MAR 19950031: SOUTHWESTERN

Received date: Dec 15, 1995

Public release date: Dec 16, 1996

19950031

Geochemical Sampling and Geological Report

on

Southwestern Alberta Mineral Permits

939080 220-231

939080 287-297

939080 300-304

939080 370-380

NTS 82G and 82J

by

Mike Waskett-Myers

and

Chris Graf, P.Eng.

for

Ecstall Mining Corporation

December 12, 1995

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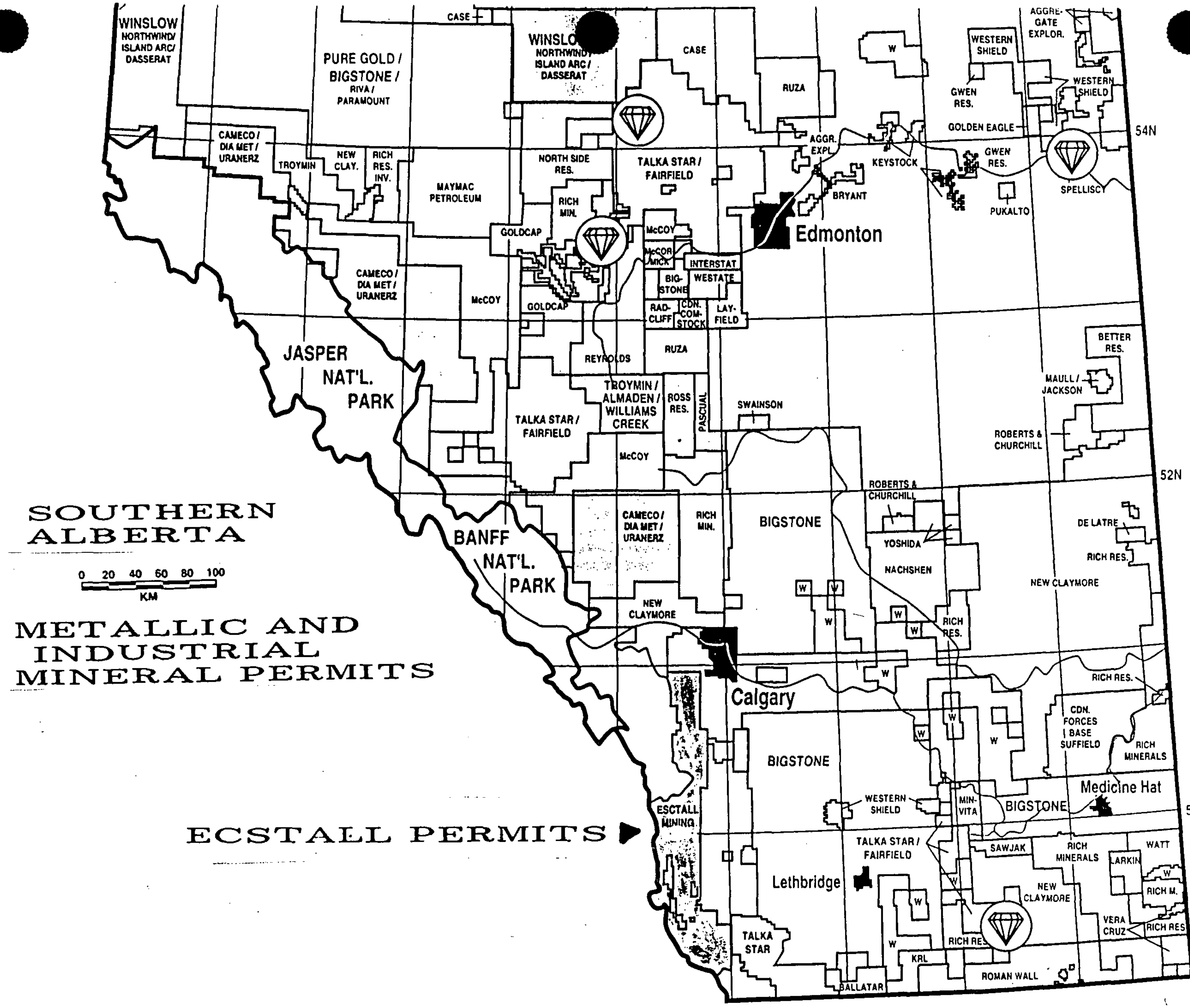
SUMMARY

Ecstall's mineral permit area is centred on 49^0 45' N latitude and 114^0 30' W longitude in southwest Alberta, and comprises all or parts of National Topographic System mapsheets 82G/7,8,9,10,15,16 and 82J/1,2,7,8. The project encompasses a total area of about 7,320 km^2. Southwest Alberta comprises two physiographic regions: the Eastern System of the Western Cordillera and, in the northeast portion of the area, a small wedge of the Interior Plains. The Eastern System of the Western Cordillera can be divided into the Foothills and Rocky Mountains subprovinces. The area is underlain mainly by metasedimentary and, locally, by volcanic and intrusive igneous rocks that range in age from Middle Proterozoic to Tertiary.

A large number of metallic mineral occurrences and deposits exist in southwest Alberta, in southeast British Columbia and in the adjacent areas of northwestern United States of America. Many of them are spatially related to the Southern Alberta Rift. Metallic mineral exploration in southwestern Alberta peaked in the late 1960's to early 1970's when extensive exploration for copper and other metals was conducted in the Clark Range. potential exists for the discovery of : (a) stratabound copper-lead-zinc-silver deposits of Kupferschiefer and kipushi type in the Proterozoic rocks of the Clark Range and , possibly, in some Phanerozoic strata, (b) Mississippi Valley type lead -zinc deposits in selected carbonate rocks that range from Proterozoic to Triassic age, (c) stratiform sediment -hosted Sedex type lead-zinc or nickel-zinc deposits in black shales and other fine grained clastic rocks that range from Proterozoic to, possibly, Paleocene age, (d) epithermal or mesothermal precious metal deposits in strata of both Proterozoic and Phanerozoic age, (e) paleoplacer magnetite deposits and other heavy minerals, such as gold, in selected horizons within Cretaceous and , possibly, Lower Tertiary units that are derived from the Intermontane region of British Columbia, (f) diamondiferous kimberlite/lamproite diatremes or placer deposits in clastic rocks that range from Proterozoic to Tertiary in age

Southwest Alberta has had a long history of resource development as a result of extensive coal mining, oil and natural gas development, forestry and some other natural resource exploitation. There is a well-developed support infrastructure, including an extensive road network. The area is geologically complex and there are numerous diverse types of metallic mineral occurrences. Therefore, individual prospectors and the metallic mineral industry should consider southwest Alberta as a prospective place to explore for a variety of metallic mineral deposits. The Government of Alberta has an important role to play in encouraging industry by continuing to provide geoscientific information and by having an equitable, but environmentally effective, integrated resource policy for southwest Alberta. Such information will provide industry with the impetus it needs to discover metallic mineral deposits in southwest Alberta.


SOUTHERN ALBERTA
0 20 40 60 80 100
KM
METALLIC AND INDUSTRIAL MINERAL PERMITS
ECSTALL PERMITS
Edmonton
Calgary
Lethbridge
Medicine Hat
JASPER NAT'L. PARK
BANFF NAT'L. PARK
54N
52N
50N
ECSTALL MINING
BIGSTONE
NEW CLAYMORE
TALKA STAR / FAIRFIELD

MAP 1

ENR-LSAS
REPORT DATE: 1995-03-27 TIME: 16:41:26

LAND STATUS AUTOMATED SYSTEM
BASIC AGREEMENT SEARCH REPORT BY CLIENT ID

AGREEMENT TYPE/NUMBER	STATUS	STATUS EFFECTIVE	CANCELLATION REASON	CANCEL/ EXPIRY	--- AGREEMENT AREA (HA) --- ORIGINAL	CURRENT	CLIENT ID	CLIENT PARTCPTN	CLIENT HECTARES
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093 9393080222	5 ACTIVE	1993-08-05		2003-08-18	6,695.0000	6,695.0000	8033789 001	100.0000	6,695.0000
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		39	<-- AGREEMENT COUNT		307,043.7680	307,037.7680			307,037.7680

ABOVE TOTALS FOR THE SORT SEQUENCE:

CLIENT ID # 8033789 001 CLIENT NAME : GRAF, CHRIS WAYNE

39 <-- AGREEMENT COUNT 307,043.7680 307,037.7680 307,037.7680

*** END OF REPORT ***

LOCATION, ACCESS, PHYSIOGRAPHY

Ecstall's project area is centred on 49^0 45' N latitude and 114^0 30' W longitude in southwest Alberta (Figure 1). The program area comprises all or parts of national Topographic System (NTS) 1:50,000 scale map-sheets 82G/7,8,9,10,15,16 and 82J/1,2,7,8.

Access in the project area is provided by a well-maintained network of primary, hard surface, all-weather roads; secondary, loose surface all-weather roads and numerous tertiary logging roads and trails. Access to elevations of about 1,500m by loose all-weather roads is common. Access to the higher elevations backwoods areas can be achieved in dry weather by four-wheel drive vehicles and by foot. A helicopter would be beneficial for explorations of the steeper mountain ridges.

PHYSIOGRAPHY

Ecstall's project area is comprised of two physiographic regions: the Eastern System of the Western Cordillera and, in the northwest portion of the area, a small wedge of the Interior Plains. The Eastern System of the Western Cordillera is divided into four subprovinces: the Foothills, Front, Main and Western Ranges of the Rocky Mountains (North and Henderson 1954). Within the project area, the Eastern System of the Western Cordillera consists of the Foothills and the Front Ranges of the Rocky Mountains in about equal proportions.

The Interior Plains are characterized by a relatively featureless topography of low relief. The flat topography reflects the underlying, near-horizontal to gently west-dipping, easterly-tapering, Phanerozoic sedimentary sequence. Locally, the Plains are cut by rivers that provide moderate relief of up to a few tens of metres. The Interior Plains rise in elevation from east to west across the prairie provinces and reach their maximum elevation of about 1,100 m in the northwestern portion of the Southern Alberta Rift project area.

The boundary between the Interior Plains and the Foothills is located at or near the Turner Valley Fault, which is approximately at the unconformable lithological contact between the Cretaceous Belly River Formation and the Tertiary Paskapoo Formation. The Western boundary of the Foothills is located approximately at the McConnell Thrust Fault, where various older sedimentary rocks are thrust over younger sedimentary rock. The Foothills are characterized by a series of rounded, northerly-trending ridges with elevations up to about 1,800 m.

The Front Ranges occupy the westernmost portion of the project area, from the Foothills, west to the Alberta-British Columbia border and beyond. The Front Ranges are characterized by prominent grey cliffs with elevations at the summits typically reaching about 2,750 m. The characteristic layer-cake appearance of the Front Range cliffs is produced by alternating sequences of resistant Palaeozoic carbonates that are thrust-faulted over younger, recessive-weathering, clastic sedimentary rocks.

PRIOR WORK

Exploration by private industry in the Rocky Mountains and Foothills of Alberta has occurred periodically from the late nineteenth century onwards. In the late 1800's, mineral exploration and mining occurred in the Banff - Field corridor as the railway pushed through from Calgary to British Columbia. In the late 1950's and through the 1960's, base metals were explored for in the area from Canmore to Waterton Lakes National Park. Metallic mineral exploration in southwest Alberta peaked in the late 1960's to early 1970's, when extensive exploration for copper and other metals was conducted in the Clark Range. Based on the available assessment records, there has been minimal exploration for metallic minerals in southwest Alberta since the Government of Alberta implemented the Eastern Slopes Policy in 1977. In the late 1980's, a reported gold discovery in the Crowsnest Pass area fuelled a staking rush and renewed interest in exploration for the 'Lost Lemon Gold Mine' in southwest Alberta (Stewart 1989).

During the early 1900's, small-scale mining was performed on two copper-bearing diorite dykes at Coppermine Creek in the Clark Range of southwest Alberta, within what is now Waterton Lakes National Park (Goble 1970; Morton *et al.* 1974; Goble 1976). However, there are no records that indicate much regional exploration accompanied this mining activity. During the early 1960's, the Goble family rediscovered copper-silver mineralization in the Middle Proterozoic rocks of the Clark Range. Considerable staking and exploration followed, with important concentrations of stratabound copper and silver being discovered at the Spionkop, Yarrow, Grizzly and Whistler prospects or showings (Bradshaw 1967, 1968; Duncan 1970; Halferdahl 1971; Van Dyck 1971; Gyr 1971; Goble 1972; Goble 1973a; Allan 1973; Collins and Smith 1977), and stratabound lead-zinc-silver and copper-silver mineral occurrences being discovered in the North Kootenay Pass area (Carter 1971; Goble 1973a, 1973b, and 1975). In total, over 70 copper-silver and lead-zinc-silver showings have been found in the Clark Range.

The Oldman (formerly called Bearspaw) lead-zinc-silver prospect on the east flank of Mount Gass near the headwaters of the Oldman River was discovered by hunters in 1912 (Headley 1954; Holter 1973, 1977). West Canadian Collieries acquired the prospect and performed exploration during the early 1950's. Holter (1973, 1977) stated that galena and sphalerite are associated with intersecting faults in dolomitic limestone of the Upper Devonian Palliser Formation. However, Salat (1988) provided evidence that the Oldman deposit is spatially related to a dolomitization front and is hosted in a paleokarst system that developed at the top of the Palliser Formation. He also suggested that the deposit has potential for about 2 to 2.5 millions tons with an average grade of 5 to 7% zinc, 34.29 grams silver per tonne (g Ag/t) or 1 ounce silver per ton (oz Ag/T), 1% lead and 1 pound per ton cadmium. Assessment data indicate that other poorly documented base metal occurrences exist in the vicinity of the Oldman deposit. These include a lead occurrence on the northeast slope of Beehive Mountain and a copper occurrence at Mount Livingstone (Gills 1970). Assay certificates that accompany the assessment report by Gillis (Ibid.) indicate that the copper occurrence is hosted in the uppermost Devonian Big Valley Formation. The Big Valley Formation is predominantly limestone and is time equivalent to the Costigan Member of the Upper Palliser Formation.

The geology and occurrences of the magnetite deposits near Burmis in the Crowsnest Pass region were first described by Leach (1912). Allan (1931) published a more detailed account of the stratigraphy and structure of the magnetite deposits north of Burmis, and he also prepared a brief unpublished report in 1941 on the Dungarvan magnetite deposits, which are south of Pincher reek. During the 1950's, extensive exploration including trenching, drilling and metallurgical testing, was to determine the potential of the magnetite deposits as feed for a possible iron ore smelter. This work is well-summarized in Bruce (1957), Steiner (1958) and Mellon (1961). During the 1970's and 1980's the magnetite deposit were re-evaluated for the potential use of magnetite in coal beneficiation processes. This work is summarized by Rushton (1972) and Grant and Trigg (1983).

Many other metallic mineral occurrences have been reported in the Alberta Rocky Mountains and Foothills, but most are poorly-documented or unsubstantiated. A possible base metal occurrence was reported by Trigg (1982), who described a specimen of galena, sphalerite and anglesite that was brought to him by a client. This specimen was supposed to have been collected from the south end of Mist Mountain about 18km southeast of Upper Kananskis Lake, but subsequent follow-up field work was unable to locate the occurrence. However, a few stream sediment samples that were collected in the vicinity of the occurrence are anomalous in zinc and silver (Johnston and Olson 1982).

There are several poorly-documented gold occurrences in the Alberta Rocky Mountains and Foothills. Perhaps the most famous and most elusive is the Lost Lemon Gold Mine, which was reportedly discovered in 1870 by two prospectors, Frank Lemon and his partner Blackjack, at the headwaters of a small stream between the Highwood River and Crowsnest Pass (Stewart 1989). Exploration for the Lost Lemon Gold Mine on the Alberta side of the Rocky Mountains has been ongoing since that time, but little documented information exists on this exploration. A company named Lost Lemon Mines.Ltd. performed exploration in the vicinity of Plateau Mountain t the southern boundary of Kananaskis Country in the 1970's and early 1980's. They reportedly drilled a hole in the valley of Dry Creek during 1981. The drill core was later logged by Dr. L. B. Halferdahl, P. Geol. who stated that the core he examined consisted of limestone, with black shale at the bottom of the hole (pers. comm. 1993). Assay certificates provided to Dr. Halferdahl by his client reported up to 0.446 grams gold per tonne (g Au/t) or 0.013 ounces gold per ton (oz Au/T) and up to 10.29 g Ag/t (0.3 oz Ag/T) from separate rock samples. The samples were reported to have been from the drill core, but the core interval that contained the anomalous samples was missing from the drill core that Dr. Halferdahl had been asked to log. Therefore, he could not confirm that the anomalous samples were from the drill core, from the surface in the vicinity of the drill hole, or from a completely different source. Low amounts of gold have been reported in the Crowsnest volcanics just west of Coleman along Highway 3 where rock grab samples assay up to 0.21 g Au/t, with extracted pyrite concentrates assaying as high as 2.54 g Au/t (Stewart 1989). This announcement precipitated a staking rush and resulted in renewed exploration for the Lost Lemon Gold Mine. Assessment data from this exploration are not yet publicly available.

In the Clark Range, Goble (1973a) stated that gold was discovered during the period 1901 to 1903. A gold occurrence is reported to be hosted within Lower Purcell quartzites, south of Oil City, on the northwest slope of Buchanan Ridge. The occurrence has never been substantiated, and is now within Waterton Lakes National Park. One other possible gold occurrence of note was reportedly discovered a few kilometres northeast of Blairmore at Transmission-line Structure Site 456. A non-geological employee of construction company had collected a rock grab sample from a calcareous siltstone at this site that assayed up to 0.76 g Au/t (Olson 1985b). This gold result could not be duplicated in follow-up exploration, but the original site that had been sampled was backfilled and could not be resampled.

Exploration for silver in southwest Alberta has mainly focused on existing base metal occurrences in the Rocky Mountains and Foothills. Three silver occurrences of note include a silver assay of 0.729 ounces per ton (25 g Ag/t) from a pyrite-rich limestone that is about 80km west of Calgary on the Ghost River (Hoffmann 1985), anomalous silver and phosphorous from samples of the Fernie Formation at the headwaters of Westrup Creek near Mount Livingstone (Hamilton 1978), and up to 32.57 g Au/t (0.95 Ag/T) and 0.72 g Au/t (0.021 oz Au/T) in samples from a series of syenitic to dioritic intrusions at the headwaters of Jutland Creek near the Alberta and British Columbia border in the Clark Range (Goble 1974a, 1974b). The location and description of the sample given for the Ghost River occurrence indicates that the sample my have been collected from Middle Cambrian Cathedral Formation. The intrusions sampled by Goble (1974a, 1974b) in the Clark Range are postulated to be of Late Cretaceous or Early Tertiary age.

Regional geochemical sampling information is sparse for the entire Alberta Rocky Mountains and Foothills. No government-conducted regional geochemical stream sediment or water database exists for southwestern Alberta, and no documented heavy mineral sampling has been performed by private industry in the region. Geochemical stream sediment and water sampling surveys were performed by Geophoto Services Ltd. for Imperial Oil in the area between Canmore and Vicary Creek (O'Donnel and Fuenning 1967), the Devonian Palliser Formation was systematically rock sampled by Esso Minerals and the Geological Survey of Canada (Geldsetzer *et al.* 1987), and stream sediment and water samples were collected in the Clark Range southwest of Pincher Creek (Bradshaw 1967, 1968; Gyr 1971; Halferdahl 1971; Van Dyck 1971; Allan 1973). In general, the geochemical surveys that were performed during the late 1960's and early 1970's failed to discover significant geochemical anomalies for follow-up exploration, even in areas of known mineral occurrences. However, a review of the existing publicly available geochemical data in the vicinity of the Oldman River lead-zinc-silver prospect at Mount Gass, indicates that subtle stream sediment geochemical anomalies do exist, but the anomalies tend to be restricted areally around the known occurrences. This is perhaps due to the high topographic elevations that result in low residence time for groundwater, or to carbonate buffering of the ground water by limy country rock, which would reduce the oxidation of sulphides and the resultant release of metals into the groundwater.

Other reported geochemical anomalies include copper and chromium contained within deposits of "Bog Iron" in the Ghost River area to the north study area (Renn 1956), and associated iron and phosphate anomalies in the Zephyr Creek area (Norman 1957; Kidd 1958). Renn (1956) stated that chromium is present in a "yellow section of ore", and that brown silicate rock was found. These descriptions may be an indication that mafic intrusions or diatremes exist in the Ghost River area, and hence warrant exploration for diamonds. Pell (1987) reported that such intrusive diatremes exist within the Mark diatreme cluster, which is centred on the Alberta and British Columbia border near the Freshfield Icefield, which is northwest of Banff. Northcote (1983a, 1983b) reported that a microdiamond was found in the largest diatreme on the Mark claims on the British Columbia side of the border. As well, in the Ram River area near Nordegg, Alberta, Takla Star Resources Ltd. (1993) has reported finding two chromite anomalies in heavy mineral concentrates from creek drainages. They suggest that the chemistry of the chromites might be indicative of diamonddiferous lamproites.

LAND STATUS AND LAND USE

Ecstall's mineral permit encompass a total area over 7,320 km^2. The Alberta Government originally approved "A Policy for Management of the Eastern Slopes" (Eastern Slopes Policy) in 1977 and amended the same in 1984. This Eastern Slopes Policy was intended as a guideline for the interigated management of resources. Within Ecstall's project area about 87 per cent (6,390 km^2) of the land is under the jurisdiction of the Eastern Slopes Policy. Subsequent to the release of the amended Eastern Slopes Policy (1984), Sub-Regional Interigater Resource Plans were established between 1986 and 1988 to further refine the land use zoning as it applies to each sub region. The project area contain three such sub-regions: Kananaskis Country, Livingstone-Porcupine Hills and Castle River (Government of Alberta 1985, 1986, 1987).

The Eastern Slopes Policy and supplementing Sub-Regional Integrated Resource Plans identify broad units of land for which policies and interigated management objectives are specified. Land use zoning is employed as a mean of translating government policies into a planning and decision making format. The system consists of eight detailed land use zones, which define the permitted range of activities for a land use area. At present, the area restricted from mineral exploration and development within Ecstall's area consists of the whole of the Kananaskis Country Sub-Region, the Prime Protection and Facility Development Zones within the Livingstone River-Porcupine Hills and Castle River Sub-Regions, the Beauvias Lake and Chain Lakes Provincial Parks and the Eden Valley Indian Reserve. This restricted area for mineral exploration represents about 23 per cent (1,660 km^2) of the total project area. Since the Government of Alberta implemented the Eastern Slopes Policy, it is of note that some exploration has been approved within some parts of those area designated as Prime Protection Zones.

GEOLOGY

REGIONAL STRATIGRAPHY AND INTRUSIVE ACTIVITY

The first geological map of the southern Canadian Rocky Mountains was published by Dawson (1886). Other pioneer work was done by McConnell (1887) and Daly (1912). The discovery of gas in 1924, followed by crude oil in 1936, at Turner Valley (Hume 1938) was the impetus for large mapping programs in the Foothills and Front Ranges of Alberta in order to assist in the search for additional hydrocarbon accumulations. Excellent summaries of the state of the knowledge are given by Clark (1954), North and Henderson (1954), Hume (1957), Fox (1959) and Shaw (1963). Much of the Canadian Rockies was mapped during a second period of increased mapping activity during the 1950's and 1960's. The geologists from the Geological Survey of Canada most notably involved during that period were Price, Mountjoy and Ollerenshaw. Their work is well summarized by Bally *et al.* (1966), Dahlstrom (1970), Douglas *et al.* (1970) and Price (1981). Much of the work during this period was on unravelling the complex Precambrian and Palaeozoic stratigraphy, and the complex structural history of these rocks. The Alberta Rocky Mountains and Foothills are covered by about 81 NTS map sheets at a scale of 1:50,000 and 11 map sheets at a scale of 1:250,000. Approximately 47 of the 1:50,000 scale map sheets have published geology at a scale of 1:63,360 or better. However, most of these published map sheets were completed prior to 1970, and the geological mapping was not focused on searching for features indicative of metallic mineral occurrences or processes.

The Rocky Mountains of Alberta are dominantly comprised of miogeosynclinal sedimentary and volcanic rocks ranging in age from Middle Proterozoic to Tertiary. The rocks are largely unmetamorphosed to slightly metamorphosed. The Proterozoic-Phanerozoic sedimentary sequence in southwest Alberta is thought to be underlain by crystalline basement rocks of Archean to early Proterozoic age. In general, the sedimentary sequence comprises:

(a)Middle to Upper Proterozoic: up to 13,700 m (45,000 feet) of quartzite, siltstone, argillite and minor amounts of carbonate that thicken to the west.

(b)Palaeozoic: mostly carbonate with some shale. Major unconformities below the base of the Cambrian, Middle Devonian and near the top of the Pennsylvanian.

(c)Triassic and Jurassic: generally an incomplete section of continental to marine conglomerate, sandstone, shale, carbonate, evaporite and coal.

(d)Cretaceous and Tertiary: conglomerate, sandstone, siltstone, shale, and coal of marine to continental origin. These rocks include two major clastic wedges derived from uplift in the west. The two clastic wedges are an Upper Jurassic to Lower Cretaceous Kootenay-Blairmore cycle, and an Upper Cretaceous to Oligocene Belly River-Paskapoo cycle.

Known igneous and volcanic rocks in the Alberta Rocky Mountains exist in the Crowsnest Pass area and the Clark Range. They range in age from Middle Proterozoic to Late Early Cretaceous. Several alkalic ultramafic diatremes and dykes have been identified north of the Southern Alberta Rift area near the Alberta-British Columbia border between Golden and Elkford (Pell 1987). Pell (ibid.) reports ages of between 348 Ma and 396 Ma for the HP pipe, which is part of the Mark diatreme cluster that straddles the Alberta-British Columbia border. In the Crowsnest Pass area, the Crowsnest volcanics, which are of trachytic to phonolitic composition (Dingwell and Brealry 1985, Adair 1986, Peterson and Currie 1993), are intercalated with the upper portions of the Blairmore sandstones. Folinsbee *et al.* (1957) dated the volcanics at 96 Ma. Igneous activity in the Clark Range of southwest Alberta is of at least three types and ages. The oldest is represented by Moyie-type diorite or diabase sills and dykes that have been dated as old as 1,580 Ma and as young as 1,400 Ma (Hunt 1962; Hoy 1989). The second type is the Purcell Lavas, which are andesitic in composition and form an excellent marker horizon throughout the Belt-Purcell Supergroup. Hunt (1962) suggested that the Purcell Lavas were extruded at about 1,100 Ma. The third of igneous activity is represented by trachytic to syenitic alkalic intrusions that straddle the Alberta-British Columbia border in the Clark Range near the headwaters of the Castle River (Price 1962; Goble 1974a, 1974b). Price (1962) stated that these intrusions are likely of Cretaceous or Tertiary age.

REGIONAL STRUCTURAL GEOLOGY

The Rocky Mountains and Foothills of Alberta are dominated by northwest-trending folds and thrust sheets that developed during accretion of land masses west of the Rocky Mountain Trench. The Lewis Thrust carried Precambrian and some overlying Palaeozoic rocks from as far west as Cranbrook, British Columbia and superimposed them on Palaeozoic and younger rocks. Also present within southwest Alberta are numerous other thrust faults as well as some normal faults which are transverse to the regional strike. The geological base maps which were compiled for inclusion in this report, are simplified and only selected faults and fold structures are shown. The structural geology of the Eastern Rocky Mountains and Foothills is well-summarized by Charlesworth (1959). Shaw (1963), Balley *et al.* (1966), Dahlstrom (1970), Jones (1971), and Price (1981). Work during the 1970's and 1980's was focused on the details of imbricate thrusting and the actual mechanisms responsible for the formation of such structures as floor thrusts, roof thrusts and duplexes (Fermor and Price 1987).

Uplift to the west is documented as early as the Jurassic by the Kootenay Group-Blairmore Group clastic wedge (Eisbacher *et al.* 1974). The formation of the Eastern Rocky Mountains and Foothills of Alberta was probably an ongoing process from Late Jurassic to Paleocene time, but the last major stage of uplift is thought by many authors to have occurred during Late Eocene to Oligocene. The evidence for this is the deformed Eocene and Oligocene conglomerates)Shaw 1963; Balley *et al.* 1966; Eisbacher *et al.* 1974).

Other enigmatic structures that may have influenced tectonics, sedimention and metallogenesis have been documented or deducted to exist within or beneath the Eastern Rocky Mountains. These include the Southern Alberta Rift, West Alberta Arch and various transverse, tear or normal faults. A discussion of these structures follows.

SOUTHERN ALBERTA RIFT

The Southern Alberta Rift was first described by Kanasewich (1968) and Kanasewich *et al.* (1969) using deep seismic reflection, magnetic and gravity data. Kanasewich (1968) suggested the trace of the rift is visible for 450 km from just north of Medicine Hat near the Saskatchewan border to the Rocky Mountains southwest of Cranbrook near the Idaho border. Kanasewich *et al.* (1969) suggested that the rift is Precambrian in age, penetrates the crust to the Mohorovic discontinuity and has associated faults with vertical displacement of up to 5 km. McMechan (1981) described evidence of graben-like, synsedimentary normal faulting throughout Precambrian Belt-Purcell Supergroup. She stated that the northeast trending St. Mary-Boulder Creek Fault near Kimberley, British Columbia and the Moyie-Dibble Creek Fault further to the southeast were active periodically during much of the Proterozoic and that they correspond to the location of the subsurface trace of the Southern Alberta Rift identified by Kanasewich (Ibid.). Regional Bouguer gravity anomaly maps reveal significant differences in the gravity field on either side of these faults making the site of a long-lived, crustal scale tectonic feature (Price 1981; Fountain and McDonough 1984). Rifting during Belt-Purcell, Windermere and Late Proterozoic-Early Cambrian time at the edge of the North American continent has been described by a number of authors (Leech 1962; Stewart 1972; Lis and Price 1976; Benvenuto and Price 1979; Struik 1987; Devlin and Bond 1988; Devlin 989). Evidence for a younger reactivation with, perhaps, lesser magnitude faulting associated with the Southern Alberta Rift has ben presented by a number of authors. Price and Lis (1975), for example, described significant differences in thicknesses and facies of Upper Palaeozoic rocks across the Moyie-Dibble Creek Fault. Hopkins (1987, 1988) described synsedimentary subsidence of Lower Cretaceous rocks in the Cessford hydrocarbon field associated with a narrow graben that reaches from the Precambrian basement into the Cretaceous section. The Cessford field is located southeast of Calgary near the proposed northern margin of the Southern Alberta Rift. Reactivation of the rift during the Lower Cretaceous is further supported by deposition of the thickest portions of the Crowsnest volcanics centred within the bounds of the rift (Pearce 1970; Adair 1986). The volcanics are trachytic to phonolitic in composition and, if compared to other trachyte and phonolite provinces, are indicative of continental rifting. The Lewis and Clark Fault System and the Great Falls Tectonic Zone can be regarded as step-like sympathetic structures to the Southern Alberta Rift. These two fault zones are deep-seated and have a history of recurrent fault movements very similar to the Southern Alberta Rift. Episodic fault movement along the Lewis and Clark Fault System and the Great Falls Tectonic Zone has been documented from early Proterozoic to the Tertiary and perhaps occurred as recently as the Holocene (Lorenz 1984; O'Neill and Lopez 1985; Wallace *et al.* 1990).

WEST ALBERTA ARCH

The West Alberta Arch is a northwest-trending structure with its axis located at about the eastern limit of the Rocky Mountains (Verrall 1968). It was active from at least Silurian to Middle Devonian time as evidenced by the lack of Late Cambrian to Middle Devonian carbonates and shales, and the presence of Middle to Upper Devonian fringing reefs (Geldsetzer and Mountjoy 1992). Verrall (1968) suggested that it might even have been active as early as Late Cambrian. Geldsetzer and Mountjoy (1992) described the presence of debris flows, spectacular megabreccias and deep-water channels (such as the Cline Channel) within Upper Devonian carbonates with no evidence of subaerial exposure associated with the West Alberta Arch. They suggested earthquake generated debris flows may have been responsible for these deposits. A graben-type environment might also have caused these deposits and may have been active in a few places along the West Alberta Arch during the Late Devonian, after the major uplift of the arch. Some evidence exists that the West Alberta Arch and other structures were reactivated during the Lower Carboniferous (Brandley and Krause 1993). The reason for uplift of the West Alberta Arch is known, but Bingham *et al.* (1985) reported that a conductive ridge underlies the Eastern Rocky Mountains. They suggested that in the American Rockies, similar conductive structures are correlated with high heat flow and low seismic velocities in the lower crust. They further suggested that partial melting and periodic uplift might have been associated with the conductive ridge. Perhaps partial melting during the Palaeozoic beneath the present-day location of the Eastern Rocky Mountains was responsible for uplift of the West Alberta Arch.

TRANSVERSE, TEAR AND NORMAL FAULTS

Northeast-trending transverse, tear and normal faults have been mapped in a few places along the Alberta Rocky Mountains and Foothills. Excellent summaries of the early mapping and geological setting of these structures is presented in Price (1967) and Dahlstrom (1970). Areas of prominent northeast-trending subvertical faults, with or without evidence of vertical movement, have been reported or mapped in the Alberta Rockies by Beach (1942), Birnie (1961), Fitzgerald (1962) Price (1967), Verrall (1968), Dahlstrom (1970), Moffat and Spang (1984), McGugan (1987) and McMechan (1988). The only prominent area of this type of faulting in Ecstall's project area has been mapped by Douglas (1958) in the vicinity of the Highwood River and Mount Head (NTS 82J/7 East Half).

GEOLOGY OF SOUTHWESTERN ALBERTA

Ecstall's project area is underlain by predominantly Middle Proterozoic to Tertiary age sedimentary rocks (Table 1).

The Proterozoic, Helikian to Hadrynian age, Purcell Group, which includes the Waterton, Altyn, Grinnell, Appekunny, Siyeh, Purcell Lava, Shepard and Kintla Formations in southwest Alberta, comprises a thick sequence of shallow water marine clastic sediments and near-shore stromatolitic carbonates (Douglas *et al.* 1970). The deposition of Proterozoic sediments ended with uplift during the East Kootenay Orogeny (White 1959; Leech 1962). The Cambrian, which includes the Eldon, Pika, Arctomys, Elko and Flathead Formations in southwest Alberta, lies unconformably on the Proterozoic Purcell Group. The Cambrian rocks consist of thick accumulations of carbonate deposited in the Alberta Trough that grade laterally to the west into shallower water shales and conglomerates at the west margin of the Cambrian age Purcell Arch. In southwest Alberta, no Ordovician strata are known to exist. Regional uplift occurred during Ordovician to early Devonian time and this caused the erosion or non-deposition, or both, of much of the Ordovician strata. In the Early Late Devonian, seas transgressed over the Alberta Arch. Broad-scale subsidence was common over much of the craton. Devonian carbonate bank and reef growth, fringing the Alberta Arch kept pace with the subsiding craton. The Upper Devonian Fairholme Group lies unconformably under the Alexo and Palliser Formations. A marine regression caused the Upper Fairholme carbonate reefs to be emergent. The overlying Alexo is comprised of carbonate clastic sediments, possibly related to erosion of the Fairholme Group. Thick accumulations of Palliser Formation carbonates, which conformably overlie the Alexo, are in turn conformably overlain by early Mississippian black shales of the Exshaw Formation. The Miissippian Banff Formation and Rundle Group comprise a thick sequence of shallow-water crinoidal limestone and dolomite and carbonate clastic sediments. In southwest Alberta, the Pennsylvanian Spray Lakes Group conformably overlies the Mississippian Rundle Group and is unconformably overlain by Permo-Pennsyvanian Rocky Mountain Group (encompasses Permian Ishbel Group and Triassic Spray River Group). The Ishbel Group comprises shallow-water, cross-bedded sandstones, phosphatic, quartzose siltstones and cherty dolomite. The Rocky Mountain Group is unconformably overlain by the Triassic Spray River Group. The Spray River Group is comprised of the Sulphur Mountain Formation deltaic sediments, and the Whitehorse Formation, which consists of gypsum, red beds, and collapse breccias, likely deposited in a restricted basin. he Jurassic in southwest Alberta is represented by the Fernie Group. The retreat of the Late Fernie Sea and an influx of clastic sediments derived from the Columbian Orogen to the west, marks the gradational boundary of the Fernie and Jurassic-Cretaceous Kootenay Groups. Pansa (1972) suggested that the uppermost sandstones in the Fernie Group may be "passage beds" that are interpreted as prodelta deposits of an easterly-prograding clastic wedge, which are overlain by the deltaic coal deposits of the Kootenay Group. The Kootenay-Blairmore cycle, which is the lower molasse of Eisbacher *et al.* (1974), comprises deltaic, shallow-marine sediments overlain by clastic wedge sediments derived from erosion of the Columbian Orogen to the west. Following the Lower Cretaceous Kootenay-Blairmore molassse cycle the Upper Cretaceous-Tertiary marine Alberta Assemblage and the non-marine Belly River Paskapoo Assemblage comprise the upper molasse of the Columbian Orogen. The molasse cycles comprise a sequence of near-shore relatively shallow-water facies that alternate between marine and non-marine clastic sediments. The stratigraphy of southwest Alberta is dominated by these cycles from Late Jurassic to Tertiary.

In southwest Alberta, major sole thrusts such as the Lewis, McConnell, Turtle Mountain and Livingstone Thrusts carry older sedimentary or volcanic rocks, or both, over younger rocks Numerous other thrust faults are present throughout southwest Alberta. The Lewis Thrust sheet forms a large, broad, synclinorium which extends from the Akamina Syncline to several other anticlines and synclines near Mount McCarty, which is south of Blairmore. In addition, steeply-dipping, northeast-trending normal faults of undetermined vertical throw are known to exist within the project area.

1993 - 1995 EXPLORATION

INTRODUCTION:

Between June 1993 and July 1995 heavy mineral sampling programs were carried out to help evaluate the economic potential of 307,000 hectares of mineral permits along the eastern slopes of the Rockies in SW Alberta. The permit area runs from just north of the US border to Turner Valley in the north, and from the foothills in the east to the Alberta/B.C. border in the west.

The project was initiated to explore for base and precious metal deposits and kimberlitic/lamproitic pipes in the region similar to the Crossing Creek kimberlite, 20 miles west in southeast B.C.. During the picking process for diamond indicator minerals anomalous amounts of fine gold were detected in a number of the samples. Though the diamond work is continuing, the emphasis on field work carried out in 1994 was oriented towards following up the gold bearing sample areas.

In both 1993 (52, 10kg samples AD 1-52) and 1994 (52, 10 kg samples AG 1-52) the major sampling was carried out in June by a two man crew based in Coleman Alberta. A further short sampling program (16, 10 kg samples ARI-16) was done in October 1994.

In July of 1995 approximately three weeks was spent prospecting and sampling (16,10 kg samples AG 60-75) (heavy minerals, silts and rocks) in order to determine the origin of the gold in the drainages of Lost Creek, Carbondale Creek, and Racehorse Creek, similar work was also carried out to locate a source for the garnets and gold in Pekisko and Shepard creeks.

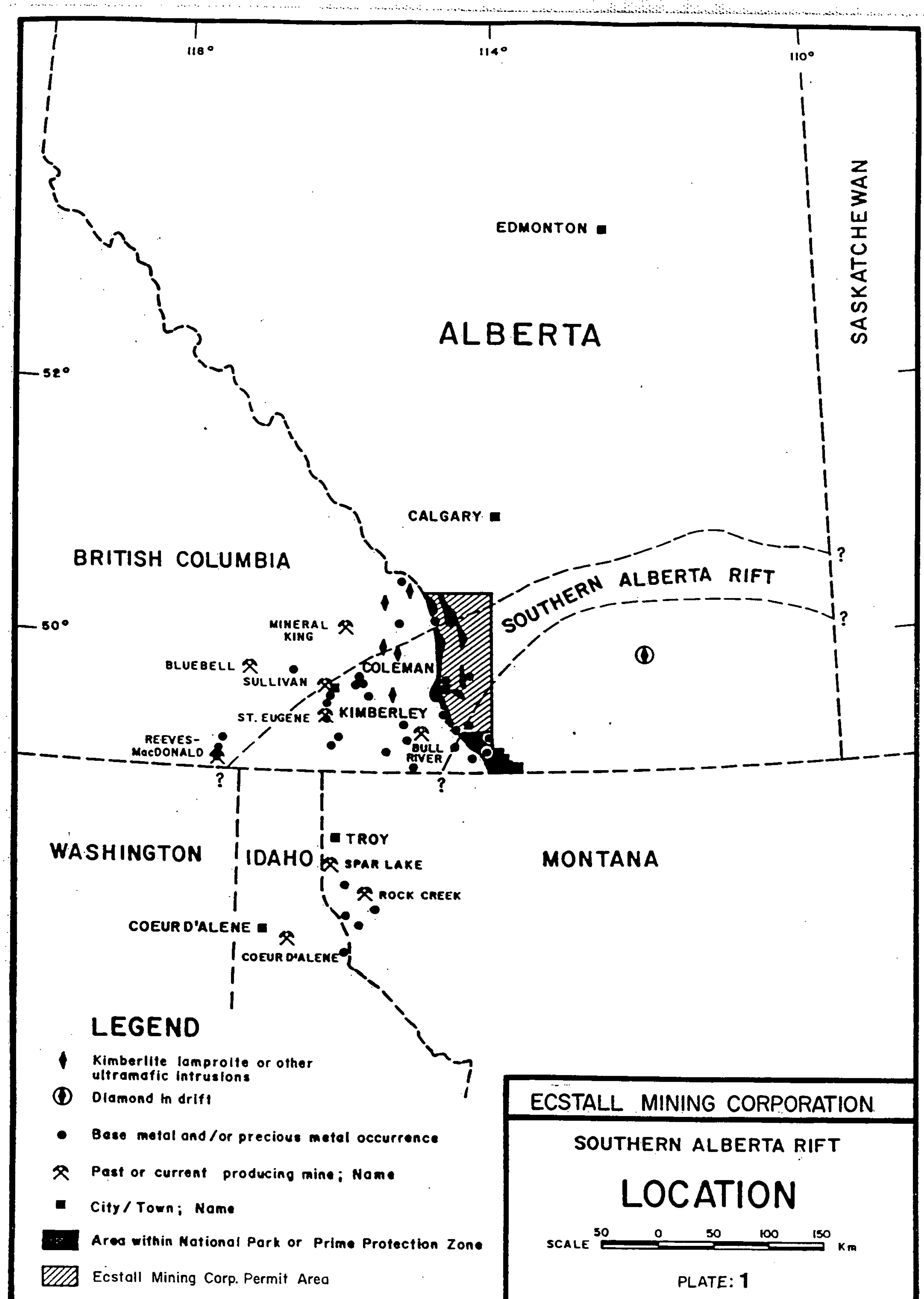
SAMPLING:

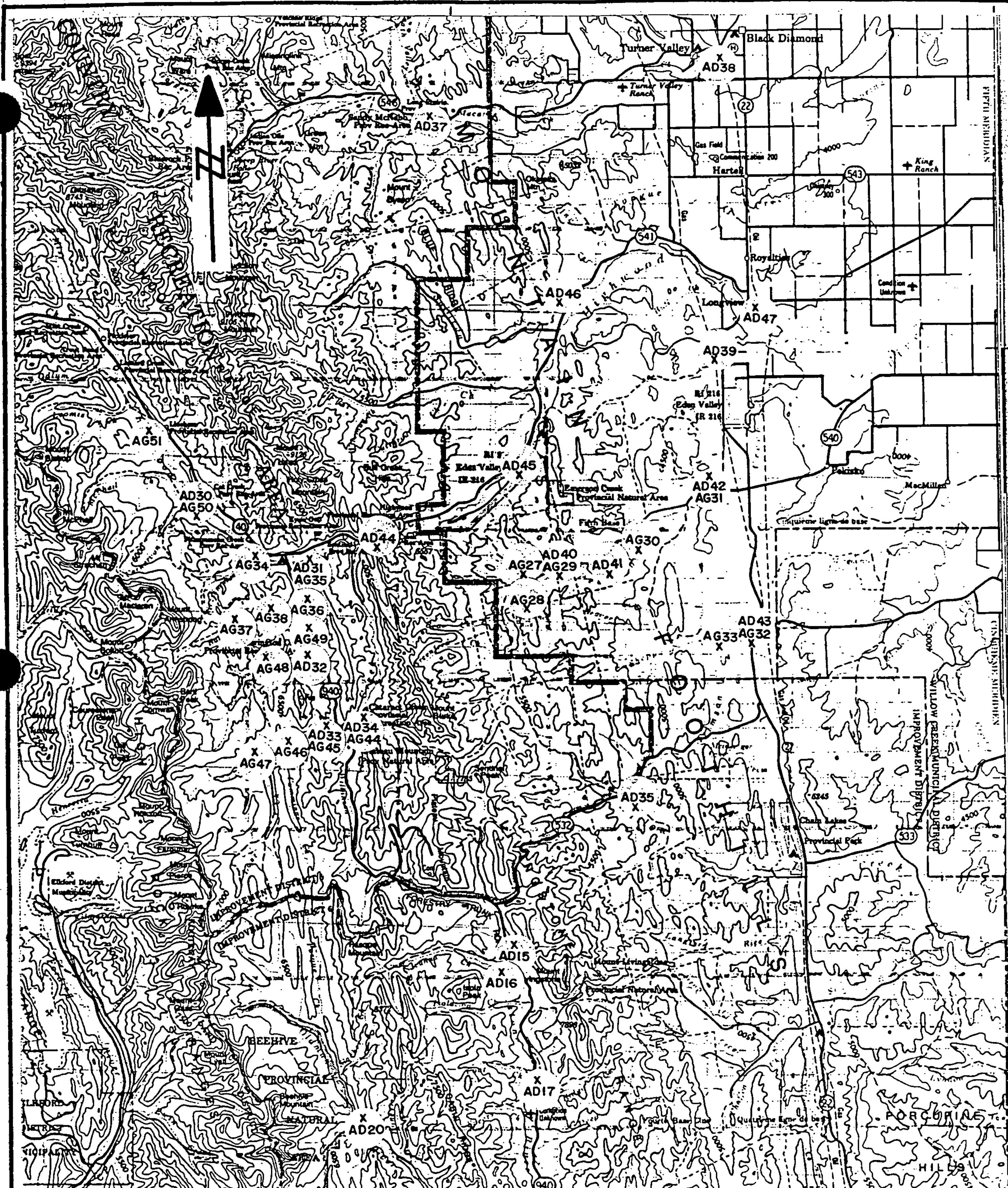
In the field sampling was carried out on the major drainages, and consisted of collecting 10 kilograms of minus 20 mesh material at each sample site which required the sieving of approximately 40 kilograms of raw stream bed detritus. The samples were put into plastic bags and shipped to Vancouver for further concentration.

CONCENTRATION:

In Vancouver the 10 kilogram samples went through two stages of concentration. The first stage was reducing the 10 kilogram sample to 2 kilograms by use of a HY-G centrifugal concentrator, and stage two was done using a Gold Genie spiral concentrator which reduced the sample to a few grams. The water flow and angle of the Gold Genie was set so the cut off was at the approximate specific gravity of garnet.

Following the Gold Genie concentration the resulting heavy mineral concentrates (few grams) were dried and put into numbered plastic vials.


118°
114°
110°
52°
50°
EDMONTON
ALBERTA
SASKATCHEWAN
CALGARY
BRITISH COLUMBIA
SOUTHERN ALBERTA RIFT
MINERAL KING
BLUEBELL
SULLIVAN
COLEMAN
ST. EUGENE
KIMBERLEY
REEVES-MacDONALD
BULL RIVER
WASHINGTON
IDAHO
TROY
SPAR LAKE
MONTANA
ROCK CREEK
COEUR D'ALENE
COEUR D'ALENE
LEGEND
Kimberlite lamproite or other ultramafic intrusions
Diamond in drift
Base metal and/or precious metal occurrence
Past or current producing mine; Name
City/Town; Name
Area within National Park or Prime Protection Zone
Ecstall Mining Corp. Permit Area
ECSTALL MINING CORPORATION
SOUTHERN ALBERTA RIFT
LOCATION
SCALE 50 0 50 100 150 Km
PLATE: 1



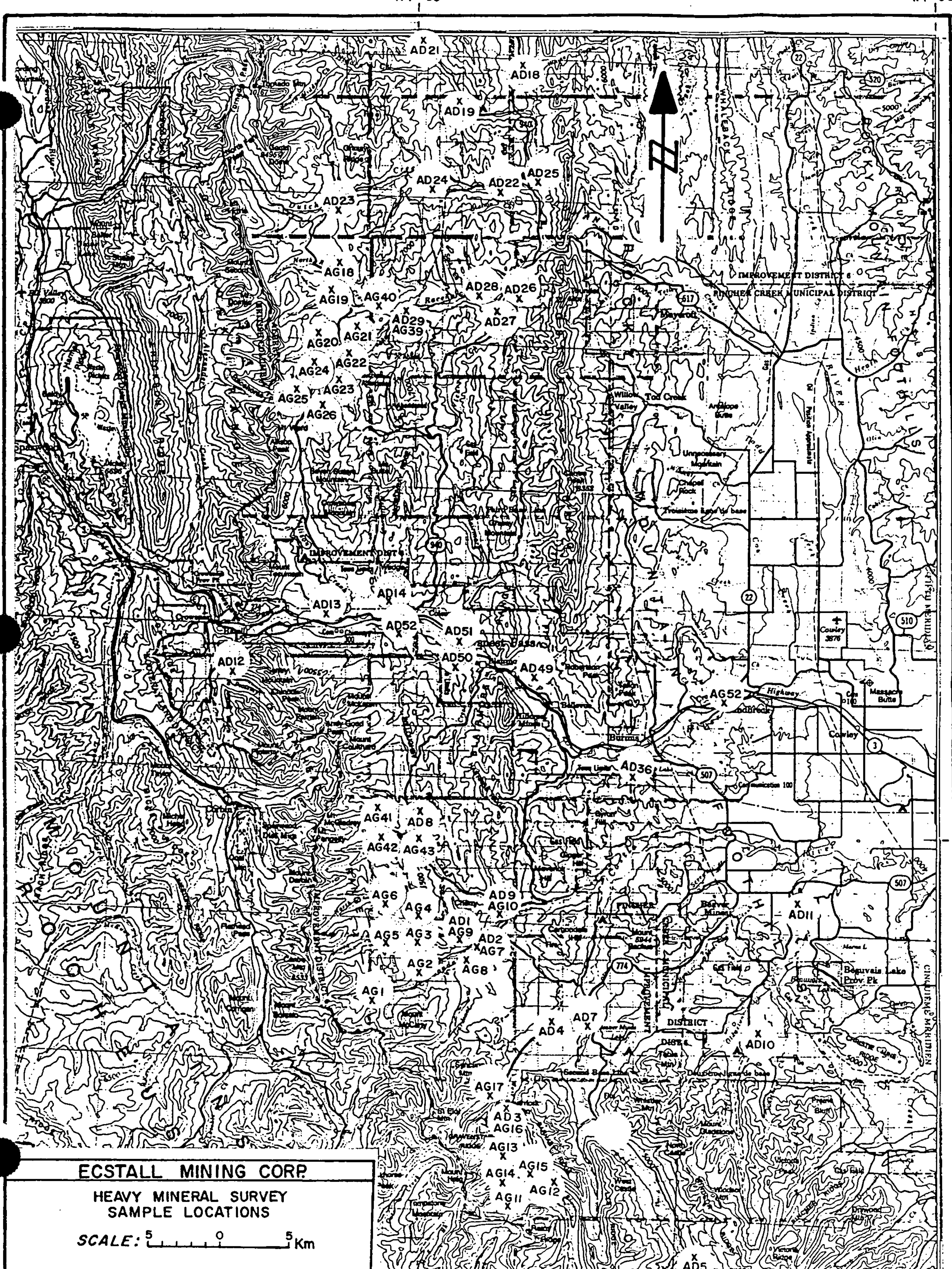
ECSTALL MINING CORP.

HEAVY MINERAL SURVEY
SAMPLE LOCATIONS

SCALE: 5 0 5 Km

MWM

PLATE: 2



114° 30'
114° 00'
50°
49°
AD21
AD18
AD19
AD24
AD22
AD25
AD23
AG18
AD28
AD26
AG19
AG40
AD29
AG39
AD27
AG20
AG21
AG22
AG24
AG23
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AG26
AD13
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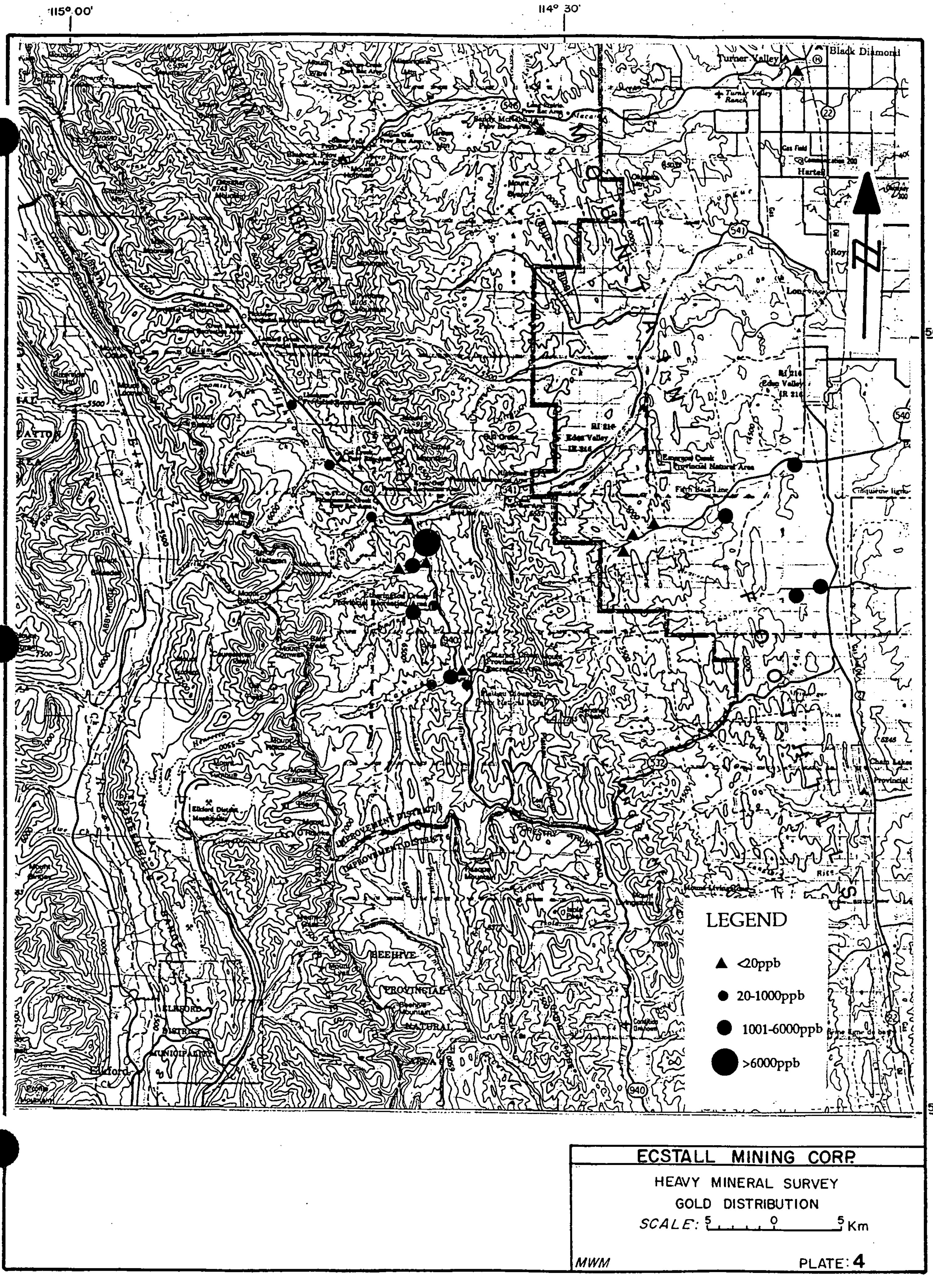
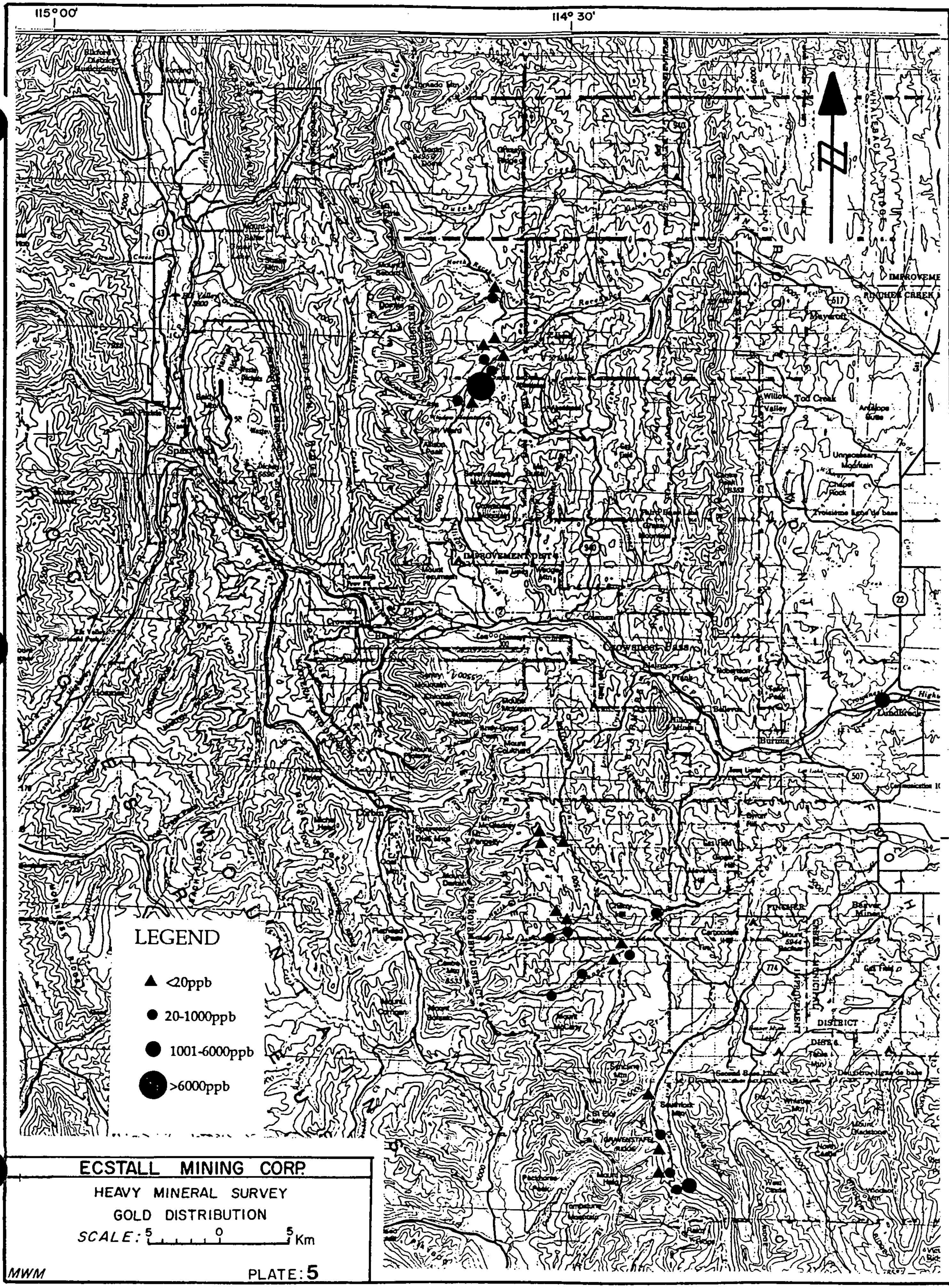
AD52
AD51
AD50
AD12
AD49
AG52
AD36
AG41
AD8
AG42
AG43
AG6
AD9
AG10
AG4
AD1
AG9
AG5
AG3
AD2
AG7
AG2
AG8
AD11
AG1
AD4
AD7
AD10
AG17
AD3
AG16
AG13
AG14
AG15
AG12
AG11
AD5
IMPROVEMENT DISTRICT 6
PINCHER CREEK MUNICIPAL DISTRICT
IMPROVEMENT DISTRICT
Cowley
Beauvais Lake Prov. Pk
CINQUIÈME MERIDIEN
ECSTALL MINING CORP.
HEAVY MINERAL SURVEY
SAMPLE LOCATIONS
SCALE: 5 0 5 Km
MWM
PLATE: 3


115° 00'
114° 30'
LEGEND
<20ppb
20-1000ppb
1001-6000ppb
>6000ppb
ECSTALL MINING CORP.
HEAVY MINERAL SURVEY
GOLD DISTRIBUTION
SCALE: 5 0 5 Km
MWM
PLATE: 4


115°00'
114°30'
LEGEND
<20ppb
20-1000ppb
1001-6000ppb
>6000ppb
ECSTALL MINING CORP.
HEAVY MINERAL SURVEY
GOLD DISTRIBUTION
SCALE: 5 0 5 Km
MWM
PLATE: 5
Crowsnest Pass
Coleman
Blairmore
Frank
Bellevue
Hillcrest Mines
Burmis
Lundbreck
Sparwood
Corbin
Maycroft
Tod Creek
Willow Valley
IMPROVEMENT DISTRICT
DISTRICT

MICROSCOPIC OBSERVATION:
Microscope work was carried out by Mike Waskett-Myers on the +60 mesh fraction of several samples following removal of the magnetic fraction, using a dip magnet.

The 1993 microscope work primarily involved looking for diamond indicator minerals such as pyrope garnets, chrome diopsides and titanium ilmenites however the presence of any other interesting minerals were also recorded.

During the picking procedure carried out on the 1993 samples, fine gold was noticed in several samples. Since the picking of diamond indicator minerals was being performed on the +60 mesh fraction it was decided to scan the -60 mesh fraction for gold content.

The scan of the -60 mesh fraction of all 52 1993 samples revealed fine gold (some hackly) in a number of the samples. While the largest gold grain count was from the sample taken on Lost Creek (15 grains), there appears to be a more definite pattern of anomalous concentrations of gold grains in the Highwood, Castle, and Pekisko/Shepard drainages. Various samples from other drainages also contained one or more gold grains, most notably a sample collected on the South Racehorse River (10 grains). See Appendix 3.

ANALYSIS:
As a result of the microscope work a number of mineral grains were analysed by scanning electron microprobe with a energy dispersive x-ray analyzer (SEM-EDX) at Cominco's lab in Vancouver. The result of this analysis was the confirmation of a chrome diopside in sample AD2 and a chrome pyrope garnet in sample AD43.

Grains thought visually to be gold were also picked from samples AD1,AD30 and AD34 for confirmation using the same SEM-EDX at Cominco's lab. All grains proved to be gold.

Further XRF and Probe work on these samples was carried out by LAC Minerals in there own lab, the results of this work are in Appendix 1.

Sample series AG (collected in June 1994) and AR (collected in October 1994) were also analyzed by Neutron Activation. The results indicate that gold is present in anomalous amounts in several of the drainages.

The available 1993 heavy mineral samples were also analysed by both neuton activation and ICP on behalf of Cyprus Amax Exploration Ltd. A number of these samples had been lost during earlier analytical work, therefore the results of the more recent analysis is inconclusive. See Appendix 1 for results.

Ecstall Mining has obtained the Alberta Geological Survey silt samples collected during the R.A.Olson Consulting Ltd program of 1992. These samples have been concentrated using the Gold Genie, to produce a panned concentrate for Neutron Activation analysis. While it is understood that these concentrates will not be equivalent to the heavy mineral samples collected during the Ecstall programs, it is hoped that the samples will provide more complete sample coverage of the permit area. The results of the analysis of these samples will not be available for this report but will be added at a later date.

Based on the neutron activation work a correlation exists, in certain areas, between the following elements Au, Cr, Ba, As, Sb, La, Ce, and Th. Those areas are Pekisko/Shepard, Cataract/Etherington and the top end of the South Racehorse drainages. A stream sediment sample taken from the mouth of Allison creek was shown by neutron activation analysis to contain 66 ppm Ag (2 oz/t) as well as anomalous Pb, As and Sb contents.

DISCUSSION:

The sampling done in June of 1994, which was intended as follow up on those creeks that had shown gold in 1993, failed to reproduce some of the anomalous amounts of gold discovered in the 1993 samples. While gold was found in several 1994 samples it was not as plentiful or wide spread as in the 1993 samples, however anomalous concentrations of mercury were found in samples taken from various drainages in the region, particularly from the Castle River and Highwood River areas.

The more detailed work carried out in 1994 has shown that two creeks, Pekisko and Shepard contain considerable amounts of orange, red, and pink garnets. The garnets have a dodecahedron crystal form with well preserved crystal faces and are uniformly ~ 50 mesh in size. Stream sediment samples from both of these creeks also contain gold.

Because of the discrepancy between the amounts of native gold in the 1993 and 1994 samples it was decided that several more heavy mineral samples should be collected from select areas that had contained gold in the 1993 sampling. In October 1994 a two man crew returned to the area and collected a total of sixteen stream sediment samples from two (Lost/Carbondale creeks and Racehorse creek) of the anomalous gold drainages, as indicated by the 1993 sampling program.

Since in the fall when water levels are low there is a better choice of sampling sites , it was felt that the samples collected during the October program would have a better chance of containing more heavy minerals than those samples collected during the higher water June program.

The October sampling seems to support the spring 1994 sampling in as much as there is not as much gold as contained in the 1993 samples. However a number of gold grains were found in several samples.

CONCLUSIONS AND RECOMMENDATIONS:

Pekisko and Shepard creeks both contain anomalous amounts of garnets and gold grains. Since these two creeks drain a common area, further work is warranted in this area to explore its diamond and gold potential.

The Castle Creek and Highwood river areas are sensitive due to their land status/zoning. Stream sediment samples were collected from these drainages in order to complete the overall picture for the study area and it turned out that both streams contain gold. More work is justified in these areas to locate the sources for the gold in the stream sediment samples.

During July of 1995 a two man crew carried out a program of further follow up sampling and prospecting in the areas of Lost creek, Carbondale creek, Racehorse creek, Pekisko creek and a limited amount of work in the Highwood - Cataract creek drainages.

The 1995 work indicates that in the Lost/Carbondale creeks and Racehorse creek areas the gold is related to the volcanic flows (Crowsnest volcanic group) however, in the Highwood, Baril, Etherington and Cataract creek drainages there is no evidence of the Crowsnest volcanics, and it is possible that the gold in these drainages is glacially transported or more likely due to local undiscovered bedrock sources of a different nature.

The presence of anomalous gold values in the Crowsnest volcanics is well known, however their economic potential has not been thoroughly investigated, particularly with regard to locating areas of gold mineralized hydrothermal activity associated with their emplacement.

The Pekisko / Shepard drainages are of potential economic interest owing to the amount of garnets contained in their stream sediment samples. Also Cross creek, located east of Highway 22, contains a very large amount of garnets of possible kimberlite/lamproite origin. Unfortunately the above drainages flow through areas of very little outcrop however there appears to be a number of unexposed igneous/intrusive bodies distributed throughout this area and further sampling work is warranted.

REFERENCE

R.A.Olson Consulting Ltd. (1993) - The Southern Alberta Rift in Southwest Alberta, program to identify targets for metallic mineral exploration (Canada-Alberta MDA Project M92-04-002).

STATEMENT OF QUALIFICATIONS

I, Chris Graf, of [redacted] Vancouver, British Columbia, Canada, hereby certify that the work desrcibed in this report was carried out under my supervision and that:

1. Mike Waskett-Myers carried out all of the field work and sampling and is qualified to write this report.

2. I graduated with a B.Ap.Sc. (Geological Engineering) from the University of British Columbia.

3. I am registered member of the Association of Professional Engineers of British Columbia, and have been since 1980.

4. I have been practising my geological engineering profession since 1974.

Signed in Vancouver, British Columbia, on the 12th day of December, 1995.

[redacted]

Chris Graf, B.Ap.Sc., P.Eng.

APPENDIX I

Analytical Results

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Certificate Date: 07-SEP-95
Invoice No. : I9526204
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526204

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
NBS47026	201	202	< 1	0.01	14	590	12	2	2	72	< 0.01	< 10	< 10	17	< 10	54
NBS47027	201	202	< 1	< 0.01	25	600	6	2	4	30	< 0.01	< 10	< 10	34	< 10	90
NBS47028	201	202	< 1	0.01	19	830	8	2	3	45	0.01	< 10	< 10	38	< 10	66
NBS47029	201	202	< 1	0.02	14	1170	6	2	1	72	< 0.01	< 10	< 10	25	10	58
NBS47030	201	202	1	0.01	16	890	16	< 2	2	30	0.01	< 10	< 10	21	10	48
NBS47031	201	202	< 1	< 0.01	26	530	14	< 2	5	26	< 0.01	< 10	< 10	40	< 10	78
NBS47032	201	202	1	0.06	18	560	22	< 2	4	44	0.01	< 10	< 10	34	< 10	86
NBS47033	201	202	< 1	0.01	25	490	16	2	4	47	< 0.01	< 10	< 10	43	< 10	88
NBS47034	201	202	1	0.01	15	660	8	2	1	42	< 0.01	< 10	< 10	17	< 10	66
NBS47035	201	202	1	0.01	10	530	16	2	1	59	< 0.01	< 10	< 10	14	< 10	48
NBS47036	201	202	< 1	< 0.01	24	570	14	2	3	58	< 0.01	< 10	< 10	26	< 10	100
NBS47037	201	202	< 1	< 0.01	20	360	16	2	4	72	< 0.01	< 10	< 10	35	< 10	68
NBS47038	201	202	< 1	< 0.01	14	480	8	< 2	3	18	< 0.01	< 10	< 10	18	< 10	46
NBS47039	201	202	1	0.01	15	570	12	2	2	32	< 0.01	< 10	< 10	16	< 10	62

CERTIFICATION: [redacted]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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British Columbia, Canada V7J 2C1
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Total Pages : 1
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Account : MUB

CERTIFICATE OF ANALYSIS A9526204

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
NBS47026	201	202	< 1	0.01	14	590	12	2	2	72	< 0.01	< 10	< 10	17	< 10	54
NBS47027	201	202	< 1	< 0.01	25	600	6	2	4	30	< 0.01	< 10	< 10	34	< 10	90
NBS47028	201	202	< 1	0.01	19	830	8	2	3	45	0.01	< 10	< 10	38	< 10	66
NBS47029	201	202	< 1	0.02	14	1170	6	2	1	72	< 0.01	< 10	< 10	25	10	58
NBS47030	201	202	1	0.01	16	890	16	< 2	2	30	0.01	< 10	< 10	21	10	48
NBS47031	201	202	< 1	< 0.01	26	530	14	< 2	5	26	< 0.01	< 10	< 10	40	< 10	78
NBS47032	201	202	1	0.06	18	560	22	< 2	4	44	0.01	< 10	< 10	34	< 10	86
NBS47033	201	202	< 1	0.01	25	490	16	2	4	47	< 0.01	< 10	< 10	43	< 10	88
NBS47034	201	202	1	0.01	15	660	8	2	1	42	< 0.01	< 10	< 10	17	< 10	66
NBS47035	201	202	1	0.01	10	530	16	2	1	59	< 0.01	< 10	< 10	14	< 10	48
NBS47036	201	202	< 1	< 0.01	24	570	14	2	3	58	< 0.01	< 10	< 10	26	< 10	100
NBS47037	201	202	< 1	< 0.01	20	360	16	2	4	72	< 0.01	< 10	< 10	35	< 10	68
NBS47038	201	202	< 1	< 0.01	14	480	8	< 2	3	18	< 0.01	< 10	< 10	18	< 10	46
NBS47039	201	202	1	0.01	15	570	12	2	2	32	< 0.01	< 10	< 10	16	< 10	62

CERTIFICATION [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

[redacted]o: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Certificate Date: 07-SEP-95
Invoice No. : I9526204
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526204

Field No.	SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
AG60	NBS47026	201	202	10	< 0.2	0.82	< 2	360	< 0.5	< 2	4.24	< 0.5	4	14	20	1.30	< 10	1	0.11	10	1.05	290
AG61	NBS47027	201	202	< 5	< 0.2	1.37	< 2	280	< 0.5	6	0.77	0.5	10	21	19	2.48	< 10	< 1	0.11	10	0.56	355
AG62	NBS47028	201	202	< 5	< 0.2	0.90	6	170	< 0.5	4	4.61	< 0.5	6	20	16	1.82	< 10	< 1	0.10	10	2.29	340
AG63	NBS47029	201	202	< 5	< 0.2	0.44	< 2	80	< 0.5	2	11.25	< 0.5	3	16	13	0.89	< 10	< 1	0.05	10	4.64	200
AG64	NBS47030	201	202	< 5	< 0.2	0.68	< 2	110	< 0.5	< 2	5.76	< 0.5	5	19	13	1.35	< 10	< 1	0.15	10	3.48	280
AG 65	NBS47031	201	202	< 5	< 0.2	1.57	< 2	460	< 0.5	< 2	0.60	0.5	10	27	29	2.54	< 10	< 1	0.13	10	0.94	445
AG 66	NBS47032	201	202	< 5	< 0.2	1.33	6	340	< 0.5	< 2	0.71	0.5	10	17	24	2.31	< 10	1	0.14	20	0.97	580
AG 67	NBS47033	201	202	< 5	< 0.2	1.31	2	380	< 0.5	< 2	0.44	0.5	9	22	25	2.44	< 10	< 1	0.10	10	0.53	540
AG 68	NBS47034	201	202	< 5	< 0.2	0.51	4	120	< 0.5	< 2	4.95	< 0.5	3	11	9	1.23	< 10	< 1	0.07	< 10	1.36	155
AG 69	NBS47035	201	202	< 5	< 0.2	0.44	< 2	100	< 0.5	4	8.64	< 0.5	2	11	8	0.85	< 10	< 1	0.05	< 10	2.49	135
AG 70	NBS47036	201	202	< 5	< 0.2	0.86	8	290	< 0.5	< 2	0.96	< 0.5	9	14	17	2.02	< 10	< 1	0.10	< 10	0.40	275
AG 71	NBS47037	201	202	< 5	< 0.2	1.15	2	350	< 0.5	< 2	0.48	0.5	9	17	23	2.04	< 10	< 1	0.09	10	0.42	375
AG 72	NBS47038	201	202	< 5	< 0.2	1.18	< 2	200	< 0.5	< 2	0.96	< 0.5	6	16	15	1.81	< 10	< 1	0.12	10	1.22	350
AG 73	NBS47039	201	202	< 5	< 0.2	0.57	< 2	190	< 0.5	2	2.30	< 0.5	5	10	12	1.31	< 10	< 1	0.08	< 10	0.88	150

Note: split of silt fraction for analysis pre-heavy mineral concentration

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Pag[illegible]er : 1-B
Total [illegible]s : 1
Certificate Date: 07-SEP-95
Invoice No. : I9526204
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526204

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
NBS47026	201	202	< 1	0.01	14	590	12	2	2	72	< 0.01	< 10	< 10	17	< 10	54
NBS47027	201	202	< 1	< 0.01	25	600	6	2	4	30	< 0.01	< 10	< 10	34	< 10	90
NBS47028	201	202	< 1	0.01	19	830	8	2	3	45	0.01	< 10	< 10	38	< 10	66
NBS47029	201	202	< 1	0.02	14	1170	6	2	1	72	< 0.01	< 10	< 10	25	10	58
NBS47030	201	202	1	0.01	16	890	16	< 2	2	30	0.01	< 10	< 10	21	10	48
NBS47031	201	202	< 1	< 0.01	26	530	14	< 2	5	26	< 0.01	< 10	< 10	40	< 10	78
NBS47032	201	202	1	0.06	18	560	22	< 2	4	44	0.01	< 10	< 10	34	< 10	86
NBS47033	201	202	< 1	0.01	25	490	16	2	4	47	< 0.01	< 10	< 10	43	< 10	88
NBS47034	201	202	1	0.01	15	660	8	2	1	42	< 0.01	< 10	< 10	17	< 10	66
NBS47035	201	202	1	0.01	10	530	16	2	1	59	< 0.01	< 10	< 10	14	< 10	48
NBS47036	201	202	< 1	< 0.01	24	570	14	2	3	58	< 0.01	< 10	< 10	26	< 10	100
NBS47037	201	202	< 1	< 0.01	20	360	16	2	4	72	< 0.01	< 10	< 10	35	< 10	68
NBS47038	201	202	< 1	< 0.01	14	480	8	< 2	3	18	< 0.01	< 10	< 10	18	< 10	46
NBS47039	201	202	1	0.01	15	570	12	2	2	32	< 0.01	< 10	< 10	16	< 10	62

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Page [illegible]r :1-A
Total Pages :1
Certificate Date: 07-SEP-95
Invoice No. : I9526206
P.O. Number :950803
Account :MUB

CERTIFICATE OF ANALYSIS A9526206

Field No.	SAMPLE	PREP CODE		Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
AG 61	NBS47041	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AG 62	NBS47042	299	229	0.4	1.20	< 2	190	< 0.5	8	7.88	1.0	9	95	30	9.74	10	6	0.02	30	0.61	1930	1
AG 63	NBS47043	299	229	0.6	1.08	< 2	100	< 0.5	< 2	9.93	1.0	7	83	29	10.80	10	< 1	0.01	40	0.65	2170	< 1
AG 64	NBS47044	299	229	< 0.2	0.59	46	240	< 0.5	< 2	2.38	2.0	40	201	138	>15.00	10	29	0.10	20	1.55	330	10
AG 65	NBS47045	299	229	6.2	0.83	48	110	< 0.5	< 2	0.76	1.0	29	306	65	11.10	10	14	0.15	20	0.51	550	8
AG 66	NBS47046	299	229	0.8	1.38	14	900	< 0.5	4	9.61	1.0	10	219	32	10.85	20	4	0.07	40	0.48	2130	2
AG 67	NBS47047	299	229	0.2	1.20	22	850	< 0.5	6	3.16	1.0	12	305	39	12.95	10	59	0.13	30	0.33	1565	4
AG 68	NBS47048	299	229	3.2	0.41	104	200	< 0.5	< 2	8.61	2.0	12	130	77	13.15	20	57	0.13	150	0.79	235	21
AG 69	NBS47049	299	229	2.6	0.21	138	220	< 0.5	< 2	10.90	5.0	15	110	83	14.05	10	16	0.07	80	1.75	280	26
AG 70	NBS47050	299	229	0.6	0.84	< 2	670	< 0.5	2	7.75	1.0	4	49	24	8.00	10	2	0.02	40	0.17	2030	3
AG 71	NBS47051	299	229	0.4	0.66	58	130	< 0.5	8	2.63	1.5	12	82	34	13.40	10	5	0.05	20	0.15	1375	13
AG 72	NBS47052	299	229	0.6	0.81	58	320	< 0.5	6	3.32	1.0	39	160	168	12.30	10	3	0.10	20	0.62	1000	6
AG 73	NBS47053	299	229	1.0	0.74	14	420	< 0.5	6	7.64	0.5	3	61	29	8.76	10	< 1	0.02	40	0.28	1835	4

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Page Number : 1
Total Pages : 1
Certificate Date: 28-SEP-95
Invoice No. : I9526205
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526205

Fld No.	SAMPLE	PREP CODE	Au NAA ppb	Sb ppm ppm	As ppm	Br NAA ppm	Ce NAA ppm	Cr NAA ppm	Co NAA ppm	La NAA ppm	Mo NAA ppm	Ag NAA ppm	Ta NAA ppm	Th NAA ppm	W NAA ppm	U NAA ppm	Fe %	Ba ppm
AG61	NBS47041	235 3999	120	39	120	< 5	190	1100	< 50	89	43	< 25	< 5	16	< 10	16	not/ss	6900
AG62	NBS47042	235 3999	12	3	16	< 1	180	140	18	78	2	< 5	12	12	< 2	8	11.40	440
AG63	NBS47043	235 3999	6	3	22	< 1	210	100	17	79	3	< 5	14	12	< 2	9	12.40	250
AG64	NBS47044	235 3999	15	8	160	< 2	120	190	78	68	18	< 10	2	14	13	11	>20.0	3000
AG65	NBS47045	235 3999	35200	11	91	< 1	140	760	48	91	12	21	2	10	< 2	6	12.00	>10000
AG66	NBS47046	235 3999	< 5	3	41	< 1	240	170	22	79	9	< 5	9	12	2	8	12.40	8100
AG67	NBS47047	235 3999	9	9	57	< 1	190	390	24	100	10	< 5	4	16	< 2	7	15.40	1700
AG68	NBS47048	235 3999	1060	10	181	1	75	210	24	190	35	< 5	< 1	8	16	5	16.20	3200
AG69	NBS47049	235 3999	23	11	263	2	98	200	32	140	49	< 5	< 1	10	< 2	5	16.80	4400
AG70	NBS47050	235 3999	7	3	16	< 1	380	61	< 10	190	2	< 5	10	17	2	11	8.50	3200
AG71	NBS47051	235 3999	8	16	151	< 1	300	490	31	180	22	< 5	7	26	7	11	15.80	2400
AG72	NBS47052	235 3999	14	7	127	1	340	420	67	170	14	< 5	5	15	< 2	10	14.00	7000
AG73	NBS47053	235 3999	10	5	30	< 1	340	120	< 10	170	7	< 5	8	17	2	12	9.80	4900

CERTIFICATION: [redacted]

Chemex Labs Ltd.

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To: CYPRUS CANADA INC.
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119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Page Number : 1
Total Pages : 1
Certificate Date: 05-SEP-95
Invoice No. : I9526202
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526202

	SAMPLE	PREP CODE		Al2O3 % XRF	CaO % XRF	Cr2O3 % XRF	Fe2O3 % XRF	K2O % XRF	MgO % XRF	MnO % XRF	Na2O % XRF	P2O5 % XRF	SiO2 % XRF	TiO2 % XRF	LOI % XRF	TOTAL %	Ba ppm	Rb ppm	Sr ppm	Nb ppm	Zr ppm	Y ppm
R7	NBS47007	299	--	18.36	2.22	0.01	4.27	11.04	0.54	0.16	2.63	0.07	56.15	0.45	2.87	98.77	2980	290	3750	50	230	20
R11	NBS47011	299	--	15.88	3.91	0.01	5.61	10.05	0.68	0.36	2.12	0.13	55.55	0.81	3.90	99.01	3020	220	1350	30	190	20
R15	NBS47015	299	--	18.78	1.57	0.01	5.39	10.40	0.74	0.19	2.98	0.07	54.60	0.53	3.77	99.03	2820	280	1790	30	150	10

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Certificate Date: 07-SEP-95
Invoice No. : I9526201
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526201

Field No	SAMPLE	PREP CODE		Au g/t FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
R1	NBS47001	205	226	< 0.005	< 0.2	3.37	< 2	90	< 0.5	2	0.86	0.5	23	37	30	5.43	20	< 1	0.08	30	2.56	560
R2	NBS47002	205	226	< 0.005	0.4	2.31	< 2	100	< 0.5	2	1.26	< 0.5	3	44	45	2.67	10	< 1	0.17	40	0.22	810
R3	NBS47003	205	226	< 0.005	0.2	0.15	< 2	100	< 0.5	2	0.03	< 0.5	< 1	170	7	0.53	< 10	< 1	0.03	< 10	0.02	45
R4	NBS47004	205	226	< 0.005	< 0.2	0.63	< 2	440	< 0.5	< 2	0.65	< 0.5	6	78	17	1.59	< 10	< 1	0.15	< 10	0.47	70
R5	NBS47005	205	226	< 0.005	< 0.2	0.73	< 2	130	< 0.5	2	1.15	< 0.5	5	56	18	1.57	< 10	< 1	0.19	< 10	0.71	70
R6	NBS47006	205	226	< 0.005	< 0.2	3.02	< 2	450	< 0.5	8	0.82	< 0.5	26	27	20	6.57	20	1	0.07	10	3.40	670
R7	NBS47007	205	226	< 0.005	0.2	2.21	< 2	70	< 0.5	2	1.23	< 0.5	1	21	47	1.93	20	1	0.18	30	0.28	680
R8	NBS47008	205	226	< 0.005	< 0.2	0.49	< 2	1440	< 0.5	< 2	3.18	1.0	10	50	15	>15.00	10	< 1	0.10	10	1.09	780
R9	NBS47009	205	226	< 0.005	< 0.2	0.86	4	550	< 0.5	< 2	0.37	< 0.5	6	74	13	1.99	< 10	< 1	0.14	< 10	0.28	45
R10	NBS47010	205	226	< 0.005	< 0.2	0.41	< 2	200	< 0.5	6	0.39	< 0.5	6	90	9	4.52	< 10	< 1	0.09	< 10	0.36	280
R11	NBS47011	205	226	< 0.005	< 0.2	0.77	< 2	200	< 0.5	< 2	2.45	0.5	6	25	72	2.57	10	< 1	0.22	30	0.26	1895
R12	NBS47012	205	226	< 0.005	< 0.2	0.72	< 2	300	< 0.5	4	0.17	< 0.5	3	99	8	1.53	< 10	< 1	0.11	< 10	0.17	45
R13	NBS47013	205	226	< 0.005	< 0.2	0.22	< 2	260	< 0.5	< 2	1.60	0.5	< 1	13	15	0.73	< 10	< 1	0.06	< 10	0.64	50
R14	NBS47014	205	226	< 0.005	< 0.2	0.14	< 2	130	< 0.5	< 2	0.06	< 0.5	1	140	8	0.36	< 10	1	0.04	< 10	0.01	15
R15	NBS47015	205	226	< 0.005	< 0.2	< 0.01	< 2	300	< 0.5	< 2	1.34	4.0	7	29	22	>15.00	10	< 1	0.05	< 10	1.05	2920
R16	NBS47016	205	226	< 0.005	0.2	3.32	< 2	180	< 0.5	< 2	0.93	0.5	4	13	37	2.92	10	1	0.23	30	0.32	925
R17	NBS47017	205	226	< 0.005	0.4	0.48	< 2	200	< 0.5	4	0.98	3.5	11	23	34	1.07	< 10	< 1	0.20	< 10	0.30	150

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Page [redacted] r : 1-B
Total [redacted] : 1
Certificate Date: 07-SEP-95
Invoice No. : I9526201
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526201

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
NBS47001	205	226	1	0.72	13	1760	24	2	8	123	0.07	< 10	< 10	81	10	166
NBS47002	205	226	< 1	1.20	3	630	22	< 2	2	85	0.18	< 10	< 10	89	< 10	74
NBS47003	205	226	3	0.01	3	100	4	< 2	< 1	19	< 0.01	< 10	< 10	12	< 10	20
NBS47004	205	226	1	0.01	21	680	8	< 2	3	27	< 0.01	< 10	< 10	17	< 10	90
NBS47005	205	226	1	0.01	19	700	6	4	3	35	< 0.01	< 10	< 10	20	< 10	108
NBS47006	205	226	< 1	0.01	15	2630	12	4	11	28	0.02	< 10	< 10	72	10	190
NBS47007	205	226	1	0.83	2	320	36	2	1	1985	0.12	< 10	< 10	102	< 10	90
NBS47008	205	226	< 1	0.03	11	5920	22	14	10	197	< 0.01	< 10	< 10	210	20	138
NBS47009	205	226	< 1	0.01	19	710	14	< 2	3	26	< 0.01	< 10	< 10	35	< 10	78
NBS47010	205	226	1	< 0.01	12	740	2	< 2	2	21	< 0.01	< 10	< 10	26	< 10	46
NBS47011	205	226	< 1	0.02	2	530	12	2	2	88	0.10	< 10	< 10	88	< 10	72
NBS47012	205	226	< 1	< 0.01	13	590	4	< 2	2	18	< 0.01	< 10	< 10	23	< 10	44
NBS47013	205	226	< 1	< 0.01	3	40	6	2	4	33	< 0.01	< 10	< 10	15	< 10	38
NBS47014	205	226	< 1	< 0.01	10	30	2	< 2	1	4	< 0.01	< 10	< 10	4	< 10	34
NBS47015	205	226	5	0.03	24	1430	12	14	12	25	< 0.01	< 10	< 10	69	< 10	80
NBS47016	205	226	< 1	1.86	1	280	18	< 2	1	158	0.15	< 10	< 10	108	< 10	80
NBS47017	205	226	1	0.02	56	1300	18	2	5	32	< 0.01	< 10	< 10	26	< 10	280

CERTIFICATION: [redacted]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PARRY.

Page Number : 1-A
Total Pages : 1
Certificate Date: 13-AUG-95
Invoice No. : I9523956
P.O. Number : 950710
Account : MUB

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A9523956

SAMPLE	PREP CODE		Au g/t FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
NBC47607	205	226	0.025	< 0.2	0.92	6	490	< 0.5	2	0.08	< 0.5	3	126	9	1.39	< 10	< 1	0.17	< 10	0.13	20
NBC47608	205	226	1.780	< 0.2	0.37	16	390	0.5	2	11.55	< 0.5	6	43	3	6.51	< 10	< 1	0.08	< 10	0.54	850
NBC47609	205	226	0.145	< 0.2	0.53	6	460	< 0.5	< 2	13.40	< 0.5	3	26	14	1.52	< 10	< 1	0.16	< 10	0.38	340
NBC47610	205	226	< 0.005	< 0.2	0.24	6	40	< 0.5	2	11.90	< 0.5	1	46	< 1	0.50	< 10	< 1	0.13	< 10	6.27	65
NBC47611	205	226	0.045	< 0.2	0.92	6	320	1.0	< 2	0.86	< 0.5	9	105	6	10.40	< 10	< 1	0.09	< 10	0.31	800
NBC47612	205	226	0.010	< 0.2	0.10	< 2	20	< 0.5	< 2	0.08	< 0.5	1	240	3	1.12	< 10	< 1	0.02	< 10	0.02	75
NBC47613	205	226	< 0.005	< 0.2	0.02	4	< 10	< 0.5	< 2	14.20	< 0.5	< 1	47	< 1	0.09	< 10	< 1	0.01	< 10	2.01	15
NBC47614	205	226	< 0.005	< 0.2	0.49	< 2	120	< 0.5	< 2	0.24	< 0.5	4	201	6	1.72	< 10	< 1	0.06	< 10	0.02	90
NBC47615	205	226	< 0.005	< 0.2	2.30	2	170	< 0.5	< 2	5.61	< 0.5	22	214	< 1	5.28	< 10	< 1	0.07	40	3.86	970
NBC47616	205	226	< 0.005	< 0.2	0.13	2	80	< 0.5	< 2	2.97	< 0.5	1	154	2	0.76	< 10	< 1	0.05	< 10	1.78	480
NBC47617	205	226	< 0.005	< 0.2	0.50	8	70	< 0.5	< 2	0.14	< 0.5	4	236	8	0.82	< 10	< 1	0.10	< 10	0.10	135
NBC47618	205	226	< 0.005	< 0.2	0.37	< 2	80	< 0.5	< 2	1.34	< 0.5	< 1	197	6	0.36	< 10	< 1	0.23	< 10	0.14	10
NBC47619	205	226	< 0.005	< 0.2	2.30	6	170	< 0.5	< 2	1.06	< 0.5	9	110	18	3.14	< 10	1	0.19	10	0.96	765

CERTIFICATION: [redacted]

* SAMPLE NBC47608 AND NBC47609 EXHIBIT A GOLD NUGGET EFFECT.

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: CYPRUS CANADA INC.
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119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PARRY.

Certificate Date: 13-AUG-95
Invoice No. : I9523956
P.O. Number : 950710
Account : MUB

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A9523956

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ba ppm
NBC47607	205	226	< 1	< 0.01	13	530	8	< 2	2	26	< 0.01	< 10	< 10	30	< 10	50	620
NBC47608	205	226	2	0.01	14	1570	< 2	< 2	2	143	< 0.01	< 10	< 10	61	< 10	50	780
NBC47609	205	226	2	0.01	13	620	4	< 2	3	279	< 0.01	< 10	< 10	16	< 10	64	860
NBC47610	205	226	< 1	0.01	6	300	< 2	< 2	< 1	54	< 0.01	< 10	< 10	6	< 10	50	160
NBC47611	205	226	1	0.01	18	3960	2	< 2	4	74	< 0.01	< 10	< 10	90	< 10	62	440
NBC47612	205	226	< 1	< 0.01	4	280	< 2	< 2	< 1	6	< 0.01	< 10	< 10	8	< 10	4	20
NBC47613	205	226	< 1	0.01	5	190	< 2	< 2	< 1	250	< 0.01	< 10	< 10	6	< 10	42	100
NBC47614	205	226	< 1	< 0.01	18	370	4	< 2	4	46	< 0.01	< 10	< 10	56	< 10	68	340
NBC47615	205	226	< 1	< 0.01	101	1170	2	< 2	12	64	0.05	< 10	< 10	94	< 10	100	480
NBC47616	205	226	< 1	< 0.01	3	80	< 2	< 2	< 1	9	< 0.01	< 10	< 10	2	< 10	2	220
NBC47617	205	226	1	< 0.01	15	490	4	< 2	1	7	< 0.01	< 10	< 10	26	< 10	30	160
NBC47618	205	226	< 1	< 0.01	7	220	< 2	< 2	< 1	30	< 0.01	< 10	< 10	10	< 10	22	120
NBC47619	205	226	< 1	0.03	24	820	6	< 2	9	65	0.20	< 10	< 10	82	< 10	78	1500

CERTIFICATION: [redacted]

* SAMPLE NBC47608 AND NBC47609 EXHIBIT A GOLD NUGGET EFFECT.

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To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PERRY

Page [illegible]er : 1-A
Total [illegible] : 1
Certificate Date: 07-SEP-95
Invoice No. : I9526203
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526203

	SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
S1	NBS47018	201	202	< 5	0.2	2.53	< 2	360	< 0.5	< 2	0.12	< 0.5	5	15	10	1.93	< 10	1	0.10	< 10	0.16	60
S2	NBS47019	201	202	< 5	< 0.2	0.82	2	520	< 0.5	< 2	0.03	< 0.5	6	14	22	2.21	< 10	< 1	0.20	< 10	0.16	50
S3	NBS47020	201	202	< 5	0.2	0.67	< 2	420	< 0.5	< 2	0.10	< 0.5	8	13	17	1.73	< 10	< 1	0.14	< 10	0.17	75
S4	NBS47021	201	202	< 5	0.2	0.67	28	280	< 0.5	< 2	0.53	< 0.5	3	4	9	2.78	< 10	< 1	0.13	30	0.18	140
S5	NBS47022	201	202	< 5	0.4	0.64	12	190	< 0.5	< 2	3.52	0.5	11	12	28	2.32	< 10	< 1	0.10	< 10	0.72	175
S6	NBS47023	201	202	< 5	< 0.2	2.24	34	400	< 0.5	4	0.92	1.5	16	24	39	3.79	10	< 1	0.22	10	0.69	4310
S7	NBS47024	201	202	< 5	< 0.2	2.59	32	310	< 0.5	2	0.72	0.5	11	26	32	3.35	10	< 1	0.14	10	0.69	2110
S8	NBS47025	201	202	< 5	< 0.2	2.14	16	290	< 0.5	< 2	0.61	1.0	11	26	29	3.25	< 10	< 1	0.11	10	0.81	2130

CERTIFICATION: [redacted]

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Page [illegible]r : 1-B
Total Pages : 1
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Invoice No. : I9526203
P.O. Number : 950803
Account : MUB

CERTIFICATE OF ANALYSIS A9526203

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
NBS47018	201	202	< 1	0.01	19	4170	14	2	3	14	0.01	< 10	< 10	30	< 10	184
NBS47019	201	202	1	0.01	14	780	22	< 2	3	107	< 0.01	< 10	< 10	20	< 10	78
NBS47020	201	202	< 1	< 0.01	17	530	12	< 2	3	81	< 0.01	< 10	< 10	18	< 10	78
NBS47021	201	202	11	0.01	7	950	60	< 2	3	145	< 0.01	< 10	< 10	10	< 10	44
NBS47022	201	202	7	0.01	31	860	16	4	4	87	< 0.01	< 10	< 10	16	< 10	98
NBS47023	201	202	2	< 0.01	19	1410	44	4	12	147	0.06	< 10	< 10	101	< 10	166
NBS47024	201	202	3	< 0.01	17	1330	26	2	8	87	0.06	< 10	< 10	77	< 10	124
NBS47025	201	202	2	< 0.01	18	1260	22	< 2	9	105	0.06	< 10	< 10	82	< 10	126

CERTIFICATION: [redacted]

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DELTA, BC
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Page[redacted]r :1-A
Total P[redacted] :1
Certificate Date: 14-AUG-95
Invoice No. : I9523955
P.O. Number : 950710
Account : MUB

CERTIFICATE OF ANALYSIS A9523955

SAMPLE	PREP CODE		Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
AD05	299	229	< 0.4	1.46	2	>10000	0.5	< 2	0.80	1.0	19	1005	41	11.95	< 10	15	0.53	10	0.79	560	1
AD06	299	229	< 0.4	1.41	38	8240	1.0	< 2	0.92	0.5	38	895	77	>15.00	< 10	14	0.39	20	1.05	550	4
AD07	299	229	< 0.4	1.26	12	6240	2.0	20	2.18	< 0.5	32	364	36	>15.00	10	13	0.15	30	0.99	835	5
AD10	299	229	2.0	1.31	298	400	1.0	< 2	1.93	< 0.5	45	483	145	>15.00	10	34	0.24	20	1.38	635	43
AD11	299	229	5.6	2.09	148	250	3.0	< 2	7.58	< 0.5	48	362	195	>15.00	< 10	20	0.12	60	1.21	3170	29
AD13	299	229	66.4	0.90	86	6770	< 0.5	< 2	13.35	22.5	10	430	361	>15.00	< 10	10	0.07	40	0.94	2070	18
AD15	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD16	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD17	299	229	< 0.4	1.14	78	5070	1.5	< 2	2.55	1.5	22	240	53	>15.00	10	7	0.22	20	0.76	1025	52
AD18	299	229	2.4	1.40	116	1430	1.5	< 2	2.49	0.5	31	176	74	>15.00	< 10	8	0.25	20	0.63	1105	35
AD19	299	229	2.0	1.24	80	2560	1.0	< 2	4.20	0.5	11	133	37	>15.00	10	6	0.14	30	0.20	1530	31
AD20	299	229	1.2	2.09	118	4410	1.5	42	2.02	1.0	19	461	56	>15.00	< 10	3	0.39	30	0.44	1155	32
AD21	299	229	3.6	1.85	84	3180	1.5	< 2	3.03	2.0	18	454	45	>15.00	< 10	3	0.33	30	0.47	1440	29
AD22	299	229	< 0.4	1.91	46	1250	0.5	34	9.48	0.5	10	432	39	>15.00	10	2	0.30	40	0.55	2220	12
AD23	299	229	7.6	0.49	342	300	< 0.5	2	7.92	1.0	30	153	108	>15.00	< 10	4	0.05	20	1.36	940	60
AD24	299	229	4.4	2.65	192	440	0.5	< 2	>15.00	0.5	17	253	102	>15.00	30	5	0.15	90	0.54	4680	39
AD25	299	229	4.0	1.83	188	1100	3.0	10	4.25	2.0	55	171	200	>15.00	40	8	0.24	20	0.69	2100	61
AD26	299	229	< 0.4	1.09	28	2250	0.5	< 2	7.67	0.5	9	110	43	>15.00	< 10	6	0.10	30	0.45	1995	13
AD35	299	229	2.0	1.50	62	4010	1.0	2	0.94	0.5	19	123	59	>15.00	< 10	6	0.22	20	0.28	1120	37
AD36	299	229	< 0.4	1.43	< 2	600	< 0.5	12	14.15	< 0.5	5	130	21	>15.00	20	2	0.04	40	0.23	3560	4
AD37	299	229	3.6	0.99	114	420	1.0	2	5.81	< 0.5	30	101	61	>15.00	10	2	0.17	10	0.76	590	26
AD38	299	229	0.8	0.67	28	1610	0.5	4	13.90	< 0.5	12	111	27	13.00	< 10	3	0.12	< 10	1.67	865	6
AD44	299	229	< 0.4	1.18	66	2430	1.5	2	3.17	< 0.5	16	142	44	>15.00	10	1	0.20	20	0.45	640	33
AD48	299	229	< 0.4	0.67	12	5610	0.5	2	>15.00	< 0.5	4	180	14	10.35	< 10	2	0.11	20	3.57	465	7
AD49	299	229	0.8	1.32	58	7030	0.5	14	7.06	0.5	17	193	101	>15.00	10	7	0.12	30	0.28	2750	42
AD50	299	229	< 0.4	1.51	< 2	380	< 0.5	4	14.40	< 0.5	10	129	83	>15.00	10	5	0.03	50	0.20	4480	1
AD51	299	229	< 0.4	1.60	< 2	290	< 0.5	< 2	>15.00	< 0.5	4	374	27	>15.00	10	4	0.07	60	1.05	3830	1
AD52	299	229	< 0.4	1.58	6	2270	< 0.5	< 2	14.60	< 0.5	5	122	99	>15.00	10	4	0.06	60	0.19	4070	7

CERTIFICATION:[redacted]

Chemex Labs Ltd.

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[redacted]o: CYPRUS CANADA INC.
C/O RUBICON MINERALS
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DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PARRY.

Certificate Date: 14-AUG-95
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CERTIFICATE OF ANALYSIS A9523955

SAMPLE	PREP CODE		Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
AD05	299	229	0.05	67	290	20	< 2	7	469	0.75	< 10	< 10	453	< 10	76
AD06	299	229	0.04	78	620	184	2	9	258	0.69	< 10	< 10	428	< 10	92
AD07	299	229	0.02	60	480	48	4	18	233	0.75	< 10	< 10	657	< 10	122
AD10	299	229	0.03	81	550	122	< 2	10	231	0.43	< 10	< 10	241	< 10	98
AD11	299	229	0.04	148	1010	144	22	28	334	1.63	< 10	< 10	1575	< 10	380
AD13	299	229	0.03	83	2880	816	8	8	273	0.67	< 10	< 10	458	30	240
AD15	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD16	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD17	299	229	0.02	103	3830	62	36	9	140	0.11	< 10	< 10	491	10	258
AD18	299	229	0.02	108	2530	232	28	9	229	0.17	10	< 10	458	< 10	182
AD19	299	229	0.02	58	800	88	40	11	101	0.60	< 10	< 10	1055	< 10	144
AD20	299	229	0.04	92	1670	146	18	10	124	0.37	< 10	< 10	645	< 10	200
AD21	299	229	0.03	87	1980	94	28	11	123	0.35	< 10	< 10	621	< 10	220
AD22	299	229	0.07	61	1380	68	2	13	168	0.88	< 10	< 10	763	< 10	160
AD23	299	229	0.02	203	1580	180	8	3	123	0.25	< 10	< 10	211	< 10	360
AD24	299	229	0.07	166	1650	2460	56	20	241	1.25	< 10	< 10	1635	10	216
AD25	299	229	0.03	163	2770	180	68	17	180	0.43	< 10	20	1215	10	322
AD26	299	229	0.03	45	1190	76	12	13	166	0.83	< 10	< 10	897	< 10	156
AD35	299	229	0.02	76	1520	102	32	9	95	0.18	< 10	20	590	< 10	170
AD36	299	229	0.05	27	860	18	2	15	161	1.05	< 10	< 10	1100	< 10	140
AD37	299	229	0.02	146	480	80	16	6	102	0.12	< 10	< 10	518	< 10	254
AD38	299	229	0.02	48	1490	10	< 2	7	155	0.01	< 10	< 10	75	< 10	156
AD44	299	229	0.02	59	1690	78	40	9	91	0.19	< 10	< 10	738	< 10	144
AD48	299	229	0.02	25	1790	24	4	4	154	0.16	< 10	< 10	259	< 10	66
AD49	299	229	0.03	69	1320	430	30	12	206	0.82	< 10	< 10	962	< 10	234
AD50	299	229	0.04	42	940	214	< 2	13	172	1.14	< 10	< 10	1175	< 10	300
AD51	299	229	0.07	27	1200	84	< 2	16	246	1.19	< 10	< 10	1140	< 10	180
AD52	299	229	0.06	32	710	50	16	17	229	1.13	< 10	< 10	1355	< 10	168

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AD05	299	229	< 0.4	1.46	2	>10000	0.5	< 2	0.80	1.0	19	1005	41	11.95	< 10	15	0.53	10	0.79	560	1
AD06	299	229	< 0.4	1.41	38	8240	1.0	< 2	0.92	0.5	38	895	77	>15.00	< 10	14	0.39	20	1.05	550	4
AD07	299	229	< 0.4	1.26	12	6240	2.0	20	2.18	< 0.5	32	364	36	>15.00	10	13	0.15	30	0.99	835	5
AD10	299	229	2.0	1.31	298	400	1.0	< 2	1.93	< 0.5	45	483	145	>15.00	10	34	0.24	20	1.38	635	43
AD11	299	229	5.6	2.09	148	250	3.0	< 2	7.58	< 0.5	48	362	195	>15.00	< 10	20	0.12	60	1.21	3170	29
AD13	299	229	66.4	0.90	86	6770	< 0.5	< 2	13.35	22.5	10	430	361	>15.00	< 10	10	0.07	40	0.94	2070	18
AD15	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD16	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD17	299	229	< 0.4	1.14	78	5070	1.5	< 2	2.55	1.5	22	240	53	>15.00	10	7	0.22	20	0.76	1025	52
AD18	299	229	2.4	1.40	116	1430	1.5	< 2	2.49	0.5	31	176	74	>15.00	< 10	8	0.25	20	0.63	1105	35
AD19	299	229	2.0	1.24	80	2560	1.0	< 2	4.20	0.5	11	133	37	>15.00	10	6	0.14	30	0.20	1530	31
AD20	299	229	1.2	2.09	118	4410	1.5	42	2.02	1.0	19	461	56	>15.00	< 10	3	0.39	30	0.44	1155	32
AD21	299	229	3.6	1.85	84	3180	1.5	< 2	3.03	2.0	18	454	45	>15.00	< 10	3	0.33	30	0.47	1440	29
AD22	299	229	< 0.4	1.91	46	1250	0.5	34	9.48	0.5	10	432	39	>15.00	10	2	0.30	40	0.55	2220	12
AD23	299	229	7.6	0.49	342	300	< 0.5	2	7.92	1.0	30	153	108	>15.00	< 10	4	0.05	20	1.36	940	60
AD24	299	229	4.4	2.65	192	440	0.5	< 2	>15.00	0.5	17	253	102	>15.00	30	5	0.15	90	0.54	4680	39
AD25	299	229	4.0	1.83	188	1100	3.0	10	4.25	2.0	55	171	200	>15.00	40	8	0.24	20	0.69	2100	61
AD26	299	229	< 0.4	1.09	28	2250	0.5	< 2	7.67	0.5	9	110	43	>15.00	< 10	6	0.10	30	0.45	1995	13
AD35	299	229	2.0	1.50	62	4010	1.0	2	0.94	0.5	19	123	59	>15.00	< 10	6	0.22	20	0.28	1120	37
AD36	299	229	< 0.4	1.43	< 2	600	< 0.5	12	14.15	< 0.5	5	130	21	>15.00	20	2	0.04	40	0.23	3560	4
AD37	299	229	3.6	0.99	114	420	1.0	2	5.81	< 0.5	30	101	61	>15.00	10	2	0.17	10	0.76	590	26
AD38	299	229	0.8	0.67	28	1610	0.5	4	13.90	< 0.5	12	111	27	13.00	< 10	3	0.12	< 10	1.67	865	6
AD44	299	229	< 0.4	1.18	66	2430	1.5	2	3.17	< 0.5	16	142	44	>15.00	10	1	0.20	20	0.45	640	33
AD48	299	229	< 0.4	0.67	12	5610	0.5	2	>15.00	< 0.5	4	180	14	10.35	< 10	2	0.11	20	3.57	465	7
AD49	299	229	0.8	1.32	58	7030	0.5	14	7.06	0.5	17	193	101	>15.00	10	7	0.12	30	0.28	2750	42
AD50	299	229	< 0.4	1.51	< 2	380	< 0.5	4	14.40	< 0.5	10	129	83	>15.00	10	5	0.03	50	0.20	4480	1
AD51	299	229	< 0.4	1.60	< 2	290	< 0.5	< 2	>15.00	< 0.5	4	374	27	>15.00	10	4	0.07	60	1.05	3830	1
AD52	299	229	< 0.4	1.58	6	2270	< 0.5	< 2	14.60	< 0.5	5	122	99	>15.00	10	4	0.06	60	0.19	4070	7

CERTIFICATION: [redacted]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

[redacted]o: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PARRY.

Page[redacted]r :1-B
Total [redacted] :1
Certificate Date: 14-AUG-95
Invoice No. : I9523955
P.O. Number : 950710
Account : MUB

CERTIFICATE OF ANALYSIS A9523955

SAMPLE	PREP CODE		Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
AD05	299	229	0.05	67	290	20	< 2	7	469	0.75	< 10	< 10	453	< 10	76
AD06	299	229	0.04	78	620	184	2	9	258	0.69	< 10	< 10	428	< 10	92
AD07	299	229	0.02	60	480	48	4	18	233	0.75	< 10	< 10	657	< 10	122
AD10	299	229	0.03	81	550	122	< 2	10	231	0.43	< 10	< 10	241	< 10	98
AD11	299	229	0.04	148	1010	144	22	28	334	1.63	< 10	< 10	1575	< 10	380
AD13	299	229	0.03	83	2880	816	8	8	273	0.67	< 10	< 10	458	30	240
AD15	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD16	--	--	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss	not/ss
AD17	299	229	0.02	103	3830	62	36	9	140	0.11	< 10	< 10	491	10	258
AD18	299	229	0.02	108	2530	232	28	9	229	0.17	10	< 10	458	< 10	182
AD19	299	229	0.02	58	800	88	40	11	101	0.60	< 10	< 10	1055	< 10	144
AD20	299	229	0.04	92	1670	146	18	10	124	0.37	< 10	< 10	645	< 10	200
AD21	299	229	0.03	87	1980	94	28	11	123	0.35	< 10	< 10	621	< 10	220
AD22	299	229	0.07	61	1380	68	2	13	168	0.88	< 10	< 10	763	< 10	160
AD23	299	229	0.02	203	1580	180	8	3	123	0.25	< 10	< 10	211	< 10	360
AD24	299	229	0.07	166	1650	2460	56	20	241	1.25	< 10	< 10	1635	10	216
AD25	299	229	0.03	163	2770	180	68	17	180	0.43	< 10	20	1215	10	322
AD26	299	229	0.03	45	1190	76	12	13	166	0.83	< 10	< 10	897	< 10	156
AD35	299	229	0.02	76	1520	102	32	9	95	0.18	< 10	20	590	< 10	170
AD36	299	229	0.05	27	860	18	2	15	161	1.05	< 10	< 10	1100	< 10	140
AD37	299	229	0.02	146	480	80	16	6	102	0.12	< 10	< 10	518	< 10	254
AD38	299	229	0.02	48	1490	10	< 2	7	155	0.01	< 10	< 10	75	< 10	156
AD44	299	229	0.02	59	1690	78	40	9	91	0.19	< 10	< 10	738	< 10	144
AD48	299	229	0.02	25	1790	24	4	4	154	0.16	< 10	< 10	259	< 10	66
AD49	299	229	0.03	69	1320	430	30	12	206	0.82	< 10	< 10	962	< 10	234
AD50	299	229	0.04	42	940	214	< 2	13	172	1.14	< 10	< 10	1175	< 10	300
AD51	299	229	0.07	27	1200	84	< 2	16	246	1.19	< 10	< 10	1140	< 10	180
AD52	299	229	0.06	32	710	50	16	17	229	1.13	< 10	< 10	1355	< 10	168

CERTIFICATION: [redacted]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: CYPRUS CANADA INC.
C/O RUBICON MINERALS
119 53RD ST.
DELTA, BC
V4M 3B3

Project : AB302
Comments: CC: STEVE PARRY.

Page Number : 1
Total Pages : 1
Certificate Date: 29-AUG-95
Invoice No. : I9523954
P.O. Number : 950710
Account : MUB

CERTIFICATE OF ANALYSIS A9523954

SAMPLE	PREP CODE		Au NAA ppb	Sb ppm ppm	As ppm	Br NAA ppm	Ce NAA ppm	Cr NAA ppm	Co NAA ppm	La NAA ppm	Mo NAA ppm	Ag NAA ppm	Ta NAA ppm	Th NAA ppm	W NAA ppm	U NAA ppm	Fe tot %	Ba ppm
AD05	235	220	5610	2	28	< 1	47	760	32	21	2	6	2	8	< 2	5	14.66	not/ss
AD06	235	220	15	4	79	2	58	690	44	36	4	< 5	2	9	3	6	21.37	not/ss
AD07	235	220	420	4	70	4	130	310	43	71	5	< 5	3	10	3	8	38.92	not/ss
AD10	235	220	2690	7	396	< 1	95	460	42	54	42	< 5	2	7	4	6	24.01	not/ss
AD11	235	220	19	14	159	3	220	200	38	110	17	< 5	4	13	4	8	39.52	not/ss
AD13	235	220	2420	12	133	10	230	660	20	89	21	26	5	13	14	9	not/ss	not/ss
AD15	235	220	5780	16	170	< 5	< 50	710	< 50	44	65	< 25	< 5	5	< 6	8	not/ss	not/ss
AD16	235	220	28	19	130	< 2	130	540	41	59	28	< 10	< 2	11	< 2	8	21.69	not/ss
AD17	235	220	19	45	149	< 1	40	290	28	39	49	< 5	< 1	7	13	10	40.96	not/ss
AD18	235	220	13	38	168	3	90	220	36	47	33	< 5	< 1	8	5	9	35.92	not/ss
AD19	235	220	500	58	132	< 1	140	120	20	59	25	< 5	1	11	12	12	41.21	not/ss
AD20	235	220	2520	42	190	< 2	190	550	28	82	35	< 10	< 2	15	8	10	31.87	not/ss
AD21	235	220	13500	42	141	< 1	160	500	26	65	25	< 5	1	11	9	9	32.26	not/ss
AD22	235	220	8070	11	77	< 1	250	390	18	91	12	< 5	4	10	3	9	19.16	not/ss
AD23	235	220	4090	20	451	2	140	270	37	71	58	13	1	9	< 2	5	28.56	not/ss
AD24	235	220	1130	41	124	1	310	180	17	140	19	< 5	5	14	8	11	30.53	not/ss
AD25	235	220	140	50	161	< 1	62	63	35	33	28	< 5	1	8	6	10	41.64	not/ss
AD26	235	220	420	15	56	< 1	200	140	16	79	11	< 5	4	10	< 2	8	23.37	not/ss
AD35	235	220	26700	49	118	2	140	350	29	53	38	< 5	< 1	9	< 2	14	24.72	not/ss
AD36	235	220	1980	6	17	< 1	310	150	16	100	3	< 5	8	12	< 2	10	22.27	not/ss
AD37	235	220	2800	29	154	2	63	130	29	24	24	< 5	< 1	5	5	7	36.45	not/ss
AD38	235	220	5330	5	48	< 1	45	230	21	20	7	< 5	< 1	3	< 2	3	14.20	not/ss
AD44	235	220	< 5	50	115	2	66	220	15	38	27	5	< 1	10	< 2	11	41.21	not/ss
AD48	235	220	1180	9	22	< 2	140	270	< 20	54	15	< 10	< 2	8	< 2	6	11.35	not/ss
AD49	235	220	8830	88	232	< 4	410	690	50	150	83	< 5	7	21	< 2	23	37.08	not/ss
AD50	235	220	6880	5	10	2	320	110	18	110	< 2	< 5	8	12	< 2	9	24.40	not/ss
AD51	235	220	15	14	31	< 3	370	130	12	140	6	6	7	14	< 2	11	27.74	not/ss
AD52	235	220	852	4	10	3	370	370	18	110	< 2	6	9	15	< 2	11	17.22	not/ss

CERTIFICATION: [redacted]

Rubicon Minerals Corporation
119 - 53rd Street
Delta, BC V4M 3B3

Fax Cover Sheet

DATE:	September 12, 1995	**TIME:**	11:18 AM
TO:	Chris Graf Ecstall	**PHONE:** **FAX:**	(604)681-4402 (604)681-1562
FROM:	Garfield MacVeigh Rubicon Minerals Corp.	**PHONE:** **FAX:**	(604)948-2583 (604)990-0457
RE:	SW Alberta		
CC:			

Number of pages including cover sheet: [4]

Message

I have attached HMC results for AD samples (Cert A9523954). Also faxed are original rock sample results from rock samples collected by MacVeigh (Cert A9539560) Au(30gm) + ICP. I requested a reassay for the anomalous results and Chemex was unable to repeat the analysis - I am expecting a letter from them re the repeat analysis.

Still outstanding are the HMC results from Mike's last round of samples.

Garfield

A9523954 - COMPLETE																
CLIENT : CYPRUS CANADA INC.																
# of SAMPLES : 28																
DATE RECEIVED : 27-JUL-95																
PROJECT : AB302																
CERTIFICATE COMMENTS : CC: STEVE PARRY.																
	4139	4140	4141	4142	4143	4144	4145	4146	4147	4148	4149	4150	4151	4152	325	25
SAMPLE	Au NAA	Sb ppm	As	Br NAA	Ce NAA	Cr NAA	Co NAA	La NAA	Mo NAA	Ag NAA	Ta NAA	Th NAA	W NAA	U NAA	Fe tot	Ba
DESCRIP	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
AD05	5610	2	28	<1	47	760	32	21	2	6	2	8	<2	5	14.66	not/ss
AD06	15	4	79	2	58	690	44	36	4	<5	2	9	3	6	21.37	not/ss
AD07	420	4	70	4	130	310	43	71	5	<5	3	10	3	8	38.92	not/ss
AD10	2690	7	396	<1	95	460	42	54	42	<5	2	7	4	6	24.01	not/ss
AD11	19	14	159	3	220	200	38	110	17	<5	4	13	4	8	39.52	not/ss
AD13	2420	12	133	10	230	660	20	89	21	26	5	13	14	9	not/ss	not/ss
AD15	5780	16	170	<5	<50	710	<50	44	65	<25	<5	5	<6	8	not/ss	not/ss
AD16	28	19	130	<2	130	540	41	59	28	<10	<2	11	<2	8	21.69	not/ss
AD17	19	45	149	<1	40	290	28	39	49	<5	<1	7	13	10	40.96	not/ss
AD18	13	38	168	3	90	220	36	47	33	<5	<1	8	5	9	35.92	not/ss
AD19	500	58	132	<1	140	120	20	59	25	<5	1	11	12	12	41.21	not/ss
AD20	2520	42	190	<2	190	550	28	82	35	<10	<2	15	8	10	31.87	not/ss
AD21	13500	42	141	<1	160	500	26	65	25	<5	1	11	9	9	32.26	not/ss
AD22	8070	11	77	<1	250	390	18	91	12	<5	4	10	3	9	19.16	not/ss
AD23	4090	20	451	2	140	270	37	71	58	13	1	9	<2	5	28.56	not/ss
AD24	1130	41	124	1	310	180	17	140	19	<5	5	14	8	11	30.53	not/ss
AD25	140	50	161	<1	62	63	35	33	28	<5	1	8	6	10	41.64	not/ss
AD26	420	15	56	<1	200	140	16	79	11	<5	4	10	<2	8	23.37	not/ss
AD35	26700	49	118	2	140	350	29	53	38	<5	<1	9	<2	14	24.72	not/ss
AD36	1980	6	17	<1	310	150	16	100	3	<5	8	12	<2	10	22.27	not/ss
AD37	2800	29	154	2	63	130	29	24	24	<5	<1	5	5	7	36.45	not/ss
AD38	5330	5	48	<1	45	230	21	20	7	<5	<1	3	<2	3	14.2	not/ss
AD44	<5	50	115	2	66	220	15	38	27	5	<1	10	<2	11	41.21	not/ss
AD48	1180	9	22	<2	140	270	<20	54	15	<10	<2	8	<2	6	11.35	not/ss
AD49	8830	88	232	<4	410	690	50	150	83	<5	7	21	<2	23	37.08	not/ss
AD50	6880	5	10	2	320	110	18	110	<2	<5	8	12	<2	9	24.4	not/ss
AD51	15	14	31	<3	370	130	12	140	6	6	7	14	<2	11	27.74	not/ss
AD52	852	4	10	3	370	370	18	110	<2	6	9	15	<2	11	17.22	not/ss

A9523956 - CERTIFIED																		
CLIENT : CYPRUS CANADA INC.																		
# of SAMPLES : 13																		
DATE RECEIVED : 27-JUL-95																		
PROJECT : AB302																		
CERTIFICATE COMMENTS : CC: STEVE PARRY.																		
	494	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2150	2130	2131	2132	2151	2134
SAMPLE	Au g/t	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg
DESCRIPTI	FA+AA	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%
NBC47607	0.025	<.2	0.92	6	490	<.5	2	0.08	<.5	3	126	9	1.39	<10	<1	0.17	<10	0.13
NBC47608	1.78	<.2	0.37	16	390	0.5	2	11.55	<.5	6	43	3	6.51	<10	<1	0.08	<10	0.54
NBC47609	0.145	<.2	0.53	6	460	<.5	<2	13.4	<.5	3	26	14	1.52	<10	<1	0.16	<10	0.38
NBC47610	<.005	<.2	0.24	6	40	<.5	2	11.9	<.5	1	46	<1	0.5	<10	<1	0.13	<10	6.27
NBC47611	0.045	<.2	0.92	6	320	1	<2	0.86	<.5	9	105	6	10.4	<10	<1	0.09	<10	0.31
NBC47612	0.01	<.2	0.1	<2	20	<.5	<2	0.08	<.5	1	240	3	1.12	<10	<1	0.02	<10	0.02
NBC47613	<.005	<.2	0.02	4	<10	<.5	<2	14.2	<.5	<1	47	<1	0.09	<10	<1	0.01	<10	2.01
NBC47614	<.005	<.2	0.49	<2	120	<.5	<2	0.24	<.5	4	201	6	1.72	<10	<1	0.06	<10	0.02
NBC47615	<.005	<.2	2.3	2	170	<.5	<2	5.61	<.5	22	214	<1	5.28	<10	<1	0.07	40	3.86
NBC47616	<.005	<.2	0.13	2	80	<.5	<2	2.97	<.5	1	154	2	0.76	<10	<1	0.05	<10	1.78
NBC47617	<.005	<.2	0.5	8	70	<.5	<2	0.14	<.5	4	236	8	0.82	<10	<1	0.1	<10	0.1
NBC47618	<.005	<.2	0.37	<2	80	<.5	<2	1.34	<.5	<1	197	6	0.36	<10	<1	0.23	<10	0.14
NBC47619	<.005	<.2	2.3	6	170	<.5	<2	1.06	<.5	9	110	18	3.14	<10	1	0.19	10	0.96

A9523956 -																
CLIENT : C'																
# of SAMPL																
DATE RECE																
PROJECT :																
CERTIFICA																
	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	25
SAMPLE	Mn	Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn	Ba
DESCRIPTI	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
NBC47607	20	<1	<.01	13	530	8	<2	2	26	<.01	<10	<10	30	<10	50	620
NBC47608	850	2	0.01	14	1570	<2	<2	2	143	<.01	<10	<10	61	<10	50	780
NBC47609	340	2	0.01	13	620	4	<2	3	279	<.01	<10	<10	16	<10	64	860
NBC47610	65	<1	0.01	6	300	<2	<2	<1	54	<.01	<10	<10	6	<10	50	160
NBC47611	800	1	0.01	18	3960	2	<2	4	74	<.01	<10	<10	90	<10	62	440
NBC47612	75	<1	<.01	4	280	<2	<2	<1	6	<.01	<10	<10	8	<10	4	20
NBC47613	15	<1	0.01	5	190	<2	<2	<1	250	<.01	<10	<10	6	<10	42	100
NBC47614	90	<1	<.01	18	370	4	<2	4	46	<.01	<10	<10	56	<10	68	340
NBC47615	970	<1	<.01	101	1170	2	<2	12	64	0.05	<10	<10	94	<10	100	480
NBC47616	480	<1	<.01	3	80	<2	<2	<1	9	<.01	<10	<10	2	<10	2	220
NBC47617	135	1	<.01	15	490	4	<2	1	7	<.01	<10	<10	26	<10	30	160
NBC47618	10	<1	<.01	7	220	<2	<2	<1	30	<.01	<10	<10	10	<10	22	120
NBC47619	765	<1	0.03	24	820	6	<2	9	65	0.2	<10	<10	82	<10	78	1500

9/12/95 11:24AM

XRAL

XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ont.
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

DISTRIBUTION

TO: ECSTALL MINING CORP.
ATTN: DON SHARPE
307-475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

CUSTOMER No. 376

REPORT 30706

WORKORDER 2087-03

XRAL
XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ont.
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS
REPORT 30706

TO: LAC MINERALS LTD.
ATTN: J. GARFIELD MACVEIGH
EXPLORATION DIVISION
698 SEYMOUR ST., STE.204
VANCOUVER, B.C.
V6B 3K6

CUSTOMER No. 376

DATE SUBMITTED
30-Nov-94

WORKORDER 2087-03

TOTAL PAGES 8

67 HEAVY MINERAL CONCENTRATES

	METHOD	DETECTION LIMIT	METHOD CODE
AU PPB	NA	10.	14-2
NA PPM	NA	500.	14-2
CA %	NA	1.	14-2
SC PPM	NA	.1	14-2
CR PPM	NA	10.	14-2
FE %	NA	.02	14-2
CO PPM	NA	5.	14-2
NI PPM	NA	200.	14-2
ZN PPM	NA	200.	14-2
AS PPM	NA	5.	14-2
SE PPM	NA	20.	14-2
MO PPM	NA	20.	14-2
AG PPM	NA	5.	14-2
SB PPM	NA	.2	14-2
BA PPM	NA	200.	14-2
LA PPM	NA	1.	14-2
CE PPM	NA	3.	14-2
SM PPM	NA	.1	14-2
EU PPM	NA	.2	14-2
YB PPM	NA	.2	14-2
LU PPM	NA	.1	14-2
HF PPM	NA	1.	14-2
TA PPM	NA	1.	14-2
W PPM	NA	10.	14-2
IR PPB	NA	50.	14-2
TH PPM	NA	.5	14-2
U PPM	NA	.5	14-2

*** UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD PULPS IN 90 DAYS ***
AND REJECTS IN 30 DAYS FROM THE DATE OF THIS REPORT

ATE 20-DEC-94

CERTIFIED BY [redacted]

Jean H. Opdebeeck, General Manager

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	AU PPB NA 14-2	NA PPM NA 14-2	CA % NA 14-2	SC PPM NA 14-2	CR PPM NA 14-2	FE % NA 14-2	CO PPM NA 14-2
AR1	<10	700	15	10.5	50	31.6	11
AR2	<10	600	17	10.5	50	22.5	10
AR3	<10	600	12	8.2	190	32.4	26
AR4	<10	800	13	14.5	160	27.5	22
AR5	<10	800	13	16.3	160	24.7	17
AR6	<10	1000	14	16.2	130	26.7	16
AR7	<10	900	17	15.0	60	21.0	13
AR8	<10	900	15	14.9	70	22.9	19
AR9	<10	700	14	11.0	70	29.5	28
AR10	<10	2000	16	16.4	180	20.5	16
AR11	<10	1000	16	13.4	80	22.8	9
AR12	10	1100	13	9.2	300	22.6	28
AR13	30	800	7	5.7	270	34.4	39
AR14	<10	600	12	10.9	70	32.2	22
AR15	26000	700	<3	17.4	830	27.5	31
AR16	20	800	7	8.8	300	26.3	42
AG1	450	700	8	13.7	190	39.9	35
AG2	430	800	15	13.8	190	20.3	14
AG3	470	<500	7	16.8	380	42.2	36
AG4	<10	1100	20	16.3	130	23.0	19
AG5	510	600	11	14.1	360	29.8	27
AG6	10	800	14	15.2	150	37.6	40
AG7	<10	900	10	19.0	280	37.1	26
AG8	60	900	11	15.3	160	28.4	18
AG9	<10	1000	13	15.5	90	19.5	18
AG10	430	900	16	14.4	110	35.4	33
AG11	370	1000	<1	27.0	160	38.4	33
AG12	5100	800	<1	29.7	180	43.8	15
AG13	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG14	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG15	870	800	<1	29.8	170	43.4	17
AG16	30	1500	<1	29.0	520	42.0	43
AG17	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG18	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG19	<10	900	12	8.5	370	21.2	28
AG20	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG21	10	600	6	7.4	290	25.6	27
AG22	10	800	19	13.8	90	25.9	16
AG23	20	800	<1	14.9	630	27.4	32
AG24	20	600	9	8.1	370	25.9	26

NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	AU PPB NA 14-2	NA PPM NA 14-2	CA % NA 14-2	SC PPM NA 14-2	CR PPM NA 14-2	FE % NA 14-2	CO PPM NA 14-2
AG25	600	500	5	8.6	320	32.0	41
AG27	<10	900	<1	9.4	180	49.4	12
AG28	10	1600	<1	10.1	430	33.9	10
AG29	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG30	2900	900	1	8.4	170	37.8	9
AG31	4200	800	<1	20.7	590	38.5	29
AG32	3000	<500	<2	62.6	1900	22.5	26
AG33	5300	<500	<1	44.9	1000	14.6	20
AG34	30	500	6	8.6	710	37.3	76
AG35	10000	700	<1	8.9	390	37.8	23
AG36	<10	800	20	4.4	270	13.6	14
AG37	1400	800	4	8.2	290	34.7	16
AG38	<10	900	3	11.8	1000	44.3	19
AG39	<10	600	12	10.6	100	37.3	20
AG40	<10	800	16	13.5	70	22.4	9
AG41	<10	600	8	11.6	330	31.9	35
AG42	<10	1000	13	19.6	130	23.4	19
AG43	<10	1000	11	21.2	250	29.5	24
AG44	170	1900	1	12.4	370	32.2	21
AG45	<10	800	<1	10.9	570	35.9	20
AG46	4600	700	<1	14.6	1200	44.8	26
AG47	20	800	<1	9.0	480	36.4	28
AG48	1600	600	<1	9.2	690	36.0	23
AG49	920	1000	3	11.2	470	39.2	19
AG50	50	900	3	14.0	630	36.5	28
AG51	760	<500	<1	3.3	150	9.20	6
AG52	5600	900	16	11.8	270	13.8	17
D AR1	630	800	17	12.8	150	26.4	15
D AG9	10	1100	14	16.1	80	19.6	16
D AG34	NSS	NSS	NSS	NSS	NSS	NSS	NSS

D - QUALITY CONTROL DUPLICATE
NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	NI PPM NA 14-2	ZN PPM NA 14-2	AS PPM NA 14-2	SE PPM NA 14-2	MO PPM NA 14-2	AG PPM NA 14-2	SB PPM NA 14-2
AR1	<200	<200	42	<20	20	<5	27.0
AR2	<200	<200	25	<20	<20	<5	14.0
AR3	<200	700	6	<20	<20	<5	3.8
AR4	<200	200	17	<20	<20	<5	11.0
AR5	<200	<200	20	<20	<20	<5	5.7
AR6	<200	<200	28	<20	<20	<5	9.4
AR7	<200	<200	12	<20	<20	<5	3.5
AR8	<200	<200	7	<20	<20	<5	3.7
AR9	<200	300	8	<20	<20	<5	2.9
AR10	<200	<200	20	<20	<20	<5	7.1
AR11	<200	<200	22	<20	<20	<5	10.0
AR12	<200	200	210	<20	40	<5	41.0
AR13	<200	400	400	<20	60	<5	21.0
AR14	<200	600	13	<20	<20	<5	11.0
AR15	<200	200	180	<20	40	<5	11.0
AR16	<200	200	390	<20	80	<5	18.0
AG1	<200	400	23	<20	<20	<5	7.8
AG2	<200	<200	12	<20	<20	<5	3.5
AG3	<200	400	17	<20	<20	<5	5.0
AG4	<200	200	8	<20	<20	<5	2.8
AG5	<200	300	17	<20	<20	<5	5.6
AG6	<200	400	11	<20	<20	<5	4.3
AG7	<200	200	29	<20	<20	<5	8.1
AG8	<200	<200	38	<20	<20	<5	10.0
AG9	<200	200	18	<20	<20	<5	5.0
AG10	<200	400	15	<20	<20	<5	6.1
AG11	<200	400	36	<20	<20	<5	3.1
AG12	<200	<200	17	<20	30	<5	2.6
AG13	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG14	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG15	<200	<200	20	<20	<20	<5	2.6
AG16	<200	<200	100	<20	150	<5	3.0
AG17	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG18	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG19	<200	200	190	<20	20	<5	58.0
AG20	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG21	<200	200	230	<20	30	<5	11.0
AG22	<200	400	7	<20	<20	<5	4.0
AG23	<200	<200	180	<20	30	<5	10.0
AG24	<200	200	250	<20	40	<5	12.0

NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	NI PPM NA 14-2	ZN PPM NA 14-2	AS PPM NA 14-2	SE PPM NA 14-2	MO PPM NA 14-2	AG PPM NA 14-2	SB PPM NA 14-2
AG25	400	200	410	<20	60	<5	22.0
AG27	<200	<200	140	<20	40	<5	80.0
AG28	<200	300	86	<20	20	<5	43.0
AG29	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG30	<200	<200	85	<20	20	<5	56.0
AG31	<200	<200	85	<20	20	<5	44.0
AG32	<200	<200	12	<20	<20	<5	3.7
AG33	<200	<200	11	<20	<20	<5	2.3
AG34	<200	300	260	<20	50	<5	28.0
AG35	<200	<200	150	<20	40	<5	96.0
AG36	<200	200	50	<20	<20	<5	5.3
AG37	<200	300	120	<20	30	<5	24.0
AG38	<200	300	120	<20	40	<5	46.0
AG39	<200	500	40	<20	20	<5	27.0
AG40	<200	<200	26	<20	<20	<5	11.0
AG41	<200	400	170	<20	30	<5	9.2
AG42	<200	<200	18	<20	<20	<5	3.1
AG43	<200	200	19	<20	<20	<5	3.2
AG44	<200	200	86	<20	20	<5	38.0
AG45	<200	<200	140	<20	40	<5	47.0
AG46	<200	200	160	<20	50	<5	58.0
AG47	<200	<200	180	<20	40	<5	43.0
AG48	<200	200	140	<20	20	<5	38.0
AG49	<200	<200	130	<20	50	<5	43.0
AG50	<200	300	120	<20	30	<5	38.0
AG51	<200	<200	30	<20	<20	<5	13.0
AG52	<200	<200	13	<20	80	<5	3.6
D AR1	<200	300	27	<20	<20	<5	13.0
D AG9	<200	200	15	<20	<20	<5	4.4
D AG34	NSS	NSS	NSS	NSS	NSS	NSS	NSS

D - QUALITY CONTROL DUPLICATE
NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	BA PPM NA 14-2	LA PPM NA 14-2	CE PPM NA 14-2	SM PPM NA 14-2	EU PPM NA 14-2	YB PPM NA 14-2	LU PPM NA 14-2
AR1	2200	124	329	46.2	12.0	11.4	1.8
AR2	2500	74	243	42.4	11.6	12.2	1.8
AR3	600	70	187	28.1	8.3	8.4	1.3
AR4	3300	78	242	37.6	10.8	10.3	1.6
AR5	2800	88	260	40.8	12.0	11.7	1.8
AR6	1500	75	248	39.9	10.9	11.3	1.7
AR7	3800	71	263	44.8	12.8	12.4	1.9
AR8	1200	73	262	45.3	12.4	12.3	1.9
AR9	800	77	214	32.1	9.3	8.9	1.4
AR10	2500	94	302	51.7	13.6	15.8	2.3
AR11	6400	167	426	57.0	14.8	17.3	2.6
AR12	12000	130	236	31.4	6.6	10.0	1.8
AR13	16000	95	74	15.5	4.4	6.4	1.0
AR14	2000	87	271	42.9	11.4	12.2	1.9
AR15	61000	429	773	40.2	5.7	22.8	4.3
AR16	24000	180	300	14.9	2.0	5.8	1.2
AG1	2900	65	191	30.1	8.7	8.7	1.3
AG2	1100	74	228	35.7	10.3	10.1	1.5
AG3	5000	60	170	23.9	7.1	8.4	1.4
AG4	1400	97	315	51.1	14.3	14.3	2.1
AG5	3300	67	201	30.6	8.6	10.6	1.5
AG6	3200	75	232	36.6	10.5	9.7	1.5
AG7	4500	90	327	35.6	10.4	12.4	1.9
AG8	17000	70	204	32.2	9.8	10.2	1.6
AG9	2200	111	265	37.0	12.9	12.5	2.0
AG10	1100	95	266	43.3	11.6	12.1	1.9
AG11	300	112	208	25.4	8.1	7.1	1.1
AG12	1000	69	227	10.7	3.4	3.2	.5
AG13	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG14	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG15	900	67	128	11.5	4.1	3.7	.5
AG16	5800	235	501	39.8	6.9	5.8	.8
AG17	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG18	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG19	12000	192	269	33.2	7.3	13.1	2.3
AG20	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG21	50000	88	141	19.6	5.0	8.4	1.2
AG22	1500	119	415	56.9	15.7	16.7	2.6
AG23	73000	369	646	44.5	5.8	18.7	3.3
AG24	17000	98	166	20.5	5.2	9.8	1.7

NSS - NOT SUFFICIENT SAMPLE

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20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	BA PPM NA 14-2	LA PPM NA 14-2	CE PPM NA 14-2	SM PPM NA 14-2	EU PPM NA 14-2	YB PPM NA 14-2	LU PPM NA 14-2
AG25	25000	212	353	18.1	2.6	9.4	1.7
AG27	9100	44	120	14.7	5.4	25.0	4.2
AG28	4700	82	158	15.9	5.1	20.5	3.2
AG29	NSS	NSS	NSS	NSS	NSS	NSS	NSS
AG30	5900	34	59	9.8	4.3	12.7	2.3
AG31	32000	91	181	16.1	4.1	20.9	3.3
AG32	180000	465	896	58.1	8.3	30.9	4.6
AG33	150000	369	662	28.8	6.6	22.9	3.5
AG34	55000	65	154	16.2	3.6	15.4	2.7
AG35	14000	91	170	12.0	2.9	6.2	1.0
AG36	6000	17	36	3.1	1.2	1.8	.3
AG37	20000	36	72	7.9	1.9	5.2	.9
AG38	20000	73	169	19.4	4.5	5.2	1.0
AG39	2400	108	281	40.4	11.2	11.1	1.8
AG40	2600	145	397	57.4	15.8	17.6	2.7
AG41	8400	48	129	20.6	6.1	7.1	1.1
AG42	4200	72	180	30.7	11.7	10.1	1.5
AG43	3700	90	255	42.1	12.8	12.9	2.0
AG44	3900	76	124	11.1	3.7	5.0	.9
AG45	11000	68	116	12.4	4.4	10.9	1.8
AG46	31000	123	243	18.5	4.6	11.0	2.1
AG47	45000	55	104	9.9	3.3	8.7	1.2
AG48	37000	68	127	12.1	2.9	9.3	1.6
AG49	31000	40	196	9.2	2.4	4.5	.8
AG50	11000	47	122	10.6	2.8	8.3	1.5
AG51	3900	11	31	1.8	.6	1.8	.3
AG52	1200	71	352	29.7	10.4	10.3	1.8
D AR1	1300	108	329	52.8	14.9	15.4	2.4
D AG9	2400	91	241	37.8	13.4	12.1	1.8
D AG34	NSS	NSS	NSS	NSS	NSS	NSS	NSS

D - QUALITY CONTROL DUPLICATE
NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	HF PPM NA 14-2	TA PPM NA 14-2	W PPM NA 14-2	IR PPB NA 14-2	TH PPM NA 14-2	U PPM NA 14-2
AR1	20	4	10	<50	14.0	14.2
AR2	21	4	<10	<50	10.0	11.3
AR3	22	4	<10	<50	9.2	6.0
AR4	34	7	<10	<50	13.0	7.5
AR5	28	8	<10	<50	10.0	7.3
AR6	31	8	<10	<50	11.0	8.3
AR7	25	10	<10	<50	10.0	8.3
AR8	24	10	<10	<50	11.0	8.2
AR9	18	5	<10	<50	9.2	7.0
AR10	38	7	<10	<50	12.0	9.4
AR11	39	6	10	<50	16.0	10.8
AR12	100	<2	<10	<50	20.0	8.5
AR13	39	2	<10	<50	8.1	5.2
AR14	25	6	10	<50	13.0	9.7
AR15	410	<2	<10	<50	62.0	21.5
AR16	110	3	<10	<50	29.0	6.7
AG1	35	6	<10	<50	9.3	7.2
AG2	35	9	<10	<50	9.0	8.1
AG3	53	5	<10	<50	13.0	8.0
AG4	46	10	<10	<50	13.0	9.2
AG5	56	7	<10	<50	13.0	7.5
AG6	30	8	10	<50	11.0	7.9
AG7	45	7	10	<50	12.0	8.5
AG8	42	5	<10	<50	8.9	8.1
AG9	41	8	<10	<50	18.0	8.9
AG10	33	6	10	540	12.0	8.9
AG11	15	1	<10	<50	9.9	6.0
AG12	9	1	10	<50	6.4	3.9
AG13	NSS	NSS	NSS	NSS	NSS	NSS
AG14	NSS	NSS	NSS	NSS	NSS	NSS
AG15	8	1	<10	<50	7.1	4.7
AG16	30	2	10	<50	11.0	5.5
AG17	NSS	NSS	NSS	NSS	NSS	NSS
AG18	NSS	NSS	NSS	NSS	NSS	NSS
AG19	120	<2	<10	<50	21.0	10.4
AG20	NSS	NSS	NSS	NSS	NSS	NSS
AG21	76	2	<10	<50	11.0	7.0
AG22	38	7	<10	<50	14.0	11.2
AG23	380	<1	<10	<50	62.0	20.7
AG24	100	<1	<10	<50	14.0	7.5

NSS - NOT SUFFICIENT SAMPLE

XRAL

20-DEC-94 REPORT 30706 WORKORDER 2087-03

SAMPLE	HF PPM NA 14-2	TA PPM NA 14-2	W PPM NA 14-2	IR PPB NA 14-2	TH PPM NA 14-2	U PPM NA 14-2
AG25	150	<1	<10	<50	30.0	8.8
AG27	13	<1	20	<50	10.0	11.1
AG28	47	<1	10	<50	12.0	9.0
AG29	NSS	NSS	NSS	NSS	NSS	NSS
AG30	16	<1	10	<50	7.2	8.9
AG31	43	1	10	<50	28.0	10.4
AG32	170	5	10	<50	130	15.5
AG33	120	7	10	<50	100	9.2
AG34	93	<1	<10	<50	13.0	9.2
AG35	46	<1	10	<50	17.0	10.5
AG36	19	<1	<10	<50	8.2	3.9
AG37	31	<1	10	<50	13.0	10.1
AG38	98	<1	10	<50	27.0	14.8
AG39	22	5	10	<50	13.0	13.4
AG40	32	6	<10	<50	13.0	10.4
AG41	40	4	20	<50	6.3	7.5
AG42	26	7	<10	<50	8.5	7.5
AG43	40	8	<10	<50	12.0	8.0
AG44	33	<1	10	<50	13.0	9.7
AG45	66	1	10	<50	14.0	9.8
AG46	140	1	20	<50	22.0	15.2
AG47	47	<1	10	<50	12.0	9.5
AG48	82	1	10	<50	13.0	13.2
AG49	50	<1	20	<50	16.0	8.9
AG50	130	<1	10	<50	12.0	11.7
AG51	37	<1	20	<50	2.5	2.4
AG52	48	5	90	<50	9.0	5.5
D AR1	33	6	10	<50	13.0	12.2
D AG9	36	7	<10	<50	12.0	8.1
D AG34	NSS	NSS	NSS	NSS	NSS	NSS

D - QUALITY CONTROL DUPLICATE
NSS - NOT SUFFICIENT SAMPLE

LAC

To: Garfield MacVeigh

From: Dave Brosnahan

Date: August 9, 1994

Subject: Mineralogy of Selected SW Alberta Samples

Memorandum

INTRODUCTION

This memo gives results of X-ray diffraction (XRD) and microprobe examinations of heavy mineral concentrates from Southwest Alberta. You selected sample numbers AD1, AD29, AD30, and AD43 for priority in your June 17 memo. The samples included initial concentrate material, and hand-picked particles attached to tape. We pulverized small splits from each concentrate for XRD. Table I below lists samples selected for microprobe study.

Table I

Southwest Alberta Samples Examined by Electron Microprobe

Sample #	Hand-Picked	Concentrate
AD1	two mounts: 1. gangue, 2. gold grains	polished epoxy grain mount
AD30	one mount with gangue and gold grains	

Sections of tape with the attached hand-picked grains were cut out of cardboard holders with scissors, remounted on microprobe specimen holders, and carbon-coated for electrical conductivity. In addition, we made a polished epoxy mount from AD1 initial concentrate for microprobe confirmation of the XRD results.

DISCUSSION

X-Ray Diffraction

Table II shows the semi-quantitative mineralogical compositions as determined by XRD. AD1 and AD29 were similar showing mostly andradite garnet, with hematite and quartz. AD30 was mostly hematite and quartz, with minor calcite and goethite. AD43 contained almandine garnet rather than andradite, and included barite in addition to quartz and hematite.

Microprobe Analysis - Gangue

Minerals checked in Table III show electron microprobe identifications. The colors in parentheses were noted during stereomicroscopic examinations of the hand-picked grains. The hand-picked garnet, chlorite, epidote, and staurolite confirm an origin from metamorphic terrain. The calc-silicates, and diopside and calcite in the AD1 concentrate, suggest the possibility of skarn. Zircon and sphene are accessories in such rocks.

Microprobe Analysis - Gold

Under a stereomicroscope, the hand-picked gold grains showed a range of lusters from dull pyrite-like to shiny. The duller-appearing gold generally correlated with higher mercury contents, as confirmed by microanalysis. Some gold grains, with or without mercury, also contained alloying silver and iron.

The AD1 grains showed the following chemical compositions:

- pure gold,
- gold with trace to several percent mercury,
- gold with trace to several percent silver,
- gold with trace to several percent silver and mercury,
- gold with several percent silver, and trace to several percent iron.

The AD30 gold grains showed higher mercury contents than those in AD1, with one grain suggesting a composition of 45% Au, 40% Hg, and 15% Ag. All the AD30 gold included mercury; silver ranged from below detection to ≈15%, and two grains showed several percent iron along with mercury and silver.

Table II

X-Ray Mineralogy of Southwest Alberta Heavy Mineral Concentrates

		Approx. %			
Mineral	**Formula**	**AD1**	**AD29**	**AD30**	**AD43**
almandine	$Fe_3Al_2(SiO_4)_3$				35
andradite	$Ca_3Fe_2(SiO_4)_3$	75	67		
barite	$BaSO_4$				4
calcite	$CaCO_3$			5	
goethite	$FeO{\cdot}OH$			4	
hematite	Fe_2O_3	15	20	49	10
quartz	SiO_2	10	13	42	51

Table III

Gangue Minerals Identified by Microprobe Analysis
(Excluding XRD Identifications)

Mineral (color)	Formula	AD1 Hand-Picked	AD1 Con	AD30 Hand-Picked
almandine (pink)	$(Fe,Mn)_3Al_2(SiO_4)_3$	√	√	
arsenopyrite	$FeAsS$		√	
barite	$BaSO_4$		√	
calcite	$CaCO_3$		√	
chlorite (green)	$(Mg,Fe,Al)_6(Al,Si)_4O_{10}(OH)_8$			√
diopside	$Ca(Mg,Fe)Si_2O_6$		√	
epidote (green)	$Ca_2(Al,Fe)_3Si_3O_{12}(OH)$	√		√
ilmenite	$FeTiO_3$		√	
K-feldspar	$KAlSi_3O_8$		√	√
pseudomalachite(?) (green)	$Cu_5(PO_4)_2(OH)_4{\cdot}H_2O$	√		
pyrite	FeS_2	√	√	
spessartine (orange)	$(Mn,Fe)_3Al_2(SiO_4)_3$			√
sphene (yellow)	$CaTiSiO_5$	√		√
staurolite (orange)	$FeAl_4Si_2O_{10}(OH)_2$	√		
zircon (purple)	$ZrSiO_4$	√		√

LAC NORTH AMERICA LTD.

LAC

Vancouver Office

698 Seymour St. - Suite 204
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Fax: (604) 683-5113

June 6, 1994

Mr. Don Sharp
Ecstall Mining Corporation
307 -475 Howe Street
Vancouver, BC V6C 2B3

Dear Don:

I am returning information on your SW Alberta property area that you provided me when I left your office. We had copies of the ARC reports on hand.

I also acknowledge receipt of six cards with mounted grains selected from heavy mineral concentrates and several small bags of mineral concentrates numbered - AD1, AD3, AD14, AD29, AD30, AD31, AD32, AD34, AD39, AD43, AD45, AD46. Our Denver Lab will examine these samples and I will provide a copy of all the results to you.

I expect to hear from you about general terms of an option deal. Thanks for your time today,

Sincerely yours,

[redacted]

J. Garfield MacVeigh
Disrtict Manager

Cominco Ltd./Exploration Research Laboratory/1486 East Pender Street
Vancouver, B.C./Canada V5L 1V8/Tel. (604) 685-3032/Fax: (604) 844-2686

Cominco

Exploration
Research Laboratory

Mr. Chris Graf, P. Geol.
Ecstall Mining Corporation
#307 - 475 Howe Street
Vancouver, B.C.
V6C 2B3

12 May 1994

Dear Mr. Graf:

I have had photographs taken for some of your mineral grains. The photographs are of the following samples:

1) Sample AD1. A grouping of gold grains (15) that have previously been studied and reported on.

2) Sample AD29. This sample has two purple grains which are identified as zircons and 9 grains of gold. One grain of gold proved to contain considerable Hg and minor Ag.

3) Sample AD43. This group of grains contains 5 grains of gold, a green grain which proved to be diopside, two white grains and numerous purple grains. One of the purple grains appears to be a garnet and was in fact confirmed as a Cr - pyrope.

4) Sample AD39. This sample contains a metallic looking grain that proved to be rutile (TiO_2). White grains proved to be quartz, purple grains are zircons and one grain of gold is rich in Ag and contains minor Cu and Zn.

Sample AD39 was cleaned in alcohol and purple looking grains (some) turned white. These grains proved to be quartz. It was in this sample that the metallic looking grains (thought to be diamonds) occurred. One may have been lost in the cleaning attempt but the remaining grain proved to be rutile.

......2/

I hope this information is useful. The photographs (prints) have been made directly from color slides which I shall return with the sample grains.

Yours truly,

[redacted]

J.A. McLeod, P.Eng.

JAM/el

Cominco Ltd./Exploration Research Laboratory/1486 East Pender Street
Vancouver, B.C./Canada V5L 1V8/Tel. (604) 685-3032/Fax. (604) 844-2686

Exploration
Research Laboratory

Mr. Chris Graf, P.Geol.
Ecstall Mining Corporation
#307 - 475 Howe Street
Vancouver, B.C.
V6C 2B3

08 March 1994

Dear Mr. Graf:

Following are the results of microscopic grain study, picking and analysis by SEM-EDX.

ROW 1 - 1 - a black grain from AD7 is a Fe-oxide.
- 2 - a black grain from AD7 is a Fe-oxide.
- 3 - a green green from AD16, possibly augite pyroxene.
- 4 - a tiny purple grain from AD20 is a zircon.
- 5 - a yellow grain from AD20 is sphene.

ROW 2 - 1 - a gold grain from AD32 is gold.
- 2 - a purple grain from AD32 is an almandine >grossular garnet.
- 3 - a black grain from AD32 is a Fe-silicate.
- 4 - a black grain from AD32 is a Fe-silicate.
- 5 - a tiny gold grain from AD34 is a Au with some Hg.
- 6 - a tiny purple grain from AD34 is a zircon.
- 7 - a pink garnet from AD35 is a almandine garnet.

ROW 3 - 1 - a black grain from AD39 is a normal ilmenite.
- 2 - a black grain from AD39 is a ilmenite with minor Mg.
- 3 - an apple green grain from AD39 is a diopside.2
- 4 - a dark purple grain from AD42 is a zircon.
- 5 - a tiny round purple grain from AD42 is a zircon.
- 6 - a black grain from AD42 is a normal ilmenite.
- 7 - a tiny round purple grain from AD43 is a zircon.

. . . . 2/

ROW 4 - 1 - a lilac garnet from AD43 is a Cr-pyrope.
- 2 - a purple grain from AD43 is a zircon.
- 3 - a green grain from AD43 is a diopside.
- 4 - a green grain from AD43 is a diopside.
- 5 - a bluish clear grain from AD43 is apatite.

ROW 5 - 1 - a gold grain from AD1 is gold.
- 2 - a purple grain from AD1 is a zircon.
- 3 - a round purple grain from AD1 is a zircon.
- 4 - a gree-blue grain from AD1 is a Zn, Fe, Al-oxide.
- 5 - a yellow grain from AD1 is sphene.

ROW 6 - 1 - a tiny green grain from AD2 is a Cr-diopside.
- 2 - a metallic grain from AD2 is a Au-Hg phase. It contains a ilmenite inclusion.

Of all the grains anlayzed, one from AD43 is visually and by SEM-EDX analysis, a Cr-pyrope garnet of the type associated with kimberlites. Also, one grain, from AD2 is a Cr-diopside.

The grains picked out in this study where done to provide a knowledge of a variety of coloured grains that might be misidentified as kimberlite indicators. In fact, the Cr-pyrope and Cr-diopside were believed to be indicator minerals from visual inspection. Most of the others were not.

Sincerely,

[redacted]

J.A. McLeod., P.Eng.

JAM/skw

ECSTALL MINING CORPORATION
307 - 475 Howe St., Vancouver, B.C. V6C 2B3
Telephone: (604) 681-4402 Facsimile: (604) 681-1562

February 15, 1994 **Trading Symbol: VSE-EAM**

NEWS RELEASE 94.03

GOLD DISCOVERED IN HEAVY MINERAL SAMPLES- SW ALBERTA PROPERTY

In July, 1993, Ecstall carried out a reconnaissance stream sediment sampling program on the Crowsnest, Oldman, Castle and Highwood river drainages within Ecstall's **1.27 million acre** southwest Alberta permit area.

During the program, 52 screened (minus 20 mesh) stream sediment samples, each weighing approximately ten kilograms, were collected. Gravity concentrates of these samples were made using High-G and Gold Genie concentrators. The samples were then examined by binocular microscope. Three of these concentrated samples, each from a different drainage (Highwood River, Cataract Creek and Lost Creek), were observed under the binocular microscope to contain numerous small gold grains, many of which are angular, indicating short transport distances.

A number of these grains were subsequently analyzed by SEM-EDX (scanning electron microprobe) at the Cominco Ltd/ Exploration Research Laboratory which confirmed that they were native gold. The SEM/EDX analysis found that all the native gold grains from Cataract Creek were identical in that they contained a modest amount of silver whereas the gold grains from the other two drainages contained copper and/or mercury as well as silver. These results indicate that Cataract Creek has one local source for its gold whereas the main Highwood River has two different gold sources and Lost Creek has three gold sources.

Ecstall intends to have all 52 reconnaissance samples analyzed for gold and minor metal content in order to locate hardrock source areas for this gold mineralization. These areas will then be sampled on much closer spacing in combination with a mapping and prospecting program this season.

This is the first scientifically documented discovery of native gold in this area of southwestern Alberta (apart from the legendary Lost Lemon gold mine). This area has a favourable geological environment for gold deposits similar to the types known in adjacent areas of Montana and further south in Nevada.

[redacted]

Chris Graf,
President

Cominco Ltd./Exploration Research Laboratory/1486 East Pender Street
Vancouver, B.C./Canada V5L 1V8/Tel. (604) 685-3032/Fax. (604) 844-2686

Cominco

Exploration
Research Laboratory

Mr. Chris Graf, P.Geol.
Ecstall Mining Corporation
#307 - 475 Howe Street
Vancouver, B.C.
V6C 2B3

14 January 1994

Dear Chris:

Three samples were submitted for mineral grain identification. The selected grains studied from each sample are optically all believed to be gold and are finer to considerably finer than 60 mesh (250 microns). The three samples are numbered AD-1, AD-30, and AD-34.

A sampling of "gold" grains were picked from each of the three samples and were analyzed by scanning electron microprobe with a energy dispersive x-ray analyzer (SEM-EDX).

In all cases grains picked from sample AD-1 (7 grains), AD-30 (6 grains) and AD-34 (5 grains) proved to be native gold by SEM-EDX analysis.

Yours truly,

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. A. McLEOD

J.A. McLeod, P.Eng.

JAM/skw

Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V3A 4P9
PHONE (604) 888-1323 • FAX (604) 888-3642

Chris Graf
Ecstall Mining Corp.
307-475 Howe St.
Vancouver, V6C 2B3

August 10, 1993

Dear Chris:

REG: Sample AD 42

Garnet mineral grains were picked from the sample by use of stereo-binocular microscope set at 16 power. Majority of grains were in the size range of 30 to 60 mesh fraction.

Out of 200 garnet grains picked, 25 were mounted and polished for electron probe analysis. The enclosed probe results indicate that all grains contained high percentages of Feo in the 30% plus range with very low to no Cr_2O_3 content. According to Dawson and Stephens (1975) your samples categorized as class 5 (Magnesian Almandine), the copy of the chart is enclosed.

Sincerely,

[redacted]

Jim Vinnell

Vancouver Petrographics Ltd
Data Sheet of Indicator Mineral Picking

Sample # AD 42 NON MAG -20 MESH **Lab #** **Field #**

Indicator Minerals

Fractions		Other Garnet	Pyrope(?) Good	Pyrope(?) Poor	Cr-Diopside	Chromite & Ilmenite	Other
10-20 Mesh							
20-30 Mesh							
30-60 Mesh	~~Many~~	many Red - pink amber red	more to the pink color not enough lavender	possibly some G-9	3 grains not transparent enough to be Cr.diop. pois clinopyroxene	Lots of chromite	olivine ??

General Comments

Sample contains abundant chromite Picked several (100-200) grains of pink to Lavender garnet grains. Not enough lavender to say they were pyrope. Picked 25 of the most probable to be pyrobe and mounted for electron ~~map~~ microprobe.

Note: Sample is quite fine grained - possibly transported via wind ???

BB-6

ELSTALL

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM 30.
	48083	1707.11	12.07	0.46820	0.22907	0.9	
	32465	5281.20	58.61	0.90720	0.07667	0.6	
	38386	168.96	17.70	0.02979	0.00701	2.5	
Na	46413	14.80	12.60	0.00094	0.00005	8.2	
Si	27739	10154.94	69.91	0.88215	0.12326	0.4	
Mn	52201	74.71	8.20	0.03477	0.00936	3.7	
Mg	38502	989.05	26.30	0.22533	0.01648	1.1	
Ti	31452	36.60	32.47	0.00029	0.00016	5.2	
Cr	56868	6.70	6.30	0.00023	0.00006	12.2	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4682	0.2291	26.945	11.60	FeO	[redacted]
Al :	0.9072	0.0767	11.436	10.19	Al2O3	21.607
Ca :	0.0298	0.0070	0.757	0.45	CaO	1.060
Na :	0.0009	0.0000	0.011	0.01	Na2O	0.014
Si :	0.8821	0.1233	17.051	14.60	SiO2	36.478
Mn :	0.0348	0.0094	1.103	0.48	MnO	1.424
Mg :	0.2253	0.0165	2.831	2.80	MgO	4.694
Ti :	0.0003	0.0002	0.018	0.01	TiO2	0.030
Cr :	0.0002	0.0001	0.007	0.00	Cr2O3	0.010
O			39.822	59.85	BY STOICHIOMETRY	
TOTAL :			99.981			99.981

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.42 FOR Na

POINT N : 51 X= 9250 Y= -30732 Z= -88 MGARNET

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM 30.
Fe	48083	1679.72	12.73	0.46046	0.22529	0.9	
Al	32465	5287.22	60.71	0.90791	0.07673	0.6	
Ca	38386	167.86	19.20	0.02928	0.00689	2.5	
Na	46413	13.80	12.90	0.00038	0.00002	8.5	
Si	27739	10234.49	69.61	0.88915	0.12424	0.4	

Mn	52201	35.30	7.90	0.01433	0.00385	5.4
Mg	38502	1174.25	25.50	0.26887	0.01967	1.0
Ti	31452	34.80	34.71	0.00001	0.00000	5.4
Cr	56868	8.90	6.40	0.00141	0.00039	10.6

EL[illegible]ENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
[illegible] :	0.4605	0.2253	26.554	11.37	FeO	34.161
[illegible]l :	0.9079	0.0767	11.453	10.15	Al2O3	21.639
Ca :	0.0293	0.0069	0.746	0.45	CaO	1.044
Na :	0.0004	0.0000	0.004	0.00	Na2O	0.006
Si :	0.8892	0.1242	17.210	14.65	SiO2	36.817
Mn :	0.0143	0.0039	0.455	0.20	MnO	0.588
Mg :	0.2689	0.0197	3.357	3.30	MgO	5.566
Ti :	0.0000	0.0000	0.000	0.00	TiO2	0.001
Cr :	0.0014	0.0004	0.043	0.02	Cr2O3	0.062
O			40.061	59.87	BY STOICHIOMETRY	
TOTAL :			99.883			99.883

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 52 X= 9140 Y= -32761 Z= -82 MGARNET

BB8

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1812.45	14.60	0.49663	0.24299	0.9	
Al	32465	5256.28	57.51	0.90314	0.07633	0.6	
Ca	38386	222.90	18.10	0.04034	0.00949	2.2	
Na	46413	13.90	12.30	0.00068	0.00003	8.5	
[illegible]	27739	10097.69	75.01	0.87676	0.12250	0.4	
[illegible]	52201	84.21	7.40	0.04016	0.01081	3.5	
Mg	38502	560.03	22.80	0.12575	0.00920	1.4	
Ti	31452	35.80	32.49	0.00023	0.00013	5.3	
Cr	56868	7.70	6.60	0.00062	0.00017	11.4	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4966	0.2430	28.488	12.42	FeO	36.649
Al :	0.9031	0.0763	11.356	10.25	Al2O3	21.456
Ca :	0.0403	0.0095	1.022	0.62	CaO	1.429
Na :	0.0007	0.0000	0.008	0.01	Na2O	0.011
Si :	0.8768	0.1225	16.888	14.64	SiO2	36.129
Mn :	0.0402	0.0108	1.269	0.56	MnO	1.639
Mg :	0.1257	0.0092	1.600	1.60	MgO	2.653
Ti :	0.0002	0.0001	0.014	0.01	TiO2	0.024
Cr :	0.0006	0.0002	0.019	0.01	Cr2O3	0.027
O			39.353	59.89	BY STOICHIOMETRY	
TOTAL :			100.016			100.017

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.42 FOR Na

POINT N : 53 X= 9047 Y= -34081 Z= -81 MGARNET

BB9

[illegible]	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1679.42	11.33	0.46082	0.22547	0.9	
Al	32465	5353.00	57.61	0.92000	0.07775	0.6	
Ca	38386	157.75	18.90	0.02735	0.00643	2.6	
Na	46413	15.20	11.80	0.00145	0.00007	8.1	
Si	27739	10275.10	77.01	0.89218	0.12466	0.4	
Mn	52201	18.40	5.80	0.00654	0.00176	7.4	

Cr	56868	6.40	5.10	0.00074	0.00020	12.5	

	K		WT. %	NORMALIZED		
ELEMENT	I.X./I.STD.	K.RATIO	CONCEN.	ATOM. C	COMPOUND	CONCEN.
Fe :	0.4608	0.2255	26.574	11.28	FeO	[redacted]
Al :	0.9200	0.0778	11.601	10.19	Al2O3	21.919
Ca :	0.0273	0.0064	0.697	0.41	CaO	0.975
[illegible]a :	0.0014	0.0001	0.016	0.02	Na2O	0.022
Si :	0.8922	0.1247	17.266	14.57	SiO2	36.937
Mn :	0.0065	0.0018	0.208	0.09	MnO	0.268
Mg :	0.2948	0.0216	3.678	3.59	MgO	6.098
Ti :	0.0004	0.0002	0.022	0.01	TiO2	0.036
Cr :	0.0007	0.0002	0.022	0.01	Cr2O3	0.032
O			40.392	59.84	BY STOICHIOMETRY	
TOTAL :			100.475			100.475

ITERATION : 0

BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 54 X= 8833 Y= -36319 Z= -71 MGARNET

BB10

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1479.97	12.33	0.40539	0.19834	1.0	
Al	32465	5418.08	55.41	0.93155	0.07873	0.6	
Ca	38386	169.36	17.60	0.02989	0.00703	2.5	
Na	46413	14.20	12.80	0.00060	0.00003	8.4	
Si	27739	10474.22	74.91	0.90964	0.12710	0.4	
Mn	52201	24.30	7.50	0.00878	0.00236	6.5	
Mg	38502	1916.32	27.20	0.44215	0.03234	0.9	
[illegible]	31452	35.90	33.20	0.00019	0.00010	5.3	
[illegible]	56868	6.50	5.70	0.00045	0.00013	12.4	

	K		WT. %	NORMALIZED		
ELEMENT	I.X./I.STD.	K.RATIO	CONCEN.	ATOM. C	COMPOUND	CONCEN.
Fe :	0.4054	0.1983	23.516	9.76	FeO	[redacted]
Al :	0.9315	0.0787	11.765	10.11	Al2O3	22.229
Ca :	0.0299	0.0070	0.767	0.44	CaO	1.074
Na :	0.0006	0.0000	0.007	0.01	Na2O	0.009
Si :	0.9096	0.1271	17.681	14.59	SiO2	37.824
Mn :	0.0088	0.0024	0.281	0.12	MnO	0.363
Mg :	0.4421	0.0323	5.383	5.13	MgO	8.925
Ti :	0.0002	0.0001	0.012	0.01	TiO2	0.020
Cr :	0.0005	0.0001	0.014	0.01	Cr2O3	0.020
O			41.291	59.83	BY STOICHIOMETRY	
TOTAL :			100.717			100.717

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.44 FOR Na

POINT N : 55 X= 5508 Y= -17694 Z= -46 MGARNET

CC1

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
[illegible]	48083	1578.37	11.73	0.43276	0.21173	1.0	
[illegible]	32465	5424.31	57.81	0.93227	0.07879	0.6	
Ca	38386	192.77	20.20	0.03399	0.00800	2.3	
Na	46413	13.70	10.10	0.00153	0.00007	8.6	
Si	27739	10181.18	66.81	0.88477	0.12362	0.4	
Mn	52201	28.80	8.00	0.01088	0.00293	5.9	
Mg	38502	1437.62	28.30	0.32987	0.02413	1.0	
Ti	31452	33.10	31.75	0.00009	0.00005	5.5	

	K		WT. %	NORMALIZED		
ELEMENT	I.X./I.STD.	K.RATIO	CONCEN.	ATOM. C	COMPOUND	CONCEN.
Fe :	0.4328	0.2117	25.030	10.64	FeO	32.200
Al :	0.9323	0.0788	11.753	10.34	Al2O3	22.206
Ca :	0.0340	0.0080	0.869	0.51	CaO	1.216
Na :	0.0015	0.0001	0.017	0.02	Na2O	0.023
[illegible] :	0.8848	0.1236	17.175	14.51	SiO2	36.742
Mn :	0.0109	0.0029	0.347	0.15	MnO	0.448
Mg :	0.3299	0.0241	4.073	3.98	MgO	6.753
Ti :	0.0001	0.0001	0.006	0.00	TiO2	0.010
Cr :	0.0005	0.0001	0.015	0.01	Cr2O3	0.023
O			40.336	59.84	BY STOICHIOMETRY	
TOTAL :			99.621			99.621

ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 56 X= 5414 Y= -19306 Z= -58 MGARNET
CC2

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1674.49	11.87	0.45923	0.22469	0.9	
Al	32465	5378.44	57.41	0.92429	0.07812	0.6	
Ca	38386	143.14	18.90	0.02447	0.00576	2.7	
Na	46413	14.60	13.20	0.00060	0.00003	8.3	
Si	27739	10300.62	76.21	0.89432	0.12496	0.4	
Mn	52201	23.80	7.00	0.00878	0.00236	6.5	
Mg	38502	1366.32	24.10	0.31414	0.02298	1.0	
Ti	31452	35.50	32.32	0.00022	0.00012	5.3	
[illegible]	56868	8.00	5.70	0.00130	0.00036	11.2	

	K		WT. %	NORMALIZED		
ELEMENT	I.X./I.STD.	K.RATIO	CONCEN.	ATOM. C	COMPOUND	CONCEN.
Fe :	0.4592	0.2247	26.494	11.17	FeO	34.083
Al :	0.9243	0.0781	11.674	10.19	Al2O3	22.058
Ca :	0.0245	0.0058	0.624	0.37	CaO	0.874
Na :	0.0006	0.0000	0.007	0.01	Na2O	0.009
Si :	0.8943	0.1250	17.337	14.53	SiO2	37.090
Mn :	0.0088	0.0024	0.279	0.12	MnO	0.361
Mg :	0.3141	0.0230	3.905	3.78	MgO	6.474
Ti :	0.0002	0.0001	0.014	0.01	TiO2	0.023
Cr :	0.0013	0.0004	0.039	0.02	Cr2O3	0.058
O			40.656	59.82	BY STOICHIOMETRY	
TOTAL :			101.029			101.029

ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 57 X= 5150 Y= -20856 Z= -58 MGARNET
CC3

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1414.89	11.80	0.38759	0.18963	1.0	
[illegible]	32465	5415.32	58.41	0.93061	0.07865	0.6	
[illegible]	38386	233.01	16.30	0.04268	0.01004	2.1	
Na	46413	15.40	13.80	0.00068	0.00003	8.1	
Si	27739	10496.73	74.41	0.91172	0.12739	0.4	
Mn	52201	22.00	9.50	0.00654	0.00176	6.8	
Mg	38502	1939.49	29.50	0.44706	0.03270	0.9	
Ti	31452	40.50	31.53	0.00063	0.00034	5.0	
Cr	56868	5.60	4.50	0.00062	0.00017	13.4	

K WT. % NORMALIZED

Al :	0.8899	0.0752	11.238	10.10	Al203	21.233
Ca :	0.0245	0.0058	0.622	0.38	CaO	0.870
Na :	0.0014	0.0001	0.016	0.02	Na20	0.021
Si :	0.8790	0.1228	16.965	14.65	SiO2	36.294
Mn :	0.0073	0.0020	0.231	0.10	MnO	0.298
[illegible] :	0.1595	0.0117	2.031	2.03	MgO	3.368
[illegible] :	0.0000	0.0000	0.002	0.00	TiO2	0.004
Cr :	0.0008	0.0002	0.024	0.01	Cr203	0.034
O			39.487	59.85	BY STOICHIOMETRY	

TOTAL : 100.261 100.261

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.42 FOR Na

POINT N : 60 X= 4924 Y= -27107 Z= -60 MGARNET

CC6

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1771.55	12.47	0.48591	0.23774	0.9	
Al	32465	5226.16	57.01	0.89797	0.07589	0.6	
Ca	38386	142.84	17.30	0.02472	0.00582	2.7	
Na	46413	12.30	13.70	0.00000	0.00000	9.0	
Si	27739	10267.60	78.41	0.89131	0.12454	0.4	
Mn	52201	13.80	7.60	0.00324	0.00087	8.5	
Mg	38502	1022.39	28.10	0.23272	0.01702	1.1	
Ti	31452	35.90	33.53	0.00017	0.00009	5.3	
Cr	56868	6.70	5.50	0.00068	0.00019	12.2	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
[illegible] :	0.4859	0.2377	27.970	12.01	FeO	35.983
Al :	0.8980	0.0759	11.336	10.07	Al203	21.418
Ca :	0.0247	0.0058	0.629	0.38	CaO	0.880
Na :	0.0000	0.0000	0.000	0.00	Na20	0.000
Si :	0.8913	0.1245	17.232	14.71	SiO2	36.864
Mn :	0.0032	0.0009	0.103	0.04	MnO	0.133
Mg :	0.2327	0.0170	2.926	2.89	MgO	4.852
Ti :	0.0002	0.0001	0.010	0.01	TiO2	0.017
Cr :	0.0007	0.0002	0.020	0.01	Cr203	0.030
O			39.950	59.88	BY STOICHIOMETRY	

TOTAL : 100.177 100.177

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.00 FOR Na

POINT N : 61 X= 5030 Y= -31446 Z= -72 MGARNET

CC8

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1727.35	10.80	0.47416	0.23199	0.9	
Al	32465	5307.45	57.21	0.91205	0.07708	0.6	
Ca	38386	156.05	20.30	0.02673	0.00629	2.6	
Na	46413	14.70	11.40	0.00140	0.00007	8.3	
[illegible]	27739	10179.82	74.91	0.88393	0.12351	0.4	
[illegible]	52201	45.40	7.40	0.01987	0.00535	4.7	
Mg	38502	1049.20	28.30	0.23895	0.01748	1.1	
Ti	31452	39.80	34.31	0.00038	0.00021	5.0	
Cr	56868	4.80	5.50	0.00000	0.00000	14.5	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4742	0.2320	27.297	11.70	FeO	35.116

Na? Al?
Ca?

Si :	0.8837	0.1235	17.085	14.63	SiO2	36.549
Mn :	0.0128	0.0034	0.405	0.18	MnO	0.522
Mg :	0.2155	0.0158	2.711	2.68	MgO	4.495
Ti :	0.0001	0.0000	0.003	0.00	TiO2	0.005
Cr :	0.0000	0.0000	0.000	0.00	Cr2O3	0.000
			39.816	59.87	BY STOICHIOMETRY	
TOTAL :			99.961			99.961

ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.42 FOR Na
BE CAREFULL - K.R./W.F. = 0.00 FOR Cr

POINT N : 64 X= 694 Y= -17445 Z= -12 MGARNET
DD1

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1639.36	10.13	0.45006	0.22020	0.9	
Al	32465	5396.11	59.31	0.92714	0.07836	0.6	
Ca	38386	125.83	20.10	0.02082	0.00490	2.9	
Na	46413	13.00	13.60	0.00000	0.00000	8.8	
Si	27739	10150.88	72.51	0.88165	0.12319	0.4	
Mn	52201	15.70	7.60	0.00424	0.00114	8.0	
Mg	38502	1459.45	28.20	0.33501	0.02450	1.0	
Ti	31452	41.90	33.03	0.00062	0.00034	4.9	
Cr	56868	6.30	6.30	0.00000	0.00000	12.6	

ELEMENT	I.X./I.STD.	K K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4501	0.2202	25.997	11.03	FeO	33.445
Al :	0.9271	0.0784	11.721	10.29	Al2O3	22.145
Ca :	0.0208	0.0049	0.532	0.31	CaO	0.744
Na :	0.0000	0.0000	0.000	0.00	Na2O	0.000
Si :	0.8817	0.1232	17.130	14.45	SiO2	36.646
Mn :	0.0042	0.0011	0.135	0.06	MnO	0.174
Mg :	0.3350	0.0245	4.151	4.04	MgO	6.883
Ti :	0.0006	0.0003	0.039	0.02	TiO2	0.064
Cr :	0.0000	0.0000	0.000	0.00	Cr2O3	0.000
O			40.398	59.80	BY STOICHIOMETRY	
TOTAL :			100.102			100.102

ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.00 FOR Na
BE CAREFULL - K.R./W.F. = 0.00 FOR Cr

POINT N : 65 X= 671 Y= -19598 Z= -35 MGARNET
DD2

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1710.23	12.13	0.46914	0.22954	0.9	
Al	32465	5314.09	60.91	0.91272	0.07714	0.6	
Ca	38386	130.23	18.60	0.02199	0.00517	2.8	
Na	46413	16.40	10.60	0.00247	0.00012	7.8	
Si	27739	9915.93	78.91	0.86064	0.12025	0.4	
Mn	52201	229.51	9.30	0.11515	0.03098	2.2	
Mg	38502	545.29	25.80	0.12161	0.00890	1.4	
Ti	31452	35.90	34.81	0.00008	0.00004	5.3	
Cr	56868	6.40	5.00	0.00079	0.00022	12.5	

ELEMENT	I.X./I.STD.	K K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4691	0.2295	26.865	11.77	FeO	34.562
Al :	0.9127	0.0771	11.477	10.40	Al2O3	21.686

Na?
Ca?

Si :	0.8606	0.1203	16.589	14.45	SiO2	35.489
Mn :	0.1151	0.0310	3.630	1.62	MnO	4.698
Mg :	0.1216	0.0089	1.549	1.56	MgO	2.569
Ti :	0.0001	0.0000	0.005	0.00	TiO2	0.008
Cr :	0.0008	0.0002	0.024	0.01	Cr2O3	0.035
			39.129	59.82	BY STOICHIOMETRY	
TOTAL :			99.861			99.861

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.42 FOR Na

POINT N : 66 X= 547 Y= -21896 Z= -42 MGARNET

DD3

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1733.99	13.07	0.47542	0.23261	0.9	
Al	32465	5335.54	60.21	0.91650	0.07746	0.6	
Ca	38386	118.03	20.50	0.01921	0.00452	2.9	
Na	46413	13.10	13.30	0.00000	0.00000	8.8	
Si	27739	9985.52	77.31	0.86681	0.12111	0.4	
Mn	52201	109.82	8.40	0.05303	0.01427	3.1	
Mg	38502	856.26	27.50	0.19400	0.01419	1.2	
Ti	31452	35.40	36.51	0.00000	0.00000	5.3	
Cr	56868	6.70	6.60	0.00006	0.00002	12.2	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4754	0.2326	27.311	11.85	FeO	35.136
Al :	0.9165	0.0775	11.556	10.38	Al2O3	21.835
Ca :	0.0192	0.0045	0.487	0.29	CaO	0.682
[illegible] :	0.0000	0.0000	0.000	0.00	Na2O	0.000
[illegible] :	0.8668	0.1211	16.768	14.47	SiO2	35.871
Mn :	0.0530	0.0143	1.679	0.74	MnO	2.168
Mg :	0.1940	0.0142	2.450	2.44	MgO	4.063
Ti :	0.0000	0.0000	0.000	0.00	TiO2	0.000
Cr :	0.0001	0.0000	0.002	0.00	Cr2O3	0.002
O			39.503	59.83	BY STOICHIOMETRY	
TOTAL :			99.757			99.757

ITERATION : 3

BE CAREFULL - K.R./W.F. = 0.00 FOR Na

BE CAREFULL - K.R./W.F. = 0.00 FOR Ti

POINT N : 67 X= 551 Y= -23862 Z= -45 MGARNET

DD4

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1640.77	10.00	0.45052	0.22042	0.9	
Al	32465	5306.02	56.91	0.91196	0.07708	0.6	
Ca	38386	151.25	17.20	0.02640	0.00621	2.6	
Na	46413	14.30	11.90	0.00102	0.00005	8.4	
Si	27739	10244.07	72.41	0.88987	0.12434	0.4	
Mn	52201	29.70	7.50	0.01161	0.00312	5.8	
[illegible]	38502	1297.96	28.00	0.29728	0.02174	1.0	
[illegible]	31452	32.40	30.35	0.00014	0.00008	5.6	
Cr	56868	7.30	6.70	0.00034	0.00009	11.7	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4505	0.2204	26.012	11.11	FeO	33.464
Al :	0.9120	0.0771	11.508	10.17	Al2O3	21.743
Ca :	0.0264	0.0062	0.674	0.40	CaO	0.943

Si?
Na?

Mn :	0.0116	0.0031	0.369	0.16	MnO	0.477
Mg :	0.2973	0.0217	3.69[illegible]	3.63	MgO	6.127
Ti :	0.0001	0.0001	0.009	0.00	TiO2	0.015
Cr :	0.0003	0.0001	0.010	0.00	Cr2O3	0.015
O			40.157	59.87	BY STOICHIOMETRY	

AL : 99.691 99.691
ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 68 X= 337 Y= -27635 Z= -51 MGARNET
DD6

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1687.07	12.27	0.46273	0.22640	0.9	
Al	32465	5390.90	56.91	0.92680	0.07833	0.6	
Ca	38386	249.12	21.40	0.04486	0.01055	2.1	
Na	46413	14.70	12.00	0.00115	0.00006	8.3	
Si	27739	10153.48	74.21	0.88188	0.12322	0.4	
Mn	52201	26.60	6.80	0.01035	0.00279	6.2	
Mg	38502	1148.73	25.30	0.26301	0.01924	1.1	
Ti	31452	35.70	31.27	0.00031	0.00017	5.3	
Cr	56868	6.80	6.60	0.00011	0.00003	12.2	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4627	0.2264	26.680	11.37	FeO	34.323
Al :	0.9268	0.0783	11.677	10.30	Al2O3	22.063
Ca :	0.0449	0.0106	1.143	0.68	CaO	1.599
Na :	0.0011	0.0001	0.013	0.01	Na2O	0.018
i :	0.8819	0.1232	17.071	14.46	SiO2	36.520
Mn :	0.0104	0.0028	0.329	0.14	MnO	0.425
Mg :	0.2630	0.0192	3.283	3.21	MgO	5.443
Ti :	0.0003	0.0002	0.019	0.01	TiO2	0.032
Cr :	0.0001	0.0000	0.003	0.00	Cr2O3	0.005
O			40.209	59.81	BY STOICHIOMETRY	

TOTAL : 100.428 100.428
ITERATION : 3
BE CAREFULL - K.R./W.F. = 0.43 FOR Na

POINT N : 69 X= 257 Y= -29199 Z= -50 MGARNET
DD7

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1575.25	10.33	0.43231	0.21151	1.0	
Al	32465	5354.13	57.61	0.92017	0.07777	0.6	
Ca	38386	139.94	18.10	0.02400	0.00565	2.7	
Na	46413	13.00	11.40	0.00068	0.00003	8.8	
Si	27739	10390.95	73.51	0.90259	0.12611	0.4	
Mn	52201	27.30	8.30	0.00994	0.00267	6.1	
Mg	38502	1571.42	28.80	0.36109	0.02641	0.9	
Ti	31452	32.80	31.77	0.00007	0.00004	5.5	
	56868	4.90	5.80	0.00000	0.00000	14.3	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4323	0.2115	25.004	10.54	FeO	32.167
Al :	0.9202	0.0778	11.608	10.12	Al2O3	21.933
Ca :	0.0240	0.0056	0.613	0.36	CaO	0.857
Na :	0.0007	0.0000	0.008	0.01	Na2O	0.010
Si :	0.9026	0.1261	17.482	14.65	SiO2	37.399

Mg?
Mn?

Ti :	0.0001	0.0000	0.004	0.00	Ti02	0.007
Cr :	0.0000	0.0000	0.000	0.00	Cr203	0.000
0			40.695	59.85	BY STOICHIOMETRY	

TOTAL : 100.211 100.211

ITERATION : 0

BE CAREFULL - K.R./W.F. = 0.43 FOR Na

BE CAREFULL - K.R./W.F. = 0.00 FOR Cr

POINT N : 70 X= 177 Y= -30924 Z= -63 MGARNET

DD8 SLANTED

ELT.	PEAK POS.	PEAK (C/S)	BACKGR. (C/S)	I.X./I.STD.	K.RATIO	SIG/K	BEAM
							30.
Fe	48083	1731.17	13.00	0.47471	0.23226	0.9	
Al	32465	5275.07	56.21	0.90679	0.07664	0.6	
Ca	38386	140.94	18.10	0.02420	0.00569	2.7	
Na	46413	15.40	13.60	0.00077	0.00004	8.1	
Si	27739	10233.13	70.71	0.88914	0.12423	0.4	
Mn	52201	55.71	7.20	0.02537	0.00683	4.3	
Mg	38502	1001.80	26.50	0.22832	0.01670	1.1	
Ti	31452	32.60	36.04	0.00000	0.00000	5.5	
Cr	56868	5.40	4.80	0.00034	0.00009	13.6	

ELEMENT	K I.X./I.STD.	K.RATIO	WT. % CONCEN.	NORMALIZED ATOM. C	COMPOUND	CONCEN.
Fe :	0.4747	0.2323	27.339	11.73	Fe0	35.171
Al :	0.9068	0.0766	11.432	10.16	Al203	21.600
Ca :	0.0242	0.0057	0.617	0.37	Ca0	0.863
Na :	0.0008	0.0000	0.009	0.01	Na20	0.012
Si :	0.8891	0.1242	17.206	14.68	Si02	36.809
Mn :	0.0254	0.0068	0.806	0.35	Mn0	1.041
Mg :	0.2283	0.0167	2.853	2.81	Mg0	4.730
Ti :	0.0000	0.0000	0.000	0.00	Ti02	0.000
Cr :	0.0003	0.0001	0.010	0.00	Cr203	0.015
0			39.969	59.88	BY STOICHIOMETRY	

TOTAL : 100.240 100.240

end of 6 crystal

ITERATION : 0

BE CAREFULL - K.R./W.F. = 0.43 FOR Na

BE CAREFULL - K.R./W.F. = 0.00 FOR Ti

APPENDIX II

Sample Locations

(e) Sample location

APPENDIX 2

FIELD NOTES FOR SW ALBERTA HEAVY MINERAL PROGRAM

SAMP#	WIDTH	VEL	LOCATION	EAST	NORTH
	JUNE	1993			
AD1	5	F	Lost Creek @jct with Carbondale	685646.00	5478808.29
AD2	5	F	Carbondale @ jct with Lost Creek	685753.87	5478419.59
AD3	6	F	West Castle 10.2Km from bridge	688254.08	5465647.67
AD4	8	F	West Castle @ main bridge	691459.95	5472966.22
AD5	5	F	Castle Creek @ Scarpe Ck	700615.82	5457596.47
AD6	6	F	Castle Creek @10.2 Km north of AD5	700618.64	5458291.69
AD7	10	F	Castle Creek just above bridge	693085.47	5474041.73
AD8	4	F	Lynx Creek 10Km north of jct with Carbondale	681013.70	5486184.99
AD9	6	F	Lynx Creek @ jct with Carbondale	687607.75	5481065.07
AD10	4	F	Mill Creek @ road bridge	705218.60	5472459.69
AD11	6	F	Mill Creek @ washed out bridge	707673.62	5482850.93
AD12	4	F	Below Ptolomy Ck jct	668018.24	5497490.33
AD13	4	F	Allison Ck @ No.3 Hwy	674335.62	5500317.69
AD14	4	F	Macgillvery Ck 1Km N of Hwy 3	679118.28	5501449.97
AD15	6	F	Livingstone Ck @ Savanna Ck	682529.84	5557223.00
AD16	5	F	Savanna Ck @ jct Livingstone	682422.87	5557222.46
AD17	8	F	Livingstone Ck 10Km S of AD 15	684183.16	5549209.98
AD18	8	F	Livingstone Ck 10Km S of AD17	686529.99	5538383.31
AD19	9	F	Oldman Riv. 3.2 Km W road jct	682659.79	5536410.92
AD20	9	F	Oldman Riv. 10.6Km above AD21	673160.86	5546079.55
AD21	9	F	Oldman Riv. 5.5 Km above AD19	679132.46	5540394.90
AD22	12	F	Dutch Ck @ main road	686972.45	5530899.04
AD23	5	M	Dutch Ck @ 18 Km Bridge	673891.84	5529429.62
AD24	6	M	Dutsh Ck 7.7 Km East of AD 23	680365.99	5531432.62
AD25	12	F	Oldman Riv @ jct with Dutch Ck	687685.40	5530966.42
AD26	6	F	Daisy Ck @ jct with Vicary Ck	685982.99	5523837.88
AD27	5	F	Vicary Ck @ jct with Racehorse Ck	685513.75	5522550.56
AD28	8	F	Racehorse Ck @ jct with Vicary Ck	685078.29	5523057.77
AD29	6	F	South/North Racehorse Jct	678564.51	5521896.83
AD30	10	F	Highwood River @ Cat Ck	662210.84	5586434.55
AD31	7	F	Baril Ck @ road	667258.21	5583135.16
AD32	6	F	Etherington Ck @ road	668873.99	5578249.43
AD33	7	F	Cateract Ck @ road	671513.12	5572627.51
AD34	6	F	Wilkinson Ck @ road	671683.98	5572495.78
AD35	5	F	Willow Ck @ road	689123.99	5568753.76
AD36	14	F	Crowsnest Riv. @ road bridge on Hwy 507	696537.71	5492259.15
AD37	12	F	Sheep River @ Sandy Mc Nabb rec area	675103.28	5611222.90
AD38	10	F	Sheep River @ compressor plant Turner Valley	693268.36	5616457.79
AD39	5	F	Coal Ck @ Hwy 22	694724.59	5597927.61
AD40	7	F	Pekisko Ck 13 Km W of AD42	685139.44	5583605.34
AD41	8	F	Pekisko Ck 5Km E of AD 40	688341.70	5583549.48
AD42	8	F	Pekisko Ck @ road bridge	694700.46	5588596.61
AD43	6	F	Shepard Ck @ Hwy 22	697001.89	5579769.89
AD44	14	F	Highwood River @ Fir Ck	672629.96	5584639.68

SAMP#	WIDTH	VEL	LOCATION	EAST	NORTH
AD45	14	F	Highwood River @ Eden Valley Reserve	681657.73	5590458.44
AD46	7	F	Flat Ck @ Hwy 541	685031.71	5600674.05
AD47	12	F	Highwood River @ Hwy 22	696127.43	5600255.50
AD48	4	F	Todd Ck @ Willow Valley	695947.98	5516239.66
AD49	7	F	Gold Ck @ Hwy No. 3	687770.53	5497110.80
AD50	9	F	Crowsnest River @ West Access Crossing	683516.68	5498589.58
AD51	5	F	Blaimore Ck @ Hwy No. 3	683674.60	5498675.05
AD52	10	F	Crowsnest River 2.2 Km W of Coleman	679342.24	5500447.65
1994 SAMPLING PROGRAM - JUNE					
AG1	6	F	Carbondale Ck	679656.44	5474861.20
AG2	6	F	Carbondale Ck 3Km E of AG1	682265.87	5476275.67
AG3	4	F	South Lost Ck @ jct with N. Lost Ck	681772.34	5479902.57
AG4	5	F	North Lost Ck @ jct with S. Lost Ck	681690.95	5480033.54
AG5	6	F	South Lost Ck 1.7Km W of AG3	680247.29	5478987.58
AG6	4	F	North Lost Ck 800 m above AG4	680807.14	5480038.88
AG7	7	F	Carbondale Ck @ jct with Gardiner Ck	685603.88	5478349.42
AG8	2	M	Gardiner Ck @ jct with Carbondale Ck	685733.71	5478249.44
AG9	8	F	Lost Ck @ jct with Carbondale Ck	685731.06	5478714.40
AG10	8	F	Lynx Ck @ jct with Carbondale Ck	687522.54	5481162.77
AG11	2	F	Middlepass Ck @ West Castle Ck jct	689533.53	5462198.28
AG12	6	F	West Castle Ck @ Middlepass Ck jct	689709.19	5462296.09
AG13	1.5	F	Trib. to West Castle Ck (small)	688657.77	5463625.59
AG14	3	F	West Castle trib. @ jct with West Castle Ck	689034.82	5463153.19
AG15	6	F	West Castle Ck @ jct with trib	689158.73	5463107.78
AG16	7	F	West Castle Ck @ bridge@ Ski area	688264.96	5465794.57
AG17	4	F	Syncline Brook @ road	687594.37	5468468.68
AG18	5	F	N. Racehorse Ck @ west road	675171.80	5523344.17
AG19	3	F	First Ck @ west road	675118.46	5523097.94
AG20	3	F	Smith Ck @ west road	674871.19	5519725.43
AG21	3	F	Trib to Smith Ck @ west road	674868.67	5519918.01
AG22	8	F	Racehorse Ck above Smith Ck jct	675382.10	5519122.40
AG23	5	F	Racehorse Ck @ trib jct	674465.10	5518230.25
AG24	1.5	F	Trib @ Racehorse Ck Jct	674421.68	5518381.03
AG25	5	F	Racehorse Ck @ trib jct	672860.71	5516141.21
AG26	0.5	F	Trib @ Racehorse jct	673029.36	5516141.46
AG27	9	F	Pekisko Ck	683634.65	5582985.14
AG28	9	F	McConnel Ck @ Pekisko Ck jct	682309.94	5582150.39
AG29	2	F	Smith Ck @ road Above Pekisko Ck	685245.67	5583653.31
AG30	9	F	Pekisko Ck 5Km E. of AG29	689343.59	5584452.53
AG31	12	F	Pekisko Ck @ road bridge Hwy 540	694764.22	5588595.64
AG32	6	F	Sheppard Ck @ road bridge	697065.38	5579804.51
AG33	5	F	Sheppard Ck 1.2 Km W.of AG32	695875.81	5579437.43
AG34	4	F	Fitzsimmons Ck Above Highwood jct	664810.56	5583476.99
AG35	7	F	Baril Ck above Highwood Jct	667470.03	5583213.71
AG36	4	F	Baril Ck @Hwy 940	668150.26	5581011.71
AG37	3	F	Baril Ck 1Km W. of AG 36	667497.32	5580293.84
AG38	3	F	Baril Ck .5Km W. of AG36	667906.95	5580621.65
AG39	6	F	South Racehorse Ck @ North/South Racehorse jct	678753.28	5521929.16

SAMP#	WIDTH	VEL	LOCATION	EAST	NORTH
AG40	6	F	North Racehorse Ck @North/South Racehorse jct	678406.62	5522093.57
AG41	3	F	Goat Ck north trib	679251.99	5485903.46
AG42	4	F	Goat Ck south trib	679213.31	5485715.35
AG43	5	F	Goat Ck @ road bridge	681146.27	5485416.96
AG44	9	F	Wilkinson Ck @ Cateract Ck jct	671728.63	5572332.01
AG45	9	F	Cateract Ck @ Wilkinson Ck jct	671477.88	5572415.41
AG46	9	F	Cateract Ck .5Km W.of AG45	671023.81	5572371.50
AG47	8	F	Cateract Ck .7Km W.of AG46	670298.62	5572171.42
AG48	6	F	Etherington Ck 1.2 Km W. of Hwy 940	668415.53	5577455.88
AG49	7	F	Etherington Ck @ Hwy 940	669064.24	5578452.83
AG50	12	F	Highwood River @ Cat Ck	662388.53	5586290.24
AG51	12	F	Highwood River @ Lineham	658221.14	5591242.17
AG52	15	F	Crowsnest River Below Lundbreck Falls	702097.60	5496031.40
FOLLOW UP SAMPLING - OCTOBER					
AR1			South Racehorse @ AG39	678535.27	5521992.27
AR2			North Racehorse @ AG40	678406.62	5522093.57
AR3			Vicary Ck @ road bridge	679850.12	5513818.68
AR4			Lost Ck @ AG9	685628.08	5478678.98
AR5			Carbondale Ck @AG7	685639.54	5478480.62
AR6			Carbondale Ck @AG2	682362.10	5476387.29
AR7			South Lost Ck @AG3	681638.42	5479877.56
AR8			North Lost Ck @ AG4	681570.50	5480087.99
AR9			Lynx Ck 1Km N. W. of AG10	687397.79	5481296.06
AR10			Crowsnest River below Lundbreck falls	702097.60	5496031.40
AR11			North Racehorse @ AG18	675180.59	5523251.91
AR12			First Ck @ AG19	675179.64	5523094.72
AR13			Smith Ck @ AG20	674794.76	5519728.19
AR14			South Racehorse @ AG22	675415.24	5519217.19
AR15			South Racehorse @ AG23	674467.41	5518239.19
AR16			South Racehorse @ AG25	672875.60	5516111.20
1995 SAMPLING PROGRAM - JULY					
AG60				710290.56	5577610.41
AG61				688694.71	5568690.39
AG62				678193.78	5481340.71
AG63				678207.83	5481499.99
AG64				676763.15	5477416.22
AG65				679801.68	5474580.26
AG66				678172.75	5474818.74
AG67				680719.86	5474799.74
AG69				673173.34	5522488.26
AG70				674250.96	5524013.04
AG71				681631.03	5475202.38
AG72				684972.70	5475455.07
AG73				674999.08	5523379.48
AG74				689847.76	5586542.67
AG75				689621.29	5586665.40

APPENDIX III

Gold Grain Count and Microscope Observation Notes

APPENDIX 3

		SW ALBERTA - HEAVY MINERAL SAMPLING, 1993					
			GOLD CONTENT (Grains counted)				
	Sample No.		Au Grains		Sample No.		Au Grains
	AD 1		15		AD27		1
	AD 2		1		AD28		
	AD 3		3		AD29		10
	AD 4		1		AD30		12
	AD 5		1		AD31		5
	AD 6				AD32		3
	AD 7		1		AD33		
	AD 8				AD34		5
	AD 9		1		AD35		
	AD10				AD36		
	AD11				AD37		
	AD12				AD38		
	AD13				AD39		1
	AD14		2		AD40		
	AD15				AD41		1
	AD16				AD42		1
	AD17				AD43		5
	AD18				AD44		1
	AD19				AD45		3
	AD20				AD46		2
	AD21		1		AD47		
	AD22		1		AD48		
	AD23		1		AD49		
	AD24				AD50		
	AD25				AD51		1
	AD26				AD52		1

AD1 MAINLY MELANITE (BLACK GARNET), SOME HEMATITE, PINK ORANGE POWDERY LAYER ON SOME CRYSTALS (ARSENIC?), CHALCO — RARE 3 SMALL FLAKE AU — CONTAMINATION

AD2 MELANITE, HEMATITE — THATS ABOUT IT BUT FOR RARE GARNET

AD3 MELANITE, HEMATITE, PINKY [illegible] (RARE), QTZ, PIECE OF SILVER LIKE METAL (3 IN TOTAL)

AD4 MELANITE, HEMATITE, PYRITE (MASSIVE — [illegible]) OCCASIONAL GARNET — PINK Hg?

AD5 QTZ, CHLORITOID, ROCK FRAGMENTS, MELANITE (NOT MUCH), MAGNETITE HORNBLENDE? PURPLE GARNET ??

AD6 MAGNETITE, HEMATITE, QTZ, CHLORITOID, HORNBLENDE

AD7 MELANITE — QUITE A LOT, HEMATITE, QTZ, CHLORITOID, BLACK MIN (MELANITE? ILMENITE?) ON GARNET

AD8 MELANITE LOT, MINOR MAGNETITE, QTZ

AD9 MAINLY MELANITE, MAGNETITE, HEMATITE, PINK GARNET (4 BITS)

AD10 MAGNETITE, PYRITE, HEMATITE — LOT, QTZ, MINOR MELANITE, CHLORITOID, GARNET — [illegible] ORANGE (PICKED REF SAMPLE), IRRIDESCENT BLUE MINERAL (BORNITE?) ORANGE MINERAL [illegible] GREEN BLUE MINERAL PICKED

AD11 MELANITE, HEMATITE, QTZ, BARITE? GARNET

AD12 CALCITE, MAGNETITE, MELANITE (SMALL AMT), VERY MINOR GARNET (PINK)

AD13 MAGNETITE, MELANITE, CALCITE, GARNET, PYRITE (MINOR)

AD14 MAINLY MELANITE, SOME HEMATITE

AD15 CALCITE, SOME MELANITE, MINOR QTZ, MINOR PYRITE, MINOR MAGNETITE IRON OXIDE COATING ON MANY GRAINS

AD16 CALCITE, HEMATITE, BORNITE? (MINOR) POSSIBLE CHROME-DIOPSIDE (PICKED) PYRITE

AD17 VARIOUS IRON OXIDES, QTZ (MINOR) CALCITE, HEMATITE

AD18 HEMATITE, PYRITE, GARNET, CALCITE

CHRIS GRAF

[illegible]19 MELANITE, HEMATITE, VERY MINOR PINK GARNET

AD20 QTZ, HEMATITE, GREEN MINERAL (PICKED), WHITE/CLEAR (PICKED), MAGNETI[TE]

AD21 MAGNETITE, HEMATITE, MELANITE (MINOR) PIECE OF COARSE GOLD, VERY MINOR GARNET

AD22 MAGNETITE, MELANITE, HEMATITE

AD23 MAGNETITE, MELANITE (MINOR), HEMATITE, CALCITE, OXIDE COATINGS, PIECE OF COARSE GOLD, POSSIBLE PYROPE (PICKED)

AD24 MELANITE, HEMATITE, VERY MINOR MAGNETITE

AD25 MELANITE (MEDIUM), HEMATITE, MINOR MAG, Fe, Mn, COATINGS, VERY MINOR GARNET (ALMANDINE)

[illegible]26 MINOR MAGNETITE, MELANITE, HEMATITE

AD27 VERY MINOR MAG, MELANITE, HEMATITE (PICKED ONE GARNET ?)

AD28 MELANITE, HEMATITE

AD29 MAINLY MELANITE, SOME HEMATITE, MODERATE MAGNETITE, PICKED TWO MINERALS ONE GARNET? OTHER UNKNOWN

AD30 MINOR MELANITE, HEMATITE, Au COARSE 3 PIECES, PICKED VARIOUS GARNET & ONE GREEN PIECE

AD31 MINOR MELANITE, HEMATITE, VARIETY OF GARNETS (PICKED CROSS SECTION) GREEN MINERAL PICKED MOST LIKELY CR DIOP. Au (COARSE VERY SMALL), POSSIBLE PYROPE YELLOW

AD32 HEMATITE, MINOR MELANITE, MAGNETITE MINOR, OXIDE COATINGS, GOLD CRYSTAL PICKED GARNETS P/CROSS SECTION, GN MINERAL

[illegible]33 MINOR MAG, HEMATITE, UNKNOWN MINERAL PICKED, BLACK MINERALS PICKED, GARNETS PICKED

34 HEMATITE, POSSIB PURP GARNET PICKED, GREEN MINERAL PICKED, SEVERAL SMALL FLECKS COARSE GOLD PICKED AMONGST. Mn OXIDE COATINGS VERY MINOR MAGNETITE

AD35 VERY MINOR MAG, Fe Mn COATING, HEMATITE, MINOR GARNET (POSS PURP)

AD36 ~~VM~~ MINOR MAG, MAJOR MELANITE

AD37 V/M MAG, PYRITE, HEMATITE, SOME GARNET

AD38 V/M MAG, CALCITE, MINOR PYRITE, OXIDE COATINGS, GARNET - MAINLY PINK, GREEN MINERAL (GARNET?)

AD39 MINOR MAG, PYRITE, MUCH GARNET

AD40 V/M MAG, PYRITE, HEMATITE, POSS. Cr DIOP, ILMENITE

AD41 V/M MAG, OXIDE COATINGS, HEMATITE, MINOR PYRITE, POSS Cr DIOP

AD42 V/M MAG, HEMATITE, PYRITE, GARNET MINOR, Au (1 PIECE), GREEN MINERAL BLUE/WHITE ?

AD43 MINOR MAG, MAINLY GARNET SOME MELANITE PURPLY PINK (PICKED)

AD44 V/M MAG, HEMATITE, Fe Mn OXIDES, FEW SMALL CHIPS GARNET - SO A LOT OF YELLOW

AD45 V/M MAG, CALCITE, OXIDE COATINGS, HEMATITE, PYRITE, Au, FEW GS

AD46 V/M MAG, AS ABOVE (INCLUDING Au 1 PIECE)

AD47 MINOR MAG, AS ABOVE (NO Au OBSERVED)

AD48 MINOR MAG, MINOR MELANITE, CALCITE, PYRITE V/M,

AD49 MINOR MAG, MAJOR MELANITE, HEMATITE

AD50 MAGNETITE, MAJOR MELANITE, PYRITE, HEMATITE

AD 51 MINOR MAG, MELANITE (MAJOR) HEMATITE

AD 52 MAINLY MELANITE, MAGNETITE, PYRITE, 1 CALCITE

6-1	Au 1. (VERY SMALL) POSS LACK OF FINES	CARBONDALE	
6-2	—		
6-3	— Hg, PYRITE? (BURNT)		SOUTH LOST
6-4	—		NORTH LOST
6-5	—		SOUTH LOST
6-6	—		NORTH LOST 800 M/UP
6-7	—		CARBONDALE
6-8	—		GARDNIER
6-9	— Hg,		LOST — AT BRIDGE
6-10	—		LYNX — " "
6-11	— Hg +	CASTLE	
6-12	— Hg + +	CASTLE	
6-13	— Hg	CASTLE	
6-14	— Hg +	CASTLE	
6-15	— Au (FLAT, PLACER)	CASTLE	
6-16	—	CASTLE	
6-17	—	CASTLE	
6-18	—	TOP OF RACEHOUSE DRAINAGE	
6-19	—	TOP OF RACEHOUSE DRAINAGE	
6-20	— Hg	TOP OF RACEHOUSE DRAINAGE	
6-21	—	TOP OF RACEHOUSE DRAINAGE	
6-22	—	TOP OF RACEHOUSE DRAINAGE	
6-23	— LARGE AMOUNT OF FINE PURPLE PEBBLES ZIRCON OR?	TOP OF RACEHOUSE DRAINAGE	
6-24	—	TOP OF RACEHOUSE DRAINAGE	
6-25	— Hg	TOP OF RACEHOUSE DRAINAGE	
6-26	NO SAMPLE	TOP OF RACEHOUSE DRAINAGE	
6-27	—	PERUSKO	
6-28	—	PERUSKO	
6-29	— Hg	PERUSKO	
6-30	— 1 PIECE OF AU (POSSIBLY AMALGAM)	PERUSKO	
6-31	BRIGHT GREEN MINERAL (MICA ON COATING) LOT OF GARNET PIECE OF FAIRLY ROUGH GOLD	PERUSKO	

Sample	Notes	Location
AG32	LOT OF GARNET, Au 1 ROUNDED FLAKE, Hg	SHEPARD CK
AG33	LOT OF GARNET, Au 1 ROUNDED	SHEPARD CK
AG34	—	BARIL CK
AG35	Au 1 VERY SMALL PIECE	BARIL CK
AG36	—	BARIL CK
AG37	—	BARIL CK
AG38	—	BARIL CK
AG39	Au 1 VERY SMALL PIECE POSSIBLY AMALGAM	RACEHORSE
AG40	—	RACEHORSE
AG41	—	LYNX
AG42	—	LYNX
AG43	—	LYNX
AG44	—	HIGHWOOD COUNTRY
AG45	Hg	HIGHWOOD COUNTRY
AG46	Au 2 (FLAT, PLACER) ALSO SEEMED TO HAVE MORE FINE MATERIAL	HIGHWOOD COUNTRY
AG47	Hg	HIGHWOOD COUNTRY
AG48	Hg	HIGHWOOD COUNTRY
AG49	Hg +	HIGHWOOD COUNTRY
AG50	Hg	HIGHWOOD COUNTRY
AG51	Hg ++	HIGHWOOD COUNTRY
AG52	Hg +++ Au 1 (PART Hg)	CROWSNEST @ LUNDBRECK FALLS

SW ALBERTA [illegible]

AR1 —	Hg (MINOR)	—60
AR2 —	~~Hg~~ Au 2 PIECES (1 VERY SMALL)	—60
AR3 —	—	—60
AR4 —	—	—60
AR5 —		—60
AR6 —		—60
AR7 —		—60
AR8 —	1 PIECE Au (FAIRLY COARSE), 1 OTHER PIECE MAYBE Au	—60
AR9 —	1 " " (VERY SMALL)	—60
AR10 —		—60
AR11 —		—60
AR12 —		WS
AR13 —		WS
AR14 —		—60
AR15 —	1 PIECE Au? (COARSE)	WS
AR16 —		WS

LN1 —	LOT OF METAMORPHIC GARNETS	—60
LN2 —	" " " "	—40
LN3 —	SOME GARNET	WS

APPENDIX IV

Field Notes

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Oldman, Highwood and
Castle River drainage

1993

SOUTHERN ALBERTA DIAMOND RECCE

JUNE 22ND

CARBONDALE RIVER DRAINAGE

AD 1 ✓ LOST CK 5M FAST GRAVELLY BAR
TOOK OPTICAL SAMPLE

AD 2 ✓ CARBONDALE 5M FAST BAR
OPTICAL SAMPLE

JUNE 23RD

WEST CASTLE ROAD OUT AT 10.2 Km
FROM BRIDGE

AD 3 ✓ 6M FAST/DEEP AT BRIDGE
OPTICAL SAMPLE

AD 4 ✓ 8M FAST WEST CASTLE AT
MAIN BRIDGE - OPT/SAMP

CASTLE

AD 5 ✓ 5M FAST WIDE
OPT SAMPLE

AD 6 ✓ 6M FAST 10.2KM FROM AD5
OPT SAMPLE

WE HAVE TRIED TO COLLECT 10 Kgs (20 lbs)
OF -20 MESH SEDIMENT FROM EVERY SITE
AT EACH SITE WE DETERMINED THE BEST
SAMPLING POINT FOR OPTIMIZATION OF HEAVIES
CONCENTRATION.
AT A NUMBER OF SITES A SMALLER
SAMPLE WAS COLLECTED FOR CONCENTRATION
USING THE GOLD GENII PRIOR TO EXAMINATION
UNDER THE BINOCULAR MICROSCOPE, THESE
SITES ARE NOTED BY "OPT/SAMP"

✓ SAMPLE SITE PLOTTED ON 1:50,000

● SAMPLE COLLECTED } ON 1:250,000
● NOT COLLECTED } BLACK & WHITE MAPS

ALL SAMPLES NAMED "AD" FOR
"ALBERTA DIAMONDS"

2 PIECES OF FLAGGING AT EACH
SITE 1 ORANGE 3/4" WITH NO. ON
AND 1 PINK 1/2" PIECE

CASTLE CK
AD 7✓ 10M FAST JUST ABOVE BRIDGE
OPT/SAMP

JUNE 24TH
AD8 4M FAST LYNX CK @ 10KM
ABOVE AD 9

AD9✓ 6M FAST LYNX CK @ BRIDGE
OPT/SAMP
WIDE RANGE OF DIFF
VOLC ROCK FRAGS

AD10✓ 4M FAST MILL CK AT RD
BRIDGE OPT/SAMP
MILL CK HIGHER UP IS BARRED
TO ACCESS BY BAPTIST CHURCH
CAMP

GLADSTONE CK IS NOT MUCH
BETTER THAN A TRICKLE AT
SOUTH END

ACTUALLY THIS IS MILL CK
AD11✓ F 6M GLADSTONE AT
WASHED OUT BRIDGE
OPT SAMP

AD12✓ 4M FAST BELOW AHOLDY CK JCT
OPT /SAMP
1ST COULDN'T GET 10KG
2.7M FROM HWY / CAMPSITE

AD13✓ 4M FAST ALLISON CK
ON HWY

AD14✓ 4M FAST MACGILLVERY CK
DOWN 3RD HYDRO LINE @ 1KM
OPT SAMPLE
INCREASE IN VOLCANIC FRAGS

JUNE 25TH

AD15✓ 6M FAST LIVINGSTONE
AT CONFLUENCE WITH SAVANNA CK
OPT SAMP

AD16✓ 5M FAST SAVANNA CK
OPT /SAMP AT JCT WITH LIVINGSTONE

AD17✓ 8M FAST / DEEP - LIVINGSTONE
10 KM FROM SAVONNA CK RD
BANK SAMPLE

AD18 ✓ 8M FAST LIVINGSTONE R.10
10K SOUTH OF AD17

AD19 ✓ 9M FAST OLDMAN 3.2 KM FROM
START OF ROAD
OPT/SAMP

AD20 ✓ 9M FAST OLDMAN 10.6KM ABOVE
AD21
OPT/SAMP

AD21 ✓ 9M FAST OLDMAN 55 KM ABOVE
AD19

<u>JUNE 26TH</u>

AD22 ✓ 12M FAST GRAVEL BAR
DUTCH CK AT MAIN HWY
OPT/SAMP

AD23 ✓ 5M MOD GRAVEL BAR
DUTCH CK @ 18 KM BRIDGE

AD24✓ 6M MOD DUTCH CK
7.7 KM FROM AD23
7.5 KM TO ROAD JCT

AD 25✓ 12 M FAST OLDMAN RIV
GRAVEL BAR OFF ROAD
THAT LEAVES HWY ST
ACROSS FROM DUTCH CK RD

AD26 ✓ 6M FAST DAISY CK AT
ROAD BRIDGE
OPT/SAMP
FRAGMENTS OF VOLCANICS/
INTRUSIVES IN GRAVELS

AD 27✓ 5M FAST VICARY CK
JUST ABOVE JCT WITH
RACEHORSE CK
OPT/SAMP

AD 28✓ 8M FAST RACEHORSE CK
JCT WITH VICARY
OPT/SAMP
BOTH ABOVE SITES ARE
IN RECREATION AREA

AD 29✓ 6M FAST/DEEP SOUTH RACEH

COULTY CROSS TO GET TO
NORTH RACEHORSE

JUNE 27TH

AD30✓ 7M FAST HIGHWOOD @ CAT CK
GRAVEL BAR -
OPT/SAMP

AD31✓ 7M FAST BARIL CK
OPT/SAMP

AD32✓ 6M FAST/DEEP ETHERINGTON
OPT/SAMPLE 400M UP CK

AD33✓ 7M FAST/DEEP CATARACT CK
JUST ABOVE JCT WITH
WILKINSON CK
OPT/SAMP

AD 34 ✓ 6M FAST WILKINSON CK
AT REC AREA JUST ABOVE
JCT WITH CATARACT CK
OPT/SAMP

AD 35 ✓ 5M FAST WILLOW CK BELOW
BRIDGE BY 200 METRES
ACCESS NOT POSSIBLE IN EITHER
DIRECTION
OPT/SAMP (a) ACTIVE
(b) DRY

AD 36 ✓ 14M FAST CROWSNEST AND
EAST HILLSIDE EXIT
OPT/SAMP

JUNE 28TH

AD 37 ✓ 12M FAST SHEEP RIVER
AT SANDY MCNABB REC
AREA. THE UPSTREAM SAMPLE
WAS NOT POSSIBLE DUE TO
CANYON. WE CAN'T CROSS THE
RIVER TO SAMPLE ON OTHER
SIDE. THIS VALLEY IS TOO
WELL DEVELOPED TO ALLOW EASY
SAMPLING

AD 38 ✓ 10M FAST SHEEP RIVER
BEHIND COMPRESSOR PLANT
AT TURNER VALLEY
OPT / SAMP

AD 39 ✓ 5M FAST COAL CK
AT ROAD (22) BRIDGE

ADAO ✓ 7M FAST 13 KM PEKISKO CK
NOT MUCH IN WAY OF FINES
OPT / SAMP
BLACK SHALE OUTCROP
ABUNDANT

ADA1 ✓ 8M FAST 5KM E OF ADAO
PEKISKO CK
RD JCT

AD 42 ✓ 8M FAST PEKISKO CK
JUST ABOVE ROAD BRIDGE
OPT / SAMP

ADA3 ✓ 6M FAST SHENAHAN CK
AT RD BRIDGE

JUNE 27TH

ADA4 ✓ 1AM FAST HIGHWOOD RIV
AT FIR CK REC AREA
OPT / SAMP

ADA5 ✓ 1AM FAST / DEEP HIGHWOOD
AT INDIAN RESERVE EDEN VALLEY

ADA6 ✓ 7M FAST FLAT CK
BELOW BRIDGE NO ACCESS
TO HIGHER AREAS
OPT / SAMP

ADA7 ✓ 12M FAST HIGHWOOD AT
MASON ROAD (22)

ADA8 ✓ 4M FAST TODD CK
ROADS AS SHOWN ON MAP ARE
NOT CORRECT

AD 49 ✓ 7M FAST GOLD CK
ABOVE CROWSNEST HWY
OPT / SAMP

THERE WAS NO ROAD ACROSS
HIGHWOOD AND UP CATARACT CR
AS SHOWN ON MAP.

JUNE 30TH

AD 50 ✓ 9M FAST CROWSNEST RIV
AT WEST ACCESS CROSSING
BLAIRMORE

AD 51 ✓ 5M FAST BLAIRMORE CK
AT CROWSNEST HWY
OPT / SAMP

AD 52 ✓ 10M FAST CROWSNEST RIV
2.2 KM W OF COLEMAN
BEHIND PUMP HOUSE

SOUTHERN ALBERTA 1994

8TH JUNE

✓AG 1	CARBONDALE		6M	FAST	OP/S
✓AG 2	CARBONDALE		3KM	N OF AG 1	
	6M	F			
AG 3 ✓	SOUTH	LOST	F	4M	OP/S
AG 4 ✓	NORTH	LOST	F	5M	OP/S
AG 5 ✓	SOUTH LOST	1200M S AG3	F	6M	OP/S

9TH JUNE

AG 6 ✓	NORTH LOST	800M ABOVE AG4	F	4M	OP/S
AG 7 ✓	CARBON DALE	ABOVE GARDNIER	F	7M	OP/S
AG 8 ✓	GARDNIER		M	1-3M	OP/S
AG 9 ✓	LOST CK	AT BRIDGE	F	8M	OP/S
AG 10 ✓	LYNX	AT BRIDGE	F	8M	

10TH JUNE					
AG11	MIDDLE PASS		F	2M	OP/S
✓AG12	CASTLE CK		F	6M	OP/S
AG13	CASTLE TRIB	SMALL	F	1.5	
✓AG14	CASTLE TRIB		F	3	OP/S
✓AG15	CASTLE		F	6M	OP/S
✓AG16	CASTLE @ BRIDGE		F	7M	OP/S
✓AG17	CASTLE TRIB		F	4M	OP/S
11TH JUNE					
✓AG18	N RAFEHOUSE		F	5M	OP/S
✓AG19	FIRST CK		F	3M	OP/S
✓AG20	SMITH CK		F	3M	OP/S
✓AG21	FORK TO SMITH		F	3M	OP/S

✓AG-22		F	8M	OP/S
	FORK ON THIS PART OF RIVER DOESN'T SEEM TO EXIST			
✓AG-23	RACEHORSE	F	5M	OP/S
✓AG-24	THIB	F	1.5M	OP/S
✓AG-25	RACEHORSE	F	5M	OP/S
✓AG-26	FORK VERY SMALL	F	.5M	OP/S ONLY

JUNE 12TH

✓AG-27	PERISKO	F	9M	OP/S
AG-28	MC CONNELL	F	9M	OP/S
✓AG-29	SMITH CK	F	2M	OP/S
	THIS IS WHERE AG 40 SHOULD HAVE BEEN.			

AG30	PEKISKO	F	9 M	OP/S	11 KM W OF AG 3[illegible]
✓AG-31	PEKISKO	F	12 M	OP/S	AT BRIDGE
✓AG 32	SHEPARD CK	F	6 M	OP/S	AT BRIDGE
✓AG-33	1200 M ABOVE	AG 32	F	5 M	OP/S

JUNE 13TH

✓AG 34	FITZ SIMMONS		F	4 M	OP/S
✓AG-35	BAHIL CK @ AG 31		F	7 M	OP/S
✓AG-36	BAHIL CK @ ROAD		F	4 M	OP/S
✓AG 37	BAHIL CK @ 1200 M		F	3 M	OP/S
	BLACK SHALE				
✓AG-38	BAHIL @ SUMMIT		F	3 M	OP/S

JUNE 14TH				
✓AG39	SOUTH RACEHOUSE	6M	F	OP/S
✓AG40	NORTH RACEHOUSE	6M	F	OP/S
AG41	LYNX TRIB FIRST FORK	NORTH	3M	OP/S
AG42	LYNX TRIB SOUTH FORK	F	4M	OP/S
AG43	LYNX TRIB @ BRIDGE		5M	OP/S
JUNE 15TH				
✓AG44	WILKINSON CK AT RACEHOUSE	F	9M	OP/S
✓AG45	CATERACT CK	F	9M	OP/S
✓AG46	CATERACT CK 500 ABOVE 45	F	9M	OP/S
✓AG47	CATERACT CK 700 ABOVE 46	F	8M	OP/S
✓AG48	ETHERINGTON @ 1200 M	F	6M	OP/S
✓AG49	ETHERINGTON @ ROAD	F	7M	OP/S

√AG50	HIGHWOOD @ CATCK		F	12M	OP/S
√AG51	HIGWOOD @ BAINSHAM		F	12M	OP/S
√AG52	CROWSNEST BELOW LUNNBAKER			F [illegible]	
			F		OP/S

END

SW ALBERTA - RE KUNS

OCT 12

AR 1 AT AU 39 SOUTH RACEHOUSE
WATER MUCH LOWER

AR 2 NORTH RACEHOUSE
AR 3 VICARY CK

OCT 13

AR4 LOST CK - LOWER

AR5 CARBONDALE - VOLCANICS
IN PLACE ON CK BED

AR6 2KM S OF HW5 ON CARBONDALE

AR7 S LOST CK

AR 8 N LOST

AR9 LYNX @ BRIDGE

AR 10 KUNNBUCK (BELOW FALLS)

OCT 14

AR 11 N RACEHOUSE

AR 12 FIRST CK

AR13 SMITH CK

AR14 SOUTH RACEHOUSE

AR15 " " 1.3 KM ABOVE 14

AR16 " "

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Water Resistant

Cruiser's Field Book

Level/Metric

MIKE MYERS – CONTINUATION

OF SW ALBERTA WORK.

JULY 1998

24 Pages

SW ALBERTA - 1995

JULY 12 / PEKISKO - PANNED SILT AT
BAILEY BRIDGE - SOME PINK &
RED GARNETS OBSERVED

~~CROSS CK~~
AG 60 ✓ 2M SLOW FULL OF COW PISS
ROCK OUTCROPS ALL S/ST

AG61 ✓ WILLOW CK ABOVE ROAD
F 5M

JULY 13
AG62 ✓ F 3M
AG63 ✓ F 4M

SOUTH FORK & TOP OF LOST NORTH FORK

WALKED ROADS ON BOTH SIDE OF NORTH FORK
FOUND CONSIDERABLE FLOAT OF VOLCANICS
(CROWSNEST ?) ON SOUTH SIDE OF CK
AND PORPHYRY ON NORTH SIDE
ROCK SAMPLE OF PORPHYRY
" " " SEDIMENT/VOLCANIC ON RD
POSSIBLE BLACK GARNET

JULY 14TH
SOUTH LOST
LARGE CONGLOM BOULDER NO
IGNEOUS CLASTS / DIFF SORT OF
MATRIX

AG64 ✓ F 2 TOP OF SOUTH FORK
SMALL SAMPLE

R4 ✓ BLACK SHALE BED

R3 ✓ CONGLOM - SOUTH LOST

JULY 15 - CARBONDALE

AG65 ✓ F 5 MACDONALD CK

AG66 ✓ F 10 CARBONDALE MT
ROAD TORRENTIAL RAIN - NO TIME
TO COLLECT FULL HEAVY

AG67 ✓ F 3 @ SHEAR ZONE

JULY 16TH

AG68 ✓ F 2 @ WYETH OUT

SMITH CK

WALKED SMITH CK ROAD TO MOUNTAINS
ONLY ROCK WAS LIMESTONE WITH
MINOR SILTSTONE.

R7 ✓ EXTENSIVE OUTCROP OF VOLCANICS
(FLOW) WITH LARGE FELDSPAR CRYSTALS
FROM 1/8" TO 2". ON SIDE OF SOUTH
RACEHORSE AT SMITH CREEK

AREA BELOW "KILL ZONE"

S1 ✓ BROWN 20 500 M FROM JCT

S2 ✓ GREY BLACK / SHALE CLAY 100 M W S1

S3 ✓ SHALE GREY CLAY 150 M W S1

BOTH ROADS ALONG SOUTH RACEHORSE SOUTH
OF SMITH CK SHOWED ONLY LIMESTONE
& SILTSTONE.

JULY 17TH NORTH RACEHORSE

AG69 ✓	F	3		1ST CK @ BRIDGE	
	SHALE WITH WHITE BAND CUTTING				
	SHALE (PHOTO) — DUTCH CK				
S4 ✓	WHITE BAND				
S5 ✓	SHALE @ CK				
R8 } R9 ✓	OUTCROP/FLOAT 700 FT W of AD23				
AG 70 ✓	F	2	EAST of N. RACEHORSE		
R10 ✓	VOLCANICS ABOVE N. RACEHORSE				

WALKED & DROVE FIRST CK ONLY ROCKS OBSERVED WERE LIMESTONE, SANDSTONE & SILTSTONE DROVE OVER TO NORTH RACEHORSE VIA FIRST CK OBSERVED ONLY LIMESTONE, SANDSTONE & SILTSTONE

JULY 18TH – CARBONDALE / KOST

AG71 ✓ TRIB F 2

AG72 ✓ GARDINER CK @ SECOND BRIDGE F 5

R11 ✓ ROAD OFF CARBONDALE TO CASTLE (E. MAVERICK HILL) 2.1 KM ALONG RD 1.5 UP HILL

MC DOUGAL / SEVEN CONGLOM AT FRANK SLIDE INTERP CENTRE

SOILS FROM CONGLOM

S6 AT EAST SIDE

S7 ON TOP

S8 W SIDE

JULY 19TH RACEHORSE

R12 ✓ SOUTH R/HORSE POSS VOLCANICS

@ AG22 VOLCANICS

AG73 ✓ NORTH RACEHORSE @ WASHED OUT BY
F

JULY 20TH KANANASKIS AREA

HIGHWOOD RIVER NO INDICATION OF VOLCANICS IN RIVER BARS. SOME CONGLOM OF QUARTZITE/SHALE TYPE

BAUL CK – ONLY ROCK TYPES IN EVIDENCE ARE LIMESTONE, SANDSTONE SILSTONE & CONGLOM OF QUARTZITE/SHALE TYPE RIA SLIGHTLY COOKED SILTSTONE

ETHERINGTON CK – SAME AS BAUL CK.

SINCE THERE DOES NOT APPEAR TO BE ANY VOLCANICS IN THIS AREA PERHAPS THE GOLD IS DERIVED FROM GLACIAL TILL

JULY 21ST — SHOWING GARFIELD ROUND SOUTH & NORTH RACEHORSE

JULY 22ND — SHOWING GARFIELD ROUND CARBONDALE / FROST CK. AREA MOVED TO LONGVIEW - SHOWED GARFIELD RUNNAMOOKS AREA

JULY 23RD WILLOW CK TO RUNNAMOOKS BAD WASHOUT BETWEEN DRY CK & WILKINSON CK. TOOK 2 ROCK SAMPLES AT WASHOUT

R16
R17

PANNED SHALE (ACTING AS NATURAL RIFFLES) NO COLOUR SOME PYRITE, NO MAGNETITE

PLATEAU MTN — ACCESS BANNED MTN APPEARS TO BE ALL LIMESTONE

JULY 24TH — PERISKO CK —

CROSSED RIVER AND WALKED WEST TO FALLS 1.5-2KM SIEVED AND PANNED SAMPLE — NO GARNETS WERE SEEN

CLIMBED HILL E OF PERISKO CK TO INTERCEPT DICKSON CK. NOTICED WHAT APPEARED TO BE A SLUMP FEATURE ABOUT A MILE TO SOUTH. IT TURNED OUT TO BE A RECESSIVE SHALE UNIT.

HEADED FOR DICKSON - PANNED SILTS NO GARNETS, NO INDICATION OF ANYTHING DIFFERENT IN THE FLOAT. WALKED DOWN TO JCT WITH PERISKO. (WE STARTED FROM TOP DAMS) PANNED DICKSON JUST ABOVE PERISKO - NO GARNETS

JULY 25TH - PEKISKO CK

AG74 ✓ F A EMERSON CK AT ROAD

PANNED SILTS - POSITIVE ON GARNETS (PINK)

PANNED PEKISKO JUST ABOVE EMERSON NO GARNETS

AG75 ✓ F 1 1ST TRIB TO EMERSON TO WEST

PANNED - MANY GARNETS, BUT ALL ARE ONLY CHIPS AND LESS THAN 20 MESH. WALKED UP CK SEVERAL 100 METRES, CK GOES INTO SWAMPY AREA?

ROCK SAMPLES S.W. ALBERTA 1995

R1	PORPHYRY FLOAT N. LOST CK
R2	VOLCANIC/SED FLOAT " " "
R3	CONGLOM FLOAT S. LOST
R4	BLACK SHALE? IN PLACE S. LOST
R5	BLACK SHALE IN PLACE CARBONDALE
R6	CROWSNEST VOLCANIC WITH REDDISH CRYSTALS - CARBONDALE (FLOAT)
R7	VOLCANIC FLOW - SOUTH RACEHORSE SMITH CK JCT
R8	VOLCANIC FLOW 700 M W OF CK (SAMPLED - DUTCH)
R9	SAME AS ABOVE - FINER MATRIX
R10	VOLCANIC JUST ABOVE ON RACEHORSE - CONTAINS BRIGHT SPOTS THAT MAY BE SULPHIDE
R11	VOLCANIC ON RD OFF CARBONDALE
R12	SOUTH R/HORSE (AG23) OUTCROP ON RIVER
R13	COAL FROM VICARY CK AREA
R14	SLIGHTLY COOKED SILTSTONE FROM BARIL CK (FLOAT)
R15	FLOW @ CARBONDALE / LOST CK JCT ON CARBONDALE IN PLACE
R16	RUSTY SILTSTONE AND WASH-OUT BETWEEN WILKINSON CK

K DRY CK

R17 BLACK SHALE SAME LOCATION AS R16. POSSIBLY SOME COAL

APPENDIX V

Cost Statement

COST STATEMENT

1995	Rubicon Minerals field and analytical work	$16,404.65
	MWM Exploration	$ 2,800.00
	MWM Exploration	$ 4,264.00
	MWM Exploration	$ 520.00
	MWM Field Assistant	$ 2,125.00
	Hy G Sample Concentration	$ 107.00
	Eagle Mapping (airphotos)	$ 867.54
SUB TOTAL		**$30,670.66**
1994	MWM Exploration	$ 2,200.00
	MWM Exploration	$ 1,843.64
	MWM Exploration	$ 1,820.00
	MWM Exploration	$ 3,410.00
	MWM Field Expenses	$ 973.64
	MWM Field Expenses	$ 2,196.02
	MWM Field Assistant	$ 1,200.00
	COMINCO	$ 160.50
	COMINCO	$ 107.00
SUB TOTAL		**$13,910.80**
1993	MWM Exploration	$ 2,841.00
	MWM Field Expenses	$ 2,004.22
	MWM Field Assistant	$ 1,100.00
	Vancouver Petrographics	$ 214.00
SUB TOTAL		**$ 6,159.22**
TOTAL		**$50,740.68**

MWM EXPLORATION
4949 5TH AVENUE
DELTA, B.C.
V4M 1J6

INVOICE FOR SERVICES

December 04, 1995

ECSTALL MINING CORPORATION
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Preparation/Concentration of Alberta Geological Survey stream sediment samples

350 samples x $8.00 /per sample:--$2,800.00

Total $2,800.00

Please make cheque payable to: M. Waskett-Myers

Thank you.

Rubicon Minerals Corporation

RMC

119-53rd St.
Delta, B.C.
Canada V4M 3B3

David W. Adamson Ph.D.
Principal

Phone: 604-948-2583
Fax: 604-990-0457
E-mail:David.Adamson@deepcove.com

	Expenditure summary on Ecstall southwest Alberta Property						Dec3/95
CERT #	**LAB:**	**DATE**	**NET**	**GST**	**TOTAL**	**comment**	
I9526201	CMX	7-Sep-95	297.16	20.80	317.96	ok	
I9526202	CMX	5-Sep-95	60.00	4.20	64.20	ok	
I9526203	CMX	7-Sep-95	120.00	8.40	128.40	ok	
I9526204	CMX	7-Sep-95	210.00	14.70	224.70	ok	
I9526206	CMX	8-Sep-95	67.20	4.70	71.90	ok	
I9526205	CMX	28-Sep-95	316.20	22.13	338.33	need inv	
I9523954	CMX	6-Sep-95	900.64	63.04	963.68	ok	
I9523955	CMX	14-Aug-95	145.60	10.19	155.79	need inv	
I9523956	CMX	13-Aug-95	336.97	23.58	360.55	need inv	
R30706	XRAL	30-Nov-94	1708.50	119.60	1828.10	no inv	
other info							
[redacted] credit 7 days work @ $350/day				2450.00			
credit 10 days @$450/day				4500.00			
[redacted] expenses related to Property				1201.04			
probe work by Lac minerals + rpt estimated value				1000.00			
AGS silt samples (in progress)							
sample prep	350 samples @ $8.00/sample			2800.00			
analysis	350 samples @ $15.57/sample est			5449.50	← not included in project costs claimed herein for assessment credit		
note: the quote from Chemex is a discount rate that will be given to Ecstall							

[signature]

MWM EXPLORATION
4940 5th Ave
Delta, B.C.
V4M 1J6

INVOICE FOR SERVICES

July 28, 1995

ECSTALL MINING CORP.
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Heavy mineral sampling and prospecting, SW Alberta project 17 Days @ $240.00 per day	$4080.00
Air photo work, setting up report and drafting 8 Hours @ $20.00 per hour	$ 160.00
Typing report, 12 pages @ $2.00 per page	$ 24.00
TOTAL	$4264.00

Please make cheque payable to: M. Waskett-Myers

Thank you.

DATE July 31, 1995 AMOUNT 7846.47
CK# 1903 ACCOU[redacted]
PAYMENT APPROVED [redacted]

MWM EXPLORATION
4940 5th Ave
Delta, B.C.
V4M 1J6

INVOICE FOR SERVICES

April 25, 1995

ECSTALL MINING CORP.
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Drafting and report preparation for SW Alberta project

26 hours @ $20.0/ hour	$520.00

Please make cheque payable to: [redacted].

Thank you.

DATE April 27/95 AMOUNT 520.00
CK# 1818 ACCOUNT [redacted]
PAYMENT APPROVED ____________

MWM EXPLORATION
4940 5th Ave
Delta, B.C.
V4M 1J6

INVOICE FOR SERVICES

July 28, 1995

ECSTALL MINING CORP.
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Field assistant on SW Alberta project
17 Days @ $125.00 per day $2125.00

Please make cheque payable to: [redacted]

Thank you.

DATE July 31, 1995 AMOUNT 2125.00
CK# 1905 ACCOUNT [redacted]

PAYMENT APPROVED ____________

EXPENSE SHEET

~~NAME~~ ECSTALL MINING CORP MONTH JULY 1995

DATE	LOCATION	DAILY	TRANS.	ACCOM.	SUNDRY
10		32.00 LUNCH (2)	54.51 GAS (1)(3)		
11	CRANBROOK	41.00 DINNER BREAK (5)(8)	34.00 GAS (7)	MOTEL 62.96 (4)	GROCERIES 105.33 (6)
12		35.00 DINNER (9)	36.60 GAS (10)		
13		20.00 DINNER (11)			
14		36.00 DINNER (12)			
15		39.00 " (14)			GROCERIES 24.97 (13)
16		30.25 " (15)			
17		33.00 " (18)	31.30 GAS (16)		KITCHEN UTENSILS 5.20 (17)
18		29.00 " (19)			
19		43.20 " (21)			GROCERIES 17.64 (20)
20		30.60 " (23)	27.50 GAS (22)		
21			20.70 GAS (24)		
22	COLEMAN	63.00 LUNCH DINNER (26)(29)		MOTEL 517.44 (25)	GROCERIES 11.37 (27)(28)
23		33.00 DINNER (31)	28.51 GAS (30)		
24		30.07 " (32)			
25	LONGVIEW	20.45 " (34)	26.65 GAS (35)	MOTEL 278.20 (33)	
26		13.46 LUNCH (37)	36.72 GAS (36)		COQUIHALLA TOLL 10.00 (38)
27 }			30.97 GAS (39)		
			TRUCK RENTAL 1682.92 (40)		
					FIELD SUPPLIES 10.55
		34.57	GST 124.18	54.66	11.45
TOTAL		528.43	2010.38	858.60	185.06

Daily 528.43

Trans. 2010.38

Accom. 858.60

Sundry 185.06

TOTAL 3582.47 LESS ADVANCE OF $300.00 = $3282.47

DATE ______ AMOUNT 3582.4[redacted]

CK# 1903 ACCOUNT [redacted]

PAYMENT APPROVED [redacted]

Hy-G Manufacturing Inc.
6080 196 Street
Langley, B.c.
V3A 5X3

RECEIVED 08/16/95

REFER TO THIS NUMBER
1460628

SOLD TO
Ecstall Mining Corp
307 475 Howe St.
Vancouver, B.C.
V6C 2B3

SHIP TO
SAME

DATE	SHIPPED VIA	GST	PROV. LICENCE NO.	YOUR ORDER NO.	OUR ORDER NO.	TERMS	SALESMAN
08/09/95		122886351					

BACK ORDERED	QTY ORDERED	DESCRIPTION	QTY. SHIPPED	UNIT PRICE	AMOUNT
		Concentrating placer samples with			
		Mike Myers - two hours @		50.00	100 00
					7 00

ALBERTA PROPERTIES.

DATE Aug-18/95 AMOUNT 107.00
CK# 1914 ACCOUNT [redacted]
PAYMENT APPROVED

K ORDERED ITEMS WILL BE SHIPPED AS SOON AS AVAILABLE UNLESS ARE OTHERWISE ADVISED. ITEMS ARE NOT AVAILABLE AND HAVE NOT BEEN BACK ORDERED.	DATE SHIPPED	B/O FROM	B/O TO
			107.00

E & OE

INVOICE

EAGLE MAPPING
SERVICES LTD.

*Topographical / Digital
Mapping and
Orthophoto*

#17 - 1833 Coast Meridian Road
Port Coquitlam, B.C.
Canada V3C 6G2

Phone: (604) 942-5551
Fax: (604) 942-5951

*** I N V O I C E ***

INVOICE # 12740

DATE: MAY 12, 1995

OUR JOB 95-T-19
95-T-20

OUR GST # 101537264

DATE May 15/95 AMOUNT 867.54
CK# 1837 ACCOUNT [redacted]
PAYMENT APPROVED

SOLD TO:
ECSTALL MINING CORPORATION
#307-475 HOWE STREET,
VANCOUVER, B.C.
V6C 2B3

==
TERMS: PAYABLE UPON RECEIPT
==

ATTENTION: MR. CHRIS GRAF Airphotos: Southwest Alberta

For the provision of a total of 116 prints as follows:

AS 4211 160-165,172-199
AS 4233 40-49,57-65,73-80
AS 4234 117-123,133-138,149-155,167-172,
184-190,203-209,222-226
AS 4322 116-120,134-138.

FIRM LUMP SUM PRICE.................................$ 725.00

One contact print each, for a total of 6 contact
prints, as follows:

BC 86045 95-97
BC 86100 225-227

FIRM LUMP SUM PRICE.................................$ 36.00
SUBTOTAL..$ 761.00

PST...$ 53.27
GST...$ 53.27
========
TOTAL AMOUNT DUE....................................$ 867.54

THANK YOU!

ing Inc.

REFER TO THIS NUMBER
1460605

GST # 122886351

SOLD TO Tastall Mining Corp.
307-475 Howe St.
Vancouver, BC

SHIP TO SAME

DATE	SHIPPED VIA	GST	PROV. LICENCE NO.	YOUR ORDER NO.	OUR ORDER NO.	TERMS	SALESMAN
7-25-94							

BACK ORDERED	QTY. ORDERED	DESCRIPTION	QTY. SHIPPED	UNIT PRICE	AMOUNT
	39	hours concentrating samples		45.00	1,755 00
		7% GST			122 85
					1,877 85

DATE July 25/94 AMOUNT $1877.85
CK# 1608 ACCOUNT
SAMPLE PROCESSING - SW ALTA PROJECT
PAYMENT APPROVED [redacted]

INVOICE	BACK ORDERED ITEMS WILL BE SHIPPED AS SOON AS AVAILABLE UNLESS WE ARE OTHERWISE ADVISED. N/A ITEMS ARE NOT AVAILABLE AND HAVE NOT BEEN BACK ORDERED.	DATE SHIPPED 7/22/94	B/O FROM	B/O TO 1,877 85

E & OE

0 63015 99985 MOORE® SPEEDISET® 3 0

INVOICE

Don Sharp

ject for: c/o Ecstall Mining Corp. Fri. July 23/94
307-475 Howe St.
Vancouver, BC. Ph. (604) 681-4402

52 x 20 lb. screened gravel samples Nos. AG #1 thru #52

A) - wet screen to 1/8" minus and concentrate to approx 4 lbs. in 5" HY-G batch concentrator - @ 15 min.

B) - reconcentrate thru spiral "Gold Genie" wheel (approx. 5 runs) @ 30 min reduce to approx 1/2 lb. of concentrate containing an estimated 50% of total garnets in 20 lb. sample.

Time to complete = A - 13 hrs. ; plus B - 26 hrs = total 39 hrs.

Work performed by: [redacted]

MWM EXPLORATION
4940 5th Ave
Delta, B.C.
V4M 1J6

INVOICE FOR SERVICES

October 25th, 1994

ECSTALL MINING CORP.
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Field work on SW Alberta gold project

MWM - Geochemist: 5 Days

Ian Palmer - Helper 5 Days

TOTAL $2200.00

Please make cheque payable to: M.Waskett-Myers

Thank you.

DATE OCT 25/94 AMOUNT 4043.64
CK # 1674 ACCOUNT
PAYMENT APPRO[redacted]

MWM EXPLORATION
4940 5th Ave
Delta, B.C.
V4M 1J6

INVOICE FOR SERVICES

October 25th, 1994

ECSTALL MINING CORP. (For Lac Minerals)
#307 - 475 HOWE STREET
VANCOUVER, B.C.
V6C 2B3

Transportation of samples from SW Alberta
Sample prep - HI-G and GOLD GENIE concentration
Binocular microscope observation of concentrates, and reporting of results

TOTAL COST $1843.64

Please make cheque payable to: M.Waskett-Myers

Thank you.

EXPENSE SHEET

NAME

MONTH OCTOBER 1994

DATE	LOCATION	DAILY	TRANS.	ACCOM.	SUNDRY
11TH		APPLES 1.11 (2)			GAS 24.00 (1)
		LUNCH 19.00 (3)			GAS 26.00 (4)
12TH	COLEMAN	GROCERIES 29.51 (6)		MOTEL 69.15 (5)	
		DINNER 22.00 (7)			
13TH	"	DINNER 25.00 (8)			GAS 21.50 (9)
14TH	"	DINNER 33.00 (12)		MOTEL 134.40 (13)	GAS 13.00 (10)
					FIX FLAT TIRE 8.00 (11)
15TH		DINNER 25.99 (15)			GAS 29.00 (14)
16TH			TRUCK 453.98 (17)		GAS 37.00 (16)
TOTAL		157.61	453.98	203.55	158.50

Daily	157.61
Trans.	453.98
Accom.	203.55
Sundry	158.50
TOTAL	973.64

10.31

28.33

4.52
8.40
12.92

1.57
1.70
1.41
.85
1.90
2.42
9.85

GST 61.41

1101 Laburnam Ave
Port Coquitlam
V3B 1K2

June 21,1994

INVOICE FOR SERVICES

ECSTALL MINING CORP.

Field work: 12 Days @ $100.00/per day	$1200.00

Please make cheque payable to [redacted]

Thank you.

DATE June 20/94 AMOUNT $1200.00

CK# 1595 ACCOUNT ____

PAYMENT APPROVED [redacted]

4940 5th Avenue
Delta, B.C.
V4M 1J6

June 21,1994

INVOICE FOR SERVICES

ECSTALL MINING CORP.

Organisation and planning of Alberta project 1.5 Days @ $200.00/per day	300.00
Field work: 12 Days @ $240.00/per day	2880.00
Processing 23 samples @$10.00/sample	230.00
TOTAL	$3410.00

Please make cheque payable to [redacted]

Thank you.

DATE June 28/94 AMOUNT 5106 02
CK# 1596 ACCOUNT ____
PAYMENT APPROVED [redacted]

EXPENSE SHEET

NAME ECSTALL MINING MONTH JUNE

DATE	LOCATION	DAILY	TRANS.	ACCOM.	SUNDRY
6	PRINCETON	(2) LUNCH 16.05	GAS 24.34 (3)		FAX 2.30 (1)
		(5) DINNER 10.46	GAS 28.50 (4)		
7	COLEMAN	(6) GROC 80.03		74.91 (8)	DINNER 24.50 (7)
8	"	DINNER 31.50	GAS 29.00		
9	"	(9) DINNER 35.00			
10	"	(10) DINNER 24.00			
11	"	(12) DINNER 28.00	GAS 27.00 (11)		
12	"	(13) DINNER 28.00	GAS 20.00 (14)		
13	"	(16) DINNER 33.80	GAS 20.00 (18)		
14	"	(19) DINNER 39.00			GROCERIES 18.47 (15)
15	"		GAS 21.00 (20)		~~GAS~~
16	"		GAS 20.20 (21)	MOTEL 423.36 (22)	
16	TRIP BACK OSOYOOS		GAS 26.00 (23)	MOTEL 133.40 (24)	
16	OSOYOOS	(25) DINNER 38.77			
17	"	(26) BREAK 12.50	GAS 10.00 (27)		
17	HOPE	(28) DINNER 28.38	GAS 12.00 (29)		
18			GAS 26.11 (30)		
			TRUCK 812.61 (31)		
					FIELD SUPPLIES 36.83 (32)
TOTAL		405.49	1076.76	631.67	82.10

Daily 405.49

Trans. 1076.76

Accom. 631.67

Sundry 82.10

TOTAL 2196.02

ADVANCE OF $500

BALANCE = $1696.02

4940 5th Avenue
Delta, B.C.
V4M 1J6

April 13th 1994

INVOICE FOR SERVICES

ECSTALL MINING CORP.

Processing samples using GOLD GENIE 52 samples @ $10.00 per sample	=$520.00
3 days picking samples (+60 mesh)	=$600.00
3 days picking samples (-60 mesh)	=$600.00
1/2 day at Cominco, etc.	=$100.00
TOTAL	=$1820.00

Please make cheque payable to [redacted]

Thank you.

DATE April 20/94 AMOUNT 1820.00
CK# 1562 ACCOUNT
PAYMENT APPROVED [redacted]

COMINCO EXPLORATION
500 - 200 Burrard Street / Vancouver, B.C. / Canada V6C 3L7 / Tel. (604) 682-0611 / Fax (604) 685-3041

INVOICE

INVOICE NO: V-0311

TERMS: On Receipt
GST #R101063576

30 March 1994

ECSTALL MINING CORPORATION
#307 - 475 Howe Street
Vancouver, B.C.
V6C 2B3

ATTENTION: Mr. Chris Graf, P.Geol.

---

3 MARCH 1994
Mineralogical Report/SEM-EDX 2 hours @ $75.00 = $ 150.00

SUB TOTAL	$ 150.00
G.S.T. @ 7%	10.50
TOTAL INVOICE	$ 160.50

COMINCO EXPLORATION
500 - 200 Burrard Street / Vancouver, B.C. / Canada V6C 3L7 / Tel. (604) 682-0611 / Fax (604) 685-3041

Cominco Exploration

I N V O I C E

INVOICE NO: V-0214

TERMS: On Receipt
GST #R101063576

02 March 1994

ECSTALL MINING CORPORATION
#307 - 475 Howe Street
Vancouver, B.C.
V6C 2B3

ATTENTION: Mr. Chris Graf, P.Geol.

---

10 FEBRUARY 1994
Mineralogical Report = $ 100.00

DATE Mar 20/94 AMOUNT 107.00
CK# ______ ACCOUNT ______
5013 - 7.00
PAYMENT [redacted]

SUB TOTAL	....	$ 100.00
G.S.T. @ 7%	....	7.00
TOTAL INVOICE	....	$ 107.00
		========

VP Vancouver Petrographics Ltd.
8080 Glover Road
Langley, B.C. V3A 4P9

(604) 888-1323 Fax (604) 888-3642

INVOICE

GST # R105484687

No. 930486

SALESPERSON	DATE OF INVOICE
	Aug 10,93

SHIP TO

Atten: Chris Graf

TO:

Ecstall Mining Corp.
307-475 Howe St.
Vancouver,B.C.
V6C 2B3

ACCOUNT NO.	DATE SHIPPED	SHIPPED VIA	COL	P.P	F.O.B. POINT	TERMS	YOUR ORDER NUMBER
	Aug.10,199	Loomis		X	Ft. Langley	30 Days	Chris Graf

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1.5	Hrs Indicator Mineral Pick	50.00	75.00
1	Setting for Probe	20.00	20.00
17	grains Probe analysis	5.00	85.00
	Courier services		20.00
	G.S.T. (7%)		14.00
	Thank You	TOTAL	214.00

YOUR COMPLETE GEOLOGICAL SERVICE & SUPPLY COMPANY

REMARKS:

DATE Nov 1/93 AMOUNT 214.00

CK# 1185 ACCOUNT [redacted]

PAYMENT APPROVED [redacted]

SAMPLE PREPARATION FOR MICROSTUDIES • PETROGRAPHIC REPORTS • GEOLOGY FIELD STUDIES
FIELD AND LABORATORY • SUPPLIES AND EQUIPMENT

July 5th, 1993

INVOICE FOR SERVICES

ECSTALL MINING

Assistant sampler for southern Alberta Project

11 Days at $100/day =$1100.00

TOTAL =$1100.00

Please make cheque payable to [redacted]

Thank you.

DATE July 5/93 AMOUNT 1100 xx

CK# 1140 ACCOUNT

South ALTA PROJ.

PAYMENT APPROVED [redacted]

4940 5th Avenue
Delta, B.C.
V4M 1J6

July 5th, 1993

INVOICE FOR SERVICES

ECSTALL MINING

Organising and sampling for southern Alberta Project

11 Days at $230/day	=$2530.00
1 day general work in Vancouver @$200/day	=$ 200.00
Sample prep and visual inspection - 37 samples at $3.00/ sample	=$ 111.00
TOTAL	=$2841.00

Please make cheque payable to [redacted]

Thank you.

DATE July5/93 AMOUNT 4845 22

CK# 1141 ACCOUNT

PAYMENT APPROVED [redacted]

EXPENSE SHEET

NAME ______________________ MONTH June

	DATE	LOCATION	DAILY	TRANS.	ACCOM.	SUNDRY
1	18/6/93	VAN				FIELD GEAR 107.99
2	19/6/93	VAN				FIELD GEAR 34.50
3	20/6/93	VAN		TRUCK RENTAL 375.00		
4	21/6/93	PRINCETON	LUNCH 15.52	~~TRUCK RENTAL~~		
5	" " "	"		GAS 19.73		
6	" " "	YAHK		GAS 20.00		
7	" " "	CRANBROOK			51.75	FAX TO THRIFTY 2.00 (11)
8	" " "	"	SNACK 9.63			
9	22/6/93	BLAIRMORE	GROCERIES 54.13	GAS 30.00 (12)		
10	23/6/93	"	DINNER 21.00			
	24/6/93	"	GROC 8.69 (13)	GAS 30.00 (14)		
	" "	COLEMAN	DINNER 19.00 (15)			
16	22/6/93	CRANBROOK	BREAK 8.43			
17	25/6/93	COLEMAN	DINNER 20.00			
	26/6/93	"	DINNER (20) 24.00	GAS 23.30 (18) GAS 11.00 (19)		JAR OF JAM 2.79 (21)
24	27/6/93	"	DINNER (22) 24.00	GAS (23) 21.00		
	28/6/93	" (25) (26)	DINNER 28.00 GROC 8.89	GAS 25.00 (27)		
	29/6/93	"	DINNER 27.00 (28)			
	30/6/93	" (29)	DINNER 21.00	GAS 28.00 (30)		CAR WASH (31) 4.50
	1/7/93	COLEMAN		(32)	MOTEL 423.36	PHONE CALL 3.05 (33)
		CHRISTINA LAKE	LUNCH 13.00 (34)			
		OSOYOOS		GAS 34.00 (35)		
		DELTA		GAS 27.00 (36)		
		VAN		TRUCK RENTAL 427.46 (37)		
	TOTAL		302.29	1071.99	475.11	154.83

Daily	302.29
Trans.	1071.99
Accom.	475.11
Sundry	154.83
TOTAL	2004.22

APPENDIX VI

Rubicon Minerals Ltd. Summary Geological report on Ecstall's Mineral Permits

RUBICON MINERALS CORPORATION
119-53rd Street
Delta
Property submission to Cyprus Canada - SW Alberta Property of Ecstall Mining Corporation 03/10/95

PROPERTY: SW Alberta.

OWNER: Ecstall Mining Corporation.
Chris Graf (President) - Tel. 604-681-4402.

LOCATION: SW of Calgary, Alberta, to the Waterton National Park boundary.

CLAIMS: 1.2 million acres under permit. (approximately 46 townships). No detailed claim search carried out. No details of assessment requirements, but thought to require major work by December, 1995 (approximately $45,000/Twp). Major property rationalization is required.

TARGET: Sediment/volcanic hosted, disseminated gold?. Paleo-placer Au?

INFRASTRUCTURE: Well developed.

SENSITIVITIES: None, except close to park boundaries.

GEOLOGY: Ecstall Mining control over 1.2million square acres of property underlain by the Foothills and Front Ranges linear belts. Foothills geology is dominated by thrust faults with footwall Mesozoic and Tertiary strata and hanging wall Mesozoic or Carboniferous strata. The Front ranges are marked by the Lewis and McConnell thrusts which place Devonian to Proterozoic carbonates onto Cretaceous rocks. Igneous activity in southwest Alberta is of three ages. The oldest is represented by 1.4-1.58Ga mafic sills and dykes. The second is represented by intermediate flows of the Purcell Group, thought to have been extruded at approximately 1.1Ga. The third, and most prevalent is the early Cretaceous Crowsnest Formation, which comprises alkaline trachytic to phonolitic volcaniclastics.

MINERALIZATION: Olson et.al (1994) have summarized showings in the area. they include: stratabound copper-silver occurrences in Proterozoic rocks, Cu-Zn-Pb sulphides in quartz-carbonate veined rocks which cut Hadrynian to Cambrian strata, Pb-Zn showings in carbonate rocks and a gold occurrence reported in Crowsnest volcanics.

Since 1994, Ecstall Mining have carried out stream, silt and limited rock sampling in selected parts of the property. The majority of data are from heavy mineral concentrates (HMC's) of stream gravels analyzed using neutron activation analysis. **Thirty seven out of 102 plotted samples are considered to contain 'anomalous' gold, typically >1000ppb and up to 35,200ppb.** Gold anomalies are generally accompanied by weaker anomalies in As, Sb and Mo. The magnitude and relative proportion of gold anomalies on the Ecstall property greatly exceeds published data from the region or from similar terrains.

Limited probe work indicates that gold grains consist of Au-Ag-Hg alloys with rare Au-Hg alloys. There is no indication that the component of Hg is caused by human activity. Known Hg-bearing gold grains have not been reported from the placer gold deposits of the North Saskatchewan River, suggesting a possible local source on the Ecstall property. Very limited lithological sampling in the Dutch Creek area has returned anomalous gold up to 1.78g/t Au. Chemex labs report strong heterogeneity of gold in this sample and did not reproduce it in two subsequent splits. Gold anomalies are developed across a wide area and it is not clear at this stage what geological controls influence gold distributions. It appear however, that gold anomalies are best developed close to the Lower Cretaceous/Upper Cretaceous boundary. This boundary may be important in that it encompasses the Crowsnest alkaline volcanics and the Upper Cretaceous Fish Scale Group which marks a major extinction possibly related to a widespread volcanic event.

Ecstall silt samples (15) do not contain any anomalous gold. In addition, 393 silt samples from the region, sampled and analyzed by the Alberta Geological Survey, contain few anomalous samples. Reference to a regional GSC silt study in NE BC where similar lithological and tectonic elements are present, indicates that, in that area, standard silt sampling is not effective in detecting gold anomalies and that there is thus no correlation between HMC's Au and Au in silts. However, when HMC's are extracted from the silts, weighed and converted to gold (ppb) and combined with a standard 30g sample fire assay neutron activation analysis, there is an improved correlation with gravel HMC Au and additional, undiscovered anomalies are developed. Assuming that the Alberta government silt samples are available to Cyprus, a unique opportunity exists to further examine gold distributions on the Ecstall Property at low costs. Alberta Geological Survey samples cover much of the Ecstall property (see attached maps).

RECOMMENDATIONS:

An option agreement with Ecstall should be sought. A proposed work program should include:

1) Acquisition of the AGS silt samples, preparation of silt HMC's and analysis by NAA for gold plus pathfinders. This work could be carried out in 1995.

2) Additional HMC sampling in under explored parts of the property (see maps accompanying this report).

3) Lithological sampling and analysis in anomalous areas. Analysis should include large sample or total assay techniques.

4) Property rationalization is forced by upcoming assessment requirements. Present data are not sufficient to allow this rationalization to be carried out with confidence. However, most gold anomalies occur between 550000 N and 560000N. Dropping ground outside this range would reduce the property by approximately 30%. Even so, additional rationalization would probably be required. This could be best carried out following analysis of the Alberta Geological silt samples.

DESCRIPTION OF ACCOMPANYING DATA

The following maps accompany this report:

1:125,000 North and South sheets Au, As, Mo, Sb in Heavy Mineral Concentrates
1:125,000 North and South sheets coloured AGS geological base maps
1:125,000 North and South sheets stream silt Ecstall and AGS data
1:250,000 Au, As, Sb, Mo in HMC's

All data are stored in a FoxPro digital database prepared by Rubicon Minerals Corporation

DESCRIPTION OF ANOMALIES

All anomalies determined from visual inspection of data, no statistical analysis of the data has been carried out.

SOUTH SHEET

AREA	Au(>500ppb)	Sb(>20ppm)	As(>50ppm)	Mo(>30ppm)
West Castle River: generally draining Precambrian sediments 9 samples	3/7 anomalous. 370,870,**5100ppb**	no anomalies	1/9 anomalous. 100ppm	2/9 anomalous. 30,150ppm
Mill Creek area: generally subdued topo. L-U Cret seds include. Crowsnest Fm. Local thrusting. 2 samples	1/2 **2690ppb**	1/2	2/2 298,148ppm	1 42ppm
Carbondale-Lost Creek area: L-U Cret include Crowsnest, overthrust PC seds. 26 samples	6/26 430,430,450,510 **35,200**	0/26	2/26 58,86	1/26 30ppm
Lynx Creek: north of Carbondale. 3 samples	0/3	0/3	1/3 170ppm	1/3 30ppm
Crowsnest Area: extensive source area from Crowsnest Pass. 8 samples	6/8 852,**1980, 2420, 5600, 6880, 8830ppb**	**1/8**	2/8 58,86ppm	3/8 21,80,83
East of Racehorse Ck: 2 samples	2/2 420,**1180**			
Racehorse Creeks areas: 23 samples	3/23 600, **1080, 26,000**	6/23 up to 58ppm	8/23 up to 410ppm	11/23 up to 80 ppm

NORTH SHEET

Generally sample areas underlain by folded, thrusted L-U Cretaceous sequence. Crowsnest formation absent or rare. Anomalies more common in Upper Cretaceous?

AREA	Au	Sb	As	Mo
Dutch Ck 4 Samples	3/4 **1130,4090,8070**	3/4 up to 58ppm	4/4 up to 342ppm	2/4 up to 58ppm
Hidden Ck: 3 Samples	2/3 500,**13,500**	3/3 up to 33ppm	2/3 up to 116ppm	3/3 up to 33ppm
:Livingstone/ Oldman/Savanna: 4 Samples	2/4 **2520,5780ppb**	1/4 up to 18ppm	2/4 up to 118	4/4 up to 65ppm
Cataract Ck: 4 Samples	1/4 up to **4600ppb**	4/4 up to 58ppm	4/4 up to 180ppm	4/4 up to 50ppm
Etherington Ck: 8 Samples	3/8 **1400,1600,>10,000ppb**	6/8 up to 96ppm	8/8 up to 260ppm	6/8 up to 40ppm
Sheppard Ck 2 Samples	1/2 **26,700**			
Pekisko Ck: 5 Samples	2/5 **2900,4200ppb**	4/5 to 80 ppm	3/5 up to 140ppm	3/5 up to 40ppm
S. Pekisko Ck 2 Samples	2/2 **3000,5300**			
Highwood Ck: 2 Samples	1/2 760ppb	1/2 up to 38ppm	1/2 up to 120ppm	2/2 up to 50
Sheep Ck: 1 Sample	1/1 **5330**			
Coal Ck: 1 Sample	1/1 **2800ppb**	1/1 up to 16ppm	1/1 up to 114ppm	1/1 up to 24ppm

ECSTALL MINING CORPORATION
#307 - 475 HOWE STREET,
VANCOUVER, B.C., V6C 2B3
TELEPHONE: (604) 681-4402
FAX: (604) 681-1562 / E-MAIL: CGRAF@ECSTALL.COM

December 18, 1995

Alberta Energy
Attention: Mr. Brian Hudson
Petroleum Plaza-North Tower
9945 108 Street
Edmonton, Alberta
T5K 2G6

Dear Mr. Hudson:

RE: MINERAL PERMITS 9393080 (220-231), (287-297), (300-304), (370-380)

Further to your letters of November 17, 20, 21 and 22, 1995 this response is written to describe certain land areas, within the above captioned mineral permits which I, as agent for Ecstall Mining Corporation, wish to retain.

On the enclosed table I have listed the selected lands within Ecstall's mineral permits that are to be retained (10,148 hectares in total), all but three are west of the 5th meridian. An assessment report describing the geological/geochemical sampling work carried out by Ecstall on these mineral permits was sent to your office December 15, 1995. Ecstall's exploration expenditures incurred carrying out this work were $50,740.

I trust you will find everything in order but if you require further information please do not hesitate to contact me.

Sincerely,
ECSTALL MINING CORPORATION

[redacted]

Chris Graf, P.Eng.,
President

Enclosure

PROSPECT	MINERAL PERMIT #	TOWNSHIP	RANGE	SECTION
RACEHORSE CREEK GOLD	9393080297 "	10 10	4 4	7 ALL 18 ALL
" "	" "	10 10	5 5	2 ALL 3 ALL
BURMIS	9393080300	5	2	12NW1/4
MAGNETITE	"	5	2	12NE1/4
GRIZZLY COPPER	9393080301	4	3	22 ALL
"	"	4	3	21NE1/4
"	"	4	3	28 ALL
"	"	4	3	27 ALL
"	"	4	3	32 ALL
"	"	4	3	33 ALL
SPIONKOP	9393080304	3	1	8NE1/4
COPPER	"	3	1	9SE1/4
"	"	3	1	9SW1/4
"	"	3	1	9NW1/4
"	"	3	1	16SW1/4
(west of 4th meridian)	"	3	30	16SW1/4
"	"	3	30	17NE1/4
"	"	3	30	17SE1/4
PEKISKO	9393080371	16	2	6 ALL
CREEK	"	16	2	7 ALL
DIAMONDS	"	16	2	8 ALL
"	9393080372	16	3	32 ALL
"	"	16	3	33 ALL
"	9393989373	17	3	10 ALL
"	"	17	3	3 ALL
"	"	17	3	4 ALL
"	"	17	3	15 ALL

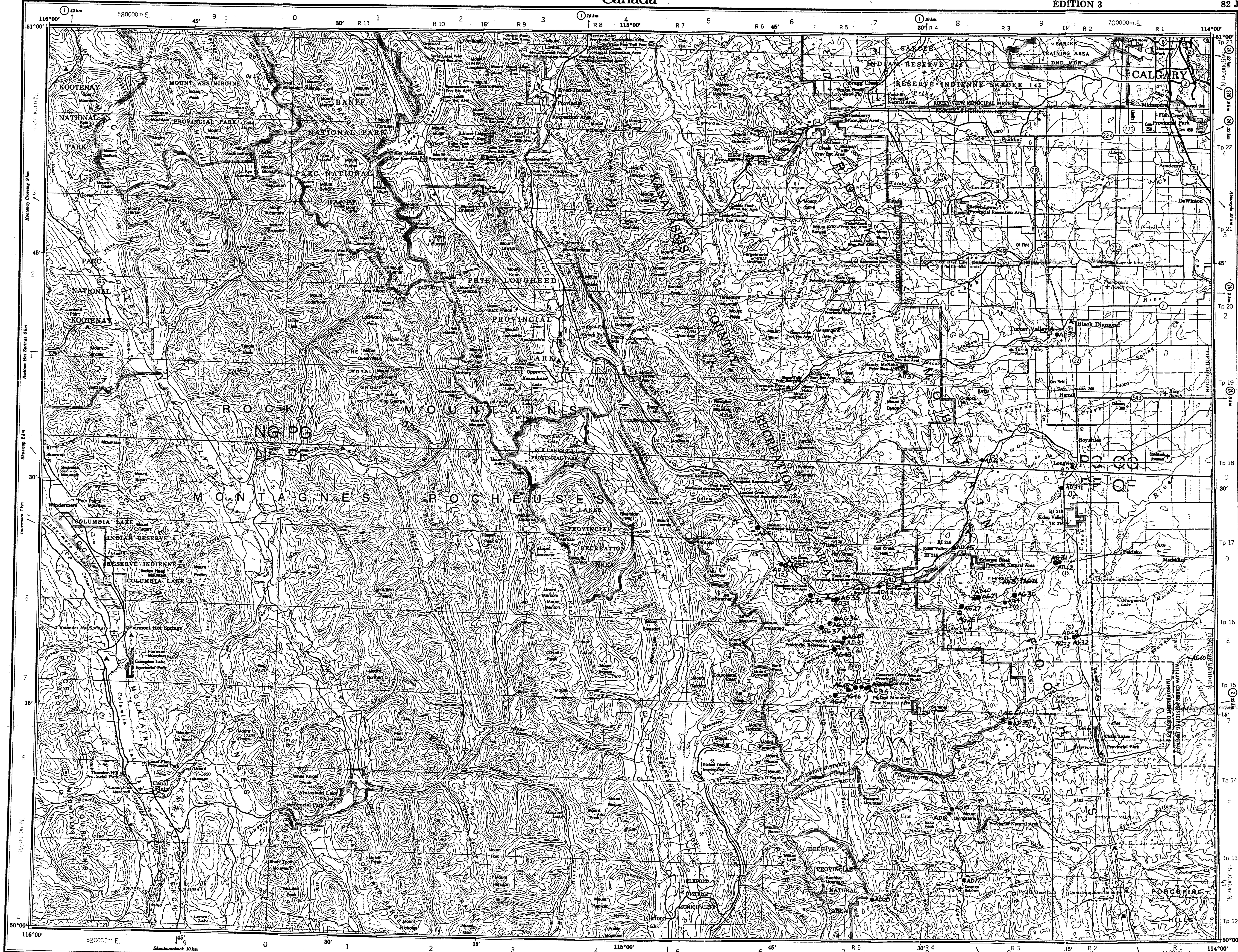
82 J EDITION 3 Canada ÉDITION 3 82 J

KANANASKIS LAKES

82 J

EDITION 3 ÉDITION

Military users, refer to this map as: Référence de cette carte pour usage militaire:	SERIES A 502 SÉRIE	
	MAP 82 J CARTE	
	EDITION 3 MCE ÉDITION	



TEN THOUSAND METRE UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 11

QUADRILLAGE UNIVERSEL TRANSVERSE DE MERCATOR DE DIX MILLE MÈTRES

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KANANASKIS LAKES

ALBERTA BRITISH COLUMBIA
ALBERTA COLOMBIE-BRITANNIQUE

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Scale 1:250 000 Échelle

FOR COMPLETE REFERENCE SEE REVERSE SIDE — POUR UNE LISTE COMPLÈTE DES SIGNES, VOIR AU VERSO

Magnetic declination 1991 varies from 19°37' easterly at centre of west edge to 18°46' easterly at centre of east edge. Mean annual change decreasing 7.0'.

En 1991, la déclinaison magnétique varie de 19°37' vers l'est au centre du bord ouest à 18°46' vers l'est au centre du bord est. La variation annuelle moyenne décroît de 7,0'.

CONVERSION SCALE FOR ELEVATIONS — ÉCHELLE DE CONVERSION DES ALTITUDES

CONTOUR INTERVAL 500 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES 500 PIEDS
Altitudes en pieds
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Index to adjoining Maps of the National Topographic System
Tableau d'assemblage du Système national de référence cartographique

82 N	82 O	82 P
82 K	82 J	82 I
82 F	82 G	82 H

Updated for features visible on 1987 satellite imagery.

Mise à jour pour illustrer les éléments cartographiques visibles sur les images satellite de 1987.

KANANASKIS LAKES
82 J
EDITION 3 ÉDITION

Energy, Mines and Resources Canada — Énergie, Mines et Ressources Canada

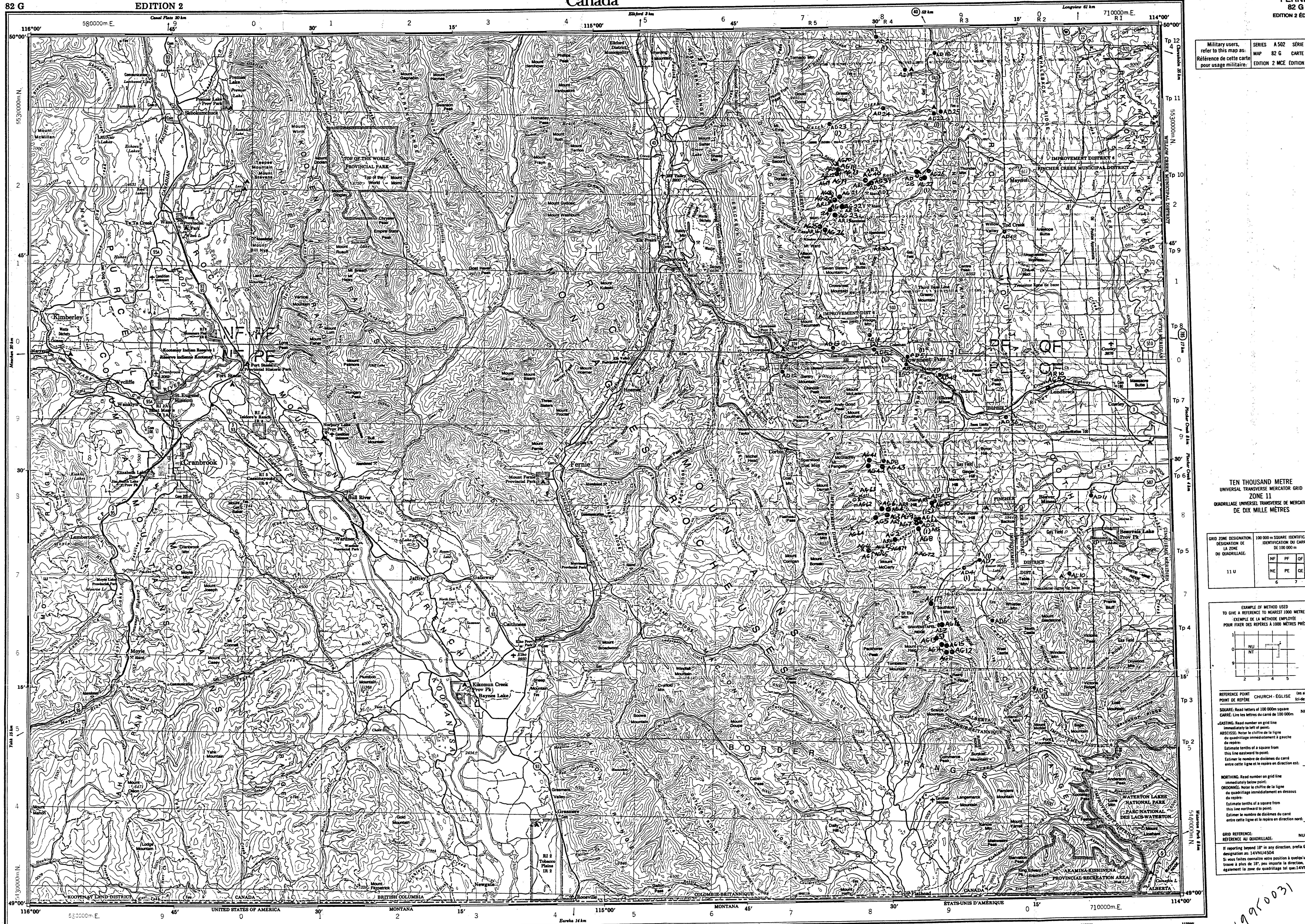
1995-0031

PLATE 6

82 G EDITION 2 Canada ÉDITION 2 82 G

FERNIE
82 G
EDITION 2 ÉDITION

Military users, refer to this map as:	SERIES A 502	SÉRIE
Référence de cette carte pour usage militaire:	MAP 82 G	CARTE
	EDITION 2 MCE	ÉDITION



TEN THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 11
QUADRILLAGE UNIVERSEL TRANSVERSE DE MERCATOR
DE DIX MILLE MÈTRES

GRID ZONE DESIGNATION: DÉSIGNATION DE LA ZONE DU QUADRILLAGE:	100 000 m SQUARE IDENTIFICATION IDENTIFICATION DU CARRÉ DE 100 000 m
11 U	NF PF QF / NE PE QE

EXAMPLE OF METHOD USED TO GIVE A REFERENCE TO NEAREST 1000 METRES
EXEMPLE DE LA MÉTHODE EMPLOYÉE POUR FIXER DES REPÈRES À 1000 MÈTRES PRÈS

REFERENCE POINT / POINT DE REPÈRE: CHURCH - ÉGLISE (as above) (ci-dessus)

SQUARE: Read letters of 100 000m square
CARRÉ: Lire les lettres du carré de 100 000m — NU

EASTING: Read number on grid line immediately to left of point:
ABSCISSE: Noter le chiffre de la ligne du quadrillage immédiatement à gauche du repère: — 4
Estimate tenths of a square from this line eastward to point:
Estimer le nombre de dixièmes du carré entre cette ligne et le repère en direction est: — 5 — 45

NORTHING: Read number on grid line immediately below point:
ORDONNÉE: Noter le chiffre de la ligne du quadrillage immédiatement en dessous du repère: — 0
Estimate tenths of a square from this line northward to point:
Estimer le nombre de dixièmes du carré entre cette ligne et le repère en direction nord: — 4 — 04

GRID REFERENCE: / RÉFÉRENCE AU QUADRILLAGE: NU4504

If reporting beyond 18° in any direction, prefix Grid Zone designation as: 14VNU4504
Si vous faites connaître votre position à quelqu'un qui se trouve à plus de 18°, peu importe la direction, indiquez également la zone du quadrillage tel que: 14VNU4504

1995 0031

1979	1967
1980	1975

Updated for all major features using satellite imagery obtained in 1984.
Les éléments importants ont été mis à jour à l'aide d'images prises par satellite en 1984.

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FERNIE
BRITISH COLUMBIA ALBERTA
COLOMBIE-BRITANNIQUE ALBERTA

Scale 1:250 000 Échelle

Miles 5 0 5 10 15 20 Milles
Kilometres 5 0 5 10 15 20 25 30 Kilomètres

Roads:	Routes:		
hard surface	revêtement dur	dual highway / double chaussée	more than 2 lanes / plus de 2 voies
hard surface	revêtement dur	2 lanes / 2 voies	less than 2 lanes / moins de 2 voies
loose or stabilized surface, all weather	gravier, aggloméré, toute saison	2 lanes or more / 2 voies ou plus	less than 2 lanes / moins de 2 voies
loose surface, dry weather	de gravier, temps sec		
cart track	de terre		
trail, cut line or portage	sentier, percée ou portage		

FOR COMPLETE REFERENCE SEE REVERSE SIDE POUR UNE LISTE COMPLÈTE DES SIGNES, VOIR AU VERSO

Magnetic declination 1989 varies from 18°49′ easterly at centre of west edge to 17°59′ easterly at centre of east edge. Mean annual change decreasing 14.2′.

En 1989, la déclinaison magnétique varie de 18°49′ vers l'est au centre du bord ouest à 17°59′ vers l'est au centre du bord est. La variation annuelle moyenne décroît de 14,2′.

CONVERSION SCALE FOR ELEVATIONS — ÉCHELLE DE CONVERSION DES ALTITUDES

Metres 30 20 10 0 50 100 150 200 250 300 Mètres
Feet 100 50 0 100 200 300 400 500 600 700 800 900 1000 Pieds

CONTOUR INTERVAL 500 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES 500 PIEDS
Altitudes en pieds
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

82 K	82 J	82 I
82 F	82 G	82 H
USA É-U d'A	USA É-U d'A	USA É-U d'A

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Tableau d'assemblage du Système national de référence cartographique

FERNIE
82 G
EDITION 2 ÉDITION

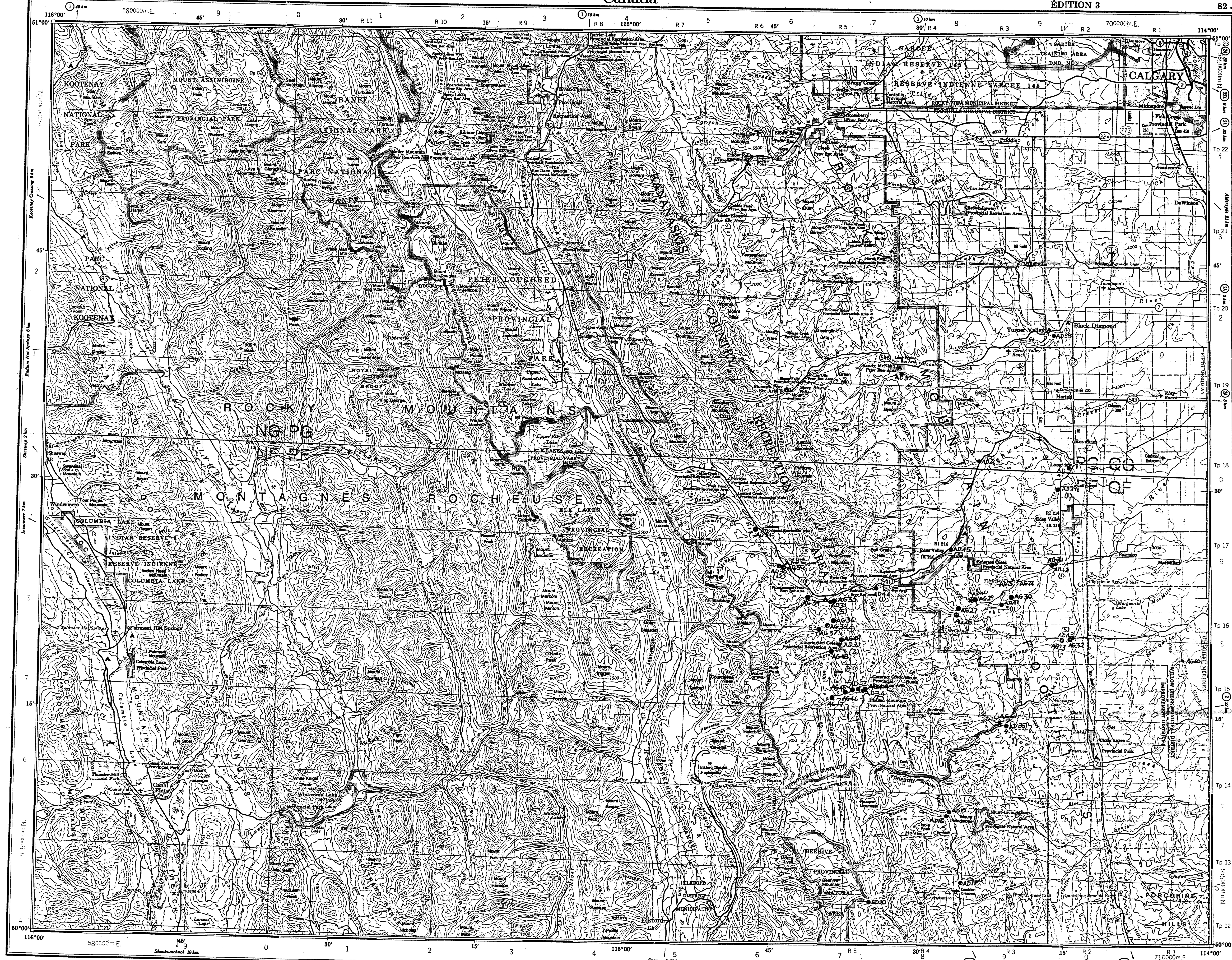
Energy, Mines and Resources Canada — Énergie, Mines et Ressources Canada

PLATE 7

82 J EDITION 3 Canada ÉDITION 3 82 J

KANANASKIS LAKES
82 J
EDITION 3 ÉDITION

Military users, refer to this map as: Référence de cette carte pour usage militaire:	SERIES	A 502	SÉRIE
	MAP	82 J	CARTE
	EDITION	3 MCE	ÉDITION



TEN THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 11
QUADRILLAGE UNIVERSEL TRANSVERSE DE MERCATOR
DE DIX MILLE MÈTRES

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ALBERTA COLOMBIE-BRITANNIQUE

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loose or stabilized surface, all weather	gravier, aggloméré, toute saison	2 lanes or more / 2 voies ou plus	less than 2 lanes / moins de 2 voies
loose surface, dry weather	de gravier, temps sec		
cart track	de terre		
trail, cut line or portage	sentier, percée ou portage		

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Scale 1:250 000 Échelle

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ÉQUIDISTANCE DES COURBES 500 PIEDS
Altitudes en pieds
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

82 N	82 O	82 P
82 K	82 J	82 I
82 F	82 G	82 H

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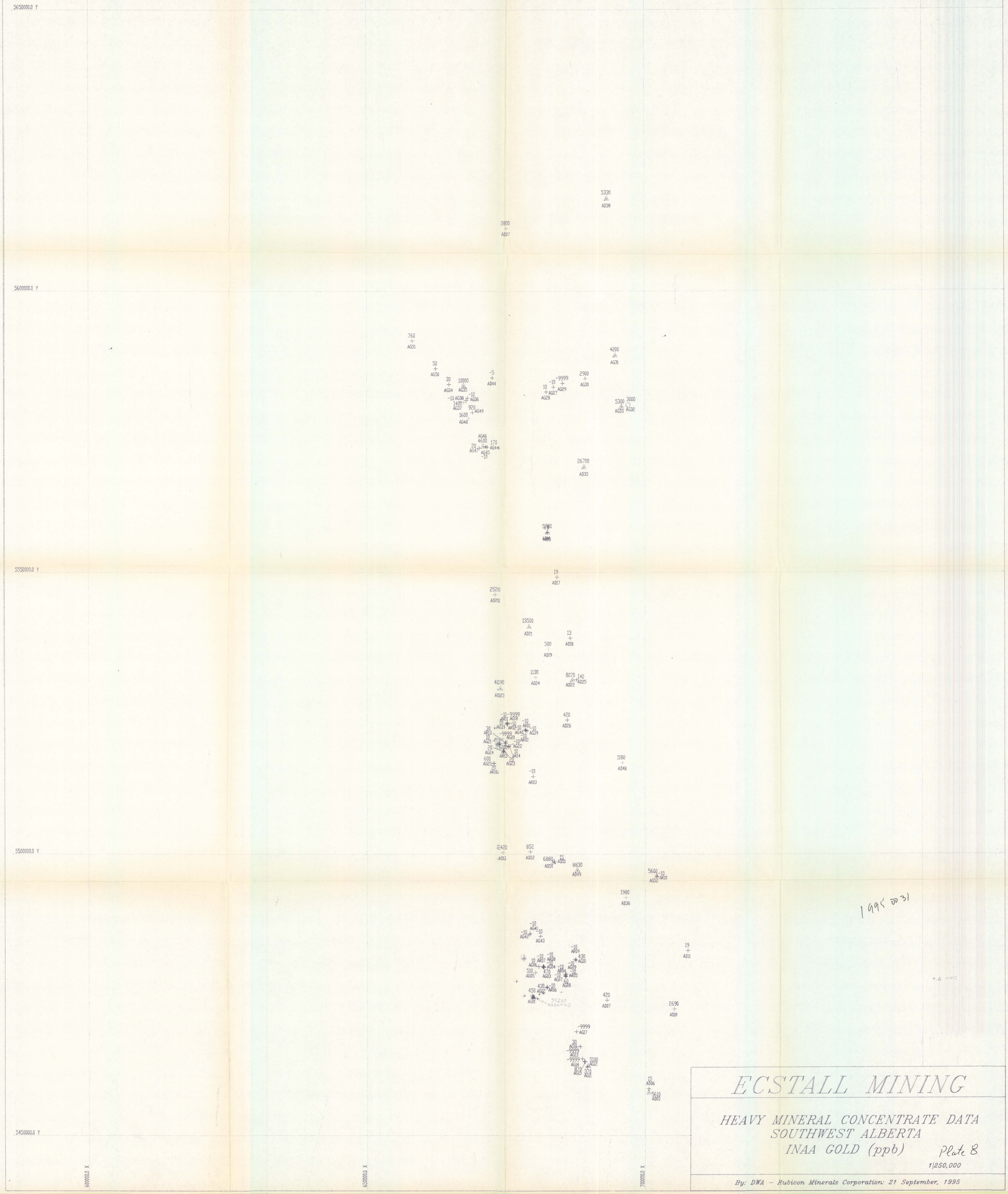
KANANASKIS LAKES
82 J
EDITION 3 ÉDITION

Energy, Mines and Resources Canada — Énergie, Mines et Ressources Canada

PLATE 6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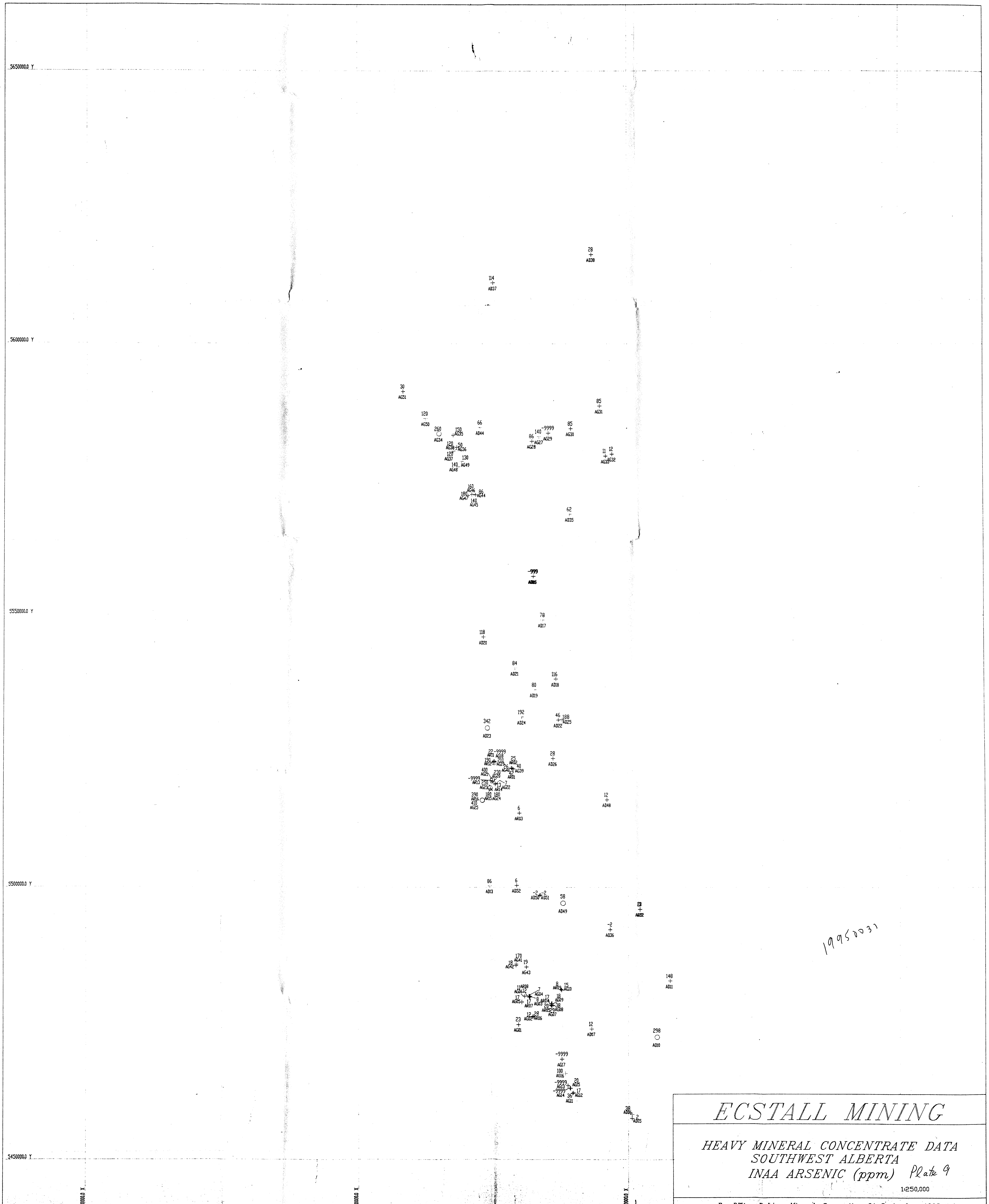
700000.0 X
ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA GOLD (ppb)
Plate 8
1|250,000
By: DWA - Rubicon Minerals Corporation: 21 September, 1995

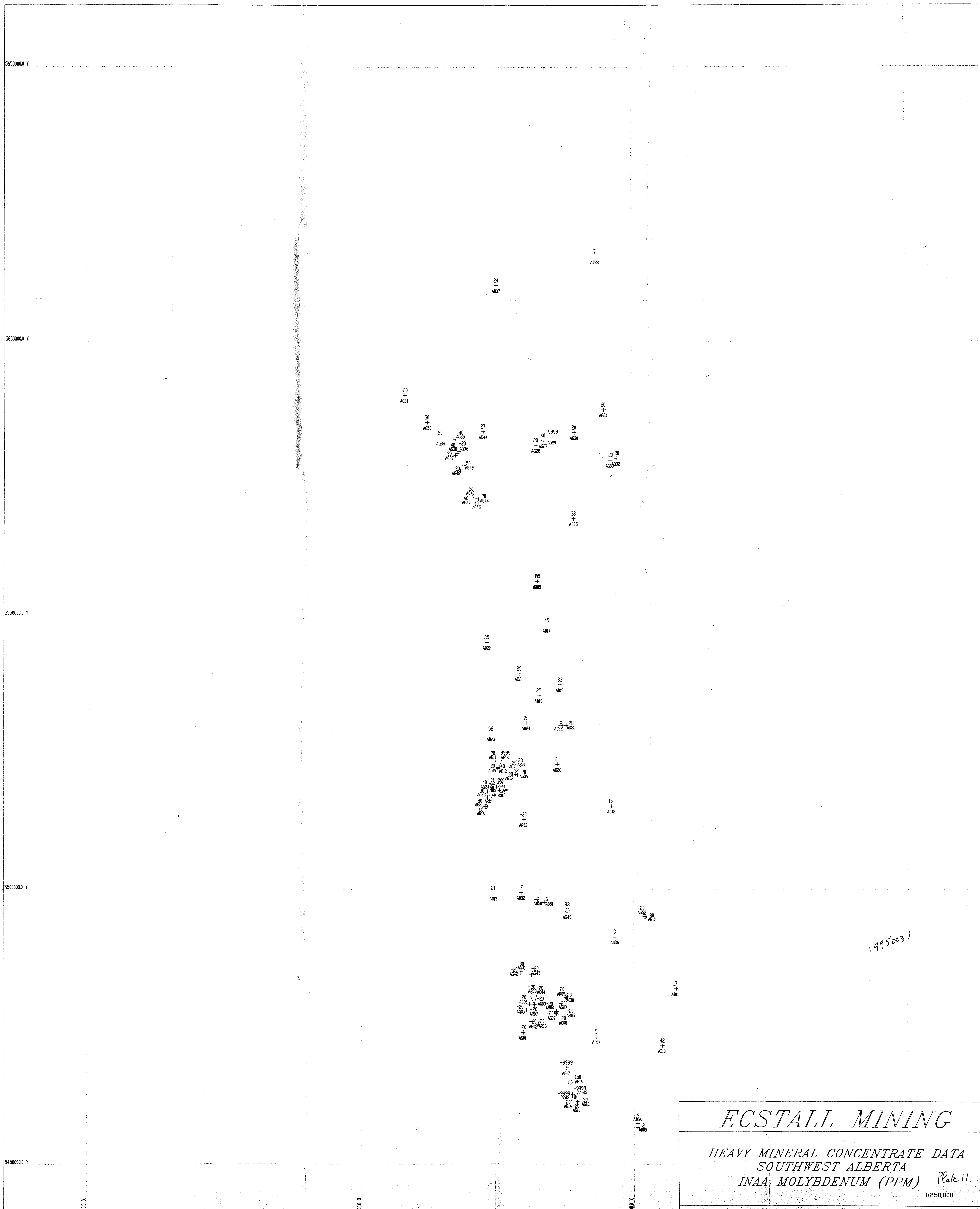


ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ARSENIC (ppm) Plate 9

1:250,000

By: DWA – Rubicon Minerals Corporation: 21 September, 1995


ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA MOLYBDENUM (PPM)
Plate 11
1:250,000
By: DWA - Rubicon Minerals Corporation: 21 September, 1995
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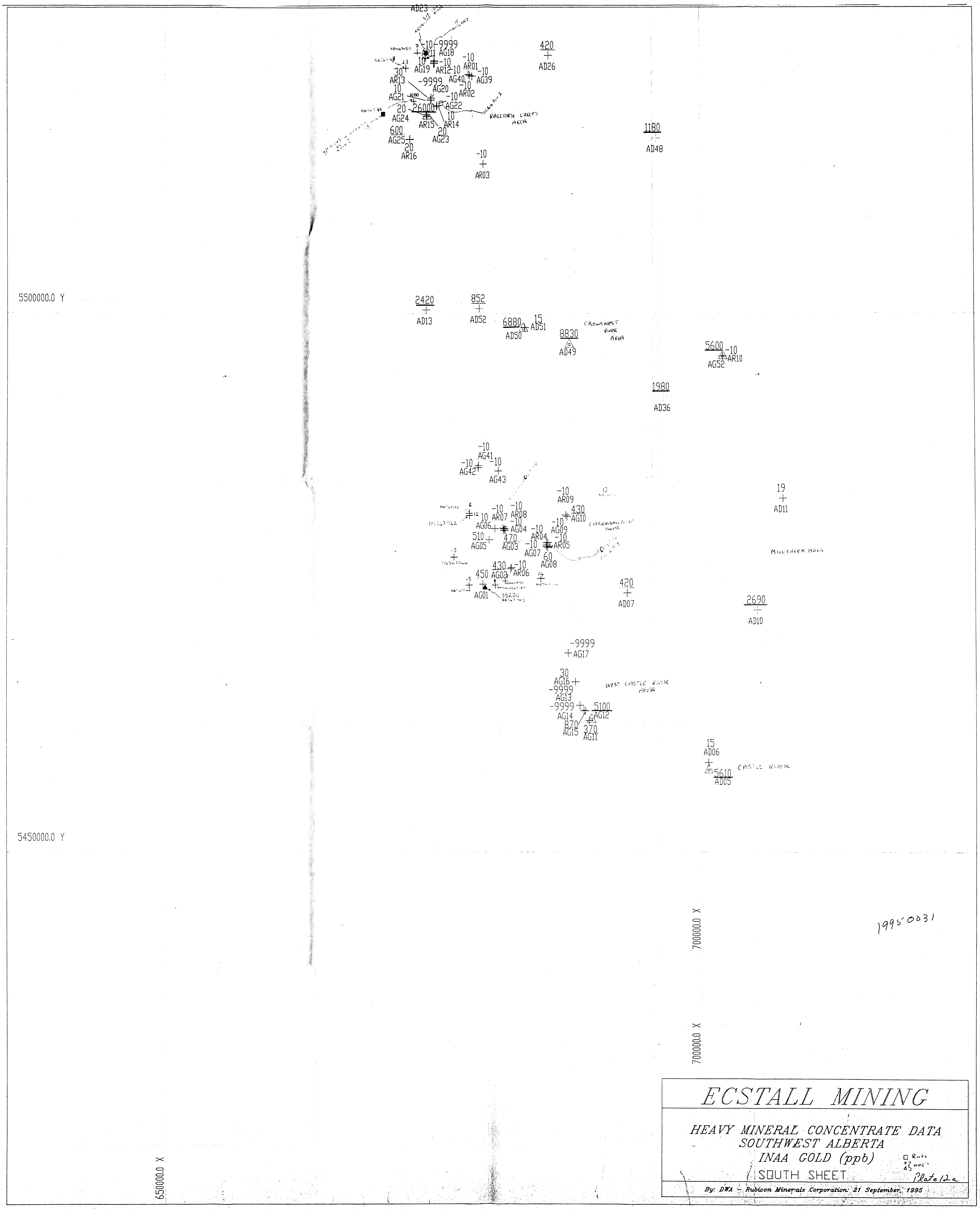
5550000.0 Y
5500000.0 Y
5450000.0 Y
600000.0 X
650000.0 X
700000.0 X
19950031



5500000.0 Y
5450000.0 Y
650000.0 X
700000.0 X
700000.0 X
RACEHORSE CREEKS AREA
CROWSNEST RIVER AREA
CARBONDALE RIVER AREA
MILL CREEK AREA
WEST CASTLE RIVER AREA
CASTLE RIVER
420 AD26
1180 AD48
-10 AR03
2420 AD13
852 AD52
6880 AD50
15 AD51
8830 AD49
5600 AG52
-10 AR10
1980 AD36
19 AD11
420 AD07
2690 AD10
-9999 AG17
5100 AG12
370 AG11
15 AD06
5610 AD05
1995-0031
ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA GOLD (ppb)
SOUTH SHEET
Plate 12a
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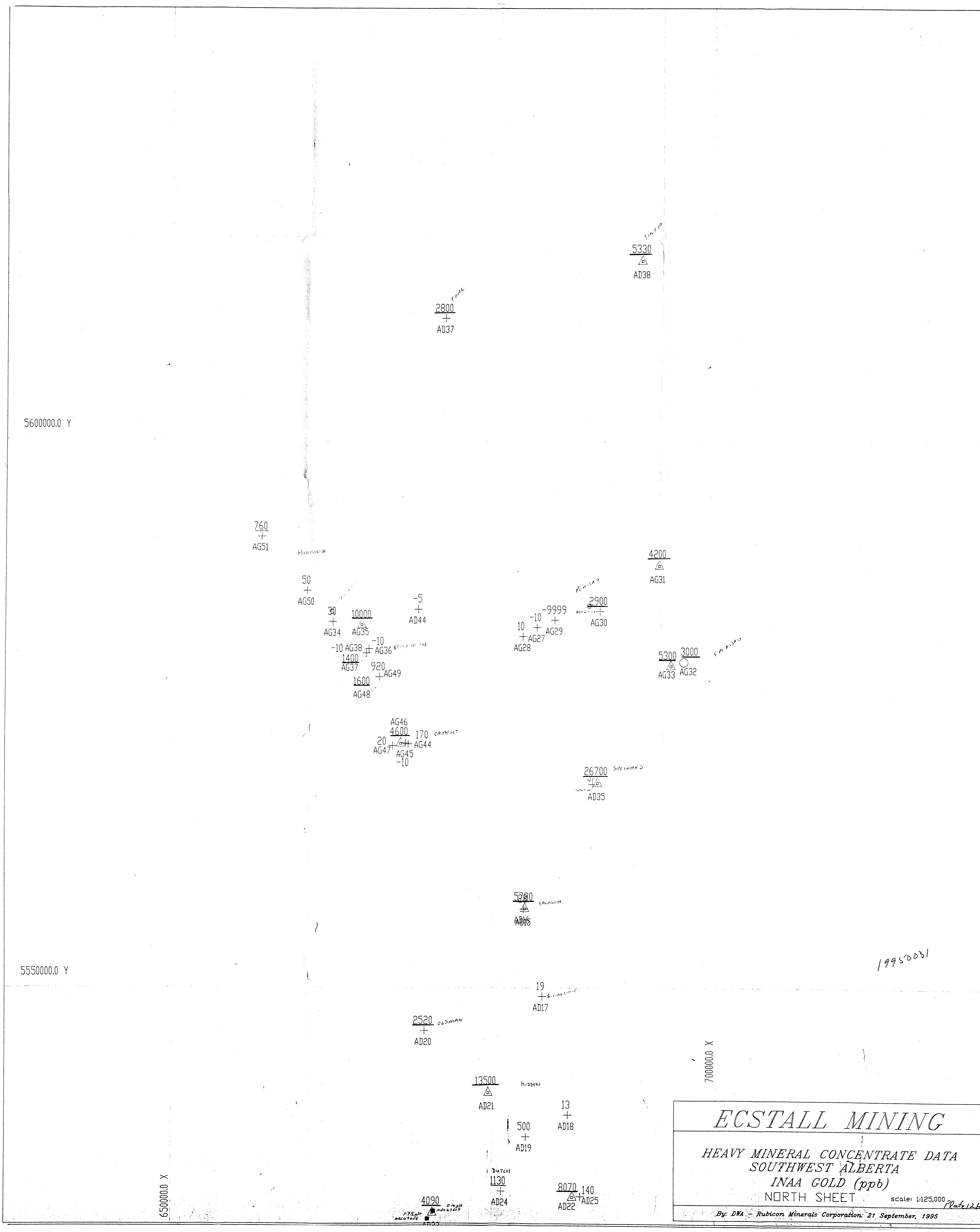
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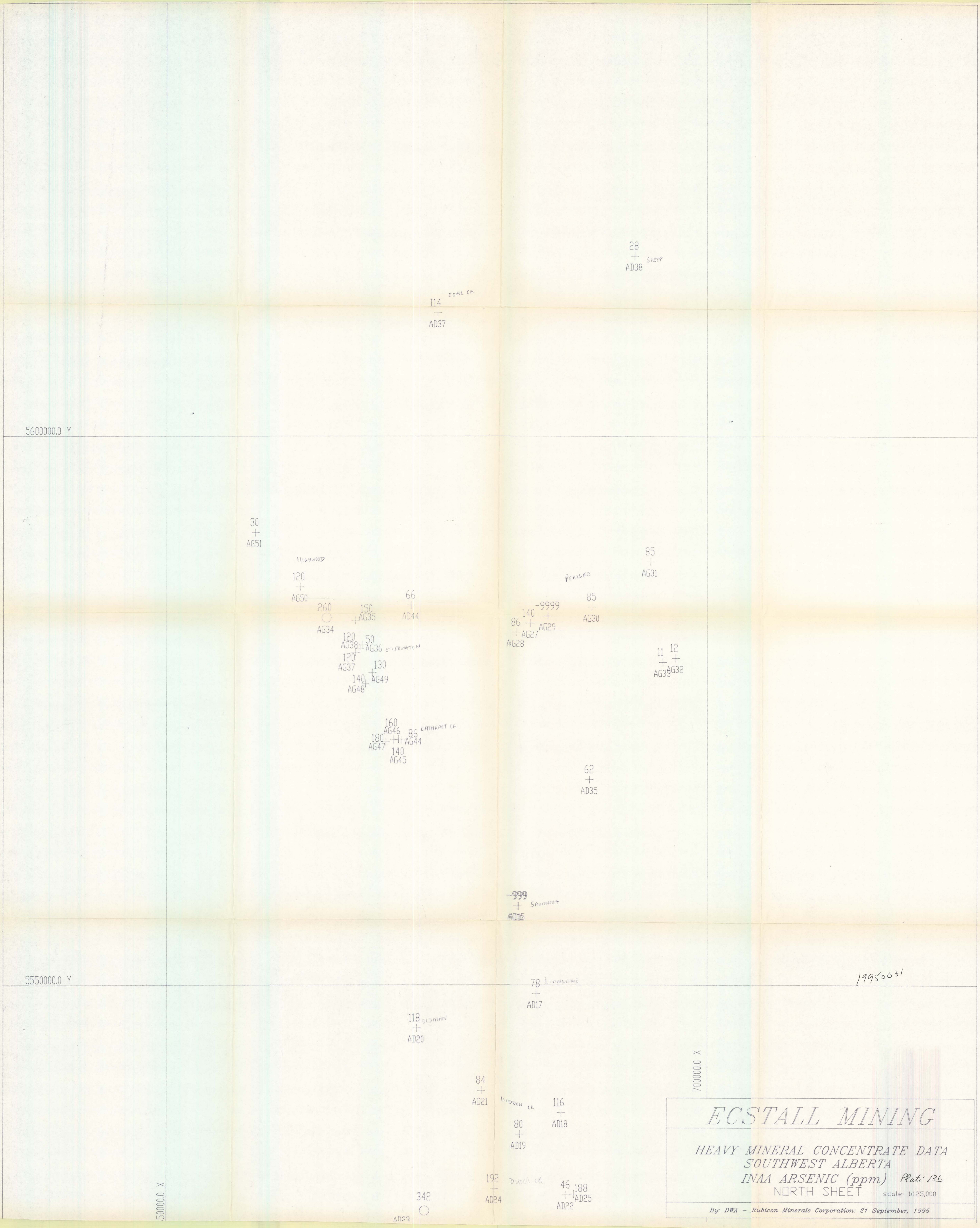
5330
AD38
2800
AD37
760
AG51
4200
AG31
50
AG50
-5
AD44
30
AG34
10000
AG35
-10 AG38
-10
AG36
1400
AG37
920
AG49
1600
AG48
-9999
AG29
-10
AG27
10
AG28
2900
AG30
5300
AG33
3000
AG32
AG46
4600
170
AG44
20
AG47
AG45
-10
26700
AD35
19
AD17
2520
AD20
13500
AD21
13
AD18
500
AD19
1130
AD24
8070
AD22
140
AD25
4090
19950031
ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA GOLD (ppb)
NORTH SHEET
scale: 1:125,000
By: DWA - Rubicon Minerals Corporation 21 September, 1995

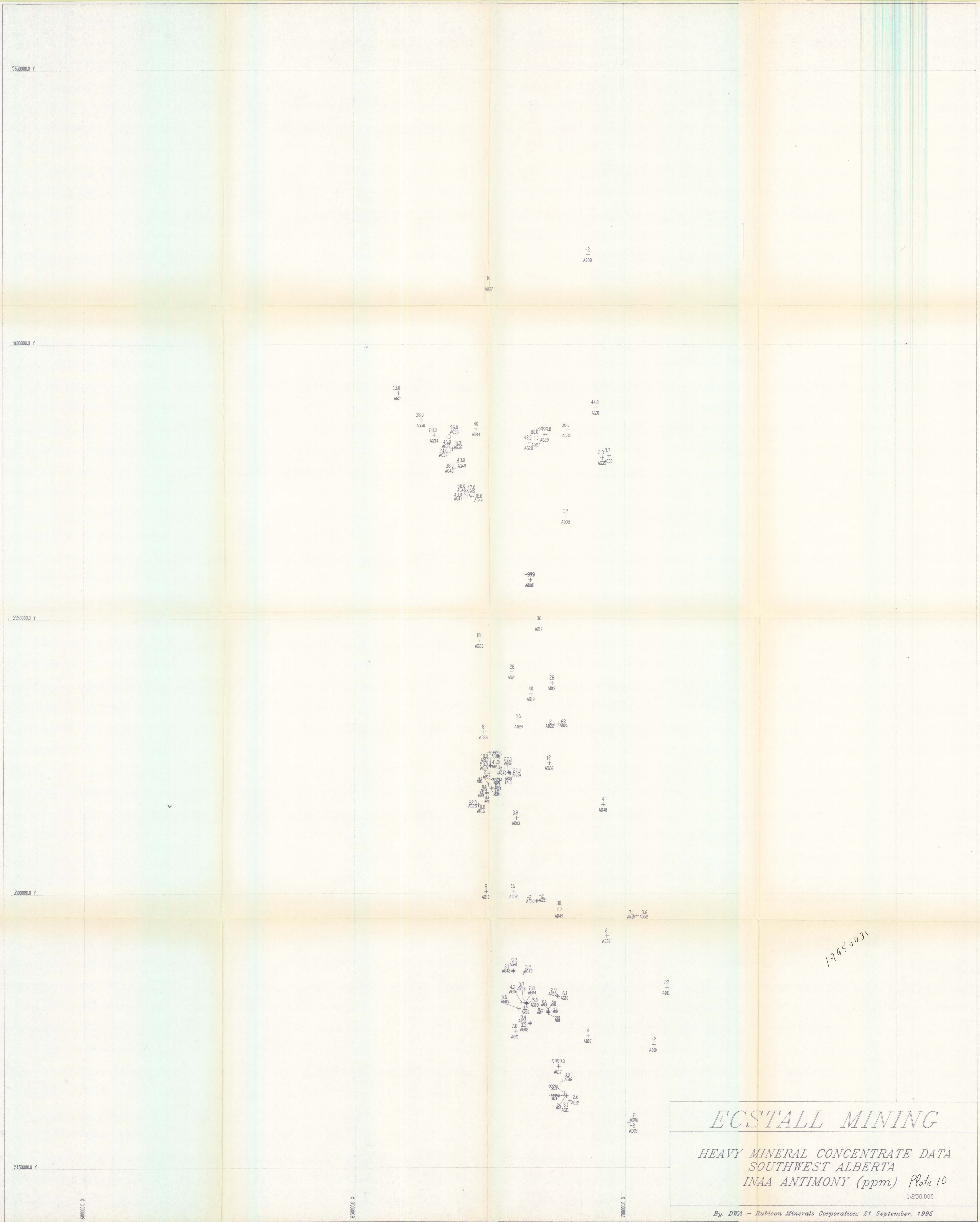
ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ARSENIC (ppm)
plate 13a
scale 1:125,000
By: DWA - Rubicon Minerals Corporation: 21 September, 1995
5500000.0 Y
5450000.0 Y
650000.0 X
700000.0 X
RACEHORSE CK AREA
CROWSNEST RIVER AREA
LYNX CK AREA
CARBONDALE - LOST CREEK AREA
MILL CREEK
WEST CASTLE RIVER AREA
19950031



ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ARSENIC (ppm) Plate: 13b
NORTH SHEET scale: 1:125,000

By: DWA – Rubicon Minerals Corporation: 21 September, 1995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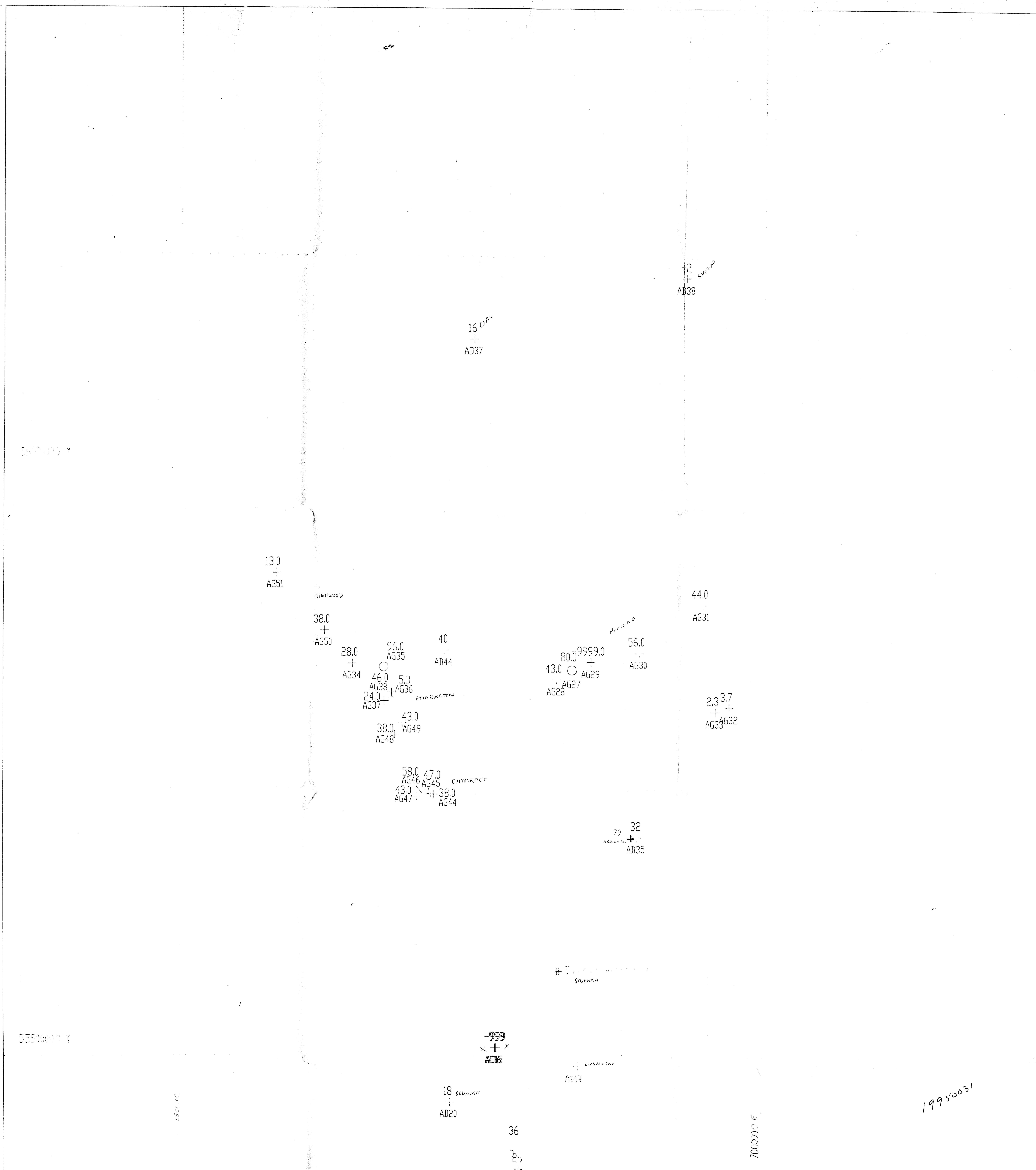
700000.0 X
19950031
ECSTALL MINING
HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ANTIMONY (ppm) Plate 10
1:250,000
By: DWA - Rubicon Minerals Corporation: 21 September, 1995



ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ANTIMONY (ppm)

Plate 14a

NORTH SIDE

scale: 1:125,000

By: DWA – Rubicon Minerals Corporation: 21 September, 1995

19950031

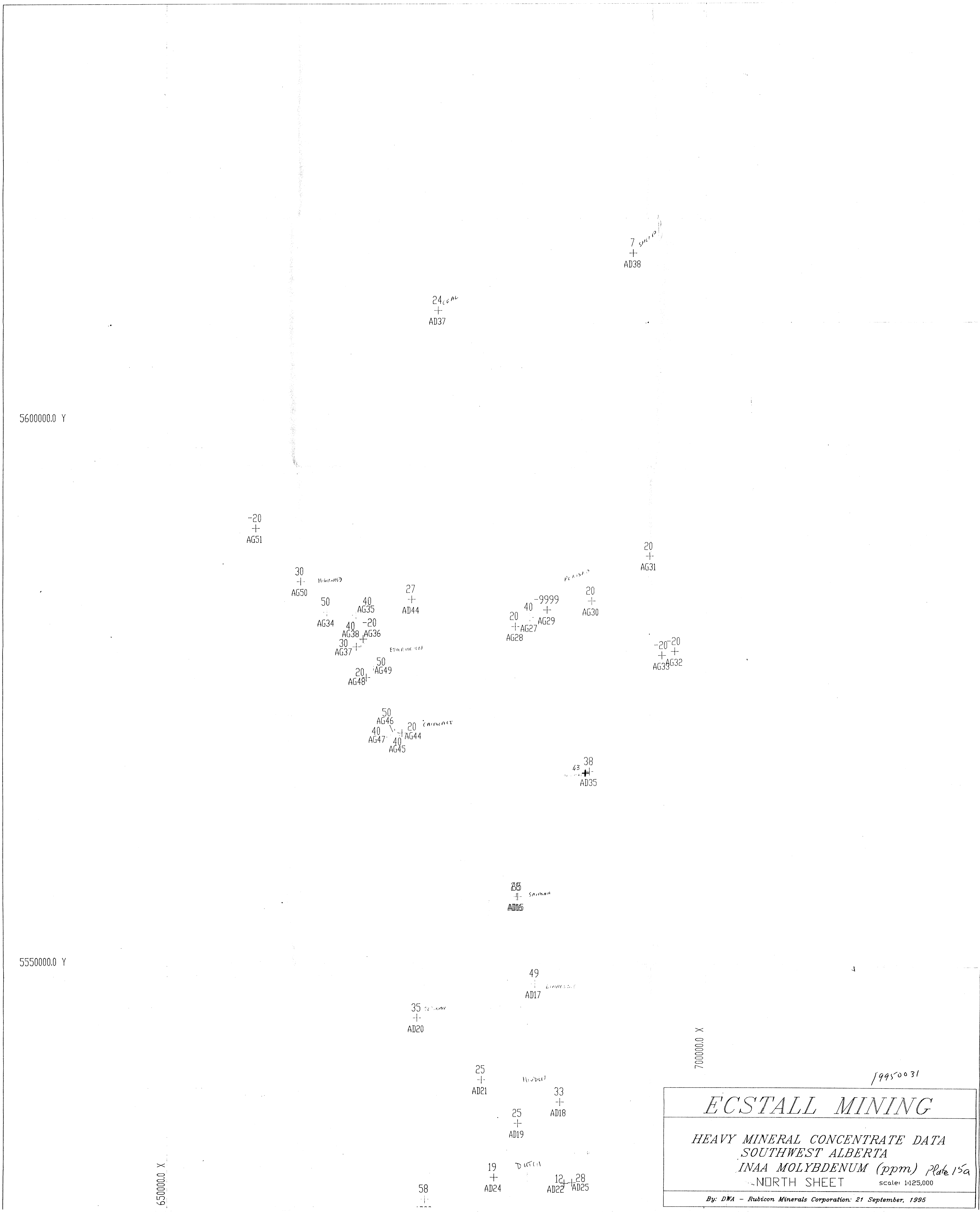
ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA ANTIMONY (ppm)

Plate 4b

scale 1:125,000

By: DWA – Rubicon Minerals Corporation: 21 September, 1995



19950031

ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA MOLYBDENUM (ppm) Plate 15a
NORTH SHEET scale: 1:125,000

By: DWA – Rubicon Minerals Corporation: 21 September, 1995

19950031

ECSTALL MINING

HEAVY MINERAL CONCENTRATE DATA
SOUTHWEST ALBERTA
INAA MOLYBDENUM (ppm)

Plate 15b

SOUTH SHEET

scale 1:125,000

By: DWA - Rubicon Minerals Corporation: 21 September, 1995