CICADA VENTURES LTD.

(Owner & Operator)

GEOPHYSICAL ASSESSMENT REPORT

(Event Number 5470123)
Centre of Work: 5698500N, 686150E

on a

3D IP Geophysical Survey

(Work done from September 13, 2013 to October 01, 2013)

on

Tenure 513829

of the

IRON MASK PROPERTY

Kamloops Mining Division
BCGS 0921.059/.069

Author & Consultant
Laurence Sookochoff, PEng
Sookochoff Consultants Inc.
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Appendix II SJ Geophysics Ltd. – All related maps for the Three Dimensional Induced Polarization Survey on the Cicada Project, Phase IV
SUMMARY

The Iron Mask Property, located within three kilometers south of Kamloops in the southern Interior of British Columbia, is within 11 kilometers southeast of the developed, soon to be producing, New Afton mine; a mineral resource developed below the former Afton Mine producer. The KGHM-Ajax proposed super-pit which would combine the formerly productive Ajax East and the Ajax West mines from which production was terminated in 1997 is within 200 metres of the Iron Mask Property.

Both the formerly designated Ajax and Afton copper-gold mineral deposits were hosted by the Iron Mask Batholith, an intrusive which is host to numerous mineral zones; some of which were developed to minor and others to major productive mineral deposits. The estimated mineral reserves on the New Afton mineral deposit hosted by shattered Cherry Creek unit rocks of the Iron Mask Batholith, are reported as 43.25 million measured tonnes grading 2.68 % copper and 22.4 million indicated tonnes grading 2.42 % Cu with gold, palladium and silver values. The mineral zone is reportedly a steeply dipping tabular body 365 metres long, averaging 76 metres wide and extending to at least 304 metres below the old Afton Mine pit bottom.

The Ajax West mineral zone is hosted by a linear body of Sugarloaf diorite, with a northwest trending axis and steep southerly dip, which has been emplaced along the contact between Nicola volcanics and Iron Mask Hybrid diorite. At the Ajax East mineral zone, located one kilometre east-northeast of the Ajax West zone, mineralization occurs along the northeast trending and west dipping contact zone between Iron Mask Hybrid unit diorite and the main lobe of the Sugarloaf dioritic unit.

The Cicada 513829 Claim Group is indicated (MapPlace) to be centrally underlain by various units of the north-northwest trending Late Triassic to Early Jurassic Iron Mask Batholith (LTrJI) which is bordered on the southwest and the northeast by basaltic volcanic rocks of the Upper Triassic Nicola Group (uTrNE). In the south the intrusive and the volcanics are capped by Miocene basaltic rocks (Mivb); a small capping alooccurs in the northwest.

The conformable contact between two units of the Iron Mask Batholith generally splits the Batholith in half with the Hybrid unit to the west and the Cherry Creek unit to the east. The Hybrid unit also appears in the north as a tear-drop shaped “inlier” to the Cherry Creek unit. The Sugarloaf unit covers the extreme southern portion of the Ajax associated Sugarloaf occurrence, and also a small portion is in the southeast corner adjacent to the Cherry Creek unit, the Hybrid unit to the west, and the sediments (uTrNsfl) of the Nicola Group to the east and the south.

The localized three dimensional IP survey covered the Iron Mask/Nicola Volcanic contact and the Fargo mineral showing. The objective of the IP Survey was to determine the IP response any potential mineralized zone associated with the Fargo mineral showing where a mineralized zone of the Cherry Creek Unit hosts mineralization in quartz veins and fracture zones and from where one carload of ore grading about 2% Cu & 2 g/t Au was reportedly shipped.

The IP Survey was a success in that results were interpreted to indicate a substantial sub-anomalous zone of indicated mineralization varying from 300 metres below surface to near surface in the east, and is open to depth, measuring 200 metres and open to the north and the south, and 800 metres from the Iron Mask/Nicola contact in the west and open to the east.

Finger-like anomalous zones extending to the surface as at the Fargo anomaly and the Creek anomaly are indicated as structures bearing mineral/alteration zones that were conduits for the mineral-bearing solutions from the Basal anomaly to reach the surface.
INTRODUCTION

In September and October 2013 an exploration program comprised of a Geophysical IP Survey was completed over a portion of the Cicada Ventures Ltd Iron Mask property of. The purpose of the exploration program was to determine the IP response of any potential mineralized zone associated with the Fargo mineral showing where mineralized zones of the Cherry Creek Unit of the Iron Mask Batholith is exposed and from where one carload ore grading about 2% Cu & 2 g/t Au was reportedly shipped.

Information for this report was obtained from sources as cited under Selected References, from intermittent exploration the writer has performed in the Iron Mask area since 1979. and from the results of the IP Survey reported on herein by SJ Geophysics Ltd. (Report included in the Appendices) of Delta BC Canada.

Figure 1. Location Map
(From MapPlace)

PROPERTY DESCRIPTION AND LOCATION

The Cicada 513829 Claim Group is comprised of ten contiguous claims covering an area of 4,062 hectares

The property is located within BGS 0921059 and 0921069 of the Kamloops Mining Division, three kilometres southwest of Kamloops in southwestern British Columbia, Canada. The Property is also within 11 kilometres of the formerly productive Afton Mine, and would be within 200 metres of the proposed Ajax super-pit.
Table I. Tenures of the Cicada 513829 Claim Group

<table>
<thead>
<tr>
<th>Tenure Number</th>
<th>Type</th>
<th>Claim Name</th>
<th>Good Until</th>
<th>Area (ha)</th>
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<tbody>
<tr>
<td>513823</td>
<td>Mineral</td>
<td>20141010</td>
<td>676.91</td>
<td></td>
</tr>
<tr>
<td>513829</td>
<td>Mineral</td>
<td>20141010</td>
<td>471.948</td>
<td></td>
</tr>
<tr>
<td>513830</td>
<td>Mineral</td>
<td>20141130</td>
<td>369.443</td>
<td></td>
</tr>
<tr>
<td>513891</td>
<td>Mineral</td>
<td>20141010</td>
<td>595.444</td>
<td></td>
</tr>
<tr>
<td>518204</td>
<td>Mineral</td>
<td>LINCOLN 1</td>
<td>20141010</td>
<td>205.215</td>
</tr>
<tr>
<td>521733</td>
<td>Mineral</td>
<td>LINCOLN 2</td>
<td>20141010</td>
<td>307.732</td>
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<tr>
<td>521761</td>
<td>Mineral</td>
<td>LINCOLN 3</td>
<td>20141010</td>
<td>287.123</td>
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<tr>
<td>521762</td>
<td>Mineral</td>
<td>LINCOLN 5</td>
<td>20141010</td>
<td>369.063</td>
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<tr>
<td>521765</td>
<td>Mineral</td>
<td>LINCOLN 6</td>
<td>20141010</td>
<td>327.968</td>
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<tr>
<td>836889</td>
<td>Mineral</td>
<td>LINK</td>
<td>20141010</td>
<td>451.6912</td>
</tr>
</tbody>
</table>

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access

Access from downtown Kamloops to the Cicada 513829 Claim Group is to Highway 1, thence westward for one kilometre to Highway 5A, thence southward for three kilometres to the northern boundary of the Tenure 521765, thence for another 10 kilometres along Highway 5 which sub parallels and provides access to the eastern border of the property.

Access to the central portions of the Property is from Knutsford, within six kilometres south of Kamloops via Highway 5A, thence southerly via the Long Lake road for three kilometres to the all-weather Goose Lake secondary road, thence westward through the central portion of the Property, thence southerly sub-parallelising the western boundary for 10 kilometres. The Edith Lake road, six kilometres south of Knutsford, provides access to the central portions of the Property.

Climate

The region is situated within the dry belt of British Columbia with rainfall between 25 cm and 30 cm per year. Temperatures during the summer months could reach a high of 35°C and average 25°C with the winter temperatures reaching a low of -10°C and averaging 8°C. On the property, snow cover on the ground could be from December to April and would not hamper a year-round exploration program.

Local Resources and Infrastructure

Kamloops, an historic mining centre, could be a source of experienced and reliable exploration and mining personnel and a supply for most mining related equipment. Kamloops is serviced daily by commercial airline and is a hub for road and rail transportation. Electrical power may be available from a high voltage transmission line that is within four kilometers north of the property. A natural gas pipeline parallels the transmission line. Vancouver, a port city on the southwest corner of, and the largest city in, the Province of British Columbia is four hours distant by road and less than one hour by air from Kamloops.
Accessibility, Climate, Local Resources, Infrastructure and Physiography (cont’d)

Physiography

The property is situated at the western edge of the Douglas Plateau, which is within the physiographic area designated as the Interior Plateau of British Columbia. Gentle to moderate slopes prevail with relief in the order of some 200 meters.

Figure 2. Claim Location
(Base Map: Google)
AREA HISTORY

The Kamloops area has been explored for mineral resources since the late 19th century originating with the discovery of gold in Tulameen, 100 km south of Kamloops.

Numerous pits, shafts, trenches and adits still mark the exploration northward from Tulameen, to and northward from Kamloops. The exploration resulted in the development and subsequent production from three major mineral deposits: the Similkameen Copper mine at Princeton; the Craigmont mine at Merritt; and the Afton mine at Kamloops; all of which have terminated production due to economic non-viability based on metal prices. With the recent increase in metal prices, the Similkameen, the Afton, and the Property adjacent Ajax mineral deposits have been re-explored resulting in the development of significant mineral resources. Production from all three is scheduled within the next two years.

Production was derived from two major producers in the immediate Kamloops area; the Afton and the Ajax. Mining at the Ajax East and the Ajax West deposits, commenced in 1989 and terminated in June 1997. In 2005 Abacus acquired the rights to the Ajax from Teck-Cominco and proceeded to develop a measured and indicated resource of 442 million tonnes grading 0.30% Cu and 0.19 grams Au per tonne.

The established resource is to be developed as one super pit which would include the former Ajax East and the Ajax West deposits. Production is scheduled for 2015 with a projected mine life of 23 years. The boundary of the super-pit is indicated to be within 200 metres of the Cicada property.

The project is referred to as KGHM-Abacus after KGHM and Abacus entered into a joint venture agreement whereby KGHM paid Abacus $37 m in cash for 51% of the project and was allowed to acquire a further 29% in the JV after completing a bankable feasibility study. The feasibility study has been completed and KGHM is now the operator of the project.

The New Afton deposit (formerly Afton), located 10 kilometres northwest of the Ajax, contained an original 30.84 million tonnes grading 1.0 per cent copper, 0.58 grams per tonne gold and 4.19 grams per tonne silver when mining commenced in 1977 and terminated in early 1989. DRC Resources Corp. (name changed to New Gold Inc. in 2005) acquired the property in 2000 and proceeded to develop a measured resource of 9,540,000 tonnes grading 1.289 per cent copper, 0.945 grams per tonne gold, 3.438 grams per tonne silver and 0.117 grams per tonne palladium, with an indicated resource of 59,160,000 tonnes grading 1.049 per cent copper, 0.829 grams per tonne gold, 2.487 grams per tonne silver and 0.119 grams per tonne palladium.

Total contained product in these categories is about 744,000 tonnes of copper (1.64 billion pounds) and 58 tonnes of gold (1.9 million ounces). An additional inferred resource is reported to be 7,450,000 tonnes grading 0.924 per cent copper, 0.784 grams per tonne gold, 2.341 grams per tonne silver, and 0.12 grams per tonne palladium. Production is reportedly scheduled for 2014.
**PROPERTY HISTORY**

Table II. Summary of Minfile reported historical exploration work performed on Minfile reported prospects and/or showings within the Iron Mask property.

**WINDSOR** showing (Alkalic porphyry Cu-Au)
Minfile 092INE009
UTM 5608625N, 685506E

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>Windsor: 91 m NW of shaft</td>
<td>Diamond-drill hole W2 (AX core).</td>
<td>Minor pyrite-magnetite mineralization. The hole passes from greenstones into strongly albitized and brecciated diorite or microdiorite of the Iron Mask batholith Cherry Creek unit</td>
<td>Island Copper Mines Ltd.</td>
</tr>
<tr>
<td></td>
<td>Windsor</td>
<td>Diamond-drill hole W1</td>
<td>Passes through picrite basalt into greenstones and back into picrite basalt.</td>
<td>Island Copper Mines Ltd.</td>
</tr>
<tr>
<td>1964</td>
<td>Several claim groups</td>
<td>IP survey (37.5 km)</td>
<td>AR 605 (Millar) The machine used could not detect large, very low-grade copper zones</td>
<td>Rolling Hills Copper Mines</td>
</tr>
<tr>
<td>1976</td>
<td>From Buda south and west covering the Windsor</td>
<td>Four percussion holes (365.7m); IP survey (24 km); soil geochem survey</td>
<td>AR 6,123 (Pasieka) Drilling located a narrow mineralized zone; copper anomaly at the Buda; copper anomaly from the Windsor north for 300 metres</td>
<td>L.M.C. Resources Ltd.</td>
</tr>
</tbody>
</table>

**FARGO** prospect (Alkalic porphyry Cu-Au)
Minfile 092INE051
UTM 5606964N, 687475E

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>Fargo Zone</td>
<td>Shipment of one carload ore grading about 2% Cu &amp; 2 g/t Au reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>MR claims (Buda SW &amp; SE to Fargo)</td>
<td>Geological mapping, magnetometer survey (38.6 km), 625 soil samples</td>
<td>AR 2,821 (Vollo) Favourable host rocks for mineralization; no mineral zones detected by soils</td>
<td>Royal Canadian Ventures Ltd.</td>
</tr>
<tr>
<td></td>
<td>Fargo Zone South. Adjacent &amp; south of Edith Lake; Ace &amp; MOT claims</td>
<td>Soil sampling (912 samples) &amp; magnetometer survey</td>
<td>AR 2,871 (Stadnyk) Magnetometer; inconclusive. Soil survey: copper anomalies in NE (not within the Cicada claims); group of two anomalies in NW</td>
<td>Erin Explorations Ltd (N.P.L.)</td>
</tr>
<tr>
<td>1972</td>
<td>Rose claims Fargo Zone</td>
<td>Soil survey, magnetometer survey, five percussion drill holes (184.4 m)</td>
<td>AR 4,111 (Tully) Weak geochem anomaly associated with a copper-magnetite zone; widespread but low tenor copper mineralization in drilling; strong NW mag anomaly</td>
<td>Plaza Resources Ltd.</td>
</tr>
</tbody>
</table>
Property History (cont’d)
Fargo prospect (cont’d)

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>Wildrose claim (400m east of the Fargo trench)</td>
<td>IP &amp; magnetometer survey, four percussion drill holes (245 m)</td>
<td><strong>AR 6,991</strong> <em>(Brauset)</em> Traces of chalcopyrite and fine-grained magnetite abundant, 0.5%-1% pyrite in Hybrid unit rocks (WR-78-6)</td>
<td>Cominco Ltd.</td>
</tr>
<tr>
<td>1989</td>
<td>Fargo Zone West</td>
<td>Percussion Drilling (41 percussion drill holes)</td>
<td><strong>AR 18,873</strong> <em>(Blanchflower)</em> 18 of 41 percussion holes located on the Cicada Property; best hole (PE 89-21) returned 251 feet of 0.108% Cu.</td>
<td>Cominco Ltd.</td>
</tr>
</tbody>
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**IM** *(L.1748)* showing (Alkaline porphyry Cu-Au)
Minfile 092INE112
UTM 5609884N, 687862E

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<th>Work Completed</th>
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<th>Company</th>
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<tr>
<td>1968-1969</td>
<td>IM claims</td>
<td>Magnetometer survey (4km), soil sampling (120) IP survey (22.5km)</td>
<td><strong>AR 1,748</strong> <em>(Vollo)</em> Broad copper anomaly coincident with high mag close to the contact; small anomalies are of unknown significance.</td>
<td>Royal Canadian Ventures Ltd.</td>
</tr>
<tr>
<td>1969</td>
<td>IM claims South</td>
<td>IP &amp; resistivity (Cicada ground N &amp; W of BYR)</td>
<td><strong>AR 2,144</strong> <em>(Mullan, Hallof)</em> Zone A IP anomaly on Cicada ground centred on Edith Lake road; in dioritic rocks; widespread disseminated pyrite with some malachite staining</td>
<td>Great Plains Development</td>
</tr>
<tr>
<td>1972-1973</td>
<td>IM claims</td>
<td>25 diamond drill holes, (1,618.4m), three rotary drill holes, (90.8m), 15 percussion drill holes (972.3m)</td>
<td><strong>AR 4,844</strong> <em>(Vollo)</em> DDH IM-33: 40 feet (130-170) of 0.22% Cu in monzonite w epidote, calcite veinlets, bleached, 0.5%-2% pyrite</td>
<td>Craigmont Mines Limited</td>
</tr>
<tr>
<td>1989</td>
<td>IM claims</td>
<td>IP, Resistivity, magnetometer, VLF-EM surveys on a 60.4 kilometre grid.</td>
<td><strong>AR 19,603</strong> Part 1 &amp; 2 <em>(Pease)</em> Three zones of anomalous chargeability effects were detected, two of which have corresponding soil geochemical anomalies.</td>
<td>Placer Dome</td>
</tr>
</tbody>
</table>

**CHANCE** showing (Alkaline porphyry Cu-Au; Polymetallic veins Ag-Pb-Zn+/Au)
Minfile 092INE101
UTM 5606729N, 686105E

<table>
<thead>
<tr>
<th>Year</th>
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<th>Results</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>Pre 1940</td>
<td>Chance mineral showing</td>
<td>Three shafts, several trenches and open-cuts.</td>
<td>One shaft 54.8m deep with levels at 30 &amp; 35 m</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>Chance</td>
<td>Geochemical Survey 661 samples for Cu; 279 samples for Ag;</td>
<td><strong>AR 3,762</strong> <em>(Mitchell)</em> High copper background; no outstanding anomalies, up to 168 ppm copper values from mineralization in trench</td>
<td>Lori Explorations</td>
</tr>
</tbody>
</table>
**Property History (cont’d)**

**Chance showing (cont’d)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>Chance &amp; Fargo</td>
<td>IP Survey (7.7 km); mag survey (7.7 km)</td>
<td><strong>AR 6,826</strong> (&lt;i&gt;Scott&lt;/i&gt;) Zone of moderately high chargeability (32mv) in Chance area</td>
<td>Cominco Ltd.</td>
</tr>
<tr>
<td>1980 (June)</td>
<td>Chance &amp; Humphrey Creek</td>
<td>VLF-EM Survey (27km); Soils (915)</td>
<td><strong>AR 8,043</strong> (&lt;i&gt;Mark&lt;/i&gt;) Copper anomalies on Humphrey Creek</td>
<td>Argenta Resources Ltd.</td>
</tr>
<tr>
<td>1980 (Sept)</td>
<td>Chance &amp; Humphrey Creek</td>
<td>IP Survey (3.5km)</td>
<td><strong>AR 9,198</strong> (&lt;i&gt;Mark&lt;/i&gt;) One significant anomaly on Humphrey Creek; No IP response on the Chance</td>
<td>Argenta Resources Ltd.</td>
</tr>
<tr>
<td>1981 (June)</td>
<td>Chance &amp; Humphrey Creek</td>
<td>Diamond Drilling 3 holes 381m; 2 on Humphrey Creek; 1 on Chance</td>
<td><strong>AR 10,037</strong> (&lt;i&gt;Sookochoff&lt;/i&gt;) 540 ppm copper</td>
<td>Argenta Resources Ltd.</td>
</tr>
<tr>
<td>1985</td>
<td>Edith (Chance)</td>
<td>Geological mapping</td>
<td><strong>AR 14,310</strong> (&lt;i&gt;Sookochoff&lt;/i&gt;) Potential volcanic sedimentary control</td>
<td>Argenta Resources Ltd.</td>
</tr>
<tr>
<td>1986</td>
<td>Edith (Chance)</td>
<td>SP &amp; resistivity (2.7 km)</td>
<td><strong>AR 14,985</strong> (&lt;i&gt;Bergey&lt;/i&gt;) No anomalies</td>
<td>Afton Operating</td>
</tr>
<tr>
<td>1986</td>
<td>Edith (Chance)</td>
<td>Geological &amp; Geochemical Surveys</td>
<td><strong>AR 15,446</strong> (&lt;i&gt;Bergey&lt;/i&gt;) Diorite stock near main shaft w weak epidote in volcanics. One of three shafts put down on veined and epidotized diorite. Trench exposes tuff w pyrite, pyrrhotite and chalcopyrite. 0.05% Cu in an argillite breccia zone</td>
<td>Afton Operating</td>
</tr>
<tr>
<td>1987-1988</td>
<td>Hump claim</td>
<td>Geological mapping &amp; a VLF-EM survey</td>
<td><strong>AR 17,799</strong> (&lt;i&gt;Murphy&lt;/i&gt;) No anomalies;</td>
<td>J.D. Murphy</td>
</tr>
</tbody>
</table>

**BUDA showing (Alkalic porphyry Cu-Au)**

Minfile 092INE116  
UTM 5609118N, 686315E

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>MR claims (Buda SW &amp; SE to Fargo)</td>
<td>Geological mapping, magnetometer survey (38.6 km), 625 soil samples</td>
<td><strong>AR 2,821</strong> (&lt;i&gt;Vollo&lt;/i&gt;) Favourable host rocks for mineralization; no mineral zones detected by soils</td>
<td>Royal Canadian Ventures Ltd.</td>
</tr>
<tr>
<td>1972</td>
<td>Jacko Lake to Buda</td>
<td>Geological &amp; Magnetic Survey</td>
<td><strong>AR 3,630</strong> (&lt;i&gt;Seraphim&lt;/i&gt;) Contact is in the Peterson Creek valley; mag lows produced by altered and mineralized Iron Mask; picrite produces local highs; picrite exists as lenses</td>
<td>Rolling Hills Copper Mines Ltd.</td>
</tr>
<tr>
<td>1972</td>
<td>Buda Shaft area</td>
<td>Geological Mapping</td>
<td><strong>AR 4,009</strong> (&lt;i&gt;Seraphim&lt;/i&gt;) Scattered copper mineralization in dioritic to pink feldspar altered dioritic at the Buda shaft</td>
<td>Rolling Hills Copper Mines Ltd.</td>
</tr>
<tr>
<td>1972</td>
<td>Dave &amp; RH Claims</td>
<td>IP &amp; Mag Survey</td>
<td><strong>AR 4,036</strong> (&lt;i&gt;Seraphim&lt;/i&gt;) N-S core of IP anomaly (5PFE) 200 feet west of Buda shaft; correlates with a mag high</td>
<td>Minex Development Ltd</td>
</tr>
<tr>
<td>1972-</td>
<td>Wade, Pam, Don, &amp; Map claims</td>
<td>Magnetometer survey</td>
<td><strong>AR 4,314</strong> (&lt;i&gt;Tully&lt;/i&gt;) Mag high in the Buda shaft area is due to picrite</td>
<td>Minex Development Ltd</td>
</tr>
</tbody>
</table>
## Table III. Work Completed by Cicada Ventures Ltd. on the Iron Mask Property

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Work Completed</th>
<th>Results</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Humphrey zone; SE to Fargo, NW to Buda</td>
<td>VLF-EM, Magnetometer &amp; IP Surveys; Geological Surveys; Diamond Drilling (2 holes on the Fargo Zone)</td>
<td>Geological: Spotty mineralization at Buda, Fargo, &amp; Humphrey in a Hybrid unit. VLF-EM: 3 anomalies; none correlative with known mineral zones. Magnetometer: Inconclusive. IP: 3 anomalies; one correlative with Humphrey zone. Diamond Drilling: One meter of 0.299% Cu in Cherry Creek; 4 metres of 0.141% Cu in Nicola volcanics</td>
<td>AR 27,096 (Sookochoff)</td>
</tr>
<tr>
<td>2002</td>
<td>Buda area north; Dal Claims</td>
<td>Structural Analysis</td>
<td>Two areas of structural intersections to explore for surficial indications of potentially economic sub-surface mineralization</td>
<td>AR 26,787 (Sookochoff)</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Fargo zone south</td>
<td>Diamond drilling; 3 holes, 1,344 feet</td>
<td>Best assay of 2.4 feet of 717 ppm Cu in altered volcanics</td>
<td>AR 28,876 (Sookochoff)</td>
</tr>
<tr>
<td>2006</td>
<td>Tenure 521733</td>
<td>Structural Analysis</td>
<td>Three areas of structural intersections to explore for surficial indications of potentially economic sub-surface mineralization</td>
<td>AR 28,857 (Sookochoff)</td>
</tr>
<tr>
<td>2008</td>
<td>Fargo zone to south</td>
<td>MMI soil survey</td>
<td>Indicated the Nicola/intrusive contact</td>
<td>AR 30,649 (Sookochoff)</td>
</tr>
<tr>
<td>2009</td>
<td>Tenure 513830</td>
<td>Structural Analysis</td>
<td>Primary structures trend northerly</td>
<td>AR 31,263 (Sookochoff)</td>
</tr>
<tr>
<td>2009</td>
<td>Tenures 521761 &amp; 521762</td>
<td>Structural Analysis</td>
<td>Two areas of structural intersections</td>
<td>Event 4376522 (Sookochoff) AR 31,309</td>
</tr>
<tr>
<td>2009</td>
<td>Tenure 513829</td>
<td>Structural Analysis</td>
<td>Three areas of structural intersections</td>
<td>Event 4376690 (Sookochoff) AR 31,326</td>
</tr>
<tr>
<td>2009</td>
<td>Tenure 513833</td>
<td>Structural Analysis</td>
<td>Primary northwesterly trending structures influenced by the Nicola/Iron Mask contact</td>
<td>Event 4376700 (Sookochoff) AR 31,361</td>
</tr>
<tr>
<td>2010</td>
<td>Tenures 513823 S of Peterson Creek</td>
<td>3D IP Survey (4 lines; 4.8 line kilometres); soil survey</td>
<td>Spotty chargeability highs near Peterson Creek. No soil anomalies</td>
<td>Event 4799907 (Sookochoff) (Campagne) AR 32,227</td>
</tr>
<tr>
<td>2011</td>
<td>Tenure 513823 (east of 2010 IP survey and straddling Peterson Creek)</td>
<td>3D IP Survey (5 lines; 6.3 line kilometres)</td>
<td>Two primary chargeability anomalies</td>
<td>Event 5121702 (Sookochoff) (Zayonce) AR 32,795</td>
</tr>
<tr>
<td>2012</td>
<td>Tenures 521761 &amp; 521762</td>
<td>3D IP Survey (5 lines; 5 line kilometres) soil survey</td>
<td>One strong chargeability anomaly correlating with a reported mineral zone of 410,973 tonnes of 0.35% Cu.</td>
<td>Event 5408738 (Sookochoff) (Enns)</td>
</tr>
</tbody>
</table>
REGIONAL GEOLOGY

The Afton geological district is located within the regional Quesnel Trough, a 30 to 60, km wide belt of Lower Mesozoic volcanic and related strata enclosed between older rocks and much invaded by batholiths and lesser intrusions (Campbell and Tipper, 1970). The southern part is the well-known Nicola belt, continuing nearly 200 km to its termination at the U.S. border and containing the important copper deposits of Highland Valley, Craigmont, Copper Mountain, Afton, Brenda, in addition to the historic Hedley gold camp. In the vicinity of Afton, the Iron Mask district is part of a major structure extending northwestward across the general northerly trend of the Nicola belt. This cross structure is less than 10 km wide and about 35 km long. To the northwest, later stratified rocks of an adjoining basin largely obscure the structure. To the southeast, it contains two related plutons formerly believed to be a single connected body named the Iron Mask batholith.

The plutons are emplaced in Upper Triassic strata of the Nicola Group that extend widely south and west of the district, but are restricted eastward by Paleozoic rocks of the Cache Creek Group and northward by Tertiary rocks. The Nicola strata include andesite and basaltic flows, breccias (some described as lahars or mudflow breccias: Northcote, 1974), tuffs, and lesser amounts of argillite and limestone. They strike northwestward and exhibit moderate dips except near inferred faults. Their degree of metamorphism is low, not exceeding the greenstone facies. The Iron Mask pluton comprises four major, successively emplaced units designated as the Iron Mask Hybrid, Pothook, Sugarloaf, and Cherry Creek units. In addition, a picrite basalt unit forms steep, lenticular bodies that are poorly exposed, commonly possess sheared, serpentinized margins, and are generally found within 300 m of most prospects in the district.

The Iron Mask Hybrid unit forms the spine of the Iron Mask pluton. It is mostly agmatic, consisting of rounded to angular fragments of various sizes, texture and composition in a dioritic matrix. The fragments include mainly coarse and fine-grained diorite and coarse-grained gabbro with lesser amounts of medium to coarse-grained hombblendite and scattered xenoliths of Nicola Group volcanic rocks. The Sugarloaf unit occurs mainly along the southwest side of the Iron Mask pluton and as small, enclosed bodies in the southern half of the pluton.

Rocks of this unit are mainly porphyritic with hornblende, minor clinopyroxene, and plagioclase in a grayish-green matrix. They are of fairly uniform diorite-andesite composition. The Sugarloaf rocks host several copper occurrences. The Ajax deposit is located within brecciated and albite-dominant Sugarloaf rocks.

The Cherry Creek unit consists of rocks with composition ranges from diorite, monzonite, and syenite to their porphyritic and fine-grained equivalents as well as local intrusive breccias. Copper and minor iron mineralization is prominent in the Cherry Creek unit, particularly in zones of intense brecciation associated with alkali metasomatism. The Afton mine lies at the eastern termination of a narrow, four kilometre long, easterly trending zone of intense intrusive brecciation that is located at the northern edge of the Iron Mask pluton.

Structurally, in the vicinity of Afton, the Iron Mask district is part of a major structure extending northwestward across the general northerly trend of the Nicola belt. This cross structure is less than 10 km wide and about 35 km long. To the northwest, later stratified rocks of an adjoining basin largely obscure the structure.
Regional Geology (cont’d)
To the southeast, it contains two related plutons formerly believed to be a single connected body named the Iron Mask batholith. The Afton deposit lies on the northwestern edge of the Iron Mask Batholith, an area that is known to be the locus of much faulting. The area of the deposit, and especially the western half, which terminates the ore body to the west, is strongly faulted. The Afton ore body lies apparently at the intersection of structures considered to reflect deep-seated faults that were active intermittently from the late Triassic (Carr, 1976).

PROPERTY GEOLOGY
On the Iron Mask property, deep-seated structures may be reflected by aeromagnetic magnetic low trends as they are at the Afton (MapPlace). The east-west trending magnetic low, correlating with Peterson Creek is indicated as a potential mineral controlling structure. The north-south Humphrey Creek depression that generally correlates with the Nicola-Iron Mask contact and at the boundary of a magnetic high indicates a significant intersecting structure.

The Iron Mask property covers a contact zone between the Iron Mask batholith and the Nicola volcanics and includes an aeromagnetic low area between increasing highs to the northwest and southeast (MapPlace). The property also incorporates nine Minfile reported mineral prospects and/or showings designated as the WINDSOR, the FARGO, the CHANCE, the IM, and the BUDA. The Fargo zone and the Humphrey Creek zone occur within the Hybrid unit east of the Iron Mask-Nicola contact and within the elevated portions of the aeromagnetic high. The Windsor zone is located within the Nicola Group volcanics south of the contact. The Buda zone is most significant as it occurs within the aeromagnetic low area, at the nose of an aeromagnetic high and along an indicated east-west structure; comparable surficial indicators to the Afton mineral deposit.

In a 2002 geological mapping program of the Iron Mask property Sookochoff (2003) reports that the Iron Mask intrusive in this area is indicated to be rimmed by the Hybrid unit of the Iron Mask batholith with the Sugarloaf unit to the interior. The Hybrid unit occurs in the Buda, Humphrey, and Fargo workings.

The following is a summary of Minfile reported geology of the nine Minfile prospects and/or showings within the Iron Mask property.

**WINDSOR (SUN)** showing (Alkalic porphyry Cu-Au)
Minfile 092INE009
Within Tenure 513823

The Windsor showing is underlain by intrusive rocks of the Late Triassic-Early Jurassic Iron Mask batholith and andesitic volcanics of the Upper Triassic Nicola Group. Old workings spaced along a line 79 metres long trending 280 degrees consist of an inclined shaft more than 6 metres deep and several trenches and shallow pits. Host rock is Nicola andesitic volcanics. The exposures in the workings indicate that a fault, striking 280 degrees and mineralized across a width of 0.9 metre, gives place westward to two or more fractures whose strike is 300 degrees. The fractures dip about 60 degrees to the north.
Figure 4. Property Geology

GEOLOGY MAP LEGEND

Eocene
EKaT
Kamloops Group:
undivided volcanic rocks

Miocene
Mivb
unnamed basaltic volcanic rocks

NICOLA GROUP Eastern Volcanic Facies
Upper Triassic
uTrNE
basaltic volcanic rocks
uTrNsF
mudstone, siltstone, shale,
fine clastic sedimentary rocks

uTrNMI
lower amphibolite/kyanite grade metamorphic rocks
uTrJum
unnamed ultramafic rocks

IRON MASK BATHOLITH
Late Triassic to Early Jurassic
LTrJH
Hybrid Unit
dioritic to gabbroic intrusive rocks
LTrJIC
Cherry Creek Unit:
dioritic to gabbroic intrusive rocks
LTrJIS
Sugarloaf Unit
dioritic to gabbroic intrusive rocks
Property Geology (cont’d)

KIMBERLY, developed prospect (Porphyry Cu-Au)
Minfile 092INE017
Within Tenure 521765

The Kimberly prospect occurs in porphyritic brecciated monzonite of the Cherry Creek unit of the Late Triassic-Early Jurassic Iron Mask batholith, near its northeastern contact with Upper Triassic Nicola Group volcanics. The exposed underlying rock is a fractured and brecciated monzonite, weakly to strongly altered by pink to red and less commonly white feldspathization, and mineralized with varying amounts of pyrite, chalcopyrite and magnetite. Most of the exposed fractures trend north to northwest and surface mineralization is widespread.

UTOPIA showing (Alkalic porphyry Cu-Au)
Minfile 092INE020
Within Tenure 513829

The Utopia showings consist of mineralized shears in diorite of the Late Triassic-Early Jurassic Iron Mask batholith. Shafts, open cuts, pits and an adit explore the shear zones which vary from 0.3 to 2.6 metres wide. The shears strike from 350 to 050 degrees and dip steeply southwest and northwest.

FARGO prospect (Alkalic porphyry Cu-Au)
Minfile 092INE051
Within Tenure 513829

The Fargo showing area is dominantly underlain by two intrusive units of the Late Triassic-Early Jurassic Iron Mask batholith. Gabbroic to dioritic agmatites of the Iron Mask Hybrid unit underlies most of the western part of the property, while most of the eastern part is underlain by dioritic to syenitic rocks of the Cherry Creek unit.

Magnetite is ubiquitous throughout these rocks, ranging from less than 3 per cent in the Cherry Creek unit to more than 10 per cent in the Iron Mask Hybrid unit. Weak to moderate propylitic alteration with attendant pyritization is quite pervasive throughout the Iron Mask Hybrid unit. In contrast, the Cherry Creek unit is pervasively saussuritized with local zones of propylitic, albitic and potassic alteration.

The original Fargo showings consist of quartz veins in diorite of the Cherry Creek unit of the Iron Mask batholith. The principal working is an inclined shaft stated to be 9.1 metres deep with a drift to the north at the bottom. The workings are inaccessible because of water in the shaft (ca. early 1940s). The vein strikes 350 degrees and dips 75 degrees to the west and ranges up to 1.5 metres in width at the collar, tapers to 0.3 metre, and then swells again to 1.5 metres. The best mineralized part is a band about 0.3 metre wide along the hanging wall which contains considerable chalcopyrite and just below, abundant azurite and malachite. The vein has been traced 6 metres south and 3 metres north of the shaft by stripping; both strippings are now sloughed. Another shaft has been sunk at a point 45 metres southwest of the other. It has been sunk 6 metres on a vertical vein that is 35 centimetres wide at the collar and appears to widen near the bottom of the shaft (Geological Survey of Canada Memoir 249).
Property Geology (cont’d)

KNUTSFORD showing (Bedded gypsum)
Minfile 092INE072
Within Tenure 521762

Deposits of gypsite occur on a small bench on the hill slope west of Knutsford in an area underlain by sandstone of the Eocene Kamloops Group. One of the deposits was worked by G.J. Rogers and S. Little of Knutsford who excavated a trench 26 metres long, 13.7 metre wide, and from 0.3 to 1.5 metres deep. About 24 metres west, another pit 1.2 metres deep has been excavated in the same material. The bench on which the deposit occurs is 30 to 46 metres wide and it is probable that the gypsite extends 182 metres southeast of the large cut. The gypsite is a greyish cream colour, due, apparently, to the presence of organic matter. It is contaminated with some sand and carries occasional small pebbles. A second deposit occurs northwest of Knutsford and is about 45 metres above the road on what is apparently a continuation of the same bench. The bench at this point is about 61 metres long and 15 metres wide. The gypsite also extends in a narrow band on a gentle slope below the bench trending towards the road (Geological Survey of Canada Memoir 249).

CHANCE showing (Alkali porphyry Cu-Au; Polymetallic veins Ag-Pb-Zn+/Au)
Minfile 092INE101
Within Tenure 513829

The Chance showings are shear zones in Upper Triassic Nicola Group augite porphyritic andesitic volcanic rocks intruded by diorite of the Late Triassic-Early Jurassic Iron Mask batholith. The shear zones are between 0.3 to 1.5 metres wide and host quartz veins and stringers that pinch and swell and are between 15 to 35 centimetres wide.

The veins are mineralized with pyrite, chalcopyrite and galena; low values in gold were reported, with occasional high assays. Most of the shear zones are hosted by porphyritic andesitic volcanic rocks but one occurs at the contact between argillite and andesite and contains local pyrite and chalcopyrite mineralization. This zone comprises thin bedded argillites intercalated with altered volcanics. The argillites are locally brecciated, fissile and healed with a quartz-calcite matrix.

IM showing (Alkalic porphyry Cu-Au)
Minfile 092INE112
Within Tenure 521761

The IM showing consists of a 1973 drillhole (IM-33) which intersected disseminated chalcopyrite and pyrite mineralization between 39.6 and 51.8 metres depth in fractured and brecciated fine-grained monzonite. The fractures are healed by chlorite, calcite and epidote. The intrusive rock is part of the Cherry Creek unit of the Late Triassic-Early Jurassic Iron Mask batholith. A sample across 12 metres yielded an average of 0.22 per cent copper (Assessment Report 4844).

BUDA showing (Alkalic porphyry Cu-Au)
Minfile 092INE116
Within Tenure 513823

The Buda property is underlain by diorite breccia of the Iron Mask Hybrid unit and diorite and monzonite of the Cherry Creek unit, both of the Late Triassic-Early Jurassic Iron Mask batholith.
**Property Geology (cont’d)**

**FORD** showing (Alkalic porphyry Cu-Au)
Minfile 092INE134
Within Tenure 521762

The Ford property is adjacent to the southwest boundary of the Kimberly property Crown grants (092INE017) and is underlain by intrusive rocks of the Late Triassic-Early Jurassic Iron Mask batholith. On the property, a central core of moderately coarse grained Iron Mask Hybrid unit gabbro is bordered by moderately fine grained syenite, monzonite and diorite of the Cherry Creek unit. Fracturing is common in all rocks. A ground magnetometer survey resulted in the discovery of one outcrop within the gabbro which contained major masses of fine-grained magnetite. The magnetic survey showed the likelihood that other such zones exist which have not yet been investigated.

**REGIONAL MINERALIZATION**

In both the Ajax West and the Ajax East zones, chalcopyrite is the predominant copper mineral. It occurs as blebs and disseminations, in fractures, veinlets, and micro-veinlets, and occasionally in breccias and vugs with accompanying calcite. Pyrite is ubiquitous; it occurs with chalcopyrite in similar proportions but also exists separately, notably peripheral to copper mineralization. Overall, pyrite content does not exceed 1 to 2 percent. Bornite and chalcocite are present in trace amounts only. Malachite and azurite are noted in outcrop areas with spotty distribution at depth. Molybdenite occurrences are widespread but values are generally low. Magnetite is present primarily as disseminations; large-scale magnetite veining is absent. The Nicola rocks are never mineralized to ore grade.

Only one phase of mineralization is present in the Ajax East zone but in the Ajax West zone several pulses are indicated by the spatial distribution of copper-gold ratios. Gold mineralization is closely associated with chalcopyrite mineralization. Copper mineralization at the Ajax East zone is localized about the contact but occurs predominantly in the footwall Sugarloaf rocks and is bounded by stronger pyrite mineralization to the east. Distribution of mineralization is similar to the Ajax West zone, being a combination of disseminations and fracture fillings. Indications are that north trending fracture and joint sets with steep westerly dips may be preferentially mineralized.

**PROPERTY MINERALIZATION**

The following is a summary of Minfile reported mineralization of the nine Minfile prospects and/or showings within the Iron Mask property.

**WINDSOR (SUN)** showing (Alkalic porphyry Cu-Au)
Minfile 092INE009
Within Tenure 513823

Mineralization consists of chalcopyrite and abundant coarsely crystalline pyrite in calcite and quartz gangue. The sulphides extend into the adjacent sheared greenstone. Samples of the best material on the dumps at the shaft and the large pit assayed 1.5 and 0.69 per cent copper respectively (Minister of Mines Annual Report 1956).
Property Mineralization (cont’d)

KIMBERLY, developed prospect (Porphyry Cu-Au)
Minfile 092INE017
Within Tenure 521765

Four apparently separate zones of copper mineralization are known to occur in a northwesterly trending area of more than 1219 by 243 metres. They are all found within or close to the monzonitic rocks, near their contacts with diorite. The mineralization occurs as fracture coatings and as disseminations. Malachite and azurite are common secondary copper minerals.

UTOPIA showing (Alkalic porphyry Cu-Au)
Minfile 092INE020
Within Tenure 513829

Mineralization consists of disseminations and veinlets of primarily pyrite with chalcopyrite, malachite and azurite. Quartz is sparse and magnetite is locally present. Some of the shears exhibit albite alteration. Assays reported from one of the zones yielded a high of 1.37 grams per tonne gold. It is also reported that some ore was shipped from a 6-metre adit and that the best gold assays obtained ran $21 per ton (ca. early 1940s, Geological Survey of Canada Memoir 249).

FARGO prospect (Alkalic porphyry Cu-Au)
Minfile 092INE051
Within Tenure 513829

Extensive percussion drilling by Cominco in 1989, about 600 metres east of the original Fargo showing, indicates that chalcopyrite mineralization appears to occur within an easterly trending, 304 metre wide brecciated zone that contains low grade intercepts that may be spatially related to relatively narrow, steeply dipping, northwesterly and northerly trending fault/shear structures. One hole, PE 89-21, intersected 15 metres grading 0.223 per cent copper. The highest gold value was from drillhole PE 89-32, 0.8 gram per tonne over 3 metres (Assessment Report 18873).

KNUTSFORD showing (Bedded gypsum)
Minfile 092INE072
Within Tenure 521762

A number of short auger holes indicated the gyspite to be 1.2 to 2.4 metres thick and in places probably thicker. A reported analysis of a sample yielded 0.6 per cent Fe2O3 and Al2O3, 31 per cent CaO, trace MgO, 42.1 per cent SO3, 4.5 per cent insoluble and 21.6 per cent loss on ignition (Geological Survey of Canada Memoir 249).

CHANCE showing (Alkalic porphyry Cu-Au; Polymetallic veins Ag-Pb-Zn+/Au)
Minfile 092INE101
Within Tenure 513829

In 1985, a selected grab sample from a trench analysed 1.64 per cent copper, 9.6 grams per tonne silver and 24.8 grams per tonne gold (Assessment Report 14310).
Property Mineralization (cont’d)

**IM** showing (Alkalic porphyry Cu-Au)
Minfile 092INE112
Within Tenure 521761

The IM showing consists of a 1973 drillhole (IM-33) which intersected disseminated chalcopyrite and pyrite mineralization between 39.6 and 51.8 metres depth in fractured and brecciated fine-grained monzonite. The fractures are healed by chlorite, calcite and epidote. The intrusive rock is part of the Cherry Creek unit of the Late Triassic-Early Jurassic Iron Mask batholith. A sample across 12 metres yielded an average of 0.22 per cent copper (Assessment Report 4844).

**BUDA** showing (Alkalic porphyry Cu-Au)
Minfile 092INE116
Within Tenure 513823

Weak disseminated and fracture-coating pyrite and chalcopyrite mineralization occurs in Cherry Creek unit diorite. The diorite contains strong north to northwesterly striking, steeply dipping fractures and exhibits K-feldspar alteration.

**FORD** showing (Alkalic porphyry Cu-Au)
Minfile 092INE134
Within Tenure 521762

The Ford property is adjacent to the southwest boundary of the Kimberly property Crown grants (092INE017) and is underlain by intrusive rocks of the Late Triassic-Early Jurassic Iron Mask batholith. On the property, a central core of moderately coarse grained Iron Mask Hybrid unit gabbro is bordered by moderately fine grained syenite, monzonite and diorite of the Cherry Creek unit. Fracturing is common in all rocks. A ground magnetometer survey resulted in the discovery of one outcrop within the gabbro which contained major masses of fine-grained magnetite. The magnetic survey showed the likelihood that other such zones exist which have not yet been investigated.

2013 Exploration Program

**IP Survey**

*a) Introduction*

An IP Survey was completed by SJ Geophysics Ltd. of Delta, BC on a localized area within Tenure 513829 of the Cicada Ventures Ltd. Iron Mask property. The purpose of the IP Survey was to determine the IP response any potential mineralized zone associated with the Ford mineral showing where a mineralized zone of the Cherry Creek Unit of the Iron Mask Batholith is exposed and from where one carload ore grading about 2% Cu & 2 g/t Au was reportedly shipped.

*b) Procedure*

A four line east-west grid was established to cover the Fargo mineral showing (Minfile 092INE051) on the eastern portion of the grid to the west near the Chance mineral showing (Minfile 092INE101). The lines were spaced at 65-70 metre intervals from (56)06800N to (56)07000N and were 1,850 metres long with the western limits to within 300 metres east of the Chance mineral showing.
**IP Survey (cont’d)**

**Procedure (cont’d)**

The logistics of the IP Survey are contained in a report by Casey Vandenburg attached hereto as Appendix I. The entire survey chargeability and resistivity plan maps and longitudinal sections are attached herein as Appendix II.

**Figure 5. Index Map showing the IP Grid**
*(Map from Vandenburg, 2013)*

![Index Map showing the IP Grid](image)

**c) Results**

**IP Chargeability**

From the four cross-sections across 200 metres, the results showed:

**Fargo Anomaly**

- A near surface localized anomaly of >25 ms correlates with the Fargo mineral showing;
- The dimensions of the anomaly are 200 metres long, open to the north and the south, by up to 200 metres below surface, and up to 125 metres wide;
- The anomaly is strongest at the north and the south sections and weakens rapidly to depth;
2013 IP Survey (cont’d)

East Anomaly
- This anomaly shows up on the cross sections as a small weak anomaly in the south; diverging from the Fargo anomaly and increasing to >25 ms at the north section where it is 250 metres east of the Fargo anomaly with dimensions of 100 metres deep from 25 metres below surface, and showing a width of 50 metres prior to the termination eastward by the survey limit;

Creek Anomaly
- This anomaly correlates with the north-northwesterly trending Iron Mask/Nicola Volcanic contact, is evident across all four cross-sections for 200 metres, and open to the south and the north;
- It is generally a narrow, 50 metre wide anomaly at the surface widening to 200 metres at 250 metres below surface where it coalesces with an extensive basal sub-anomaly;
- The Creek anomaly is weakest in the north, strengthening to pods of >25ms within the 200 metre wide sub-anomalous zone.

Basal Sub-Anomaly
- This sub-anomaly (14 to 22 ms) is mostly within the “Area of Low Model Confidence”;
- In the south, all three aforementioned anomalies blend into the extensive basal sub-anomaly at depth;
- Vertically, it ranges from 300 metres from the surface and open to depth at 500 metres;
- Its width ranges from 100 metres west of the Creek anomaly for 800 metres eastward to the survey limits;
- Longitudinally, it extends across the four cross-sections for 200 metres and is open to the north and the south;
- It appears to be strengthening to the south where it incorporates a localized 75x100 pod of 22-25 ms within the sub-anomalous zone;
- It is approximately 100 metres deeper in the south; possibly indicating either a contact zone between a barren unit (Hybrid?) and a sulphide bearing unit (Cherry Creek?) of the Iron Mask Batholith or a structural contact;
- Northward, the eastern portion of the anomaly trends towards the surface joining the East anomaly.

Resistivity
- The strongest correlation between a chargeability high and a resistivity low is within the eastern portion of the Basal Anomaly where moderate sub-anomalous chargeability values of 16 to 22ms correlate with a general resistivity low of 100 to 130 ohm-m;
- The highest correlation is at the south where the anomalous localized 75x100 pod of 22-25 ms occurs within the general sub-anomalous zone of between 14 to 22 ms in a generally low 100 to 130 ohm-m resistivity zone.
**INTERPRETATION**

The results of the 3D IP Survey over the Fargo mineral showing were encouraging in that:

- A substantial zone of mineralization is indicated at a depth of some 300 metres below surface and open at some 500 metres. The zone extends north-south for 200 metres to the limits of the survey, and some 800 metres wide, closed to the west into the volcanics at the Iron Mask/Nicola Volcanic contact, but open to the east into the intrusive;

- The surficial Fargo mineralized zone appears to be surficially localized and is possibly accompanied by siliceous alteration reflected by the high resistivity;

- The same holds true for the higher chargeability correlating with higher resistivity at the Creek Anomaly;
CONCLUSIONS

The Fargo mineral showing is a mineralized zone associated with a narrow zone of the Cherry Creek Unit within the Hybrid unit of the Iron Mask Batholith. It is indicated as “surface seepage” from Basal IP sub-anomalous zone; a potentially substantial mineral zone hosted by perhaps the Cherry Creek unit of the Iron Mask Batholith.

Faults or shear zones were a conduit for the mineral-bearing Cherry Creek unit to reach the surface. These mineral/ altered structures are indicated by the lenticular IP anomalies arising from the indicated mineral zone reflected by the Basal sub-anomaly.

RECOMMENDATIONS

A 500 metre NQ diamond drill hole is recommended to intersect the localized anomalous chargeability zone of 22-25 ms measuring 75x100 metres which occurs within the general sub-anomalous zone of between 14 to 22 ms chargeability in a generally low 100 to 130 ohm-m resistivity zone (Figure 7). The purpose of the drill hole is to test the surficial Fargo mineral zone and to determine the mineral significance of the Basal IP sub-anomalous zone.

The UTM coordinates (NAD 83) of the drill hole collar should be at 5,606,800N 687,550E.
Respectfully submitted,

Laurence Sookochoff, PEng
SELECTED REFERENCES


MapPlace: Internet downloads.


Minfile 092INEO12: Ajax (Afton), Ajax (L.4710), Ajax West, Afton (Ajax).


Selected References (cont’d)


Reed, A. Structural Geology of the Afton Copper-Gold Mine, Kamloops, B C, and Its Influence On Pitfall Slope Stability; for Afton Mines Ltd.


**Selected References (cont’d)**


STATEMENT OF COSTS

The fieldwork on the Cicada Ventures Ltd. Iron Mask Property was carried out between September 13, 2013 and October 1, 2013 to the value as follows:

IP Survey

SJ Geophysics Ltd. IP: Contract: as per Invoice) $15,000.00

Engineering, supervision, and reporting

Laurence Sookochoff, PEng.

2 days @ $1,000.00/day $2,000.00
Expenses: car rental, gas, lodging, meals 585.00
Reporting 3,500.00 6,085.00

$21,085.00
CERTIFICATE

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with an address of 120 125A-1030 Denman Street, Vancouver, BC V6G 2M6.

I, Laurence Sookochoff, further certify that:

- I am a graduate of the University of British Columbia (1966) and hold a BSc. degree in Geology;
- I have been practicing my profession for the past forty seven years;
- I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- The information for this report is based on the information as itemized in the Selected Reference section of this report and the management and supervision of the IP as reported on herein.

Laurence Sookochoff, PEng
Appendix I

SJ Geophysics Ltd.

Geophysical Report on a Three Dimensional
Induced Polarization Survey on the Cicada Project, Phase IV
LOGISTICS REPORT PREPARED
FOR
SOOKOCHOFF CONSULTANTS INC.

THREE DIMENSIONAL INDUCED POLARIZATION SURVEY
ON THE
CICADA PROJECT (PHASE IV)

KAMLOOPS, BC, CANADA
LATITUDE: N50° 37'  LONGITUDE: W120° 21'
BCGS SHEET: 921.069
NTS SHEET: 092I09
MINING DIVISION: Kamloops

SURVEY CONDUCTED BY SJ GEOPHYSICS LTD.
SEPTEMBER, 2013

REPORT PREPARED BY
CASEY VANDENBERG
OCTOBER, 2013
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1. Survey Summary

SJ Geophysics Ltd. was contracted by Sookochoff Consultants Inc. to acquire geophysical data on the Cicada property. The following table provides a brief summary of the project.

<table>
<thead>
<tr>
<th>Client</th>
<th>Sookochoff Consultants Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
<td>Cicada (Phase IV)</td>
</tr>
<tr>
<td>Location (approx. centre of grid)</td>
<td>Latitude: 50° 35'03&quot; N Longitude: 120° 21'30&quot; W 687000E 5606900N; UTM Datum NAD83 Zone 10</td>
</tr>
<tr>
<td>Survey Type</td>
<td>3D Induced Polarization (3DIP)</td>
</tr>
<tr>
<td>Total Line Kilometres</td>
<td>3DIP: 6.2 km</td>
</tr>
<tr>
<td>Production Dates</td>
<td>September 28 – September 29, 2013</td>
</tr>
<tr>
<td>Objective</td>
<td>The purpose of the 3DIP survey carried out by SJ Geophysics on the Cicada Phase IV grid was to determine the geophysical signature associated with the Fargo showing (Minfile No. 092INE051) located along the contact between the Iron Mask Batholith, a dioritic intrusive, and Upper Triassic volcanics associated with the Nicola Group. SJ Geophysics previously carried out 2D and 3DIP surveys (Phase I, Phase II and Phase III respectively) in the area located directly north of the Phase IV grid. The phase IV grid is also situated 4 km southeast of the Ajax mine.</td>
</tr>
</tbody>
</table>

Table 1: Survey Summary

This logistics report summarizes the operational aspects and methodologies of the geophysical survey. This report does not discuss or interpret the survey results.
2. **Location and Access**

The Cicada project is located in central British Columbia, Canada (Figure 1).

![Overview map of the Cicada project located in British Columbia, Canada.](image)

The closest town to the survey area is Kamloops, BC, whose city centre is approximately 10 km north of the Cicada project. The project area can be accessed from Kamloops via the following directions (Figure 2):
- Take highway 5A South from Kamloops
- Turn right onto Long Lake Road and follow for 3.6 km
- Turn right onto Edith Lake Road and follow for 3.5 km before arriving at the grid
- Edith Lake Rd bisects the grid

![Location map for the Cicada project showing towns and road access.](image)

The flora and fauna on the grid consists primarily of grasses along with a number of small rodents and birds. The grid also crossed active ranch land with many cattle present. Towards the western edge of the grid some wetlands and pine forests were also encountered.
3. **GRID INFORMATION**

The Cicada (Phase IV) grid is located 4 km southeast of the Ajax mine in the mineral claim directly south of the claim surveyed with the Phase I and Phase II grids from previous years. It consisted of four survey lines, spaced between 65-70 m apart with stations spaced every 100 m along the lines (Figure 3). No stations were flagged or marked prior to the survey.

<table>
<thead>
<tr>
<th>Grid</th>
<th>Cicada (Phase IV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Survey Lines</td>
<td>4</td>
</tr>
<tr>
<td>Survey Line Azimuth</td>
<td>90°</td>
</tr>
<tr>
<td>Line Spacing</td>
<td>65-70 m</td>
</tr>
<tr>
<td>Station Spacing</td>
<td>100 m</td>
</tr>
<tr>
<td>Elevation range</td>
<td>863 – 1003 m</td>
</tr>
</tbody>
</table>

*Table 2: Grid parameters*

Line and station labels for the grid were based on the UTM coordinates, with the line labels being represented by the last four digits in the UTM northing and the station labels represented by the last four digits in the UTM easting. Please refer to Appendix A for a detailed breakdown of the survey lines.

The SJ Geophysics crew used idealized coordinates uploaded to handheld GPS devices for navigation between stations and for collecting the survey location information. GPS control points were recorded with Garmin GPSMAP 62s handheld GPS receivers using the UTM Zone 10 north projection and the NAD83 datum.

The terrain was relatively flat with one prominent hill situated in the center of the grid. The east end of the grid was mostly open while the west end of the grid had some forested segments and wetlands. Precipitation fell intermittently throughout the survey providing for reasonably damp conditions.
4. Field Work and Instrumentation

4.1. Field Logistics

SJ Geophysics' field crew typically consists of at least two field geophysicists or technicians and at least three helpers to assist in the day-to-day operation of the survey. The field geophysicists and technicians oversee all operational aspects including field logistics, data acquisition and initial field data quality control. Table 3 lists the SJ Geophysics crew members on this project.

Figure 3: Grid Map showing the survey area for the Cicada (Phase IV) grid
Due to the short time frame made available to complete the survey, the SJ Geophysics' crew mobilized to Kamloops on September 27th and conducted the survey between September 28th-29th. Demobilization occurred late in the evening of September 29, 2013. The following table lists the crew members used during the survey.

<table>
<thead>
<tr>
<th>Crew Member Name</th>
<th>Role</th>
<th>Dates on Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shawn Rastad</td>
<td>Geophysicist</td>
<td>September 28 – September 29, 2013</td>
</tr>
<tr>
<td>Casey Vandenberg</td>
<td>Field Technician</td>
<td>September 28 – September 29, 2013</td>
</tr>
<tr>
<td>Jan Dobrescu</td>
<td>Geophysicist</td>
<td>September 28 – September 29, 2013</td>
</tr>
<tr>
<td>Alex Visser</td>
<td>Field Technician</td>
<td>September 28 – September 29, 2013</td>
</tr>
<tr>
<td>Gina Visser</td>
<td>Field Assistant</td>
<td>September 28 – September 29, 2013</td>
</tr>
</tbody>
</table>

*Table 3: Details of the SJ Geophysics crew on site*

During the course of the geophysical survey, the SJ Geophysics crew conducted a preliminary safety meeting as well as daily tailgate meetings. The safety meetings include a comprehensive review of safe work practices specific to our geophysical surveys and field operations. At the tailgate meetings, personnel discuss issues related to: changing weather conditions (including ramifications on the survey as well as personal safety), efficient organization of daily tasks, and any other work-related questions or concerns.
The SJ Geophysics crew arranged accommodations at the Alpine Motel in Kamloops, BC. Each room had a fridge and oven however the short timing of the survey did not allow for time to purchase groceries and prepare lunches in advance. Wireless Internet was provided at the hotel. Cellular service was good in town, but intermittent on the grid.

The SJ Geophysics crew arrived in Kamloops on the evening of September 27th. The following day, the crew headed directly to the grid where they briefly met with the client prior to setting up. Data acquisition started immediately after setup was completed on the 28th and was completed on the 29th prior to cleanup and demobilizing back to Vancouver.

Ground contact on the grid was generally good, although the current tended to drop on occasion as soil moisture levels dropped. The crew either added water to the injection sites or moved their electrodes to improve contact when necessary.

4.2. Survey Parameters and Instrumentation

The geophysical instrumentation used to acquire the 3DIP data consisted of a SJ-24 full waveform receiver and a GDD Tx II transmitter. The specifications of these instruments are listed in Appendix B and the equipment parameters are summarized in Table 4.
<table>
<thead>
<tr>
<th><strong>Array Type</strong></th>
<th>3DIP – Offset Pole-Dipole – Shoelace Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Dipoles</strong></td>
<td>32</td>
</tr>
<tr>
<td><strong>Dipole Length</strong></td>
<td>~120 m</td>
</tr>
<tr>
<td><strong>Array Length</strong></td>
<td>1600 m</td>
</tr>
<tr>
<td><strong>Current Interval</strong></td>
<td>100 m</td>
</tr>
<tr>
<td><strong>IP Transmitter</strong></td>
<td>GDD TxII (Serial #435, 435)</td>
</tr>
<tr>
<td><strong>Duty Cycle</strong></td>
<td>50%</td>
</tr>
<tr>
<td><strong>Waveform</strong></td>
<td>Square</td>
</tr>
<tr>
<td><strong>Cycle and Period</strong></td>
<td>2 sec on / 2 sec off; 8 second</td>
</tr>
<tr>
<td><strong>IP Receiver</strong></td>
<td>SJ-24 Full Waveform Digital Receiver</td>
</tr>
<tr>
<td><strong>Reading Length</strong></td>
<td>Minimum 60 seconds</td>
</tr>
<tr>
<td><strong>Vp Delay, Vp Integration</strong></td>
<td>1200 ms, 600 ms</td>
</tr>
<tr>
<td><strong>Mx Delay, # of Windows</strong></td>
<td>200 ms, 20</td>
</tr>
<tr>
<td><strong>Width (Mx Integration)</strong></td>
<td>36, 39, 42, 45, 48, 52, 56, 60, 65, 70, 75, 81, 87, 94, 101, 109,118, 128, 140, 154 (200 ms – 1800 ms)</td>
</tr>
<tr>
<td><strong>Properties Calculated</strong></td>
<td>Vp, Mx, Sp, Apparent Res</td>
</tr>
<tr>
<td><strong>GPS</strong></td>
<td>Garmin GPSMAP 62s</td>
</tr>
<tr>
<td><strong>Average Accuracy</strong></td>
<td>5 m</td>
</tr>
<tr>
<td><strong>Projection / Datum</strong></td>
<td>NAD83 Zone 10</td>
</tr>
</tbody>
</table>

*Table 4: Instrument parameters*

Due to the tight line spacing requested by the client and the short survey window afforded to the crew, it was decided to have two current lines bounding the grid, one to the north and one to the south. Two parallel receiver lines were then established in the middle of the grid. The receiver lines were offset 70 m from each other and 65 m from the nearest current line. An extension
cable was then used to allow for a single receiver operator to acquire data from both receiver lines at the same central recording station. As no current line was established between the two receiver lines, it was decided to form dipoles between the two receiver lines to improve the between line information. The chosen array design for this scenario involved using one electrode from receiver line 1 with a second electrode, offset 100 m in the along line direction from receiver line 2 and vice versa, forming a shoelace pattern (Figure 4).

For the potential lines, the electrodes consisted of stainless steel pins, 50 cm long and 10 mm in diameter, which were hammered into the ground. At each current station (100 m intervals), current was injected using two long (1 m) stainless steel electrodes hammered into the ground. The remote current locations consisted of four 1 m stainless steel rods, 15 mm in diameter. At both current and remote sites the ground was soaked with water to improve contact. One remote was used for the duration of the survey. Table 5 shows the UTM location of the remote site.

![Figure 4: Shoelace patterned array design used to collect the IP data](image.png)

<table>
<thead>
<tr>
<th>Name</th>
<th>Label</th>
<th>UTM Easting / NAD83</th>
<th>UTM Northing / NAD83</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Remote</td>
<td>6801N 8350E</td>
<td>688346</td>
<td>5606772</td>
</tr>
</tbody>
</table>

Table 5: Locations of 3DIP remote sites
5. **Geophysical Techniques**

5.1 IP Method

The time domain IP technique energizes the ground by injecting square wave current pulses via a pair of current electrodes. During current injection, the primary voltage and input current are used along with the known positions of the electrodes to calculate the apparent (bulk) resistivity of the ground. Immediately after the current injection stops, a time decaying voltage is measured at the receiver electrodes. This IP effect measures the amount of polarizable (or “chargeable”) particles in the subsurface rock.

Under ideal circumstances, high chargeability corresponds to disseminated metallic sulfides. Unfortunately, IP responses are rarely uniquely interpretable as other rock materials are also chargeable, such as some graphitic rocks, clays and some metamorphic rocks (e.g., serpentinite). Therefore, it is prudent from a geological perspective to incorporate other data sets to assist in interpretation.

IP and resistivity measurements are generally considered repeatable to within about five percent. However, changing field conditions, such as variable water content or electrode contact, reduce the overall repeatability. These measurements are influenced to a large degree by the rock materials near the surface or, more precisely, near the measurement electrodes. In the past, interpretation of a traditional IP pseudosection was often uncertain because strong responses located near the surface could mask a weaker one at depth. Geophysical inversion techniques help to overcome this uncertainty.

5.2 3DIP Method

Three dimensional IP surveys have been designed to take advantage of recent advances in 3D inversion techniques. Unlike conventional 2DIP, the electrode arrays are not restricted to an in-line geometry. In the standard 3DIP configuration, a receiver array is established along one survey line while current lines are located on two adjacent lines lying on either side of the receiver line. Current injections are performed sequentially at fixed increments (25, 50, 100 or 200 m) along the current lines. Meanwhile, geophysical data are collected along a receiver array.
which consists of 12 to 16 dipoles laid out along the receiver line. Spacing between current and receiver lines is often the same; however, line spacing is sometimes modified to compensate for local conditions, such as inaccessible sites and water bodies, or the overall conductivity of the ground. Whenever possible, two receivers can be used to speed up production and increase depth penetration. In most cases, one receiver records a full 16 dipole set while a second receiver records additional dipoles. By injecting current at multiple locations along current lines adjacent to receiver arrays, data acquisition rates are significantly improved over conventional surveys.

6. **Quality Assurance**

6.1. **Locations**

Good quality survey location data is crucial to successful analysis and interpretation of the collected geophysical data.

The quality of the location data for this survey is generally high thanks to good satellite reception and open terrain. GPS measurements (control points) were obtained for each survey station and no interpolation was necessary.

6.2. **IP Data**

The IP geophysical data go through a series of quality assurance processes. Prior to acquisition, it is SJ Geophysics' best practice to acquire a noise reading to determine the background noise levels and to detect possible bad channels (i.e. poor ground contacts). This allows the operator to troubleshoot problem areas in the array prior to acquisition, then once the operator is satisfied surveying can begin. Immediately after each full waveform reading is completed the data are analyzed in the field to provide the operator a set of electric potential and chargeability values (Vp, Sp, Mx) as well as a chart of the chargeability decay curves for each dipole in the array. This gives the operator valuable information to verify the quality of data in real time. Also available to the operator are visualization tools for full waveform signals and a spectral analysis program to assist in troubleshooting possible bad stations and unwanted noise.
Each evening, the analyzed data are imported into JavIP: a proprietary IP database management system developed by S.J.V. Consultants Ltd. (SJV). This package integrates the locational information with each reading, thus allowing the calculation of the apparent resistivity and apparent chargeability. The package's interactive quality control tools include: plots of decay curves, tables of calculated parameters and a dot plot (a graphical display of data of the various parameters). These enable the field geophysicist to validate each data point. After the field geophysicist removes known bad points from field observations and other obvious outliers, the database is delivered to SJV for a more stringent second review. In this second review, the data are scrutinized to ensure erroneous data points are not passed along to the final stage of processing: the inversion.

The data collected on the Cicada project were of fair quality. The voltage potentials (Vp) were reasonable for the most part and resulting decay curves were mostly clean, although there was some low frequency noise in some readings. Some poor quality data points were flagged for removal due to lower quality signals and extra noise. However, most of the data flagged for removal was due to non-coupling. This phenomena is typical in IP surveys and is related to the survey configuration. Non-coupling occurs when the receiver dipole is sub-parallel to the equipotential lines which can result in a significant decrease in signal strength and lead to untrustworthy data. Figure 4 shows a typical reading from the grid.

![Decay Curves](image)

*Figure 5: Decay curves from injection line 6800N station 7400E.*
7. **Geophysical Inversion**

The purpose of geophysical inversion is to estimate the distribution of the physical properties of the rocks in the subsurface based on the geophysical data collected at the surface. Examples of physical properties include: density, resistivity, chargeability, and magnetic susceptibility. Geophysical measurements made at the surface are strongly influenced by the physical properties of rocks in the subsurface. Therefore, we can use mathematical algorithms to convert these surface measurements into a 3D picture of the subsurface. This process is called geophysical inversion. Unfortunately, the inversion process cannot provide a single unique solution. Indeed, there are many different possible subsurface 3D physical property models that could fit our surface geophysical measurements. Despite this limitation, inversion is a very powerful tool to help identify the main subsurface features which are required by the surface geophysical data. With the combination of high quality surface measurements and geophysical inversion, a much greater understanding of the subsurface can be obtained. Several geophysical inversion programs are available, but SJ Geophysics primarily uses the UBC-GIF algorithms (e.g. DCIP2D, DCIP3D, MAG3D, GRAV3D) which were developed by a consortium of major mining companies under the auspices of the UBC-Geophysical Inversion Facility.

It is SJ Geophysics standard practice to invert data from 3DIP surveys, and to do this we use the DCIP3D program which solves two inverse problems. First, the DC potentials are inverted to calculate the spatial distribution of electrical resistivity in the subsurface. Second, the chargeability data (IP) are inverted to recover the spatial distribution of IP polarizable particles in subsurface rocks. When available, additional information, such as geological boundaries and down-hole geophysical data, can be added to the inversion in order to constrain the inversion model. The inversion programs are generally applied iteratively to evaluate the output with regard to what is geologically known, estimate the depth of detection, and determine the viability of specific measurements.
The inversion result is then run through a series of quality control steps prior to final gridding and mapping. Inversion output is plotted to show the distribution of physical properties (e.g. resistivity, chargeability, etc.) in cross-sections (Appendix C) as well as plan maps (Appendix D & E) that are sliced at different depths beneath the surface. Inversion results are also visualized in 3D using the open source software packages Mayavi and Paraview. Using both 2D and 3D views, additional data (such as topography, geochemistry, and drillholes) can then be overlain to aid in interpretation and facilitate discussion of potential drilling targets.

Respectfully submitted,

per SJ Geophysics Ltd.

Casey Vandenberg
**APPENDIX A: SURVEY DETAILS**

*Cicada (Phase IV) Grid*

<table>
<thead>
<tr>
<th>Line</th>
<th>Series</th>
<th>Type</th>
<th>Start Station</th>
<th>End Station</th>
<th>Survey Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6800</td>
<td>N</td>
<td>Tx</td>
<td>6300</td>
<td>7800</td>
<td>1500</td>
</tr>
<tr>
<td>6865</td>
<td>N</td>
<td>Rc</td>
<td>6250</td>
<td>7850</td>
<td>1600</td>
</tr>
<tr>
<td>6935</td>
<td>N</td>
<td>Rc</td>
<td>6250</td>
<td>7850</td>
<td>1600</td>
</tr>
<tr>
<td>7000</td>
<td>N</td>
<td>Tx</td>
<td>6300</td>
<td>7800</td>
<td>1500</td>
</tr>
</tbody>
</table>

Total Linear Metres = 6200

*Rc = Receiver Line, Tx = Transmitter Line*
**APPENDIX B: INSTRUMENT SPECIFICATIONS**

**SJ-24 Full Waveform Digital IP Receiver**

**Technical:**
- **Input impedance:** 10 Ω
- **Input overvoltage protection:** up to 1000 V
- **External memory:** Unlimited readings
- **Number of dipoles:** 4 to 16 +, expandable
- **Synchronization:** Software signal post-processing user selectable
- **Common mode rejection:** More than 100 dB (for Rs=0)
- **Self potential (Sp):** Range: -10 V to +10 V
  - **Resolution:** 0.1 mV
  - Proprietary intelligent stacking process rejecting strong non-linear SP drifts
- **Primary voltage:** Range: 1µV – 10 V (24bit)
  - **Resolution:** 1 µV
  - **Accuracy:** typ. <1.0%
- **Chargeability:** Resolution: 1 µV/V
  - **Accuracy:** typ. <1.0%

**General (4 dipole unit):**
- **Dimensions:** 18 x 16 x 9 cm
- **Weight:** 1.1 kg
- **Battery:** 12 V external
- **Operating temperature range:** -40 °C to 50 °C

**GDD Tx II IP Transmitter**

- **Input voltage:** 120V / 60 Hz or 240V / 50Hz (optional)
- **Output power:** 3.6 kW maximum
- **Output voltage:** 150 to 2200 V
- **Output current:** 5 mA to 10 A
- **Time domain:** 1, 2, 4, 8 second on/off cycle
- **Operating temp. range:** -40 °C to +50 °C
- **Display:** Digital LCD read to 0.001 A
- **Dimensions:** 34 x 21 x 39 cm
- **Weight:** 20 kg
Appendix C: Interpreted Resistivity and Chargeability Cross-Sections

Cross-Sections showing vertical cross-sections through the Resistivity and Chargeability Inversion Models along 4 lines (6800N, 6865N, 6935N and 7000N) are provided at a 1:5000 scale. These maps are provided in digital PDF format as file 3DSections_CicadaIV.pdf

Appendix D: Interpreted Resistivity Plan Maps

Plan maps showing the spacial distribution of the interpreted resistivity parameter at depths below topography of 25m, 50m, 75m, 100m, 150m, 200m, 250m, 300m, and 400m are provided at a 1:5000 scale. These maps are provided in digital PDF format as file Planmap_CicadaIV_CHG.pdf

<table>
<thead>
<tr>
<th>Plate Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-1</td>
<td>Interpreted Resistivity Inversion Model – Depth 25m Below Topography</td>
</tr>
<tr>
<td>R-2</td>
<td>Interpreted Resistivity Inversion Model – Depth 50m Below Topography</td>
</tr>
<tr>
<td>R-3</td>
<td>Interpreted Resistivity Inversion Model – Depth 75m Below Topography</td>
</tr>
<tr>
<td>R-4</td>
<td>Interpreted Resistivity Inversion Model – Depth 100m Below Topography</td>
</tr>
<tr>
<td>R-5</td>
<td>Interpreted Resistivity Inversion Model – Depth 150m Below Topography</td>
</tr>
<tr>
<td>R-6</td>
<td>Interpreted Resistivity Inversion Model – Depth 200m Below Topography</td>
</tr>
<tr>
<td>R-7</td>
<td>Interpreted Resistivity Inversion Model – Depth 250m Below Topography</td>
</tr>
<tr>
<td>R-8</td>
<td>Interpreted Resistivity Inversion Model – Depth 300m Below Topography</td>
</tr>
<tr>
<td>R-9</td>
<td>Interpreted Resistivity Inversion Model – Depth 400m Below Topography</td>
</tr>
</tbody>
</table>
**APPENDIX E: INTERPRETED CHARGEABILITY PLAN MAPS**

Plan maps showing the spacial distribution of the interpreted chargeability parameter at depths below topography of 25m, 50m, 75m, 100m, 150m, 200m, 250m, 300m, and 400m are provided at a 1:5000 scale. These maps are provided in digital PDF format as file Planmap_CicadaIV_CHG.pdf

<table>
<thead>
<tr>
<th>Plate Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1</td>
<td>Interpreted Chargeability Inversion Model – Depth 25m Below Topography</td>
</tr>
<tr>
<td>C-2</td>
<td>Interpreted Chargeability Inversion Model – Depth 50m Below Topography</td>
</tr>
<tr>
<td>C-3</td>
<td>Interpreted Chargeability Inversion Model – Depth 75m Below Topography</td>
</tr>
<tr>
<td>C-4</td>
<td>Interpreted Chargeability Inversion Model – Depth 100m Below Topography</td>
</tr>
<tr>
<td>C-5</td>
<td>Interpreted Chargeability Inversion Model – Depth 150m Below Topography</td>
</tr>
<tr>
<td>C-6</td>
<td>Interpreted Chargeability Inversion Model – Depth 200m Below Topography</td>
</tr>
<tr>
<td>C-7</td>
<td>Interpreted Chargeability Inversion Model – Depth 250m Below Topography</td>
</tr>
<tr>
<td>C-8</td>
<td>Interpreted Chargeability Inversion Model – Depth 300m Below Topography</td>
</tr>
<tr>
<td>C-9</td>
<td>Interpreted Chargeability Inversion Model – Depth 400m Below Topography</td>
</tr>
</tbody>
</table>
Appendix II

SJ Geophysics Ltd.

All related maps for the Three Dimensional Induced Polarization Survey on the Cicada Project, Phase IV
Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: Volterra-3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole-Dipole Offset 3DIP
Mapping Information:
Index Map Datum: NAD83
Index Map Projection: UTM Zone 10
Section Map Projection: Local Coordinate System
Chargeability Inversion Model: ipinv3d.chg
Resistivity Inversion Model: dcinv3d.con
Mapping Date: 18-Oct-2013
Colour Classification:
Resistivity: Modified Logarithmic
Chargeability: Modified Linear

Sookochoff Consultants Inc.
Cicada
Phase IV
Kamloops, B.C., Canada

3DIP Survey
3D Inversion Models
of
Interpreted
Resistivity & Chargeability
Cross Section: 6865N
Sookochoff Consultants Inc. Cicada
Phase IV
Kamloops, B.C., Canada

3DIP Survey
3D Inversion Models of Interpreted Resistivity & Chargeability
Cross Section: 6935N
Interpreted Resistivity (ohm-m) 7000N

Interpreted Chargeability (ms) 7000N
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 25m Below Topography

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Phase IV

Kamloops, B.C., Canada
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 50m Below Topography

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Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D

Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole-Dipole Offset 3DIP

Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18-Oct-2013

Mapping By: SJ Geophysics Ltd.  11966-95A Avenue, Delta, British Columbia, Canada V4C 3W2  (604) 582-1100  www.sjgeophysics.com
Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC−GIF DCIP3D
Instrumentation:
Receiver: SJ−24 Full−Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole−Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18−Oct−2013

Planmap
Interpreted Chargeability Inversion Model (ms)
Depth: 75m Below Topography

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Cicada Project
Phase IV
Kamloops, B.C., Canada
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 100m Below Topography

Sookochoff Consultants Inc.
Cicada Project
Phase IV
Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole-Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18–Oct–2013
Sookochoff Consultants Inc.
Cicada Project
Phase IV
Kamloops, B.C., Canada

Planmap
Interpreted Chargeability Inversion Model (ms)
Depth: 150m Below Topography

Survey by: SJ Geophysics Ltd.
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Survey Type: 3DIP
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole-Dipole Offset 3DIP

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole-Dipole Offset 3DIP

Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18-Oct-2013

Mapping By: SJ Geophysics Ltd.
11966-95A Avenue, Delta, British Columbia, Canada V4C 3W2
(604) 582-1100
www.sjgeophysics.com
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 200m Below Topography

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Phase IV
Kamloops, B.C., Canada
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 250m Below Topography

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Interpreted Chargeability Inversion Model (ms)

Depth: 300m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Receiver: SJ-24 Full-Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole–Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18-Oct-2013

Mapping By: SJ Geophysics Ltd. 11966-95A Avenue, Delta, British Columbia, Canada V4C 3W2 (604) 582-1100 www.sjgeophysics.com

LEGEND
- Survey Stations
- Remote Stations
- Mineral Showings
- Roads
- Streams
- Elevation Contours (10m)
- Claim Boundary
- Lakes
- Area of Low Model Confidence

ms
> 25
22 – 25
20 – 22
16 – 19
14 – 16
12 – 14
10 – 12
8 – 10
6 – 8
4 – 6
2 – 4
< 2
Planmap

Interpreted Chargeability Inversion Model (ms)

Depth: 400m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC−GIF DCIP3D
Instrumentation:
Receiver: SJ−24 Full−Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole−Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: ipinv3d.chg
Colour Classification: Modified Linear
Mapping Date: 18−Oct−2013

Mapping By : SJ Geophysics Ltd.  11966−95A Avenue, Delta, British Columbia, Canada V4C 3W2 (604) 582−1100   www.sjgeophysics.com
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 25m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC–GIF DCIP3D

Instrumentation:
Transmitter: GDD TX II
Array Type: Modified Pole–Dipole Offset 3DIP

Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18–Oct–2013

Mapping By: SJ Geophysics Ltd.  11966–95A Avenue, Delta, British Columbia, Canada V4C 3W2  (604) 582–1100   www.sjgeophysics.com
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 50m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC–GIF DCIP3D

Instrumentation:
Transmitter: GDD TX II
Array Type: Modified Pole–Dipole Offset 3DIP

Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18–Oct–2013
Planmap

Interpreted Resistivity Inversion Model (ohm−m)

Depth: 75m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC−GIF DCIP3D
Instrumentation:
Receiver: SJ−24 Full−Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole−Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18−Oct−2013

Mapping By: SJ Geophysics Ltd.  11966−95A Avenue, Delta, British Columbia, Canada V4C 3W2 (604) 582−1100   www.sjgeophysics.com
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 100m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC-GIF DCIP3D
Instrumentation:
Transmitter: GDD TX II
Array Type: Modified Pole–Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18–Oct–2013

Mapping By: SJ Geophysics Ltd.  11966–95A Avenue, Delta, British Columbia, Canada V4C 3W2  (604) 582–1100   www.sjgeophysics.com

LEGEND
• Survey Stations
X Remote Stations
■ Mineral Showings
Roads
 Streams
Elevation Contours (10m)
Claim Boundary
Lakes
Area of Low Model Confidence
ohm–m
> 580
460–580
360–460
280–360
220–280
170–220
130–170
100–130
80–100
60–80
45–60
< 45
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 150m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada

Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC−GIF DCIP3D
Instrumentation:
Receiver: SJ−24 Full−Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole−Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18−Oct−2013

Mapping By : SJ Geophysics Ltd.  11966−95A Avenue, Delta, British Columbia, Canada V4C 3W2  (604) 582−1100   www.sjgeophysics.com
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 200m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada
Planmap

Sookochoff Consultants Inc.

Interpreted Resistivity Inversion Model (ohm-m)

Depth: 250m Below Topography

Cicada Project

Phase IV

Kamloops, B.C., Canada
Project Information:
Survey by: SJ Geophysics Ltd.
Survey Type: 3DIP
Survey Date: September, 2013
3D Inversion by: SJ Geophysics Ltd.
Inversion Software: UBC−GIF DCIP3D
Instrumentation:
Receiver: SJ−24 Full−Waveform Digital IP Receiver
Transmitter: GDD TX II
Array Type: Modified Pole−Dipole Offset 3DIP
Mapping Information:
Datum: NAD83
Projection: UTM Zone 10
Inversion Model: dcinv3d.con
Colour Classification: Modified Logarithmic
Mapping Date: 18−Oct−2013

Planmap
Interpreted Resistivity Inversion Model (ohm−m)
Depth: 300m Below Topography

Sookochoff Consultants Inc.
Cicada Project
Phase IV
Kamloops, B.C., Canada
Planmap

Interpreted Resistivity Inversion Model (ohm–m)

Depth: 400m Below Topography

Sookochoff Consultants Inc.

Cicada Project

Phase IV

Kamloops, B.C., Canada