ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Reliance Gold Project, Assessment Report for 2020 Airborne Geophysical Survey

TOTAL COST: $26,404

AUTHOR(S): **Darren O'Brien, P.Geo**
SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): **MX-4-748 / October 22, 2020**
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): **5832219 / March 24, 2021**

YEAR OF WORK: **2020**

PROPERTY NAME: **Reliance Gold**

CLAIM NAME(S) (on which work was done):

1063230, 1064613, 1071257, 1075797, 1061787

COMMODITIES SOUGHT: **Gold**

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: **092JNE191 / 092JNE033 / 092JNE136**

MINING DIVISION: **Lillooet**
NTS / BCGS: **092J15W / 092J087**
LATITUDE: _______**50° 52' 00"**
LONGITUDE: _____**122° 47' 00"** (at centre of work)
UTM Zone: **515,900 EASTING: 5,634,700 NORTHING**:

OWNER(S):
137790 SIMPSON, ANA RUTH (50%)
116838 MARK, DAVID GEORGE (50%)
174334 ENDURANCE GOLD CORPORATION (100%)

MAILING ADDRESS:
Suite 520 – 800 West Pender Street
Vancouver, BC V6C 2V6

OPERATOR(S) [who paid for the work]: **Endurance Gold Corporation (147334)**

MAILING ADDRESS:
Suite 520 – 800 West Pender Street
Vancouver, BC V6C 2V6

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)
Bridge River Group; Intermontane Belt; Basalt; Argillite; Chert; Stibnite; Arsenopyrite; Sulphide; Pyrite; Calcite; Ankerite; Quartz; Gold; Shear; Vein; Orogenic

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:
1933-271; 1935-F56; 1936-F8; 1945-A88; 3276, 3548, 9744, 12276, 12812, 14019, 27561, 28362, 29460, 30524, 38797

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			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne	248.5 line-km 22.3 km^2	1063230, 1064613, 1071257, 1075797, 1061787	$26,404
GEOCHEMICAL (number of samples analysed for …)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		TOTAL COST	$26,404

BRITISH COLUMBIA

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Mineral Titles Online

Mineral Claim Exploration and Development Work/Expiry Date Change

Confirmation

Recorder:	ENDURANCE GOLD CORPORATION (147334)	**Submitter:**	ENDURANCE GOLD CORPORATION (147334)
Recorded:	2021/MAR/24	**Effective:**	2021/MAR/24
D/E Date:	2021/MAR/24		

Confirmation

If you have not yet submitted your report for this work program, your technical work report is due in 90 days. The Exploration and Development Work/Expiry Date Change event number is required with your report submission. **Please attach a copy of this confirmation page to your report.** Contact Mineral Titles Branch for more information.

Event Number: **5832219**

Work Type: Technical Work
Technical Items: Geophysical, PAC Withdrawal (up to 30% of technical work required)

Work Start Date: 2020/JUN/01
Work Stop Date: 2020/JUN/05
Total Value of Work: $ 26404.00
Mine Permit No:

Summary of the work value:

Title Number	Claim Name	Issue Date	Good To Date	New Good To Date	# of Days For-ward	Area in Ha	Applied Work Value	Sub-mission Fee
1071257	TRUAX	2019/SEP/23	2020/SEP/23	2028/feb/01	2687	204.07	$ 17786.62	$ 0.00
1075797	TRUAX 2	2020/APR/19	2021/APR/19	2028/feb/01	2479	224.38	$ 16993.90	$ 0.00

Financial Summary:

Total applied work value: $ 34780.52

PAC name: Endurance Gold Corporation
Debited PAC amount: $ 8376.52
Credited PAC amount: $ 0

Total Submission Fees: $ 0.0

Total Paid: **$ 0.0**

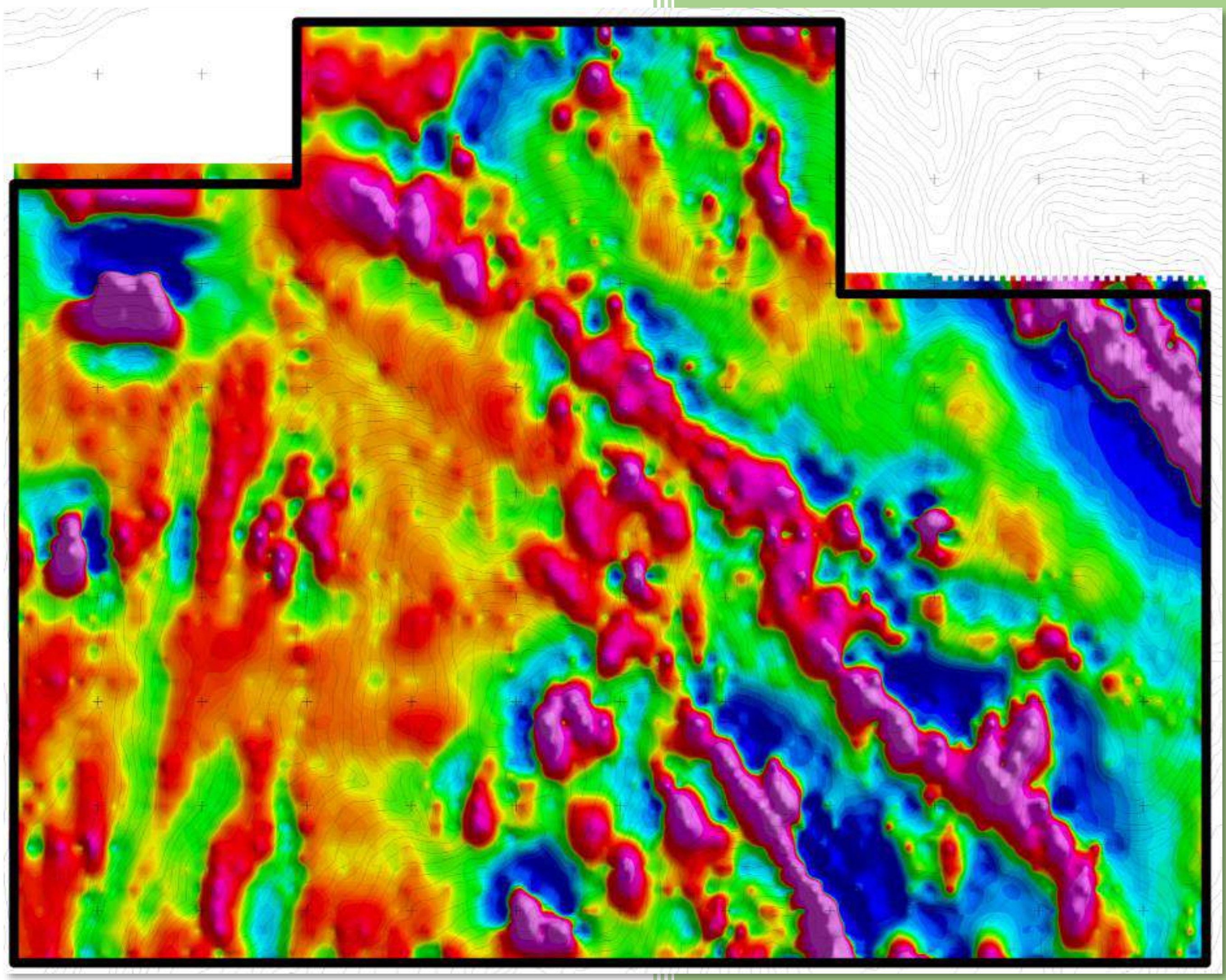
Please print this page for your records.

The event was successfully saved.

Click here to return to the Main Menu.

2020

Reliance Gold Project, British Columbia, Canada Assessment Report for 2020 Airborne Geophysical Survey



NTS Mapsheet: 092J15
50° 52‟ N Latitude / 122° 47‟ W Longitude

Report for:
Endurance Gold Corporation

Author: Darren O'Brien, P.Geo
O'Brien Geological Consulting Inc.

Dated: June 4, 2021

Contents

Figures

Tables

Appendix

Appendix 1 Airborne Geophysical Survey Report by Precision GeoSurveys Inc.

Appendix 2 Airborne Geophysical Maps 1:15,000 (Plates 1 to 6)

1 Introduction

In 2020, Endurance Gold Corporation contracted Precision GeoSurveys Inc. of Langley, British Columbia to conduct a helicopter-borne aeromagnetic survey over its Reliance Project. The Reliance Project consists of two contiguous claim blocks with five mineral claims. The Reliance Claim Block consists of claims 1063230, 1064613, and 1061787; while the Truax Claim Block consists of claims 1071257and 1075797. Endurance Gold has the option to acquire 100% of the claims from the underlying owner.

The geophysical survey was flown between the dates June 1st and 5th, 2020 and consisted of 248.5 line-km flown at 100 metre line spacing with a average ground clearance of 42.8 metres.

2 Property Description and Location

2.1 Property Location / Physiography / Access / Infrastructure

The Reliance Gold Project is located 4 km east of the village of Gold Bridge, BC in the Bridge River valley on the south side of the Carpenter Lake Reservoir (Figure 1). The Project covers the northern slope of NW3 Peak of the Truax Mountain Range. Geographical coordinates for the centre of the Project are 50° 52‟ north latitude, and 122° 47‟ west longitude. The 1:50k NTS map index is 092J/15, and the 1:20k BCGS index is 092J.087. The camp laydown area at the outlet of McDonald Creek is located at 514,615m E / 5,636,465m N (NAD83 Zone 10N).

Road access from Gold Bridge to the Reliance Property is by the Greyrock Forest Service Road on the east side of the Bridge River valley. Access on to the property is at the 4 km marker sign where a series of logging roads and bush roads provide four wheel drive access the northern part of the property. The southern half of the property and the alpine has ATV access via bush trails.

Gold Bridge is a 100 km drive on all season road (Highway 40) from Lillooet, BC where there is access to the provincial highway system as well as the CN rail line. Alternate all season access to the south is via the Seton Portage road from the Terzaghi Dam 55 km east of Gold Bridge to Pemberton. Late spring to early fall seasonal road access to Pemberton is possible via the Hurley Forest Service Road. All roads in the region cross through very steep country which is subject to avalanches, landslides and washouts, particularly in the spring resulting in road closures. Pemberton to Vancouver is a 150 km drive via Highway 99. Lillooet to Vancouver is a 250 km drive via Highway 99, or a 320 km drive via Highway 1 and the Fraser River canyon.

There are limited facilities in the nearby communities of Gold Bridge and Bralorne. Both villages have populations of less than 100 residents. Facilities include small hotels, two restaurants, a self-serve gas bar, a small grocery story, a post office, and an elementary school. There is no cell phone service but Internet service is available. The nearest power and water sources are 4 km from the property at Gold Bridge. Lillooet and Pemberton are larger towns and can provide services to operate an exploration project.

The climate is moderately dry as the property is located in a rain shadow area of the Coast Mountain range. Summer daily maximum temperatures can be around 25°C. Precipitation increases in the winter and daily average highs are typically around 0°C. Snow cover accumulates from early November and typically lasts until early May. Snow accumulation varies greatly depending on elevation. Advanced exploration activities such a diamond drilling can be operated on a year round basis.

Topography varies from 650 metres at the Carpenter Lake Reservoir, to 2590 metres at the south end of the property along the slope of Truax Mountain. The highest of the Truax Mountain peaks is 2880 metres which is located off the property. Main drainages on the property include McDonald, Steep, and Camp Creeks. All drainages flow into the Bridge River and ultimately into the Carpenter Lake Reservoir.

Vegetation below 1500 metre elevation consists of Black Spruce, Douglas Fir, Lodgepole Pine, aspen, vine maple, willow and birch trees with soapberries, wild raspberries, thimbleberry, oregon grape, rose and various grasses. Cottonwood and Devils Club are evident along Steep Creek. Historic and recent logging has occurred at lower elevations where a private woodlot is registered. Open alpine is above 1500 metre elevation.

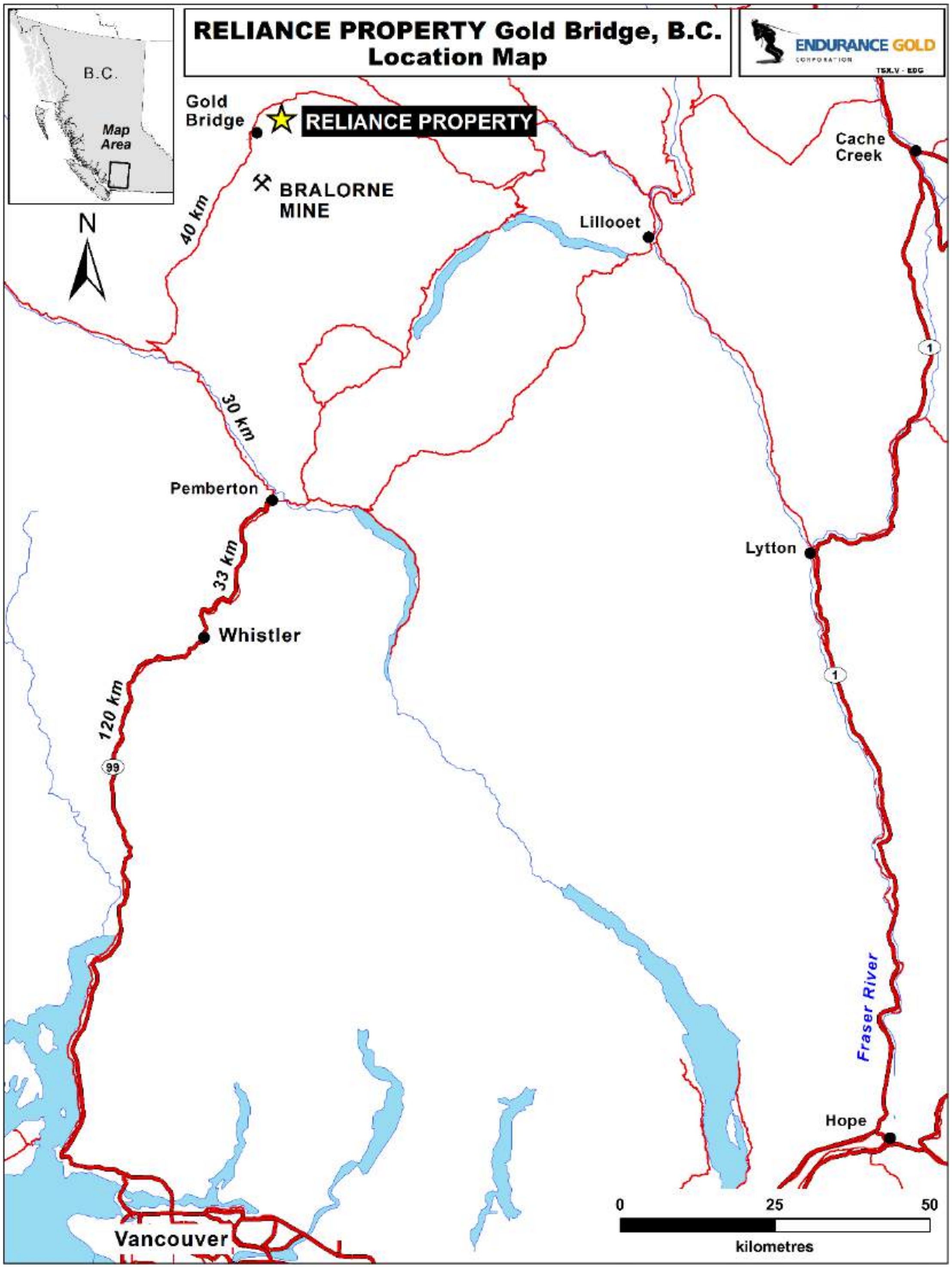


FIGURE 1 LOCATION MAP OF THE RELIANCE GOLD PROJECT

2.2 Tenure

The Reliance Gold Property consists of five Mineral Titles Online "MTO cell" claims in two non-contiguous blocks. The western block ("Reliance") consists of three claims for approximately 694 hectares. The eastern block ("Truax") consists of two claims for approximately 428 hectares. The Reliance block overlaps the historic crown grants that have all reverted to the crown.

Claim status for any legacy and cell claims was searched on the BC Mineral Titles Online (MTO) website and is provided in Table 1. All claims are indicated to be in good standing until at least July 14, 2021, but under the Order of the Chief Gold Commissioner (dated March 27, 2020), the expiration date of all mineral and placer claims has been extended to December 31, 2021 due to COVID-19 restrictions.

Claim ownership is reported to be 50% by client 116838 David George Mark, and 50% by client 137790 Ana Ruth Simpson, or 100% by client 147334 Endurance Gold Corporation. Endurance Gold is the operator of the project and has the option to acquire 100% ownership in all claims.

Claims shapefiles used to create Figure 2 were downloaded from the DataBC website (https://data.gov.bc.ca/).

TABLE 1 RELIANCE GOLD MINERAL CLAIMS

Title Number	Claim Name	Owner	Title Type	Located	Map Number	Issue Date	Good to Date	Area (ha)
1063230	RELIANCE	116838 (50%) 137790 (50%)	Mineral Claim	MTO Cell	092J	2018/SEP/21	2025/MAY/02	183.54
1064613	RELIANCE 2	116838 (50%) 137790 (50%)	Mineral Claim	MTO Cell	092J	2018/NOV/21	2023/MAR/09	489.58
1071257	TRUAX	116838 (50%) 137790 (50%)	Mineral Claim	MTO Cell	092J	2019/SEP/23	2028/FEB/01	204.07
1075797	TRUAX 2	116838 (50%) 137790 (50%)	Mineral Claim	MTO Cell	092J	2020/APR/19	2028/FEB/01	224.38
1061787		147334 (100%)	Mineral Claim	MTO Cell	092J	2018/JUL/14	2021/JUL/14	20.39

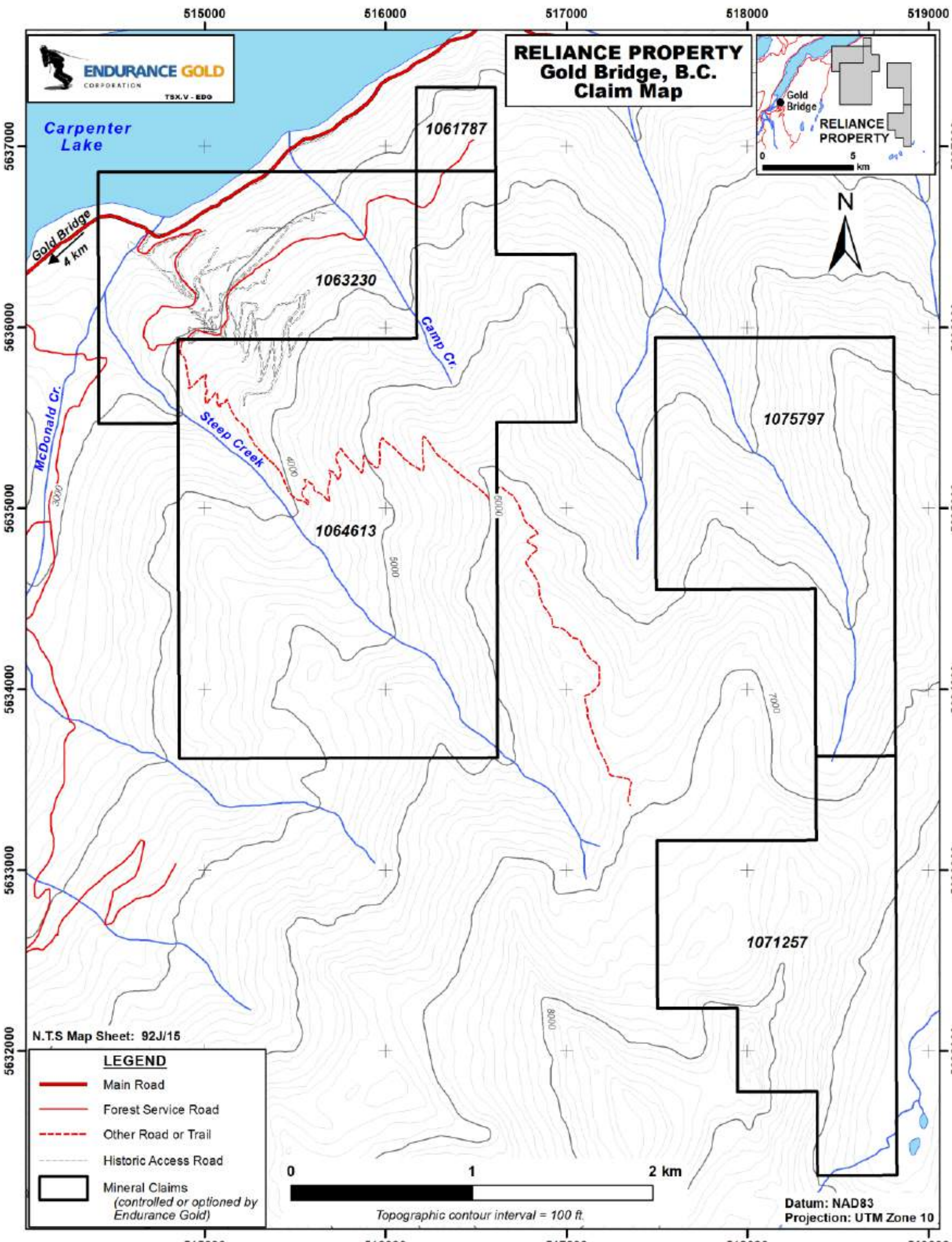


FIGURE 2 RELIANCE GOLD - MINERAL CLAIM MAP

The five “MTO cell” claims and are located online by Universal Transverse Mercator map projection coordinates (UTM NAD83 Zone 10) for the northeast corner of each cell unit. The MTO cell claims require annual exploration and development work which must be registered within one year of the work being completed. The required work value is dependent upon the age of the mineral claims and increases as per the schedule below:

First and second anniversary years	$5.00 per hectare per year
Third and fourth anniversary years	$10.00 per hectare per year
Fifth and sixth anniversary year	$15.00 per hectare per year
Subsequent anniversary years	$20.00 per hectare per year

Mineral claims allow the holder certain rights to exploitation of subsurface minerals only, and no rights to surface commodities are implied by the Province of British Columbia.

3 Exploration History

3.1 Early History (MINFILE 092JNE033)

The early property consisted of 19 now-reverted Crown-granted mineral claims and fractions including the Nemo, Omen and Eros claim groups. Its history was noted by Cairnes (1943): "*The Reliance is one of the older properties and has been known from the beginning as an antimony prospect. The original group of four claims was staked in 1910 by Mr. F.A. Brewer, who relocated the property in 1915. By September 1915, it is reported, four tons of ore had been bagged for shipment, and the richest carried up to 1/2 ounce in gold a ton (17 grams per tonne gold).*" In 1917 there was a shipment of hand-cobbed gold-bearing stibnite but no further records are available for this period.

The property was reorganized by Reliance Gold Mines Limited in 1933 and development work continued until 1937 (O'Grady 1937a). This included underground work on several adits and installation of a compressor plant. The mine workings comprised the old Reliance adit (elevation 1100 m) on the Nemo 7 Crown-granted claim, the Fergusson adit (elevation 1023 m) also on Nemo 7, the Turner adit (elevation 830 m) on Omen 1, the River adit (elevation 663 m) on Omen 2, and the Senator adit (elevation about 790 m) on Nemo 1. Short intervals of stibnite mineralization in narrow quartz veins were encountered in the adits.

In 1971, Tri-Con Exploration Surveys Limited, on behalf of T.V.I. Mining Limited, conducted a program of geological mapping, detailed reconnaissance soil sampling, and electromagnetic surveying in an attempt to determine the limits of the known antimony mineralization. Some 197 soil samples, 19 chip and channel samples, and 34 rock grab samples were collected. All samples were analyzed for antimony and arsenic, while some of the chip, channel and rock samples were also analyzed for gold, copper and zinc. Several electromagnetic conductors were identified and a prominent southeast trending, coincident arsenic-antimony geochemical anomaly was identified near the Senator workings on the west part of the property. There are no records of any follow up investigation at that time.

3.2 Menika Mining (1984 – 2008)

In 1984, Menika Mining Ltd ("Menika) acquired the Reliance gold property by option agreement from Karl Otting of Lillooet. Five 1985 diamond drill holes were reported on by L. Sookochoff in "Diamond Drill Report for Menika Mining", dated February 10,1986. A "discovery" hole, drilled in 1986, was drilled to a depth of 119 metres. During 1987, an extensive drilling program comprising 8,140 metres of drilling in 53 diamond drill holes was carried out. The 1988 program consisted of 3294 metres of drilling in 23 diamond drill holes. There was a lapse in exploration activity until 1996 when another program consisting of 13 drill holes was carried out but limited records are available regarding this program.

In 2003, Menika conducted limited surface sampling on the Reliance property, and in 2004 they followed up with three diamond drill holes for 580 metres with encouraging results, such as 33.5 metres grading 7.54 grams per tonne gold (Exploration and Mining in BC 2004, page 59).

In 2003, 2005 and 2006, Menika contracted Geotronics Consulting Inc. to conduct MMI soil sampling over the strike length of the Royal Shear. At total of 1,013 samples were collected.

In 2008, Menika conducting diamond drilling at the Carter Zone (an MMI soil anomaly) and at the Imperial Zone. Three holes for 1356 metres were completed at Carter and 8 holes for 1,694 metres on the Imperial Zone.

A total of 109 diamond drill holes for over 17,000 metres was completed between the years 1985 and 2008 by Menika. A compilation of the historic drill holes is listed in Table 2. The list represents the drill hole collar coordinates believed to be true at the writing of this report and only a small percentage of the collar locations have been identified in the field. Collars coordinates have been sourced from various drill logs, sketch maps, internal memos, and assessment reports. Coordinates have been adjusted when identified in the field with handheld GPS and elevations have been adjusted to fit a 1:5000-scale topographic map created in 1987 by Eagle Mapping. There is no record of controlled collar surveying of the historic drill hole locations by Menika.

TABLE 2 HISTORIC DRILL HOLES

Hole ID	Easting (Nad83Z10)	Northing (NAD83Z10)	Elevation (m)	Length (m)	Azimuth	Dip	Year
DDH_85-1	515087	5636163	896	105	130	-50	1985
DDH_85-2	515087	5636163	896	212	150	-60	1985
DDH_85-3	515088	5636171	897	99.5	360	-90	1985
DDH_85-4	515079	5636090	883	151.5	115	-70	1985
DDH_85-5	515018	5636152	849	151	130	-60	1985
DDH_86-1	514997	5636054	854	119	70	-60	1986
DDH_87-01	515029	5636116	853	333.45	185	-75	1987
DDH_87-02	515029	5636116	853	226.7	185	-50	1987
DDH_87-03	515029	5636116	853	120.7	160	-50	1987
DDH_87-04	515028	5636119	852	427.94	205	-60	1987
DDH_87-05	515027	5636124	852	261	73	-60	1987
DDH_87-06	514954	5636199	814	166.4	168	-55	1987
DDH_87-07	514954	5636199	814	197.2	145	-50	1987
DDH_87-08	514954	5636199	814	160.63	145	-65	1987
DDH_87-09	514954	5636199	814	169.47	120	-55	1987
DDH_87-10	514997	5636054	854	160.32	92	-60	1987
DDH_87-11	514997	5636054	854	142.51	92	-75	1987
DDH_87-12	514997	5636054	854	313.9	360	-90	1987
DDH_87-13	515003	5636080	853	138.99	60	-60	1987
DDH_87-14	515003	5636080	853	124.05	60	-75	1987
DDH_87-15	514906	5636112	814	185	30	-60	1987
DDH_87-16	514906	5636112	814	178.6	30	-75	1987
DDH_87-17	514906	5636112	814	191.1	360	-90	1987
DDH_87-18	514906	5636112	814	269.1	210	-45	1987
DDH_87-19	515174	5635911	958	185.01	90	-60	1987
DDH_87-20	514967	5636076	834	117.35	50	-60	1987
DDH_87-21	514967	5636076	834	133.2	50	-75	1987
DDH_87-22	514967	5636076	834	188	360	-90	1987
DDH_87-23	515065	5636056	880	44.81	50	-60	1987
DDH_87-24	515065	5636056	880	63.1	50	-75	1987
DDH_87-25	515065	5636056	880	87.48	360	-90	1987
DDH_87-26	515344	5635770	1083	79.3	355	-60	1987

Hole ID	Easting (Nad83Z10)	Northing (NAD83Z10)	Elevation (m)	Length (m)	Azimuth	Dip	Year
DDH_87-27	515344	5635770	1083	212.14	23	-50	1987
DDH_87-28	515369	5636095	1040	309.7	16	-50	1987
DDH_87-29	515369	5636095	1040	215.4	187	-60	1987
DDH_87-30	515369	5636095	1040	252.1	187	-75	1987
DDH_87-31	515038	5636020	881	145.4	360	-90	1987
DDH_87-32	515038	5636022	881	130.5	90	-70	1987
DDH_87-33	515031	5636041	876	136.3	360	-90	1987
DDH_87-34	515031	5636041	876	57.03	270	-80	1987
DDH_87-35	515031	5636041	876	191.1	270	-80	1987
DDH_87-36	515048	5636054	878	200.25	360	-90	1987
DDH_87-37	515036	5636041	878	130.76	90	-80	1987
DDH_87-38	515036	5636041	878	92.96	90	-70	1987
DDH_87-39	515036	5636041	878	73.76	90	-60	1987
DDH_87-40	515036	5636041	878	68.58	90	-45	1987
DDH_87-41	515037	5636026	880	117.35	90	-80	1987
DDH_87-42	515037	5636026	880	84.43	90	-60	1987
DDH_87-43	515037	5636026	880	154.23	90	-45	1987
DDH_87-44	515006	5636083	853	139.2	90	-89	1987
DDH_87-45	515006	5636083	853	105.76	90	-70	1987
DDH_87-46	515006	5636083	853	68.88	90	-45	1987
DDH_87-47	515029	5636095	856	96.62	360	-90	1987
DDH_87-48	515029	5636095	856	76.2	90	-45	1987
DDH_87-49	514984	5636040	854	143.56	360	-90	1987
DDH_87-50	514956	5636045	851	200.25	360	-90	1987
DDH_87-51	515001	5636069	854	99.36	90	-45	1987
DDH_87-52	515001	5636069	854	121	90	-80	1987
DDH_87-53	515001	5636069	854	139.29	360	-90	1987
DDH_88-01	Unk	Unk	Unk	Unk	60	-50	1988
DDH_88-02	Unk	Unk	Unk	Unk	60	-85	1988
DDH_88-03	Unk	Unk	Unk	Unk	60	-50	1988
DDH_88-04	Unk	Unk	Unk	Unk	60	-85	1988
DDH_88-05	Unk	Unk	Unk	Unk	360	-90	1988
DDH_88-06	515301	5635705	1069	151.49	57	-51	1988
DDH_88-07	515371	5635655	1112	110.03	60	-51	1988
DDH_88-08	Unk	Unk	Unk	Unk	60	-50	1988
DDH_88-09	515311	5635715	1072	60.05	60	-65	1988
DDH_88-10	515311	5635715	1072	81.38	60	-85	1988
DDH_88-11	515201	5635805	989	172.21	60	-50	1988
DDH_88-12	515201	5635805	989	146.91	60	-75	1988
DDH_88-13	515201	5635805	989	169.77	360	-90	1988
DDH_88-14	515218	5635781	1000	133.2	60	-52	1988
DDH_88-15	515218	5635781	1000	107.29	60	-75	1988
DDH_88-16	515218	5635781	1000	88.39	360	-90	1988
DDH_88-17	514915	5636046	858	294.7	55	-80	1988
DDH_88-18	514909	5636026	869	314.55	55	-86	1988
DDH_88-19	515015	5635995	875	260.6	360	-90	1988
DDH_88-20	515019	5636021	870	141.4	360	-90	1988
DDH_88-21	514987	5636021	864	172.8	360	-90	1988

Hole ID	Easting (Nad83Z10)	Northing (NAD83Z10)	Elevation (m)	Length (m)	Azimuth	Dip	Year
DDH_88-22	515261	5635745	1028	138.68	360	-90	1988
DDH_88-23	515261	5635745	1028	154.53	60	-75	1988
DDH_96-1	515507	5636411	970	298	50	-45	1996
DDH_96-2	515033	5636371	825	255.2	25	-65	1996
DDH_96-3	515052	5636455	787	64	205	-45	1996
DDH_96-4	515533	5636605	1003	Unk	Unk	Unk	1996
DDH_96-5	515466	5636562	890	79	79	Unk	1996
DDH_96-6	515364	5636195	892	Unk	Unk	Unk	1996
DDH_96-7	515373	5636195	1003	Unk	Unk	Unk	1996
DDH_96-8	515608	5636658	892	Unk	Unk	Unk	1996
DDH_96-9	515608	5636658	892	Unk	Unk	Unk	1996
DDH_96-10	515608	5636658	892	Unk	194	Unk	1996
DDH_96-11	514924	5636000	886	322.17	360	-90	1996
DDH_96-12	514930	5635970	904	370.94	360	-90	1996
DDH_96-13	515563	5636985	696	Unk	Unk	Unk	1996
DDH_2004-01	515028	5636117	852	146.3	185	-49	2004
DDH_2004-02	515187	5635837	976	163.68	91	-48	2004
DDH_2004-03	515239	5635627	1117	270.36	82	-49	2004
DDH_UR08-0001	515690	5635105	1329	619.24	360	-90	2008
DDH_UR08-0002	515690	5635105	1329	401.43	300	-70	2008
DDH_UR08-0003	515780	5635145	1398	337.42	360	-90	2008
DDH_I08-0001	514907	5635980	896	422.76	55	-84	2008
DDH_I08-0002	514907	5635980	896	420.94	55	-89	2008
DDH_I08-0003	514993	5636052	852	87.98	90	-47	2008
DDH_I08-0004	514993	5636052	852	99.97	90	-60	2008
DDH_I08-0005	514993	5636052	852	102.72	90	-70	2008
DDH_I08-0006	514980	5636024	863	233.78	215	-85	2008
DDH_I08-0007	514988	5636021	864	185.02	360	-90	2008
DDH_I08-0008	514988	5636021	864	141.2	90	-83	2008

4 Geological Setting and Mineralization

Geological setting and mineralization is modified after C. Hart and R. Goldfarb (2017), and J. Oliver (2020):

4.1 Regional Geology

The Reliance Gold Project is located within the Bridge River mining district in southwestern British Columbia. The district is the largest historical gold producer in the Canadian Cordillera with more than 128 tonnes (4.1 million ounces) of gold production between 1897 and 1971 (Church, 1996). Most production came from the Bralorne-Pioneer vein system that yielded approximately 7 million tonnes averaging 19.1 g/t (0.58 oz/t) Au (Leitch, 1990).

The Bridge River district is in a northwest-trending, structurally complex region along the western margins of the Intermontane Terranes, adjacent to variable intrusive contacts with the plutonic rocks of the southeastern Coast Plutonic Complex to the west. In this region, the Intermontane Terranes consist of structurally interleaved Mississippian to Middle Jurassic Bridge River Terrane accretionary complex structurally juxtaposed against Late Triassic to Early Jurassic Cadwallader Terrane volcanic rocks and arc-marginal clastic strata. The region was subsequently intruded and overlain by a wide range of Cretaceous and Tertiary magmas that form the plutonic and volcanic rocks related to the Coast Plutonic Complex.

The Bridge River Terrane is primarily Mississippian to Middle Jurassic pillowed and massive oceanic basalts, with lesser ribbon chert, shale, argillite, and limestone. Locally there are slivers of serpentinite.

The Cadwallader Terrane includes mafic arc tholeiitic volcanic rocks (Pioneer Formation) that are overlain by a thick sequence of Lower and Middle Jurassic Hurley Formation siltstone, sandstone and conglomerate.

The Coast Plutonic Complex is a region underlain by a mostly contiguous and diverse array of granitoid bodies, comprising mid-Cretaceous and older, mid-crustal plutons and batholiths, with contact-metamorphosed country rock pendants indicating intrusion into older, mostly Cadwallader Terrane basement. Notable among the definable plutonic bodies is the Late Cretaceous to Eocene Dickson-McClure batholith, the Bendor batholiths and the Eldorado pluton.

The geology of the district is characterized by significant deformation and the most significant event was the amalgamation of the Bridge River accretionary complex. These rocks yield ca. 230 Ma Ar-Ar ages on white mica, and indicate that subduction related deformation occurred during the late Middle Triassic, and may have continued into the Middle Jurassic (Schiarizza et al., 1997).

Subsequently, the region was widely affected by mid-Cretaceous contractional deformation that emplaced the westerly-verging Shulaps ultramafic complex above Cadwallader and Bridge River terranes. The timing of this deformation and related low grade metamorphism is ca. 130 to 92 Ma (Garver et al., 1989; Schiarizza et al., 1997). Much of the Bralorne-Pioneer vein system occurs along or within these structures, and early Late Cretaceous sinistral movements on the Eldorado fault and the Castle Pass fault system are considered to be coeval with final regional contraction (Schiarizza et al., 1997).

Younger, northwest-trending dextral strike-slip displacements reactivated many of the older faults, particularly the Marshall Creek and Yalakom faults east of the Bralorne district. Dextral deformation is best estimated as having been initiated at or slightly before 67 Ma, and is considered a primary control on much of the mineralization proximal to the faults in these areas (Schiarizza et al., 1997).

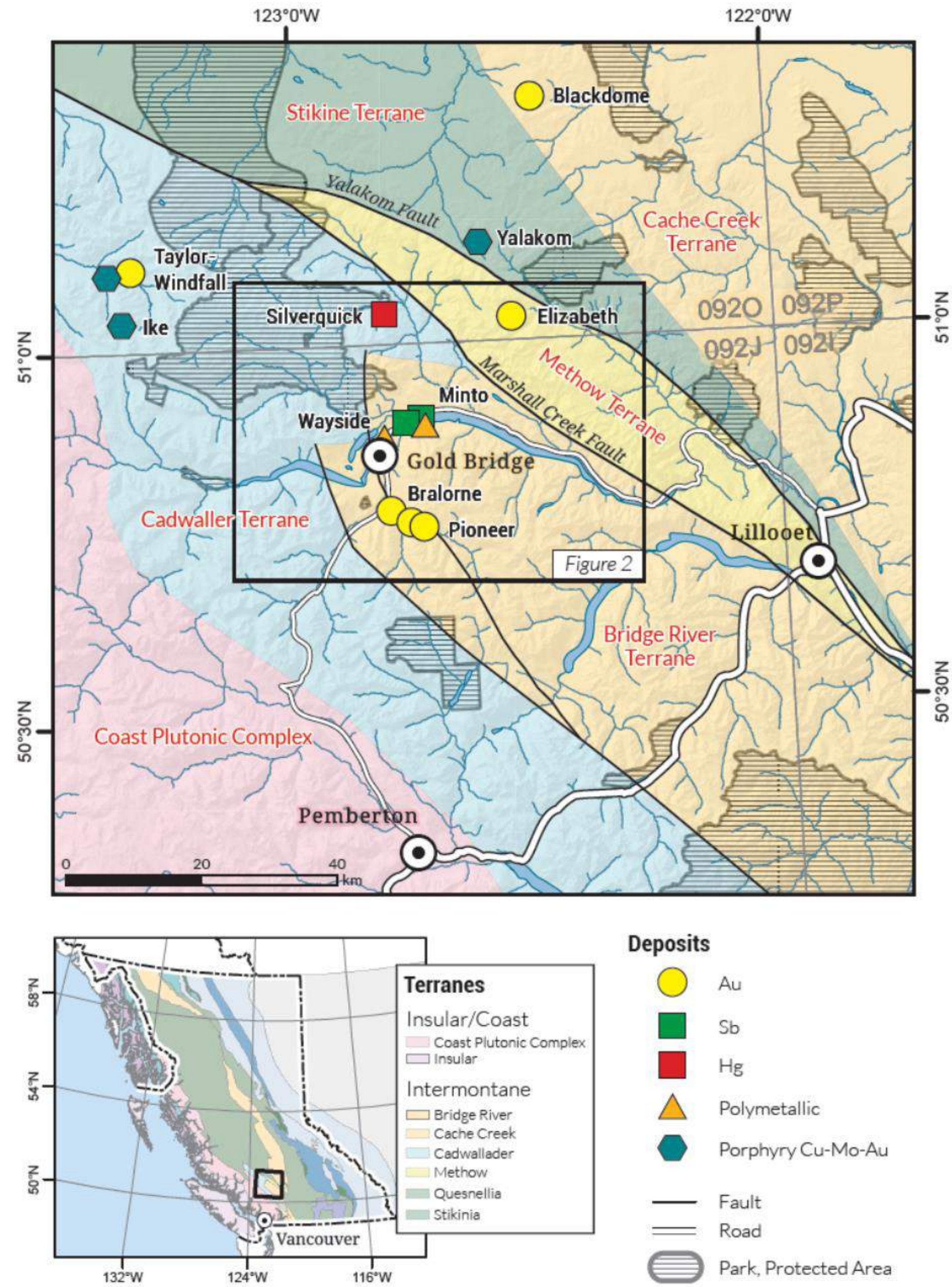


FIGURE 3 REGIONAL GEOLOGICAL SETTING OF THE BRIDGE RIVER MINING DISTRICT IN SOUTHERN BRITISH COLUMBIA; MODIFIED AFTER HART AND GOLDFARB (2017).

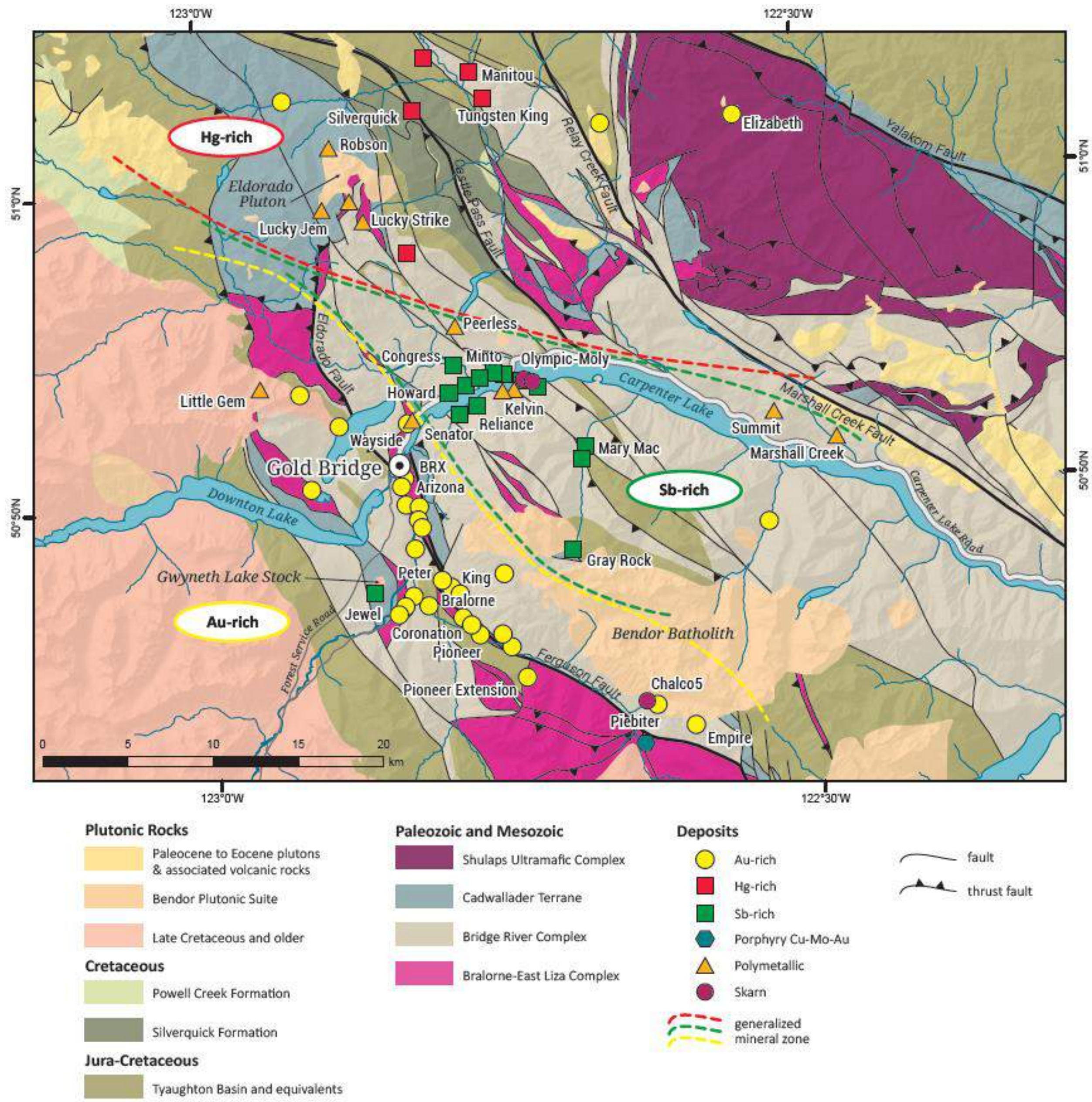


FIGURE 4 REGIONAL GEOLOGICAL SETTING OF THE BRIDGE RIVER MINING DISTRICT SHOWING DISTRIBUTION OF MINERAL DEPOSITS; MODIFIED AFTER HART AND GOLDFARB (2017).

4.2 Property Geology / Lithology / Mineralization

Much of the Reliance Gold property is overlain by either unconsolidated glacial tills or by post glacial white volcanic ash. Tills are non-stratified, coarse boulder to cobble sized with a sandy matrix. Till thickness appear to be increasing in the western portion of the property where road cuts indicate that greater than 5 m of coarse boulder-cobble tills are common.

Most till exposures are overlain by a post glacial white ash deposits of the Bridge River Ash formation. These deposits are variable in thickness ranging from a few 10’s of cm to greater than a metre. They are bone white in color, felsic in composition and locally may contain black vitric pumice fragments. The ashes have been derived from Plinth Peak, located 53 km to the west northwest of Gold Bridge, and are Pliocene (2,350 years) age (Schiarizza et al., 1997).

Bedrock lithologic units present on the Reliance Gold property are interpreted to belong to the Mississippian to Middle Jurassic Bridge River Terrane and include; (1) mafic flows and pillowed flows (upper and lower sequences), (2) interbedded fine grained argillites and ribbon banded cherts, (3) hematitic siliceous siltstones-cherts, (4) polylithic volcanic breccias, (5) limestone-marbles, and (6) quartzite.

Intrusive units on the Reliance Gold property include; (7) hornblende and plagioclase phyric diorites, (8) feldspar porphyritic dykes, and (9) gabbro-diorites. No age dating has been completed on the Reliance Gold intrusives and the current assumption is that they may be related to the nearby Late Cretaceous Bendor Plutonic Suite (Oliver 2020).

Alteration outcrop mapping has identified six principle alteration domains including post alteration tufa deposits, weak sericite-chlorite-hematite, weak ankerite, moderate ankerite, moderate to strong ankerite quartz, and early sericite-quartz (Oliver, 2020).

Two styles of gold mineralization have been identified on the property including; (1) gold associated with quartz-ankerite breccia zones and quartz-ankerite shear and extensional vein arrays; and (2) gold associated with clay-sericite-hematite fault zones with weaker secondary silica (Oliver, 2020).

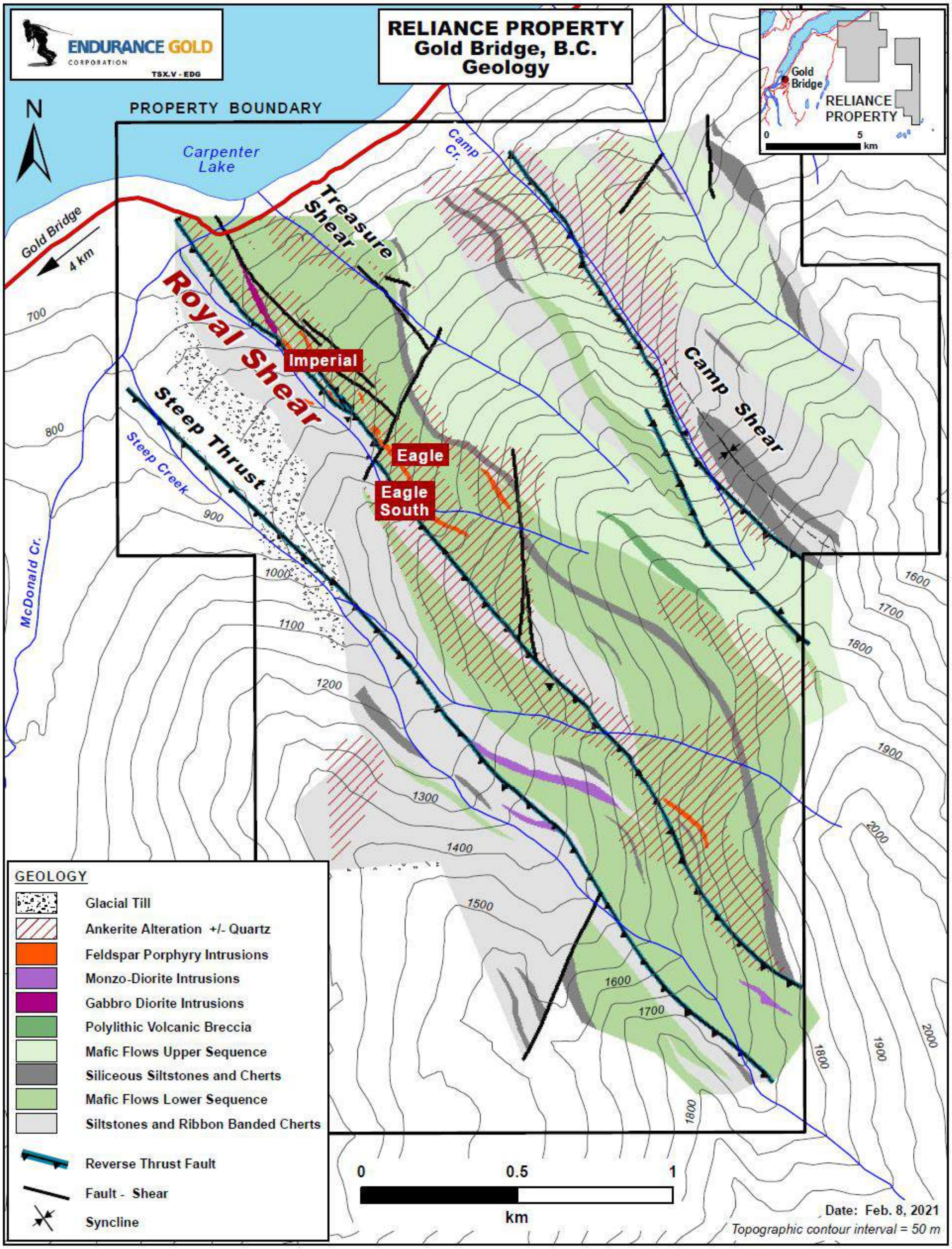


FIGURE 5 RELIANCE GOLD PROPERTY GEOLOGY MAP (2020)

5 Airborne Geophysics Program

5.1 Program Objective and Results

Endurance Gold contracted Precision GeoSurveys Inc. of Langley, BC to conduct a helicopter-borne aeromagnetic survey over the Reliance and Truax claim blocks. Airborne magnetic data was collected to assist in geological mapping of the claim blocks and to aid in interpreting bedrock lithology, major structures, and alteration. Radiometric data was also collected and archived but not processed at the time of writing this report.

The survey was flown on June 1 and June 5, 2020. A total of 248.5 line km of magnetic data was collected over an area of 22.3 km^2. The survey was flown with 45 lines at 100 m line-spacing at a heading of 090^o normal to dominant geological structures. The survey included 6 tie-lines flown at 1000 m spacing at a heading of 000^o. The mean survey height was 42.8 m.

Precision GeoSurveys began the survey on June 1 using a Bell 206 Jet Ranger helicopter, and due to high winds and steep terrain, the survey was completed on June 5 using an Airbus AS350 helicopter. The survey aircraft were equipped with a magnetometer, spectrometer, data acquisition system, laser altimeter, barometer, temperature/humidity probe, pilot guidance unit, and GPS navigation system. In addition, two magnetic base stations were used to record temporal magnetic variations.

Total magnetic intensity was measured with a Scintrex CS-3 split-beam cesium vapor magnetometer mounted on the front of the helicopter in a non-magnetic and non-conductive “stinger” configuration. Radiometric data was collected utilizing a GRS-10 fully integrated gamma radiation detection system containing a total of 8.4 litres of downward looking NaI (Tl) synthetic crystals, with 256 channel output at 1 Hz sampling rate.

Deliverables for the project included digital databases, maps and a logistics report.

The digital databases were provided in two formats, Geosoft GDB and text XYZ files. Reliance digital data was represented as grids as listed below:

- Digital Terrain Model (DTM)
- Total Magnetic Intensity (TMI)
- Residual Magnetic Intensity (RMI) – removal of IGRF from TMI
- Reduced to Magnetic Pole (RTP) – reduced to magnetic pole of RMI
- Calculated Horizontal Gradient (CHG) – total magnitude of the horizontal gradients
- Calculated Vertical Gradient (CVG)

Digital maps were created and the following map products were prepared:

- Actual flights lines
- DTM
- Magnetic maps as colour images with elevation contour lines:
    - TMI (with actual flight lines and topographic features)
    - TMI

- RMI
- RTP of RMI
- CHG of RMI
- CVG of RMI

The logistics report provided by Precision GeoSurveys is attached as Appendix 1 in the back of this report. The logistics report provides information on data acquisition procedures, data processing, and presentation of the survey data.

Airborne magnetic maps presented in Appendix 2 of this report have been modified by Endurance Gold to present results in contour form, and note physiography, claim boundaries, flight lines, terrain clearance, speed, and weather/wind vector.

5.2 Discussion, Interpretation and Conclusions

The Reliance Gold property is an early stage exploration project. Re-examining the historic drilling results in the context of modern geologic ideas for the Bridge River Camp has led Endurance to believe that the project has the potential to host a gold resource of the orogenic classification.

Completion of the airborne magnetics survey provided a property-scale base map for Endurance's ongoing geologic mapping and geochemical sampling programs. Northwest lineament identified in the TMI and CVG magnetic maps clearly identify the Royal, Treasure and Camp shears which may be host to orogenic-style gold mineralization.

Important magnetic anomalies that require follow-up work include the 1,000 metre elongated magnetic high identified on the TMI map that is centered at 514,900m Easting / 5,636,000m Northing. This magnetic anomaly is coincident to mineralization identified along the Royal Shear from the Treasure Anomaly to the northwest, to the Eagle Anomaly to the southeast. It is currently unknown if the magnetic high represents an alteration feature related to the gold event, or if it simply represents a more iron-rich volcanic unit that may be more susceptible to host gold mineralization.

A second magnetic anomaly requiring follow up is the 400 metre wide circular anomaly located at 515,700m Easting / 5,633,800m Northing. This anomaly may represent a previously unidentified intrusive unit that may or may not be important to gold mineralization.

The Reliance Gold property in an under-explored gold project that has returned preliminary results indicative of an epizonal-level orogenic gold system with geological and genetic analogies to the nearby Bralorne-Pioneer gold mines; a mesothermal-level orogenic gold system that has produced 4.2 million ozs of gold at an average grade of 17.7 grams per tonne (Church and Jones, 1999). Further work is recommended at Reliance to evaluate the potential to host an economic orogenic gold deposit. Work would include property-scale geologic and structural mapping, property-scale surface geochemistry sampling, outcrop channel sampling, more detailed geophysics including ground magnetics and IP/Resistivity, and reverse-circulation and diamond drilling.

7 References

Boitard, C. (1996): Field notes. Map with Drill Sites and Roads Approximate Location. 1:5000. Dated October 1996.

Cairnes, C.E. (1943): Geology and Mineral Deposits of the Tyaughton Lake Map Area, British Columbia; Geological Survey of Canada, Paper 43-15, pp 39 pages.

Church, B.N. (1996): Geology and mineral deposits of the Bridge River mining camp; BC Ministry of Energy and Mines, BC Geological Survey, Paper 1995-3, 160 p., URL http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/Papers/Documents/Paper1995-03-BridgeRiverMiningCamp_1.pdf [April 2017].

Church, B. N., & Jones, L. D. (1999): Metallogeny of the Bridge River Mining Camp (092J10,15 & 092O02).

Garver J.I., Schiarizza, P. and Gaba, R.G. (1989): Stratigraphy and structure of the Eldorado Mountain area, Chilcotin ranges, southwestern British Columbia (92O/2; 92J/15); in Geological Fieldwork 1988, BC Ministry of Energy, Mines and Petroleum Resources, Paper 1989-1, pp. 131–143.

Hart, C.J.R. and Goldfarb, R.J., (2017): Constraints on the Metallogeny and Geochronology of the Bridge River Gold District and Associated Intrusions, southwestern British Columbia; Geoscience BC Report 2017-08, pp 18 pages.

Kirkham, G., (2020): Bralorne Gold Project, Bralorne, British Columbia, Canada. NI43-101 Technical Report prepared for Talisker Resources Ltd. Dated July 24, 2020; Filed on SEDAR for Talisker Resources Ltd. pp 167 pages.

Leitch, C.H.B. (1990): Bralorne: a mesothermal, shield-type vein gold deposit of Cretaceous age in southwestern British Columbia; Canadian Institute of Mining, Metallurgy, and Petroleum, Bulletin, v. 83, no. 941, pp. 53–80.

Lindinger, J.E. (Leo) (2009): Technical Report of Exploration Activities on the Reliance Gold Property, Bridge River Mining Camp, Southwestern British Columbia, Canada; Filed on SEDAR for Menika Mining Ltd., pp 95 pages.

Mark, D. (2007): Geochemical Report on an MMI Soil Geochemical Survey During August, 2006 over the Reliance Property. Ministry of Energy and Mines Assessment Report No 29477. pp 22 pages plus attachments.

Mark, D. (2020): Exploration Report on the 2018 and 2019 Exploration Program within the Reliance Property, Bralorne-Pioneer Mines Gold Camp, Steep Creek, Gold Bridge, Lillooet Mining Division, British Columbia. Assessment Report written for Endurance Gold Corporation; Dated January 7, 2020; pp 143 pages.

Morris, R.J. (1987, 1988, 1996): Field notes.

Morris, R. J. (1988): Reliance Property, Geological Assessment. Unpublished Company Report. pp 40 pages plus attachments.

Oliver, J.O. (2020): Characteristics of Lithology, Structure, Alteration and Mineralization at the Reliance Property, Central British Columbia. Canada. Unpublished Company Report. pp 27 pages plus attachments.

Richards, G.G. (2004): Assessment Report on Diamond Drilling Results, Reliance Gold Property, Bridge River Mining Camp, Southwestern British Columbia, Canada; dated November 30, 2004; Ministry of Energy and Mines Assessment Report No 27561. pp 61 pages.

Schiarizza, P., Gaba, R.G., Glover, J.K., Garver, J.I. and Umhoefer, P.J. (1997): Geology and mineral occurrences of the Taseko-Bridge River area (NTS 092O/2,3; 092O/1; 092J/15,16); BC Ministry of Energy, Mines and Petroleum Resources, Bulletin 100, pp 291 pages.

Sookochoff, L. (1985): Exploration Progress Report for Menika Mining Ltd. on the Reliance Property. Dated July 15, 1985; Ministry of Energy and Mines Assessment Report No 14019. pp 16 pages plus attachments.

Sookochoff, L. (1986): Diamond Drill Report for Menika Mining on the Reliance Property. dated February 10,1986; Chevron Files PF841329; pp 45 pages.

Stephen J.C. (2001): Report on the Reliance Gold Property. Unpublished Company Report. pp 88 pages plus attachments.

Stephen, J.C. (2003): Menika Mining Ltd. Reliance Claims Group. Report on Activities. Unpublished Company Report. pp 13 pages plus attachments.

Van Wermeskerken, M. (2020): Summary of Observations During the Reliance Property, BC Field Visit (Sept 30 – Oct 15, 2020). Unpublished Company Report (draft). Dated October 30, 2020. pp 4 pages plus attachments.

8 Statement of Qualification

I, Darren O'Brien, P.Geo, do hereby certify the following:

• I am author of this assessment report titled "Reliance Gold Project, British Columbia, Canada – Assessment Report for 2020 Airborne Geophysical Survey" dated June 5, 2021 (the "*Assessment Report*").

• I am a graduate of the University of Alberta (1993) and hold a B.Sc. Degree (Specialization) in Geology.

• In 2001 I obtained an Advanced Diploma in Geographic Information Systems (GIS) from the British Columbia Institute of Technology.

• I am registered as a Professional Geologist with the Engineers & Geoscientists of British Columbia (EGBC), and a former elected director of The Association for Mineral Exploration British Columbia (AMEBC).

• I have worked in my profession as a Geologist for 28 years, both as an employee of major and junior mining companies, and as an independent consultant. I have worked at a variety of mining and exploration projects in Canada, United States, Central Asia and the Caribbean.

• I have been to the Reliance Gold Project numerous times and have been actively managing the project and participating in the exploration work described in this Assessment Report since April 2020.

• I am independent of Endurance Gold Corporation, and do not expect to become an insider, associate or employee of the issuer.

• I operate under the business name O'Brien Geological Consulting Inc., a business independent of Endurance Gold Corporation.

• The business address of O'Brien Geological Consulting Inc. is 3649 – 153 Street, Surrey, BC, V3Z 0R2.

(signed) "Darren O'Brien"

Darren O'Brien, P.Geo
June 5, 2021

9 Statement of Costs

Exploration Work type	Comment	Days			Totals
Personnel (Name)* / Position	**Field Days (list actual days)**	**Days**	**Rate**	**Subtotal***	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
				$0.00	**$0.00**
Office Studies	**List Personnel (note - Office only, do not include field days**				
Literature search	Darren O'Brien	2.0	$650.00	$1,300.00	
Database compilation			$0.00	$0.00	
Computer modelling			$0.00	$0.00	
Reprocessing of data			$0.00	$0.00	
General research			$0.00	$0.00	
Report preparation	Darren O'Brien	5.0	$650.00	$3,250.00	
Other (specify)	Kathie Jaworski (graphics)	25.0	$80.00	$2,000.00	
				$6,550.00	**$6,550.00**
Airborne Exploration Surveys	**Line Kilometres / Enter total invoiced amount**				
Aeromagnetics	248.5	2.0	$64.38	$19,854.00	
Radiometrics			$0.00	$0.00	
Electromagnetics			$0.00	$0.00	
Gravity			$0.00	$0.00	
Digital terrain modelling			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$19,854.00	**$19,854.00**
Remote Sensing	**Area in Hectares / Enter total invoiced amount or list personnel**				
Aerial photography			$0.00	$0.00	
LANDSAT			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Ground Exploration Surveys	**Area in Hectares/List Personnel**				
Geological mapping					
Regional		*note: expenditures here*			
Reconnaissance		*should be captured in Personnel*			
Prospect		*field expenditures above*			
Underground	Define by length and width				
Trenches	Define by length and width			$0.00	**$0.00**
Ground geophysics	**Line Kilometres / Enter total amount invoiced list personnel**				
Radiometrics					
Magnetics					
Gravity					
Digital terrain modelling					
Electromagnetics	*note: expenditures for your crew in the field*				
SP/AP/EP	*should be captured above in Personnel*				
IP	*field expenditures above*				
AMT/CSAMT					
Resistivity					
Complex resistivity					
Seismic reflection					
Seismic refraction					
Well logging	Define by total length				

Geophysical interpretation					
Petrophysics					
Other (specify)					
				$0.00	**$0.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Drill (cuttings, core, etc.)			$0.00	$0.00	
Stream sediment			$0.00	$0.00	
Soil	*note: This is for assays or*		$0.00	$0.00	
Rock	*laboratory costs*		$0.00	$0.00	
Water			$0.00	$0.00	
Biogeochemistry			$0.00	$0.00	
Whole rock			$0.00	$0.00	
Petrology			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Drilling	**No. of Holes, Size of Core and Metres**	**No.**	**Rate**	**Subtotal**	
Diamond			$0.00	$0.00	
Reverse circulation (RC)			$0.00	$0.00	
Rotary air blast (RAB)			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Other Operations	**Clarify**	**No.**	**Rate**	**Subtotal**	
Trenching			$0.00	$0.00	
Bulk sampling			$0.00	$0.00	
Underground development			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Reclamation	**Clarify**	**No.**	**Rate**	**Subtotal**	
After drilling			$0.00	$0.00	
Monitoring			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
Transportation		**No.**	**Rate**	**Subtotal**	
Airfare			$0.00	$0.00	
Taxi			$0.00	$0.00	
truck rental			$0.00	$0.00	
kilometers			$0.00	$0.00	
ATV			$0.00	$0.00	
fuel			$0.00	$0.00	
Helicopter (hours)			$0.00	$0.00	
Fuel (litres/hour)			$0.00	$0.00	
Other					
				$0.00	**$0.00**
Accommodation & Food	**Rates per day**				
Hotel			$0.00	$0.00	
Camp			$0.00	$0.00	
Meals	day rate or actual costs-specify		$0.00	$0.00	
				$0.00	**$0.00**
Miscellaneous					
Telephone			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**

Equipment Rentals					
Field Gear (Specify)			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**
Freight, rock samples					
			$0.00	$0.00	
			$0.00	$0.00	
				$0.00	**$0.00**
TOTAL Expenditures					**$26,404.00**

Appendix 1

Airborne Geophysical Survey Report by Precision GeoSurveys Inc.

AIRBORNE GEOPHYSICAL SURVEY REPORT

Reliance Survey Block

Gold Bridge, BC

Endurance Gold Corp.

Precision GeoSurveys Inc.
www.precisiongeosurveys.com
Hangar 42 Langley Airport
21330 - 56th Ave., Langley, BC
Canada V2Y 0E5
604-484-9402

Jenny Poon, B.Sc., P.Geo.
Shawn Walker, M.Sc., P.Geo.
June 2020
Job# 20111

Table of Contents

List of Figures

List of Tables

List of Appendices

List of Reliance Survey Block Plates (Scale 1:15,000)

1.0 Introduction

This report outlines the geophysical survey operations and data processing procedures taken during the high resolution helicopter-borne aeromagnetic survey flown over the Reliance survey block for Endurance Gold Corp. The survey block is located in southwestern British Columbia (Figure 1). It was flown on June 1 and June 5, 2020.

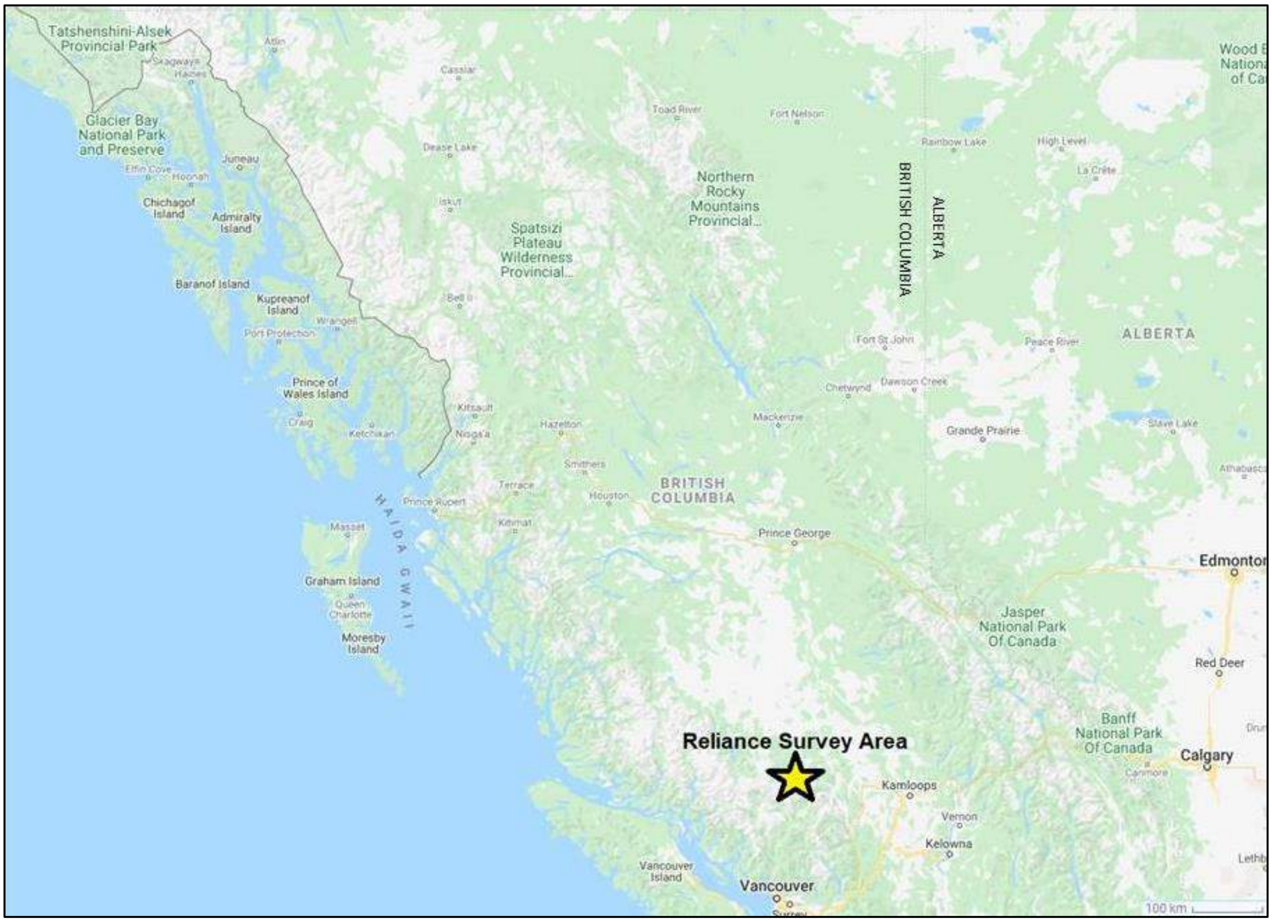


Figure 1: Reliance survey area located in southwestern British Columbia.

1.1 Survey Area

Reliance survey block is centered approximately 4 km east of Gold Bridge, British Columbia (Figure 2).

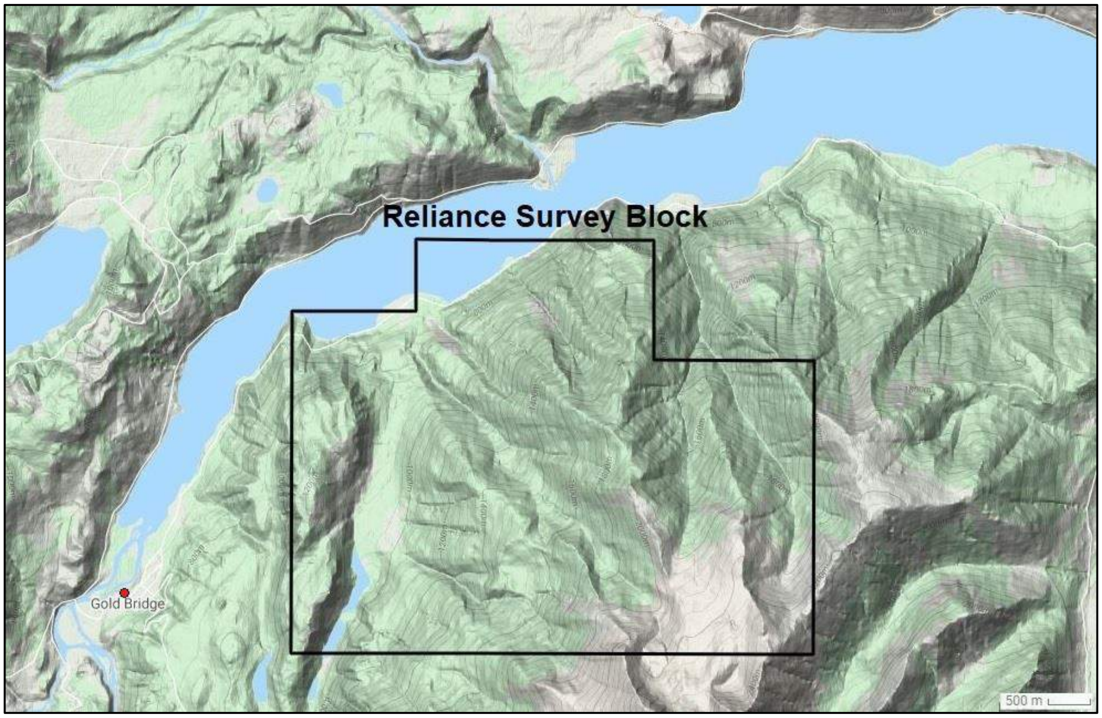


Figure 2: Reliance survey block east of Gold Bridge, British Columbia.

A total of 248.5 line km of magnetic data was collected over an area of 22.3 km^2. The survey was flown at 100 m line spacing at a heading of 090°/270° normal to dominant geological structures; tie lines were flown at 1000 m spacing at a heading of 000°/180° (Figures 3 and 4).

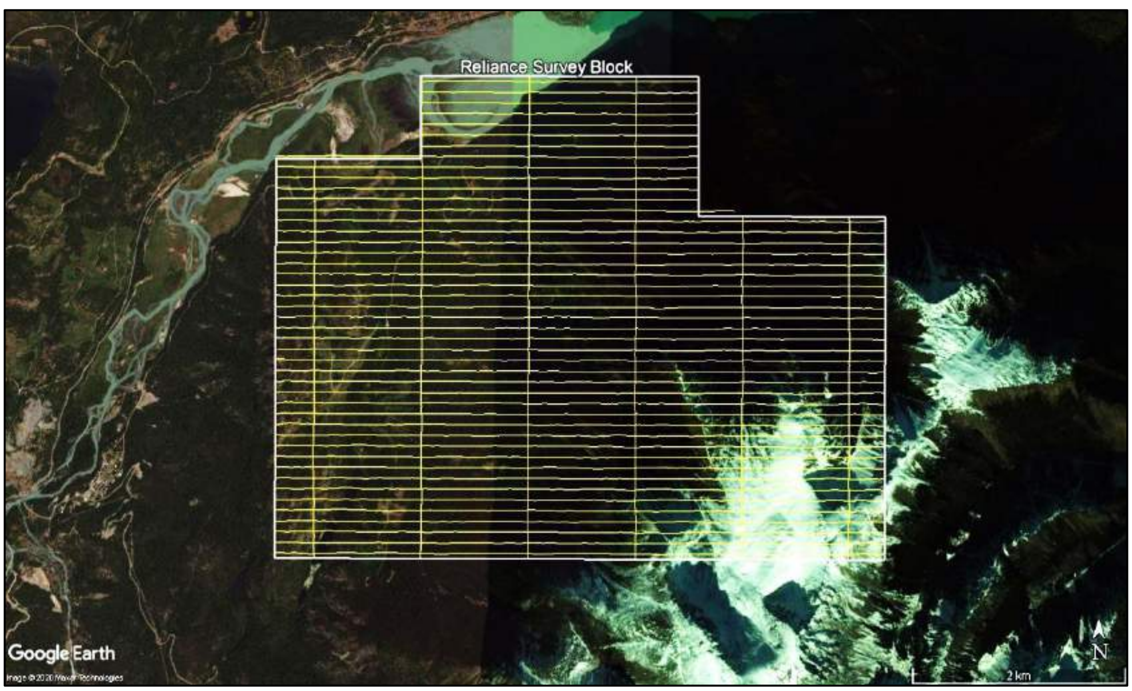


Figure 3: Plan View – Reliance survey block with actual flight lines in yellow and survey block boundary in white.

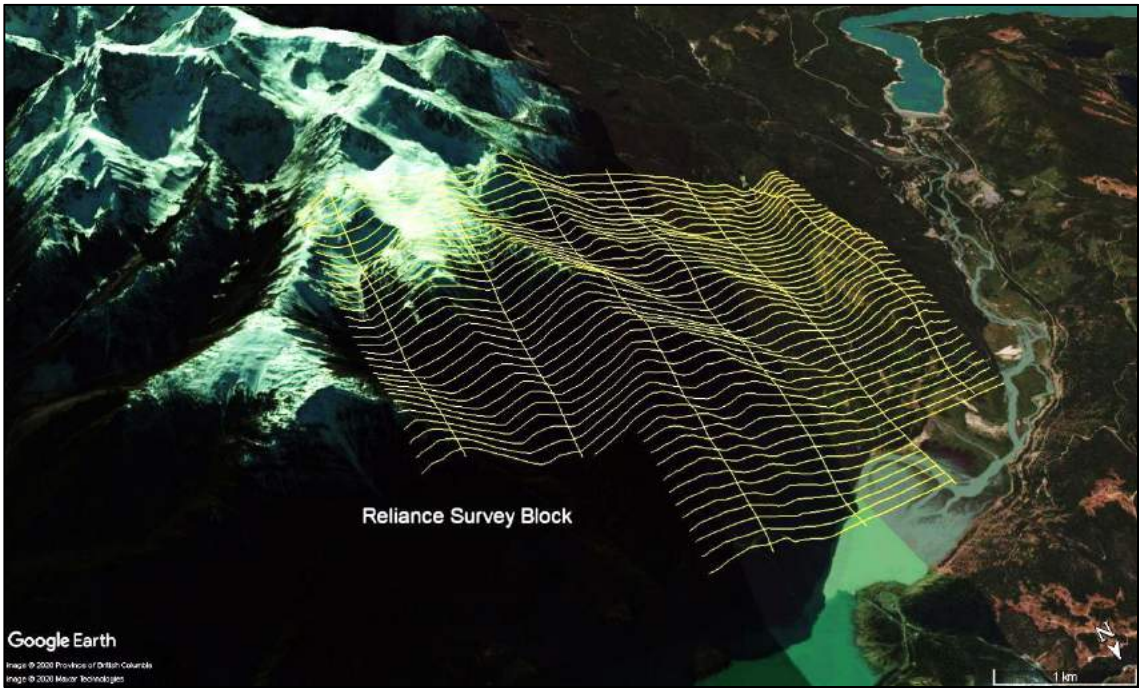


Figure 4: Terrain View – Reliance survey block with actual flight lines displayed in yellow.

1.2 Survey Specifications

The geodetic system used for the geophysical survey was WGS 84 in UTM Zone 10N. A total of 248.5 line km was flown (Table 1). Polygon coordinates for Reliance survey block are specified in Appendix A.

Survey Block	Area (km^2)	Line Type	No. of Lines Planned	No. of Lines Completed	Line Spacing (m)	Line Orientation (UTM grid)	Mean Survey Height (m)	Total Planned Line km	Total Actual km Flown
Reliance	22.3	Survey	45	45	100	090°/270°	42.7	223	224.9
		Tie	6	6	1000	000°/180°	44.9	24	23.6
		Total	**51**	**51**			**42.8**	**247**	**248.5**

Table 1: Survey flight line specifications.

2.0 Geophysical Data

Geophysical data are collected in a variety of ways and are used for many purposes including aiding in the determination of geology, mineral deposits, oil and gas deposits, geotechnical investigations, contaminated land sites, and UXO (unexploded ordnance) detection.

For the purposes of this survey, airborne magnetic data were collected to serve in geological mapping and exploration for mineral deposits. Radiometric data were also collected and archived but were not processed at client's request.

2.1 Magnetic Data

Magnetic surveying is the most common airborne geophysical technology used for both mineral and hydrocarbon exploration. Aeromagnetic surveys measure and record the total intensity of the magnetic field at the magnetometer sensor, which is a combination of the desired magnetic field generated in the Earth as well as small variations due to temporal effects of the constantly varying solar wind. By subtracting temporal and regional magnetic effects, the resulting aeromagnetic maps show the spatial distribution and relative abundance of magnetic minerals - most commonly the iron oxide mineral magnetite - in the upper levels of Earth's crust, which in turn are related to lithology, structure, and alteration of bedrock. Survey specifications, instrumentation, and interpretation procedures depend on the objectives of the survey. Magnetic surveys are typically performed for:

- Geological Mapping - to aid in mapping lithology, structure, and alteration.
- Depth to Basement Mapping - for exploration in sedimentary basins or mineralization associated with the basement surface.

2.2 Radiometric Data

Radiometric surveys are used to determine either the absolute or relative concentrations of uranium (U), thorium (Th), and potassium (K) in surface rocks and soils using natural radioactive emanations. Gamma radiation is utilized due to its greater penetration depth compared with alpha and beta radiation. Radiometric data are useful for mapping lithology, alteration, and structure as well as providing insights into weathering. For example, the natural radioactivity of igneous rocks generally increases with SiO_2 content and clay minerals tend to fix the natural radioelements.

Gamma rays are electromagnetic waves with frequencies between 10^{19} and 10^{21} Hz emitted spontaneously from an atomic nucleus during radioactive decay, in packets referred to as photons. The energy E transported by a photon is related to the wavelength λ or frequency ν by the formula:

$$E = h\nu = hc/\lambda$$

where: c is the velocity of light
h is Planck's constant (6.626 x 10^{-34} joule).

All detectable gamma radiation from Earth materials comes from the natural decay products of three primary radioelements: U, Th, and K. Each individual nuclear species (isotope) emits gamma rays at one or more specific energies, as shown in Figure 5. Of these elements, only potassium (^{40}K) emits gamma energy directly, at 1.46 MeV. Uranium (^{238}U) and thorium (^{232}Th)

emit gamma rays through their respective decay series; ^{214}Bi at 1.76 MeV for uranium and ^{208}Tl at 2.61 MeV for thorium. Accordingly, the ^{214}Bi and ^{208}Tl measurements are considered equivalents for uranium (eU) and thorium (eTh), as the daughter products will be in equilibrium under most natural conditions.

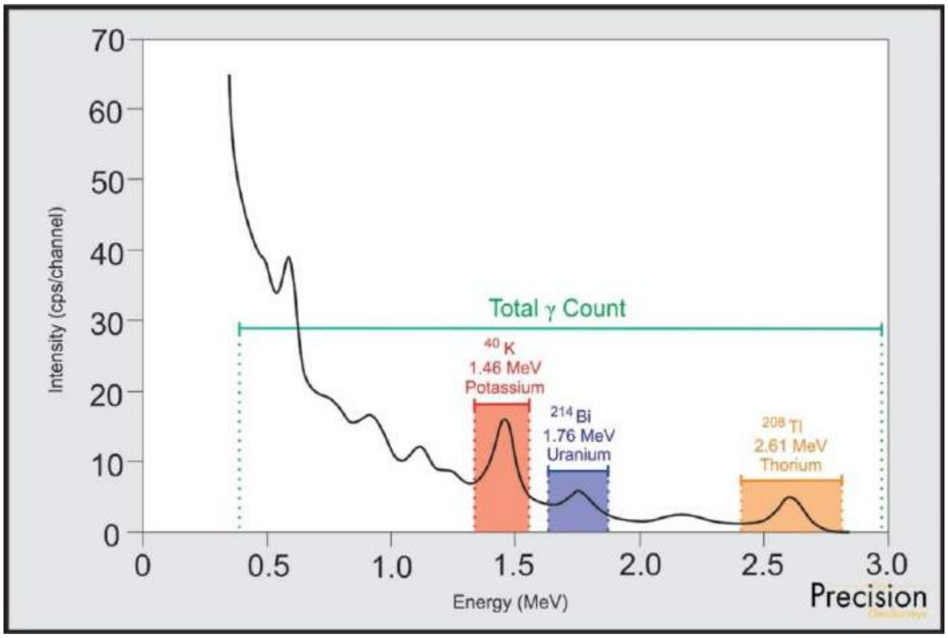


Figure 5: Typical natural gamma spectrum showing the three spectral windows (^{40}K 1.37-1.57 MeV, ^{214}Bi 1.66-1.86 MeV, ^{208}Tl 2.41-2.81 MeV) and total count (0.40-2.81 MeV) window.

Surficial debris, vegetation, standing water (lakes, marshes, swamps), and snow can effectively attenuate gamma rays originating from underlying rocks. Therefore, variations in isotope counts must be evaluated with respect to surficial conditions before they are attributed to changes in underlying geology. An increase in soil moisture can also significantly affect gamma radiation concentrations. For example, a 10% increase in soil moisture can decrease the measured gamma radiation by about the same amount. Radon isotopes are long-lived members of both the U and Th decay series and Ra mobility can influence radiometric surveys. In addition to being directly radioactive, ^{226}Ra and ^{222}Rn can attach to dust particles in the atmosphere. Radioactive precipitation of these dust particles by rain can lead to apparent increases of more than 2000% in uranium ground concentration (IAEA, 2003). Therefore, gamma data should not be collected during a rainfall, or shortly after a rainfall. While radiometric data were collected, they were not processed at client request.

3.0 Aircraft and Equipment

All geophysical and subsidiary equipment were carefully installed on the survey aircraft by Precision GeoSurveys to collect high resolution magnetic and radiometric data.

3.1 Aircraft

Precision GeoSurveys began the survey on June 1 using a Bell 206 Jet Ranger helicopter, registration C-FZHK, and due to high winds and steep terrain, the survey was completed on June 5 using an Airbus (formerly Eurocopter) AS350 helicopter, registration C-GSVY at a nominal height of 40 m AGL.

3.2 Geophysical Equipment

The survey aircraft (Figures 6 and 7) were equipped with a magnetometer, spectrometer, data acquisition system, laser altimeter, barometer, temperature/humidity probe, pilot guidance unit (PGU), and GPS navigation system. In addition, two magnetic base stations were used to record temporal magnetic variations.

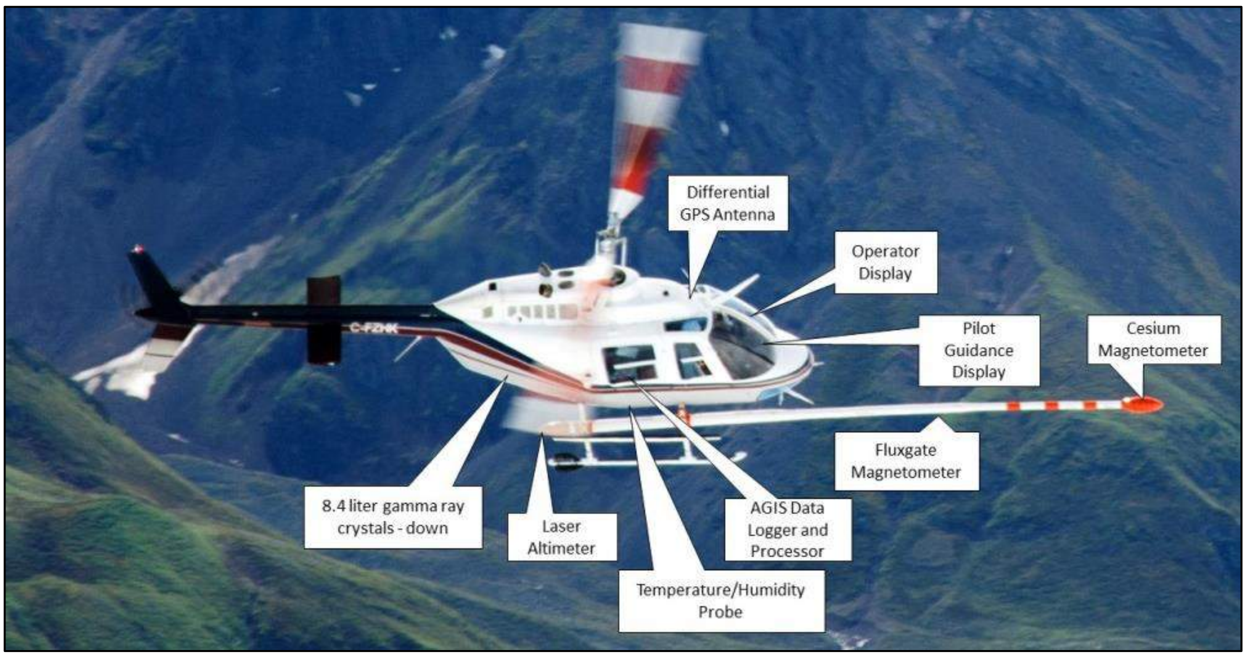


Figure 6: Bell 206 Jet Ranger helicopter equipped with geophysical equipment.

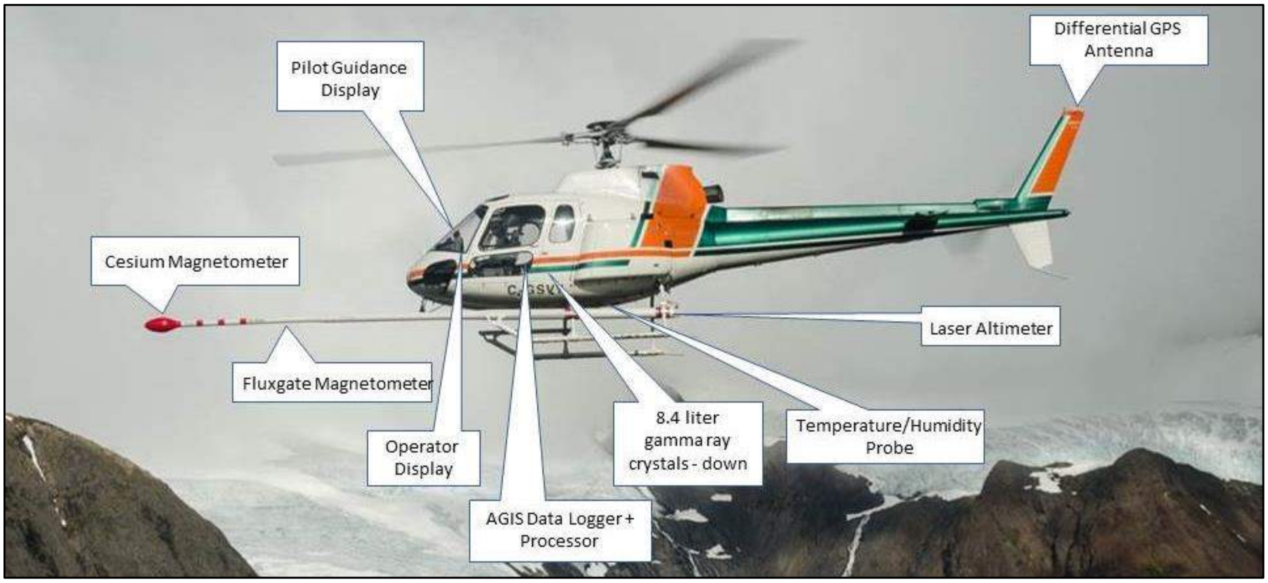


Figure 7: Airbus AS350 helicopter equipped with geophysical equipment.

3.2.1 Magnetometer

The survey was flown with a Scintrex CS-3 (Figure 8) split-beam cesium vapor magnetometer (S/N 712302) mounted on the front of the helicopter in a non-magnetic and non-conductive “stinger” configuration to measure total magnetic intensity. The CS-3 magnetometer (Figure 9) was orientated at 45 degrees from vertical to couple with local magnetic field at the Reliance survey block.

Figure 8: View of CS-3 cesium vapor magnetometer.

Figure 9: View of "stinger" configuration. Cesium vapor magnetometer sensor orientated 45° from vertical to couple with local magnetic field.

3.2.2 Spectrometer

The GRS-10 radiometric data acquisition system is a fully integrated gamma radiation detection system (Figure 10) containing a total of 8.4 litres of downward-looking NaI(Tl) synthetic crystals, with 256 channel output at 1 Hz sampling rate. The downward-looking crystals are designed to measure gamma rays from below the aircraft and are equipped with upward-shielding high density RayShield® gamma-attenuating blankets to minimize cosmic and solar gamma noise. The crystals are installed in the rear cabin of the helicopter away from variable fuel cell gamma attenuation.

Figure 10: GRS-10 thallium-activated sodium iodide gamma spectrometer crystal packs. The open unit on the right shows two individual 4.2 litre gamma detectors.

3.2.3 IMPAC

The Integrated Multi-Parameter Acquisition Console (IMPAC) (Figure 11), manufactured by Nuvia Dynamics Inc. (previously Pico Envirotec Inc.), is the main computer used in integrated data recording, data synchronizing, providing real-time quality control data for the geophysical operator display, and the generation of navigation information for the pilot and operator display systems.

Figure 11: IMPAC data acquisition and navigation system.

IMPAC uses the Microsoft Windows operating system and geophysical parameters are based on Nuvia's Airborne Geophysical Information System (AGIS) software. Depending on survey specifications, information such as magnetic field, electromagnetic data, total gamma count, counts of various radioelements (K, U, Th, etc.), temperature, cosmic radiation, barometric pressure, atmospheric humidity, navigation parameters, and GPS status can all be monitored on the AGIS on-board display (Figure 12).

While in flight, raw magnetic response, magnetic fourth difference, compensated and uncompensated data, radiometric spectra, aircraft position, survey altitude, cross track error, and other parameters are recorded and can be viewed by the geophysical operator for immediate QC (quality control). Additional software allows for post or real time magnetic compensation and radiometric calibration.

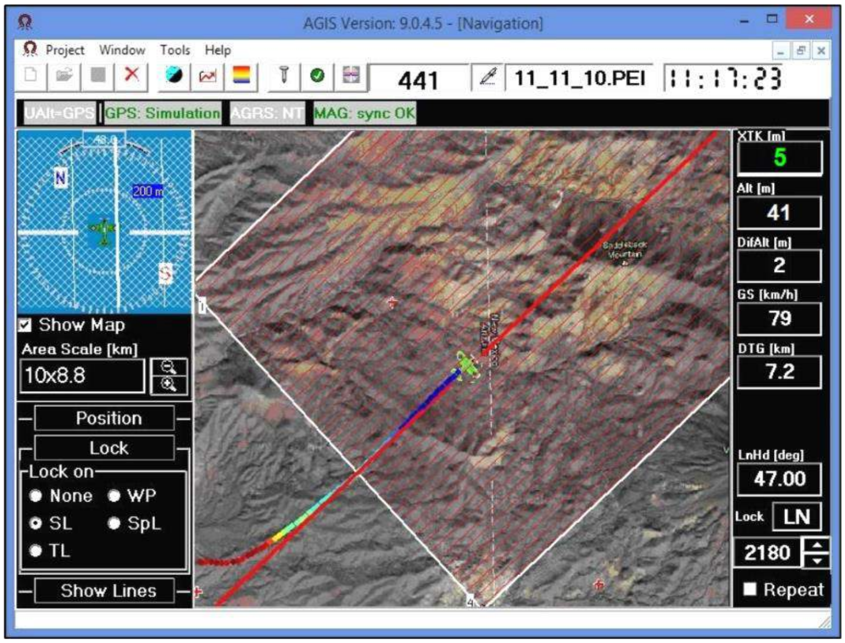


Figure 12: AGIS operator display, showing real time flight line recording and navigation parameters. Additional windows display real-time geophysical data to operator.

3.2.4 Magnetic Base Station

To monitor and record Earth's temporal magnetic field variations, particularly diurnal, two GEM GSM-19T base station magnetometers were operated at all times while airborne data were being collected. The base stations were located in an area with low magnetic gradient, away from electric power transmission lines and moving ferrous objects, such as motor vehicles, that could affect the survey data integrity.

The GEM GSM-19T magnetometer (Figure 13) with integrated GPS time synchronization uses proton precession technology with absolute accuracy of ±0.20 nT and sensitivity of 0.15 nT at 1 Hz. Base station magnetic data were recorded on internal solid-state memory and downloaded onto a field laptop computer using a serial cable and GEMLink 5.4 software. Profile plots of the base station readings were generated, updated, and reviewed at the end of each survey day.

Figure 13: GEM GSM-19T proton precession magnetometer.

3.2.5 Fluxgate Magnetometer

As the survey aircraft flies along a survey line, small attitude changes (pitch, roll, and yaw) were recorded by a triaxial fluxgate magnetometer (Figure 14). The fluxgate consists of three magnetic sensors - X, Y, and Z - operating independently and simultaneously. Each sensor has an analog output corresponding to the component of the ambient magnetic field along its axis. Response of the sensors is proportional to the cosine of the angle between the applied field and the sensor's sensitive axis. Fluxgate data are used for magnetic compensation and attitude corrections.

Figure 14: Billingsley Triaxial fluxgate magnetometer.

3.2.6 Laser Altimeter

Terrain clearance is measured by an Opti-Logic RS800 Rangefinder laser altimeter (Figure 15) attached to the aft end of the magnetometer boom. The RS800 laser is a time-of-flight sensor that measures distance by a rapidly modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 700 m off natural surfaces with accuracy of ±1 m on 1 x 1 m diffuse target with 50% (±20%) reflectivity. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and digital outputs, ground clearance data are transmitted to an RS-232 compatible port and recorded and displayed by the AGIS and PGU at 10 Hz in meters.

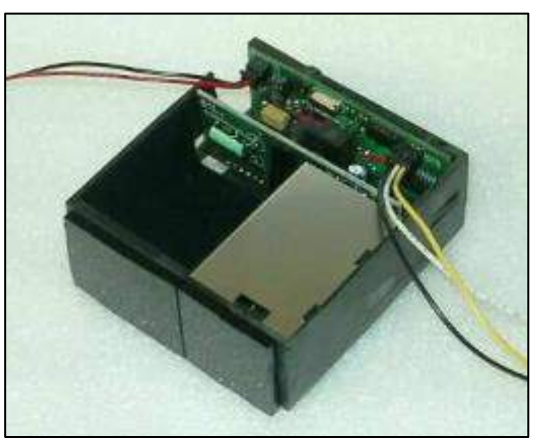


Figure 15: Opti-Logic RS800 Rangefinder laser altimeter.

3.2.7 Pilot Guidance Unit

Steering and elevation (ground clearance) information is continuously provided to the pilot by the Pilot Guidance Unit (PGU). The graphical display is mounted on top of the aircraft's instrument panel, remotely from the data acquisition system. The PGU is the primary navigation aid (Figure 16) to assist the pilot in keeping the aircraft on the planned flight path, heading, speed, and at the desired ground clearance.

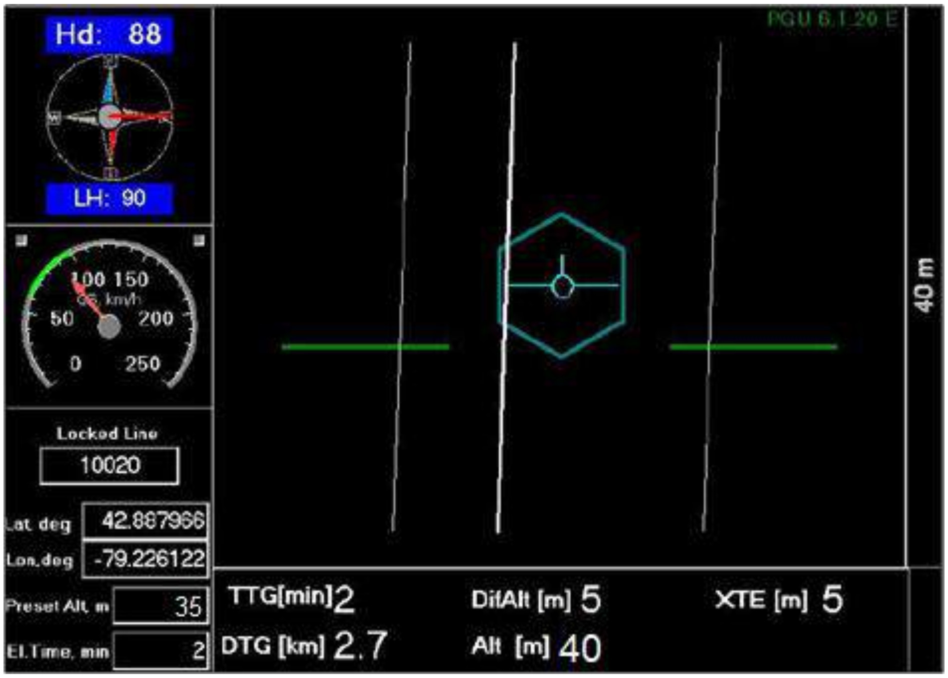


Figure 16: PGU screen displaying navigation information.

PGU information is displayed on a full VGA 600 x 800 pixel 7 inch (17.8 cm) LCD display. The CPU for the PGU is contained in a PC-104 console and uses Microsoft Windows operating system control, with input from the GPS antenna on the aircraft, laser altimeter, and AGIS.

3.2.8 GPS Navigation System

A Hemisphere R220 GPS receiver (Figure 17) and a Novatel GPS antenna on the aircraft integrated with the AGIS navigation system and pilot display (PGU) provide accurate navigational information and control. The R220 GPS receiver supports fast updates at a rate of up to 20 Hz (20 times per second); delivering sub-meter positioning accuracy in three dimensions. It supports GNSS (GPS/GLONASS) L1 and L2 signals.

The receiver supports differential correction methods including L-Band, RTK, SBAS, and Beacon. The R220 employs innovative Hemisphere GPS Eclipse SureTrack technology, which allows it to model the phase on satellites that the airborne unit is currently tracking. With

SureTrack technology, dropouts are reduced and speed of the signal reacquisitions is increased; enhancing accurate positioning when base corrections are not available.

Figure 17: Hemisphere R220 GPS receiver.

4.0 Survey Operations

The survey was flown on June 1 and June 5, 2020 in dry and windy conditions. Delays were encountered due to poor weather – low clouds and high winds. The experience of the pilot ensured that data quality objectives were met, and that safety of the flight crew was never compromised given the potential risks involved in airborne geophysical surveying. Field processing and quality control checks were performed daily.

4.1 Operations Base and Crew

The base of operation for the Reliance survey was at Tyax Lodge, British Columbia, north of the survey block.

Precision's geophysical crew consisted of three members (Table 2):

Crew Member	Position
Harmen Keyser, P.Geo.	Helicopter pilot
Shawn Walker, M.Sc., P.Geo	Geophysicist - data processor, reporting, and mapping
Jenny Poon, B.Sc., P.Geo.	Geophysicist – reporting

Table 2: List of survey crew members.

4.2 Magnetic Base Station Specifications

Changes in Earth's magnetic field over time, such as diurnal variations, magnetic pulsations, and geomagnetic storms, were measured and recorded by two stationary GEM GSM-19T proton precession magnetometers. The magnetic base stations were installed in an area (Table 3; Figures 18 and 19) of low magnetic noise away from metallic items such as ferromagnetic objects, vehicles, and power lines that could affect the base stations and ultimately the survey data.

Station Name	Easting/Northing	Latitude/Longitude	Datum/Projection
GEM 3 S/N 5081669	514143 m E 5632518 m N	122° 47' 56.82" W 50° 50' 39.09" N	WGS 84, Zone 10N
GEM 4 S/N 2065370	514142 m E 5632525 m N	122° 47' 56.87" W 50° 50' 39.32" N	WGS 84, Zone 10N

Table 3: Magnetic base station locations.

Magnetic readings were reviewed at regular intervals to ensure that no airborne data were collected during periods of high magnetic activity (greater than 10 nT change per minute).

Figure 18: GEM 3 (left) and GEM 4 (right) magnetic base stations.

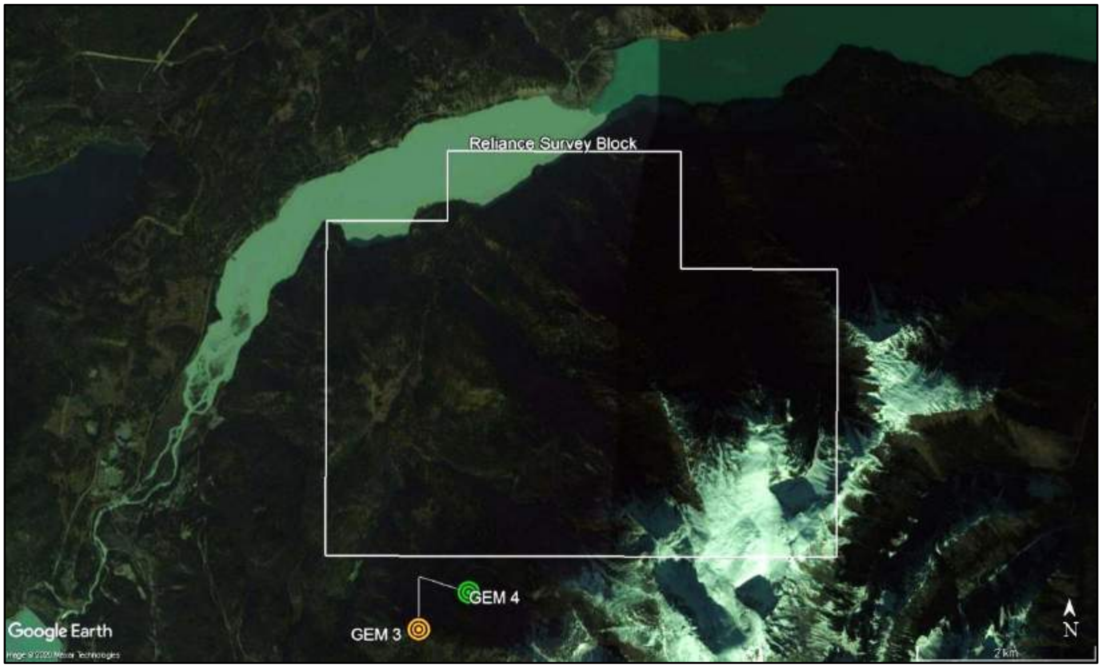


Figure 19: GEM 3 (orange) and GEM 4 (green) magnetic base stations located 0.2 km south of Reliance survey block.

4.3 Field Processing and Quality Control

Survey data were transferred from the aircraft's data acquisition system onto a USB memory stick and copied onto a field data processing laptop. The raw data files in PEI binary data format were converted into Geosoft GDB database format. Using Geosoft Oasis Montaj 9.8, the data were inspected to ensure compliance with contract specifications (Table 4; Figures 20 to 22).

Parameter	Specification	Tolerance
Position	Line Spacing	Flight line deviation within 8 m L/R from ideal flight path. No exceedance for more than 1 km.
	Height	Nominal flight height of 40 m above ground level (AGL) with tolerance of ±10 m. No exceedance for more than 1 km, provided deviation is not due to tall trees, topography, mitigation of wildlife/livestock harassment, cultural features, powerlines, railway, or other obstacles beyond the pilot's control.
	GPS	GPS signals from four or more satellites must be received at all times, except where signal loss is due to topography. No exceedance for more than 1 km.
Magnetics	Temporal/Diurnal Variations	Non-linear temporal magnetic variations within 10 nT of a linear chord of length 1 minute.
	Normalized 4th Difference	Magnetic data within 0.05 nT peak to peak. No exceedance for distances greater than 1 km or more, provided noise is not due to geological or cultural features.

Table 4: Contract survey specifications.

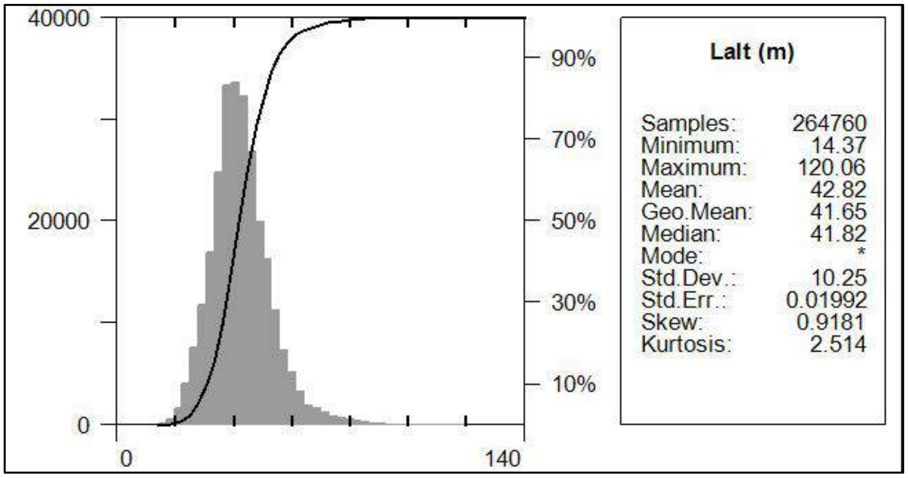


Figure 20: Histogram showing survey elevation vertically above ground.

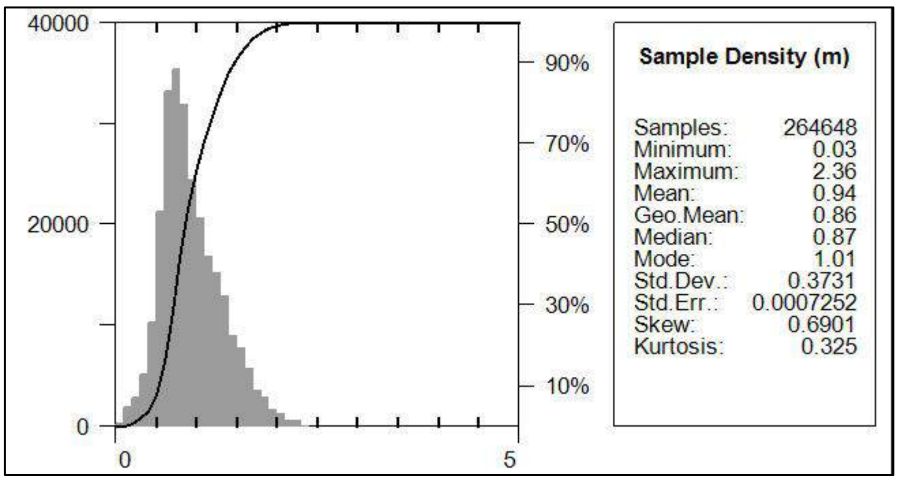


Figure 21: Histogram showing magnetic sample density. Horizontal distance in meters between adjacent measurement locations; magnetic sample frequency 20 Hz.

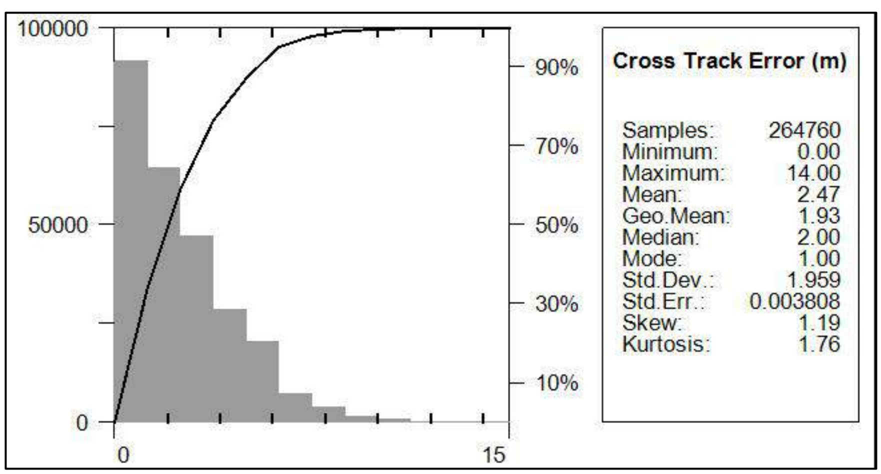


Figure 22: Histogram showing cross track error.

5.0 Data Acquisition Equipment Checks

Airborne equipment tests and calibrations were conducted for the laser altimeter and magnetometer. A lag test was performed for both sensors. There were two tests conducted for the airborne magnetometer: compensation flight and heading error test.

5.1 Lag Test

A lag test was performed to determine the difference in time the digital reading was recorded for the magnetometer and laser altimeter with the position fix time that the fiducial of the reading was obtained by the GPS system resulting from a combination of system lag and different locations of the various sensors and the GPS antenna. The test was flown in the four orthogonal survey headings over an identifiable magnetic anomaly at survey speed and height. The resulting data (Table 5) were used to correct for time and position.

Instrument	Source	Lag Fiducial	Correction (sec)
Magnetometer	Logging equipment	6	0.30
Laser Altimeter	Sharp gully	5	0.25

Table 5: Survey lag correction values.

Validity of the lag values was confirmed by a lack of offsets (corrugations) in geophysical profiles from adjoining survey lines.

5.2 Magnetometer Tests

The magnetometer was tested and calibrated with a series of dedicated flights specifically for removing undesired effects of aircraft movement, speed, and heading direction.

5.2.1 Compensation Flight Test

During aeromagnetic surveying a small but significant amount of noise is introduced to the magnetic data by the aircraft itself, as the magnetometer is within the aircraft's magnetic field. Changes in aircraft attitude combined with the permanent magnetization of certain aircraft parts (in particular the engine and other ferrous magnetic objects) contribute to this noise. For this survey, two compensation flights were flown - one for each aircraft. The aircraft were degaussed using proprietary technology prior to starting the survey and the remaining magnetic noise was removed by a process called magnetic compensation.

The magnetic compensation process consists of a series of prescribed maneuvers (±10° roll, ±10° pitch, and ±10° yaw) where the aircraft flies in the four orthogonal headings required for the survey (000°/090°/180°/270° in the case of this survey) at a sufficient altitude (typically > 2,500 m AGL) in an area of low magnetic gradient where Earth's magnetic field becomes nearly uniform at the scale of the compensation flight. In each heading direction, three specified roll, pitch, and yaw maneuvers (total 36) are performed by the pilot at constant elevation so that any magnetic variation recorded by the airborne magnetometer can be attributed to aircraft movement. These maneuvers are recorded by the airborne fluxgate magnetometer and provide the data that are required to calculate the necessary parameters for compensating the magnetic data to remove aircraft noise from survey data. Magnetic compensation values are shown in Tables 6 and 7, which were applied to the survey data collected by the respective aircraft.

Pre-Compensation					Post-Compensation				
Heading	**Roll**	**Pitch**	**Yaw**	**Total**	**Heading**	**Roll**	**Pitch**	**Yaw**	**Total**
000°	0.4690	0.4827	0.1937	1.1454	000°	0.0307	0.0375	0.0406	0.1088
090°	0.5573	0.2451	0.2088	1.0112	090°	0.0263	0.0269	0.0254	0.0786
180°	0.3532	0.3010	0.0873	0.7415	180°	0.0407	0.0369	0.0302	0.1078
270°	0.4705	0.6410	0.3118	1.4233	270°	0.0251	0.0307	0.0277	0.0835
Total	1.8500	1.6698	0.8016		**Total**	0.1228	0.1320	0.1239	
FOM (nT) = 4.3214					**FOM (nT) = 0.3787**				

Table 6: Compensation flight results – C-FZHK. Flown May 29, 2020.

Pre-Compensation					Post-Compensation				
Heading	**Roll**	**Pitch**	**Yaw**	**Total**	**Heading**	**Roll**	**Pitch**	**Yaw**	**Total**
000°	2.5695	1.0387	0.9144	4.5226	000°	0.1758	0.2501	0.1325	0.5584
090°	3.3359	0.8366	0.7788	4.9513	090°	0.2153	0.2165	0.2942	0.7260
180°	1.9147	1.1358	0.8895	3.9400	180°	0.1941	0.3256	0.3084	0.8281
270°	1.8880	0.5965	0.6762	3.1607	270°	0.1841	0.2241	0.1603	0.5685
Total	9.7081	3.6076	3.2589		**Total**	0.7693	1.0163	0.8954	
FOM (nT) = 16.5746					**FOM (nT) = 2.6810**				

Table 7: Compensation flight results – C-GSVY. Flown June 6, 2020.

5.2.2 Heading Correction Test

To determine heading errors and other offsets, cloverleaf pattern flight tests were conducted at high altitude. The cloverleaf tests were flown in the same orthogonal headings as the survey and tie lines (000°/090°/180°/270° in the case of this survey) at >2500 m AGL in an area with low magnetic gradient. For all four directions the survey helicopter must pass over the same mid-point, at the same elevation, with the aircraft in straight and level flight. The difference in magnetic values obtained in reciprocal headings is the heading error. Heading correction values derived from each aircraft are summarized in Tables 8 and 9.

Heading	Fiducial	Mag (nT)	Correction (nT)
000°	1135.8	54210.97	0.66
090°	1557.8	54213.35	-1.72
180°	1292.3	54213.62	-1.99
270°	1437.8	54208.59	3.04
	Average	54211.63	
	Total		0.000

Table 8: Magnetic sensor heading corrections – C-FZHK. Flown May 29, 2020.

Heading	Fiducial	Mag (nT)	Correction (nT)
000°	10932.2	55325.00	4.21
090°	11207.6	55338.93	-9.72
180°	10811.6	55330.38	-1.17
270°	11090.2	55322.53	6.68
	Average	55329.21	
	Total		0.000

Table 9: Magnetic sensor heading corrections – C-GSVY. Flown June 6, 2020.

6.0 Data Processing

After all data were collected, several procedures were undertaken to ensure that all data met a high standard of quality. All magnetic data recorded by the AGIS were converted into Geosoft and ASCII file formats using Nuvia Dynamics software. Further processing (Figure 23) was carried out using Geosoft Oasis Montaj 9.8 geophysical processing software along with proprietary processing algorithms. Laser altimeter and GPS data were resampled to 20 Hz to correspond with the sampling rate of the magnetometer. Radiometric data were collected and, at client's request, not processed.

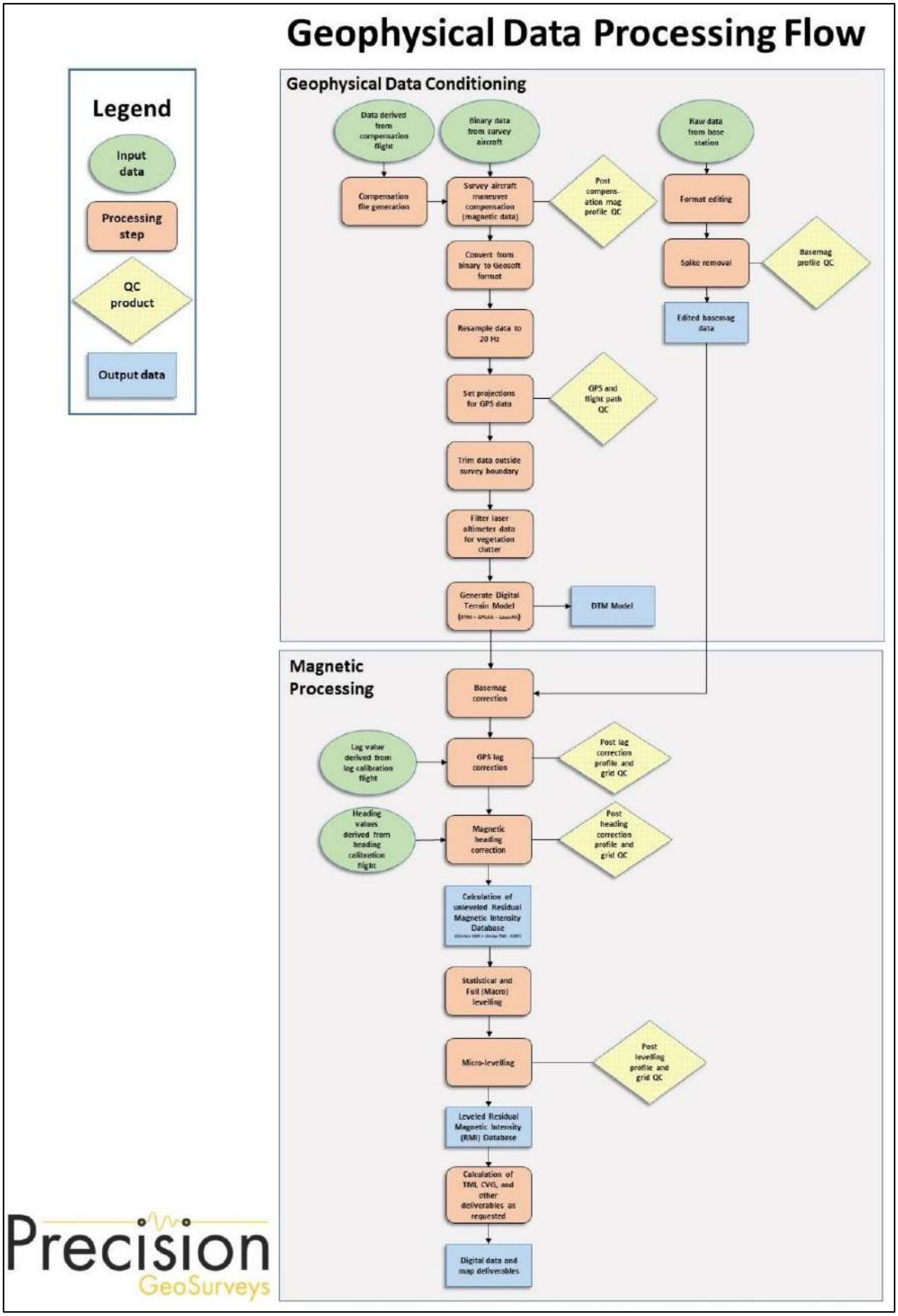


Figure 23: Magnetic data processing flow.

6.1 Position Corrections

In order to collect high resolution geophysical data, the location at which the data were measured and recorded must be accurate.

6.1.1 Lag Correction

A correction for lag error was applied to the geophysical data recorded at each individual sensor to compensate for the combination of lag in the recording system and the sensing instrument flying in a different location from the GPS antenna, as determined during the lag test. Validity of lag corrections was confirmed by the absence of grid corrugations in adjoining reciprocal lines.

6.1.2 Flight Height and Digital Terrain Model

A laser altimeter is affected by vegetation-covered ground, where not all of the laser measurements will be to the actual ground surface. The thicker the vegetation, the lower the proportion of valid ground measurements. Erroneous readings due to vegetation reflection is called vegetation clutter and can be easily distinguished from the actual ground surface. To correct for vegetation clutter, a rolling statistics filter is applied to remove all measurements except for the hard surface. This provides a measured distance that closely approximates the ground surface along the flight line below the survey helicopter, provided it is in a horizontal attitude with vertical laser measurements.

Laser altimeters are unable to provide valid data over glassy water or fog, which dissipates the laser, so a “zero” reading is obtained. In these cases, estimates of correct height are inserted manually.

A Digital Terrain Model (DTM) channel was calculated by subtracting the processed laser altimeter data from the filtered GPS altimeter data defined by the WGS 84 ellipsoidal height. DTM accuracy is affected by the geometric relationship between the GPS antenna and the laser altimeter as well as flight attitude of the helicopter, slope of the ground, sample density, and satellite geometry.

6.2 Magnetic Processing

Raw magnetic data, as collected by the airborne instruments, were corrected for aircraft influence, flight maneuvers, temporal variations, lag, and heading. The data were examined for magnetic noise and spikes, which were removed as required. The background magnetic field, International Geomagnetic Reference Field (IGRF) of the Earth, was removed and survey and tie line data of the resulting residual magnetic field were then leveled.

6.2.1 Flight Compensation

Data obtained from the compensation flight test were applied to the raw magnetic data as the first step of data processing. A computer program called MAGComp was used to create a model from the compensation flight test for each survey to remove the noise induced by the aircraft and its movement; this model was applied to data from each survey flight.

6.2.2 Temporal Variation Correction

The intensity of Earth's magnetic field varies with location and time. The time variable, known as diurnal or more correctly temporal variation, is removed from the recorded airborne data to provide the desired magnetic field at a specified location. Magnetic data from base station GEM 3 were used for correcting the airborne magnetic survey data, and GEM 4 data were retained for backup. The data were edited, plotted, and merged into a Geosoft database (.GDB) on a daily basis.

Base station measurements were averaged to establish a magnetic reference datum of 54372.30 nT. Magnetic deviations relative to the reference datum were used to calculate the observed variations of the Earth's magnetic field over time. The airborne magnetic data were then corrected for temporal variations by subtracting base station deviations from data collected on the aircraft, effectively removing effects of diurnal and other temporal variations.

6.2.3 Heading Correction

For each survey heading, changes in instrument magnetic fields along a survey flight line are detected and these systematic shifts are recorded. These values are used to construct a heading table (.TBL) file. An intersection table was created, containing all magnetic field values where tie lines intersected the survey lines and the overall average magnetic field value was calculated. For each of the four headings, the averages were calculated and then compared to the overall average to determine four values to be used for heading error correction in each flight direction.

6.2.4 IGRF Removal

The International Geomagnetic Reference Field (IGRF) model is the empirical representation of Earth's magnetic field (main core field without external sources) collected and disseminated from satellite data and from magnetic observatories around the world. The IGRF has historically been revised and updated every five years by a group of modellers associated with the International Association of Geomagnetism and Aeronomy (IAGA). The 13th generation IGRF (IGRF-13) released in December 2019 was used.

The initial unleveled Residual Magnetic Intensity (RMI) was calculated by taking the difference between IGRF and the non-leveled Total Magnetic Intensity (TMI) to create a more valid model of individual near-surface anomalies. This model is independent of time to allow for other magnetic data (previous or future) to be more easily incorporated into each survey database.

6.2.5 Leveling and Micro-leveling

Residual magnetic intensity (RMI) from survey and tie lines was then used to level the entire survey dataset. Two types of leveling were applied to the corrected data: conventional leveling and micro-leveling. There were two components to conventional leveling; statistical leveling to level tie lines and full leveling to level survey lines. The statistical leveling method corrected the SL/TL intersection errors that follow a specific pattern or trend. Through the error channel, an algorithm calculated a least-squares trend line and derived a trend error curve, which was then added to the channel to be leveled. The second component was full leveling. This adjusted the magnetic value of survey lines so that all lines matched trended tie lines at each intersection point.

Following statistical leveling, micro-leveling was applied to corrected conventional leveled data. This iterative grid-based process removed low amplitude components of flight line noise that still remained after tie line and survey line leveling and resulted in fully leveled RMI data. The IGRF was then added back onto the RMI to allow for the production of a leveled TMI grid and map.

6.2.6 Reduction to Magnetic Pole

Reduced to Magnetic Pole (RTP) data were computed from the leveled Residual Magnetic Intensity (RMI) data. The RTP filter was applied in the Fourier domain and migrates the observed magnetic inclination and declination field to what the field would look like at the north magnetic pole.

Inclination and declination were calculated by using the survey date. The derived values were used in the following formula:

$$RTP\ (\theta) = \frac{[\sin(I) - I\ \cdot \cos(I) \cdot \cos(D-\theta)]^2}{[\sin^2(I_a) + \cos^2(I_a) \cdot \cos^2(D-\theta)] \cdot [\sin^2(I) + \cos^2(I) \cdot \cos^2(D-\theta)]}$$

where: I is geomagnetic inclination in ° from horizontal
D is geomagnetic declination in ° azimuth from magnetic north
I_a is the inclination for amplitude correction (never less than I). Default is +/-20°. If $|I_a|$is specified to be less than$|I|$, it is set to I

6.2.7 Calculation of Horizontal Gradient

Calculated Horizontal Gradient (CHG) is the magnitude of the total horizontal gradient. It is used to estimate contact locations of magnetic bodies at shallow depths, reveal anomaly texture, and highlight anomaly-pattern discontinuities.

If M is the magnetic field, then the CHG is calculated as:

$$\mathrm{CHG}(x,y) = \sqrt{\left(\frac{\partial M}{\partial x}\right)^2 + \left(\frac{\partial M}{\partial y}\right)^2}$$

6.2.8 Calculation of First Vertical Derivative

The first vertical derivative was computed from the leveled Residual Magnetic Intensity (RMI) data. The first vertical derivative calculates the vertical rate of change in the magnetic field. It is used to enhance shorter wavelength signals; therefore, edges of magnetic anomalies are highlighted, and deep geologic sources in the data are suppressed.

The first vertical derivative calculated from the RMI was designated as Calculated Vertical Gradient of RMI, or CVG.

The filter, L, used to produce the n^{th} vertical derivative is described by:

$$L(r) = r^n$$

where: r is the radial component in the wavenumber domain

7.0 Deliverables

Reliance survey data are presented as digital databases, maps, and a logistics report.

7.1 Digital Data

The digital files have been provided in two formats, the first is a .GDB file for use in Geosoft Oasis Montaj and the second format is a text (.XYZ) file. Full descriptions of the digital data and contents are included in the report (Appendix C).

Reliance digital data were represented as grids as listed below:

- Digital Terrain Model (DTM)
- Total Magnetic Intensity (TMI)

- Residual Magnetic Intensity (RMI) – removal of IGRF from TMI
- Reduced to Magnetic Pole (RTP) – reduced to magnetic pole of RMI
- Calculated Horizontal Gradient (CHG) – total magnitude of the horizontal gradients
- Calculated Vertical Gradient (CVG)

7.1.1 Grids

Digital data were gridded and displayed using the following Geosoft parameters:

- Gridding method: minimum curvature
- Grid cell size: 25 m
- Low-pass desampling factor: 2
- Tolerance: 0.001
- % pass tolerance: 99.99
- Maximum iterations: 100

All magnetic grids were drawn with a histogram-equalized colour shade; sun illumination inclination at 45° and declination at 045°. DTM grid was drawn with a histogram-equalized topographic colour.

7.2 KMZ

Gridded digital data were exported into .KMZ files which can be displayed using Google Earth. The grids can be draped onto topography and rendered to give a 3D view.

7.3 Maps

Digital maps were created for Reliance survey. The following map products were prepared:

Overview Maps (colour images and non-shaded with elevation contour lines and topographic features):

- Actual flight lines
- DTM

Magnetic Maps (colour images with elevation contour lines):

- TMI, with actual flight lines and topographic features
- TMI
- RMI
- RTP of RMI
- CHG of RMI
- CVG of RMI

All survey maps were prepared in WGS 84 and UTM Zone 10N.

7.4 Report

A pdf copy of the logistics report is included along with digital data and maps. The report provides information on data acquisition procedures, data processing, and presentation of the Reliance survey data.

8.0 Conclusions and Recommendations

While the objective of geophysical data processing is to accurately represent the Earth's geophysical features, continual processing, such as the calculation of derivatives, can generate false features as the signal-to-noise ratio decreases. In addition, false features can appear near the edges of a survey block where gridding algorithms are unable to properly calculate grids, such as in "edge effects." Therefore, subtle geophysical features in derivative-enhanced map products or near the survey margins must be used with discretion.

The airborne geophysical data were acquired to map the geophysical characteristics of the survey area, which are in turn related to the distribution and concentration of magnetic minerals in the Earth. Geophysical data are rarely a direct indication of mineral deposits and therefore interpretation and careful integration with existing and new geological, geochemical, and other geophysical data are recommended to maximize value from the survey investment.

Respectfully submitted,
Precision GeoSurveys Inc.

Jenny Poon, P.Geo.

Shawn Walker, P.Geo.

Appendix A

Polygon Coordinates

Reliance Survey Block Polygon Coordinates – WGS 84 Zone 10N

Latitude (deg N)	Longitude (deg W)	Easting (m)	Northing (m)
50.84630	122.81394	513099	5632750
50.87980	122.81380	513099	5636475
50.87977	122.79460	514450	5636475
50.88674	122.79457	514450	5637250
50.88667	122.75761	517050	5637250
50.87498	122.75767	517050	5635950
50.87492	122.73281	518799	5635950
50.84615	122.73297	518799	5632750

Appendix B

Equipment Specifications

- GEM GSM-19T Proton Precession Magnetometer (Magnetic Base Station)
- Hemisphere R220 GPS Receiver
- Opti-Logic RS800 Rangefinder Laser Altimeter
- Setra Model 276 Barometric Pressure
- Scintrex CS-3 Survey Magnetometer
- Billingsley TFM100G2 Ultra Miniature Triaxial Fluxgate Magnetometer
- Rotronic HygroClip HC-S3 Relative Humidity and Temperature Probe
- Pico Envirotec GRS-10 Gamma Spectrometer
- Nuvia Dynamics IMPAC data recorder system (for navigation and geophysical data acquisition)

GEM GSM-19T Proton Precession Magnetometer (Magnetic Base Station)

Sensitivity	0.15 nT @ 1 Hz
Resolution	0.01 nT (gamma), magnetic field and gradient
Absolute Accuracy	±0.2 nT @ 1 Hz
Operating Range	20,000 nT to 120,000 nT
Gradient Tolerance	Over 7,000 nT/m
Operating Ranges	Temperature: -40°C to +50°C Battery Voltage: 10.0 V minimum to 15 V maximum Humidity: up to 90% relative, non-condensing
Storage Temperature	-50°C to +50°C
Dimensions	Console: 223 x 69 x 40 mm Sensor Staff: 4 x 450 mm sections Sensor: 170 x 71 mm dia. Weight: console 2.1 kg, sensor and staff assembly 2.2 kg
Integrated GPS	Yes

Hemisphere R220 GPS Receiver Specifications

GPS Sensor	Receiver Type	L1 and L2 RTK with carrier phase	
	Channels	12 L1CA GPS 12 L1P GPS 12 L2P GPS 3 SBAS or 3 additional L1CA GPS	
	Update Rate	10 Hz standard, 20 Hz available	
	Cold Start Time	<60 s	
	Warm Start Time 1	30 s (valid ephemeris)	
	Warm Start Time 2	30 s (almanac and RTC)	
	Hot Start Time	10 s typical (valid ephemeris and RTC)	
	Reacquisition	<1 s	
	Differential Options	SBAS, Autonomous, External RTCM, RTK, OmniSTAR (HP/XP)	
Horizontal Accuracy		RMS (67%)	2DRMS (95%)
	RTK [1, 2]	10 mm + 1 ppm	20 mm + 2 ppm
	OmniSTAR HP [1, 3]	0.1 m	0.2 m
	SBAS (WAAS) [1]	0.3 m	0.6 m
	Autonomous, no SA [1]	1.2 m	2.5 m
L-Band Sensor	Channel	Single channel	
	Frequency Range	1530 MHz to 1560 MHz	
	Satellite Selection	Manual or Automatic (based on location)	
	Startup and Satellite Reacquisition Time	15 seconds typical	
Communications	Serial Ports	2 full duplex RS232	
	Baud Rates	4800 – 115200	
	USB Ports	1 Communications, 1 Flash Drive data storage	
	Correction I/O Protocol	Hemisphere GPS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK), CMR, CMR+NMEA 0183, Hemisphere GPS binary	
	Timing Output	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)	
	Event Marker Input	HCMOS, active low, falling edge sync, 10 kΩ	
Environmental	Operating Temperature	-30°C to +65°C	
	Storage Temperature	-40°C to +85°C	
	Humidity	95% non-condensing	
Power GPS Sensor	Input Voltage Range	8 to 36 VDC	
	Consumption, RTK	<4.9 W (0.40 A @ 12 VDC typical)	
	Consumption, OmniSTAR	<5.5 W (0.46 A @ 12 VDC typical)	

[1]Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity.
[2] Depends also on baseline length.
[3] Requires a subscription from OmniSTAR.

Opti-Logic RS800 Rangefinder Laser Altimeter

Accuracy	±1 m on 1x1 m^2 diffuse target with 50% reflectivity, up to 700 m
Resolution	0.2 m
Communication Protocol	RS232-8, N, 1 ASCII characters
Baud Rate	19200
Data Raw Counts	~200 Hz
Data Calibrated Range	~10 Hz
Data Rate	~200 Hz raw counts for un-calibrated operation; ~10 Hz for calibrated operation (averaging algorithm seeks 8 good readings)
Calibrated Range Units	Feet, Meters, Yards
Laser	Class I (eye-safe), 905 nm ± 10 nm
Power	7 - 9 VDC conditioned required, current draw at full power (~ 1.8 W)
Laser Wavelength	RS100 905 nm ± 10 nm
Laser Divergence	Vertical axis – 3.5 mrad half-angle divergence; Horizontal axis – 1 mrad half-angle divergence; (approximate beam "footprint" at 100 m is 35 cm x 5 cm)
Dimensions	32 x 78 x 84 mm (lens face cross section is 32 x 78 mm)
Weight	<227 g (8 oz)
Casing	RS100/RS400/RS800 units are supplied as OEM modules consisting of an open chassis containing optics and circuit boards. Custom housings can be designed and built on request.

Setra Model 276 Barometric Pressure

Performance	Accuracy RSS[1] (at constant temp)	±0.25% FS[2]
	Non-Linearity (BSFL)	±0.22% FS
	Hysteresis	0.05% FS
	Non-Repeatability	0.05% FS
	Thermal Effects[3]	Compensated range: 0°C to +55°C (+30°F to +130°F) Zero shift (over compensated range): 1% FS Span shift (over compensated range): 1% FS
	Resolution	Infinite, limited only by output noise level (0.0005% FS)
	Time Constant	10 msecs to reach 90% final output with step function pressure input
	Long Term Stability	0.25% FS / 6 months
Environmental	Temperature	Operating[4]: -18°C to +79°C (0°F to +175°F) Storage: -55°C to +121°C (-65°F to +250°F)
	Vibration	2 g from 5 Hz to 500 Hz
	Shock	50 g (Operating, 1/2 sine 10 ms)
	Acceleration	10 g
Electrical	Circuit	3-Wire[5] (Exc, Out, Com)
	Power Consumption	0.20 W (24 VDC)
	Output Impedance	5 Ω
	Output Noise	<200 µV RMS (0 to 100 Hz)

[1] RSS of non-linearity, hysteresis, and non-repeatability.
[2] FS = 300 mb for 800 – 1100 mb range; 500 for 600 – 1100 mb range; and 20 PSI for 0 to 20 PSIA.
[3] Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.
[4] Operating temperature limits of the electronics only. Pressure media temperatures may be considerable higher or lower.
[5] The separate leads for +EXC, -EXC, +Out, -Out are commoned internally. The shield is connected to the case. For best performance, either the -Exc or -Out should be connected to the case. Unit is calibrated at the factory with -Exc connected to the case. The insulation resistance between all signal leads are tied together and case ground is 100 Ω minimum at 25 VDC

Scintrex CS-3 Survey Magnetometer

Operating Principal	Self-oscillating split-beam Cesium Vapor (non-radioactive ^{133}Cs)
Operating Range	15,000 nT to 105,000 nT
Gradient Tolerance	40,000 nT/m
Operating Zones	15° to 75° and 105° to 165°
Hemisphere Switching	a) Automatic b) Electronic control actuated by the control voltage levels (TTL/CMOS) c) Manual
Sensitivity	0.0006 nT √Hz rms
Noise Envelope	Typically 0.002 nT peak to peak, 0.1 to 1 Hz bandwidth
Heading Error	±0.20 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) Continuous signal at the Larmor frequency which is proportional to the magnetic field (proportionality constant 3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) Square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5") Length: 160 mm (6.3") Weight: 1.15 kg (2.6 lb)
Sensor Electronics	Diameter: 63 mm (2.5") Length: 350 mm (13.8") Weight: 1.5 kg (3.3 lb)
Cable, Sensor to Sensor Electronics	3 m (9' 8"), lengths up to 5 m (16' 4") available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 VDC
Supply Current	Approx. 1.5 A at start up, decreasing to 0.5 A at 20°C
Power Up Time	Less than 15 minutes at -30°C

Billingsley TFM100G2 Ultra Miniature Triaxial Fluxgate Magnetometer

Axial Alignment	Orthogonality better than ±1°
Input Voltage Options	15 to 34 VDC @ 30 mA
Field Measurement Range Options	±100 μT = ±10 V
Accuracy	±0.75% of full scale (0.5% typical)
Linearity	±0.015% of full scale
Sensitivity	100 μV/nT
Scale Factor Temperature Shift	0.007% full scale/°C
Noise	≤12 pT rms/√Hz @ 1 Hz
Output Ripple	3 mV peak to peak @ 2nd harmonic
Analog Output at Zero Field	±0.025 V
Zero Shift with Temperature	±0.6 nT/°C
Susceptibility to Perming	±8 nT shift with ± 5 Gs applied
Output Impedance	332 Ω ± 5%
Frequency Response	3 dB @ >500 Hz (to >4 kHz wide band)
Over Load Recovery	±5 Gs slew <2 ms
Random Vibration	>20 G rms 20 Hz to 2 kHz
Temperature Range	-55°C to +85°C
Acceleration	>60 G
Weight	100 g
Size	3.51 cm x 3.23 cm x 8.26 cm
Connector	Chassis mounted 9 pin male "D" type

Rotronic HygroClip HC-S3 Relative Humidity and Temperature Probe

Relative Humidity	Operating Range	0 to 100% RH
	Accuracy at 23°C	±1.5% RH
	Output	0 – 1 VDC
	Typical Long-Term Stability	Better than ±1% RH per year
Temperature	Measurement Range	-40°C to +60°C
	Temperature Accuracy	-30°C to +60°C ±0.2°C -50°C to +60°C ±0.6°C (worst case)
	Output	0 – 1 VDC
Power	Supply Voltage	3.5 to 50 VDC (typically powered by data logger's 12 VDC supply)
	Current Consumption	<4 mA
Dimensions	Diameter	1.53 cm (0.60")
	Length	16.8 cm (6.6")
	Housing Material	Polycarbonate

Pico Envirotec GRS-10 Gamma Spectrometer

Crystal Volume	Two 4.2 L NaI(Tl) synthetic downward-looking crystals. Total volume of 8.4 L
Resolution	256/512/1024 channels
Tuning	Automatic using peak determination algorithm
Calibration	Fully automated detector
Real Time	Linearization and gain stabilization
Communication	RS232
Detectors	Expandable to 10 detectors and digital peak
Count Rate	Up to 60,000 cps per detector
Count Capacity per Channel	65545
Energy Detection Range	36 keV to 3 MeV
Cosmic Channel	Above 3 MeV
Upward Shielding	RayShield® non-radioactive shielding on downward-looking crystals
Spectra	Collected spectra of 256/512 channels, internal spectrum resolution 1024
Software	Calibration: High voltage adjustment, linearity correction coefficients calculation, and communication test support Real Time Data Collection: Automatic Gain real time control on natural isotopes, and PC-based test and calibration software suite
Dimensions	Each downward-looking box contains two (2) gamma detection NaI(Tl) crystals – 4.2 L (256 cu in.) (approx. 100 x 100 x 650 mm) each. Total volume of approx. 8.4 L or 512 cu in. with detector electronics
Spectra Stabilization	Real time automatic corrections on radio nuclei: Th, U, K. No implanted sources

Nuvia Dynamics IMPAC data recorder system

(for navigation and geophysical data acquisition)

Functions	Integrated Multi-Parameter Airborne Console (IMPAC) with integrated dual Global Positioning System Receiver (GPS) and all necessary navigation guidance software. Inputs for geophysical sensors - portable gamma ray spectrometer GRS-10/AGRS, MMS4/MMS8 Magnetometer, fluxgate, Totem 2A EM, A/D converter, temperature/humidity probe, barometric pressure probe, and laser/radar altimeter. Output for the multi-parameter PGU (Pilot Guidance Unit)
Display	Monitor display 600 x 800 pixels; customized keypad and operator keyboard. Multi-screen options for real-time viewing of all data inputs, fiducial points, flight line tracking, and GPS channels by operator
Navigation	Pilot/operator navigation guidance. Software supports preplanned survey flight plan, along survey lines, way-points, preplanned drape profile surfaces
Data Sampling	Sensor dependent
Data Synchronization	Synchronized to GPS position. Supports dual GPS
Data File	PEI Binary data format
Storage	80 GB
Software	DATAView: Allows fast data verification and conversion of PEI binary data to Geosoft GBN or ASCII formats MapConvert: For survey preparation, calibration and conversion of maps, and survey plot after data acquisition MagComp: For calculation of magnetic compensation coefficients GRS10/AGRS Calibration: High voltage adjustment, linearity correction coefficients calculation, and communication test support AGIS: Real time data acquisition and navigation system. Displays chart/spectrum view in real-time for fast data Quality Control (QC)
Electrical	Multiple ethernet connections, RS232 serial ports, USB ports, and 16-bit differential analog input channels. It can support up to 4 magnetometer sensors
Power Requirement	24 VDC

Appendix C

Digital File Descriptions

- Magnetic Database Descriptions
- Radiometric Database Descriptions (Unprocessed)
- Geosoft Grid Descriptions
- Map Descriptions

Magnetic Database:

Abbreviations used in the GDB/XYZ files listed below:

CHANNEL	UNITS	DESCRIPTION
X_WGS84	m	UTM Easting – WGS84 Zone 10N
Y_WGS84	m	UTM Northing – WGS84 Zone 10N
Lat_deg	Decimal degree	Latitude – WGS84
Lon_deg	Decimal degree	Longitude – WGS84
Date	yyyy/mm/dd	Dates of the survey flight(s) – Local
FLT		Flight Line numbers
Line		Line numbers
STL		Number of satellite(s)
GPSfix		1 = non-differential 2 = WAAS/SBAS differential
Heading	degree	Heading of aircraft
GPStime	HH:MM:SS	GPS time (UTC)
Geos_m	m	Geoidal separation
XTE_m	m	Cross track error
Galt	m	GPS height – WGS84 Zone 10N (ASL)
Lalt	m	Laser altimeter readings (AGL)
DTM	m	Digital Terrain Model
Sample_Density	m	Horizontal distance in meters between adjacent measurement locations; sample frequency is 20 Hz
Speed_km_hr	km/hr	Ground speed of aircraft in km/hr
basemag	nT	Base station temporal variation data
IGRF	nT	International Geomagnetic Reference Field, IGRF-13
Declin	Decimal degree	Calculated declination of magnetic field
Inclin	Decimal degree	Calculated inclination of magnetic field
TMI	nT	Total Magnetic Intensity (leveled)
RMI	nT	Residual Magnetic Intensity (leveled)

Radiometric Database:

Abbreviations used in the GDB/XYZ files listed below:

CHANNEL	UNITS	DESCRIPTION
X_WGS84	m	UTM Easting – WGS84 Zone10N
Y_WGS84	m	UTM Northing – WGS84 Zone 10N
Lat_deg	Decimal degree	Latitude – WGS84
Lon_deg	Decimal degree	Longitude – WGS84
Date	yyyy/mm/dd	Date of the survey flight(s) – Local
FLT		Flight Line numbers
LineNo		Line numbers
STL		Number of satellite(s)
GPStime	HH:MM:SS	GPS time (UTC)
GPSFix		1 = non-differential 2 = WAAS/SBAS differential
Heading	degree	Heading of the aircraft
XTE_m	m	Cross track error
Galt	m	GPS height – WGS84 Zone 10N (ASL)
Lalt	m	Laser altimeter readings (AGL)
DTM	m	Digital Terrain Model
Sample_Density	m	Horizontal distance in metres between adjacent measurement locations; sample frequency is 20 Hz
Speed_km_hr	km/hr	Ground speed of aircraft in km/hr
Cos_cps	counts/sec	Spectrometer – Raw Cosmic
K_cps	counts/sec	Raw Potassium
Th_cps	counts/sec	Raw Thorium
Ur_cps	counts/sec	Raw Uranium
TC_cps	counts/sec	Raw Total Count

Note – radiometric data provided in database were not processed at client’s request.

Grids:

Reliance Survey Block, WGS 84 Datum, Zone 10N, cell size at 25 m

FILE NAME	DESCRIPTION
20111_Reliance_DTM_25m.grd	Digital Terrain Model gridded at 25 m cell size
20111_Reliance_TMI_25m.grd	Total Magnetic Intensity gridded at 25 m cell size
20111_Reliance_RMI_25m.grd	Residual Magnetic Intensity gridded at 25 m cell size
20111_Reliance_RTP_25m.grd	Reduced to Magnetic Pole of RMI gridded at 25 m cell size
20111_Reliance_CHG_25m.grd	Calculated Horizontal Gradient of RMI gridded at 25 m cell size
20111_Reliance_CVG_25m.grd	Calculated Vertical Gradient of RMI gridded at 25 m cell size

Maps:

Reliance Survey Block, WGS 84 Datum, Zone 10N (jpegs, pdfs, and georeferenced pdf)

Plate Number	Plate Name	FILE NAME	DESCRIPTION
1	FL	20111_Reliance_ActualFlightLines	Plotted actual flown flight lines
2	DTM	20111_Reliance_DTM_25m	Digital Terrain Model gridded at 25 m cell size
3	TMI_wFL	20111_Reliance_TMI_wFL_25m	Total Magnetic Intensity gridded at 25 m cell size with actual flown flight lines
4	TMI	20111_Reliance_TMI_25m	Total Magnetic Intensity gridded at 25 m cell size
5	RMI	20111_Reliance_RMI_25m	Residual Magnetic Intensity gridded at 25 m cell size
6	RTP	20111_Reliance_RTP_25m	Reduced to Magnetic Pole of RMI gridded at 25 m cell size
7	CHG	20111_Reliance_CHG_25m	Calculated Horizontal Gradient of RMI gridded at 25 m cell size
8	CVG	20111_Reliance_CVG_25m	Calculated Vertical Gradient of RMI gridded at 25 m cell size

Plates

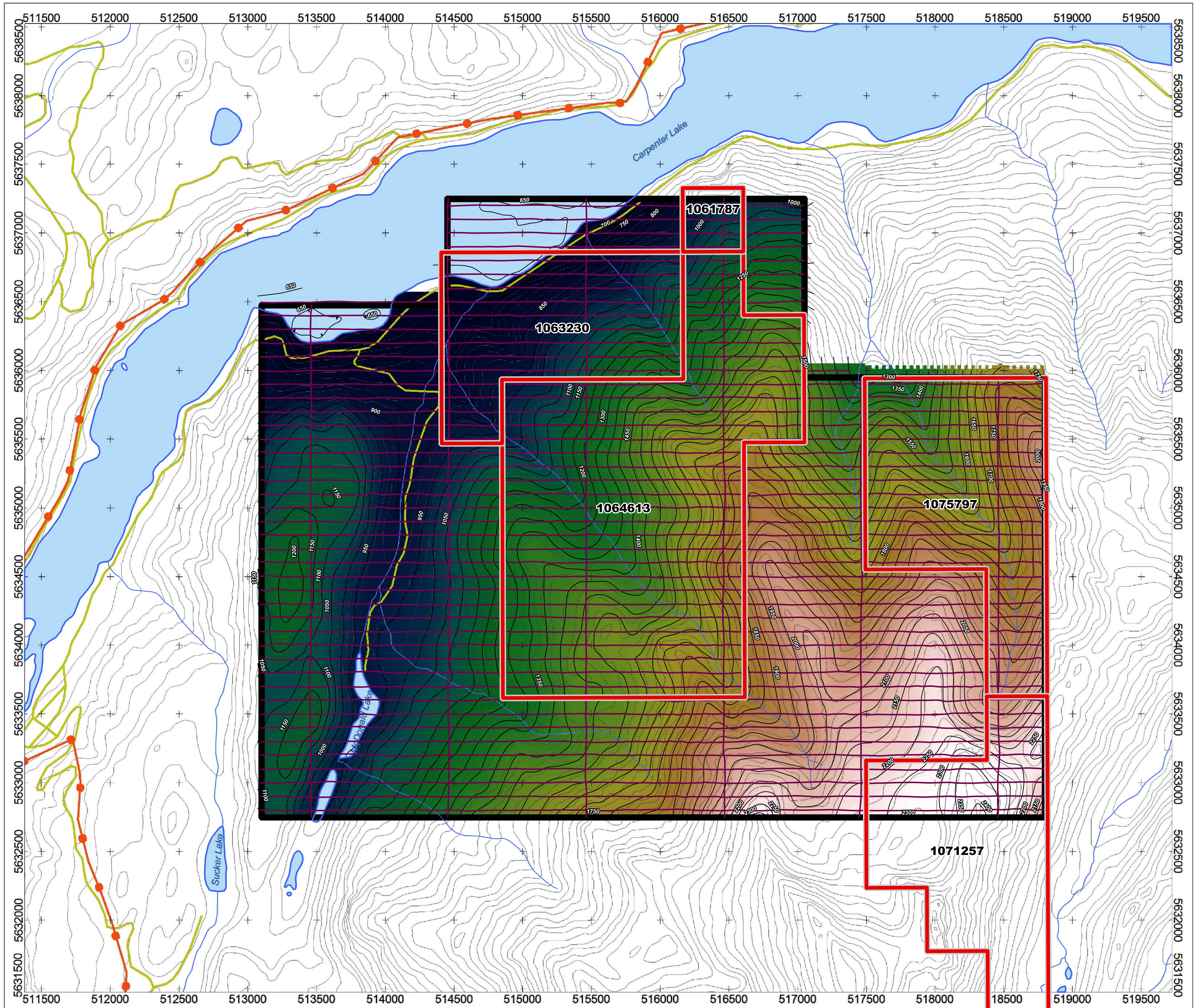
Reliance Survey Block
Scale 1:15,000
(Print and Digital)

- Plate 1: Reliance – Actual Flight Lines (FL)
- Plate 2: Reliance – Digital Terrain Model (DTM)
- Plate 3: Reliance – Total Magnetic Intensity with Actual Flight Lines (TMI_wFL)
- Plate 4: Reliance – Total Magnetic Intensity (TMI)
- Plate 5: Reliance – Residual Magnetic Intensity (RMI)
- Plate 6: Reliance – Reduced to Magnetic Pole (RTP) of RMI
- Plate 7: Reliance – Calculated Horizontal Gradient (CHG) of RMI
- Plate 8: Reliance – Calculated Vertical Gradient (CVG) of RMI

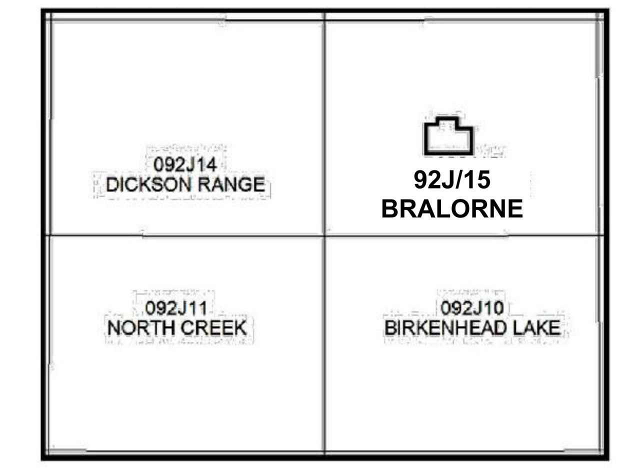
Appendix 2

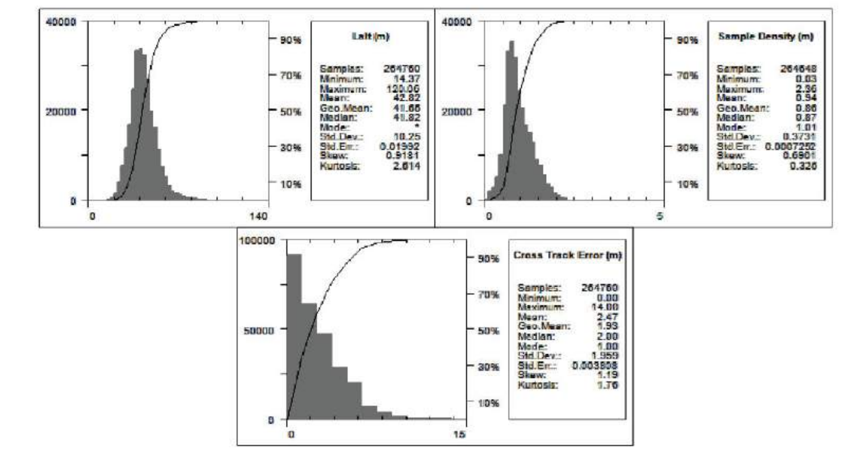
Airborne Geophysical Maps

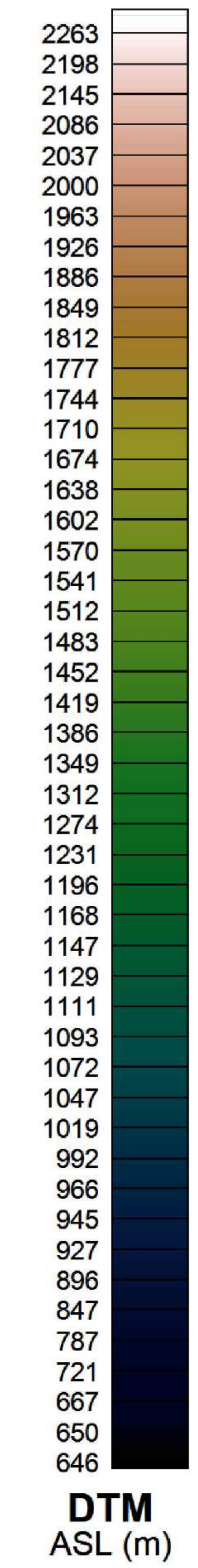
1:15,000 Scale



National Topographic System







MAP PROJECTION
Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020)
	Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger)
	C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(Tl)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend

Water Bodies..
Road(s)...
Power Line(s)...
Elevation Contours, 100 ft Interval..........
Reliance Survey Block Boundary............

TOPOGRAPHIC REFERENCE
National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/>[2007]

Endurance Gold Corp.

Reliance Survey Block

Overview Map
Digital Terrain Model

Precision GeoSurveys

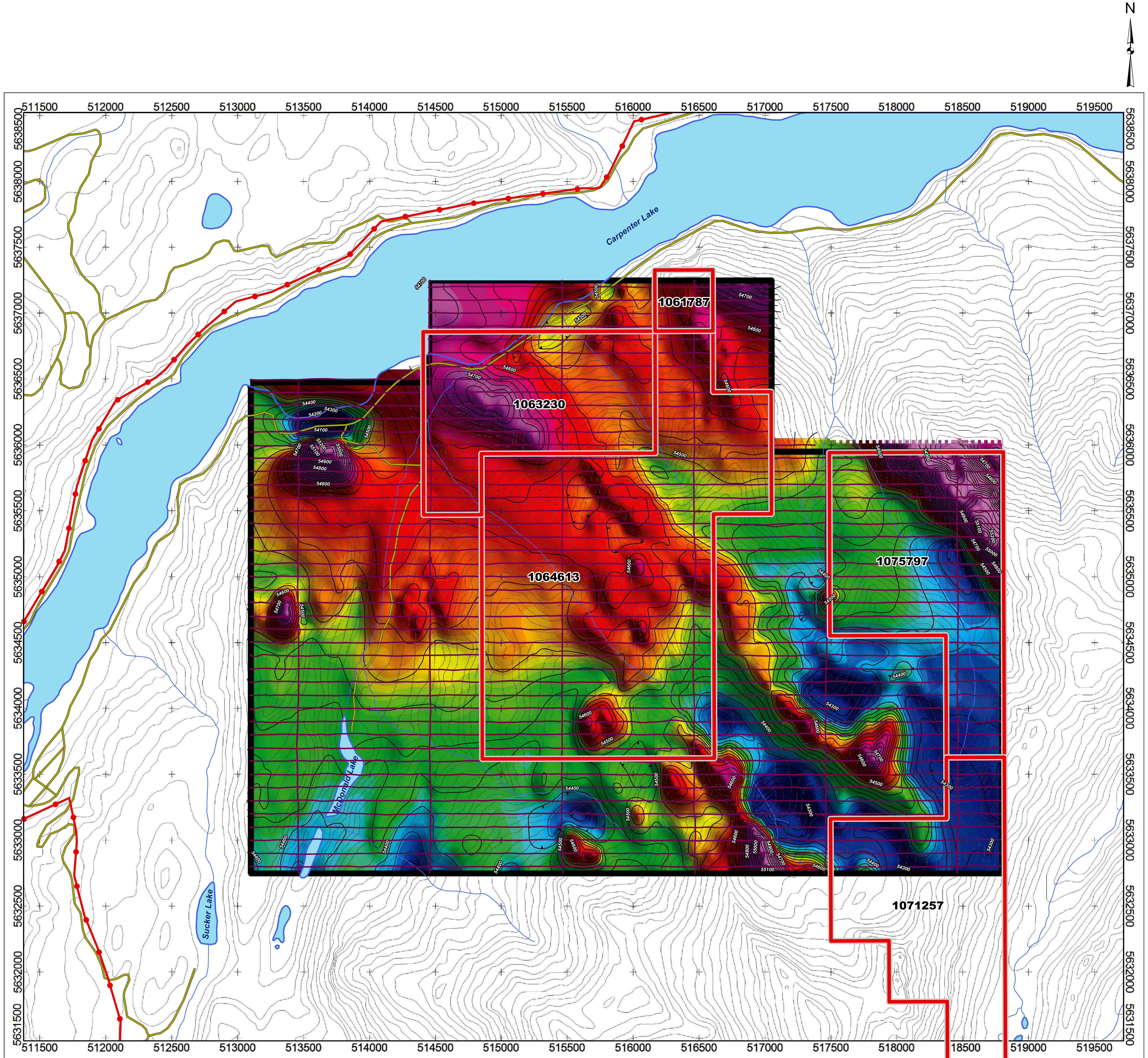
Legend
Digital Terrain Model Contour Interval 50 metres

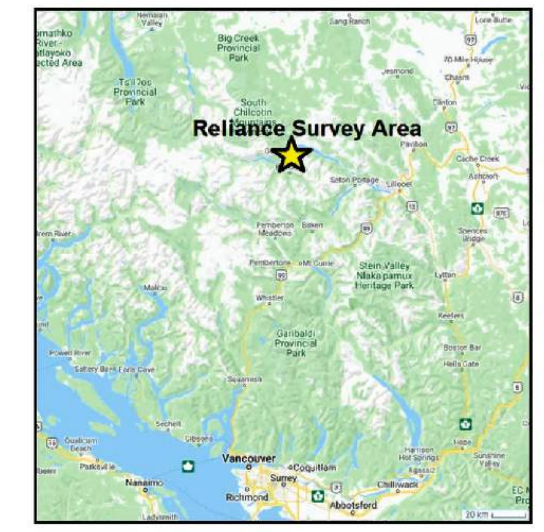
Actual Flight Lines
1061787 MINERAL CLAIM with claim no.

Scale 1:15000
250 0 250 500 750 1,000
metres
WGS 84 / UTM Zone 10N

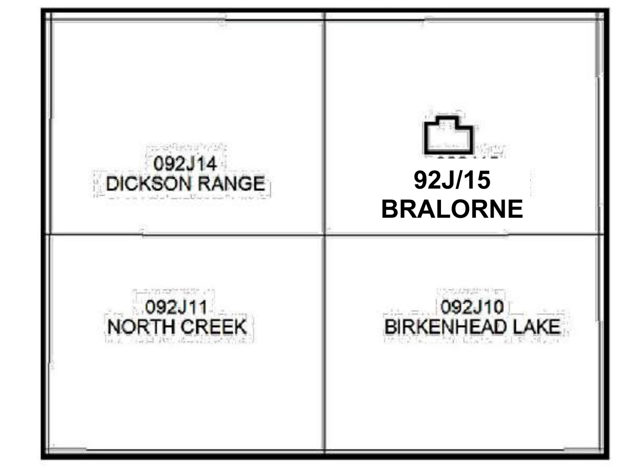
Job #20111
June 12, 2020

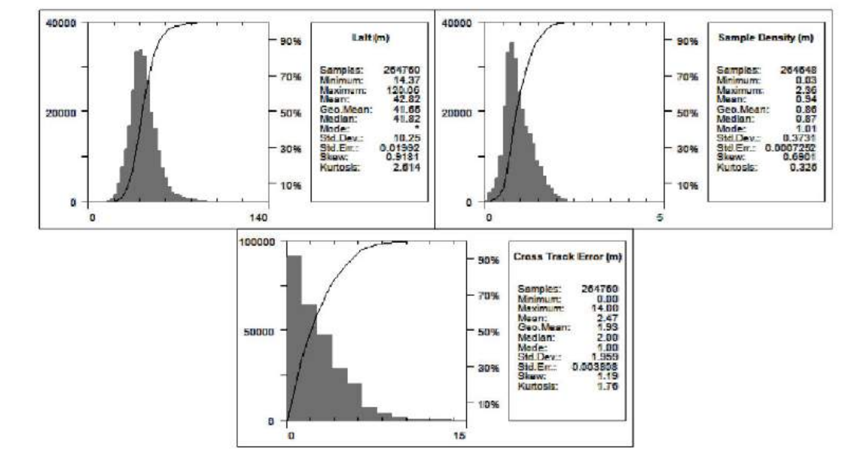
Plate 1: DTM

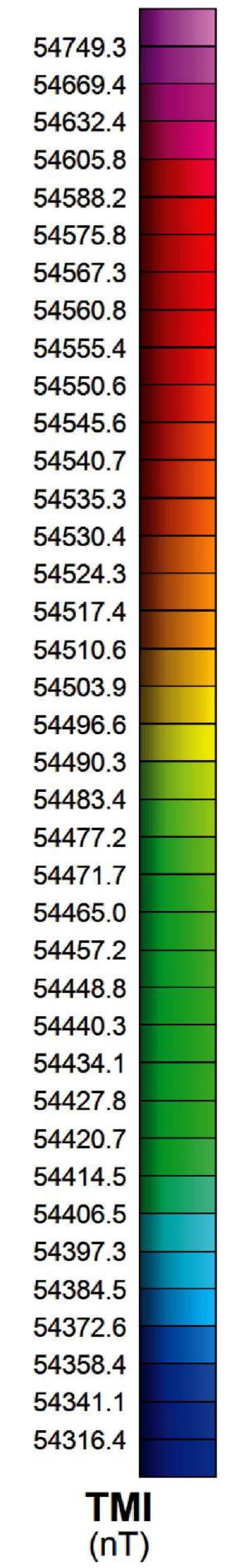




National Topographic System







MAP PROJECTION
Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020)
	Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger)
	C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(Tl)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend

Elevation Contours, 100 ft Interval...........

Reliance Survey Block Boundary.............

DATA REFERENCE
Magnetic data have been compensated and corrected for temporal variations, lag, and heading; then leveled to generate the Total Magnetic Intensity (TMI) grid. Refer to report for details. TMI is represented as a grid and drawn with a histogram-equalized color shade; sun illumination inclination at 45° and declination at 045°.

TOPOGRAPHIC REFERENCE
National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/>[2007]

Endurance Gold Corp.

Reliance Survey Block

Magnetic Map

Total Magnetic Intensity

Precision GeoSurveys

Total Magnetic Intensity 25 nT interval

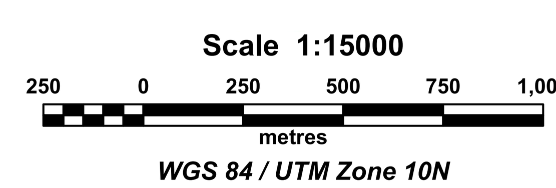
Power Line(s)..

Road(s)..

Water Bodies...

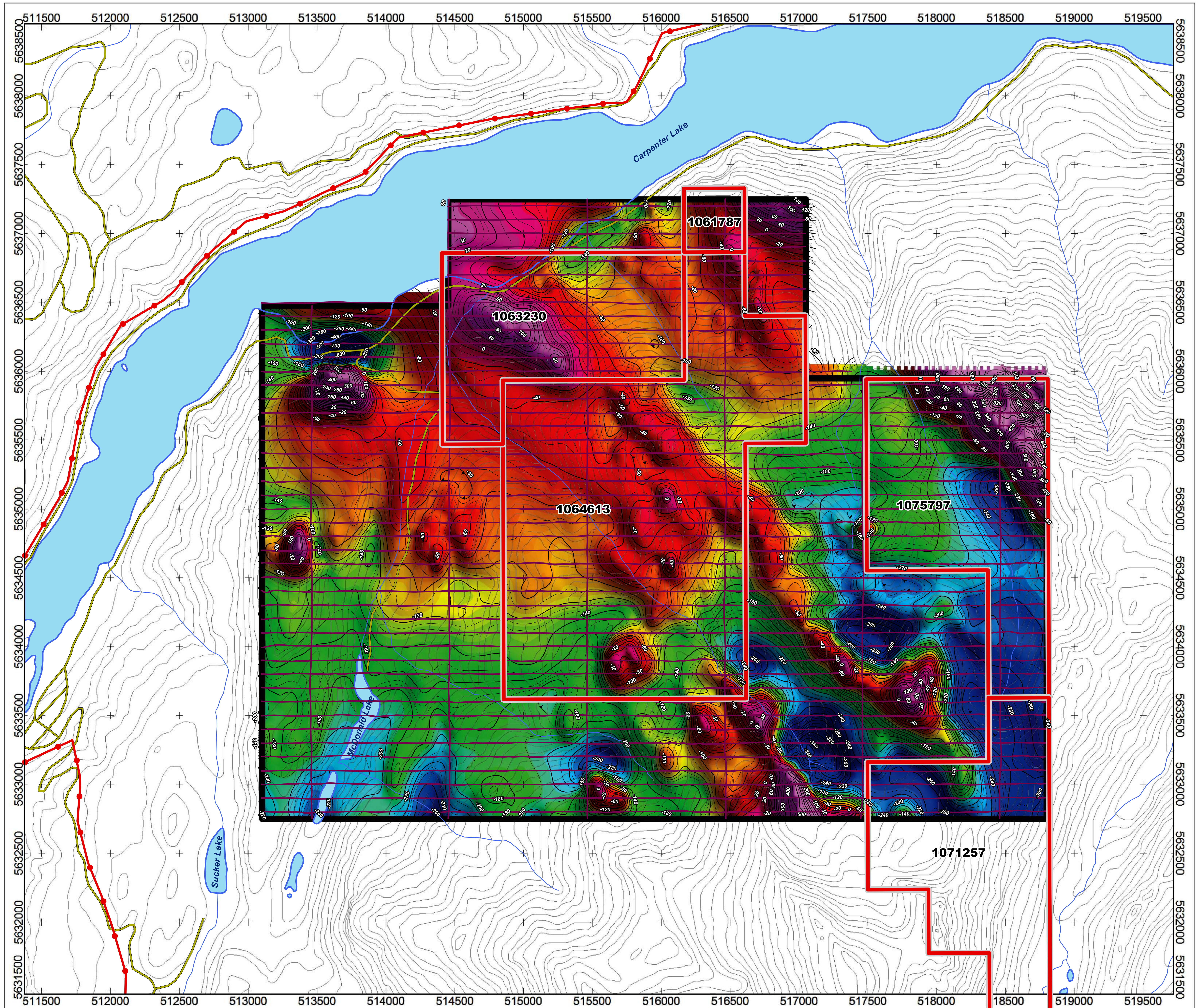
Actual Flight Lines

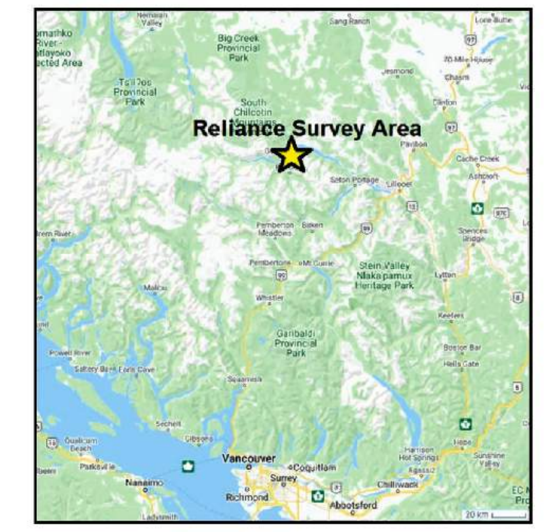
1061787 MINERAL CLAIM with claim no.



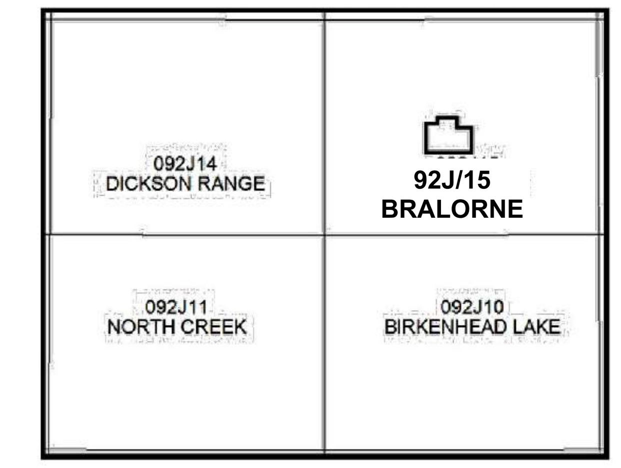
Job #20111
June 12, 2020

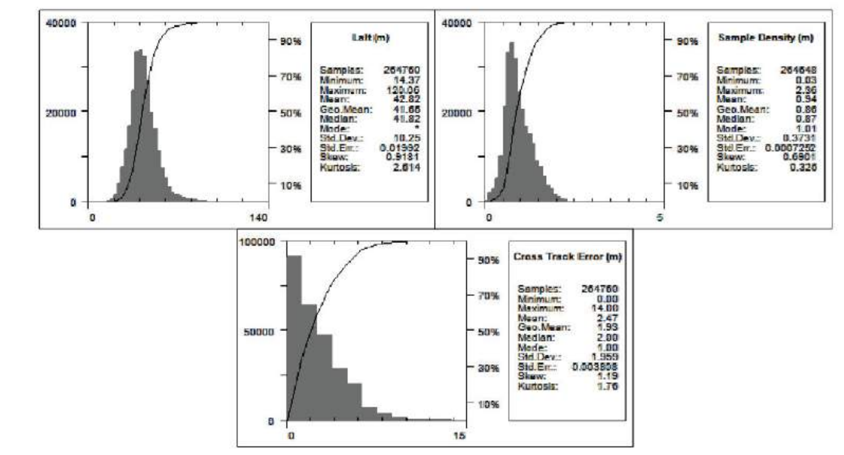
Plate 2: TMI

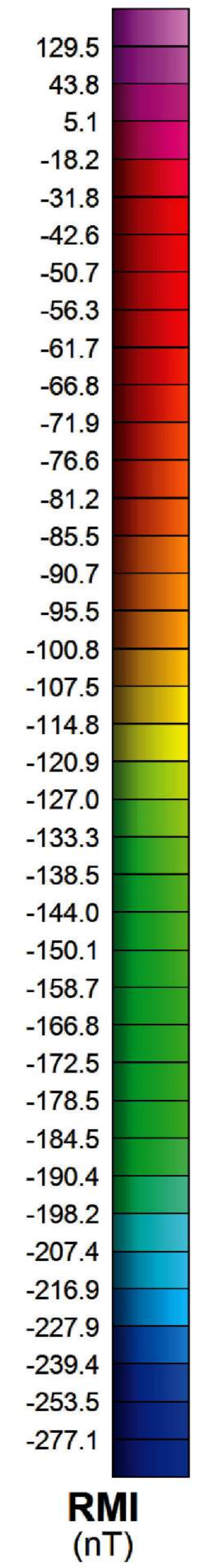




National Topographic System







MAP PROJECTION
Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020) Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger) C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(Tl)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend
Elevation Contours, 100 ft Interval...........
Reliance Survey Block Boundary.............

DATA REFERENCE
Residual Magnetic Intensity (RMI) is computed by taking the difference between Total Magnetic Intensity (TMI) and IGRF. Refer to report for details. RMI is represented as a grid and drawn with a histogram-equalized color shade; sun illumination inclination at 45° and declination at 045°.

TOPOGRAPHIC REFERENCE
National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bndt/>[2007]

Endurance Gold Corp.

Reliance Survey Block

Magnetic Map
Residual Magnetic Intensity

Precision GeoSurveys

Residual Magnetic Intensity 10 nT interval
Power Line(s)..
Road(s)..
Water Bodies...

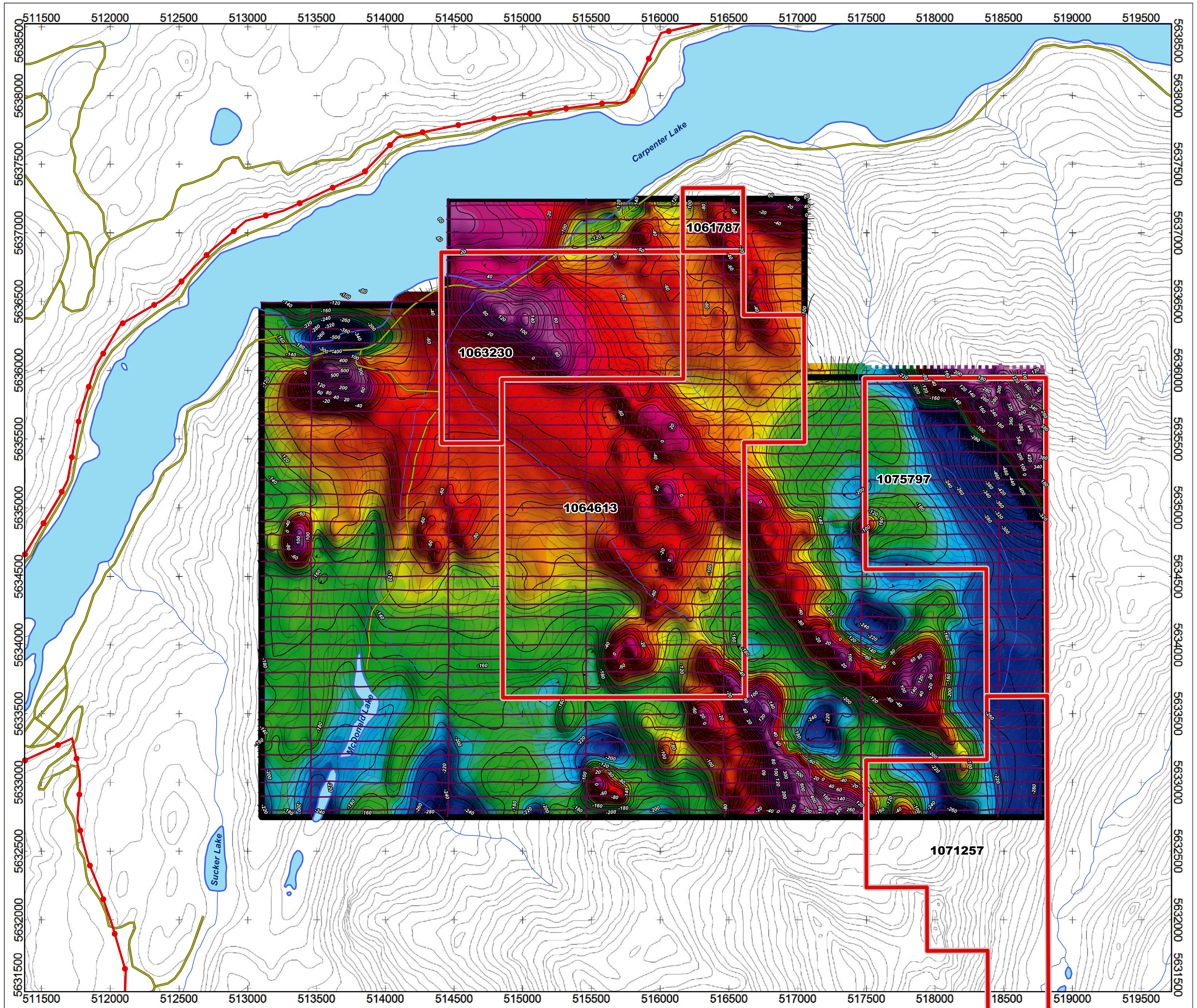
Actual Flight Lines

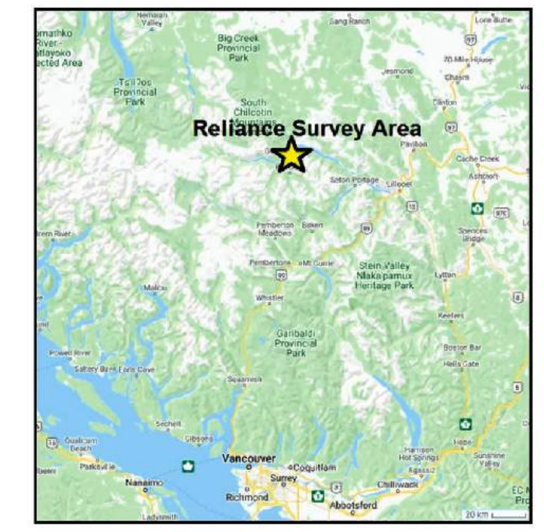
1061787 MINERAL CLAIM with claim no.

Scale 1:15000
250 0 250 500 750 1,000
metres
WGS 84 / UTM Zone 10N

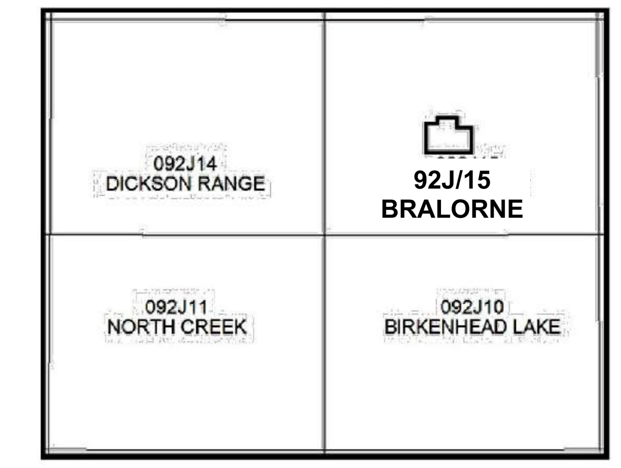
Job #20111
June 12, 2020

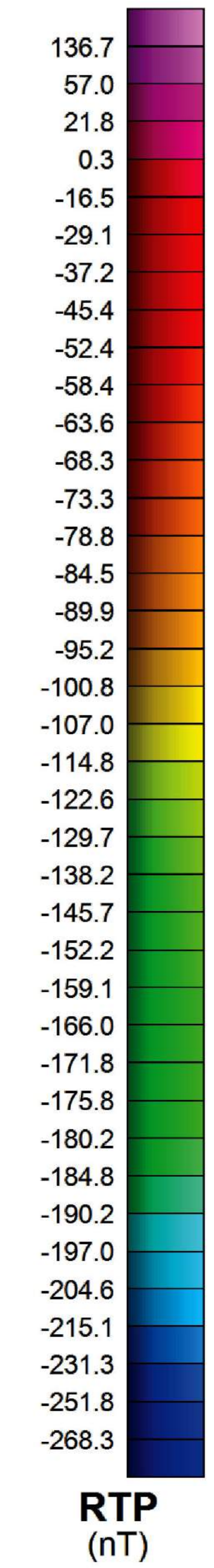
Plate 3: RMI

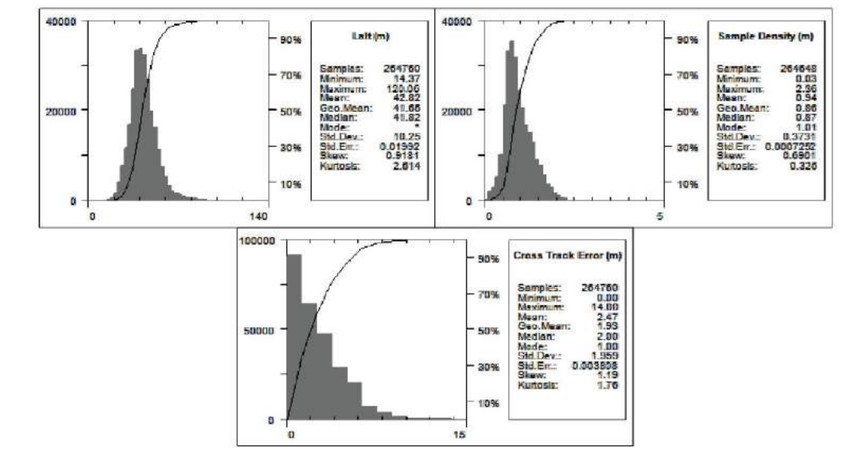




National Topographic System







MAP PROJECTION
Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020) Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger) C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(TI)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend

Elevation Contours, 100 ft Interval...........

Reliance Survey Block Boundary.............

DATA REFERENCE
Reduced to Magnetic Pole (RTP) is computed from Residual Magnetic Intensity (RMI). Refer to report for details. RTP is represented as a grid and drawn with a histogram-equalized color shade; sun illumination inclination at 45° and declination at 045°.

TOPOGRAPHIC REFERENCE
National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bndt/>[2007]

Endurance Gold Corp.

Reliance Survey Block

Magnetic Map
Reduced to Magnetic Pole

Precision GeoSurveys

Reduced to Pole Magnetics 10 nT interval

Power Line(s)..

Road(s)..

Water Bodies..

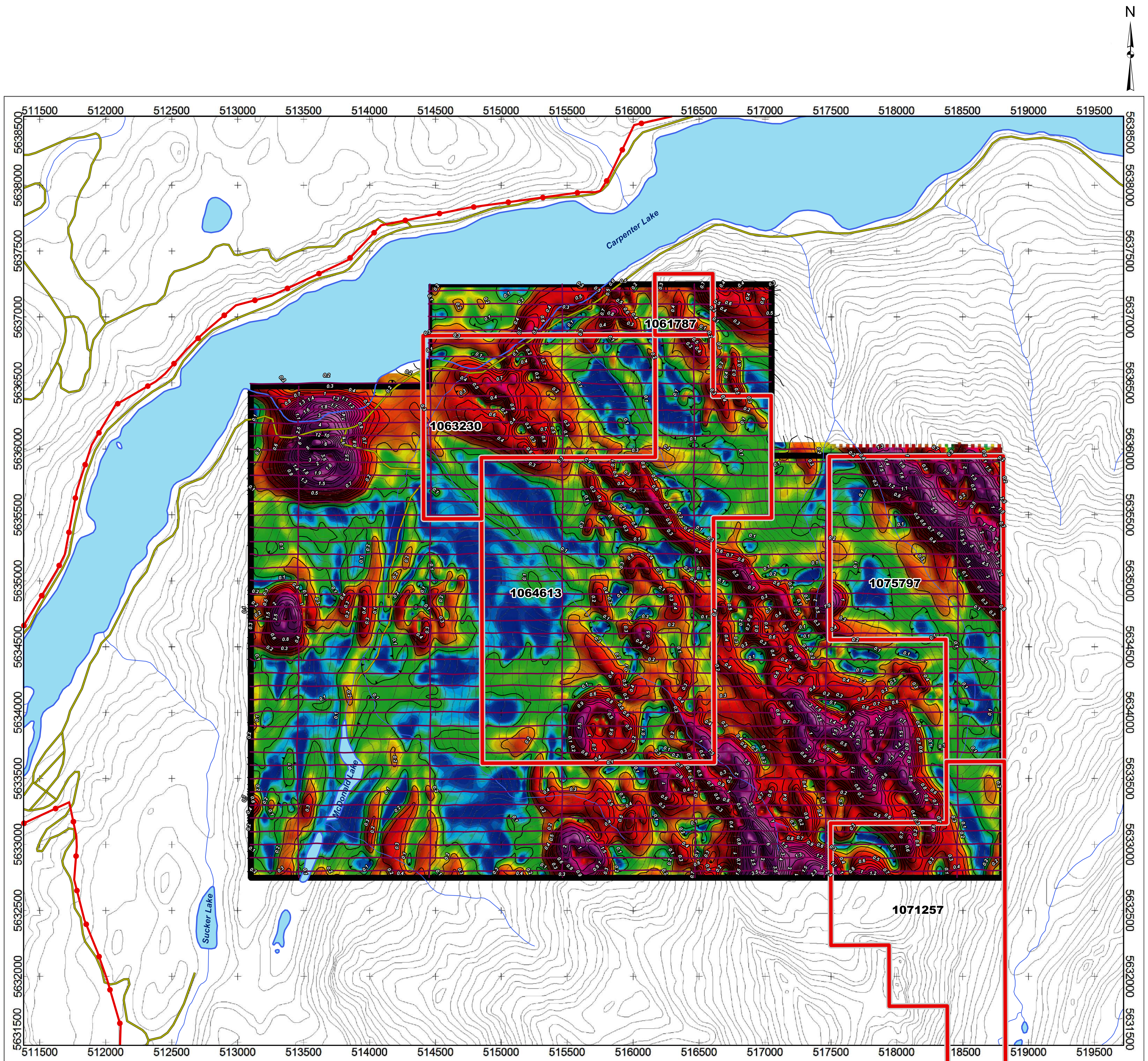
Actual Flight Lines

1061787 MINERAL CLAIM with claim no.

Scale 1:15000
250 0 250 500 750 1,000
metres
WGS 84 / UTM Zone 10N

Job #20111
June 12, 2020

Plate 4: RTP

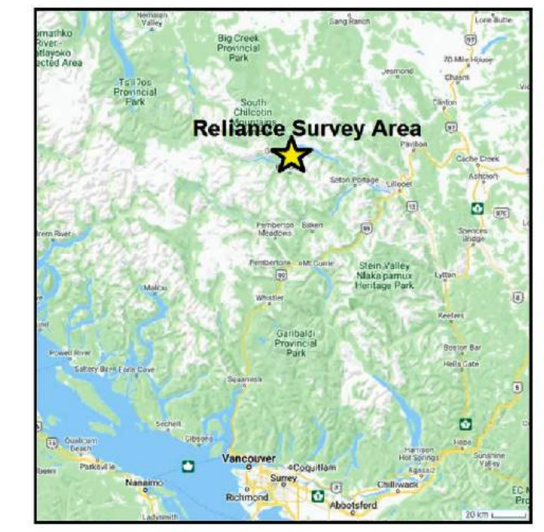


Calculated Horizontal Gradient Magnetics 0.1 nT/m interval	
Power Line(s)..	
Road(s)..	
Water Bodies..	

Actual Flight Lines

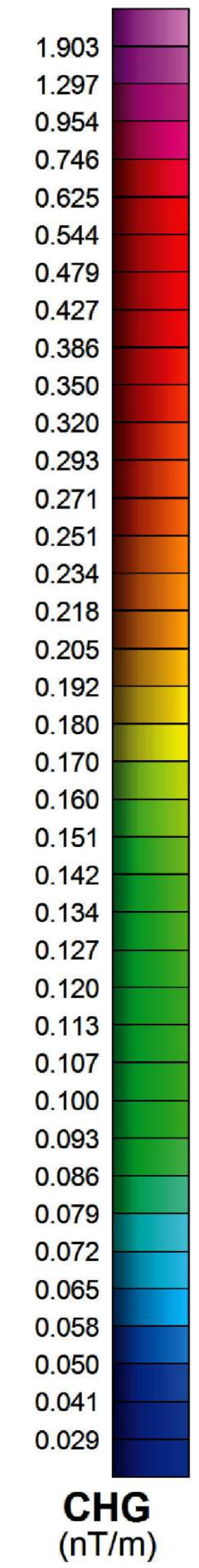
1061787 MINERAL CLAIM with claim no.

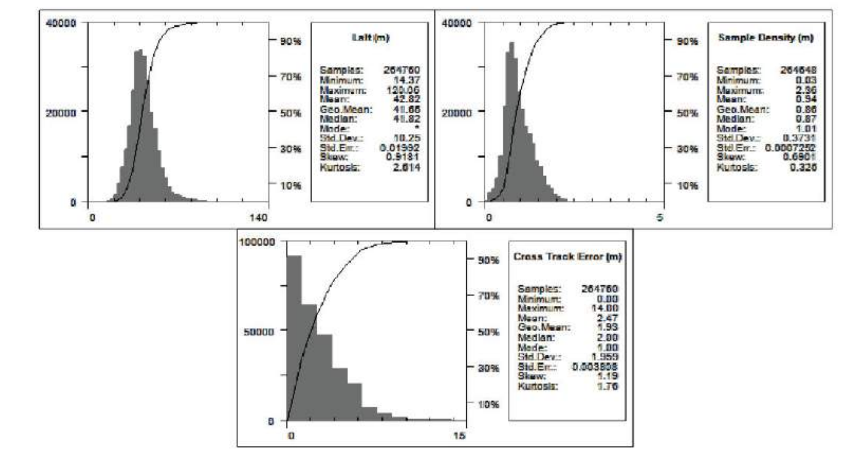
Job #20111
June 12, 2020



National Topographic System

092J14 DICKSON RANGE	92J/15 BRALORNE
092J11 NORTH CREEK	092J10 BIRKENHEAD LAKE





MAP PROJECTION
Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020) Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger) C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(Tl)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend

Elevation Contours, 100 ft Interval...........

Reliance Survey Block Boundary.............

DATA REFERENCE
Calculated Horizontal Gradient (CHG) is the magnitude of the horizontal gradient of Residual Magnetic Intensity (RMI). Refer to report for details. CHG is represented as a grid and drawn with a histogram-equalized colour shade; sun illumination inclination at 45° and declination at 045°.

TOPOGRAPHIC REFERENCE
National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bndt/>[2007]

Scale 1:15000
250 0 250 500 750 1,000
metres
WGS 84 / UTM Zone 10N

Endurance Gold Corp.

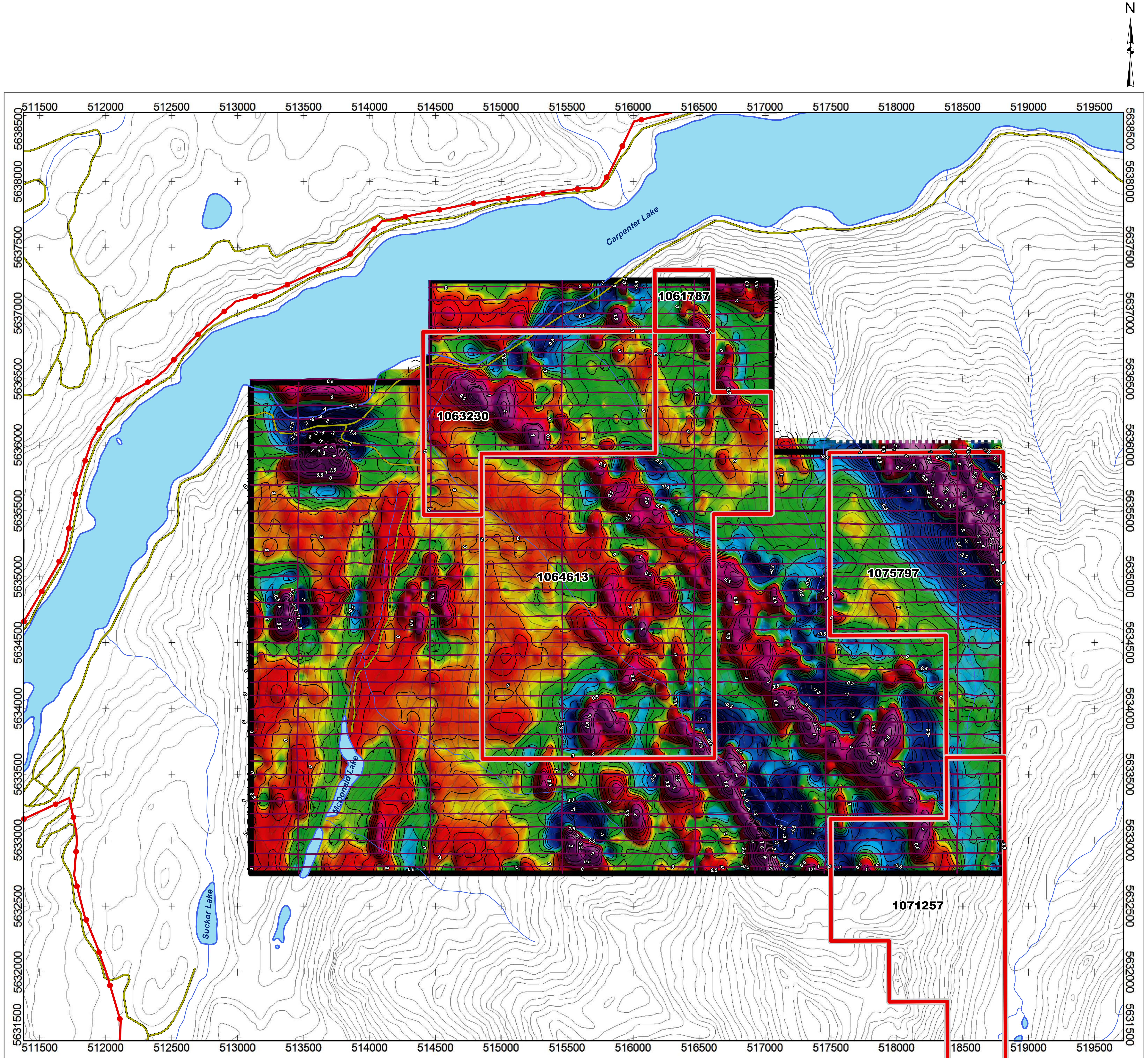
Reliance Survey Block

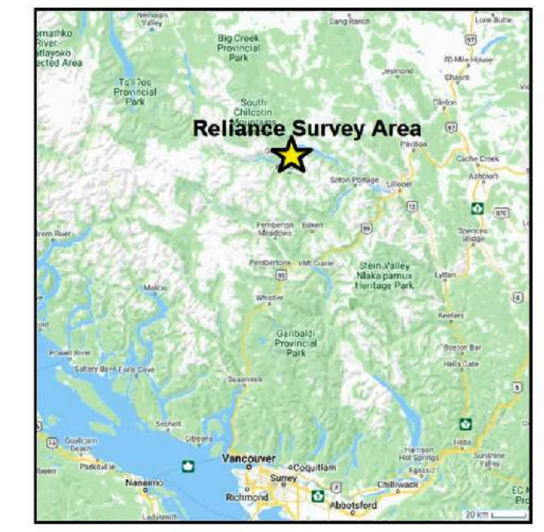
Magnetic Map

Calculated Horizontal Gradient

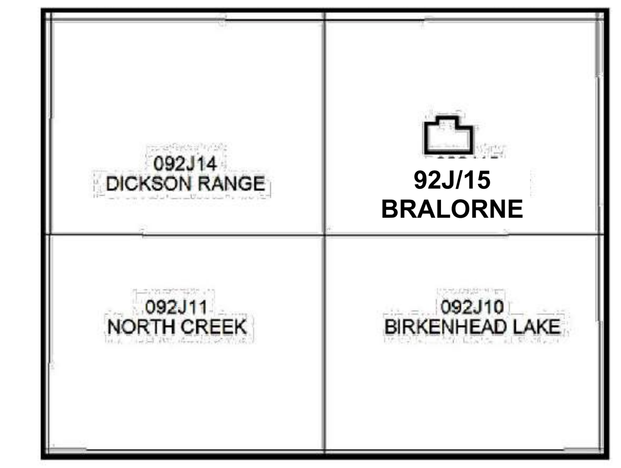
Precision GeoSurveys

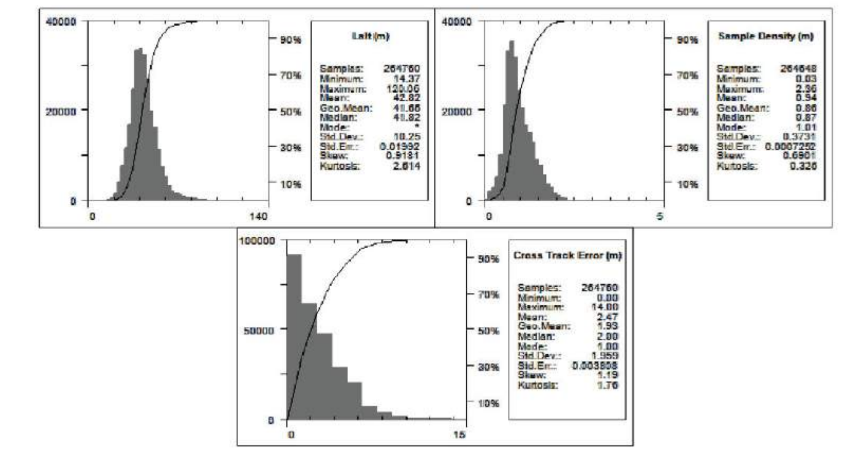
Plate 5: CHG

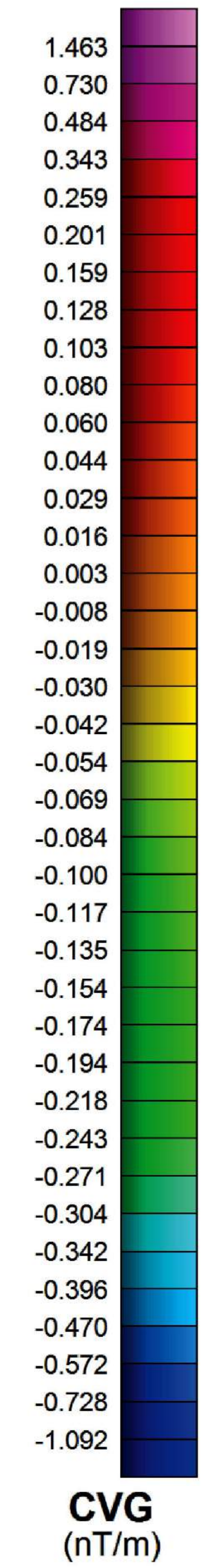




National Topographic System







MAP PROJECTION

Projection: Universal Transverse Mercator Zone 10N
Datum: WGS 84
Local Datum Transform: World

RELIANCE SURVEY SPECIFICATIONS

Survey Dates:	June 1 and June 5, 2020
Survey Base:	Tyax Lodge, BC
Aircraft Types:	Bell 206 Jet Ranger helicopter (June 1, 2020) Airbus AS350 helicopter (June 5, 2020)
Registrations:	C-FZHK (Bell 206 Jet Ranger) C-GSVY (Airbus AS350)
Survey Technology:	Magnetic and radiometric survey
Mean Flight Height:	42.8 meters
Survey Line Spacing:	100 meters
Survey Line Direction:	090°/270°
Tie Line Spacing:	1000 meters
Tie Line Direction:	000°/180°

AIRBORNE SURVEY SYSTEM

Magnetometer Sensor:	Scintrex CS-3 Cesium
Configuration:	Stinger with 3 axis compensation
Sample Rate:	20 Hz
Sensitivity:	0.0006 nT √Hz rms
Gamma Ray Spectrometer:	Pico Envirotec GRS-10
Downward-Looking Crystals:	8.4 litres of NaI(Tl)
Sample Rate:	1 Hz (Resampled to 20 Hz)

Legend

Elevation Contours, 100 ft Interval...........

Reliance Survey Block Boundary.............

DATA REFERENCE

Calculated Vertical Gradient (CVG) is the first vertical derivative of Residual Magnetic Intensity (RMI). Refer to report for details. CVG is represented as a grid and drawn with a histogram-equalized colour shade; sun illumination inclination at 45° and declination at 045°.

TOPOGRAPHIC REFERENCE

National Topographic Data Base (NTDB), Canada. Ottawa, ON: Government of Canada, Natural Resources Canada, Center for Topographic Information.
URL <http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bndt/>[2007]

Endurance Gold Corp.

Reliance Survey Block

Magnetic Map

Calculated Vertical Gradient

Precision GeoSurveys

Plate 6: CVG

Calculated Vertical Gradient Magnetics 0.1 nT/m interval

Power Line(s)..

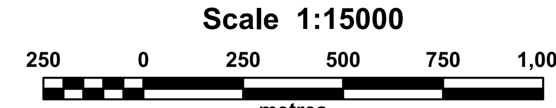
Road(s)..

Water Bodies..

Actual Flight Lines

1061787 MINERAL CLAIM with claim no.

Scale 1:15000



WGS 84 / UTM Zone 10N

Job #20111
June 12, 2020