins Reed Property by a crew under supervision of the writer, within the period of August 21st to September 30th , 2017.

Much of the background information, including geology and mineralization, was taken from Lesley Hunt's 2014 diamond drilling report on the property.

4 PROPERTY AND OWNERSHIP

The Haskins Reed Property presently consists of 11 contiguous mineral claims with a total area of 3,353.88 hectares, as listed in the table below.

TABLE OF HASKINS REED PROPERTY CLAIMS			
Tenure Number	**Claim Name**	**Good to Date**	**Area (ha)**
510709		2018/NOV/05	594.72
510712		2018/NOV/05	181.625
510720		2018/NOV/05	297.324
510721		2018/NOV/05	198.397
510722	JOE REED 1-25	2018/NOV/05	413.21
510723	JOE REED 26-50	2018/NOV/05	413.189
531855	NEW JR 1-6	2018/NOV/05	99.139
552837	ZINC 1-7	2018/NOV/05	115.7352
561802	MORE JR	2018/NOV/05	396.4535
586219	FLANK 1	2018/NOV/05	396.4501
1026212	STEALTH	2018/NOV/05	247.6375
		TOTAL AREA	**3,353.88**

The "Good to Date" of November 05th, 2018 assumes that this report and the associated cost statement will be accepted by the BC Mineral Titles Office for assessment credits.

The claims are owned by Pacific Bay Minerals Ltd, Vancouver, BC.

5 LOCATION AND ACCESS

The Haskins-Reed Property is located 59° 18' 36" north latitude and 129° 27' 40" west longitude within BCGS Map Sheets 104P.023, 033 and National Topographic System (NTS) Map Sheet 104P/ 06.

The property is located in northwest British Columbia, 19 kilometres east of the old town site of Cassiar, BC and 104 km north of the village of Dease Lake, BC, (see Figure 2).

Access to the property is via four-wheel drive vehicle departing from Hwy 37 (Stewart Cassiar Hwy) approximately 13 km northeast of the townsite of Jade City. The old Della Mines Access Road then splits off to the north from the access road to Hot Lake which continues on to the west.

Mineral exploration activities can be completed during the summer months, from late May through to October. Drilling operations can be conducted on a year-round basis subject only to adequate provision for snow removal from access roads and water for various work activities. The former Cassiar asbestos mine operated in the district from 1953 until 1992.

PACIFIC BAY MINERALS LTD.

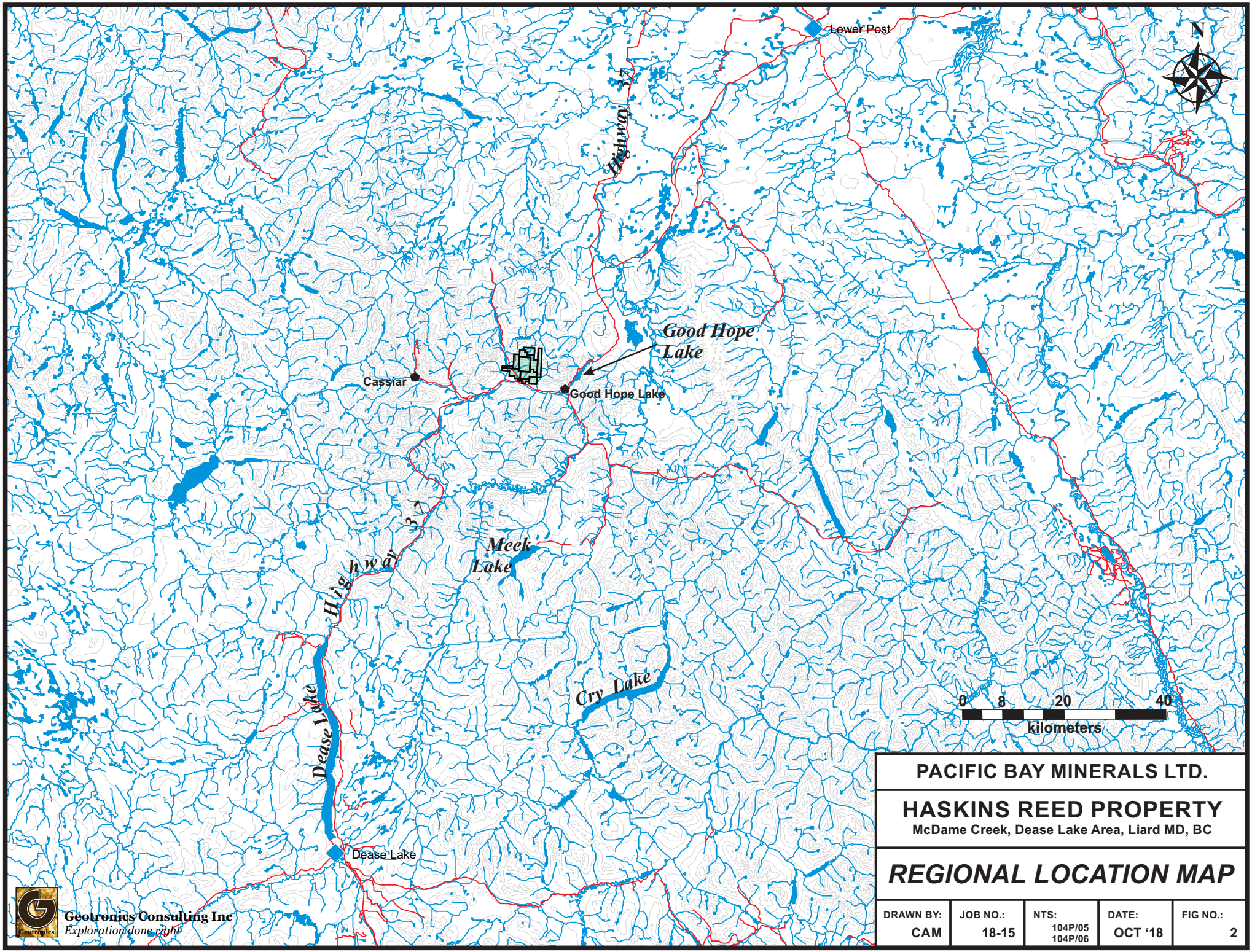
HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

BC LOCATION MAP

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	OCT '18	1

Geotronics Consulting Inc
Exploration done right



PACIFIC BAY MINERALS LTD.

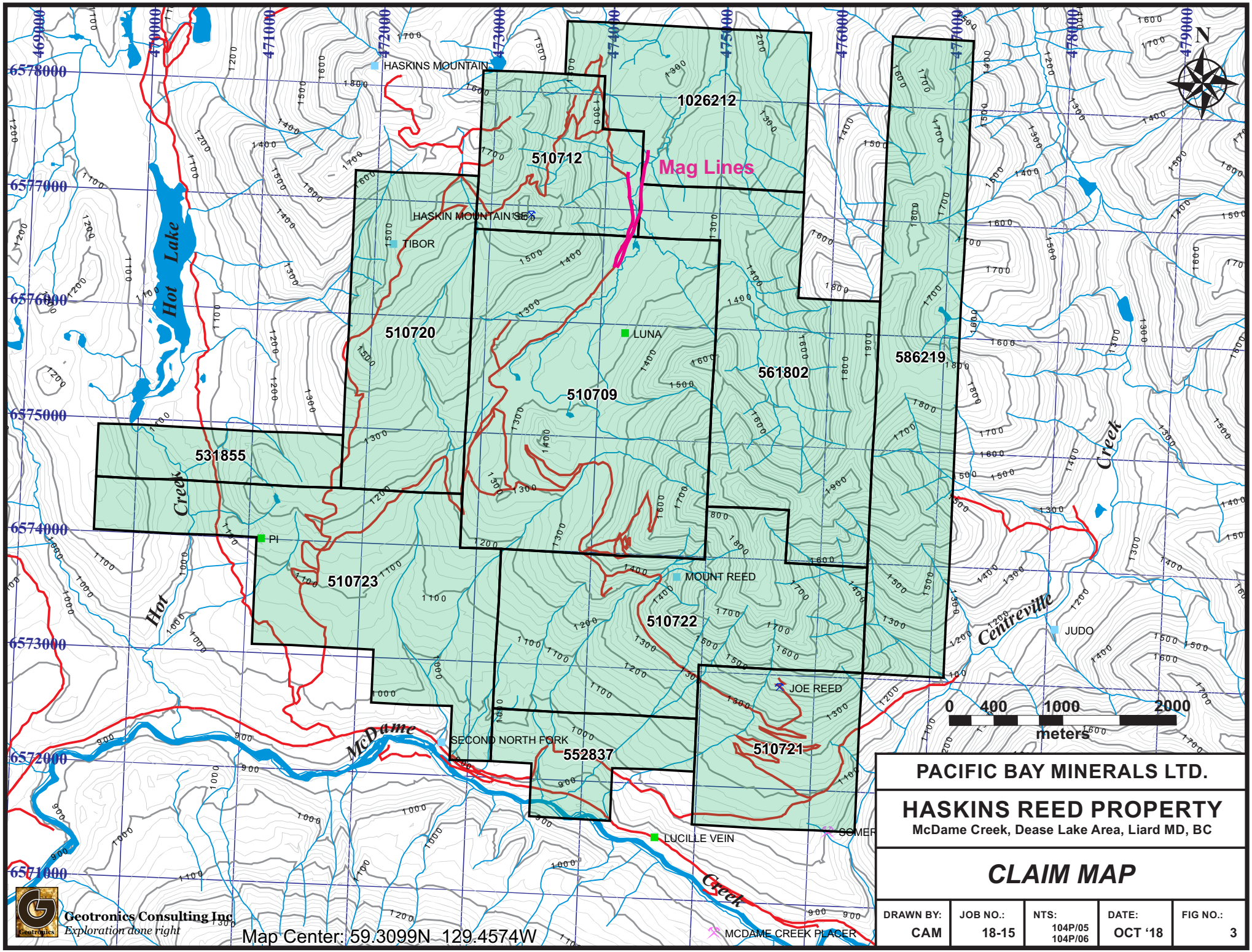
HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

REGIONAL LOCATION MAP

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	OCT '18	2

Geotronics Consulting Inc
Exploration done right



Geotronics Consulting Inc
Exploration done right

Map Center: 59.3099N 129.4574W

PACIFIC BAY MINERALS LTD.

HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

CLAIM MAP

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	OCT '18	3

The open pit mine was located at high elevation and seldom encountered unmanageable operating conditions.

6 PHYSIOGRAPHY

The Property is mostly rugged terrain on both sides of McDame Creek. Elevations range from around 900 m along McDame Creek to in excess of 1,900 metres above sea level at the northwestern part of the property, at the summit of Mt. Haskins. The claims are drained westerly and southwesterly into Hot Lake and Hot Creek; southerly and northerly into McDame Creek; and northeasterly into Poorman Lake and Dennis Creek.

The climate is characterized by short, warm summers and long, cold winters. Underground mining can be conducted year-round. Daily mean temperatures recorded at Jade City range from –20°C in January to +15°C in July. Snowfall between October and May has an average total accumulation of 227 cm. Highest summer temperatures are close to 25° C and winter temperatures may exceptionally reach -50° C. Precipitation, equally in the form of rain in summer and snow in winter, averages 750 mm annually (Environment Canada website). Cloud cover prevails in summer and low hanging fog frequently obscures the mountains.

Vegetation consists of forests of jack pine, lodge pole pine, black spruce, and poplar thinning to buck brush and alpine meadows above tree line at 1,400 to 1,500 metres above sea level. Valley bottoms comprise shallow lakes and swamps with thick, stunted growths of pine and spruce.

7 HISTORY

This is taken from Lesley Hunt's 2014 report who, as noted below, took it from Carpenter's and Gilmour's 2008 report.

The majority of the following Property and area History discussion contained in this report has been sourced from the report titled "Technical Report on the Haskins - Reed Property, Cassiar District, Liard Mining Division, British Columbia", dated August 8, 2008, authored by Thomas Carpenter, B.Sc., PGeo and William R. Gilmour, B.Sc., PGeo. This Technical Report is available on SEDAR.

In 1969, an aeromagnetic survey was flown for Brettland Mines Ltd. over an area that covered much of the same ground as does the present Property. A report by R. Crosby, P. Eng concluded that the survey "revealed magnetic features which are interpreted as indicating major faulting and possible skarn type mineralization" (Assessment Rpt No. 2228).

Demand Gold Ltd. in 1997 completed an extensive program of exploration in the Mount Haskins and Mount Reed areas. That company's work is detailed in AR 25253 and 25254 (available online from the BC MEMPR website) and included prospecting, geological mapping, ground magnetometer surveys and soil geochemical surveys.

The following are summaries of exploration specific to certain showings and prospects.

Mount Reed (Dome)

These showings are located at about 1,100 m elevation on the southwest side of Mount Reed. In 1969, the property was option from J. Reed by Glen Copper Mines Ltd ("Glen Copper") and Brettland Mines Ltd.. Work in 1969 included geological mapping, silt and soil geochemistry, induced polarization and magnetometer surveys. The geochemistry highlighted areas of molybdenum and tungsten mineralization. In late 1969, Pacific Petroleums Ltd optioned a one-third interest in the property. In 1970, geological mapping, magnetometer survey, trenching and a 14-hole 1250 m drilling program was completed. All the options were dropped by 1971.

In 1971, Reed Mines Ltd ("Reed Mines") optioned the property from J. Reed. The property was optioned from Reed Mines by Glen Copper and 4 holes totaling 375 m were drilled.

Canadian Superior Exploration Limited ("Canadian Superior") optioned the property from J. Ashton and A. Macdonald in 1978, and drilled seven holes, totaling 570 m, to determine the extent of skarn mineralization (Harivel, 1978). In 1979, 4 holes totaling 406 m were drilled. In 1980, 867 m were drilled in 7 holes. A report by R. Lasmanis, P. Eng stated that all holes "encountered significant intercepts of tungsten /molybdenum mineralization (AR 8421). The 1981 drilling indicated that the skarn zones lack continuity (Watkins, 1981).

Joe Reed Vein

The first mineral discovery in the immediate area was made in 1937 by Joe Reed who discovered a Pb-Zn-Ag vein on the southwestern flank of Reed Mountain and staked the first claims in the area on what is now known as the Joe Reed Vein (Minfile 104P 021).

In 1955 the Consolidated Mining and Smelting Company ("Cominco") optioned the property and, in 1956, drilled five diamond drill holes for a total of 457 m, testing the Joe Reed Vein to a depth of 60 m and over a strike length of 170 m.

In 1969, the soil geochemical surveys on the Mount Reed extended eastward to cover the area of the Joe Reed. In 1971, three holes totaling 153 metres were drilled by Glenn Copper.

B Zone (Della)

In 1965, United States Smelting, Refining & Mining Company discovered the "Main Zone" on Mount Haskins. This corresponds to the B Zone described in this Report.

In the early 1970s Della Mines Ltd. ("Della") made an attempt to mine this deposit. The company drove two tracked drifts to intersect and crosscut three main zones. Adverse metal prices and changing political climate at the time forced the company to discontinue exploration and development. The claims were held by cash in lieu from the mid-1970s until 1993.

Brett Zone

These showings adjoin the Mount Reed molybdenum-tungsten prospect, and are zinc-rich skarns. In 1980, Canadian Superior encountered zinc-bearing skarns in drilling adjacent to a molybdenum-tungsten zone.

In 1997, Demand Gold carried out a program of reconnaissance prospecting, geological mapping, a magnetometer survey and a soil geochemical survey. Nine drill holes totaling 1,019 m were drilled to test magnetic highs thought to be related to zinc-lead-silver bearing skarns. In three of the holes, zinc zones were encountered.

Diamond drilling was carried out on this zone with six NQ holes with the objective to test for a zinc anomaly that was previously located during the 1997 diamond drilling. The objective was reached in that it extended the Brett Zone along strike to 60 meters and down dip 55 to 60 meters.

Dako

This skarn outcrop showing is located on Tenure 510709. An old adit of unknown age and an old trench are shown by Hodgson (1977). In 1997, a magnetometer survey helped map the extent of the skarn and two holes were drilled by Demand Gold. No significant widths of skarn were intersected.

Placer Mining

Placer gold was first discovered in the McDame area in 1874. The town of Centerville was established during the ensuing gold rush from placer workings on McDame, Snow, Troutline, and Quartzrock Creeks. The district developed into one of British Columbia's major placer camps; most of its production occurred between 1874 and 1895. At that time and until the 1990's, it was the site of the largest nugget discovered in British Columbia, 73 ounces. It came from McDame Creek, just downstream from the Table Mountain Property. Smaller scale placer mining continues today. The total placer gold production from the area up to the early 2000's has been estimated at 108,000 ounces.

Lode Gold Mining

Although placer production in the district was significant, little was done prior to 1933 to locate lode gold deposits. In 1934, the first gold-bearing quartz veins were found in Quartzrock & Troutline Creeks and the first mineral claims were staked. A small exploration rush developed over the next few years as most of the near-surface, gold-bearing veins were discovered. The higher-grade portions of these veins were exploited by small-scale mining over the next forty years. At one point, half-a-dozen abandoned mill sites with capacities of less than 12 tons per day existed in the area.

The two largest gold operations in the area were the Cusac and Erickson mines known as the Table Mountain Mine located 5 km south east of the townsite of Jade City. Another gold mine, the Taurus Gold mine is located 4 km west of the abandoned townsite of Cassiar.

Gold was first discovered in the area in 1934 and immediate staking of the Erickson and Taurus properties followed. Intermittent production of all three gold mines dates back to the sixties and continued with several mill expansions at the Table Mountain mine and new high-grade gold discoveries are recorded up until 1997. A more detailed description of the history of gold discovery, exploration and exploitation in the Cassiar vicinity can be found in the Update Of Technical Report on the Table Mountain Property, Liard Mining District, British Columbia, Prepared for Hawthorne Gold Corp., Prepared by Garth Kirkham, P.Geo., P.Geoph., W. Peter Stokes, P.Eng. and John Fox, P.Eng., Beacon Hill Consultants (1988) Ltd., dated June 1, 2008.

Cassiar Asbestos Deposit

In 1949, a GSC mapping crew first encountered the Cassiar asbestos deposit on McDame Mountain. A small 500 ton per day plant was built and in operation by 1952. The asbestos fibre produced was shipped from Whitehorse in the Yukon and all of the supplies for the mine were brought in along the Alaska Highway to Cassiar. Eventually, Highway 37N was constructed between Stewart and Cassiar, which gave access to supplies from Smithers or Terrace. Chrysotile fibre ore was trucked to Stewart with backhauls of diesel for power and heat. The chrysotile fibre was subsequently shipped from Stewart to markets around the world.

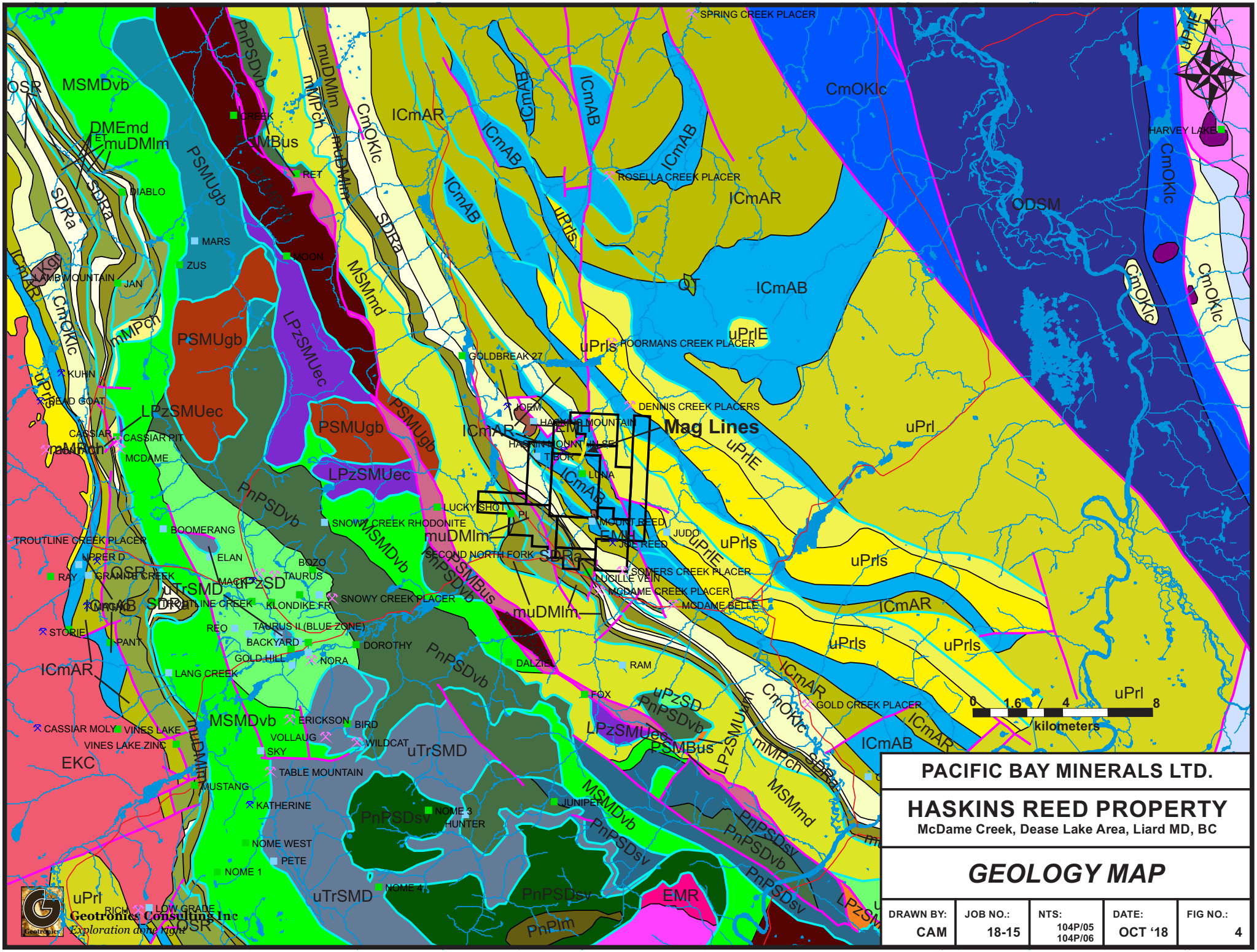
Between 1960 and 1992, Cassiar became the most notable infrastructure north of Stewart and west of Fort Nelson with the exception of Whitehorse. The town was sold off when government loan guarantees were not extended after the transition from open pit to underground operations and the mine was forced to close in February 1992.

8 GEOLOGICAL SETTING

This is taken from Lesley Hunt's 2014 report.

8.1 REGIONAL GEOLOGY

"The property lies within the northern extension of the Omineca lithotectonic domain. Mounts Reed and Haskin are underlain by a northwest trending belt of Cambrian-Ordovician Kechika Group and Lower Cambrian Atan Group sediments (Rosella and Boya Formations) which have been intruded by Eocene granitic stocks of the Cassiar Batholith. The oldest rocks exposed in the region are thick bedded limestone and dolomite with olive green to grey phyllitic partings, belonging to the Espee Formation. In the valley east of Mount Haskin, the Espee Formation outcrops as two limestone bands separated by a forested section which probably masks the phyllitic interval. Exposed on Mount Haskin are the Boya quartzites, Rosella limestones and the Kechika siltstones. The siltstones have been hornfelsed pervasively. The rocks exposed on Mount Reed are the Boya quartzites and Rosella limestones which have been locally skarnified above the quartzite contact. The Rosella Creek Fault structure runs northwesterly on the eastern flank of Mount Reed"(Nelson, J.L., 1993).



PACIFIC BAY MINERALS LTD.

HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

GEOLOGY MAP

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	OCT '18	4

PnPlm — UNNAMED
Pennsylvanian to Permian
limestone, marble, calcareous sedimentary rocks

uPrlS — INGENIKA GROUP - STELKUZ FORMATION
Upper Proterozoic
undivided sedimentary rocks

uPrl — INGENIKA GROUP
Upper Proterozoic
undivided sedimentary rocks

uPrlE — INGENIKA GROUP - ESPEE FORMATION
Upper Proterozoic
limestone, marble calcareous sedimentary rocks

lCmAB — ATAN GROUP - BOYA FORMATION
Lower Cambrian
quartzite, quartz arenite sedimentary rocks

lCmAR — ATAN GROUP - ROSELLA FORMATION
Lower Cambrian
limestone, marble calcareous sedimentary rocks

CmOKlc — KECHIKA GROUP
Cambrian to Ordovician
limestone, slate, siltstone, argillite

ODS — SANDPILE GROUP
Ordovician to Lower Devonian
dolomitic carbonate rocks

ODSM — SANDPILE and McDAME GROUPS
Ordovician to Middle Devonian
dolomitic carboante rocks

OSR — ROAD RIVER GROUP
Ordovician to Silurian
limestone, slate, siltstone, argillite

SDRa — RAMHORN GROUP
Silurian to Lower Devonian
quartzite, quartz arenite sedimentary rocks

muDMlm — McDAME GROUP
Middle Devonian to Upper Devonian
limestone, marble, calcareous sedimentary rocks

DMEmd — EARN GROUP
Upper Devonian to Lower Mississippian
mudstone/laminite fine clastic sedimentary rocks

EMR — RAPID RIVER TECTONITE
Early Mississippian
tonalite intrusive rocks

MSMmd — SLIDE MOUNTAIN COMPLEX
Mississippian
mudstone/laminite fine clastic sedimentary rocks

MSMDvb — SLIDE MOUNTAIN COMPLEX - DIVISION li
Mississippian
basaltic volcanic rocks

mMPch — UNNAMED
Middle Mississippian to Permian
chert, siliceous argillite, siliclastic rocks

PnPSDvb — SLIDE MOUNTAIN COMPLEX - DIVISION li
Pennsylvanian to Permian
basaltic volcanic rocks

PnPSDsv — SLIDE MOUNTAIN COMPLEX - DIVISION li
Pennsylvanian to Permian
marine sedimentary and volcanic rocks

PnPvb — UNNAMED
Pennsylvanian to Permian
basaltic volcanic rocks

PSMUgb — SLIDE MOUNTAIN COMPLEX - ULTRAMAFIC & GABBROIC THRUST SHEET
Permian
gabbroic to doritic intrusiverocks

PSMUec — SLIDE MOUNTAIN COMPLEX - ULTRAMAFIC & GABBROIC THRUST SHEET
Permian
eclogite/mantle tetonite

PSMBus — SLIDE MOUNTAIN COMPLEX - BLUE DOME FAULT ZONE
Permian
serpentinite ultramafic rocks

PSMBUdi — SLIDE MOUNTAIN COMPLEX - BLUE DOME FAULT ZONE
Permian
diabase, basaltic intrusive rocks

uPzSD — SLIDE MOUNTAIN COMPLEX - DIVISION li
Upper Paleozoic
basaltic volcanic rocks

LPzSMUec — SLIDE MOUNTAIN COMPLEX - ULTRAMAFIC & GABBROIC THRUST SHEETS
Late Paleozoic
eclogite/mantle tectonite

LPzSMUum — SLIDE MOUNTAIN COMPLEX - ULTRAMAFIC & GABBROIC THRUST SHEETS
Late Paleozoic
ultramafic rocks

uTrSMD — SLIDE MOUNTAIN COMPLEX - DIVISION li
Upper Triassic
limestone, slate, siltstone, argillite

EKC — CASSIAR BATHOLITH
Early Cretaceous
granite, alkali feldspar granite intrusive rocks

LKgr — UNNAMED
Late Cretaceous
granite, alkali feldspar granite intrusive rocks

EMH — HART PLUTON
Eocene
granite, alkali feldspar granite intrusive rocks

QT — TUYA FORMATION
Pleistocene to Holocene
bimodal volcanic rocks

Contact

Fault

Thrust

MinFile Symbols

- showing
- prospect
- past producer

Geotronics Consulting Inc
Exploration done right

PACIFIC BAY MINERALS LTD.

HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

GEOLOGY LEGEND

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	OCT '18	4a

There are two components of the regional geology of the area. The autochthonous Cassiar Platform rocks, and the later intrusive stocks belonging to the Cassiar Batholith (Figure 5).

Shallow dipping thrust faults which imbricate the sequence are likely early and related to easterly directed, syn-accretionary thrust development during Mesozoic emplacement of the Sylvester Allochthon onto the siliclastic strata of the Cassiar Platform Terrane (Nelson and Bradford, 1993).

The Cassiar Platform autochthonous rocks underlie the Sylvester Allochthon, and comprise rocks ranging in age from Hadrynian to Early Mississippian. The autochthonous rocks are seen as north northwest striking, steeply east dipping sequences of metasediments and sediments, ranging in width from 100m to 1,000m with a few mostly sinistral offsetting faults.

The Cassiar Batholith granitic and granodioritic rocks of Middle to Late Cretaceous age intrude the Cassiar Platform rocks. The Cassiar batholith is dominated by muscovite - biotite granite and biotite ± muscovite granodiorite along with subordinate biotite ± hornblende granodiorite, quartz monzodiorite, and quartz monzonite (Driver et al, 2000). Megacrystic feldspar is seen throughout the intrusive rocks as well as local clusters and disseminations of magnetite.

A major dextral Kechika fault system lies to the east of Midway – Cassiar area. It is related to the prominent crustal structure - the Tintina Fault - that accounts for the major displacement of the continental margin. The Selwyn basin was dissected by it and the western part (Cassiar Terrane) was moved 450 km north from its original position. The dextral displacement took place during the Cretaceous-Tertiary.

8.2 PROPERTY GEOLOGY

Approximately 75% of the property is covered by forest and scrub vegetation. Outcrop accounts for approximately 20% of the claimed area and occurs primarily in isolated exposures on hillsides, ridges and along road cuts.

8.2.1 Lithology

Geological mapping has identified the primary lithologies underlying the claims area as a package of Atan Group sediments composed of interbedded quartzite with phyllite and limestone with dolostone. The bedrock geology on the present tenures 510709 and 510712, consists of northwest to northerly striking, moderately to steeply southwest dipping Atan Group sediments.

“The Lower Cambrian Rosella Formation consists of thin to thick bedded limestone with recessive slatey/muddy interbeds. The limestone is partly replaced by orange-weathered, coarse secondary dolomite. The Rosella limestone ranges from 200m to 700m thick and rests conformably on the Boya Formation.

The Boya Formation occurs as rubbly subcrop of a siliclastic sequence consisting predominantly of quartzite with interbedded slate and siltstone. The Boya Formation probably represents a shallow marine fan-top facies evidenced by crossbedding in sandstones found in float" (Nelson, J.L. 1993).

Within present Tenure 510709 a blind or "cryptic" granitic intrusion was located by drilling done between 1968- 1972. "This granitic intrusion is dated from early to middle Eocene and is composed of 3 facies; a coarse granite, a fine granite and an aplitic facies. The granite stock is a coarse grained quartz and alkali-feldspar megacrystic monzogranite. It contains 30% quartz, 1-3% biotite and equal portions of K-feldspar and plagioclase. Xenoliths of aplite, cut by quartz veins, are found within the main granitic stock and, coarse granitic dykes cut the aplite facies which indicates that the aplitic rocks were emplaced prior to granitic intrusion. It has been determined, through past study, that the mineralization within the claim block is mostly related to the aplitic intrusive stage." (Nelson, J.L. 1993).

8.2.2 Structure

"The general attitude of the stratigraphic sequences is to the northwest with moderate to steep dips to the southwest. The faults on the property follow two dominant trends. The first are northwest trending faults paralleling the stratigraphy and the long axis of the Mount Reed intrusion. Secondly, a series of faults trending northeast cut the northwesterly trending faults. The northeasterly trending faults are a controlling factor on the extent of skarn development and Ag-Pb-Zn bearing veins." (Nelson, J.L. 1993).

8.2.3 Alteration and Mineralization

There are four types of mineralization associated with the granitic intrusion:

1.) Massive sulphide (pyrrhotite, sphalerite, chalcopyrite and galena) skarn / replacement beds and lenses in carbonate rocks (example, B Zone).

2.) Molybdenum tungsten and sphalerite in hornfels and skarns (Mount Reed).

3.) Molybdenum and pyrite with quartz stockwork in southeast portion of the Mount Reed intrusion (Mount Reed).

4.) Silver-rich, sphalerite-galena-pyrite vein mineralization occurs in 3 to 6 m wide north-trending shear (Joe Reed Vein).

"The patterns of mineralization and alteration at Mounts Reed and Haskin are related to the emplacement of two separate pulses of granitoid magmas that created complex adjacent hydrothermal systems. The metamorphic minerals formed in the Rosella carbonates include tremolite, actinolite and diopside. The intensity of metamorphism, especially around Mount Haskin, suggests the presence of a larger intrusion at depth. The exact age relationships between the two episodes of intrusion and development of the exoskarns are unclear. Evidence from previous drilling shows that the exoskarn

system was cut by the granitic stock underlying the west flank of Mount Reed thus suggesting that the monzogranite emplacement post-dated the main stage skarn development. It is possible that the main stage exoskarns were associated with earlier aplitic intrusions.

The temporal relationship of the base metal skarn and the vein hosted sulphide mineralization is unknown; however, by analogy from other areas, they most likely both formed late and peripherally within the hydrothermal systems in the area." (Nelson, J.L., 1993).

The Mount Reed molybdenum and tungsten prospect, (Minfile 104P06 043), located 5 km southeast of Mount Haskins, has characteristics similar to those of the Joem prospect. Like the latter, Mount Reed has been explored by extensive drilling. A small porphyritic granitic intrusion of Eocene age emplaced in Atan Group sedimentary strata has a peripheral shell of mixed metacarbonate skarn that carries elevated values in molybdenum and tungsten. Skarn types include pyrrhotite-garnet, epidote-diopside-garnet, andradite-wollastonite, garnet-epidote - magnetite and magnetite-epidote. Although most of the molybdenum and tungsten mineralization is associated with skarn, there is some porphyry style mineralization within the intrusive rocks. On a Property scale, molybdenum and tungsten soil geochemistry delineates the area of the intrusive and surrounding hornfels and skarns. The cause of the IP chargeability anomaly to the west of most of the drilling is not known.

The Joe Reed Vein, located on Tenure 510721, has been traced by trenching and drilling over about 80 m. Soil geochemistry shows silver, lead and zinc anomalies up slope and down slope of the area of drilling. The soils also indicate a possible parallel zone about 500 m to the west.

The B Zone, located on Tenure 510712, has been traced on surface for 700 metres and comprises skarn with sulphides and magnetite. The underground development and drilling indicate the B Zone has strong vertical continuity and, by extrapolation, that somewhat similar configurations may apply to other skarn-type occurrences. Syenite dykes stemming from the intrusive, found within the main zones, were postulated by geologists in1969 to have been the source of mineralization.

Other base metal skarn showings are the Brett, Dako and Cobra, which follow a northwest trend from the Mount Reed zone. The C Zone is located between the Cobra and the B Zone. The skarn development appears to be strongly controlled by stratigraphy; this is, within carbonate units along the contact of other sedimentary units. The repetition of the stratigraphy is due to thrust faulting.

9 MAGNETIC SURVEY

9.1 INSTRUMENTATION

The magnetic survey was carried out with a model G-856 proton precession magnetometer manufactured by Geometrics of San Jose, California. This instrument

reads out directly in nanoTeslas (nT) to an accuracy of ±0.1 nT, over a range of 0 - 65,535 cps. The operating temperature range is -20° to +50° C. It's memory stores more than 5,000 readings in survey mode keeping track of time, date, station number, line number, magnetic field reading, and quality of the magnetic field reading. In base station mode the magnetometer stores up to 12,000 readings which is more than survey mode due to not storing time of recording designated by sample interval.

9.2 THEORY

Only two commonly occurring minerals are strongly magnetic, magnetite and pyrrhotite and therefore magnetic surveys are used to detect the presence of these minerals in varying concentrations, as follows:

- Magnetite and pyrrhotite may occur with economic mineralization on a specific property and therefore a magnetic survey may be used to locate this mineralization.
- Different rock types have different background amounts of magnetite (and pyrrhotite in some rare cases) and thus a magnetic survey can be used to map lithology. Generally, the more basic a rock-type, the more magnetite it may contain, though this is not always the case. In mapping lithology, not only is the amount of magnetite important, but also the way it may occur. For example, young basic rocks are often characterized by thumbprint-type magnetic highs and lows.
- Magnetic surveys can also be used in mapping geologic structure. For example, the action of faults and shear zones will often chemically alter magnetite and thus these will show up as lineal-shaped lows. Or, sometimes lineal-shaped highs or a lineation of highs will be reflecting a fault since a magnetite-containing magmatic fluid has intruded along a zone of weakness, being the fault.

9.3 SURVEY PROCEDURE

The magnetic readings were taken along two northerly-trending lines about 600 meters north of the Luna Showing, as shown on the claim map, fig 3. The line spacing averaged 100 meters separation within the northern part of the survey, and 40 meters separation within the southern part of the survey. The readings were taken, on average, every 15 meters and were written into a field book along with the GPS location of each reading.

The diurnal variation was not monitored in the field but in examining the data, this was not of concern.

9.4 COMPILATION OF DATA

The GPS location data and magnetic data were input into a computer. Using Geosoft software, the data was next plotted onto three plan maps described as follows:

1. GP-1 is the location of the survey lines onto a satellite image of the survey area.
2. GP-2 is a coloured contour plot onto a survey plan map with 56,950 nT subtracted from each posted value and the contouring at an interval of 50 nT.
3. GP-3 is a profile of the magnetic data onto a second plan map

10 DISCUSSION OF RESULTS

The magnetic survey, as shown on the profile and contour plan maps, shows a magnetic field that has a relatively low range of 205 nT varying from 57,056 nT within the northern part of the survey area to 56,859 nT within the southern part. The geology map shows the survey area to be entirely underlain by sedimentary rock types which explains the low range. It would appear, therefore, that the magnetic survey did not encounter the airborne magnetic high.

Three magnetic lineations of magnetic lows have been drawn on the contour plan map. Magnetic lows often occur along geologic structure such as faults and shear zones and these are important for the placement of mineralization. Therefore, these type of lineations are indicative of faults and/or shear zones. However, the case for these lineations actually occurring is limited since there are only two survey lines.

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12 GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Surrey, in the Province of British Columbia, do hereby certify that:

I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

I am a Consulting Geophysicist of Geotronics Consulting Inc., with offices at 6204 – 125th Street, Surrey, British Columbia.

I further certify that:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.
2. I have been practicing my profession for the past 50 years and have been active in the mining industry for the past 53 years.
3. This report is compiled from data obtained from a magnetic survey carried out within the period of August 21st, to September 30th, 2017 within the northern part of the Haskins Reed Property by a field technician under my direction.
4. I do not hold any interest in Pacific Bay Minerals Ltd. nor in any of its properties, nor do I expect to receive any interest in as a result of writing this report.

David G. Mark, P.Geo. November 22, 2018
Geophysicist

13 AFFIDAVIT OF EXPENSES

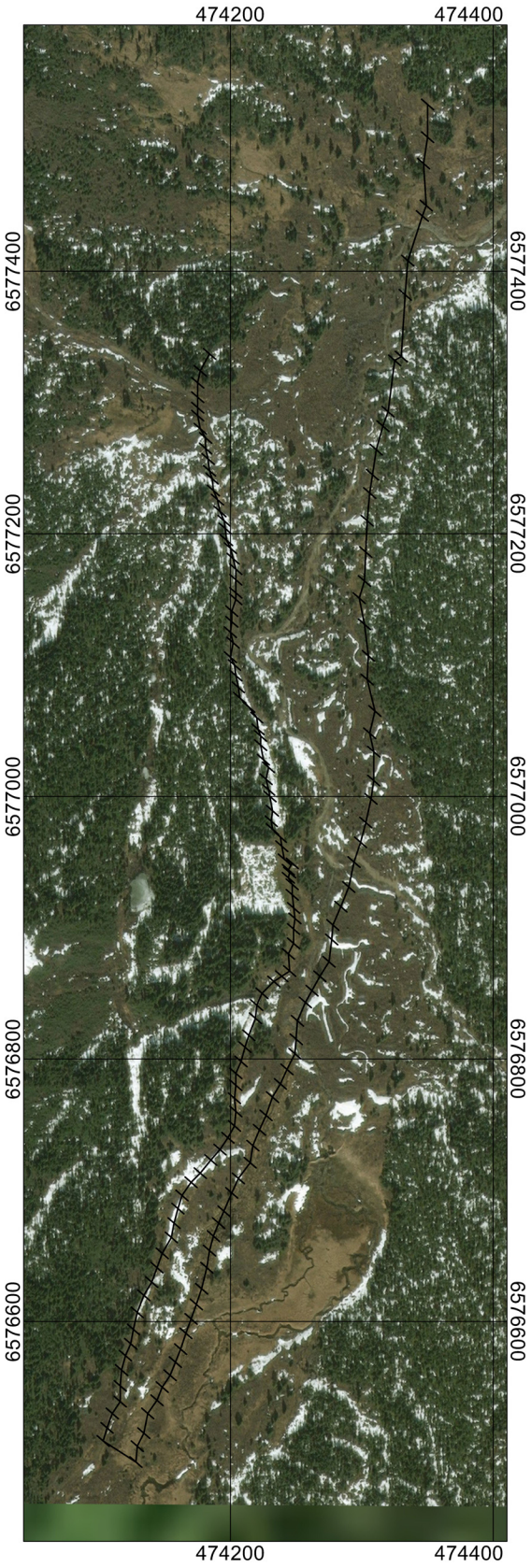
The magnetic survey was carried out within the northern part of the Haskins Reed Property, which occurs on the north side of McDame Creek, located 19 km east of the abandoned town of Cassiar, B.C, and 104 km north-northeast of the village of Dease Lake, during the period of August 21st to September 30th, 2017, to the value of the following:

MOB/DEMOB:		
Travel of crew to property, return, on per rata basis	$900.00	
Senior geophysicist, 5 hours @ $100/hour	$500.00	
Shipment of magnetometer to Watson Lake, return	$350.00	
TOTAL	$1,750.00	$1,750.00
FIELD:		
Rental of magnetometer, 1 week@ $700/week	$700.00	
Magnetic survey, 2 days @ $900/day	$1,800.00	
ATV rental, 3 days@$120/day	$360.00	
TOTAL	$2,860.00	$2,860.00
REPORT and DATA REDUCTION:		
Geophysical technician, 29 hours @$75/hour	$2,175.00	
Senior geophysicist, 22 hours @$100/hour	$2,100.00	
TOTAL	$4,275.00	$4,275.00
GRAND TOTAL		**$8,885.00**

Respectfully submitted,
Geotronics Consulting Inc.

David G. Mark, P.Geo,
Geophysicist

November 22, 2018



Survey Date:
2018

Instrumentation:
GEM Systems Model GSM-19;
Proton Precession Magnetometer

Base:
56,950 nT (this value has been subtracted from each reading)

Contour Interval:
50 nT

100 0 100 200
(meters)

NAD83 / UTM zone 9N

PACIFIC BAY MINERALS LTD.

HASKIN'S REED PROPERTY

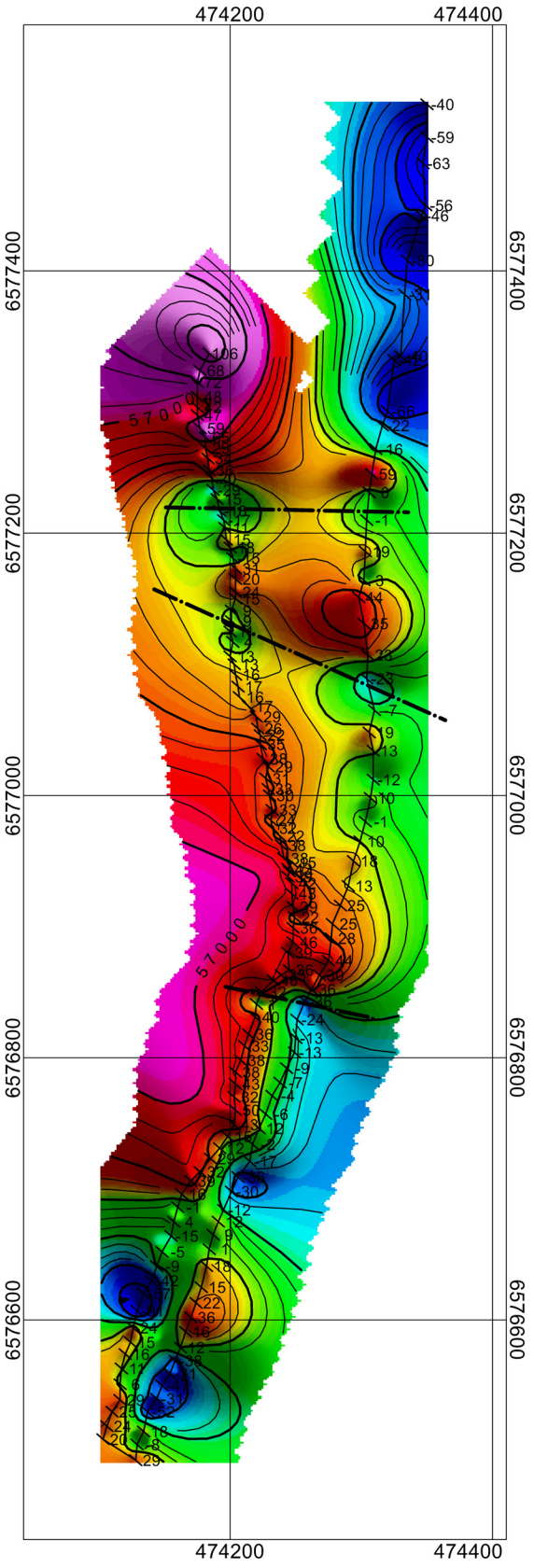
McDame Creek, Dease Lake Area, Liard MD, BC

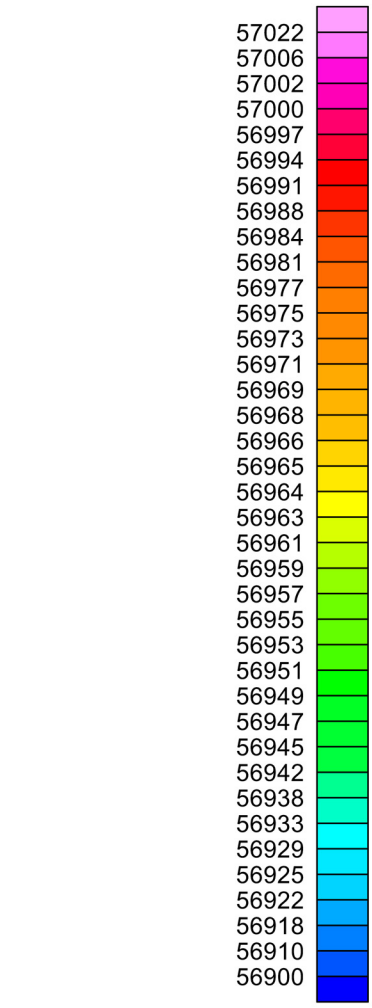
MAGNETIC SURVEY

SATELLITE PLAN

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	NOV 18	GP-1

Geotronics Consulting Inc
Exploration done right





Survey Date:
August and September, 2017

Instrumentation:
Geometrics, Model G-856
Proton Precession Magnetometer

Base:
56,950 nT (this value has been subtracted from each reading)

Contour Interval:
50 nT

Magnetic lineation of lows suggestive of geologic structure

100 0 100 200
(meters)

NAD83 / UTM zone 9N

Geotronics Consulting Inc
Geophysics done right

PACIFIC BAY MINERALS LTD.

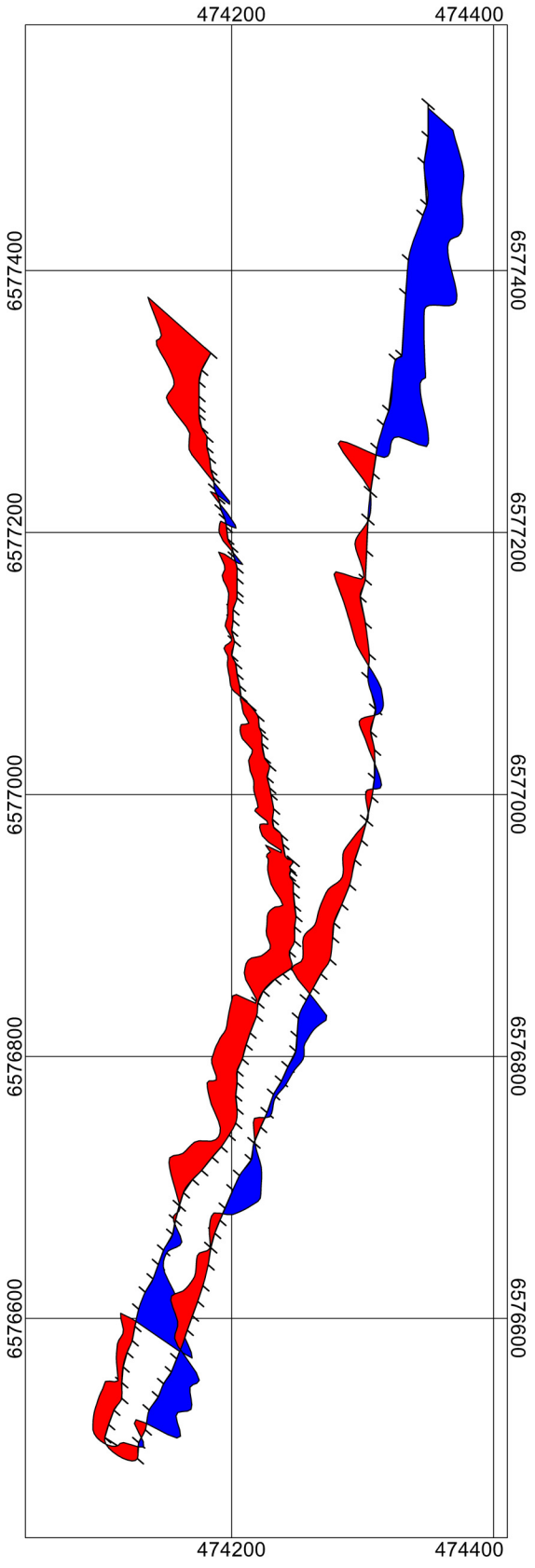
HASKINS REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

MAGNETIC SURVEY

CONTOUR PLAN

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	NOV 18	GP-2



Positive
Negative

Survey Date:
2018

Instrumentation:
GEM Systems Model GSM-19;
Proton Precession Magnetometer

Base:
56,950 nT (this value has been subtracted from each reading)

Contour Interval:
50 nT

100 0 100 200
(meters)
NAD83 / UTM zone 9N

Geotronics Consulting Inc
Exploration done right

PACIFIC BAY MINERALS LTD.

HASKIN'S REED PROPERTY

McDame Creek, Dease Lake Area, Liard MD, BC

MAGNETIC SURVEY

PROFILE PLAN

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
CAM	18-15	104P/05 104P/06	NOV 18	GP-3