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# 2019 VLF SURVEY REPORT FLAT LAKE AREA WEST, MIDDLE & FLAT LAKE GRIDS SUGAR ZONE PROPERTY DAYOHESSARAH LAKE AREA WHITE RIVER, ONTARIO

NTS 42C/ 10, 11, 14 and 15

# Latitude 48°36' N, Longitude 85°06' W

Work Completed March 12-September 17, 2019

for

Harte Gold Corporation 8 King Street East Suite 1700 Toronto, Ontario M5C 1B5

David B. Stevenson, M.Sc., P.Geo.

September 2019

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Appendix C – Superior Exploration, Adventure & Climbing Co. Ltd. - Invoice

Appendix D – Superior Exploration, Adventure & Climbing Co. Ltd. - Harte Gold - Flat Lakes Area - Raw VLF Data, West Grid / Middle Grid / Flat Lake Grid

#### **Executive Summary**

Between March 12 and April 3, 2019 ground VLF surveys were conducted on the West, Middle and Flat Lake Grids in an area locally know as the Flat Lake area. This area is located on the Dayohessarah Lake property which is located in the Dayohessarah Lake area, north of White River, Ontario.

The work was performed by Shaun Parent of Superior Exploration, Adventure & Climbing Co. Ltd. on behalf of Harte Gold Corporation. The objective of the survey was to delineate geophysical anomalies potentially containing precious or base metal mineralization and/or identify significant geological structures in the area.

The total cost of the Flat Lake Area VLF surveys amounted to \$42,990 and spanned across nine grouped mining claims. The survey consisted of 17.3 kilometers along 12 reconnaissance grid lines, 4 lines per grid, spaced 200m apart. A total of 876 station readings were taken spaced at 20m intervals.

A VLF EM-16 unit and a Garmin GPS 60CSX was utilized during the survey to collect the VLF readings and note the GPS location of each reading. Two transmitters were read at each station: NAA 24.0 KHz – Cutler, Maine and NML 25.2 KHz- La Moure, North Dakota.

Plan view Fraser-Filter, and Resistivity contour maps as well as cross sections were produced of the area (modelled up to 144 meters in depth). The survey outlined several strong VLF bedrock conductors, as well as several highly resistive bedrock units. Superior Exploration, Adventure & Climbing Ltd recommends adding additional infill lines to the grid to obtain a higher resolution of VLF trends as well as some ground follow up. Several potential drill targets are also recommended.

The Property is in the Dayohessarah Greenstone Belt ("DGB"). This greenstone belt is part of the larger, east trending Schreiber-White River Belt of the Wawa Subprovince of the Superior Craton. The DGB is situated between two larger greenstone belts; the Hemlo Greenstone Belt to the west and the Kabinakagami Greenstone Belt to the east. The DGB has an active history of exploration dating back to 1969 when Canex Aerial Exploration Ltd. drilled three holes on the Property. Exploration ramped up after the discovery of Hemlo, when Pezamerica Resources commenced geophysics and drilling.

In 1998, Harte Gold Corp. entered into an option agreement on most of the unpatented mining claims comprising the Dayohessarah Lake Property, including the Sugar Zone. Harte subsequently entered into a Joint Venture agreement with Corona Gold Corporation.

### 1.0 Introduction

Between March 12 and April 3, 2019 three ground VLF surveys was conducted by Superior Exploration, Adventure & Climbing Co. Ltd. on behalf of Harte Gold Corporation in the Flat Lake area. A total of 17.3 line-kilometers were completed. The surveys were conducted on the West, Middle and Flat Lake Grids (Figures 5, 6 and 7). Each grid consisted of 4 lines for a total of 12 lines. The Flat Lake area is located 16.5 km north-northeast of the Sugar Zone mine site (Figure 2) on the Dayohessarah Lake Property and is accessed via Highway 631 from White River, ON (NTS 042C11).

This report is being written to introduce the VLF interpretive report written by Shaun Parent of Superior Exploration, Adventure & Climbing Co. Ltd. and is attached to this report as Appendix B. Please refer to this report for a detailed discussion of the results. This introductory report was written from September 14-17, 2019.

All UTM coordinates are in NAD 83, Zone 16N projection.

Although a work permit is not required for a VLF survey, the Flat Lake VLF surveys occurs within Exploration Permit PR-18-000299 and PR-18000300 which were issued May 10, 2019.

### 2.0 **Property Location and Description**

### 2.1 Location and Access

The Dayohessarah Lake Property is situated approximately 25 km northeast of the Town of White River (Trans-Canada Highway No. 17) and 60 km east of the Hemlo gold camp. The Property is approximately equidistant from Sault Ste. Marie to the south-east and Thunder Bay to the west (Figure 1). The overall Property encompasses NTS zones 42C/ 10, 11, 14 and 15 and the gold mineralized occurrences are exposed at Latitude 48°48' north, Longitude 85°10' west. The property covers parts of the Odlum, Strickland, Gourlay, Tedder, Hambleton, Cooper, Nameigos, Abraham and Bayfield Townships, and falls within the Sault Ste. Marie Mining Division.

The Property can be accessed via a series of logging roads and drill trails extending north from the community of White River. Access is also available by way of float plane, based in White River via Dayohessarah Lake or Hambleton Lake, and by helicopter based in Wawa or Marathon.

The western and southern portions of the Property are accessible via a series of logging roads controlled by White River Forest Products Limited. Road No. 100 extends north from the western end of White River. Road No. 200 intersects Road No. 100 approximately 20 km from Highway 17 and provides access to the western and southern portions of the property. Road No. 300 intersects Road No. 100 approximately 36 km from Highway 17 and provides access to the very northern portion of the Property. Road No. 305 intersects Road No. 300 approximately 6 km from Road No. 100 and provides access to northern and eastern parts of the Property. Road access to within 400 m of the Sugar Zone is available via a small road heading south and southwest from Road No. 305 for 8.8 km. From there, access to the Sugar Zone is available via all-terrain or tracked vehicles in the summer, and snowmobiles, tracked vehicles and trucks in the winter. The distance from White River to the Sugar Zone is approximately 60 km by road.

Areas surrounding Dayohessarah, Hambleton, Strickland and Pike Lakes are designated by the Ontario Ministry of Natural Resources as 'Restricted Access'. Locked gates on Road No. 200 and Road No. 305 control vehicular access in order to prevent access to remote lodge operations on two lakes. Permits are required for road access to most of the Sugar Zone property for mineral exploration purposes.

## 2.2 Description of Mining Claims

The Dayohessarah Lake Property consists of four mining leases comprising 1467.26 hectares, including 69 boundary cell claims, 43 single cell claims, 197 multi-cell claims. Harte Gold also

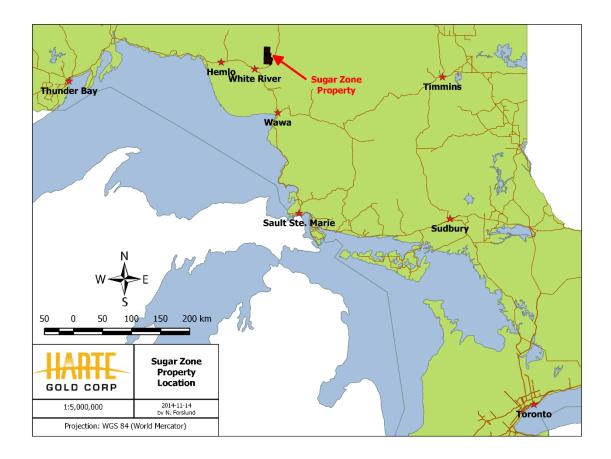


Figure 1 - Property Location

has an option to earn a 100% interest in the Halverson Property subject to certain terms and conditions. The Halverson Property consist of 12 boundary cell claims and 4 single cell claims. (Appendix A). All claims of the Dayohessarah Lake Property are held in the name of Harte Gold Corp., except for those of the Halverson Property which are held in the name of Lloyd Joseph Halverson and are subject to an option agreement. The Property boundaries are marked by claim lines but have not been surveyed (Figure 2).

There are two mining alienations which border parts of Harte's current claim block. The largest (W-LL-C1521) lies to the east of the current claim area, and shortly borders claim 4260617 on the east, and Hwy 631 on the west. The second alienation (No. 2847) lies entirely within Harte's current claim block, west of Dayohessarah Lake. Surface rights are held by the Crown and timber cutting rights are held by White River Forest Products Ltd.

In 1998, Harte Gold Corp. (Harte) entered into an option agreement on most of the unpatented mining claims comprising the Dayohessarah Lake Property, including the Sugar Zone. Harte Subsequently entered into a Joint Venture agreement with Corona Gold Corp.

The original claims are subject to a 3.5% net smelter royalty ("NSR"). The Joint Venture participants, namely Corona (51%) and Harte (49%), have the option of acquiring 1.5% of the 3.5% NSR for \$1.5 million, in proportion to their respective interest and have, in addition, the right of first refusal on the remaining 2.0% NSR.

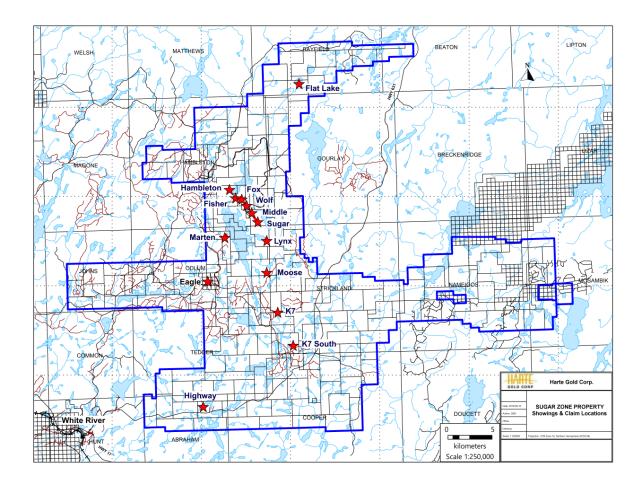


Figure 2 - Claim Position and Showings

Harte and Corona entered into an Option Agreement (the "Corona Option") dated May 28, 2010, entitling Harte to acquire Corona's 51% interest in the Sugar Zone Joint Venture upon completion of certain conditions. Effective March 10, 2010, Harte became the Operator of the Sugar Zone Joint Venture for as long as the Corona Option remained in good standing. Harte completed all required conditions and as of May 23, 2012 acquired Corona's 51% interest to become the 100% owner and operator of all the claims which were previously part of the Sugar Zone Joint Venture.

### 2.3 Physiography and Vegetation

The climate is northern boreal, with short hot summers and cold, snowy winters. Some field operations, such as drilling, can be carried out year-round while other operations, such as prospecting and mapping, can only be carried out during the late spring, summer and early autumn months.

The temperatures can range from -35°C in the winter to +30°C in the summer; though the mean temperatures are around -20°C to +20°C. Rainfall is about 727 mm annual average, with the wettest month being September (120 mm average). Snow is abundant, often reaching several metres with December and January having the heaviest snowfall (about 80 cm). Snow is on the ground by late October and the ice begins to thaw on the lakes by April.

The topography on the Property varies from moderate to rugged, with lake levels generally at 390 m above sea level, and occasional hills up to 480 m elevation. The overburden is generally between 0 to 20 m deep on the Property, with occasional boulderer terrain, and normally approximately 2 to 3 m overlying the Sugar Zone. Vegetation is boreal, with jack pine, fir, poplar and birch occupying dry uplands and cedar, tamarack and spruce growth on more poorly drained terrain.

### 3.0 Historical Work

Exploration for gold and base metals has been conducted on the Dayohessarah property since 1969. After over 10 years of very little work, exploration started to pick up on the property again in 1983, after the discovery of the Hemlo Gold camp. A complete timeline of mineral exploration on the DGB is presented below.

**1969** Canex Aerial Exploration Ltd. drilled three diamond drill holes in the vicinity of the mafic/ultramafic intrusives and flows near the north end of Dayohessarah Lake. Results include an intersection of 0.326% Ni and 0.08% Cu over 5 ft. in metagabbroic rocks.

**1983-1986** Pezamerica Resources Limited conducted an exploration program which included an airborne Mag and EM survey that outlined thirty-one (31) geophysical anomalies in the area. Twenty-four (24) of these anomalies were investigated by Teck Exploration on behalf of Pezamerica. Teck Exploration drilled nine airborne geophysical targets based on coincidental soil gold anomaly trends. In all cases, the airborne anomalies were explained by pyrite/pyrrhotite rich horizons within felsic volcanics. Hole PZ-6 returned appreciable amounts of sphalerite mineralization (0.47% Zn over 2.8 feet). None of the assayed core returned significant gold values.

**1990** Most of the DGB is staked by a prospecting syndicate.

**1991** The Property is optioned from the prospectors by Hemlo Gold Mines Inc. Initial prospecting uncovered the gold-bearing Sugar Zone deposit. Based on bedrock exposure and trenching, the Sugar Zone was traced for 750 m, and a ground IP survey outlined the Sugar Zone structure extending for 1,500m.

**1993** Hemlo Gold conducted a preliminary diamond drill program to test the Sugar Zone for economic gold mineralization. A grid was cut with a 6-km baseline and tie-lines ranging in spacing between 100 m and 1,000 m. Six diamond drill holes were completed totaling 800 m. All drill holes intersected significant gold mineralization in the Sugar Zone. A small trenching program is initiated on the Sugar Zone.

**1994** Hemlo Gold proceeds with initial geological mapping, prospecting and a follow-up drill program. Fifteen diamond drill holes are completed on the Property, totaling 2,416 m. Eight of the drill holes intersected the Sugar Zone. An I.P. survey is completed over the southern portion of the Property, and a Mag survey is completed over the entire grid. After the exploration program, the Property was returned to the prospecting syndicate who initially staked the ground, due to legal reasons.

**1998-1999** Most of the Property is optioned from the prospector's syndicate. The mining claims were subject to a Joint Venture agreement between Corona Gold Corporation (51%) and Harte Gold Corp. (49%). Corona was the operator. The initial 313 claims are subject to a 3.5%

net smelter royalty ("NSR"), and the Joint Venture participants have the option to acquire 1.5% of the 3.5% NSR for \$1.5 million and have the right of first refusal on the remaining 2.0% NSR.

Corona carries out an extensive exploration program. The existing grid was rehabilitated, and new grid lines established east of Dayohessarah Lake. In total, 96.1 km of grid lines with 100 m spacing oriented at 320° azimuth are cut over the Sugar Zone area. An oriented soil sampling program is carried out on the grid, as well as mapping and sampling. Prospecting was limited to the Sugar Zone and extensions of the Sugar Zone to the south and to the north. A surface power trenching program is conducted on parts of the Sugar Zone and six trenches were excavated, washed, channel sampled and mapped in detail. A detailed Mag-VLF and reconnaissance gradient I.P. survey is performed on the Property.

A diamond drilling program totaling 9,937 m of NQ core in 53 holes is completed, mostly into and around the Sugar Zone. The drill holes cover 3 km of strike length and intersect the zone at approximately 50 m spacing at shallow depths. A secondary purpose of the program was to follow-up low grade mineralization encountered in previous drilling by Hemlo Gold and to test previously untested/poorly tested I.P. anomalies west of the Sugar Zone and east of Dayohessarah Lake.

Preliminary Mineral Resource estimates of the Sugar Zone mineralization in the 12000 N to 13100 N area were prepared, based on the drilling program noted above. Another estimate was made, using revised and refined criteria and polygonal methods, in the spring 1999, following additional data evaluation (Drost et Al, 1998).

**2003-2004** Corona conducts a diamond drilling program totaling 7,100 m in 26 holes. The drill program mostly intersects the Sugar Zone and is successful in its purpose of expanding the strike and dip extent of the zone, as well as increasing the level of confidence in the continuity of mineralization by in-fill drilling.

**2004** Corona conducts another diamond drilling program totaling 3,588 m in 11 holes. The program is successful in increasing the mineralization extent of the Sugar Zone, as well as increasing the defined Sugar Zone depth to a vertical depth of 300 m. A new Mineral Resource estimate was completed.

**2008** A helicopter airborne geophysical survey was flown over the Property by Fugro Airborne Surveys Corp., under contract from Corona. The survey used a DIGHEM multi-coil, multi-frequency electromagnetic system along with a high sensitivity cesium magnetometer. A total of 1,917 line-km was flown. It was recommended by Dave Hunt P.Geo. that compilation of historic exploration data on the remainder of the property be followed by a program of reconnaissance mapping and prospecting to evaluate the Fugro airborne conductor axes on the ground, as well as to identify additional target areas extending both north and south of existing Sugar Zone mineralization and elsewhere on the property.

**2009** During March, Corona undertook a drilling program totaling 2,020 m in 10 holes. The purpose of the program was to test airborne electromagnetic conductors, magnetic anomalies, induced polarization chargeability anomalies and geologically defined possible extensions to the north and the south of the known Sugar Zone mineralization.

During July to September, a prospecting, reconnaissance geological mapping and channel sampling program was undertaken on geophysical targets outlined by the Fugro airborne

geophysical anomalies. Highlights included sampling of a float rock (Peacock Boulders) returning a value of 87.80 g/t Au, as well as grab samples from quartz veining east of the Sugar Zone returning values of 30.40 and 9.04 g/t Au.

**2010** Harte Gold Corp. initiated it first drilling program. During March, a diamond drill program totaling 2,097.31 m in 12 holes, two of which were aborted before reaching the Sugar Zone. The program was successful in locating a high-grade area of the Sugar Zone located near surface and directly under a series of surface trenches. The drill program was also successful in determining that the Sugar Zone has significant mineralization below 300 m depth.

Ground IP is completed over a grid totaling 20,475 meters. Chargeability from the survey outlines a potential zone north of the Peacock Boulder discovery of 2009. 5 Trenches totaling 1,850 square meters were completed over and around the newly discovered Wolf Zone.

A total of 5,387.94 m of diamond drilling totaling 33 drill holes was completed on the newly discovered Wolf Zone. Results outlined a small, high grade zone with a strike length up to 600 m and a depth up to 250 meters.

**2011** Between May and June 2011 two more grids totaling 60,800 meters were completed over the fold nose near the north end of the of the Dayohessarah Lake Property, on the west side of Hambleton Lake. Follow up ground IP was completed on the grids by JVX Geophysical Surveys. A small 5,200-meter grid was also cut, and ground IP completed on the west side of Dayohessarah Lake, to outline a Gossan Zone.

A Bore Hole survey was completed In August 2011 on eleven deep drill holes in the Sugar Zone. The Bore Hole survey outlined several conductors in the area. An airborne VTEM survey was completed at the end of August by Geotech Ltd. The survey covered the entire property and outlined 5 large moderate to strong conductive areas of interest. The most exciting result of the survey was a potential copper-nickel ore body below the surface, under the komatiite volcanics at the northern end of Dayohessarah Lake.

There were two main drill programs in 2011. The first was on the Sugar Zone, between February 11 to April 13, and again between July 17 and November 24, 2011, and totaled 7,885.74 meters of diamond drilling in 27 drill holes. The drilling was designed to expand the resource estimate both at depth, and to upgrade inferred resource to indicated resource. The second drill program targeted IP anomalies on the Fold Nose grid. A total of 3,430.93 meters were drilled in 15 diamond drill holes. Most IP anomalies were explained by sedimentary layers, and no significant intercepts were observed.

**2012** In April 2012, Geotech Ltd. carried out a helicopter borne geophysical survey over the Dayohessarah Lake Property. The program was completed as an extension of the airborne VTEM survey conducted in 2011 which totaled 302 line-km of data over the northern parts of Dayohessarah Lake and western parts of Hambleton Lake and the shore line. The 2012 program totaled 1,153 line-km of data essentially covering the rest of the Dayohessarah Greenstone Belt.

To understand the source of the Peacock boulders, thin sections of three Peacock boulder samples were sent to Pleason Geoscience for analysis. The boulders returned assay values of 87.30 g/t Au, 52.80 g/t Au and 37.20 g/t Au. It was noted that the mineralogy and micro-textures of the samples were similar to gold-bearing zones at the Hemlo and Musselwhite gold camps.

Between October 30, 2012 and November 2, 2012 four mechanical trenches were made along the surface exposure of the Sugar Zone. The purpose of the trenches was to expose enough high-grade material from the Lower Zone of the Sugar Zone for a reasonably representative blasting program. The total area of the trenches is 1,799 square meters.

During the period January 21, 2012 to July 29, 2012 a total of 6,283.92 meters were drilled in 12 diamond drill holes targeting the Sugar Zone. The drilling was carried out by Major Drilling Group International Inc. The purpose of the diamond drilling program was to expand the current Mineral Resource Estimate of the Sugar Zone at vertical depths below 400 m, and to test the continuity, grade and width of the zone at 1,000 m vertical depth. The program was successful in defining Au mineralization in both the Upper and Lower Zones with significant assay results ranging from 0.56g/t Au to 162g/t Au.

An additional 2 drill holes targeted an IP north-east of Dayohessarah Lake. These exploration holes totaled 375 meters and did not return any significant gold values.

Two holes totaling 333 meters were drilled targeting an extension of the Wolf Zone. No significant assays were returned.

**2013** Exploration in the 2013 season included a short prospecting program, where 46 samples were taken and analyzed for Au using fire assay. Two samples returned Au values of 10.2g/t and 0.73g/t.

Four holes were drilled on the Halverson Zone, totaling 1103.28m These holes targeted Cu-Ni mineralization discovered in 2011 by a VTEM survey.

An additional 17 diamond drill holes totaling 1356m were drilled to decrease the spacing between holes in a high-grade portion of the Sugar Zone Lower Zone (called Jewelry Box). Significant intervals from this program ran from 2.77g/t Au to 28.5g/t Au over widths from 0.35m to 8.27m.

Harte Gold continued moving forward with the permitting and optimization of the advance exploration 70,000 tonne bulk sample at the Sugar Zone. Confirmation drilling at the Jewelry Box Zone (JBZ) returned significant high-grade gold assays and enabled Harte Gold to re-design the bulk sample target areas in order to test this high-grade portion of the Sugar Zone deposit. The JBZ lies close to surface and can be developed quicker and more cost effectively.

Harte Gold also completed road construction to provide highway access to the property and survey work associated with taking certain of the Sugar Zone property mining claims to lease. Harte Gold is also in the process of negotiating contract mining and off-site milling agreements.

Harte Gold completed a regional exploration program and Induced Polarization (IP) survey with the objective of finding the source of the high-grade Peacock Boulders which returned gold values up to 87 g/t. Drill targets have been identified and are scheduled to be drilled during the summer of 2014.

**2014** Harte Gold continued to advance the Sugar Zone "Advanced Exploration and Bulk Sample Project" during 2014. Efforts focused on completing the permitting associated with the amended closure plan, completing the road to the portal site and overall optimization of the mining plan developed in the 2012 Preliminary Economic Assessment.

Additional confirmation drilling at the Jewelry Box Zone (JBZ), the target area for the bulk sample, returned significant high-grade gold assays providing additional confirmation to mining contractors developing bids for the project.

2014 was a busy year of exploration, Induced Polarization and magnetometer surveys were conducted over a majority of the core mining claims and generated numerous drill targets. Follow up ground proofing and drill programs identified the Wolf Zone as the source of the high-grade Peacock Boulders and lead to the discovery of the Contact Zone, where a sericite schist was found to have Hemlo-style geochemistry and anomalous gold as well as a third mineralized zone known as the Footwall Zone and located 50 meters east of the Sugar Zone deposit.

During 2015 Harte Gold completed additional exploration drilling that extended the Sugar Zone deposit 300 meters south of its previously defined boundary.

Harte Gold completed additional construction work on the site access road linking the Sugar Zone deposit to Highway 631 and completed the lease application process for certain mining claims that comprise the Sugar Zone property. The leases cover the Sugar Zone deposit and immediately surrounding area and are a requirement for commercial production.

**2015** This was a pivotal year for Harte Gold as efforts to move the project ahead during a challenging mining market finally culminated in October with the first portal blast at the Sugar Zone. Since October the ramp was advanced to over 850 meters in length and begun shipping ore to Barrick Gold for custom milling from ore developed on the 375 level.

With production under our bulk sampling program well underway, the commercial permitting process has begun. This process is expected to take 12-18 months which may coincide well with completion of the bulk sample program. During the intervening period, the plan is to continue with underground development which would include the ramp, underground infrastructure including ventilation and setting up stopes to be ready for mining.

The commercial production target is 600 tonnes/day. Milling options are currently being studied and a tailings facility will form part of our permit application so that an on-site milling facility can eventually be built.

Harte gold initiated a significant geophysical program between the Sugar Zone and the Wolf Zone. The Contact Zone where Hemlo-style mineralization has been found in sericite schists up to 45meter-wide and the Gossan Zone located on the west side of Dayohessarah Lake will be a focus for future exploration.

**2016** This was a very busy year for Harte Gold as mining was in full swing with ore being delivered to Barrick Gold Corporation's Hemlo mill throughout the year.

Exploration efforts both near-mine and regionally are progressing at an aggressive pace with 6 drill rigs now working at the Sugar Zone and the newly discovered Middle Zone and the Wolf Zone. It is expected that the next resource update will include resources at the Middle Zone which could be incorporated into an updated mine plan and Technical Report.

**2017** During the year the Company raised an aggregate of \$50 million under bought deal private placements and received \$5,063,163 from the exercise of investor and finders warrants and stock options. Funds were used to complete the Company's 70,000 tonne Advanced

Exploration Bulk Sample, underground development work associated with the Company's 30,000 Phase I Commercial Permit, mill construction and general corporate purposes.

Harte Gold completed the 70,000 tonne Advanced Exploration Bulk Sample in March 2017 under which it shipped a total of 67,425 dry tonnes at an average grade of 8.28 grams / tonne to Barrick Inc.'s nearby Hemlo Mill for processing. Harte Gold realized approximately \$27 million from the advanced exploration bulk sample, which funds were re-invested in the Sugar Zone project.

Harte Gold received a Phase I - 30,000 tonne commercial permit in January 2017. The Phase I program is situated towards the south end of the Sugar Zone Deposit and required the development of a ramp from the Advanced Exploration Bulk Sample at the north end of the Deposit to provide access. Harte Gold established five mining levels and excavated 30,000 tonnes of development ore. The development ore is stockpiled on surface and will serve as the initial feed for the on-site Mill under Phase II Commercial Permits anticipated in June 2018.

In February 2017 Harte Gold submitted a Notice of Material Change ("NOMC") and subsequently received approval to build the Mill Building and install the crusher, ball mill, gravity concentrator, float concentrate circuit, paste back-fill plant, effluent treatment plant and other ancillary items associated with on-site milling process. As of the date hereof construction is well advanced and on schedule for completion in June 2018.

Harte Gold received location approval for its tailing's management facility ("TMF") and commenced preconstruction clearing completed the installation of the west dam. Harte Gold sought and received confirmation from the Canadian Environmental Assessment Agency that no federal environmental assessment is applicable to the project.

Harte Gold submitted a Draft Closure Plan Amendment ("CPA") to the MNDM which CPA provides for full commercial production, on-site milling and the operation of the TMF. Harte Gold is working with the MNDM and MOECC to finalize all outstanding permits in order to begin commissioning the mill in June and production in July.

Harte Gold was also very active with its exploration programs; Harte Gold completed approximately 80,000 meters of drilling during the year. Drill programs focused on:

Moving that portion of the Sugar Zone Deposit between surface and 500m from the inferred resource category to the indicated category. Increasing the number of contained ounces within the newly discovered Middle Zone. Testing for Wolf Zone extensions at depth and other targets along strike.

A regional airborne geophysical survey was also undertaken which resulted in the definition of new exploration targets within and outside the Sugar Zone Property. As a result of this survey Harte Gold staked an additional ground to cover a greenstone belt and other targets, to bring the total property package to 79,335 hectares.

**2018** A Mineral Resource Estimate dated February 15, 2018 contains an Indicated Mineral Resource Estimate of 2,607,000 tonnes grading 8.52 g/t for 714,200 ounces of contained gold and an Inferred Mineral Resource Estimate of 3,590,000 tonnes, grading 6.59 g/t for 760,800 ounces of contained gold, using a 3.0 g/t Au cut-off. The Company also completed a Preliminary Economic Assessment with an effective date of March 31, 2018, outlining 80,700 ounces of annual average gold production at an All-In Sustaining Cash Cost ("AISC") of US\$708/oz Au over an 11 year mine life.

All commercial production permits were issued in September. Process plant construction and transition to grid power were completed in September. First gold production was announced in mid-October. Gold doré bars are being produced through the gravity circuit and a high-grade concentrate is being produced through the flotation recovery circuit for offsite processing.

Official Mine Opening which was attended by the Premier of Ontario and Minister of Energy, Northern Development and Mines occurred October 24<sup>th</sup>, 2018. The Company bought down the royalty on the Sugar Zone property from 3.5% to 2.0% effective October 31, 2018.

Process plant commissioning was completed in early November. Since that time the Company has increased throughput to achieve the initial targeted rate of 575 tpd.

Sill development is on-going and long-hole stoping between the 140 and 155 levels off the Sugar Zone South ramp has begun. Results of the first production stope blast achieved expectations.

Underground development continues at the Sugar Zone North and South ramps. During September, the average advance rate of 8 meters per day was ahead of plan. The installation of critical underground infrastructure to support ventilation, power and pumping has been completed. In addition, the mine return air ventilation fan was successful installed and the transition to grid power for the majority of site power requirements substantially completed. Redpath is ramping up its underground mine personnel to achieve targeted ore sill development rates. Harte Gold's current permits allow for underground mining and mill processing rates of 550 tpd and 575 tpd respectively. Harte Gold will submit an application to increase both categories to 800 tpd in Q1 2019.

The Company expects to declare commercial production at the end of December 2018.

Near Mine Exploration infill drilling at the Sugar and Middle Zones for 2018 has concluded. Approximately 62,000 meters was drilled with a focus on the upgrade of Inferred Mineral Resources to the Indicated category. The drill program was successful and is expected to improve overall modelled grade of the Resources. Results will be factored into an updated NI 43-101 Mineral Resource Estimate targeted for early 2019. Step-out drilling underway will continue to mid-December. Approximately 30,000 meters has been drilled to-date, targeting extension of known mineralization at the Sugar, Middle and Wolf Zones, as well as discovery of new potential zones of mineralization like the Fox Zone. Information provided from the Company's downhole IP program completed in August has been successful identifying a number of drill targets, including a chargeability anomaly currently being drilled to test the convergence of the Middle and Wolf Zones. Downhole geophysics has been a highly successful tool used in the past, earlier work led to the deep Sugar Zone discovery at a depth of 1,000 meters. The Company has also started deep drilling at the Sugar Zone, approximately 1,500 meters below surface and 500 meters below the current extent of Inferred Mineral Resources, illustrated below. The intent of deep drilling is to test continuity of mineralization down dip and to potentially follow up with further downhole IP to develop deep drilling targets.

#### 4.0 Geological Setting

#### 4.1 Regional Geology

The DGB is situated between two larger greenstone belts; the Hemlo Greenstone Belt to the west and the Kabinakagami Greenstone Belt to the east. These greenstone belts are part of the larger, east trending Schreiber-White River Belt of the Wawa Subprovince of the Superior Craton (Figure 3). The Late Archean DGB trends northwest and forms a narrow, eastward concave crescent. The belt is approximately 36 km in length and varies in width from 1.5 to 5.5 km. Principal lithologies in the belt are moderately to highly deformed metamorphosed volcanics, volcaniclastics and sediments that have been enclosed and intruded by tonalitic to granodioritic quartz-porphyry plutons.

The greenstone belt is bordered to the east by the Strickland Pluton and to the west by the Black Pic Batholith. The Danny Lake Stock borders the south-western edge of the DGB. The Strickland Pluton is characterized by a granodioritic composition, quartz phenocrysts, fine grained titanite, and hematitic fractures. The Black Pic Batholith is like the Strickland Pluton, but locally more potassic. The Black Pic Batholith also contains interlayers of monzogranite. The Danny Lake Stock is characterized by hornblende porphyritic quartz monzonite to quartz monzodiorite (G. M. Stott, 1999).

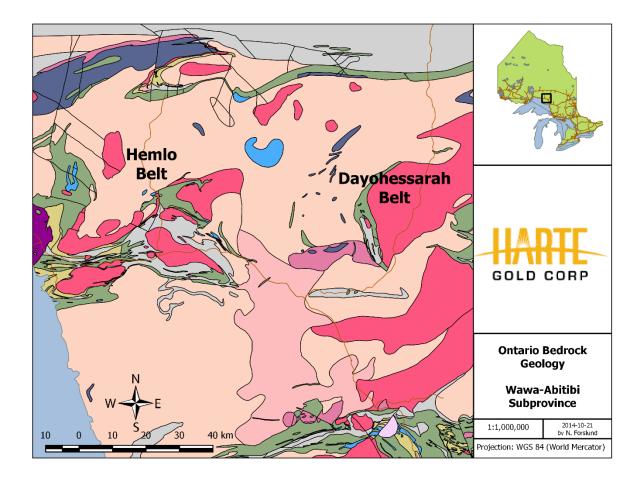


Figure 3 - Regional Geology

The DGB has been metamorphosed to upper greenschist to amphibolite facies. The Strickland Pluton seems to have squeezed the greenstone belt and imposed upon it a thermal metamorphism. Most of the mafic volcanics are composed primarily of plagioclase and hornblende. Almandine garnets are widely observed in the clastic metasediments and locally, along with pyrope garnets, in the mafic volcanics (G.M. Stott, 1996a,b,c).

Alteration throughout the belt consists of diopsidation, albitization, weak magnesium biotitization, weak carbonatization and moderate to strong silicification which accompanied the emplacement of the porphyry dykes/sills and quartz veining.

The belt has been strongly foliated, flattened and strained. Deformation seen in the supracrustal rocks has been interpreted to be related to the emplacement of the Strickland Pluton. Strongly developed metamorphic mineral lineations in the supracrustal rocks closely compare with the orientations of the quartz phenocryst lineations seen in the Strickland Pluton. This probably reflects a constant strain aureole imposed by the pluton upon the belt (G.M. Stott, 1996a,b,c). The strain fabric is best observed a few hundred meters from the Strickland Pluton in the Sugar Zone, which has been characterized as the most severely strained part of the belt. The Sugar Zone is defined by sets of parallel mineralized quartz veining, quartz flooding of strongly altered wall-rock, thin intermediate porphyry lenses and dykes/sills parallel to stratigraphy and foliation, and gold mineralization.

Foliations and numerous top indicators define a synclinal fold in the central portion of the belt. The synclinal fold has been strongly flattened and stands upright with the fold hinge open to the south and centered along Dayohessarah Lake.

### 4.2 Property Geology

Near Dayohessarah Lake, the belt is dominated by a basal sequence of massive to pillowed mafic volcanics, commonly with ellipsoidal, bleached alteration pods, overlain by intermediate tuff and lapilli tuff. The tuffaceous units rapidly grade upwards to a sedimentary sequence consisting of greywacke and conglomerates derived from volcanics, sediments and felsic intrusive sources (G. M. Stott, 1996a,b,c). Several thin, continuous cherty sulphide facies iron formations are found in the mafic volcanic sequence. Spinifex textured komatiitic flows stratigraphically underlie the main sedimentary sequence and can be traced around the north end of Dayohessarah Lake. Also, at the north end of Dayohessarah Lake, mafic and ultramafic sills and stocks underlie the komatiites (Figure 4).

Several fine to medium grained, intermediate feldspar porphyry dykes/sills have intruded and swarmed the belt. Swarming of the intermediate porphyry dykes is more intense east of Dayohessarah Lake. Stott has interpreted the porphyry sills and associated porphyry bodies to be related to the Strickland Pluton. A smaller granitic quartz porphyry body containing some sulphide mineralization is located northwest of Dayohessarah Lake. The porphyritic texture of the dykes/sills is often nearly, or completely, obliterated by the degree of foliation in the greenstone belt, or by the degree of shear in the Sugar Zone. These intermediate dykes/sills vary in abundance across the Property, but increase in regularity within, and around, the Sugar Zone. There is also a consistent, weak pervasive silicic alteration in the intermediate intrusives, as well as consistently trace amounts of very fine-grained disseminated pyrite.

The major linear structure recognized on the Property is the Sugar Deformation Zone ("SDZ"), which trends northwest-southeast for approximately 3.5 km and dips southwest between 65° and

75°. The SDZ appears to be spatially related to the Strickland Pluton and is a complex system with strain intensities varying from strongly deformed-pillow mafic volcanics to undeformed massive mafic flows to anastomosing linear areas. Stratigraphically-conformable porphyritic intermediate intrusions swarm through the SDZ. Both the mafic volcanics and the intermediate intrusives exhibit moderate linear fabrics along with hydrothermal alteration (i.e., silicification).

In general, the north-westerly striking, south-westerly dipping stratigraphy hosting the gold mineralized portions of the Sugar Zone can be subdivided into the following units:

- Hanging Wall Volcanics;
- Upper Zone (Sugar Zone mineralization);
- Interzone Volcanics;
- Lower Zone (Sugar Zone mineralization);
- Footwall Volcanics

The Hanging Wall, Interzone and Footwall volcanic horizons consist predominantly of massive and pillowed basalt flows generally striking northwest and dipping at an average angle of 64° to the southwest. Coarse to very coarse grained, locally gabbroic-textured phases form a significant component of the Hanging Wall mafic volcanic package. It is believed that these phases represent thick, slowly-cooled portions of the massive mafic flows, as they commonly grade into finer grained, more recognizable basaltic flows, and eventually even pillow flows. In much of the area which drilling on the Sugar Zone was carried out, a distinctive, very coarse grained mafic volcanic flow was observed consistently about 15 m stratigraphically above the Upper Zone. Other than this unit, specific mafic flows, as well as intermediate porphyry units, are nearly impossible to interpret/distinguish between holes.

The Upper and Lower zones range in thickness from 1.5 to 10 m, strike at 140° and dip between 65° and 75° with minor undulations.

The auriferous Wolf Zone lies in the northern extent of the SDZ but drilling between the two zones indicates that the zones are complexly separate from each other. Like the Sugar Zone, the Wolf Zone is north-north-westerly striking and south-westerly dipping. Unlike the Sugar Zone, there is only one gold mineralized zone, and not two or more parallel zones.

A northerly-striking, sub-vertically dipping, dark grey-black, diabase dyke intrudes the older rock types in the greenstone belt and crosscuts the SDZ. The diabase obliterates the SDZ when it is encountered. The diabase dyke is aphanitic around the edges and, where thick enough to do so, grades to a coarse-grained euhedral rock in the middle of the dyke. The dyke exhibits very coarse-grained greenish quartz-epidote phenocrysts up to 3 cm across throughout. The dyke is weakly pervasively magnetic. A very small amount of lateral movement of the zones has been interpreted locally on either side of the dyke, suggesting that very minor dyke-related faulting has occurred. There are at least two more diabase dykes on the property. They strike at 35 degrees across the northern portion of the belt. These dykes are up to 40 m across and are similar in appearance and mineralogy to the dyke that cuts through the Sugar Zone.



#### Figure 4 - Property Geology

Other than the diabase, the youngest intrusive rocks observed on the Property are white to pale grey, fine grained to medium grained and occasionally pegmatitic felsite dykes. The dykes generally consist of varying amounts of plagioclase, quartz and muscovite. These generally thin dykes strike northeast and where they intersect the SDZ, they completely wipe out the zone. These dykes are undeformed and clearly postdate the mineralization and deformation events.

#### 5.0 Mineralization

### 5.1 Sugar Zone

The auriferous Upper and Lower zones of the Sugar Zone lie within the SDZ. They are defined as highly strained packages consisting of variously altered mafic volcanic flows, intermediate porphyritic intrusions and boudinaged auriferous quartz veins. The two zones range in true thickness from about 1.5 to 10 m and are separated by 20 to 30 m of barren mafic volcanics. A high-grade section of the Lower zone between lines 13+000N and 12+900N has been the focus of a bulk sample study and is referred to as the Jewelry Box.

Each zone is made up of one or more porphyritic intrusions, flanked by altered basalt and hosting stratigraphically conformable quartz veins. Alteration within the mafic volcanic potions of the zones consists primarily of silicification (both pervasive and as quartz veining), diopsidation and biotitization. The porphyry units of the zones exhibit biotite and silica alteration as well, but no diopside alteration.

The Upper and Lower zones appear geologically consistent both down dip and along strike. The Lower Zone has consistently larger widths, as well as mostly consistently higher grades of gold mineralization, however both the width and the gold grade within each zone seem to follow the same trends across the zone. That is to say, that where the Upper Zone exhibits larger widths and higher gold grades, the Lower Zone also exhibits larger widths and higher gold grades. The zones are observed on surface to pinch and swell over distances of 50 m or more.

Gold mineralization mostly occurs in quartz veins, stringers and quartz flooded zones predominantly associated with porphyry zones, porphyry contact zones, hydrothermally altered basalts and, rarely, weakly altered or unaltered basalt within the Upper and Lower zones.

Fine to coarse grained specks and blebs of visible gold are common in the Sugar Zone quartz veins, usually occurring within marginal, laminated or refractured portions of the veins. The visible gold itself is often observed to be concentrated within thin fractures, indicating some degree of remobilization. Quartz veins and floods also contain varying amounts of pyrrhotite, pyrite, chalcopyrite, galena, sphalerite, molybdenite and arsenopyrite. The presence of galena, sphalerite and/or arsenopyrite is a strong indicator of the presence of visible gold. Pyrite, chalcopyrite and, rarely, molybdenite form a minor component of total sulphides and do not appear to be directly related to the presence of gold mineralization.

Other mineralized zones have been observed between, above and below the Sugar Zone Upper and Lower zones, in diamond drilling. Most of these intercepts are believed to be quartz veining originating in either the Upper or Lower zone, that have been diverted from the sheared part of the zone, up to 30 m from the main bodies of mineralization. One of these zones is the historically discovered Zoe Zone, which has been recently renamed the Lynx Zone, which lies east of the southern end of the Sugar Zone.

## 5.2 Wolf Zone

The auriferous Wolf Zone lies along strike of the Sugar Zone and may represent the northern extension of the SDZ. It is defined as highly strained packages consisting of variously altered mafic volcanic flows and gabbro. The zone ranges in true thickness from 0.5 to 8 m.

The zone is made up of highly sheared mafic volcanics, and a network of intrusive, intermediate quartz-feldspar porphyry dykes/sills. Alteration in the mafic volcanic and gabbro units consists mainly of silicification (both pervasive and quartz veining), diopside alteration and magnesium-rich brown biotite alteration. Alteration within the intermediate porphyry units consist of mostly silicification, with small amounts of magnesium-rich brown biotite, and no diopside. The zone is observed in trenches to pinch and swell over 30 m.

Gold mineralization mostly occurs in quartz veins, stringers and quartz flooded zones predominantly associated with porphyry zones, and hydrothermally altered basalts and gabbro.

Fine grained specks of visible gold are occasionally observed in the Wolf Zone quartz veins. The visible gold itself is often observed to be concentrated within thin fractures, indicating some degree of remobilization. Quartz veins and floods also contain varying amounts of pyrrhotite, pyrite and occasional galena. The presence of galena is a strong indicator of the presence of visible gold. Pyrite and pyrrhotite form most of the total sulphides, but do not appear to be directly related to the presence of gold mineralization.

### 6.0 Summary of Work

Between March 12 and April 3, 2019 Superior Exploration, Adventure & Climbing Ltd. completed VLF EM-16 surveys on three grids (West, Middle and Flat Lake) in the Flat Lake area which occur on Harte Gold's Dayohessarah Lake property (Figures 5, 6 and 7). These grids are located 16.5 km north-northeast of the Sugar Zone mine site. These grids are accessed via Highway 631 and then a series of logging roads from White River, Ontario. A total of 17.3 km was surveyed along 12 lines which included a total of 876 station readings. Readings were taken every 20m on lines spaced 200m apart. Four lines were surveyed per grid. Field work on the grids were completed from March 12, 15, 20-28, 30-31 and April 1-3. The main objective of the survey was to delineate geophysical anomalies and/or identify significant geological structures in the area. This introductory report was written September 14-17, 2019.

Please refer to the interpretive report submitted by Superior Exploration, Adventure & Climbing Ltd. for further details on all technical and logistical aspects of the completed survey. (Appendix B).

Invoices from Superior Exploration, Adventure & Climbing Ltd. for the survey is included in Appendix C.

### 7.0 Results

Plan view Fraser-Filter, and resistivity contour maps as well as cross sections were produced of the area (modelled up to 144 meters in depth). The survey outlined several strong VLF bedrock conductors, as well as several highly resistive bedrock units.

For a more detailed discussion of the results and maps please see the Superior Exploration, Adventure & Climbing Ltd. interpretation report attached in Appendix B.

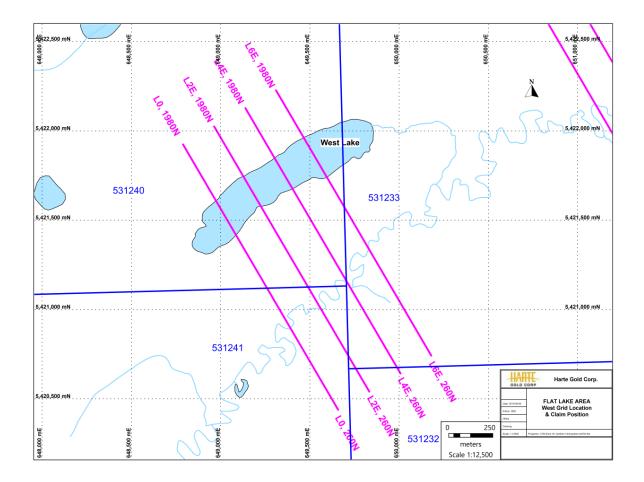


Figure 5 - West Grid and Claim Locations

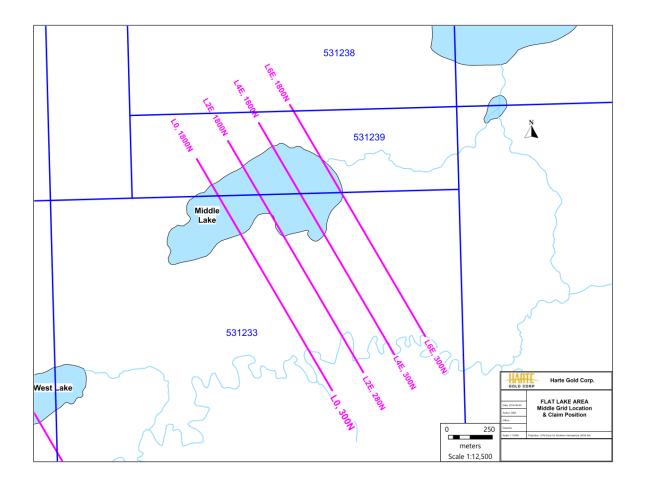


Figure 6 - Middle Grid and Claim Locations

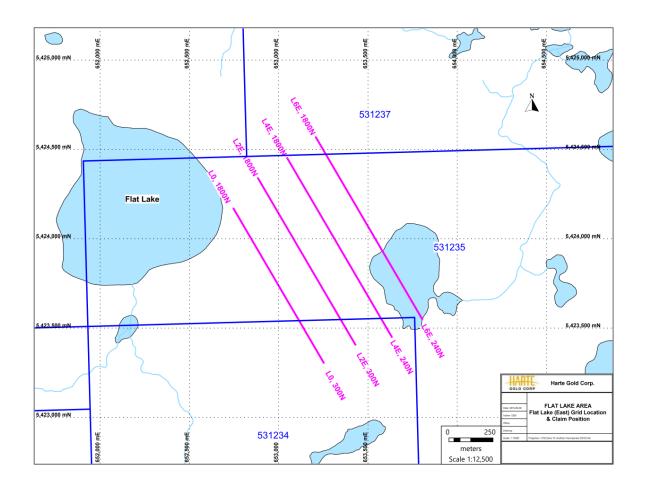


Figure 7 - Flat Lake (East) Grid and Claim Locations

### 8.0 Conclusions and Recommendations

The VLF EM-16 surveys were successful in identifying several strong bedrock conductors as well as several highly resistive rock units. Superior Exploration, Adventure & Climbing Ltd recommends adding additional 100m infill lines to the grid to obtain a higher resolution of VLF trends and adding additional filters as well as some follow-up ground work.

Please refer to the Superior Exploration, Adventure & Climbing Ltd. interpretation report attached in Appendix B for a detailed list of conclusions and recommendations.

#### 9.0 Costs

The total cost of the three VLF surveys conducted on the West, Middle and Flat Lake grids amounted to \$42,990. A total of 17.3 km of VLF survey was completed with a total of 876 station readings along 12 lines (4 lines per grid). The survey area intersected a total of nine grouped mining claims; 531240, 531241, 531232, 531233, 531239, 531238, 531234, 531235 and 531237 (Figures 5, 6 and 7).

Program costs and cost per claim are summarized in Tables 1 and 2.

# Table 1 - Summary of Costs

Activity	ι	Jnits		Cost per Unit		Total	%
Fieldwork, Interpretation and Modelling	17.30	km	@	\$1,500.00	per km	\$ 25,950	60.4%
Geophysical Report	17.30	km	@	\$300.00	per km	\$ 5,190	12.1%
Mobilization & Demobilization	1	trip	@	\$800.00	per day	\$ 800	1.9%
Truck Rental	13	days	@	\$125.00	per day	\$ 1,625	3.8%
Snow Machine Rental	11	days	@	\$75.00	per day	\$ 825	1.9%
Per Diem	16	samples	@	\$75.00	per sample	\$ 1,200	2.8%
Room & Board - Shaun Parent	16	days	@	\$300.00	per day	\$ 4,800	11.2%
Report Writing	4	days	@	\$650.00	per day	\$ 2,600	6.0%
Total Cost						\$42,990	100.0%

### Table 2 – Cost Per Claim

	West Grid		Middle Gric	l	Flat Lake (East )	Grid		% of Total	\$/Claim
Claim #	Line #	Meters	Line #	Meters	Line #	Meters	Total M/Claim	Meters	
531240	L0, 1080N-1980N	900					900		
	L2E, 950N-1980N	1030					1030		
	L4E, 840N-1980N	1140					1140		
	L6E, 1220N-1980N	760					760		
	[				1		3830	22.11%	\$9,506
531241	L0, 260N-1080N	820					820		
501211	L2E, 490N-950N	460					460		
		100					1280	7.39%	\$3,177
								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<i>ç</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
531232	L2E, 260N-400N	140					140		
	L4E, 260-300N	40					40		
					7		180	1.04%	\$447
				10.00			4050		
531233		90	L0, 300N-1560N	1260			1350		
	L4E, 300N-840N	540	L2E, 280N-1430N	1150			1690		
	L6E, 260N-1220N	960	L4E, 300N-1340N	1040			2000		
			L6E, 300N-1240N	940			940 <b>5980</b>	24 520/	¢11 013
		[				[	5980	34.53%	\$14,843
531239			L0, 1560N-1800N	240			240		
			L2E, 1430N-1800N	370			370		
			L4E, 1340N-1800N	460			460		
			L6E, 1240N-1780N	540			540		
							1610	9.30%	\$3,996
531238			L6E, 1780N-1800N	20			20		
							20	0.12%	\$50
531234					L0, 300N-580N	280	280		
					L2E, 300N-460N	160	160		
					L4E, 240N-360N	120	120		
							560	3.23%	\$1,390
531235					L0, 580N-1300N	720	720		
					L2E, 460N-1380N	920	920		
					L4E, 360N-1400N	1040	1040		
					L6E, 240N-1310N	1070	1070		40.000
							3750	21.65%	\$9,308
531237					L6E, 1310N-1420N	110	110		
551257					202, 101010 142010	110	110	0.64%	\$273
								0.01/0	<i>72,3</i>
Totals		6880		6020		4420	17320	100.00%	\$42,990

#### 10.0 References

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Laarman, J.E., 2014. Report on the Summer 2014 Geologic Mapping. Internal report prepared for Harte Gold Corp.

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Stott, G.M., 1996b. Precambrian Geology of Dayohessarah Lake Area (Central area), Ontario Geological Survey, Preliminary map no. 3310.

Stott, G.M., 1996c. Precambrian Geology of Dayohessarah Lake Area (South half), Ontario Geological Survey, Preliminary map no. 3311.

#### 11.0 Statement of Qualifications

I, David B. Stevenson, of 2217 Lacewood Drive, Thunder Bay, Ontario, P7K 1C4 hereby certify that:

I am presently employed by Harte Gold Corporation as their Chief Exploration Geologist.

I am a graduate of the University of New Brunswick, B.Sc. (Hons. Geology), 1981 and a graduate of Queen's University, M.Sc. (Minex), 1998.

I have practiced my profession as a geologist for over 35 years in various provinces and territories across Canada as well as Norway.

I am a member in good standing of the Association Professional Geoscientists of Ontario.

I have personal knowledge of the work carried out on the property as described in this report,

I have no personal interest in the property.

Dated this 17<sup>th</sup> day of September, 2019 at Thunder Bay, Ontario.

David B. Stevenson, M.Sc., P.Geo.

Appendix A – Claims List

#### Schedule "A" Sugar Zone Mining Leases

	Twp.	Issued	Anniversary	Area (Ha.)	Reserve		Lease #	Rights	PIN	Reg'd Plan	
1069333	HAMBLETON	01-Jun-15	31-May-36	393.38	\$3,828	Lease	CLM514	MR+SR	31054-0003	Pts. 1-9, 1R-13011	
1069332		01-Juli-15	51-Way-50	393.30					31054-0003	FIS. 1-9, IK-13011	
	HAMBLETON				\$7,320		CLM514	MR+SR			
1069343	HAMBLETON				\$3,989		CLM514	MR+SR	31054-0005		
1069344	HAMBLETON					Lease	CLM514	MR+SR, MRO	31054-0006		
1069345	HAMBLETON				\$3,729	Lease	CLM514	MR+SR, MRO			
1069346	HAMBLETON				\$3,621	Lease	CLM514	MR+SR			
1182993	HAMBLETON				\$1,519	Lease	CLM514	MR+SR			
1232640	GOURLAY				\$302	Lease	CLM514	MR+SR, MRO			
	HAMBLETON				\$3,263		CLM514	MR+SR, MRO			
		01 May 15	20 1 10 26	202.67			CLM514 CLM515		21052 0001	Dia 1.0 1D 12020	
1069327	HAMBLETON	01-May-15	30-Apr-36	282.67	\$3,932			MR+SR, MRO	31053-0001	Pts. 1-9, 1R-13039	
1069328	HAMBLETON				\$6,981		CLM515	MR+SR			
1069329	HAMBLETON				\$28,415	Lease	CLM515	MR+SR			
1069330	HAMBLETON				\$6,199	Lease	CLM515	MR+SR			
1069331	HAMBLETON				\$7,819	Lease	CLM515	MR+SR			
1069334	HAMBLETON				\$5,851		CLM515	MR+SR			
1069335	HAMBLETON				\$5,914		CLM515	MR+SR			
1069336	HAMBLETON				\$32,451		CLM515	MR+SR			
1069337	HAMBLETON				\$7,427		CLM515	MR+SR, MRO			
1069338	HAMBLETON				\$1,426	Lease	CLM515	MR+SR, MRO			
1069339	HAMBLETON				\$4,461	Lease	CLM515	MR+SR, MRO			
1069340	HAMBLETON				\$6,587		CLM515	MR+SR			
1069341	HAMBLETON				\$39,482		CLM515	MR+SR			
1069342					\$120,283		CLM515	MR+SR			
1069347	HAMBLETON				\$343,207		CLM515	MR+SR			
1069348	HAMBLETON				\$8,049	Lease	CLM515	MR+SR, MRO			
1069349	HAMBLETON				\$3,569	Lease	CLM515	MR+SR, MRO			
1069350	HAMBLETON				\$7,532		CLM515	MR+SR, MRO			
1135498	HAMBLETON						CLM515 CLM515	MR+SR			
					\$930,312						
1182994	HAMBLETON				\$1,458,826		CLM515	MR+SR			
4270162	HAMBLETON					Lease	CLM515	MR+SR			
937770	ODLUM	01-May-15	30-Apr-36	279.83	\$174	Lease	CLM516	MR+SR	31078-0001	Pts. 1-11, 1R-13038	
1043803	ODLUM	-	-			Lease	CLM516	MR+SR, MRO			
1043811	ODLUM					Lease	CLM516	MR+SR, MRO			
1043812	ODLUM					Lease	CLM516				
								MR+SR, MRO			
1069356	ODLUM					Lease	CLM516	MR+SR			
1069357	ODLUM					Lease	CLM516	MR+SR, MRO			
1069358	ODLUM				\$600	Lease	CLM516	MR+SR, MRO			
1069363	ODLUM				\$382	Lease	CLM516	MR+SR, MRO			
1069364	ODLUM					Lease	CLM516	MR+SR, MRO			
1069365	ODLUM				\$200	Lease	CLM516	MR+SR, MRO			
1069372	ODLUM					Lease	CLM516	MRO			
1069373	ODLUM					Lease	CLM516	MR+SR, MRO			
1069374	ODLUM				\$102	Lease	CLM516	MR+SR, MRO			
1078250	ODLUM					Lease	CLM516	MR+SR, MRO			
1078251	ODLUM				\$617	Lease	CLM516	MR+SR, MRO			
					\$1,388						
1078252	ODLUM						CLM516	MR+SR, MRO			
1135499	HAMBLETON				\$741,876		CLM516	MR+SR			
1194337	HAMBLETON				\$1,719	Lease	CLM516	MR+SR			
1194340	ODLUM				\$306	Lease	CLM516	MR+SR, MRO			
937771	ODLUM	01-May-15	30-Apr-36	511.38	\$287	Lease	CLM517	MR+SR	31077-0001	Pts. 1-8, 1R-13019	
937772	ODLUM					Lease	CLM517	MR+SR			
1043806	ODLUM					Lease	CLM517	MR+SR, MRO			
1043807	ODLUM					Lease	CLM517	MR+SR			
1043808	ODLUM				\$200	Lease	CLM517	MR+SR, MRO			
1043809	ODLUM				\$1	Lease	CLM517	MR+SR, MRO			
1043810	ODLUM					Lease	CLM517	MRO			
	HAMBLETON				\$113,438		CLM517 CLM517	MR+SR			
	HAMBLETON				\$1,000		CLM517	MR+SR, MRO			
1069354	ODLUM				\$10,426		CLM517	MR+SR, MRO			
	ODLUM				\$30,262	Lease	CLM517	MR+SR			
1069355	ODLUM				\$9,613	Lease	CLM517	MR+SR, MRO			
1069355 1069366	ODLOW				\$66,094		CLM517	MR+SR, MRO			
1069366						Lease	CLM517 CLM517	MR+SR, MRO			
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1069366 1069367 1069368 1069369 1069370 1069371	ODLUM ODLUM ODLUM ODLUM ODLUM				\$154	Lease	CLM517	MR+SR, MRO			
1069366 1069367 1069368 1069369 1069370 1069371 1140638	ODLUM ODLUM ODLUM ODLUM STRICKLAND				\$154 \$174	Lease Lease Lease	CLM517 CLM517	MR+SR, MRO MR+SR, MRO			
1069366 1069367 1069368 1069369 1069370 1069371 1140638 1140639	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND				\$154 \$174 \$174	Lease Lease Lease Lease	CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO			
1069366 1069367 1069368 1069370 1069370 1069371 1140638 1140639 1140640	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350	Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR			
1069366 1069367 1069368 1069370 1069370 1069371 1140638 1140639 1140640 1140641	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350	Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR			
1069366 1069367 1069368 1069370 1069370 1069371 1140638 1140639 1140640	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350	Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR			
1069366 1069367 1069368 1069370 1069370 1069371 1140638 1140639 1140640 1140641	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$350	Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR			
1069366 1069367 1069368 1069370 1069370 1069371 1140639 1140639 1140640 1140641 1140642 1140643	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$350 \$306	Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR			
1069366 1069367 1069368 1069370 1069370 1069371 1140639 1140649 1140640 1140641 1140642 1140643 1140644	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR			
$\begin{array}{c} 1069366\\ 1069367\\ 1069368\\ 1069369\\ 1069370\\ 1069370\\ 1140638\\ 1140638\\ 1140640\\ 1140641\\ 1140643\\ 1140643\\ 1140644\\ 1140645\\ \end{array}$	ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			
1069366 1069367 1069368 1069369 1069370 1140638 1140638 1140640 1140642 1140642 1140643 1140645 1140645	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			
$\begin{array}{c} 1069366\\ 1069367\\ 1069368\\ 1069369\\ 1069370\\ 1069370\\ 1140638\\ 1140638\\ 1140640\\ 1140641\\ 1140643\\ 1140643\\ 1140644\\ 1140645\\ \end{array}$	ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$174 \$350 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			
1069366 1069367 1069368 1069369 1069370 1140638 1140638 1140640 1140642 1140642 1140643 1140645 1140645	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$374 \$350 \$306 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			
1069366 1069367 1069368 1069370 1069370 1140638 1140639 1140640 1140641 1140642 1140644 1140645 1140645 1140645 1140645	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$350 \$306 \$306 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR, MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			
1069366 1069367 1069368 1069370 1069370 1069370 1140638 1140643 1140644 1140644 1140644 1140644 1140644 1140646 1140646	ODLUM ODLUM ODLUM ODLUM STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND STRICKLAND				\$154 \$174 \$350 \$306 \$306 \$306 \$306	Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease Lease	CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517 CLM517	MR+SR, MRO MR+SR, MRO MR+SR MRO MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR MR+SR			

#### Schedule "B" Sugar Zone - Claims

ownship / Area	Tenure ID	Tenure Type			leserve
IOSAMBIK	125756	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
OSAMBIK	293144	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	153728	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	276267	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
OSAMBIK	226382	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	170250				
	336697	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	-	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	221060	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	274244	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
10SAMBIK	118071	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	117527	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IOSAMBIK	273605	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
AMEIGOS	219128	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	286341	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	322925	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	173870	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	117345	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	220366	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	208950	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	102955	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	227074	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	189153	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	170921	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	266283	Boundary Cell Mining Claim Boundary Cell Mining Claim	2020-01-08	\$200	\$0 \$0
AMEIGOS	155027	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	267591	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	170388	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	287639	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	125817	Boundary Cell Mining Claim	2020-01-08	\$200	\$0 \$0
	286384				
IAMEIGOS	_	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	189186	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	125769	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	274252	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	102956	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	102957	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	286342	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
IAMEIGOS	286343	Boundary Cell Mining Claim	2020-01-08	\$200	\$0
AMEIGOS	225048	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IAMEIGOS	159665	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
	_				
IAMEIGOS	104062	Boundary Cell Mining Claim	2020-01-09	\$200	\$0
IAMEIGOS	344511	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	141005	Boundary Cell Mining Claim	2020-02-16	\$200	\$1,339
IAMEIGOS	281507	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	122945	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	238950			\$200	
	-	Boundary Cell Mining Claim	2020-02-16		\$0
AMEIGOS	319552	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	282751	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	157827	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	134919	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS					
	290157	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	151061	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	133689	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	186239	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
IAMEIGOS	302908	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	186333	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	150356	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
AMEIGOS	186240	Boundary Cell Mining Claim	2020-02-16	\$200	\$0
DLUM	205218	Boundary Cell Mining Claim	2019-06-20	\$200	\$0
DLUM	236538	Boundary Cell Mining Claim	2019-06-20	\$200	\$0
DLUM	323310	Boundary Cell Mining Claim	2019-06-20	\$200	\$0
DLUM	113014	Boundary Cell Mining Claim	2019-06-20	\$200	\$0
DLUM	308490	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	199956	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	137166	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	156716	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	112652	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	142645	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	155301	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
DLUM	168606	Boundary Cell Mining Claim	2019-12-23	\$200	\$0
BRAHAM	531086	Multi-cell Mining Claim	2020-01-18	\$9,600	\$0
BRAHAM	531081	Multi-cell Mining Claim	2020-02-22	\$10,000	\$0
BRAHAM	531082	Multi-cell Mining Claim	2020-02-22	\$9,600	\$0
BRAHAM	531083	Multi-cell Mining Claim	2020-02-22	\$9,600	\$2,428
		0			
BRAHAM,COOPER	531087	Multi-cell Mining Claim	2020-01-18	\$9,600	\$0
BRAHAM,COOPER	531084	Multi-cell Mining Claim	2020-03-10	\$9,600	\$0
BRAHAM,COOPER,TEDD	ER 531096	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
			2020-01-09	\$10,000	\$0
BRAHAM, TEDDER	531094	Multi-cell Mining Claim			

ABRAHAM, TEDDER	531048	Multi-cell Mining Claim	2020-02-22	\$9,000	\$0
ABRAHAM, TEDDER	531080	Multi-cell Mining Claim	2020-02-22	\$9,600	\$0
AYFIELD	531235	Multi-cell Mining Claim	2019-12-22	\$8,000	\$74
AYFIELD	531236	Multi-cell Mining Claim	2019-12-22	\$8,000	\$0
AYFIELD	531237	Multi-cell Mining Claim	2019-12-22	\$8,000	\$0 \$0
	-				
AYFIELD	531238	Multi-cell Mining Claim	2019-12-22	\$9,200	\$0
AYFIELD	531239	Multi-cell Mining Claim	2019-12-22	\$1,600	\$0
AYFIELD,GOURLAY	531233	Multi-cell Mining Claim	2019-12-22	\$10,000	\$0
AYFIELD,GOURLAY	531234	Multi-cell Mining Claim	2019-12-22	\$8,000	\$0
AYFIELD, GOURLAY, HAMBLET	531240	Multi-cell Mining Claim	2019-12-22	\$9,600	\$0
AYFIELD, HAMBLETON, MATT		Multi-cell Mining Claim	2019-12-17	\$8,000	\$0
OOPER	531139	Multi-cell Mining Claim	2020-01-09	\$9,200	\$0
OOPER	531112	Multi-cell Mining Claim	2020-01-09		\$0 \$0
		ů.		\$10,000	
OOPER	531163	Multi-cell Mining Claim	2020-01-09	\$6,000	\$0
OOPER	531115	Multi-cell Mining Claim	2020-01-10	\$9,200	\$0
OOPER	531116	Multi-cell Mining Claim	2020-01-10	\$9,600	\$0
OOPER	531117	Multi-cell Mining Claim	2020-01-10	\$10,000	\$2,829
OOPER	531118	Multi-cell Mining Claim	2020-01-10	\$10,000	\$0
OOPER	531085	Multi-cell Mining Claim	2020-03-10	\$9,600	\$0
OOPER	531085				\$0 \$0
	-	Multi-cell Mining Claim	2020-03-10	\$9,600	
OOPER	531089	Multi-cell Mining Claim	2020-03-10	\$8,000	\$0
OOPER	531090	Multi-cell Mining Claim	2020-03-10	\$9,600	\$2,410
DOPER	531091	Multi-cell Mining Claim	2020-03-10	\$9,600	\$0
DOPER	531092	Multi-cell Mining Claim	2020-03-10	\$9,600	\$8
DOPER	531093	Multi-cell Mining Claim	2020-03-10	\$10,000	\$0
DOPER	531113	Multi-cell Mining Claim	2020-03-10	\$10,000	\$0 \$0
OOPER	531114	Multi-cell Mining Claim	2020-03-10	\$10,000	\$2,309
OOPER,STRICKLAND	531166	Multi-cell Mining Claim	2020-01-09	\$800	\$0
OOPER,STRICKLAND	531119	Multi-cell Mining Claim	2020-01-10	\$8,000	\$0
OOPER,STRICKLAND	531120	Multi-cell Mining Claim	2020-01-10	\$6,000	\$0
OOPER,STRICKLAND	531121	Multi-cell Mining Claim	2020-01-10	\$6,400	\$0
OOPER,STRICKLAND	531164	Multi-cell Mining Claim	2020-01-10	\$7,200	\$0
OOPER,STRICKLAND	531165	Multi-cell Mining Claim	2020-04-21	\$5,200	\$0 \$0
		_			
DOPER,STRICKLAND,TEDDER		Multi-cell Mining Claim	2020-01-09	\$6,800	\$0
OOPER,TEDDER	531151	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
DOPER,TEDDER	531111	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
OOPER,TEDDER	531097	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
OOPER,TEDDER	531100	Multi-cell Mining Claim	2020-01-09	\$9,600	\$0
OURLAY	531220	Multi-cell Mining Claim	2019-12-03	\$9,600	\$2,964
OURLAY	531225			\$9,600	\$891
		Multi-cell Mining Claim	2019-12-03		
OURLAY	531229	Multi-cell Mining Claim	2019-12-03	\$10,000	\$4,154
OURLAY	531231	Multi-cell Mining Claim	2019-12-03	\$10,000	\$7,260
OURLAY	531232	Multi-cell Mining Claim	2019-12-22	\$9,600	\$0
OURLAY, HAMBLETON	531219	Multi-cell Mining Claim	2019-11-20	\$9,200	\$2,615
OURLAY, HAMBLETON	531224	Multi-cell Mining Claim	2019-12-03	\$9,600	\$1,774
OURLAY,HAMBLETON	531226	Multi-cell Mining Claim	2019-12-03	\$10,000	\$2,337
OURLAY,HAMBLETON	531230	Multi-cell Mining Claim	2019-12-03	\$8,800	\$4,898
OURLAY,HAMBLETON	531243	Multi-cell Mining Claim	2019-12-03	\$10,000	\$2,913
OURLAY,HAMBLETON	531241	Multi-cell Mining Claim	2019-12-17	\$9,600	\$6,343
OURLAY, HAMBLETON, STRIC	531222	Multi-cell Mining Claim	2019-12-03	\$6,200	\$0
OURLAY,STRICKLAND	531221	Multi-cell Mining Claim	2019-12-03	\$10,000	\$0
AMBLETON	531254	Multi-cell Mining Claim	2019-06-13	\$9,600	\$6,152
AMBLETON	531255	Multi-cell Mining Claim	2019-06-13	\$10,000	\$6,288
		_			
AMBLETON	531256	Multi-cell Mining Claim	2019-06-13	\$10,000	\$8,118
AMBLETON	531258	Multi-cell Mining Claim	2019-06-13	\$4,800	\$3,900
AMBLETON	531269	Multi-cell Mining Claim	2019-06-13	\$1,200	\$0
AMBLETON	531214	Multi-cell Mining Claim	2019-07-20	\$2,400	\$243,686
AMBLETON	531228	Multi-cell Mining Claim	2019-12-03	\$6,000	\$1,879
AMBLETON	531264	Multi-cell Mining Claim	2019-12-17	\$9,600	\$850
AMBLETON	531244	Multi-cell Mining Claim	2019-12-17	\$10,000	\$0 \$0
		_			
AMBLETON	531245	Multi-cell Mining Claim	2019-12-17	\$9,600	\$0
AMBLETON	531246	Multi-cell Mining Claim	2019-12-17	\$9,600	\$0
AMBLETON	531247	Multi-cell Mining Claim	2019-12-17	\$9,600	\$0
AMBLETON	531210	Multi-cell Mining Claim	2019-12-23	\$6,800	\$4,399
AMBLETON	531249	Multi-cell Mining Claim	2019-12-23	\$1,200	\$0
AMBLETON	531257	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
AMBLETON	531268	Multi-cell Mining Claim	2019-12-23	\$4,000	\$0 \$0
		0			
AMBLETON	531212	Multi-cell Mining Claim	2019-12-31	\$7,200	\$58,751
AMBLETON	531215	Multi-cell Mining Claim	2019-12-31	\$3,600	\$213,133
AMBLETON	531216	Multi-cell Mining Claim	2019-12-31	\$1,000	\$546,949
AMBLETON	531217	Multi-cell Mining Claim	2019-12-31	\$2,200	\$471,385
AMBLETON	531218	Multi-cell Mining Claim	2019-12-31	\$1,800	\$110,673
AMBLETON	531227	Multi-cell Mining Claim	2020-04-21	\$5,600	\$1,553
		_			
AMBLETON	531248	Multi-cell Mining Claim	2020-04-21	\$10,000	\$0
AMBLETON	531265	Multi-cell Mining Claim	2020-04-21	\$10,000	\$0
AMBLETON	531266	Multi-cell Mining Claim	2020-04-21	\$5,600	\$0
AMBLETON	531267	Multi-cell Mining Claim	2020-04-21	\$5,600	\$0
AMBLETON	531211	Multi-cell Mining Claim	2021-12-23	\$3,200	\$2,381
	531259	Multi-cell Mining Claim	2022-12-23	\$1,200	\$851

HAMBLETON,ODLUM	531209	Multi-cell Mining Claim	2019-12-23	\$2,400	\$3,007
HAMBLETON,ODLUM	531208	Multi-cell Mining Claim	2019-12-31	\$5,200	\$578
HAMBLETON, ODLUM	531200	Multi-cell Mining Claim	2020-04-26	\$8,200	\$419,784
		_			
OHNS	530313	Multi-cell Mining Claim	2019-06-20	\$6,400	\$4,084
OHNS	530314	Multi-cell Mining Claim	2019-06-20	\$6,400	\$3,989
OHNS	530315	Multi-cell Mining Claim	2019-06-20	\$7,200	\$8,147
OHNS	530316	Multi-cell Mining Claim	2019-06-20	\$10,000	\$7,432
OHNS	530317	Multi-cell Mining Claim	2019-06-20	\$7,200	\$1,858
OHNS	531017	Multi-cell Mining Claim	2019-06-20	\$9,600	\$10,643
OHNS	531018	Multi-cell Mining Claim		\$10,000	
			2019-06-20		\$1,750
OHNS,ODLUM	530318	Multi-cell Mining Claim	2019-06-20	\$7,200	\$3,955
OHNS,ODLUM	531019	Multi-cell Mining Claim	2019-06-20	\$9,600	\$3,654
IOHNS,ODLUM	531020	Multi-cell Mining Claim	2019-06-20	\$10,000	\$1,750
MOSAMBIK	531287	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
MOSAMBIK	531348	Multi-cell Mining Claim	2020-01-09	\$8,800	\$0
MOSAMBIK	532869	Multi-cell Mining Claim	2020-04-10	\$8,000	\$0
VOSAMBIK,NAMEIGOS	531286	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
,					
MOSAMBIK,NAMEIGOS	531288	Multi-cell Mining Claim	2020-01-09	\$8,400	\$0
MOSAMBIK,NAMEIGOS	531347	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
AOSAMBIK,NAMEIGOS	531349	Multi-cell Mining Claim	2020-01-09	\$6,400	\$0
AOSAMBIK,NAMEIGOS	531350	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
AMEIGOS	531340	Multi-cell Mining Claim	2019-06-13	\$6,800	\$6,473
AMEIGOS	531335	Multi-cell Mining Claim	2019-06-13	\$10,000	\$2,377
	531333	_			
NAMEIGOS		Multi-cell Mining Claim	2019-06-13	\$8,000	\$4,097
NAMEIGOS	531343	Multi-cell Mining Claim	2019-06-13	\$8,000	\$5,623
NAMEIGOS	531344	Multi-cell Mining Claim	2019-06-13	\$7,200	\$8,195
NAMEIGOS	531283	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
NAMEIGOS	531284	Multi-cell Mining Claim	2020-01-09	\$9,200	\$0
NAMEIGOS	531285	Multi-cell Mining Claim	2020-01-09	\$10,000	\$0
NAMEIGOS	531351	Multi-cell Mining Claim	2020-01-09	\$9,600	\$0
AMEIGOS	531352	Multi-cell Mining Claim		\$10,000	\$0 \$0
		0	2020-01-09		
AMEIGOS	531332	Multi-cell Mining Claim	2020-02-16	\$9,600	\$0
IAMEIGOS	531333	Multi-cell Mining Claim	2020-02-16	\$4,800	\$0
AMEIGOS	531334	Multi-cell Mining Claim	2020-02-16	\$10,000	\$0
IAMEIGOS	531336	Multi-cell Mining Claim	2020-02-16	\$9,200	\$0
IAMEIGOS	531337	Multi-cell Mining Claim	2020-02-16	\$9,200	\$0
AMEIGOS	531338	Multi-cell Mining Claim	2020-02-16	\$9,600	\$0
AMEIGOS	531341	Multi-cell Mining Claim	2020-02-16	\$800	\$0 \$0
		_			
AMEIGOS	531345	Multi-cell Mining Claim	2020-02-16	\$800	\$0
IAMEIGOS	531346	Multi-cell Mining Claim	2020-02-16	\$1,600	\$2,096
AMEIGOS	531331	Multi-cell Mining Claim	2020-04-11	\$7,600	\$0
AMEIGOS	531281	Multi-cell Mining Claim	2020-04-11	\$10,000	\$0
AMEIGOS	531282	Multi-cell Mining Claim	2020-04-11	\$9,600	\$0
AMEIGOS	531289	Multi-cell Mining Claim	2020-04-11	\$5,600	\$0
AMEIGOS,STRICKLAND	531276	Multi-cell Mining Claim	2020-02-22	\$10,000	\$0 \$0
		_			
AMEIGOS,STRICKLAND	531279	Multi-cell Mining Claim	2020-02-22	\$4,000	\$0
IAMEIGOS,STRICKLAND	531280	Multi-cell Mining Claim	2020-04-11	\$9,600	\$0
DLUM	531016	Multi-cell Mining Claim	2019-06-20	\$10,000	\$2,167
DLUM	531021	Multi-cell Mining Claim	2019-06-20	\$10,000	\$7,963
DLUM	531024	Multi-cell Mining Claim	2019-06-20	\$10,000	\$6,270
DLUM	531025	Multi-cell Mining Claim	2019-06-20	\$9,600	\$4,018
DLUM	531207	Multi-cell Mining Claim	2019-07-02	\$1,600	\$38,911
					. ,
DLUM	531201	Multi-cell Mining Claim	2019-10-29	\$2,000	\$1,713
DLUM	531026	Multi-cell Mining Claim	2019-12-23	\$10,000	\$151
DLUM	531182	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
DLUM	531199	Multi-cell Mining Claim	2019-12-23	\$800	\$0
DLUM	531200	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
DLUM	531202	Multi-cell Mining Claim	2019-12-23	\$9,200	\$416
DLUM	531202	Multi-cell Mining Claim	2019-12-31	\$7,000	\$1,479
		_			
DLUM	531204	Multi-cell Mining Claim	2019-12-31	\$3,800	\$0
DLUM	531205	Multi-cell Mining Claim	2020-03-27	\$4,800	\$66,972
DLUM	531183	Multi-cell Mining Claim	2020-04-21	\$9,600	\$0
DLUM	531198	Multi-cell Mining Claim	2020-04-21	\$7,600	\$0
DLUM,STRICKLAND	531270	Multi-cell Mining Claim	2019-12-03	\$5,000	\$4,323
DLUM,STRICKLAND	531184	Multi-cell Mining Claim	2020-04-21	\$9,600	\$0
DLUM,STRICKLAND	531197	Multi-cell Mining Claim	2020-04-21	\$9,600	\$0 \$0
DLUM,STRICKLAND,TEDDER		Multi-cell Mining Claim	2020-04-21	\$10,000	\$0
DLUM,TEDDER	531022	Multi-cell Mining Claim	2019-06-20	\$8,800	\$8,157
DLUM,TEDDER	531023	Multi-cell Mining Claim	2019-06-20	\$9,600	\$5,911
DLUM,TEDDER	531027	Multi-cell Mining Claim	2019-12-23	\$9,600	\$0
DLUM,TEDDER	531154	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
DLUM,TEDDER	531154	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0 \$0
DLUM,TEDDER	531174	Multi-cell Mining Claim	2019-12-23	\$9,600	\$0
TRICKLAND	531162	Multi-cell Mining Claim	2019-11-16	\$9,600	\$0
TRICKLAND	531168	Multi-cell Mining Claim	2019-11-16	\$10,000	\$0
TRICKLAND	531177	Multi-cell Mining Claim	2019-11-16	\$9,600	\$0
TRICKLAND	531178	Multi-cell Mining Claim	2019-11-16	\$10,000	\$0
	531180	Multi-cell Mining Claim	2019-11-16	\$9,200	\$0 \$0
TRICKLAND					

STRICKLAND	531273	Multi-cell Mining Claim	2019-11-16	\$10,000	\$0
STRICKLAND	531274	Multi-cell Mining Claim	2019-11-16	\$10,000	\$0
STRICKLAND	531275	Multi-cell Mining Claim	2019-11-16	\$8,400	\$0
STRICKLAND	531278	Multi-cell Mining Claim	2019-11-16	\$800	\$0
TRICKLAND	531195	Multi-cell Mining Claim	2019-12-03	\$8,800	\$3,651
TRICKLAND	531167	Multi-cell Mining Claim	2019-12-03	\$8,400	\$6,945
TRICKLAND	531170	Multi-cell Mining Claim	2019-12-03	\$9,200	\$1,763
TRICKLAND	531176	Multi-cell Mining Claim	2019-12-03	\$10,000	\$4,122
TRICKLAND	531179	Multi-cell Mining Claim	2019-12-03	\$8,400	\$0
STRICKLAND	531181	Multi-cell Mining Claim	2019-12-03	\$9,600	\$0
STRICKLAND	531185	Multi-cell Mining Claim	2019-12-03	\$9,600	\$5,886
TRICKLAND	531196	Multi-cell Mining Claim	2019-12-03	\$8,800	\$0
STRICKLAND	531223	Multi-cell Mining Claim	2019-12-03	\$7,400	\$3,197
STRICKLAND	531225	Multi-cell Mining Claim	2019-12-03	\$1,200	\$3,197
	531160	0	2019-12-03	\$1,200	\$0 \$0
	531160	Multi-cell Mining Claim			\$0 \$0
TRICKLAND TRICKLAND	531277	Multi-cell Mining Claim	2020-02-22 2020-02-22	\$8,400	\$0 \$0
	531277	Multi-cell Mining Claim		\$7,200	
		Multi-cell Mining Claim	2020-04-21	\$10,000	\$0
TRICKLAND, TEDDER	531156	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
TRICKLAND, TEDDER	531169	Multi-cell Mining Claim	2020-04-21	\$8,800	\$200
TRICKLAND, TEDDER	531171	Multi-cell Mining Claim	2020-04-21	\$8,800	\$0
EDDER	531031	Multi-cell Mining Claim	2019-12-23	\$9,600	\$0
EDDER	531153	Multi-cell Mining Claim	2019-12-23	\$8,800	\$0
EDDER	531155	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
EDDER	531172	Multi-cell Mining Claim	2019-12-23	\$10,000	\$0
EDDER	531079	Multi-cell Mining Claim	2020-01-09	\$9,200	\$0
EDDER	531046	Multi-cell Mining Claim	2020-01-09	\$8,800	\$346
EDDER	531047	Multi-cell Mining Claim	2020-01-09	\$9,600	\$0
EDDER	531098	Multi-cell Mining Claim	2020-01-09	\$9,600	\$0
EDDER	531099	Multi-cell Mining Claim	2020-01-09	\$9,600	\$0
OOPER	531126	Single Cell Mining Claim	2020-01-09	\$400	\$0
IOSAMBIK	273604	Single Cell Mining Claim	2020-01-09	\$400	\$0
IOSAMBIK	188477	Single Cell Mining Claim	2020-01-09	\$400	\$0
OSAMBIK,NAMEIGOS	265657	Single Cell Mining Claim	2020-01-09	\$400	\$0
IOSAMBIK,NAMEIGOS	344618	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	335993	Single Cell Mining Claim	2020-01-08	\$400	\$0
IAMEIGOS	208958	Single Cell Mining Claim	2020-01-08	\$400	\$0
IAMEIGOS	220373	Single Cell Mining Claim	2020-01-08	\$400	\$0
IAMEIGOS	102261	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	127131	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	229063	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	154316	Single Cell Mining Claim	2020-01-09	\$400	\$0 \$0
IAMEIGOS			2020-01-09		\$0 \$0
	103256	Single Cell Mining Claim	2020-01-09	\$400	
NAMEIGOS	118285	Single Cell Mining Claim		\$400	\$0
IAMEIGOS	219164	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	276303	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	125852	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	170953	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	286410	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	189211	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	531316	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531309	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	118287	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531304	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	170954	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531290	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531291	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531292	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531293	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531294	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531295	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531296	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531297	Single Cell Mining Claim	2020-01-09	\$400	\$0
AMEIGOS	531298	Single Cell Mining Claim	2020-01-09	\$400	\$0 \$0
AMEIGOS	531298	Single Cell Mining Claim	2020-01-09	\$400	\$0 \$0
AMEIGOS		Single Cell Mining Claim		\$400	
	531300		2020-01-09		\$0 \$0
AMEIGOS	531301	Single Cell Mining Claim	2020-01-09	\$400	\$0 ¢0
IAMEIGOS	531302	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	531305	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	531306	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	531317	Single Cell Mining Claim	2020-01-09	\$400	\$0
IAMEIGOS	514033	Single Cell Mining Claim	2020-04-11	\$400	\$0
AMEIGOS	514035	Single Cell Mining Claim	2020-04-11	\$400	\$0
STRICKLAND	110507	Single Cell Mining Claim	2019-12-03	\$200	\$0

#### Schedule "C" Halverson Property

Legacy Claim Id	Township / Area	Tenure ID	Tenure Type	Anniversary Date	Work Required	Total Reserve
4281896	ODLUM	136581	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	334503	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	255919	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	237877	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	220822	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	220821	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	209284	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	209282	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	201257	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	171296	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	142560	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	136582	Boundary Cell Mining Claim	2021-02-06	\$200	\$0
4281896	ODLUM	324599	Single Cell Mining Claim	2021-02-06	\$400	\$0
4281896	ODLUM	255918	Single Cell Mining Claim	2021-02-06	\$400	\$0
4281896	ODLUM	255917	Single Cell Mining Claim	2021-02-06	\$400	\$223
4281896	ODLUM	209283	Single Cell Mining Claim	2021-02-06	\$400	\$0

Appendix B – Superior Exploration, Adventure & Climbing Co. Ltd. Report titled "VLF EM-16 Survey / Interpretation Report Over the Flat Lake Area, West Grid / Middle Grid / Flat Lake Grid, White River, Ontario, Canada. Shaun Parent P.Geo. dated April 24, 2019"



# VLF EM-16 Survey / Interpretation Report

# **Over the**

# **Flat Lake Area**

# West Grid / Middle Grid / Flat Lake Grid

# White River, Ontario

Prepared For

Harte Gold Corporation By

Shaun Parent

Superior Exploration, Adventure & Climbing Co. Ltd.

April 24, 2019

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# Preamble

Superior Exploration, Adventure & Climbing Co. Ltd. is an Incorporated Company specializing in Mining Exploration and Geophysics as well as Professional climbing.

Our VLF surveys (YVLF) are a non-invasive way to complete first pass ground geophysics. No cut lines are needed and an exploration permit is not generally required.

We have worked in many countries and have experience working in a wide variety of environments such as VMS, Breccia Pipes, Epithermal Veins and Shear Hosted Gold Deposits.

Shaun Parent, BSc. P. Geo is a member of the Association of Professional Geoscientists of Ontario as well as the Prospectors & Developers Association of Canada. He has over 30 years' experience working in the Geological and Geophysical Field. Although he specializes in Ground VLF, he is also experienced working with I.P., Max Min, Surface & Borehole Pulse EM, Airborne Magnetics and Ground Magnetometer.

Sandra Slater is a member of the Prospectors & Developers Association of Canada. She has been working in the Geological/Geophysical field for over 10 years and specializes in data analysis and VLF2DMF software, as well as assisting in the field.

Shaun began working with the developer of the VLF2DMF software since its inception in 2008 and he and Sandra continue to do so. Superior Exploration has completed many successful "blind" case history test VLF surveys over various ore bodies and mineralized zones.

## **Executive Summary:**

3 separate Ground VLF surveys were completed over the Flat Lakes area. The property is located approximately 50 kilometers Northeast of White River, Ontario. The survey was carried out in March & April 2019 using a VLF EM-16 unit and a handheld Garmin GPS-60CSX. Two transmitters were read at each station: NAA 24.0 KHz – Cutler, Maine and NML 25.2 KHz- La Moure, North Dakota. A total of 17.3 km of VLF was carried out on 3 separate grids (West Grid) (Middle Grid) (Flat Grid) consisting of 4 VLF lines on each grid.

The main objective of the survey was to determine if the VLF Survey could delineate zones carrying mineralization and or structures. No geological information was known at the time of the VLF survey.

# **Property Access**

Access is by the following:

- Follow Logging Road #100 just west of White River across from the White River Forest Products for 35 kilometers to the junction of logging road #300
- Follow logging road #300 to Km. Marker 57 and park vehicle.
- Using an off road vehicle, follow southern logging road for 18 kilometers
- From the end of this logging road, follow a blazed and cut snow machine trail to Flat Lake where the Flat Lake Grid, Line 00, station 14+00N begins
- Cross Flat Lake to the west and follow the blazed and cut snow machine trail to the Middle Lake Grid. The grid crosses Middle Lake.
- Go to the far west end of Middle Lake and walk 40 minutes through the woods to the West Lake Grid. The grid crosses West Lake.

# Introduction

A VLF-EM16 survey is a relatively simple and economic geophysical survey that is used to better understand shallow, vertical and sub vertical bedrock conductors.

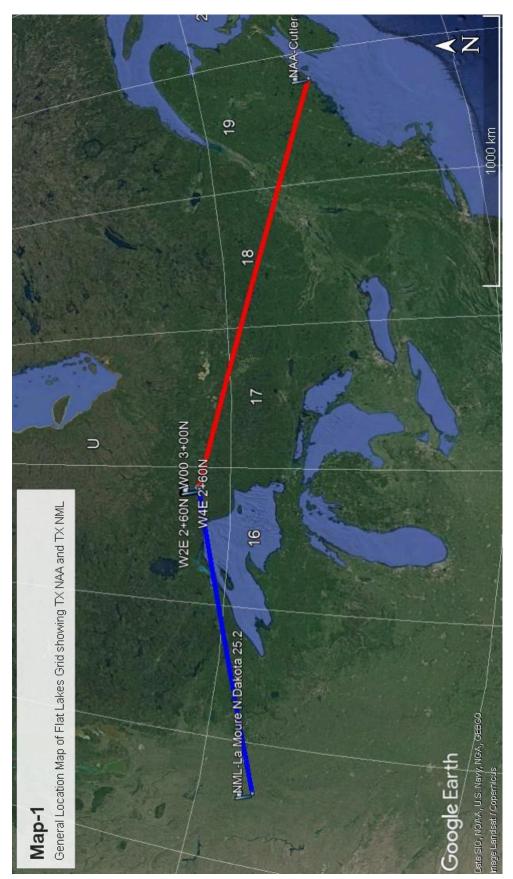
This report describes the findings and results of the VLF EM-16 survey utilizing the VLF2DMF processing software of which the author of this report has assisted in its development since 2007. It enables the processing and inversion of electromagnetic (EM) induction data acquired along a survey area using a Very Low Frequency (VLF) (Santos 2013. The software generates profiles of Raw Data, Fraser Filtered Data, Fraser Filter Pseudo Sections, KH Filtered Data, Resistivity, JY Inversions, and (2-D) Modelled Inversions.

VLF data collected in the surveyed area was also compiled onto separate plan maps of contoured Fraser Filter In Phase, Fraser Filter Quadrature as well as Resistivity data.

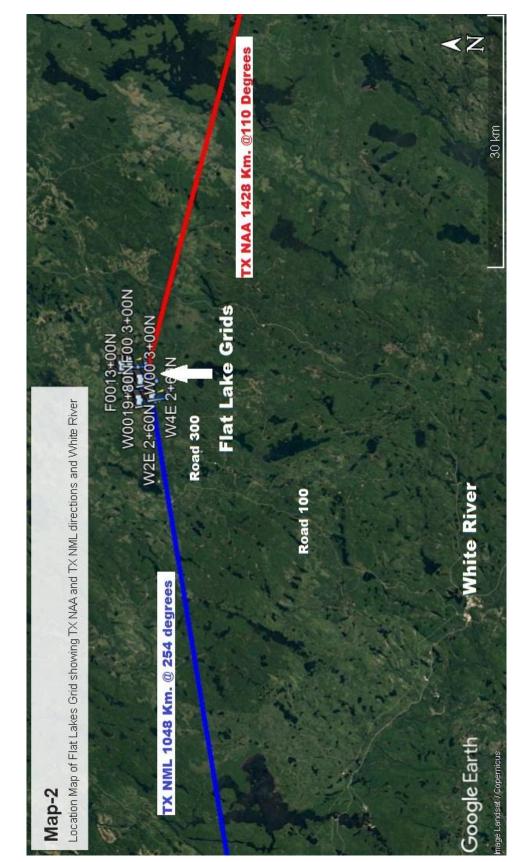
## Personnel

The VLF EM-16 operator and GPS field navigator responsible for the collection of all raw data was Shaun Parent.

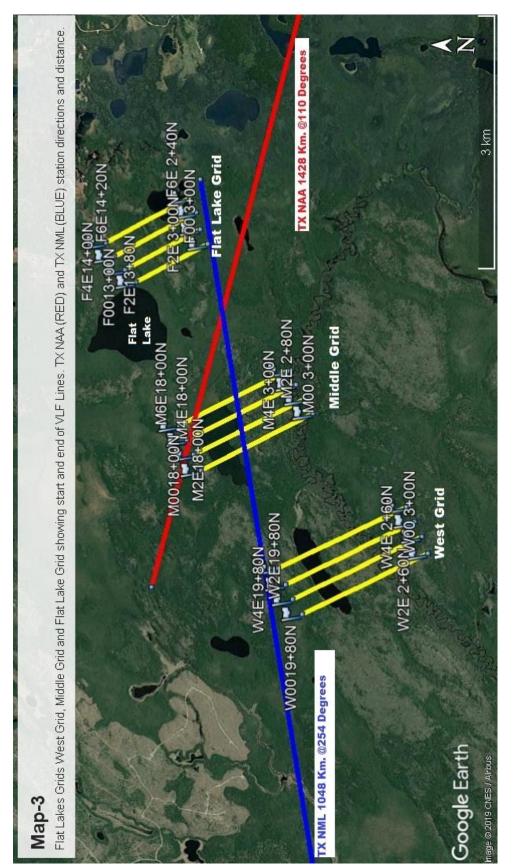
Processing, Profiling, Modelling and Interpretation of the VLF data using the VLF2DMF Software was completed by Sandra Slater and Shaun Parent.



Map 1 General Location Map of the Flat Lake Area Grids showing TX NAA and TX NML



Map 2 General Location Map of Flat Lake Area Grids with White River, ON



#### Map 3 Flat Lake Area Grids with Line Starts & Ends

# **Work Performed**

## **Fieldwork**

The VLF EM-16 survey consisted of running a total of 12 VLF reconnaissance lines over 3 separate Grid Areas, 200 meters apart. An extreme amount of snow this year did not allow for any basic prospecting to be completed during the survey to discover any pertinent findings such as outcrops.

- Flat Lake grid area: 4 lines
- Middle lake grid area: 4 lines
- West Lake grid area: 4 lines

The following parameters were used throughout the survey

Equipment Used: VLF EM-16 unit and a handheld Garmin 60-CSX PS

VLF Transmitters Used:	NAA - 24.0 KHz. Cutler, Maine (East) @ Azimuth 110 degrees 1420 Km
	NML - 25.2 KHz. La Moure, North Dakota (West) @ Azimuth 254 degrees 1048 Km

**VLF survey direction:** The VLF Em-16 receiver faced a direction of 00 degrees true azimuth for each reading taken.

**VLF survey stations:** VLF readings began at the south end of each VLF line and were taken approximately 20 meters apart along each survey line.

**Parameters of Measurement:** In-phase and Quad-phase components of a vertical magnetic field is measured as a percentage of horizontal primary fields. (Tangent of tilt angle and ellipticity). VLF transmitter NAA was to the east while transmitter NML was to the west. The transmitters are chosen so that the direction to the transmitting station is as close to the orientation of the bedrock strike.

#### **VLF Data Collection Process**

Field data was collected as follows on each surveyed line.

- Each station was saved onto the Handheld Garmin 60CSX GPS Unit (including any local features such as power lines, fences and geological structures)
- VLF readings for each station were recorded on the GPS as In-Phase and Quadrature corresponding to the line number and station number. (See example in Table 1)
- Garmin and VLF data were compiled and processed. All UTM Values are NAD 83.

#### Table 1 Example of VLF Data Collection

Line 2E	NAA In phase	NAA Quadrature	NML In phase	NML Quadrature	Notes
3+00N	10	6	4	5	swamp
3+20N	8	4	2	4	ос

## **Interpretation & Modelling**

#### **VLF2DMF Data Processing**

All VLF data collected was processed and interpreted separately for TX NAA and TX NML. The following filters, inversions, profiling and modelling were completed and used in the interpretation process, however, only the Raw Data and 2D Modelled Inversions are included in the appendix at the end of this report.

#### **Raw Data Profiles**

The raw data for each frequency was plotted for each line surveyed. No filtering or smoothing of the raw data was done. Raw Data Profiles for all lines can be found in the Appendices at the end of this report.

- West Grid: Appendix A
- Middle Grid: Appendix B
- Flat Lake Grid: Appendix C

#### Fraser Filter Profile with Fraser Peaks

Raw data was run through the Fraser filter. This filter transforms In-Phase cross overs and inflections into positive peak anomalies. (Fraser 1969) In-Phase inflections and cross overs are usually plus to minus, while Quadrature responses are negative to positive giving a negative peak anomaly when the Fraser Filter is applied. Fraser filter data was compiled separately for each grid to produce Plan Maps.

<ul> <li>West Grid:</li> </ul>	NAA Maps 6, 7	NML Maps 11, 12
Middle Grid:	NAA Maps 17, 18	NML Maps 22, 23
• Flat Lake Grid:	NAA Maps 28, 29	NML Maps 33, 34

#### **Fraser Pseudo Section**

Fraser Filter pseudo section is built by applying the Fraser Filter of various lengths along the survey line.

#### **K-H Profiles**

Raw Data was run through the Karous-Hjelt (K-H) filter. The filter is applied to obtain a section of current density. The higher values are generally associated with conductive structures. (Karous, Hjelt 1983)

#### Resistivity Profiles: 2000 & 4000 Ohm's

The apparent resistivity was calculated. The resistivity can be calculated if the mean environmental resistivity is known at the beginning of the VLF profile. A mean resistivity of 2000 ohm's and 4000 ohm's was used for all lines. Resistivity data from each profile was combined to produce plans maps. This report contains Plan Maps for Resistivity results at 4000 Ohm's.

•	West Grid:	NAA Map 8	NML Maps 13
•	Middle Grid:	NAA Map 19	NML Maps 24
•	Flat Lake Grid:	NAA Map 30	NML Maps 35

#### JY Section Model:

A 2D inversion that looks for the best distribution of the density of current (JY). The output is the apparent current density with positive values associated with conductors and negative values associated to resistors.

#### 2D Inversion Resistivity Models 2000 Ohm's & 4000 Ohm's

A resistivity of 2000 Ohm's and 4000 Ohm's was used to build initial models used in the inversion to obtain a realistic cross section of the line surveyed. Conductive zones are red/yellow while resistive zones are blue. A depth scale is found on the left side of model profiles. Surface conductive zones show little depth extent, have a horizontal display and are limited in depth.

The maximum depth slice with a bedrock resistivity of 2000 Ohms is 144.3 meters for transmitter NAA (24.0 KHz.) and 140.9 meters for TX NML (25.2 KHz.).

The maximum depth slice with a bedrock resistivity of 4000 Ohms is 204.1 meters for transmitter NAA (24.0 KHz.) and 192.2 meters for TX NML (25.2 KHz.).

All Inversion models have the same color scaling using a minimum resistivity of 10 and a maximum of 10000. The vertical exaggeration of all models is 1.0. Fraser Filter anomaly picks are found across the top of all models. Models with a resistivity of 4000 Ohm's were selected due to a more detailed response and are included in this report. Models for all lines can be found in the Appendices at the end of this report.

- West Grid: Appendix A
- Middle Grid Appendix B
- Flat Lake Grid: Appendix C

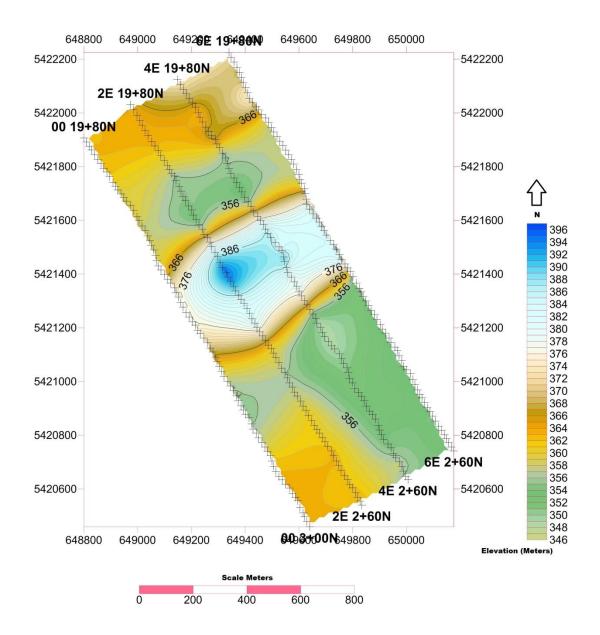
## **Discussion of Results - West Grid**

Lines W00, W2E, W4E, W6E

Map-4 shows the layout of the VLF lines on an elevation contour map.

The stronger anomalies were interpreted into main trends. There are more, weaker anomalies that could not be followed due to the 200 meter spacing between lines as well as a lack of knowledge of the geological strike prior to interpretation. A more detailed interpretation could be achieved with additional fill in lines being completed in order to verify the 200 meter responses.

#### Map 4 West Grid Elevation Map



### West Grid VLF Anomalies

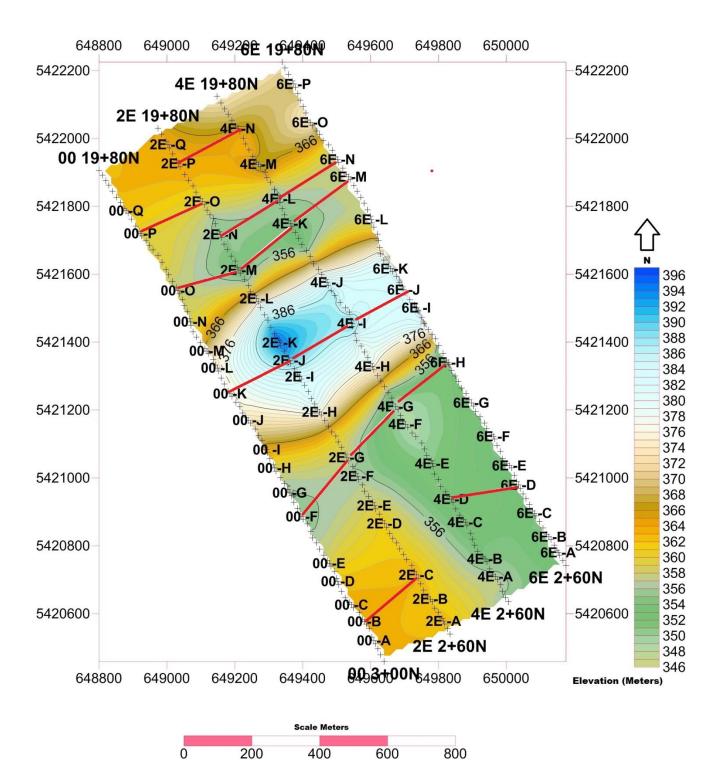
VLF Trends were identified for TX NAA (8 trends) and TX NML (6 trends). Trends are signified as the following example: 4E-D, 6E-D (Line 4 East-VLF Pick D to Line 6E-VLF Pick D)

#### TX NAA (8 Trends)

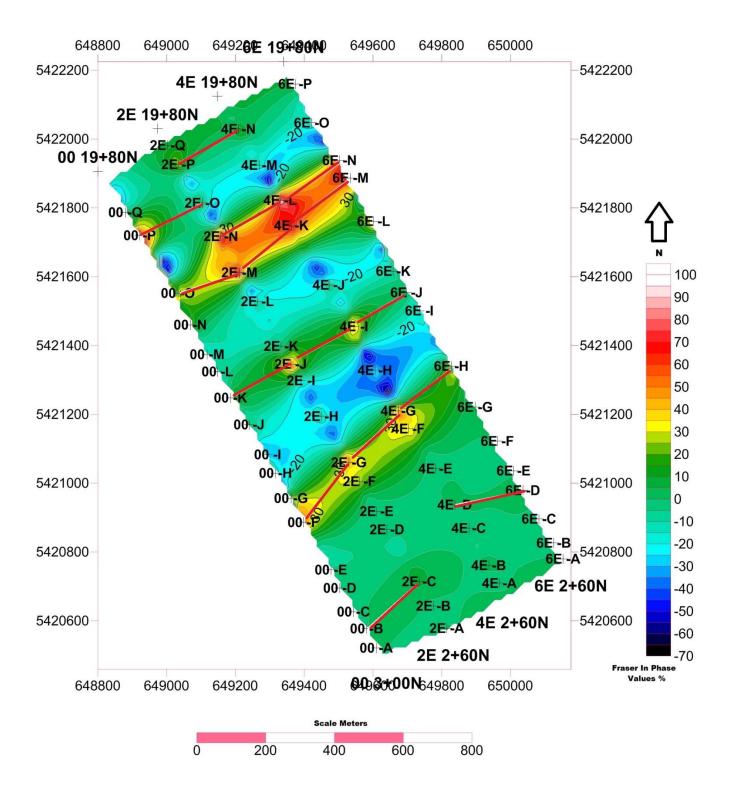
Map- 5	Elevation Contours with NAA Picks and Trends
	Trend 4 follows a topographic high which may signify outcropping (00-K,
	2E-J, 4E-I, 6E-J)
	Trend 3 follows the floodplain of a winding river (00-F, 2E-G, 4E-G, 6E-H)
Maps 6 & 7	Fraser Filter Contours of In Phase & Quadrature Values
Map 8	Resistivity Contours:
	<ul> <li>Trend 4 occurs in a resistivity high (00-K, 2E-J, 4E-I, 6E-J)</li> </ul>
	<ul> <li>Trends 6 &amp; 5 follow a resistivity low (2E-N, 4E-L, 6E-N) &amp; (00-O,</li> </ul>
	2E-N, 4E-K, 6E-M)
	<ul> <li>Trend 3 follows the edge of the resistivity high (00-F, 2E-G, 4E-G, 6E-H)</li> </ul>
Map 9	NAA Picks and Trends on a Google Image

TX NAA Trends with those suggested for ground follow up in Red

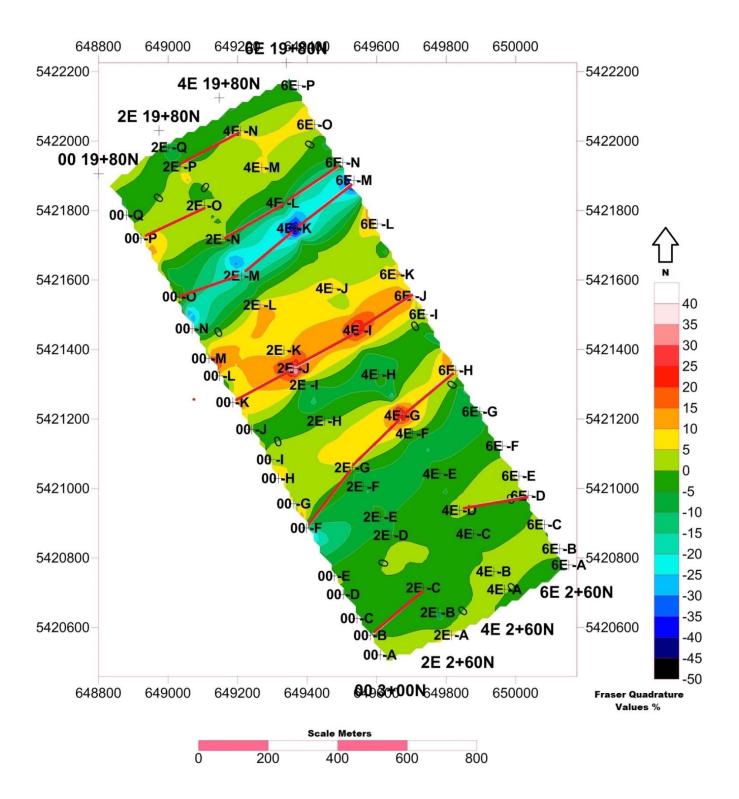
- 1. 00-B, 2E-C
- 2. 4E-D, 6E-D
- 3. 00-F, 2E-G, 4E-G, 6E-H
- 4. 00-K, 2E-J, 4E-I, 6E-J
- 5. 00-O, 2E-N, 4E-K, 6E-M
- 6. 2E-N, 4E-L, 6E-N
- 7. 00-P, 2E-O
- 8. 2E-P, 4E-N



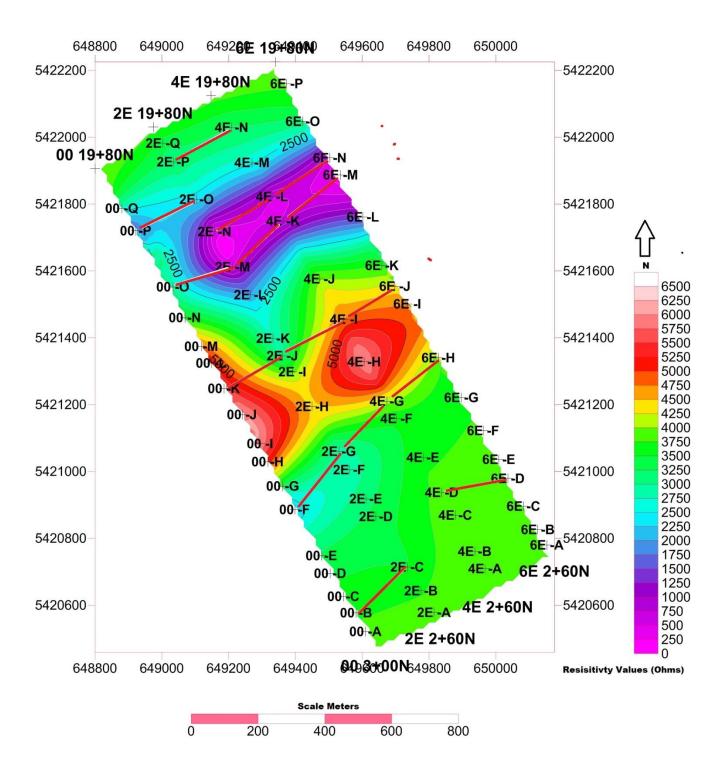
#### Map 5 West Grid Elevation Map with TX NAA Picks & Trends



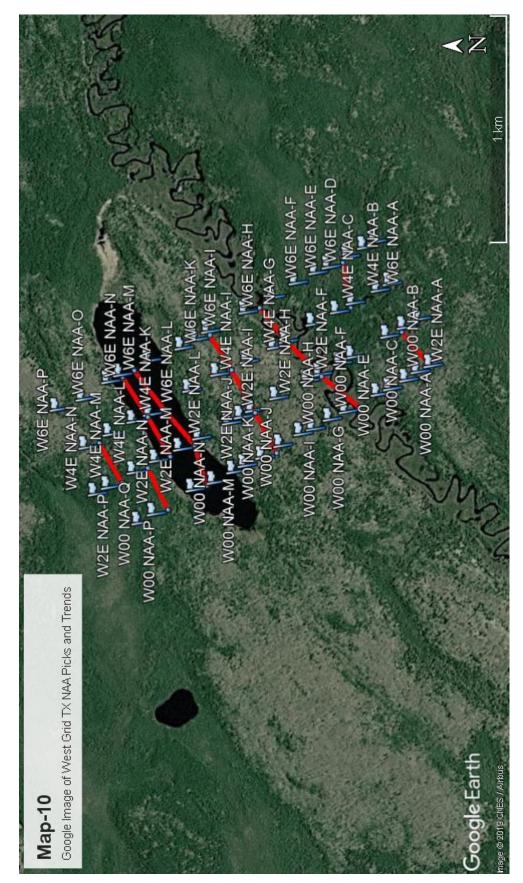
#### Map 6 West Grid TX NAA Fraser In Phase Contours with Picks & Trends



#### Map 7 West Grid TX NAA Fraser Quadrature Contours with Picks & Trends



#### Map 8 West Grid TX NAA Resistivity 4000 Ohm Contours with Picks & Trends



Map 9 West Grid Google Image of TX NAA Picks & Trends

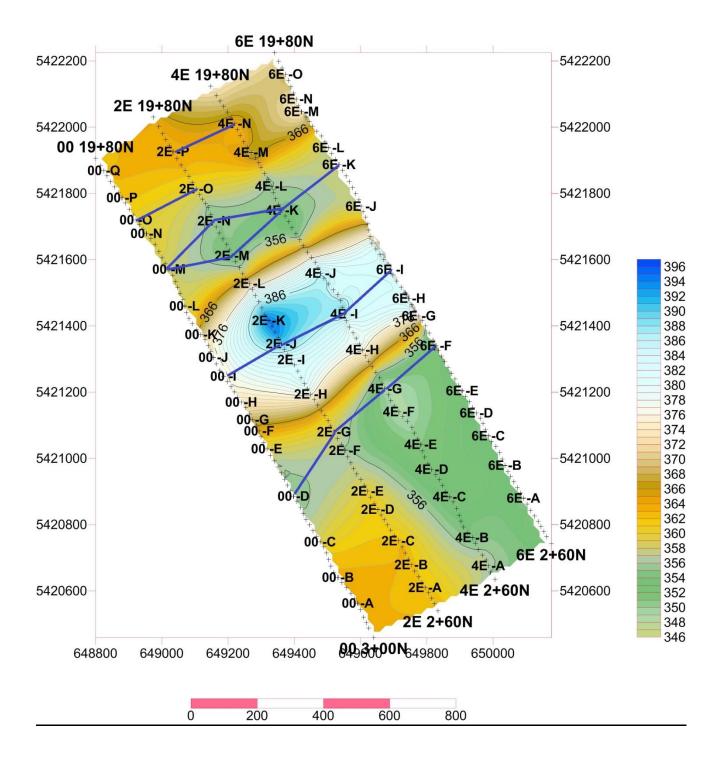
#### TX NML (6 Trends)

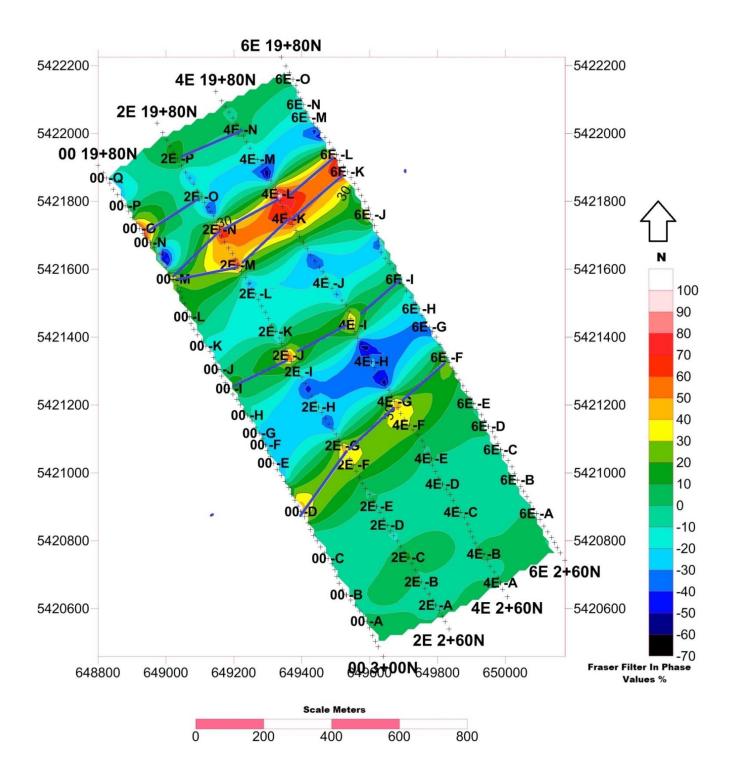
Map- 10	Elevation Contours with NML Picks and Trends Trend 2 follows a topographic high with outcropping (00-I, 2E-J, 4E-I, 6E-I)
	Trend 1 follows the flood plain of a river (00-D, 2E-G, 4E-G, 6E-F)
Maps 11 & 12	Fraser Filter Contours of In Phase & Quadrature Values
Map 13	Resistivity Contours:
	<ul> <li>Trends 3 &amp; 4 occur in a resistivity low (00-M, 2E-M, 4E-K, 6E-K) &amp; (00-M, 2E-N, 4E-L, 6E-K)</li> </ul>
	• Trend 5 follows the edge of the resistivity low (00-O, 2E-O)
	• Trends 1 & 2 follow the edge of the resistivity high (00-D,
	2E-G, 4E-G, 6E-F) & (00-I, 2E-J, 4E-I, 6E-I)
Map 14	NML Picks and Trends on a Google Image.

TX NML Trends with those suggested for ground follow up highlighted in Blue

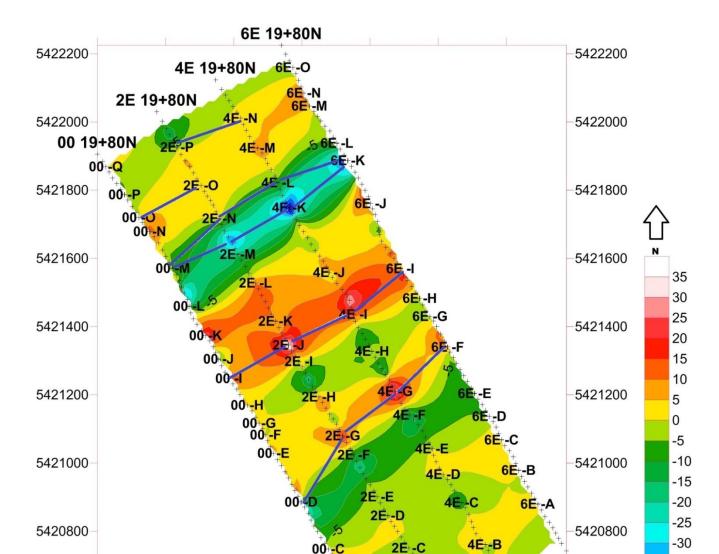
- 1. 00-D, 2E-G, 4E-G, 6E-F
- 2. 00-I, 2E-J, 4E-I, 6E-I
- 3. 00-M, 2E-M, 4E-K, 6E-K
- 4. 00-M, 2E-N, 4E-L, 6E-K
- 5. 00-0, 2E-O
- 6. 2E-P, 4E-N







#### Map 11 West Grid TX NML Fraser In Phase Contours with Picks & Trends



#### Map 12 West Grid TX NML Fraser Quadrature Contours with Picks & Trends



649400

00+-B

00--A

5420600

648800

649000

649200

2E-B

993000N649800

2E-A

2E 2+60N

-35

-40

-45

-50

-55

6E 2+60N

5420600

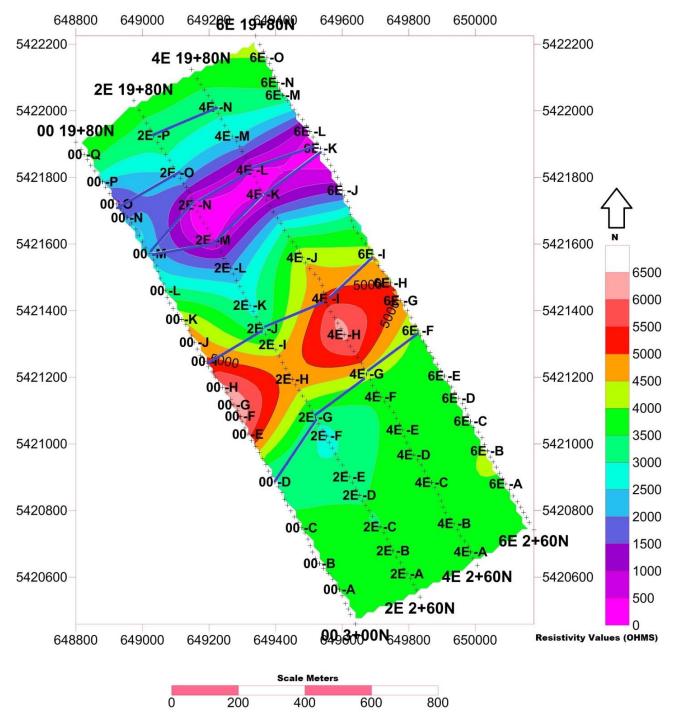
**Fraser Filter Quadrature** 

Values %

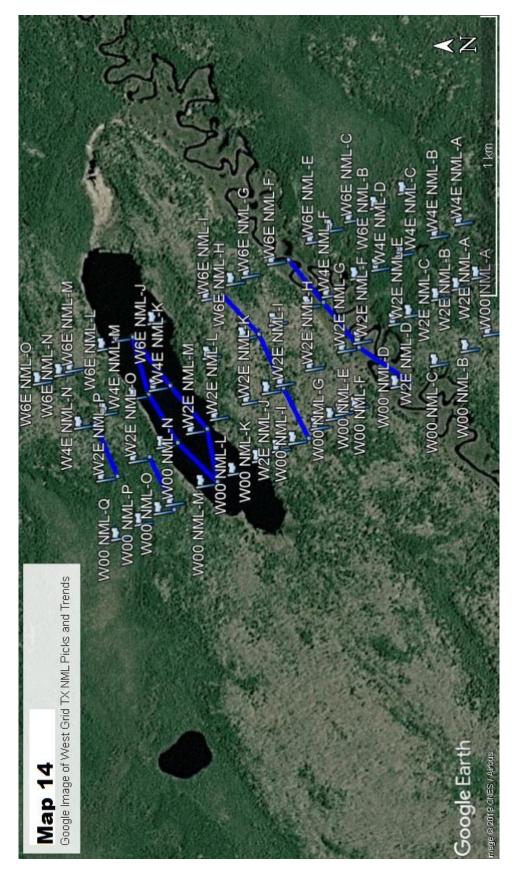
4E-A

4E 2+60N

650000



#### Map 13 West Grid TX NML Resistivity 4000 Ohm Contours with Picks & Trends



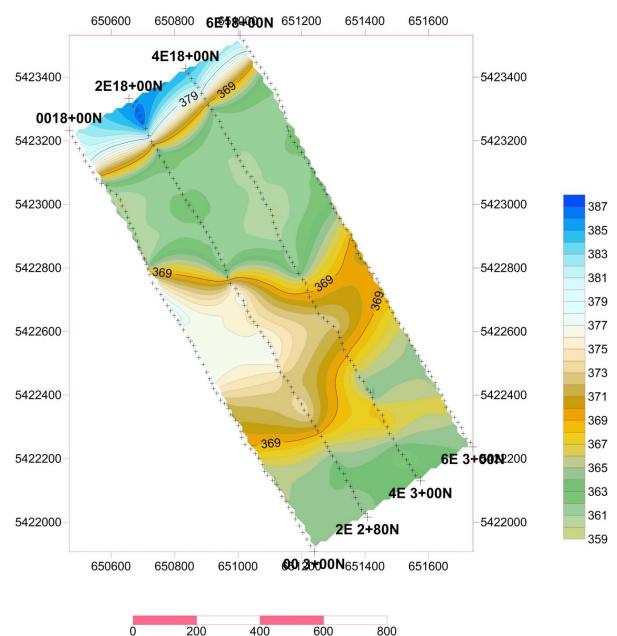
Map 14 West Grid Google Image of TX NML Picks & Trends

# **Discussion of Results - Middle Grid**

Lines M00, M2E, M4E, M6E

Map-15 shows the layout of the VLF lines on an elevation contour map.

The stronger anomalies were interpreted into main trends. There are more, weaker anomalies that could not be followed due to the 200 meter spacing between lines as well as a lack of knowledge of the geological strike prior to interpretation. A more detailed interpretation could be achieved with additional fill in lines being completed in order to verify the 200 meter responses.



#### Map 15 Middle Grid Elevation Map

## **Middle Grid VLF Anomalies**

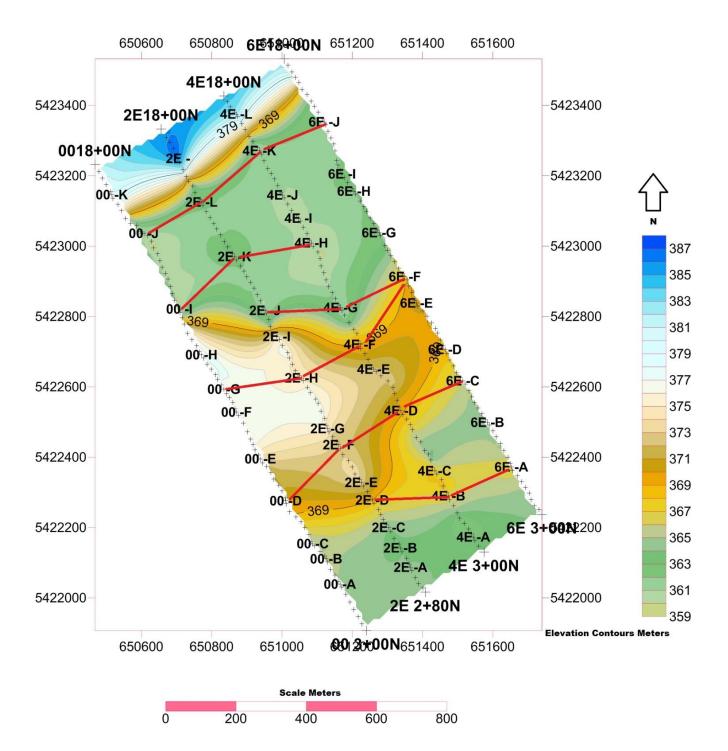
VLF Trends were identified for TX NAA (6 trends) and TX NML (6 trends). Trends are signified as the following example: 2E-D, 4E-B, 6E-A (Line 2 East-VLF Pick D to Line 4E-VLF Pick B to Line 6 East-VLF Pick A)

#### TX NAA (6 Trends)

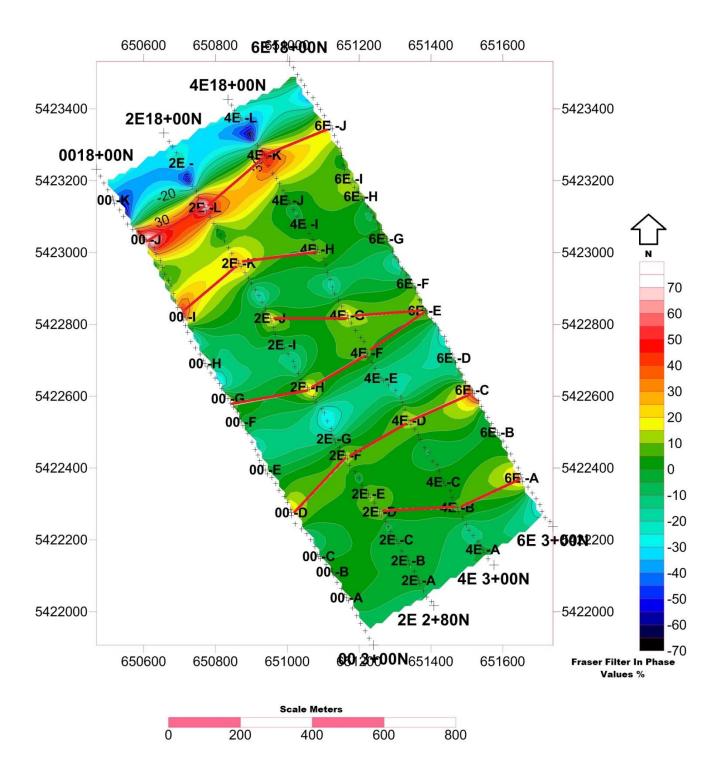
Map- 16	Elevation Contours with NAA Picks and Trends
	Trends 3 & 2 follow a topographic high with outcropping (00-G,
	2E-H, 4E-F, 6E-F) & (00-D, 2E-F, 4E-D, 6E-C)
Maps 17 & 18	Fraser Filter Contours of In Phase and Quadrature Values
Map 19	Resistivity Contours:
	<ul> <li>Trend 5 occurs in a resistivity low (00-I, 2E-K, 4E-H)</li> </ul>
	• Trend 6 follows the edge of the resistivity low (00-J, 2E-L,
	4E-K, 6E-J)
Map 20	NAA Picks and Trends on a Google Image.

TX NAA Trends with those suggested for ground follow up in Red

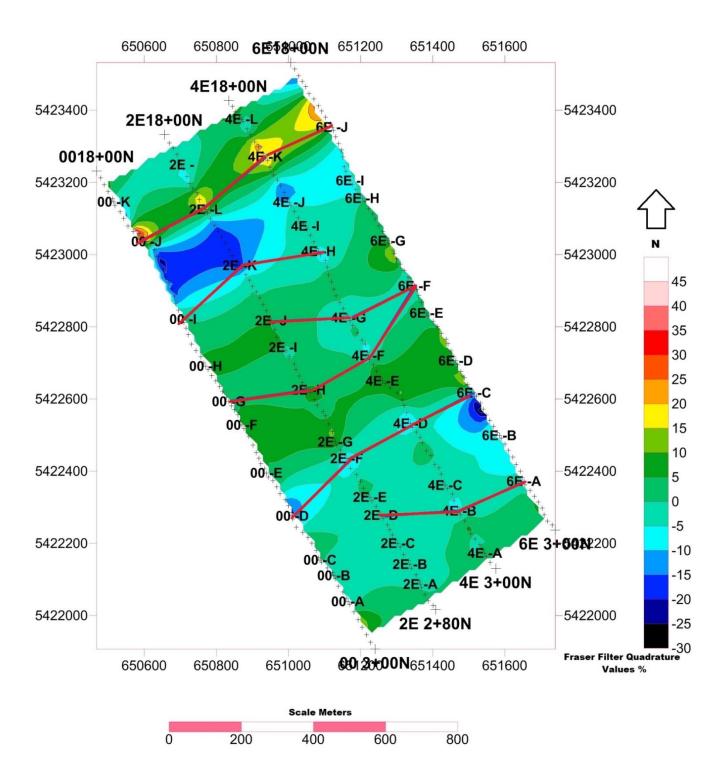
- 1. 2E-D, 4E-B, 6E-A
- 2. 00-D, 2E-F, 4E-D, 6E-C
- 3. 00-G, 2E-H, 4E-F, 6E-F
- 4. 2E-J, 4E-G, 6E-F
- 5. 00-I, 2E-K, 4E-H
- 6. 00-J, 2E-L, 4E-K, 6E-J



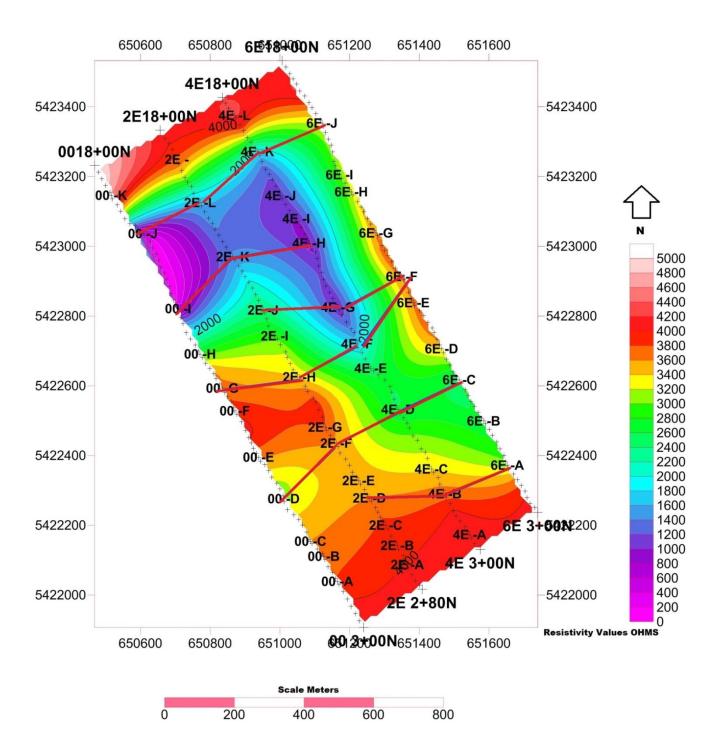
#### Map 16 Middle Grid Elevation Map with TX NAA Picks & Trends



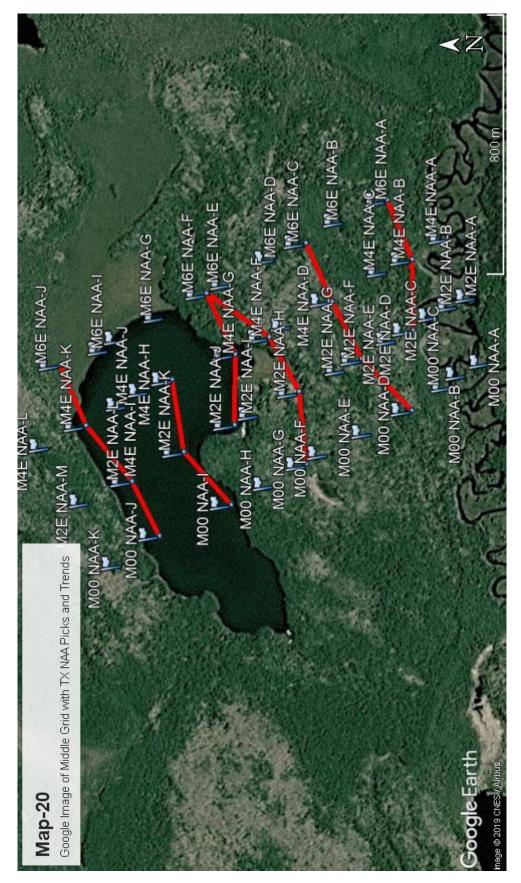
#### Map 17 Middle Grid TX NAA Fraser In Phase Contours with Picks & Trends



#### Map 18 Middle Grid TX NAA Fraser Quadrature Contours with Picks & Trends



#### Map 19 Middle Grid TX NAA Resistivity 4000 Ohm Contours with Picks & Trends



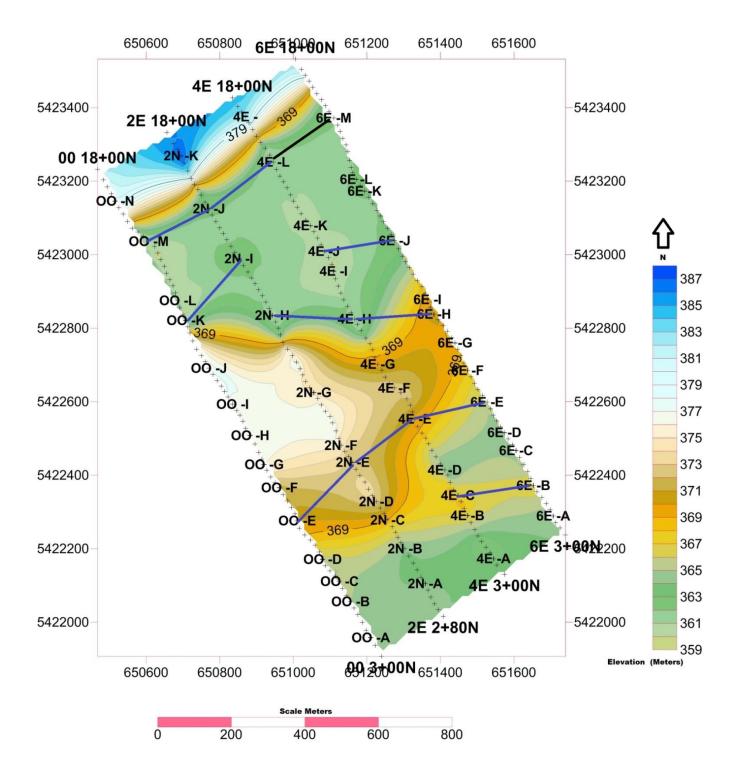
### Map 20 Middle Grid Google Image of TX NAA Picks & Trends

#### TX NML (6 Trends)

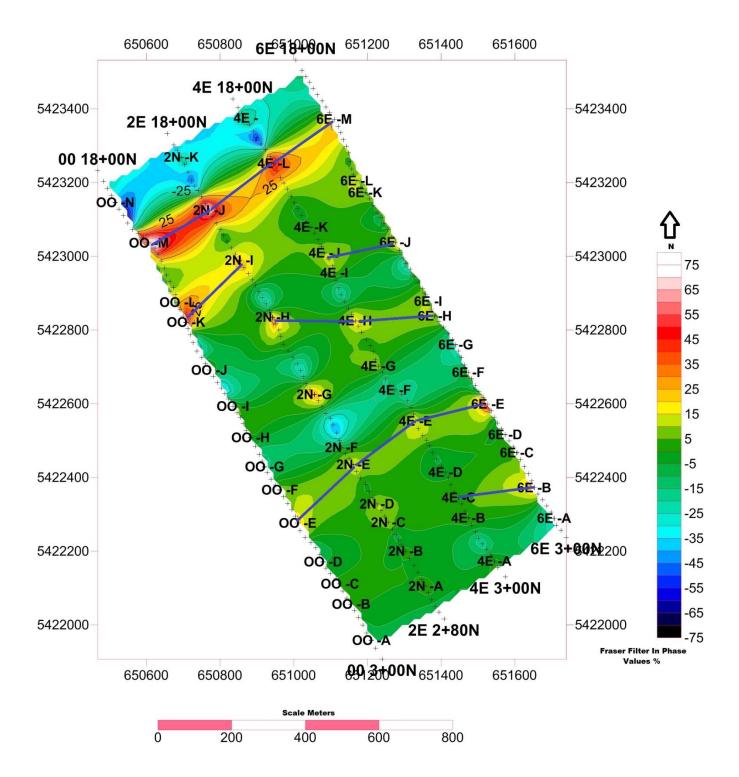
Map- 21	Elevation Contours with NML Picks and Trends Trend 2 follows a topographic high with outcropping (00-E, 2E-E, 4E-E, 6E-E)
Maps 22 & 23	Fraser Filters Contours of In Phase and Quadrature Values
Map 24	Resistivity Contours:
	<ul> <li>Trend 4 occurs in a resistivity low (00-K, 2N-I)</li> </ul>
	• Trends 6 & 3 follow the edge of the resistivity low (00-M,
	2E-J, 4E-L, 6E-M) & (2E-H, 4E-H, 6E-H)
Map 25	NML Picks and Trends on a Google Image

TX NML Trends with those suggested for ground follow up highlighted in Blue

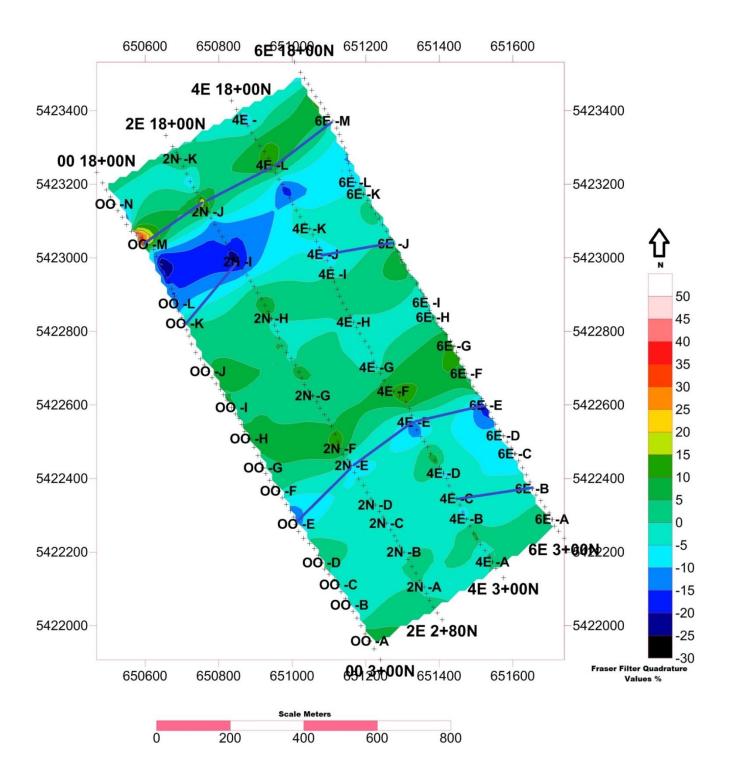
- 1 4E-C, 6E-B
- 2 00-E, 2E-E, 4E-E, 6E-E
- 3 2E-H, 4E-H, 6E-H
- 4 00-K, 2N-I
- 5 4E-J, 6E-J
- 6 00-M, 2E-J, 4E-L, 6E-M



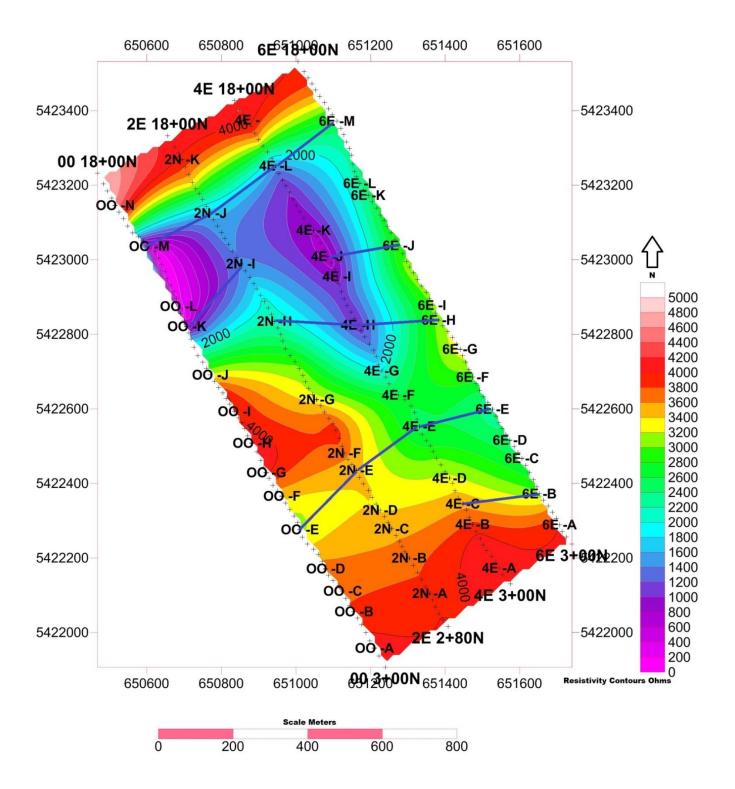
#### Map 21 Middle Grid Elevation Map with TX NML Picks & Trends



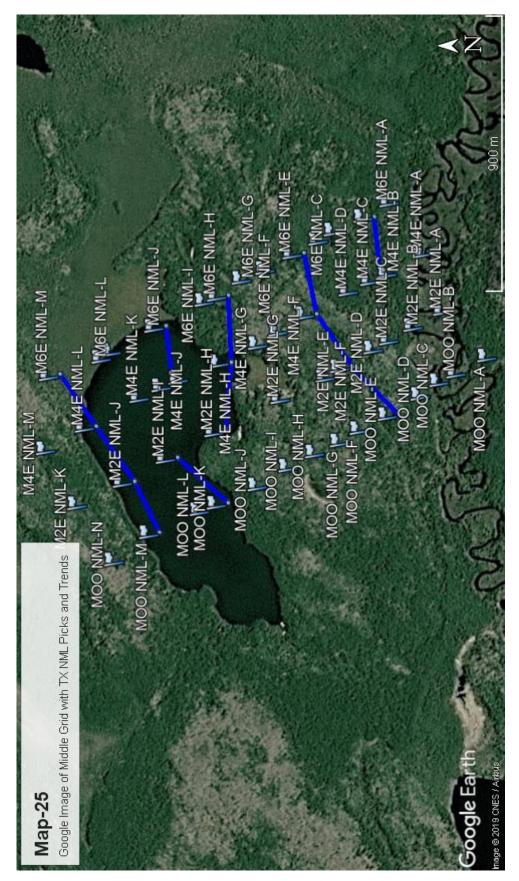
#### Map 22 Middle Grid TX NML Fraser In Phase Contours with Picks & Trends



#### Map 23 Middle Grid TX NML Fraser Quadrature Contours with Picks & Trends



#### Map 24 Middle Grid TX NML Resistivity 4000 Ohm Contours with Picks & Trends



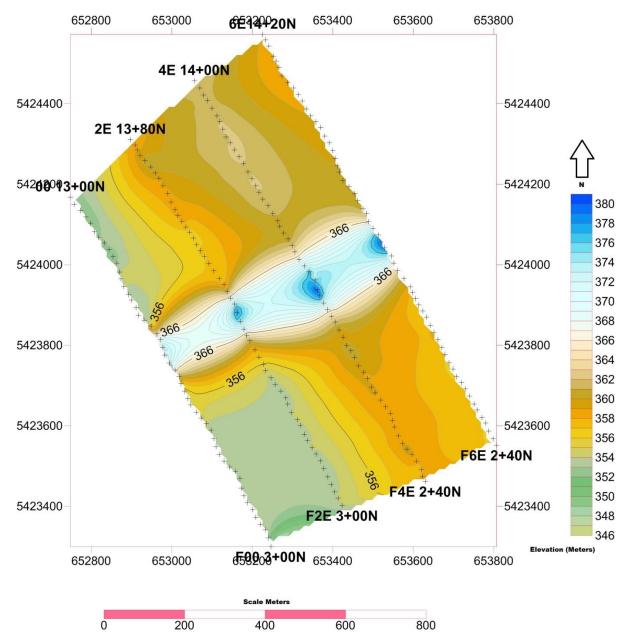
Map 25 Middle Grid Google Image of TX NML Picks & Trends

## **Discussion of Results - Flat Lake Grid**

Lines F00, F2E, F4E, F6E

Map-26 shows the layout of the VLF lines on an elevation contour map.

The stronger anomalies were interpreted into main trends. There are more, weaker anomalies that could not be followed due to the 200 meter spacing between lines as well as a lack of knowledge of the geological strike prior to interpretation. A more detailed result could be achieved with additional fill in lines being completed in order to verify the 200 meter responses.



Map 26 Flat Lake Grid Elevation Map

### **Flat Lake Grid VLF Anomalies**

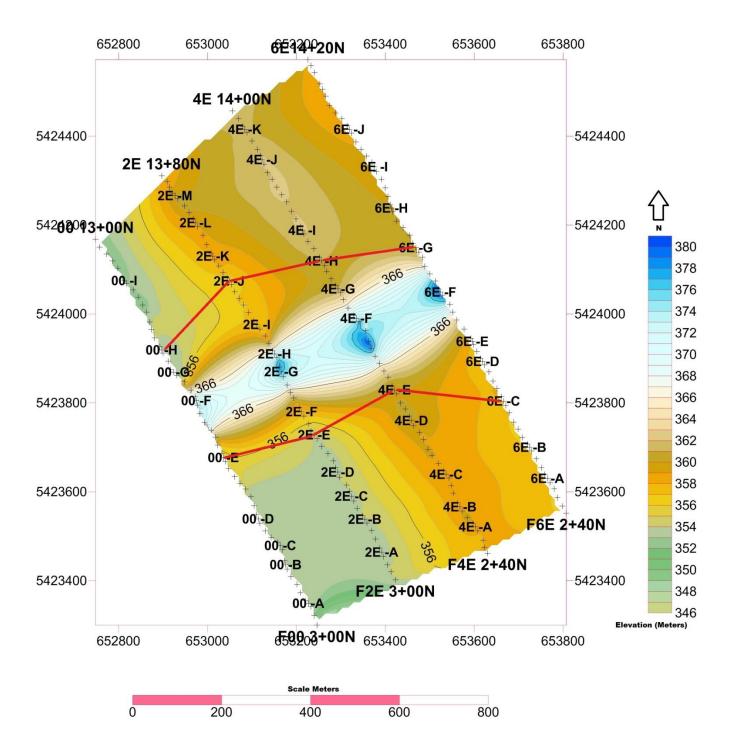
VLF Trends were identified for TX NAA (2 trends) and TX NML (2 trends). Trends are signified as the following example: 00-E, 2E-E- 4E-E, 6E-C (Line 00-VLF Pick E to Line 2E-VLF Pick E to Line 4 East-VLF Pick E to Line 6 East-VLF Pick C)

#### TX NAA (2 Trends)

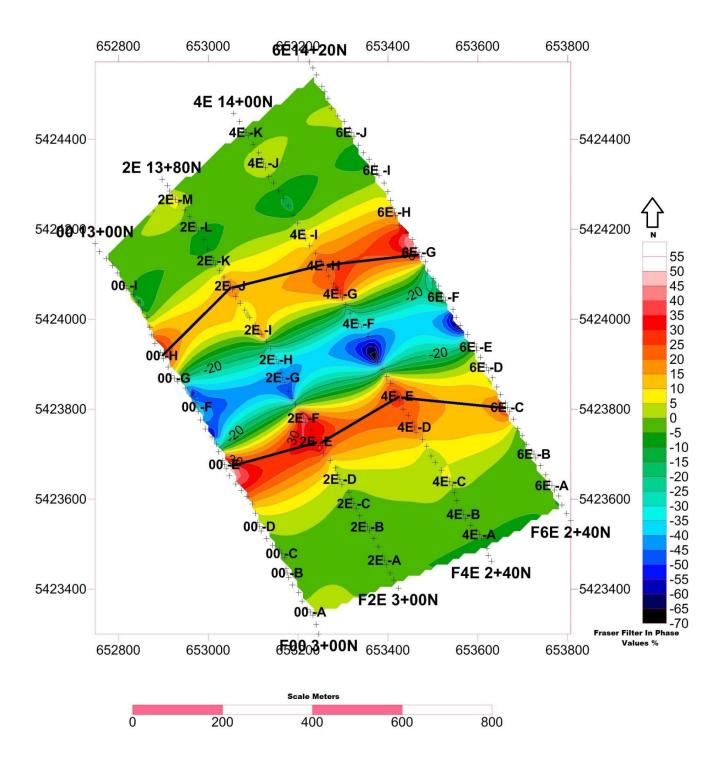
Map- 27	Elevation Contours with NAA Picks and
Maps 28 & 29	Fraser Filter Contours of In Phase and Quadrature Values
Map 30	<ul> <li>Resistivity Contours:</li> <li>Trends 1 &amp; 2 follow the edge of the resistivity low (00-E, 2E-E, 4E-E, 6E-C) &amp; (00-H, 2E-J, 4E-H, 6E-G)</li> </ul>
Map 31	NAA Picks and Trends on a Google Image

TX NAA Trends with those suggested for ground follow up in Red

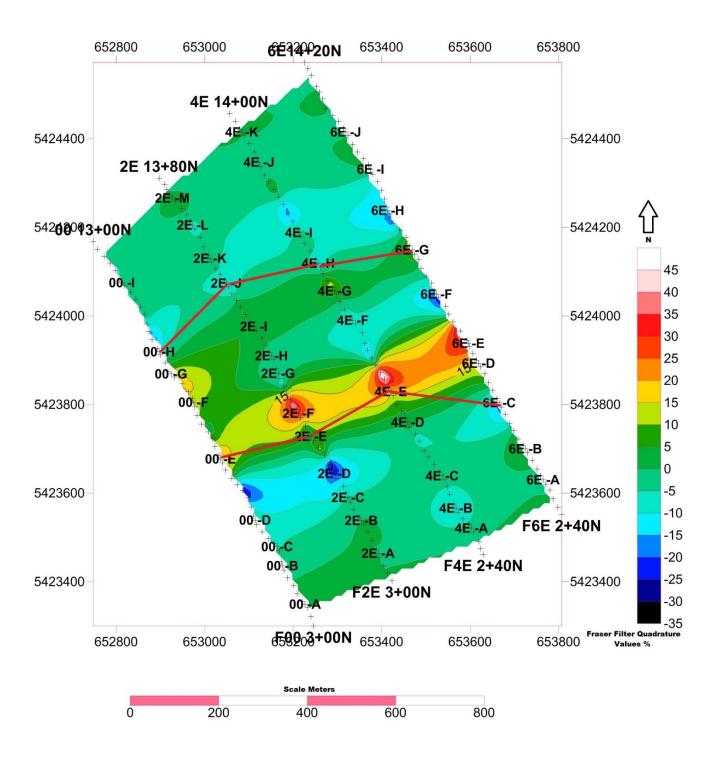
- 1 00-E, 2E-E, 4E-E, 6E-C
- 2 00-H, 2E-J, 4E-H, 6E-G



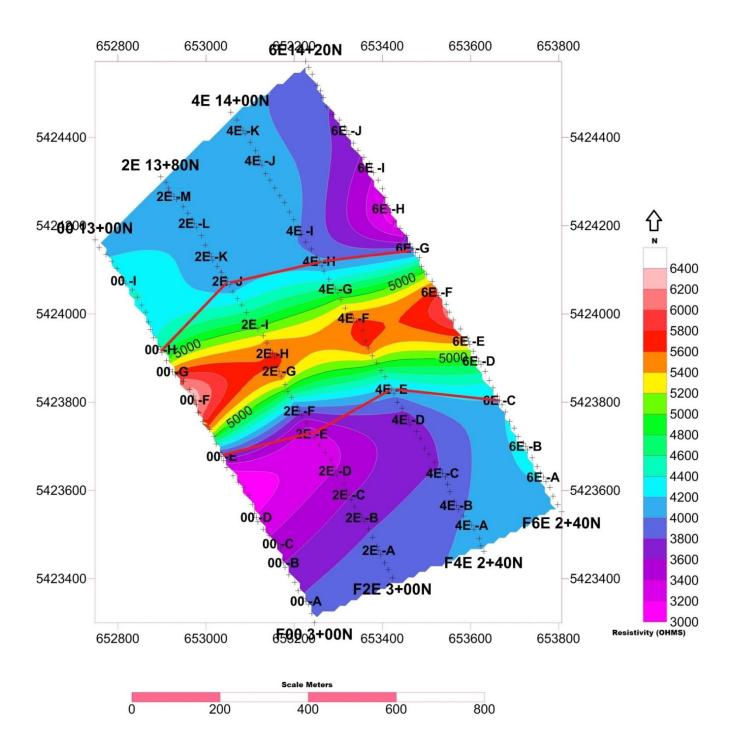
#### Map 27 Flat Lake Grid Elevation Map with TX NAA Picks & Trends



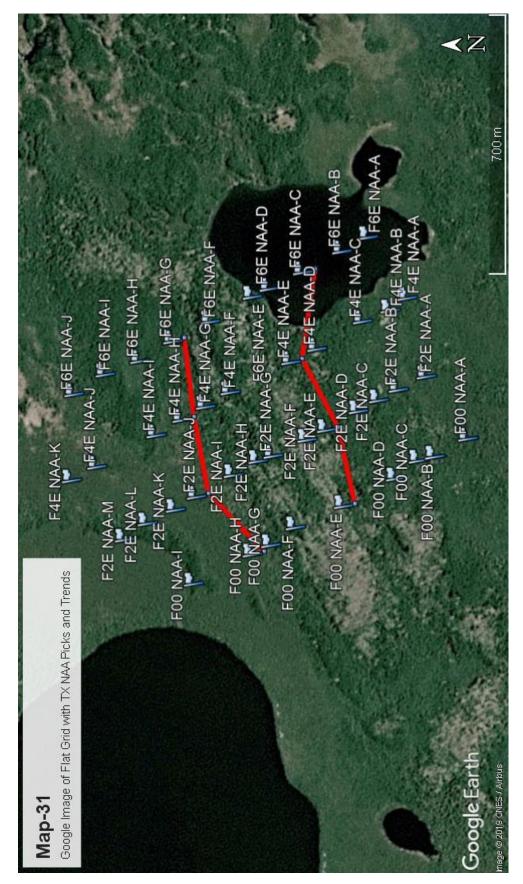
#### Map 28 Flat Lake Grid TX NAA Fraser In Phase Contours with Picks & Trends



#### Map 29 Flat Lake Grid TX NAA Fraser Quadrature Contours with Picks & Trends



#### Map 30 Flat Lake Grid TX NAA Resistivity 4000 Ohm Contours with Picks & Trends

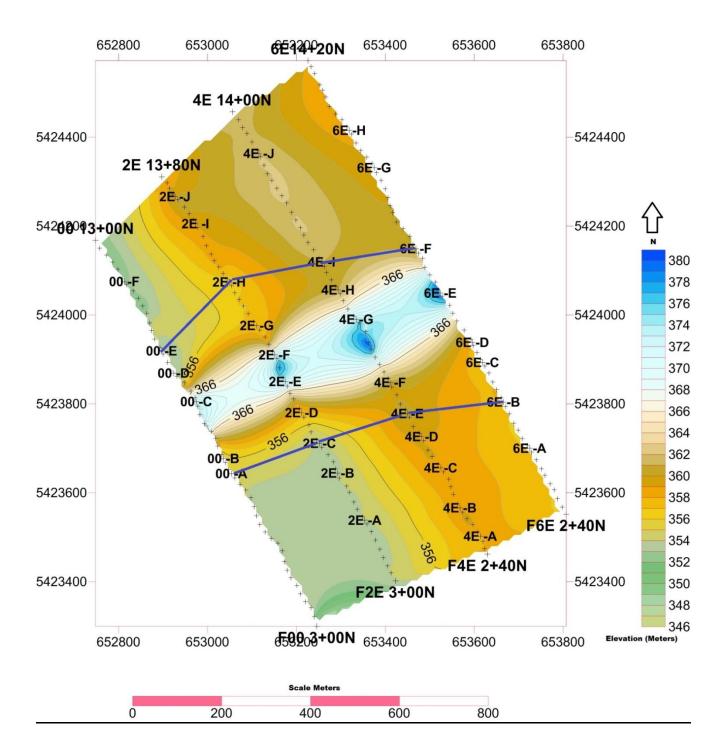


Map 31 Flat Lake Grid Google Image of TX NAA Picks & Trends

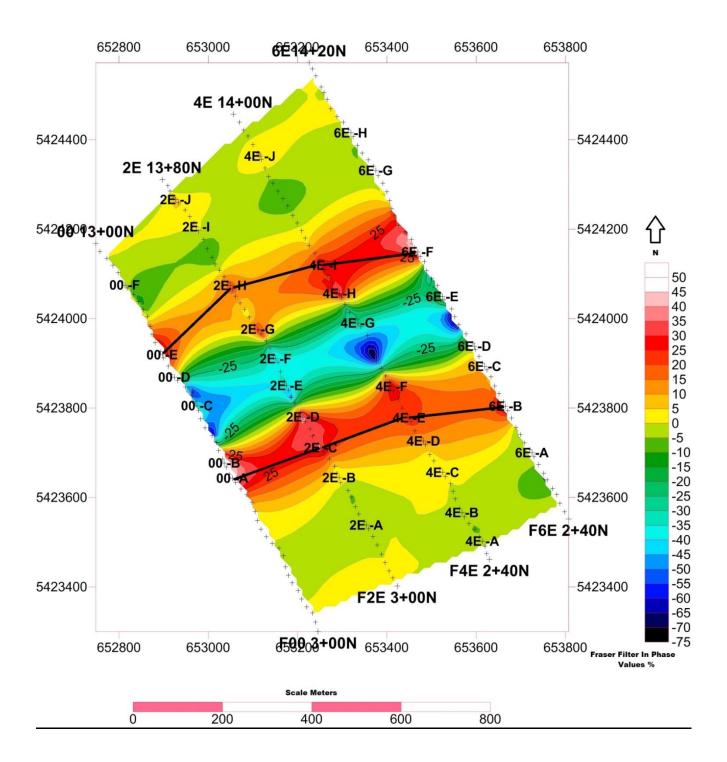
## TX NML (2 Trends)

Map- 32	Elevation Contours with NML Picks and Trends
	Trends 1 & 2 follow the edge of a topographic high that has
	outcropping (00-A, 2E-C, 4E-E, 6E-B) & (00-E, 2E-H, 4E-I, 6E-F)
Maps 33 & 34	Fraser Filter Contours of In Phase and Quadrature Values
Map 35	Resistivity Contours:
	• Trends 1 & 2 follow the edge of the resistivity low (00-A,
	2E-C, 4E-E, 6E-B) & (00-E, 2E-H, 4E-I, 6E-F)
Map 36	NML Picks and Trends on a Google Image

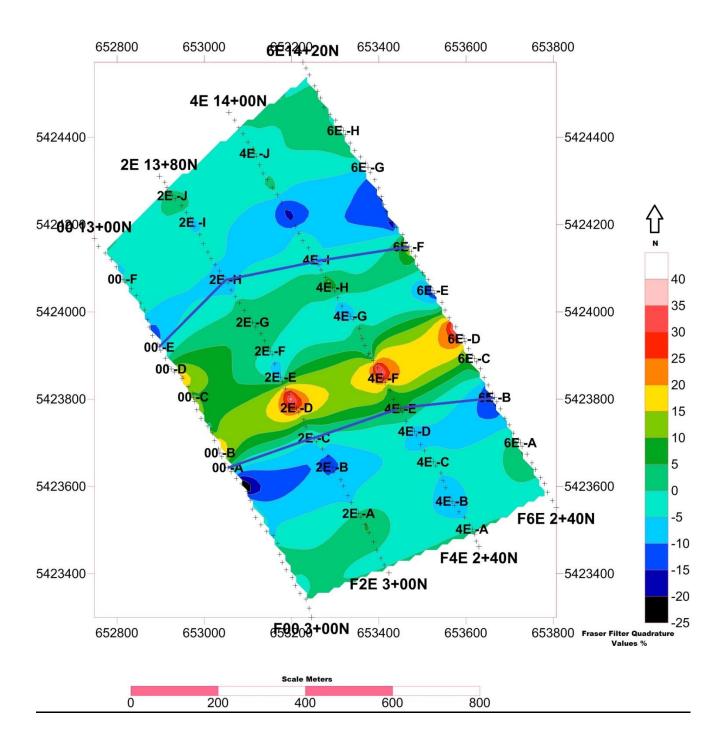
TX NML Trends with those suggested for ground follow up highlighted in Blue 1 00-A, 2E-C, 4E-E, 6E-B 2 00-E, 2E-H, 4E-I, 6E-F



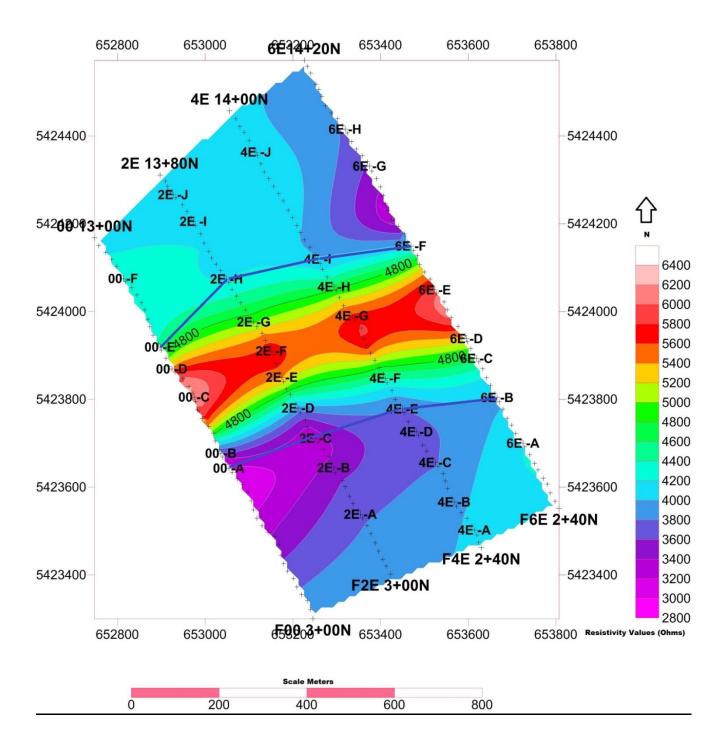
#### Map 32 Flat Lake Grid Elevation Map with TX NML Picks & Trends



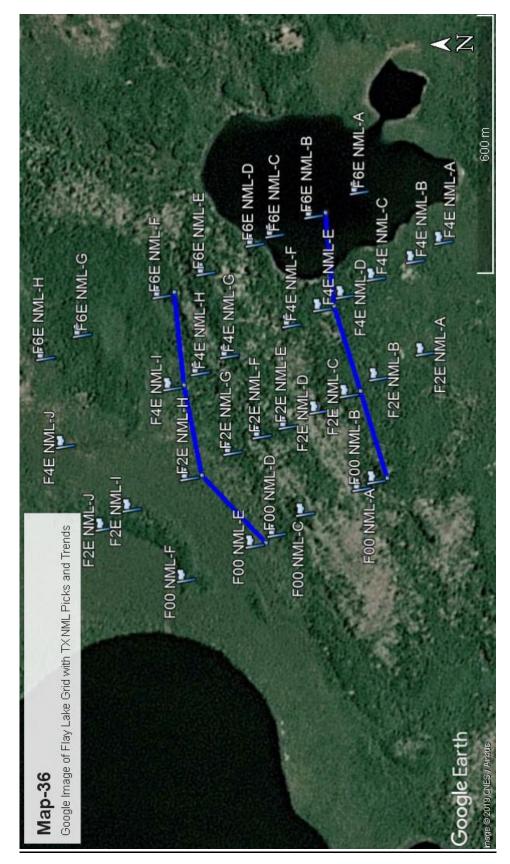
#### Map 33 Flat Lake Grid TX NML Fraser In Phase Contours with Picks & Trends



#### Map 34 Flat Lake Grid TX NML Fraser Quadrature Contours with Picks & Trends



#### Map 35 Flat Lake Grid TX NML Resistivity 4000 Ohm with Picks & Trends



#### Map 36 Flat Lake Grid Google Image of TX NML Picks & Trends

# **Conclusions – West Grid**

This Ground VLF EM-16 survey over the West Grid area was successful in:

- Defining Several VLF bedrock conductors.
- Using a bedrock background resistivity of 4000 ohms gave us modelled sections to 204 meters in depth and outlined several highly resistive and minimally resistive rock units.
- Without geological information or geological strike information, it is difficult to match many of the VLF Picks and Trends.

# **Recommendations - West Grid**

- Run additional 100 meter fill in lines at 1E, 3E & 5E in order to identify additional VLF Picks and Trends. This would enable a more detailed interpretation of trends across the surveyed area.
- Overlay the TX NAA and NML Picks and Trends on Google earth images as well as geology maps and airborne magnetic maps in order to identify surface lineaments and geological contacts.
- Run depth slice plan maps of both the KH data and the Inversion models at increasing depths. This will eliminate shallow conductors and isolate deeper bedrock conductors to a depth of 204 meters. This will also determine if the bedrock conductor has a dip or plunge.
- Overlay TX NAA and TX NML VLF Picks and Trends with airborne magnetic survey data in order to find a matching VLF Magnetic anomaly.
- Ground follow-up of the VLF Picks and Trends outlined in this report in order to ground proof the targets with the geology, as outcrops exist on this grid.
   NAA Strongest VLF Anomaly Picks:

00-O, 00-F 2E-F, 2E-M, 2E-N 4E-F, 4E-K 6E-H, 6E-M NML Strongest VLF Anomaly Picks:

00-D, 00-L, 00-M, 00-O 2E-F, 2E-J, 2E-M, 2E-N 4E-F, 4E-G, 4E-K, 4E-L 6E-F, 6E-J, 6E-K

- Perhaps a lake bottom soil survey below the VLF conductors found under West Lake, and under the flood plain of the southern river will assist in determining the cause of these anomalies.
- Proposed drill holes should be projected on both the inversion models and the JY models using a vertical exaggeration of 1.0 to determine if the proposed hole will intersect the VLF Bedrock conductor.

# **Conclusions – Middle Grid**

This Ground VLF EM-16 survey over the Middle Grid area was successful in:

- Defining Several VLF bedrock conductors.
- Using a bedrock background resistivity of 4000 ohms gave us modelled sections to 204 meters in depth and outlined several highly resistive and minimally resistive rock units
- Without geological information or geological strike information, it is difficult to match the VLF Picks and Trends with geology.

# **Recommendations – Middle Grid**

- Run additional 100 meter fill in lines at 1E, 3E & 5E in order to obtain additional VLF Picks and Trends. This would enable a more detailed interpretation of trends across the surveyed area.
- Overlay the TX NAA and NML Picks and Trends on Google earth images as well as geology maps and airborne magnetic maps in order to identify surface lineaments and geological contacts.
- Run depth slice plan maps of both the KH data and the Inversion models at various depths. This will eliminate shallow conductors and isolate deeper bedrock conductors to a depth of 204 meters. This will also determine if the bedrock conductor has a dip or plunge.
- Overlay TX NAA and TX NML VLF Picks and Trends with airborne magnetic survey data in order to find a matching VLF Magnetic anomaly.
- Ground follow-up of the VLF Picks and Trends outlined in this report in order to ground proof the targets with geology, as outcrops exist on this grid.
   NAA Strongest Anomaly Picks:

00-D, 00-I, 00-J 2E-E, 2E-H 2E-J, 2E-K, 2E-L 4E-D, 4E-F, 4E-G, 4E-H, 4E-K 6E-A, 6E-C, 6E-E, 6E-H, 6E-I, 6E-J

NML Strongest Anomaly Picks:

00-E, 00-K, 00-M 2E-D, 2E-E, 2E-G, 2E-H, 2E-I, 2E-J 4E-C, 4E-E, 4E-G, 4E-H, 4E-I, 4E-J, 4E-L 6E-B, 6E-E, 6E-H, 6E-I, 6E-K, 6E-L, 6E-M

- Perhaps a lake bottom soil survey below the VLF conductors found in Middle Lake, will assist in determining the cause of these anomalies.
- Proposed drill holes should be projected on both the inversion models and the JY models using a vertical exaggeration of 1.0 to determine if the proposed hole will intersect the VLF Bedrock conductor.

# **Conclusions – Flat Lake Grid**

This Ground VLF EM-16 survey over the Flat Lake area was successful in:

- Defining 2 VLF bedrock conductors.
- Using a bedrock background resistivity of 4000 ohms gave us modelled sections to 204 meters in depth and outlined one highly resistive rock unit, flanked by 2 VLF trends.
- Without geological information or geological strike information, it is difficult to match the VLF Picks and Trends with geology.

# **Recommendations – Flat Lake Grid**

- Run additional 100 meter fill in lines at 1E, 3E & 5E in order to obtain additional VLF Picks and Trends. This would enable a more detailed interpretation of trends across the surveyed area.
- Overlay the TX NAA and NML Picks and Trends on Google earth images as well as geology maps and airborne magnetic maps in order to identify surface lineaments and geological contacts.
- Run depth slice plan maps of both the KH data and the Inversion models at various depths. This will eliminate shallow conductors and isolate deeper bedrock conductors to a depth of 204 meters. This will also determine if the bedrock conductor has a dip or plunge.
- Overlay TX NAA and TX NML VLF Picks and Trends with airborne magnetic survey data in order to find a matching VLF Magnetic anomaly.
- Ground follow-up of the VLF Picks and Trends outlined in this report in order to ground proof the targets with geology, as outcrops exist on this grid in the area of high resistive response.

NAA Strongest Anomaly Picks:

00-E, 00-G, 00-H 2E-E, 2E-F, 2E-I, 2E-J 4E-D, 4E-E, 4E-G, 4E-H 6E-C, 6E-G, 6E-H NML Strongest Anomaly Picks:

00-A, 00-B, 00-D, 00-E 2E-C, 2E-D, 2E-G, 2E-H 4E-E, 4E-F, 4E-H, 4E-I, 6E-B 6E-C, 6E-F

• Proposed drill holes should be projected on both the inversion models and the JY models using a vertical exaggeration of 1.0 to determine if the proposed hole will intersect the VLF Bedrock conductor.

# **List of References**

Baker, H.A,. and J.O. Myers, 1979, VLF-EM model studies and some simple quantitative applications to field results: Geoexploration 17, 55-63

Fraser, D.C., 1969. Contouring of VLF-EM data. Geophysics, 34 958-967

Geonics Ltd., 1997: Operating Manual for VLF Em-16

Karous, M and Hjelt, S.E., 1983: Linear filtering of VLF dip-angle measurements, Geophysical Prospecting 31, 782-794

McNeil, J.D. and Labson; 1991: Geological Mapping using VLF radio fields. In Nabghian, M.N Ed, Electrical Methods in Applied Geophysics 11. Soc. Expl. Geoph, 521-640

Sayden, A.S, Boniwell, J.B; 1989: VLF Electromagnetic Method, Canadian Institute of Mining and Metalurgy, Special Volume 41, 111-125 of VLF-EM Data

Monteiro Santos, F.A; 2013: VLF 2D V1.3 A program for 2D inversion

# **Certificate of Qualifications**

I, Shaun Parent, P. Geo . Residing at 282 B Whispering Pines Road, Batchawana Bay, Ontario do certify that:

- 1. I am a consulting Geoscientist with Superior Exploration, Adventure & Climbing Co. Ltd.
- 2. I graduated with a Geological Technician Diploma from Sir Sandford Fleming College in 1986.
- 3. I graduated with a BSc. from the University of Toronto in 1986
- 4. I am a member in good standing with the Association of Professional Geoscientists of Ontario #1955 and a member of the Prospectors and Developers Association of Canada.
- 5. I have been employed continuously as a Geoscientist for the past 27 years since my graduation from University.
- 6. The nature of my involvement with this project was to carry out the interpretation of the VLF data using the EMTOMO VLF2D Software of which I have been developing with Dr. Fernando Santos of Lisbon, Portugal.

Dated this 24<sup>th</sup> day of April 2019

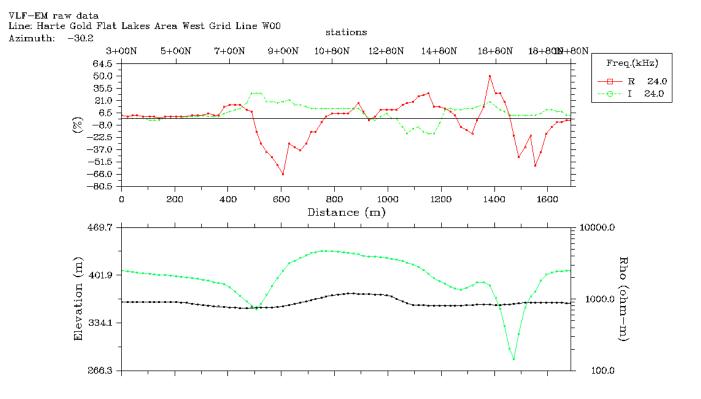
Shaun Parent, Diploma-Geo, BSc. P. Geo

# **APPENDIX A**

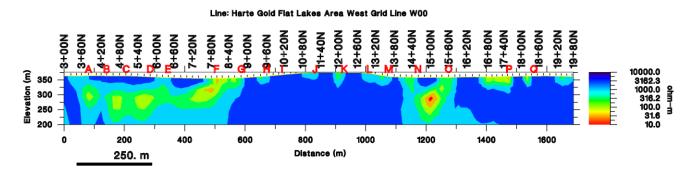
# West Grid

# **NAA Figures**

#### West Grid NAA Figure 1 Line W00 Raw Data Profile



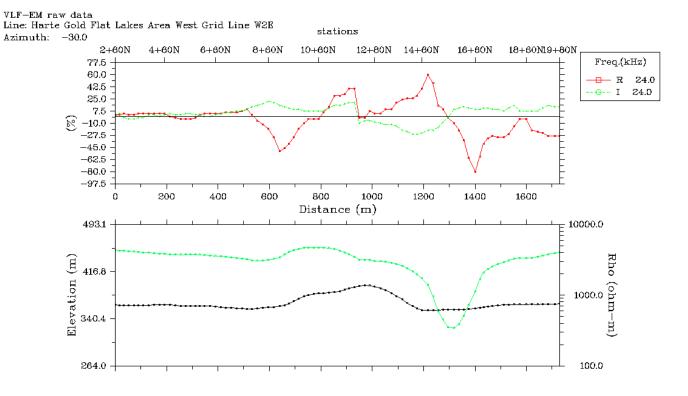
#### West Grid NAA Figure 2 Line W00 Model 4000 Ohm with Fraser Picks



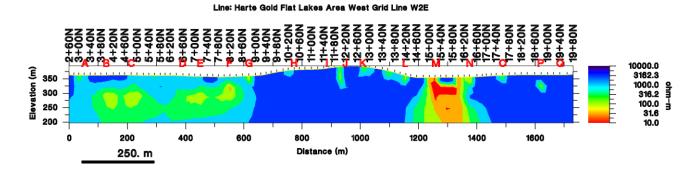
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Vertical Exaggeration: 1.0

#### West Grid NAA Figure 3 Line W2E Raw Data Profile

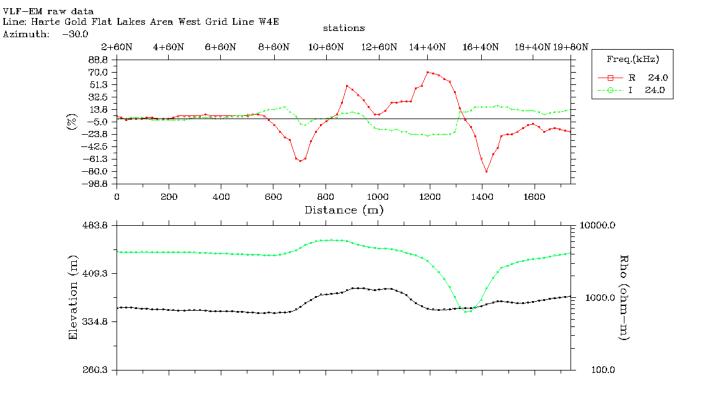


#### West Grid NAA Figure 4 Line W2E Model 4000 Ohm with Fraser Picks

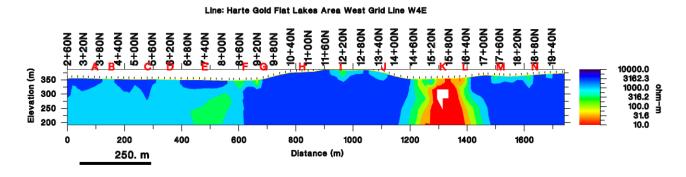


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#### West Grid NAA Figure 5 Line W4E Raw Data Profile

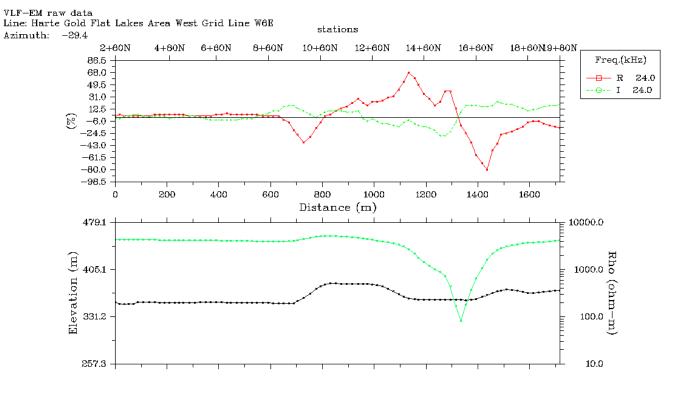


#### West Grid NAA Figure 6 Line W4E Model 4000 Ohm with Fraser Picks

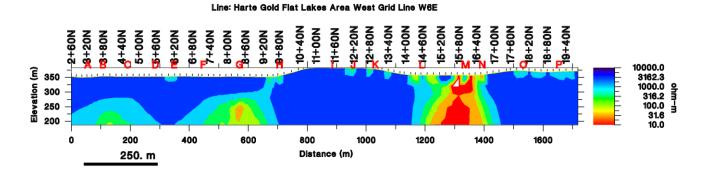




#### West Grid NAA Figure 7 Line W6E Raw Data Profile



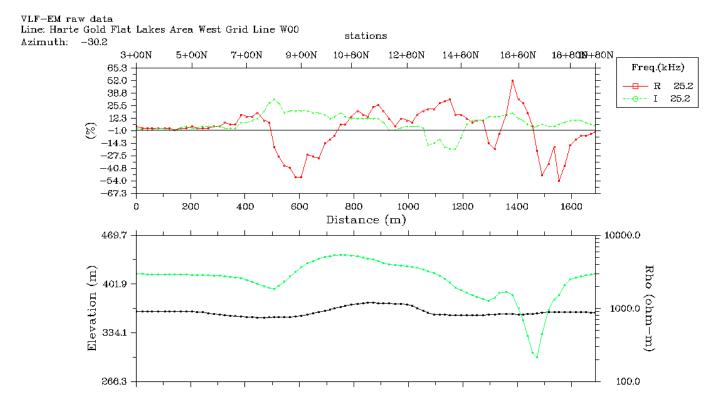
#### West Grid NAA Figure 8 Line W6E Model 4000 Ohm with Fraser Picks



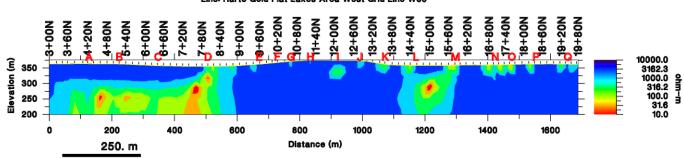
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# **NML Figures**

#### West Grid NML Figure 1 Line W00 Raw Data Profile



#### West Grid NML Figure 2 Line W00 Model 4000 Ohm with Fraser Picks

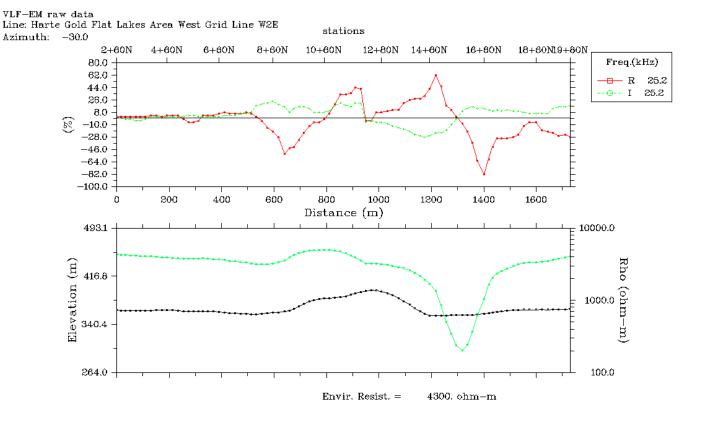


Line: Harte Gold Flat Lakes Area West Grid Line W00

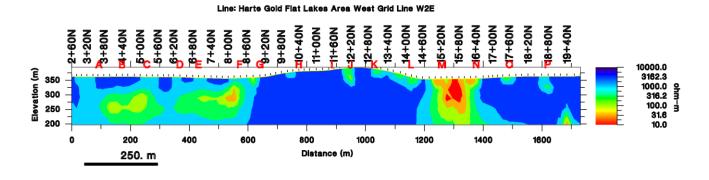
Transmitter: NML

Vertical Exaggeration: 1.0

#### West Grid NML Figure 3 Line W2E Raw Data Profile

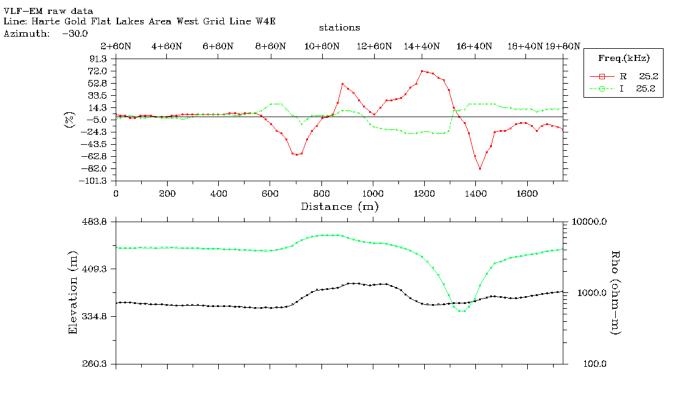


#### West Grid NML Figure 4 Model 4000 Ohm with Fraser Picks

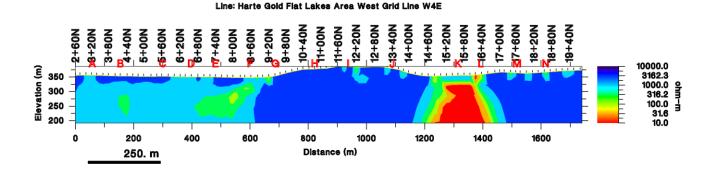


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#### West Grid NML Figure 5 Line W4E Raw Data Profile

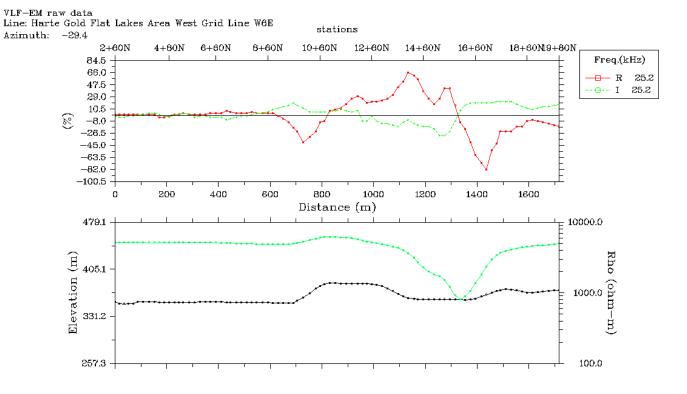


#### West Grid NML Figure 6 Line W4E Model 4000 Ohm with Fraser Picks

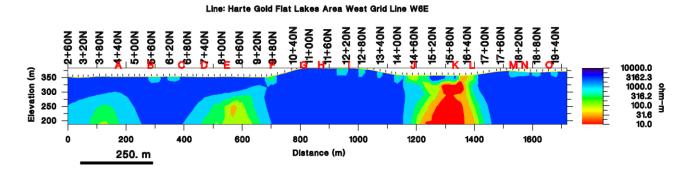


Transmitter: NML

#### West Grid NML Figure 7 Line W6E Raw Data Profile



#### West Grid NML Figure 8 Line W6E Model 4000 Ohm with Fraser Picks



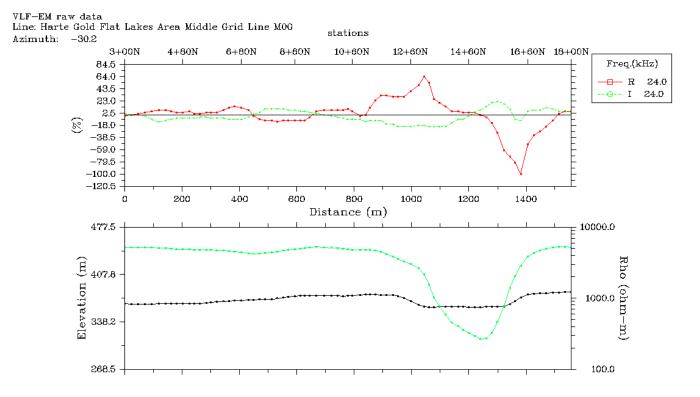
Transmitter: NML

# APPENDIX B

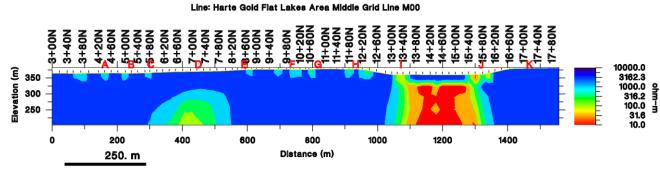
# Middle Grid

# **NAA Figures**

#### Middle Grid NAA Figure 1 Line M00 Raw Data Profile



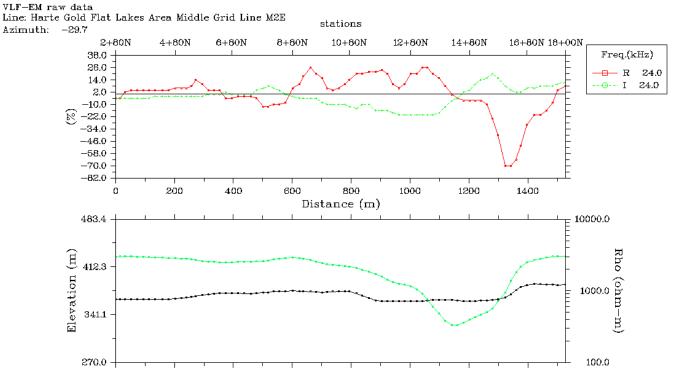
#### Middle Grid NAA Figure 2 Line M00 Model 4000 Ohm with Fraser Picks



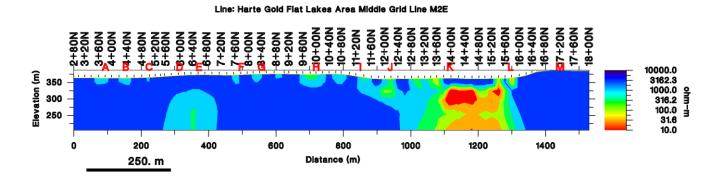
Line: Harte Gold Flat Lakes Area Middle Grid Line M00

Transmitter: NAA

#### Middle Grid NAA Figure 3 Line M2E Raw Data Profile



#### Middle Grid NAA Figure 4 Line M2E Model 4000 Ohm with Fraser Picks



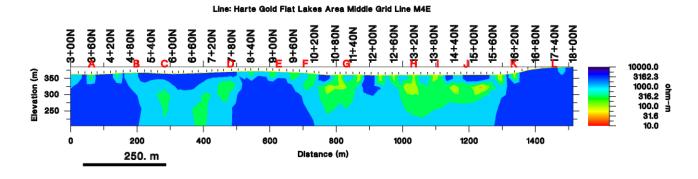


#### Middle Grid NAA Figure 5 Line M4E Raw Data Profile

VLF-EM raw data

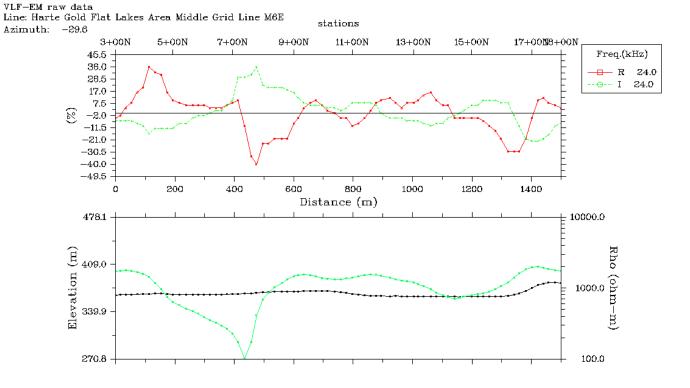
Line: Harte Gold Flat Lakes Area Middle Grid Line M4E stations Azimuth: -29.7 14+80N 9+00N 10+80N 16+80N18+00N 3+00N 5+00N 7+00N 12+80N 32.5 -Freq.(kHz) 20.0 - R 24.0 7.5-<del>o</del>-- I 24.0 -5.0 -17.5 8 -30.0-42.5 -55.0 -67.5-80.0-92.5 400 600 800 1000 1200 200 1400 0 Distance (m) 481.3 -<del>\_</del> 10000.0 RhoElevation (m) 410.6 0 (ohm-m) 339.9 269.3 100.0

#### Middle Grid NAA Figure 6 Line M4E Model 4000 Ohm with Fraser Picks

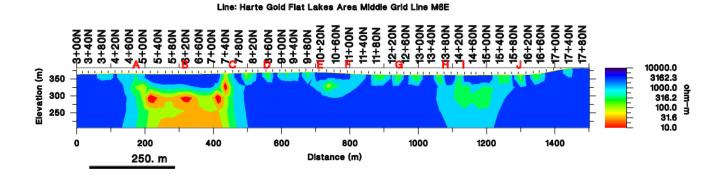




#### Middle Grid NAA Figure 7 Line M6E Raw Data Profile



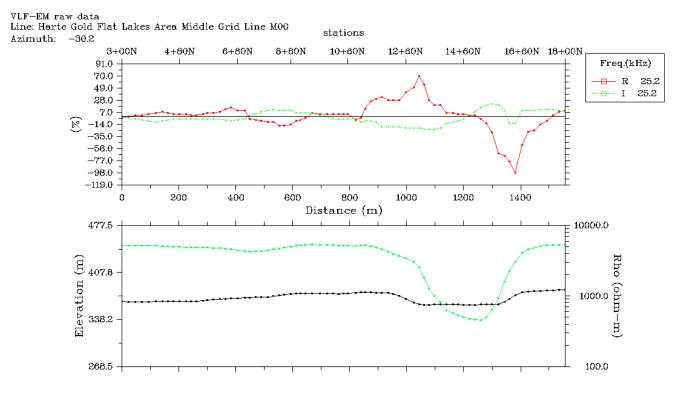
#### Middle Grid NAA Figure 8 Line M6E Model 4000 Ohm with Fraser Picks



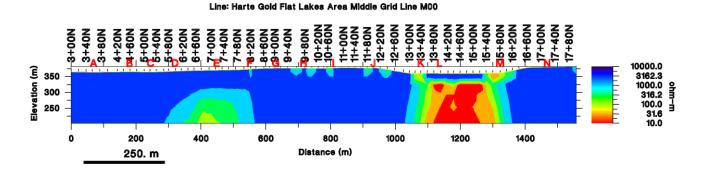
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# **NML Figures**

#### Middle Grid NML Figure 1 Line M00 Raw Data Profile

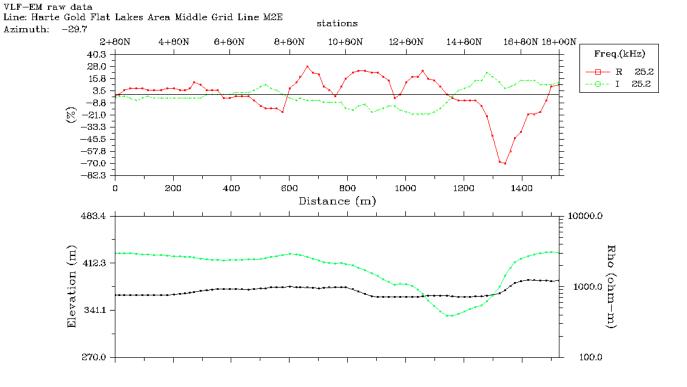


#### Middle Grid NML Figure 2 Line M00 Model 4000 Ohm with Fraser Picks

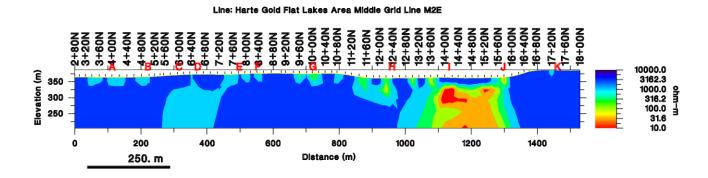


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#### Middle Grid NML Figure 3 Line M2E Raw Data Profile



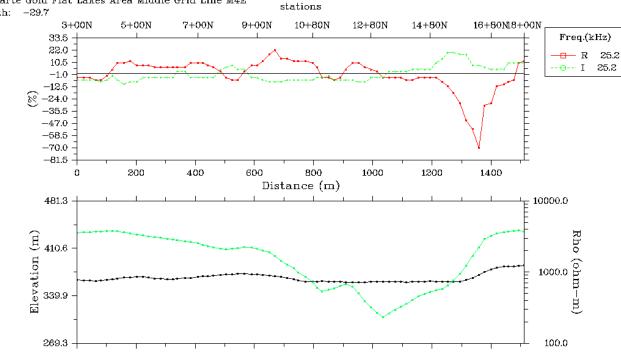
#### Middle Grid NML Figure 4 Line M2E Model 4000 Ohm with Fraser Picks



Transmitter: NML

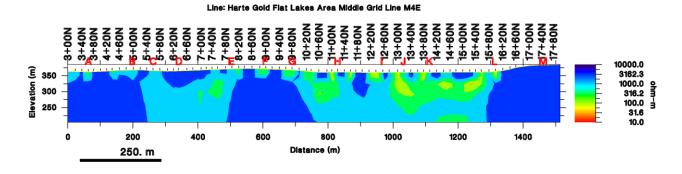
Vertical Exaggeration: 1.0

#### Middle Grid NML Figure 5 Line M4E Raw Data Profile



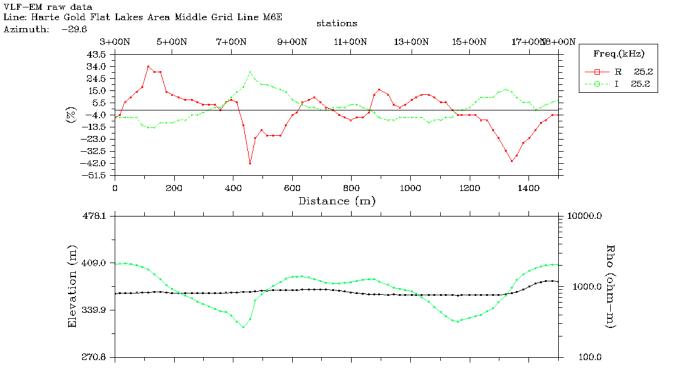
VLF-EM raw data Line: Harte Gold Flat Lakes Area Middle Grid Line M4E Azimuth: -29.7 static

#### Middle Grid NML Figure 6 Line M4E Model 4000 Ohm with Fraser Picks

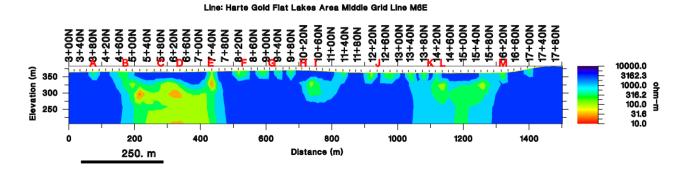


Transmitter: NML

#### Middle Grid NML Figure 7 Line M6E Raw Data Profile



#### Middle Grid NML Figure 8 Line M6E Model 4000 Ohm with Fraser Picks



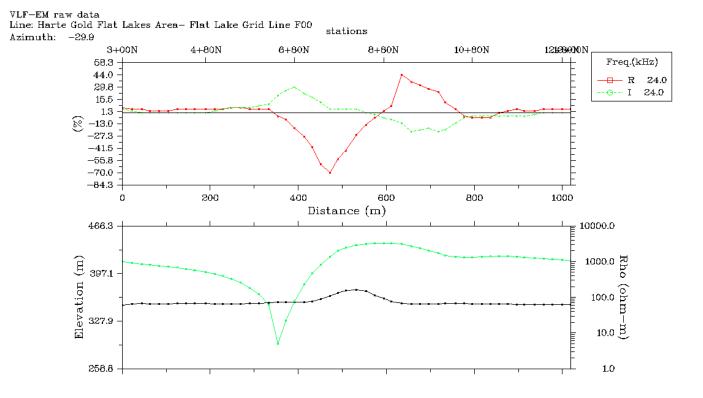
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# **APPENDIX C**

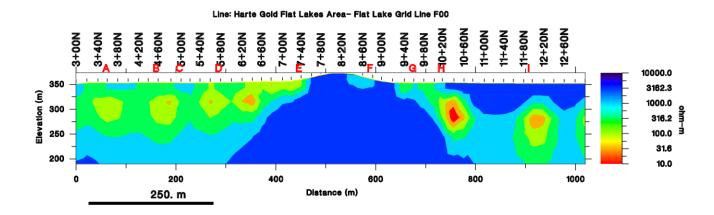
# Flat Lake Grid

## **NAA Figures**

#### Flat Lake Grid NAA Figure 1 Line F00 Raw Data Profile



#### Flat Lake Grid NAA Figure 2 Model 4000 Ohm with Fraser Picks



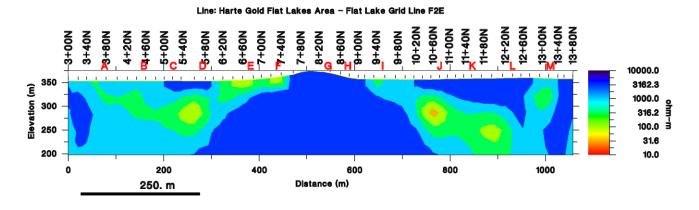
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#### Flat Lake Grid NAA Figure 3 Line F2E Raw Data Profile

9+00N 13+00**1**8+80N 3+00N 5+00N 7+00N 11+00N 48.0 Freq.(kHz) 36.0 - R 24.0 24.0 -<del>0</del>-- I 24.0 12.0 -0.0 8 -12.0-24.0 -36.0 --48.0-60.0-72.0400 600 1000 0 200 800 Distance (m) F 10000.0 468.8Elevation (II) 8700 (II) 8700 (II) Rho(ohm-m) 1000.0 100.0 264.8

VLF-EM raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F2E Azimuth: -30.1 stations

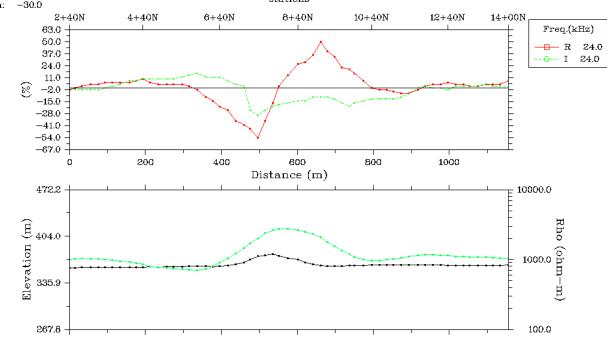
#### Flat Lake Grid NAA Figure 4 Line F2E Model 4000 Ohm with Fraser Picks





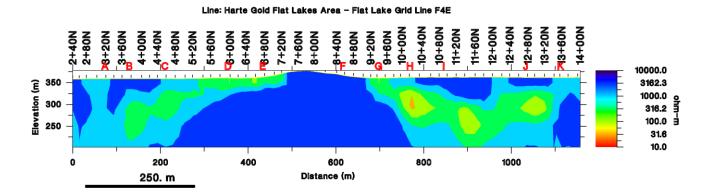
Vertical Exaggeration: 1.0

#### Flat Lake Grid NAA Figure 5 Line F4E Raw Data Profile



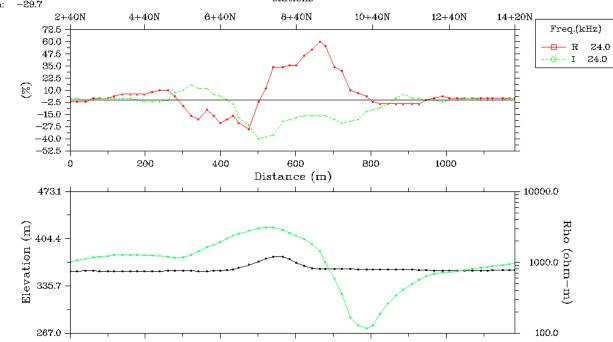
VLF-EM raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F4E Azimuth: -30.0 stations

#### Flat Lake Grid NAA Figure 6 Line F4E Model 4000 Ohm with Fraser Picks



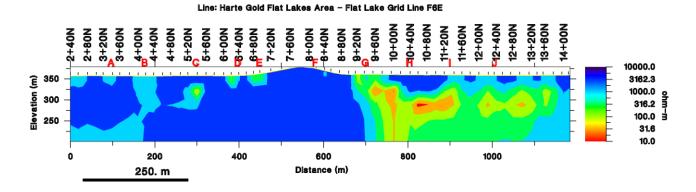
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#### Flat Lake Grid NAA Figure 7 Line F6E Raw Data Profile



VLF-EM raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F6E Azimuth: -29.7 stations

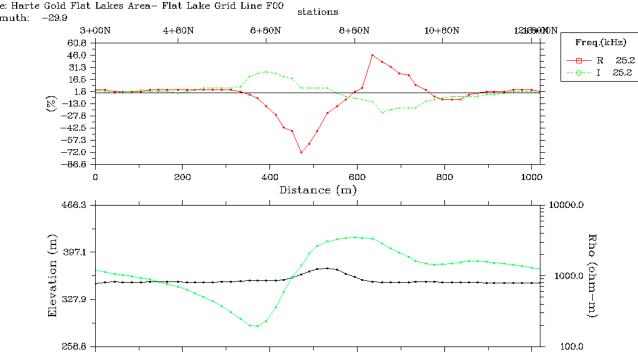
#### Flat Lake Grid NAA Figure 8 Line F6E Model 4000 Ohm with Fraser Picks



Transmitter: NAA

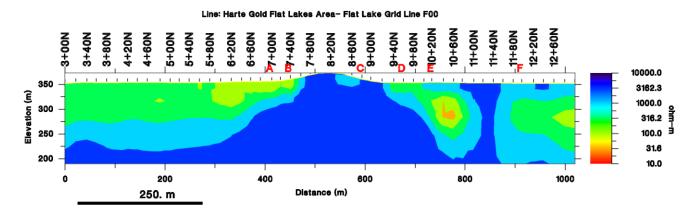
### **NML Figures**

#### Flat Lake Grid NML Figure 1 Line F00 Raw Data Profile



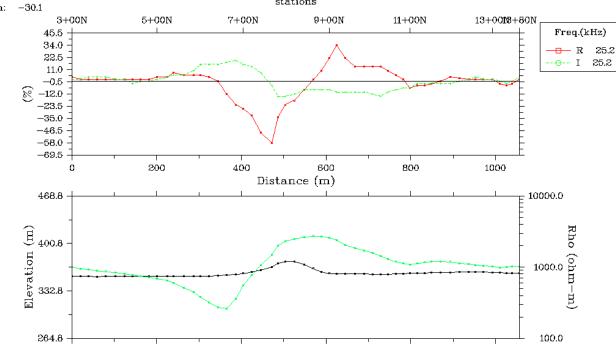
#### VLF-EM raw data Line: Harte Gold Flat Lakes Area- Flat Lake Grid Line F00 Azimuth: -29.9

#### Flat Lake Grid NML Figure 2 Line F00 Model 4000 Ohm with Fraser Picks



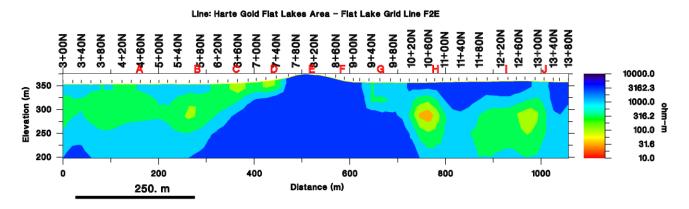
Transmitter: NML

#### Flat Lake Grid NML Figure 3 Line F2E Raw Data Profile



#### VLF-EM raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F2E Azimuth: -30.1 stations

#### Flat Lake Grid NML Figure 4 Line F2E Model 4000 Ohm with Fraser Picks



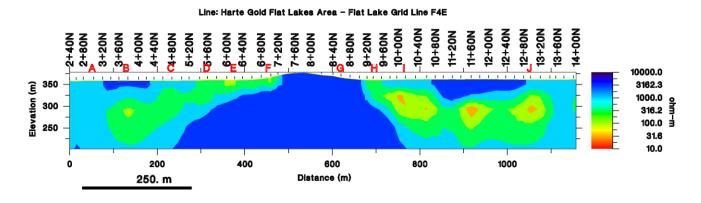
Transmitter: NML

#### Flat Lake Grid NML Figure 5 Line F4E Raw Data Profile

8+40N 2+40N 6+40N 10 + 40N12+40N 14+00N 4 + 40N65.0 Freq.(kHz) 52.0 - R 25.2 39.0 --<del>o</del>-- I 25.2 26.0 -13.0 8 0.0 -13.0-26.0-39.0-52.0 -65.0200 400 600 800 1000 0 Distance (m) 472.210000.0 F Elevation (m) 6.922 (m) Rho1000.0 (ohm-m) 267.8 100.0

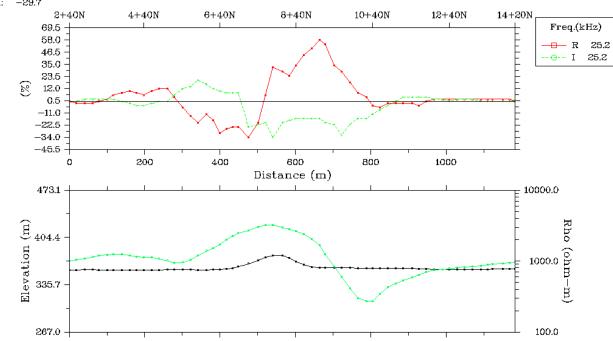
VLF-EM raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F4E Azimuth: -30.0 stations

#### Flat Lake Grid NML Figure 6 Line F4E Model 4000 Ohm with Fraser Picks



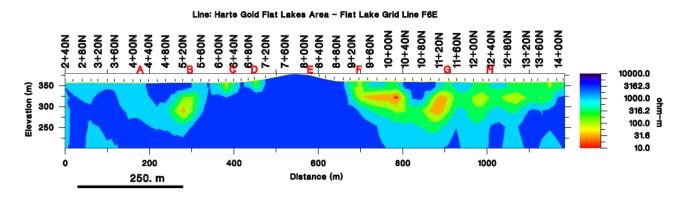
Transmitter: NML

#### Flat Lake Grid NML Figure 7 Line F6E Raw Data Profile



 $\tt VLF-EM$  raw data Line: Harte Gold Flat Lakes Area - Flat Lake Grid Line F6E Azimuth: -29.7 stations

#### Flat Lake Grid NML Figure 8 Line F6E Model 4000 Ohm with Fraser Picks



Transmitter: NML

Appendix C – Superior Exploration, Adventure & Climbing Co. Ltd. - Invoice

Appendix D – Superior Exploration, Adventure & Climbing Co. Ltd. Harte Gold – Flat Lakes Area – Raw VLF Data West Grid / Middle Grid / Flat Lake Grid

	v		Harte	e Gold - F	lat Lakes A	rea - Raw V	VLF Data	
W-				West Grid	/ Middle Gri	d / Flat Lake G	Grid	
SIIPFR			Groun	d VLF Surve	ey conducted	by Superior E	xploration	
EXPLORATION, ADVENTURE 8	GLIMBING CO.			Fieldwork	from March 2	22 - April 4, 20	)19	
5					1	ΑA		ML
Line Number	StationID	Х	Y	Z	In-Phase	OutPhase	In-Phase	OutPhase
W00	3+00N	649640	5420459	364	4	0	4	2
W00	3+20N	649629	5420479	363	2	0	2	0
W00	3+40N	649621	5420496	364	4	0	2	0
W00	3+60N	649615	5420511	363	4	0	2	0
W00	3+80N	649604	5420531	364	2	0	2	2
W00	4+00N	649596	5420556	364	2	-2	2	2
W00	4+20N	649587	5420569	364	2	-2	2	0
W00	4+40N	649576	5420584	364	0	-2	0	0
W00	4+60N	649566	5420603	364	2	0	2	2
W00	4+80N	649550	5420617	364	2	0	2	4
W00	5+00N	649538	5420634	363	2	0	4	2
W00	5+20N	649525	5420647	364	2	0	2	2
W00	5+40N	649514	5420665	364	2	2	2	4
W00	5+60N	649507	5420685	363	4	2	2	4
W00	5+80N	649500	5420704	361	4	2	4	4
W00	6+00N	649495	5420725	362	4	4	4	4
W00	6+20N	649483	5420740	360	6	2	8	2
W00	6+40N	649473	5420756	358	4	2	6	2
W00	6+60N	649462	5420772	358	4	2	6	2
W00	6+80N	649450	5420790	357	14	6	16	8
W00	7+00N	649441	5420808	357	16	8	14	8
W00	7+20N	649429	5420823	357	16	10	14	10
W00	7+20N	649424	5420842	356	16	10	18	10
	7+40N 7+60N	649414	5420842	355	10	12	10	20
	7+80N	649402	5420804	355	8	30	8	20
W00	8+00N	649393	5420878	355	-16	30	-18	32
W00	8+00N 8+20N	649385	5420894	355	-10	30	-18	28
	8+20N 8+40N	649374	5420910	356	-40	20	-28	18
W00	8+40N 8+60N	649367	5420928	356	-40	20	-38	20
W00	8+80N 8+80N	649356	5420947	355	-40	18	-40	20
W00	9+00N	649336	5420983	355	-55	20	-50	20
W00	9+00N 9+20N	649346		358		20	-30	20
W00	9+20N 9+40N		5421001		-30	16	-28	18
		649321	5421019	359	-34			
W00	9+60N	649313	5421038	359	-38	16	-30	18
W00	9+80N	649303	5421057	363	-30	14	-14	16
W00	10+00N	649296	5421074	364	-16	12	-10	12

W00	10+20N	649291	5421091	364	-16	12	-6	14
W00	10+40N	649280	5421110	367	-4	12	6	18
W00	10+60N	649270	5421124	370	2	12	6	14
W00	10+80N	649260	5421144	371	6	12	14	12
W00	11+00N	649247	5421162	372	6	12	20	12
W00	11+20N	649233	5421178	373	6	12	16	12
W00	11+40N	649223	5421191	376	6	12	14	12
W00	11+60N	649215	5421210	376	12	12	24	12
W00	11+80N	649203	5421223	376	18	12	26	12
W00	12+00N	649192	5421240	375	8	6	20	8
W00	12+20N	649180	5421256	376	-2	0	12	0
W00	12+40N	649169	5421276	374	2	-2	4	0
W00	12+60N	649160	5421294	374	10	2	12	2
W00	12+80N	649152	5421315	375	10	6	10	4
W00	13+00N	649143	5421332	375	10	0	8	4
W00	13+20N	649137	5421349	374	10	0	16	4
W00	13+40N	649123	5421367	371	16	-10	20	2
W00	13+60N	649112	5421380	368	18	-18	22	-16
W00	13+80N	649098	5421398	361	20	-12	22	-14
W00	14+00N	649087	5421415	360	26	-10	28	-10
W00	14+20N	649077	5421431	359	28	-16	30	-18
W00	14+40N	649071	5421449	359	30	-18	32	-20
W00	14+60N	649067	5421470	359	14	-18	16	-20
W00	14+80N	649060	5421489	359	14	-6	16	-8
W00	15+00N	649050	5421507	358	12	10	12	6
W00	15+20N	649045	5421526	358	8	12	8	10
W00	15+40N	649038	5421542	359	4	10	10	10
W00	15+60N	649028	5421562	358	-10	10	10	10
W00	15+80N	649016	5421579	358	-14	12	-14	14
W00	16+00N	649005	5421598	358	-18	12	-20	14
W00	16+20N	648997	5421614	359	-2	14	-4	14
W00	16+40N	648986	5421636	361	14	16	16	16
W00	16+60N	648974	5421655	360	50	20	52	18
W00	16+80N	648959	5421672	360	30	14	32	12
W00	17+00N	648948	5421686	360	30	10	28	10
W00	17+20N	648938	5421698	360	20	8	18	6
W00	17+40N	648926	5421713	358	4	4	4	2
W00	17+60N	648918	5421727	360	-20	4	-22	4
W00	17+80N	648908	5421742	362	-46	4	-48	6
W00	18+00N	648895	5421762	362	-34	4	-36	4
W00	18+20N	648885	5421780	362	-20	4	-18	4
W00	18+40N	648874	5421794	363	-56	4	-54	6
W00	18+60N	648864	5421811	363	-40	6	-38	8
W00	18+80N	648851	5421827	363	-18	10	-16	10
W00	19+00N	648839	5421845	362	-10	10	-10	10

W00	10,201	648829	E121062	264	-4	8	E	10
W00	19+20N 19+40N		5421862 5421876	364	-	8	-6 -6	10
		648820		364	-4			8
W00	19+60N	648810	5421892	362	-2	4	-4	6
W00	19+80N	648800	5421906	362	-2	4	-2	4
W2E	2+60N	649834	5420540	363	2	0	2	2
W2E	2+80N	649827	5420555	364	2	4	2	0
W2E	3+00N	649818	5420569	361	4	-2	2	-2
W2E	3+20N	649811	5420586	363	2	-4	2	-2
W2E	3+40N	649800	5420604	362	2	-4	2	-4
W2E	3+60N	649789	5420616	362	4	-2	2	-4
W2E	3+80N	649782	5420635	362	4	-2	2	-2
W2E	4+00N	649769	5420650	362	4	2	4	2
W2E	4+20N	649757	5420669	363	4	2	4	2
W2E	4+40N	649748	5420688	363	4	0	2	0
W2E	4+60N	649740	5420704	362	4	2	4	2
W2E	4+80N	649729	5420724	364	0	4	4	2
W2E	5+00N	649721	5420742	363	-2	2	4	2
W2E	5+20N	649707	5420759	362	-4	2	-2	2
W2E	5+40N	649697	5420775	362	-4	4	-6	4
W2E	5+60N	649686	5420791	361	-4	4	-6	4
W2E	5+80N	649676	5420808	361	-2	2	-4	2
W2E	6+00N	649666	5420821	362	2	2	4	2
W2E	6+20N	649657	5420836	361	4	0	4	2
W2E	6+40N	649647	5420855	361	4	0	4	2
W2E	6+60N	649635	5420874	362	4	2	6	2
W2E	6+80N	649626	5420893	362	4	4	8	4
W2E	7+00N	649615	5420909	359	6	6	6	4
W2E	7+20N	649607	5420927	358	6	6	6	4
W2E	7+40N	649594	5420946	358	6	8	6	6
W2E	7+60N	649582	5420961	358	8	8	8	6
W2E	7+80N	649576	5420979	358	10	10	6	8
W2E	8+00N	649564	5420995	356	2	14	2	18
W2E	8+20N	649557	5421014	356	-6	16	-4	20
W2E	8+40N	649548	5421033	356	-12	18	-14	22
W2E	8+60N	649535	5421050	358	-18	22	-20	24
W2E	8+80N	649525	5421070	358	-30	20	-28	20
W2E	9+00N	649514	5421090	360	-50	16	-52	16
W2E	9+20N	649505	5421106	360	-46	14	-44	8
W2E	9+40N	649498	5421123	360	-40	12	-42	14
W2E	9+60N	649486	5421135	363	-30	10	-32	16
W2E	9+80N	649476	5421152	366	-18	10	-22	16
W2E	10+00N	649465	5421170	372	-10	8	-12	14
W2E	10+20N	649455	5421185	376	-4	8	-6	8
W2E	10+40N	649444	5421202	378	-4	8	-6	8
W2E	10+60N	649436	5421218	380	-4	8	-2	8

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W2E	10+80N	649425	5421233	382	6	8	6	10
W2E	11+00N	649416	5421254	382	14	12	20	18
W2E	11+20N	649406	5421273	382	30	16	34	22
W2E	11+40N	649396	5421291	382	30	16	34	18
W2E	11+60N	649385	5421305	383	32	18	36	16
W2E	11+80N	649376	5421321	386	40	20	44	22
W2E	12+00N	649364	5421337	388	40	20	42	22
W2E	12+20N	649357	5421355	392	-2	-10	-4	-6
W2E	12+40N	649346	5421374	394	-2	-6	-4	-4
W2E	12+60N	649336	5421389	394	8	-6	8	-6
W2E	12+80N	649330	5421406	395	4	-8	8	-6
W2E	13+00N	649316	5421425	395	4	-10	10	-8
W2E	13+20N	649306	5421443	392	10	-12	12	-12
W2E	13+40N	649298	5421465	388	10	-12	12	-14
W2E	13+60N	649288	5421481	383	20	-14	22	-16
W2E	13+80N	649276	5421502	382	24	-20	26	-20
W2E	14+00N	649269	5421519	374	26	-22	28	-24
W2E	14+20N	649259	5421536	370	26	-26	28	-26
W2E	14+40N	649247	5421548	363	30	-26	32	-28
W2E	14+60N	649241	5421567	355	40	-24	42	-26
W2E	14+80N	649228	5421586	355	60	-20	62	-22
W2E	15+00N	649217	5421603	354	48	-20	46	-22
W2E	15+20N	649207	5421620	352	16	-16	18	-18
W2E	15+40N	649201	5421639	356	10	-8	12	-10
W2E	15+60N	649190	5421653	354	-2	-2	2	-2
W2E	15+80N	649178	5421673	355	-10	10	-8	10
W2E	16+00N	649168	5421689	355	-20	12	-20	14
W2E	16+20N	649161	5421708	355	-34	14	-36	16
W2E	16+40N	649154	5421725	355	-60	12	-62	14
W2E	16+60N	649143	5421748	355	-80	10	-82	14
W2E	16+80N	649137	5421765	356	-58	10	-60	12
W2E	17+00N	649127	5421775	358	-40	12	-42	10
W2E	17+20N	649118	5421789	358	-32	12	-30	12
W2E	17+40N	649110	5421804	360	-28	10	-30	10
W2E	17+60N	649098	5421823	360	-30	10	-30	12
W2E	17+80N	649086	5421842	361	-30	8	-28	10
W2E	18+00N	649077	5421860	363	-26	12	-24	10
W2E	18+20N	649064	5421877	363	-14	16	-12	8
W2E	18+40N	649052	5421894	364	-4	8	-6	6
W2E	18+60N	649039	5421916	363	-4	8	-6	6
W2E	18+80N	649028	5421935	364	-20	8	-18	6
W2E	19+00N	649017	5421954	363	-22	8	-20	6
W2E	19+20N	649008	5421972	364	-24	12	-22	14
W2E	19+40N	648997	5421991	364	-28	16	-26	16
W2E	19+60N	648984	5422012	363	-28	14	-24	16

W2E	19+80N	648974	5422030	365	-28	14	-28	18
W4E	2+60N	650006	5420635	355	4	-2	4	-4
W4E	2+80N	649997	5420648	355	2	0	2	-2
W4E	3+00N	649988	5420666	357	-2	0	2	0
W4E	3+20N	649983	5420685	357	0	2	-2	2
W4E	3+40N	649975	5420701	357	0	2	-2	0
W4E	3+60N	649960	5420716	357	0	2	2	-2
W4E	3+80N	649951	5420732	355	2	0	2	-2
W4E	4+00N	649943	5420754	355	2	-2	2	0
W4E	4+20N	649931	5420767	354	0	-2	0	0
W4E	4+40N	649915	5420784	354	0	-2	0	-2
W4E	4+60N	649907	5420802	353	0	-2	0	-2
W4E	4+80N	649900	5420819	354	2	-2	2	-2
W4E	5+00N	649895	5420837	354	4	-2	2	-2
W4E	5+20N	649884	5420860	351	4	-2	4	-4
W4E	5+40N	649874	5420877	351	4	0	4	-2
W4E	5+60N	649863	5420890	352	4	2	4	0
W4E	5+80N	649851	5420909	353	4	2	4	4
W4E	6+00N	649843	5420928	354	6	2	4	4
W4E	6+20N	649832	5420945	351	4	2	4	4
W4E	6+40N	649822	5420959	352	4	0	4	4
W4E	6+60N	649807	5420974	350	4	0	4	4
W4E	6+80N	649800	5420995	351	4	2	4	4
W4E	7+00N	649788	5421012	351	4	4	6	4
W4E	7+20N	649784	5421033	351	4	4	6	2
W4E	7+40N	649779	5421051	351	4	4	4	2
W4E	7+60N	649766	5421067	350	4	6	6	4
W4E	7+80N	649759	5421085	350	6	6	6	6
W4E	8+00N	649751	5421103	350	6	8	6	6
W4E	8+20N	649733	5421121	348	4	12	2	10
W4E	8+40N	649722	5421132	349	-2	14	-4	14
W4E	8+60N	649710	5421149	347	-10	14	-12	20
W4E	8+80N	649695	5421167	350	-20	16	-22	20
W4E	9+00N	649688	5421183	349	-28	18	-26	20
W4E	9+20N	649681	5421202	348	-32	10	-36	12
W4E	9+40N	649666	5421218	350	-60	4	-58	2
W4E	9+60N	649663	5421235	349	-64	-8	-60	0
W4E	9+80N	649652	5421251	354	-60	-10	-58	-12
W4E	10+00N	649641	5421269	361	-34	-4	-36	-4
W4E	10+20N	649630	5421285	367	-20	0	-22	2
W4E	10+40N	649620	5421301	372	-10	0	-14	2
W4E	10+60N	649610	5421319	374	-4	0	-2	2
W4E	10+80N	649601	5421336	378	2	2	0	2
W4E	11+00N	649592	5421355	382	6	2	4	2
W4E	11+20N	649582	5421371	375	24	8	22	6

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W4E	11+40N	649572	5421388	376	50	8	52	10
W4E	11+60N	649559	5421405	384	44	10	44	10
W4E	11+80N	649555	5421425	384	36	8	38	8
W4E	12+00N	649546	5421446	389	28	4	26	6
W4E	12+20N	649543	5421464	391	18	-6	16	0
W4E	12+40N	649537	5421488	384	6	-14	8	-12
W4E	12+60N	649526	5421501	381	6	-16	4	-16
W4E	12+80N	649511	5421517	384	12	-16	14	-18
W4E	13+00N	649495	5421536	387	24	-18	26	-20
W4E	13+20N	649484	5421551	387	24	-16	26	-20
W4E	13+40N	649475	5421567	385	26	-20	28	-20
W4E	13+60N	649468	5421585	382	26	-20	30	-22
W4E	13+80N	649457	5421599	378	26	-24	36	-26
W4E	14+00N	649447	5421614	373	46	-24	46	-26
W4E	14+20N	649432	5421631	370	50	-24	52	-26
W4E	14+40N	649422	5421652	358	70	-26	72	-24
W4E	14+60N	649411	5421670	355	68	-24	70	-23
W4E	14+80N	649398	5421687	353	66	-24	68	-26
W4E	15+00N	649388	5421706	353	60	-24	62	-26
W4E	15+20N	649378	5421723	353	56	-24	58	-26
W4E	15+40N	649368	5421741	353	40	-20	42	-22
W4E	15+60N	649358	5421757	355	16	10	14	10
W4E	15+80N	649347	5421775	355	-2	10	0	10
W4E	16+00N	649340	5421794	356	-12	12	-10	12
W4E	16+20N	649333	5421811	356	-26	18	-26	20
W4E	16+40N	649327	5421832	356	-60	18	-62	20
W4E	16+60N	649316	5421850	355	-80	18	-82	20
W4E	16+80N	649304	5421871	361	-54	18	-56	20
W4E	17+00N	649295	5421885	364	-44	20	-46	20
W4E	17+20N	649290	5421900	367	-26	18	-24	20
W4E	17+40N	649276	5421917	367	-24	18	-22	16
W4E	17+60N	649264	5421930	369	-24	14	-22	14
W4E	17+80N	649253	5421947	364	-20	14	-18	14
W4E	18+00N	649242	5421966	363	-14	12	-12	12
W4E	18+20N	649232	5421984	363	-10	12	-10	12
W4E	18+40N	649225	5422001	363	-8	12	-10	12
W4E	18+60N	649215	5422021	365	-12	10	-14	12
W4E	18+80N	649203	5422037	366	-20	6	-22	8
W4E	19+00N	649192	5422054	368	-16	8	-14	10
W4E	19+20N	649181	5422071	370	-14	10	-12	12
W4E	19+40N	649170	5422087	370	-16	10	-14	12
W4E	19+60N	649159	5422105	372	-18	12	-16	12
W4E	19+80N	649147	5422124	374	-20	14	-20	14
W6E	2+60N	650176	5420742	354	2	-2	2	0
W6E	2+80N	650167	5420756	354	4	-2	2	-2

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W6E	3+00N	650157	5420772	353	2	2	2	-2
W6E	3+20N	650149	5420787	354	2	2	2	0
W6E	3+40N	650141	5420802	343	2	4	2	0
W6E	3+60N	650132	5420818	353	2	4	2	2
W6E	3+80N	650119	5420834	354	2	2	2	2
W6E	4+00N	650108	5420853	354	2	0	2	4
W6E	4+20N	650097	5420871	354	4	2	2	4
W6E	4+40N	650087	5420888	354	4	2	-2	2
W6E	4+60N	650078	5420903	354	4	2	-2	0
W6E	4+80N	650068	5420921	353	4	-2	0	-2
W6E	5+00N	650058	5420939	353	4	0	2	2
W6E	5+20N	650049	5420953	354	4	0	2	2
W6E	5+40N	650041	5420968	353	4	2	4	4
W6E	5+60N	650031	5420989	353	2	2	2	2
W6E	5+80N	650024	5421008	354	2	2	2	-2
W6E	6+00N	650016	5421029	353	2	0	2	0
W6E	6+20N	650001	5421043	353	2	-2	2	0
W6E	6+40N	649989	5421057	354	2	-4	4	-2
W6E	6+60N	649982	5421078	355	4	-4	4	-2
W6E	6+80N	649973	5421096	355	4	-4	4	-2
W6E	7+00N	649966	5421115	353	6	-4	8	-6
W6E	7+20N	649957	5421128	353	4	-4	6	-4
W6E	7+40N	649942	5421146	354	4	-4	4	-2
W6E	7+60N	649935	5421162	353	4	-2	4	0
W6E	7+80N	649923	5421180	352	4	-2	4	0
W6E	8+00N	649910	5421195	353	4	-2	6	2
W6E	8+20N	649903	5421212	354	4	2	4	4
W6E	8+40N	649890	5421230	353	2	4	4	4
W6E	8+60N	649881	5421249	353	2	6	4	6
W6E	8+80N	649869	5421265	353	2	10	4	10
W6E	9+00N	649859	5421283	354	2	10	0	12
W6E	9+20N	649849	5421300	351	-4	16	-4	14
W6E	9+40N	649839	5421317	352	-8	18	-10	16
W6E	9+60N	649831	5421333	352	-20	18	-18	20
W6E	9+80N	649824	5421347	352	-26	14	-24	16
W6E	10+00N	649814	5421367	351	-38	10	-40	12
W6E	10+20N	649801	5421390	353	-30	4	-32	6
W6E	10+40N	649791	5421410	367	-16	0	-24	6
W6E	10+60N	649781	5421423	373	-8	4	-10	6
W6E	10+80N	649771	5421437	378	2	8	-8	6
W6E	11+00N	649758	5421454	382	4	10	8	6
W6E	11+20N	649751	5421474	384	10	10	10	8
W6E	11+40N	649740	5421492	384	14	10	12	10
W6E	11+60N	649729	5421510	383	16	8	18	8
W6E	11+80N	649716	5421525	382	22	8	26	6

W6E W6E	12+00N 12+20N	649702 649694	5421545	383	28	10	30	8
W6E 1			5421563	384	22	-2	26	-8
		649684	5421503	384	18	-2 -6	20	-8
VVOE	12+40N 12+60N					-0 -2	20	-8
W6E		649676	5421593	382	24	-2 -6	22	-8
	12+80N	649665	5421608	381	24			
	13+00N	649653	5421624	384	26	-10	24	-12
	13+20N	649639	5421641	380	30	-10	26	-12
	13+40N	649629	5421660	378	32	-12	32	-14
	13+60N	649627	5421679	374	42	-14	44	-16
	13+80N	649623	5421699	368	54	-8	52	-10
	14+00N	649620	5421718	363	68	-4	66	-6
	14+20N	649610	5421739	362	60	-10	62	-12
W6E	14+40N	649604	5421751	357	50	-12	56	-14
W6E 1	14+60N	649600	5421771	358	36	-14	38	-16
W6E	14+80N	649591	5421790	357	28	-16	26	-16
W6E	15+00N	649581	5421809	358	18	-20	18	-20
W6E	15+20N	649571	5421827	359	24	-28	26	-30
W6E	15+40N	649561	5421845	358	40	-28	42	-30
W6E	15+60N	649551	5421861	358	40	-22	42	-24
W6E	15+80N	649540	5421879	358	14	-8	16	-8
W6E	16+00N	649529	5421895	359	-12	8	-10	8
W6E	16+20N	649518	5421912	358	-24	18	-20	16
W6E	16+40N	649507	5421929	358	-38	18	-40	20
W6E	16+60N	649498	5421946	356	-58	18	-60	20
W6E	16+80N	649487	5421965	357	-70	16	-72	20
W6E	17+00N	649476	5421981	360	-80	16	-82	20
W6E	17+20N	649460	5421994	364	-50	18	-52	20
W6E	17+40N	649450	5422011	368	-40	24	-42	22
W6E	17+60N	649442	5422022	368	-26	22	-24	22
W6E	17+80N	649428	5422038	372	-24	20	-24	22
W6E	18+00N	649415	5422055	376	-22	20	-24	22
W6E	18+20N	649409	5422075	374	-18	16	-16	18
W6E	18+40N	649402	5422094	374	-14	14	-16	14
W6E	18+60N	649393	5422112	370	-8	10	-8	12
W6E	18+80N	649386	5422132	369	-6	12	-6	10
W6E	19+00N	649379	5422151	368	-6	14	-8	12
W6E	19+20N	649369	5422169	368	-10	16	-10	14
W6E	19+40N	649358	5422189	370	-12	18	-12	14
W6E	19+60N	649348	5422208	372	-14	18	-14	16
W6E	19+80N	649340	5422225	372	-16	20	-16	18
M00	3+00N	651240	5421907	365	-2	2	-2	2
M00	3+20N	651228	5421926	365	0	0	0	-2
M00	3+40N	651217	5421947	365	2	0	2	-4
M00	3+60N	651204	5421968	364	4	-2	2	-6

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M00	3+80N	651193	5421988	364	6	-8	4	-8
M00	4+00N	651182	5422010	365	8	-12	6	-10
M00	4+20N	651170	5422031	364	8	-10	8	-8
M00	4+40N	651160	5422047	365	6	-8	6	-6
M00	4+60N	651151	5422065	365	4	-6	4	-4
M00	4+80N	651138	5422081	366	4	-6	4	-4
M00	5+00N	651129	5422102	366	6	-6	4	-4
M00	5+20N	651122	5422119	365	2	-6	2	-4
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M00	8+80N	650923	5422421	376	-10	6	-8	6
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M00	12+60N	650731	5422752	378	40	-20	42	-20

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M2E	5+40N	651281	5422238	366	8	-2	6	-4
M2E	5+60N	651275	5422251	366	14	-2	12	-4
M2E	5+80N	651262	5422269	368	10	-2	10	-4
M2E	6+00N	651251	5422287	370	4	0	4	0
M2E	6+20N	651243	5422303	371	4	0	4	0

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M2E	6+40N	651231	5422318	372	4	0	4	0
M2E	6+60N	651221	5422337	373	-4	2	-4	0
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M2E	8+20N	651134	5422472	376	-10	6	-14	6
M2E	8+40N	651126	5422490	376	-10	4	-14	4
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M2E	12+80N	650921	5422880	362	20	-20	12	-18
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M2E	13+20N	650900	5422913	361	26	-20	18	-20
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M4E	3+00N	651575	5422130	363	-4	-4	-4	-6
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M4E	8+80N	651282	5422631	372	8	-2	8	-4
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M4E	9+20N	651254	5422656	372	12	-4	12	-6
M4E	9+40N	651245	5422677	371	16	-6	18	-8
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M4E	12+80N	651102	5422983	359	4	-4	4	-4
M4E	13+00N	651089	5423000	361	2	0	2	-4
M4E	13+20N	651079	5423017	361	-4	2	-4	-4
M4E	13+40N	651071	5423036	361	-4	2	-4	2
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M4E	13+80N	651052	5423071	361	-4	4	-4	2
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M4E	15+60N	650959	5423221	361	-16	18	-18	20
M4E	15+80N	650949	5423242	361	-26	16	-28	18
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M4E	16+40N	650917	5423298	362	-80	4	-70	8
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M4E	18+00N	650835	5423427	385	12	-12	12	10

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M6E	3+00N	651740	5422237	364	-4	-6	-6	-6
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M6E	5+40N	651622	5422439	364	6	-8	8	-8
M6E	5+60N	651610	5422458	365	6	-4	8	-4
M6E	5+80N	651601	5422475	365	6	-2	6	-4
M6E	6+00N	651590	5422491	365	6	-2	4	-2
M6E	6+20N	651579	5422507	365	4	0	4	0
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M6E	6+80N	651548	5422555	364	6	6	6	6
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M6E	8+40N	651469	5422694	368	-20	20	-20	18
M6E	8+60N	651459	5422717	368	-20	20	-20	16
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M6E	9+00N	651443	5422753	370	-8	16	-4	8
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M6E	13+00N	651240	5423099	363	8	-6	8	-6
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M6E	13+40N	651222	5423128	361	14	-8	12	-6
M6E	13+60N	651210	5423148	362	16	-10	12	-10
M6E	13+80N	651200	5423164	362	10	-8	10	-8
M6E	14+00N	651187	5423181	363	6	-8	6	-8
M6E	14+20N	651177	5423195	362	6	-4	6	-6
M6E	14+40N	651165	5423214	363	-4	-2	0	-6
M6E	14+60N	651159	5423231	361	-4	0	-4	0
M6E	14+80N	651155	5423243	361	-4	2	-4	0
M6E	15+00N	651151	5423270	362	-4	6	-4	2
M6E	15+20N	651147	5423290	362	-4	6	-4	6
M6E	15+40N	651139	5423307	362	-6	10	-8	10
M6E	15+60N	651131	5423326	362	-10	10	-8	10
M6E	15+80N	651125	5423344	362	-14	10	-16	10
M6E	16+00N	651117	5423362	362	-20	8	-22	14
M6E	16+20N	651103	5423381	362	-30	8	-32	16
M6E	16+40N	651092	5423398	363	-30	-2	-40	14
M6E	16+60N	651083	5423412	363	-30	-10	-36	10
M6E	16+80N	651071	5423431	364	-20	-20	-26	6
M6E	17+00N	651057	5423446	368	-4	-22	-22	6
M6E	17+20N	651048	5423465	372	10	-22	-16	0
M6E	17+40N	651038	5423480	378	12	-20	-10	2
M6E	17+60N	651028	5423495	382	8	-17	-8	4
M6E	17+80N	651017	5423514	383	6	-10	-4	6
M6E	18+00N	651006	5423532	382	4	-8	-4	8
F00	3+00N	653246	5423300	345	6	4	4	4
F00	3+20N	653240	5423321	352	4	2	4	2
F00	3+40N	653233	5423342	354	4	0	2	0
F00	3+60N	653220	5423355	354	2	0	2	2
F00	3+80N	653209	5423373	353	2	0	2	2
F00	4+00N	653201	5423392	353	2	0	2	4
F00	4+20N	653188	5423409	353	4	0	4	2
F00	4+40N	653179	5423426	354	4	0	4	2
F00	4+60N	653173	5423445	353	4	0	4	2
F00	4+80N	653169	5423470	354	4	0	4	0
F00	5+00N	653158	5423487	354	4	2	4	2
F00	5+20N	653143	5423497	353	4	4	4	4
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F00	5+60N	653118	5423529	353	6	6	4	6
F00	5+80N	653110	5423548	354	4	6	4	6
F00	6+00N	653105	5423569	353	4	8	4	6
F00	6+20N	653098	5423589	353	4	10	2	8
F00	6+40N	653086	5423606	354	-4	20	-2	20
F00	6+60N	653073	5423619	355	-8	26	-6	24
F00	6+80N	653061	5423634	356	-18	30	-16	26
F00	7+00N	653047	5423652	356	-28	22	-26	24
F00	7+20N	653040	5423668	355	-40	18	-42	20
F00	7+40N	653032	5423686	355	-60	12	-46	18
F00	7+60N	653023	5423705	357	-70	4	-72	6
F00	7+80N	653018	5423723	360	-54	4	-62	6
F00	8+00N	653008	5423738	368	-44	4	-46	6
F00	8+20N	652993	5423756	372	-26	4	-24	6
F00	8+40N	652983	5423776	376	-14	0	-16	0
F00	8+60N	652978	5423795	374	-6	-2	-8	-4
F00	8+80N	652972	5423814	370	2	-6	2	-6
F00	9+00N	652963	5423829	366	8	-8	6	-8
F00	9+20N	652949	5423847	353	44	-12	46	-10
F00	9+40N	652931	5423862	354	36	-22	38	-24
F00	9+60N	652917	5423875	354	32	-20	32	-20
F00	9+80N	652911	5423894	353	28	-18	24	-18
F00	10+00N	652900	5423912	352	24	-22	22	-18
F00	10+20N	652893	5423926	354	12	-20	10	-18
F00	10+40N	652881	5423946	353	4	-12	4	-10
F00	10+60N	652874	5423965	354	-4	-6	-4	-8
F00	10+80N	652870	5423982	355	-6	-4	-8	-6
F00	11+00N	652863	5424004	353	-6	-4	-8	-4
F00	11+20N	652854	5424020	352	-6	-4	-8	-4
F00	11+40N	652844	5424038	352	0	-4	-2	-4
F00	11+60N	652833	5424054	354	2	-4	0	-4
F00	11+80N	652818	5424068	352	4	-4	2	-2
F00	12+00N	652808	5424082	352	2	-4	2	-2
F00	12+20N	652798	5424103	352	2	-2	2	0
F00	12+40N	652786	5424119	352	4	0	4	2
F00	12+60N	652773	5424135	352	4	0	4	2
F00	12+80N	652757	5424150	352	4	0	4	2
F00	13+00N	652748	5424168	352	4	0	2	0
F2E	3+00N	653423	5423402	354	2	2	4	2
F2E	3+20N	653413	5423420	354	2	2	2	2
F2E	3+40N	653405	5423436	354	4	2	2	4
F2E	3+60N	653396	5423454	353	4	2	2	4
F2E	3+80N	653388	5423473	353	4	2	2	4
F2E	4+00N	653378	5423494	354	4	2	2	2
F2E	4+20N	653369	5423513	353	4	2	2	2

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F2E	4+40N	653359	5423530	354	4	0	2	-2
F2E	4+60N	653349	5423546	354	4	0	2	0
F2E	4+80N	653337	5423563	354	4	2	2	0
F2E	5+00N	653329	5423579	353	6	2	4	2
F2E	5+20N	653319	5423601	354	6	2	4	4
F2E	5+40N	653313	5423615	354	6	6	8	6
F2E	5+60N	653297	5423633	354	8	6	6	6
F2E	5+80N	653288	5423654	354	4	10	6	10
F2E	6+00N	653283	5423670	353	4	28	6	16
F2E	6+20N	653271	5423686	354	4	24	4	16
F2E	6+40N	653257	5423702	354	2	20	0	16
F2E	6+60N	653246	5423719	353	-10	18	-12	18
F2E	6+80N	653233	5423737	355	-20	18	-22	20
F2E	7+00N	653228	5423753	356	-26	18	-26	16
F2E	7+20N	653217	5423770	357	-30	16	-32	14
F2E	7+40N	653207	5423789	358	-46	6	-48	8
F2E	7+60N	653194	5423811	360	-60	-6	-58	-4
F2E	7+80N	653186	5423824	364	-42	-16	-34	-14
F2E	8+00N	653179	5423840	369	-24	-12	-22	-14
F2E	8+20N	653170	5423859	376	-16	-10	-18	-12
F2E	8+40N	653162	5423881	379	-6	-10	-8	-8
F2E	8+60N	653156	5423902	376	8	-8	2	-8
F2E	8+80N	653146	5423917	367	12	-8	10	-8
F2E	9+00N	653138	5423934	359	20	-8	22	-8
F2E	9+20N	653130	5423950	357	36	-8	34	-10
F2E	9+40N	653118	5423966	358	20	-8	22	-10
F2E	9+60N	653104	5423985	357	18	-10	14	-10
F2E	9+80N	653092	5424003	358	16	-10	14	-10
F2E	10+00N	653081	5424020	356	16	-12	14	-12
F2E	10+20N	653071	5424035	358	16	-14	14	-14
F2E	10+40N	653061	5424050	356	10	-12	10	-10
F2E	10+60N	653054	5424066	356	8	-10	6	-8
F2E	10+80N	653044	5424081	356	2	-8	2	-6
F2E	11+00N	653035	5424094	358	-6	-4	-6	-6
F2E	11+20N	653025	5424108	358	-4	-4	-4	-2
F2E	11+40N	653015	5424122	358	-4	-4	-4	-2
F2E	11+60N	653008	5424137	359	-4	-2	-2	-2
F2E	11+80N	652998	5424156	358	-4	-2	0	-2
F2E	12+00N	652990	5424177	359	0	-2	4	-2
F2E	12+20N	652978	5424196	359	2	0	3	0
F2E	12+40N	652968	5424214	359	2	2	2	2
F2E	12+60N	652959	5424228	359	2	4	2	4
F2E	12+80N	652948	5424243	362	4	2	2	2
F2E	13+00N	652933	5424259	360	4	2	2	2
F2E	13+20N	652921	5424272	360	0	0	-2	0

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F2E	13+40N	652914	5424285	359	-4	-2	-4	-2
F2E	13+60N	652909	5424297	358	-4	0	-2	0
F2E	13+80N	652897	5424311	358	4	2	2	4
F4E	2+40N	653630	5423462	359	-2	-2	-2	0
F4E	2+60N	653623	5423475	357	0	-2	2	-2
F4E	2+80N	653620	5423491	358	2	-2	2	-4
F4E	3+00N	653608	5423512	358	4	-2	2	-2
F4E	3+20N	653597	5423529	359	4	-2	4	-2
F4E	3+40N	653584	5423542	360	6	0	6	0
F4E	3+60N	653573	5423557	359	6	2	6	2
F4E	3+80N	653563	5423575	358	6	4	6	4
F4E	4+00N	653553	5423597	359	6	8	6	6
F4E	4+20N	653548	5423614	359	8	8	6	8
F4E	4+40N	653543	5423631	359	10	10	8	10
F4E	4+60N	653531	5423647	359	6	10	6	10
F4E	4+80N	653519	5423664	359	4	10	4	10
F4E	5+00N	653505	5423682	359	4	10	4	10
F4E	5+20N	653496	5423696	360	4	10	4	12
F4E	5+40N	653486	5423718	358	4	12	4	14
F4E	5+60N	653477	5423733	360	2	14	-2	16
F4E	5+80N	653463	5423749	360	-2	16	-4	18
F4E	6+00N	653454	5423770	360	-10	12	-8	16
F4E	6+20N	653445	5423786	361	-14	12	-18	14
F4E	6+40N	653434	5423800	361	-20	12	-22	12
F4E	6+60N	653426	5423820	359	-24	8	-26	10
F4E	6+80N	653415	5423838	359	-36	4	-34	8
F4E	7+00N	653406	5423858	362	-40	2	-42	6
F4E	7+20N	653397	5423872	364	-44	-24	-48	-16
F4E	7+40N	653387	5423889	366	-54	-30	-52	-18
F4E	7+60N	653377	5423905	372	-36	-24	-38	-16
F4E	7+80N	653368	5423923	380	-16	-20	-14	-16
F4E	8+00N	653362	5423938	382	2	-18	2	-18
F4E	8+20N	653356	5423962	372	14	-16	16	-20
F4E	8+40N	653341	5423983	377	26	-14	28	-20
F4E	8+60N	653329	5423997	371	28	-14	30	-18
F4E	8+80N	653316	5424013	367	36	-10	34	-14
F4E	9+00N	653306	5424032	364	50	-10	52	-12
F4E	9+20N	653299	5424048	362	40	-10	44	-14
F4E	9+40N	653289	5424064	360	34	-12	32	-14
F4E	9+60N	653278	5424079	360	22	-16	24	-18
F4E	9+80N	653268	5424096	360	20	-20	20	-22
F4E	10+00N	653263	5424109	361	16	-16	14	-14
F4E	10+20N	653251	5424128	361	8	-14	6	-14
F4E	10+40N	653239	5424147	362	0	-12	-2	-14
F4E	10+60N	653226	5424163	362	-2	-12	-2	-14

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F4E	10+80N	653217	5424180	362	-2	-12	-4	-14
F4E	11+00N	653209	5424196	362	-4	-12	-4	-14
F4E	11+20N	653199	5424214	363	-6	-10	-4	-8
F4E	11+40N	653189	5424231	361	-6	-6	-4	-4
F4E	11+60N	653178	5424252	362	-2	0	-2	0
F4E	11+80N	653167	5424268	363	2	2	0	2
F4E	12+00N	653156	5424285	362	4	0	2	2
F4E	12+20N	653145	5424303	363	4	0	4	0
F4E	12+40N	653135	5424318	361	6	-2	6	0
F4E	12+60N	653127	5424337	363	4	2	6	2
F4E	12+80N	653119	5424356	362	4	2	6	4
F4E	13+00N	653112	5424370	361	2	2	2	2
F4E	13+20N	653100	5424389	361	2	2	2	2
F4E	13+40N	653089	5424408	362	4	4	2	4
F4E	13+60N	653079	5424422	361	4	2	2	4
F4E	13+80N	653070	5424439	361	4	2	4	4
F4E	14+00N	653056	5424457	362	8	2	6	2
F6E	2+40N	653807	5423552	357	-2	2	0	0
F6E	2+60N	653798	5423568	356	-2	2	-2	0
F6E	2+80N	653787	5423587	357	-2	0	-2	2
F6E	3+00N	653780	5423607	358	2	0	-2	2
F6E	3+20N	653771	5423620	357	2	2	0	2
F6E	3+40N	653759	5423639	358	2	2	2	2
F6E	3+60N	653751	5423654	357	4	2	6	2
F6E	3+80N	653740	5423674	357	6	2	8	0
F6E	4+00N	653729	5423692	357	6	2	10	-2
F6E	4+20N	653720	5423707	357	6	0	8	-4
F6E	4+40N	653708	5423722	357	6	-2	6	-4
F6E	4+60N	653699	5423741	356	8	-2	10	-2
F6E	4+80N	653689	5423757	357	10	-2	12	0
F6E	5+00N	653679	5423778	357	10	0	12	0
F6E	5+20N	653671	5423794	357	4	8	4	6
F6E	5+40N	653661	5423814	358	-6	10	-6	12
F6E	5+60N	653651	5423832	359	-16	16	-14	14
F6E	5+80N	653642	5423849	357	-20	12	-20	20
F6E	6+00N	653633	5423870	357	-10	12	-12	16
F6E	6+20N	653624	5423885	358	-16	6	-18	12
F6E	6+40N	653614	5423900	357	-24	4	-30	10
F6E	6+60N	653606	5423916	357	-20	0	-26	8
F6E	6+80N	653598	5423931	358	-16	-4	-24	8
F6E	7+00N	653593	5423945	359	-24	-18	-24	8
F6E	7+20N	653577	5423966	360	-30	-26	-34	-24
F6E	7+40N	653561	5423986	363	-2	-40	-20	-22
F6E	7+60N	653552	5424004	367	12	-38	6	-20
F6E	7+80N	653545	5424022	375	34	-36	32	-34

F6E	14+20N	653226	5424572	359	2	2	0	2
F6E	14+00N	653233	5424559	358	2	2	2	0
F6E	13+80N	653241	5424543	359	2	0	2	0
F6E	13+60N	653253	5424518	358	2	0	2	0
F6E	13+40N	653259	5424506	358	2	0	2	0
F6E	13+20N	653266	5424490	358	2	0	2	0
F6E	13+00N	653274	5424469	358	2	2	2	2
F6E	12+80N	653288	5424452	358	2	2	2	2
F6E	12+60N	653302	5424439	358	2	0	2	2
F6E	12+40N	653314	5424423	358	2	0	2	0
F6E	12+20N	653324	5424407	358	4	-2	2	2
F6E	12+00N	653334	5424387	359	2	0	2	2
F6E	11+80N	653345	5424370	359	0	0	0	4
F6E	11+60N	653358	5424355	360	-4	2	-4	4
F6E	11+40N	653370	5424341	359	-4	2	-2	4
F6E	11+20N	653380	5424320	359	-4	6	-2	4
F6E	11+00N	653391	5424303	360	-4	2	-2	0
F6E	10+80N	653400	5424284	359	-4	-4	-2	-4
F6E	10+60N	653406	5424264	360	-4	-8	-6	-8
F6E	10+40N	653411	5424246	360	-2	-10	-4	-12
F6E	10+20N	653417	5424230	360	4	-12	4	-16
F6E	10+00N	653425	5424209	360	7	-20	8	-16
F6E	9+80N	653440	5424194	361	10	-22	18	-22
F6E	9+60N	653455	5424177	361	30	-24	28	-32
F6E	9+40N	653462	5424159	360	34	-20	34	-22
F6E	9+20N	653475	5424139	360	56	-16	54	-20
F6E	9+00N	653484	5424128	360	60	-16	58	-16
F6E	8+80N	653489	5424107	365	52	-16	50	-16
F6E	8+60N	653500	5424090	374	46	-16	44	-16
F6E	8+40N	653513	5424074	379	36	-18	34	-16
F6E	8+20N	653519	5424056	380	36	-20	24	-18
F6E	8+00N	653528	5424042	380	34	-22	28	-20

