

**2009 Assessment Report  
for the  
CYNTHIA Property  
VLF and Magnetism Surveys  
July 12-16, 2009  
YMIP # 09-115**

**Mayo Mining District  
Yukon Territory  
NTS 105 O/6  
Latitude: 63° 23.5'N  
Longitude: 131° 21'W**

**Quartz Claims**

<b>Claim Name/No.</b>	<b>Grant No.</b>
CYNTHIA 1-10	YC10257-10266
CYNTHIA 11-28	YC10730-10747
CYNTHIA 39-50	YC10764-10775

**By:**

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**For:**

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**March 31 2010**



## **SUMMARY**

From July 12-16 2009, J.S Berdahl conducted a YMIP funded exploration program on the CYNTHIA Property, in the Mayo Lake Mining District, that consisted of a ground based magnetics and VLF survey. This technical report documents the qualifying mineral exploration work conducted during the 2009 program, and has been provided to satisfy the reporting requirements of the Target Evaluation section of the Yukon Mining Incentives Program (YMIP) and for assessment purposes.

The CYNTHIA property is located 160 km north of the village of Ross River, Yukon and 80 km north of the Sheldon Lake airstrip along the North Canol Road. The subject property is presently accessible only by helicopter. The property consists of 43 quartz mineral claims owned 100% by R.S Berdahl.

The claims forming the core of the property were first staked as the Art 1-12 claims in 1967 by the Hess Project as a potential source of intrusion related gold style mineralization. Between 1967 and 2002 a number of companies and partnerships were involved in exploration programs in the immediate area.

The 2009 exploration program at the CYNTHIA property consisted of a ground based total field magnetics survey and a VLF EM survey. A total of 13.4 line km of magnetics and VLF data was acquired from an irregularly shaped 1.2 km by 0.4 km grid, covering the CYNTHIA 11 and 24-26 claims. The magnetics and VLF surveys was conducted simultaneously over the same grid area.

The information collected from the 2009 work program indicates generally a poor correlation between areas of low magnetic field strength and crossovers in in-phase and quadrature of the VLF response. Although several areas of magnetic lows warrant followup. In general due to poor correlation between the magnetics and vlf surveys, and the relative difficulty to interpret this vlf data, further vlf surveying is not recommended at this time.

Followup work on the CYNTHIA property in 2010 should consist of expanding the magnetics grid to the north and completing a systematic grid soil geochemistry survey over the 2009 work area as well as the expanded 2010 grid area. Additional prospecting should be conducted over areas representing magnetic anomalies.



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## **1.0 INTRODUCTION**

From July 12-16 2009, R.S Berdahl conducted a YMIP exploration program on the CYNTHIA property, located in the Mayo mining district, Yukon Territory. Historically the CYNTHIA property has been explored by several operators as a potential intrusion related gold exploration target. In 2009 a 2 person crew spent 5 days in the field acquiring 13.4 line km of ground based magnetics and VLF data from an irregularly shaped 1.2 km by 0.4 km grid.

This technical report documents the 2009 exploration program on the Quartz Claims comprising the CYNTHIA property and has been produced to satisfy the reporting requirements of the Yukon Mining Incentives Program (YMIP) .

The exploration program was managed by J.S Berdahl. This report has been produced by Derek K. Torgerson B.Sc, P.Geol. with material data provided by R.S Berdahl. The 2009 field program was conducted from July 12-16, 2009.

## **2.0 LOCATION AND ACCESS**

The CYNTHIA property is centred at 63°23.5' north latitude, 131°21' west longitude on NTS map sheet 105O/6. It consists of 43 contiguous Yukon quartz mining claims. The property is situated within the Tintina Gold Belt, 160 km north of the village of Ross River, Yukon and 80 km north of the Sheldon Lake airstrip along the North Canol Road. A winter road extending from the Canol Road west to the Plata airstrip is located roughly 10 km south of the property.

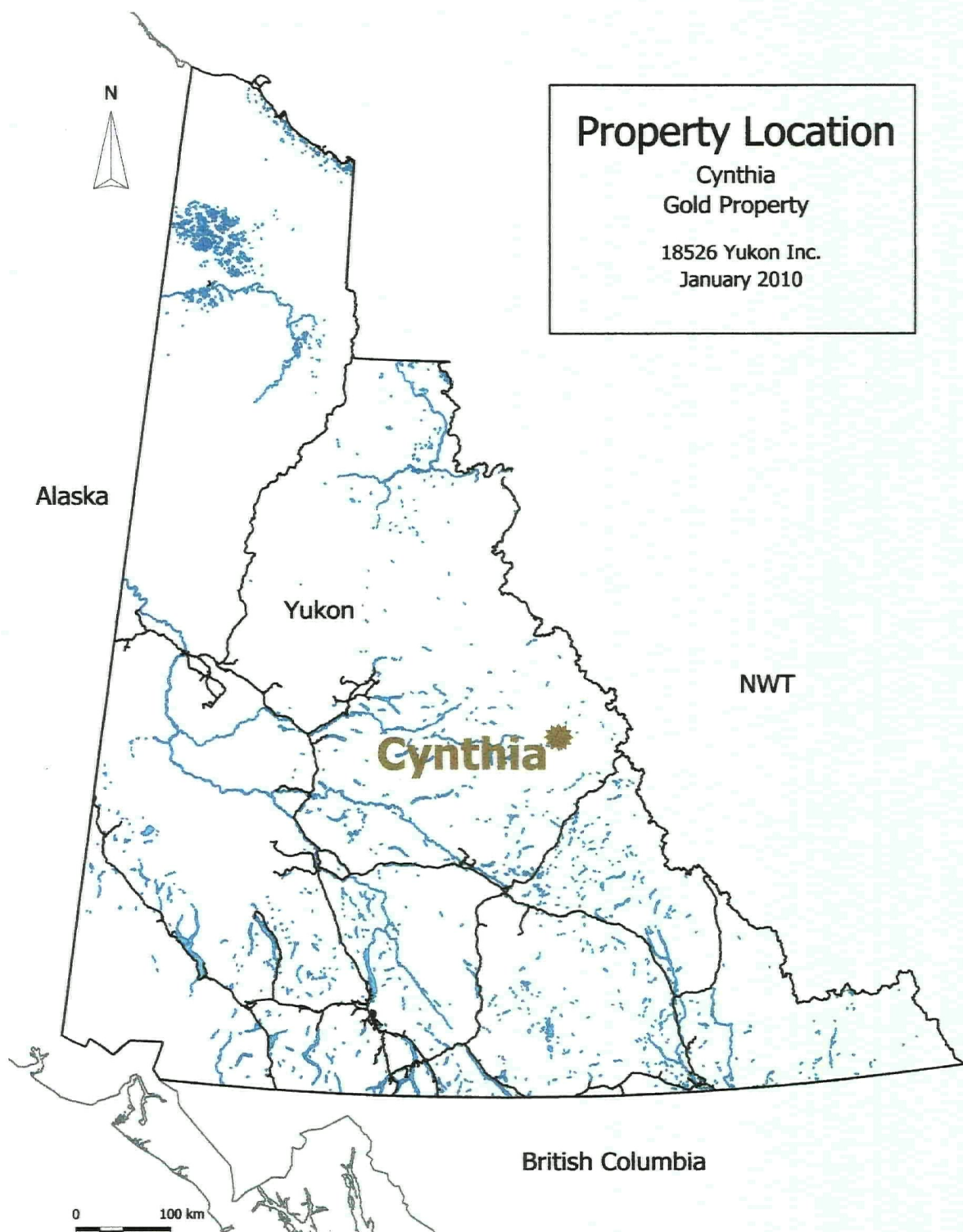
## **3.0 CLAIM INFORMATION**

The CYNTHIA Property is in the Mayo Mining District and consists of 43 contiguous Quartz Claims acquired in accordance with the Yukon Quartz Mining Act. The claims are registered in the name of, and owned 100% by 18526 Yukon Inc. The claim location map is included in Figure 2. The 2009 exploration program was conducted on the CYNTHIA 11 and 24-26 claims. These claims are owned 100% by 18526 Yukon Inc.

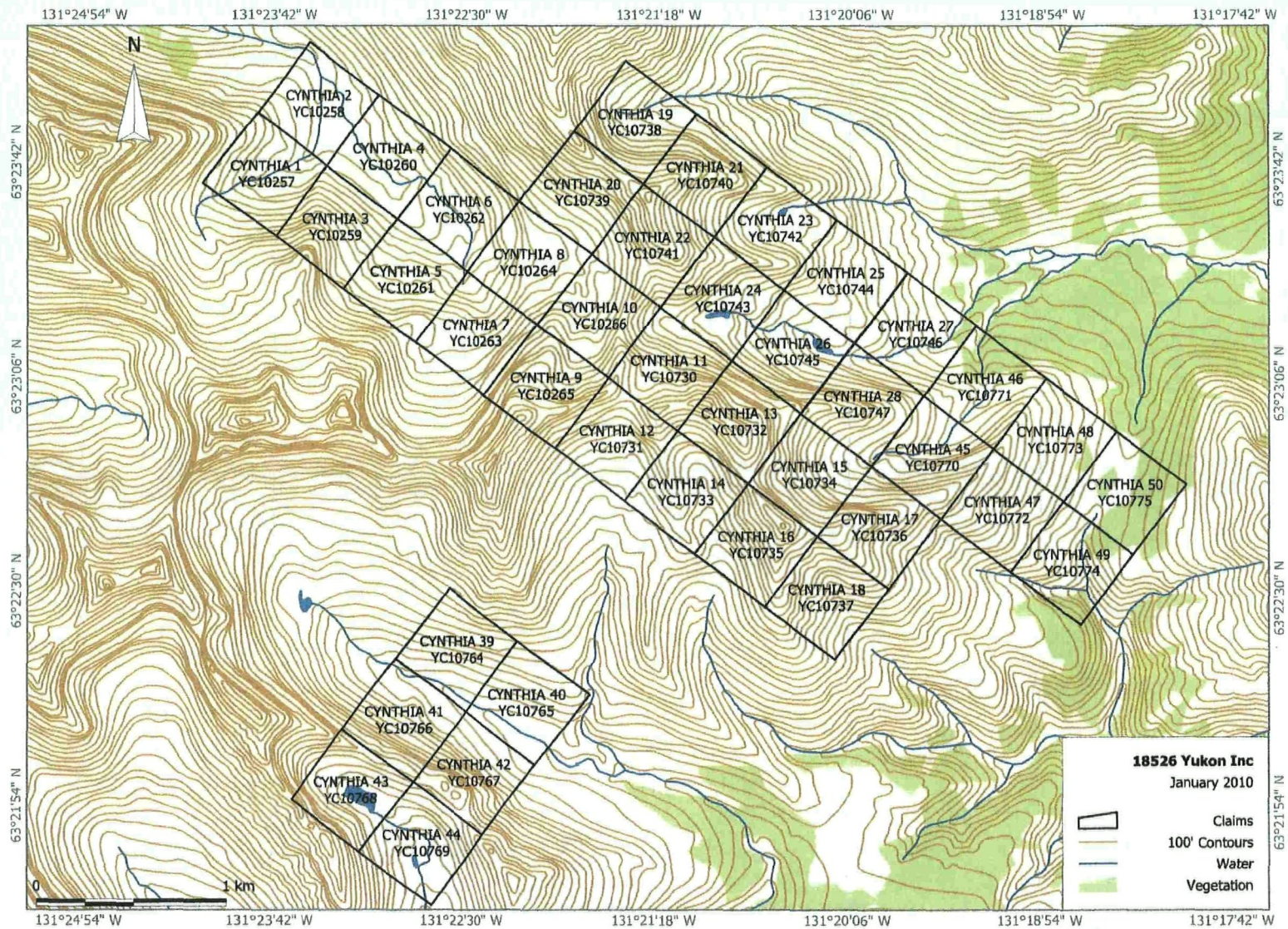
### **Quartz Claims Table:**

<b>Claim Name/No.</b>	<b>Grant No.</b>	<b>Expiry Date</b>
CYNTHIA 1-10	YC10257-10266	2013-06-17
CYNTHIA 11-28	YC10730-10747	2013-07-11
CYNTHIA 39-44	YC10764-10769	2009-11-26
CYNTHIA 45-50	YC10770-10775	2012-11-26











#### **4.0 PHYSIOGRAPHY AND CLIMATE**

The Cynthia property is located within rugged terrain with elevations ranging from 1,450m to 2200m. Although much of the property is very rugged, a series of cirques leading to broad glacial valleys has resulted in large areas of more moderate, easily explorable terrain. The climate is subarctic, with short, cool summers and long, cold winters and moderate precipitation. The climate of the property area is generally fairly dry in the summer months with most precipitation occurring in July and early August. Temperatures generally range from -40° C in the winter to 30° C in the summer. Snow begins accumulating in mid to late September and is mostly melted by early June. The snow-free season extends from early June to mid September. Vegetation consists of subalpine boreal forest up to roughly 1,500m, with typical tundra vegetation covering higher elevations. Very high areas are barren of vegetation, with small icefields remaining in some north-facing cirques.

#### **5.0 PROPERTY HISTORY**

The Cynthia property was first staked as the Art 1-12 claims in 1967 by the Hess Project (Atlas EL, Quebec Cartier Mining Company, and Phillips Brothers (Canada) Ltd.). In 1968, the companies performed grid soil sampling, and magnetic and electromagnetic surveys (Yukon MINFILE, 2001). The eastern part of the project site was restaked as the

Emmy 1-16 claims in 1981 by Union Carbide Canada Ltd., which conducted geological mapping and rock sampling in 1981 and 1982 (James, 1982). The program located weakly pyritic to arsenopyritic quartz veins that returned values up to 3130 g/t Au, 775 g/t Ag, 795 g/t Sb and 1.7% Pb. Breccia zones returned values up to 660 ppb Au; a black chert breccia returned 3.7% Pb and 948 g/t Ag (Union Carbide, 1982, in-house report). The property was restaked in 1991 as the Hess 1-64 claims by Noranda Exploration Company Ltd. In 1995, the entire present property area was staked as the EM 1-112 claims by Brian Lueck, who optioned the property to Yukon Gold Corporation, which conducted geological mapping, and rock and soil sampling. This program defined three anomalous areas, including one hosted by brecciated argillite between two prominent quartz monzonite intrusive bodies (Lueck, 1996). In 1997, Cyprus Canada Inc. optioned the claims and performed a helicopter reconnaissance program. Cyprus Canada sampled the hornfelsed metasedimentary rocks between the two intrusive bodies, obtaining values from 0.5 to 1.0 g/t Au; a sample of quartz-feldspar dyke material returned 1.8 g/t Au (Yukon MINFILE, 2001). In 2002, shortly after the EM 1-112 claims lapsed, Klad Enterprises Ltd. staked the present Cynthia 1-50 claims.



## **6.0 GEOLOGY**

### **6.1 REGIONAL GEOLOGY**

The regional geology was described by Gordey and Anderson (1993) and Soloviev, S.G., Schulze, C.M. and Baklyukov, O.E., (2003), and is shown in Figure 3.

The Cynthia property is located within the Tintina Gold Belt (British Columbia and Yukon Chamber of Mines, 2000), which occurs along a trend of mid- to Late Cretaceous granitoid (diorite, granodiorite, quartz monzonite, syenite) intrusions extending from central Alaska, across central Yukon, to the Yukon-British Columbia border, roughly parallel to the ancient North America craton boundary. In Yukon, the belt is superimposed on the Selwyn Basin, a thick sequence of shelf and off-shelf continental margin metasedimentary rocks formed from late Precambrian to Triassic time.

The southeastern portion of the Selwyn Basin, including the Cynthia property, is underlain by a broad package of Ordovician to Devonian Road River Group and Devonian-Mississippian Earn Group sedimentary rocks, with west-northwest-trending upper Precambrian to Lower Cambrian Hyland Group sedimentary units occurring to the southwest. Hyland Group sedimentary rocks consist largely of coarse clastic 'grits', shale, and lesser limestone and calcareous clastic rocks. Road River Group sedimentary rocks consist mostly of thick chert horizons with lesser interbedded shale, limestone and calcareous mudstone, with minor mafic volcanic units. Earn Group sedimentary rocks consist of chert-pebble conglomerate and greywacke, as well as lesser shale and sandstone.

The area is transected by a number of variably striking faults and fault zones that represent portions (branches) of regional-scale lineaments. Most prominent among them are west-northwest and north-northeast-trending faults that control the majority of larger intrusive stocks, dykes and zones of mineralization, both in regional and local scales.

### **6.2 PROPERTY GEOLOGY**

The geology of the CYNTHIA area is taken from the work of Klad Enterprise's geologists Soloviev, S.G., Schulze, C.M. and Baklyukov, O.E., (2003)

The Cynthia property is situated between and adjacent to two mid-sized (5 by 3 km and 3 by 2 km) exposures of quartz monzonite belonging to the Cretaceous Tombstone Intrusive Suite (Fig. 2). These have been interpreted as surface exposures of a single large pluton. The larger southern exposure is coarse-grained and equigranular, whereas the northern one is K-feldspar porphyritic, possibly suggesting a shallower emplacement depth. Small apophyses of the southern intrusive body occur along its northern contact. Numerous quartz and quartz-feldspar porphyritic dykes are found along structural corridors across the property, but are especially concentrated in the central, western and



extreme southern parts of the property.

Sedimentary rock on the property consists primarily of Ordovician-Devonian Road River Group chert and interbedded shale, with minor limestone in the northern part of the property and extending farther northward. Devonian-Mississippian Earn Group chert-pebble conglomerate has been identified in the centre of the property but the contacts remain undetermined. Previous mapping has identified the entire sedimentary package as Road River Group; however, local greywacke and limestone units in the southern part of the property suggest at least the partial presence of Earn Group sedimentary rocks.

A broad district-scale fault zone incorporating several north-northeast-trending faults occurs across the central property area where it is superimposed on a large arcuate band of silicified limestone. This unit varies from a maximum thickness of roughly 500 m in the central region to a minimum of 100 m in extreme southern portions. The faults, interpreted as steeply east-dipping reverse faults, have caused lateral and vertical stratigraphic displacement, resulting in downward displacement of stratigraphy along the western side. The fault zone hosts several quartz-feldspar porphyry dykes and numerous chalcedony and drusy quartz veins, as well as intensive quartz stockwork. It bears significant gold mineralization, and has been delineated as the Ted Zone. North-south-trending chalcedony veins also occur east of the Ted Zone.

Another wide (0.5-1.0 km) district-scale fault zone strikes west-northwest through the property centre, parallel to regional-scale strike-slip faulting of the Tintina fault system. This zone hosts numerous dyke swarms, suggesting it represents a continuous dilational corridor. The zone also hosts intensive quartz stockwork and thicker linear veins, with minor chalcedony veining. Within the stockwork zone, quartz veins and stringers strike predominantly east-southeast, and dip steeply to the south-southwest, although a significant number strike roughly north-south, dipping steeply westward. Vein densities range from 5 to 10 veins per metre, with locally much higher concentrations. Veins are generally centimetre- to millimetre-scale, although veins up to 30 cm wide are present locally. This broad fault zone also bears significant gold mineralization and has been delineated as the Garry Zone.

The intersection of the Ted Zone and Garry Zone occurs in the central part of the property. This 1.5 by 1.5 km intersection area is characterized by the most intensive fracturing and brecciation, the highest quartz vein density, and the strongest silicification and hydrothermal alteration on the property. This area also hosts the most intensive gold mineralization, and has been delineated as the Intersection Zone.

The Intersection Zone is a conditionally contoured, circular area, outlined to incorporate the zone of mutual intersection and influence of the Ted and Garry zones. As a result, all mineralized occurrences, veins, stockwork and dykes found within the Intersection Zone can be attributed either to the Ted Zone or to the Garry Zone. These occurrences, however, exhibit characteristics that differ from those found within the Ted and Garry zones outside the Intersection Zone.



The most pronounced feature of the Intersection Zone is the greater abundance of mineralized veins and dykes, and a much higher density of quartz stockwork compared with the outlying Ted and Garry zones. This is not surprising, due to the much higher degree of structural preparation within this zone of intersecting district-scale faults. The location of the Intersection Zone, close to or just above the 'saddle' between the two intrusive exposures (probably surface expressions of a single continuous intrusion extending under the 'saddle'), has strongly influenced the strength of thermal preparation and hydrothermal activity.

As a result, the second most pronounced, and most important feature of the Intersection Zone is that it hosts the most intense gold mineralization found on the property. Gold grades are commonly in the 1.0-4.0 g/t Au range; one sample returned 16.0 g/t Au. Notably, both styles (highly arsenical and low-sulphide) of auriferous mineralization within the Intersection Zone bear higher gold grades than respective assemblages in the outlying Ted and Garry zones. In particular, the gold-arsenic assemblage in the Intersection Zone returned values typically up to 3.20 g/t Au, and includes the sample returning 16.0 g/t Au. Similarly, the low sulphide quartz stockwork assemblage within the Intersection Zone returned numerous values exceeding 1.0 g/t Au.

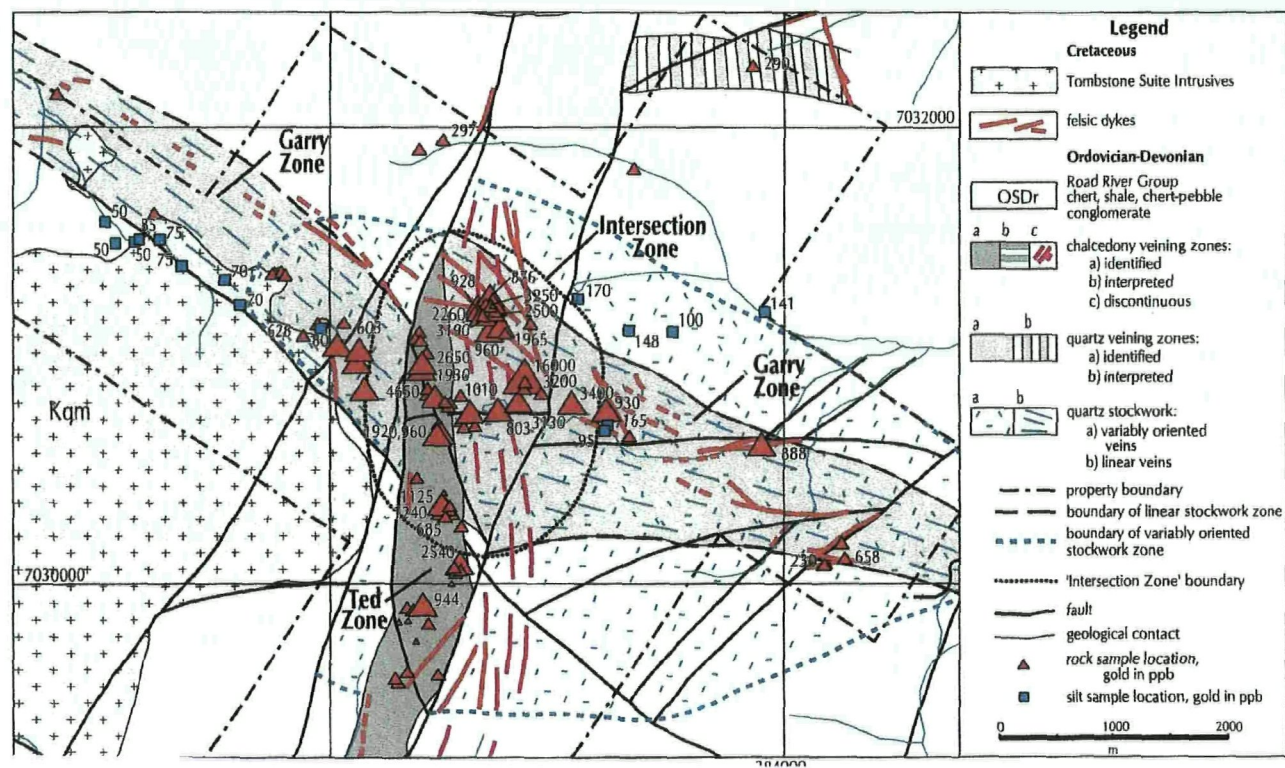
The third major feature of the Intersection Zone is the existence of a broadly occurring third gold-bearing mineral assemblage absent from the outlying Ted and Garry zones. This is a highly sulphidized, highly arsenical gold-rich assemblage, also bearing very high bismuth (up to 780 ppm Bi), antimony (up to 6720 g/t Sb), silver (up to 479 g/t Ag) and lead (up to 3100 ppm Pb; Fig. 5b) values. This set of elements associated with gold indicates an epithermal affinity of this mineral assemblage.

The structural settings of the fault-controlled mineralized zones forming the Intersection Zone, particularly the steep eastward dip of the Ted Zone and southward dip of the Garry Zone, suggest a southeast plunge of the Intersection Zone.











## **7.0 2009 EXPLORATION PROGRAM**

The 2009 exploration program at the CYNTHIA property consisted of a ground based total field magnetics survey and a VLF EM survey. A total of 13.4 line km of magnetics and VLF data was acquired from an irregularly shaped 1.2 km by 0.4 km grid, covering the CYNTHIA 11 and 24-26 claims. The magnetics and VLF surveys were conducted simultaneously over the same grid area.

The 2009 exploration grid was centered over the Intersection Zone and covered steep largely talus and overburden covered slopes. Several high grade gold bearing rock samples have been historically collected in this zone returning values up to 16.0 g/t. The 2009 CYNTHIA program was conducted over five days during the period of July 12-16, 2009 by a two person crew consisting of Scott Berdahl and Milada Pardovicova.

## **8.0 GEOPHYSICAL SURVEY METHOD**

The magnetics and VLF surveys were conducted simultaneously with two GSM-19T proton magnetometers, with built in VLF capabilities manufactured by GEM Systems of Richmond, BC. One magnetometer was equipped with a GPS unit and was used as a mobile "walk mag" sensor to cover the survey grid lines. The second magnetometer was used simultaneously as a stationary "base mag" to monitor diurnal variations in the regional magnetic field.

Survey grid lines at the CYNTHIA property were spaced at 50 m and 25m intervals and oriented on an azimuth of 79.9 and 259.9, and covered a 1.2 km by 0.4 km grid. The CYNTHIA magnetics survey covered a total of 13.3 line km of surveying. The mobile magnetometer unit was configured to take readings every 2 s during travel along these lines; at walking speeds this corresponded to roughly 1 reading for every 1.5 m of line. The magnetics survey collected a total of 2847 readings over the grid area. The base station magnetometer took 1 reading every 12 s. This data was downloaded on a daily basis and was used to correct the mobile magnetics data for fluctuations in the regional magnetic field. The VLF survey collected also covered 13.3 km of grid and collected data every 5m for a total of 2694 VLF readings.

The magnetic data was corrected for diurnal variation in the regional magnetic field after the survey by subtracting the total field strength at the base station from the concurrent strength measured by the mobile "walk magnetometer" a datum field strength was added to this calculated result. Mobile magnetometer readings taken at time intervals between readings of the base station required a base station magnetic field value which was obtained by linearly interpolating the field strength between the two adjacent readings. The base field strength datum added was calculated separately for the survey by averaging the values of the readings taken by the base station for that survey. Readings with inadequate signal quality were removed from the data.

VLF data was collected partially using the Jim Creek station and partially with the LaMour station.



VLF maps are included in appendix II and Magnetics maps are included in Appendix III.

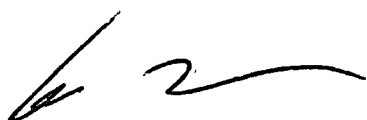
## 9.0 CONCLUSIONS AND RECOMMENDATIONS

The 2009 YMIP funded exploration program conducted at the CYNTHIA property was focused on further evaluating the Intrusion Related Gold mineralization potential of the property. The 1.2 km by 0.4 km mag and VLF grid was centered over the Intersection Zone and covered an area historically known to contain the best gold mineralization on the property, with rock samples returning up to 16.0 g/t gold. The CYNTHIA property is located within the Tintina Gold Belt, which occurs along a trend of mid- to Late Cretaceous granitoid (diorite, granodiorite, quartz monzonite, syenite) intrusions extending from central Alaska, across central Yukon, to the Yukon-British Columbia border, roughly parallel to the ancient North America craton boundary which are known to host several Intrusion Related Gold deposits stretching from Alaska to the Yukon-BC border.

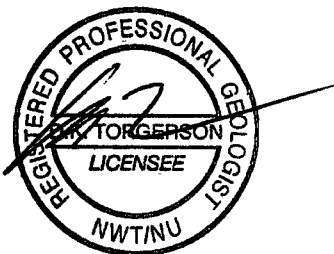
The information collected from the 2009 work program indicates generally a poor correlation between areas of low magnetic field strength and crossovers in in-phase and quadrature of the VLF response. Plutons of the Tombstone Gold Belt typically have a reduced primary oxidation state and form ilmenite or titanite over magnetite, and therefore have a low magnetic response. The best mineralization in the intersection zone is hosted in high arsenic quartz veining and stockworks. The magnetic data indicates several magnetic low embayment type features. These areas of interest occur along the western portion of L3N orientated towards the north east and along the central portion of L1N. This later magnetic low wraps around a large, approximately 300 m long magnetic high and represents an area of potential interest. Coincidentally occurring along L1AN is a moderate in-phase-quadrature crossover corresponding roughly to this magnetic low embayment feature. In general due to poor correlation between the magnetics and vlf surveys, and the relative difficulty to interpret this vlf data, further vlf surveying is not recommended at this time.

Followup work on the CYNTHIA property in 2010 should consist of expanding the magnetics grid to the north and completing a systematic grid soil geochemistry survey over the 2009 work area as well as the expanded 2010 grid area. Additional prospecting should be conducted over areas representing magnetic anomalies.

Respectfully Submitted



Derek K Torgerson P.Geol





## 10.0 STATEMENT OF EXPENDITURES

### STATEMENT OF EXPENDITURES 2009 CYNTHIA PROJECT

#### WAGES

Prep Time (includes project setup, hiring, admin)		
Geologist	3 man days @ \$450/day	\$1,350.00
Field Time		
Technician	3 man days @ \$325/day	\$975.00
Geologist	3 man days @ \$450/day	\$1,350.00
Mob/Demob		
	4 man days @ 300/day	\$1,200.00

#### TRAVEL

Helicopter		
	Trans North from Faro to CYNTHIA return	\$5,586.00
Vehicle		
	1 4x4 Truck 1,000 km @ 0.59/km	\$590.00

#### PER DIEM

Food, Consumables, Safety Equip		
	10 man days @ \$50/day	\$500.00

#### RENTAL

2 GEM System Magnetometers(19T & 19WT), 1 GEM VLF computer, gen set, sat phone, gps, camp		\$1,735.00
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#### REPORT PREPARATION

\$1,500.00

#### TOTAL

\$14,786.00



## **11.0 REFERENCES**

Gordey, S.P., and Anderson, R.G., 1993, Evolution of the Northern Cordilleran Miogeocline, Nahanni Map Area (1050, Yukon and Northwest Territories, Geological Survey of Canada, Memoir 428.

Soloviev, S.G., Schulze, C.M. and Baklyukov, O.E., 2003. Structural settings and geochemistry of the Cynthia gold prospect, Tintina Gold Belt, Hess River area (1050/6), Yukon. *In*: Yukon Exploration and Geology 2002, D.S. Emond and L.L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 285-294.



**APPENDIX I**  
**STATEMENT OF QUALIFICATIONS**

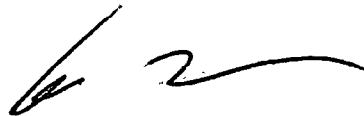


Statement of Qualifications

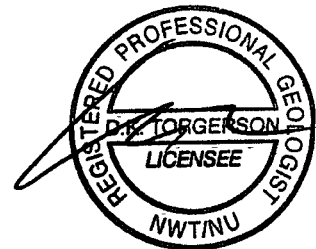
I, Derek Torgerson, P. Geol., certify that:

1. I am a contract geologist employed by Casselman Geological Services and reside at 2 Cranberry Place, Whitehorse, Yukon Territory, Y1A 5W5.
2. I graduated from Brock University in St. Catharines, Ontario with a dual major Bachelor of Science Degree with distinction in Geology and Environmental Science in 1994 and have worked as a geologist since 2004.
3. I am a member of the North West Territories Association of Professional Engineers, Geologists and Geophysicists (NAPEGG), Licencee No. L2043
4. I prepared the report titled 2009 Assessment Report for the CYNTHIA Property VLF and Magnetics Surveys July 12-16, 2009, for R.S Berdahl

Dated this 31 day of March, <sup>2010</sup>~~2009~~, at Whitehorse, Yukon Territory.



Derek K Torgerson, BSc., P.Geol.

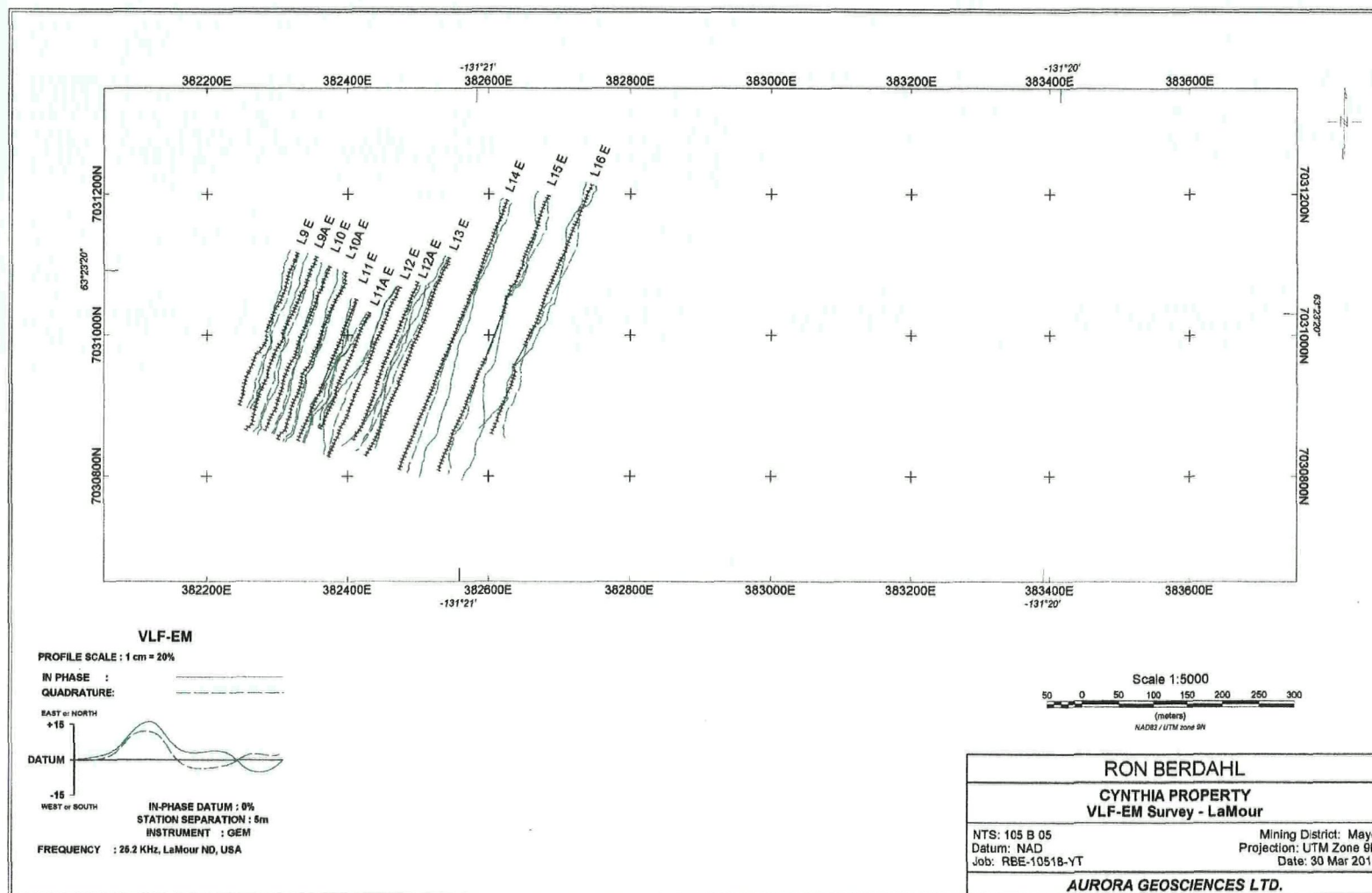




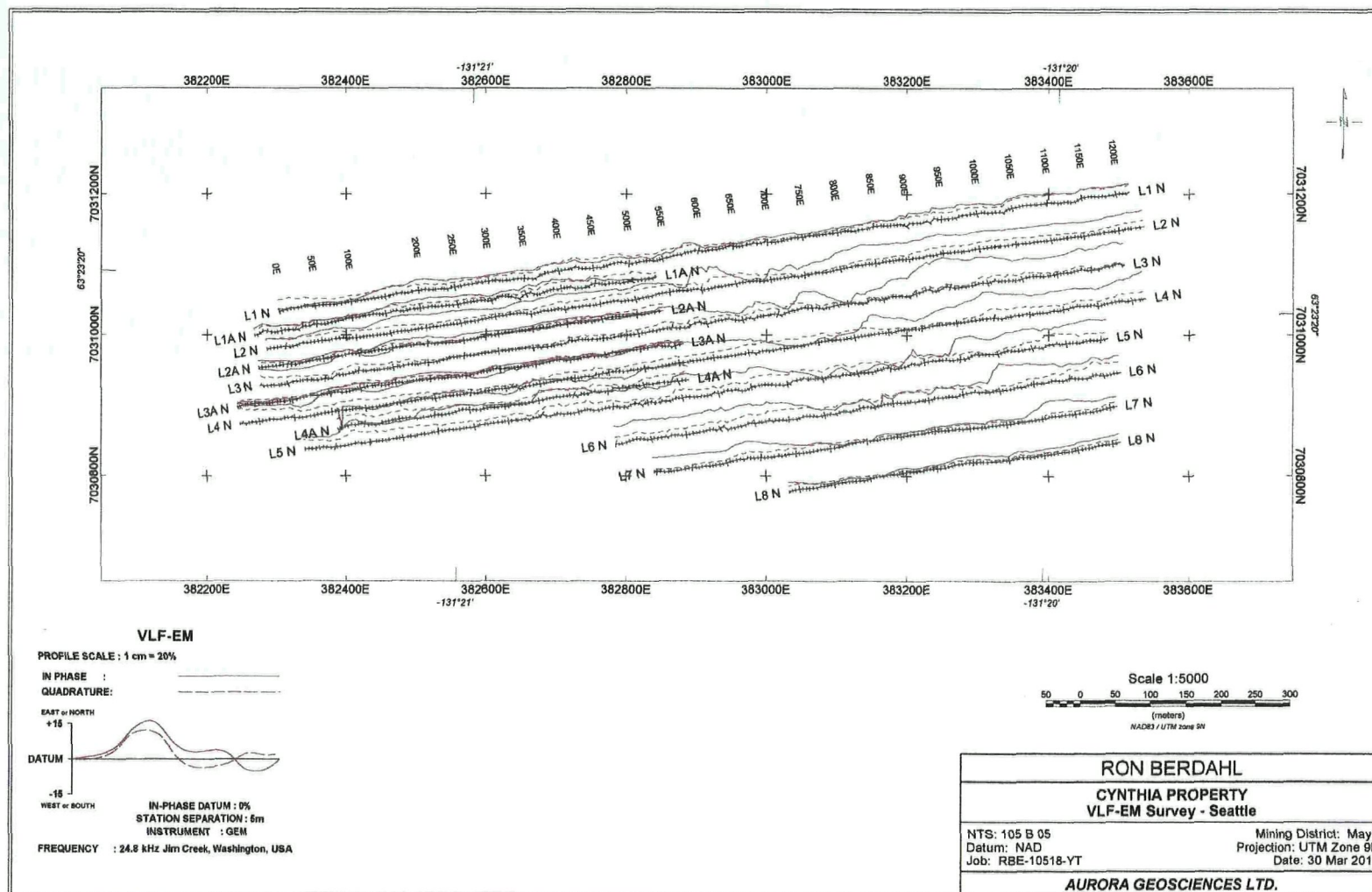
**Appendix II**

**VLf MAPS**

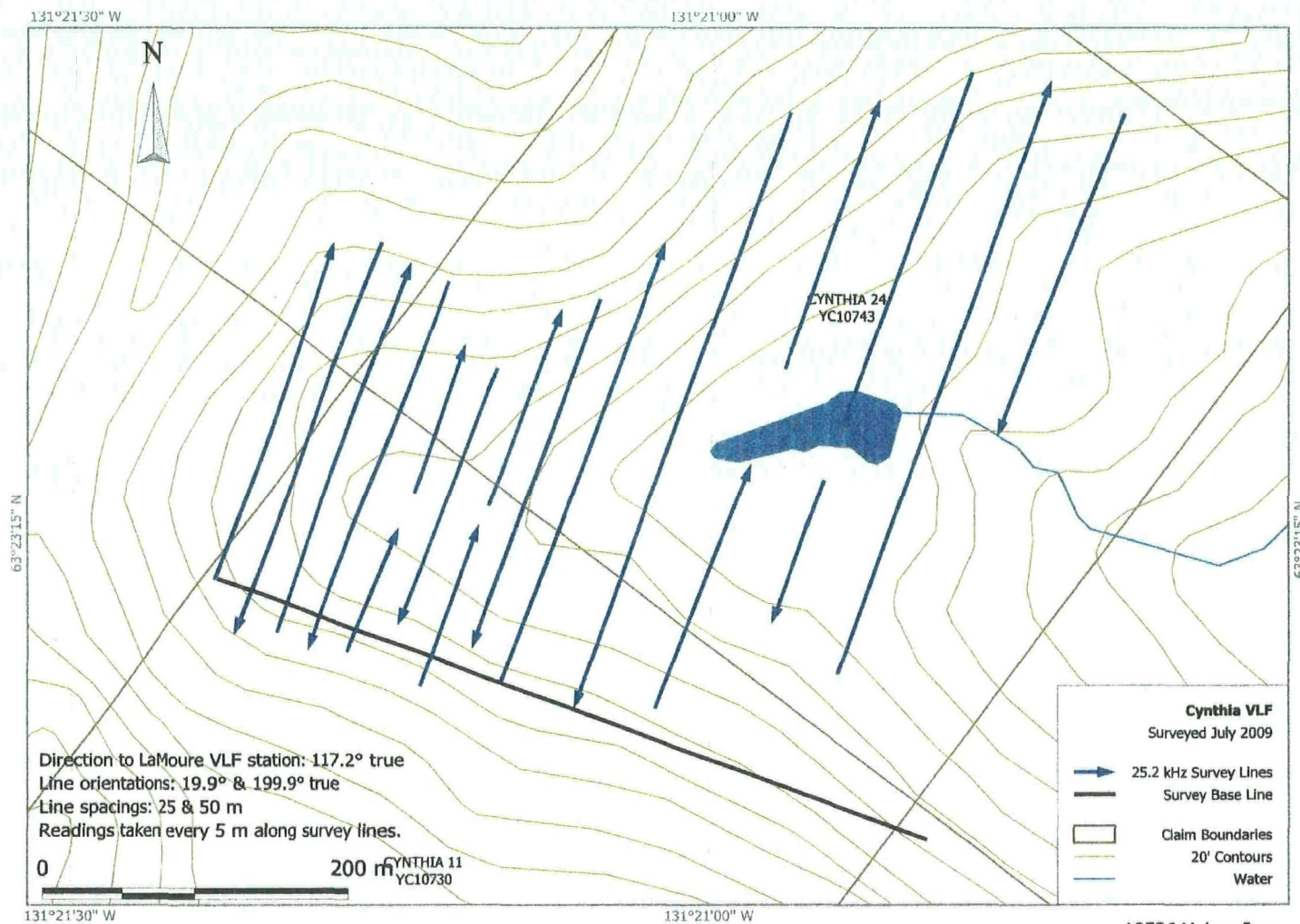










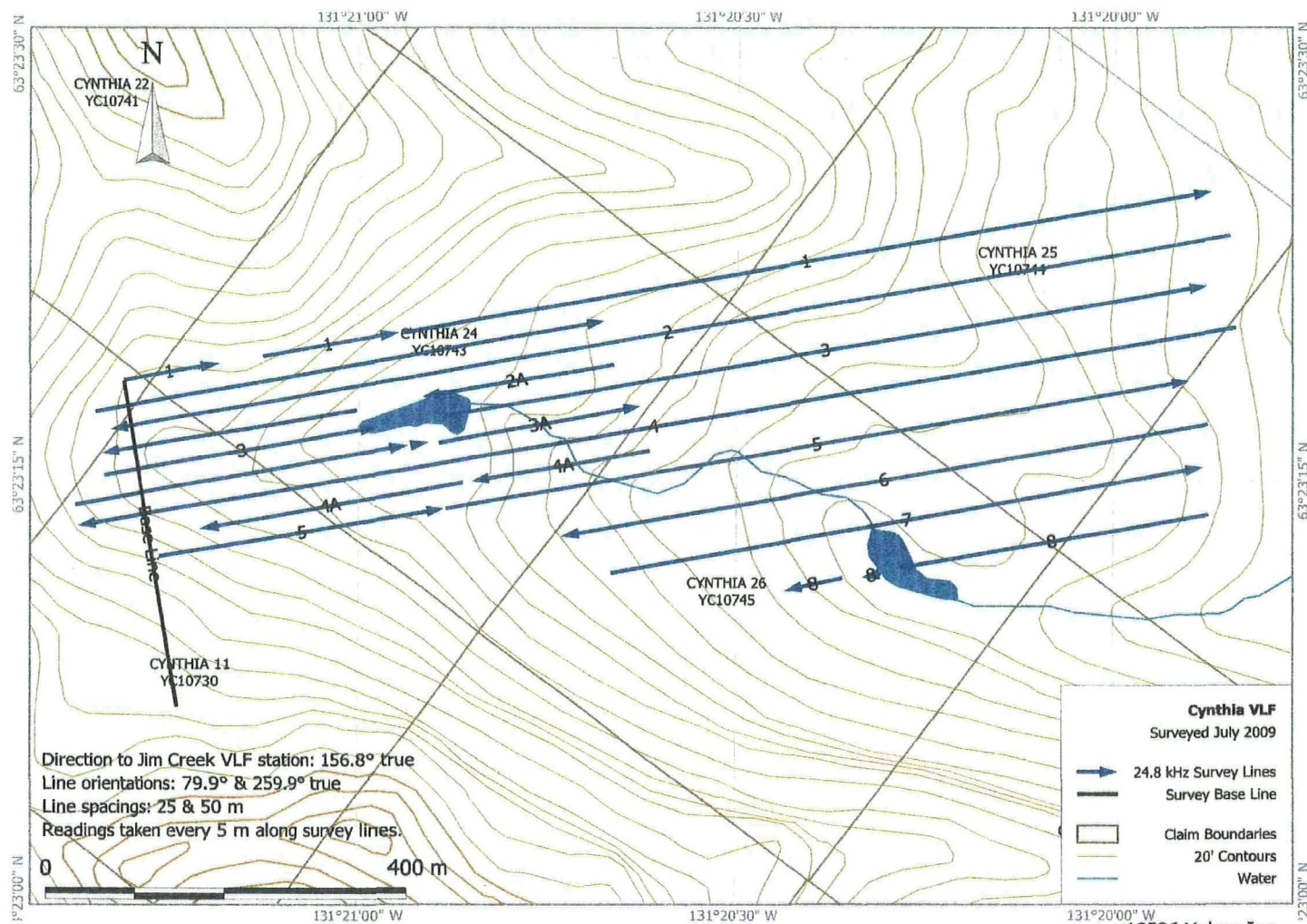


CYNTHIA PROPERTY

VLF Survey Grid - 25.2 kHz

18526 Yukon Inc.  
Mapsheet 115 O 06



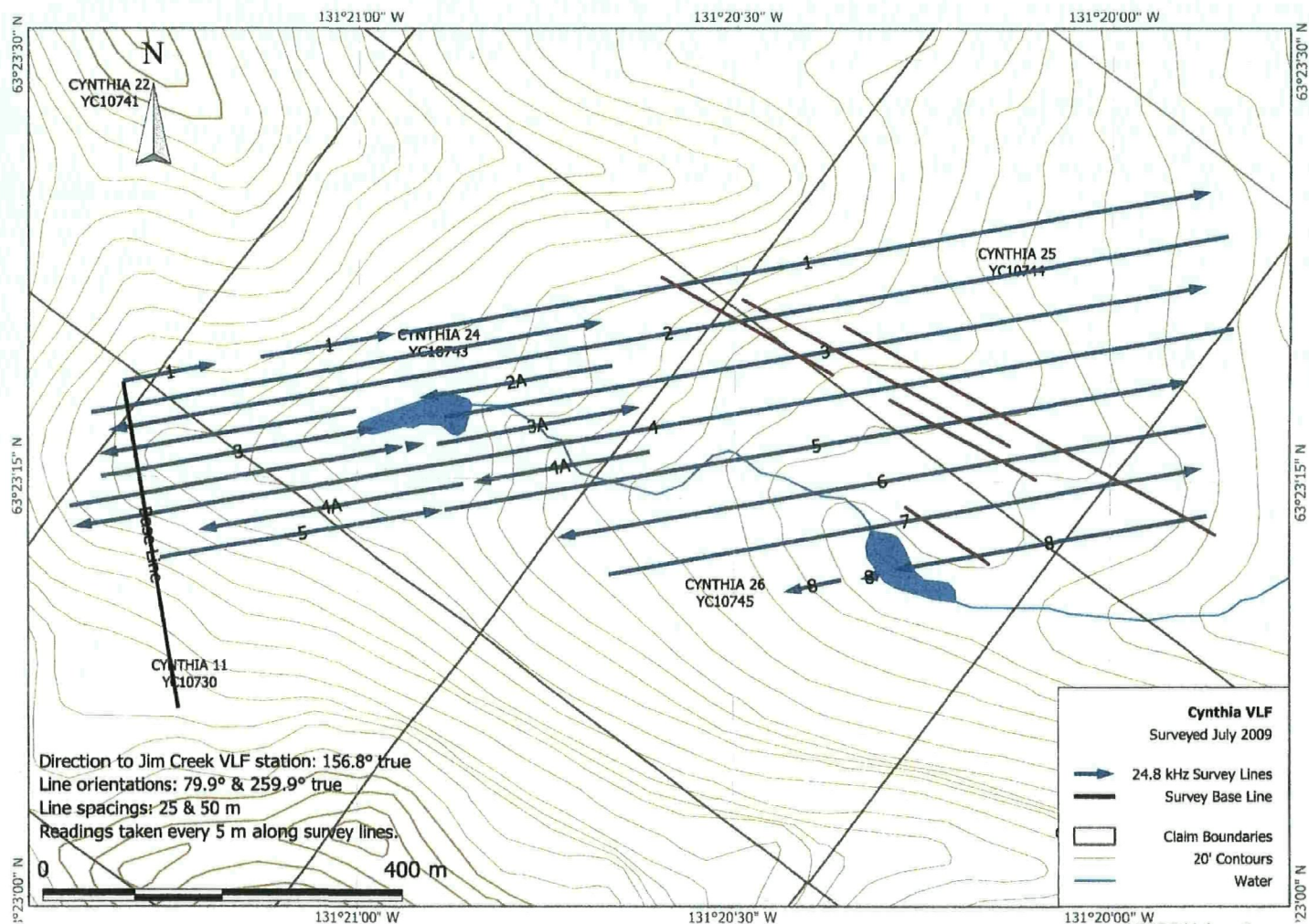


CYNTHIA PROPERTY

VLF Survey Grid - 24.8 kHz

18526 Yukon Inc.  
 Mapsheet 115 O 06

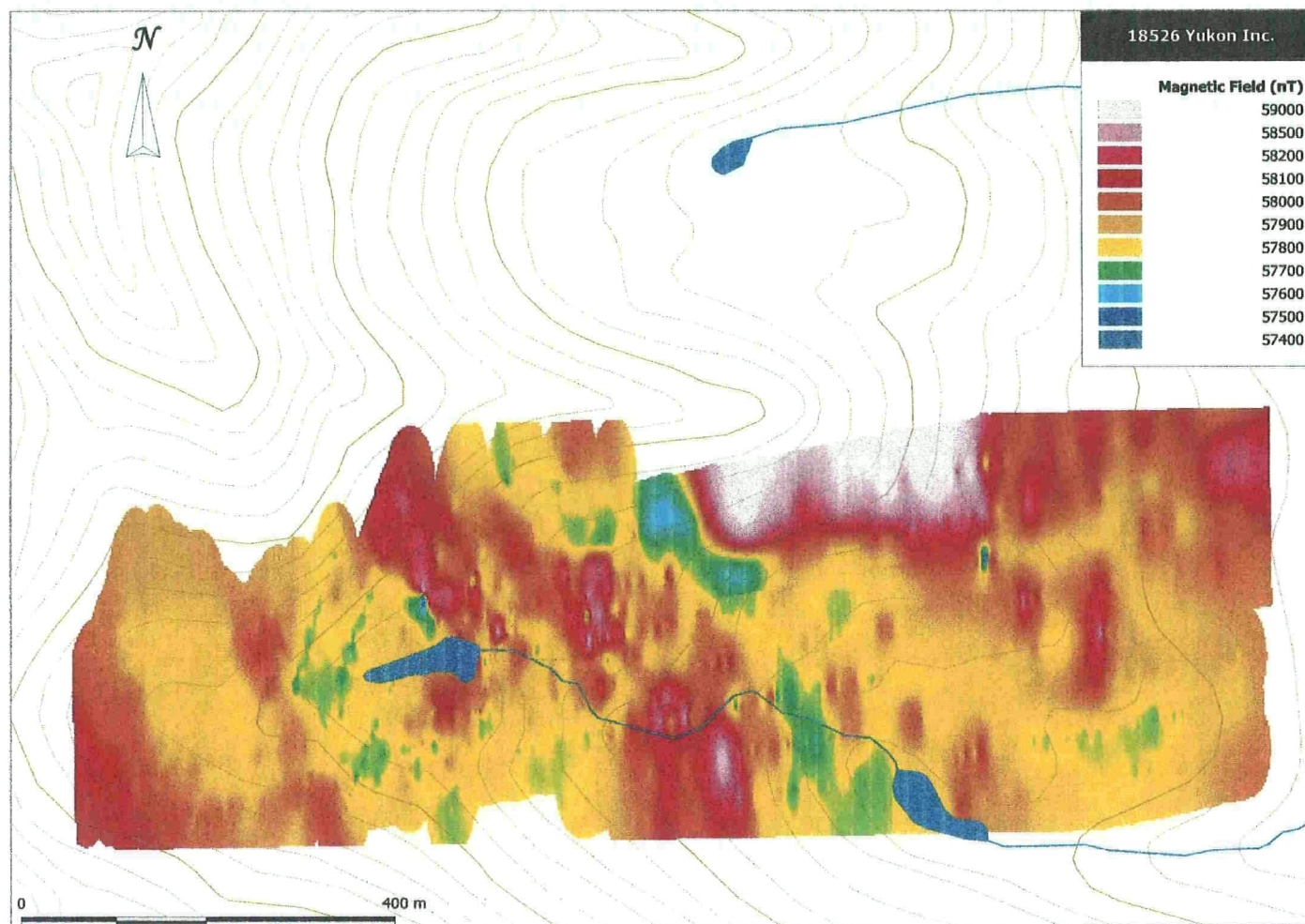






**Appendix III**  
**MAGNETCS MAPS**



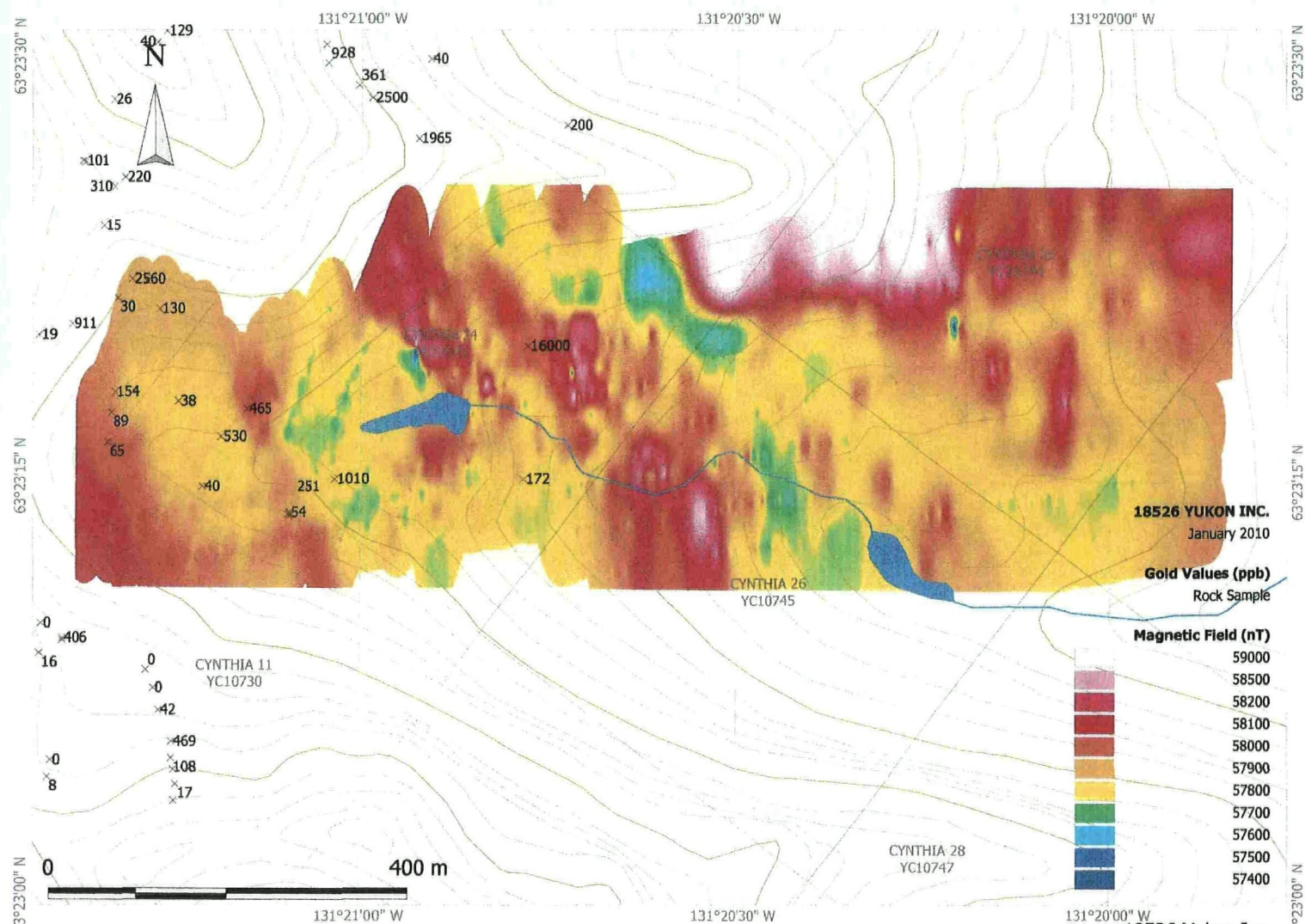


CYNTHIA PROPERTY

Total Field Magnetics

1:5500  
Mapsheet 105 O 06





CYNTHIA PROPERTY

Klad Samples/18526 Ground Mag

18526 Yukon Inc.  
Mapsheet 115 O 06