

Kennecott Canada Exploration Inc.



1998 GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL, AND DIAMOND DRILLING ASSESSMENT REPORT on the FINDLAY CREEK OPTION

CORE 1 & 2, FIN 3, FIN 14 TO 34, DOC 1 TO 6, DOC 13 TO 20, DOC 32 & 33, TOR 1 & 2, OCT 1 TO 6, FAT CAT 1 TO 3, FAT CAT 6 TO 11, and LAST CHANCE mineral claims

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1.0 INTRODUCTION

1.1 **Project Description**

The Findlay Creek claims were staked in 1995 and 1996 by Miner River Resources Ltd. and Eagle Plains Resources Ltd. to cover lower and middle Aldridge stratigraphy considered prospective for "Sullivan-type" zinc-lead mineralization. Kennecott optioned the claims in January 1997 and conducted a property-wide evaluation of the claim block using soil and stream sediment geochemistry. In 1998 Kennecott staked additional claims and optioned adjoining ground from Alcudia Capital Inc. and prospector William Noble. 1998 exploration work included additional soil sampling, geological mapping, geophysical surveys, and diamond drilling.

This report describes Kennecott's 1998 exploration program. The report includes results from the DOC 7 to12 and DOC 21 to 30 mineral claims previously described in an assessment report to accompany Statement of Work 3125296 (October 2, 1998). The attached statement of costs does not include the previously recorded work.

1.2 Location, Access, and Physiography

The project area encompasses 9,624 hectares at the headwaters of Doctor Creek, a tributary of Findlay Creek in southeastern British Columbia. The area is centred at geographic coordinates 50° 04' north latitude by 116° 12' west longitude on N.T.S. map sheet 082K/01 (Figure 1).

Road access to the property is reasonable with recently used logging roads up Doctor Creek and several of its tributaries. Helicopters are needed for access to higher elevations and the western part of the claims. The closest helicopters are based in Cranbrook, 65 kilometres to the south and Invermere, 55 kilometres to the north. The closest community is Canal Flats, about 40 kilometres by improved gravel road east of the property. The closest full service centre is Cranbrook, which has a commercial airport and full facilities.

The project area lies within the Purcell Mountains, a sub-range of the Columbia Mountains of British Columbia. Topography is rugged with steep, locally precipitous slopes, serrated ridges, and U-shaped glacial valleys shaped by alpine glaciation. Elevations range from 1,640 metres in the valley on the west side of the DOC 33 claim to 2,860 metres at the summits of Doctor Peak and an unnamed peak on the southern claim boundary.

The climate is continental and is characterized by low to moderate precipitation and a wide temperature range. Temperatures range from about -30°C in the winter to over 25°C in the summer months. The field season for most of the project area is from June to mid-October although snow cover in the higher regions can last well into July.

1.3 Claim Status

The Findlay Creek property consists of 51 two-post mineral claims (51 units) and 26 modified grid mineral claims (374 units) giving a total claim holding of 425 units covering 9,624 hectares (23,780 acres)(Figure 2). The claims are owned by Kennecott Canada Exploration Inc. subject to underlying option agreements with Miner River Resources Ltd. / Eagle Plains Resources



Ltd., Alcudia Capital Inc., and prospector William Noble. A full list of the claims is attached as Appendix I.

The northwest corner of the claim block abuts the Purcell Wilderness Conservancy and a portion of the property is within a designated Special Resource Management Area as shown on figure 4.

1.4 Exploration History

Mineral exploration in the region began with placer gold mining on Wildhorse River in the mid-1860's. Activity focused on placer gold deposits until the late 1800's when silver-lead deposits at St. Eugene and Sullivan were discovered. The region has been actively explored, primarily for lead and zinc, ever since.

The project area has been sporadically explored since at least the 1930's. Government assessment reports indicate exploration programs by Cominco (1959-69, 1977, 1984-1988), Texas Gulf Sulphur (1971), Kerr-Addison Mines (1971-1975), Amax (1977-79), Four Tops Mining (1982-1985), Billiton Canada (1983-1984), Teck Corp. (1990), Eagle Plains-Miner River (1995-1996), and Kennecott (1997).

Past exploration targeted silver-lead in veins, tungsten associated with skam proximal to Cretaceous intrusions, and most recently, zinc and lead associated with the contact of the lower Aldridge and middle Aldridge formations ("LMC"), and lead within the upper Aldridge formation.

2.0 REGIONAL GEOLOGY

The Findlay Creek project area straddles the axis of the Purcell anticlinorium, a broad gently north plunging structure cored by the Proterozoic Purcell Supergroup (Figure 3). The supergroup comprises a thick (12+ kilometres) sequence of siliciclastic and lesser carbonate rocks deposited in an intracratonic rift basin. Hoy (1992) provides a detailed description of the regional geology. Reesor (1954) and Brown and Termuende (1998) describe the Findlay Creek area.

The Aldridge Formation is the lowermost unit of the Purcell Supergroup exposed in the region. The lower Aldridge Formation consists of rusty weathering, thin-bedded to laminated silicic siltstones and argillites. Lower Aldridge sediments grade upward into grey weathering, thick-bedded turbidites of the middle Aldridge Formation. The middle Aldridge Formation is about 2,500 to 3,500 metres thick. Lower and middle Aldridge strata are expanded by middle Proterozoic dioritic to gabbroic sills of the Moyie intrusions. The upper Aldridge Formation consists of rusty weathering, thin-bedded siltstone and argillite and is typically 250 to 500 metres thick.

Pale grey, green and mauve argillite, siltstone and arenite of the Creston Formation overly the Aldridge Formation. The Creston Formation ranges in thickness from 1,200 metres to over 2,000 metres and is overlain by carbonate rocks of the Kitchener Formation, siltites and argillites of the Van Creek Formation, and volcanics of the Nicol Creek Formation. The uppermost strata of the Purcell Supergroup, the Dutch Creek Formation and the Mount Nelson Formation are exposed in the northern part of the region. Cretaceous granitic stocks and batholiths intrude all formations of the Purcell Supergroup.





The most significant mineral deposit in the region is the world class Sullivan mine owned by Cominco Ltd. at Kimberley, B.C., 40 kilometres south-southeast of the subject property. The Sullivan contained an estimated 170 million tonnes grading 5.5% zinc, 5.8% lead and 59 g/T silver. The deposit is hosted by siltstone and argillite of the lower Aldridge Formation immediately below the contact with the middle Aldridge formation. Sullivan is interpreted to be a sedimentary exhalitive (sedex) sulphide deposit formed in a fault-controlled sub-basin. The lower-middle Aldridge contact ("LMC") is commonly anomalous in zinc and lead and has been the focus of most zinc-lead exploration in the region.

3.0 **PROPERTY GEOLOGY**

The project area is primarily underlain by middle Aldridge Formation (Figure 5). Lower Aldridge Formation is exposed on the southern edge of the claim group and upper Aldridge and Creston formations occur at the northern end of the claims. Numerous sills of the Moyie intrusions intrude both lower and middle Aldridge formations. Local narrow gabbroic sills also occur within the upper Aldridge and Creston formations but their relationship to the Moyie intrusions is unclear.

Broad open folds plunging moderately to the west and north dominate the project area. A series of north trending faults cross the centre of the property that locally offset Moyie sills. Several roughly bedding parallel reverse faults were noted within both lower and middle Aldridge stratigraphy. Bedding adjacent to the reverse faults is typically disrupted and isoclinally folded and characterized by a penetrative phyllosilicate foliation that obscures bedding. In general, the middle Aldridge formation shows less deformation than the more argillaceous formations above and below.

Regional stream sediment sampling by the G.S.C. shows the Doctor Creek and Greenland Creek drainages are anomalous in lead and zinc with values consistently higher than elsewhere in the region.

4.0 1998 EXPLORATION PROGRAM

The 1998 exploration program was conducted between June 1, 1998 and November 1, 1998. Work consisted of soil and rock geochemical sampling, 1:10,000 and 1:5,000 scale geological mapping, TEM geophysical surveys, and diamond drilling.

The regional exploration program was supervised by Steven Coombes, P.Geo., senior geologist for Kennecott Canada Exploration Inc. Fieldwork was supervised by Rick Zuran, contract project geologist. Geological mapping was by contract geologists Martine Bedard, Nick Thomas, Lucas Marshall, Stephen Metcalf, and Toby Pierce. Geochemical samples were collected by contract field assistants Chris Botterill, Jesse Campbell, Brian Farmer, Alex Raymont, and Carolyn Sroda. Camp maintenance and first aid services were by contract field technician Jim Greig. Meals were provided by contract cook Louise Levesque with relief cooking by contractors Carol Blakley and Ian Somerville.

Bighorn Helicopters Inc. of Cranbrook, B.C. provided helicopter support using Hughes 500-D and Bell 206 B3 Jet Ranger helicopters for crew set outs and drill shift changes. An Aerospatiale AS-350 ("A-Star") helicopter was used for drill moves. Quantec Consulting Inc. of



Porcupine, Ontario conducted the TEM surveys under the supervision of Andrew Cole, senior geophysicist for Kennecott. Diamond drilling was by Hy-tech Drilling Ltd. of Smithers, B.C. Other contractors included: Daryl Calder, Cranbrook, B.C. (claim staking, line cutting); Peter Klewchuk, Cranbrook, B.C. (marker unit identification); Keith Heebert of Interior Reforestation Co. Ltd., Cranbrook, B.C. (established GPS base stations); and Deck Electric Ltd., Invermere, B.C. (camp wiring).

The project operated from a tent camp located in a log landing at kilometre 39 on the Doctor Creek Forestry Road (Spur F) at an elevation of 1990 metres. NAD83 UTM coordinates for the camp are 5,542,300mN, 559,310mE. The camp was originally built to accommodate 12 people and later expanded to accommodate 16 people. Camp facilities included a 14 kW diesel generator providing electricity to kitchen, dry, office, and some sleeping tents; gravity feed hot and cold water to the kitchen and dry; and full laundry facilities. Off site communications were by satellite phone. Communications on the property were by a combination of satellite phone and handheld VHF radios. The office was equipped with a drafting area, photocopier, microscope, stereoscope, computers, printers and digitizing tablet. A rock saw was installed near the office tent.

Field personnel accessed work areas from camp by foot, ATV, truck and helicopter. Vehicles included a 4x4 crew cab pick-up truck, two 4x4 extended cab pick-up trucks, and 2 "quad" all terrain vehicles. A GMC suburban was permanently based in camp as an emergency transport vehicle (ETV).

The general field schedule was as follows:

Jun 1-14:Camp construction, GPS base stations.Jun 14-Sept 2:Geochemical soil sampling, geological mapping.Aug 21-Sept 14:TEM geophysical survey, geological mapping.Sept 18-- Oct 22:Diamond drillingOct 20-24:Camp demobilization.Nov 1-Dec 3:Logging and sampling drill core at Ft Steele.

The 1998 program included: geological mapping of the entire property at 1:10,000 scale (approx. 8,000 ha) including selected areas at 1:5,000 scale (approx. 2,000 ha); contour soil geochemical sampling (1,235 samples); rock geochemical sampling (390 samples); petrographic sampling (15 samples); marker unit sampling and identification (18 samples); surface TEM geophysics (6 grids covering 22.35 line km); diamond drilling (5 holes totaling 1,853.17 metres); core sampling (317 samples); and report preparation and reproduction. The total cost of the exploration program was about CDN\$1,200,000.00. The amount being applied for assessment purposes in this report is CDN\$870,000.00 (see appendix II for breakdown).

4.1 Geological Mapping Surveys

The Findlay Creek property mapping was plotted on three overlapping 1:10,000 scale and two 1:5,000 scale topography base maps created from the TRIM 1:20,000 digital topographic files for the area. Two sets of air photos were also used to assist mapping: a 1988 colour 1:15,000 scale set, and a 1995 black and white 1:40,000 scale set. Other aids to mapping included LandSat images, numerous oblique photographs taken during the field season, and magnetic, radiometric and electromagnetic data from a government airborne geophysical survey flown in 1995 (British Columbia Ministry of Employment and Investment, 1996).

All base maps and positional data was collected and reported in NAD83 UTM11. All maps are oriented to UTM grid north which is 0° 35' east of true north. Magnetic declination during the program was 18° 34' east of true north. All field measurements were taken using a magnetic declination of 18° east and plotted against grid north.

Select survey control points in the field were obtained with a Trimble Pathfinder Pro XR rover GPS with a TDC2 data recorder and Trimble Pathfinder Pro XL base station GPS with a TDC1 data recorder rented from Cansel Survey Equipment of Calgary. The GPS system was primarily used for accurately locating claim posts, geophysical grid lines, drill holes, some stratigraphic markers, rock chip traverses, and select rock and soil samples. Two GPS base stations were established near the camp by Interior Reforestation of Cranbrook, B.C. They are marked by sections of metal pipe driven into the ground on small hills south and northeast of the camp site. Base station coordinates are shown in table 1.

Table 1 – GPS base stations:

Survey point	Easting	Northing	Elevation (m)
Site #1	559313.32	5542278.9	1995
Site #2	559332.7	5542334.7	1990

Field mapping was done in pairs with Nick Thomas and Lucas Marshall working on the northern part of the property, and Martine Bedard and Steve Metcalf working on the southern part of the property. Rick Zuran and Steven Coombes supervised the mapping and worked in selected areas. Lucas Marshall and Jim Greig were responsible for collecting GPS control data.

Fifteen rock samples were collected in conjunction with geological mapping for petrographic analysis. The samples were sent to Vancouver Petrographics in Langley, B.C. for section preparation and were described by Craig Leitch of Salt Spring Island, B.C. (appendix XI).

Eighteen potential stratigraphic marker samples were collected with tops labeled and sent to contract geologist Peter Klewchuk of Cranbrook, B.C. for identification.

4.2 Soil and Rock Geochemical Surveys

One thousand two hundred thirty five (1,235) soil samples were collected at 100 metre intervals along contour lines. Samples were collected with a hand mattock form depths ranging from 10 to 50 centimetres. One hundred seven (107) of the samples were collected from outside the claim boundary. Of the one thousand one hundred twenty eight (1,128) samples collected on the claims, nine hundred sixty (960) samples are being applied for assessment credit in this report. All sample locations are plotted with lead and zinc values on figures 8a, 8b, and 8c. Chemex Labs of North Vancouver, B.C. analyzed all samples using 32 element I.C.P. techniques. Soil sample descriptions are attached as appendix III. Soil geochemical results are attached as appendix IV.

Three hundred ninety (390) selected rock samples were collected for geochemical analysis in conjunction with the geological mapping. Three hundred fifty two (352) were collected on the property and of these three hundred fifteen (315) are applied for assessment in this report. All sample locations are plotted with lead and zinc values on figures 9a, 9b, and 9c. Chemex Labs of North Vancouver, B.C. analyzed all samples using 32 element I.C.P. techniques.

Rock sample descriptions are attached as appendix V. Rock geochemical results are attached as appendix VI.

4.3 TEM Geophysical Surveys

Quantec Consulting Inc. of Porcupine, Ontario was contracted to conduct TEM surveys on the property between August 27 and September 15, 1998. The survey types were TEM (transient electromagnetic) fixed loop profiling and moving loop sounding. Quantec supplied two geophysical technicians, Paul Plazek and Roch Michaud, and all geophysical equipment.

Six individual grid areas covering 22.35 line kilometres were tested as shown in table 2. Loop locations are shown on figure 10. Full survey parameters and results are presented in a report by Quantec attached as appendix X.

Area	Method	Tx Loop Area (sqm)	No. Rx Lines	Total Rx Stns	Total Rx km's
Tourmalinite	Fixed	968,400	6	132	5.4
Tourmalinite	Moving	10,000	1	12	1.1
Clearcut	Moving	10,000	1	6	0.5
Cassat 1	Fixed	584,700	2	53	5.6
Cassat 2	Fixed	640,400	1	28	2.8
Doctor Basin	Fixed	454,000	3	28	2.8
Pico Basin	Fixed	555,300	1	14	1.4
Echo Lake	Fixed	1,000,000	2	30	2.75
TOTALS		4,222,800	17	303	22.35

Table 2 - TDEM Survey Summary:

4.4 Diamond Drilling

Diamond drilling on the Findlay Creek property was done by Hy-tech Drilling Ltd. of Smithers, BC. The on site foreman throughout the drill program was Fraser Stewart The drill rig used is a modified JKS drill with a Boyles 20 hydraulic head designed to be broken into several helicopter portable loads ranging from 450 kg (1,000 pounds) to 590 kg (1,300 pounds). The rig was built to drill holes in excess of 1500 metres (5,000 feet) in the Eskay Creek area and is ideally suited for deep holes in areas with poor road access. All holes were drilled using NCQ tools.

Hy-tech Drilling provided two drillers and two helpers who operated in two ten hour shifts. A fifth man was provided to help with drill pad construction, fuel hauling, and general support. A small insulated plywood building with first aid equipment, survival gear, and satellite phone was slung to each drill site in case poor weather prohibited flying at shift change.

Five diamond drill holes, totaling 1853.17 metres (6,080 feet), were drilled on the Findlay Creek property between September 18 and October 20. The program was completed in fiftyone ten hour shifts for an average drilling rate of 36.3 metres (119 feet) per shift including moves between holes. An additional five shifts were lost to bad weather when moving from hole F98-04 to F98-05. Drill hole information is shown in table 3. Hole locations are shown on figures 4 and 5 and on the property geology maps. (figures 6a, 6b, 7a, and 7b).

Hole	Easting	Northing	Elevation	Depth (m)	Avg. Dip	Avg. Azimuth
F98-01	556247.72	5541979.64	2218.9	478.23	-80	085
F98-02	557999.55	5540087.53	2433.6	135.33	-60	049
F98-03	558394.97	5540152.09	2491.1	468.78	-85	100
F98-04	556307.38	5539689.98	2491.4	487.98	-86	080
F98-05	558293.26	5551012.94	2252.1	282.85	-62	166
				1853.17		

Table 3 – Diamond drill holes:

Prior to drilling each hole, lumber was slung to the site and a drill platform and rod rack were constructed. Cuttings from the drill holes were contained in tarp lined sumps or impounded with bales of straw at each site. After each hole was completed, all equipment, lumber, drill cuttings, and other debris were removed from the site. Core was typically flown back to camp at each shift change. Casing was left in holes F98-01, 03, 04 and 05.

The initial orientation of the drill and angle of the head were set with a Brunton compass. Down-hole surveys were done using a Pajari down hole survey instrument rented from Pothier Enterprises Ltd. of Delta, B.C.

Core logging and sampling was initially done in camp and later completed at a rented facility at Fort Steele, B.C. when the camp was demobilized. Holes F98-01, 04 and 05 were logged by Rick Zuran. Holes F98-02 and 03 were logged by Martine Bedard (and partly by Nick Thomas). All holes were logged using a combination of descriptive and graphic techniques with standardized codes to ease conversion to a digital database. Drill logs are attached as appendix VII and RQD logs are attached as appendix VII.

Three hundred seventeen (317) core samples were collected by spitting the core lengthwise with either a Longyear manual core splitter or rock saw. Half the core was submitted for analysis and the other half retained in the core box. All samples were sent to Chemex Labs in North Vancouver, B.C. where they were analysed for 32 elements by inductively coupled argon plasma (I.C.P.) techniques. Eight samples from hole F98-04 were also analysed for gold by fire assay atomic absorption (AA). Core sample results are attached as appendix IX.

The drill core is currently stored in a core rack at Wildhorse Farm in Fort Steele, B.C.

5.0 1998 EXPLORATION RESULTS

5.1 Geological Mapping Results

The results of the geological mapping are shown on figures 6a, 6b, 7a, and 7b. Figures 6a and 6b encompass all of the mapped area at 1:10,000 scale. Figures 7a and 7b are more detailed maps (1:5,000 scale) of areas of particular interest identified by geochemical surveys in 1997. The 1998 mapping largely supported the 1:50,000 scale compilation map prepared by the B.C.G.S. in 1997 (Brown, in press) but provides considerably more detail in complex areas.

5.1.1 LITHOLOGY AND STRATIGRAPHY

The Findlay Creek Property is underlain by middle Proterozoic siliciclastic sedimentary rocks that include: thin laminated to medium bedded rusty brown weathering siltstones, "wackes", and arenites of the lower Aldridge Formation (Pa1); siltstone meta-conglomerate of the LMC fragmental (LM-FRG); turbiditic arenites, "wackes", silty argiillites, and siltstones of the middle Aldridge Formation (Pa2); grey to dark grey argiillites and siltstones and laterally equivalent tourmaline-rich siltstones, siliceous horizons, and arenite-"wackes" of the upper Aldridge Formation (Pa3, Pa3-t); and green to tan grey weathering siltstones, mudstones with lesser dolostones of the youngest Creston Formation (Pc).

The above conformable sedimentary package is intruded by gabbro and quartz diorite sills and dykes of the Proterozoic Moyie intrusions (Pm), pyroxenite (PYX), quartz eye porphyry (QEP), and lamprophyre dykes (LAM) of unknown age, and biotite monzogranite (Km) of the Cretaceous White Creek batholith.

The following geological units are presented in reverse stratigraphic order (youngest to oldest). Descriptions are derived from visual and petrographic examinations of hand samples and drill core.

INTRUSIVE ROCKS

AGE UNKNOWN (TERTIARY?)

LAM

LAMPROPHRYE (LAM):

Moderate brown, locally weathers green brown and/or orange brown. Medium to coarse grained, non-foliated, porphyritic textured subhedral biotite-chlorite phenocrysts in a fine grained non-magnetic calcareous matrix. Outcrops weather sub-spheroidal in rounded to sub-rounded "rotten" talus. Soil development adjacent to lamprophyre outcrops is often very micaceous. Joints and fractures are generally irregular. This lithology occurs as dykes averaging 1 metre wide. Age dated lamprophyre dykes elsewhere in the district are Tertiary.

MIDDLE CRETACEOUS

Km

BIOTITE MONZOGRANITE (Km) – White Creek Batholith:

Light grey to off white weathering, leucocratic, coarse grained hypidiomorphic granular textured euhedral biotite ± homblende, plagioclase and subhedral quartz grains with megacrysts, commonly several centimetres long, of euhedral potassium feldspar. Local muscovite developed along contact with Aldridge Formation. Outcrops weather into large very blocky talus (average 50cm across) with some blocks over three metres across. Exfoliation weathering and uniform planar jointing was noted locally. This lithology occurs as a large batholith and related stocks.

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AGE UNKNOWN (Unit crosscuts Proterozoic middle Aldridge Fm. On Findlay Ck. Property)

QEP

QUARTZ EYE PORPHYRY (QEP):

Medium grey, weathers grey brown and grey green. Coarse grained, non-foliated porphyritic textured sub-angular to sub-rounded quartz grains (5%;1-5mm) in a fine grained matrix of biotite-muscovite (avg. 25%), calcite (avg. 20%) with minor chlorite. This lithology occurs as a dyke 30 centimetres wide.

AGE UNKNOWN (Unit crosscuts Proterozoic lower Aldridge Fm. On Findlay Ck. Property)

PYX

PYROXENITE (PYX):

Moderate to dark green, locally weathering rusty orange. Coarse grained, nonfoliated equigranular crystalline textured with greater than 90% clinopyroxene with interstitial calcite, plagioclase (?) and trace local disseminated pyrrhotite. Outcrops weather to sub-spheroidal to blocky talus. This lithology occurs as dykes averaging 1 metre wide.

MIDDLE PROTEROZOIC

Moyie Intrusions (Pm) – (Zircon U-Pb dates circa 1467 Ma; Anderson and Davis, 1995)

Рm

GABBRO (GAB), and HORNBLENDE QUARTZ DIORITE (DIO):

Dark grey to dark green and brown, melanocratic to locally mesocratic in coarser grained quartz diorites phases. Generally medium grained, locally fine along contacts, locally coarse grained in thicker sills. Hypidiomorphic granular to locally sub-ophitic textured and locally foliated. Hornblende/pyroxene, plagioclase, and minor quartz are the main minerals. Hornblende-biotite replaces pyroxene in diorites with increased quartz and plagioclase. Local chlorite replaces biotite and/or homblende. Trace to 1-2% disseminated and/or blebby pyrrhotite and/or chalcopyrite occur locally giving the rock a magnetic character. Outcrops weather into blocky talus, locally tabular where a foliation is present. Uniform planar jointing noted locally. This lithology occurs as sills ranging from 5 to 350 metres thick and dykes from 1 to 5 metres thick.

Pm-gar

GARNET BIOTITE ALTERED GABBRO (GAR-GAB):

Dark green-grey containing pink scattered clots, commonly weathering to a rusty colour. Medium grained hypidiomorphic granular to weak porphyritic texture. Biotite (45% avg.), quartz (25% avg.) with lesser chlorite, plagioclase, amphibole, light pink Mn-garnet (3% avg.) with up to 5% disseminated pyrrhotite make up the composition of this lithology. Pyrrhotite gives the rock a local magnetic character. This lithology occurs as a sill 5 metres thick.

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SEDIMENTARY ROCKS

MIDDLE PROTEROZOIC

Creston Formation (Pc)

Pc

UNDIVIDED SILTSTONE (SLT), MUDSTONE (MST), ARGILLITE (ARG) with lesser QUARTZ ARENITE (ARE), and DOLOSTONE (DOL):

Light green to tan (MST), grey (ARG), light grey to tan (ARE), and grey buff to orange buff (DOL). Quartz arenite to quartzitic siltstone are common variations. Dolostone pods and lenses with spotted dolomite alteration occur locally. Lenticular to wavy bedforms with local sericitic phyllitic foliation noted locally. Soft sedimentary structures include local but rare shrinkage or mudcracks (MST), ripple marks, and flame structures (SLT-ARE). Outcrops weather shaly (SLT-ARG) to sub-blocky (quartz ARE). The thickness of the Creston Fm is at least 900m but the top is not exposed on the property.

Upper Aldridge Formation (Pa3)



UNDIVIDED ARGILLITE (ARG) and SILTSTONE (SLT) with lesser ARENITE (ARE):

Grey to dark grey, weathering rusty brown. Grain sizes, as recognized in the field, range from silt size fraction (grains just visible with a 10x hand lens) siltstone and argillite to very fine sandstone (125um) to medium grained sandstone (0.5mm). Quartz arenite to quartzitic siltstone are uncommon variations. Disseminated limonite is locally noted pseudomorphing euhedral and fine grained disseminated pyrite. Graphitic argillite is locally noted particularly along shearing and among deformed beds. Outcrops generally are thin bedded to laminated and locally reflect deformational phases very well. Outcrops weather shaly, platy (SLT-ARG) and to a lesser degree sub-blocky (ARE). Thickness of the Upper Aldridge Formation varies from 50 to 100 meters. Structural thickening is likely in deformed areas. Laterally the unit inter-fingers with the laminated unit described below.

Pa3-t

LAMINATED TOURMALINE-SILTSTONE (LTO), SILTSTONE (SLT), SILICEOUS HORIZONS (SLH) with interbedded ARENACEOUS SILTSTONE to ARENITE ("WACKES") and lesser ARGILLITE and rare LIMESTONE LENSES (LST).

Includes lead mineralization exposed on Tourmalinite and Rocky Top ridges and intersected in drill hole F98-05:

Medium to dark grey with occasional white siliceous horizons. Grain sizes, as recognized in the field, range from silt size fraction (grains just visible with a 10x hand lens) and very fine sandstone (125um) to medium grained sandstone (0.5mm). Accessory minerals include very fine acicular tourmaline needles (up to 50%) and local disseminated limonite. Accessory minerals within the lead mineralized sections include trace euhedral arsenopyrite crystals in the LTO beds, and trace to 20% associated pyrrhotite+/-galena+/-chalcopyrite in the siliceous horizons. The unit is uniformly laminated, thin (LTO, SLH, SLT, ARG, LST) to medium bedded (ARE, SLT) with occasional elongated dark silty clasts stratigraphically near siliceous horizons. Sedimentary structures include: graded

bedding, load structures, flame structures, cross stratification, soft sediment deformation and dewatering sedimentary dykes. Outcrops weather into shaly to tabular blocks of talus. This unit is at least 125 metres thick.

Middle Aldridge Formation (Pa2)

Pa2

UNDIVIDED TURBIDITIC "WACKES" – QUARTZ ARENITE to SILTSTONE with lesser SILTY ARGILLITE:

Light grey to light brown, locally weathering rusty brown. Grain sizes, as recognized in the field, range from silt size fraction (grains just visible with a 10x hand lens) to very fine sandstone (125um) to medium grained sandstone (0.5mm). A blended spectrum of quartzofeldspathic "wacke" lithologies include: quartz arenite, quartzofeldspathic arenite, silty arenite, quartzitic siltstone, arenaceous siltstone, and siltstone. Accessory minerals include local limonite and pyrite. Recrystalized sericite (in ARE) and biotite (in SLT) are noted with local phyllite. This unit comprises medium to thick well bedded SLT and ARE interbedded with lesser laminated to thin bedded siltstone and silty ARG. Sedimentary structures noted include: graded bedding, load structures, cross stratification, rip up clasts, and slumped bedding. Thrust style deformation is taken up in the ARE as accumulative "S" type fractures. Outcrops weather into blocky (ARE) to shaly (ARG) talus. This unit is approximately 3,300 metres thick in the Findlay Creek area.

Middle Aldridge rocks contain about twenty thinly laminated time "marker" units that can be correlated throughout the region. Eighteen samples were collected during the 1998 program of which ten were identifiable markers. They are shown in table 4 in reverse stratigraphic order (youngest to oldest) and there positions are plotted on the accompanying geology maps.

Sample No.	Easting	Northing	Marker Name
VR55761A	557617	5548667	Shaft
VR30305A	557560	5546240	Meadowbrook
VR81644A	563006	5550160	Meadowbrook
VR30312A	556484	5544905	Ginty
VR55755A	558728	5546825	Ginty
VR55776A	560166	5547198	Sundown (overturned)
VR55871A	559288	5547385	Sundown
VR30309A	556502	5543097	Moyie
VR55554A	555126	5542874	Moyie
VR55771A	556776	5543807	Moyie

Table 4 – Marker samples:

Lower – Middle Contact (?) of the Aldridge Formation (LMC)

LM-FRG

"FRAGMENTAL" (FRG) -- SILTSTONE META-CONGLOMERATE:

Medium grey matrix with dark grey coloured clasts weathering light rusty brown. Matrix is composed of partly recrystallized silt to fine grain biotite and muscovite micas with lesser fine grained quartz. Clasts are composed of quartz silty arenite and arenaceous siltstone (wackes). Clasts are elongated along bedding, range in size from 2 mm to 10 cm, and average 20% of the rock making the conglomerate matrix supported. Rare clasts contain trace disseminated pyrrhotite rimming or coring clasts. This unit is thin wavy bedded and weathers into tabular-irregular talus. The thickness of the siltstone meta-conglomerate is about 10 metres. This unit has been historically used to mark the contact between the lower and middle Aldridge Formation but mapping suggests it may be located somewhat above the contact.

Lower Aldridge Formation (Pa1)

Pa1

UNDIVIDED QUARTZ SILTY ARENITE, SILTSTONE and QUARTZ ARENITE:

Light to medium grey, weathering rusty brown. Grain sizes, as recognized in the field, range from: silt size fraction (grains just visible with a 10x hand lens) to very fine sandstone (125um) to medium grained sandstone (0.5mm). A blended spectrum of quartzo-feldspathic "wacke" lithologies include: siltstone, quartzitic siltstone, arenaceous siltstone, silty arenite, and quartz arenite. Accessory minerals include local limonite and pyrite. Recrystallized micas; sericite (in ARE) and biotite (in SLT), are noted with local phyllitic, schistose and granophyric textures particularly near intrusive contacts. This unit comprises thin bedded and laminated siltstone interbedded with medium bedded quartz arenite and quartz silty arenite. Sedimentary structures noted include: graded bedding, cross stratification, and slumped bedding. Thrust style deformation is taken up in the ARE as accumulative "S" type fractures. Outcrops weather into blocky (ARE) to shaly (SLT) talus. The base of the lower Aldridge Formation is not exposed in the district.

5.1.2 STRUCTURE

Aldridge and Creston strata on the property generally dip gently to the northwest. The sedimentary rocks are deformed by broad open folds that plunge moderately to the west and north. Within this relatively undeformed strata, several low angle deformational features were observed on the property.

Southeast to east verging tight to isoclinal minor folds are common in the Creston and upper Aldridge formations. Folding commonly occurs within schistose shear zones characterized by penetrative phyllosilicate foliation and crenulation or kink folds. The upper Aldridge Formation intersected in drill hole F98-05 shows considerable isoclinal folding, shearing and fracturing suggesting the unit may be structurally thickened, at least locally.

Middle Aldridge Formation rocks are relatively undeformed on the property. Locally there are indications of low angle shearing and folding, particularly in the Beetle Peak – Fama Peak area within thin to medium bedded siltstones near the Sundown stratigraphic marker. The deformation consists of overturned bedding and small scale isoclipal folds.

The lower Aldridge Formation shows the most low angle deformation on the property with considerable open and isoclinal folding of sediments and Proterozoic intrusive sills. Typically, the sedimentary rocks are attenuated while the sills are thickened in the fold hinges. Two

deformation "corridors" trend northwest through Echo Lake – Banana Lake and through Pico Basin – Cassat Basin. These corridors feature larger scale isoclinal folding (10's to 100's of meters), low angle reverse faulting, and local normal faulting.

Lower Aldridge sediments and Proterozoic sills in the Silver Key Basin – Blake Lake area are also highly deformed along the contact with the White Creek Batholith to the east. In this area the bedding is tilted steeply to the west with considerable schistose foliation, bedding parallel fracturing, shearing and small scale folding.

Major structural trends and southeast to east verging minor folds indicate a compressive southeast verging tectonic event affected the Proterozoic rocks on the property. Tectonic stress was mostly absorbed through deformation (folding, shearing, and thrust faulting) of the thinner bedded units both above and beneath the middle Aldridge Formation. The thick bedded and more competent units (i.e. middle Aldridge Formation and most sills) show relatively little deformation.

Cross-cutting the low angle structures are several high angle, north-south trending faults that are best exposed in the Shrink Lake – Fama Peak area and near the Alpine showing to the north. These structures locally offset Moyie sills within the middle Aldridge Formation and commonly host minor lead-zinc-copper vein style mineralization.

5.1.3 ALTERATION

Regional alteration is lower greenschist facies with most mafic minerals partially altered to chlorite or actinolite. Adjacent to the White Creek Batholith, metamorphic grade is higher with sedimentary units commonly altered to mica schist.

Albite alteration occurs within both lower and middle Aldridge sediments. Commonly it is spatially associated with gabbro or diorite dykes but in many localities there is no obvious correlation. It is impossible to differentiate between albite alteration and silica alteration in the field so albite identification is tentative where thin section analysis was not done.

Carbonate alteration was noted locally, particularly in the upper Aldridge and Creston formations. Some sills within upper Aldridge and Creston formations are also locally carbonate altered.

Tourmaline alteration was noted in several locations on the claims. The most intense and pervasive alteration is on Tourmalinite Ridge and on Rocky Top Ridge within upper Aldridge sediments. In many places the rock is almost entirely fine grained tourmaline needles in a carbonate matrix.

5.1.4 MINERALIZATION

The Findlay Creek Property hosts vein, intrusive related, disseminated, and stratiform mineralization.

The most significant mineralization is galena, pyrrhotite, arsenopyrite, and chalcopyrite exposed at the north end of the property at Tourmalinite Ridge and on the east end of Rocky Top Ridge. The mineralization is stratiform in character and occurs over a stratigraphic interval in excess of 100 metres. Lead values are anomalous with an average grade of 1,460 ppm

over 105.2 metres intersected in drill hole F98-05. Within that interval individual samples include 1.77 percent lead over 0.48 metre and 12.95 percent lead over 0.09 metre. The Tourmalinite Ridge mineralization is distinctly lead dominant with only background zinc values.

In the Pico basin area sheeted veins contain blackjack sphalerite, pyrrhotite, scheelite, chalcopyrite, muscovite, beryl, and fluorite. The veins are very narrow (2 cm) and widely distributed (1 per 30 metres in drill hole F98-04). The presence of scheelite, beryl and fluorite suggest the mineralization may be related to Cretaceous plutonism. This style of mineralization appears to be the primary source for the zinc soil anomalies in the southern part of the claims.

Silver Key basin hosts several veins in large structures containing galena, miargyrite (AgSbS₂), sphalerite, pyrite, siderite, arsenopyrite and scheelite. At least one of these structures saw minor production (29 tonnes) as the Silver Key Mine in 1926, 1936, 1939, and 1940 and again in 1963 as the St. Anthony Mine (B.C. Minfile). Minfile also reports some 280 tonnes of ore were milled from the Silver Key in 1980 and 1981 but there are no records of mining in those years. It should be noted that Minfile shows the Silver Key and St. Anthony as separate occurrences. Surface mapping and prospecting in the Echo Lake area, where the St. Anthony is plotted, shows no sign of significant workings. Furthermore, the claims that encompassed the Silver Key mine area in the 1960's were called the St. Anthony group so it appears they are the same. The Last Chance claim which now covers the Silver Key area was acquired by Kennecott late in the 1998 field season so relatively little work was done in Silver Key basin.

Table 5 shows the types of mineralization located or examined on the property during the 1998 program. Table 6 lists the locations of the different mineralized areas on the property.

Vein:							
V-1	Quartz – pyrrhotite ± chalcopyrite.						
V-2	Quartz ± galena ± tourmaline ± calcite.						
V-3	Quartz ± calcite ± sphalerite ± pyrrhotite ± chalcopyrite ± scheelite ± muscovite ±						
	beryl ± fluorite.						
V-4	Quartz – magnetite.						
V-5	Quartz – arsenopyrite – skutterudite (?).						
V-6	Quartz – bismuthinite.						
V-7	Siderite – galena – sphalerite ± pyrite.						
V-8	Calcite ± magnetite, ± actinolite, ± chalcopyrite ± pyrite ± epidote.						
V-9	Quartz ± calcite ± pyrite ± galena ± sphalerite ± chalcopyrite.						
V-10.	Galena – sphalerite						
Disseminate	ed:						
D-1	Pyrite – galena – sphalerite ± ankerite						
Intrusive:							
<i>I-1</i>	Disseminated pyrrhotite ± chalcopyrite within gabbro.						
Stratiform:							
S-1	Disseminated pyrrhotite along bedding and/or laminae.						
S-2	Siliceous horizons (avg. 1 cm wide) with associated blebby pyrrhotite ±						
	chalcopyrite ± galena.						
<u>S-3</u>	Tourmaline bands ± euhedral arsenopyrite.						

Table 5 – Types of Mineralization:

Table 6 – Locations of Mineralization:

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Area and Description	Easting	Northing
Rocky Top Ridge Area		
Alpine showing; D-1, V-9	559700	5553100
Quartz - galena in tourmaline-rich argillite; knob at east end of	561425	5552280
Rocky Top ridge; S-2 & 3		
Quartz vein with galena and pyrrhotite; V-9	560190	5552580
Tourmalinite Ridge Area		
Galena and quartz pods in tourmaline-rich argillite; DDH TR96-01	559450	5550850
area (Doc showing); V-2, S-2 & 3		
Galena-tourmaline vein – stockwork; north side of ridge; V-2	559550	5551320
Galena – quartz – tourmaline – arsenopyrite ± chalcopyrite in DDH	558290	5551010
F98-05; S-2 & 3		
Beetle Peak		
Galena-fist size pods in quartz veins – high in tungsten; northeast	559700	5548100
of peak; V-3		
Banded tourmaline with galena at top, N-S galena veinlets along	559300	5547300
ridge E of peak; S-3, V-2.		
Shrink Lake North		
Galena – sphalerite (hydrozincite) in quartz veins; V9?	557100	5548900
Arsenopyrite, scorodite in vuggy quartz vein; V-5?	557800	5548800
Shrink Lake South		
Skarn pods - veins; actinolite-magnetite-chalcopyrite in altered	556960	5547280
gabbro; V-8		
Mag-gie Fault		
Magnetite albite alteration; V-4	555900	5545050
Shrink Lake- Fama Peak Corridor		
Galena-sphalerite in quartz-calcite veinlets; V-9	557450	5546600
Fama Peak		
Breccia with coarse euhedral pyrite and unrelated cross cutting	557400	5546235
galena veins-at Fama Fault.; ?		
Quartz – calcite vein with galena, chalcopyrite, arsenopyrite cutting	558190	5546905
gabbro; V-9?		
Quartz – sphalerite – pyrrhotite veins in shear zone crossing	556795	5546210
gabbro; V-9?		
Fama Peak South		
Old campsite, chalcopyrite in prominent quartz veins within gabbro;	557050	5545450
V-1		
Silver Key Area		
Layered pyrrhotite ; S-1	559200	5540930
Good Boy Showing, exposed west-southwest of Blake Lake at	558680	5539780
2540 m elevation, V-3, V-7		
Bad Boy Showing, on ridge at south end of valley, fracture	559570	5539250
controlled galena ± sphalerite (averages 2300 ppm Pb, 1300 ppm		
Zn over 30m); V-10		
Miargyrite at mine site dump (Main Adit on road), old workings not	559270	5540780
examined; V-3, V-10?		

Table 6 - Locations of Mineralization (cont.):

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Area and Description	Easting	Northing
Doctor Creek Basin		
Layered pyrrhotite in float and creek outcrops; S-1	557770	5541480
Chalcopyrite in gabbro; I-1, V-1	558500	5542050
Quartz vein with galena and pyrrhotite; V-9	555115	5540040
Echo Lake – Silver Key Ridge		
Galena at north end gossan; V-1?	558840	5541830
Pyrrhotite pods-epidote, calcite pods; V-8; from talus below galena	558840	5541830
Echo Lk. Area		
Sphalerite – galena in quartz – calcite vein; V-9	556810	5541290
Quartz vein (east-west) with sphalerite; V-9?	556950	5540340
Skutterudite/cobaltite; V-5	557280	5540070
Pico Basin		
Sheeted veinlets with coarse grained blackjack sphalerite -	556910	5539250
chalcopyrite, muscovite, beryl, scheelite, V-3		
Goethite, Mnx with Zn along structure on east side, V-3?	556920	5539700
Bismuthinite at Pico; V-6	556295	5540010
Sphalerite west Pico-"disseminated"; V-3?	555900	5539525
Banana Lake Area		
Pyrrhotite pods; V-1; drilled in DDH F98-02	558050	5540160
Banded tourmaline-albite on ridge southwest of Banana Lk.; S-3	557730	5539490

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5.2 Soil and Rock Geochemistry Results

5.2.1 SOIL GEOCHEMISTRY

Several areas of anomalous lead and zinc values in soils were outlined by the 1998 program (figures 8a, b, c). The most prospective parts of the claims as determined by geochemistry are the Tourmalinite Ridge-Rocky Top Ridge area at the north end of the claims and the Pico Basin area at the south end of the claims. The Tourmalinite-Rocky Top area is a lead-arsenic-silver dominant anomaly while the Pico Basin area is zinc dominant. A third elevated area is near Beetle Peak in the centre of the property with elevated lead and zinc.

The northern lead-arsenic-silver anomaly coincides directly with the upper Aldridge Formation hosted stratabound mineralization drill tested in hole F98-05 and confirms the continuity of mineralization between Tourmalinite Ridge and Rocky Top Ridge. The Pico basin anomaly is similarly caused by known mineralization in the form of sheeted veins drill tested in hole F98-04. The Beetle Peak anomaly is probably caused by the numerous galena and sphalerite bearing fractures and related veins in the area.

The most significant unexplained anomaly is an area of elevated zinc on the FATCAT 1 and 3 claims. The area is near the contact between the White Creek Batholith and middle Aldridge arenites with the highest zinc values from samples within the batholith. Examination of the sample sites revealed barren looking monzogranite with rare narrow quartz veinlets.

An anomalous site that was not re-examined is on the DOC 16 claim in a creek bed south of Doctor Peak. This is a one to two sample lead-arsenic-silver anomaly with a geochemical signature similar to the stratabound mineralization at the north end of the claims. There are several other single station anomalies in lead and zinc, particularly in the Shrink Lake – Fama Peak area, that are attributed to fault controlled sulphide bearing veins.

Of interest is the relative lack of a soil geochemical response below both the Good Boy and Bad Boy showings in Silver Key Basin. This illustrates the value of prospecting and mapping to locate mineralization in areas with poor soil development. The north facing basin is snow covered for most of the year and the surrounding cliffs contribute a steady supply of talus precluding the development of soil.

Statistical analysis of the entire soil data set shows a good correlation between lead-silver and lead-arsenic (both 0.61). The correlation between lead-zinc is only 0.22. Table 7 shows selected elements for the soil samples in the plus 98th percentile range for lead and zinc. Only three samples were in the plus 98th percentile range for both elements.

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Sampie	Easting	Northina	Aq (ppm)	As (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
Pb anoma	llous:			<u> </u>	VE E ***/		
55414	559620	5550945	4.6	3760	163	4690	258
00184	559649	5551244	23.6	1050	80	3910	78
55415	559702	5550887	6.8	3700	295	3810	476
00182	559495	5551380	2.6	3270	130	2440	260
55441	559258	5550325	3.2	1280	84	1960	94
50226	559263	5539778	2.6	60	46	1350	304
00181	559394	5551380	2.4	926	49	1295	98
55413	559526	5550976	3.8	538	39	830	84
55470	560805	5552011	0.8	836	93	790	170
55471	560876	5551938	0.4	846	106	770	174
33340	556583	5543336	6.6	858	144	734	180
00183	559572	5551315	0.8	1325	182	722	218
55494	559204	5549985	1.6	498	34	712	106
18722	559685	5547484	2.4	104	103	710	522
55467	560494	5552090	0.2	542	61	568	258
Zn anoma	llous:						
55520	557858	5548793	2.6	146	87	560	2150
33396	561723	5544991	-0.2	6	70	20	1280
55656	561721	5544992	-0.2	12	89	12	1130
02043	556808	5539259	0.2	26	106	20	1070
55663	561608	5545004	1.8	30	244	42	1050
55658	561639	5544820	9.2	30	439	546	934
55660	561606	5544638	0.4	10	106	22	916
02037	556485	5539734	0.6	22	293	58	882
55657	561679	5544898	0.2	50	93	38	832
02042	556781	5539361	-0.2	80	454	36	824
02036	556413	5539786	0.6	78	273	82	784
12919	557765	5539704	0.6	140	520	142	724
33394	561759	5545181	-0.2	14	23	22	710
02031	556130	5539587	1.2	216	191	102	682
55654	561760	5545181	-0.2	24	21	26	672
17524	553843	5542618	0.6	134	34	122	624
02041	556737	5539449	0.8	94	146	84	624
02035	556321	5539817	0.6	10	149	64	618
50371	557741	5544156	2.4	20	96	164	582
12925	553311	5539476	1.6	84	37	428	572
33397	561679	5544898	-0.2	76	110	46	570
33400	561606	5544637	0.2	10	66	14	548
Pb and Z	n anomalou	s:				•	
02172	559775	5548166	1.6	244	522	974	1995
33398	561640	5544819	4.2	30	271	730	1345
02159	559056	5548264	1	202	580	692	572

Table 7 - Anomalous Soil Sample Results:

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5.2.2 ROCK GEOCHEMISTRY

Rock sampling returned several anomalous values up to 25.2% lead and 19.7% zinc from selected samples. All samples are plotted on figures 9a, b, and c. The highest lead and zinc results are summarized in table 8.

Sample	Easting	Northing	Ag (ppm)	As (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
Pb anomalo	ous:						
55893	559609	5550896	310	5790	109	252000	64
55900	558837	5541732	99.4	46	57	73600	172
55775	559626	5547141	405	44	13600	73400	320
55594	555097	5539272	302	682	561	60500	270
55706	560192	5552582	87.8	84	11	35900	274
33253	559703	5548103	11.8	104	92	24200	190
55738	559681	5551058	34.8	2400	123	23100	120
55774	557438	5546572	36.8	6	134	13100	48
55712	559440	5550610	16	1320	143	11600	72
30307	558190	5546904	10.8	>10000	2830	11400	56
30268	559782	5550912	26.2	612	46	9900	148
55894	559555	5551316	25.8	188	337	7340	10
55895	559550	5551323	5.8	1030	126	5660	2
55570	559384	5539470	4.8	166	19	5280	40
Zn anomalo	ous:	**************************************			-		
55901	556802	5541293	1.8	74	129	248	46400
55588	556947	5540342	30.8	48	167	720	26800
30291	557091	5547341	11.8	42	245	756	22600
55762	556795	5546210	0.8	20	492	44	11700
55981	558170	5546101	3.4	8	71	916	6110
55773	557446	5546603	4.8	6	37	998	4100
30403	558673	5539780	5	2260	137	664	3960
55735	557783	5548851	<0.2	42	13	26	2660
55734	557834	5548844	<0.2	20	18	18	2540
55961	556910	5539283	<0.2	6	114	2	2410
55580	555903	5539528	1	52	86	22	2190
Pb and Zn	anomalous	•					
55998	558674	5539766	476	6720	935	117500	197000
55879	556620	5539633	65.4	1115	656	36100	3220
55974	556818	5539911	38.6	1245	129	11900	5340
55590	558675	5539780	43	4300	200	9580	36400
55968	556924	5539699	11.6	176	100	7440	1840
02205	555116	5540039	9.2	4	208	5770	4960
55891	559577	5539245	15.6	92	23	5340	1170
33252	559703	5548146	5.8	48	28	2830	10900
55965	556995	5539857	124	190	1630	2410	3840
55752	557408	5547512	68.6	26	42	2230	6780

Table 8 - Anomalous Rock Sample Results:

5.3 TEM Geophysical Survey Results

Geophysical surveys were conducted over six grid areas on the property as shown on figure 10. The full report on the survey prepared by Quantec Consulting Inc. is attached as appendix X. Individual grid area results are summarized below.

Tourmalinite Ridge

The Tourmalinite Ridge ground TDEM data were acquired over the upper Aldridge – Creston Formation contact in an area of elevated lead-arsenic-silver soil geochemistry. A GSC/BCGS airborne DIGHEM survey in 1995 also identified a number of shallow conductors in the area that the ground survey was designed to test. The survey identified the upper Aldridge Formation as weakly conductive as expected from the graphitic horizons and small amounts of sulphide in the rocks. The survey indicates the conductive unit either becomes less conductive (less argillaceous) or is fault bound on the east end of the fixed loop. No large conductor indicating a significant increase in sulphide content was identified within the tested area.

<u>Clearcut</u>

The Clearcut grid area was identified as a regionally anomalous conductor from the DIGHEM survey and was chosen for a ground survey because it is at the intersection of NE-SW and E-W structures. Results indicate a relatively resistive halfspace with a deeper more conductive layer. No sulphide responses were encountered and the lack of supportive geochemistry downgrades this area as a target.

Cassat Basin

The two Cassat Basin loops were established to test the down-dip extension of anomalous geochemistry in the Pico Basin area. Results show a homogeneous halfspace with a thin more conductive unit of approximately 2.5 Siemens at depth (>800m). This conductor is near the depth penetration limit of the survey.

Echo Lake

The Echo Lake – Banana Lake area loop was designed to test the down-dip extension of mineralization exposed at the "Good Boy" showing to the east. DIGHEM survey results showed a circular EM anomaly that roughly coincides with the showing. The ground survey indicated a shallow (<25m), near vertical body with a calculated response of 10 Siemens striking at about 315°. No flat lying conductors were identified. The near vertical conductor was later drill tested by hole F98-02.

Doctor Basin

A single large fixed loop was used to test the lower Aldridge – middle Aldridge contact at the headwaters of Doctor Creek. The loop also partially tested a coincident mag – EM anomaly identified by the DIGHEM survey and drill tested in 1996 with hole DOC96-01. The only conductor identified in the ground survey coincided with the airborne anomaly. Ground inspection shows semi-massive pyrrhotite in gabbro that would account for the anomaly.

Pico Basin

A single loop was established to test the anomalous geochemistry in lower Aldridge sediments in Pico Basin. An approximate depth-of-investigation of 800 metres gave a simple halfspace response with no indication of a conductor.

5.4 Diamond Drilling Results

Five diamond drill holes were drilled on the Findlay Creek property totaling 1853.17 meters. Diamond drill hole F98-01 was located in Doctor Creek and was designed to test the top part of the lower Aldridge Formation. The hole was collared in a gabbro sill(?) but intersected a 13.6 metre thick conglomerate bed below the gabbro that is interpreted to be the "LMC fragmental" used locally to mark the transition between the lower and middle Aldridge formation.

Drill hole F98-02 was located near Banana Lake to test a steeply dipping EM conductor identified during the ground TDEM survey. Hole F98-03 was located high in the cirque southeast of Banana Lake in an attempt to test stratigraphy that hosts the "Good Boy" showing to the east. None of the first three holes intersected base metal mineralization other than minor sphalente and chalcopyrite related to veins and intrusives. The conductor drilled in hole F98-02 was caused by semi-massive to massive pyrrhotite associated with a folded gabbro sill.

Diamond drill hole F98-04 was collared in Pico Basin to test lower Aldridge stratigraphy despite the lack of supportive EM response. Surface mapping indicates hole F98-04 is collared an estimated 200 metres stratigraphically below the "LMC fragmental". Assuming this is the same conglomerate horizon intersected in hole F98-01 at 200 metres depth, holes F98-01 and F98-04 test a combined 400 metres of sedimentary stratigraphy beginning 17 metres above the fragmental horizon. An additional 500 metres of gabbro sill(?) was drilled in the two holes. Hole F98-04 failed to intersect any stratigraphically controlled mineralization but did encounter numerous high angle quartz-sphalerite-pyrrhotite-chalcopyrite-scheelite ± fluorite veinlets in both gabbro and sediments over much of its length. One of the best intervals in hole F98-04 averaged 463 ppm lead and 603 ppm zinc over seven metres (435m to 442m).

Diamond drill hole F98-05 in Tourmalinite Creek was designed to test lead-arsenic-silver anomalous stratabound mineralization in the upper Aldridge Formation. The hole was collared in Creston Formation and successfully tested the underlying upper Aldridge Formation although the hole was terminated prior to entering strata that clearly belonged to the middle Aldridge Formation. Mineralized strata in hole F98-05 averaged 1,460 ppm lead over 105.2 metres (171.8m to 277.0m). This interval included 0.48 metres of 17,700 ppm (1.77%) lead and 0.09 metres of 129,500 ppm (12.95% lead).

Full analytical results for all drill holes are attached as appendix IX. Drill logs (attached as appendix VII) are summarized below.

F98-01

0-9.14m	Overburden.
9.14-40.50m	Gabbro.
40.50-45.72m	Pa2(?) siitstone wackes.
45.72-175.08m	Gabbro with pervasive trace disseminated pyrrhotite.
175.08-191.40m	Pa2(?) arenaceous siltstone wackes with minor sphalerite noted in a cross-cutting vein.
191.40-191.69m	Pa2(?) distinctive laminated siltstone with 1% disseminated pyrrhotite along laminations.
191.69-205.00m	LMC fragmental with siltstone matrix.
205.00-385.25m	Pa1(?) medium bedded quartz arenites with minor laminated siltstones, minor granophyre, arenaceous siltstone-wackes, and minor faulted subintervals.

385.25-388.10m 388.10-478.23m	Calcareous pyritic gabbro dyke. Pa1 thin to medium bedded siltstone wackes and arenaceous siltstone wackes.
F98-02	
0-4.25m	Overburden.
4.25-14.94m	Foliated gabbro.
14.94-17.83m	Pyroxenite with trace disseminated pyrrhotite.
17.83-62.26m	Gabbro with trace to 1% disseminated pyrrhotite.
62.26-66,85m	Pa1 foliated siltstone.
66.85-67.70m	Pyroxenite.
67.80-92.36m	Pa1 arenaceous siltstone with trace disseminated pyrrhotite and local minor pyrrhotite and chalcopyrite in quartz veinlets.
92.36-102.24m	Gabbro with local minor pyrrhotite and chalcopyrite in quartz veinlets.
102.24-103.67m	Calcareous lamprophyre.
103.67-135.33m	Gabbro.

F98-03

The first half of the F98-03 was collared in shallow to moderately dipping Pa1 sediments, passed through a fold nose at about 35m depth, and continued down the limb of a fold at a very shallow angle to the core axis. The second half of the hole was predominantly Pm gabbro with minor thin intervals of Pa1 sediments near the bottom.

0-2.13m	Overburden.
2.13-98.60m	Pa1 thin bedded arenaceous and siltstone wackes - overturned bedding passing through the nose of a fold into up right bedding.
98.60-101.30m	Biotite foliated gabbro.
101.30-210.38m	Pa1 arenaceous siltstones and silty arenite wackes with local granophyric- bedding very shallow to core axis.
210.38-407.12m	Gabbro with trace to 1% disseminated pyrrhotite and local trace chalcopyrite throughout interval. Trace to weak chlorite alteration.
407.12-420.50m	Pa1 meta-siltstone and foliated gabbro.
420.50-468.78m	Gabbro with moderate chlorite alteration.

F98-04

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) 4. J Mineralization in F98-04 is in widely spaced (average every 30m) moderate to steep dipping sheeted quartz \pm calcite veinlets (average 2cm wide) within gabbro sills (Pm) and siltstone wackes (Pa1). Veinlets typically contained less than 10% blackjack sphalerite with pyrrhotite \pm chalcopyrite \pm scheelite \pm fluorite \pm muscovite \pm beryl.

0-2.13	Overburden.
2.13-52.06m	Thin bedded arenaceous siltstone wackes (Pa1). A thin 40 cm calcareous meta-gabbro occurs at 15.50m.
52.06-55.60m	Granophyre.
55.60-57.70m	Lamprophyre.
57.70-207.96m	Gabbro with local fine and dioritic coarse grained phases, calcareous altered at start of interval, trace disseminated pyrrhotite throughout.
207.96-229.40m	Laminated to thin bedded arenaceous siltstone wackes (Pa1).
229.40-417.27m	Gabbro with local dioritic coarse grained phases.
417.27-487.98m	Arenaceous siltstone and silty arenite wackes with local granophyric textures (Pa1).

<u>F98-05</u>

Significant mineralization was intersected in hole F98-05 as 45 documented distinct average 10cm thick zones distributed over 125 metres (152.64-277.75m) within Pa3-t siltstone wackes, argillite and silty quartzitic arenites. Each zone is characterized by a siliceous horizon (average 1cm thick) with associated pyrrhotite \pm galena \pm chalcopyrite, and tourmaline rich siltstone band(s) (average 1cm thick) \pm associated euhedral arsenopyrite. Silty elongated fragments occur locally within these zones.

0-4.57m	Overburden.
4.57-105.94	Faulted mixed lithologies of siltstone, argillite and arenaceous quartzitic wackes of Pc and lesser Pa3. Strata is very deformed at the bottom of this interval.
105.94-138.68m	Core was dropped by the helicopter. The un-restored core contains argiilites and siltstone wackes of Pc and Pa3.
138.68-171.80m	Mixed graphitic argillites and arenaceous siltstones of Pa3. Section contains a 10cm wide clastic silty dike (dewatering feature at 142.25m). Mineralized zone 1 is 10m down hole from the dyke.
171.80-176.50m	Fault gouge and breccia partly mineralized with local silicification.
176.50-219.35m	Laminated (locally tourmaline rich) to medium bedded siltstone wackes of
	Pa3-t containing mineralized zones 2 to 33. This interval is calcareous at the hanging wall of the underlying gabbro.
219.35-230.14m	Gabbro sill (Pm?) with weak chlorite alteration.
230.14-282.85m	Silty arenite wackes and local tourmaline rich laminated siltstone wackes of Pa3-t containing mineralized zones 34 to 45. Minor fault at 272.50 to 274.00m contains very fine grained gemmy translucent greenish yellow dodecahedral garnets. Coarser grained sediments indicates possible transition to Pa2

6.0 SUMMARY AND CONCLUSIONS

The 1998 exploration program on the Findlay Creek property consisted of an initial phase of geological mapping and soil sampling to define target areas with potential for hosting economic lead-zinc mineralization. Follow-up ground TDEM surveys were conducted over the most promising target areas with negative or inconclusive results. Five diamond drill holes at the end of the season tested the most favorable targets with encouraging results from the last drill hole.

Drill hole F98-05 intersected stratabound lead mineralization with anomalous arsenic and silver values near Tourmalinite Ridge. The average lead value in the drill hole is 1,460 ppm across a stratigraphic width of 105 metres. Surface and core sampling at Tourmalinite Ridge, one kilometre to the east, indicates a similar average lead grade. Mineralization is confined to a package of silty argillite and argillite assigned to the upper Aldridge Formation. Surface sampling and mapping indicates the anomalous unit has a minimum strike length in excess of 4 kilometres and dips at about 25° to the northwest.

The style of mineralization and the lack of zinc differentiates the system from known sedimenthosted massive sulphide deposits. Additional diamond drilling is required to test the remainder of the host stratigraphy for economic grade mineralization.

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8.0 STATEMENT OF QUALIFICATIONS

I, Steven Coombes, of the village of Invermere, Province of British Columbia, DO HEREBY CERTIFY THAT:

- 1) I am a senior geologist employed by Kennecott Canada Exploration Inc. with a business office at 354–200 Granville Street, Vancouver, British Columbia, Canada, V6C 1S4.
- 2) I am a graduate in Geology with a Bachelor of Science degree from the University of British Columbia in 1983.
- 3) I am a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 19713).
- 4) I am a Fellow of the Geological Association of Canada (No. F5457).
- 5) I have practiced my profession as a geologist for the past sixteen years.

Four years pre-graduate field experience in geology, geochemistry, and geophysics with Noranda Exploration Co. Ltd. (seasonal, 1979 to 1982).

Two years as exploration geologist with Rhyolite Resources Inc. (1983 to 1985).

Five years as exploration geologist with Searchlight Consultants Inc. (1985 to 1990).

Five years as consulting geologist and proprietor of Summit Geological (1990 to 1995).

Four years as project geologist and senior geologist for Kennecott Canada Exploration Inc. (1995 to 1998).

6) I supervised the 1998 Purcell region exploration programs, and wrote this report to document the results of the Findlay Creek program.

FESSIO OVINCE F. COOMBES Steven Coombes, P. Geor.

Steven Coombes, F Senior Geologist

Dated: February 1, 1999

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STATEMENT OF QUALIFICATIONS

I, Rick J. Zuran, B.Sc., with a residence of P.O. Box 34003, Whitehorse, Yukon Territory, Y1A 7A1, Canada, do hereby certify that:

- 1. I am a graduate of the University of British Columbia, Vancouver, British Columbia with a Bachelor Degree in Geological Sciences (1988).
- 2. I have engaged in mineral exploration since 1977 for base metals, uranium, and precious metals in Yukon Territory, Northwest Territories, British Columbia, Saskatchewan, and Labrador.
- 3. I am a member of the Yukon Chamber of Mines.
- 4. I am presently employed by Kennecott Canada Exploration Inc. of #354-200 Granville St., Vancouver, BC, V6C 1S4 (604 669 1880).
- 5. The work described in this report is based on field work conducted from June to October, 1998 which I supervised.
- 6. I am co-author of this report.

Dated at Ft. Steele, British Columbia this 315 day of January, 1999.

Respectfully Submitted,

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Rick J. Zuran, B.Sc. Project Geologist Kennecott Canada Exploration Inc.



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STRA	TIFIED ROCKS
Middle	Proterozoic
Crestor	Formation
Pc	light green-grey-buff siltstone, mudstone, argillite; lesser quartz arenite and dolostone
Upper /	Alderidge Formation
Pa3	mid to dark grey, rusty weathering argillite and siltstone with lesser arenite

the second s	
Pa3	mid to dark grey, rusty weathering argillite and siltstone with lesser arenite
Middle .	Alderidge Formation
Pa2	light grey to brown turbiditic wackes-quartz arenite and siltstone; lesser silty argillite
Lower-I	Niddle Alderidge Formation Contact?
Pfr	fragmental; siltstone meta-conglomerate
Lower A	Aldridge Formation
Pa1	light to mid grey, rusty weathering silty arenite, siltstone and quartz arenite
INTRI	JSIVE ROCKS
Tertia	y ?
П	medium to coarse grained lamprophyre
Middl	e Cretaceous
White	Creek Batholith
Kmg	biotite monzogranite
Creta	ceous ?
QEP	quartz-eye porphyry dykes
Age U	nknown ?
ΡΥΧ	pyroxenite
Middi	e Proterozoic
Моуіе	Intrusions

Pm gabbro and hornblende quartz-diorite

SYMBOLS

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\neq \neq \neq	bedding:	(inclined, vertical, horizontal)
\neq \neq \neq	foliation:	(Inclined, vertical, horizontal)
///	jointing:	(inclined, vertical, horizontal)
¥ ≯ ≯	dyke:	(inclined, vertical, horizontal)
* * *	vein:	(inclined, vertical, horizontal)
بمسمر فمممو	fault:	(defined, inferred)
≠₹ ^{₽^}	shear zone	
>	fold axis	
* *	anticline, syn	cline
11	geological contact	(defined, approximate)
·-·-·	limit of tourm	aline alteration
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$\widehat{\Box}$	cabin	
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ABBREVIATIONS

AB	BREVIATIONS		
Altera	ntion	Mine	rals
ble	bleached	act	actinolite
hnf	hornfels	alb	albite
oxi	oxidation	apy	arsenopyrite
ser	sericitization	ber	beryl
sil	silicification	bio	biotite
tou	tourmalinization	cal	calcite
		chl	chlorite
Litho	logy	сру	cha l copyrite
ARE	arenite	flo	fiourite
ARG	argillite	gal	galena
DIO	diorite	gar	garnet
DOL	dolomite	goe	goethite
FRG	fragmental	hnb	hornblende
GAB	gabbro	lim	limonite
LAM	lamprophyre	mag	magnetite
LST	limestone	mno	manganese oxid
LTO	laminated tourmaline siltstone	mus	muscovite
MST	mudstone	pbo	lead oxide
ΡΥΧ	pyroxenite	poh	pyrrhotite
QEP	quartz eye porphyry	руг	pyrite
QZT	quartzite	qtz	quartz
SCH	schist	ser	sericite
SLH	silicified laminated horizon	sph	sphalerite
SLT	siltstone	sti	stibnite
		tou	tourmaline
Quali	fiers		
azi	azimuth	Ħ	light
dk	dark	mas	massive
dis	disseminated	phy	phyllitic
fbx	fault breccia	PPy	porphyry
fol	foliated	tr	trace

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Pa3? Pc Pa3? 578 MAG St: Harrow - brown fal, lim

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