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Volume I of II

THE SOUTHERN ALBERTA RIFT IN SOUTHWEST ALBERTA

PROGRAM TO IDENTIFY TARGETS

FOR METALLIC MINERAL EXPLORATION

(CANADA-ALBERTA MDA PROJECT M92-04-002)

ALBERTA RESEARCH COUNCIL OPEN FILE REPORT 1993-13A

R.A. Olson Consulting Ltd.

March, 1993

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ACKNOWLEDGMENTS AND DISCLAIMER

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This report and its contents, the project of which it is submitted and the conclusions and recommendations arising from it do not necessarily reflect the view of either the Government of Canada, its officers, employees or agents, or the Government of Alberta, its officers, employees or agents.

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THE SOUTHERN ALBERTA RIFT IN SOUTHWEST ALBERTA

PROGRAM TO IDENTIFY TARGETS

FOR METALLIC MINERAL EXPLORATION

(CANADA-ALBERTA MDA PROJECT M92-04-002)

SUMMARY

The Southern Alberta Rift project area is centred on 49°45' N latitude and 114°30' W longitude in southwest Alberta, and comprises all or parts of National Topographic System map-sheets 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.

The 1992 field program was conducted to search for and document features that are indicative of metallic mineral deposits that might be associated with an ancient, but long-lived rift, which is named the Southern Alberta Rift. This work was supplemented by a regional reconnaissance geochemical stream sediment survey that was conducted in order to provide a geochemical database to aid in mineral exploration, and to provide background data for resource assessment and environmental studies. A total of 415 geochemical stream sediment samples were collected from 394 different sites. As well, a total of 164 rock samples were collected from selected mineral occurrences and anomalies. The stream sediment and rock samples were analyzed for a variety of elements of potential interest to industry. Nineteen metallic mineral occurrences were discovered and seven previously known occurrences or prospects were examined. The results of the 1992 stream sediment and rock sampling, and of prior exploration from assessment records, indicate that intriguing geochemical anomalies exist in southwest Alberta. Rock samples from newly discovered metallic mineral occurrences assay up to 227 parts per million copper, 184 parts per million lead, 798 parts per million zinc and 0.7 parts per million silver, with elevated concentrations of arsenic, barium, cadmium and molybdenum. Stream sediment samples assay up to 99 parts per billion gold, 0.8 parts per million silver, 51 parts per million copper, 29 parts per million lead, 213 parts per million zinc, with anomalous concentrations of other elements such as antimony, arsenic, barium, cadmium, cobalt, mercury, molybdenum, nickel and uranium. Rock samples from known metallic mineral prospects and occurrences assay up to 3.48 % copper, 12.1 % lead, 19.5 % zinc and 118.6 parts per million silver. The available records of prior exploration indicate that there has not been a large amount of systematic detailed exploration in the Proterozoic and Phanerozoic rocks of southwest Alberta. This coupled with the results of the 1992 Southern Alberta Rift program, indicate that the potential for discovery of important metallic mineral deposits in southwest Alberta is good.

A large number of metallic mineral occurrences and deposits exist in southwest Alberta, in southeast British Columbia and in the adjacent areas of the 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 central British Columbia, (f) diamondiferous kimberlite/lamproite diatremes or placer deposits derived from these rocks, and (g) sediment hosted uranium 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.

INTRODUCTION

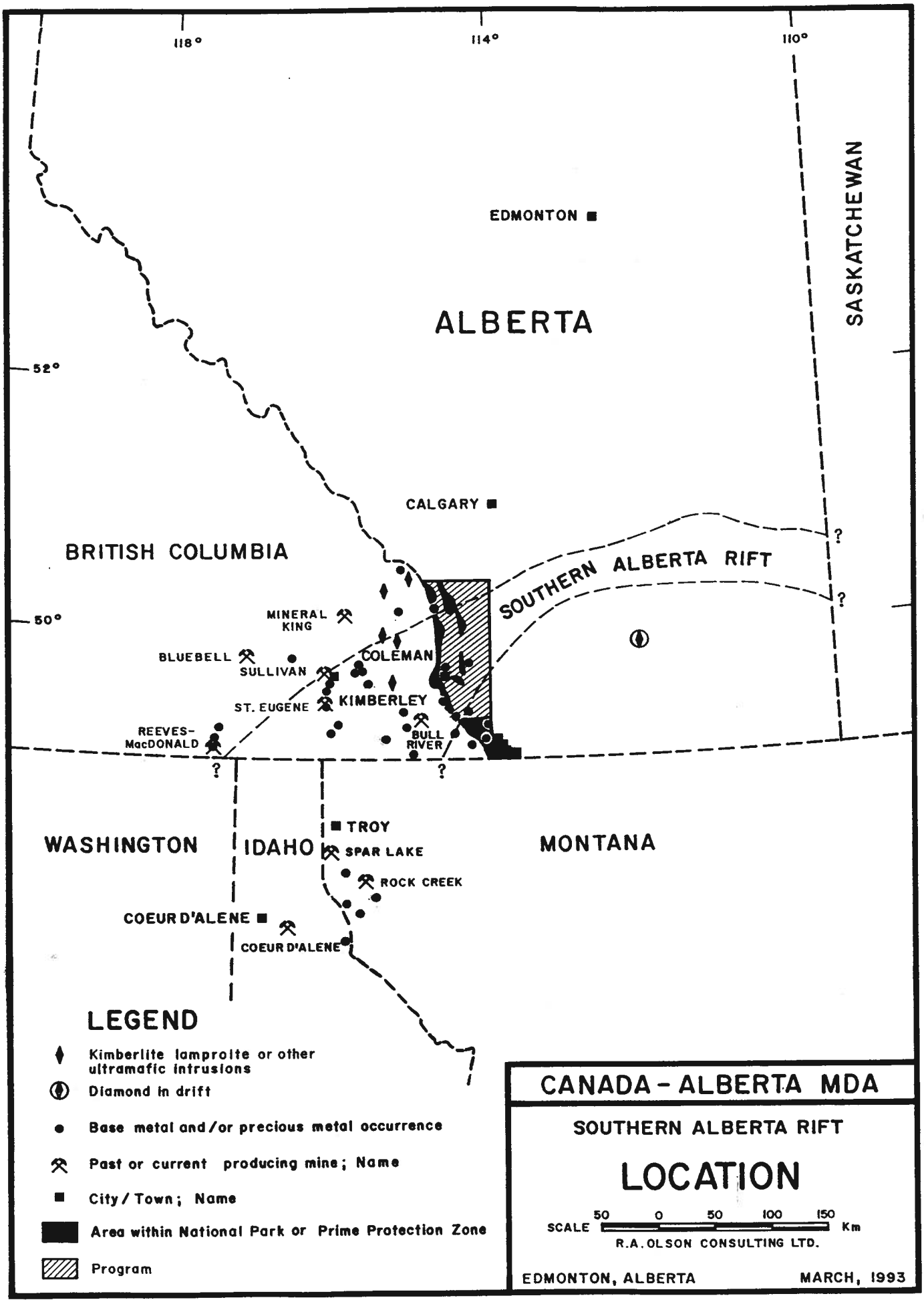
R.A. Olson Consulting Ltd. (RAOCL) was advised on June 1, 1992 by Ms. K. Cochrane, Director, Minerals Research of the Alberta Department of Energy, that RAOCL's proposed project entitled "Geological Mapping, Prospecting and Sampling of the Southern Alberta Rift in Southwest Alberta to Identify Potential Targets for Metallic Mineral Exploration" had been approved by the Management Committee of the Canada-Alberta Partnership Agreement on Mineral Development (hereafter referred to as the Canada-Alberta 'MDA'). The approved research project (M92-04-002) is governed by the Non-Petroleum Mineral Development Agreement between Her Majesty the Queen in Right of Alberta, and RAOCL that is dated June 8, 1992.

Pre-field office work on the project commenced on June 8, 1992, and field work was performed between August 16 and October 15. The post-field analysis of data and preparation of the final report was completed on March 31, 1993.

LOCATION, ACCESS, PHYSIOGRAPHY

The Southern Alberta Rift project area is centred on 49°45' N latitude and 114°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 1,500 m by loose all-weather roads is common. Access to the higher elevation backwoods areas can be achieved in dry weather by four-wheel drive vehicles and by foot. A helicopter would be beneficial for exploration of the steeper mountain ridges.


118°
114°
110°
EDMONTON
ALBERTA
SASKATCHEWAN
52°
CALGARY
BRITISH COLUMBIA
SOUTHERN ALBERTA RIFT
50°
MINERAL KING
BLUEBELL
SULLIVAN
COLEMAN
ST. EUGENE
KIMBERLEY
REEVES-MacDONALD
BULL RIVER
WASHINGTON
IDAHO
TROY
SPAR LAKE
ROCK CREEK
MONTANA
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
Program
CANADA - ALBERTA MDA
SOUTHERN ALBERTA RIFT
LOCATION
SCALE 50 0 50 100 150 Km
R.A. OLSON CONSULTING LTD.
EDMONTON, ALBERTA
MARCH, 1993

The Southern Alberta Rift area is comprised of 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 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 northeastern 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 rocks. 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 Paleozoic 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 (Hedley 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 million 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 (Gillis 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 Creek. During the 1950's, extensive exploration including trenching, drilling and metallurgical testing, was performed on the Burmis and Dungarvan magnetite deposits. The intent of this work 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 deposits 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). The Dungarvan magnetite deposit is currently close to a production decision (Hamilton *pers. comm.* 1993).

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 18 km southeast of Upper Kananaskis 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 at the southern boundary of Kananaskis Country in the late 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 a 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 80 km west of Calgary on the Ghost River (Hoffmann 1885), 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 Ag/t (0.95 oz 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 may have been collected from Middle Cambrian Cathedral Formation limestone just above a thrust fault that separates it from Cretaceous Brazeau 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'Donnell 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 known copper occurrences in the Clark Range and 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 groundwater 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 of the 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 diamondiferous lamproites.

LAND STATUS AND LAND USE

The Southern Alberta Rift project encompasses a total area of about 7,320 km^2 (Table I). Approximately 77 per cent (5,660 km^2) of the project area is available for mineral exploration. The other 23 per cent (1,660 km^2) is restricted from mineral exploration. As of March 1993, the mineral dispositions granted or currently under review comprise about 32 per cent (1,815 km^2) of the total area available for exploration. 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 integrated management of resources. Within the Southern Alberta Rift 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 Integrated Resource Plans were established between 1986 and 1988 to further refine the land use zoning as it applies to each sub-region. The Southern Alberta Rift program area is comprised of 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 integrated management objectives are specified. Land use zoning is employed as a means 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 the Southern Alberta Rift project area consists of the whole of the Kananaskis Country Sub-Region, the Prime Protection and Facility Development Zones

TABLE I
LAND STATUS
SOUTHERN ALBERTA RIFT

LAND STATUS	SOUTHERN ALBERTA RIFT PROJECT AREA (km^2)	AREA OF RESTRICTED LAND USE (km^2)	AREA AVAILABLE FOR MINERAL EXPLORATION (km^2)	AREA PRESENTLY COVERED BY MINERAL DISPOSITIONS (km^2)
Prime protection zoning	--	930	--	--
Facility development zoning	--	36	--	--
Provincial parks (Beauvais Lake & Chain Lakes)	--	12	--	--
Indian reserve (Eden Valley)	--	17	--	--
Kananaskis Country resource management area	--	665	--	--
Mineral dispositions (granted)	--	--	--	85
Mineral dispositions (under review)	--	--	--	1,730
Freehold land	--	--	--	900
Total	7,320	1,660	5,660	1,815

within the Livingstone River-Porcupine Hills and Castle River Sub-Regions, the Beauvais Lake and Chain Lakes Provincial Parks and the Eden Valley Indian Reserve. This restricted area for mineral exploration represents only 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 areas designated as Prime Protection Zones.

1992 PROGRAM

A large number of metallic mineral occurrences and deposits exist in southwest Alberta, in southeast British Columbia and in the adjacent areas of the northwestern United States of America (Figure 2). These occurrences and deposits are of several diverse types, and many of them are reported to be spatially related to an ancient, but long-lived rift, which is named the Southern Alberta Rift (Kanasewich 1968, Kanasewich *et al.* 1969). Examples of the more important deposits include: (a) synsedimentary base metal deposits such as Sullivan in British Columbia, and the stratabound copper deposits in Proterozoic rocks that exist in southwest Alberta, southeast British Columbia and at Spar Lake in northwest Montana, (b) vein-type base-precious metal deposits such as Bluebell in British Columbia and Coeur d'Alene in Idaho, (c) Mississippi Valley type base metal deposits such as the Metalline Falls and Van Stone deposits in northeastern Washington, the Monarch-Kicking Horse deposits near Field, British Columbia, and the Oldman River lead-zinc-silver prospect in southwest Alberta, (d) the Mount

Brussilof magnesite deposit in southeast British Columbia, and (e) placer gold deposits such as those along the Wild Horse River near Fort Steele, British Columbia.

In southwest Alberta, the existence of lithologically diverse host rocks, numerous faults and the Southern Alberta Rift make this area favourable for several types of metallic mineral deposits. It is believed that individual prospectors and the metallic mineral resource industry will be encouraged to explore southwest Alberta if geological and geochemical anomalies from past exploration, supplemented by data from the 1992 Southern Alberta Rift project, are compiled on suitable geological base maps and made available to industry to focus exploration.

The 1992 Southern Alberta Rift field program was conducted to search for and document features that are indicative of metallic mineral deposits. These indicator features include, for example, metallic mineral occurrences, alteration, gossans, veining, sedimentary facies changes in association with faults, high-angle faults related to tensional tectonics and other such favourable geological anomalies. Rock samples were collected from selected mineral occurrences and anomalies, and were analyzed for a variety of elements of potential interest to industry. As well, a regional, reconnaissance, geochemical stream sediment survey was conducted in southwest Alberta in order to provide a geochemical database to aid in mineral exploration, resource assessment and geological mapping, and to provide background data for environmental studies.

The 1992 fieldwork was conducted between mid-August and mid-October. Initially, a four-man crew was based out of Coleman, Alberta and fieldwork was concentrated in the southern portion of the Southern Alberta Rift project area. During the latter part of the program the four-man crew was based out of Black Diamond, Alberta and fieldwork was concentrated in the northern portion of the project area. Daily crew deployment was by four-wheel drive vehicle and by foot.

Fieldwork comprised reconnaissance geological mapping and prospecting, collection of 164 rock samples and 415 geochemical stream sediment samples, and the examination of selected lithologies to determine their potential to host metallic mineral occurrences. The results of the geological mapping and prospecting are compiled on the computer-generated base maps entitled "**Geology, Mineral Occurrences**" (Figures 3 and 4). The geology on these bases is modified after Douglas (1949, 1952), Norris (1958a, 1958b), Price (1962), and Ollerenshaw (1975). Sample locations are shown on maps entitled "**Sample Location**" (Figures 5 and 6). Rock samples and geochemical stream sediment samples with results deemed to be 'anomalous' are tabulated in Tables II to IV and shown on maps entitled "**Geochemical Anomalies**" (Figures 7 and 8). Histograms and cumulative percentile plots for 25 selected elements for the geochemical stream sediment samples are in Appendix I. Mineral occurrences which were discovered or examined during 1992 are tabulated in Table V and shown on the compiled geological base maps (Figures 3 and 4). Mineral occurrence field sheets that document the geological characteristics at each occurrence are in Appendix II. Rock sample cards and geochemical stream sediment sample cards that document the characteristics of each sample and sample site are in Appendices III and IV, respectively. Analytical lab reports for the rock samples and stream sediment samples are in Appendix V. With respect to the above computer-generated maps, and particularly the "Geology, Mineral Occurrences" maps (Figures 3 and 4), computer-generated coloured copies of these maps can be obtained from the Alberta Geological Survey.

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 focused on unravelling the complex Precambrian and Paleozoic 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) Paleozoic: 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 Brearly 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 type 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 Paleozoic rocks from as far west as Cranbrook, British Columbia and superimposed them on Paleozoic 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), Bally *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 deformation of sedimentary rocks as young as Paleocene and the deposition of undeformed Eocene and Oligocene conglomerates (Shaw 1963; Bally *et al.* 1966; Eisbacher *et al.* 1974).

Other enigmatic structures that may have influenced tectonics, sedimentation and metallogenesis have been documented or deduced 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 Mohorovicic 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 marking 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 1989). Evidence for a younger reactivation with, perhaps, lesser magnitude faulting associated with the Southern Alberta Rift has been presented by a number of authors. Price and Lis (1975), for example, described significant differences in thicknesses and facies of Upper Paleozoic 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 not 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 Paleozoic 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 the Southern Alberta Rift project area has been mapped by Douglas (1958) in the vicinity of the Highwood River and Mount Head (NTS 82J/7 East Half). Reconnaissance mapping during 1992 fieldwork indicates that northeast-trending subvertical faults exist within the project area and further mapping is needed to better define their extent.

GEOLOGY OF SOUTHWESTERN ALBERTA

The Southern Alberta Rift area is underlain by predominantly Middle Proterozoic to Tertiary age sedimentary rocks (Table VI).

The Proterozoic, Helikian to Hadrynian age, Purcell Group, which includes the Waterton, Altyn, Grinnell, Appekunny, Siyeh, Purcell Lava, Sheppard 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 Mississippian 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-Pennsylvanian 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. The 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.

Jansa (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 molasse 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. Only those mentioned above are shown on Figures 2 to 4. 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 Southern Alberta Rift area.

PROGRAM RESULTS

ROCK SAMPLING

The rock sampling program was directed towards collection of samples from mineral occurrences and other features that are indicators of metallic mineral deposits, in order to provide geochemical data that might lead to exploration by industry. During the 1992 program, a total of 164 rock grab samples were collected (Figures 5 and 6). The rock samples were analyzed for a suite of 31 elements of potential interest to mineral explorationists, using a combination of Induction-Coupled Plasma emission spectroscopy (ICP) and fire assay/atomic absorption (Appendix V). The reconnaissance rock sample results are highlighted in Table II.A and results from samples that were collected from known mineral occurrences are highlighted in Table II.B. Selected rock sample highlights are shown on Figures 7 and 8.

Analytical results for the precious and base metals and other elements in reconnaissance rock samples assay up to 227 parts per million (ppm) copper, 0.7 ppm silver (1 ppm Ag = 1 g Ag/t), 184 ppm lead, 798 ppm zinc, 625 ppm arsenic, 68 ppm molybdenum and 3,105 ppm barium. Although the value of a single element in each of the samples may or may not be interesting in itself, multiple elements with higher concentrations in a single sample may be indicative of alteration and other geological phenomena associated with potential metallic mineral deposits. Analytical results for the precious and base metals and other elements in rock samples, which were collected at or near known mineral occurrences, assay up to 118.6 ppm silver, 3.48% copper, 12.1 % lead, 19.5 % zinc, 113 ppm arsenic, 111 ppm cobalt and 376 ppm cadmium. Results of individual rock samples will be discussed in the sections entitled "Discussion of Geochemical Results" and "Mineral Occurrences".

STREAM SEDIMENT SAMPLING

Prior to conducting the regional reconnaissance geochemical stream sediment survey in southwest Alberta, RAOCL contacted the Geological Survey of Canada (GSC) and the AGS to

discuss with them their standard procedures with respect to sample collection and analytical methodology. As a result, the field collection and analytical methodologies employed by RAOCL during 1992 closely parallel those of the GSC for their National Regional Geochemical Stream Sediment Surveys.

During 1992 a total of 415 stream sediment samples were collected from 394 spatially separate sites from primary or secondary creeks or streams. In a few places, selected tertiary stream drainages were sampled. The stream sediment samples were analyzed for a suite of 40 elements that are of potential interest to mineral explorationists, using a combination of Neutron Activation Analysis (INAA) and fire assay/atomic absorption (Appendix V). During the collection of both the geochemical stream sediment samples and the rock samples, the precise sample locations were recorded on 1:50,000 scale topographic maps, and the corresponding 1:50,000 scale Universal Transverse Mercator (UTM) coordinates were established. The UTM sample coordinates were subsequently transferred to ASCII formatted computer files and combined with the 1:250,000 scale digital topographic and geographic base map files that had been prepared by the AGS. However, because of slight variations between the 1:250,000 scale digital topographic/geographic files that were used by the AGS, and the UTM sample coordinates established from the 1:50,000 scale topographic paper base maps, in some places there is an offset between the actual creek sampled and the plotted location of the stream sediment sample (Figures 5 to 8). In most cases, the plotting deviation is small, typically being 1 to 2 mm or less. In order to preserve the integrity of the original accuracy of the 1:50,000 scale UTM coordinates in the AGS's geographic information system (GIS) database, no attempt has been made to correct any such offset in any of the sample locations shown on the 1:125,000 scale final maps. The precise 1:50,000 scale UTM sample location coordinates are given on the sample cards in Appendices II and III.

Twenty-one of the 415 stream sediment samples which were collected during 1992 are field duplicates (Appendix V). Collection of field duplicates, with one duplicate sample being collected in about every 20 spatially separate sites, is a standard practise that the GSC requires in their National Regional Geochemical Stream Sediment Surveys. The purpose of the field duplicate sample is to provide a measure of the within-sample-site variability of the analytical results. In general, the elements in the 21 duplicate sample pairs show a low within-sample-site variability, hence this indicates that the natural and sampling variability at each site are less than any between-sample-site variability. With respect to the presentation of results, the first or 'Original' stream sediment sample result has not been averaged with the second or 'Duplicate' stream sediment sample result. Instead, only the original stream sediment sample results are shown on the maps entitled "Geochemical Anomalies" (Figures 7 and 8). However, both the original and duplicate sample numbers are plotted on the maps entitled "Sample Locations" (Figures 5 and 6) and both the results are given on the Laboratory Reports (Appendix V). As well as the comparative results for the 21 field duplicates, the analytical laboratory performed a series of internal duplicate analyses on selected stream sediment samples and on laboratory standards (Appendix V).

The geochemical stream sediment data were digitally sorted, and the 25 elements that have a number of results above the analytical detection limit were ranked by percentile (Table IV) and plotted as histograms and cumulative frequency plots (Appendix I). For the histogram-cumulative frequency plots, most elements were separated into 10 arithmetic classes of equal analytical range. Exceptions to this are silver, gold, barium, bromine and rubidium, for which the last analytical range is enlarged in order to include a few high values. The histograms show that for most of these 25 elements, if the results that lie at or below detection are removed from the

population, the distribution is unimodal and approximately symmetrical. For some elements, such as silver, copper, lead, zinc, cadmium, antimony, mercury and bromine, the distributions are slightly to moderately positively skewed. A more sophisticated statistical treatment of the data was not performed to determine if the distributions for each element approximate a normal (Gaussian) distribution or could be converted to a normal distribution by an arithmetic transformation such as taking the log value of each result. For the 25 elements which are presented as histogram-cumulative frequency plots, 14 elements that are believed to be of greater interest to mineral explorationists were selected and the upper 99 and 97.5 percentiles for each of these elements was calculated and tabulated (Table IV). Samples with at least two elements greater than the 97.5 percentile value are shown in Table IV and are plotted on Figures 7 and 8. Because the geochemical results and sample locations are in digital form and are on file in the AGS's GIS, maps for individual elements or combinations of selected elements are available from them.

Table III gives the comparative analytical results for the 25 elements showing the detection limit, the 97.5 and 99th percentile values, and the maximum assay for the 394 original samples. Analytical results for geochemical stream sediment samples are up to 99 parts per billion (ppb) gold, 0.8 ppm silver, 51 ppm copper, 29 ppm lead, 213 ppm zinc, 19 ppm arsenic, 2.9 ppm antimony, 137 ppb mercury, 1.9 ppm cadmium, 20 ppm cobalt, 7 ppm molybdenum, 84 ppm nickel, 130 ppm chromium, 2,400 ppm barium and 5.1 ppm uranium. In general, several samples have results that indicate certain elements are well above the background values expected for samples from streams draining the types of sedimentary lithologies that are present in southwest Alberta. Some of these higher results are from sample sites that are down-drainage from known metallic mineral occurrences, whereas others are from creeks where no metallic mineral occurrences have been documented. In some places, there are samples with no geochemical anomalies that were collected from sites that are directly down-drainage from known mineral occurrences. The reason for this lack of anomalous geochemical response is uncertain.

DISCUSSION OF GEOCHEMICAL RESULTS

Within the Clark Range, which is largely underlain by Proterozoic sedimentary rocks, several major drainages contain elevated concentrations of one or more elements (Figure 8). These include elevated barium, uranium, copper, lead and arsenic from samples collected in Pincher Creek and from a small tributary of Whitney Creek. These elevated results reflect the numerous copper-lead-silver mineral occurrences that are known to exist in the Prairie Bluff to Drywood Mountain area. Rock grab samples (2JWP017, 2JWP018), which were collected during 1992 from Grinnell or Appekunny formations east of Victoria Peak, contain up to 1.5 ppm silver, 130 ppm copper, 397 ppm chromium and 3,489 ppm barium, and support the existence of widespread copper-silver mineralized zones in this area. It is interesting to note, however, that the geochemical stream sediment signatures are quite subtle, even though the copper-silver mineralized zones are laterally extensive and locally have potential for economic grades based on past assessment work.

In the Castle River drainage there are several sites with elevated concentrations of one or more of copper, uranium, lead, cobalt and arsenic. No rock samples were collected to substantiate the well-known Whistler Mountain copper-silver occurrence, which exists east of Castle River. At the Grizzly prospect, which is located west of Castle River on the east side of Barnaby Ridge, rock grab samples were collected during 1992 from quartzite and argillite of the Grinnell Formation. One of these rock samples is from a quartzite-argillite succession that contains malachite, chalcocite and chalcopyrite in combined amounts visually estimated to be up

to about 7 volume per cent. A rock grab sample (2MSP026) assays 3.48 % copper and 15.5 ppm silver (Table II.B; Figure 6). Elevated concentrations of copper, arsenic and uranium also exist in a few stream sediment samples from the tributaries of the West Castle River (Figure 8). These elevated values are possibly a result of the copper- and silver-bearing quartzite and argillite sequences that are present in Appekunny and Grinnell Formations between St. Eloi Mountain and Rainy Ridge, along the Alberta-British Columbia border.

Near North Kootenay Pass, geochemical stream sediment samples were collected at four spatially separate sites along the Carbondale River. The most westerly sample contains elevated concentrations of barium and lead. A few kilometres to the north, a sample from the upper reaches of North Lost Creek contains elevated concentrations of silver and zinc. The elevated elemental concentrations in these two samples may reflect the mineral occurrences that exist between North Lost Creek and North Kootenay Pass (Table II.B; Figures 4 and 8).

A single geochemical stream sediment sample from Ptolemy Creek contains elevated concentrations of antimony, arsenic, cadmium, molybdenum, silver and zinc. This stream sediment sample contains the highest concentrations of cadmium, zinc and antimony that were encountered in the 1992 stream sediment survey. At Mount Ptolemy, near the headwaters of Ptolemy Creek, the stratigraphic sequence comprises a thick sequence of Devonian to Permian carbonates, as well as black shale of the Exshaw Formation (Figure 4). Two sulphide mineral occurrences, M17 and M18, were discovered in stratigraphically equivalent rocks at and near Mount Ptolemy (Figure 4). At occurrence M18, which is located on Mount Ptolemy topographically above and up-drainage of the anomalous stream sediment sample site, up to 1 volume per cent pyrite exists in Rundle Group dolomitic limestone (Table V). At occurrence M17, which is to the northwest, near the Alberta-British Columbia border, up to 3 volume per cent pyrite and trace amounts of sphalerite exist within Rundle Group carbonates. At both these occurrences there are solution cavities, dolomitization and fine-grained, disseminated pyrite within the Rundle Group carbonates. However, the rock samples which were collected at both these sulphide occurrences do not contain elevated concentrations of lead, zinc or cadmium. Therefore, it is uncertain whether the carbonates or shale at Mount Ptolemy are the source of the elevated concentrations of cadmium, zinc and antimony in Ptolemy Creek, or whether undiscovered sulphide mineralization is present.

Due north of Coleman there are several sites with elevated concentrations of antimony, copper, lead, cadmium and barium in creeks draining McGillivray Ridge. Rock grab sample 2MDP007, which was collected east of McGillivray Ridge from faulted, dirty limestone above the Coleman thrust fault contains 3,002 ppm barium. This area is underlain by Upper Jurassic to Lower Cretaceous clastic rocks and a thick succession of Crowsnest Formation volcanic rocks. The southern strike extension of this thick succession of Crowsnest volcanic rocks crops out west of Coleman along Highway 3. Rock grab samples (2JWP001, 2PMP001), which were collected during 1992 from these volcanic rocks, contain up to 227 ppm copper, 146 ppm zinc and 70 ppm lead. The exact cause of the elevated concentrations of antimony, copper, lead, cadmium and barium in stream sediments near McGillivray Ridge is uncertain, but may be due to transport of metals from the Crowsnest volcanics. Three rock grab samples (2MSP004, 2MSP014, 2JWP022) that were collected south of Burmis contain low, but elevated concentrations of zinc (Figure 8). The samples were collected from Jurassic to Cretaceous shales and limestone (Table II.A). Northeast of Coleman, a rock grab sample (2MSP002) which was collected from Fernie Group shale, assays 68 ppm lead, 22 ppm molybdenum and 207 ppm zinc (Figure 8).

At the Oldman lead-zinc-silver prospect near Mount Gass, several stream sediment samples that were collected down-drainage along the Oldman River contain elevated concentrations of silver, antimony, cadmium, and zinc (Figure 7). To the south at Hidden Creek, which drains primarily Cretaceous clastic rocks and Devonian Fairholme Group carbonates in the Tornado Mountain area, there are elevated concentrations of silver, cadmium and mercury. No mineral occurrences are reported in the Hidden Creek drainage basin, but the elevated concentrations in stream sediments may indicate such occurrences are present.

Several reconnaissance rock grab samples, from the area west of the Livingstone Range between Dutch Creek and the Highwood River, were collected from Lower Cretaceous Blairmore Group or Upper Cretaceous Alberta Group clastic rocks. Some of these samples contain low, but elevated concentrations of lead and zinc (Figure 7). In grab samples 2JWP031 and 2PMP014, for example, lead is present in amounts up to 147 ppm and zinc is present in amounts up to 241 ppm. In places, these Cretaceous units lie stratigraphically or topographically below Lower Cretaceous Crowsnest Formation volcanics, hence it is possible the elevated lead and zinc may be a result of movement of metals in groundwater from the volcanic rocks. However, in other areas no Crowsnest volcanics are reported to exist and the elevated lead and zinc levels in Cretaceous clastic sediments are unexplained.

North of the confluence of the Oldman and Livingstone Rivers, several streams and larger creeks that drain the Livingstone Range exhibit elevated concentrations of one or more of mercury, gold, arsenic, antimony, cadmium, cobalt, molybdenum, copper, nickel and zinc. The spatial distribution of these elevated metal concentrations in streams and creeks that drain the Livingstone Range is intriguing. The cause of the elevated metal concentrations is unknown because there are few reported precious or base metal sulphide occurrences in the area. Four pyrite occurrences (M5, M12, M16 and M20) were discovered during the 1992 program (Figure 3). 3). The anomalous concentrations of metals in some stream drainages and the existence of pyrite occurrences may indicate that potential exists in the Livingstone Range area for thrust-related, Mesozoic 'Carlin type' precious metal deposits similar to those which exist at the Mercur gold district in southern Utah.

MINERAL OCCURRENCES

A total of nineteen mineral occurrences were newly discovered and seven previously known mineral occurrences were examined during the 1992 field program (Table V). At each of these occurrences, greater than one volume per cent visually estimated sulphide or magnetite exists either in bedrock or in locally-derived talus boulders. Three of the mineral occurrences comprise magnetite in Cretaceous sandstone and eighteen of the sulphide occurrences comprise pyrite in Phanerozoic carbonate or clastic rocks. At six occurrences, one or more of copper-, lead- or zinc-bearing sulphide or carbonate minerals, with or without pyrite, exist in either Proterozoic or in Devonian to Mississippian carbonate rocks (Table V). With respect to the nineteen sulphide mineral occurrences which are in Phanerozoic rocks, five are within Cretaceous clastic rocks (M1, M4 to M6, and M8), four are within Jurassic to Cretaceous clastic rocks (M9 to M12), three are in Permo-Pennsylvanian to Triassic calcareous clastic sediments or carbonate rocks (M13 to M15) and seven are in Devonian to Mississippian carbonate or chert (M16 to M22). The sulphide occurrences comprise, in places, up to 10 volume per cent pyrite and one or more of carbonate veining, hematitic alteration or faulting. Galena or sphalerite, or both, exist at occurrences M17 and M22. As well, elevated concentrations of base metals exist in rock samples at a few places (Table II.A). For example, at occurrence M14 which is near Blairmore on Highway 3 (Figure 8), pyrite exists in fault-brecciated Rundle Group limestone and assays up to

109 ppm copper, 184 ppm lead and 798 ppm zinc. At occurrence M21, pyrite exists in black-grey limestone and shaly interbeds of the Mount Head Formation. M21 is located about 5 km west of the east boundary of Kananaskis Country Resource Management Area (Figure 7). In this area, the Mount Head Formation is between the Zephyr Creek and the Mount Burke faults. Locally, the limestone contains up to about 5 volume per cent disseminated pyrite or masses of pyrite that range from 2 to 4 cm in diameter. In places, the limestone is partially replaced by dolomite. A rock grab sample from the dolomitized limestone at M21 assays 58 ppm lead and 158 ppm zinc.

Two magnetite occurrences (M2 and M3), which were examined during 1992, are south and north, respectively, of the main North Burmis Magnetite prospect (Figure 4). The magnetite beds are up to 1.5 m thick, occur within a west-dipping, poorly-indurated basal sandstone of the Belly River Formation and, where examined, the beds contain locally up to about 60 volume per cent magnetite. The North Burmis Magnetite prospect exists in a structurally complex zone of thrust-repeated horizons of Upper Cretaceous Belly River Formation, cut by vertical orthogonal sets of cross faults and local drag folds. Steiner (1958) suggested that these near-vertical zones may have economic potential. Grant and Trigg (1983) reported that the Burmis magnetite is similar, but of lesser quality than the magnetite from the now-closed Craigmont and Westfrob mines in British Columbia, and that the Burmis Magnetite deposits may have potential for use in coal beneficiation. To the southeast, south of Pincher Creek, the Dungarvan Magnetite prospect is also within the Cretaceous Belly River Formation (Figure 2). The magnetite deposits at this prospect may soon be brought into production. The magnetite occurrences are of geological interest because similar magnetite paleoplacer occurrences are present within the Belly River Formation or its time equivalent stratigraphic units from the Gulf of Mexico to the Arctic Ocean (Steiner 1958). The third newly-discovered magnetite occurrence (M7) is in the Cretaceous Blairmore Group north of Coleman (Figure 4). At this occurrence the magnetite exists as laminae in a sandstone, but the magnetite-bearing zone is only a few millimetres thick.

The well-known Oldman lead-zinc-silver prospect (M22), which is hosted in the Devonian Palliser Formation on the east slope of Mount Gass, was briefly examined. However, on the day the Oldman prospect was visited, Mount Gass was heavily cloud covered and the occurrence and the enclosing host rocks could not be thoroughly examined. Minor prospecting and rock sampling were performed near the northeasterly facing adit that is located at an elevation of about 2,285 m (7,500 feet). A rock grab sample (2MSP029) was collected east of the adit from carbonate veins that are about 0.3 m wide and are in a limestone-dolomite host rock. This sample assays 19.5 % zinc, 12.1 % lead and 118.6 ppm silver (Table II.B). The sample also contains elevated concentrations of cadmium, copper and antimony.

There are at least 70 base metal mineral showings known to exist in the Proterozoic clastic sedimentary rocks that form the Akamina Syncline in the Clark Range in southwest Alberta (Figures 2 and 4). Many of these showings, which were initially discovered in the late 1960's or early 1970's, are now within the Eastern Slopes Prime Protection Zone, and hence they are currently restricted from further mineral exploration. Prior metallic mineral exploration within the Proterozoic rocks of the Clark Range was focused on copper-silver mineralized zones within the Appekunny, Grinnell, Siyeh Formations and the Purcell Lavas, and on lead-zinc-silver mineralized zones within the Siyeh and Sheppard Formations. Many of these showings are well- documented in several geological publications and in publicly available assessment reports (Bradshaw 1967, 1968; Duncan 1970; Carter 1971; Gyr 1971; Halferdahl 1971; Van Dyck 1971; R.J. Goble 1970, 1972; E.O. Goble 1973a, 1973b, 1975, 1976; Allan 1973; Morton *et al.* 1974; Collins and Smith 1977).

Four of the Proterozoic mineral prospects or showings which were discovered in the 1960's or 1970's, were geologically examined during 1992 to assess their potential for further exploration. The mineral showings that were examined comprise: (a) the copper-silver Grizzly prospect (M23) in the Grinnell Formation at Barnaby Ridge, (b) the copper-silver showing (M24) and spatially related lead-zinc bearing veins hosted within siltstones of the Upper Siyeh and Sheppard Formations at Table Mountain, and (c) the lead-zinc-silver and copper-silver showings (M25 and M26) in the Sheppard Formation at North Kootenay Pass (Figures 4 and 8). As well, reconnaissance prospecting traverses were conducted through the Proterozoic rocks at a few other locales, including Mill Creek, Victoria Peak and at Carbondale River area.

The Grizzly prospect (M23) at Barnaby Ridge is hosted within an alternating sequence of quartzite and red and green siltstone of the Upper Grinnell Formation. In places, the quartzites are well-laminated or show well-defined cross-bedding. The quartzite beds are up to about 1 m thick, and the interlayered, well-laminated red siltstone beds are about 0.5 m thick. Several vertical faults and drag-folded beds exist at this showing. Malachite staining is common on the surface of weathered quartzites, along fracture surfaces and along the edges of green siltstone clasts within quartzitic beds. A rock grab sample (2MSP026), which was collected during 1992 at this site from the chalcopyrite-, malachite-, and chalcocite-bearing quartzite, assays 3.48 % copper and 15.5 ppm silver, with minor amounts of molybdenum, arsenic and cadmium (Table II.B). A 0.3 m thick, black quartzitic layer, which is at least 50 m in strike length, is exposed within the lower Siyeh Formation. In places, this black quartzitic layer contains brittle fractures and it may contain chalcocite. Cominco Ltd. drilled the Grizzly prospect and intersected a chalcocite-bornite mineralized zone (Halferdahl 1971; Goble 1973a; Collins and Smith 1977). Mineralized quartzite beds up to about 0.3 m thick contain locally up to 6.7 % copper. Further work, including detailed geochemical stream sediment follow-up sampling was recommended by Halferdahl (1971) and Goble (1973a), but apparently no follow-up work was ever performed.

At the Table Mountain showing (M24), up to 10 per cent combined lead-zinc and up to 171.4 g Ag/t (5 oz Ag/T) occur in Sheppard Formation siltstone (Goble 1973a). Goble (Ibid.) stated that the lead-zinc mineralized zone is confined to the lower 23 m (75 feet) of the Sheppard Formation, and it is within black siltstone, hence it is difficult to recognize. Sometimes the zinc occurs as hydrozincite, which exists as a white zinc carbonate coating. Hydrozincite can be identified with the aid of an ultraviolet light and by the use of a chemical which is colloquially referred to as "Zinc Zap". Goble (1973a) also mentioned a traverse he conducted in the North Kootenay Pass area where he collected a sample from a 1.8 m (6 foot) thick limy siltstone in the Siyeh Formation, that assays 2.56 % lead, 1.40 % zinc and 79.5 g Ag/t (2.32 oz Ag/T). During 1992, traverses were conducted through the upper Siyeh Formation to determine if lead-zinc mineralized zones might exist within siltstone horizons similar to those at North Kootenay Pass. Several siltstone beds were sampled, but no anomalous concentrations of lead or zinc were discovered. However, numerous small veinlets up to about 1 cm wide that contain lead and zinc sulphides were found crosscutting dolomite beds of the upper Siyeh Formation. Because the veins are small, no samples were collected from them. Goble (Ibid.) stated that only the well-exposed and easily accessible portions of the Sheppard Formation were adequately prospected at Table Mountain. Therefore, potential exists at the Table Mountain area for thicker, possibly higher grade copper-lead-zinc-silver mineralized zones because both stratabound and cross-cutting mineralized zones exist over a relatively large area, and the area has not been adequately explored except perhaps where there is easy access.

At the North Kootenay Pass area, the Upper Siyeh Formation, Purcell Lavas, and the Sheppard and Kintla Formations are easily accessible and reasonably well exposed. Carter

(1971) stated that a 3.0 to 4.6 m (10 to 15 foot) thick zone of stratabound base metal sulphides exists in the Lower Sheppard Formation about 24.4 m (80 feet) above its contact with the underlying Purcell Lavas. The North Kootenay Pass area is within 30 km of the inferred southern boundary of the Southern Alberta Rift. The area is geologically complex due to the proximity of the Lewis Thrust and several northeast-trending faults. Shallow and steep west-dipping faults cut the Sheppard Formation immediately above the Purcell Lavas. Displacement on these faults is undetermined. Evidence of hydrothermal alteration includes abundant magnesium-rich chlorite in the dolomites of the Sheppard Formation and the siltstones of the Kintla Formation. The genetic origin of the sulphide mineralized zones is uncertain. Morton *et al.* (1974) suggested that original syngenetic or diagenetic mineralized zones may have been locally enriched near dioritic intrusions and by hydrothermal activity along normal faults. During the early 1970's, Cominco Ltd. tested selected showings between North Kootenay Pass and North Lost Creek by drilling (Carter, 1971). A map from Carter's (Ibid.) assessment report shows there were eight drill holes, but he reported the results for only the one hole, hence it is uncertain whether the results from the other seven drill holes were better or worse. Carter (Ibid.) did recommend further work, but the records do not document whether the recommended follow-up exploration took place. The hole drilled by him at North Lost Creek intersected less than 0.5 per cent combined lead-zinc across 4.6 m (15 feet) in core. He also stated that the majority of the mineralization is in the upper 1.8 m (6 feet) of dolomite, that the highest grades of lead-zinc exist within the silt-rich lenses, and the lead-copper grade is greater than the zinc grade in intraformational conglomerates. During 1992, twelve rock grab and composite rock chip samples (2JWP004 to 2JWP010, 2MSP016 to 2MSP020) were collected at North Kootenay Pass (Figure 6). These rock samples are from black siltstone and siliceous dolomite of the Proterozoic Sheppard Formation, and were collected stratigraphically above where it is believed one of the eight holes were drilled by Cominco Ltd. A composite chip sample, which was collected across a 2 m width from black siltstone in the Sheppard Formation, assays 2,027 ppm lead, 1,681 ppm zinc and 1.1 ppm silver. A 2.5 m wide contiguous composite rock chip sample, which was collected stratigraphically below the above sample, assays 575 ppm lead, 579 ppm zinc and 0.9 ppm silver. As well, some other rock grab samples from this locale have assays up to 2.0 ppm silver, 2,035 ppm lead, 7,718 ppm zinc and 352 ppm copper (Table II.B). The lead and zinc minerals within the black siltstone are fine-grained and difficult to see without a hand lens.

DISCUSSION OF RESOURCE POTENTIAL

Economically important metallic mineral deposits have not, to date, been discovered in the Rocky Mountains and Foothills of Alberta, although there was minor production early in the century from a few small base metal deposits in southwest Alberta (Goble 1970; Hamilton and Olson, In press). Studies by several people indicate that in southeastern British Columbia and the adjacent parts of the United States of America, the deposition of some of the stratiform and vein-type base metal and precious metal deposits such as those at Sullivan, British Columbia; Spar Lake, Montana and Coeur d'Alene, Idaho may have been genetically linked to periodic activation of the Southern Alberta Rift and possibly related structures such as the Lewis and Clark fault system (Kanasewich 1968; Kanasewich *et al.* 1969; McMechan 1981). Many of the base and precious metal occurrences in southwest Alberta are hosted in similar rock types to the previously mentioned deposits. In addition, the occurrences are spatially associated with features that indicate the Southern Alberta Rift has been periodically active; these features include syndepositional graben faulting, associated sedimentary facies changes and syndepositional volcanism. There is reason to believe an economically important metalliferous deposit could exist in the Rocky Mountains and Foothills of Alberta because of the presence of structural complexities, including the Southern Alberta Rift, as well as many diverse types of metallic

mineral occurrences, diverse favourable host rocks and alteration. In addition, hot fluids, both recent and ancient, have migrated through the stratigraphic succession.

Based on the geologic and tectonic setting, and on comparisons with other metallogenic provinces, the potential ore deposit types that may exist in southwest Alberta include: **base metal deposits**, such as (1) carbonate-hosted Mississippi Valley Type lead-zinc deposits, (2) stratiform sediment-hosted lead-zinc deposits, (3) stratiform sediment-hosted Kupferschiefer type copper deposits, (4) stratabound sediment-hosted Kipushi type copper deposits, and (5) stratiform shale hosted nickel-zinc deposits; **precious metal deposits**, such as (6) epithermal gold deposits and (7) mesothermal gold deposits; and a few **other types of deposits**, such as (8) magnetite and other heavy mineral placer/paleoplacer deposits, with or without associated precious metals, (9) diamondiferous kimberlite or lamproite deposits, and (10) sediment-hosted uranium deposits. Following is a discussion of the characteristics of each of these types of deposits and suggestions for possible exploration targets in southwest Alberta.

BASE METAL DEPOSITS

Carbonate-Hosted Mississippi Valley Type Lead-Zinc Deposits

Much of the Alberta Rocky Mountains and Front Ranges are underlain by carbonates of Late Proterozoic to Triassic age. These carbonates contain many geological features that are considered favourable for the presence of Mississippi Valley Type (MVT) lead-zinc deposits, including dolomitization or silicification fronts; porosity and permeability associated with karstification, faulting or fracturing; the presence of reefal masses; regional transitions from platformal carbonates to basinal shales; several unconformities and disconformities in the stratigraphic sequence, and structural complexities such as folds and faults. These features are considered to be important regional characteristics associated with the formation of MVT deposits (Anderson and Macqueen 1988).

The existence of a few lead-zinc prospects and many small occurrences in the Alberta Rocky Mountains and Front Ranges (Evans 1965) indicates that potential exists for more important carbonate hosted MVT deposits. In the Banff to Field corridor, which straddles the Alberta-British Columbia border for example, deposits and occurrences of lead-zinc-silver are hosted in Middle Cambrian Cathedral Formation limestone and they exhibit many characteristics that are similar to other MVT deposits and occurrences. The Cathedral limestone is heavily dolomitized and contains reef structures, especially in the vicinity of the Kicking Horse-Monarch lead-zinc-silver deposits near Field, British Columbia (Ney 1954). The Oldman lead-zinc-silver prospect (M22) is hosted in platformal dolomites of the Upper Devonian Palliser Formation (Holter 1973, 1977). Although Holter (Ibid.) suggested that the Oldman mineralized zone is fault-controlled, recent work by Salat (1988) showed that paleokarst features and dolomitization fronts are common in the vicinity of the prospect. Beales (1953) described widespread dolomitic mottling of the Palliser Formation throughout the Rocky Mountains. Work by Esso Minerals geologists during the 1970's and early 1980's found that occurrences of lead-zinc in the Palliser Formation are common (J.E. MacDonald *pers. comm.* 1993). Other, somewhat poorly-documented occurrences of lead-zinc exist at Mist Mountain (Trigg 1982; Johnston and Olson 1982), Beehive Mountain (Gillis 1970) and in carbonates intersected by many oil wells in central and northern Alberta (Dubord 1987, 1988), with the reported host rocks being mainly of Devonian age. Sporadic occurrences of lead-zinc also exist in dolomite of the Middle Proterozoic Sheppard and Kintla Formations near the Carbondale River (Carter 1971; Goble 1973a, 1973b, 1975).

Structural elements in the Alberta Rocky Mountains and Foothills that are favourable for the development of MVT lead-zinc deposits include the West Alberta Arch, the Southern Alberta Rift and other, possibly long-lived, transverse faults. These features indicate there is potential for MVT lead-zinc deposits to be present. Worldwide, MVT lead-zinc deposits occur in carbonate rocks of several diverse ages. Anderson and Macqueen (1988), however, stated that carbonates of either Cambrian-Ordovician or Carboniferous age were the host units for the majority of North American MVT deposits. Although this generality may be true, in the Western Canada Sedimentary Basin the most important MVT lead-zinc deposits are in Devonian strata at Pine Point, Northwest Territories and at Robb Lake, British Columbia. Therefore, in southwest Alberta the carbonate intervals that are deemed to be favourable hosts for MVT lead-zinc deposits include: (a) Middle Proterozoic Upper Purcell Group, (b) Cambrian Cathedral Formation, (c) Upper Devonian Fairholme Group and Palliser Formation, (d) the Carboniferous-Permian succession, including the Banff, Rundle and Rocky Mountain Groups, and (e) the shallow-water transgressive carbonate cycles of the Triassic Spray River Group.

In the Clark Range, laterally extensive succession of carbonates in the Sheppard and Kintla Formations are reported to contain MVT lead-zinc occurrences. Most prior work in the Clark Range has been focused towards stratabound, sediment-hosted copper-silver deposits, hence the potential for MVT deposits may not have received much attention.

At and near the Southern Alberta Rift, the Cambrian to Silurian succession of carbonates is not present due to non-deposition, as a result of the emergent West Alberta Arch during that time period. Therefore, MVT deposits in Cambrian strata, such as those at the now-closed Monarch-Kicking Horse mine, will only be present to the west and northwest where the Cambrian Cathedral Formation and its equivalents exist.

The potential for MVT lead-zinc deposits is probably most favourable in Upper Devonian strata such as the Palliser Formation, which is present in the Main Ranges and in some places in the Front Ranges. The Devonian rocks at and near the Oldman prospect in the vicinity of the Oldman River should be considered particularly favourable for exploration for MVT lead-zinc mineralized zones. A stream sediment survey which was performed by Geophoto Services Ltd. (O'Donnell and Fuenning 1967) discovered up to 1,200 ppm zinc in a stream draining the Oldman prospect. At the headwaters of Lost Creek, about 7.5 km north of the Oldman prospect, two stream sediment samples assay 450 ppm zinc and 580 ppm zinc. A rock sample from Beehive Mountain, south of the Oldman prospect, is reported to have contained 47 % lead (Gillis 1970). Another area considered prospective for MVT mineralized zones in Devonian rocks, is east of Kananaskis Lakes within the Elk Range, where there are several zinc anomalies in stream sediments that range from 200 to 400 ppm (O'Donnell and Fuenning 1967). These anomalies also occur near several prominent transverse faults (Price 1967; McGugan 1987; McMechan 1988).

Thick sequences of limestone and, in places, dolomite, also exist in the Carboniferous-Permian succession. The platform carbonates of Carboniferous-Permian age in the Alberta Rocky Mountains are not associated with a regional transition to deeper water shale, nor are there reports of any lead-zinc mineralized zones. Nonetheless, these rock units should be considered as exploration targets because they contain other features favourable for the existence of MVT lead-zinc deposits. For example, in this succession there are unconformities and disconformities, abundant dolomitization fronts, some reefal complexes and vertical to subvertical faults. Fieldwork and sampling during 1992 identified Carboniferous-Permian age limestones with

up to 798 ppm zinc and 0.7 ppm silver near Blairmore (M14), and up to 197 ppm zinc and 3,105 ppm barium west of Mount Livingstone (Figures 4, 7 and 8).

Lastly, potential for MVT deposits exists in the Triassic Spray River Group. This group comprises mostly near-shore, shallow-water limestones and dolomites, which are usually considered to be less favourable hosts for MVT lead-zinc deposits. On the other hand, the Spray River Group does contain porous and permeable siltstone and sandstone, and evaporitic sequences. It is possible that dissolution of the evaporitic sequences may have provided the saline fluids necessary both to create porosity in the carbonates and to transport metals in solution. The Spray River Group also has some lithological similarities to the shallow-water cycles of the Sheppard and Kintla Formations of the Middle Purcell Group, which do host lead-zinc mineralized zones. As well, the Spray River Group contains abundant pyrite in dolomite and dolomitic siltstone in the southern Canadian Rocky Mountains (Gibson 1974). At present, there is no reported trace element geochemistry available for these Triassic rocks to assist in the evaluation of their potential for MVT lead-zinc mineralized zones.

Stratiform Sediment-Hosted Lead-Zinc Deposits

Potential exists in the Alberta Rocky Mountains for clastic, sediment-hosted, stratiform, lead-zinc deposits. The types of deposits in this category include euxinic black shale hosted (Sedex) lead-zinc deposits such as those which exist in northeastern British Columbia and the Selwyn Basin, Yukon (Carne and Cathro 1982; Morganti 1988), and the turbidite-hosted deposits such as Sullivan at Kimberley, British Columbia (Hamilton *et al.* 1982; Hoy 1982). Sandstone-hosted lead-zinc deposits such as those at George Lake, Saskatchewan (Bjorlykke and Sangster 1981) or Liasvall, Sweden (Grip 1967) are a third variety of stratiform sediment-hosted lead-zinc deposits.

In the Alberta Rocky Mountains, extensive Middle Proterozoic, Jurassic to Lower Cretaceous and Upper Cretaceous to Tertiary shallow-water, sandstone-dominated, clastic wedges are present, but there is little, if any, thick, deep-water flysch deposits consisting of turbidites, shale and chert. As a result, potential in southwest Alberta may be higher for the siltstone/sandstone-hosted variety of stratiform lead-zinc deposits, rather than the starved basin, euxinic shale or turbidite varieties. Many of the clastic wedges in southwest Alberta contain geological features that are considered favourable for sandstone-hosted lead-zinc mineralized zones, including transgressive basal sandstones or conglomerates, vertical to subvertical faults, possibly related to intracratonic rifting, interlayered impermeable cap rocks, such as shales or mudstones, and the presence of evaporites in the stratigraphic section. Areas deemed to be structurally favourable for sandstone-hosted stratiform lead-zinc deposits include those units that were deposited within or adjacent to the inferred Southern Alberta Rift, and those locales with prominent vertical to subvertical, northeast-trending transverse, tear or normal faults. In the Carbondale River area, for example, Upper Purcell Group Sheppard and Kintla Formations contain cyclical shallow-water siltstone, shale and dolomite. Carter (1971) reported up to 1.28 % zinc and 0.09 % lead across 0.91 m (3 feet) from a surface rock sample in Sheppard Formation siltstone and dolomite, near the headwaters of North Lost Creek. Carter (1971) also reported that Sheppard Formation siltstone and dolomite assayed up to 0.33 % zinc and 0.09 % lead across 4.27 m (14 feet) in a drill hole. Goble (1973a) also documents work in black shale and siltstone of the Sheppard Formation. He reported surface rock sample assays up to 2.56 % lead, 1.40 % zinc and 79.54 g Ag/t (2.32 oz Ag/T) across 1.8 m (6 feet) at North Kootenay Pass; 3.40 % lead, 0.20 % zinc and 94.3 g Ag/t (2.75 oz/T) across 2.44 m (8 feet) at North Lost Creek; 3.02 % lead, 1.00 % zinc and 123.4 g Ag/t (3.60 oz Ag/T) across 2.74 m (9 feet) at South Lost Creek, and

1.92 % lead, 1.43 % zinc and 162.9 g Ag/t (4.75 oz Ag/T) across 3.35 m (11 feet) at Carbondale River. Goble (1975) subsequently reported on a follow-up program of five drill holes at the North Kootenay Pass area. He gave visual estimates of sulphide content, but no assay results were reported.

During the 1992 program, black siltstones of the Sheppard Formation were rock sampled at North Kootenay Pass, at the headwaters of the Carbondale River. A chip sample assays up to 2,027 ppm lead, 1,681 ppm zinc and 1.1 ppm silver across 2 m, and grab samples assay up to 2,035 ppm lead 7,718 ppm zinc and 2.0 ppm silver. Northeast-trending and steeply-dipping faults and related fractures exist in the area and are within 30 km of the inferred southern boundary of the Southern Alberta Rift. In places, chlorite alteration is present. Further work is needed to assess the potential for siltstone- or shale-hosted, stratiform lead-zinc deposits in the Carbondale River area.

Other potential clastic host rocks for stratiform lead-zinc deposits in southwest Alberta include Triassic Spray River Group siltstone and shale, Jurassic Fernie Group shale, and siltstone and sandstone/siltstone units capped by shale within the Kootenay-Blairmore and the Belly River-Paskapoo clastic wedges. These units may have higher potential for lead-zinc in the faulted areas of the Elk, Opal and Misty Ranges east of Kananaskis Lakes, and faulted areas in the vicinity of Mount Head. Many unexplained lead-zinc anomalies exist in samples of Jurassic to Upper Cretaceous clastic rocks, and in stream sediments draining these rocks southwest and southeast of Burmis, in the vicinity of Coleman and west of the Livingstone Range, between Dutch Creek and the Highwood River (Figures 7 and 8).

Stratiform Sediment-Hosted Kupferschiefer Type Copper Deposits

Sediment-hosted stratiform copper deposits that occur in shallow marine or epicontinental sedimentary rocks are referred to as Kupferschiefer type deposits (Brown 1992). Numerous occurrences of silver-bearing, disseminated chalcocite, chalcopyrite and bornite exist in Helikian arenites in southwest Alberta and in southeast British Columbia. A geologically similar but economic deposit named Spar Lake and numerous copper-silver occurrences exist in northwest Montana (Hayes and Balla 1986; Hayes and Einaudi 1986). Thus, potential exists for the discovery of an important Kupferschiefer type stratiform copper deposit in the Rocky Mountains and Foothills of southwest Alberta.

Regional characteristics that are considered important for Kupferschiefer type copper deposits include location in a rift basin with extensional faults, a thick sequence of hematitic (red bed) clastic sediments, the presence of evaporites in the stratigraphic section, horizons of chemically reduced sediments that might form a suitable host rock, and rift-generated, mafic volcanic rocks (Gustafson and Williams 1981; Eckstrand 1984; Jowett 1986, 1989, 1991; Jowett *et al.* 1987; Boyle *et al.* 1989; Brown 1992;). All of these characteristics are present within Purcell Group rocks of southwest Alberta.

Extensive exploration was conducted in the Clark Range of southwest Alberta during the late 1960's and early 1970's. Several copper-silver occurrences were discovered, including the Spionkop, Yarrow, Grizzly and Whistler prospects (Bradshaw 1967, 1968; Duncan 1970; Halferdahl 1971; Van Dyck 1971; Gyr 1971; Goble 1972, 1973a; Allan 1973; Collins and Smith 1977). At Whistler Mountain, rock samples from trenches assay up to 6.70 % copper and 26 ppm silver in Upper Grinnell Formation quartz arenites. At least 25 beds are mineralized, but most of them are less than 0.15 m thick (Collins and Smith 1977). The available records indicate that the

Whistler prospect was not drill tested. At Grizzly Creek, Cominco Ltd. drilled five holes between 1969 and 1971. The reported initial results are up to 0.95 % copper and 3.43 g Ag/t (0.10 oz Ag/T) across 1.22 m (4 feet), and 1.19 % lead across 1.52 m (5 feet) (Halferdahl 1971). Collins and Smith (1977) resampled the drill core and they report analyses of up to 1.23 % copper, 220 ppm lead, 130 ppm cobalt and 25 ppm silver in quartz arenite beds from the Upper Grinnell Formation. They stated that some of the mineralized beds are up to 2.13 m (7 feet) thick. Halferdahl (1971) reported that the mineralized zones at Grizzly Creek may be fault-related. At Spar Lake mine in Montana, the initial reserves were 64 million tonnes grading 0.76 % copper and 54 g Ag/t (Hayes and Balla 1986). In southwest Alberta, some of the grades reported for the Whistler and Grizzly prospects approach the grade at Spar Lake, hence an economic deposit could exist if sufficient thickness and quantity of ore can be found. In the Yarrow Creek to Spionkop Creek area, Goble (1972) reported up to 6.40 % copper in rock grab samples collected from Grinnell Formation quartzites, with grades of up to 3.38 % copper and 41.15 g Ag/t (1.20 oz Ag/T) across 2.13 m (7 feet). In this area, Goble (1974c) reported proven reserves of 238,500 tons of 1.97 % copper and 21.26 gAg/t (0.62 oz Ag/T), probable reserves of 2.4 to 10.5 million tons of 1.25 % to 2.5 % copper and 3.43 to 8.57 g Ag/t (0.1 to 0.25 oz Ag/T), and possible reserves of 17 to 20 million tons of 1.25 % to 1.75 % copper and 6.86 to 10.29 g Ag/t (0.2 to 0.3 oz Ag/T). However, the assessment records indicate that Kintla Explorations Ltd. drilled only five holes, and little data is provided to substantiate any of these reserve estimates.

Rock grab samples which were collected during 1992 from Grinnell Formation quartzites assay up to 3.48 % copper and 15.5 ppm silver, with anomalous amounts of molybdenum, arsenic and cadmium. Stream sediment samples which were collected during 1992 from the Clark Range show low, but elevated concentrations of arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, silver, uranium and zinc. In the late 1960's and early 1970's, several regional to semi-detailed geochemical stream sediment or water sampling programs for base and precious metals were conducted in the Clark Range by various exploration companies (Bradshaw 1967, 1968; Gyr 1971; Halferdahl 1971). Most workers concluded that the results failed to locate known copper mineralized zones, and therefore stream sediment or stream water surveys were of limited use in the search for undiscovered copper mineralized zones. However, a compilation and review of all the available geochemical data from assessment records indicates that many of the known copper, lead or zinc prospects do show up as subtle geochemical anomalies in streams with closely-spaced sampling. As well, there are several other subtle anomalies that are presently unexplained because they are not down-drainage from reported occurrences. It is possible that heavy mineral sampling of drainage sediments in the Clark Range, rather than the standard sampling of stream fines, might better define some of the known mineral occurrences, and thereby be a more useful geochemical tool in the search for blind copper-silver mineralized zones. Results from the 1992 program, in conjunction with data from the available assessment records, also indicate that some of the known copper-silver prospects which have received little or no diamond drill testing, may warrant further exploration. The Grizzly Creek prospect is one such example.

Assessment records and work by Morton *et al.* (1974) indicate that the Purcell Lavas and associated dykes are altered and contain anomalous copper. As well, Halferdahl (1971) and Morton *et al.* (Ibid.) suggested that the mineralized zones appear to be locally upgraded in the vicinity of vertical to subvertical tensional faults at the Grizzly, Spionkop and Yarrow Creek prospects or showings. The potential for the copper-silver deposits to be enhanced in the vicinity of faults or adjacent to altered Purcell Lavas should not be ignored. This is because the remobilization of silver, copper and other metals into vein-type deposits or other such concentrations can form ore from protore. For example, at the prolific silver-producing district of

Coeur d'Alene, Idaho, the silver is thought by many to be remobilized from stratiform, copper-silver mineralized zones that are widespread in the Purcell Group equivalent Belt Group rocks of northern Montana and Idaho (Hobbs and Fryklund 1968; Venkatakrishnan and Bennett 1988). In summary, the Clark Range of southwest Alberta contains all the important regional and local geological characteristics for Kupferschiefer type stratiform, sediment-hosted copper deposits. As well, selected Phanerozoic, shallow-water clastic sequences should not be ignored as potential hosts for Kupferschiefer type stratiform copper deposits. For example, favourable porous and permeable clastic host rocks, with cap rocks such as shales, hematitic red beds and evaporites, exist within the Spray River Group, the Kootenay-Blairmore clastic wedge and the Belly River-Paskapoo clastic wedge. Where these clastic packages exist within the confines of the Southern Alberta Rift, they could have been mineralized by copper leached from either the Middle Proterozoic Purcell Group or the Crowsnest Formation volcanics, both of which contain widespread, elevated concentrations of copper. Regional stream sediment and heavy mineral geochemical surveys, along with trace element lithogeochemical sampling of selected stratigraphic intervals, are needed to better evaluate if these units have potential for stratiform copper-silver deposits in the Alberta Rocky Mountains and Foothills.

Stratabound Sediment-Hosted Kipushi Type Copper Deposits

Kipushi type deposits are essentially stratabound to stockwork copper-zinc-lead-cobalt-silver deposits in karsted or brecciated dolomites. This deposit type exhibits some similarities to both clastic-hosted stratiform copper deposits of the Kupferschiefer type and carbonate-hosted lead-zinc deposits of the MVT. Important conditions for Kipushi type mineralization include a rift basin setting with graben faults, permeable carbonates, and a potential source of copper, such as from rift-related basalts, deeply-weathered basement or sediments derived from the erosion of such rocks (Runnells 1969; Cox and Bernstein 1986). North American examples of Kipushi type, carbonate-hosted copper deposits include the copper-zinc-lead-cobalt-germanium deposit at Ruby Creek, Alaska (Runnells 1969) and the Acton Vale copper-zinc-lead deposits in Quebec (Sassano and Procyshyn 1988; Kumarapeli *et al.* 1990). In the southern Canadian Rocky Mountains of British Columbia and Alberta there are, in a few places, examples of carbonate-hosted, stratabound copper deposits and occurrences that have some characteristics similar to those found in a Kipushi type setting. For example, in southeast British Columbia, some of the highly-deformed copper-zinc deposits of the Goldstream area may be of Kipushi type. The Goldstream deposits are hosted in calcareous phyllites, marbles and basalts of probable Lower to Middle Paleozoic age. Hoy *et al.* (1984) proposed that these deposits are of Volcanogenic Massive Sulphide origin, but the deposits also have some similarities to the Ruby Creek and Acton Vale deposits, hence they may be of Kipushi type. In Alberta, epigenetic copper occurrences exist in Cambrian limestones in the vicinity of Banff, at Castle Mountain, Copper Mountain and Twin Lakes. In southwest Alberta, the only reported occurrence of copper in Phanerozoic carbonates is by Gillis (1970) who stated the occurrence exists in the "Big Valley Group" (equivalent to Upper Palliser Formation) in the vicinity of Mount Livingstone. The geology of the copper occurrences in carbonate rocks in southwest Alberta is poorly known, but some of them may be of Kipushi type.

In the Clark Range, copper occurrences have been documented in dolomite and dolomitic argillite of the Waterton, Siyeh, Sheppard and Kintla Formations at various localities. In the past, most of the reported exploration in the Clark Range was focused on Lower Purcell Group, continental clastic and argillaceous rocks of the Appekunny, Grinnell and Siyeh Formations based on the Kupferschiefer model. However, some exploration for copper or lead-zinc in the carbonate rocks of the Sheppard and Kintla Formations was performed by Alcor Minerals Ltd. (Van Dyck

1971), by Cominco Ltd. (Carter 1971) and by Kintla Explorations Ltd. (Goble 1973a, 1973b, 1975). Van Dyck (1971) explored the carbonate units in Sheppard and Kintla Formations in the main Clark Range southeast of the Carbondale River area, and discovered up to 2.3 % copper in Kintla Formation dolomite at Sage Mountain. He concluded, however, that the copper mineralized zones, even though widespread in distribution, were too low-grade or narrow to be of economic interest. Van Dyck (1971) also concluded that the lead-zinc mineralized zones in the Sheppard Formation, in the Carbondale River area, are not economic. Carter (1971) and Goble (1973a, 1973b, 1975) discovered targets of sufficient merit to warrant drill testing at the Carbondale River area, and both recommended further exploration, even though their initial drill results indicated the sulphidic intersections were sub-economic.

In a few places, prior geochemical stream sediment results show subtle anomalies from creeks draining carbonate rocks. For example, the data in Gyr (1971) indicates that known copper occurrences in the Grinnell Formation are reflected by subtle geochemical stream sediment 'anomalies', which occur up to several hundred metres downstream, in tributaries of Pincher and Whitney Creeks. Further, the data in Bradshaw (1967, 1968) and Gyr (1971) indicate that there are at least 14 subtle copper or zinc anomalies in the stream sediment samples, which were collected from sites down-drainage from areas underlain by Sheppard or Kintla Formations. As well, several unexplained anomalies exist along some tributaries of Mill Creek, and results are up to 150 ppm copper in stream sediment samples (Gyr 1971). An unexplained anomaly of 250 ppm zinc (Bradshaw 1968) also exists in a tributary of the West Castle River that drains Sheppard and Kintla Formations west of Ruby Lake. These copper and zinc anomalies indicate that there may be potential for carbonate hosted Kipushi type base metal deposits in Sheppard and Kintla Formations of Upper Purcell Group within the Clark Range.

Within the Phanerozoic succession, stratigraphic units that may be potential host rocks for Kipushi type deposits include: (a) Upper Devonian Fairholme Group and Palliser Formation, (b) Carboniferous to Permian Rundle Group and Rocky Mountain Group and (c) the Triassic Whitehorse Formation of the Spray River Group. The Crowsnest Formation volcanic rocks and the structures associated with the Southern Alberta Rift could conceivably have provided the source and conduit to move and deposit copper in carbonates of these Devonian to Triassic units, between the Clark Range and Kananaskis Lakes. The presence of evaporites in the stratigraphic section is sometimes considered as a favourable prerequisite for the transport of copper in solution, prior to its deposition into stratabound deposits. Both the Rundle Group and Whitehorse Formation contain evaporites within the bounds of the Southern Alberta Rift and in the vicinity of the Crowsnest Formation volcanics. The Whitehorse Formation also contains redbeds, which are sometimes considered a possible source of copper.

In summary, many of the regional characteristics considered favourable for Kipushi type deposits exist in southwest Alberta, including: (a) a periodically active rift zone such as the Southern Alberta Rift, (b) copper-enriched source rocks, such as the Purcell Lavas, the Lower Purcell Group clastic rocks and, possibly, the volcanic and volcaniclastic rocks of the Crowsnest Formation, (c) carbonate host rocks such as those that exist in the Proterozoic and Phanerozoic succession, and (d) evidence of vertical and shallow-dipping faults to provide conduits for the migration of fluids. The most likely targets for Kipushi type base metal deposits in southwest Alberta are the Proterozoic carbonate rocks in the Clark Range, and the Paleozoic and Lower Mesozoic carbonate rocks in the Rocky Mountains and Foothills.

Stratiform Shale-Hosted Nickel-Zinc Deposits

Volumetrically, shale-hosted nickel-zinc deposits are currently a minor world resource. However, this type of exploration target has received little attention outside of China, and therefore little is known about the geology and potential of this deposit type. Examples of stratiform, shale-hosted nickel-zinc deposits include several deposits in China (Coveney *et al.* 1992), and the Nick deposit in Yukon Territory (Hulbert *et al.* 1992). Shale-hosted nickel-zinc deposits also have the potential to yield significant amounts of molybdenum, platinum group elements and gold (Coveney *et al.* 1992).

At the Nick deposit, the first indication of nickel-zinc mineralized zones was provided by a regional stream sediment geochemical survey conducted by the Geological Survey of Canada (1977). This regional survey was designed to locate turbidite-hosted lead, zinc and barium mineralized zones of the Sedex type (Carne and Cathro 1982). The mineralized zones at the Nick deposit are hosted by black shales at transitions between shelf carbonates and deeper-water clastic rocks, and they are spatially or temporally associated with rift-related graben faults or reactivated basement faults (Hulbert *et al.* 1992).

Potential exists in southwest Alberta for finding shale-hosted, stratiform nickel-zinc deposits similar to those at the Nick. The four most prospective units in the Rocky Mountains and Foothills are the: (a) black shale in the Middle Proterozoic Sheppard Formation of the Clark Range, especially in the Carbondale River area, (b) black shale of the Exshaw Formation, which exists at the transition between Upper Devonian and Mississippian carbonate units, (c) black shale of the Triassic Sulphur Mountain Formation of the Spray River Group, and (d) black shale of the Jurassic Fernie Group.

As previously noted, dolomite, shale and siltstone of the Sheppard Formation in the Carbondale River area have anomalous, but uneconomic concentrations of lead, zinc, copper and silver (Carter 1971; Goble 1973a, 1973b, 1975). Goble (1975) also mentions the existence of arsenopyrite, molybdenum, in amounts up to 0.18 %, and anomalous concentrations of uranium. The presence of elements such as arsenic, molybdenum and uranium indicates that potential exists for black shale-hosted nickel-zinc deposits in Proterozoic strata because this suite of elements is anomalous at both the Nick and the Chinese nickel-zinc deposits (Schultz 1991; Hulbert *et al.* 1992; Coveney *et al.* 1992).

With respect to the black shales of the Exshaw Formation, sparse geochemical and mineralogical data indicate that there may be potential for stratiform nickel-zinc deposits. That is, an average shale contains approximately 68 ppm nickel, 95 ppm zinc, 2.6 ppm molybdenum, 13 ppm arsenic, 580 ppm barium and 3.7 ppm uranium (Mason and Moore 1982 after Turekian and Wedepohl 1961). The Exshaw Formation shale, however, contains an average of 107 ppm nickel, 102 ppm zinc, 27.6 ppm molybdenum, 21 ppm arsenic, 325 ppm barium and 15.6 ppm uranium, from analyses of 42 core samples from drill holes in the Alberta basin (Duke 1983). In places, even higher concentrations of these elements exist in the Exshaw Formation; for example, some of the drill cores contain up to 391 ppm nickel, 498 ppm zinc, 167 ppm molybdenum, 87.1 ppm arsenic, 1,050 ppm barium and 92.2 ppm uranium. Campbell (1980) stated that elevated concentrations of uranium, nickel and zinc are most common in the lowermost 1.2 m of the Exshaw shale, and that the concentrations decrease upwards from the base of the contact. Between Banff and Jasper, a sphalerite occurrence is reported in shale of lower Banff Formation (possibly equivalent to the Exshaw Formation) on Limestone Mountain in the Rocky Mountain Front Range, approximately 7.5 km southwest of the Clearwater River (Moore 1953).

Potential for shale-hosted stratiform nickel-zinc deposits may also exist in a black shale member near the top of the Triassic Sulphur Mountain Formation. The shale exists near the top of the formation, either beneath the uppermost dolomite member of the Sulphur Mountain Formation, or beneath silty dolomite of the Whitehorse Formation. Gibson (1965, 1971) reported that up to 10 volume per cent pyrite is common in the black shale and there are local horizons of massive pyrite. Pyrite is also common in the overlying dolomite of the Whitehorse Formation. Phosphate-enriched sediments are common within the Sulphur Mountain Formation below the upper black shale member. The Nick deposit exists at the base of a phosphate-enriched chert member within a black shale unit (Hulbert *et al.* 1992). No trace element chemistry has been reported for the Sulphur Mountain Formation.

The 1992 stream sediment and rock sampling results indicate that the Fernie Group shales may have potential to host stratiform nickel-zinc deposits. For example, a rock sample from a faulted Fernie Group shale, northwest of Mount Ptolemy assays up to 631 ppm zinc, 227 ppm arsenic, 89 ppm molybdenum and 10 ppm cadmium (Table II.A and Figure 8). In addition, many stream sediment samples from creeks draining Fernie Group shales have elevated concentrations of elements which are reported to be anomalous at the Nick deposit, such as nickel, zinc, arsenic, molybdenum, barium and uranium (Figures 7 and 8). The stream sediment anomalies may also indicate that shales of the Sheppard, Kintla, Exshaw and Sulphur Mountain Formations are also potential hosts for stratiform nickel-zinc deposits. These rock units, particularly where they are within or near the bounds of the Southern Alberta Rift, may be favourable host rocks for economic nickel-zinc mineralized zones.

PRECIOUS METAL DEPOSITS

Epithermal Gold Deposits

Epithermal, disseminated gold deposits are large producers of gold throughout California, Nevada and Utah. Exploration for this type of deposit in the Canadian Cordillera in British Columbia and the Yukon Territory has resulted in a few discoveries but none that are of the magnitude of the deposits in the United States. Epithermal gold deposits exist in a variety of host rocks, but 'dirty' or 'carbonaceous' silty carbonates are a common host, and typically the deposits are low-grade, but large tonnage. Epithermal gold deposits are also referred to as "No-see-um gold" because of their fine-grained, disseminated nature, or "Carlin type" after the Carlin trend in northeast Nevada. The formation of Carlin type deposits has usually been attributed to epithermal hydrothermal processes associated with the emplacement of high-level felsic intrusions and rhyolitic volcanism (Bagby and Berger 1985; Romberger 1986; Berger and Henley 1989). Because such felsic igneous activity is largely lacking in the Rocky Mountains and Foothills, the potential for Carlin type deposits in Alberta has long been regarded as significantly lower than that for British Columbia or the Yukon Territory. However, recent work on Carlin type deposits has indicated that the assumed genetic relationship to felsic igneous activity may not be universally valid. For example, at the Carlin type Mercur gold district in north-central Utah, the gold deposits are hosted by the Mississippian Great Blue Limestone below the Long Trail Shale. The Mercur deposits are characterized by replacement of carbonate and silty carbonate by silica, phyllosilicates, pyrite, barite, various arsenic, mercury, antimony and thallium minerals, and by disseminated micrometre-sized gold (Jewell and Parry 1987, 1988). At Mercur, there are spatially-associated Tertiary felsic stocks and rhyolites. Recently, however, Wilson and Parry (1990) have dated alteration associated with the gold mineralized zones at between 122 Ma and 193 Ma, hence the Mercur gold deposits are much older than the Tertiary felsic igneous rocks. Wilson and Parry (1990) concluded that the gold-bearing hydrothermal activity is related to Rocky

Mountain-style thrust faulting along the Manning Canyon detachment during the Mesozoic, because there are no igneous rocks older than 40 Ma at the Mercur gold district. Therefore, in Alberta it is possible that Rocky Mountain-style thrust faulting of Paleozoic carbonates may have provided the necessary environment for the formation of Carlin type gold deposits. As previously noted, important characteristics of Carlin type gold deposits are that gold grades are generally low, the deposits rarely contain visible gold, they do not always yield placer concentrations during erosion, and extensive associated alteration to act as a guide to ore is not always present (Bagby and Berger 1985). Most of the Carlin type deposits in Nevada and other parts of the western United States of America were discovered during the late 1970's and 1980's using geochemical methods followed by drilling. Perhaps the lack of discoveries in the Canadian Cordillera to date is a result of the difficulty in finding Carlin type gold deposits, rather than a lack of felsic intrusive activity.

A few low-grade gold occurrences have been reported in the Alberta Rocky Mountains and Foothills and this might indicate there is some potential for carbonate-hosted, disseminated gold deposits of the Carlin type in Alberta. These include, for example, (a) up to 1,510 ppb gold in stream sediment samples southeast of Hinton within the Foothills (Fox 1991), (b) gold in bedrock that was reportedly recovered from the "Pot Hole" northwest of Lake Louise, within Banff National Park (La Casse and Roebuck 1978), (c) 0.45 g Au/t (0.013 oz Au/T) in a reported drill core sample of carbonates in the Dry Creek area (Dr. L. Halferdahl *pers. comm.* 1993), and (d) 0.76 g Au/t from a calcareous siltstone northeast of Blairmore (Olson 1985b). In addition to the presence of gold occurrences locally within the Alberta Rocky Mountains and Front Ranges, there are also many places where carbonate rocks are cut by thrust faults or transverse faults, a geological setting similar to that which exists at the Mercur gold district. It is possible that regional stream silt surveys or heavy mineral geochemical surveys for gold, coupled with analyses for potential pathfinder elements such as antimony, arsenic, mercury and thallium, may assist in the discovery of potential Carlin type gold deposits in the Alberta Rocky Mountains and Foothills. In addition, Carlin type deposits are commonly associated with silicification, particularly the formation of jasperoid. Therefore, any zones of silicification or jasperoid that are found should be sampled for gold, even if they appear barren of visible gold, sulphide minerals or other evidence for gold. Sampling of such silicified/jasperoid zones has been an effective reconnaissance prospecting tool for Carlin type gold deposits in the western United States of America.

Another potential target for Carlin type gold deposits in the Alberta Rocky Mountains and Foothills is areas of carbonates intruded by alkalic dykes, sills and stocks. Schutz *et al.* (1989) reported that stratiform- to structurally-controlled gold mineralized zones exist within Upper Devonian Jefferson Group dolomites in the Little Belt Mountains (Rocky Mountain Foreland Terrane) southeast of Great Falls, Montana. They (Ibid.) reported that the bulk of the gold-bearing zone is spatially and, possibly, genetically related to the intrusion of Tertiary age syenite porphyry sills and hornblende-biotite lamprophyres. These types of intrusions exist locally in the Alberta Rocky Mountains of southwest Alberta. Price (1962) and Goble (1974a, 1974b), for example, described porphyritic trachyte, syenite and diorite dykes and stock-like masses that intrude the Siyeh Formation, Purcell Lavas and the Sheppard Formation in the Clark Range. Goble (1974a) stated that "excellent gold values associated with diabase, diorite and syenite intrusions in the Siyeh and Sheppard Formations" had been discovered by Kintla Explorations Ltd. on their Commerce Mountain claim block in British Columbia near the Alberta-British Columbia border, southwest of Sage Mountain. Goble (1974b) reported up to 1.37 g Au/t (0.04 oz Au/T) and 30.86 g Ag/t (0.9 oz Ag/T) from samples that were collected on "traverse seven" along the continental divide, southeast of Jutland Mountain. The geological setting in southwest Alberta is

similar to that which exists in the Little Belt Mountains of Montana (Schutz *et al.* 1989). Therefore, because both the Siyeh and Sheppard Formations contain significant amounts of limestone, if these rock units are cut by alkalic intrusions within Alberta then there is the potential for them to host Carlin type gold deposits. Another potential area for Carlin type gold deposits related to alkalic intrusives is in the vicinity of the Crowsnest Formation volcanics, especially where feeder dykes to the Crowsnest volcanics have intruded other rock units. Such Crowsnest intrusions are reported to exist as dykes cutting Rundle Formation carbonate on Crowsnest Mountain and cutting Kootenay strata in the vicinity of Coleman (Norris 1955; Price 1962). Therefore, Devonian to Mississippian carbonate successions in the vicinity of alkalic intrusions, related to the Crowsnest volcanics, may provide a suitable setting for the existence of Carlin type gold deposits.

The results of the stream sediment survey conducted during 1992, may indicate that Devonian to Permian carbonates of the Livingstone Range have potential to host Carlin type gold deposits. Four stream sediment samples from streams draining the Livingstone Range, between Sentinel Peak and just east of Vicary Creek, contain two or more of gold, arsenic, antimony or mercury above the 97.5 percentile (Figures 7 and 8). Several other samples from creeks that drain the Livingstone Range in this area contain anomalous concentrations of at least one of the above four elements. Gold, arsenic, antimony and mercury are considered by some to be the most useful pathfinder elements in searching for Carlin type gold deposits.

Mesothermal Gold Deposits

Potential exists for mesothermal gold deposits in the Alberta Rocky Mountains and Foothills, although the potential is regarded as lower than that for the epithermal disseminated Carlin type gold deposits. Mesothermal gold deposits can be hosted in a variety of lithologies. They generally show a strong spatial correlation with major, regional strike-slip faults, and are often hosted in spatially-related, second- or third-order structures that are sympathetic to the regional faults (Nesbitt and Muehlenbachs 1989). Faults that exhibit evidence of a transition from ductile to brittle-ductile deformation and shear strain are more favourable for the development of mesothermal alteration and associated gold mineralized zones. Mesothermal gold deposits are often located in rocks metamorphosed to at least greenschist facies and many mesothermal gold districts exist at regional transitions from greenschist to amphibolite metamorphic facies.

Gold-bearing quartz veins were discovered in the 1980's or earlier about 60 km south-southwest of Jasper in the Athabasca Pass area, less than 0.5 km east of the Alberta-British Columbia border (Shaw and Morton 1990a, 1990b). The quartz veins are hosted in quartz-dominated clastic rocks of the Lower Cambrian McNaughton Formation, which is part of the Lower Cambrian Gog Group. Shaw and Morton (Ibid.) stated that the McNaughton Formation is metamorphosed to pumpellyite or lower greenschist facies, and that the gold-bearing quartz veins were emplaced during compressive tectonism, leading to the formation of the Chatter Creek Thrust Fault. They classify the Athabasca Pass gold mineralized zone as mesothermal in character based on fluid inclusion work (Shaw and Morton 1990b).

In southwest Alberta, potential exists for gold mineralized zones that are similar to the Athabasca Pass prospect in Proterozoic or, possibly, Lower Paleozoic clastic rocks that have been deeply buried, metamorphosed, and thrust to surface during formation of the Southern Canadian Rockies. In southwest Alberta, the Proterozoic clastic rocks of the Clark Range are the only exposed rocks that display the necessary metamorphic and structural conditions necessary to form mesothermal gold deposits.

OTHER TYPES OF DEPOSITS

Magnetite and Other Heavy Mineral Placer/Paleoplacer Deposits, With or Without Associated Precious Metals

Magnetite paleoplacer deposits in the Belly River sandstone of southwest Alberta may soon be the first producing metallic mineral mine in Alberta. The magnetite is to be used for coal beneficiation rather than as iron ore. The Burmis and Dungarvan magnetite deposits also contain significant amounts of titanium (up to 10 % TiO_2) in the form of ilmenite, titaniferous magnetite and small amounts of rutile. Potential may exist for mineable paleoplacer concentrations of titanium in the form of ilmenite and rutile. Potential for mineable paleoplacer accumulations of magnetite or titanium is probably highest in the area of the Southern Alberta Rift. The source for the magnetite and titanium, the Crowsnest volcanics, are centred within the bounds of the Rift.

Potential also exists in the Rocky Mountains and Foothills of Alberta for placer or paleoplacer accumulations of gold. Fox (1991) reported that a regional stream sediment sampling program resulted in the detection of several gold anomalies in streams of the Rocky Mountains and Foothills. This led to the acquisition of mineral claims southeast of Hinton in the Anderson Creek area. Fox (1991) reported gold in several stream sediment samples and heavy mineral concentrates between 300 ppb and 1,510 ppb gold. Concentrations of other elements associated with precious metals such as arsenic, mercury and antimony were negligible, perhaps indicating a paleoplacer source for the placer gold. Fox (Ibid.) prospected and conducted a small soil sampling program looking for the source of the gold in Upper Cretaceous Belly River conglomerates, near the headwaters of Anderson Creek. Fox (Ibid.) stated that outcrops of bedrock are rare and that the soil sampling results were disappointing. Grant (1981) collected a rock sample of Blairmore sandstone in the vicinity of Logan Creek, northeast of Canmore that assays 1,150 ppb gold with elevated concentrations of zinc, nickel, cobalt and vanadium. The grades indicated to be present in some of the Anderson Creek tributaries and the Logan Creek sample may be sufficient for mining, if large enough quantities of gold-bearing sediments could be found.

Potential also exists for placer or paleoplacer concentrations of diamonds in the Alberta Rocky Mountains and Foothills. However, finding concentrations of diamonds will be dependant upon the presence and partial erosion of diamondiferous source rocks, such as kimberlites or lamproites in Alberta or British Columbia. Microdiamonds are reported to have been found in the Jack and Mark diatremes in southeastern British Columbia near the Alberta border (Northcote 1983a,1983b; Dummett *et al.* 1985).

The highest potential for paleoplacer accumulations of heavy minerals, and perhaps modern placer accumulations derived from the paleoplacers, exists in areas underlain by the Jurassic-Lower Cretaceous Kootenay-Blairmore clastic wedge and the Upper Cretaceous-Tertiary Belly River-Paskapoo clastic wedge. Significant lode gold sources exist in the Cariboo (and Selkirk) Mountains to the west. The Cariboo placer gold fields in the Barkerville area were derived from such lode sources. Much of the sediment in the Kootenay-Blairmore and Belly River-Paskapoo clastic wedges was derived from west of the Alberta-British Columbia Rocky Mountains. If sediments within certain formations within the clastic wedges could be traced back to a source, such as the Cariboo Mountains, they might then be an exploration target for paleoplacer gold. Regional heavy mineral sampling might help to better define areas prospective for heavy mineral placer or paleoplacer accumulations.

Diamondiferous Kimberlite and Lamproite Deposits

Much of the Alberta Rocky Mountains and Foothills is underlain by thick Archean or Proterozoic continental crust (Ross and Stephenson 1989; Ross 1991, 1993; Burwash 1993). Thick continental crust in conjunction with deep-seated structures such as the West Alberta Arch, Southern Alberta Rift and the Snowbird Tectonic Zone indicate that potential exists for the discovery of kimberlite- or lamproite-hosted diamond deposits in the Alberta Rocky Mountains and Foothills.

Kimberlites and lamproites are complex, alkaline, ultramafic igneous to pyroclastic rocks, that are emplaced along deep-seated structures that have likely tapped the upper mantle, where diamonds are formed (Helmstaedt 1992). Kimberlites are volatile-rich, potassic, ultramafic rocks that occur as small dykes, sills and pipes. The pipes are generally comprised of volcaniclastic and tuffaceous rocks at surface, underlain by a carrot shaped diatreme comprised of volcanic breccia. Lamproites are ultrapotassic, ultramafic rocks, and they contain much less volatiles than kimberlites. Lamproites tend to occur as extrusive volcanic and volcaniclastic rocks, and associated hypabyssal dykes and sills.

There is evidence of at least three, and possibly four, ages of alkaline mafic to ultramafic igneous activity in the Alberta Rocky Mountains, some of which may have potential for diamonds. These ages are: Helikian, Paleozoic, Cretaceous and Tertiary. The oldest generation is represented by the Helikian Moyie Sills and Purcell Lavas which are restricted to the Clark Range. The composition of the Helikian dioritic Moyie Sills and the andesitic Purcell Lavas differ significantly from the potassic, mafic to ultramafic compositional fields of kimberlites and lamproites, which are thought to be the necessary igneous host rocks for economic concentrations of diamonds.

The second oldest generation of alkaline, mafic to ultramafic igneous activity, consists of Paleozoic diatreme breccias, dykes, sills and stocks that predate compressional deformation in the Canadian Cordillera. These intrusions exist mostly in the Rocky Mountains of British Columbia between Williston Lake and Cranbrook, and they form a complex suite of rocks comprised of carbonatites, nepheline and sodalite syenites, some ijolite series rocks, numerous ultramafic and lamprophyric diatreme breccias, and associated dykes, and one kimberlite diatreme (Pell 1987). Dating of these intrusions by many workers has been summarized by Pell (1987), who stated that there are at least three Paleozoic ages of mafic to ultramafic intrusion. These are: Ordovician-Silurian, Late Devonian-Mississippian and Permian-Triassic. North of Golden, British Columbia there are two diatreme clusters, the Jack and the Mark (Northcote 1983a, 1983b; Dummett *et al.* 1985). The Mark diatreme cluster straddles the Alberta-British Columbia border and a few dykes within the Mark cluster exist on the Alberta side of the border. The Mark diatremes are believed to be part of the Devonian-Mississippian group of intrusions (Pell 1987). Bulk samples of the Jack and Mark diatremes, and of nearby stream sediments contained kimberlitic indicator minerals, including a few microdiamonds. Nonetheless, Pell (1987) and Ijewliw and Schulze (1988) suggested that the diatremes are alkalic, ultramafic lamprophyres and not kimberlites or lamproites. The Cross kimberlite, which outcrops near the Alberta border about 8 km northwest of Elkford, British Columbia, is the only recognized occurrence of kimberlite in the Canadian Rocky Mountains (Grieve 1982). The Cross kimberlite is of Permian-Triassic age and has not been reported to contain diamonds (Grieve 1982; Pell 1987).

The third generation of alkaline igneous activity in the Alberta Rocky Mountains and Foothills is represented by the Upper Lower Cretaceous Crowsnest Formation volcanics, that exist

north and south of Coleman, Alberta. The volcanics are sodic-rich trachytes to phonolites and do not appear to have a chemistry that is favourable for diamonds. However, the reported age for the Crowsnest volcanics is 96 Ma (Folinsbee *et al.* 1957), which corresponds closely to the reported age of 94 to 96 Ma for several kimberlites in the Fort a la Corne area of Saskatchewan, that contain gem-quality microdiamonds and macrodiamonds (Gent 1992; Lehnert-Thiel *et al.* 1992). These dates for the Crowsnest volcanics indicate that alkaline volcanism was occurring in the Alberta Rocky Mountains and Foothills at the same time as diamonds were being transported from the upper mantle to the surface during the Late Early Cretaceous in Saskatchewan. Therefore, it is possible that Upper Lower Cretaceous rocks in the Alberta Rocky Mountains and Foothills are a potential target for kimberlite or lamproite hosted diamond deposits.

A fourth generation of alkaline igneous activity in the Alberta Rocky Mountains and Foothills is represented by the trachytic to syenitic stocks and dykes, which straddle the Alberta-British Columbia border in the Clark Range, in the vicinity of Sage Mountain and Jutland Peak. Price (1962) suggested that these intrusions are Late Cretaceous or Tertiary in age, but their chemistry indicates they may have a closer affiliation with the igneous event responsible for the Crowsnest Formation volcanics. Alkalic minette intrusions of probable Tertiary age do exist in southeast Alberta, in the Sweetgrass Hills (Irish 1968); these intrusions have been dated at 48 Ma or Eocene (Taylor *et al.* 1964). Whether the Sweetgrass Hills minettes are of kimberlitic, or lamproitic affinity, or have diamond potential, is yet to be determined.

The above discussion demonstrates that it is important in the exploration for potential kimberlites and lamproites in southwest Alberta to establish the expected intrusive/extrusive age of the alkalic, mafic to ultramafic igneous rocks being sought, and as a consequence, to focus exploration on the associated stratigraphic intervals that may have been intruded, particularly where these intervals are exposed or are near surface. Also important is the chemistry of the ultramafic host rock, whether the host rock contains macrodiamonds or microdiamonds, and an understanding of both the regional and structural setting. In the Alberta Rocky Mountains and Foothills, important stratigraphic periods for potential kimberlite/lamproite intrusive activity include: (a) the Upper Devonian-Mississippian carbonate and shale succession, (b) Permian-Triassic strata, (c) Upper Lower Cretaceous strata at about the age of the Fish Scale Horizon stratigraphic marker, and (d) the Tertiary. The first and third ages may be more important because there are diamondiferous diatremes of Devonian-Mississippian age in British Columbia and Upper Lower Cretaceous age in Saskatchewan. The stratigraphic and paleogeographic setting at the time of intrusive emplacement is also important because many of the kimberlite/lamproite intrusions may have breached the surface subaqueously and be preserved as much wider-spread stratabound volcaniclastic deposits, rather than occurring as the classical carrot-shaped diatreme. Such volcaniclastic deposits are proving to be an important component of the Saskatchewan kimberlite fields (Lehnert-Thiel *et al.* 1992). It is also important to note that most of the Paleozoic successions of the Alberta Rocky Mountains and Front Ranges have been structurally detached, hence any diatremes of Paleozoic age may have structurally detached root zones and be partially eroded due to exposure since the early Tertiary or during the numerous Paleozoic unconformities that represent periods of subaerial exposure.

Although the geotectonic controls on kimberlite and lamproite emplacement are not well understood, it is believed that large-scale deep-seated structures must play some role in their ascent from the deep continental crust to the surface (Helmstaedt 1992; Gent 1992). This is because such deep-seated structures are needed to allow magma of kimberlitic or lamproitic affinity to escape the upper mantle and reach surface quickly, prior to reabsorption of any diamond xenocrysts. In southwest Alberta there are two such regional structures: the Southern

Alberta Rift and the West Alberta Arch. The Southern Alberta Rift is believed to be a long-lived, deep-seated graben structure that affected both the Precambrian crystalline basement and the overlying Proterozoic-Phanerozoic succession (Kanasewich 1968; Kanasewich *et al.* 1969). With respect to the West Alberta Arch, the Paleozoic alkalic igneous intrusions in the Rocky Mountains of British Columbia are distributed west of, but sub-parallel to the Alberta-British Columbia border. The northwest-trending West Alberta Arch was periodically active during the Paleozoic, and its western edge crudely approximates the distribution of these Paleozoic, alkalic intrusions in British Columbia. Bingham *et al.* (1985) suggested that a conductive ridge below the Eastern Rockies may be indicative of high heat flow in the lower crust and it also may be responsible for periodic uplift, extension and igneous activity such as that which occurred during the Paleozoic. Therefore, perhaps the eastern margin of the West Alberta Arch is a favourable location to search for kimberlites and lamproites, particularly because it is closer to being "on Archean craton", which is considered important for the existence of diamondiferous kimberlites and, possibly, lamproites. At present, there are no known kimberlites or lamproites in southwest Alberta. However, Takla Star Resources Ltd. (1993) reported recently that a number of aeromagnetic anomalies exist within their "Pincher Block" of mineral claims in southwest Alberta. They suggested that four of these anomalies "are of a size and profile characteristically associated with diatremes".

Sediment-Hosted Uranium Deposits

No important sediment hosted uranium occurrences exist in Alberta, hence an evaluation of the potential for uranium in southwest Alberta rests mainly on geological comparisons with other regions known to contain such uranium deposits. The principal types of sediment-hosted uranium deposits include:

(a) sandstone-hosted deposits, similar to those that exist in Wyoming, South Dakota, Colorado, Utah, New Mexico and elsewhere in the world (DeVoto 1978);
(b) uraniferous lignite deposits, similar to those that exist in Europe, the northern United States and elsewhere (Denson and Gill 1965; Cvancara 1976a, 1976b; Elevatorski 1977);
(c) carbonate-hosted deposits, similar to those present in New Mexico and western Australia (Ruzicka 1975; Langford 1978);
(d) basal conglomerate-hosted deposits, similar to those that exist in south-central British Columbia, Washington state and Japan (Boyle 1982);
(e) uraniferous phosphorites, such as those that exist in Permian strata in Idaho, Utah, Montana and Wyoming, and in Pliocene strata in Florida (Ruzicka 1975); and
(f) uraniferous black shale, such as the Cambrian Alum Shale of Scandinavia (Bell 1978).

Not included in this sediment-hosted category of uranium are the unconformity-related uranium deposits which exist both in Precambrian basement rocks and overlying Proterozoic sandstone, similar to those that are present in Saskatchewan, northwestern Australia and the Northwest Territories of Canada (Hoeve and Sibbald 1978, 1979; Sibbald and Petruk 1985; Evans 1986). With respect to the above six types of sediment hosted uranium deposits, only the first three are discussed because world-wide, they are economically more important than the latter sediment-hosted types of uranium deposits. Although the last three types of sediment-hosted uranium deposits are not discussed herein, it should be noted that conglomerates, phosphate-bearing strata and black shales exist in several stratigraphic rock units in southwest Alberta.

Following is a brief summary of the characteristics of the first three types of sediment-hosted uranium deposits and the potential for their existence in southwest Alberta.

Sandstone-Hosted Uranium Deposits

Sandstone-hosted uranium deposits exist in many places throughout the world, and in the past they have been an economically important source of uranium production. Large uranium deposits of this type occur in sandstones of the western United States, in the former East Germany, in the former Czechoslovakia, in Hungary, in the former U.S.S.R. and elsewhere (Ruzicka 1975). In general, the important geologically favourable guides for sandstone-hosted uranium deposits include: (a) continental, fluvial, lacustrine or marginal sedimentary sequences as host rocks, (b) abundant tuffaceous material or another source of uranium within the sedimentary sequence or nearby, (c) basin margin uplift during sedimentation, (d) spatial proximity to an oxidizing environment to facilitate the transport of uranium in groundwater, and (e) the presence of carbonaceous or humate matter, pyrite or some other suitable uranium reductant (Harshman 1968; Galloway 1978; Ellis 1979; Galloway *et al.* 1979; Galloway and Kaiser 1979; Adams and Saucier 1981; Adams and Smith 1981; Harshman and Adams 1981; Thamm *et al.* 1981; Crawley 1983). The occurrence of oxidized and reduced alteration fronts in sandstone is also commonly considered a prime exploration guide, but some epigenetic sandstone-hosted uranium deposits, such as those at south Texas, United States of America, exist entirely within pyritiferous, reduced sandstone (Galloway *et al.* 1979).

At least some of these geologically favourable features exist in southwest Alberta. For example, fine- to coarse-grained continental clastic rocks which, in places, contain coal or other carbonaceous matter, exist in the Late Jurassic to Cretaceous Kootenay Group, Lower Cretaceous Blairmore Group, Upper Cretaceous Belly River and St. Mary River Formations, Cretaceous to Paleocene Willow Creek Formation, and Paleocene Porcupine Hills Formation. In many of these rock units, and particularly the Upper Cretaceous and Lower Tertiary strata, volcanic material comprises a significant portion of the lithic fragments and, in places, tuff beds or other volcaniclastic horizons are present. Potential for sandstone-hosted uranium deposits also may exist in some of the Proterozoic arenites in the Clark Range. For example, Goble (1976) reported pitchblende and carnotite, and up to 4.81 % U_3O_8 in Grinnell Formation quartzite at some of the copper-silver occurrences. No anomalous radioactivity has been reported in the Phanerozoic strata in southwest Alberta, but anomalous radioactivity has been observed locally in some of their stratigraphic equivalents. For example, Bell *et al.* (1976) discovered anomalously radioactive bone at three localities in southern Alberta. As well, reconnaissance uranium exploration along the Waterton River discovered a locale that assays 0.2 % uranium in a silty limestone in Willow Creek Formation (Grant 1982). Van Dyke (1981) provides a comparative uranium resource evaluation of selected rock units in Alberta with geologically equivalent strata in the United States of America.

Uraniferous Lignite Deposits

Uranium-bearing coals have been mined solely for their uranium content in Europe, the northern United States of America and elsewhere (Ruzicka 1975). Most of the uranium in coals and lignites is of epigenetic origin and was derived from rocks containing abnormal contents of uranium, such as acidic intrusive and extrusive igneous rocks. In general, the important geologically favourable guides for uraniferous lignite deposits include: (a) carbonaceous or lignitic host rocks characterized by high ash contents and high permeabilities, (b) stratigraphic proximity of the carbonaceous host rocks to an unconformity at the base of overlying later strata, particularly those of Tertiary age, (c) the existence of thick permeable strata directly overlying and, in places, underlying the carbonaceous unit, (d) shallow structural troughs superimposed on a broad regional structure, and (e) volcanic ash or other volcanic material in the country rocks to

provide a readily available source of uranium (Denson and Gill 1965; Pipiringos *et al.* 1965; Noble 1973; Cvancara 1976a, 1976b; Elevatorski 1977; DeVoto 1978). In the northern United States of America, the uraniferous lignite deposits are divisible into two types: "*blanket-type ore bodies which are of relatively uniform mineralization over a large area, and lenticular deposits of higher grade, but generally smaller and irregular in shape. Of the two types, the lenticular type is more prevalent. The lenticular deposits have commonly been found in groups or clusters. ... Most of the deposits have reserves of less than 50,000 tons* (45,360 tonnes). *Thicknesses range from one to three feet* (0.3 to 0.9 m), *with an average grade of 0.20 % U_3O_8.*" (Elevatorski 1977). In Canada, uraniferous lignite exists in Tertiary strata in southwestern Saskatchewan and, to a much lesser extent, in southeastern Alberta (Chamberlain 1960; Lang *et al.* 1962; Cameron and Birmingham 1968, 1970; Cameron *et al.* 1969, 1970). In general, the most anomalous area discovered exists in lignite in the Paleocene Ravenscrag Formation near Eastend, Saskatchewan, where anomalous radioactivity of up to 40 times background and lithogeochemical samples from outcrop and drill core assay up to 0.126 % U_3O_8.

At least some of these geologically favourable features exist in southwest Alberta. Coal-bearing horizons exist in the Jurassic Kootenay Group and Upper Cretaceous Belly River Formation. Although lignite horizons exist in the Paleocene Paskapoo Formation in central Alberta and in the Paleocene Ravenscrag Formation in southeastern Alberta, lignite or other coaly zones are not reported in the age-equivalent Paleocene Porcupine Hills Formation in southwestern Alberta. To date, important anomalous radioactivity or uranium occurrences have not been discovered associated with the coal-bearing Jurassic and Cretaceous sequences in southwest Alberta. Van Dyke (1981), however, suggested that coal in the Upper Cretaceous-Tertiary Scollard Formation in central Alberta may be favourable for anomalous uranium concentrations. Hence, it is possible that uraniferous coals may also be present in some strata in southwest Alberta.

Carbonate-Hosted Uranium Deposits

Examples of carbonate-hosted uranium deposits include those present in the Todilto Limestone of New Mexico, and at Yeelirrie, Australia (Langford 1978; Rawson 1980). For the Todilto limestone-hosted uranium deposits, the important geologically favourable criteria include: (a) the margins of carbonate reefs, especially those locales that are organic-rich, (b) an underlying sandstone or other porous rock unit, (c) locales of more intense folding, faulting and/or jointing, (d) recrystallization of the carbonate host, (e) hematitization, (f) existence of certain accessory minerals, including vanadium and manganese oxides, fluorite, barite and pyrite, and, possibly, (g) evaporite conditions during or shortly after deposition of the carbonate host rock to facilitate the circulation of meteoric water (Perry 1963; Rawson 1980). For the Yeelirrie type uranium deposits, the important geologically favourable criteria include: (a) a basement area of moderate to low relief that is being deeply weathered in an arid climate, (b) a large slow-moving volume of reducing or slightly oxidizing water flowing off an extensive granitoid catchment area, (c) a locale where the uranium-bearing waters are constricted, (d) partial evaporation of these waters to promote high concentrations of uranyl ion in the solution, and (e) an upwelling of these waters into an oxidizing environment and/or mixing of these waters with other waters or lithologies that contain a suitable reductant (Mann and Deutscher 1978; Langford 1978).

At least some of the geological features believed favourable for carbonate-hosted uranium deposits are, or were, locally present in some stratigraphic units in southwest Alberta. In the Clark Range, for example, Proterozoic Siyeh, Sheppard and Kintla Formations contain carbonate rocks interbedded with fine- to coarse-grained clastic sedimentary rocks that were deposited in

a shallow-water to, at times, hypersaline environment (Aitken and McMechan 1992). Another potentially favourable unit for carbonate-hosted uranium deposits is the Triassic Spray River Group which consists of fine- to medium-grained clastic sedimentary rocks, carbonate horizons, intraformational breccia and, in places, evaporites that were deposited marginal to and derived from a craton, of low relief (Gordey *et al.* 1992). Also present in southwest Alberta is a thick succession of Paleozoic carbonate units. However, these carbonates are not considered to be as favourable for carbonate-hosted uranium deposits because they mainly were deposited in a platformal marine environment. Nonetheless, it is possible that some of the Devonian strata in southwest Alberta may be potentially favourable host rocks for uranium because during the Devonian, the West Alberta Arch highland existed near the present Alberta-British Columbia border, and carbonate with interbedded clastic sediments and, in places, evaporites were being deposited (Fritz *et al.* 1992; Gordey *et al.* 1992). Lastly, the uranium occurrence discovered in silty limestone of the Willow Creek Formation that assays 0.2 % uranium (Grant 1982), may indicate that limy units in the Upper Cretaceous to Paleocene Willow Creek Formation should be examined for their potential to contain carbonate-hosted uranium deposits.

With respect to uranium in the geochemical stream sediment samples that were collected during 1992, 12 sites produced uranium results that exceed the 97.5 percentile. The uranium content of these samples ranges from 4.0 to 5.1 ppm, and three sites contain 5.0, 5.1 and 5.1 ppm uranium. In general, the uranium content of stream sediments in areas underlain by Phanerozoic rocks in the Plains Region averages about 2.4 ppm, and values which exceed 5.0 ppm are 'anomalous' (Southard 1978; Olson 1984, 1985a). In southwest Alberta, the three stream sediment samples (2JWC030, 2JWC062, 2MSC048) that contain 5.0 ppm uranium or greater, also contain elevated concentrations of copper, and are from tributaries of Lynx Creek, Pincher Creek and the West Castle River near the northern margin of the Clark Range (Figure 8). These sites drain either Proterozoic or Cretaceous sedimentary rocks. Three other samples from sites at or near the northern margin of the Clark Range have a uranium concentration greater than the 97.5 percentile, as well as associated elevated concentrations of copper and/or other metals. Two other sites with elevated uranium concentrations and associated other metals exist near the headwaters of the Livingstone River, north of Coleman (Figure 7). The cause of the elevated uranium concentrations and other metals at these eight sites is undetermined.

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDIES

A large number of metallic mineral occurrences, and a few small deposits exist in the Southern Alberta Rift area of southwest Alberta. 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) MVT 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 central British Columbia, (f) diamondiferous kimberlite/lamproite diatremes or placer deposits derived from these rocks, and (g) sediment-hosted uranium deposits in clastic rocks that range from Proterozoic to Tertiary in age.

The Proterozoic clastic or carbonate rocks in the Akamina Syncline of the Clark Range must be considered a particularly attractive exploration target because there are over 70 known metallic

mineral showings in these rocks. In general, the variety and wide vertical and lateral distribution of mineral occurrences in the Proterozoic rocks of the Akamina Syncline indicate that mineralizing processes were extensive and long lived. Several of the stratabound mineralized zones locally reach ore grade and are laterally extensive, but there are only a few places where the zone is sufficiently thick to produce a significant tonnage of potential resource. Mechanisms, such as mafic intrusions, faulting and folding, that act to further concentrate pre-existing mineralized zones to increase either the tonnage or grade or both, have been active in the geological past in southwest Alberta. Assessment records indicate that only the most easily accessible areas in the Clark Range have been prospected and sampled. Some past workers, such as Carter (1971) and Goble (1973a), recommended further stream sediment sampling, prospecting and drilling to follow-up known occurrences or to search for undiscovered deposits, but the available records do not indicate this follow-up work was done. The geochemical stream sediment results from prior exploration work, and from the 1992 Southern Alberta Rift stream sampling program, indicate that several geochemical anomalies exist. Some of these anomalies are spatially related to known metallic mineral occurrences, but there are others that are unexplained. The available records indicate there has not been a large amount of systematic, detailed exploration in the Proterozoic rocks of the Akamina Syncline, hence the potential for discovery of an economic metallic mineral deposit is good.

With respect to those areas in southwest Alberta that are underlain by Phanerozoic strata, the existence of diverse host rocks, structural and stratigraphic complexities arising from the Southern Alberta Rift, known metallic mineral occurrences, several newly discovered occurrences (Figures 3 and 4), and several unexplained geochemical anomalies (Figures 7 and 8), indicate that some localities and rock units are favourable for several different types of metallic mineral deposits. However, for explorationists to be successful in discovering deposits that may be present in this structurally complex and lithologically diverse sequence of sedimentary rocks, an integrated approach to exploration will be required. That is, the integrating of data from prior geochemical, geophysical, geological and prospecting surveys, coupled with additional systematic prospecting and geological examinations, appropriate and effective ground and airborne geophysical surveys, and other effective geochemical surveys such as heavy mineral sampling of stream drainages, will have a greater probability of discovering both outcropping and blind metallic mineral ore deposits.

The exploration efforts of industry should be supplemented by various geological, geophysical or geochemical programs of a more regional scope that are conducted or supported by government. For example, in southwest Alberta such government programs could include one or more of: (a) a focused, structural-stratigraphic study to better define the existence, duration and margins of the Southern Alberta Rift, (b) a heavy mineral sampling program of selected stream drainages to determine if this technique is better suited to identify metallic mineral occurrences as compared to the standard method of sampling stream sediment fines, (c) heavy mineral sampling programs and other related studies directed towards determining the potential for diamondiferous kimberlite/lamproite diatremes in southwest Alberta, (d) detailed geological mapping of selected mineralized locales, such as the area surrounding the Oldman lead-zinc-silver prospect, to better define mineral relationships and areas of favourable geology, (e) geological mapping of the Quaternary geology to determine the types and amounts of various surficial materials that exist, and (f) regional geochemical and airborne geophysical surveys to search for targets of potential interest to industry.

The Government of Alberta should encourage industry by continuing to review and, where needed, revise the regulatory aspects that pertain to metallic mineral exploration in

southwest Alberta. For example, large areas, particularly those above about 1,800 m elevation, are currently restricted from exploration and development under either the Eastern Slopes Policy or by the Castle River, Livingstone River-Porcupine Hills and Kananaskis Country Sub-Regional Integrated Resource Plans. In some cases, oil and gas exploration and development, and in one case metallic mineral exploration, have proceeded in such restricted areas. In short, the Government of Alberta should continue to make the Eastern Slopes Policy a truly integrated resource policy, by ensuring that sufficient geoscientific work and appropriate environmental studies are done to permit government to make informed decisions with respect to allowing the exploration and development of Alberta's economic natural resources, while at the same time having adequate safeguards in place to protect the natural environment. In future, for example, consideration should be given to allowing industry, under appropriate land usage regulations, access to geologically favourable host rocks in selected areas where metallic mineral exploration is now not permitted, such as Prime Protection Zones or Kananaskis Country.

Southwest Alberta has had a long history of resource development as a result of extensive coal mining, oil and natural gas development, forestry and other natural resource exploitation. There is a well developed support infrastructure, including an extensive road network ranging from highways to four-wheel drive trails. The area is geologically complex and there are numerous diverse types of metallic mineral occurrences. Therefore, it is believed that these reasons will stimulate individual prospectors and the metallic mineral industry to explore southwest Alberta for a variety of metallic mineral deposits. The Government of Alberta also 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.

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Date March 31, 1993
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The Association of Professional Engineers, Geologists and Geophysicists of Alberta

March 31, 1993
Edmonton, Alberta

TABLE II

ROCK SAMPLE HIGHLIGHTS

SOUTHERN ALBERTA RIFT

A. RECONNAISSANCE ROCK SAMPLES

Sample Number	Occurrence Identifier *	Formation Name / Age	Rock Type	Visual Sulphides	Analytical Result (ppm or %, except Hg in ppb)	Elemental Value for Lithologically Equivalent Rock Type (ppm & %, Hg in ppb)**
2JWP001	--	Crowsnest Fm. / L. Cretaceous	volcanic breccia	py	Cu (214), Zn (118)	Cu (50), Zn (70)
2JWP014	--	Belly River Fm. / U. Cretaceous	fault gouge	py	As (625), Mo (68)	---
2JWP015	--	Blairmore Grp. / L. Cretaceous	sandstone	--	Ba (2,144)	Ba (316)
2JWP022	--	Alberta Grp. / U. Cretaceous	shale	--	Zn (163), Mo (20)	Zn (100), Mo (1.5)
2JWP029	M21	Mt. Head Fm. / Mississippian	limestone	py	Pb (58), Zn (158)	Pb (5), Zn (26)
2JWP031	--	Blairmore Grp. / L. Cretaceous	sandstone	py	Pb (147), Zn (230)	Pb (10), Zn (25)
2MDP005	--	---	ultramafic	--	Cu (205), Ba (2,075)	Cu (50), Ba (250)
2MDP007	--	Kootenay Fm-Blairmore Grp. Jurassic - L. Cretaceous	limestone	--	Ba (3,002)	Ba (90)
2MDP010	--	Blairmore Grp. / L. Cretaceous	siltstone	--	Zn (195)	Zn (100)
2MDP041	--	Blairmore Grp. / L. Cretaceous	sandstone	py	Zn (160)	Zn (25)
2MDP045	M15	Alberta Grp. / U. Cretaceous	dolomite	py	As (114)	As (1)
2MDP046	--	Fernie Grp. / Jurassic	shale / fault gouge	--	Zn (631), As (227), Mo (89), Cd (10)	Zn (100), As (13), Mo (1.5), Cd (0.8)
2MDP047	--	Crowsnest Fm. / L. Cretaceous	volcanic breccia	--	Zn (182)	Zn (70)
2MDP054	--	Alberta Grp. / U. Cretaceous	siltstone	py	Zn (177)	Zn (100)
2MSP002	--	Fernie Grp. / Jurassic	shale	--	Pb (68), Zn (307), Mo (22)	Pb (22), Zn (100), Mo (1.5)
2MSP004	--	Kootenay Fm. / Jurassic - L. Cretaceous	shale	--	Zn (179)	Zn (100)
2MSP014	--	Blairmore Grp. / L. Cretaceous	limestone	--	Zn (193)	Zn (26)
2PMP001	--	Crowsnest Fm. / L. Cretaceous	volcanic breccia	py	Cu (227), Pb (70), Zn (146)	Cu (50), Pb (5), Zn (70)
2PMP003	--	Blairmore Grp. / L. Cretaceous	sandstone	--	Zn (167)	Zn (25)
2PMP014	--	Blairmore Grp. / L. Cretaceous	sandstone	--	Zn (241)	Zn (25)
2PMP017	--	Rocky Mtn. Grp. / Pennsylvanian - Permian	limestone	--	Zn (197), Ba (3,105)	Zn (26), Ba (90)
2PMP027	--	Crowsnest Fm. / L. Cretaceous	volcanic breccia	--	Cu (210)	Cu (50)
2PMP028	M11	Rocky Mtn. Grp. / Pennsylvanian - Permian	sandstone	py	Zn (149), Ag (0.6)	Zn (25), Ag (0.3)
2PMP034	M14	Rundle Grp. / Mississippian	limestone	py	Cu (109), Pb (184), Zn (798), Ag (0.7), Mo (J3), Cd (7)	Cu (6), Pb (5), Zn (26), Ag (0.1), Mo (0.4), Cd (0.035)

B. KNOWN MINERAL OCCURRENCE ROCK SAMPLES

Sample Number	Occurrence Identifier *	Occurrence Name	Rock Type	Visual Sulphides	Analytical Result (ppm)	Elemental Value for Lithologically Equivalent Rock Type (ppm)**
2JWP008	M25	North Kootenay Pass	siltstone	gl	Cu (62), Pb (2,035), Zn (4,281), Ag (2.0), Hg (4), Cd (23)	Cu (35), Pb (22), Zn (100), Ag (0.1), Hg (0.4), Cd (0.8)
2JWP010	M25	North Kootenay Pass	dolomite	cpy , py	Cu (352)	Cu (6)
2JWP017	--	Pincher Creek	quartzite	--	Ag (1.5), Cr (397)	Ag (0.3), Cr (27)
2JWP018	--	Pincher Creek	siltstone	py	Cu (130), Ba (3,489)	Cu (35), Ba (546)
2MSP018	M25	North Kootenay Pass	siltstone	--	Pb (2,027), Zn (1,681), Ag (1.1), Cd (7)	Pb (22), Zn (100), Ag (0.1), Cd (0.8)
2MSP019	M25	North Kootenay Pass	siltstone	--	Pb (575), Zn (579), Ag (0.9)	Pb (22), Zn (100), Ag (0.1)
2MSP020	M25	North Kootenay Pass	siltstone	cpy , gl	Pb (959), Zn (7,718), Ag (1.0), Cd (36)	Pb (22), Zn (100), Ag (0.1), Cd (0.8)
2MSP021	M25	North Kootenay Pass	shale	--	Pb (63), Zn (293)	Pb (22), Zn (100)
2MSP026	M23	Grizzly	sandstone	cpy , cov	Cu (3.48%), Ag (15.5), Mo (23), As (113), Cd (111)	Cu (10), Ag (0.3), Mo (0.3), As (1), Cd (0.8)
2MSP027	M26	South Lost Creek	sandstone	--	Cu (244), Pb (2,074), Zn (1,202), Ag (1.2)	Cu (10), Pb (10), Zn (25), Ag (0.3)
2MSP028	M26	South Lost Creek	siltstone	py	Cu (248), Ag (0.7)	Cu (35), Ag (0.1)
2MSP029	M22	Oldman	limestone	gl , sph	Cu (282), Pb (12.1%), Zn (19.5%), Ag (118.6), Sb (17), Cd (376)	Cu (6), Pb (5), Zn (26), Ag (0.1), Sb (<1), Cd (0.035)

* only one sample location shown, every elevated element per occurrence shown on Figure 7 and 8.
** after The Handbook of Geochemistry, 1978. Wedepohl, K., executive editor, Springer-Verlag, Berlin. Vol II-1 to II-5.

TABLE III

SUMMARY OF STREAM SEDIMENT ANALYTICAL RESULTS

SOUTHERN ALBERTA RIFT

Element *	Assay Method **	Detection Limit (ppm unless noted)	97.5 Percentile (ppm unless noted)	99th Percentile (ppm unless noted)	Maximum Value (ppm unless noted)
Precious metals					
Gold	NA	5 ppb	8 ppb	15 ppb	99 ppb
Silver	AA	0.1	0.4	0.5	0.8
Base metals and related elements					
Antimony	NA	0.2	1.6	1.9	2.9
Arsenic	NA	1	10	11	19
Cadmium	AA	0.2	0.9	1.2	1.9
Cobalt	NA	10	15	17	20
Copper	AA	1	32	38	51
Lead	AA	2	19	25	29
Mercury	AA	10 ppb	90 ppb	100 ppb	137 ppb
Molybdenum	NA	2	3	4	7
Nickel	NA	20	57	67	84
Zinc	AA	1	126	154	213
Other metals					
Barium	NA	100	1,200	1,400	2,400
Bromine	NA	1	46	66	78
Cerium	NA	10	84	89	100
Cesium	NA	1	6	8	9
Chromium	NA	50	110	120	130
Hafnium	NA	2	11	12	12
Iron	NA	0.5 %	39 %	44 %	45 %
Lanthanum	NA	5	41	45	50
Rubidium	NA	10	150	180	210
Samarium	NA	0.2	6.2	6.7	8
Scandium	NA	0.5	13	15	17
Thorium	NA	0.5	11	13	13
Uranium	NA	0.5	4.0	4.3	5.1

NOTE: * Iridium, Selenium, Tellurium, Tin, Tungsten, Europium, Terbium, Lutenium, Tantalum and Zirconium were also analysed for, but the results for these elements are near to or below the detection limit.

** Assay methods: NA (Neutron Activation), AA (Atomic Absorbtion).

TABLE IV

STREAM SEDIMENT HIGHLIGHTS

SOUTHERN ALBERTA RIFT

Sample ID	Au (ppb)	Ag	Cu	Pb	Zn	As	Ba	Cd	Co	Hg (ppb)	Mo	Ni	Sb	U
99 th %ile (ppm)	15	0.51	38	25	154	11	1400	1.2	17	100	4	67	1.9	4.3
97.5 %ile (ppm)	8	0.40	32	19	126	10	1206	0.9	15	90	3	57	1.6	4.0
2JWC002	3	0.05	26	10	103	7	760	0.4	12	91	1	37	1.3	2.5
2JWC013	3	0.05	26	14	86	8	780	0.4	17	33	1	10	1.1	2.9
2JWC026	12	0.05	6	6	35	4	570	0.1	5	10	1	10	0.5	2.3
2JWC030	3	0.30	34	18	113	7	980	0.6	5	82	1	10	1.1	5.0
2JWC032	3	0.05	19	25	73	8	960	0.1	12	32	1	10	0.8	3.4
2JWC037	3	0.05	21	13	89	8	1200	0.6	10	56	1	30	1.2	3.0
2JWC038	3	0.05	17	13	85	6	1206	0.4	5	42	1	25	1.1	3.2
2JWC043	3	0.05	30	22	94	8	1400	0.4	5	56	1	10	1.0	3.6
2JWC050	3	0.05	16	14	92	7	750	0.3	15	40	1	10	0.9	3.1
2JWC051	3	0.60	18	10	140	7	260	0.7	5	66	1	10	1.1	2.9
2JWC053	3	0.50	15	13	109	7	160	0.7	5	56	1	23	1.2	2.5
2JWC057	3	0.05	25	15	153	7	970	0.4	11	42	1	10	1.2	2.5
2JWC059	3	0.05	14	12	45	7	600	0.1	13	17	1	10	0.7	4.3
2JWC061	3	0.05	35	18	69	8	970	0.1	5	62	1	10	0.9	4.0
2JWC062	3	0.05	31	13	80	10	680	0.1	11	35	1	10	1.0	5.1
2JWC063	3	0.05	24	20	65	10	650	0.1	17	34	1	10	1.0	3.7
2JWC064	3	0.05	21	26	63	10	780	0.1	11	26	1	10	1.2	3.7
2JWC065	3	0.05	39	21	66	8	1000	0.1	12	54	1	10	0.7	4.3
2JWC066	9	0.20	13	10	61	5	690	0.1	11	26	1	10	0.8	3.3
2JWC067	7	0.05	15	25	104	9	770	0.1	5	20	1	10	0.8	3.3
2JWC068	6	0.10	18	19	79	8	650	0.2	5	36	3	10	0.8	3.3
2JWC069	9	0.05	14	17	100	4	540	0.4	5	56	1	10	0.9	2.9
2JWC074	3	0.05	21	8	100	8	900	0.3	11	47	1	65	1.2	3.2
2JWC081	15	0.05	20	7	101	4	410	0.7	5	46	5	56	0.6	2.4
2JWC084	89	0.05	10	7	57	4	570	0.3	5	10	1	10	0.5	2.2
2JWC090	8	0.20	23	12	96	7	770	0.4	10	30	1	48	1.0	3.2
2JWC099	3	0.20	30	13	150	11	980	0.7	18	49	1	10	1.0	3.2
2JWC106	3	0.40	16	9	63	8	1000	0.1	11	38	2	10	0.9	3.1
2JWC111	3	0.20	25	14	86	8	790	0.3	14	38	1	70	0.9	2.9
2JWC121	3	0.20	22	15	114	10	750	0.7	12	38	1	60	0.9	2.4
2JWC125	3	0.20	26	13	88	9	860	0.3	15	30	1	40	1.1	3.3
2JWC128	3	0.20	17	11	75	7	1000	0.1	18	31	1	10	0.7	2.8
2JWC129	8	0.20	28	15	93	10	950	0.4	12	44	5	10	0.8	3.2
2JWC131	3	0.20	17	10	77	4	630	0.5	16	50	1	10	0.8	3.1
2JWC132	3	0.20	24	12	102	9	610	0.6	5	47	3	59	0.8	4.3
2JWC133	3	0.30	25	12	98	6	790	0.7	5	97	1	42	1.2	3.5
2JWC134	5	0.30	32	11	104	8	950	0.8	11	70	1	44	1.6	2.9
2JWC135	3	0.30	23	10	105	5	710	1.0	5	124	1	10	1.0	2.2
2JWC136	3	0.40	21	10	106	7	960	0.9	5	90	1	84	1.3	3.7
2JWC141	3	0.05	26	13	93	7	800	0.6	5	63	1	36	1.7	3.5

Sample ID	Au (ppb)	Ag	Cu	Pb	Zn	As	Ba	Cd	Co	Hg (ppb)	Mo	Ni	Sb	U
99 th %ile (ppm)	15	0.51	36	25	154	11	1400	1.2	17	100	4	67	1.9	4.3
97.5 %ile (ppm)	6	0.40	32	19	126	10	1200	0.9	15	90	3	57	1.8	4.0
2MDC005	3	0.05	37	11	95	10	930	0.4	14	67	1	33	1.8	3.0
2MSC001	3	0.05	19	19	97	8	790	0.3	13	59	1	10	1.0	3.3
2MSC008	3	0.05	21	13	73	15	1300	0.1	12	37	1	10	0.8	2.6
2MSC010	3	0.05	17	14	84	12	1300	0.1	5	38	1	10	0.8	3.7
2MSC021	3	0.05	22	13	70	6	1200	0.5	11	37	2	10	1.0	3.1
2MSC022	3	0.05	25	15	100	8	1200	0.3	5	27	1	10	0.9	3.7
2MSC031	3	0.05	22	15	146	6	750	0.4	10	26	1	10	0.9	2.9
2MSC034	3	0.05	22	19	87	5	830	0.7	5	57	1	10	1.1	2.4
2MSC036	3	0.05	25	29	68	10	1000	0.1	11	35	1	10	1.1	3.4
2MSC039	3	0.05	18	14	44	9	1400	0.1	10	11	1	10	0.9	4.0
2MSC042	3	0.05	19	15	48	9	1200	0.1	12	5	1	10	0.9	3.9
2MSC043	3	0.05	24	18	87	8	960	0.1	15	17	1	10	1.0	3.7
2MSC044	3	0.05	26	16	109	6	550	1.9	11	67	1	10	1.4	3.0
2MSC045	3	0.20	28	19	109	8	830	0.5	17	21	1	10	1.0	2.8
2MSC048	5	0.05	36	29	72	6	2400	0.4	11	12	1	31	0.7	5.1
2MSC050	3	0.50	17	10	213	11	120	1.9	5	66	3	47	2.9	3.8
2MSC051	3	0.05	21	16	79	11	980	0.4	5	25	1	10	1.0	3.8
2MSC056	3	0.05	14	9	69	4	590	0.1	11	19	1	67	0.8	2.5
2MSC058	3	0.05	17	12	85	8	1000	0.1	12	28	3	10	1.0	3.0
2MSC061	3	0.05	12	9	71	6	810	0.1	5	27	4	10	0.5	2.6
2MSC064	20	0.05	9	8	56	6	760	0.1	5	5	1	10	1.1	3.3
2PMC001	3	0.05	22	29	60	4	790	0.6	5	36	1	10	2.5	2.8
2PMC002	3	0.05	12	11	75	7	740	0.4	5	26	3	38	0.8	2.8
2PMC005	75	0.05	13	12	67	5	900	0.5	5	40	1	31	0.7	2.8
2PMC007	3	0.40	40	18	113	10	1000	0.8	14	65	1	69	1.6	3.2
2PMC008	3	0.05	15	13	70	5	1300	0.1	5	34	1	10	0.7	2.9
2PMC015	3	0.05	25	16	96	12	1500	0.1	5	31	3	10	0.9	4.2
2PMC018	15	0.10	16	14	90	6	870	0.4	5	45	1	10	0.8	3.1
2PMC022	6	0.05	30	14	90	8	1200	0.5	13	43	1	47	1.6	3.4
2PMC024	3	0.05	20	13	112	7	790	0.9	13	23	1	10	1.5	2.8
2PMC026	3	0.20	22	12	128	7	970	1.4	5	99	1	51	1.4	3.2
2PMC029	3	0.40	18	14	89	6	890	0.9	5	99	1	10	1.0	3.2
2PMC032	5	0.30	23	16	126	7	790	1.0	12	80	1	26	1.5	3.0
2PMC033	3	0.05	13	12	91	5	620	0.9	5	62	1	10	1.2	2.7
2PMC034	3	0.05	21	12	102	8	700	0.9	5	53	1	40	1.3	2.9
2PMC035	3	0.20	31	15	100	7	950	0.9	13	69	1	10	1.7	3.0
2PMC036	3	0.05	17	13	82	8	1200	0.4	12	36	1	10	1.0	3.3
2PMC041	3	0.05	26	16	122	6	930	1.1	5	64	1	10	1.4	2.9
2PMC043	3	0.30	29	13	113	7	800	0.9	12	53	2	47	1.3	3.2
2PMC045	3	0.05	20	15	103	7	860	0.8	15	34	2	10	1.2	2.9

Sample ID	Au (ppb)	Ag	Cu	Pb	Zn	As	Ba	Cd	Co	Hg (ppb)	Mo	Ni	Sb	U
99 th %ile (ppm)	15	0.51	38	25	154	11	1400	1.2	17	100	4	67	1.5	4.3
97.5 %ile (ppm)	9	0.40	32	19	126	10	1200	0.9	15	80	3	57	1.4	4.0
2PMC047	3	0.05	17	11	96	8	830	0.9	5	42	1	36	1.0	2.5
2PMC052	3	0.20	23	15	109	8	690	0.9	5	43	4	34	0.9	4.0
2PMC055	9	0.30	47	17	113	10	1100	1.0	20	77	1	43	2.1	3.5
2PMC057	3	0.05	11	15	112	5	320	0.9	5	36	1	10	0.6	2.6
2PMC058	3	0.20	24	15	110	7	520	0.7	5	56	3	40	0.8	3.6
2PMC059	3	0.20	25	16	145	10	530	0.8	14	61	7	10	0.8	4.0
2PMC060	3	0.20	17	15	199	8	530	1.4	5	49	6	79	0.9	4.3
2PMC061	8	0.20	21	16	126	6	380	0.9	12	76	1	51	0.7	2.9
2PMC064	3	0.05	11	10	124	4	280	0.4	5	32	3	10	0.4	2.4
2PMC068	3	0.40	16	11	109	6	810	0.9	5	74	1	10	1.0	3.1
2PMC074	3	0.20	26	13	99	6	1200	0.7	5	49	1	10	1.1	3.3
2PMC076	3	0.05	11	26	172	5	510	0.4	5	12	1	10	0.8	2.1
2PMC095	3	0.30	14	11	89	5	590	1.0	5	49	1	31	0.7	2.9
2PMC096	3	0.30	20	13	115	7	900	0.8	5	44	3	10	0.7	3.0
2PMC098	3	0.20	26	12	102	4	820	0.6	12	101	1	10	1.4	2.4
2PMC099	3	0.05	16	10	79	4	600	0.6	5	98	1	47	0.8	2.9
2PMC100	3	0.10	33	11	103	8	960	0.6	11	77	1	10	1.6	2.7
2PMC122	8	0.40	21	15	91	6	570	0.5	5	93	2	44	1.0	2.9
2PMC123	3	0.20	24	12	94	7	870	0.7	12	53	1	57	1.9	3.3
2PMC124	3	0.05	34	13	91	8	950	0.5	11	30	1	51	1.6	3.2
2PMC130	3	0.80	31	14	169	7	860	0.8	11	137	1	74	1.3	2.9
2PMC132	8	0.05	25	14	87	8	650	0.6	13	120	1	10	1.4	3.6
2PMC133	3	0.20	28	15	103	10	850	0.7	14	56	2	10	2.0	3.7
2PMC152	7	0.05	14	8	78	5	870	0.1	16	32	1	10	1.0	2.7
2PMC160	3	0.05	20	10	82	7	840	0.1	5	58	1	57	1.2	2.9
2PMC161	5	0.05	21	11	82	6	1400	0.3	10	58	1	10	1.6	3.1
2PMC163	3	0.05	22	10	96	5	900	0.4	17	47	1	38	1.1	2.7
2PMC171	3	0.20	27	11	94	7	810	0.1	13	72	1	10	1.6	3.5
2PMC173	3	0.20	27	12	98	7	940	0.3	15	56	1	62	1.3	3.4
2PMC174	3	0.05	31	11	94	6	950	0.3	13	63	1	10	1.6	3.3
2PMC175	3	0.05	21	12	93	8	900	0.1	15	42	1	10	0.9	3.6
2PMC176	3	0.05	14	9	68	9	1500	0.1	11	27	1	43	0.9	2.8
2PMC178	3	0.05	13	9	78	5	610	1.2	5	112	1	10	0.6	1.6
2PMC179	7	0.20	21	12	115	8	640	0.5	12	55	4	35	0.9	3.7
2PMC183	8	0.05	15	10	82	8	720	0.1	13	28	1	10	0.8	3.1

TABLE V

SUMMARY OF MINERAL OCCURRENCES DISCOVERED OR EXAMINED - 1992

SOUTHERN ALBERTA RIFT

Occurrence Identifier	Host Unit	Age of Unit	Main Lithology	Minerals Present	Total Sulphides (combined vol. %)	Status
M1	Belly River Fm.	Cretaceous	Sandstone	Pyrite	1-2	Newly discovered
M2	Burmis / Belly River Fm.	Cretaceous	Sandstone	Magnetite	40-50	Known occurrence
M3	Burmis / Belly River Fm.	Cretaceous	Sandstone	Magnetite	50-60	Known occurrence
M4	Blairmore Fm.	Cretaceous	Sandstone	Pyrite	5	Newly discovered
M5	Blairmore Fm.	Cretaceous	Quartz arenite	Pyrite	1-2	Newly discovered
M6	Blairmore Fm.	Cretaceous	Sandstone / siltstone	Pyrite	1	Newly discovered
M7	Blairmore Fm.	Cretaceous	Sandstone	Magnetite	1	Newly discovered
M8	Blairmore Fm.	Cretaceous	Sandstone	Pyrite	2	Newly discovered
M9	Kootenay Fm.	Jurassic to Cretaceous	Sandstone	Pyrite	5-10	Newly discovered
M10	Kootenay Fm.	Jurassic to Cretaceous	Oolitic sandstone	Pyrite, Hematite	10	Newly discovered
M11	Kootenay Fm.	Jurassic to Cretaceous	Sideritic sandstone	Pyrite	1-2	Newly discovered
M12	Kootenay Fm.	Jurassic to Cretaceous	Sandstone	Pyrite	10	Newly discovered
M13	Spray River Fm.	Triassic	Calcareous siltstone	Pyrite	2	Newly discovered
M14	Rocky Mtn. Fm.	Pennsylvanian to Permian	Calcareous sandstone	Pyrite	10	Newly discovered
M15	Rocky Mtn. Fm.	Pennsylvanian to Permian	Limestone	Pyrite	2-3	Newly discovered
M16	Rundle Grp.	Mississippian	Chert	Pyrite	1-2	Newly discovered
M17	Rundle Grp.	Mississippian	Limestone / dolomite	Pyrite, Sphalerite	2-3	Newly discovered
M18	Rundle Grp.	Mississippian	Limestone	Pyrite	1	Newly discovered
M19	Rundle Grp.	Mississippian	Chert	Pyrite	1-2	Newly discovered
M20	Rundle Grp.	Mississippian	Limestone / shale	Pyrite	1-2	Newly discovered
M21	Rundle Grp.	Mississippian	Limestone	Pyrite	5	Newly discovered
M22	Oldman / Palliser Fm.	Devonian	Limestone / dolomite	Galena, Sphalerite	5	Known occurrence
M23	Grizzly / Grinnell Fm.	Proterozoic	Quartz arenite / siltstone	Pyrite, Covellite, Chalcopyrite, Chalcocite, Malachite	7	Known occurrence
M24	Table Mountain / Siyeh Fm.	Proterozoic	Black siltstone	Pyrite, Malachite, Galena	1-2	Known occurrence
M25	North Kootenay Pass / Sheppard Fm.	Proterozoic	Black siltstone / dolomite	Pyrite, Chalcopyrite, Galena	1	Known occurrence
M26	Sheppard Fm.	Proterozoic	Black siltstone / dolomite	Pyrite, Chalcopyrite, Galena	Trace-1	Known occurrence

ERCB

TABLE OF FORMATIONS, ALBERTA

ERATHEM	SYSTEM	SOUTH-CENTRAL MTNS. & FOOTHILLS	NORTHERN MTNS. & FOOTHILLS	SOUTHERN PLAINS	CENTRAL PLAINS	NORTHWEST PLAINS	NORTHEAST PLAINS
CENOZOIC	QUATERNARY	RIVER GRAVEL AND SAND, SOIL, GLACIAL DEPOSITS - MORAINE, DRIFT, LAKE FILL, ESKERS, KAMES, REWORKED OLIGOCENE CONGLOMERATES					
	TERTIARY	PORCUPINE HILLS; WILLOW CREEK; PASKAPOO X; ST. MARY RIVER; BLOOD RESERVE; BEARPAW; BELLY RIVER X; BRAZEAU X	SAUNDERS GROUP: PASKAPOO; COALSPUR; BRAZEAU X	CYPRESS HILLS; PORCUPINE HILLS; WILLOW CREEK; RAVENSCRAG X; FRENCHMAN; BATTLE; WHITEMUD; EASTEND X; ST. MARY RIVER X; BLOOD RESERVE; BEARPAW; OLDMAN; FOREMOST; BELLY RIVER	PASKAPOO; SCOLLARD; BATTLE; WHITEMUD; EDM.; HORSESHOE CANYON; BEARPAW; BELLY RIVER X; VICTORIA; BROOKSEAU; LEA PARK	PASKAPOO; SCOLLARD; WAPITI X	BELLY RIVER X
MESOZOIC	CRETACEOUS UPPER	ALBERTA GROUP: WAPIABI; BLACKSTONE; CHUNGO; CARDIUM; JUMPING POUND SS	SMOKY GROUP: CHUNGO; WAPIABI; CARDIUM; KASKAPAU; DUNVEGAN X; SHAFTESBURY	COLORADO: FIRST WHITE SPECKLED SHALE; MEDICINE HAT SS; CARDIUM; SECOND WHITE SPECKLED SHALE; FISH SCALE (BARONS SS); BOW ISLAND; SL COLO	COLORADO: FIRST WHITE SPECKLED SHALE; CARDIUM; SECOND WHITE SPECKLED SHALE; FISH SCALE ZONE; VIKING; JOLI FOU; BASAL COLORADO	SMOKY GROUP: PUSKAWASKAU; BADHEART; MUSKIKI; CARDIUM; KASKAPAU; POUCE COUPE; DOE CREEK; DUNVEGAN X	LA BICHE: FIRST WHITE SPECKLED SHALE; SECOND WHITE SPECKLED SHALE; FISH SCALE ZONE; VIKING (PELICAN); JOLI FOU
		BLAIRMORE GROUP: UPPER; BEAVER MINES; LOWER; GLADSTONE; HOME SS; "CALCAREOUS" MBR; CADOMIN (DALHOUSIE)	LUSCAR GROUP: GATES; MOUNTAIN PARK; GRANDE CACHE; TORRENS; MOOSEBAR; GLADSTONE; GETHING X; CADOMIN	MANNVILLE: UPPER; "GLAUCONITIC"/MOULTON; OSTRACOD ZONE; SUNBURST; LOWER; TABER-CUTBANK; DETRITAL	MANNVILLE: UPPER; CLEARWATER; GLAUCONITIC SS; OSTRACOD ZONE; LOWER; ELLERSLIE (BASAL QUARTZ); DETRITAL (DEVILLE)	FORT ST. JOHN GROUP: SPIRIT RIVER; PEACE RIVER; SHAFTESBURY; FISH SCALE ZONE; PADDY; CADOTTE; HARMON; NOTIKEWIN; PALMER X; WILRICH; BLUESKY; BULLHEAD; GETHING X; CADOMIN	MANNVILLE: GRAND RAPIDS X; CLEARWATER; WABISKAW; MCMURRAY; COLONY; MCLAREN; WASECA; SPARKY; O.F.; REX; LLOYDMINSTER; CUMMINGS; DINA
	JURASSIC	FERNIE GROUP: KOOTENAY; ELK; MIST MOUNTAIN; MORRISSEY; "PASSAGE BEDS"; "GREEN BEDS"; "GREY BEDS"; ROCK CREEK; "POKER CHIP" (BLACK) SHALE; NORDEGG	FERNIE GROUP: NIKANASSIN; "PASSAGE BEDS"; SHALE WITH DARK REDDISH BROWN BANDS; "GREY BEDS"; ROCK CREEK; "BLACK SHALE"; NORDEGG	ELLIS: SWIFT; RIERDON; SAWTOOTH	FERNIE: NIKANASSIN; "GREY BEDS"; ROCK CREEK; POKER C SH; NORDEGG	FERNIE: NIKANASSIN; "GREY BEDS"; ROCK CREEK (BROWN SS); BLACK SHALE; NORDEGG EQUIV.	
	TRIASSIC	SPRAY RIVER GROUP: WHITEHORSE; SULPHUR MTN	SCHOOLER CREEK: BALDONNEL; CHARLIE LAKE; HALFWAY; TOAD; GRAYLING			SCHOOLER CREEK: BALDONNEL; CHARLIE LAKE; BOUNDARY; HALFWAY; DOIG; DAIBER: MONTNEY	
	PERMIAN	ISHBEL: RANGER CANYON; JOHNSTON CANYON				BELLOY	
	PENNSYLVANIAN	SPRAY LAKES: RANANASKIS; TUNNEL MTN				STODDART: TAYLOR FLAT; KISKATINAW	
	MISSISSIPPIAN	ETHERINGTON; RUNDLE: MT. HEAD: CARNARVON, LOOMIS, BARIL, MARSTON, SALTER, WILEMAN; TURNER VALLEY: "UPPER POROUS"; "MIDDLE DENSE"; "LOWER POROUS"; LIVINGSTONE: SHUNDA (BLACK LIME); PEKISKO; BANFF; EXSHAW	GOLATA; RUNDLE: DEBOLT; SHUNDA; PEKISKO; BANFF; EXSHAW	RUNDLE: MT. HD; TURNER V.: "LF"; "MD"; ELKTON; SHUNDA; LIVING STONE; PEKISKO; BANFF; EXSHAW; BAKKEN	RUNDLE: ELK; SHUNDA; PEKISKO; BANFF; EXSHAW	GOLATA; RUNDLE: DEBOLT; SHUNDA; PEKISKO; BANFF; EXSHAW	BANFF; EXSHAW
		PALLISER; COSTIGAN; MORRO; ALEXO	PALLISER; COSTIGAN; MORRO; ALEXO; SASSENACH LOWER	WAB.: BIG VALLEY; CROSSFIELD; STETTLER; CROWFOOT	WABAMUN; BIG VALLEY; CROSS; STETTLER; WINTERBURN: GRAMINIA; RIVERSIDE; CELMAR; NISKU; CAMROSE	WABAMUN; KOTCHO; YETCHO; WINTERBURN: TROUT RIVER; BAKISA; REDKNIFE; JEAN MARIE	WABAMUN; WINTERBURN
PALEOZOIC	DEVONIAN UPPER	FAIRHOLME: SOUTHESK (WHITE BEDS); CAIRN (BLACK REEF)	FAIRHOLME: MT. HAWK; SOUTHESK (WHITE BEDS); PERDRIX; CAIRN (BLACK REEF); FLUME	FAIRHOLME: SOUTHESK; PEECHEE; CAIRN; BEAVERHILL LAKE	WOODBEND: REEF; IRETON; LEDUC; DUVERNAY; "BSL REEF"; DUV; COOKING LAKE; BH. LK.: SWAN HILLS; WATERWAYS; SLAVE POINT; FORT VERMILION	WOODBEND: LEDUC; IRETON; FORT SIMPSON; BH. LK.: MUSKWA; SLAVE POINT; FORT VERMILION	WOODBEND: GROSMONT; IRETON; LEDUC; TATHLINA; TWIN FALLS; HAY RIVER; BH. LK.: WATERWAYS; SLAVE POINT; FORT VERMILION
	MIDDLE	YAHATINDA		ELK POINT: WATT MTN; PRAIRIE; WINNIPEGOSIS; CONTACT RAPIDS; COLD LAKE; ERNESTINA; LOTSBERG; BASAL RED BEDS	ELK POINT: WATT MTN; GILWOOD; PRAIRIE; WINNIPEGOSIS; CONTACT RAPIDS; COLD LAKE; ERNESTINA; LOTSBERG; BASAL RED BEDS	ELK POINT: UPPER; PRAIRIE; SULPHUR POINT; ZAMA; MUSKEG; BLACK SPRING; UPPER KEG RIVER; LOWER KEG RIVER; PINE POINT; LOWER; CHINCHAGA; COLD LAKE; ERNESTINA; BASAL RED BEDS; GRANITE WASH	ELK POINT: UPPER; WATT MOUNTAIN; PRAIRIE; WINNIPEGOSIS; LOWER; GRANITE WASH; CONTACT RAPIDS; COLD LAKE; ERNESTINA; LOTSBERG; BASAL RED BEDS
		LOWER					
	SILURIAN						
	ORDOVICIAN	ORD	L ORD	RED RIVER	RED RIVER		
	CAMBRIAN UPPER	LYNX GROUP: UPPER; SULLIVAN	LYNX GROUP: UPPER; SULLIVAN	FINNEGAN; DEADWOOD	FINNEGAN; DEADWOOD	MIDDLE CAMBRIAN	
	CAMBRIAN MIDDLE	PIKA; ELDON; STEPHEN; CATHEDRAL; MT WHYTE	PIKA; ELDON; UNDIFFERENTIATED	PIKA; ELDON; STEPHEN; CATHEDRAL; MT WHYTE	PIKA; ELDON; STEPHEN; CATHEDRAL; MT WHYTE; EARLIE		
	CAMBRIAN LOWER	GOG GROUP	GOG GROUP	BASAL SANDSTONE UNIT	BASAL SANDSTONE UNIT		
PRECAMBRIAN		PRECAMBRIAN	PRECAMBRIAN	PRECAMBRIAN	PRECAMBRIAN	PRECAMBRIAN	PRECAMBRIAN

- LEGEND -

- GAS
- OIL
- COAL OCCURRENCES (MINOR, MAJOR)
- CORRELATION UNCERTAIN
- FACIES TRANSITION
- AGE NOT CONCLUSIVELY ESTABLISHED
- THE FAUNAS SUGGEST THAT THE CADOTTE IS NOT THE EQUIVALENT OF THE PELICAN

- NOTES -

IN THE NORTHWEST PLAINS COLUMN, THE PEACE RIVER UPPER DEVONIAN STRATIGRAPHY IS SHOWN AT THE LEFT AND THE RAINBOW STRATIGRAPHY AT THE RIGHT.

ALTERNATIVE LOCAL NAMES ARE SHOWN IN BRACKETS.

SELECTIVE MEMBERS AND ZONES ARE NOT KNOWN TO OCCUR THROUGHOUT THE ENTIRE AREAS.

DECEMBER 1985

TABLE VI

TABLE OF FORMATIONS, ALBERTA

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CERTIFICATION

I, J. WILLIAMSON OF 4318 - 37 STREET, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF ALBERTA AT EDMONTON WITH A B.SC DEGREE IN GEOLOGY (1988). I AM REGISTERED AS A PROFESSIONAL GEOLOGIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

SINCE 1988 I HAVE CONDUCTED PROGRAMS ON BEHALF OF COMPANIES AS A GEOLOGIST IN THE EMPLOY OF R.A. OLSON CONSULTING LTD. AND ITS PREDECESSOR COMPANY, TRIGG, WOOLLETT, OLSON CONSULTING LTD.

I HAVE NO INTEREST, DIRECT OR INDIRECT, IN THE SOUTHERN ALBERTA RIFT AREA OF SOUTHWEST ALBERTA NOR DO I EXPECT TO RECEIVE AN INTEREST IN THE FUTURE.

THE REPORT ENTITLED "SOUTHERN ALBERTA RIFT IN SOUTHWEST ALBERTA, PROGRAM TO IDENTIFY TARGETS FOR METALLIC MINERAL EXPLORATION; (CANADA-ALBERTA MDA PROJECT M92-04-002)" IS BASED UPON FIELDWORK AND UPON STUDY OF PUBLIC[illegible] AND UNPUBLISHED DATA. THE FIELDWORK WAS DONE UNDER THE SUPERVISION OF MYSELF AND M.B. DUFRESNE UNDER THE OVERALL SUPERVISION OF DR. R.A. OLSON.

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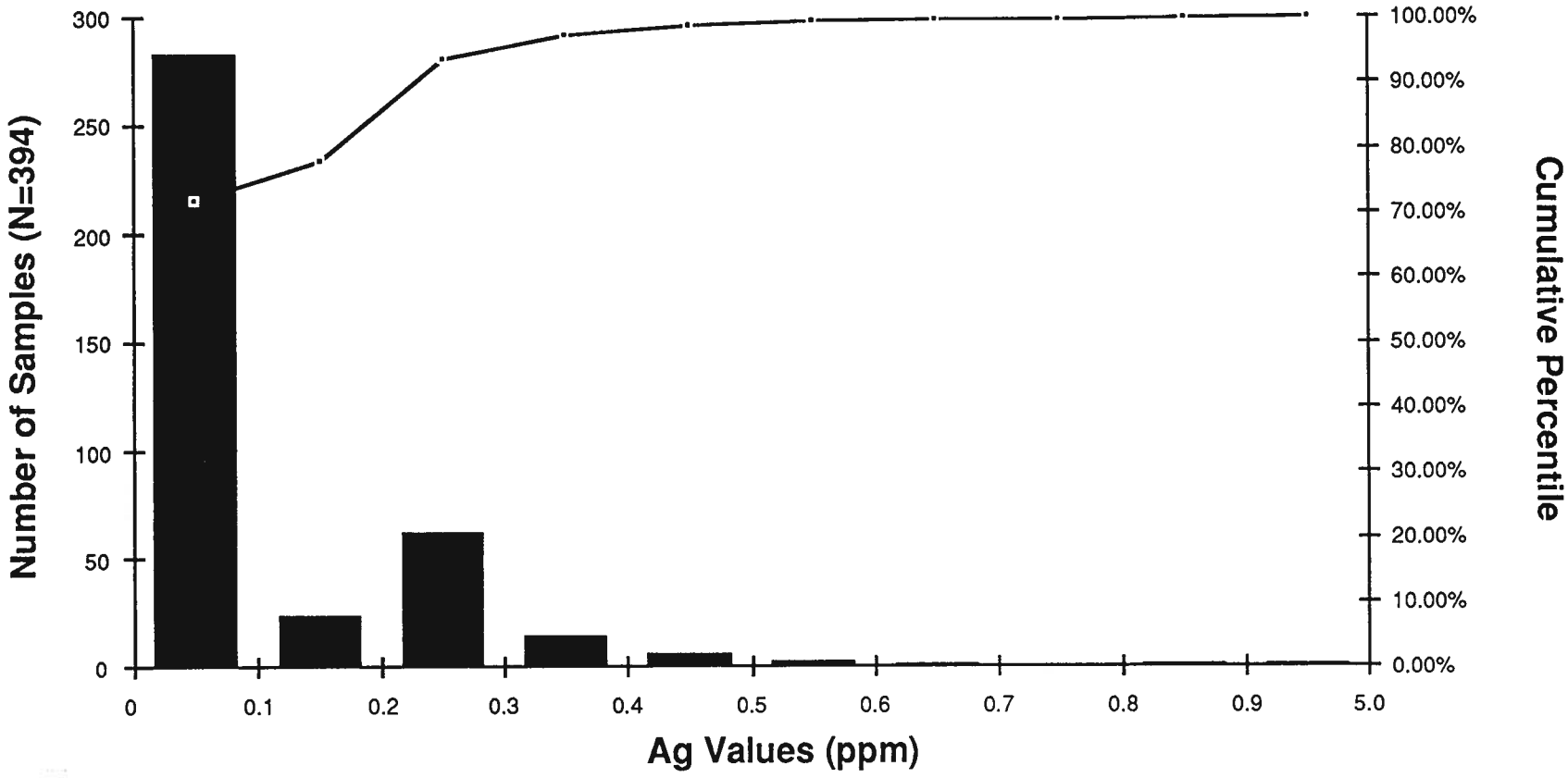
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APPENDIX I

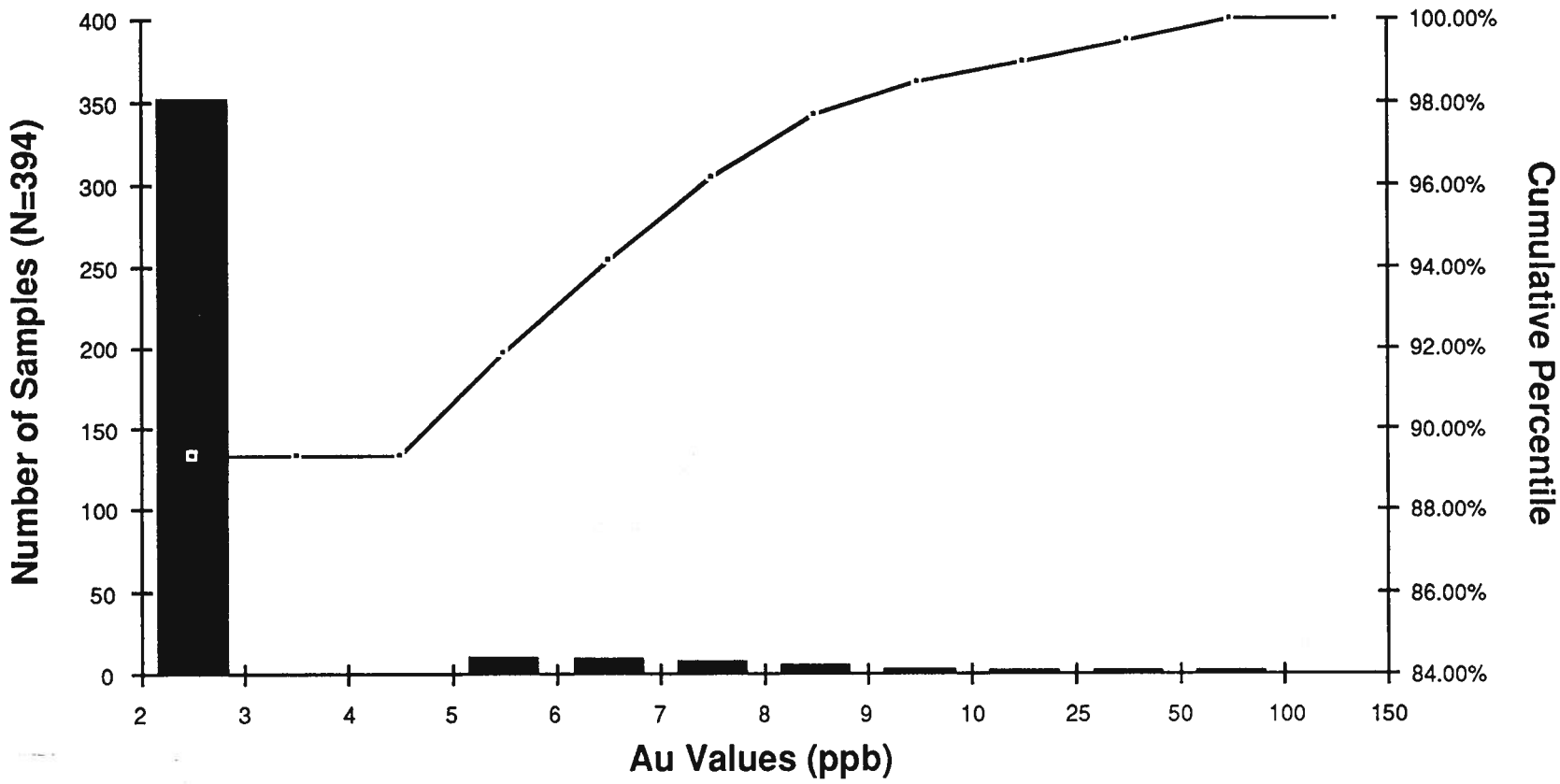
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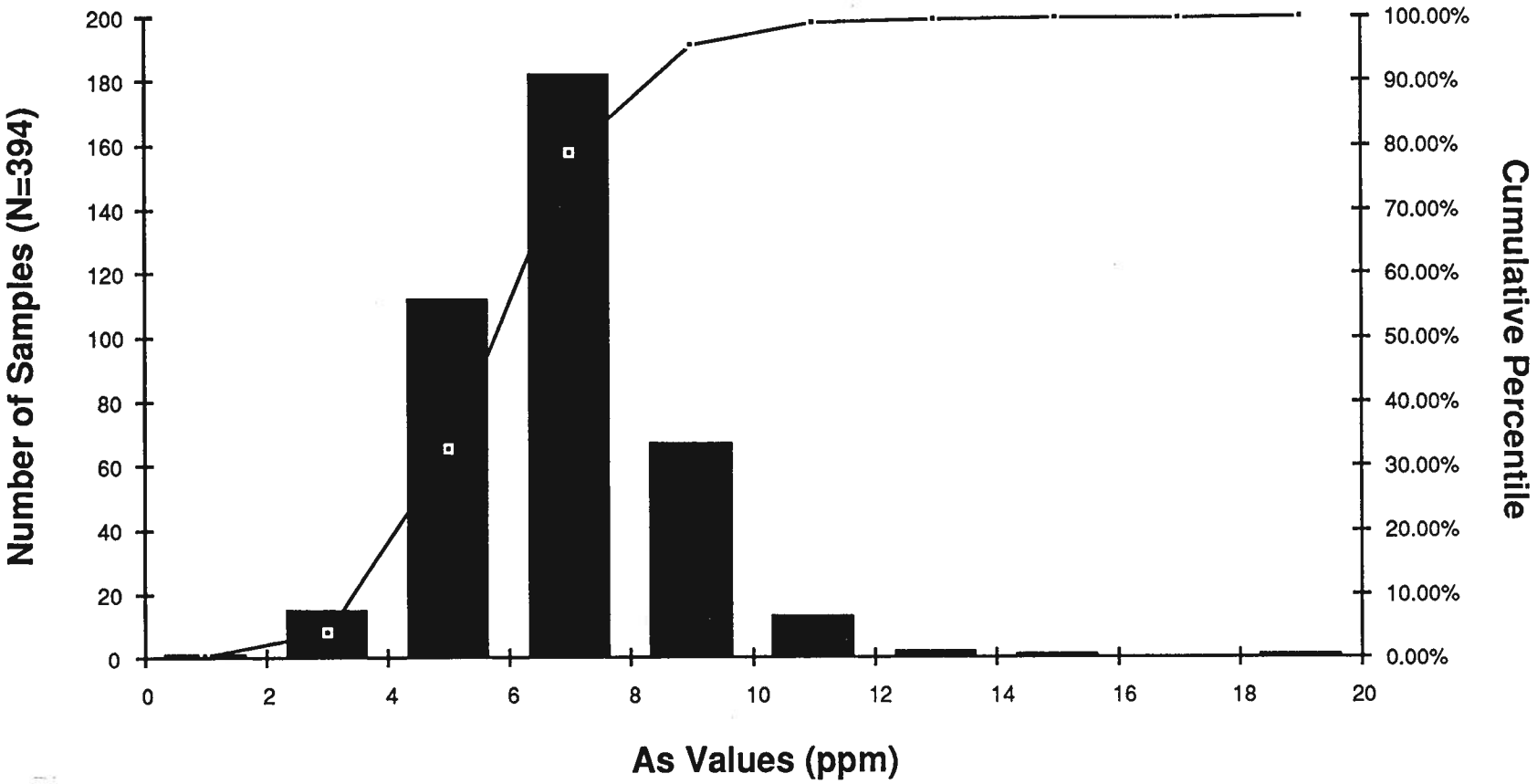
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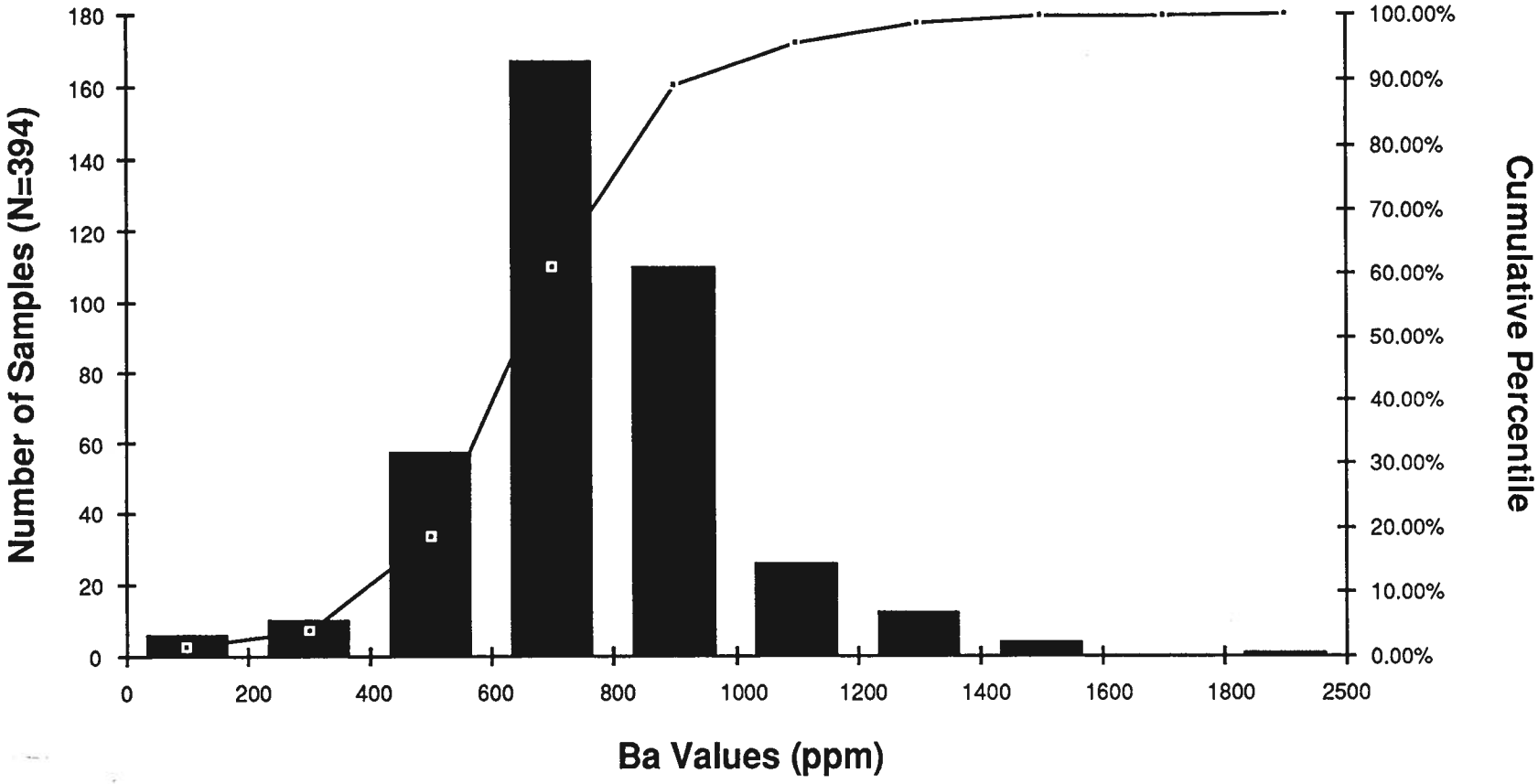
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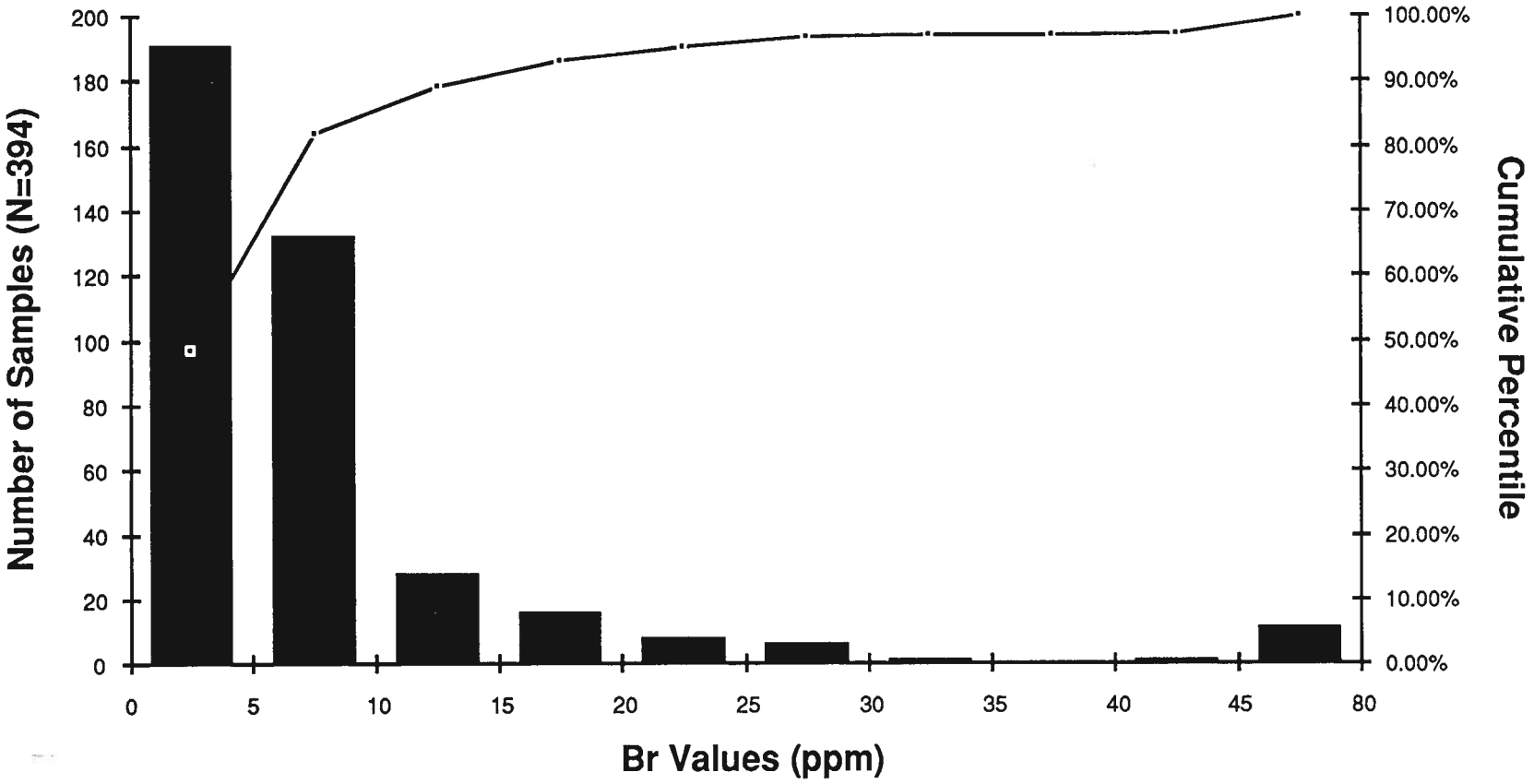
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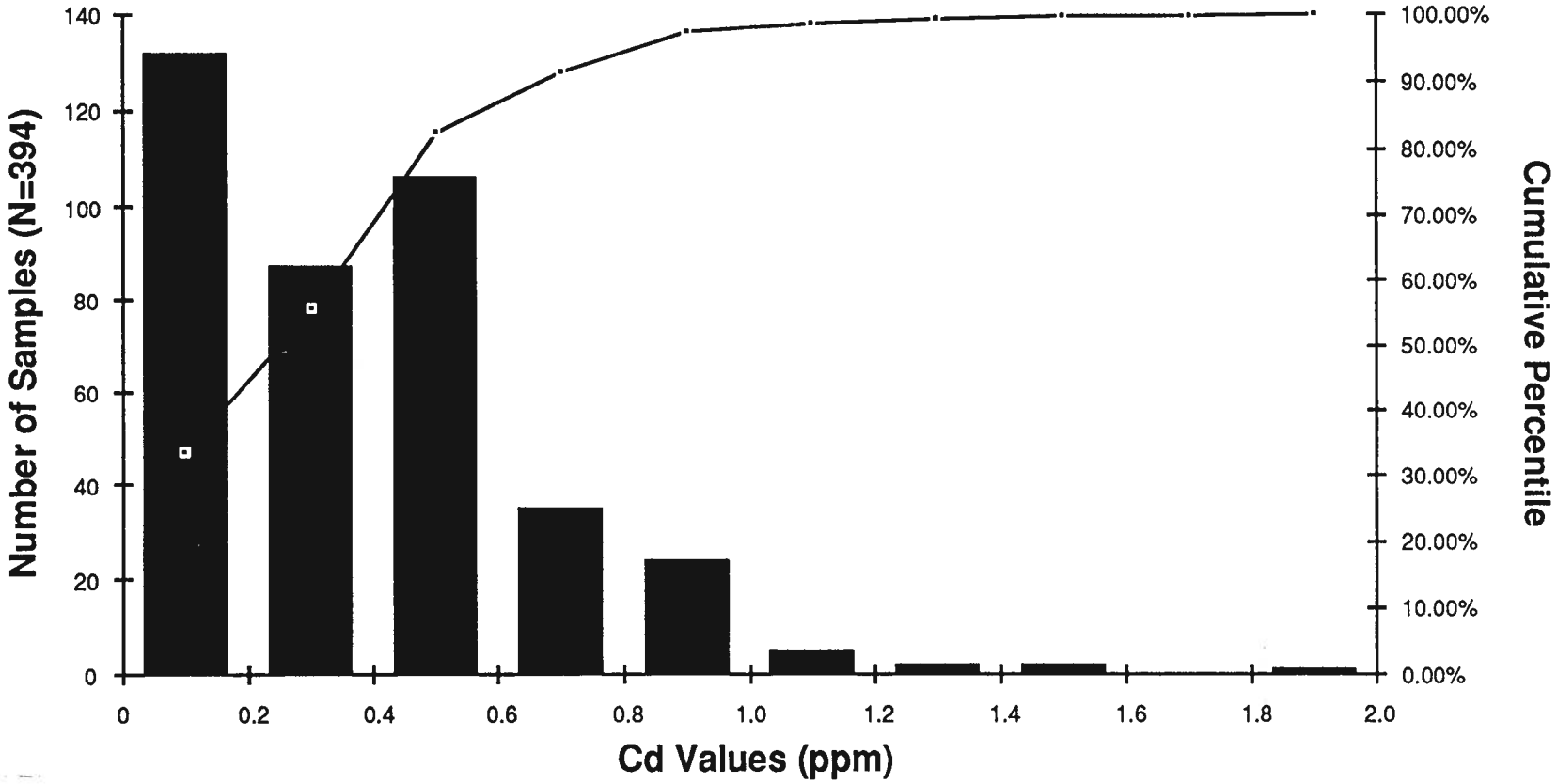
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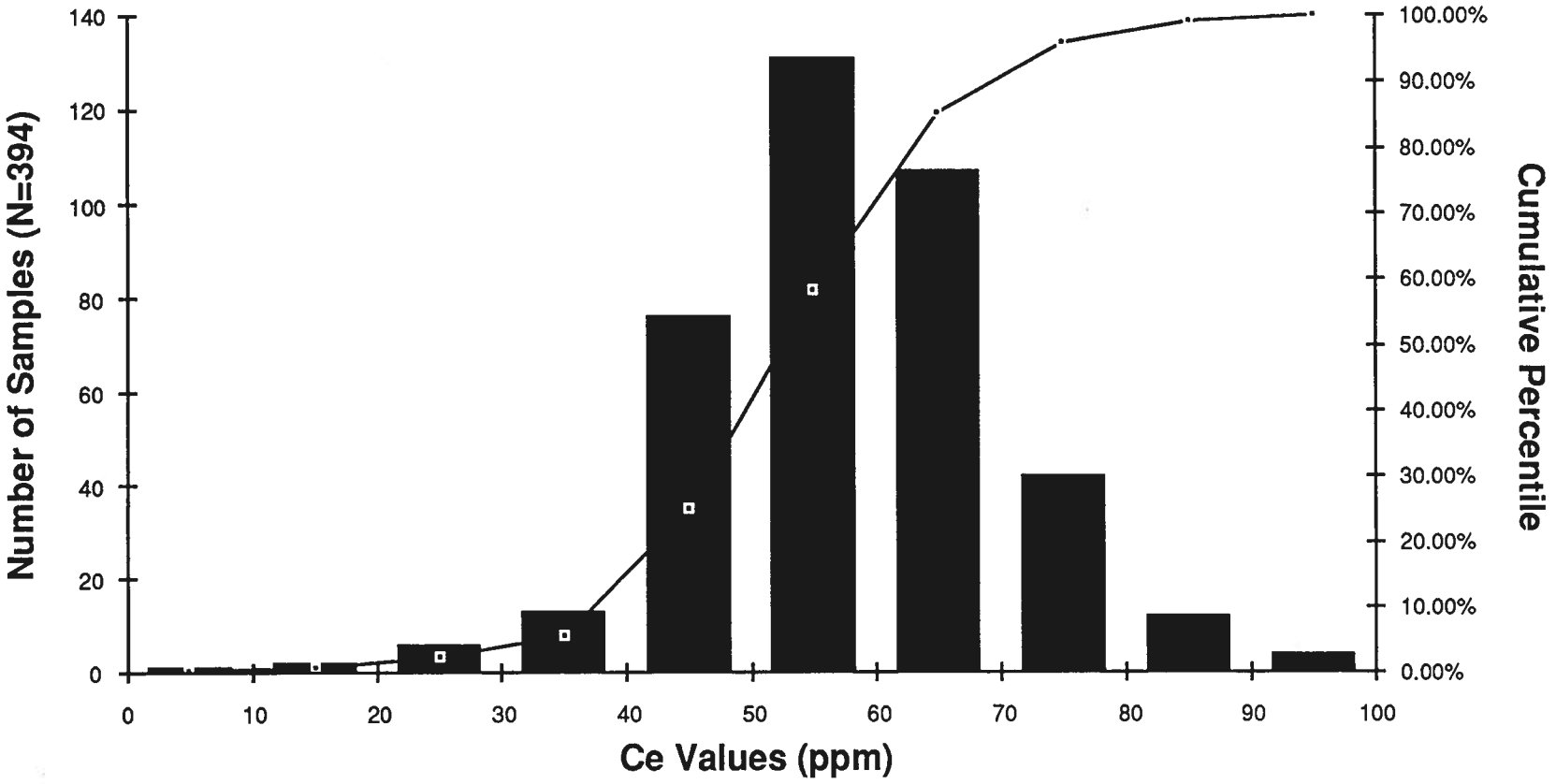
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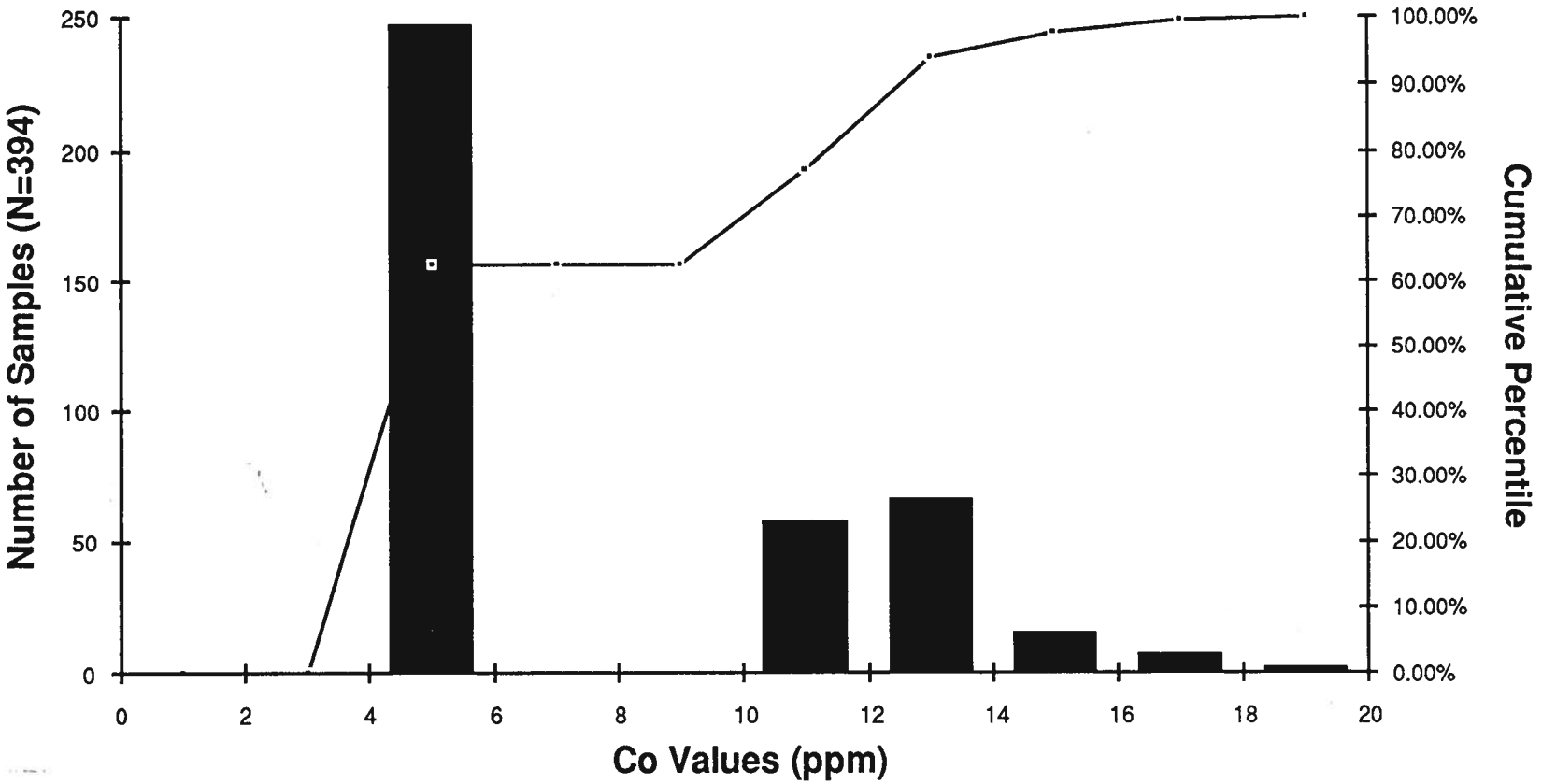
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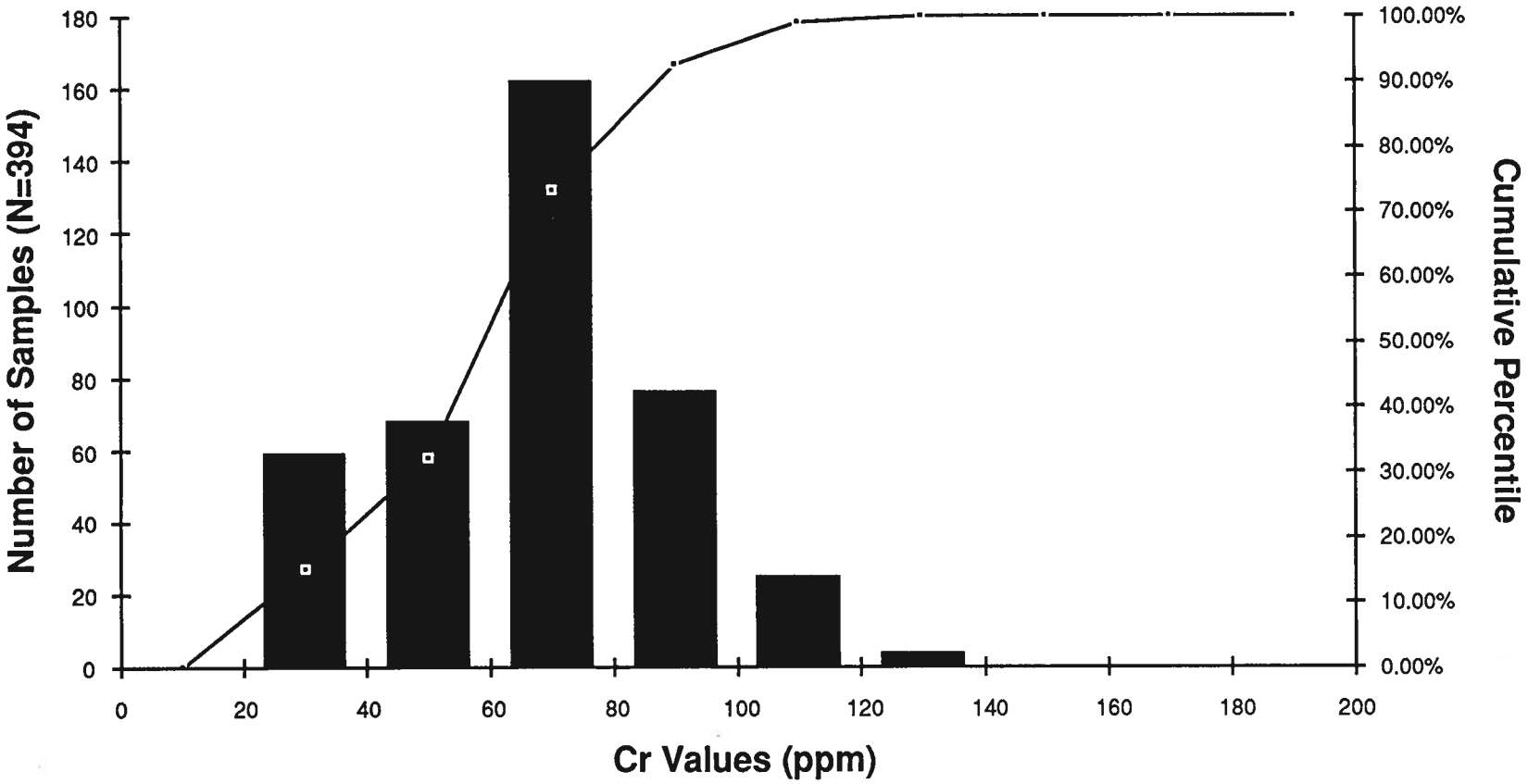
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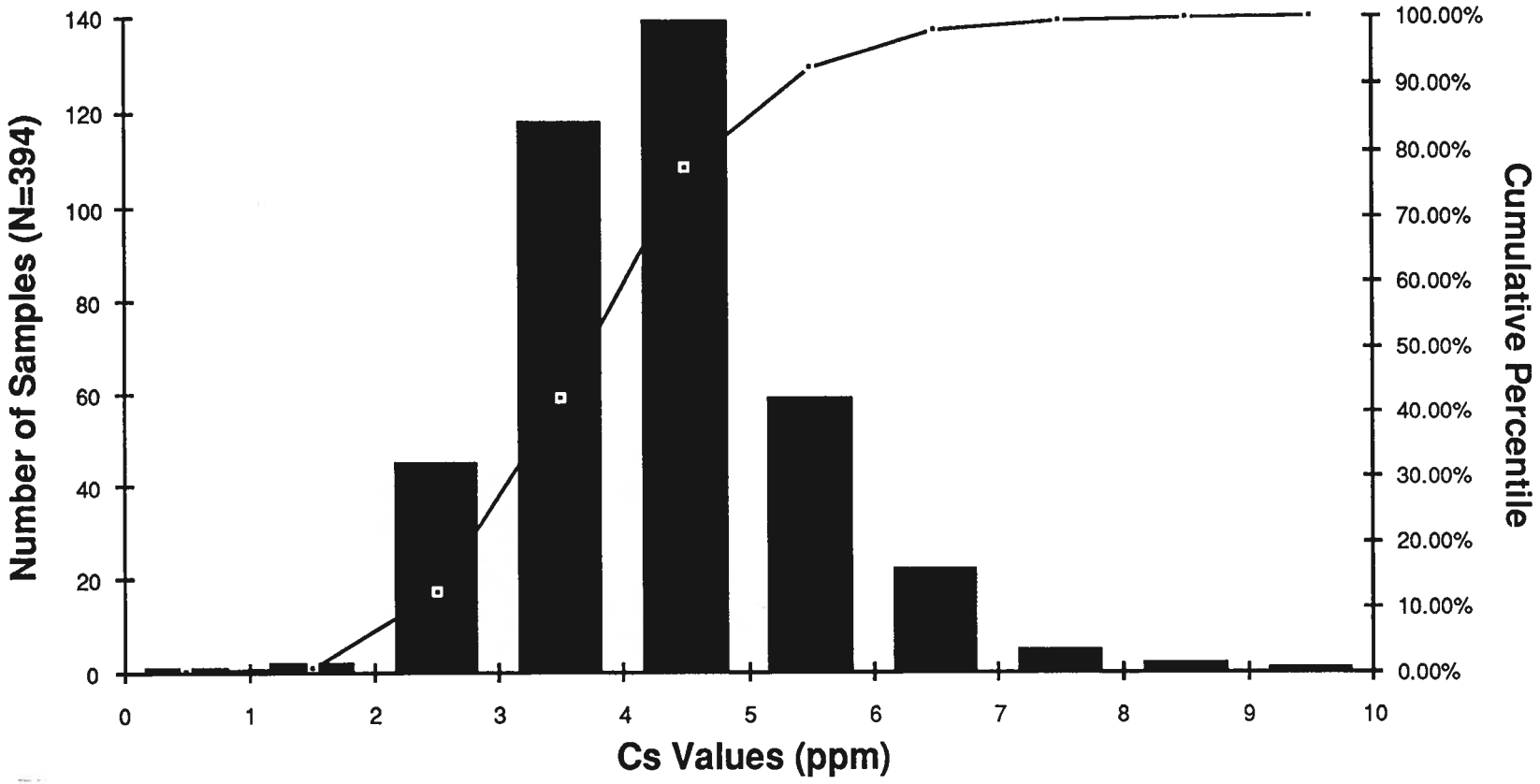
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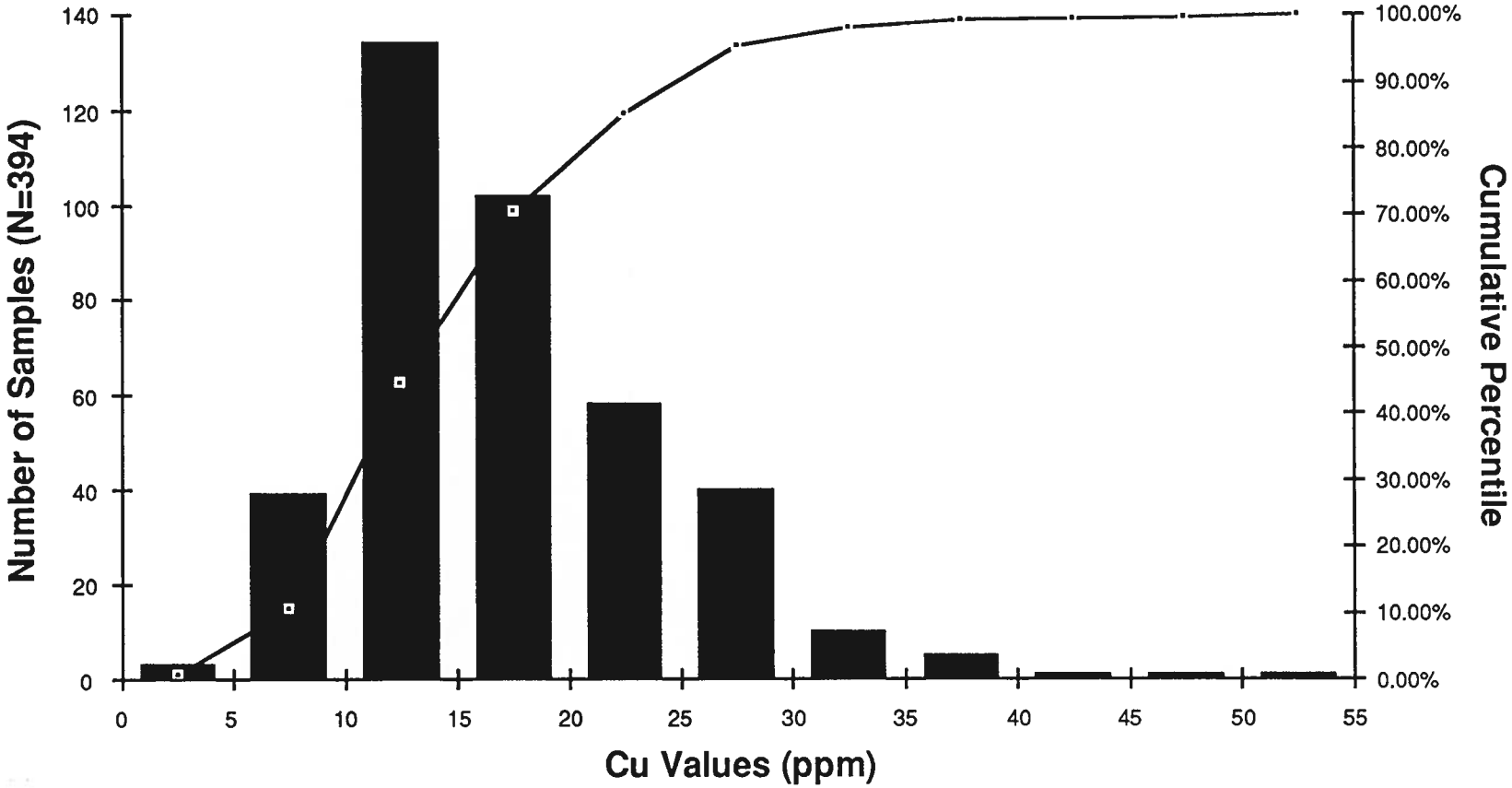
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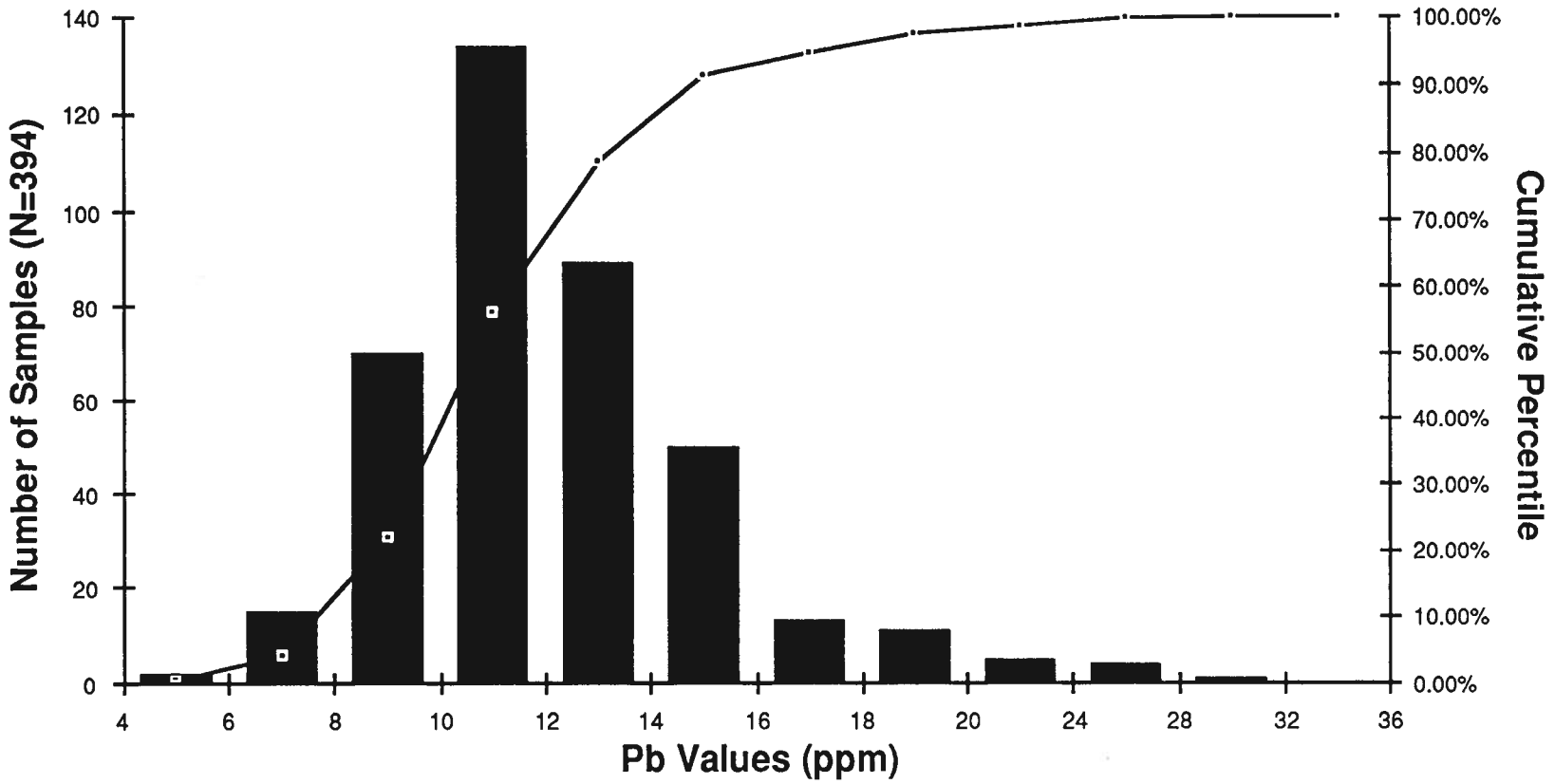
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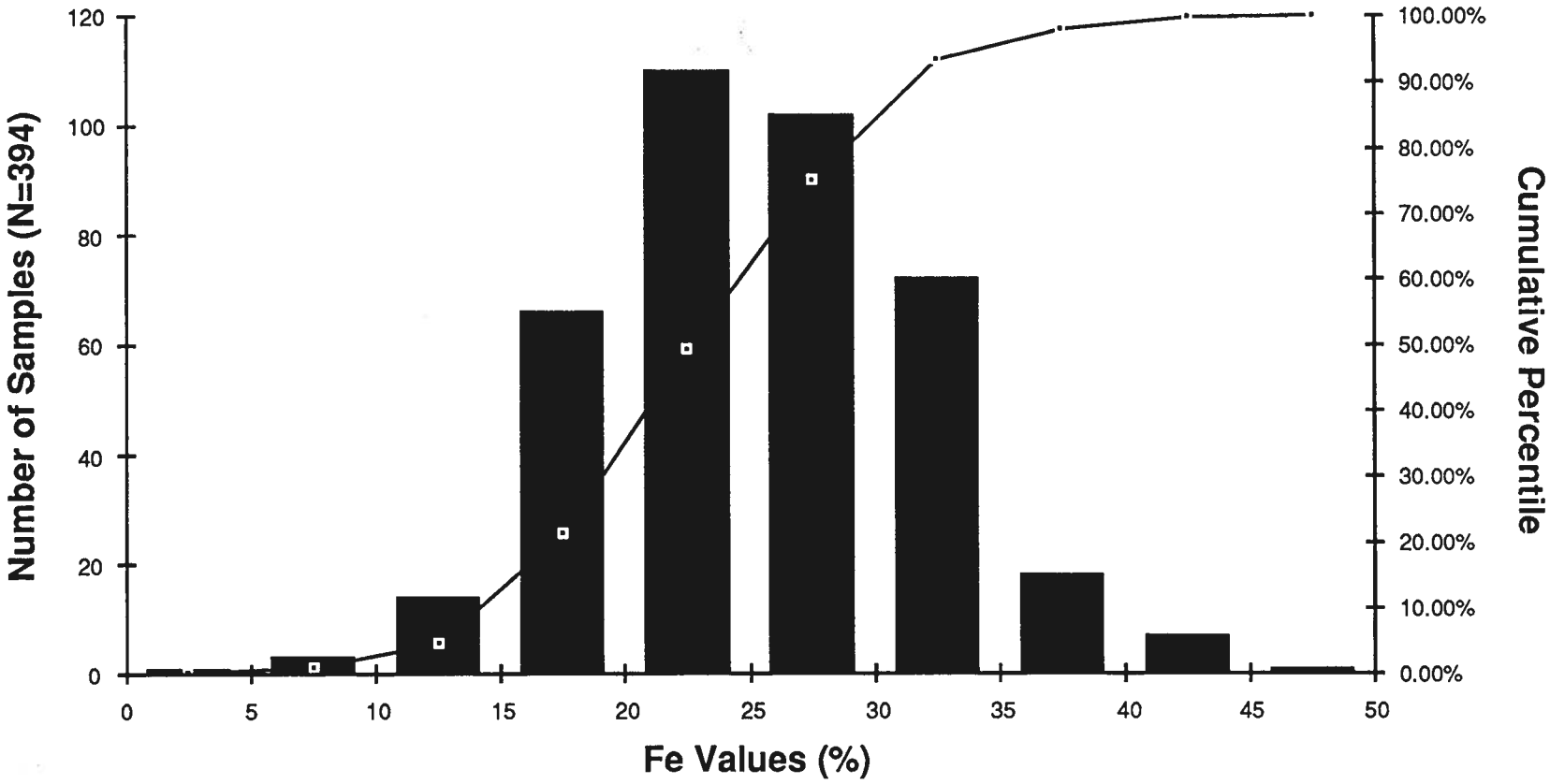
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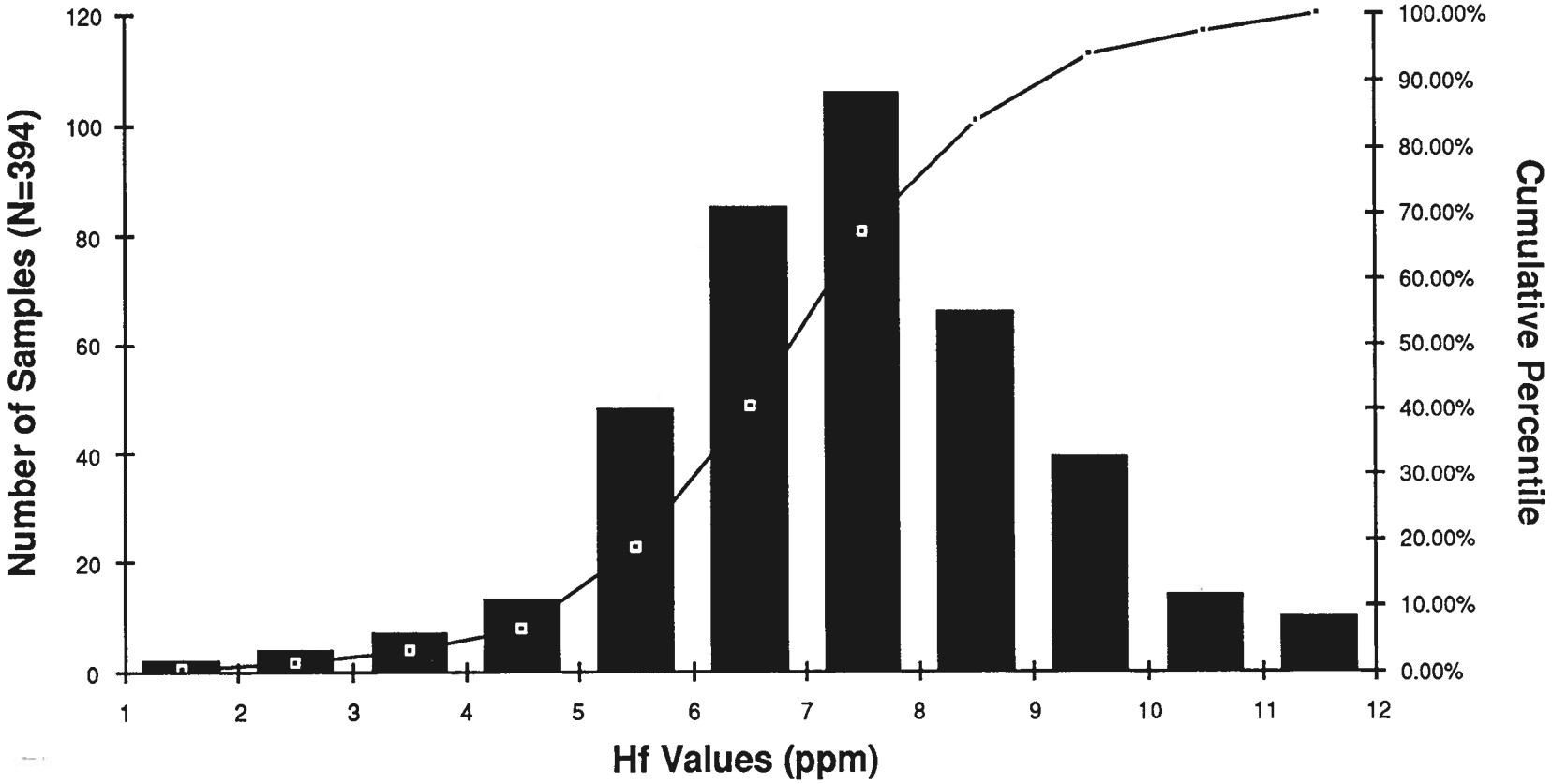
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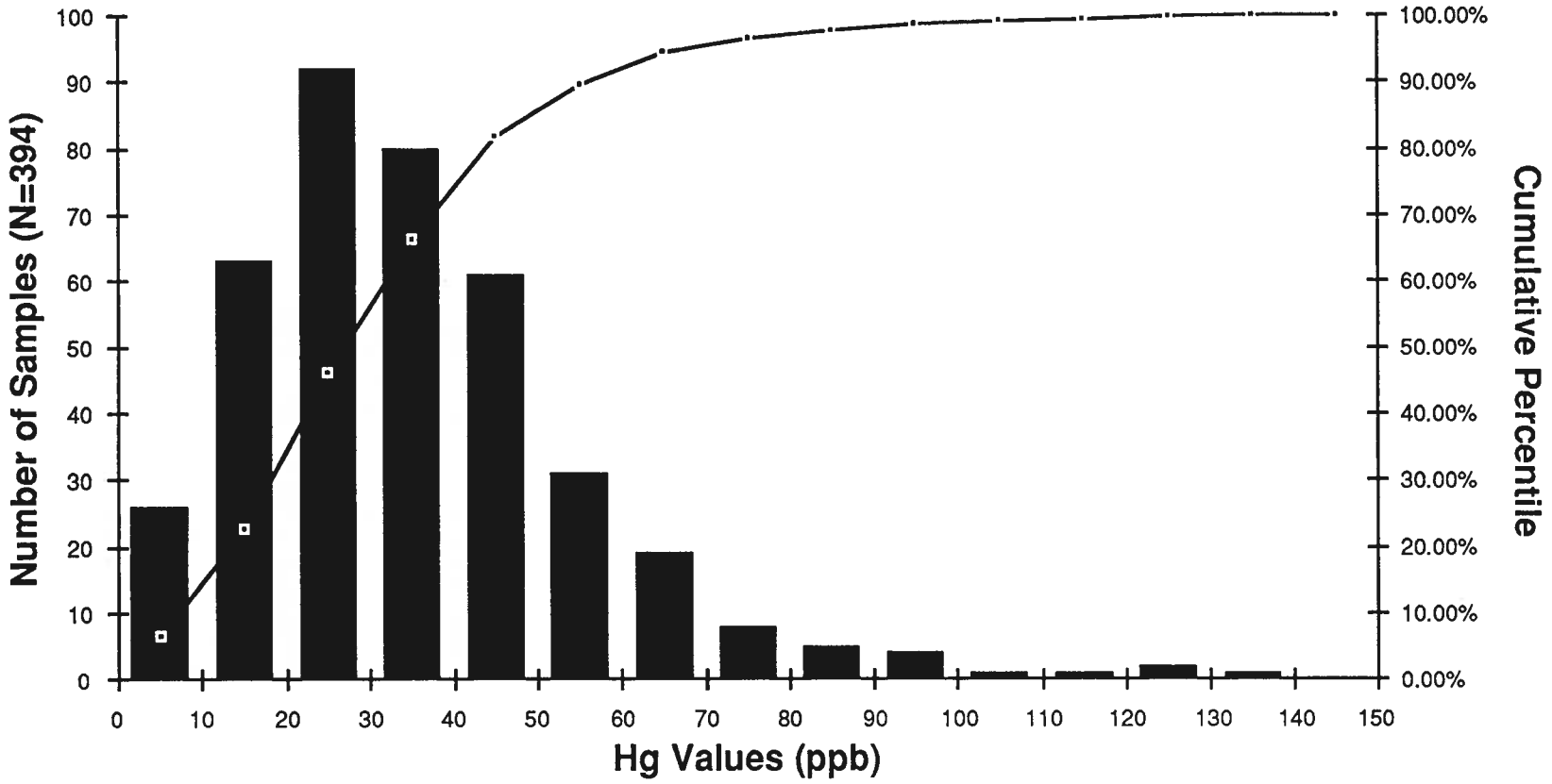
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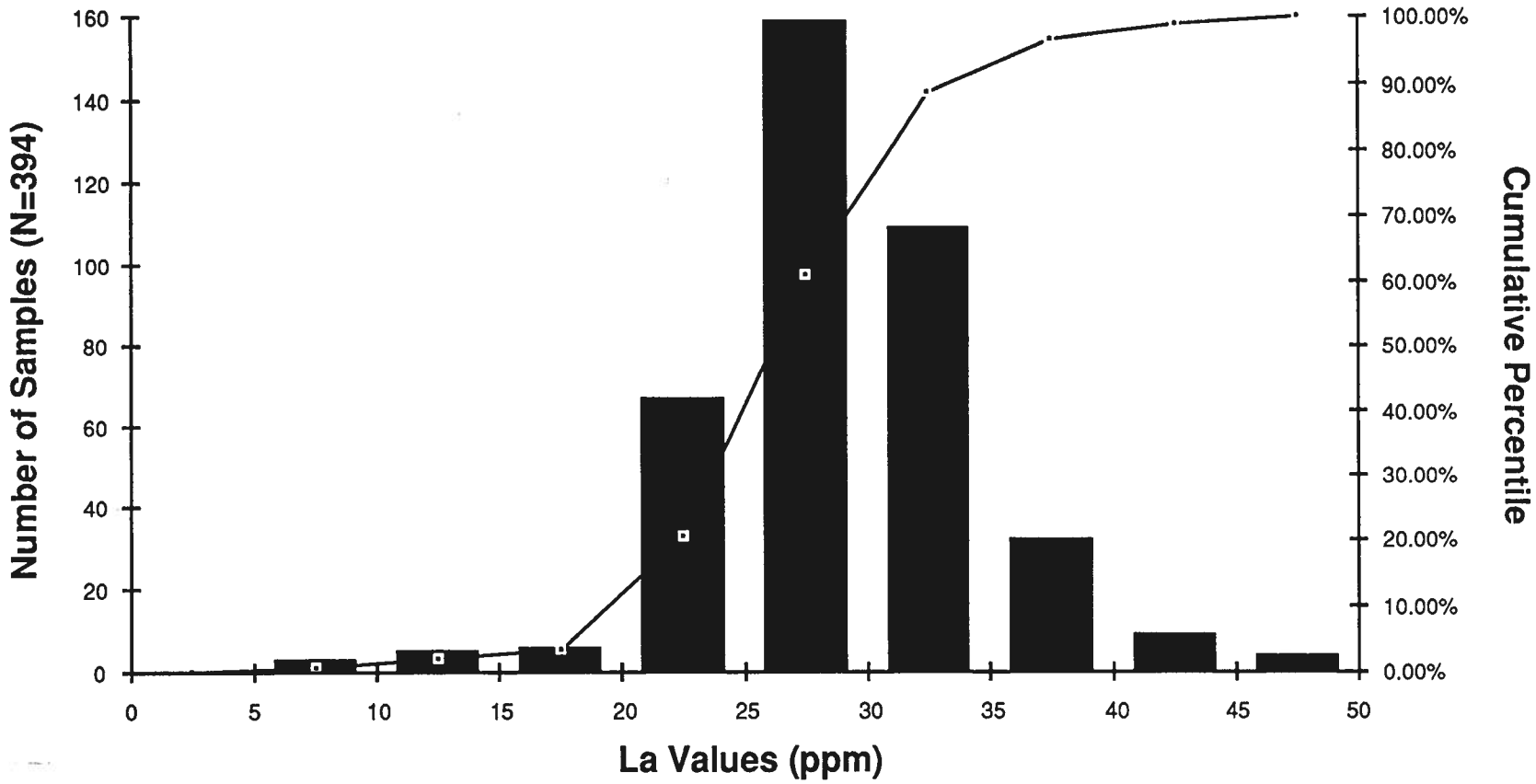
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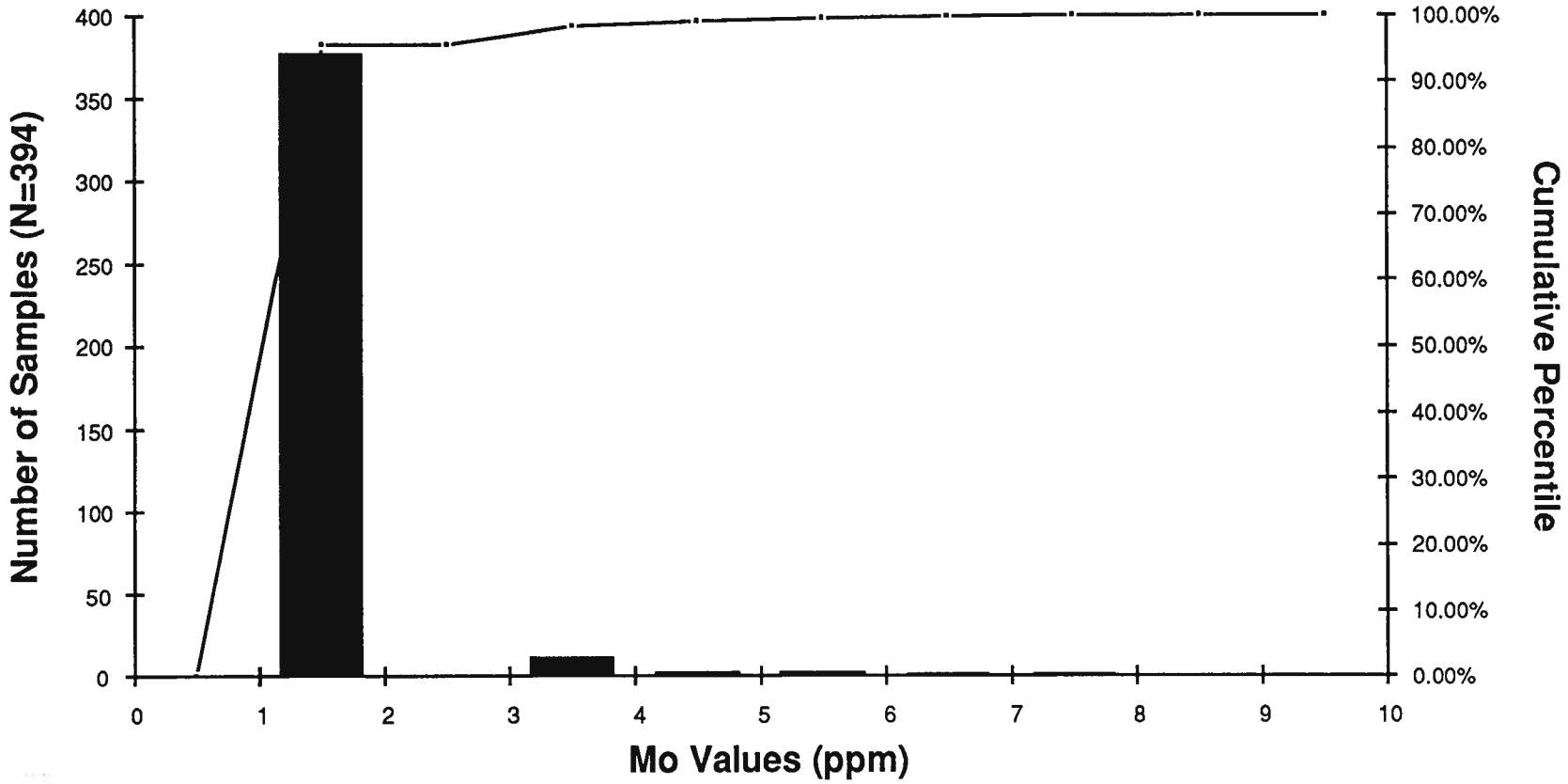
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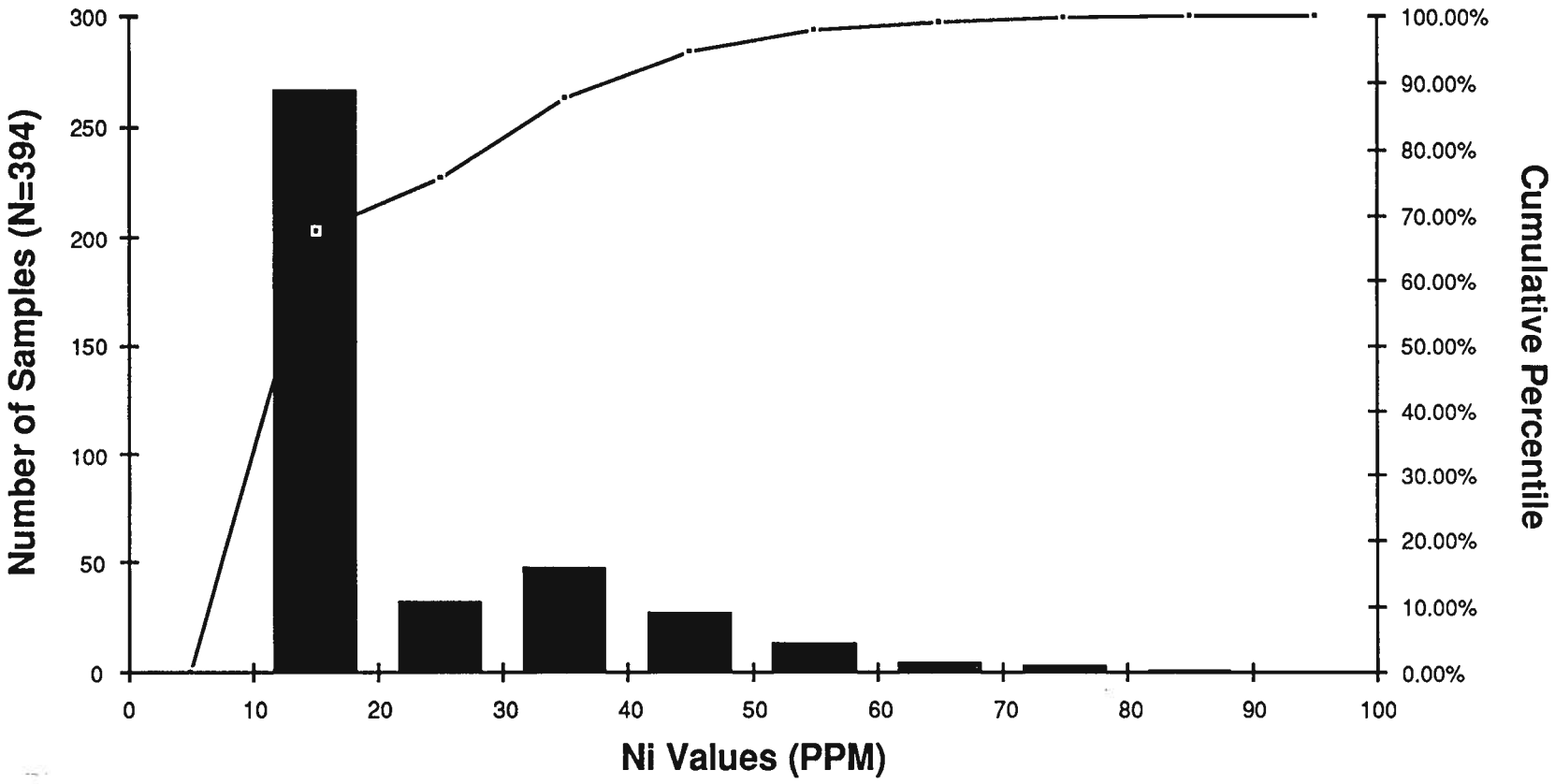
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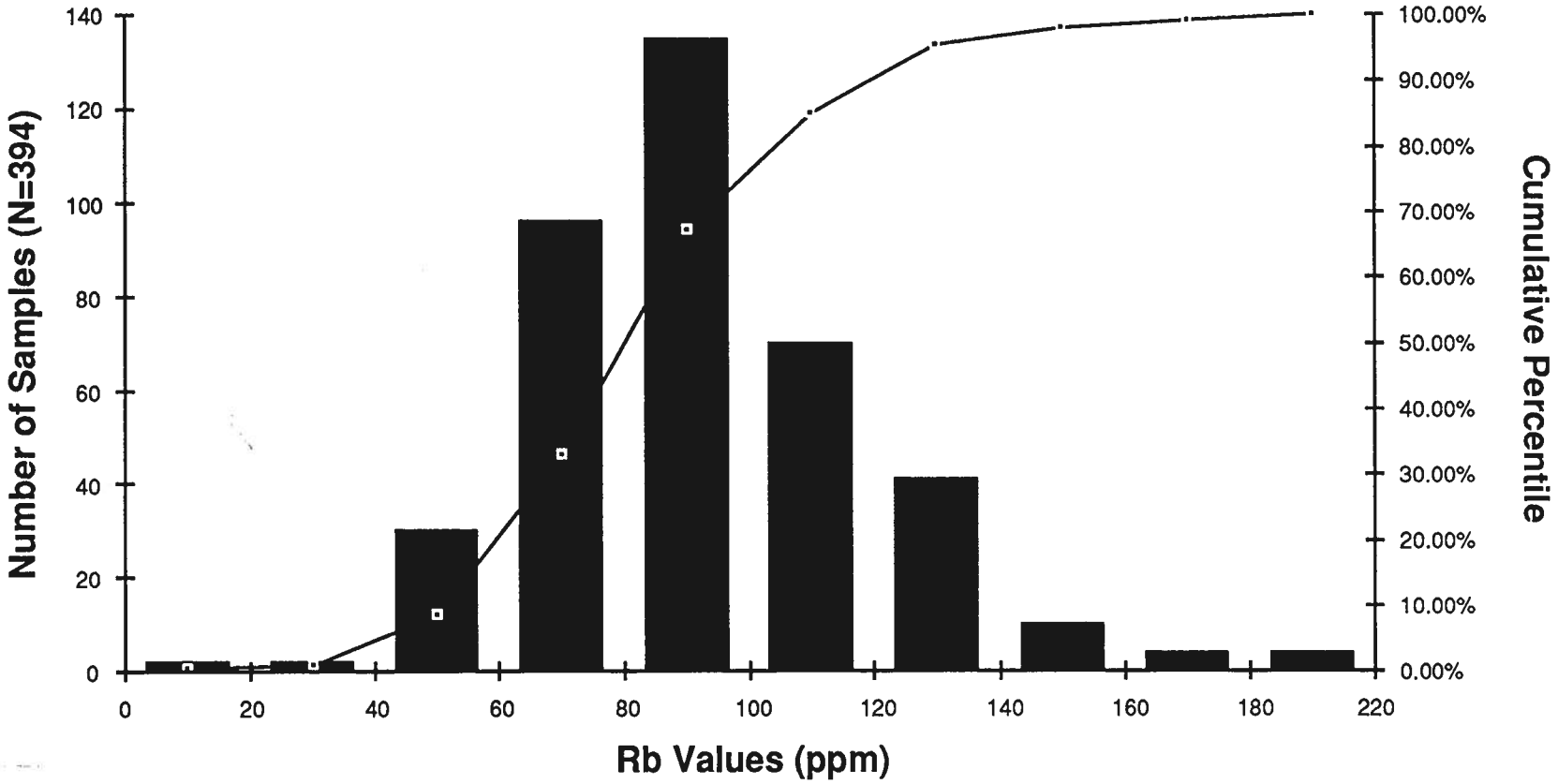
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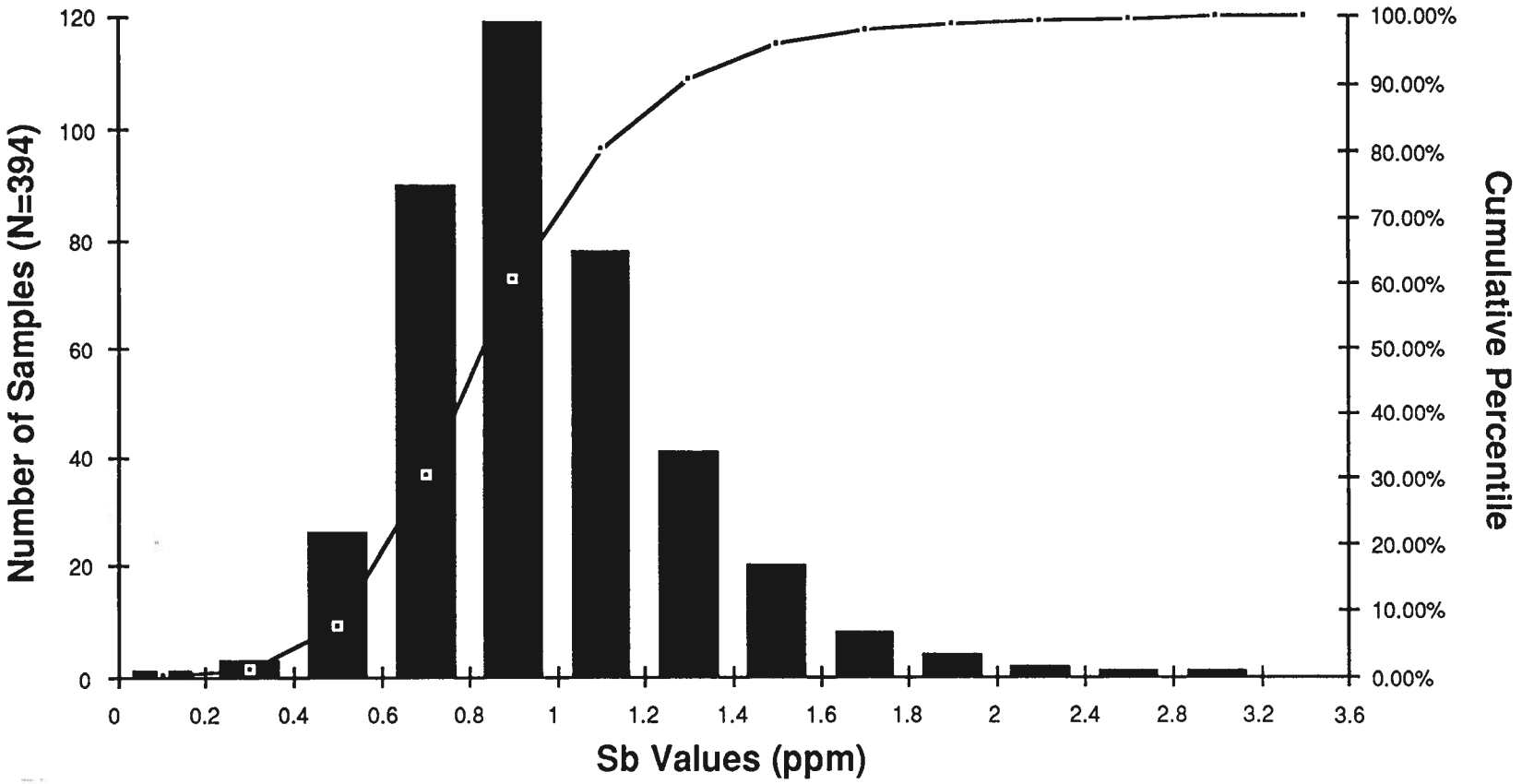
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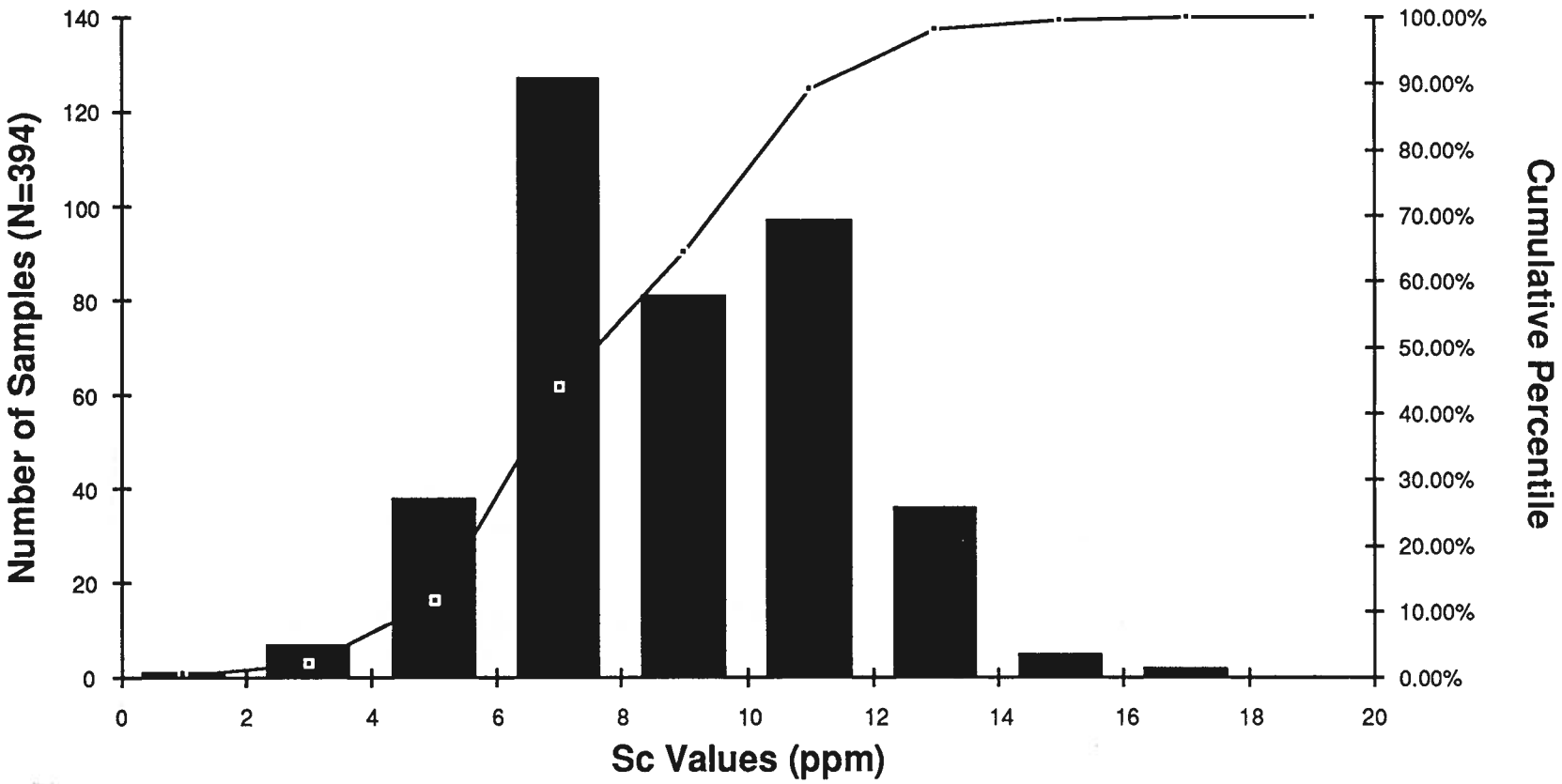
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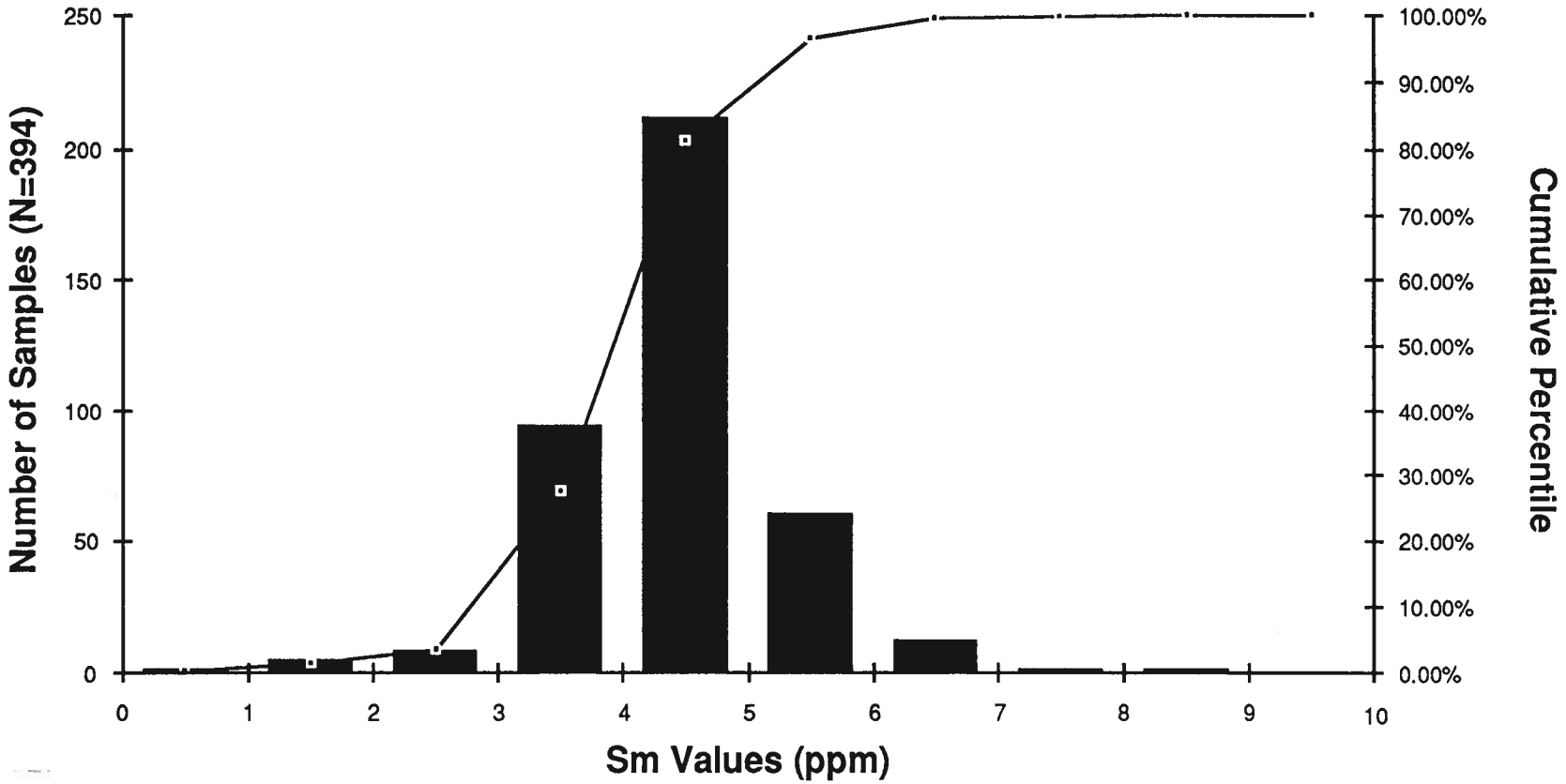
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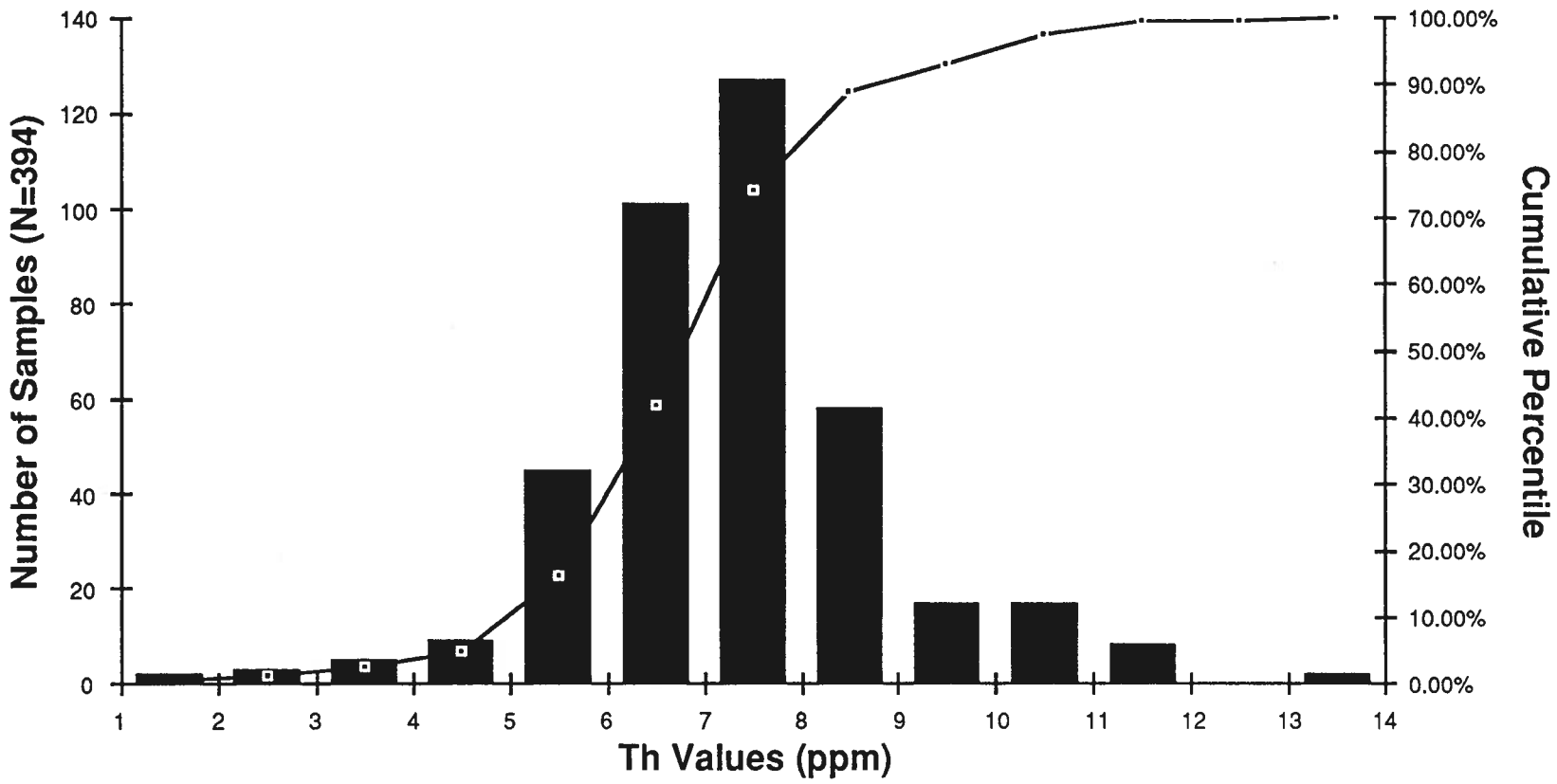
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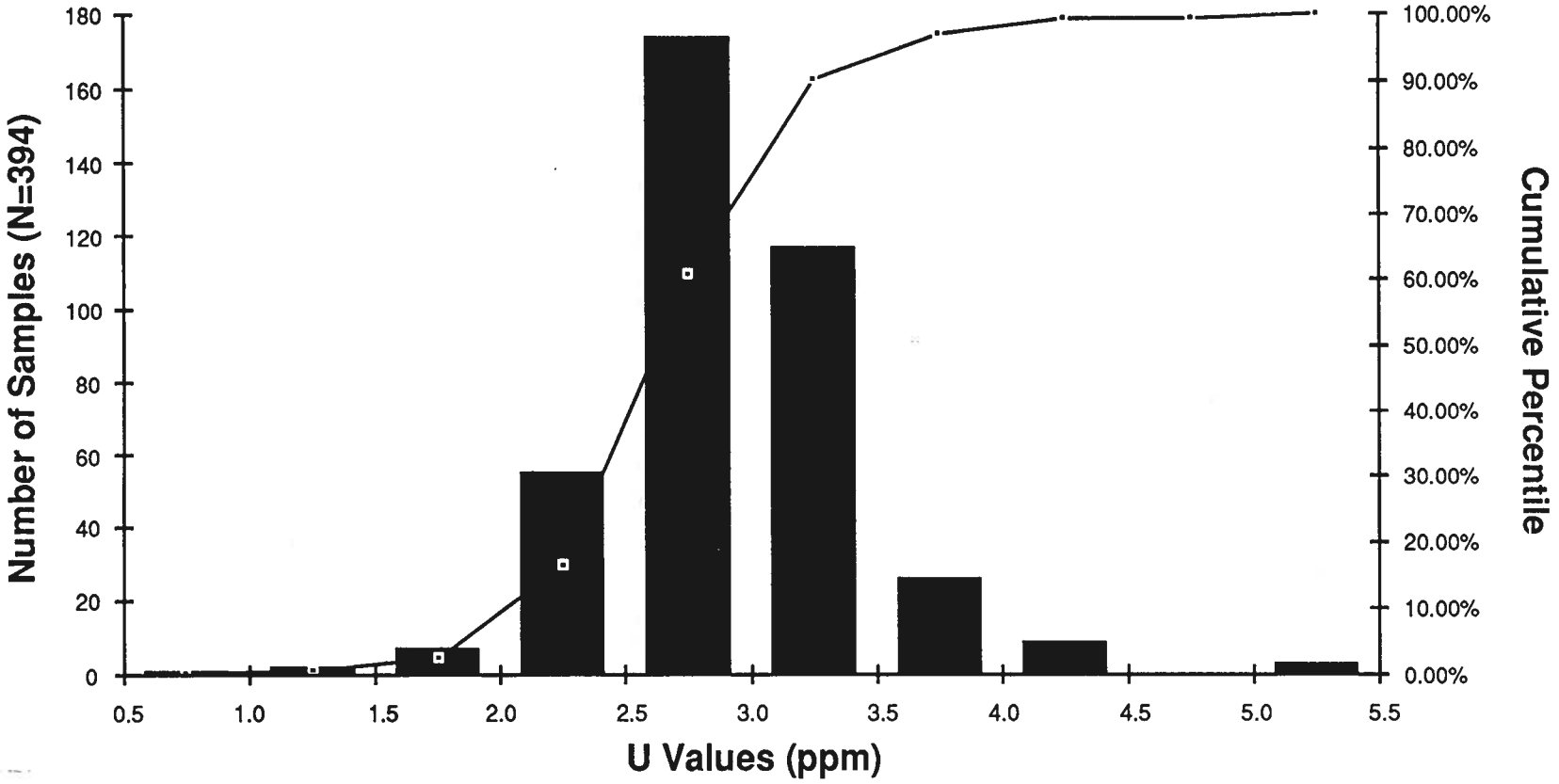
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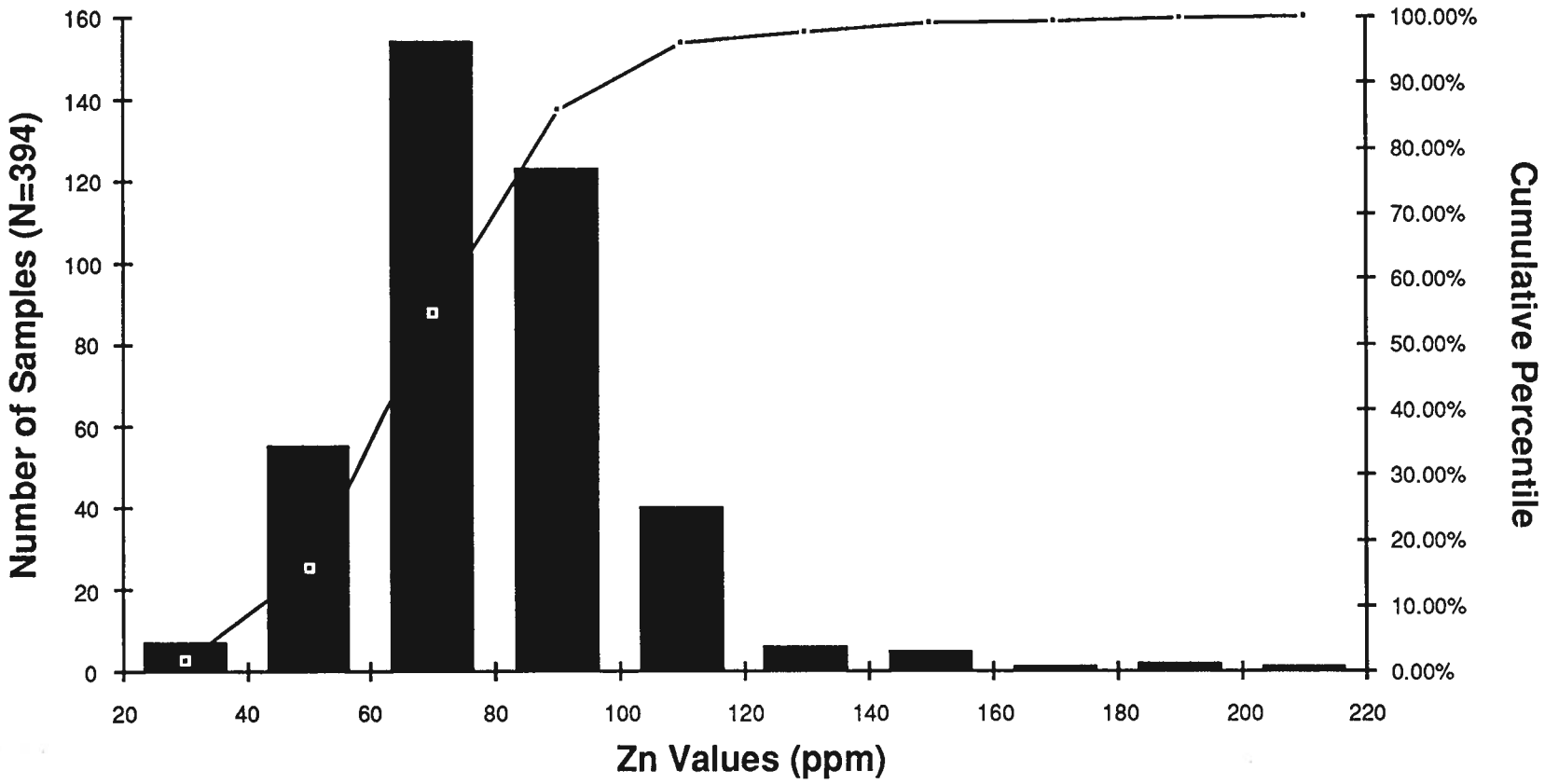
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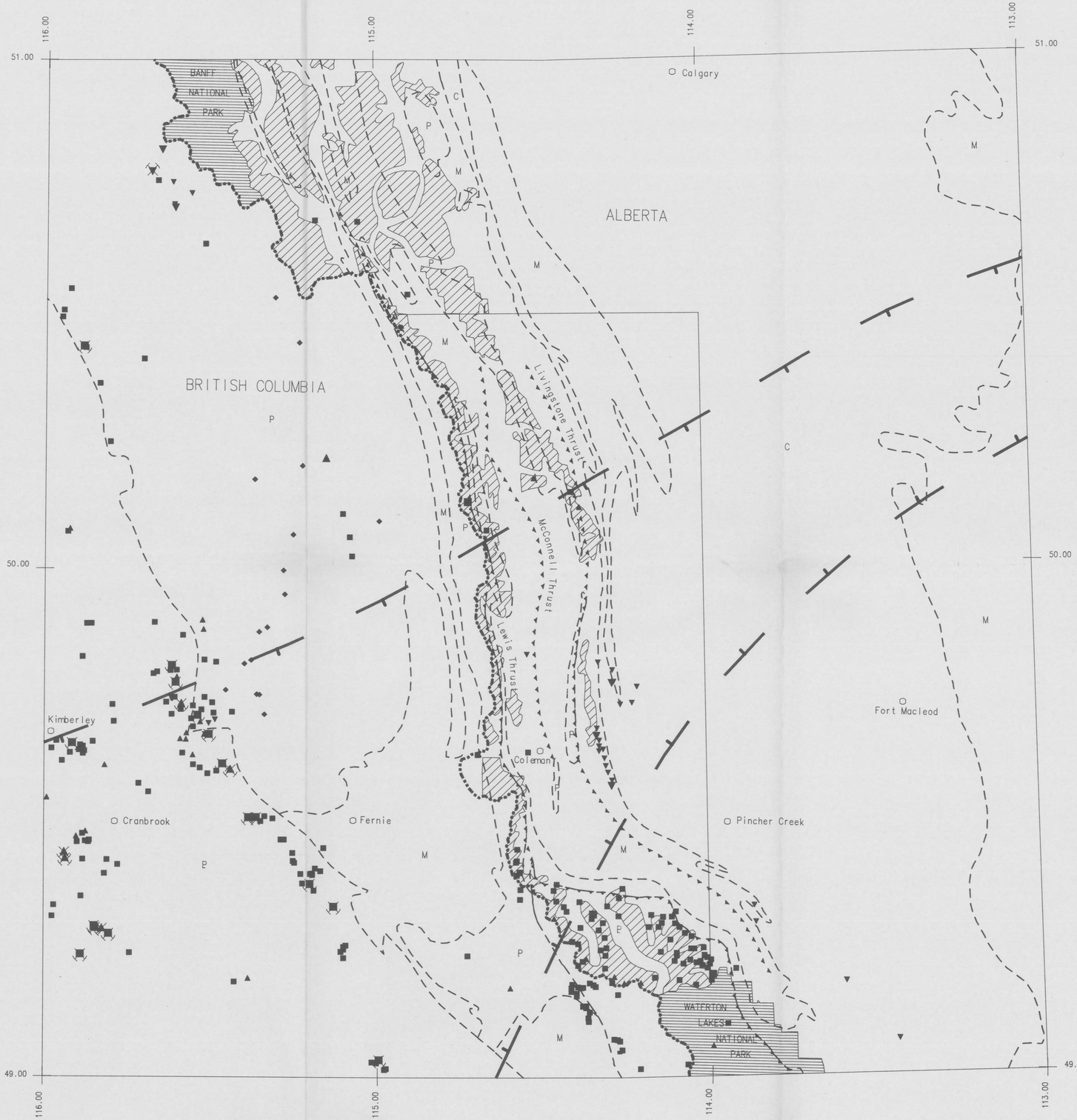


FREQUENCY DISTRIBUTION - U



FREQUENCY DISTRIBUTION - Zn





LEGEND

C Cenozoic
(includes Upper Cretaceous Willow Creek Formation)

M Mesozoic

P Paleozoic

P Proterozoic

SYMBOLS

GEOGRAPHIC INFORMATION

Project boundary

Provincial boundary

National park

Prime protection zone

Town

REGIONAL GEOLOGY

Geological boundary

Southern Alberta Rift margin
(after Kanasewich, 1968
and Kanasewich et al , 1969)

Thrust fault
(teeth in direction of dip)

MINERAL OCCURRENCES

Producer

Past producer

Prospect, gold-silver

Prospect, sulphide

Prospect, magnetite

Showing, gold-silver

Showing, sulphide

Showing, magnetite

Showing, diatreme

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CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

REGIONAL GEOLOGY, MINERAL OCCURRENCES

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 40 20 0 20 40 KILOMETRES

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FIGURE 2



Note: Geology modified after R.J.W. Douglas, 1949, 1952; D.K. Norris, 1958a, 1958b; R.A. Price, 1962; and N.C. Ollerenshaw, 1975.

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LEGEND

PLEISTOCENE/RECENT

14 Till, Gravel, Sand, Silt, Alluvium

TERTIARY

13 Porcupine Hills Formation

TERTIARY AND UPPER CRETACEOUS

12 Willow Creek Formation (equivalent to the Paskapoo Formation)

UPPER CRETACEOUS

11 St. Mary River, Bearpaw and Belly River Formations

10 Alberta Group (includes the Wapiabi, Cardium and Blackstone Formations)

LOWER CRETACEOUS

9c Crowsnest Formation

9a Blairmore Group

LOWER CRETACEOUS AND JURASSIC

8 Kootenay Formation

JURASSIC

7 Fernie Group

TRIASSIC

6 Spray River Formation

PERMIAN AND PENNSYLVANIAN

5 Rocky Mountain Group

MISSISSIPPIAN

4b Rundle Group

4a Exshaw and Banff Formations

DEVONIAN

3c Palliser Formation

3b Alexo Formation

3a Fairholme Group

CAMBRIAN

2b Eldon, Pika, and Arctomys Formations, and Lynx Group

2a Gog Group

PRECAMBRIAN

1e Kintla and Sheppard Formations

1d Purcell Lava

1c Siyeh Formation

1b Grinnell and Appekunny Formations

1a Altyn and Waterton Formations

SYMBOLS

GEOGRAPHIC INFORMATION

Provincial boundary

Primary, secondary and tertiary roads

REGIONAL GEOLOGY

Geological boundary

Southern Alberta Rift margin (after Kanasewich, 1968 and Kanasewich et al., 1969)

Thrust fault (teeth in direction of dip)

Normal fault (solid circle indicates downthrown side, defined; assumed)

Tear fault

Anticline

Syncline

Overturned syncline

MINERAL OCCURRENCES

Prospect; gold–silver

Prospect; sulphide

Prospect; magnetite

Showing; gold–silver

Showing; sulphide

Showing; magnetite

M1 Mineral occurrence identifiers

Note: Prospect is a mineral occurrence (showing) where sufficient work has been done to indicate or define a resource tonnage

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CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

GEOLOGY, MINERAL OCCURRENCES

SOUTHWESTERN ALBERTA – NORTH SHEET

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 2.5 0 2.5 5 7.5 KILOMETRES

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FIGURE 3


M13
M7
M27
M9
M4 - M10
M11
M15
M17
M14
M18
M3
M8
M26
M25
M6
M24
M1
M23
Lewis Thrust
Livingstone Thrust
Lewis Thrust
Lewis Thrust
Lewis Thrust
Livingstone Thrust
Lewis Thrust
Livingstone Thrust
Lewis Thrust
Lewis



SYMBOLS

GEOGRAPHIC INFORMATION

- Provincial boundary
- Primary, secondary and tertiary roads
- Railway
- River or stream
- Topographic contours (interval 1,000 feet)

REGIONAL GEOLOGY

- Southern Alberta Rift margin (after Kanasewich, 1968 and Kanasewich et al., 1969)

SAMPLE LOCATION

- 2PMP005 ■ Rock sample site; identifier
- 2MSC057 ● Stream sediment sample site; identifier

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GEOLOGICAL ENGINEERING

CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

SAMPLE LOCATION

SOUTHWESTERN ALBERTA – NORTH SHEET

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 0 2.5 5 7.5 KILOMETRES

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FIGURE 5

SYMBOLS

GEOGRAPHIC INFORMATION

- Provincial boundary
- Primary, secondary and tertiary roads
- Railway
- River or stream
- Topographic contours (interval 1,000 feet)

REGIONAL GEOLOGY

- Southern Alberta Rift margin (after Kanasewich, 1968 and Kanasewich et al., 1969)

SAMPLE LOCATION

- 2PMP005 ■ Rock sample site; identifier
- 2MSC057 • Stream sediment sample site; identifier

115.0
49.75 +
49.50 +
49.25 +
49.0 +
115.0
+114.5
114.0
+ 49.0
+ 49.25
+ 49.50
+ 49.75

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CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

SAMPLE LOCATION

SOUTHWESTERN ALBERTA – SOUTH SHEET

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 2.5 0 2.5 5 7.5 KILOMETRES

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SYMBOLS

GEOGRAPHIC INFORMATION

- Provincial boundary
- Primary, secondary and tertiary roads
- Railway
- River or stream
- Topographic contours (interval 1,000 feet)

REGIONAL GEOLOGY

- Southern Alberta Rift margin (after Kanasewich, 1968 and Kanasewich et al., 1969)

GEOCHEMICAL ANOMALIES

- ★ Ba Cu Pb — Geochemical stream sediment sample site: two or more elements greater than 99 percentile value
- ★ Ag Zn — Geochemical stream sediment sample site: two or more elements greater than 97.5 percentile value

  Note: large letter size indicates an elemental value greater than the 99 percentile; small letter size indicates an elemental value between the 97.5 and 99 percentile
- ● Cu Zn — Rock sample site: elevated element shown
- 2JWC099 — Sample identifier

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CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

GEOCHEMICAL ANOMALIES

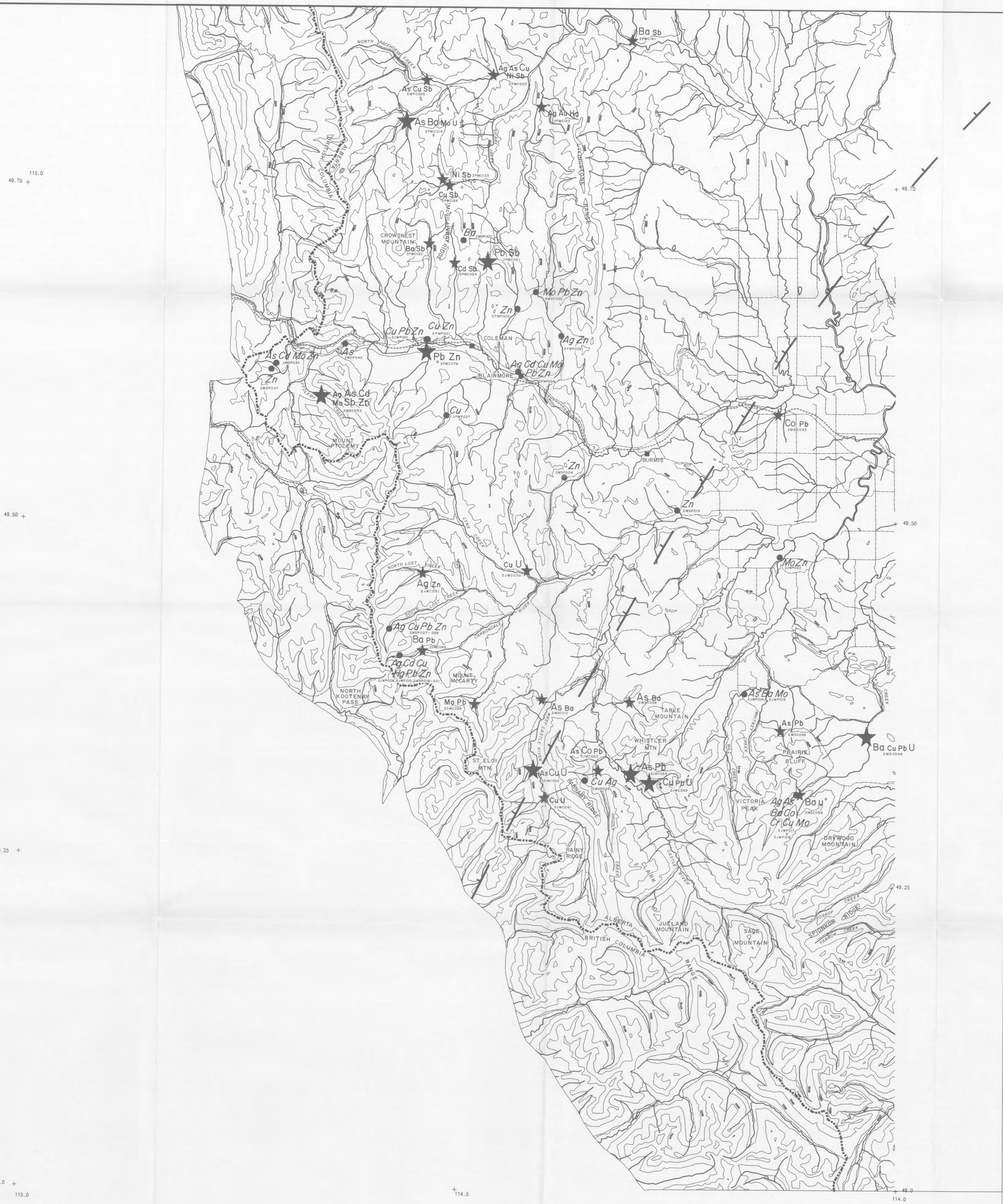
SOUTHWESTERN ALBERTA – NORTH SHEET

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 2.5 0 2.5 5 7.5 KILOMETRES

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SYMBOLS

GEOGRAPHIC INFORMATION

- Provincial boundary
- Primary, secondary and tertiary roads
- Railway
- River or stream
- Topographic contours (interval 1,000 feet)

REGIONAL GEOLOGY

- Southern Alberta Rift margin (after Kanasewich, 1968 and Kanasewich et al., 1969)

GEOCHEMICAL ANOMALIES

- ★ Ba Cu Pb — Geochemical stream sediment sample site: two or more elements greater than 99 percentile value
- ★ Ag Zn — Geochemical stream sediment sample site: two or more elements greater than 97.5 percentile value

  Note: large letter size indicates an elemental value greater than the 99 percentile; small letter size indicates an elemental value between the 97.5 and 99 percentile
- ● Cu Zn — Rock sample site: elevated element shown
- 2MSC045 — Sample identifier

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CANADA – ALBERTA MDA

SOUTHERN ALBERTA RIFT

GEOCHEMICAL ANOMALIES

SOUTHWESTERN ALBERTA – SOUTH SHEET

NTS 82G/7,8,9,10,15,16; 82J/1,2,7,8

SCALE 2.5 0 2.5 5 7.5 KILOMETRES

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FIGURE 8

NTS 82G, J

Volume II of II

THE SOUTHERN ALBERTA RIFT IN SOUTHWEST ALBERTA

PROGRAM TO IDENTIFY TARGETS

FOR METALLIC MINERAL EXPLORATION

(CANADA-ALBERTA MDA PROJECT M92-04-002)

ALBERTA RESEARCH COUNCIL OPEN FILE REPORT 1993-13 B

APPENDICES II TO V

R.A. Olson Consulting Ltd.

March, 1993

J. Williamson
M.B. Dufresne
R.A. Olson

APPENDIX II

MINERAL OCCURRENCE FIELD SHEETS

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Oct. 5/92 Date: _____

Identifiers: Mineral Occurrence ID: M2 Mineral Occurrence Name: Tod Creek Magnetite deposit

Location: NTS 82 G/16 UTM Easting 695700 Northing 5516450 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Approximately 25 kms North of Highway 3 along North Burmis Road and approximately 12 kms West of Highway 22 in Willow Creek Valley, near Tod Creek.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Low to moderate relief in Willow Creek Valley, near the base of the Livingstone Range.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Fe (Magnetite)

Status: Producer _____ Past producer _____ Prospect X Showing _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer X
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: Roymac Holdings Ltd.
Summary of Magnetite Sampling and Research, Burmis Alberta, 1983

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Belly River	Upper Cretaceous	Sedimentary	X	Sandstone	Poorly indurated sandstone unit with 1-1.5 m thick gray blue coloured, magnetite rich, massive bedding within a white to cream, crossbedded fine to medium grained sandstone bed.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

ructure:

Main Type		Description / Remarks
ndeformed		
olded		
ault ed		
ear Zones		
oliation		
neation		
her		

Overburden:

Type		Percentage (Must add to 100%)
Outcrop	Road cut	20
Major Overburden	Soil	80
Secondary Overburden		
Tertiary Overburden		
Remarks		

ineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
ratabound	X	1-1.5 m thick	Magnetite	40-50	Hematite	10		
scordant								
assive								
sseminated								
ein: single								
ein: multiple								
ein: stockwork								
oty or Coating								
her								
her								
her								
her								

MINERAL OCCURRENCE FIELD SHEET

Iteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

eometry	Mineralogy and Paragenesis	Description/Remarks
	Fe Oxides (Hematite)	Surficial coatings of Fe rich beds.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

ize Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

riority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
igh			
edium			
ow	X		
ncertain			
one			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Sept. 11/92 Date: _____

Identifiers: Mineral Occurrence ID: M1 Mineral Occurrence Name: Mill Creek

Location: NTS 82 G/8 UTM Easting 705250 Northing 5472450 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:125,000 and 1:50,000 Topographic and Forestry maps.

General Location: Approximately 12.2 kms (by road) Southeast of Beaver Mines, Alberta and approximately 6.5 kms Southwest of Beauvais Lake.

Access: Aircraft _____ Boat _____ Road X Foot X

Physiography: Moderate to high relief throughout this area, changing from foothills to the border ranges of the Clark Range.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Belly River	Cretaceous	Sedimentary	X	Sandstone	Greenish, poorly sorted sandstone with larger subrounded pebbles of other lithology.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier:
		c) Aplitic			2JWP013
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded		
Faulted	X	Carbonate veins filling extensional fractures (related to faulting?).
Shear Zones		Calcite veins have slickenslides showing upward movement.
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	40
Major Overburden	60
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays (ppm)	Description / Remarks
Stratabound								
Discordant								
Massive								
Disseminated	X				Pyrite	1-2	As (357)	Pyrite lining spaces between grains in places.
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High	_____		
Medium	_____		
Low	_____		
Uncertain	_____		
None	_____		

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Oct. 5/92 Date: _____

Identifiers: Mineral Occurrence ID: M3 Mineral Occurrence Name: South Burmis Magnetite deposit

Location: NTS 82 G/9 UTM Easting 696175 Northing 5493850 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Forestry and Topographic maps, talking with local people, geology maps.

General Location: Approximately 500 m East of Burmis and 800 m North of Highway 3.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Low to moderate relief, in the Crowsnest Pass area.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Fe (Magnetite)

Status: Producer _____ Past producer _____ Prospect X Showing _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer X
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: Roymac Holdings Ltd.
Summary of Magnetite Sampling and Research, Burmis Alberta, 1983

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Belly River	Upper Cretaceous	Sedimentary	X	Sandstone	Poorly indurated sandstone unit, 1 m thick Magnetite rich bed within a white to cream, poorly indurated, crossbedded sandstone.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded	X	West dipping linear beds.
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	90
Major Overburden Talus/Soil	10
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X	1-1.5 m wide	Magnetite	50-60	Hematite	10		
Discordant								
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X_____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
	Fe Oxides (Hematite)	Surficial coating of Fe rich beds.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X		
Uncertain			
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD PM Checked by: _____
Examined Date: Sept. 4/92 Date: _____

Identifiers: Mineral Occurrence ID: M4 Mineral Occurrence Name: Nez Perce Creek

Location: NTS 82 G/10 UTM Easting 679875 Northing 5501875 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): 129 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Boulders in road cut along Nez Perce road.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Rolling hummocks among old coal workings North of Coleman.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite _____

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Blairmore	Upper Cretaceous	Sedimentary	X	Sandstone	Salt and peppery sandstone composed of quartz and black and white chert grains.
		Ign. Plutonic			Pyrite seams possibly replacing organic layers.
		a.) Pegmatitic			Possibly part of Blairmore sandstones and conglomerates about 200-300 m West of Kootenay coal seams.
		b) Med-Crse Grained			
		c) Aplitic			Sample Identifier:
		Ign. Volcanic:			2MDP011
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Host sandstone North-South striking and dipping Westerly at about 40 degrees.
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X	Several subangular boulders (Talus)	Pyrite	5				Pyrite is interstitial in the form of a seam that crosscuts bedding at low angles.
Discordant	X							
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
Subparallel to sandstone layers.	Pyrite and Hematite	Pyrite is interstitial almost cementing quartz grains in sandstone. Minor carbonaceous material in sandstone, perhaps pyrite seam replacing carbon (?). Seam does crosscut bedding.

Instrument Type/Model (Unit of measurement)	Average Background			Maximum Radioactivity			Differentiating Spectrometer		Remarks (including Reserves and Resources, if any)
	Average Reading	Length of this Average Zone	Width	Maximum Reading	Length	Width	Channel	Maximum Readings	
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------			Remarks (including Reserves if any)
		Small	Medium	Large	

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X	No apparent indications of precious or base metals.	No further work unless geochemistry of sample collected indicates potential for precious or base metals.
Uncertain			
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD Checked by: _____
Examined Date: Sept. 2/92 Date: _____

Identifiers: Mineral Occurrence ID: M5 Mineral Occurrence Name: Livingstone River

Location: NTS 82 G/16 UTM Easting 687275 Northing 5535625 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): 201 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Boulder on the bank of Livingstone River.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Rolling hills between the Front and Main Ranges.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types	Main Host to Mineralization	Lithological Description
	Probably Cretaceous	Sedimentary X Ign. Plutonic a.) Pegmatitic b) Med-Crse Grained c) Aplitic Ign. Volcanic: a) Aphanitic b) Flow c) Pyroclastic Metamorphic a) Low-medium grade b)Medium-high grade Cataclastite/ Mylonite Breccia	Quartz Arenite	Pyritic, dark gray to black quartz arenite boulder within a thin veneer of Tertiary gravel. Sample Identification: 2MDP009

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound								
Discordant								
Massive								
Disseminated	X	Several subangular boulders.			Pyrite	1-2		Clots and blebs of disseminated pyrite in a sandstone boulder.
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
	Several subangular - subrounded sandstone boulders.	No visible alteration other than pyrite clots.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X	Boulders only.	No further work unless geochemistry of sample indicates potential for precious or base metals.
Uncertain			
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Aug 30/92 Date: _____

Identifiers: Mineral Occurrence ID: M6 Mineral Occurrence Name: Carbondale River / MacDonald Lake

Location: NTS 82 G/7 UTM Easting 679800 Northing 5474750 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: _____ **Access:** Aircraft _____ Boat _____ Road X Foot _____

Physiography: _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Blairmore	Upper Cretaceous	Sedimentary	X	Sandstone and shale	Massive, knobby weathering red-brown dirty sandstone beds and lenses within a tan brown, highly eroded shaley sandstone. Calcite veining in the massive sandstone as well as a 2-3 cm alteration halo associated with fractures.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			
		c) Aplitic			Sample Identifier:
		Ign. Volcanic:			2MSP008
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Tilted, undeformed sandstone beds and lenses.
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	30
Major Overburd talus	70
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound			cpy/py?	1%				Scattered cpy/py? clots in massive knobby sandstone beds and lenses. Hematite also visible.
Discordant								
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork	X							
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
Haloing	unknown hematite	2-3 cm alteration halo associated with fracturing. local staining and minor coatings

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High		trace cpy/py?, calcite veining	
Medium			
Low	X		
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD PM Checked by: _____
Examined Date: Aug. 28/92 Date: _____

Identifiers: Mineral Occurrence ID: M7 Mineral Occurrence Name: North Racehorse Creek

Location: NTS 82G/15 UTM Easting 676940 Northing 5522175 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): 170 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry map.

General Location: Outcrop in road cut on logging trail about 200 meters above and 500 meters south of North Racehorse Creek.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Rolling to steep hills east of Rocky Mountain Main Range.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Magnetite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Blairmore	Upper Cretaceous	Sedimentary	X	Arkosic Sandstone	Arkosic sandstone, dark grey to greenish on fresh surface, light beige weathered surface. Comprised of feldspar, chlorite, biotite, quartz. Blairmore sandstone probably just above the Crowsnest Volcanics.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Striking North-South with dip of about 30 degrees to the West.
Folded		Rocks undeformed except sandstone is part of a mapped thrust sheet.
Faulted	X	
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X	1.5cm wide	Magnetite					Thin 1-2 mm wide Magnetite laminae in sandstone.
Discordant								
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

'teration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

ɔometry	Mineralogy and Paragenesis	Description/Remarks
		No visible alteration. Synsedimentary placer accumulation.

Instrument Type/Model (Unit of measurement)	Average Background			Maximum Radioactivity			Differentiating Spectrometer		Remarks (including Reserves and Resources, if any)
	Average Reading	Length of this Average Zone	Width	Maximum Reading	Length	Width	Channel	Maximum Readings	
							Total Potassium (K) Thorium (Th) Uranium (U)		

ze Classification:

Major Commodity	Average Grade	------ Size ------			Remarks (including Reserves if any)
		Small	Medium	Large	

'iority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
gh			
edium			
w	X	Thin laminae	
ncertain			
ne			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Sept. 16/92 Date: _____

Identifiers: Mineral Occurrence ID: M8 Mineral Occurrence Name: Screwdriver Creek

Location: NTS 82 G/8 UTM Easting 700000 Northing 5485000 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: 3.3km West of Highway 507 near Screwdriver Creek.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Moderate topography, typically gently sloping foothills.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining X Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Blairmore	Cretaceous	Sedimentary	X	Sandstone	Greenish grey sandstone.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier: 2JWP023
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type		Percentage (Must add to 100%)
Outcrop		10
Major Overburd	Till	90
Secondary Overburden		
Tertiary Overburden		
Remarks		

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	%	Gangue Minerals Present Mineral	%	Best Assays	Description / Remarks
Stratabound								
Discordant								
Massive								
Disseminated	X				Pyrite	1		Disseminated crystals
Vein: single					Calcite	5		Veining up to 4 mm wide.
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) X _____ Local to Moderate (20% to 50%) X _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
	Limonite	Coating on surfaces.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD PM Checked by: _____
Examined Date: Sept. 4/92 Date: _____

Identifiers: Mineral Occurrence ID: M9 Mineral Occurrence Name: Nez Perce Creek

Location: NTS 82 G/10 UTM Easting 679800 Northing 5504300 10TM _____ 6TM _____ Zone 11
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Forestry and Topographic maps.

General Location: Coal mining ledge about 50 m above Nez Perce Creek.
Approximately 3.6 kms from highway.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: Rolling hills with prominent ridges.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing X _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Kootenay	Upper Jurassic to Lower Cretaceous	Sedimentary	X	Carbonaceous Sandstone	Coal bearing sandstone part of mined coal benches on Nez Perce Creek.
		Ign. Plutonic			Lots of carbonaceous organic matter including what looks like a piece of fossilized wood.
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier:
		c) Aplitic			2MDP012
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Part of North-South oriented thrust sheet dipping Westerly at about 30-40 degrees.
Folded		Appears to be unmetamorphosed and undeformed.
Faulted	X	
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present		Gangue Minerals Present		Best Assays	Description / Remarks
			Mineral	%	Mineral	%		
Stratabound	X	Unknown	Pyrite	5-10				Sandstone contains a seam of pyrite (interstitial to massive) with abundant disseminated pyrite away from the seam. Seam of pyrite is up to 2cm wide and subparallel to bedding.
Discordant	X							
Massive	X							
Disseminated	X							
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
		None apparent other than pyrite. Pyrite may represent sulphide replacement of carbonaceous matter.

Instrument Type/Model (Unit of measurement)	Average Background			Maximum Radioactivity			Differentiating Spectrometer		Remarks (including Reserves and Resources, if any)
	Average Reading	Length of this Average Zone	Width	Maximum Reading	Length	Width	Channel	Maximum Readings	
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------			Remarks (including Reserves if any)
		Small	Medium	Large	

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High		No field indicators of precious or base metals.	No further work unless geochemistry of sample collected indicates potential for precious or base metals.
Medium			
Low	X		
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD PM Checked by: _____
Examined Date: Sept 4/92 Date: _____

Identifiers: Mineral Occurrence ID: M10 Mineral Occurrence Name: Nez Perce Creek

Location: NTS 82 G/10
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____
UTM Easting 679875 Northing 5501875 10TM _____ 6TM _____ Zone _____
Latitude _____ Longitude _____
Aerial Photograph Number(s): 129
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.
Related Mineral Permits or Leases _____

General Location: _____

Physiography: _____

Access: Aircraft _____ Boat _____ Road X Foot _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite, Hematite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types	Main Host to Mineralization	Lithological Description
Kootenay	Cretaceous	Sedimentary X Ign. Plutonic a.) Pegmatitic b) Med-Crse Grained c) Aplitic Ign. Volcanic: a) Aphanitic b) Flow c) Pyroclastic Metamorphic a) Low-medium grade b)Medium-high grade Cataclasite/ Mylonite Breccia	Oolitic Sandstone	Dense and heavy oolitic sandstone comprised of hematite and pyrite. Possibly oolitic ironstone. Boulders in road ditch, similar oolitic ironstone with pyrite found in coal mining waste pile at 679800E, 5504300N UTM. Sample Identifier: 2MDP013

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X		Pyrite,	1-2				Oolitic sandstone with fracture controlled disseminated pyrite.
Discordant	X		Hematite	>10?				Hematite probably oolitic to diagenetic.
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High		Unsure of extent and of metals contained in oolitic unit.	No further work unless geochemistry of sample collected indicates potential for precious or base metals.
Medium			
Low	X		
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: PM MD Checked by: _____
Examined Date: Sept. 16/92 Date: _____

Identifiers: Mineral Occurrence ID: M11 Mineral Occurrence Name: Gold Creek

Location: NTS 82 G/9 UTM Easting 688850 Northing 5501600 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Rolling hills of coal mining area South of Coleman.

Access: Aircraft _____ Boat _____ Road X Foot X

Physiography: Rolling hills.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types	Main Host to Mineralization	Lithological Description
Kootenay	Cretaceous	Sedimentary X	Disseminated Pyrite	Sandstone (Sideritic?).
		Ign. Plutonic		
		a.) Pegmatitic		
		b) Med-Crse Grained		Sample Identifier: 2PMP028
		c) Aplitic		
		Ign. Volcanic:		
		a) Aphanitic		
		b) Flow		
		c) Pyroclastic		
		Metamorphic		
		a) Low-medium grade		
		b)Medium-high grade		
		Cataclastite/ Mylonite		
		Breccia		

MINERAL OCCURRENCE FIELD SHEET

tructure:

Main Type		Description / Remarks
ndeformed	X	Disseminated Pyrite in sandstone layer associated with coal beds striking North-South and dipping 30-40 degrees West.
olded		Some minor vertical faults present with 1-2 m offsets.
aulted		
hear Zones		
oliation		
neation		
ther		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

ineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
tratabound	X		Pyrite	1-2	Siderite ?		(ppm) Ag (0.6)	
iscordant								
assive								
isseminated	X							
ein: single								
ein: multiple								
ein: stockwork								
oty or Coating								
ther								
ther								
ther								
ther								

MINERAL OCCURRENCE FIELD SHEET

Iteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

eometry	Mineralogy and Paragenesis	Description/Remarks
		None visible unless siderite is a result of alteration.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

ize Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

'riority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
ligh			
1edium			
ow	X		
Incertain	X		
lone			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD PM Checked by: _____
Examined Date: Sept. 10/92 Date: _____

Identifiers: Mineral Occurrence ID: M12 Mineral Occurrence Name: Deep Creek

Location:
NTS 82J/1
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____
UTM Easting 686450 Northing 5546740 10TM _____ CTM _____ Zone _____
Latitude _____ Longitude _____
Aerial Photograph Number(s): _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry.
Related Mineral Permits or Leases None

General Location: Just above bend in Deep Creek on North bank.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Foothills of Livingstone Range.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status:
Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X _____
Remarks X

Nature of Deposit:
Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Kootenay	Cretaceous	Sedimentary	X	Sandstone	Quartz-rich sandstone, salt and peppery appearence, grey due to quartz and black chert granules. Sandstone unit is near the top of Kootenay about 5 m below quartz-chert pebble conglomerate of Blairmore.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier: 2MDP028
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Part of Kootenay rocks.
Folded		Striking about North-South and dipping 50-60 degrees West.
Faulted		Unit just below faulted Blairmore-Kootenay contact.
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X	1-2 meters wide	Pyrite	10				Fine grained, granular, disseminated pyrite and clots of pyrite.
Discordant								
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

lteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

eometry	Mineralogy and Paragenesis	Description/Remarks
		None visible.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

ze Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

lority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
gh			
dium			
w	X		
certain	X		
ne			

MINERAL OCCURRENCE FIELD SHEET

Examined by: PM Checked by: _____
Examined Date: Oct. 5/92 Date: _____

Identifiers: Mineral Occurrence ID: M13 Mineral Occurrence Name: Oldman River / Gap Pass

Location: NTS 82 G/16 UTM Easting 691050 Northing 5528150 10TM _____ 6TM _____ Zone 11
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Sample from the South bank of the Oldman River, approximately 2 kms from Gap Pass.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Bank of the Oldman River.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Spray River	Jurassic to Cretaceous	Sedimentary	X	Limey Siltstone	Flat lying limey Jurassic to Cretaceous siltstones. Light gray and relatively fresh other than the rusty pyrite knots.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identification:
		c) Aplitic			2PMP041
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Approximately 250 m upstream along the Oldman River from intensly folded Rundle Limestone.
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound								
Discordant								
Massive								
Disseminated	X	unknown	pyrite	2				Pyrite knots disseminated throughout an otherwise fresh appearing limey siltstone.
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Parageneses	Description/Remarks
Disseminated pyrite knots.	Rusty weathering pyrite knots up to 2cm wide.	No apparent association with a structural event but rather disseminated throughout the rock.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X	Proximity to Livingstone Thrust may indicate potential for base or precious metals.	No further work unless geochemistry of sample indicates potential for base or precious metals.
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: PM MD Checked by: _____
Examined Date: Sept.19/92 Date: _____

Identifiers: Mineral Occurrence ID: M14 Mineral Occurrence Name: Blairmore

Location: NTS 82G/9 UTM Easting 685350-400 Northing 5498425-450 10TM _____ 6TM X Zone 11
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry road maps.

General Location: Road cut on Highway 3 about 250-300 m East of Blairmore central access.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Rocky Mountain	Pennsylvanian to Permian	Sedimentary	X	Limestone to Limey Sandstone	Limestones with chert breccias, limey sandstones and dolomites of Livingstone Range.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier:
		c) Aplitic			2MDP042, 2MDP043, 2PMP032, 2PMP033, 2PMP034
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Limestones striking 350 to 355 degrees, dipping 30 to 40 degrees West. Part of
Folded		Livingstone thrust. Several bedding parallel faults and horizontal faults.
Faulted	X	One bedding parallel fault offsets a horizontal fault.
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound								
Discordant	X		Pyrite	Up to 10	Calcite			Pyrite in seams, clots. In places related to fault zones. Some places disseminated.
Massive								
Disseminated	X							
Vein: single								
Vein: multiple	X							
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	Size: Small	Size: Medium	Size: Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE F. .LD SHEET

Examined by: MD, PM Checked by: _____
Examined Date: Sept. 19/92 Date: _____

dentifiers: Mineral Occurrence ID: M15 Mineral Occurrence Name: Crowsnest Lake

.ocation: NTS 82G/10 UTM Easting 670900-950 Northing 5500200-250 10TM _____ 6TM X Zone 11
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

Seneral Location: North road cut overlooking Crowsnest Lake on Highway 3. First Limestone outcrop West of Cretaceous clastic rocks.

Access: Aircraft _____ Boat _____ Road X Foot _____

Physiography: _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Rocky Mountain	Pennsylvanian to Permian	Sedimentary	X	Dolomite and Limestone	Variegated Limestones above the Lewis Thrust.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Cree Grained			Sample Identifier:
		c) Aplitic			2MDP045, 2PMP036
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Faulted and brecciated in places along lithological contacts.
Folded		Limestones striking about 350 degrees, dipping 50 degrees West.
Faulted	X	Within approximately 100-200 m of the Lewis Thrust.
Shear Zones		Some fracturing and faulting discordant to lithological contacts.
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present		Gangue Minerals Present		Best Assays	Description / Remarks
			Mineral	%	Mineral	%		
Stratabound	X				Carbonate			Fine-grained, disseminated pyrite associated with altered and faulted-brecciated Limestone.
Discordant								
Massive					Pyrite	2-3		
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE F.. _D SHEET

Examined by: MD PM Checked by: _____
Examined Date: Sept. 10/92 Date: _____

Identifiers: Mineral Occurrence ID: M16 Mineral Occurrence Name: Logging road off Highway 940

Location: NTS 82 J/1 UTM Easting 685325 Northing 5554375 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases None
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Secondary logging road off of Highway 940.
About 2.1 km from the highway in road cut talus.

Access: Aircraft _____ Boat _____ Road _____ Foot x

Physiography: _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite/Marcasite?

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Rundle	Mississippian	Sedimentary	X	Silty Limestone	Paleozoic carbonate.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier: 2MDP027
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound					Pyrite/ Marcasite	1-2		
Discordant								
Massive								
Disseminated								
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE F..LD SHEET

Examined by: JW MS Checked by: _____
Examined Date: Sept. 16/92 Date: _____

Identifiers: Mineral Occurrence ID: M17 Mineral Occurrence Name: Crowsnest - BC Border

Location: NTS 82 G/10 UTM Easting 666700 Northing 5500000 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 and 1:125,000 Topographic and Forestry maps.

General Location: On old highway cut at locality of Crowsnest below new Highway 3.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Rugged mountainous terrain.

Main Metallic Commodity:
Au _____ Ag _____ Cu X _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X _____
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer X _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Etherington, Rundle Group	Mississippian	Sedimentary	X	Cherty dolomite, recrystallized limestone	Tan to buff weathered limestone, grey on fresh surface. Bands of recrystallized dolomite replacing limestone.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Cree Grained			
		c) Aplitic			Sample Identifier:
		Ign. Volcanic:			2JWP024, 2JWP025, 2JWP026
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	20
Major Overburd Road Talus	80
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound								
Discordant								
Massive	X		Sphalerite?	<1	Pyrite	1-2		Reddish, opaque, resinous crystals of Sphalerite
Disseminated	X							Clots of Pyrite <10 cm x 8 cm x 2 cm throughout.
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
		Fe staining from Pyrite clots.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X		
Uncertain			
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: JW MS Checked by: _____
Examined Date: Sept. 18/92 Date: _____

Identifiers: Mineral Occurrence ID: M18 Mineral Occurrence Name: Ptolemy Creek

Location: NTS 82 G/10 UTM Easting 671725 Northing 5493225 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic maps.

General Location: South of Highway 3 approximately 8 km (by road), due South of Crowsnest Lake. **Access:** Aircraft _____ Boat _____ Road X Foot x

Physiography: Rugged mountainous topography with peaks up to 9,234 feet.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer X
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types	Main Host to Mineralization	Lithological Description
Livingstone	Mississippian	Sedimentary X	Limestone	Tan weathering fossiliferous limestone, grey on fresh surface.
		Ign. Plutonic		
		a.) Pegmatitic		
		b) Med-Crse Grained		Sample Identifier:
		c) Aplitic		2JWP027, 2MSP022
		Ign. Volcanic:		
		a) Aphanitic		
		b) Flow		
		c) Pyroclastic		
		Metamorphic		
		a) Low-medium grade		
		b)Medium-high grade		
		Cataclastite/ Mylonite		
		Breccia		

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type	Description / Remarks
Undeformed	
Folded	
Faulted	
Shear Zones	
Foliation	
Lineation	
Other	

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	10
Major Overburd Talus	90
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone	Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound				Pyrite	1		Small rusty vugs <1 mm with common black cores. Rusty outcrop noted upslope.
Discordant							
Massive							
Disseminated							
Vein: single							
Vein: multiple							
Vein: stockwork							
Sooty or Coating							
Other							
Other							
Other							
Other							

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X_____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
		Rusty vugs, generally <1 mm.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MD Checked by: _____
Examined Date: Sept 9/92 Date: _____

Identifiers: Mineral Occurrence ID: M19 Mineral Occurrence Name: Kananaskis Highway.

Location: NTS 82J/2 UTM Easting 667350 Northing 5562025 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 scale Topographic maps.

General Location: Base of slope 20 m North of Kananaskis Highway
at 3.65 km from Highway 532 cutoff.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Rounded hills and ridges. Talus slopes and lots of outcrop.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop _____ Felsenmeer _____
Boulder(s) X Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Rundle	Mississippian	Sedimentary	X	Chert	Massive chert with local carbonate nodules.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier: 2MDP023
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound								
Discordant								
Massive								
Disseminated	X				Carbonate	2-3		Clots and possible cubes of pyrite in chert. Locally intergrown with calcite.
Vein: single								
Vein: multiple					Pyrite	1-2		
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
	Carbonate	Haloes around pyrite clots and carbonate nodules.

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X		
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: PM MD Checked by: _____
Examined Date: Sept. 30/92 Date: _____

Identifiers: Mineral Occurrence ID: M20 Mineral Occurrence Name: Livingston lookout, Cowjulcer Creek

Location: NTS 82 G/16 UTM Easting 689625 Northing 5532750 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry maps.

General Location: Livingston lookout above Cowjulcer Creek, approximately 5.6 kms from Oldman River trail.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: _____

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ ***Assessment Report Identifier:*** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Rundle	Mississippian	Sedimentary	X	Limestone	Grey variegated, micritic limestone. Slightly bituminous and fossiliferous in places.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier:
		c) Aplitic			2MDP050
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	Essentially undeformed except some veining. Part
Folded		of Livingstone Thrust plate. 180 degrees with 60 degrees East dip.
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X	Unknown			Pyrite	1-2		Crystalline knots of pyrite 1-2 cm in diameter.
Discordant								
Massive								
Disseminated	X							
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
		None visible. In a few places along the road, veins of 5-10% carbonate 1-2 mm wide are present..

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	Size: Small	Size: Medium	Size: Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X		
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: JW MS Checked by: _____
Examined Date: Oct. 4/92 Date: _____

Identifiers: Mineral Occurrence ID: M21 Mineral Occurrence Name: Highwood Creek, Sentinel Camp

Location: NTS 82 J/7 UTM Easting 671625 Northing 5584675 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry road maps.

General Location: Across from Sentinel Camp F.R.A. along Highway 541
in a road cut approximately 3.7 kms West of the Kananaskis Country boundary.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: Rugged to rolling terrain in the Rocky Mountain foothills.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other X Pyrite

Status: Producer _____ Past producer _____ Prospect _____ Showing _____ Anomaly X
Remarks X

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Mount Head Fm. (Rundle)	Mississippian	Sedimentary	X	Limestone/Shale	Dark grey, massive limestone with shaley and minor breccia interbeds.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier: 2JWP029, 2JWP030
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded		
Faulted	X	Located between Zephyr Creek Fault and Mount Burke Faults.
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	40
Major Overburden Talus/Soil	60
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays (ppm)	Description / Remarks
Stratabound								
Discordant								
Massive	X				Pyrite	<5	Zn (158) Pb (58)	Masses and clots of Pyrite as well as disseminations across 15 cm wide areas in black limestone.
Disseminated	X							
Vein: single								
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
		Rusty staining from Pyrite clots

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE F..LD SHEET

Examined by: MS JW MD PM Checked by: _____
Examined Date: Aug/92 Date: _____

Identifiers: Mineral Occurrence ID: M22 Mineral Occurrence Name: Oldman River Pb-Zn

Location: NTS 82/J2 UTM Easting 663350 Northing 5555300 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): LN 13 AS 2608 Photos 29,32 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Geology, Topographic and Forestry maps.

General Location: At approximately 7500 foot elevation NE of Mount Gass. **Access:** Aircraft _____ Boat _____ Road X Foot X

Physiography: Rugged mountainous topography, 5000-9000 feet in elevation.

Main Metallic Commodity:
Au _____ Ag _____ Cu _____ Pb X _____ Zn X _____ PGE _____ Ni _____ Mo _____
U _____ Other _____

Status: Producer _____ Past producer _____ Prospect X _____ Showing _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining X _____ Colour _____

Data Sources: The Oldman River Pb-Zn occurrence SW Alberta.
M.E. Holter in Bulletin of Canadian Petroleum Geology Vol. 25 No. 1 (March 1977) P. 92-109.

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Palliser	Devonian	Sedimentary	X	Coarse crystalline Limestone and Dolomite with discordant calcite veins.	Devonian age Palliser formation, comprised of dolomitized Limestone, tan to tan brown in colour. Mineralization occurs adjacent to or in association with massive to coarse crystalline calcite veins in grey to charcoal grey Dolomite/Limestone.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Sample Identifier:
		c) Aplitic			2MSP029
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclasite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		Mineralization restricted to areas of calcite veining and surrounding Limestone/Dolomite host rock.
Folded		
Faulted	X	
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	10
Major Overburden	
Talus	80
Secondary Overburden	
Soil	10
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present		Gangue Minerals Present		Best Assays	Description / Remarks
			Mineral	%	Mineral	%	(ppm)	
Stratabound								
Discordant	X	1-3cm zones	Galena,	3-5	Calcite,	50	Zn (19.5%)	Disseminated to locally massive Galena and disseminated Sphalerite in Dolomitized Limestone. Associated
Massive	X		Sphalerite	1	Dolomite	45	Pb (12.1%)	with larger calcite veins up to 10 cm wide or vein networks.
Disseminated	X						Cu (282)	Samples collected from within 2-3 m of upper
Vein: single							Ag (118.6)	adits outside on rock faces.
Vein: multiple							Cd (376)	Sphalerite occurs adjacent to calcite veins
Vein: stockwork							Sb (17)	and is dull tan to brown in colour.
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) X _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks
	Fault associated mineralization.	

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X		
Uncertain			
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Sept. 3/92 Date: _____

Identifiers: Mineral Occurrence ID: M23 Mineral Occurrence Name: Grizzly Occurrence, Grinnell Formation

Location: NTS 82 G/8 UTM Easting 692325 Northing 5464625 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): LN 4 AS2607 Photo 37 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:125,000 and 1:50,000 Geology and Topography Maps.

General Location: Located at approximately 6000 feet elevation on spur at East side of Burnaby Ridge along Grizzly Creek. **Access:** Aircraft _____ Boat _____ Road X Foot x

Physiography: Steep rugged mountainous terrain, 5,000 - 8,100 feet in elevation.

Main Metallic Commodity:
Au _____ Ag _____ Cu X _____ Pb _____ Zn _____ PGE _____ Ni _____ Mo _____
U _____ Other _____

Status: Producer _____ Past producer _____ Prospect _____ Showing X _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer X _____
Boulder(s) _____ Gossan _____ Placer _____ Staining X _____ Colour Green malachite staining.

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Grinnell	Precambrian	Sedimentary	X	Sandstone (Quartzite) cycles capped by red shale units	Interbedded cycles of laminated to cross bedded, white/red sandstones capped by red siltstones. These units overlain by tan-buff weathering dolomites.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			
		c) Aplitic			Sample Identifier:
		Ign. Volcanic:			2MSP026, 2JWP017, 2JWP018
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade			
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded	X	Minor folds in the 1-2 m range, open folds with axial planar joints. Highly fractured outcrop and possible drag folds may indicate faults are present.
Faulted	X	
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	40
Major Overburden	60
Secondary Overburden	
Tertiary Overburden	
Remarks	At site most outcrop is covered by glacially derived or talus overburden.

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X		Covellite	Total	Pyrite	1	(ppm)	All ore minerals are seen between
Discordant			Malachite	sulphides			Cu (34753)	quartz grains in sandstones.
Massive			Chalcopyrite	7			Ag (15.5)	
Disseminated	X						As (113)	
Vein: single							Co (111)	
Vein: multiple							Cr (397)	
Vein: stockwork							Ba (3489)	
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) X_____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	------ Size ------ Small	Medium	Large	Remarks (including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low			
Uncertain	X		
None			

MINERAL OCCURRENCE FIELD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Sept 7/92 Date: _____

Identifiers: Mineral Occurrence ID: M24 Mineral Occurrence Name: Table Mountain, Siyeh Formation

Location: NTS 82 G/8 UTM Easting 699000 Northing 5471400 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): LN 5 AS2607 Photo 058 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic maps, 1:125,000 Geology map, Air Photos.

General Location: Located 1.5 kms. Southeast of Beaver Mines Lake, at 6,200 feet elevation along North side of mountain.

Access: Aircraft _____ Boat _____ Road X Foot x

Physiography: High relief, mountainous terrain, from 6,500 to 7,000 feet.

Main Metallic Commodity:
Au _____ Ag ? Cu X Pb X Zn X PGE _____ Ni _____ Mo _____
U _____ Other _____

Status: Producer _____ Past producer _____ Prospect _____ Showing X Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer X
Boulder(s) _____ Gossan _____ Placer _____ Staining X Colour red and green

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Siyeh	Precambrian	Sedimentary	X	Shale, Dolomite, Siltstone, Oolitic beds	Dark grey to black shale/siltstone, buff to tan weathering. Dolomite, grey on fresh surface. Red and green Shales. Tan oolite beds with black weathering oolites.
		Ign. Plutonic			
		a.) Pegmatitic			
		b) Med-Crse Grained			Note disseminated mineralization likely of two types: a) copper as one of chalcopyrite, malachite, covellite - in siltstone/sandstone interstitially between grains b) Pb/Zn as galena, hydrozincite, (sphalerite?) in black siltstones and galena in stringers or vein fillings in carbonate units
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			
		b) Flow			
		c) Pyroclastic			
		Metamorphic			Pb/Zn mineralization difficult to see in hand specimen with naked eye.
		a) Low-medium grade			
		b)Medium-high grade			Sample Identifier: 2MSP009, 2MSP010, 2MSP011, 2MSP012, 2MSP013
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		
Folded	X	Minor 1-2 m folds as well as dextral faulting of folded beds. Steep angled faults.
Faulted	X	
Shear Zones		
Foliation		Both left lateral and right lateral faults/fractures with displacement generally less than 1 m and causing minor 2-3 m wide graben type structures.
Lineation		
Other		
		Some large faults or zones contain gouge and rock flour. Fault gouge clasts are pebble sized and angular. Fine grained flour appears to be calcite.

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	100
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present		Gangue Minerals Present		Best Assays	Description / Remarks
			Mineral	%	Mineral	%		
Stratabound	X		Chalcopyrite	<1	Pyrite	<1		Chalcopyrite - infillings between sandstone grains.
Discordant			Galena	<1				Galena - veins and/or stringers parallel to bedding near faults.
Massive			Hydrozincite	1				Pyrite - infilling of vugs in Dolomite.
Disseminated	X							
Vein: single	X							
Vein: multiple								
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

lteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) X _____

eometry	Mineralogy and Parageneals	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

'ze Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (including Reserves if any)

lority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
gh			
dium	X		
w	X		
certain			
ne			

MINERAL OCCURRENCE FIELD SHEET

Examined by: JW MS Checked by: _____
Examined Date: Sept. 9/92 Date: _____

Identifiers: Mineral Occurrence ID: M25 Mineral Occurrence Name: North Kootenay Pass, Sheppard Formation

Location: NTS 82 G/7 UTM Easting 676525 Northing 5474500 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): _____ Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 Topographic and Forestry road maps.

General Location: North Kootenay Pass at the headwaters of the Carbondale River, elevation approximately 6,000 feet **Access:** Aircraft _____ Boat _____ Road X Foot x

Physiography: Clark Range / Main Ranges

Main Metallic Commodity:
Au _____ Ag ? _____ Cu X _____ Pb X _____ Zn ? _____ PGE _____ Ni _____ Mo _____
U _____ Other _____

Status: Producer _____ Past producer _____ Prospect _____ Showing X _____ Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X _____ Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining X _____ Colour white, possibly carbonate staining and hydrozincite stain? minor Fe stain

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types		Main Host to Mineralization	Lithological Description
Sheppard	Precambrian	Sedimentary	X	Black Siltstone red/white sandstone, cherty dolomite and their metamorphic equivalents	Black Siltstone, finely laminated to coarsely bedded, white stained, heavy, fine grained sulphides visible.
		Ign. Plutonic			Red/white quartzite, minor chalcopyrite and malachite stained.
		a.) Pegmatitic			Cherty dolomite, fine grained disseminated chalcopyrite
		b) Med-Crse Grained			In grey to white, fine grained chert/dolomite.
		c) Aplitic			
		Ign. Volcanic:			
		a) Aphanitic			Sample Identifier:
		b) Flow			2MSP018, 2MSP019, 2MSP020, 2JWP007, 2JWP008, 2JWP009, 2JWP010
		c) Pyroclastic			
		Metamorphic			
		a) Low-medium grade	X		
		b)Medium-high grade			
		Cataclastite/ Mylonite			
		Breccia			

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed	X	
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	100
Major Overburden	
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present		Gangue Minerals Present		Best Assays	Description / Remarks
			Mineral	%	Mineral	%		
Stratabound	X		Chalcopyrite	1	Pyrite	trc-1	(ppm)	All ore minerals disseminated as very fine grained
Discordant			Galena	undetermined			Zn (7718)	sulphides, very hard to identify.
Massive			Zn, Ag	undetermined			Pb (2035)	
Disseminated	X						Cu (352)	
Vein: single							Ag (2.0)	
Vein: multiple							Cd (36)	
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

Alteration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

Geometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (Including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

Size Classification:

Major Commodity	Average Grade	----- Size ----- Small	Medium	Large	Remarks (Including Reserves if any)

Priority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
High			
Medium			
Low	X	Sulphides are hard to identify.	
Uncertain	X		
None			

MINERAL OCCURRENCE F..LD SHEET

Examined by: MS JW Checked by: _____
Examined Date: Aug/92 Date: _____

Identifiers: Mineral Occurrence ID: M26 Mineral Occurrence Name: South Lost Creek showing, Sheppard Formation

Location: NTS 82 G/7 UTM Easting 675550 Northing 5476650 10TM _____ 6TM _____ Zone _____
DLS: LSD _____ SEC _____ TP _____ R _____ MER _____ Latitude _____ Longitude _____
Aerial Photograph Number(s): LN5 AS 2607 Photo 052 Related Mineral Permits or Leases _____
Means and Scale Used to Define Location: 1:50,000 and 1:125,000 Geology and Topographic maps.

General Location: _____ **Access:** Aircraft _____ Boat _____
Road X Foot x

Physiography: Rugged mountainous terrain, 5,200 to 8,000 feet elevation.

Main Metallic Commodity:
Au _____ Ag ? Cu X Pb X Zn X PGE _____ Ni _____ Mo _____
U _____ Other _____

Status: Producer _____ Past producer _____ Prospect _____ Showing X Anomaly _____
Remarks _____

Nature of Deposit: Plant _____ Quarry or Pit _____ Drill Hole _____ Outcrop X Felsenmeer _____
Boulder(s) _____ Gossan _____ Placer _____ Staining _____ Colour _____

Data Sources: _____

Geoscan Document # (MFN): _____ **Assessment Report Identifier:** _____

Host Rock(s) and Overburden:

Formation Name	Age	Country Rock Types	Main Host to Mineralization	Lithological Description
Sheppard	Precambrian	Sedimentary X Ign. Plutonic a.) Pegmatitic b) Med-Crse Grained c) Aplitic Ign. Volcanic: a) Aphanitic b) Flow c) Pyroclastic Metamorphic a) Low-medium grade b)Medium-high grade Cataclastite/ Mylonite Breccia	Black siltstones and grey cherty dolomite and local quartzite.	Dark black siltstone is the main host to Pb/Zn mineralization. Some chalcopyrite visible within grey, cherty dolomite and quartzite. Sample Identification: 2MSP027 , 2MSP028

MINERAL OCCURRENCE FIELD SHEET

Structure:

Main Type		Description / Remarks
Undeformed		Uncertain
Folded		
Faulted		
Shear Zones		
Foliation		
Lineation		
Other		

Overburden:

Type	Percentage (Must add to 100%)
Outcrop	25
Major Overburden	75
Secondary Overburden	
Tertiary Overburden	
Remarks	

Mineralized zone(s):

Nature of Mineralized Zone		Extent (LxWxD)	Ore Minerals Present Mineral	Ore Minerals Present %	Gangue Minerals Present Mineral	Gangue Minerals Present %	Best Assays	Description / Remarks
Stratabound	X		Galena	Total			(ppm)	Fine grained disseminations.
Discordant			Hydrozincite	sulphide			Pb (2074)	White powdery coatings on siltstone.
Massive			Chalcopyrite	1%			Zn (1202)	Disseminated within cherty dolomite and quartzite.
Disseminated	X						Cu (248)	
Vein: single							Ag (1.2)	
Vein: multiple							Mo (23)	
Vein: stockwork								
Sooty or Coating								
Other								
Other								
Other								
Other								

MINERAL OCCURRENCE FIELD SHEET

teration ; Radioactivity:

Pervasive (>80%) _____ Moderate to Pervasive (50% to 80%) _____ Local to Moderate (20% to 50%) _____ Spotty to Local (<20%) _____

ometry	Mineralogy and Paragenesis	Description/Remarks

Instrument Type/Model (Unit of measurement)	Average Background: Average Reading	Average Background: Length of this Average Zone	Average Background: Width	Maximum Radioactivity: Maximum Reading	Maximum Radioactivity: Length	Maximum Radioactivity: Width	Differentiating Spectrometer: Channel	Differentiating Spectrometer: Maximum Readings	Remarks (including Reserves and Resources, if any)
							Total Potassium (K) Thorium (Th) Uranium (U)		

e Classification:

Major Commodity	Average Grade	Size: Small	Size: Medium	Size: Large	Remarks (including Reserves if any)

ority Rating ; Recommendations:

Priority		Reasons for Priority Rating	Recommendation for Further Work
h			
dium			
ertain	X		
ie			

APPENDIX III

ROCK SAMPLE CARDS

104I 3 NTH
82G10 COLEMAN

SURVEY TYPE: GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO | COLLECTOR(S): JW | DATE: 8/15/92

NTS | YEAR | INT. | TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Rock CLIENT & PROJECT 2205 AREA B/or PHOTO: Blairmore Crk COLLECTOR(S): JW DATE Aug 24/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO 8267 COLLECTOR(S): JW DATE 9/09/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: R C C C CLIENT & PROJECT: 2205 AREA &/or PHOTO: 8267 COLLECTOR(S): JW DATE: 9/09/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ELEVATION
82G7	92	JW	008		676525		

REMARKS: blk siltstone, rusty gossenous, very heavy, of same type as ZMSP01B, D19. possibly more sulphidic possibly Galena + Zn + Ag? This siltstone unit at this locality is up to 40' in true thickness and is both, in places finely laminated and more massive.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

N. Kootenay Pass

SURVEY TYPE: R C C C CLIENT & PROJECT: 2205 AREA &/or PHOTO: 8267 COLLECTOR(S): JW DATE: 9/09/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ELEVATION
8267	92	JW	009		676525	5497458	

REMARKS: red/green silty sandstone with traces of copper alteration left downsection from 25VP010

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: SCREWDRIVER 826 8 Ck COLLECTOR(S): JW DATE: 9/11/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8	JW	012		69	8200		X		X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SNDS		X				45	25

FROM	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	ppb (%)
0.00	0.2	

REMARKS: gossenous sandstone unit w/tn traces of pyrite
Blairmore Group near to Crowsnest Fm volcanics

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: MILL CK 826/8 COLLECTOR(S): JW DATE: 9/11/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8	JW	013		70	52500		X		X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SNDS							

FROM	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	ppb (%)
0.00	0.2	

REMARKS: greenish poorly sorted sandstone, with longer subrounded pebbles of other lithology. Pyrite lining the spaces between grains in places. Carbonate veins (white calcite) & intersional fractures (related to faulting?). Calcite veins and green host have slickensides that indicate a upward fault motion. 1-2% pyrite.
Possibly Belly River Fm.

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Mill Ck 826/8 COLLECTOR(S): JW DATE: 9/11/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH GRID | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA & or PHOTO: 82G8 COLLECTOR(S): JW DATE: 9/12/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MINERALIZATION | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING / ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8	JW		016	7	10300			Dr: X		Gossan: X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MINERALIZATION	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	U3O8 (%)
0.00	0.3	

REMARKS: dk grn/blk sandstone, rusty weathered (limonitic) fx pyrt disseminated. very localized. slickenlines on one surface, fault? of unknown orientation

SURVEY TYPES: G - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

Pincher Creek (Victoria Peak)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA & or PHOTO: 82G8 COLLECTOR(S): JW DATE: 9/13/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MINERALIZATION | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING / ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8	JW		017	7	09900			Dr: X		Gossan: X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MINERALIZATION	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	U3O8 (%)
0.00	1.5	

REMARKS: sample collected in talus along road edge. Blk metallic mineral interstitially located in quartzite. some weathered away leaving empty cavities or orange (limonitic?) powder.

* Possibly Carnmel sandstone/red siltstone cycle.

SURVEY TYPES: G - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT 2205 AREA &/or PHOTO 82G8 COLLECTOR(S): JH DATE 9/13/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH
82G8	JW	018		7	10000			

WTHR	RELIEF	CONTAMINATION	HARDNESS
Dr ✗			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)		U ppb (%)
0.00	0.2		0

REMARKS: green siltstone, rusty, calcite (cavity-fillings euhedral xstls), tr sulphides pyrite.
Possibly Appekunny Fm.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO 82G8 (MILL CK) COLLECTOR(S): MS/JW DATE: Sept 16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH
82G8	JW	019		7	07050			

WTHR	RELIEF	CONTAMINATION	HARDNESS
D ✓	Cliff ✓		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SHALE							

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)		U ppb (%)
0.00	0.10		

REMARKS: STRONGLY TO MODERATELY Fe STAINED SHALEY UNIT, LOCALLY CALCAREOUS IN CLOSE PROXIMITY TO TWO BLACK COALY SHALE BEDS SEVERAL RUSTY CALCAREOUS NODULES WERE ALSO SAMPLED SAMPLED FROM ROAD CUT

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: ROAD CUT NEAR MILL CK 82G8 COLLECTOR(S): JW DATE: 9/16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8		JW	020	07	707050		X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)		Silver (g/t)	
0.00		03	0

REMARKS: blk coal-bearing siltstone in fault contact with limy sandstone (white-yellow) bedding appears disrupted over 10m interval, sample collected 5m east of 27WP019, unable to strike/dip at siltstone

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: MILL CK 82G8 COLLECTOR(S): MS/JW DATE: SEPT 16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8		JWP	021	07	707700		✓	✓		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
						130	L66

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)		Silver (g/t)	
0.00		01	0

REMARKS: GREY-BLACK THINLY BEDDED SHALE UNIT WITH COMMON CALCITE VEINS AND CRYSTALS WITH VERTICAL AND HORIZONTAL FAULTING. CALCITE VEINS ARE DEFORMED BY ALATER EVENT. SAMPLE IS OF THE VEIN MATERIAL

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: MILL CK 82G8 COLLECTOR(S): JW/MS DATE: Sept 16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	ANALYTICAL RESULTS
82G8		JW	022	7	707700									30								0.00 Lead (%) / 0.4 Silver (g/t)

REMARKS: GREY BLACK FINELY BEDDED SHALE WITH ZONES OF INTENSE Fe STAINING (WITH COMMON LIMONITE STAINING). GENERALLY PARALLEL TO BEDDING. SOME APPEARS TO BE CLOSELY ASSOCIATED WITH FAULTS, BOTH SUBVERTICAL AND THOSE PARALLEL TO BEDDING. THIS WAS A ROAD CUT O/C, CLOSE TO A MAJOR THRUST ZONE (MILL CREEK THRUST FAULT). O/C HAS COMMON CALCITE VEINING AND CRYSTALS

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: SCREWDRIVER CK AREA 82G8 COLLECTOR(S): JW MS DATE: 9/16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	ANALYTICAL RESULTS
82G8		JW MS	023	7	700000		SND															0.00 Lead (%) / 0.3 Silver (g/t) / 0.05 Gold (g/t)

REMARKS: greenish grey sandstone, rusty limonitic coatings, calcite veinlets up to 4mm wide exist within sandstone. Some calcite veinlets appear to be filled by yellow-green bright pyrite. Pyrite is also disseminated thru sample between calcite veinlets and in irregular clots of whitish pyrite. 1-2% pyrt

3 3km N OF HWY 507

Specimen collected

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA & or PHOTO: CROWSNEST 82G10 COLLECTOR(S): MS/JW DATE: Sept 16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Cadomin ST 82G10 COLLECTOR(S): JW MS DATE: 9/16/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYP	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G10	92	JW		026		666	7700			X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/t	U3O8 (%)
0.00	0.1	0

REMARKS: limestone, replaced in bands by buff to grey recrystallized dolomite? with pyrt and possibly sphalerite within replacement zone < 1% pyrt + sphalerite. Sphalerite as reddish, opaque, resinous xstals:

possibly Etherington Fm Mississipian
↳ Rundle Grp

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Ptolemy Crk COLLECTOR(S): JW DATE: 10/7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYP	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G10	92	JW		027		671	8500			X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/t	U3O8 (%)
0.00	0.1	0

REMARKS: fossiliferous lst in up to 1% pyrt in small 1mm clots that. Upslope rusty weathered part pyrt stained. Pyrite staining in lst upslope is similar to lst at Crowsnest Twp Location

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Reece CLIENT & PROJECT: 2205 AREA &/or PHOTO: Pekisko Creek NTS B2JB COLLECTOR(S): JW MS DATE: 6/3/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
B2JB	JW	028		6	681500		X Cr		X Comp	

ROCK TYPE	COMPOSITION	TERRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	
0.00	0.40	

REMARKS: Sample collected along scarp face on north side of Pekisko Creek west of road/river crossing. White coatings are abundant on siltstone, rusty zones are located parallel to bedding and near faulted boundary in a 2-3 wide zone, numerous faults/or joints with cm size displacement exist in outcrop. As well numerous bedding orientations (apparent dips) occur over a 10m wide zone along scarp face.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Reece CLIENT & PROJECT: 2205 AREA &/or PHOTO: Highwood Crk Sentinel Camp COLLECTOR(S): JW MS DATE: 10/4/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
B7J7	JW	029		6	671625	5584625	X Cr	X Dry	X Drill	

ROCK TYPE	COMPOSITION	TERRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	
0.00	0.10	

REMARKS: Limestone/shaley interbeds of Mount Head possible Morton Member. Green grey micaceous shaley interbedds and minor breccia, pyritic lenses & Al-o masses and clots of pyrite in dk grey massive limestone. Pyrite up to 5% locally. Note: Inside Kananaskis Boundary. Pyrite and [illegible] disseminated over 5-6' wide area in blk limestone.

Located southern Tongue Creek [illegible] Mt Burke [illegible].

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO [illegible] COLLECTOR(S): JW DATE [illegible]

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH
82J8		JW	030		671625	

REMARKS: blk to grey green siltstone or shale interbed of the Mt Head Fm. Green altered appearance of siltstone. Close to pyrite mineralization but containing no visible sulphide.

(see) 23WP029. same location

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO Flat Creek COLLECTOR(S): JW DATE 10/7/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH
82J7	92	JW	SP031		676725	5518850

FROM	TO	WIDTH	Load (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
002	005	003			0.3	200	

REMARKS: sample collected ≈ 1.8 km east of west boundary of Kennedy's area. Rusty Blairmore clean quartz sandstone & silty shaley beds in places highly fractured and containing ≈ 5 mm wide quartz veins up to 5 mm wide. Tr pyrite.

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Rock CLIENT & PROJECT 7205 AREA B/or PHOTO: Flat Creek COLLECTOR(S): [illegible] DATE 15/7/

1 2 3 4	5 6	7 8	9 10	11 12	13 14	15	16 17	18 19	20 21	22 23	24	25	26 27	28	29 30	31 32	33	34 35	36	37	38	39	40
NTS	YEAR	INT.		NUMBER	ZONE		UTM		EAST GRID	UTM COORDINATES			NORTH		WTHR	RELIEF		CONTAMINATION					HARDNESS
															Ck Dry	Low Mod	High	Comp Trench	Drill Geoch	Other			
41 42 43 44	45	46 47	48 49	50 51	52 53	54 55	56	57 58	59 60	61 62	63 64	65	66 67	68	69 70	71 72	73	74 75	76	77	78	79	80
ROCK-TYPE	Qtz	Feld	Mica	Amphy	COMPOSITION Gar	Carb	B.F	Acc	GRAIN Fine	Med	SIZE Crse	Porph	CLAST SIZE <2	2-4	4-8	8-16	16-32	32-64	>64	Nonm	MAGNETISM Weak	Mod	Str	RADIOACTIVITY			STRIKE		DIP Degrees		
1 2 3 4	5	6 7	8 9	10 11	12 13	14 15	16 17	18 19	20 21	22 23	24	25	26 27	28	29 30	31 32	33	34 35	36	37	38	39	40
FROM					WIDTH		WEATHERING /ALTERATION Fresh	Minor	Mod.	Extn	FIELD Tot	Mart	Cal	Sulf	IDENTIFICATION Acid	Hem	S.G.	Other	MATERIAL SAMPLED Fdh	Zone	Bldr	Other	ORIGINAL SAMPLE NO.				GRID SUP. REF.
41 42 43 44	45	46 47	48 49	50 51	52 53	54 55	56	57 58	59 60	61 62	63 64	65	66 67	68	69 70	71 72	73	74 75	76	77	78	79	80
Lead (%)					Silver g/t		ANALYTICAL RESULTS			U3O8 (%)													

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1 2 3 4	5	6 7	8 9	10 11	12	13 14	15	16 17	18 19	20	21	22 23	24	25	26	27	28	29	30	31	32	33	34 35	36	37	38	39	40
B 2 J B		J W		0 3	2		6	8	1	7	0	0						X								X	
Qtz	Feld	Mica	Amphy	Gar	Carb	B.F	Acc	<2	2-4	4-8	8-16	16-32	32-64	>64	Nonm	Weak	Mod	Str	Comp	Trench	Drill	Geoch	Other					
41 42 43 44	45	46 47	48 49	50 51	52	53 54	55	56	57 58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
																											70	S	S	W
																											Degrees		Direction	
1 2 3 4	5	6 7	8 9	10	11 12	13	14 15	16 17	18 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41 42 43 44	45	46 47	48 49	50	51 52	53	54 55	56	57	58 59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		0 0					0 4	0																						
Lead (%)						Silver g/t						U3O8 (%)																			

REMARKS: sample collected along north bank of Flat Crk, in blk siltstone/shale that contains (fossils?) shelly replaced by calcite, chert veining (characteristic sample)

SURVEY TYPES: M - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (detail)

SURVEY TYPE: ROCK GRAB RECCE | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: N. Racehorse Crk | COLLECTOR(S): MD | DATE: Aug 28 92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 6 15 | MD | 001 2 | 675525 | X (Dry) | X (Qtz) | X (Fold) | X (Mass) | X (Carb) | X (Sil) | X (8-16) | 0 0 (Lead ppm) | 0 1 0 (Silver g/t) | 0 0 0 (Copper ppm)

REMARKS: Samples of Grassnest volcanic phonolite breccias with minor vuggy flows. Ocp about 500 m NNE east of road at about 70-80 m NNW of Nth Racehorse Creek bridge. Strongly lichened ocp + 2 caves visible from Rd. 2MDP001 exhibits strong to moderate siderite alkration throughout. Sample is a composite of several pieces 20 m west of 2PMP006. Minor Calcite xtals present and white crust on fractures (weathering of calcite)
2MDP002 Possible lapilli tuff with white carbonate cement(?). Minor Mn stain

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (write)

SURVEY TYPE: ROCK GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: DUTCH CREEK | COLLECTOR(S): MD | DATE: Aug 29/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 6 15 | MD | P 0 0 3 | 666837 5 | X (Dry) | X (Qtz) | X (Fold) | X (Mass) | X (Carb) | X (Sil) | X (Fine) | X (Vug) | X (8-16) | 0 2 0 (Lead ppm) | 0 1 0 (Silver g/t) | 0 0 0 (Copper ppm)

REMARKS: Sample of bldr in till disturbed during logging. Bldr comprised of coral replaced by chert + qtz. Two generations of chert(?) dark grey matrix chert and light grey to white chert replacing coral, often with fgr euhedral clear qtz xtals in core of botryoidal chert.

Sample approx 25-30 m above road at 2.75 km from Dutch Creek Rd.
2PMP007 about 25 m SW and 2PMP008 25 m NW

Specimen collected

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (write)

SURVEY TYPE: ROCK GRAB | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: DUTCH CREEK | COLLECTOR(S): MD | DATE: AUG 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: NEZ PERCE CRK COLLECTOR(S): MD DATE: SEPT 1/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	UTM COORDINATES	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	92	MD	0006	11	679675				X Dr, X Cldy	X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X Qtz, X Carb						

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Au g/t	Ag g/t	Cu %
0.00	2.0	0.000

REMARKS: Sample of a brown weathering Qtz-chert sandstone w/ orange weathering chert cement. Seems to be striking NW and dipping moderately west.

Sample from bry on slope 20 m east of creek and 20m west of (and below) Road. NW to East of Creek where lower road of fork crosses creek.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: NEZ PERCE CRK COLLECTOR(S): MD DATE: SEPT 1/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	UTM COORDINATES	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/9	92	MD	0007	11	680375				X Dr, X Cldy	X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X Qtz, X Carb						

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X				

ANALYTICAL RESULTS		
Au g/t	Ag g/t	Cu %
0.00	0.1	0.000

REMARKS: Sample of cbnt veined cherty Lmst with granule sized subangular to rounded clasts of cbnt or shale embedded in dark gray limestone matrix. Cbnt/(Calcite) veins comprise 10-15% of sample. Possible fault healed material?

Sample 10 m west of road to lookout station. Station at top of ridge about 150 m west of sample site.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce Rock Grab | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: NEZ PERCE | COLLECTOR(S): MD | DATE: SEPT 1/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO Oldman River COLLECTOR(S): MD DATE Sept 2/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 16 — MD — 0 1 0 — 6 8 1 7 7 5 — 0.00 — 0.20 — 0.00

REMARKS: Sample of cbnt-clrt veined siltstone (probably Blairmore?). Veins of white cbnt up to 1cm wide. Cbnt-clrt slickensides present. Some veins have minor Fe cbnt haloes in the siltstone.

Sample from ocp and talus on west bank of Oldman River at Trail crossing 4.7 to 4.8 km from Kananaskis Rd Cutoff

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (detail)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO NEZ PERCE CRK COLLECTOR(S): MD DATE SEPT 4/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 — Z MD P — 0 1 1 — 6 7 9 8 7 5 — 0.00 — 0.00 — 0.00 — 0.30 — 0.00

REMARKS: Sample of a Py alteration seam in a qtz rich sandstone that is salt + pepper color due to chert granules. Py seam is comprised of interstitial py in a seam subparallel to bedding but cross cutting. Seam is about 0.5cm to 1cm thick and is haloed by a hematitic stain due to weathering (?)

Overall about 5-10% py in the sample. Sample is of a large 20-30cm talus bldr (angular) on brx shoulder to road. Site is 200m nth of power line

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (detail)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: NEZ PERCE CRK COLLECTOR(S): MD DATE: SEPT 4/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 | MD | 012 | 679800 | X | 00 | 0120 | 000

REMARKS: Sample of Carbonaceous sandstone with a carbon replaced piece of wood. Sample contains disseminated ● pyr. to and a seam of shear massv py upto 2 cm wide at one edge. Overall sample contains 5-10% py. Angular talus bldr is part of coal tables on ledge about 50 m above Nez Perce Creek at about 3.0 km from the Hwy. Carbonaceous sandstone and coal probably part of Kootenay.

Boulder part of coal mining waste rock

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: NEZ PERCE CRK COLLECTOR(S): MD DATE: SEPT 4/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 | MDP | 013 | 679875 | 550 | X X X | X | WDS | X | 000 | 000 | 0 | 010 | 000

REMARKS: Sample of a coaliferous bldr that appears to be carbon rich sandstone that is heavy, Fe stained and contains 1-2% py. Sandstone may actually contain abundant earthy hematite? as not enough py to explain heavy nature. Fe-cbnt (siderite(?)) may also be present! Possibly an oolitic ironstone!

Sample of a bldr in road ditch 10m nth of 2MOP011. Lots of rusty bldrs very similar to this one all along road, however py rare.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO LIVINGSTONE R. COLLECTOR(S): MD DATE SEPT 7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	UNIT	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J1	92	MD	014		683000		X		X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	U3O8 (%)
0.00	0.1	0.00

REMARKS: Sample of oolitic ironstone or Fe rich sandstone composed of hematite ± siderite + trc pyrite cubes. Sample is heavy and dense.

Angular bldr on side of road/trail about 30-40m above creek at creek bend. Road looks recent (2-5 yrs). Bldr looks to have been previously sampled as Flagging (2-3 yrs old) around a piece. Sample site about 0.5km west of river valley.

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO LIVINGSTONE R. COLLECTOR(S): MD DATE: SEPT 7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	UNIT	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J1	92	MD	015		683425		X		X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X						

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/t)	U3O8 (%)
0.00	0.1	0.00

REMARKS: Sample of a chert-Limst breccia. Slightly rusty. Sample from road cut talus ~~and alluvium~~ along Mean Creek Road. When cracked strong bitumen smell.

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA B/or PHOTO: 2205 COLLECTOR(S): MD DATE: SEPT 7/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recce Rock Grab CLIENT & PROJECT 2205 AREA &/or PHOTO Savana Creek COLLECTOR(S): MD DATE: Sept 8/92

NTS | YEAR | INT. | SAMPLE TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | WIDTH | WEATHERING/ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | GRID DUP. REP.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: SAVANA CRK COLLECTOR(S): MD DATE: SEPT 8/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | DRILL REF.

Load (%) | Silver (g/t) | ANALYTICAL RESULTS | Upa (%)

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA B/or PHOTO DRY CREEK COLLECTOR(S): MD DATE: SEPT 9/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | GRID SUP. REF.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: ROCK GRAB RECCE CLIENT & PROJECT 2285 AREA &/or PHOTO BEAVER CRK COLLECTOR(S): MD DATE: SEPT 10/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J1	MD	P	026	6	685215		D	X	X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
X	X						

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
000	01.0	000

REMARKS: Sample of Lmst bldr in disturbed talus piles (logging) near headwaters of Beaver Creek about 250 m east of logging road fork. All talus and bldrs locally derived - disturbed during logging. Lmst contains green to turquoise patches that do not react w/ HCl. Perhaps the green are clay.

Sample about 15 m west of ZMDP026 and 100m east of ZMDP021

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: Rock GRAB RECCE CLIENT & PROJECT: 2285 AREA &/or PHOTO: BEAVER CRK COLLECTOR(S): MD DATE: SEPT 10/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J1	MD	P	026	6	685215	6555490	D	X	X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
M	X	X	X	X			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X			

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
000	01.0	000

REMARKS: Sample of grey dolomitic Lmst w/ 2-5% white Cc veinlets 1-2mm wide and a buff weathering cbnt (ankerite?) filling fractures and dissolution vugs?

Sample of bldr in talus moved around by logging. May also be reworked by spring rundfs. Sample about 15 m east of ZMDP025 Specimen collected

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: BEAVER CREEK COLLECTOR(S): MD DATE: SEPT 10/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS					YEAR		INT.			NUMBER		ZONE			UTM			EAST GRID		UTM COORDINATES			NORTH				WTHR		RELIEF			CONTAMINATION						HARDNESS
8	2	J	1				MD			0	2	7			6	8	5	3	2	5								X								X		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE								MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				X					X																														

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING / ALTERATION					FIELD			IDENTIFICATION					MATERIAL SAMPLED				ORIGINAL SAMPLE NO.							

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
															ANALYTICAL RESULTS																									
					0.00								0.10								000																			

REMARKS: Sample of tan weathering silty chert lmst w/ mgr to cgr Cc stringers and associated hematitic xtals that may represent weathered sulphide. Cc stringers up to 5mm wide and are subparallel lensoidal. Hematitic xtals at edges of stringers intergrown w/ qtz xtals. Is it possibly pyrite or marcasite tarnished? Excellent rectangular + Stubby xtals 1-2%
Sample from talus in road cut on upper logging rd, about 2.1 km from Highway
Specimen collected

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: DEEP CREEK COLLECTOR(S): MD DATE: SEPT 10/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS					YEAR		INT.			NUMBER		ZONE			UTM			EAST GRID		UTM COORDINATES			NORTH				WTHR		RELIEF			CONTAMINATION						HARDNESS
8	2	J	1				M	D		0	2	8			6	8	6	4	5	0								X								X		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE								MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				X	Tr	Tr					Py																														

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING / ALTERATION					FIELD			IDENTIFICATION					MATERIAL SAMPLED				ORIGINAL SAMPLE NO.							

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
															ANALYTICAL RESULTS																									
					000				000				0.50								000																			

REMARKS: Sample of salt + pepper coloured snds with about 5-10% dissem to clots of pyrite. Arkosic to qtz granule snds. sampled snds part of shales + coal + slts stratigraphy ~ kootenay? snds cm. to about 5m stratigraphically below pebble cngl of Blairmore. Contact faulted.
Specimen Collected
Sample site at bend in creek about 15 m above creek, north bank.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

RECCE

SURVEY TYPE: ROCK GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: PHILLIPS PADS | COLLECTOR(S): MD | DATE: SEPT 13/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 | M D | 0 2 9 | 6 6 9 9 5 0 | X X | XC

0 0 0 | 0 1 0 | 0 0 0

REMARKS: Sample of grey fgr Lmst with abundant dist vnlts and Fe stained pits. Three strong sets of vnlts/fractures ① SE dipping ASNE ② E-W near vertical to dipping NTH ③ NE near vertical to dipping SE Slightly. Sample from ocp in gully about 70-80m from ~~the~~ road (ath) and 1.1 km east of Lake and Alberta-BC Border

Lmst N 20-30°W and dipping west about 60-70°.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

RECCE

SURVEY TYPE: ROCK GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: PHILLIPS PADS | COLLECTOR(S): MD | DATE: SEPT 13/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 J 10 | 9 2 M D 0 3 0 | 6 7 0 4 0 0 | 5 5 0 | X | X | X

0 0 0 | 0 1 0 | 0 0 0

REMARKS: Sample of grey dolomite (buff weathering) w/ Qtz vein or tension gash. Qtz is crush form and vuggy in places and up to 2cm wide. Slight bleaching and lots 1mm vnlts in proximity to vein. Cc vnlts up to 1mm also present. The brx in this road cut looks deformed/faulted.

Sample in road cut about 30 m sth of road and 1.55km east of Lake and Alberta-BC border. Sample site 70-80 m east of 2PMP023

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO PHILLIPS PASS COLLECTOR(S): MD DATE SEPT 13/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	92	MD	203	1	6	704000			X Cr	X Clay		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	Carb X						

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/t	U308 (%)
200	240	000

REMARKS: Sample of grey dolomitic or cherty units w/ trace pyrite in clots or rimming lenses of Calcite xtals (dissolution cavity?). No visible veins or alteration

Sample from road cut talus about 40 m east of ZMDP030

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO IRON RIDGE COLLECTOR(S): MD DATE: SEPT 14

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	92	MD	202	1	6	781250			X Clay	X Mod		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
BEXV	Felds X, Mafic X, Carb X, Mica X	Mic					

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X				

ANALYTICAL RESULTS		
Lead (%)	Silver g/t	U308 (%)
000	010	000

REMARKS: Sample of Contrast volcanics on top of Iron Ridge. Contains K-feldspar (or feldspathoid) + green matrix possibly olivine ± chlorite and amphibole. Trace amounts of magnetite in the matrix. Probably an volcanic breccia. No visible alteration or sulphides

Sample site at Nth end of ridge just before road about 200-300 m above the road.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA & / or PHOTO SENTINEL COLLECTOR(S) MD DATE: SEPT 15/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 G 10 — MD — P — 0 3 3 — 6 7 1 5 0 0 — X X X — 0.00 — 0.10 — 0.00

REMARKS: Sample of grey Lmst quite veined and mottled. Bedding not recognizeable. Probably approaching Lewis thrust. Veins anthrcty cbnt, no preferred orientation and all <1mm wide

Sample on secondary road cut about 70-80m from main Emerald Lake Rd.

SURVEY TYPES: M - Rock R - Drill core or percussion chips C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA & / or PHOTO Emerald Lk COLLECTOR(S): MD DATE: SEPT 15/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 6 10 — M — P — 0 3 4 — 6 7 0 8 0 0 — X X X X — 0.00 — 0.10 — 0.00

REMARKS: Sample of cbnt vein partly sheared and rehealed. Vein parallel to bedding @ N15°W and 40°W dip. Cc + buff weathering cbnt + also wallrock fragments sheared and incorporated. Vein partly limonitic.

Sample along secondary Rd about 600m from cutoff on Emerald Lk Rd. Old road cut where road comes to an end. Specimen collected

SURVEY TYPES: M - Rock R - Drill core or percussion chips C - Channel chip P - Grab, O - Other (define)

SURVEY TYPE: ROCK GRAB RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO STAR CREEK COLLECTOR(S): MD DATE SEPT 15/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO: STH YORK CRK COLLECTOR(S): MD DATE: SEPT 16/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

REMARKS: Sample of light green Cowsnest lapilli tuff. Looks moderately altered and weathered. Yellow and hematitic weathering pits. Matrix light green and easily scratched ~ chlor/talcy alteration? Hematitic and steel grey (Mn?) weathering rind.
Sample 2.75 km from main York Crk Road.
Sample of angular bldr/talus in road cut No ocp exposed in road cut but lots around. Sample 20 m east of 2PMP027. Bldrs and talus probably locally derived

Specimen Collected.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO: GOLD CREEK COLLECTOR(S): MD DATE: SEPT 17/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

REMARKS: Sample of Rusty Qtz-chert pebble conglomerate Nth road cut 750 m east of cutoff. Sample from cngl up against fault with 3 m horizontal offset vertical slickensides present. Metal mineral present but tarnished ~ Py? hematitic pits due to chert weathering out.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO GOLD CREEK COLLECTOR(S): MD DATE: SEPT 17/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO: BLAIRMORE HWY 3 COLLECTOR(S): MD DATE: SEPT 19

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO HWY 3 COLLECTOR(S): MD DATE SEPT 19/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 9 — MD — 2044 — 6 8 1 9 5 0 — X (Dr) — X (Dry) — X (Other)

X (RF)

2 0 0 — 2 1 0 — 0 0 0

REMARKS: Sample of shaley siltstone (grey-black) with minor goethite-hematite concretions. Sample from Nth roadcut on Hwy 3 about 60-70m east of east access to Coleman.

Composite grab across about 5m.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE

SURVEY TYPE: ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO CROWSNEST Lk COLLECTOR(S): MD DATE: SEPT 19/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 — MD — 2045 — 6 7 0 9 0 0 — X (Dr) — X (Dry) — X (Other)

D L M — X (Carb)

0 2 0 — 2 0 0 — 0 1 1 0 — 0 0 0

REMARKS: Sample of pyritic dolomite in Nth road cut on Hwy 3. Dolomite has some Cc and is moderately altered with a talcy feel in places due to alteration of original clay component? Fgr disseminated py ≈ 2%. Unit is 25 about 5m thick and oriented 350° with 50° d.p west. Sample at west end of exp. East and approaching Lewis Thrust. Upper and lower contacts of unit altered slightly faulted.

Sample about 50-60 m west of 2DRP036

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: ISLAND CAK COLLECTOR(S): MD DATE SEPT 20/92

NTS | YEAR | INT. | TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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Recce

SURVEY TYPE: Rock Grab CLIENT & PROJECT 2205 AREA B/or PHOTO White Creek COLLECTOR(S): MD DATE: Sept 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH
82G16	92	MD	0048	6	686500	5394000

REMARKS: Sample of calcareous siltstone ~ light green, possibly Blairmore. 2-5% Cc veins up to 2mm wide present.

Sample from road cut approx 50 m east of Livingstone R. and 200-300 m south of White Creek.

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

Recce Rock

SURVEY TYPE: Grab CLIENT & PROJECT 2205 AREA B/or PHOTO Cow Juicer Crk COLLECTOR(S): MD DATE: Sept 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH
82G16	92	MD	0049	6	690050	5535350

REMARKS: Sample of rusty to buff weathering cngl (Blairmore base?) just above possible faulted cntc between Kootenay coal seam and and the overlying cngl. Several near vertical faults with 3 sets of predominant slickenslides. faults range from 075° to 110° with slight sth d.p. Slicks vertical, 60-70° east and near horizontal. Steps indicate sth side up offset in Kootenay coal = Right oblique/lateral Cngl with 5-10% cbnt? (Cbnt does not fizz). Sample from road cut at first major switch back 4.1 km from Old Man Trail

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO LIVINGSTONE LOOKOUT COLLECTOR(S): MD DATE: SEPT 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 G 16 92 M D P 0 5 0 6 8 9 6 2 5 X X

REMARKS: Sample from grey fgr pyritic Lmst. Pyrt 1-2½ in 1-2cm knots and is xtalline. Minor buff weathering rinds in chst not related to py. In vicinity some of the chsts w/ 5-10% fgr 1-2mm vn/lts (chst)

Sample on Lookout Rd cut 5.6 km from Old Man Trail and 20 m sth of 2PMP038. Specimen collected

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO LIVINGSTONE LOOKOUT COLLECTOR(S): MD DATE: SEPT 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 G 16 92 M D P 0 5 1 6 8 9 6 0 0 X X X

REMARKS: Buff weathering silty dolomite. Contains rusty and buff weathering layers ~ gritty hematite. Sample 550 m nth of 2MDP050 at 6.15 km from Old Man Trail. Sample approx 50 m from Lookout Station on last switch back.

Specimen collected

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE ROCK

SURVEY TYPE: GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO SUGARLOAF MTN COLLECTOR(S): MD DATE OCT 2/92

NTS | YEAR | INIT. | SAMPLE TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE ROCK GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: PASQUE CRK | COLLECTOR(S): MD | DATE: OCT 3/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM COORDINATES NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J2	92	MD	P054	6	701500	5563000	X	X	X	X

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
S	X	X	X	X	X		

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Zinc (%)	Silver g/t	Copper (%)
0.00	0.00	0.0	0.00

REMARKS: Sample of road cut rubble ~ mostly all shale to green siltstone but couple of blds of porphyritic mafic volcanic with 5mm-1cm wide Mt-hem xtls or clasts Matrix aphanitic with lots of fgr to mgr clots of clrt. Clrt possibly after olivine or pyx? Trace pink feldspars/feldspathoids? and trace py. Also present Qtz-clrt vn/ts up to 2mm wide (1-2% of sample).
Sample site 1.0km from Pasque Crk bridge and 100m sth of 2PMP040 on east side of Pasque Crk

SURVEY TYPES: M - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: PASQUE CRK | COLLECTOR(S): MD | DATE: OCT 3/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST GRID	UTM COORDINATES NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82JZ	92	MD	P055	6	669900	5555100	X	X	X	X

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
S	X	X	X	X	X	025	N

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Zinc (%)	Silver g/t	Copper (%)
0.00	0.00	0.0	0.00

REMARKS: Sample from grey shaley siltstone with Calcite vein in crosscutting subvertical fracture. Siltstone ~ N-S steep dipping east. Vein NE-SW and steep dipping sth and 1cm-2cm wide. Minor brecciation of wallrock. No visible alteration.

Ocp sample on west bank of creek 10-20m above bridge at 3.75 km from Oldman R. Rd.

SURVEY TYPES: M - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE ROCK (GAP PASS)

SURVEY TYPE: GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): MD DATE: Oct 5/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	UNIT	SAMPLE TYPE	NUMBER	ZONE	UTM EAST GRID	UTM NORTH COORDINATES	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/16	92	MD	P	056	11	691125	5520200	Dr	Low		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
L M S N		Coarse					

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Fresh	Cal	Acid	O/C	

ANALYTICAL RESULTS			
Lead (%)	Zinc (%)	Silver g/t	Gold g/t	U3O8 (%)
0.00	0.00	0.40	0.00	0.00

REMARKS: Sample of light grey silty Lmst with trace py, Green unidentified mineral also present. Lmst contains abundant Cc veins. Sample from Sth bank of river. On Nth bank several caves, one of which has cut timbers in it.

Sample site about 1.2 km downstream from trail crossing and 250m downstream from 2PMP041

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE ROCK

SURVEY TYPE: GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): MD DATE: Oct 9/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	UNIT	SAMPLE TYPE	NUMBER	ZONE	UTM EAST GRID	UTM NORTH COORDINATES	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/16	92	MD	P	057	11	691250	5528300	Dr, Clay	Low, Mod		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
L M S N		Fine, Med		Rusty			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Fresh, Mod	Cal, Sil	Acid	O/C, Talus	

ANALYTICAL RESULTS			
Lead (%)	Zinc (%)	Silver g/t	Gold g/t	U3O8 (%)
0.00	0.00	0.10	0.00	0.00

REMARKS: Banded to colloform and crush from carbonate with limonitic sulphide that is possibly pyrite in trace amounts. Material looks mostly like vein.

Talus from entrance to adit.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE ROCK GRAB CLIENT & PROJECT 2205 AREA &/or PHOTO OLDMAN RIVER COLLECTOR(S): MD DATE OCT 8/92

NTS | YEAR | INIT. | SAMPLE TYPE | NUMBER | ZONE | UTM | 1 or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO | ORIG. DUP. REP.

ANALYTICAL RESULTS: Copper (%) | Lead (%) | Zinc (%) | Silver g/t | Gold g/t | U3O8 (%)

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: HWY 40 N of GROSS MTN | COLLECTORIS: | DATE:

NTS | YEAR | INIT. | TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | SPEC. REF. RCD.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recce CLIENT & PROJECT: ZZ05 AREA &/or PHOTO: Cultus Ck 82G/16 COLLECTOR(S): JW, MS DATE: 8/26/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE	NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G16			MS	003		709850		Dr X		Other X	

SAMPLE	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	DIP DIRECTION
							20	34	S

SAMPLE	FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

SAMPLE	ANALYTICAL RESULTS					
	Lead (%)	Silver g/T	Gold g/T		USG (%)	
	0.00	0.10	0.006		0.00	

REMARKS: reddish sandstone in road cut tan brown in colour with some bright orange altered portions and blood red altered surfaces. Sandstone contains K feldspar, qtz. Disseminated blk mineral in dendritic pattern, possibly only near fractures (coaly?). Rock unit is possibly part of the Porcupine Hills Formation shales + sandstone. (Paleocene Age).

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (state)

SURVEY TYPE: Recce CLIENT & PROJECT: ZZ05 AREA &/or PHOTO: NTS 82G/9 BYRON CK COLLECTOR(S): JW, MS DATE: 8/27/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

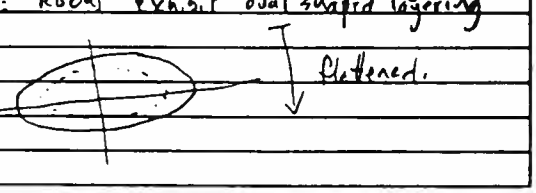
SAMPLE	NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G9		92	MS	004	6	896005	5498350	Dr X		Other X	

SAMPLE	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	DIP DIRECTION
	SM						315	10	235

SAMPLE	FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
				X			

SAMPLE	ANALYTICAL RESULTS					
	Lead (%)	Silver g/T	Gold g/T		USG (%)	
	0.00	0.30	0.016		0.00	

REMARKS: sample collected on road cut 5m above road surface. Rock collected is probable Kootenay Fm. dk grey to blk shale, extremely rusty (carbonaceous stain)? Rocks exhibit oval shaped layering in sizes up to 10 cm in long axis x 7-4 cm in short axis.



SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (state)

HASTINGS RIDGE

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G9 COLLECTOR(S): MS/JW DATE: 22/7/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: CARBONDALE CK | COLLECTOR(S): MS | DATE: AUG 30/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 8 | MS | 007 | 6 82 050 | ✓ | ✓

ROCK TYPE: SNDSTN | COMPOSITION: ✓ Qtz, ✓ Feld, ✓ Mica, ✓ Carb, ✓ Acc | GRAIN SIZE: ✓ vf, ✓ f-m | CLAST SIZE: ✓ vf, ✓ f-m | RADIOACTIVITY: ✓ Cnty | DIP: ✓ Direction

FROM: ANGLO | WIDTH: ✓ | WEATHERING/ALTERATION: ✓ Fresh, ✓ Mod | FIELD IDENTIFICATION: ✓ Cal | MATERIAL SAMPLED: ✓ O/C, ✓ Talus | ORIGINAL SAMPLE NO.: ✓

ANALYTICAL RESULTS: Lead (%): 0.00 | Silver g/T: 0.10 | U308 (%): 0.00

REMARKS: GREY TO GREY GREEN F.G. ROCK WITH RESINOUS YELLOW BROWN ROUNDED 1-2 mm GRAINS THROUGHOUT FORMING 3-4% OF TOTAL. WHITE 2-3mm VEINS OF CALCITE (?) WITH BLACK LUSTROUS F.G CLOTS AND INDIVIDUAL GRAINS 1-2 mm. THIS BLACK MINERAL IS ALSO SEEN SPORATICALLY THROUGHOUT ROCK, GENERALLY 1-3% of TOTAL. SAMPLE WAS TAKEN FROM ROAD FILL OVER CREEK WITH SAMPLE 2JWC040. IT IS LIKELY OF LOCAL DERIVATION, POSSIBLE REWORKED CROWSNEST?

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

CARBONDALE RIVER

SURVEY TYPE: RECCE | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: 82G7 | COLLECTOR(S): MS/JW | DATE: Aug 30/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 7 | MS | 008 | 6 79 800 | ✓ | ✓

ROCK TYPE: SNDSTN | COMPOSITION: ✓ Qtz, ✓ Feld, ✓ Mica, ✓ Carb, ✓ Acc | GRAIN SIZE: ✓ vf, ✓ f-m | CLAST SIZE: ✓ vf, ✓ f-m | RADIOACTIVITY: ✓ Cnty | DIP: ✓ Direction

FROM: ANGLO | WIDTH: ✓ | WEATHERING/ALTERATION: ✓ Fresh, ✓ Mod | FIELD IDENTIFICATION: ✓ Cal | MATERIAL SAMPLED: ✓ O/C, ✓ Talus | ORIGINAL SAMPLE NO.: ✓

ANALYTICAL RESULTS: Lead (%): 0.00 | Silver g/T: 0.10 | U308 (%): 0.00

REMARKS: MASSIVE KNOBY WEATHERING RED BROWN STAINED DIRTY SANDSTONE BEDS AND LENSES IN A TAN BROWN TO GREY COLOURED HIGHLY ERODED SHALEY SANDSTONE. THESE MASSIVE LENSES AND BEDS ARE HIGHLY FRACTURED, WITH CALCITE VEINING ALONG THESE FRACTURE PLANES, AS WELL AS TRACE CPY ASSOC WITH THE CALCITE. THROUGHOUT THE MASSIVE UNIT, AN ALTERATION HALO ~2-3 cm WIDE ALONG FRACTURE PLANES NOTED. GREEN (CHLORITIZED?) AND RED GRAINS COMMON THROUGHOUT SST, AS WELL AS BLACK (COALY?) SPECKS OR GRAINS. POSSIBLE VOLCANIC ORIGIN. REWORKED ??

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

G OF MACDONALD CK

SURVEY TYPE: RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO TABLE MTN 82G 8 COLLECTOR(S): MS DATE

NTS | YEAR | INIT | SAMP TYP | NUMBER | ZONE | UTM | I or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | GSC SUP. REF.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 8 | MS | 00 9 | 6 9 9 0 0 0 | ✓ Ch | ✓ Qtz | ✓ Cbn | ✓ Hem | ✓ Ab | ✓ Ser | 0 0 | 0.1 | 0 | 0.00

REMARKS: LIMESTONE, FG, TAN TO BUFF WEATHERING, WITH GREY FRESH SURFACE, MINOR TO MODERATE Fe STAINING FROM SMALL VUGS WITH OCCASIONAL CHLORITE AND STRONGLY Fe STAINED MINERALS. SAMPLE ALSO HAS MINOR CARBONATE VEINING. TAKE ~2-3' ABOVE BLACK SILTSTONE UPPER LAYER. AREA HAS COMMON SUB VERTICAL FAULTS.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO TABLE MTN 82G 8 COLLECTOR(S): MS DATE: Sept 7/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | I or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO. | GSC SUP. REF.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 8 | MS | 0 10 | 6 9 9 0 0 0 | ✓ Ch | ✓ Qtz | ✓ Cbn | ✓ Hem | ✓ Ab | ✓ Ser | 0 0 | 0.1 | 0 | 0.00

REMARKS: BLACK SILTSTONE LAYER (UPPER) WITH MINOR Fe STAINING AND OCCASIONAL WHITE COATING (HYDROZINCITE?) ON SURFACES. TAKEN ~40-60 M E of 011 and 012 BED ~1-2 feet thick. TAKEN FROM A COUPLE OF SPOTS. FAULTING + FOLDING THROUGHOUT AREA

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: B2GB TABLE MTN. | COLLECTOR(S): JW, MS | DATE: 92/07/4

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
B2G8 MS 011	69	8	950		
B2G8 MS 012	20	0.1	0.00		

REMARKS: Sampled collected above talus slope on North face of Table Mtn. Two blk siltstone bands 1 foot and 2-3' wide in Seyeh Formation below Purcell lavas. Also below oolitic ore bed (Cu). Sample 011 collected in upper narrow 1' siltstone 012 collected in lower 2-3' wide siltstone bed. Siltstone had white stain possibly hydrozincite. Note: 27sp009, 010 collected along strike to the east by 40-60 m. Faults + Fractures present throughout section of outcrop. East dipping thrust + normal faults with displacement of 0.05 cm to possible 10's of metres. Fault gouge of calcite cemented cobble sized pebbles etc. Cu or Pb minerals seen above these styles.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (specify)

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: TABLE MTN B2GB | COLLECTOR(S): JW | DATE: Sept 7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
B2G8 MS 013	69	9	950		
B2G8 MS 014	20	0.1	0.00		

REMARKS: sample collected in fault zone 1m wide, cobble to fine grained size pebbles, calcite cemented. In Seyeh Formation on Table Mtn.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (specify)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: CASTLE RIVER 82G 9 AREA COLLECTOR(S): [illegible]/JW DATE: SEPT 8/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | I or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | WIDTH | WEATHERING / ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

82G9 MS 01 # 699050

REMARKS: TAN TO TANBROWN WEATHERING LIMESTONE, DARK GREY ON FRESH SURFACE ROCK HAS WHITE <1cm WIDE CALCITE VEINS IN TENSION FRACTURES THRUGHOUT ROCK. SAMPLE HAS MINOR TO MODERATE Fe STAINING ON SURFACES. TAKEN ON EAST SIDE OF CREEK WITH SAMPLE 2MSC015

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: MAVERICK HILL 82G 8 COLLECTOR(S): MS/JW DATE: SEPT 8/92

NTS | YEAR | INT. | NUMBER | ZONE | UTM | I or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | WIDTH | WEATHERING / ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

82G8 MS 015 691450

REMARKS: CRANSNEST VOLCANICS, 1-2cm FSPAR XLS, MODERATE Fe STAINING, MODERATE TO STRONGLY MAGNETIC WITH DISSEMINATED MAGNETITE THROUGHOUT GREY BLUE METALLIC COATING ON SOME SURFACES (MAGNETITE?)

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE R-CCE CLIENT & PROJECT 2205 AREA &/or PHOTO 82G 7 COLLECTOR(S): MS DATE SEPT 9/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G7	MS		016		675900				✓ Cr			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	Qtz ✓		✓ <2 ✓ 2-4				

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	GRID SUP. REF.
				✓ Tot ✓ Mart ✓ Cal			

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
200	210	200

REMARKS: GREY TAN WEATHERING MODERATELY DIRTY SST WITH MODERATE - HEAVY Fe STAINING - Fe CEMENT
FRESH SURFACE IS DOMINATED BY BLACK GRAINS + MINOR CLEAR-WHITE QTZ GRAINS Fe STAINED THROUGHOUT ~10m W OF 2JWP004

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (below)

N. Kootenay Pass

SURVEY TYPE R-CCE CLIENT & PROJECT 2205 AREA &/or PHOTO 8267 COLLECTOR(S): MS DATE: SEPT 9/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G7	MS		017		675900				✓ Cr	✓		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	✓ Carb	✓ Fine					

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	GRID SUP. REF.
				✓ Mart ✓ Acid			

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
200	210	200

REMARKS: GREY WEATHERING LIMESTONE GREY ON FRESH SURFACE, WITH A STRONG BITUMINOUS ODOR. MINOR CALCITE VEINING, WHITE IN COLOUR
TAKEN FROM TALUS ~ 60 m FROM 2MSP016

SURVEY TYPES: R - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (below)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: NORTH KOOTENAY PASS 82G 7 COLLECTOR(S): MS DATE: Sept 9/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA & or PHOTO: NORTH MOOSEHORN 82G7 PASS COLLECTOR(S): MS DATE: SEPT 9/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

PTOLEMY CK

SURVEY TYPE: RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO 82G 10 COLLECTOR(S): MS/JN DATE SEPT 16/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING/ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 10 MS P 0 22 6 7 1 7 25 ✓ ✓ Cbs ✓ Acid ✓ 000 0.1 0 000

REMARKS: TAN WEATHERING FOSSILIFEROUS LIMESTONE, GREY ON FRESH SURFACE, WITH TRACE -1% RUSTY VUGS THROUGHOUT - THESE "VUGS" MAY BE SULPHIDES(?) OCCASIONAL BLACK CORES NOTED. SAMPLE TAKEN FROM TALUS IN THE PTOLEMY CREEK VALLEY, ABOUT 400m FROM THE END OF THE ROAD UP PTOLEMY CREEK.

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

ISLAND CK

SURVEY TYPE: RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO 82G 10 AREA COLLECTOR(S): MS DATE SEP 20/92

NTS | YEAR | INIT. | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING/ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

9 2 G 10 MS P 0 23 6 6 5 2 75 5 ✓ ✓ ✓ ✓ ✓ 000 0.1 0 000

REMARKS: GREY BLACK CARBONATE CONCRETION (CALCITE), WITH DISSEMINATED AND <1mm THICK PYRITE VEINS TRACE - 1%, WITH WHITE CALCITE VEINING THROUGHOUT THE SAMPLE TAKEN FROM ROAD CUT TALUS, AT SAME SITE AS 2MDP046

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: WHALEBACK RIDGE COLLECTOR(S): ME FM DATE: Oct 1/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G16	MS	024		7014250					✓ Dr			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SS	✓ Qtz, ✓ Feld, ✓ Mica, ✓ Acc	✓ Fine, ✓ Med				270	74

FROM	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			✓ Tan, ✓ Mod Cal		

ANALYTICAL RESULTS		
Lead (%)	Silver (g/T)	U3O8 (%)
0.000	2.6.0	0.00

REMARKS: SST, MG, GREY TO BROWN GREY. THINLY BEDDED 1-5cm BEDS, WITH COMMON MUSCOVITE THROUGHOUT <1% RED BROWN LUSTROUS MINERAL, DISSEMINATED THROUGHOUT LIKELY BIOTITE(?) TAKEN FROM WHALEBACK RIDGE CREST

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: HWY 541 COLLECTOR(S): MS DATE: OCT 7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J8	MS	025		7168700		559160			✓ Dr	✓ Mod		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SNDS	✓ Qtz, ✓ Feld, ✓ Mica, ✓ Acc	✓ Fine, ✓ Med	✓ <2, ✓ 2-4	✓ Mag			

FROM	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
		✓ Fresh, ✓ Tan	✓ Tan, ✓ Mod Cal	✓ Other	

ANALYTICAL RESULTS		
Lead (%)	Silver (g/T)	U3O8 (%)
0.000	0.1.0	0.000

REMARKS: GREY WHITE MODERATELY CLEAN SANDSTONE WITH <1% RUSTY CLOTS THROUGHOUT CLOTS ARE GENERALLY <4mm IN DIAMETER THESE ARE EVENLY DISTRIBUTED THROUGHOUT. BEDS ARE ~1-1m THICK TAKEN ~150m WEST OF HWY 541

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: GRIZZLY OCCURENCE COLLECTOR(S): MS/JW DATE: OCT 3/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	SAMPLE TYPE	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G8	R	0026	11	692325	5464625	✓ Dry	✓ Mod		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SNDS	✓ Fold	✓ Fine ✓ Med ✓ Crs	✓ <2	✓ Mag			

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			✓ Mod ✓ Int	✓ Tri ✓ Mod ✓ Cal	✓ Mag	✓ O/C	

ANALYTICAL RESULTS			
Copper (%)	Lead (%)	Zinc (%)	Silver (g/t)
54	0.00	0.00	15.50

Gold (g/t)	USG (%)
0.00	0.00

REMARKS: WHITE TO TAN WEATHERING SANDSTONE, WHITE ON FRESH SURFACE, WITH UP TO 7+ % MALACHITE OCCURING BTWN SAND GRAINS AND AS COATINGS ON ROCK SURFACES. LESSER AMOUNTS (<7%) COVELLITE AND CHALCOPYRITE WERE ALSO NOTED FOUND IN THE GRINNELL/SMYTH FM, PRE-€

SURVEY TYPES: M - Rock R - Drill core or percussion chips, O - Common clay P - Grab C - Other (specify)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: SOUTH LOST CK COLLECTOR(S): JW/MS DATE: OCT 13/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	SAMPLE TYPE	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G7	R	0027	11	675550	5476650	✓ Dry	✓ Mod ✓ High	✓ Mag	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SNDS	✓ Fold	✓ Fine ✓ Med	✓ <2	✓ Mag			

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			✓ Mod ✓ Int	✓ Tri ✓ Mod ✓ Cal	✓ Mag	✓ O/C	

ANALYTICAL RESULTS			
Copper (%)	Lead (%)	Zinc (%)	Silver (g/t)
0.02	0.20	0.12	1.20

Gold (g/t)	USG (%)
0.00	0.00

REMARKS: DARK GREY FG SSTNE, WITH 2cm WIDE ALTERATION RIM THROUGHOUT, WITH OCCASIONAL DARK PATCHES IN THE ALTERED RIM

SURVEY TYPES: M - Rock R - Drill core or percussion chips, O - Common clay P - Grab C - Other (specify)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: S. LAST CK 82G7 COLLECTOR(S): MS/JW DATE: OCT 13/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	FROM	TO	WIDTH	ZONE	UTM (E or W)	EAST GRID	UTM COORDINATES (NORTH)	WEATHERING/ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	DIP DIRECTION	WTHR	RELIEF	CONTAMINATION	HARDNESS	ANALYTICAL RESULTS: Lead (%)	Copper (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
82G7 9201				11	675550		7665350	Fresh, Moderate, Strong		Chip, Select, Other		M									Dry, Slightly	Low, High					0.70	0.005	0.00

REMARKS: TAN BROWN WEATHERING FG SILTSTONE GREY GREEN ON FRESH SURFACE, WITH <1% PYRITE DISSEMINATED THROUGHOUT, COMMONLY ASSOCIATED WITH CHLORITIC ALTERATION, LINEAR IN NATURE.

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER PL-3N COLLECTOR(S): MS/JW DATE: OCT 13/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	FROM	TO	WIDTH	ZONE	UTM (E or W)	EAST GRID	UTM COORDINATES (NORTH)	WEATHERING/ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	DIP DIRECTION	WTHR	RELIEF	CONTAMINATION	HARDNESS	ANALYTICAL RESULTS: Lead (%)	Copper (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
82J2 9201				11	663400		5555350	Fresh, Moderate, Strong		Chip, Select, Other		M, SN									Dry, Slightly	Low, High			2.02	1.40	9.50	0.005	0.00

REMARKS: GREY WHITE LIMESTONE WITH COARSE CRYSTALLINE DOLOMITE REPLACEMENT, WITH 3-5% GALENA AS MASSIVE CLOTS, DOMINANTLY IN THE DOLOMITE, ALONG WITH 1-3% FINE SPHALERITE AS BROWN LUSTROUS FINE XLS. MINOR WHITE CHALKY COATINGS NOTED ON SOME SURFACES (LIKELY CARBONATE). MINOR RUSTING ON SOME SURFACES NOTED. MINERALIZATION ASSOCIATED WITH FAULTING.

SURVEY TYPES: B - Rock, R - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 1.3km west of Coleman Road Cut COLLECTOR(S): MD PM MJ DATE: Aug 19/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: BLAIRMORE CK AREA COLLECTOR(S): P M DATE: Aug 24/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recci CLIENT & PROJECT 2205 AREA &/or PHOTO GRASSY MTN COLLECTOR(S): J. P. DATE Aug 25

NTS | YEAR | INIT. | TYPE | NUMBER | ZONE | UTM | I or | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: DUTCH CK | COLLECTOR(S): PM · MD | DATE: Aug 29

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: NORTH FORK MASS | COLLECTOR(S): PM & MD | DATE: Aug 30

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	FROM	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	Lead (%)	Zinc (%)	Silver (g/T)	Copper (%)	U3O8 (%)
B2G15			P	M	0	09	6	662	50				X Ch														
				X Carb				X																			
				000		300		010											0.00							

REMARKS: Sampled a lagd. talus. Dirty brown weathering displayed with metallic mineral displayed possibly haematized PYRT or Sphalerite. Thin ~2mm Carb VNs displayed in Sample. Sample site near the Lewis Thrust possibly 100 - 200 m
- Sample taken of talus up against bedrock.
- 200m up slope from lagd 95T Plateau.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: DUTCH CK | COLLECTOR(S): PM & MD | DATE: Aug 31

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

SAMPLE NO.	NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP	FROM	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.	Lead (%)	Zinc (%)	Silver (g/T)	Copper (%)	U3O8 (%)
B2G16			P	M	0	10	6	837	80				X Ch														
	X			X Carb	X	X				X	X																
	0.00			000				030											0.00							

REMARKS: Sampled a conglomerate along Dutch creek rd. Composed of black and white chert pebbles. Outcrop displays a rusty aspect and is composed of 2-3% carbonate. No visible sulphides. #
- Blairmore Conglomerate

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Recc. CLIENT & PROJECT: 2205 AREA &/or PHOTO: West of HWY 940 COLLECTOR(S): P/M DATE: Sept.

NTS | YEAR | INIT. | SAMPLE TYPE | NUMBER | ZONE | UTM | EAST GRID | UTM COORDINATES | NORTH | WTHR | RELIEF | CONTAMINATION | HARDNESS

ROCK TYPE | COMPOSITION | GRAIN SIZE | CLAST SIZE | MAGNETISM | RADIOACTIVITY | STRIKE | DIP

FROM | TO | WIDTH | WEATHERING /ALTERATION | FIELD IDENTIFICATION | MATERIAL SAMPLED | ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: NIZ PERCE CK COLLECTOR(S): KJT DATE:

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	92	PM	013	11	679925	5505005		X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
G	X Fold	X Coarse	X 4-8	X 32-64			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS				
Lead (%)	Zinc (%)	Silver g/t	Gold g/t	U3O8 (%)
0.00		0.2		0.00

REMARKS: Sample of a rusty conc. with stickensides useable to tell strike & dip dyke to D/C & dumping. Rusty pits due to weathering of iron carbonate. No visible sulphides. 50 m east of Nez Perce rd.) and 2MDP010, 011.

SURVEY TYPES: B - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

RECCE
SURVEY TYPE: ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD AM DATE: SEPT 7/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J/1	92	PM	014	11	603125	5655900		X	X	X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
S,N	DS	X	X	X			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
0	2		X		X		

ANALYTICAL RESULTS				
Lead (%)	Zinc (%)	Silver g/t	Gold g/t	U3O8 (%)
0.00	0.018	0.2	0.00	0.00

REMARKS: Sample of snds with fgr disseminated Fe-carbonate or hematite up to 5%. Also present 1-2 mm white Qtz-carb veins with reaction to HCl.

Sample of Occ in trail bottom about 250 300 m west of river. Possibly in Blairmore or near Blairmore-Kootenay Contact. Rx generally flat lying.

SURVEY TYPES: B - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECC ROCK GRAB CLIENT & PROJECT: 2205 AREA &/or PHOTO: MEAN CK COLLECTOR(S): P/J DATE: Sept 7/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J/1	P	M	R	015	6	03	4500	55	56	X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X		X				

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
0.00	0.10		0.00

REMARKS: Sample of limestone with trace PYRT. Sample taken 20 m up Mean Creek rd from 2MDP016.
- Coarsly crystalline fossiliferous limestone.

SURVEY TYPES: M - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (define)

SURVEY TYPE: RECC CLIENT & PROJECT: 2205 AREA &/or PHOTO: SAVANNA CK COLLECTOR(S): P.M DATE: Sept. 8

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J/1	P	MP		016	6	719	225	55	56	X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
SN	X	X	X				

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO
			X X			X	

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
0.00	0.20	20 100	0.00

REMARKS: Sample of a limestone - chert boulder with dissolution pits and vugs filled with Quartz. Some evidence of rusty pits possibly iron carbonate or sulphide weathering <1%. Boulder near in place along with other chert - lmst - siltstone boulders.
- Sample taken 10m from 2MDP017 & 018

SURVEY TYPES: M - Rock S - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (define)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: SAVANNA CK NKEP | COLLECTOR(S): P.M. | DATE: Sept. 6

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J2		PM	017		67	8000	00	X Dry			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
X Qtz	X Carb	X 1-2					

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
0.00	0.1	0.00

REMARKS: Sample of rusty limestone with rusty dissolution pits and vugs. Some vugs are quartz filled. No visible sulphides.
- Sample taken on gas landing on rd. up the side of Savannah Ck.
- Possibly rusty zone associated with vertical faulting in the area.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip, P - Grab O - Other (define)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: SAVANNA CK | COLLECTOR(S): PM & MD | DATE: Sept. 8

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J2	9	PM	018		67	7985	55502	X Dry			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
X Ss	X Carb		X 4-8	X Weak			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X Mod				

ANALYTICAL RESULTS		
Lead (%)	Silver g/T	U3O8 (%)
0.00	0.1	0.00

REMARKS: Sample of a rusty and pitted layer within a limestone outcrop. Sampled because of vuggy to filled pits (1mm - 1cm wide displayed as stringers and veins) on the weathered surface. Rusty pits account for 2-5% of rock.
- Sample 15m up slope from Savannah Ck
- 5 km up rd from MDP021, 022

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip P - Grab O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT 2205 AREA &/or PHOTO DRY CREEK COLLECTOR(S): PM DATE: SEPT 9/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J2	PM		019	6	771325		X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
			X c2, X 4-8				

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Zinc (%)	Silver g/mt	Gold g/mt	Copper (%)
000	216	0		000

REMARKS: Sample of an otherwise unweathered, fresh looking outcrop with rusty - red weathered pits possibly PYRT or iron carbonate comprising 1/2% of rock.
Sample 40m. from 2MDP023.
- 3.65 Km fr. cutoff.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE Recc CLIENT & PROJECT 2205 AREA &/or PHOTO ORY CK COLLECTOR(S): P.M. MD DATE: Sept. 9

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INT.	NUMBER	ZONE	UTM EAST GRID	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
02J2	PM		020	6	771950		X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
CH RH	V, X		X c2				

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Zinc (%)	Silver g/mt	Gold g/mt	Copper (%)
000	010	0	000	010

REMARKS: Sampled a rusty boulder in dry stream bed. 25m. fr. Kawneeski rd. Chert fractured with fine gr. qtz. + carb VNS. Carb weathers rusty orange possibly ankerite.
- 2.75 Km fr. cutoff.

SURVEY TYPES: M - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: BEAVER CRK COLLECTOR(S): PM DATE: SEPT 10/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J/1	P M	021		6	685260				X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
N	X		X	X			

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS					
	200		0.1	0.00	

REMARKS: Sample of a talus / subcrop boulder near in place with rust filled pits displaying altered clast holes. Pits possibly filled with sulphides or iron carbonate.
- Sample taken 1.85 km up logging rd from Kananaskis rd 50m from Beaver ck.
- 100 m west of 2MD025, 026
- Fossiliferous limestone.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (specify)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: PHILLIPS PASS CROWSNEST PASS AREA COLLECTOR(S): PM DATE: Sept 13

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	P M	022		11	670150				X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
E M S N	X	X	X	X		42	SW

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X		X	

ANALYTICAL RESULTS					
200	0.00	200	0.1	0.00	

REMARKS: Sample of a layer within a limestone outcrop displaying minor alteration. Possibly iron carbonate. Some veining and subtle dissolution pits evident.
- Sample taken 1.2 km east of the Alberta - B.C. border at the side of the Pipeline Clearing
- No visible sulphide

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (specify)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: PHILLIPS Lk COLLECTOR(S): PM DATE: Sept 12

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G10		PM		023		670	850			X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
		X	X			35	SW

FROM	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)		U3O8 (%)
0.00	2.1		0.00

REMARKS: Sample of fracture set (rusty) and a 0.5 metre wide breccia zone. Rusty fracture set occurs on either side of breccia zone. Siliceous texture with dissolution pits apparent within the breccia zone.
1/- No visible sulphides.
- 60 - 70 m up slope from 2MDP030

SURVEY TYPES: W - Rock, B - Drill core or percussion chips, D - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Rich and Coleman COLLECTOR(S): P.M. DATE: Sept. 14

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G10		PM		024		677	650		55600	X	X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
BEXX	X	X	X				

FROM	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
		X			X	

ANALYTICAL RESULTS			
Lead (%)	Silver (g/t)		U3O8 (%)
0.00	0.3		0.00

REMARKS: Sample taken of Crowsnest Volc. Pipeline talus. Rusty carb. VNS. with no visible sulphides. Probably anhydrite & calcite filling breccia
- 125 m up the pipeline rd. from Star Ck.)

SURVEY TYPES: W - Rock, B - Drill core or percussion chips, D - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Behind Coles Mtn. COLLECTOR(S): PM DATE: Sept 14

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: South York Ck. | COLLECTOR(S): PM | DATE: Sept 16

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Rocc1 CLIENT & PROJECT 2205 AREA &/or PHOTO Livingston Ranch COLLECTOR(S): PM DATE: Sept. 17

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G9	91	PM	029	11	691100		Cr X Clay			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
N				X			

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00		0.10		0.00

REMARKS: Sample of rusty in place talus taken - because of unidentified fine grained dark mineral within quartz veins displayed as a stockwork throughout 1a LMST cobble.
- Sample taken 4-500 m North of pipeline rd along top of Livingston range.

SURVEY TYPES: R - Rock B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE Rocc1 CLIENT & PROJECT 2205 AREA &/or PHOTO GAP PASS COLLECTOR(S): PM DATE: Sept. 18

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G16	91	PM	030	11	688500		Cr X Clay X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
MSN	X	X X X	X	X			

FROM	TO	WIDTH	WEATHERING / ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X		X	

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.00	0.10	0.005	0.00

REMARKS: Sample taken of a hematite near in place within the gap pass. Limestone fossiliferous and displays rusty spots possibly altered sphalerite (PYRT?) ~ 1%. dissolution vugs present with / intergranular calcite crystals.

SURVEY TYPES: R - Rock B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write)

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Hillcrest Area | COLLECTOR(S): P.M. | DATE: Sept. 19

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G9	82	PM		031		691	000			X	X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X	X	X			NNW	60 S

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Load (%)	Silver (g/t)	U3O8 (%)
000	0.30	0.00

REMARKS: Sample taken of Kootenay(?) Sandstone conformable with bedding but possible shear zone(?). No visible sulphides. Rusty nodules and patches present

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Blairmore | COLLECTOR(S): P.M. | DATE: Sept. 19

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	TYPE	NUMBER	ZONE	UTM	EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G9	82	PM		032	11	685	400	549		X	X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
RASN	X	X	X	X		350	32 W

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Load (%)	Silver (g/t)	U3O8 (%)
000	0.40	0.00

REMARKS: Sample taken of a limy mud in outcrop beside highway number 3 on the outskirts of Blairmore. Sample taken because of rusty PYRT blebs in a shear(?) zone.
- Sample taken 100 m up the rd from sample 2MDP0
- Shear zone appears to be ~3-4 m wide in true thickness
- 1 specimen taken.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recc. CLIENT & PROJECT: 2205 AREA &/or PHOTO: Blairmore COLLECTOR(S): PM DATE: Sept 19

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recc CLIENT & PROJECT: 2205 AREA &/or PHOTO Blg, Ice mtn COLLECTOR(S): PM DATE: Sept. 19

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recci | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Livingstone Lookout | COLLECTOR(S): P.M. | DATE: Sept 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/16	92	DMP	037	10	689625		X	X	X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
MLSN	X Carb	X	X			060	E

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.00	0.10	0.005	0.00

REMARKS: Sample of Limestone with rusty pits 2-4 mm wide possibly sulphide but most likely iron carbonate.
- Sample taken 75 m down the hill from 2MDP050.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: Recci | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Livingstone Lookout | COLLECTOR(S): P.M. | DATE: Sept 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/16	92	DMP	038	10	689625	5563750	X	X	X	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
MLSN	X Carb	X	X			060	E

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			X			X C/C	

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.058	0.10	0.005	0.00

REMARKS: Sample of heavily veined Limestone with rusty pits. Possibly sulphide but most likely iron carbonate. Veins display calcite (+barite) and occasional 2 mm wide
- Sample taken 25 m down slope from 2MDP050.

SURVEY TYPES: R - Rock, B - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (write in)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: Livingston Lookout | COLLECTOR(S): PM | DATE: Sept. 30/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/11	92	PM	039	11	689825		X Cly	X Mod	70 Degrees	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	X Carb	X Aph	X <2	X Nonm		70	E

FROM	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.

ANALYTICAL RESULTS		
Lead (%)	Silver (g/T)	U3O8 (%)
200	0.30	0.000

REMARKS: - Sample taken 4.75 Km from Old Man River Road
- Sample of a chert breccia within a limestone outcrop.
- Slickensides associated with breccia, but appears to be a lithological breccia. Fault is cut unit obliquely at 240° with a Vertical dip. Slicks on the fault dip 19° to the SW
- Sample within Paleozoic limestones but only ~100 m from Cretaceous rocks
- Sample displays minor rust but no visible sulphides.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: Pasque Ck. | COLLECTOR(S): PM | DATE: Oct. 3/92

ROCK SAMPLE CARD — R.A OLSON CONSULTING LTD.

NTS	YEAR	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82J/2	92	PM	040	11	670150		X Cly	X Mod	X Trace	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
BE IV	X Carb, X Aph	X Fine	X <2, X 2-4	X Nonm	X	70	

FROM	WIDTH	WEATHERING /ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
					X Other	

ANALYTICAL RESULTS		
Lead (%)	Silver (g/T)	U3O8 (%)
200	0.10	0.000

REMARKS: Sample taken at a possible fine grained intrusive. Some surface rust displayed but no sulphides present. Unidentified green mineral clots possibly Olivine ? Does not display the coarse grained feldspathoids generally associated with Crowsnest Volcs. but could be a fine grained variation.
- Specimen taken
- From rd cut 5 in a logging cut 5 Kms up Pasque ck. rd.
- Sample at boulders near intrusive.

SURVEY TYPES: R - Rock, S - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Oldman R. near Gap Pass COLLECTOR(S): P.M. DATE: Oct 5

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recc CLIENT & PROJECT: 2205 AREA &/or PHOTO: SAVANNA CK AREA COLLECTOR(S): P.M. DATE: Sept. 8

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: DRY CREEK COLLECTOR(S): PM DATE: SEPT 9/92

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8 2 J 2 | PM | 0 19 | 6 7 7 3 2 5 | X dr | X Qtz | X <2 | X 4-8 | 0 0 | 2.1 | 0 | 0 0 0

REMARKS: Sample of an otherwise unweathered, fresh looking outcrop with rusty-red weathered pits possibly PYRT or iron carbonate comprising <1% of rock.
Sample 40 m from 2MDP023.
- 3.65 Km fr. cutoff.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: DRY CK COLLECTOR(S): P.M. MD DATE: Sept. 9

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

0 2 J 2 | PM | M2 020 | 6 7 7 9 5 0 | X dr | CHRT | X Qtz | X <2 | X Qtz | 0 0 0 | 0.1 | 0 | 0 0 0 | 0 0 0

REMARKS: Sampled a rusty boulder in dry stream bed. 25 m fr. Kawaeskis rd.
Chert fldstone with fine gr. qtz.-carb VNS. Carb weathers rusty orange poss. ankerite.
- 2.75 Km fr. cutoff.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: BEAVER CRK COLLECTOR(S): PM DATE: SEPT 10/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Rocci CLIENT & PROJECT: 2205 AREA &/or PHOTO: PHILLIPS Lk COLLECTOR(S): PM DATE: Sept. 13

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Behind Colorado COLLECTOR(S): PM DATE: Sept. 14

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM or EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	78	PM	R	025	6	78200			Cr X			

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	Fold X, Gar X, Carb X, R.F. X	Fine X	<2 X				90

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Fresh X, Minor X	Tal X		

ANALYTICAL RESULTS			
Lead (%) 0.00	Silver (g/t) 0.10	Gold (g/t)	U3O8 (%) 0.00

REMARKS: Sample taken of a shear zone within the Crowsnest Volcanics. Outcrop faulted in several localities. On vertical fault left lateral movement with movement parallel to rock units at 30°.
- No visible sulphides but abundant rust and carbonate veining.
- Faults display slickensides.
Strike of bedding 125° Dip 30° SW
- Sample taken 750 m up pipeline rd fr. Star ck.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Behind Colorado York Ck COLLECTOR(S): PM DATE: Sept 15

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM or EAST GRID	UTM COORDINATES	NORTH	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/9	92	PM	R	026	7	68150			Cr X, Cldy X	Low X, Mod X		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
	R.F. X	Fine X, Med X		None X		186	30

FROM	TO	WIDTH	WEATHERING /ALTERATION	FIELD IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Minor X		Auto X	

ANALYTICAL RESULTS			
Lead (%) 0.00	Silver (g/t) 0.4	Gold (g/t) 0.02	U3O8 (%) 0.00

REMARKS: Sample taken to test for uranium 125 counts in a background 50 count area.
- Sample of a black shale in a conglomerate, sandstone, coal, shale outcrop
- Sample 200 m up pipeline rd east from main rd.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: South York Ck. | COLLECTOR(S): PM | DATE: Sept. 12

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST	NORTH	UTM COORDINATES (or)	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/10	79	PM	R	027	11	679575				Cr	Low	Comp	

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
Qtz	Feld, Mica, Gar, Carb	Fine, Med	<2, 2-4, 4-8	Weak, Mod			Degrees

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Fresh, Mod	Tst, Mod, Cal	Acid, Hdns, Other	O/C, Talus	

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.00	0.10		0.00

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Sample taken 20 m west of 2MDP037.
Sample fr a medium grained boulder of Crowsnest Volcanics. Displays strong crust of manganese oxide and streaks and blebs of an unidentified green mineral. No visible sulphides but rusted pits present.
Boulder slightly rounded hence may not be in place.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recc | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Gold Creek | COLLECTOR(S): P.M. | DATE: Sept. 17

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST	NORTH	UTM COORDINATES (or)	WTHR	RELIEF	CONTAMINATION	HARDNESS
82G/9	92	PM	P	028	11	688850				Cr, Clay	Low, Mod		

ROCK TYPE	COMPOSITION	GRAIN SIZE	CLAST SIZE	MAGNETISM	RADIOACTIVITY	STRIKE	DIP
Qtz	Feld, Mica, Gar, Carb	Fine, Med, Purph	<2, 2-4	Weak, Mod			Degrees

FROM	TO	WIDTH	WEATHERING/ALTERATION	FIELD	IDENTIFICATION	MATERIAL SAMPLED	ORIGINAL SAMPLE NO.
			Mod	Tst	Acid	O/C	

ANALYTICAL RESULTS	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.201	0.160	0.018	0.000

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Sample taken of a sandstone unit with rusty oxidic blebs. PYRT appears as disseminated specks within the rusty blebs. Sandstone within the Kootenay fm. @ 100 m from the Green and Gold cks. confluence. Sample taken @ 150 m from the Gold ck. rd.
- Sample taken where the Sandstone grades (faulted?) into a shaly unit.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Livingston Ranch COLLECTOR(S): PM DATE: Sept. 17

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR	INIT.			SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES]			NORTH				WTHR		RELIEF			CONTAMINATION						HARDNESS
																												Cir	Clay	Low	Mod	High	Comp	Trench	Drill	Geoch	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE									MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Med	Str											Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD			IDENTIFICATION				MATERIAL SAMPLED				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Col	Strk	Acid	Hdns	S.G.	Other	D/C	Fels	Tailings	Std	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)		ANALYTICAL RESULTS Gold g/t						U3O8 (%)																			

ROCK SAMPLE CARD R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9		2	P	m		0	2	9			6	9	1	1	0	0										X			A							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
			N																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	0						1	0							0	0	0															

REMARKS: Sample of rusty in place talus taken because of unidentified fine grained mineral within quartz veins displayed as a stockwork throughout a LMST cobble.
- Sample taken 4-500 m North of pipeline rd along top of Livingston range.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: GAP PASS COLLECTOR(S): PM DATE: Sept. 18

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR	INIT.			SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES]			NORTH				WTHR		RELIEF			CONTAMINATION						HARDNESS
																												Cir	Clay	Low	Mod	High	Comp	Trench	Drill	Geoch	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE									MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Med	Str											Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD			IDENTIFICATION				MATERIAL SAMPLED				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Col	Strk	Acid	Hdns	S.G.	Other	D/C	Fels	Tailings	Std	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)		ANALYTICAL RESULTS Gold g/t						U3O8 (%)																			

ROCK SAMPLE CARD R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	m	P	0	3	0			6	8	8	5	5	0									X	X		X							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		S	N						X				X		X	X		X																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																X														X									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	0		0	0	0		1	0							0	0	0															

REMARKS: Sample taken of a boulder near in place within the GAP PASS. Limestone fossiliferous and displays rusty spots possibly different sulphide (PYRT?) ~ 1%. dissolution vugs present with intergranular calcite crystals.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Hillcrest Area COLLECTOR(S): P.M. DATE: Sept. 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES)		NORTH					WTHR		RELIEF			CONTAMINATION						HARDNESS
																												Ctr	Clay	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE				COMPOSITION								GRAIN SIZE				CLAST SIZE							MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str									Degrees		Direction			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD			IDENTIFICATION				MATERIAL SAMPLED					ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Cal	Strk	Acid	Hdns	S.G.	Other	O/C	Fels	Tales	Bldr	Other							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS				U3O8 (%)																			

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9		2	P	M	2	0	3	1			6	9	1	0	0	0		5	4	9	3	7	2		X		X									
																												Ctr		Clay		Low	Med	High							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
				X	X	X	X			X							X																		6	0	S		
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str									Degrees		Direction			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																			Tot	Mart	Cal	Strk	Acid	Hdns	S.G.	Other													
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	0						0	3	0						0	0	0															
					Lead (%)								Silver (g/t)								U3O8 (%)																		

REMARKS: Sample taken of Kootenay(?) Sandstone conformable with bedding but Possible shear zone(?). No visible sulphides. Rusty nodules and patches present.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Blairmore COLLECTOR(S): P.M. DATE: Sept. 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES)		NORTH					WTHR		RELIEF			CONTAMINATION						HARDNESS
																												Ctr	Clay	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE				COMPOSITION								GRAIN SIZE				CLAST SIZE							MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str									Degrees		Direction			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD			IDENTIFICATION				MATERIAL SAMPLED					ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Cal	Strk	Acid	Hdns	S.G.	Other	O/C	Fels	Tales	Bldr	Other							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS				U3O8 (%)																		

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9		2	P	M	2	0	3	2	4	1	6	8	5	4	0	0		5	4	9	8	4	3		X		X	X								
																												Ctr		Clay		Low	Med	High							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
									X			X				X							X									3	5	6	3	2	W		
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str									Degrees		Direction			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																X			Tot	Mart	Cal	Strk	Acid	Hdns	S.G.	Other			Tales	Bldr	Other							ORIG. DUP. REP.
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	0						0	4	0						0	0	0															
					Lead (%)								Silver (g/t)								U3O8 (%)																		

REMARKS: Sample taken of a limy mud in outcrop beside highway number 3 on the outskirts of Blairmore. Sample taken because of rusty PYRITE blebs in a sheared(?) zone.
- Sample taken 100 m up the rd from sample 2MDPO
- Shear zone appears to be ~3-4 in wide in true thickness.
- Kootenay taken.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Blairmore COLLECTOR(S): P.M. DATE: Sept. 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE		NUMBER		ZONE			UTM				EAST GRID		UTM COORDINATES					NORTH			WTHR		RELIEF			CONTAMINATION					HARDNESS	
																	(or												Clr	Cldy	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE				COMPOSITION								GRAIN SIZE				CLAST SIZE							MAGNETISM					RADIOACTIVITY				STRIKE			DIP			
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str										Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD		IDENTIFICATION					MATERIAL SAMPLED				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Col	Stk	Acid	Hdns	S.G.	Other	O/C	Felt	Trench	Rock	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS Gold (g/t)						U3O8 (%)																	

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	9		R	P	M	R	0	3	3			6	8	5	3	5	0									X											
Cr	Cldy	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
									X							X																			4	0	W		
Fresh	Minor	Mod	Int	Tot	Mart	Col	Stk	Acid	Hdns	S.G.	Other	<2	2-4	4-8	8-16	16-32	32-64	>64	Degrees	Direction	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																X																							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	0						0	5	0		2	0			0	0	0																
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS Gold (g/t)						U3O8 (%)																	

REMARKS: Sample taken of a tiny mud ~60 m up the rd from sample 032. Compositionally similar to 032 with the same PYRT knots and attendant rusty alteration halos.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Blairmore COLLECTOR(S): P.M. DATE: Sept 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE		NUMBER		ZONE			UTM				EAST GRID		UTM COORDINATES					NORTH			WTHR		RELIEF			CONTAMINATION					HARDNESS	
																	(or												Clr	Cldy	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE				COMPOSITION								GRAIN SIZE				CLAST SIZE							MAGNETISM					RADIOACTIVITY				STRIKE			DIP			
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Porph	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Mod	Str										Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION						FIELD		IDENTIFICATION					MATERIAL SAMPLED				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mart	Col	Stk	Acid	Hdns	S.G.	Other	O/C	Felt	Trench	Rock	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS Gold (g/t)						U3O8 (%)																	

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	9		R	P	M	R	0	3	4			6	8	5	3	5	0									X											
Cr	Cldy	Low	Mod	High	Comp	Trench	Drill	Geon	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
									X				X		X		X		X				X											4	0	W		
Fresh	Minor	Mod	Int	Tot	Mart	Col	Stk	Acid	Hdns	S.G.	Other	<2	2-4	4-8	8-16	16-32	32-64	>64	Degrees	Direction	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																X											X											
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					0	0	1						0	7	0		0	0	0		0	0	0																
Copper (%)					Lead (%)				Zinc (%)				Silver (g/t)				ANALYTICAL RESULTS Gold (g/t)						U3O8 (%)																	

REMARKS: Sample taken from margins and within a 0.5 m wide shear/breccia zone within a limestone outcrop. PYRT present as blebs, and streaks and VNS occupying spaces between breccia fragments. ~3-4m from 033 samples 2MDP042, 043.

SURVEY TYPES: M - Rock R - Drill core or percussion chips, C - Channel chip P - Grab, O - Other (define)

SURVEY TYPE: Recc CLIENT & PROJECT: 2205 AREA &/or PHOTO: B/G, Lemare COLLECTOR(S): PM. DATE: Sept. 19

ROCK SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Livingston Lookout COLLECTOR(S): P.M. DATE: Sept 30/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Livingston Lookout COLLECTOR(S): P.M. DATE: Sept. 30/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYP	NUMBER	ZONE	UTM (or EAST GRID)	UTM COORDINATES (or NORTH)	WTHR Clr	WTHR Cldy	RELIEF Low	RELIEF Mod	RELIEF High	CONTAMINATION Comp	CONTAMINATION Trench	CONTAMINATION Drill	CONTAMINATION Geoch	CONTAMINATION Other	HARDNESS
82G/16	P	M	0	39	11	689925	5653532	X				X						

ROCK TYPE	COMPOSITION Qtz	Feld	Mica	Amphy	Ger	Carb	R.F	Acc	GRAIN SIZE Fine	Med	Crs	Porph	CLAST SIZE <2	2-4	4-8	8-16	16-32	32-64	>64	MAGNETISM None	Weak	Mod	Str	RADIOACTIVITY	STRIKE	DIP Degrees	DIP Direction
						X							X												270	60

FROM	TO	WIDTH	WEATHERING/ALTERATION Fresh	Minor	Mod	Str	FIELD Tal	Mart	Cal	Strk	IDENTIFICATION Acid	Hdns	S.G.	Other	MATERIAL SAMPLED C/C	Feld	Tallus	Bldr	Other	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.

ANALYTICAL RESULTS Copper (%)	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00		0.30		0.00

REMARKS: - Sample taken 4.75 Km from Old Man River Road
- Sample of a chert breccia within a limestone outcrop.
- Slickensides associated with breccia, but appears to be a lithological breccia. Fault cut unit obliquely at 240° with a Vertical dip. Slicks on the fault dip 90° to the SW
- Sample within Paleozoic Limestones but only ~100 m from Cretaceous rocks
- Sample displays minor rust but no visible sulphides.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Pasque Ck. COLLECTOR(S): PM DATE: Oct. 3/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYP	NUMBER	ZONE	UTM (or EAST GRID)	UTM COORDINATES (or NORTH)	WTHR Clr	WTHR Cldy	RELIEF Low	RELIEF Mod	RELIEF High	CONTAMINATION Comp	CONTAMINATION Trench	CONTAMINATION Drill	CONTAMINATION Geoch	CONTAMINATION Other	HARDNESS
82J/2	P	M	0	40	11	670150	5653763	X	X		X							

ROCK TYPE	COMPOSITION Qtz	Feld	Mica	Amphy	Ger	Carb	R.F	Acc	GRAIN SIZE Fine	Med	Crs	Porph	CLAST SIZE <2	2-4	4-8	8-16	16-32	32-64	>64	MAGNETISM None	Weak	Mod	Str	RADIOACTIVITY	STRIKE	DIP Degrees	DIP Direction
BF IV	X	X		X					X				X	X					X							

FROM	TO	WIDTH	WEATHERING/ALTERATION Fresh	Minor	Mod	Str	FIELD Tal	Mart	Cal	Strk	IDENTIFICATION Acid	Hdns	S.G.	Other	MATERIAL SAMPLED C/C	Feld	Tallus	Bldr	Other	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
																		X			

ANALYTICAL RESULTS Copper (%)	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)	U3O8 (%)
	0.00	0.00	0.01	0	0.00

REMARKS: Sample taken at a possible fine grained intrusive. Some surface rust displayed but no sulphides present. Unidentified green mineral clots possibly Olivine ? Does not display the coarse grained feldspathoids generally associated with Arowhead Volcs. but could be a fine grained variation.
- Specimen taken.
- From rd cut ~ in a logging cut 5 kms up Pasque ck. rd.
- Sample of boulders near outcrop.

SURVEY TYPES: M - Rock, N - Drill core or percussion chips, O - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Oldman River Near Gap Pass COLLECTOR(S): P.M. DATE: Oct 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES)			NORTH				WTHR		RELIEF			CONTAMINATION					HARDNESS	
																												Ctr	Dry	Low	Mod	High	Comp	Trench	Drill	Geoch	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE								MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Purple	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Med	Str											Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION					FIELD			IDENTIFICATION				MATERIAL SAMPLED					ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mort	Cal	Strk	Acid	Hem	S.G.	Other	G/C	Fels	Tailings	Bulk	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					Lead (%)				Zinc (%)				Silver (g/t)		ANALYTICAL RESULTS Gold (g/t)						USGS (%)																			

ROCK SAMPLE CARD R.A. OLSON CONSULTING LTD.

B	2	G	16		2	P	M		0	4	1			6	9	1	0	5	0									Ctr	X	Dry									
					X			X		X	X					X																							
Qtz					Feld		Amphy		Carb	R.F.						<2																							
																			Tot				Acid															
					0.0	0							0.6	0							0.0	0																
					Lead (%)								Silver (g/t)								USGS (%)																	

REMARKS: Sample of near flat lying limey siltstone beds on the South bank of the Oldman River. Outcrop displays rusty Pyrite knots up to 2 cm wide. Other than the knots rock is relatively fresh
- Sample taken ~ 250 m upstream from 2MDP056 on Old Man River.
- Specimen collected.
- Probably Spray River Fm.
~ 2% PYRT

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLD MAN RIVER NEAR GAP PASS COLLECTOR(S): PM & MD DATE: Oct 8/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE			UTM		(or		EAST GRID		UTM COORDINATES)			NORTH				WTHR		RELIEF			CONTAMINATION					HARDNESS	
																												Ctr	Dry	Low	Mod	High	Comp	Trench	Drill	Geoch	Other		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ROCK TYPE					COMPOSITION							GRAIN SIZE			CLAST SIZE								MAGNETISM				RADIOACTIVITY				STRIKE			DIP				
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc	Fine	Med	Crs	Purple	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Med	Str											Degrees		Direction		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
FROM					TO							WIDTH			WEATHERING /ALTERATION					FIELD			IDENTIFICATION				MATERIAL SAMPLED					ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
															Fresh	Minor	Mod	Int	Tot	Mort	Cal	Strk	Acid	Hem	S.G.	Other	G/C	Fels	Tailings	Bulk	Other								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
					Lead (%)								Silver (g/t)		ANALYTICAL RESULTS Gold (g/t)						USGS (%)																			

ROCK SAMPLE CARD R.A. OLSON CONSULTING LTD.

B	2	G	16		2	P	M		0	4	2			6	9	1	2	5	0									Ctr	X	Dry									
									X							X							X																
				Qtz	Feld	Mica	Amphy	Gar	Carb	R.F.	Acc				Purple	<2	2-4	4-8	8-16	16-32	32-64	>64	None	Weak	Med	Str											Degrees		Direction		
															X																								
															Fresh	Minor	Mod	Int	Tot	Mort	Cal	Strk	Acid	Hem	S.G.	Other	X													
					0.0	0							0.3	0							0.0	0																
					Lead (%)								Silver (g/t)								USGS (%)																	

REMARKS: Sample of Rundle LMST near man made(?) cave on Old Man River. Sample on opposite bank of Old Man to 2MDP056. Sample displays sticks and rusty pits that may be a sulphide or iron carbonate.
- Sample up slope from 2MDP057 ~ 25m
- Specimen taken.

SURVEY TYPES: M - Rock, R - Drill core or percussion chips, C - Channel chip, P - Grab, O - Other (define)

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLD MAN RIVER NEAR GAP PASS COLLECTOR(S): PM & MD DATE: Oct 8/92

ROCK SAMPLE CARD

R.A. OLSON CONSULTING LTD.

| | | |

APPENDIX IV

STREAM SEDIMENT SAMPLE CARDS

SURVEY TYPE: STREAM CLIENT & PROJECT: 2205 AREA &/or PHOTO: 8269 COLLECTOR(S): JN MS DATE: 6/19/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Cr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.							ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Ye	Grn	Red	Brn	Blk	Cree	Sand	Fines	Org	Gel								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	0	1	1	1	6	8	1	9	0	0	5	5	1	0	7	5	0	S	N	D	S	X			X		X	X	X	X
	X						4	1	1			X													2	2	1	2	1			0	M	1	1				

REMARKS: Sample collected ≈ 50m from upslope of road in ±2m wide creek / 3.4Km from road intersection

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: Blairmore Ck COLLECTOR(S): MD PM DATE: Aug 25/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	0	1	1	1	6	8	2	9	5	0	5	5	1	2	8	5	0	S	N	D	S	X			X		X	X	X	X
	X						2	1	1			X		20cm	X				X						1			3	1										

REMARKS:

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: BC69 COLLECTOR(S): JW MS DATE: 8/25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS			YEAR			INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
9	2	G	9	9	2	J	W	C	0	0	2	1	1	6	9	3	5	5	0	5	4	9	3	0	5	0	S	N	D	S	X			✓		X	X	X
	X							2	1			X		15cm		X				X	2			1	2			1	2	1								
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	- 55	- 56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cras 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Stream is ~ 2-3m wide Sample over ~10m at several sites. Flagged. Site is wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
9	2	G	9	9	2	J	W	C	0	0	3	1	1	6	9	5	0	0	0	5	4	9	3	0	0	0	S	H	L	E	✓			✓		✓	✓	✓
			✓					1	3	✓				<10		✓				✓	1				1			2	2									

REMARKS: CREEK IS 40-60cm WIDE HAY BARN ± CATTLE ABOVE SAMPLE AREA. FLAGGED. WET ACTIVE.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
9	2	G	9	9	2	J	W	C	0	0	4	1	1	6	9	7	0	5	0		4	9	8	6	0	0	S	H	L	E	✓			✓	✓			
								2				✓		20		✓		✓		✓	2			1	2			1	2	tr								

REMARKS: STREAM IS 2-4m WIDE. SAMPLED OVER 5m FLAGGED. WET ACTIVE. ABOVE BEAVER DAM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
9	2	G	9	9	2	J	W	C	0	0	5	1	1	6	9	5	2	0	0	5	5	0	0	7	0	0	S	H	L	E	✓			✓	✓	✓	✓	✓
✓	✓						Z	Z				✓		10		✓				✓								2	2									

REMARKS: STREAM IS 2-4m WIDE. FLAGGED. WET ACTIVE

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: N. BURMIS ROAD BC69 COLLECTOR(S): JW MS DATE: AUG 25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS			YEAR			INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	2	J	W	C	0	0	6	1	1	6	9	6	1	5	0	5	5	0	4	0	0	0	S	H	L	E	X			✓		✓		✓
							Z	Z	1			✓		15		✓					1				1			1	3									
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	- 55	- 56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cras 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: SAMPLE ~300m S of CREEK CONFLUENCE CREEK ~1-2m WIDE ROAD ACCESS VIA THE CROSSMANS ENTRANCE FLAGGED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	0	7	1	1	6	9	5	0	5	0	5	5	0	8	8	5	0	S	H	L	E	✓			✓	✓			
								2	1			✓		10		✓				✓	1	1			1			2	2	tr								

REMARKS: CREEK IS 1-2m WIDE ~100m UPSTREAM FROM ROAD FLAGGED ACTIVE WET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	0	8	1	1	6	9	5	0	5	0	5	5	0	9	4	5	0	S	H	L	E	✓			✓				
							2	1	1			✓		10		✓				✓		1			1	1	1	2	tr								

REMARKS: CREEK IS 1-2m WIDE ~75m FROM ROAD FLAGGED ACTIVE WET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	1	6	9	2	J	W	C	0	0	9	1	1	4	6	9	5	2	0	0	5	5	1	6	9	5	0	S	N	D	S	✓			✓		✓	✓	✓
	✓							1	2	✓				15		✓				✓																		

REMARKS: STREAM ~3m WIDE SAMPLE UPSTREAM FROM ROAD ~15m SAMPLED ALONG 10m OF CREEK FLAGGED. WET ACTIVE

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 100 CK, WILDCAT CK 82G/9 COLLECTOR(S): JW, MS DATE: AUG. 25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	9	2	J	W	C	0	1	0	11	U	6	9	5	6	0	0	5	5	1	5	8	5	0	S	N	D	S	✓			✓	✓	✓	✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Ye	Grn	Red	Bra	Blk	Crse	Sand	Fines	Org	Gel									
							2	1	1			✓		10		✓				2	2			1	2			3	1	1									

REMARKS: STREAM 3-4m WIDE FLAGGED WET ACTIVE. SAMPLE OF SOUTH TODD CREEK

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	J	W	C	0	1	1	11	U	6	9	5	6	0	0	5	5	1	5	8	5	0	S	N	D	S	✓			✓	✓	✓	✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
			✓				2	1	1			✓		10		✓				2	2			1	2			3	1	1									

REMARKS: AS ABOVE DUPLICATE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9			J	W		0	1	2		1	7	0	1	8	5	0			3	0				S	N	D	S					✓		✓			

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
	✓											✓		20		✓		✓			1				2	1			3										

REMARKS: STREAM IS 3-4m WIDE FLAGGED WET ACTIVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	1	3	1	1	7	0	2	2	5	0	5	5	1	2	0	0	S	N	D	S	✓		✓		✓		✓		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
✓	✓						2	1			✓			<5		✓				2					1	2		1										

REMARKS: CREEK IS <1m (~70cm) WIDE FLAGGED WET ACTIVE

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G9 HWY 22, HWY 3 COLLECTOR(S): JW, MS DATE: 8/25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	2	J	W	C	0	1	4	1	1	7	0	2	4	5	0	5	5	0	8	7	0	0	S	N	D	S	✓			✓	✓		✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Ye	Grn	Red	Bra	Blk	Crse	Sand	Fines	Org	Gel									
✓	✓		✓				2	1	1			✓		20		✓				✓	1				1			2	2	1									

REMARKS: STREAM ~3-4m WIDE, FLAGGED ACTIVE WET SAMPLED ON PASTURELAND

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	1	5	1	1	7	0	5	0	5	0	5	5	0	4	4	5	0	S	N	D	S	✓			✓		✓	✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
✓	✓		✓					2	2			✓		35		✓		✓			1				1			2	2	2									

REMARKS: STREAM 2-3m WIDE, FLAGGED WET ACTIVE, MURKY SAMPLED, ON PASTURELAND AREA

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	1	6	1	1	7	0	3	1	0	0	5	5	0	4	2	5	0	S	N	D	S	✓		✓	✓	✓		✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
✓	✓		✓				3	1	1			✓		10		✓		✓			1				1			2	1										

REMARKS: CREEK ~1-2m WIDE, FLAGGED WET ACTIVE. MURKY WATER SAMPLED ON PASTURELAND

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	J	W	C	0	1	7	1	1	7	0	2	2	0	0	5	4	9	9	2	0	0	S	N	D	S	✓			✓	✓		✓	✓	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
✓	✓		✓				2	1	1			✓		20		✓		✓		✓	2				1	2		2	1										

REMARKS: STREAM IS 2-3m WIDE FLAGGED WET ACTIVE MURKY WATER SAMPLED ON PASTURELAND

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

HWY 3 BURMIS

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G9 AREA COLLECTOR(S): MS/JW DATE: Aug 25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM			NORTH				ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	9	9	2	J	W	C	0	1	8	1	1	6	9	8	5	0	0	5	4	9	5	4	0	0	S	N	D	S	✓		✓				✓	✓	
✓	✓		✓				1		3	1	✓			< 5		✓				✓	2				1				4										

REMARKS: CREEK IS 20-40cm WIDE. FLAGGED. SAMPLED ON PASTURELAND WET ACTIVE

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

PORCUPINE HILLS

SURVEY TYPE: RECCE STREAM CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G9/G16 COLLECTOR(S): JW/MS DATE: Aug 26/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	9	9	2	J	W	C	0	1	9	1	1	7	1	1	2	0	0	5	5	1	4	2	0	0	S	N	P	S	✓		✓				✓	✓	
✓	✓		✓						2	2		✓		05		✓		✓	✓	✓	1				1				2	2									

REMARKS: CREEK FILLS "VALLEY", AND IS GRASS CHOKED. FORMS SEVERAL <1m STREAM BEDS WET ACTIVE FLAGGED

8	2	G	9	9	2	J	W	C	0	2	0	1	1	7	1	0	3	5	0	5	5	2	9	0	0	S	H	L	E	✓		✓	✓			✓	✓	
✓	✓		✓				1	1	1	1	✓			05		✓		✓	✓	✓	1			1				3										

REMARKS: CREEK IS 30-40cm WIDE SAMPLE TAKEN IN COW PASTURE FLAGGED WET ACTIVE

8	2	G	16	9	2	J	W	C	0	2	1	1	1	7	1	1	9	0	0	5	5	1	9	6	0	0	S	N	D	S	✓		✓	✓			✓	✓	
✓	✓		✓						2	2	✓			10		✓				✓	2				*				2	1									

REMARKS: STREAM ~1-1½m WIDE. SAMPLE TAKEN IN COW PASTURE FLAGGED. WET ACTIVE

8	2	G	16	9	2	J	W	G	0	2	2	1	1	7	1	4	2	5	0	5	5	2	1	5	5	0	S	N	D	S	✓	✓	✓				✓	✓	
✓	✓		✓								✓			< 5		✓				✓																			

REMARKS: CREEK ~20-30cm WIDE WATER IS HARDLY MOVING. TAKEN IN CATTLE PASTURE FLAGGED SEMI ACTIVE WET

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G16 DEPTH Cr / PAPLES CK COLLECTOR(S): JW/MS DATE: Aug 26/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	92	J	W	C	0	23	1	1	7	1	4	2	0	0	5	5	2	1	8	0	0	S	N	D	S	✓		✓	✓				✓		

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
✓	✓		✓					1	3			✓		0.5		✓				✓					2				4	tr									

REMARKS: CREEK 1-2m WIDE ~20m FROM ROAD. TAKEN IN CATTLE PASTURE FLAGGED WET SEMI ACTIVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	92	J	W	C	0	24	1	1	7	1	2	5	5	0	5	5	2	9	2	0	0	S	N	D	S	✓		✓	✓				✓		

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
✓	✓		✓					3	1			✓		1.0		✓				2					1			3	1										5

REMARKS: STREAM IS 1-2m WIDE. IN CATTLE PASTURE FLAGGED. WET ACTIVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	[illegible]	J	W	C	0	25	[illegible]		7	1	4	4	5	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	N	D	S	[illegible]		✓			[illegible]	[illegible]	[illegible]	

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
								2	1			✓		[illegible]		✓				[illegible]					2	1		1.2											

REMARKS: CREEK IS ~1m WIDE TAKEN IN PASTURELAND FLAGGED WET ACTIVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	92	J	W	C	0	26	1	1	7	1	4	0	0	0	5	5	4	2	5	0	0	S	N	D	S	✓	✓		✓				✓	✓	✓	

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
✓	✓		✓				2	1	1			✓		2.0		✓				✓		1			1			3	1										10

REMARKS: STREAM 2-3m WIDE ON PASTURE FLAGGED WET ACTIVE TAKEN OVER 10m

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G16 BURKE CK COLLECTOR(S): JW/MS DATE: Aug 26/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	92	J	W	C	0	27	1	1	7	1	4	0	5	0	5	5	5	3	9	8	5	0	S	N	D	S	✓	✓	✓	✓	✓		✓	✓		

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
✓	✓		✓					1	3	tr	✓			0.5		✓				✓		1			1			2	2	tr									0

REMARKS: CREEK IS 70-80cm WIDE TAKEN IN CATTLE PASTURE FLAGGED WET ACTIVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Ye 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: B298-9 CARBONDALE R. BYRON CK COLLECTOR(S): JW/MS DATE: Aug 27/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH			ROCK TYPE							WTHR		WTR SURF. or FLOW			VEGETATION			
9	2	G	9	9	2	J	W	C	0	2	8	1	1	6	9	1	5	5	0	5	4	9	1	2	0	0	S	N	D	S	✓	✓		✓	✓	✓	✓	✓	✓
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG DUP REP
	✓		✓				2	1	1			✓		1	5	✓			✓						1			3	1										
REMARKS: STREAM IS 2-2½ m WIDE. MINE WORKINGS (COAL) IN AREA. FLAGGED SAMPLED ABOVE WORKINGS WET ACTIVE																																							
8	2	G	8	9	2	J	W	C	0	2	9	1	1	6	8	9	4	0	0	5	4	8	1	5	2	5	M	D	S	N	✓	✓		✓					✓
	✓	✓					2	2	1			✓		1	0	✓			✓						1	2		3	1										
REMARKS: STREAM IS 2-3m WIDE. WATER HAS BLUE-GREEN TINGE. FLAGGED TAKEN ABOVE ROAD WET ACTIVE																																							
8	2	G	8	9	2	J	W	C	0	3	0	1	1	6	8	6	7	5	0	5	4	8	2	0	0		M	D	S	N	✓	✓		J		✓			✓
								1	3		✓			5	5	✓									1	2													
REMARKS: SAMPLE FROM <1m WIDE CHANNEL OFF OF MAIN CHANNEL (MAIN 3-4m WIDE, FAST, ROCKY) FLAGGED WET ACTIVE																																							
8	2	G	8	9	2	J	W	C	0	3	1	1	1	6	8	3	6	5	0	5	4	8	2	7	5	0	S A	N G	P	S M	✓	✓		✓	✓	✓	✓	✓	✓
	✓	✓	✓				2	1	1		✓		✓	3	0	✓			✓						1			3	1										
REMARKS: STREAM IS 5-7m WIDE, WITH LARGE BOULDERS THROUGHOUT. FLAGGED. WET ACTIVE																																							

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 ~~GOAT CK~~ GARDINER CK AREA &/or PHOTO: B268 COLLECTOR(S): MS/JW DATE: Aug 28/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH			ROCK TYPE							WTHR		WTR SURF. or FLOW			VEGETATION			
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR								COMPOSITION				ORIGINAL SAMPLE NO.						ORIG DUP REP
REMARKS:																																							
8	2	G	0	9	2	J	W	C	0	3	2	1	1	6	8	3	2	0	0	5	4	7	1	5	0	0	S	H	L	E	✓	✓		✓	✓	✓	✓	✓	✓
		✓					1	1			✓	✓		2	0	✓			✓		?				1			3	1										
REMARKS: STREAM 1-3m WIDE WET ACTIVE FLAGGED																																							
REMARKS:																																							

SAMPLE TYPES: A/B - Lake sed./water C/D Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: DUTCH CK COLLECTOR(S): MS/JW DATE: Aug 29/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0337	11	678	000	55294	SHLE	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

RELIEF: Low / Med / High — CONTAMINATION: Work / Camp / Fuel / Gasn / Rock — BOTTOM: Sand / Clay / Org — AREA or WIDTH: <1 / 1-5 / >5 — DEPTH: Clr / Yel / Brn — WATER COLOUR: Hvy / Light — SUSP. SEDIMENT COLOUR: Wht / Yel / Grn / Red / Brn / Blk — COMPOSITION: Crse / Sand / Fines / Org — ORIGINAL SAMPLE NO. — ORIG. DUP. REP.

REMARKS: STREAM 4-5 m WIDE SAMPLE TAKEN ABOVE ROAD FLAGGED WET ACTIVE

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0344	11	674	500	53000	SNDS	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

REMARKS: STREAM 3-4 m WIDE SAMPLE TAKEN ABOVE ROAD. FLAGGED, WET ACTIVE

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0356	11	678	600	53000	SHLE	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

REMARKS: Stream 5 m wide sample collected 150m upstream from road beyond blk cretaceous shale scree slopes, Flagged, Wet Active

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0365	11	678	600	53100	SHLE	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

REMARKS: CREEK 1S N 1m WIDE SAMPLE ~50m UPSTREAM OF ROAD FLAGGED WET ACTIVE

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: DUTCH CK 82G15 COLLECTOR(S): JW, MS DATE: 08/29/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0377	11	678	000	55292	SHLE	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

RELIEF: Low / Med / High — CONTAMINATION: Work / Camp / Fuel / Gasn / Rock — BOTTOM: Sand / Clay / Org — AREA or WIDTH: <1 / 1-5 / >5 — DEPTH: Clr / Yel / Brn — WATER COLOUR: Hvy / Light — SUSP. SEDIMENT COLOUR: Wht / Yel / Grn / Red / Brn / Blk — COMPOSITION: Crse / Sand / Fines / Org / Gel — ORIGINAL SAMPLE NO. — ORIG. DUP. REP.

REMARKS: sample collected 80m downslope vertically from road flagged wet active blk shale on banks 4m wide

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0388	11	682	350	55314	SNPS	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

REMARKS: sample collected 50m upstream of road at cattle gate, s.s. shale, congl. bedrock, stream 1.5m wide, Wet Active

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	JW	C	0399	11	681	750	53050	SNDS	Clr / Cldy	Gs/S Rp/M Ch/F	Con Dec Grs Moss

REMARKS: sample collected 25m upstream of 2nd order tributary of Dutch Crk. near vertical sandstone face Wet Active

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: CARBONDALE R COLLECTOR(S): JW, MS DATE: 8/30/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

REMARKS: main stream 1.5m wide, collected 30-40m upstream from road. Wet Active tagged.

REMARKS: stream bifurcates main up to 1.5m wide, Wet Active Tagged. Blackmore

REMARKS: stream about 3-5m wide, MacDonald Ck, collected upstream 35m from road.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: CARBONDALE R COLLECTOR(S): JW, MS DATE: 8/30/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

REMARKS: stream 8m wide in outcrop area of recurrent volcanics, wet active tagged.

REMARKS: AS ABOVE (DUPLICATE)

REMARKS: creek about 1.5m wide, 25m upstream collected in wet active, flagged, located at road intersection

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: S. LOST CK COLLECTOR(S): JW, MS DATE: 8/31/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR									COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Ye	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel							

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	J	W	C	0	4	6	1	1	6	8	1	7	0	0	5	4	8	0	0	0		S	N	D	S	X			X		X		
																											m	D	S	N		Clay	Gs/S	Rp/M	Clr/F	Con	Dec	Grs	Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
							3		1			X		2	5					X	1				1			2	2										

REMARKS: stream 5m wide, wet active, taken 40m upstream of walking br. due on N. Lost Crk

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	9	2	J	W	C	0	4	7	1	1	6	8	1	1	5	0	5	4	7	9	5	0		S	N	D	S	X		X			X		
																											m	D	S	N		Clay	Gs/S	Rp/M	Clr/F				Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
													X						X	X								1	2										2

REMARKS: stream ~8m wide, sample collected in slower moving backeddy wet active tagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	[illegible]	[illegible]	J	W	[illegible]	0	4	8	[illegible]	[illegible]	6	7	9	3	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	N	D	S				X						
																											S	H	L	E		Clay	Gs/S	Rp/M	Clr/F				Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
												X				X												1	2										

REMARKS: stream up to 5m wide, wet active, back eddy + Alberta Grp Geology S.S. Shale Tagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Clay	Gs/S	Rp/M	Clr/F	Con	Dec	Grs	Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: GARDINER CK / S. LOST CK / N. LOST CK COLLECTOR(S): JW, MS DATE: 9/01/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR									COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel							

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	9	2	J	W	C	0	4	9	1	1	6	7	5	7	5	0	5	4	7	7	0	5	0	D	L	M	T				X		X		
																											L	m	S	N		Clay	Gs/S	Rp/M	Clr/F	Con	Dec	Grs	Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
							3		1	tr		X		2	0					X	1				1			2	2	tr									

REMARKS: wet active, tagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	9	2	J	W	C	0	5	0	1	1	6	7	8	2	0	0	5	4	8	7	3	5	0	S	L	S	N				X		X		
																																Clay	Gs/S	Rp/M	Clr/F	Con	Dec	Grs	Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
							3		1			X		2	0					X	2				1	1		1	3										

REMARKS: Sample 51+52 collected ~ 90m above confluence wet active tagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	9	2	J	W	C	0	5	1	1	1	6	7	8	1	5	0	5	4	8	1	5	0	0	S	L	S	N				X		X		
																																Clay	Gs/S	Rp/M	Clr/F	Con	Dec	Grs	Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
							3		1			X		2	0					X	1				1	1		1	3										

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	J	W	C	0	5	2	1	1	6	8	5	0	0	0	5	4	7	5	5	5	0	S	N	D	S				X		X		
																											m	D	S	N		Clay	Gs/S	Rp/M	Clr/F				Moss
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									DUP. REP.
							2		1			X				X				X	1				1	2		3	1										

REMARKS: sample collected 10m upstream of road xing and foot bridge wet active, tagged

SAMPLE TYPES: A/B Lake sed./water C/D Stream sed./water E/F - Bog sed./water, G/H Spring sed./water, I,J,K,L Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: LYNX CK GOAT CK COLLECTOR(S): JW MS DATE: 09/01/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	9	2	J	W	C	0	5	3	1	1	6	7	8	7	5	0	5	4	8	6	7	0	0	S	N	D	S	X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
							2					X		1	0	X				4	2					3		2		HP										

REMARKS: collected 50m upstream, wet active, Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	7	9	2	J	W	C	0	5	4	1	1	6	8	1	2	5	0	5	4	8	5	4	0	0	S	N	D	S	X			X		X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							2	1	HP			✓		25		✓				X	2				!		2	1												

REMARKS: CREEK IS 2-3m WIDE FLAGGED WET ACTIVE SAMPLE TAKEN ~30m UPSTREAM FROM RD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10			J	W		0	5				6	8	0	2	5	0					2	5		S	N	D	S				X						

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
												X			0	X					2				1	2														

REMARKS: collected upstream of xing 50m 3-4 wide wet active Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10			J	W		0	5	6	1	1	6	7	9	9	5	0	5	4	8	7	9	0	0	S	N	D	S	X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							2	1	0			X		1	0	X				X							2	2												

REMARKS: sample collected m from main highway wet active Flagged. Creek is 4m wide

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: CASTLE R. AREA COLLECTOR(S): JW MS DATE: 9/02/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	J	W	C	0	5	7	1	1	6	9	3	8	5	0	5	4	7	9	9	2	5	S M	N D	D S	S N	X		X			X	X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
							3	2			X				X													3	1	1										

REMARKS: creek 0.5m wide, collected 30m above confluence with Castle River Wet Active Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	J	W	C	0	5	8	1	1	6	9	4	3	0	0	5	4	8	0	2	2	5	S M	N D	D S	S N	✓		✓			✓	✓	✓	✓

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							3	1				✓		1	0	✓				✓						L		1	2										

REMARKS: CREEK IS ~1 m WIDE. WET ACTIVE. ACROSS FROM CASTLE RIVER F.R.A.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	J	W	C	0	5	9	1	1	6	8	9	5	5	0	5	4	6	2	4	5	0	A	R	G	L	X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
												X				X												3	1										

REMARKS: creek is 2 6m wide, wet active, Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	J	W	C	0	6	0	1	1	6	8	9	5	5	0	5	4	6	2	4	5	0	A	R	G	L	X								

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
												X				X																							

REMARKS: Same as above 059 Duplicate

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F Bog sed./water, G/H Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: WEST CASTLE R. COLLECTOR(S): JW MS DATE: 9/02/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/8	92	JWC	06	1	11	689005	4	6	3	150	A	RGL	X	X	X	X

REMARKS: sample collected 60-80m upstream from road wet active flagged

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/8	92	JWC	06	2		687950	5	6	5	500	A	RGL		X		

REMARKS: Sample collected 150 upslope approximately 150 S.E of main rd, wet active flagged. Stream 5m wide

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: GRIZZLY CK CASTLE R. COLLECTOR(S): MS JW DATE: 9/03/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/8	92	JWC	06	3	11	693400	5	4	6	600	A	RGL	X	X	X	X

REMARKS: bldry stream up to 10m wide sample collected down 100m from stream of small burden wet active flagged.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/8	92	JWC	06	4	11	696100	5	4	5	450	D	LMT	X	X	X	X

REMARKS: collected 80m upslope of road Clk is bldry very little fine mtrl wet active flagged

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/8	92	JWC	06	5	11	697650	5	4	4	750	S	SNL	DSN	X	X	X

REMARKS: sample collected 60m upstream of road. wet active flagged creek 1-3m wide.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: GARDINER CK COLLECTOR(S): MS JW DATE: Oct 2/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82E3 COLLECTOR(S): JW MS DATE: 10/3/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO. STIMSON-MEINS right CRK 8258 COLLECTOR(S): JW, MS. DATE: 10/3/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	B	9	2	J	W	C	0	7	9	1	1	6	9	7	1	7	5	5	5	7	6	0	5	0	S	N	D	S	X			X	X			
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH				DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org		cl	1-5	>5		Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
									4				X	2	0	X					2				1				4									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: creek 2-3 m wide, wet active, flagged

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: DeepCreek Highwood Creek COLLECTOR(S): MS JW DATE: OCT 4/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	B	9	2	J	W	C	0	8	0	1	1	6	7	9	5	7	5	5	5	8	8	5	7	5	S	H	L	E	X	X		X	X			
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH				DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org		cl	1-5	>5		Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
							2	2				X		1	0	X				X						1		2	2									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: creek 1-2m wide, wet active Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	B	9	2	J	W	C	0	8	1	1	1	6	8	3	1	0	0	5	5	9	4	2	5	S	H	L	E	X	X	X	X	X			
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH				DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org		cl	1-5	>5		Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
							1	2	2		X			9	0	X				X					1	1													
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: creek approximately 0.5m wide, wet active, flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	B	9	2	J	W	C	0	8	2	1	1	7	0	6	1	0	0	5	5	7	8	2	5	0	S	N	D	S	X	X	X	X	X			
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH				DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org		cl	1-5	>5		Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
							1	1	1		X			1	0	X				X					2	1													
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: creek approximately 2m wide, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	B	9	2	J	W	C	0	8	3	1	1	7	0	6	0	0	0	5	5	7	8	8	0	0	S	N	D	S	X	X	X			X		
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH				DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org		cl	1-3	>5		Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
							1	1	2				X	3	0	X				X	2				1				4									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: creek approx. wet [illegible] active

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: CROSS CK COLLECTOR(S): JW, MS DATE: 10/4/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8	9	2	J	W	C	0	8	4			7	1	0	3	5	0	5	5	7	7	5	5	0	S	N	D	S			X						
												X				X					2			1	2				4									
			Work	Camp	Fuel	Geon					d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk							Gs/S	Rp/M	Ch/F				
			44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Stream 1-2m wide, reactive

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Rock Crk COLLECTOR(S): JW, MS DATE: 10/5/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	9	9	2	J	W	E	0	8	5			6	9	5	3	0	0	5	5	9	7	3	2	5	S	H	L	E		X	X					X	
												X				X					2			1	2														
			Work	Camp	Fuel	Geon					d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk							Gs/S	Rp/M	Ch/F				
			44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Stream about 0.5 m wide, wet active

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Stimson Cr. COLLECTOR(S): JW MS DATE: 10/6/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	B	9	2	J	W	C	0	8	6			7	0	1	4	5	0	5	5	9	2	0	0	0	S	N	D	S	W			X	X		X		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geen	Rock	Sand	Clay	Org	d	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cres	Sand	Fines	Org	Gal									

REMARKS: stream up to 8m wide, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	B			J	W	C	0	8	7			7	0	9	6	5	0								S	N	D	S			X					X	
												X				X											S	H	L	E									

REMARKS: swampy marsh up to 10m wide, water moving, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	B			J	W	C	0	8	8			7	0	9	1	0	0								S	N	D	S			X					X	
												X				X											S	H	L	E									

REMARKS: stream up to 1m wide, grassy + organic bottom, wet active MacMillan Hydrocrite Colony

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	8			J	W	C	0	8	9			7	0	8	7	7	5								S	N	D	S								X	
												X															S	H	L	E									

REMARKS: stream up to 0.5m wide, wet active taken upstream of farm building MacMillan Hydrocrite Colony

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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Cross Creek area

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): JW MS DATE: 10/6/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	B	9	2	J	W	C	0	9	0			7	1	1	8	2	5	5	5	8	2	8	0	0	S	N	D	S	X								

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geen	Rock	Sand	Clay	Org	d	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cres	Sand	Fines	Org	Gal									

REMARKS: collected 100m upstream of road, down steep gully in cow pasture, Swampy grassy bottom, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	B			J	W	C	0	9	1			7	0	8	8	2	5								S	N	D	S								X	
												X				X											S	H	L	E									

REMARKS: main stream about 1m wide, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	B			J	W	C	0	9	2			7	0	8	8	5	0					5	8	5	S	N	D	S									
																											S	H	L	E									

REMARKS: see above duplicate

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	B	9	2	J	W	C	0	9	3			7	0	7	2	2	5								S	N	D	S			X					X	
												X				X											S	H	L	E									

REMARKS: collected 30m upstream, stream up to 1m wide

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Mosquito Creek COLLECTOR(S): JW, MS DATE: 10/6/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STAMPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8	9	2	J	W	C	0	9	4	7	1	7	0	3	9	0	0	3	5	7	6	4	7	5	S	N	D	S	X			X				
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				WTHR		WTR SURF. or FLOW			VEGETATION		
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Ch/F 76	Con 77	Dec 78	Grs 79	Moss 80
						2	1	1				X		2	5	X				X	2					1			A	B								

ORIGINAL SAMPLE NO. 74 75 76 77 78 79

ORIG. DUP. REP. 80

REMARKS: stream up to 1m wide, wet active

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: flat area Waldie Creek Area COLLECTOR(S): JW MS DATE: 10/7/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STAMPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8	9	2	J	W	C	0	9	5			6	7	7	4	0	0	5	5	9	4	9	0	0	S	H	L	E	X		X			X		
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				WTHR		WTR SURF. or FLOW			VEGETATION		
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Ch/F 76	Con 77	Dec 78	Grs 79	Moss 80
						1	2	1			X			1	0	X				X	2					1			1	2								

ORIGINAL SAMPLE NO. 74 75 76 77 78 79

ORIG. DUP. REP. 80

REMARKS: sample collected 60m upstream wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STAMPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8			J	W		0	9	6			6	7	8	0	5	0		5	9	4	6	7	5	S	N	D	S	X		X	X		X	X	
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				WTHR		WTR SURF. or FLOW			VEGETATION		
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Ch/F 76	Con 77	Dec 78	Grs 79	Moss 80
												X									2	1				1			1										

ORIGINAL SAMPLE NO. 74 75 76 77 78 79

ORIG. DUP. REP. 80

REMARKS: wet active stream up to 5-6m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STAMPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8			J	W		0	9	7			6	8	1	7	0	0					7	1	5	S	H	L	E									
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				WTHR		WTR SURF. or FLOW			VEGETATION		
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Ch/F 76	Con 77	Dec 78	Grs 79	Moss 80
												X				X																							

ORIGINAL SAMPLE NO. 74 75 76 77 78 79

ORIG. DUP. REP. 80

REMARKS: wet active, stream up to 1 m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STAMPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	8			J	W	C	0	9	8			6	8	1	5	0	0	5	5	8	8	2	5	0	S	N	D	S	X		X			X		
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				WTHR		WTR SURF. or FLOW			VEGETATION		
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Ch/F 76	Con 77	Dec 78	Grs 79	Moss 80
												X				X					2					1			2										

ORIGINAL SAMPLE NO. 74 75 76 77 78 79

ORIG. DUP. REP. 80

REMARKS: stream up to 25m wide, wet active Eden Valley Reserve

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: Bonnet COLLECTOR(S): JW, MS DATE: 9-10

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Grey 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	J	B			J	W	C	0	9	9			6	9	1	7	0	0								S	N	D	S			X					
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X									2	1			4										

REMARKS: stream up to 1m wide wet active

8	2	J	B			J	W		1	0	0			6	9	1	5	5	0								S	N	D	S			X					
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X					1				1	2			4										

REMARKS: stream up to 1m wide wet active

8	2	J	B			J	W		1	0	1			6	8	7	3	0	0								S	H	L	E			X	X				
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X									2	1													

REMARKS: collected 200 m upstream of dam. stream up to 2m wide, wet active

8	2	J	B			J	W		1	0	2			6	9	3	0	0	0								S	N	D	E			X					
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X									2	1													

REMARKS: collected from 2m wide stream, wet active,

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: 82 J B Ochiishocelt Area COLLECTOR(S): JW, MS DATE: 10/7/82

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH	WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	d 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Grey 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	J	B			J	W		1	0	3			6	9	2	5	0	0								S	H	L	E			X					
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X									2	1													

REMARKS: collected 20m upstream of road about four yards, stream up to 0.5m wide

8	2	J	B			J	W		1	0	4			6	9	0	0	0	0								C	G	L	M			X	X				
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X					2				1	2													

REMARKS: sample collected above road crossing, stream up to 8m wide, wet active Hanard

8	2	J	B			J	W		1	0	5			6	8	9	0	0	0								S	H	L	E			X	X				
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X									2	1													

REMARKS: streamis up to 2m wide wet active

8	2	J	B			J	W		1	0	6			7	0	0	0	0	0								S	N	D	S			X	X				
											d	I-5	>5			Clr	Yel	Brn			Wht	Yel	Grn	Red	Brn	Blk													
			Work	Camp	Fuel	Geon						X				X					2				1	2													

REMARKS: stream up to 3m wide, wet active

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water; G/H Spring sed./water, I,J,K,L - Other

SURVEY TYPE: I C CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): DATE: 10/8/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM NORTH								ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORG. DUP. REP.
Low	Mod	High	Wtrk	Comp	Fuel	Geon	Rock	Sand	Gravel	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cres	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8	2	J	8	5	2	J	W		1	0	7			6	9	1	0	0	0	5	5	7	7	9	0	0	S	H	L	F		X		X		X			
												X					X			X							2	2											

REMARKS: stream up to 2m wide wet active

8	2	J	8		2	J	W		1	0	8			6	9	1	0	0	0	5	5	7	7	9	0	0	S	H	L	E									

REMARKS: DUPLICATE OF 2JWC107

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Skeena/Cr4 COLLECTOR(S): TVI IN DATE: 10/8/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM NORTH								ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORG. DUP. REP.
Low	Mod	High	Wtrk	Comp	Fuel	Geon	Rock	Sand	Gravel	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cres	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8	2	J	8		2	J	W		1	0	9			6	9	0	1	0	0	5	5	7	8	2	5	0	S	H	L	E		X		X		X			
												X				X																								

REMARKS: stream up to 2m wide wet active

8	2	J	8		2	J	W		1	1	0			6	9	0	0	2	5	5	5	7	8	2	7	5	S	H	L	E		X		X		X			
												X				X																								

REMARKS: stream up to 2.5m wide wet active

8	2	J	8			J	W		1	1	1			6	8	9	4	5	0	5	5	7	8	8	5	0	S	H	L	E		X		X		X			
												X				X																								

REMARKS: stream up to 1m wide, wet active

8	2	J	8			J	W		1	1	2			6	9	0	7	5	0	5	5	7	9	4	5	0	S	H	L	E		X		X		X			
												X				X																								

REMARKS: up to 1m wide, wet active

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Rickman Creek, Big Jim Creek COLLECTOR(S): JW MS DATE: 10/9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	13	7	06	25055	59005	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X	10	X		2 Wht	1 Blk	

REMARKS: stream up to 2m wide wet active Big Jim Crk

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	14	7	07875	56500		SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X		X		1 Wht, 2 Grn, 1 Blk		

REMARKS: stream up to 2m wide, wet active (Rickman)

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	15	7	09875	61	62900	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X		X		2 Wht, 1 Grn, 1 Blk		

REMARKS: up to 1.5m wide, wet active (Mott Crk)

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	16	7	08050	56290	0	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X	10	X		1 Red, 1 Blk		

REMARKS: up to 1m wide collected above dam

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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N.E Corner 82J1

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): JW MS DATE: 10/9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	17	7	11775	56000	0	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X	05	X		1 Wht, 1 Blk		

REMARKS: stream up to 1.5m wide, wet active.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	18								

REMARKS: Duplicate. See above.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	19	7	12850	55840	0	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X		X		1 Blk		

REMARKS: up to 2m wide, wet active

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J 1	92	JW	1	20	7	14750	55588	50	SS	N	DLE	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
			X	20	X	X	2 Blk, 1 Blk	2 2	

REMARKS: stream up to 1.5 m wide, wet activ

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO. South Willow Creek Area COLLECTOR(S): JW, MS DATE: 10/9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	125	7	10000	55555	72575	SS NH DL ES	X	X	X

RELIEF: Low / Mod / High — CONTAMINATION: Work / Camp / Fuel / Geen — BOTTOM: Rock / Sand / Clay / Org — AREA or WIDTH: cl / 1-5 / >5 — DEPTH — WATER COLOUR: Clr / Yel / Brn — SUSP.: Hvy / Light — SEDIMENT COLOUR: Wht / Yel / Grn / Red / Brn / Blk — COMPOSITION: Crse / Sand / Fines / Org / Gel — ORIGINAL SAMPLE NO. — ORIG. DUP. REP.

REMARKS: stream up to 2m wide, wet active

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	122	7	06275		760	SS NH DL ES		X	

REMARKS: stream up to 50cm wide, wet active up to 30cm wide

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	123	7	07200			SS NH DL ES		X	

REMARKS: up to 40cm wide, wet active, flagged.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	124	7	01900			SS NH LD ES		X	X

REMARKS: stream up to 5m wide, wet active

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Happy Valley E. of Highway 22 COLLECTOR(S): JW, MS DATE: 10/9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	125	7	02100		38000	SS HN LD ES	X	X	X

REMARKS: stream is series of ponded marshy areas, wet (active?)

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	126	7	02275		33700	SS HN LD ES		X	

REMARKS: stream up to 5m wide, wet active, flagged.

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	127	6	97600			SS NH DL ES		X	X

REMARKS: stream up to 5m wide, wet active

NTS	YEAR	INIT.	SAMPLE TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	1	JW	C	128	6	97800			SS NH DL ES	X	X	X

REMARKS: stream up to 2m wide, wet active,

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Westerup/Langford Area Headwaters COLLECTOR(S): JW, MS DATE: 10/9/92

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
NTS		YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM		EAST (or GRID COORDINATES)	UTM NORTH		ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	
RELIEF	CONTAMINATION			BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR			COMPOSITION		ORIGINAL SAMPLE NO.		ORIG. DUP. REP.
Low Mod High	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
8 2 J	1	9 2	J W	C	1 2 9	1 1	6 9	1	2 5 0	5 5 7	6 5 0	S S	N H	D L	S E	X
						X		X					2	1		
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS: stream up to 3m wide 50m above confluence wet active

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
8 2 J	1		J W		1 3 0		6 9	1	2 5 0			S S	N H	O L	S E	X
						X		X		2	1 2					
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS: stream up to 2m wide, wet active, above confluence

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
8 2 J	1		J W		1 3 1		6 9	2	1 5 0			S S	N H	D L	S E	
						X		X			1					
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS: stream up to 2m wide, wet active

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: ISOLATION CK COLLECTOR(S): MS JW DATE: OCT 10/92

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
NTS		YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM		EAST (or GRID COORDINATES)	UTM NORTH		ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	
RELIEF	CONTAMINATION			BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR			COMPOSITION		ORIGINAL SAMPLE NO.		ORIG. DUP. REP.
Low Mod High	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
8 2 J	2	9 2	J W	G	1 3 2	1 1	6 7	7	5 0 0	5 5 5	4 4 0	0 S	N	D	S	✓
	✓ ✓		2	1	1	✓	1 0	✓	✓	2	1		2	2		
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS: 1-2m WIDE STREAM WET ACTIVE FLAGGED

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS:

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS:

1 2 3	4	5 6	7 8	9	10 11 12	13 14	15 16	17	18 19 20	21 22 23 24	25 26 27	28 29 30 31	32 33	34 35 36	37 38 39	40
	Work Camp Fuel Gasn	Rock Sand Clay Org	cl I-5 >5		Clr Yel Brn	Hvy Light	Wht Yel Grn Red Brn Blk		Crse Sand Fines Org	Gel	Cldy	Gr/S Rp/M Ch/F	Con Dec Grs			
41 42 43	44 45 46 47	48 49 50 51	52 53 54	55 56	57 58 59	60 61	62 63 64 65 66 67	68 69 70 71	72	73	74 75 76	77 78 79	80			

REMARKS:

SAMPLE TYPES: A/B Lake sed./water C/D Stream sed./water E/F Bog sed./water G/H Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): JW/MS DATE: OCT 11/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J	1	JW	2	133	11	695235	5542000	SMDSN	X	X X X	X X X				X	X	X		2			

REMARKS: stream up to 2m wide, wet active flagged

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82G	16	JW		134	11	690250		SSHLES		X					X	X	X					

REMARKS: stream up to 1m wide, wet active

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82G	16	JW		135	11	687500		SSHLES		X					X	X	X		2			

REMARKS: Stream up to 1m wide wet active

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82G	16	JW		136	11	679550		SSNHDS		J J					J	J	J		2			

REMARKS: STREAM 1-2m WIDE WET ACTIVE FLAGGED

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): MS JW DATE: OCT 11/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J	1	JW		137	11	696275	5563625	SHLE	X	X	X X				X	X	X		2			

REMARKS: stream up to 2m wide, taken above dam. (cold) wet active.

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J	1	JW		138	11	696275	5563625	SHLE														

REMARKS: Duplicate

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J	1	JW		139	11	696150		SHLE		X	X X				Y	X	X		5 2			

REMARKS: stream up to 6-7m wide, wet active

NTS	YEAR	INIT.	SAMP. TYPE	NUMBER	ZONE	UTM EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J	1	JW		140	11	692725	5516500	SHLE	X	X X X	X X X				X	X	X		4			

REMARKS: stream up to 5m wide wet active, Flagged

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

Timber Crk

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: COLLECTOR(S): JW, MS DATE: 10/12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
0	2	J	1	9	0	J	W	2	1	4	1			6	8	7	4	5	0	5	5	6	3	1	2	5	S	N	D	S		X		X			X		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
			Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	d	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
				X								X				X																							

REMARKS: Stream up to 2m wide, 20m above confluence. wet active braid.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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Highway 37 Corridor

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: COLLECTOR(S): JW, MS DATE: 10/14/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
0	2	J	1	9	2	J	W	2	1	4	2			7	0	0	2	0	0	5	5	6	0	0	5	0	S	N	D	S		X		X			X		

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
			Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	d	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
				X								X				X																							

REMARKS: Stream up to 3m wide, wet active

REMARKS: stream up to 2m wide, wet active

REMARKS: up to 2m wide, wet active

REMARKS: stream up to 2m wide, wet active

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F Bog sed./water, G/H Spring sed./water, I,J,K,L Other

SURVEY TYPE: Stream Sediment CLIENT & PROJECT: 2205 AREA B/or PHOTO: BLAIRMORE AREA COLLECTOR(S): MD PM DATE: Aug 25/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)				UTM			NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	2	M	D	C	0	0	1	1	1	6	8	4	4	0	0	5	5	0	7	8	5	0	S	N	D	S	X			X		X	X	X	
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X						3	1				3.5	m	10	cm	X			X	X	X			X				3	1										

REMARKS: Sample Site about 60-80m upstream above bridge. Bridge at 2.25km from fork.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9		M	D		0	0	2			6	8	0	6	7	5								Alberta		G/F											
												5	m			X							X		X		S	H	L	E									

REMARKS: Sample site on Vicary Crk about 100m upstream from 940. Occ of Alberta shales in Crk Bank

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16			M	D		0	0	3			6	8	2	3	5	0								Alberta		G/F											
													X			X							X		X		S	H	L	E									

REMARKS: Sample Site 100m upstream from Crk confluence, Vicary Crk 5-6m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	M	D	C	0	0	4			6	7	8	5	7	5								S	N	D	S	X		X	X		X	X	X	
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X						2	1	0.05	0.05	X			10	cm	X			X	X								2	2	Tr									

REMARKS: Ave about 0.5 to 0.75m. T.O. to Stn Racehorse about 30-40m above confluence Steep walled

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA B/or PHOTO: N. Racehorse Crk COLLECTOR(S): MD PM DATE: Aug 28/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	M	D	C	0	0	5	1	1	6	7	6	8	0	0	5	5	2	2	4	5	0	S	N	D	S	X	X	X	X		X		X	X
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X						3	1	1		X			5	cm	X			X	2			2			1	Tr	3	1	Tr									

REMARKS: Sample of tributary into N. Racehorse about 70-80m above confluence. Brx in Creek = SNDS but grey SLTS + CROWSNEST VOLCANICS IN VICINITY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	M	D	C	0	0	6	1	1	6	7	3	8	0	0	6	5	2	9	4	1	5	S	H	L	E		X		X	X	X	X	X	
	X	X	X				3	1					X	15	cm	X				X	2					1		Tr	1	3	Tr		OMIT AT	RECOLLECTED ALTERNATE SITE					

REMARKS: Roads above creek bank. Dutch Creek is about 5-6m wide, Sample Site about 70-80m upstream of bridge.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: BLAIRMORE CREEK COLLECTOR(S): MD PM DATE: AUG 31/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	2	M	D	C	0	0	6	1	1	6	8	3	5	7	5	5	5	0	6	7	7	5	A	G	L	M	X		X			X	X	X	X
	X						2					X		5		X				X	2				2	1		1	2	1								
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gs/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Sample taken 30-40m below the confluence. Stream bed 1.5-2.0m wide.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: Dutch Creek COLLECTOR(S): MD PM DATE: Aug 29/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	M	D	C	0	0	7	1	1	6	7	1	5	7	5	5	5	2	7	7	5	0	S	H	L	E	X	X	X			X	X	X	X
X			X				1	2	1			X		to	Cm	X				X				2	1		Tr	1	3	Tr								
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gs/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Tributary to Dutch Creek sample site about 20m upstream from Trail Creek about 1.5m wide. Old logging 5-10 yrs all around.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	M	D	C	0	0	8	1	1	6	7	1	0	0	0	5	5	2	8	5	5	0	S	L	S	N	X	X		X		X		X	
X	X	X	X				3	1	Tr			X		10	Cm	X				X	2				1		Tr	2	2	Tr								
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gs/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample site about 29-30m above road on Tributary to Dutch Creek. Logging all around Creek about 3m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	M	D	C	0	0	9	1	1	6	7	0	4	7	5	5	5	2	8	6	2	5	S	L	S	N	X		X	X		X	X	X	X
	X						3	1	Tr			X		15	Cm	X				X	1				1		Tr	4	Tr								
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gs/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample from Dutch Creek about 80m upstream from trail. Creek about 5-6m wide.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: DUTCH CREEK COLLECTOR(S): MD PM DATE: AUG 30/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	M	D	C	0	1	0	1	T	6	6	7	4	2	5	S	S	3	1	5	5	0	S	N	D	S	X			X		X	X		X
	X						3	1	fc			X		10	Cls	X				Δ	2				1						T	B	F		Z	m	D	C	D	1	1	

REMARKS: 40-50 m upstream from trail. Logging close to N. old.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	M	D	C	0	1	1	1	T	6	6	7	4	2	5	S	S	3	1	5	5	0	S	N	D	S	X			X		X	X		X
	X						3					X		1/4		X					2				1									Z	m	D	C	0	1	0	

REMARKS: Duplicate sample of D.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recc CLIENT & PROJECT: ZZ05 AREA B/or PHOTO: VICARY CK AREA COLLECTOR(S): MS/JW/MD/PM DATE: Aug 13/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
B	Z	G	16	92		MS		C	00	1		1	1	16	81	7	30	0	5	5	1	4	8	5	0	S	N	D	S	X		X	X	X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						1	2	tr	tr		X		20cm		X				X		X		X			2	2	tr										

REMARKS: Sample ~30m upstream from rd. Creek ~ 1½ m wide Flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	Z	G	16	92		MS		C	00	2		1	1	16	81	9	50		5	5	1	9	3	5	0	S	N	D	S	X		X	X	X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							1	2	tr			X		5cm		X				X					1			2	tr										

REMARKS: ~180 m upstream of the road creek ~½-1m wide. Slow moving U=0 F Flagged 14.7km to Sta.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	Z	G	16		Z	MS		C	00	3			1	16	81	5	50		5	6	2	7	5	0		S	N	D	S	X		X			X				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							1	2	tr			X		5cm		X				X					X			2	tr										

REMARKS: 15m upstream from rd Creek ~20cm wide DMIT SUPERCEEDED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recc CLIENT & PROJECT: ZZ05 AREA B/or PHOTO: COLLECTOR(S): PM & MD DATE: Sept. 13

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
B	Z	G	16	9	2	M	S	C	00	3		1	1	16	81	5	25	0	5	5	2	2	8	0	0	S	N	D	S		X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						3	1	tr			X		10cm		X				X					1			2	tr										

REMARKS: Vicary ck. Sampled 300m up fr. Racehorse ck. confluence. Close to Racehorse ck Campground. Stream bed 7-8m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA B/or PHOTO: GOLD CK / CALDRON CK COLLECTOR(S): MS/RAO DATE: Aug 4/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	9	9	2	M	S	C	0	04			1	1	6	87	9	5	0	5	5	0	6		4	2	0	S	N	D	S	X		X	X	X	X	X	X		
			X				2	1	1	tr		X		1	5	X				X	1			1				2	2										

REMARKS: Stream is in logged (partially) area. Stream ~3-4m wide Flagged sampled along 5m of stream wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	9		2	M	S	C	0	05			1		6	88	2	50			5	0	6		4	2	0	S	N	D	S										
			NO	NE			3	1	TR												1				2				1	2										

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: Table Mtn / BARNABY CK COLLECTOR(S): JW, MS DATE: 9/07/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	8	9	2	M	S	C	0	06			1	1	6	96	1	50	5	4	7	1	5	00				S	N	D	S	X		X		X	X	X		
							7	2	tr			X		0	5	X				X				1				1	3	tr									

REMARKS: small 0.5m wide stream about 200m upslope of Beaver Mines Lake Path towards Table Mtn. Wet Active, tagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	8	9	2	M	S	C	0	07			1	1	6	96	1	50	5	4	7	1	5	00				S	N	D	S										

REMARKS: same as above Duplicate

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	8	9	2	M	S	C	0	08			1	1	6	95	7	50	5	4	7	1	4	00				S	N	D	S				X	X	X	X	X	X	
							3	1				X		2	5	X				X	1			1				1	2										

REMARKS: gravel streambed 4m wide, silt in eddies, wet active tagged. 30m upstream of road + bridge

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82	G	8	9	2	M	S	C	0	09			1	1	6	92	7	00	5	9	7	1	25	0				S	N	D	S	X		X	X	X	X	X		
							3	1				X		2	0	X				X	2			1				2	2	tr									

REMARKS: creek 2m wide, wet active tagged

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: SUICIDE CK, CASTLE RIVER COLLECTOR(S): MS, JW DATE: 09/07/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	1	0	1	1	6	8	8	4	5	0	5	4	7	1	3	5	0	M	D	S	N	X			X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X							3	2			X		1	5	X				X	2							3	1	1									

REMARKS: Stream 1.5m wide, collected above wooden bridge m from main road, wet active flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	1	1	1	1	6	8	8	2	0	0	5	4	7	0	0	0	0	A	R	G	L	X		X			X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X							1	2			X		0	5	X				X								1	4	Rd									

REMARKS: 1m wide creek, sample collected 50m upstream of main road Wet Active flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	1	2	1	1	6	8	9	3	0	0	5	4	7	7	1	5	0	S	H	L	E									

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X							4	Rkt			X				X				X																			

REMARKS: Creek is 1m wide with 2-3 m wide pools 1/2 m deep wet active collected 150m upstream of road

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: CARBONDALE RIVER LYONS CREEK COLLECTOR(S): MS JW DATE: 09/08/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	1	3	1	1	6	9	3	2	0	0	5	4	8	3	0	5	0	S	N	D	S		X							

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
X								3	1	tr		X		1	0	X				X	2				1	2		3	1	1									

REMARKS: 1m stream, 40m upstream of road. Wet Active Flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	1	4	1	1	6	9	4	3	0	0	5	4	8	5	0	0	0	S	N	D	S		X		X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
X								1	2	tr		X		1	0	X				X	2				1	2		2	2	M									

REMARKS: 4m wide, collected 60m upstream, above road + cattle xing, wet active, flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
9	2	G	9	9	2	M	S	C	0	1	5	1	1	6	9	9	0	5	0	5	4	8	7	5	0	0	S	N	D	S		X		X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
X								1	2	tr		X		1	0	X				X	1				2	2		2	2	M									

REMARKS: stream 1m wide; 60m upstream of road, wet active flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	2	M	S	C	0	1	6	1	1	6	8	4	3	5	0	5	4	9	3	7	5	0	S	N	D	S		X		X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X							3	1			X		0	5	X				X	2				1	2		3	1									

REMARKS: 1.5m wide, sample collected upstream of road, wet activ, flagged.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: MILL CREEK COLLECTOR(S): JW MS DATE: 9/10/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE		NUMBER		ZONE		UTM			EAST (or GRID COORDINATES)				UTM			NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
B	2	G	8	9	2	M	S	C	0	1	7	11		70	43	00			54	65	70	0					AQ	RR	GT	LZ	X					X	2	X	

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
X							3	1				X		2	5	X		X	1			2	1		3	1												

RELIEF | CONTAMINATION | BOTTOM | AREA or WIDTH | DEPTH | WATER COLOUR | SUSP. | SEDIMENT COLOUR | COMPOSITION | ORIGINAL SAMPLE NO. | ORIG. DUP. REP.

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Stream up to 6m wide, wet active flagged. taken on inside bar pt.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	8	9	2	M	S	C	0	1	8			70	40	00				65	30	0					AQ	RR	GT	LZ									

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
							3	1												2				1	1		3	1											

REMARKS: STREAM 3-4m WIDE WET ACTIVE. SAMPLED BELOW CONFLUENCE

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: BURMISTER / SCREWDRIVER CK COLLECTOR(S): MS JW DATE: 9/11/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE		NUMBER		ZONE		UTM			EAST (or GRID COORDINATES)				UTM			NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
B	2	G	9	9	2	M	S	C	0	1	9	11		69	58	25			54	91	42	5					SM	ND	DS	SN	X		X			X	X	X	

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
X							3	1				X		1	0	X				1	1			2	1			1	3									

RELIEF | CONTAMINATION | BOTTOM | AREA or WIDTH | DEPTH | WATER COLOUR | SUSP. | SEDIMENT COLOUR | COMPOSITION | ORIGINAL SAMPLE NO. | ORIG. DUP. REP.

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Stream up to 3m wide, in deep valley, wet active, flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	8	9	2	M	S	C	0	2	0	11		70	02	00			54	82	60	0					S	H	L	E	X		X			X	X	X	

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
X							2	2				X		5	0	X		X		1	1			1	1			1	2									

REMARKS: 2.5m wide stream, plant growth on stream bottom in places, wet activ, flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	8	9	2	M	S	C	0	2	1			70	10	50			54	74	45						S	N	D	S	X		X			X	X	X	

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
X							2	2				X		0	5	X		X		1	1			2	1			1	3									

REMARKS: up to 2m wide, wet active flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	G	8	9	2	M	S	C	0	2	2			69	96	25			54	77	15	0					S	N	D	S	X		X						

Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	Clr 55	Yel 56	Brn 57	Hvy 58	Light 59	Wht 60	Ye 61	Grn 62	Red 63	Bro 64	Blk 65	Cree 66	Sand 67	Fines 68	Org 69	Gel 70	71	72	73	74	75	76	77	78	79	80
X							1	2				X		1	0	X		X		1	1			1	2			2	2									

REMARKS: creek is up to 3m wide, wet active, taken 50m upstream of road.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: MILL CK, BEAVER MINES CK, GLADSTONE CK COLLECTOR(S): JW MS DATE: 9/1/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	2	3	1	1	6	9	9	7	0	0	5	4	7	6	9	0	0	S	N	D	S	X		X			X		X	
Ctr																															Ctr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1.5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
X							3	1				X		1.0		X				X					2	1			2	2									X

REMARKS: sample collected 50 m upstream of road, 2m wide ck, wet active, tagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	2	4	1	1	7	0	3	2	0	0	5	4	7	8	8	2	5	S	N	D	S			X						
																																	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
												X		1.0		X				X					2	1			4									

REMARKS: collected in slow moving pond portion of stream, stream up to 2m wide wet active, tagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8			M	S	C	0	2	5			7	0	3	3	2	5					8	0	0	S	N	D	S				X					
																																	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							3	1				X				X									1				3									

REMARKS: stream up to 5m wide, tagged wet active.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	2	6	1	1	7	0	5	2	0	0	5	4	7	2	4	5	0	S	N	D	S			X						
																																	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							3	1				X		2.5		X				X					2	1			3	1								

REMARKS: sample collected 200m up stream from road culvert, stream up to 6m wide wet active, flagged.

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: CHIPMAN CK, MILL CK AREA COLLECTOR(S): JW MS DATE: 7/2/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	2	7	1	1	7	1	4	2	0	0	5	4	7	6	3	2	5	S	H	L	E		X	X			X		X	
Ctr																															Ctr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1.5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
							1	2	1			X		0.5		X				X					2	1			4									

REMARKS: stream up to 1m wide in current local ponds up to 4m wide active central channel water ff

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	2	8	1	1	7	0	9	2	5	0	5	4	7	3	1	5	0	S	N	D	S			X	X					
																																	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							1	2	1			X		2.5		X				X					1				2	2								

REMARKS: Sample collected 40m upstream of road crossing, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	2	9	1	1	7	0	9	1	2	5	5	4	7	2	9	5	0	S	N	D	S		X	X					X	
																																	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							2	1				X		1.0		X				X					2	1			3									

REMARKS: stream approx. 1m wide local pools to 2m, current active wet active sample

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	3	0	1	1	7	0	9	1	2	5	5	4	7	2	9	5	0					X		X					X	
																															Clay	Gs/S	Rp/M	Ch/F				

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							1	2	1			X		1.0		X				X					2	1			3									

REMARKS: Duplicate of airsic 2MSC029

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: LYNX CK COLLECTOR(S): JW MS DATE: 9/12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM					NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	3	1	11		7	1	0	7	0	0	5	4	8	3	6	2	5	S	N	D	S									
																											S	H	L	E	Cr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X								4	4+	X				0.5		X				X	1					1			4	4+									

REMARKS: sample collected 50m upstream of paved highway. Stream 0.5m wide, wet active

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: LYONS CK / LYNX CK COLLECTOR(S): JW MS DATE: 9/12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM					NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	9	0	M	S	C	0	3	2	11		6	7	9	6	5	0	5	4	9	2	0	5	0	S	H	L	E									
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X							3	1				X		2.0		X				X						1			1	3									

REMARKS: stream is upto 4m wide, wet active flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM					NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	9	C	M	S	C	0	3	3	11		6	8	3	8	7	5	5	4	A	B	6	5	0	S	H	L	E									
																											A	G	L	M									
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X							3	1				X		2.0		X				X	1			2		1		3	1									

REMARKS: below confluence, 90m downstream of metal culvert wet active flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM					NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9			M	S	C	0	3	4	11		6	8	5	0	0	0	5	4	9	5	8	0	0	S	N	D	S									
																											M	D	J	N									
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X								1				X		0.5		X				X	1			1		2		2	2									

REMARKS: wet active flagged collected 50-60m upstream of road

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

WHITNEY CK
PINCHER C.K

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): JW, MS DATE: 9/13/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	3	5	11		7	0	6	4	2	5	5	4	6	9	6	2	5	S	N	D	S	X		X	X	X	X	X	X	
												X			10	X							X				1	2	2									
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	3	5	11		7	0	6	4	2	5	5	4	6	9	6	2	5	S	N	D	S	X		X	X	X	X	X	X	
							1					X			10	X				X						1	2	2										

REMARKS: stream up to 5m wide, rocky bottom, sandy deposits as lateral channel bars, wet active, flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	3	6	11		7	0	8	3	5	0	5	4	6	9	5	2	5	S	N	D	S	X		X	X	X	X	X	X	
												X				X									1			3	1										

REMARKS: sample collected 40m upstream of road

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8			M	S		0	3	7			7	1	2	4	5	0								S	N	D	S									
												X				X										1												

REMARKS: sample collected 60m upstream of road, wet active, flagged, stream up to 1.5m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8			M	S		0	3	8			7	1		6	5	0								S	N	D	S									
												X																											

REMARKS: sample collected below confluence and below gas discovery well site & pipeline

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water. E/F - Bog sed./water; G/H - Spring sed./water. I,J,K,L - Other

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PINCHER CK
DRY WOOD CK

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G, B COLLECTOR(S): JW MS DATE: 9/13/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	8	9	2	M	S	C	0	3	9	11		7	1	0	2	0	0	5	4	6	4	3	0	0	A	R	G	L		X							
	X	X					3	1				X		3	5	X				X	1				1	2		3	1									
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	3	9	11		7	1	0	2	0	0	5	4	6	4	3	0	0	A	R	G	L		X							
	X	X					3	1				X		3	5	X				X	1				1	2		3	1									

REMARKS: Sample collected upstream at most southerly well site, wet active, flagged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	4	0	11		7	1	2	8	0	0	5	4	6	5	6	0	0	S	N	D	S		X		X	X	X	X	X	
X							3	1				X		2	6	X				X	2				1	2		3	1									

REMARKS: Sample collected 50m upstream of culvert wet active flagged. stream up to 3m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	4	1	11		7	1	0	6	0	0	5	4	6	0	9	0	0	B	S	L	T		X		X	X	X	X	X	
X							3	1				X		2	0	X				X					1	2		2	2									

REMARKS: wet active, flagged, creek about 3m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	8	9	2	M	S	C	0	4	2	11		7	1	3	2	7	5	5	4	6	3	2	5	0	A	R	G	L		X		X	X	X	X	X	
X							1					X		2	5	X				X	2				1	2		2	2									

REMARKS: creek about 5m wide, collected 70m upstream of road, wet active flagged.

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: DRYWOOL CK 82G8 COLLECTOR(S): JW, MS DATE: 9/13/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	B	9	2	M	S	C	0	4	3	1	F	7	1	4	8	0	0	5	4	5	9	7	0	0	S	L	S	N		X							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.						
							1					X		2	0	X				X					1		3	1											

REMARKS: Sample collected upstream 75m from culvert, stream 1 to 3m wide, wet active, tagged

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA B/or PHOTO: CROWSNEST CK 82G10 COLLECTOR(S): JW, MS DATE: 9/14/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	9	2	M	S	C	0	4	4	1	F	6	6	6	6	5	0	5	4	9	4	0	0	0	S	H	L	E		X		X		X	X	X
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.						
							1					X		2	0	X				X					2		1	3											

REMARKS: stream 1 to 3m wide, wet active, tagged.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water I,J,K,L - Other

LUNDBRECK AREA

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: 82G9 COLLECTOR(S): JW, MS DATE: 9/15/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G9	92	MS	C	045	11	707	100549	5800	SS	NHDLSE	X	X

RELIEF: Low 41, Med 42, High 43 — CONTAMINATION: Work 44, Camp 45, Fuel 46, Gasn 47, Rock 48 — BOTTOM: Sand 49, Clay 50, Org 51 — AREA or WIDTH: cl 52, 1-5 53, >5 54 — DEPTH: 55, 56 — WATER COLOUR: Clr 57, Yel 58, Brn 59 — SUSP.: Hvy 60, Light 61 — SEDIMENT COLOUR: Wht 62, Yel 63, Grn 64, Red 65, Brn 66, Blk 67 — COMPOSITION: Crse 68, Sand 69, Fines 70, Org 71, Gel 72 — ORIGINAL SAMPLE NO.: 73, 74, 75, 76, 77, 78, 79 — ORIG. DUP. REP. 80

| | | |

PTLEMYCK

SURVEY TYPE: RECCE | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: 82G10 | COLLECTOR(S): MS/JW | DATE: SEPT 18/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	10	92		MS		C	050			71		66		91			25	549590				0			L	MS		N	✓	✓		✓		✓	✓	✓	✓
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH		DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
✓	✓	✓					2	3				✓		10	✓					✓	2					1		4	7									

REMARKS: CREEK IS ~2m WIDE WETACTIVE

REMARKS:

REMARKS:

REMARKS.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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EAST CROWSNEST CK
SPIONKOP CK

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: 82G8 | COLLECTOR(S): JW MS | DATE: 9/19/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	H	5	92		MS		C	051			11		28		41			50	546035				0			S	N		DS	X			X		X	X	X	
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH		DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X							3	1				X		2	0	X				X	2			1		1		3	1									

REMARKS: collected upstream 200m from road, wet active, tagged stream 4m wide Spionkop Crk.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	92		MS		C	052			11		66		57			00	549580				0			S	HL		E		X		X		X	X	X	
X							1	2	1			X		3		X				X					2		1		3										

REMARKS: wet actv

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	92		MS		C	053			11		66		57			00	549580				0			S	HL		E		X		X		X	X	X	
X							1	2	1			X		3		X				X					2		1		3										

REMARKS: duplicate, see above.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

NTS 82G/16

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Oldman River area COLLECTOR(S): JW, MS DATE: 9/30/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	4	1	1	7	0	4	0	5	0	5	5	2	1	5	2	5	C	G	L	M	X		X					X	
											X			0	5	X				X									A	C		Clay	Gs/S	Rp/M	Ch/F			Grs	ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: collected 50m upstream of road, tagged. moving parts of water 20cm wide, non moving sanded portion. sample collected from very slow to

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	5	1	1	7	0	2	9	0	0	5	5	8	5	6	5	0	S	N	D	S			X						
											X			0	2	X				X									A	C		Clay	Gs/S	Rp/M	Ch/F				ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: small cirk Blackfoot collected in valley, lower from highway 22, 200m east of powerline, wet active flagged.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	6	1	1	6	9	8	9	0	0	5	4	6	0	0	C		S	N	D	S			X						
											X			0	2	X				2												Clay	Gs/S	Rp/M	Ch/F				ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: collected 100m above road, and above dam/dugout wet active, flagged stream 0.50m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	7	1	1	6	9	7	7	5	5	5	2	9	5	0	0		S	N	D	S	X			X				X	
X							1	2	1		X	X		1	0	X			X								2	2				Clay	Gs/S	Rp/M	Ch/F			Grs	ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: collected 50m upstream where two creeks converge. but 200-300 above confluence with Oldman R. wet active, flagged 5m wide

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Bob Creek Area COLLECTOR(S): JW, MS DATE: 9/30/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	8	1	1	6	9	7	2	2	5	5	5	2	9	6	2	5	S	N	D	S									
X							2	1			X			1	5	X			X								2	2				Clay	Gs/S	Rp/M	Ch/F				ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample collected 30m upstream of trail (branched) wet active flagged. creek 5m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	M	S	C	0	5	9	1	1	7	0	0	1	5	0	5	5	2	4	9	0	0	S	H	L	E	X		X					X	
											X			1	0					2				2				1			Clay	Gs/S	Rp/M	Ch/F			Grs	ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: collected 300-400 upstream of main road, deep gully, grassy base, stream 1/2 m wide, wet active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	<1 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cbse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Black Mtn COLLECTOR(S): PM MS DATE: Oct 1/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS			YEAR			INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Gra	Moss
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH								SUSP.	SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Wash	Comp	Fuel	Geon	Rock	Sand	Clay	Org	cl	I-5	>5							Hvy	Light	Wht	Ye	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	0	1	1	1		7	0	2	2	2	5	5	5	4	0	3	7	5	S	N	D	S	✓		✓			✓		✓	
							2	1	1	✓	✓			0	4	✓				✓					1	1	tr	1	2	1								

REMARKS: STREAM IS 50 cm WIDE SAMPLED 15 m UPSTREAM FROM DAM. N. OF BLACK MTN. WET ACTIVE FLAGGED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	6	1				7	0	2	2	0	0								S	N	D	S	✓		✓			✓		✓	
							1	2	1	✓				0	5	✓						2						2	tr										

REMARKS: STREAM IS 40 - 50 cm WIDE. SAMPLED 10m UPSTREAM OF DAM N. OF BLACK MTN. WET ACTIVE FLAGGED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16			MS	C	0	6	7				7	0	4	5	0	0								S	H	L	E				✓					
							1	2				✓				✓						2			1														

REMARKS: Stream is 1.0-1.5m wide. Sample of Adair Ck. ~500m upck fr. Callum Ck.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	6	3				7	0	4	0	2	5								S	H	L	E			✓						
							tr	2	2	✓				0	3	✓				✓		2			1				3	tr									

REMARKS: CREEK IS 20 cm WIDE SAMPLE OF POOLE CK ~500 m UP CK FROM CALLUM CK WET ACTIVE FLAGGED

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce CLIENT & PROJECT: 2205 AREA &/or PHOTO: Lassie Ck. COLLECTOR(S): PM & MS DATE: Oct. 1/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS			YEAR			INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Gra	Moss
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH								SUSP.	SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Wash	Comp	Fuel	Geon	Rock	Sand	Clay	Org	cl	I-5	>5							Hvy	Light	Wht	Ye	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	m	S	C	0	6	4	1	1	7	0	3	3	0	0	5	5	4	1	4	0	0	S	N	D	S	X		X	X		X	X	X	
X	X						2	2	X					1	0	X			X	X					1			2	2									

REMARKS: Sample of Lassie Ck. Ck. bed approx. 0.5m wide. Sampled 600-700m up stream fr. Callum ck

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	6	5	1	1		7	0	2	9	0	0	5	5	2	5	5	7	5	S	N	D	S				X						
	X					1	2	1	X					0	7	X			X	2					1	2		1	3	tr									

REMARKS: Sample taken 30m up ck. from rd. Stream 15-70 cm wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	6	6	1	1		7	0	3	2	2	5	5	5	2	5	7	5	0	S	N	D	S	X		X			X		X	
X	X						4					X		0	3	X				X		2			1	2			tr									

REMARKS: Sample fr. Big Coulee. Extremely disturbed by cattle. Water flow but stream bed of indeterminant width.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	MS	C	0	6	7	1	1		6	9	7	5	7	5	5	5	2	9	7	5	0	S	N	D	S	X		X	X		X	X	X	
X	X					1	2					X		0	5	X		X		X		2			1	2		4										

REMARKS: Sample of Beaver Dam Ck. 200m up fr. confluence with Bob Ck. Ck. bed 1.0-1.5 m wide.

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water I,J,K,L - Other

SURVEY TYPE: RECCE Stream Sed CLIENT & PROJECT: 2205 AREA B/or PHOTO: BLAIRMORE CK COLLECTOR(S): V.M. M.D DATE: Aug. 25/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM NORTH								ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Cn/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Comp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	9	5	2	P	M	C	0	0	1	1	1	6	8	2	4	5	0	5	5	0	7	5	7	5	S	N	D	S	X			X		X	X	X	
	X						tr	1	2	1		X				X				X					X	X		1	3	tr									

REMARKS: Sample taken 1.2 m down trail from 940. Stream bed .75m - 1m wide.

8	2	G	9			J	W	C	0	0	1			6	8	2	9	5	0								S	N	D	S	X			X		X	X	X	X
	X											X				X				X					X														

REMARKS: 7.8 Km from 940 Sample taken 70m from Home Dist rd. Sample taken along 30m length 50m wide. Pipeline visible

8	2	G	9			P	M	C	0	0	2			6	8	3	0	0									S	N	D	S				X					
	X		X									1.5m				X						X			X	X													

REMARKS: Sample about 120 m downstream from crossing road. H2O ponded by road above sample site. Site 20 m NTH of road (right fork)

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Stream Sediment CLIENT & PROJECT: 2205 AREA B/or PHOTO: VICARY CK AREA COLLECTOR(S): MD PM JW MS DATE: Aug 19/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM NORTH								ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Cn/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Comp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	9			P	M	C	0	0	1	1	1	6	8	1	7	5	0	5	5	0	5	4	0	0	clastics				X		X			X	X	X	X
X	X						1	1	1	1		X		5	cm	X				X					X	X	tr	1	2	1									

REMARKS: Sample collected 20m up creek from Rd in virgin timber. Bed 1.5m

8	2	G	9			P	M	C	0	0	2	1	1	6	8	1	7	0	0	5	5	0	9	2	0	0	clastics				X		X			X	X	X	X
	X						2	2	tr	tr		X				X				X					2	1		1	2	tr									

REMARKS: Sample collected 50 m up creek from Rd. 1.8 Km from Rd intersection Bed 2-3m

8	2	G	9			P	M	C	0	0	3			6	8	2	0	5	0	5	5	2	3	5	0		S	N	D	S	X			X	X		X	X	X
	X						1	2	1	tr		X		0	5	X				X					2		tr	2	2	tr									

REMARKS: 5.3 Km from Rd intersection. 30-40m up creek from Rd. Bed 2m

8	2	G	6	9	2	P	M	C	0	0	4	1	1	6	8	1	2	5	0	5	5	1	7	0	0	0	S	H	L	E				X		X	X	X	X
	X						2	1	1	tr		X		1	0					X		1			2	3	tr	1	2	tr									

REMARKS: Sample collected 75m up creek from Rd. Bed 3m wide 12.1 Km from Rd intersection

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: BLAIRMORE CK COLLECTOR(S): J.W. PM DATE: Aug 24

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9																																				
	NTS			YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	P	M	C	0	0	5	1	1	6	8	4	7	0	0	5	5	0	3	0	5	0	S	N	D	S	X	X	X	X	X	X	X	X	X
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
	X						2	1	1			X		10cm		X				X				X	X		1	1	tr	tr									
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: 300 m above confluence of two creeks. Bed 1.5m. 50-60m below rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	P	M	C	0	0	6	1	1	6	8	5	0	5	0	5	5	0	5	0	5	0	S	N	D	S	X	X	X	X	X	X	X	X	X
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
	X						2	1				X		20cm		X				X	X			X															
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: 3m wide bed. 500m above confluence, 150m below rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Stream Sed CLIENT & PROJECT: 2205 AREA &/or PHOTO: WINTERING CK / SALT CK COLLECTOR(S): P.M & M.D. DATE: Aug. 25

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	NTS			YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	0	0	7	1	1	6	8	2	3	0	0	5	5	2	3	0	7	5	S	N	D	S	X	X	X	X	X	X	X	X	X
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
X							3	1				X		10cm	X					X				X	X	2	2	Tr	Tr									
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample taken 70-80m up from trail along Wintering Creek

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	0	0	8	1	1	6	8	2	6	7	5	5	5	2	6	7	5	0	S	A	L	E	X	X	X	X	X	X	X	X	X
																												N	D	S	Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
	X						2	2	Tr	Tr		X		5 to 10cm	X					X	1				2	1	3	Tr										
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Salt Ck about 1.5-2m. Site about 100-150m above Racehorse Ck.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cres 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO. DRUM CK COLLECTOR(S): MD PM RO DATE: Aug 26/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	9	9	2	P	MC		0	0	9	1	1	6	8	8	7	0	0	5	4	9	3	4	0	0	S	H	L	E	X			X			X		
Cr	Silt	Clay	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	1-5	>5	55	56	Cr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Bra	Blk	Cras	Sand	Fines	Org	Gel		Gr/S	Rp/M	Cl/F	Coa	Dec	Gra	Moss
Low	Med	High																																					
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X		X				3	1				3	m	10cm		X				X					X	X													

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

REMARKS: Dams, road etc. Sample site 30-40m above sizeable dam About 1 km upstream from town

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10			P	M		0	1	0			6	7	2	5	0	0															X					X
												3	m			X				X					X	X													

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10			P	M		0	1	1			6	7	2	5	0	0								S	H	L	E				X					
												3	m			X									X	X													

REMARKS: Sample site about 400-500m NW of Chinook Lk. and about 20 m Nth of Trail

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10			P	M		0	1	2			6	7	3	5	0	0								S	H	L	E				X					
												3	m			X									X	X													

REMARKS: Sample about 150-200 m west of road on Allison Crk at 2.7 km from Chinook Fork

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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Stream

SURVEY TYPE: Sediment CLIENT & PROJECT: 2205 AREA &/or PHOTO: S. Racehorse Crk COLLECTOR(S): MD PM RO DATE: Aug 26/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		STYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	15	9	2	P	M	C	0	1	3	1	1	6	7	2	9	0	0	5	5	1	6	1	7	5	S	N	D	S	X			X			X		
Cr	Silt	Clay	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	1-5	>5	55	56	Cr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Bra	Blk	Cras	Sand	Fines	Org	Gel		Gr/S	Rp/M	Cl/F	Coa	Dec	Gra	Moss
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X		X				3	1				X		20cm		X				X		1			/													

REMARKS: S. Racehorse Crk, about 30 m upstream from road. Creek is 4-5m wide. Nearby parallel Rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	0	1	4	1	1	6	7	5	2	0	0	5	5	1	9	0	0	0	S	H	L	E	X			X			X		
												X		20cm		X				2					1	2													

REMARKS: S. Racehorse Crk — about 5m wide and about 150 m above the confluence with tributary

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	0	1	5	1	1	6	7	5	2	7	5	5	5	1	9	0	0	0	A	G	L	M	X			X			X		
												X		15cm		X									1	1													

REMARKS: Tributary to S Racehorse, about 60-70m above the confluence. Crowsnest agglomerate forms the banks

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	0	1	6	1	1	6	7	5	3	5	0	5	5	1	9	3	1	5	A	G	L	M	X			X			X		
												X		15cm		X				2					1														

REMARKS: NW tributary to S. Racehorse Crk. Sample site 30m Nth of trail and 100m above confluence

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: Racehorse Crk COLLECTOR(S): MD PM RO DATE: Aug 26/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	P	M	C	0	1	7	11		6	7	5	1	5	0	5	5	2	3	1	5	0	A	G	L	M	X			X			X	X	
																															Cir	Clay	Gs/S	Rp/M	Cr/T	Con	Dec	Gra	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Low	Med	High	Wtr	Comp	Fuel	Gsm	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel		ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
X			X				3	1	Tr	Tr		X		5	cm	X				X				1	1			1	Tr								

REMARKS: Sample of First Creek about 60-70m above N. Racehorse Rd. Recent logging in drainage above the Creek.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	G	0	1	8	11		6	7	4	3	5	0	5	5	3	4	1	7	5	S	H	L	E	X	X	X	X		X	X	X
																															Cir	Clay	Gs/S	Rp/M	Cr/T	Con	Dec	Gra	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Low	Med	High	Wtr	Comp	Fuel	Gsm	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel		ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
							1	2	Tr			X		0	0	X									1		1	2	1	Tr								

REMARKS: Sample at tributary inflow N. Racehorse Crk. about 70-80 m in from road. Lower part of creek diverted by road.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15			P	M	C	0	1	9	1		6	7	3	9	5	0								S	N	D	S			X	X				
																															Cir	Clay	Gs/S	Rp/M	Cr/T	Con	Dec	Gra	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Low	Med	High	Wtr	Comp	Fuel	Gsm	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel		ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
			X									X		5	cm	X				1				1	1												

REMARKS: Logging in watershed all around Crk. Some evidence seen in Crk. Sample site on Tributary to N. Racehorse about 150m above trail

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	6	15	9	2	P	M	C	0	2	0	1	1	6	7	4	0	5	0	5	5	4	4	2	5	5	S	N	D	S		X				X		X	
																															Cir	Clay	Gs/S	Rp/M	Cr/T	Con	Dec	Gra	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Low	Med	High	Wtr	Comp	Fuel	Gsm	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel		ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
X	X		X				3	1				X		10	cm	X				X				1	1			2	2								

REMARKS: Sample about 200 m above confluence on N. Racehorse Crk. Logging all around - cause of all the organic

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: STREAM SEDIMEN CLIENT & PROJECT: 2205 AREA &/or PHOTO: ALLISON CK COLLECTOR(S): MD PM DATE: Aug 27/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	9	2	P	M	C	0	2	1	1	1	6	7	2	3	0	0	5	5	1	0	1	7	5	S	H	L	E		X		X			X	X	
																															Cir	Clay	Gs/S	Rp/M	Cr/T	Con	Dec	Gra	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Low	Med	High	Wtr	Comp	Fuel	Gsm	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel		ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
X	X		X				3	1				X				X				X	2			1	2		1	3	Tr								

REMARKS: Allison Creek near junction of 3 creeks. Allison Crk is 1.5m wide. Sample site about 50m below confluence @ 7.1km

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA B/or PHOTO: MACGILVARY CRK COLLECTOR(S): MD PM DATE: SEPT 1/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: Hidden Crk COLLECTOR(S): PM MD DATE: SEPT 2/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Cr	Clay	Gs/S	Rp/M	Cr/F	Con	Dec	Grs	Moss
8	2	G	15	9	2	P	M	C	0	2	9	1	1	6	7	4	5	2	5	5	5	3	8	6	7	5	S	N	D	S	X			X		X	X		X
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	Cr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cmse 68	Sand 69	Fines 70	Org 71	Gel 72	73										ORIG. DUP. REP. 80
	X						4	Tr				X		10	Clay	X		X	2					1		1	Tr	2	Tr										

REMARKS: South Tributary to Hidden Creek. Sample site about 70-80m upstream of confluence. Creek is about 2m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	0	3	0	1	1	6	7	4	5	0	0	5	5	3	8	7	5	C	S	N	D	S	X			X				X	
	X						4	Tr	Tr			X		2	5	X				X	1					1		Tr		Tr									

REMARKS: Hidden Creek about 60-70m Nth of confluence of two N-S tributaries. Creek about 3m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16			P	M		0	3	1			6	8	0	4	0	0								S	L	S	N				X					
			Work 44	Camp 45	Fuel 46	Geom 47						X		20		X					1					4													

REMARKS: Hidden Ck. 7-10m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: Recc Stream Sed CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLOMAN RIVER AREA COLLECTOR(S): P.M. & M.D. DATE: Sept 3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Cr	Clay	Gs/S	Rp/M	Cr/F	Con	Dec	Grs	Moss
8	2	J	2	9	2	P	M	C	0	3	2	1	1	6	7	7	2	5	0	5	5	4	3	1	0	0	S	N	D	S	X			X		X	X	X	X
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	Cr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cmse 68	Sand 69	Fines 70	Org 71	Gel 72	73										ORIG. DUP. REP. 80
	X						2	1	tr	1		X		5	5m	X		X	2					1	2		20.5	0.5										

REMARKS: Stream bed 1m wide. 150-200m upstream fr. rd. Gravelly platform disturbed by 50-60yr. old logging.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	2	9	2	P	M	C	0	3	3	1	1	6	7	6	4	2	5	5	5	4	4	1	0	0	S	N	D	S	X			X		X	X	X	X
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	Cr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cmse 68	Sand 69	Fines 70	Org 71	Gel 72	73										ORIG. DUP. REP. 80
	X						2	1	1	tr		X		5	5m	X		X						1/2	1		2	1										

REMARKS: Stream bed 1m wide. Sampled 20m up from Rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	2	9	2	P	M	C	0	3	4	1	1	6	7	5	1	0	0	5	5	4	5	0	0	0	S	L	S	N				X		X	X	X	X
	X						3	tr				X		10		X				X					2			2										

REMARKS: Sample taken from Honeymoon Ck. bed 5m wide. 80m upstream fr. rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	2	9	2	P	M	C	0	3	5	1	1	6	7	1	5	5	0	5	5	5	0	2	5	0	S	N	D	S	X			X		X	X	X	X
	X						3	1				X		10	Clay	X				X	2				1		2	1	2.5	0.5								

REMARKS: Slough Ck. Sample collected fr several spots along 200-300 m of St.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA & or PHOTO: OLDMAN RIVER AREA COLLECTOR(S): MD PM DATE: SEPT 3/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
	8	2	J	2	9	2	P	M	C	0	3	6	1	1	6	7	0	7	7	5	5	5	5	2	1	5	0	S	N	D	S	Cr		Gs/S	Rp/M	Ch/F	Con	Dec	Gra	Moss
	RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
		X						3	1	1		X			10	cm	X				X	2			1	2	1		2	4									

REMARKS: Pasqua ck. 3-4m wide. Sample collected over 20m.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	8	2	J	2	9	2	P	M	C	0	3	7	1	1	6	6	8	6	5	0	5	5	5	3	4	0	0	S	N	D	S	X		X	X		X		X	
		X						3	10	1		X			10	cm	X				X					1														

REMARKS: Straight ck. Stream bed 3m wide. Sample collected 200m up stream from Old man rd.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	8	2	J	2	9	2	P	M		0	3	8	1	1	6	6	7	4	5	0								S	N	D	S			X	X					
		X						3	1				X		10	cm	X									2	1											

REMARKS: Oyster Ck. 4-5m wide. Sample collected 300m up from Old man rd, at the head of the valley.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	8	2	J	2	9	2	P	M		0	3	9	1	1	6	6	6	6	5	0	5	5	5	4	3	0	0	S	N	D	S		X		X					
		X						3	1	1		X			10	cm	X				X					2	1											

REMARKS: Old Man River. River bed 3-4m wide. Sample collected 850m above Oyster Ck. Confluence!

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: CLIENT & PROJECT: AREA & or PHOTO: COLLECTOR(S): DATE:

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
	8	2	J	2	9	2	P	M	C	0	4	0	1	1	6	6	9	4	2	5	5	5	5	2	7	7	5	S	N	D	S	Cr		Gs/S	Rp/M	Ch/F	Con	Dec	Gra	Moss
	RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Gasn 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
		X						3	2	1		X			10	cm	X				X	2			1	2	1	1	1	3	1		X						

REMARKS: Lyall Ck. Stream bed 3-4m wide. Sample taken 40m up from gas line rd.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water I,J,K,L - Other

SURVEY TYPE: Recce STREAM SED. CLIENT & PROJECT: 2205 AREA B/or PHOTO: NEZ PERCE CK AREA COLLECTOR(S): MD & PM DATE: Sept. 4/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	9	2	P	M	C	0	4	1	1	1	6	8	0	0	0	0	5	5	0	2	1	4	0	S	N	D	S		X	X	X		X		X
	X						3	1	1	1		X		5	5	X			X		2			1	2												
														cm	cm																									

REMARKS: Nez Perce Ck (Lower). 75m fr. Nez Perce Rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	9	2	P	M	C	0	4	2	1	1	6	7	5	7	5	0	5	S	0	3	1	2	5	S	H	L	E		X	X	X				
	X						1	1	1	1		X		5	5	X					2			1	2												
														cm	cm																									

REMARKS: Sample in ck. directly below transmission line. Steep sided valley. ck 1.5 to 2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recce STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA B/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: SEPT 7/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	6	16	9	2	P	M	C	0	4	3	1	1	6	8	6	1	5	0	5	5	3	8	8	5	0	S	N	D	S	X		X			X		
X			X				Tr	1	2	1	X			2		X			X						1	Tr	1	2	1		2			2	P	M	C	0	4	4	
														cm																										

REMARKS: Sampled Wet active creek at confluence 5m west of road. All farmers fields around contamination due to pasture land. Ridge is Cretaceous sediments. Creek is a trickle

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	6	16	9	2	P	M	C	0	4	4	1	1	6	8	6	1	5	0	5	5	3	8	8	5	0	S	N	D	S	X		X			X		
X			X				Tr	1	2	1	X			2		X			X						1	Tr	1	2	1		2			2	P	M	C	0	4	3	
														cm																										

REMARKS: Same as comments for 2PMC043 - Both samples collected at stream 3.3km from Oldman Cutoff.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	0	4	5	1	1	6	9	6	0	2	5	5	5	4	3	0	5	0	S	N	D	S	X		X			X		
		X					2	1	1	1	X			3		X									2														
														cm																										

REMARKS: Sample creek in wooded pasture area about 30m west of Road. Cretaceous sediments to the west. Sample 4.85 km from Oldman Cutoff.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	4	6	1	1	6	8	4	8	6	5	5	5	4	3	0	7	5	S	H	L	E	X		X	X		X		X
X							2	1	1		X			3		X				1						1	Tr	3	1	Tr								
														cm																										

REMARKS: Sample west of road about 20m. Area may have been logged or burned 20 years ago. at 7.95 km from Oldman Rd. Creek about 1m wide. Cretaceous sediments to the west.

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water; I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: SEPT 7/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	MC	0	4	7		1	1	6	8	4	2	5	0	5	5	4	4	2	0	0	S	H	L	E	X		X			X	X	X	
			X				1	2	1			X		5	0m	X				X				1	2	0.5	1	2	0.5								

REMARKS: Area looks logged 10-15 yrs ago. Sample creek west of 25-50 m west of Rd. at 9.15km from Oldman Cutoff. Creek is about 1m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	4	8	1	1	6	8	4	2	0	0	5	5	4	4	5	0		S	N	D	S			X	X					
			X				2	2	Tr	Tr		X		3	0m	X					1				1	0.5		2	0.5								

REMARKS: Sample in Creek 1.5m wide at 9.7km from Oldman Cutoff. Site 20m west of road, area logged 10-15 years ago.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1			P	M		0	4	9			6	8	4	1	0	0								S	N	D	S				X					
			X									X				X					1				1													

REMARKS: Sampled 2.5m wide creek about 200m west of road at 11.9km from Oldman Cutoff. Area logged approx 15-20 yrs ago. SPEERS CREEK

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	0	1	1	6	8	3	8	2	5	5	5	5	0	1	5	0	S	N	D	S	X			X		X	X	X	X
							4	Tr	Tr			X		10cm		X				X	1				1		2	3	1	Tr								

REMARKS: Sampled 2.5m wide creek about 120m west of road at 15.1km from Oldman Cutoff. Bedrock visible, snds+slts+shle

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: SEPT 7/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	0	5	1	1	1	6	8	3	3	0	0	5	5	5	2	6	5	0	S	N	D	S	X		X	X		X	X		
			X				3	1	Tr			X		5cm		X				X				1	2		2	2	Tr								

REMARKS: Sampled creek (1.5 to 2m wide) about 50 m [illegible] from Rd. at 18.0km from Oldman Cutoff. Beaver dams present in flats 50m sample site. Has been logged, currently pasture land.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	2	1	1	6	8	3	0	0	0	5	5	5	4	1	0	0	S	H	L	E	X		X	X		X	X		
	X						3	1				X		10cm		X					2				1		2	2	Tr								

REMARKS: Sample of 3m wide creek about 0.5km west of river valley just before right angle bend.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	3	1	1	6	8	3	2	0	0	5	5	5	1	9	2	5	L	M	S	N	X	X		X	X	X		X	
	X						3	1				X		2cm		X					1				1		2	2	Tr		2	P	M	C	0	5	4	

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	4	1	1	6	8	3	2	0	0	5	5	5	1	9	2	5	L	M	S	N	X	X		X	X	X		X	
	X						3	1				X		20cm		X					1				1		2	2	Tr		2	P	M	C	0	5	B	

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: CLIENT & PROJECT: AREA &/or PHOTO: COLLECTOR(S): DATE:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.							ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	2	J	2	9	2	P	M	C	0	5	5	1	1	6	7	6	8	0	0	5	5	5	7	8	1	5	L	M	S	N		X		X		X		X	
	X						3	1	tr			X		10	Ch	X				X					1	2		1	3	tr									

REMARKS: Sample from Savannah Ck. 5 m up fr. Rd. 3.9 km fr. Cutoff down trail.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	6	1	1	6	8	2	1	0	0	5	5	5	7	1	8	5	S	H	L	E		X		X		X		X	
	X						3	1					X	10	Ch	X				X	1					1	0.5	0.5	2	1								

REMARKS: Stream 6-7m wide, 250 m from Savanna ck. rd. Sample of Savanna ck.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM SEDIMENT — CLIENT & PROJECT: 2205 — AREA &/or PHOTO: LIVINGSTONE R. — COLLECTOR(S): MD PM — DATE: SEPT 9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	7	1	1	6	8	0	2	7	5	5	5	6	1	6	0	0	L	M	S	N		X							
	X		X				2			1		X													1	2	C	H	R	T									

REMARKS: Sample of Dry Creek about 60-70 m above confluence and 150 m from road at 0.5 km from cutoff. Creek appears in some places but is mostly beneath gravel base. Sample site creek = dry active

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	8	1	1	6	8	1	1	6	0	5	5	6	1	1	0	0	L	M	S	N	X		X	X			X	X	
	X						2	0.5	0.5	1		X		5	Cm	X				X					1				2.5	1.5									

REMARKS: Sampled North Twin Creek about 20m above Rd. Creek about 1m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	5	9	1	1	6	8	1	4	0	0	5	5	6	0	4	0		L	M	S	N	X		X			X	X	
	X						2	2	1	1		X			Cm	X				X					1			3	1.5									

REMARKS: Sampled South Twin Creek about 60-70m upstream from Rd. Creek about 1 to 1.5 m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	0	6	0	1	1	6	8	1	5	7	5	5	5	5	9	3	5	0	D	L	M	T	X		X			X	X	
	X						3	1				X				X				X					2	1		3	1									

REMARKS: Sample from creek about 2-3 m wide but dry active. Lots of moss in creek bottom. Sample site about 50 upstream from River

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: SEPT 9/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	0	6	1	1		6	8	1	6	2	5	5	5	5	9	3	5	0	D	L	M	T	X			X			X		X
																																	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Bro 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
X	X					A	T	T				X		25 cm		X				X					2	1			30									

REMARKS: Sample of Livingstone River about 60-70 m below tributary sampled in 2DMC060. River about 6-7m wide.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE RIVER COLLECTOR(S): MD PM DATE: SEPT 10/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	0	6	2	1		6	8	4	3	7	5	5	5	4	9	3	D	0	S	L	S	N	X			X			X		X
																																	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Bro 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
	X					3	1	Tr				X		10 cm		X				X					1	2		15	2	0.5								

REMARKS: Sample of Ridge Creek just above bend, Creek about 2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	0	6	3	1		6	8	4	8	3	5	5	5	4	6	0	8	0	S	N	D	S	X						X	X	X	X
																																	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORG. DUP. REP.
Low 41	Mod 42	High 43	Work 44	Camp 45	Fuel 46	Geon 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Bro 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80
	X					3	0.5	Sand	Clay	Org			X	30 cm		X				X					2	1		15	2	0.5								

REMARKS: Sample of Deep Creek just about 50 m east of bend in trail just above waterfall. Creek 5-6m wide.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water I,J,K,L - Other

SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: POCKET CK / DAISY CK COLLECTOR(S): MD PM DATE: SEPT 11/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	92	PM	C	0644	11	6860	60	0	5521	2755	SLSN	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		4 Rock 1 Sand 1 Clay	X	10 cm	X	X	1 Brn 1 Blk	3 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Stream bed of Pocket Ck. 100m upstream from Daisy ck trail (N side).

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	16	PM	C	0651	11	6857	00	5	5020	SLSN	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 1 Sand 1 Clay	X	5 cm	X	X	2 Wht 1 Brn 2 Blk	1 Sand 2 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Ck. bed 1.5-2.0 m wide. 300m up fr. Daisy Ck. Old logging & beaver dams.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	16	PM	C	0656	11	6854	50	5	0605	SLSN	X	X	

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 1 Sand 1 Clay	X	10 cm	X	X	1 Brn 1 Blk	1 Sand 1 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Ck. bed 4.0 m wide. Sample taken 20m from side of rd. Old logged area Daisy Ck

300 m downstream

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G	16	PM	C	0667	11	6862	50	7	2505	SLSN	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 1 Sand 1 Clay	X	X	X	X	1 Brn 1 Blk	1 Sand 1 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Daisy ck. Stream bed. 6-7m wide. 90-100m above Ck. confluence.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: SEDIMENT (RECCE STREAM) CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): MD PM DATE: SEPT 12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	29	PM	C	0688	11	6734	75	5	4587	SNDS	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 1 Sand 1 Clay	X	5 cm	X	X	2 Brn 1 Blk	1 Sand 2 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Sampled tributary 1-1.5m wide about 50m upstream from Oldman River at about 17.2km from 940 Hwy.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	29	PM	C	0697	11	6726	50	5	6887	SNDS	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 1 Sand 1 Clay	X	20 cm	X	X	1 Brn 1 Blk	2 Sand 1 Fines 1 Org	ORIG. DUP. REP.

REMARKS: Sample site on Cache Ck about 70m above Beaver dam ponds and 200-250 above Oldman R. Creek about 4m wide and is at 18.6 km from 940

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	29	PM	C	0701	11	6724	50	5	7475	SNDS	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 0.5 Sand 0.5 Clay	X	10 cm	X	X	2 Brn 1 Blk	0.5 Sand 3 Fines 0.5 Org	2 P M C 0 7 1 ORIG. DUP. REP.

REMARKS: Sample of Beehive Ck 2-2.5m wide about 70-80m up from Oldman R. Creek at about 19.5km from 940

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J	29	PM	C	0711	11	6724	50	5	7475	SNDS	X	X	X

RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.
		3 Rock 0.5 Sand 0.5 Clay	X	10 cm	X	X	2 Brn 1 Blk	0.5 Sand 3 Fines 0.5 Org	2 P M C 0 7 0 ORIG. DUP. REP.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: Oldman River COLLECTOR(S): MD PM DATE: SEPT 12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	J	1	9	2	P	M	C	0	7	2	1	1	6	7	1	2	2	5	5	5	4	9	8	2	5	S	N	S	N		X		X			X		
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
X							30	50	5			X		10 cm		X				X		2			1			25	35	35								

REMARKS: Sample of Soda Creek about 1.5 to 2m wide and about 30-40m above Oldman R. Creek about 21.9 km from Hwy 940

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: FLY CK STATION CK COLLECTOR(S): MD PM DATE: SEPT 13/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	1	9	2	P	M	C	0	1	3	1	1	6	8	7	8	0	0	5	5	2	9	4	5	0	S	N	D	S		X	X	X		X	X	X	X
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
	X						3	1	1			X		10 cm		X				X		1			1	2	tr	2	2									

REMARKS: Station Ck. Sample taken 240m up from 940 rd. Stream bed 1.5-2.0m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM NORTH							ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	1	9	2	P	M	C	0	7	4	1	1	6	8	8	0	0	0	5	5	2	7	4	7	5	S	H	L	E		X		X			X		
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORG. DUP. REP.
	X						3	1	1			X				X				X		1			1	2		2	2	1								

REMARKS: Fly ck. Sample taken 15m up from 940 rd. Stream bed 1.5m wide.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: CROWSNEST COLLECTOR(S): MD PM DATE: SEPT 14/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION				
8	2	G	9	9	2	P	M	C	0	7	5	1	1	6	8	3	1	7	5	5	4	9	8	2	0	0	S	N	D	S		X			X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
X			X				3	1	Tr		X		10cm	X			X						2	1	Tr	1	3										

REMARKS: Sampled Creek about 3-4m wide approx 50m sth of pipeline. York Creek at edge of pipeline clearing

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	9	2	P	M	C	0	7	6	1	1	6	7	7	6	7	5		4	9	9	9	0		A	G	L	M		X		X					X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							3	1				X		10cm	X										1	2		15	2	55									

REMARKS: Sample of Star Creek about 2.5 to 3m wide approx 200m above the pipeline.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: HWY 3 AREA GOLD CK COLLECTOR(S): MD PM DATE: SEPT 15/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMPLE TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM		NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION				
8	2	G	10	9	2	P	M	C	0	7	7	1	1	6	7	2	7	7	5	5	5	0	0	5	0	S	N	D	S		X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
X			X				3	1			X		5cm					X						1	2		05	3	05									

REMARKS: Sampled Creek near sentinel about 150-200m upstream of Hwy 3; Creek 1 to 1.5m wide. Old industrial Park - entire area including Ck bed has been disturbed.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	P	M	C	0	7	8	1	1	6	8	2	6	2	5	5	5	0	0	4	5	0	S	N	D	S		X		X			X	X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
	X		X				3	1				X		10cm	X				X		2				1		2	2	Tr									

REMARKS: Sample of Blairmore Ck, about 3m wide and about 100m sth of power line. Old coal workings a couple of km upstream.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	P	M	C	0	7	9	1	1	6	8	8	1	2	5	5	5	0	2	8	2	5	S	N	D	S		X			X	X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
			X				2					X		25	X				X						1	2			1	05									

REMARKS: Sample of Morin Creek about 30-40 above Trail. Creek about 2-3 m wide. Old foundations & clearcuts in the valley

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	9	2	P	M	C	0	8	0	1	1	6	8	7	9	5	0	5	5	0	2	8	2	5	S	N	D	S		X		X			X	X	X	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
X		X				3	1				X		10cm	X				X		2				1		1	3	Tr									

REMARKS: Sample of Gold Creek m above confluence. Creek 3-4m wide. Old coal workings & tailings around. Trees cleared even around creek.

SAMPLE TYPES. A/B Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: GOLD CREEK COLLECTOR(S): MD PM DATE: SEPT 15/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	9	92		P	M	C	08	1		11		69		86			05	49	83			75			S	N	D	S	X			X		X	X	X	X	
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH		DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X						3	1				X		30	cm	X			X	2				1			Tr	2	2	Tr									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample of Gold Creek 300 m above the pipeline. Creek is 4-5m wide. Site upstream from chasm

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: YORK CK AREA COLLECTOR(S): MD PM DATE: SEPT 16/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	92		P	M	C	08	2		11		67		79			55	05	49			67			B	S	L	T	X	X		X		X	X	X	X	
RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH		DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
	X						5	1				X		10	cm	X			X					1	2		15	2	05									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from South York Crk 2-2.5 m wide about 80-100m above confluence of York Crk.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	10	92		P	M	C	08	3		11		67		95			25	49	64			25			B	S	L	T	X	X		X		X	X	X	X	
	X						3	1				X		20	cm	X				2				1			2	15	05									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from North York Crk 3m wide about 50 m above confluence with Sth York Crk.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	92		P	M	C	08	4		11		70		65			50	50	08			25			S	N	D	O	X	X		X		X				
			X				2	1	1			X		20	cm			X			1				1		05	05	05	Tr									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Coal Crk 2m wide at 70-80m upstream from bridge. Farmland + Pastureland.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	9	92		P	M	C	08	5		11		70		74			25	50	26			00			S	H	L	E	X	X		X		X				
X			X				2	1	1			X		20	cm		X	X		2				1	2			1	3									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: GREEN CRK COLLECTOR(S): MD PM DATE: SEPT 17/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cloy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.						DRIG. DUP. REP. SC
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cree	Sand	Fines	Org	Sal									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	9	9	2	P	M	C	0	8	6	1	1	6	8	9	1	5	0	5	5	0	1	0	0	0	S	H	L	E	X			X		X	X	X	X
	X						3	1	Tr			X		10	cm	X				X	2				1	2	Tr	1	3	Tr			2	P	M	C	0	8	7	

REMARKS: Sample from Green Crk 1.5-2m wide about 60-70m from Rd. Creek bottom mossy.

8	2	G	9		2	P	M	C	0	8	7	1	1	6	8	9	1	5	0	5							S	H	L	E	X			X		X	X	X	X
	X						5	1	Tr			X		10	cm	X				X	2				1	2	Tr	1	3	Tr			2	P	M	C	0	8	6	

REMARKS: Duplicate of ZPMC087. Same comments as above.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: HWY 517 and RACEHORSE CRK COLLECTOR(S): MD PM RD DATE: SEPT 8/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cloy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.						DRIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Cree	Sand	Fines	Org	Sal									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

8	2	G	15	9	2	P	M	C	0	8	8	1	1	6	7	3	1	0	0	5	5	1	9	0	0	0	S	H	L	E	X			X		X	X	X	X
	X						3	1	Tr			X		5	cm	X				X	2				1	2	Tr	1	2	Tr										

REMARKS: Sampled tributary to Racehorse Crk @ about 900m from road junction. Creek 2m wide

8	2	G	15	9	2	P	M	C	0	8	9	1	1	6	7	4	3	0	0	5	5	1	0	4	5	0	S	H	L	E	X			X		X	X	X	X
	X		X				1	2	1	X		X		3	cm	X				X					2	1	0.5	3	0.5										

REMARKS: Sampled tributary to Sta Racehorse creek about 50m above Rd. Creek apprx 0.5m wide. Area above has been recently logged. Crk disturbed?

8	2	G	16		2	P	M	C	0	9	0	1	1	6	9	3	7	0	0						5	0	S	N	D	S	X			X		X	X	X	X
	X						1	2	1	X		X		10	cm	X				X					1			S	H	L	E									

REMARKS: Sample from Ernst Creek about 30m above Rd. Creek 2m wide surrounded by pasture.

8	2	G	16	9	2	P	M	C	0	9	1	1	1	6	9	7	3	1	5	5	5	3	9	5	0	0	S	N	D	S	X			X		X	X	X	X
	X						1	3		X		X		5	cm	X				X	1		2							4	Tr									

REMARKS: Tributary Crk ~150-200m about pond (earthen Dam). Pasture land.

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: HWY 517 | COLLECTOR(S): MD PM RO | DATE: SEPT 18/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: SEPT 30/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	16	9	2	P	M	C	0	9	7	1	1	6	8	7	3	2	5	5	5	3	6	9	7	5	S	N	D	S	X		X			X	X	X	X
	X						2	1	1			X		3	0	X				X					1	1		0	5	3	0	5							
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample from unnamed Crk about 15-20m above Trail. Creek about 3.0km sth of White Creek and 1m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	0	9	8	1	1	6	8	7	4	5	0	5	5	3	6	9	7	5	S	N	D	S	X		X						X
	X						3	0	0			X		3	0	X				X					1				2	5									
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample from Snake Creek about 20-30 above Trail. Creek 1 to 1.5m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	0	9	9	1	1	6	8	8	0	7	5	5	5	3	6	9	7	5	S	N	D	S	X		X						X
							3	1			X			5	0	X									1														
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample from Cow Juicer Creek about 900-950m from Old Man Ridge Trail. Creek is 0.5 to 1m wide and dry in lower reaches due to old logging

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: DUTCH CREEK COLLECTOR(S): MD PM DATE: OCT 2/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
8	2	G	16	9	2	P	M	C	1	0	0	1	1	6	8	4	7	0	0	5	5	3	1	2	5	S	N	D	S	X		X			X	X	X	X
	X						3	1			X			5	0	X				X					1	T	0	5	2	1	5							
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Small Creek @ 2.35km from Dutch Crk Cutoff. Creek about 1m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	1	0	1	1	1	6	7	9	8	7	5	5	5	3	1	2	7	5	S	L	S	N	X	X	X	X	X	X	X	X	X
							3	1			X			5	0	X				2					2	1	tr	3	1									
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Small ck. 250-300m upstream fr. Dutch ck. Ck. ~ 1.0-1.5m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16			P	M	C	1	0	2	1	1	6	7	9	8	5	0	5	5	3	1	2	5	S	L	S	N	X	X	X	X	X	X	X	X	X
			X				3					X				X				2				1	2	1	3	tr									
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Creek bed disturbed by 15-20 yr old logging. Sampled unamed Crk about 150m above Dutch Cr Rd. Creek is about 1m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	1	0	3	1	1	6	7	9	3	2	5	5	5	3	1	4	0	0	S	N	D	S	X	X			X	X	X	X
X	X	X					3	0	5			X	1	2	C	X				X	2				1	3	1	2	tr									
Low 41	Med 42	High 43	Work 44	Comp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Crse 68	Sand 69	Fines 70	Org 71	Gel 72	73	Gr/S 74	Rp/M 75	Cl/F 76	Con 77	Dec 78	Grs 79	Moss 80

REMARKS: Sample of Dutch Ck taken at the boundary of G15 & G16. Stream 6-7m wide.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: DUTCH CK COLLECTOR(S): MD PM DATE: OCT 2/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	P	M	C	1	0	4	11		6	7	2	9	5	0	5	5	3	2	0	2	5	S	N	D	S	X		X			X		X	
	X						30	50	5			X		10cm		X				X	Z				1	3		05	3	05								

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: Sample from Nth tributary of Dome Ck. Creek about 2m wide. Sampled 30m above bridge.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15		2	P	M		1	0	5			6	7	2	9	7	5	5		3	1	9	5	0	S	N	D	S	X			X					
												X		10cm		X					Z				1	2												

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: Sample from 5th tributary about 10m from Rd 40m above bridge. Creek about 1.5-2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15			P	M		1	0	6			6	7	3	8	5	0						0		S	N	D	S			X	X					
												X				X									1	2													

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: Sample fr. east t.b. of Dome Ck. Ck width averages 1m. Sample taken 50-60 m up fr rd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15		2	P	M	C	1	0	7			6	7	3	8	5	0				2	4	0	0	S	N	D	S			X	X					
X	X	X					2					X		3 cm		X									1	2	tr	1	3	tr									

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: As above.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: RECCE CLIENT & PROJECT: 2205 AREA &/or PHOTO: S. RACEHORSE CK COLLECTOR(S): MD PM DATE:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	15	9	2	P	M	C	1	0	8	1	1	6	7	4	1	7	5	5	5	2	1	1	5	0	S	N	D	S	X		X			X		X	
X	X		X				2	1	1			X		5	Cm	X				X	2				1		tr	1	3	tr								

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: 50-70 m above confluence. Stream bed ~1m wide. Area recently logged

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	1	0	9	1	1	6	7	4	1	5	0	5	5	2	1	2	5	0	S	N	D	S	X			X		X		X	
X	X	X					2	1	1			X		5	cm	X				X					2	1		1	3										

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: Sample from Nth tributary about 20m above the Rd. Creek 1-1.5m wide. Old 10-20yr logging

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	1	1	0	1	1	6	7	2	7	0	0	5	5	1	5	8	5	0	S	N	D	S	X			X		X		X	
X	X	X					3	05	05			X		5	cm	X				X	Z				1			1	3										

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: Sample from tributary to S. Racehorse. Sample site 10m from S. Racehorse but 80-100m above confluence.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	15	9	2	P	M	C	1	1	1	1	1	6	7	2	5	7	5	5	5	4	4	8	5	0	S	N	D	S	X	X		X		X		X	
X	X						2	1	05			X		5	cm	X				X					1			2	2										

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

REMARKS: 2.0-3.0 m wide. 30m along rd. fr. logging cutoff 20m fr side of rd, West tributary to S. Racehorse Creek near headwaters ≈ 200m above confluence

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM
SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205
AREA &/or PHOTO: Racehorse Creek North + South COLLECTOR(S): MD PM DATE: OCT 2/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): MD PM DATE: OCT 3/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	NTS			YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)			UTM			NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel								

8 2 J 2 9 2 P M C 1 1 9 1 1 6 6 7 3 5 0 5 5 5 6 3 2 5 S S H L L S E N X X X X X X X

X X X 3 1 1 X 10 0 X 2 1 Tr 4

REMARKS: Sample from west fork of Oyster Crk about 250m along Rd from confluence, sample site 60-70 m upstream from Rd bridge. Stm. Creek 2m wide

8 2 J 2 P M 1 2 0 6 6 9 9 0 0 5 5 5 5 7 5 0 S L S N X X X X X X X

X X 2 1 3 T

REMARKS: Sample from Pasque Crk about 30-40m upstream of bridge at 3.15 km from Oldman Rd, Creek 3m wide. Note Logging upstream

8 2 J 2 P M 1 2 1 6 6 8 8 5 0 S W D S X X X X X X

X X 2 1

REMARKS: Sample from Straight Creek about 20m above old trail. Creek 1 - 1.5m wide.

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: DAISY & VICARY CREEKS COLLECTOR(S): MD PM DATE: OCT 4/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

8 2 G 16 9 2 P M C 1 2 2 1 1 6 8 6 4 0 0 5 5 2 0 6 0 0 S N D S X X X X X X X

X X 3 1 X 5 Gr X 2 1 0.5 2 0.5 1

REMARKS: Sample from tributary to Daisy Crk 750m str of Packet Crk and 350m above confluence. Creek 1-1.5m wide

8 2 G 15 9 2 P M C 1 2 3 1 1 6 7 8 4 5 0 5 5 4 2 2 5 S S H L S N X X X X X X X

X X X 3 1 1 X 5 Gr X 2 1 Tr L 3

REMARKS: Sample from NW tributary to Vicary Crk @ 3.0km from 940 and 80m above bridge and old Coal workings. Creek 1.5m wide. Strong Fe stain below bridge before Vicary.

8 2 G 15 9 2 P M C 1 2 4 1 1 6 7 9 0 5 0 5 5 3 7 5 0 S H L E X X X X X X X

X X ✓ 3 1 X 5 Gr X 2 1 15 25

REMARKS: Sample from tributary to Vicary @ 2.3km from 940. Sample site 15-20m above trail and creek is 1.5m wide

8 2 G 10 9 2 P M C 1 2 5 1 1 6 7 8 1 2 5 5 5 1 3 5 0 0 A G L M X X X X X X X

X X 3 1 Tr X 10 Gr X 2 1 0.5 3 0.5

REMARKS: Sample from Vicary Crk @ 3.15 km from 940. Creek 2m wide and sampled 10-15m above old trail and about 100m above confluence with Crk. Sampled on 2PMC126

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM VICARY

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: COLLECTOR(S): MD PM DATE: OCT 4/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	10	9	2	P	M	C	1	2	6	1	1	6	7	8	2	0	0	5	5	1	3	4	5	0	A	G	L	M		X		X		X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	X					3	1				X			5	5	X			X	2				2	1		05	30	05									

REMARKS: Sample of STR tributary to Vicary about 20m above confluence. Creek 1.5-2m wide.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: OLDMAN RIVER COLLECTOR(S): MD PM DATE: OCT 5/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	9	2	P	M	C	1	2	7	1	1	6	9	2	6	0	0	5	5	2	6	0	0	0	S	H	L	E		X	X	X		X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	X		X			1	1	1	1	X				5	9	X			X	2				1	2	Tr	1	75	05									

REMARKS: Sample from tributary east of Gap Pass about 14.05km from 517 - 22 JNCTN. Creek 0.5-1m wide and sampled 70m above 517. (Consigner rynkers)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	9	2	D	M	C	1	2	8	1	1	6	8	6	2	5	0	5	5	2	4	5	0	0	S	N	D	S		X	X	X		X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	X					3	1				X			6	0	X			X						1	2	05	2	15	1								

REMARKS: Trib. of Racehorse ck 4km South of Gap Pass. ~350m up fr. confluence.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	9	2	P	M	C	1	2	9	1	1	6	8	6	8	7	5	5	5	3	4	3	5	5	S	W	D	S		X		X		X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	X		X			3	1			X			5	0	X			X	2				1	3		05	10	25	HC								

REMARKS: Sample from Regal Creek about 15m above Road (940). Creek 1m wide. Old Flag (3-4 yrs) 318 New logging above near headwaters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	16	9	2	P	M	C	1	3	0	1	1	6	8	6	6	2	5	5	5	3	5	2	5	0	S	N	D	S		X	X	X		X	X	X

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
	X					4	T			X			2	0	X			X						3	1	05	1	15	1								

REMARKS: Sample of tributary north of Regal Ck. Creek dry at road, and 0.05m to 0.15m wide. Creek sampled about 500m above 940 Rd.

SAMPLE TYPES A/B Lake sed./water, C/D Stream sed./water, E/F - Bog sed./water, G/H Spring sed./water, I,J,K,L Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LIVINGSTONE R. COLLECTOR(S): MD PM DATE: OCT 6/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/16	92	PMC	1	31	7	6864	45039	5	00	SSL	N E	X	X X X

RELIEF: Low / Mod / High — CONTAMINATION: Work / Camp / Fuel / Geon — BOTTOM: Rock / Sand / Clay / Org — AREA or WIDTH: cl / 1-5 / >5 — DEPTH — WATER COLOUR: Clr / Yel / Brn — SUSP: Wht / Lgt — SEDIMENT COLOUR: Wht / Yel / Grn / Red / Bro / Blk — COMPOSITION: Crse / Sand / Fines / Org / Gel — ORIGINAL SAMPLE NO. — ORIG. DUP. REP.

							3	1			X	10 cm	X				2			1	3	Tr	2	2	Tr													

REMARKS: Sample from the mouth of White Crk about 40m above Livingstone R. Creek 6-7m wide.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J/9	92	PMC		132	7	6852	50		50	SSL	N E	X	X X X

											X			X						2	1																	

REMARKS: Sample from Crk draining Chatten Ridge. Crk 2-2.5 m wide and sample 500-600m above Livingstone River

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: RECCE STREAM SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: HWY 532 COLLECTOR(S): MD PM DATE: OCT 6/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J/1	92	PMC	1	33	7	6855	25555	6625		SNDS	X	X	X X X

							3	1			X	10 cm	X				X	2			1	2																	

REMARKS: Sample from Johnson Crk about 4.25km west of Willas Crk bridge. Creek 2m wide.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J/1	92	PMC		134	7	6855	25555	6625		SNDS	X	X	X X X

											X	10 cm	X				2			1	2																	

REMARKS: See remarks for 2PMC133.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J/1	92	PMC		135	7	6907	02755	6763		SHLE	X	X	X X X

											X			X						1	2																	

REMARKS: Sample from tributary 1.18km Sth of 532 and 150m west of Willas Crk. Creek about 1m wide.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82J/1	92	PMC		136	7	6899	25567	6750		SNDS	X	X	X X X

							3	1			X	10 cm		X			Z			3	1		05	305													

REMARKS: Sample from tributary 1.3 to 1.41km Sth of 532 and 120 m west of Willas Crk. Creek 1-1.5m wide

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM SEDIMENT

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA B/or PHOTO: HWY 532 COLLECTOR(S): MD PM DATE: OCT 6/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geom	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	3	7	1	1	6	9	0	0	0	0	5	5	6	7	8	0	0	S	N	D	S	X			X	X	X	X	X	
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
X							3	T	T				X	5	X					X					1			T	4	T										
			Work	Camp	Fuel	Geom	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn		Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									ORIG. DUP. REP.
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Willow Ck about 20m upstream of tributary sample das 2PMC136. Creek 5-6m wide and has extensive beaver dams near Hwy 532.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	8			P	M	C	1	3	8			6	9	1	3	0	0						0	5	S	H	L	E	X			X		X				
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
												X				X					2				3	1			4										ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	60	61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Stimson Ck about 60-70m below confluence with first major Nth draining tributary. Creek 2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	8			P	M		1	3	9			6	9	5	7	0	0								S	H	L	E			X	X					
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
			X									X				X					2					1													ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	60	61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Stimson Ck 100m upstream from bridge at km from (west of) Hwy 22. Creek in pasture land and is 2-3m wide!

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	8			P	M	C	1	4	0			6	9	7	0	2	5								S	N	D	S	X			X	X				
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
X			X				3	0.5	0.5			X		20	0m	X					1					1	0.5	5	0.5										ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	60	61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Stimson Ck 100m west of Hwy 22 and 4.4 km north of Hwy 532. Creek about 4-5m wide and is in pasture land

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM SEDIMENT

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA B/or PHOTO: Hwy 22 COLLECTOR(S): MD PM DATE: OCT 6/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION						ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
Low	Mod	High	Work	Camp	Fuel	Geom	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	8	9	2	P	M	C	1	4	1	1	1	6	9	6	5	0	0	5	5	7	9	6	2	5	S	N	D	S	X			X	X		X		
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
X			X				2	1	1			X	X	100m		X				X	2				2	1	0.5	3	0.5										ORIG. DUP. REP.
41	42	43	Work 44	Camp 45	Fuel 46	Geom 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	I-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	60	61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: Sample from Sheppard Creek about 950m west of Hwy 22 above confluence with Stimson Ck. Creek 5-6m wide

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recci CLIENT & PROJECT: 2205 AREA &/or PHOTO: Callum Ck. COLLECTOR(S): PM & MD DATE: Oct. 7/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/16	92	PMC	1	142	11	705175	5534300		SHLE	X	X X X	

RELIEF: Level 41, Mod. 42, High 43 — CONTAMINATION: Work 44, Camp 45, Fuel 46, Geon 47 — BOTTOM: Rock 48, Sand 49, Clay 50, Org 51 — AREA or WIDTH: d 52, 1-5 53, >5 54 — DEPTH: 55, 56 — WATER COLOUR: Clr 57, Yel 58, Brn 59 — SUSP.: Hvy 60, Light 61 — SEDIMENT COLOUR: Wht 62, Yel 63, Grn 64, Red 65, Brn 66, Blk 67 — COMPOSITION: Crse 68, Sand 69, Fines 70, Org 71, Gel 72 — ORIGINAL SAMPLE NO.: 73, 74, 75, 76, 77, 78, 79 — ORIG. DUP. REP. 80

| | | |

SURVEY TYPE: Recce | CLIENT & PROJECT: 2205 | AREA &/or PHOTO: Bob Ck. | COLLECTOR(S): PM & MD | DATE: Oct 7

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

| | | |

SURVEY TYPE: RECCE STREAM SEDIMENT | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: TODD CREEK CAMP CREEK | COLLECTOR(S): MD PM | DATE: OCT 8/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	TYPE	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/16	92	P	MC	158	7	694850	5547975	SHLE	X	X	XX

REMARKS: Sample from tributary to Sth Todd Crk about 4km upstream of Rd @ 2.7 km Sth of Willas Valley. Crk 2m wide

NTS	YEAR	TYPE	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	WTR SURF. or FLOW
82G/9		P	M	159		694600		SHLE	X X

REMARKS: Sample from Sth Todd Creek 5m below confluence of the forks. Creek 0.5-1m wide

NTS	YEAR	TYPE	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	WTR SURF. or FLOW
82G/16		P	M	160		694650		SNDS	X X

REMARKS: Sample from west tributary to Camp Crk about 60-70m above confluence. Creek 1-1.5m wide. Creek at 2.7 km from Camp Crk cutoff

NTS	YEAR	TYPE	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	WTR SURF. or FLOW
82G/16		P	M	161		693725		SLSN	X

REMARKS: Sample from lower reaches of Camp Crk about 250m above Oldman R. Creek 3m wide.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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SURVEY TYPE: RECCE STREAM SEDIMENT | CLIENT & PROJECT: 2205 | AREA B/or PHOTO: VALLEY WEST OF CAMP CREEK | COLLECTOR(S): MD PM | DATE: OCT 8/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	TYPE	INIT.	NUMBER	ZONE	UTM EAST	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION
82G/16	92	P	MC	162	7	691075	5529000	SHLE	X	X	XX

REMARKS: Sample from creek in valley west of Camp Crk. Sampled creek 0.5-1m wide 10m above trail and 350m above pond.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water, I,J,K,L - Other

SURVEY TYPE: Recc CLIENT & PROJECT: 2205 AREA &/or PHOTO: Camp Ck. COLLECTOR(S): PM & MD DATE: Oct. 9/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
8	2	G	16	9	2	P	M	C	1	6	3	1	1	6	9	3	3	5	0	5	5	3	0	8	5	0	S	N	D	S	X		X	X	X	X	X	X	X

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
X	X	X					.05	2	1	.05		X		5	cm	X				X					1	1	Tr	.05	3	.5								

REMARKS: ~100 m above camp Trib of Camp Ck 7.4 km up Camp Ck rd. fr. Old Man Lake. Stream bed ~1m wide flows through pasture.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	1	6	4	1	1	6	9	4	7	0	0	5	5	3	5	8	0	0	S	L	S	N	X	X			X	X	X	X	X

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							3	1				X		5	cm	X				X	2				3	1	Tr	.05	3	.05								

REMARKS: Sample from Jackknife Ck about 40m above trail crossing @ 7.35 km along Miles Cariboo Rd from Camp Ck. Creek is 1.5-2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16			P	M	C	1	6	5			6	9	4	3	7	5								S	N	D	S	X		X	X		X	X	X

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							1	2	1			X				X				X					1	1		.5	3	.5								

REMARKS: Sample from east fork of Camp Ck @ 9.3 km from Miles Cariboo Cutoff. Creek 2m wide and sampled 15m above trail crossing.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	1	6	6	1	1	6	9	4	3	0	0	5	5	3	7	1	0	0	S	N	D	S	X		X	X		X	X	X

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
X	X						3	.5	.5			X		5	cm	X				X					1	1	Tr		4	Tr								

REMARKS: Sample from west fork of Camp Ck @ 9.4 km from Miles Cariboo Cutoff. Creek 1-2m wide and about 150-200m above confluence.

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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SURVEY TYPE: Recc CLIENT & PROJECT: 2205 AREA &/or PHOTO: Bob Ck. COLLECTOR(S): PM & MD DATE: Oct. 9/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
8	2	G	16	9	2	P	M	C	1	6	7	1	1	6	9	7	2	2	5	5	5	3	6	9	0	0	S	H	L	E	X		X			X	X	X	X

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
X							1.5	1	1	.05		X		5	cm	X				X	2					1			3	1								

REMARKS: Sample of West fr. of Bob Ck. ~500 m above confluence flows through pasture land. Bed ~1m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	1	6	8	1	1	6	9	7	5	5	0	5	5	3	7	0	0	0	S	H	L	E	X		X			X		X	

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							2	1	1			X		25	cm	X				X					3	1		.5	3.5	Tr		2	P	M	C	1	6	9	

REMARKS: Sample fr. the east trib of Bob Ck. Ck. bed ~1.5 m wide. Sampled ~ 1.0 Km above the confluence.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	G	16	9	2	P	M	C	1	6	9	1	1	6	9	7	5	5	0	5	5	3	7	0	0	0	S	H	L	E	X		X			X		X	

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
							2	1	1			X		25	cm	X				X	3				3	1		.5	3.5	Tr		2	P	M	C	1	6	8	

REMARKS: Same as above.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
																															Clr	Cldy	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss

RELIEF			CONTAMINATION					BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Gasn	Rock	Sand	Clay	Org	cl	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water, C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

RECCE STREAM — CHAFFEN CRK,

SURVEY TYPE: SEDIMENT — CLIENT & PROJECT: 2205 — AREA &/or PHOTO: WHITE CRK — COLLECTOR(S): MD AM — DATE: OCT 10/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	1	7	0	1	1	6	9	6	3	2	5	5	5	4	8	3	0	0	S	N	D	S	Clr	X Cldy	Gs/S	X Rp/M	X Ch/F	Con	X Dec	X Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	<1	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
X	X						3	1	Tr			X		10cm		X				X	2			1	1		0.5	3.5	Tr									

REMARKS: Sample from Chaffen Crk about 900m above Crk Crossing. Creek 2-3m wide.

REMARKS:

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT — CLIENT & PROJECT: 2205 — AREA &/or PHOTO: WHITE CREEK — COLLECTOR(S): MD PM — DATE: OCT 11/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	C	1	7	1	1	1	6	9	3	4	0	0	5	5	4	3	8	0	0	S	H	L	E	Clr	X Cldy	Gs/S	X Rp/M	X Ch/F	X Con	Dec	X Grs	X Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	<1	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						3	1				X		5cm						X	3				1			Tr	3.5	0.5								

REMARKS: Sample from White Crk tributary 20m above trail and 80-100m above White Crk. Creek 2m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	J	1	9	2	P	M	G	1	7	2	1	1	6	9	3	4	7	5	5	5	4	3	8	7	5	S	H	L	E	Clr	X Cldy	Gs/S	X Rp/M	X Ch/F	X Con	Dec	X Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	<1	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						4	Tr	Tr			X		6cm		X				X	2			1				3	1								

REMARKS: Sample from White Creek about 50m above confluence. Creek 1.5-2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	1	6	2	P	M	C	1	7	3	1	1	6	9	1	7	0	0	5	5	4	7	2	0	0	S	N	D	S	Clr	X Cldy	Gs/S	X Rp/M	X Ch/F	X Con	X Dec	X Grs	Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	<1	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						2	1	1			X		5cm		X				X	2			1	2			1	2.5	0.5								

REMARKS: Sample from E-W tributary to White Crk 30m above trail up tributary and 300m above White Crk. Creek 1.5-2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM	NORTH						ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
8	2	G	1	6	2	P	M	C	1	7	4	1	1	6	9	0	3	0	0	5	5	4	1	0	7	5	S	W	D	S	Clr	X Cldy	X Gs/S	X Rp/M	X Ch/F	X Con	X Dec	X Grs	X Moss

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
RELIEF			CONTAMINATION				BOTTOM				AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION						ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Camp	Fuel	Geon	Rock	Sand	Clay	Org	<1	1-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
	X						2	1	1		X			5cm		X				X					1			1	2	1								

REMARKS: Sample from South tributary to White Creek about 50m above confluence. Creek 0.5m wide.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

RECCE STREAM — LIVINGSTONE R.

SURVEY TYPE: SEDIMENT — CLIENT & PROJECT: 2205 — AREA &/or PHOTO: TIMBER CREEK — COLLECTOR(S): MD PM — DATE: OCT 12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J19	2	PMC	1	1756	11	6974	0055	6307	SHLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1761	11	6941	0055	6307	SNDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1771	11	6874	2705	5514	SNDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1780	11	6841	2505	5045	LMSN	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1801	11	6841	2554	5200	SHLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1761	11	6941	0055	6307	SNDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X

REMARKS: Sample from 5th tributary to Willow Creek @ 3.05 km from Hwy 22. Creek 1.5m wide and sampled 10m above Rd culvert.

REMARKS: Sample from tributary to Willow Ck about 7km above confluence. 7.6km from Hwy 22. Creek 2-3m wide.

REMARKS: Sample from Nth Fork Timber Creek about ___ m above confluence with Sth Fork. Creek 1.5-2m wide

REMARKS: Sample from tributary to Livingstone R. north of Ridge Ck. Creek 1m wide and sampled 70-80m above trail 700m from RR

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

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RECCE STREAM — LIVINGSTONE R.

SURVEY TYPE: SEDIMENT — CLIENT & PROJECT: 2205 — AREA &/or PHOTO: RIDGE CK — COLLECTOR(S): MD PM — DATE: OCT 12/92

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

NTS	YEAR	INIT.	SAMP TYPE	NUMBER	ZONE	UTM	EAST (or GRID COORDINATES)	UTM NORTH	ROCK TYPE	WTHR	WTR SURF. or FLOW	VEGETATION	RELIEF	CONTAMINATION	BOTTOM	AREA or WIDTH	DEPTH	WATER COLOUR	SUSP.	SEDIMENT COLOUR	COMPOSITION	ORIGINAL SAMPLE NO.	ORIG. DUP. REP.
82J19	2	PMC	1	1791	11	6871	2505	5075	LMSN	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1801	11	6841	2554	5200	SHLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
82J19	2	PMC	1	1761	11	6941	0055	6307	SNDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X

REMARKS: Sample from Ridge Ck about 3.3 km above 2PMC062. Creek 1.5 to 2m wide.

REMARKS: sample from tributary about 1.3 km Sth of Speers Ck. Creek 0.5m wide and sampled 4om above Rd.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water; E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA & or PHOTO: HAPPY VALLEY COLLECTOR(S): MD PM DATE: OCT 13/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
			RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
			Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	Clay 73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	1	1	1	6	9	7	6	7	5	5	5	5	1	0	7	5	S	N	D	S	X	X	X	X			X	X	
X							Z	1				X		5	cm	X				X		3				1	1			1	3								
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample from Riley Crk about 20m above road at 6.1 km from Hwy 22. Creek 1.5 - 2m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	2	1	1	6	9	6	8	5	0	5	5	6	1	5	0	S	N	D	S		X	X	X					X	
							1	2	1			X		5	cm	X				X		3				1	1			1	3								
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample from Hunter Crk about 800m - 1km above the Road. Creek 2-3m wide and beaver dammed downstream

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1			P	M		1	8	3			6	9	6	6	0	0					0	0	S	N	D	S			X							
							05	3	75			X		5		X				X						1	1												
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample from west tributary to Hunter Creek about 800m - 1km above Rd. Creek 1m wide and heavily beaver dammed.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	4	1	1	6	9	6	6	5	0	5	5	4	9	6	0	0	S	N	D	S		X	X					X	X
X							1	2	1					10	cm	X				X						1				3	1								
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample of tributary to Chaffer Crk at 7.85 km from Hwy 22. Creek 0.5m wide and sampled from above Chimney Rock Rd.

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water; G/H - Spring sed./water; I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 NELSON CRK AREA & or PHOTO: CHAFFER CRK COLLECTOR(S): MA PM DATE: OCT 13/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM			EAST (or GRID COORDINATES)			UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION			
			RELIEF			CONTAMINATION				BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.		SEDIMENT COLOUR						COMPOSITION				ORIGINAL SAMPLE NO.					ORIG. DUP. REP.
			Low 41	Med 42	High 43	Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	Clay 73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD

R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	5	1	1	6	9	7	2	0	0	5	5	4	9	0	0	0	S	N	D	S	X	X	X			X	X		
X							3	1				X		10	cm	X				X		3				1				3	1								
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample of Beagle Crk about 1km above Chaffen Crk. Creek 1m wide and heavily beaver dammed downstream

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	6	1	1	7	0	2	2	7	5	5	5	4	7	3	5	0	S	N	D	S		X	X	X			X	X	
X							2	1				X		5	cm	X				X						1	1	Tr	1	25	05		2	P	M	C	1	8	7
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample from Hawkeye Crk about 150m above Nelson Crk. Creek about 1.5-2m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	7	1	1	7	0	2	2	7	5	5	5	4	7	3	5	0	S	N	D	S		X	X	X			X	X	
X							2	1	1			X		5	cm	X				X						1	1	Tr	1	25	05		2	P	M	C	1	8	6
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Same as for 2PMC186

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	8	1	1	7	0	2	4	2	5	5	5	4	7	2	5	0	S	N	D	S		X	X				X	X	
X							2	1	1			X		5	cm	X				X		2				1				3	1								
			Work 44	Camp 45	Fuel 46	Geen 47	Rock 48	Sand 49	Clay 50	Org 51	cl 52	1-5 53	>5 54	55	56	Clr 57	Yel 58	Brn 59	Hvy 60	Light 61	Wht 62	Yel 63	Grn 64	Red 65	Brn 66	Blk 67	Cree 68	Sand 69	Fines 70	Org 71	Gel 72	73	74	75	76	77	78	79	80

REMARKS: Sample from O'Donnell Creek about 100 m above Nelson Crk. Creek 0.5 m wide. Nelson Crk all Beaver Dammed

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water E/F - Bog sed./water G/H - Spring sed./water I,J,K,L - Other

RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: PORCUPINE HILLS COLLECTOR(S): MD PM DATE: OCT 13/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Comp	Fuel	Geom	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	8	9	1	5	7	1	0	3	5	0	5	5	4	5	6	5	0	S	N	D	S	X		X			X	X	X	
							2	1			X			3	3						1					1			3	1									

REMARKS: Sample at King Bolt Ck at top of last beaver dam about 1 km above confluence with Honey Coulee. Ck 0.5-1m wide

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1			P	M	C	1	9	0	1	7	1	0	7	2	5	5	5	4	6	1	0	0	S	N	D	S	X			X		X	X	X	
													X			X					2					1												

REMARKS: Sample from Honey Coulee about 200m above confluence with King Bolt Ck. Creek is 2-2.5m wide.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water; C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

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RECCE STREAM

SURVEY TYPE: SEDIMENT CLIENT & PROJECT: 2205 AREA &/or PHOTO: LYNDON CRK COLLECTOR(S): MD PM DATE: OCT 14/92

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NTS				YEAR		INIT.		SAMP TYPE	NUMBER			ZONE		UTM		EAST (or GRID COORDINATES)				UTM				NORTH			ROCK TYPE				WTHR		WTR SURF. or FLOW			VEGETATION		
																															Clr	Clay	Gs/S	Rp/M	Ch/F	Con	Dec	Grs	Moss
RELIEF			CONTAMINATION					BOTTOM			AREA or WIDTH			DEPTH		WATER COLOUR			SUSP.	SEDIMENT COLOUR							COMPOSITION				ORIGINAL SAMPLE NO.						ORIG. DUP. REP.
Low	Med	High	Work	Comp	Fuel	Geom	Rock	Sand	Clay	Org	cl	I-5	>5			Clr	Yel	Brn	Hvy	Light	Wht	Yel	Grn	Red	Brn	Blk	Crse	Sand	Fines	Org	Gel									
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT AND WATER SAMPLE CARD — R.A. OLSON CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1	9	2	P	M	C	1	9	1	1	4	7	1	4	6	0	0	5	5	5	0	6	5	0	S	N	D	S	X		X	X	X	X	X	X	
							3	1				X		5	X	X				X	1				2	1		25	25	1								

REMARKS: Sample from Chandler Coulee about 750 m above confluence with Lyndon Ck. Creek 1-1.5m wide.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8	2	J	1			P	M	C	1	9	2	1	1	7	1	4	5	7	5	5	5	5	1	3	0	0	S	N	D	S		X		X		X	X	X	
							3	1				X		10	X	X				X	1					1												

REMARKS: Sample from Lyndon Ck 250-300m above Chandler Coulee. Creek 2-3m wide.

REMARKS:

REMARKS:

SAMPLE TYPES: A/B - Lake sed./water C/D - Stream sed./water, E/F - Bog sed./water, G/H - Spring sed./water, I,J,K,L - Other

APPENDIX V

LABORATORY ANALYTICAL REPORTS

APPENDIX V.A

LABORATORY ANALYTICAL REPORTS

STREAM SEDIMENT DUPLICATE SAMPLE COMPARATIVE RESULTS

APPENDIX V.A

DUPLICATE STREAM SEDIMENT SAMPLE RESULTS

SOUTHERN ALBERTA RIFT

Sample ID	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)	Ba (ppm)	Cd (ppm)	Co (ppm)	Hg (ppb)	Mo (ppm)	Ni (ppm)	Sb (ppm)	U (ppm)
2JWC011	<5	<0.1	10	10	74	6	860	<0.2	<10	19	<2	31	0.5	2.8
2JWC012	<5	<0.1	9	10	58	5	840	<0.2	<10	23	<2	<20	0.6	2.5
2JWC044	<5	<0.1	32	21	95	8	1500	0.3	11	49	<2	<20	1.0	3.5
2JWC045	<5	<0.1	15	14	71	5	910	0.3	12	38	<2	20	0.8	3
2JWC059	<5	<0.1	14	12	45	7	600	<0.2	13	17	<2	<20	0.7	4.3
2JWC060	<5	<0.1	15	13	44	7	580	<0.2	<10	19	<2	<20	0.8	4.2
2JWC069	9	<0.1	14	17	100	4	540	0.4	<10	56	<2	<20	0.9	2.9
2JWC070	<5	<0.1	12	17	98	4	480	0.4	<10	55	<2	43	0.7	2.7
2JWC091	<5	<0.1	11	8	62	5	670	0.3	<10	13	<2	<20	0.6	2.3
2JWC092	<5	<0.1	10	7	56	4	620	0.3	<10	13	<2	<20	0.6	2.3
2JWC107	<5	<0.1	10	8	63	7	720	<0.2	<10	10	<2	27	0.6	2.3
2JWC108	6	0.1	10	7	58	5	680	<0.2	<10	14	<2	31	0.6	2.5
2JWC118	<5	<0.1	15	10	62	5	760	0.3	<10	19	<2	<20	0.9	2.9
2JWC119	<5	0.1	15	10	65	6	700	0.3	<10	23	<2	54	0.8	2
2MDC006	<5	<0.1	10	11	70	5	980	<0.2	<10	40	<2	<20	0.5	2.8
2MDC007	<5	<0.1	9	11	64	5	580	0.4	<10	41	<2	<20	0.6	2.7
2MSC006	<5	<0.1	25	13	55	3	780	<0.2	12	31	<2	<20	0.4	2.5
2MSC007	<5	<0.1	25	13	56	4	740	<0.2	15	19	<2	44	0.4	2.3
2MSC029	<5	<0.1	10	10	58	6	770	<0.2	<10	18	<2	26	0.7	2.6
2MSC030	<5	<0.1	11	11	57	6	710	<0.2	<10	17	<2	<20	0.7	2.6
2MSC052	<5	<0.1	15	14	85	6	480	0.8	<10	46	<2	23	0.9	2.7
2MSC053	<5	<0.1	15	13	88	6	490	0.9	<10	40	<2	<20	1.0	2.7
2PMC010	<5	<0.1	4	6	33	2	280	0.3	<10	<10	<2	<20	0.3	1.6
2PMC011	<5	<0.1	4	6	35	2	320	0.3	<10	10	<2	<20	0.3	1.6
2PMC043	<5	0.3	29	13	113	7	800	0.9	12	53	2	47	1.3	3.2
2PMC044	7	0.2	29	17	116	6	950	0.9	12	49	<2	<20	1.3	3.1
2PMC053	<5	<0.1	12	11	90	6	340	0.5	<10	44	<2	<20	0.7	2.6
2PMC054	<5	<0.1	11	11	85	6	330	0.5	<10	30	<2	<20	0.8	3
2PMC070	<5	0.2	15	12	97	9	840	0.7	<10	40	<2	31	1.1	2.7
2PMC071	<5	0.2	16	13	95	9	900	0.7	11	41	2	44	1.3	3.1
2PMC086	<5	<0.1	7	6	65	3	140	<0.2	<10	<10	<2	<20	0.4	2.2
2PMC087	<5	<0.1	7	6	74	3	<100	0.3	<10	13	<2	26	0.4	2.2
2PMC106	<5	<0.1	10	11	68	6	690	<0.2	<10	43	<2	<20	0.6	2.7
2PMC107	<5	<0.1	10	11	69	6	740	<0.2	<10	32	<2	27	0.7	2.6
2PMC133	<5	0.2	28	15	103	10	850	0.7	14	56	2	<20	2.0	3.7
2PMC134	<5	0.2	28	15	103	9	840	0.7	12	33	3	29	2.0	3.8
2PMC150	<5	<0.1	19	15	90	9	900	<0.2	12	43	<2	<20	1.1	3.2
2PMC151	<5	<0.1	17	14	81	7	850	<0.2	11	22	<2	36	1.0	3.1
2PMC168	<5	<0.1	11	9	76	8	870	<0.2	<10	27	<2	<20	0.7	2.9
2PMC169	7	<0.1	11	10	76	7	970	<0.2	<10	38	<2	30	0.7	2.9
2PMC186	<5	<0.1	12	9	69	7	730	<0.2	<10	21	<2	<20	0.8	2.9
2PMC187	<5	<0.1	10	9	65	8	750	<0.2	<10	20	<2	<20	0.9	2.8

APPENDIX V.B

LABORATORY ANALYTICAL REPORTS

ROCK SAMPLES

Geochemical Lab Report

Report: 8248-92/8248-92

SAMPLE NUMBER	ELEMENT UNITS	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Hg PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	Si %	W PPM	Be PPM
2MDP001		<1	109	61	143	0.1	1	<1	2239	3.37	17	N/A	ND	ND	640	<1	4	4	241	3.94	0.11	94	38	0.21	358	0.12	N/A	0.96	0.01	0.01	8	7.9
2MDP002		1	122	21	72	0.1	4	6	2095	2.24	13	N/A	ND	ND	192	<1	3	13	163	1.94	0.04	43	70	0.21	500	0.02	N/A	0.86	0.01	0.01	9	4.2
2MDP003		2	13	6	11	0.1	10	4	214	0.57	12	N/A	ND	ND	12	<1	2	<3	9	0.41	0.03	3	333	0.19	34	0.01	N/A	0.14	0.01	0.01	6	0.4
2MDP004		<1	10	<2	46	0.1	15	<1	1050	3.07	2	N/A	ND	ND	317	<1	<2	3	12	6.84	0.02	14	115	0.85	138	0.01	N/A	1.57	0.01	0.01	<2	1.1
2MDP005		<1	205	2	108	0.1	<1	<1	3964	3.78	2	N/A	ND	ND	1047	<1	<2	8	79	8.98	0.1	94	19	0.27	2075	0.02	N/A	1.8	0.06	0.01	<2	7.6
2MDP006		2	22	11	79	0.1	25	9	276	1.02	22	N/A	ND	ND	69	<1	4	7	24	0.56	0.07	8	371	0.04	206	0.01	N/A	0.38	0.01	0.01	5	1.2
2MDP007		<1	16	<2	40	0.1	4	<1	1384	0.84	2	N/A	ND	ND	484	<1	<2	<3	<1	17.87	0.01	15	29	0.58	3002	0.01	N/A	0.69	0.01	0.01	<2	1.2
2MDP008		<1	16	<2	20	0.1	1	<1	2211	0.42	2	N/A	ND	ND	442	<1	<2	<3	<1	19.92	0.01	14	11	0.39	1303	0.01	N/A	0.47	0.01	0.01	<2	1.2
2MDP009		3	13	6	40	0.1	15	1	130	4.89	20	N/A	ND	ND	43	<1	3	4	19	1.06	0.08	4	298	0.04	288	0.01	N/A	0.31	0.01	0.01	7	0.7
2MDP010		2	27	16	195	0.2	31	1	1437	2.91	8	N/A	ND	ND	138	1	<2	3	43	5.2	0.06	6	98	0.5	173	0.01	N/A	1.22	0.01	0.01	9	1.6
2MDP011		5	8	5	65	0.3	32	6	334	4.27	20	N/A	ND	ND	23	<1	3	<3	13	0.28	0.06	2	181	0.02	232	0.01	N/A	0.13	0.01	0.01	<2	0.8
2MDP012		7	8	<2	73	0.2	20	4	2731	16.7	49	N/A	ND	ND	20	<1	2	<3	29	0.48	0.08	3	194	0.35	66	0.01	N/A	0.16	0.01	0.01	<2	1.7
2MDP013		9	<1	21	66	0.1	4	20	8586	27.3	76	N/A	ND	ND	200	<1	14	45	3	2.21	0.06	5	75	0.53	228	0.01	N/A	0.03	0.03	0.01	12	1.2
2MDP014		6	2	22	88	0.1	14	23	6065	28.5	33	N/A	ND	ND	98	<1	14	43	27	0.92	0.15	7	74	0.66	603	0.01	N/A	0.2	0.04	0.01	12	3.3
2MDP015		1	10	<2	10	0.1	4	2	595	1.37	4	N/A	ND	ND	66	1	<2	<3	4	7.06	0.01	3	170	1.85	46	0.01	N/A	0.05	0.01	0.01	<2	0.7
2MDP016		<1	21	<2	9	0.1	3	<1	103	0.45	2	N/A	ND	ND	203	<1	<2	<3	1	19.51	0.01	2	26	8.51	38	0.01	N/A	0.09	0.01	0.01	<2	1.3
2MDP017		1	11	<2	34	0.1	6	2	204	0.42	2	N/A	ND	ND	151	<1	<2	<3	6	8.7	1.48	79	237	0.59	67	0.01	N/A	0.12	0.01	0.02	<2	1
2MDP018		3	6	7	19	0.1	9	4	77	0.3	13	N/A	ND	ND	34	<1	5	<3	3	1.59	0.44	34	227	0.02	34	0.01	N/A	0.06	0.01	0.01	<2	0.3
2MDP019		2	8	7	12	0.1	8	4	81	0.39	16	N/A	ND	ND	35	<1	5	<3	3	2.87	0.28	15	334	0.05	24	0.01	N/A	0.05	0.01	0.01	3	0.4
2MDP020		6	6	9	26	0.1	10	3	144	1.41	13	N/A	ND	ND	79	<1	3	7	7	2.35	0.71	34	259	0.07	52	0.01	N/A	0.08	0.01	0.01	2	0.4
2MDP021		<1	14	<2	12	0.1	<1	<1	128	0.61	2	N/A	ND	ND	166	<1	<2	<3	<1	26.37	0.01	5	11	0.82	29	0.01	N/A	0.13	0.01	0.01	<2	1.1
2MDP022		5	11	<2	9	0.1	6	<1	92	1.3	2	N/A	ND	ND	152	<1	<2	<3	<1	17.23	0.01	5	90	0.17	27	0.01	N/A	0.17	0.01	0.01	<2	1
2MDP023		<1	16	<2	108	0.1	13	<1	144	0.87	2	N/A	ND	ND	73	2	<2	<3	12	11.85	0.02	7	70	6.32	57	0.01	N/A	0.55	0.02	0.02	<2	1.4
2MDP024		25	18	<2	15	0.1	11	<1	169	1.46	2	N/A	ND	ND	307	<1	<2	<3	51	27.02	0.01	10	6	2.4	38	0.01	N/A	0.24	0.01	0.01	<2	2.1
2MDP025		<1	12	<2	15	0.1	4	<1	93	0.35	2	N/A	ND	ND	849	<1	<2	<3	<1	16.59	0.01	12	98	0.24	89	0.01	N/A	0.21	0.01	0.01	<2	0.9
2MDP026		<1	14	<2	9	0.1	<1	<1	43	0.12	2	N/A	ND	ND	283	<1	<2	<3	<1	29.19	0.01	<1	5	0.77	20	0.01	N/A	0.06	0.01	0.01	<2	1
2MDP027		<1	20	<2	27	0.1	1	<1	285	0.84	2	N/A	ND	ND	230	1	<2	<3	15	16.42	0.01	6	50	7.16	246	0.01	N/A	0.07	0.02	0.01	<2	1.3
2MDP028		2	7	10	12	0.5	5	3	44	0.78	16	N/A	ND	ND	18	<1	4	<3	16	0.66	0.03	1	168	0.27	39	0.01	N/A	0.19	0.01	0.01	<2	0.3
2MDP029		<1	10	<2	3	0.1	<1	<1	40	0.09	2	N/A	ND	ND	164	<1	<2	<3	<1	27.89	0.01	<1	3	0.21	15	0.01	N/A	0.04	0.01	0.01	<2	0.9
2MDP030		<1	17	<2	34	0.1	<1	<1	99	0.31	2	N/A	ND	ND	69	<1	<2	<3	<1	13.77	0.01	1	69	6.92	18	0.01	N/A	0.06	0.01	0.01	<2	0.8

SAMPLE NUMBER	ELEMENT UNITS	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Hg PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	Si %	W PPM	Be PPM
2MDP031		<1	19	<2	13	0.1	3	<1	718	0.88	2	N/A	ND	ND	261	<1	<2	<3	<1	21.95	0.01	11	3	0.59	43	0.01	N/A	0.14	0.01	0.01	<2	1.2
2MDP032		<1	42	30	101	0.1	1	2	874	2.54	13	N/A	ND	ND	159	<1	5	<3	71	1.31	0.03	35	66	0.26	103	0.2	N/A	0.75	0.01	0.01	3	3.8
2MDP033		<1	15	<2	11	0.1	<1	<1	127	0.46	2	N/A	ND	ND	220	<1	<2	<3	<1	29.56	0.01	2	<1	0.55	27	0.01	N/A	0.08	0.01	0.01	<2	1.4
2MDP034		<1	21	<2	9	0.1	<1	<1	359	0.63	2	N/A	ND	ND	358	<1	<2	<3	<1	28.36	0.01	12	1	0.49	58	0.01	N/A	0.17	0.01	0.01	<2	1.2
2MDP035		<1	16	<2	33	0.1	12	<1	560	1.1	7	N/A	ND	ND	235	1	<2	<3	27	5.03	0.04	8	54	0.32	225	0.07	N/A	2.41	0.01	0.02	<2	1
2MDP036		6	10	10	27	0.4	14	5	54	2.99	34	N/A	ND	ND	28	<1	3	<3	27	0.2	0.03	1	338	0.02	259	0.01	N/A	0.23	0.01	0.01	2	0.6
2MDP037		1	39	16	123	0.1	1	6	2700	3.3	13	N/A	ND	ND	357	1	<2	8	187	3.09	0.06	42	45	0.41	174	0.15	N/A	0.98	0.01	0.01	7	5.1
2MDP038		5	15	5	46	0.1	13	5	198	1.82	10	N/A	ND	ND	40	<1	3	<3	23	0.14	0.03	2	355	0.02	1211	0.01	N/A	0.19	0.01	0.01	<2	0.7
2MDP039		<1	15	<2	27	0.1	10	5	234	0.52	2	N/A	ND	ND	499	1	<2	<3	21	7.5	0.01	8	166	4.07	74	0.01	N/A	0.15	0.01	0.01	3	1.1
2MDP040		<1	20	<2	34	0.1	6	1	337	0.37	2	N/A	ND	ND	1041	<1	<2	<3	9	14.04	0.01	9	43	7.57	41	0.01	N/A	0.22	0.02	0.01	<2	1.2
2MDP041		4	15	13	160	0.2	47	<1	583	6.21	45	N/A	ND	ND	75	<1	<2	<3	72	0.88	0.13	9	126	0.9	383	0.01	N/A	2.37	0.01	0.01	2	1.8
2MDP042		19	10	7	57	0.3	41	9	175	15.2	43	N/A	ND	ND	32	<1	3	<3	10	4.29	0.02	2	59	2.71	73	0.01	N/A	0.31	0.01	0.01	6	1.1
2MDP043		<1	18	<2	24	0.1	10	<1	160	0.95	2	N/A	ND	ND	96	<1	<2	<3	3	12.83	0.05	2	128	6.13	29	0.01	N/A	0.14	0.01	0.01	<2	1.1
2MDP044		2	14	12	64	0.1	17	2	336	3.93	15	N/A	ND	ND	41	<1	<2	<3	28	0.93	0.06	3	112	0.54	220	0.01	N/A	0.75	0.01	0.01	3	1.1
2MDP045		<1	14	24	105	0.1	1	<1	445	0.88	114	N/A	ND	ND	122	<1	<2	<3	<1	1.36	0.01	41	24	0.2	160	0.01	N/A	4	3.4	0.01	<2	1.3
2MDP046		89	45	45	631	0.3	87	2	96	8.15	227	N/A	ND	ND	180	10	7	<3	41	0.51	0.07	10	16	0.22	698	0.01	N/A	1.05	0.2	0.01	14	1.2
2MDP047		7	6	7	182	0.1	27	14	814	18.6	19	N/A	10	ND	283	1	4	21	88	5.91	0.18	20	134	1.62	202	0.01	N/A	1.53	0.03	0.01	10	2.7
2MDP048		1	25	12	42	0.8	6	7	2337	1.1	6	N/A	ND	ND	7	<1	3	<3	14	4.41	0.01	3	110	0.17	84	0.01	N/A	0.44	0.01	0.01	3	0.8
2MDP049		2	12	18	23	0.1	4	3	23	0.75	<2	N/A	ND	ND	75	<1	2	<3	14	0.08	0.04	<1	243	0.02	107	0.01	N/A	0.1	0.01	0.01	<2	0.3
2MDP050		6	4	<2	6	0.1	4	<1	175	1.78	<2	N/A	ND	ND	1143	<1	<2	<3	5	14.68	0.01	8	21	7.4	174	0.01	N/A	0.41	0.08	0.01	<2	1.1
2MDP051		<1	2	<2	5	0.1	15	1	264	2.15	<2	N/A	ND	ND	14	<1	<2	<3	4	15.46	0.03	6	14	6.58	39	0.01	N/A	0.34	0.06	0.01	<2	1.2
2MDP052		2	8	2	60	0.1	15	7	369	11.4	<2	N/A	ND	ND	10	<1	<2	<3	61	0.53	0.07	3	67	0.28	405	0.01	N/A	0.36	0.01	0.01	<2	2.1
2MDP053		<1	10	<2	14	0.1	10	3	1873	2.69	<2	N/A	ND	ND	<1	<1	<2	<3	9	17.66	0.12	6	34	0.28	555	0.01	N/A	0.51	0.11	0.01	<2	1.4
2MDP054		1	23	13	177	0.1	22	13	238	4.35	<2	N/A	ND	ND	8	<1	<2	<3	67	0.56	0.01	13	195	0.4	117	0.01	N/A	1.52	0.01	0.01	<2	1.5
2MDP055		1	12	6	41	0.1	9	5	171	1.14	5	N/A	ND	ND	210	<1	3	<3	10	4.23	0.05	3	110	0.51	504	0.01	N/A	0.36	0.01	0.01	3	0.7
2MDP056		1	8	2	13	0.4	5	2	286	0.47	4	N/A	ND	ND	55	<1	<2	<3	5	7.92	0.04	2	136	3.32	1847	0.01	N/A	0.12	0.02	0.01	<2	0.7
2MDP057		<1	4	<2	6	0.1	<1	<1	110	0.29	<2	N/A	ND	ND	3134	<1	<2	<3	4	21.12	0.03	7	58	1.35	1416	0.01	N/A	0.18	0.04	0.01	<2	1
2MDP058		<1	7	<2	32	0.1	8	2	90	0.43	<2	N/A	ND	ND	112	<1	<2	<3	4	8.36	0.02	2	115	1.28	100	0.01	N/A	0.17	0.01	0.01	<2	0.7
2MDP059		<1	4	<2	20	0.1	7	1	81	0.35	<2	N/A	ND	ND	120	<1	<2	<3	3	16.72	0.02	1	37	0.47	490	0.01	N/A	0.23	0.02	0.01	<2	0.9
2MSP001		1	16	9	84	0.2	18	3	250	7.79	20	N/A	ND	ND	22	<1	<2	<3	26	0.28	0.07	3	155	0.13	463	0.01	N/A	0.59	0.01	0.01	3	1.1

SAMPLE NUMBER	ELEMENT UNITS	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Hg PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	Si %	W PPM	Be PPM
2MSP002		22	1	68	307	0.1	30	39	818	21.6	169	N/A	ND	ND	29	2	8	25	269	0.62	0.32	23	83	0.36	500	0.01	N/A	1.58	0.01	0.01	8	5.3
2MSP003		1	15	<2	47	0.1	12	2	699	1.53	3	N/A	ND	ND	71	1	<2	<3	20	7.22	0.1	11	77	1.52	230	0.01	N/A	0.69	0.01	0.01	2	1.3
2MSP004		1	37	14	179	0.3	38	4	410	3.81	6	N/A	ND	ND	26	<1	<2	<3	50	0.82	0.08	8	61	0.4	224	0.01	N/A	1.82	0.01	0.01	5	1.7
2MSP005		<1	12	<2	19	0.1	<1	<1	65	0.23	2	N/A	ND	ND	156	<1	<2	<3	<1	25.9	0.01	<1	19	0.51	24	0.01	N/A	0.1	0.01	0.01	<2	1
2MSP006		<1	14	8	49	0.1	11	4	28	0.99	13	N/A	ND	ND	16	<1	5	<3	17	1.02	0.03	3	134	0.15	78	0.01	N/A	0.57	0.01	0.01	4	0.7
2MSP007		2	66	16	117	0.1	5	<1	1694	2.71	16	N/A	ND	ND	405	<1	5	5	110	3	0.1	93	40	0.54	174	0.14	N/A	5.25	4.81	0.01	3	4.2
2MSP008		<1	21	<2	49	0.1	6	<1	6417	2.14	2	N/A	ND	8	64	1	<2	<3	46	11.4	0.04	13	85	0.31	153	0.03	N/A	1.2	0.15	0.01	<2	2
2MSP009		<1	35	<2	29	0.1	<1	<1	989	1.06	2	N/A	ND	ND	78	<1	<2	<3	<1	23.66	0.01	20	16	2.29	57	0.01	N/A	0.44	0.01	0.01	<2	1.3
2MSP010		<1	7	7	32	0.1	14	2	108	1.36	19	N/A	ND	ND	8	<1	3	<3	13	1.19	0.03	21	48	1.47	73	0.01	N/A	1.57	0.01	0.01	2	1.4
2MSP011		1	8	4	28	0.1	15	6	120	1.47	23	N/A	ND	ND	13	<1	4	<3	12	1.21	0.03	22	48	1.78	62	0.01	N/A	1.71	0.01	0.01	<2	1.7
2MSP012		1	7	6	38	0.1	12	2	180	1.48	13	N/A	ND	ND	13	<1	5	<3	13	2.87	0.03	27	61	1.88	61	0.01	N/A	1.54	0.01	0.01	5	1.4
2MSP013		1	7	<2	33	0.1	18	2	507	2.3	12	N/A	ND	ND	28	<1	<2	<3	10	3.11	0.03	20	67	1.99	76	0.01	N/A	1.28	0.01	0.01	4	1.1
2MSP014		1	25	25	193	0.1	31	4	670	2.48	2	N/A	ND	ND	100	<1	<2	<3	59	4.41	0.06	4	86	0.46	92	0.01	N/A	1.42	0.01	0.01	9	1.7
2MSP015		<1	30	15	103	0.1	3	4	2013	3.64	7	N/A	ND	ND	83	<1	<2	<3	110	2.31	0.06	38	51	0.33	169	0.15	N/A	0.99	0.03	0.01	3	3.1
2MSP016		1	45	4	20	0.1	10	6	174	2.13	4	N/A	ND	ND	6	<1	<2	<3	13	0.1	0.01	1	277	0.04	46	0.01	N/A	0.12	0.01	0.01	<2	0.5
2MSP017		<1	22	<2	15	0.1	<1	<1	65	0.18	2	N/A	ND	ND	78	<1	<2	<3	<1	19.34	0.01	<1	11	11.1	23	0.01	N/A	0.05	0.04	0.01	<2	1.2
2MSP018		1	82	2027	1681	1.1	18	6	865	2.08	41	N/A	ND	ND	16	7	<2	<3	17	4.39	0.05	25	77	3.68	174	0.01	N/A	1.13	0.01	0.01	8	1.6
2MSP019		<1	51	575	579	0.9	12	3	1270	1.59	11	N/A	ND	ND	22	3	<2	<3	12	7.11	0.04	18	51	5.15	186	0.01	N/A	0.8	0.01	0.01	15	1.5
2MSP020		<1	77	959	7718	1	6	3	1440	1.47	4	N/A	ND	ND	22	36	<2	<3	10	8.13	0.03	14	46	5.76	167	0.01	N/A	0.67	0.01	0.01	7	1.5
2MSP021		2	16	63	293	0.3	16	7	101	2.01	39	N/A	ND	ND	6	1	5	<3	15	0.49	0.05	23	125	1.1	116	0.01	N/A	1.16	0.01	0.01	7	1.1
2MSP022		<1	14	<2	23	0.1	<1	<1	65	0.25	2	N/A	ND	ND	81	<1	<2	<3	1	16.4	0.01	2	78	4.46	22	0.01	N/A	0.09	0.01	0.01	<2	1.2
2MSP023		1	19	<2	59	0.1	10	<1	815	0.58	2	N/A	ND	ND	257	<1	<2	<3	18	18.45	0.01	3	5	0.5	589	0.01	N/A	0.11	0.01	0.01	<2	1.3
2MSP024		2	12	14	34	0.6	12	10	204	1.6	10	N/A	ND	ND	52	1	4	3	29	3.41	0.07	17	78	1.7	79	0.01	N/A	1.09	0.02	0.01	9	1.3
2MSP025		1	83	9	49	0.1	25	18	726	1.43	14	N/A	ND	ND	50	<1	<2	<3	30	2.88	0.06	7	86	0.43	204	0.01	N/A	0.91	0.02	0.01	9	1.1
2MSP026		23	34753	25	15	15.5	<1	111	1288	1.62	113	N/A	ND	ND	<1	<1	<2	<3	3	0.68	0.01	3	210	0.74	675	0.01	N/A	0.32	0.01	0.01	17	0.6
2MSP027		2	244	2074	1202	1.2	13	11	717	1.42	19	N/A	ND	ND	<1	5	5	<3	14	2.92	0.06	15	83	2.76	251	0.01	N/A	0.9	0.01	0.01	8	1
2MSP028		<1	248	36	54	0.7	6	4	1536	1.11	<2	N/A	ND	ND	<1	<1	<2	<3	8	8.62	0.04	20	35	6.05	78	0.01	N/A	0.62	0.03	0.01	4	1.6
2MSP029		5	282	26451	>10%	118.6	<1	42	589	1.74	<2	N/A	5	ND	<1	376	17	<3	1	11.57	0.03	2	18	3.92	24	0.01	N/A	0.1	0.07	0.01	4	1
2JWP001		2	214	46	118	0.2	1	6	1434	4.37	20	N/A	ND	ND	551	<1	5	15	237	3.06	0.09	65	32	0.4	156	0.09	N/A	1.37	0.02	0.01	9	6.1
2JWP002		1	14	8	14	0.2	4	4	103	0.54	13	N/A	ND	ND	43	<1	5	5	19	0.16	0.02	3	226	0.02	162	0.01	N/A	0.16	0.01	0.01	<2	0.5

SAMPLE NUMBER	ELEMENT UNITS	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Hg PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	Si %	W PPM	Be PPM
2JWP003		<1	15	<2	30	0.1	4	<1	720	1.61	2	N/A	ND	ND	799	<1	<2	<3	9	15.42	0.02	6	43	0.59	1110	0.01	N/A	0.97	0.01	0.01	<2	1.2
2JWP004		1	13	<2	10	0.1	6	4	96	2.53	19	N/A	ND	ND	38	<1	4	3	12	0.62	0.03	2	251	0.03	235	0.02	N/A	0.13	0.01	0.01	9	0.4
2JWP005		1	9	<2	18	0.1	9	4	245	2.64	4	N/A	ND	ND	10	<1	6	<3	16	0.13	0.02	<1	278	0.02	76	0.02	N/A	0.07	0.01	0.01	8	0.5
2JWP006		<1	12	<2	22	0.1	<1	<1	57	0.31	2	N/A	ND	ND	100	<1	<2	<3	<1	32.55	0.01	<1	10	0.18	17	0.01	N/A	0.03	0.01	0.01	<2	1.1
2JWP007		1	10	4	35	0.1	13	4	923	1.99	14	N/A	ND	ND	13	<1	6	6	14	3.2	0.05	22	195	1.72	71	0.01	N/A	0.67	0.01	0.02	7	0.8
2JWP008		3	62	2035	4281	2	29	16	79	1.71	58	N/A	ND	4	5	23	2	5	16	0.15	0.05	20	142	0.79	106	0.01	N/A	0.84	0.01	0.01	2	0.6
2JWP009		1	5	9	58	0.1	21	6	178	2.12	12	N/A	ND	ND	4	<1	5	4	15	0.49	0.06	27	88	1.52	63	0.01	N/A	1.35	0.01	0.01	<2	1.6
2JWP010		<1	352	<2	19	0.1	<1	<1	2416	0.88	2	N/A	ND	ND	46	<1	<2	<3	4	14.78	0.01	9	18	9.51	513	0.01	N/A	0.17	0.01	0.01	<2	1.5
2JWP011		2	24	12	55	0.2	18	7	142	1.03	13	N/A	ND	ND	22	<1	6	<3	15	0.78	0.04	3	195	0.43	229	0.01	N/A	0.47	0.01	0.01	3	0.8
2JWP012		1	11	9	39	0.2	14	5	30	1	12	N/A	ND	ND	13	<1	4	<3	17	0.09	0.04	2	218	0.1	180	0.01	N/A	0.49	0.01	0.01	<2	0.7
2JWP013		22	15	<2	50	0.2	18	7	616	1.9	357	N/A	ND	ND	89	1	<2	<3	11	7.54	0.06	14	146	1.08	103	0.01	N/A	0.68	0.01	0.01	<2	1.1
2JWP014		68	14	<2	40	0.1	25	18	490	2.52	625	N/A	ND	ND	140	2	2	<3	11	8.02	0.05	8	69	0.9	242	0.01	N/A	0.58	0.01	0.01	<2	1
2JWP015		2	14	<2	51	0.1	15	6	581	1.72	13	N/A	ND	ND	160	1	<2	<3	13	8.24	0.03	8	101	1.05	2144	0.01	N/A	0.97	0.01	0.01	<2	1
2JWP016		6	17	11	55	0.3	18	4	58	1.52	35	N/A	ND	ND	44	<1	5	<3	28	0.43	0.07	6	155	0.16	213	0.01	N/A	0.78	0.01	0.01	2	1.2
2JWP017		6	93	35	16	1.5	23	38	75	1.51	30	N/A	ND	ND	27	<1	7	<3	5	0.06	0.01	6	397	0.27	1228	0.01	N/A	0.33	0.01	0.01	<2	0.4
2JWP018		4	130	8	27	0.2	18	21	116	1.76	21	N/A	ND	ND	108	<1	3	<3	9	0.06	0.02	21	162	0.8	3489	0.01	N/A	0.99	0.01	0.01	<2	0.9
2JWP019		9	14	8	145	0.1	35	10	3254	13.4	22	N/A	ND	ND	34	2	7	3	54	1.67	0.11	7	24	0.8	290	0.01	N/A	0.92	0.01	0.01	8	2.7
2JWP020		2	42	10	67	0.3	22	9	144	0.8	8	N/A	ND	ND	29	1	5	<3	30	0.23	0.01	3	144	0.06	353	0.01	N/A	0.47	0.01	0.01	2	1.1
2JWP021		<1	16	<2	16	0.1	<1	<1	97	0.34	2	N/A	ND	ND	1169	<1	<2	<3	<1	23.53	0.01	<1	6	0.14	423	0.01	N/A	0.09	0.01	0.01	<2	1
2JWP022		20	61	<2	163	0.4	56	9	90	4.54	2	N/A	ND	ND	241	2	<2	<3	45	10.74	0.05	5	19	0.18	162	0.01	N/A	0.45	0.01	0.01	<2	1.7
2JWP023		2	12	10	97	0.3	34	9	770	2.11	22	N/A	ND	ND	65	<1	<2	5	30	1.34	0.05	6	187	0.17	509	0.01	N/A	0.92	0.01	0.01	5	1.3
2JWP024		<1	12	2	21	0.2	13	3	100	2.44	11	N/A	ND	ND	26	1	6	<3	11	5.49	0.03	3	131	3.22	75	0.01	N/A	0.38	0.01	0.02	6	1.1
2JWP025		<1	14	<2	21	0.1	5	2	56	0.41	2	N/A	ND	ND	67	1	<2	<3	7	7.85	0.03	1	184	3.72	1885	0.01	N/A	0.05	0.01	0.01	<2	0.8
2JWP026		<1	17	<2	63	0.1	7	2	105	1.45	2	N/A	ND	ND	58	1	<2	<3	9	10.36	0.03	9	194	1.28	151	0.01	N/A	0.11	0.01	0.01	<2	0.9
2JWP027		<1	18	<2	93	0.1	<1	<1	44	0.12	2	N/A	ND	ND	153	<1	<2	<3	<1	28.31	0.01	1	3	5.87	22	0.01	N/A	0.03	0.01	0.01	<2	1.4
2JWP028		2	32	19	102	0.4	29	10	59	2.61	15	N/A	ND	ND	46	<1	<2	<3	26	1.89	0.06	3	38	0.35	283	0.01	N/A	0.93	0.02	0.01	7	1.1
2JWP029		<1	1	58	158	0.1	9	1	126	6.67	<2	N/A	ND	ND	<1	<1	<2	<3	3	18.17	0.01	7	26	0.86	39	0.01	N/A	0.26	0.06	0.01	<2	1.1
2JWP030		2	3	<2	<1	0.1	10	3	108	0.78	<2	N/A	ND	ND	<1	<1	<2	<3	4	15.1	0.01	8	10	0.22	37	0.01	N/A	0.46	0.03	0.01	<2	1.1
2JWP031		<1	24	147	230	0.3	11	8	6251	1.35	<2	N/A	11	ND	86	<1	<2	<3	18	15.38	0.09	13	24	0.47	181	0.01	N/A	0.98	0.04	0.01	<2	1.7
2JWP032		5	30	20	96	0.4	19	9	313	2.03	15	N/A	ND	ND	81	<1	3	<3	18	4.17	0.07	5	56	1.09	257	0.01	N/A	0.63	0.02	0.01	11	1.1

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2PMP001		3	227	70	146	0.2	2	10	1594	4.36	25	N/A	ND	ND	909	<1	5	14	299	3.89	0.12	79	38	0.53	234	0.13	N/A	1.01	0.01	0.01	10	8.4
2PMP002		<1	10	<2	51	0.1	6	2	1073	8	2	N/A	ND	ND	442	1	<2	<3	34	9.39	0.68	8	66	0.69	736	0.01	N/A	0.55	0.01	0.01	<2	2.1
2PMP003		3	13	10	167	0.4	52	23	1189	12.4	35	N/A	ND	ND	39	2	2	<3	112	0.41	0.14	2	230	0.09	183	0.01	N/A	0.24	0.01	0.01	5	2.6
2PMP004		<1	59	21	103	0.1	4	8	835	3.93	12	N/A	ND	ND	78	<1	<2	<3	162	0.49	0.06	42	50	0.39	188	0.21	N/A	1.29	0.01	0.01	<2	4.3
2PMP005		1	17	5	56	0.1	12	5	63	2.48	15	N/A	ND	ND	32	<1	<2	<3	29	0.08	0.06	4	181	0.1	205	0.01	N/A	0.69	0.01	0.01	2	0.8
2PMP006		<1	95	99	158	0.1	<1	3	2316	2.78	3	N/A	ND	ND	645	<1	<2	4	246	8.98	0.14	86	32	0.29	288	0.04	N/A	0.93	0.01	0.01	<2	6.8
2PMP007		1	15	8	10	0.1	12	5	373	0.96	15	N/A	ND	ND	46	<1	3	<3	16	2.82	0.08	5	224	1.48	154	0.01	N/A	0.21	0.01	0.01	6	0.6
2PMP008		<1	30	<2	22	0.2	9	<1	311	1.07	2	N/A	ND	ND	2168	<1	<2	<3	<1	17.72	0.01	12	13	9.51	59	0.01	N/A	0.38	0.05	0.01	<2	1.2
2PMP009		<1	13	<2	9	0.1	<1	<1	135	0.26	2	N/A	ND	ND	252	<1	<2	<3	<1	29.59	0.01	1	<1	0.83	41	0.01	N/A	0.05	0.01	0.01	<2	1
2PMP010		3	8	6	5	0.3	7	4	64	0.55	12	N/A	ND	ND	17	<1	3	<3	14	1.04	0.01	<1	290	0.03	66	0.01	N/A	0.12	0.01	0.01	<2	0.2
2PMP011		1	7	9	96	0.1	21	10	72	3.53	13	N/A	ND	ND	12	<1	2	<3	78	0.15	0.07	1	216	0.23	120	0.01	N/A	1.16	0.01	0.01	3	1.5
2PMP012		1	20	8	145	0.1	27	13	264	2.68	11	N/A	ND	ND	17	<1	<2	<3	12	0.31	0.03	14	26	1.18	571	0.01	N/A	1.92	0.01	0.01	4	0.9
2PMP013		3	8	8	22	0.2	9	6	61	0.97	17	N/A	ND	ND	59	1	<2	<3	14	0.09	0.06	2	267	0.06	300	0.01	N/A	0.21	0.01	0.01	<2	0.5
2PMP014		3	16	4	241	0.2	78	34	114	1.28	22	N/A	ND	ND	22	2	4	<3	19	0.28	0.1	5	234	0.05	281	0.01	N/A	0.3	0.01	0.01	6	0.7
2PMP015		<1	15	<2	43	0.1	<1	<1	26	0.16	2	N/A	ND	ND	167	<1	<2	<3	<1	28.2	0.01	<1	22	2.7	25	0.01	N/A	0.04	0.01	0.01	<2	1.1
2PMP016		2	7	<2	13	0.2	15	4	91	0.42	13	N/A	ND	ND	26	<1	4	<3	3	1.81	0.34	22	318	0.09	27	0.01	N/A	0.06	0.01	0.01	4	0.3
2PMP017		9	7	<2	197	0.1	17	2	196	5.26	12	N/A	ND	ND	128	<1	2	<3	7	0.86	0.47	19	358	0.03	3105	0.01	N/A	0.06	0.01	0.01	6	0.4
2PMP018		<1	12	<2	15	0.1	<1	<1	162	0.83	2	N/A	ND	ND	261	<1	<2	<3	<1	26.86	0.01	5	26	0.2	143	0.01	N/A	0.1	0.01	0.01	<2	1.1
2PMP019		<1	15	<2	15	0.1	2	<1	36	0.15	2	N/A	ND	ND	82	<1	<2	<3	<1	19.43	0.01	4	35	5.05	43	0.01	N/A	0.06	0.01	0.01	<2	1
2PMP020		9	8	<2	11	0.1	9	3	64	0.5	21	N/A	ND	ND	87	<1	<2	<3	1	4.66	0.01	<1	235	0.27	12	0.01	N/A	0.04	0.01	0.01	3	0.3
2PMP021		<1	13	<2	5	0.1	<1	<1	46	0.11	2	N/A	ND	ND	454	<1	<2	<3	<1	30.09	0.01	<1	<1	0.32	31	0.01	N/A	0.03	0.01	0.01	<2	1.1
2PMP022		<1	13	<2	8	0.1	<1	<1	102	0.27	2	N/A	ND	ND	183	<1	<2	<3	<1	30.06	0.01	<1	2	0.83	24	0.01	N/A	0.07	0.01	0.01	<2	1.3
2PMP023		<1	22	<2	90	0.1	<1	<1	79	0.18	2	N/A	ND	ND	81	<1	<2	<3	<1	20.82	0.01	<1	3	10.9	23	0.01	N/A	0.09	0.01	0.01	<2	1.4
2PMP024		<1	120	<2	45	0.3	<1	1	6083	1.63	2	N/A	ND	ND	1113	2	<2	<3	83	15.44	0.01	40	19	0.64	118	0.13	N/A	0.99	0.5	0.01	<2	3.9
2PMP025		<1	82	19	66	0.1	7	2	1120	1.98	7	N/A	ND	ND	523	<1	3	<3	70	3.06	0.06	36	24	0.15	73	0.1	N/A	3.22	0.23	0.01	2	3.5
2PMP026		3	21	17	11	0.4	10	3	52	0.72	7	N/A	ND	ND	39	<1	2	<3	45	0.14	0.02	3	80	0.02	1023	0.01	N/A	0.28	0.01	0.01	<2	1.4
2PMP027		1	210	38	152	0.1	<1	13	2078	5.45	4	N/A	ND	ND	127	<1	2	6	96	0.86	0.11	93	19	0.58	310	0.46	N/A	1.25	0.01	0.01	4	6
2PMP028		6	40	22	149	0.6	43	12	277	2.38	22	N/A	ND	ND	27	1	9	<3	42	1.93	0.1	8	106	1.27	167	0.02	N/A	1.21	0.01	0.01	8	1.8
2PMP029		<1	18	<2	13	0.1	<1	<1	67	0.31	2	N/A	ND	ND	280	<1	<2	<3	<1	30.56	0.01	2	5	0.42	25	0.01	N/A	0.13	0.01	0.01	<2	1.3
2PMP030		<1	21	<2	20	0.1	<1	<1	62	0.25	2	N/A	ND	ND	48	<1	<2	<3	10	17.52	0.01	3	21	11.0	25	0.01	N/A	0.32	0.01	0.01	<2	1.6

SAMPLE NUMBER	ELEMENT UNITS	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Hg PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	Si %	W PPM	Be PPM
2PMP031		8	17	27	110	0.3	20	7	36	2	45	N/A	ND	ND	23	<1	2	<3	52	0.4	0.23	9	104	0.18	129	0.01	N/A	0.81	0.01	0.01	4	1.5
2PMP032		3	10	5	45	0.4	21	6	45	3.49	21	N/A	ND	ND	36	<1	2	<3	22	1.11	0.05	7	138	1.37	138	0.01	N/A	1.1	0.01	0.02	7	1.2
2PMP033		6	8	9	51	0.5	28	5	42	8.02	10	N/A	ND	ND	16	<1	<2	<3	12	0.15	0.03	1	78	0.13	55	0.01	N/A	0.38	0.01	0.01	<2	0.7
2PMP034		33	109	184	798	0.7	28	5	199	6.26	4	N/A	ND	ND	67	7	<2	<3	4	8.21	0.03	2	181	1.92	34	0.01	N/A	0.09	0.01	0.01	6	0.8
2PMP035		4	24	18	117	0.6	29	10	83	1.11	16	N/A	ND	ND	21	1	2	<3	17	1.47	0.13	4	160	0.65	66	0.01	N/A	0.33	0.01	0.01	10	0.9
2PMP036		<1	27	<2	13	0.1	5	<1	133	1.96	2	N/A	ND	ND	120	<1	<2	<3	<1	18.04	0.01	2	13	9.47	29	0.01	N/A	0.08	0.01	0.01	<2	1.5
2PMP037		<1	12	<2	3	0.1	10	3	141	0.65	<2	N/A	ND	ND	11	<1	<2	<3	32	13.16	0.01	7	18	7.41	20	0.01	N/A	0.17	0.05	0.01	<2	1.4
2PMP038		<1	8	<2	15	0.1	<1	<1	53	0.29	<2	N/A	ND	ND	<1	<1	<2	<3	1	29.08	0.01	1	6	0.7	17	0.01	N/A	0.14	0.06	0.01	<2	1.1
2PMP039		3	11	<2	10	0.3	8	3	361	0.55	11	N/A	ND	ND	18	<1	2	<3	9	5.86	0.57	32	194	1.05	167	0.01	N/A	0.23	0.02	0.01	9	0.7
2PMP040		1	16	9	38	0.1	9	7	353	1.79	<2	N/A	ND	ND	40	<1	<2	<3	10	0.43	0.02	7	51	0.36	499	0.01	N/A	1.1	0.01	0.01	4	1.2
2PMP041		2	13	7	11	0.6	12	6	338	1.14	12	N/A	ND	ND	<1	<1	3	3	10	3.84	0.04	4	195	1.98	139	0.01	N/A	0.25	0.01	0.01	10	0.8
2PMP042		4	11	2	33	0.3	14	5	72	1.06	17	N/A	ND	ND	10	<1	5	<3	5	3.38	0.03	1	192	0.92	184	0.01	N/A	0.17	0.01	0.01	9	0.5
2PMP043		<1	7	<2	14	0.1	9	2	65	0.41	<2	N/A	ND	ND	69	<1	<2	<3	3	10.93	0.01	1	170	0.94	47	0.01	N/A	0.16	0.01	0.01	<2	0.6
2PMP044		<1	14	<2	19	0.1	9	<1	82	0.74	<2	N/A	ND	ND	1	<1	<2	<3	3	25.38	0.03	1	37	0.2	997	0.01	N/A	0.21	0.05	0.01	<2	1.1

BARRINGER MAGENTA
Laboratories (Alberta) Ltd.

4200B - 10 STREET N.E
CALGARY, ALBERTA
T2E 6K3
PHONE: (403) 250-1901

24-SEP-92

AUTHORITY:M.B. DUFRESNE

R.A. OLSON CONSULTING LTD.
#18, 10508 - 81 AVENUE
EDMONTON, ALBERTA T6E 1X7

WORK ORDER: 8248D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER		FIRE ASSAY AU PPB
2MDP:	1	8.0
2MDP:	2	<2.0
2MDP:	3	2.0
2MDP:	4	3.0
2MDP:	5	10.0
2MDP:	6	4.0
2MDP:	7	4.0
2MDP:	8	5.0
2MDP:	9	<2.0
2MDP:	10	2.0
2MDP:	11	2.0
2MDP:	12	5.0
2MDP:	13	<2.0
2MDP:	14	4.0
2MDP:	15	5.0
2MDP:	16	3.0
2MDP:	17	<2.0
2MDP:	18	7.0
2MDP:	19	2.0
2MDP:	20	2.0
2MDP:	21	6.0
2MDP:	22	2.0
2MDP:	23	3.0
2MDP:	24	11.0
2MDP:	25	<2.0
2MDP:	26	<2.0
2MDP:	27	<2.0
2MDP:	28	2.0
2MDP:	29	<2.0
2MDP:	30	<2.0

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*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	FIRE ASSAY AU PPB
2MDP: 31	2.0
2MDP: 32	<2.0
2MDP: 33	2.0
2MDP: 34	11.0
2MDP: 35	6.0
2MDP: 36	8.0
2MDP: 37	3.0
2MDP: 38	<2.0
2MDP: 39	2.0
2MDP: 40	<2.0
2MDP: 41	<2.0
2MDP: 42	<2.0
2MDP: 43	<2.0
2MDP: 44	2.0
2MDP: 45	<2.0
2MDP: 46	2.0
2MDP: 47	2.0
2MSP: 1	8.0
2MSP: 2	2.0
2MSP: 3	2.0
2MSP: 4	14.0
2MSP: 5	11.0
2MSP: 6	3.0
2MSP: 7	8.0
2MSP: 8	3.0
2MSP: 9	2.0
2MSP: 10	<2.0
2MSP: 11	2.0
2MSP: 12	<2.0
2MSP: 13	<2.0

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WORK ORDER: 8248D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	FIRE ASSAY AU PPB
2MSP: 14	<2.0
2MSP: 15	2.0
2MSP: 16	<2.0
2MSP: 17	2.0
2MSP: 18	2.0
2MSP: 19	8.0
2MSP: 20	<2.0
2MSP: 21	11.0
2MSP: 22	<2.0
2MSP: 23	3.0
2JWP: 1	14.0
2JWP: 2	3.0
2JWP: 3	<2.0
2JWP: 4	4.0
2JWP: 5	<2.0
2JWP: 6	<2.0
2JWP: 7	<2.0
2JWP: 8	<2.0
2JWP: 9	<2.0
2JWP: 10	<2.0
2JWP: 11	<2.0
2JWP: 12	<2.0
2JWP: 13	<2.0
2JWP: 14	3.0
2JWP: 15	<2.0
2JWP: 16	<2.0
2JWP: 17	<2.0
2JWP: 18	<2.0
2JWP: 19	<2.0
2JWP: 20	3.0

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WORK ORDER: 8248D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	FIRE ASSAY AU PPB
2JWP: 21	<2.0
2JWP: 22	2.0
2JWP: 23	<2.0
2JWP: 24	2.0
2JWP: 25	<2.0
2JWP: 26	<2.0
2JWP: 27	2.0
2PMP: 1	12.0
2PMP: 2	<2.0
2PMP: 3	<2.0
2PMP: 4	2.0
2PMP: 5	12.0
2PMP: 6	14.0
2PMP: 7	2.0
2PMP: 8	<2.0
2PMP: 9	2.0
2PMP: 10	3.0
2PMP: 11	<2.0
2PMP: 12	<2.0
2PMP: 13	<2.0
2PMP: 14	<2.0
2PMP: 15	<2.0
2PMP: 16	<2.0
2PMP: 17	<2.0
2PMP: 18	<2.0
2PMP: 19	<2.0
2PMP: 20	<2.0
2PMP: 21	<2.0
2PMP: 22	<2.0
2PMP: 23	2.0

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WORK ORDER: 8248D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER		FIRE ASSAY AU PPB
2PMP:	24	2.0
2PMP:	25	5.0
2PMP:	26	<2.0
2PMP:	27	<2.0
2PMP:	28	<2.0
2PMP:	29	<2.0
2PMP:	30	<2.0
2PMP:	31	<2.0
2PMP:	32	<2.0
2PMP:	33	2.0
2PMP:	34	2.0
2PMP:	35	<2.0
2PMP:	36	<2.0

SIGNED: _____
C. Douglas Read,
LABORATORY MANAGER

FOOTNOTES:
P=QUESTIONABLE PRECISION; *=INTERFERENCE; TR=TRACE; ND=NOT DETECTED;
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE

BARRINGER MAGENTA
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06-NOV-92

AUTHORITY:M. DUERESNE

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#18, 10508 - 81 AVENUE
EDMONTON, ALBERTA T6E 1X7

PROJECT: 2205

WORK ORDER: 8268D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	FIRE ASSAY AU PPB
2PMP037	2.0
2PMP038	2.0
2PMP039	<2.0
2PMP040	2.0
2PMP041	2.0
2PMP042	<2.0
2PMP043	<2.0
2PMP044	<2.0
2JWP028	2.0
2JWP029	<2.0
2JWP030	3.0
2JWP031	<2.0
2JWP032	<2.0
2MSP024	3.0
2MSP025	2.0
2MSP026	<2.0
2MSP027	<2.0
2MSP028	<2.0
2MSP029	4.0
2MDP048	<2.0
2MDP049	3.0
2MDP050	<2.0
2MDP051	2.0
2MDP052	<2.0
2MDP053	2.0
2MDP054	2.0
2MDP055	2.0
2MDP056	<2.0
2MDP057	<2.0
2MDP058	<2.0

BARRINGER MAGENTA
Laboratories (Alberta) Ltd.

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T2E 6K3
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AUTHORITY:M. DUFRESNE

PROJECT: 2205

R.A. OLSON CONSULTING LTD.
#18, 10508 - 81 AVENUE
EDMONTON, ALBERTA T6E 1X7

WORK ORDER: 8268D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	FIRE ASSAY AU PPB
2MDP059	2.0

SIGNED: _____

C. Douglas Read,
LABORATORY MANAGER

FOOTNOTES:
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BARRINGER MAGENTA
Laboratories (Alberta) Ltd.

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EDMONTON, ALBERTA T6E 1X7

WORK ORDER: 8268D-92

*** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: ROCK

SAMPLE NUMBER	ASSAY PB %	ASSAY ZN %
2MSP029	12.1	19.5

SIGNED: _____
C. Douglas Read,
LABORATORY MANAGER

FOOTNOTES:
P=QUESTIONABLE PRECISION; *=INTERFERENCE; TR=TRACE; ND=NOT DETECTED;
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE

APPENDIX V.C

LABORATORY ANALYTICAL REPORTS

STREAM SEDIMENT SAMPLES

BONDAR-CLEGG

R.A. OLSON CONSULTING LTD.
MR. MICHAEL B. DUFRESNE
#18, 10509 - 81 AVENUE
EDMONTON, AB
T6E 1X7

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01179.0 (COMPLETE)

REFERENCE:

CLIENT: R.A. OLSON CONSULTING LTD.

SUBMITTED BY: M. DUFRESNE

PROJECT: NONE GIVEN

DATE PRINTED: 23-NOV-92

	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION		EXTRACTION	METHOD
1	Au	Gold	225	5	PPB		NEUTRON ACTIVATION
2	Ir	Iridium	225	100	PPB		NEUTRON ACTIVATION
3	Ag	Silver	225	5	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
4	Zn	Zinc	225	200	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
5	Mo	Molybdenum	225	2	PPM		NEUTRON ACTIVATION
6	Ni	Nickel	225	20	PPM		NEUTRON ACTIVATION
7	Co	Cobalt	225	10	PPM		NEUTRON ACTIVATION
8	Cd	Cadmium	225	10	PPM		NEUTRON ACTIVATION
9	As	Arsenic	225	1	PPM		NEUTRON ACTIVATION
10	Sb	Antimony	225	0.2	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
11	Fe	Iron	225	0.5	PCT		NEUTRON ACTIVATION
12	Se	Selenium	225	10	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
13	Te	Tellurium	225	20	PPM		NEUTRON ACTIVATION
14	Ba	Barium	225	100	PPM		NEUTRON ACTIVATION
15	Cr	Chromium	225	50	PPM		NEUTRON ACTIVATION
16	Sn	Tin	225	200	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
17	W	Tungsten	225	2	PPM		NEUTRON ACTIVATION
18	Cs	Cesium	225	1	PPM		NEUTRON ACTIVATION
19	La	Lanthanum	225	5	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
20	Ce	Cerium	225	10	PPM		NEUTRON ACTIVATION
21	Sm	Samarium	225	0.2	PPM		NEUTRON ACTIVATION
22	Eu	Europium	225	2	PPM		NEUTRON ACTIVATION
23	Tb	Terbium	225	1	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
24	Yb	Ytterbium	225	5	PPM		NEUTRON ACTIVATION
25	Lu	Lutetium	225	0.5	PPM		NEUTRON ACTIVATION
26	Sc	Scandium	225	0.5	PPM		NEUTRON ACTIVATION
27	Hf	Hafnium	225	2	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
28	Ta	Tantalum	225	1	PPM		NEUTRON ACTIVATION
29	Th	Thorium	225	0.5	PPM		NEUTRON ACTIVATION
30	U	Uranium	225	0.5	PPM		NEUTRON ACTIVATION
31	Na	Sodium	225	0.05	PCT		NEUTRON ACTIVATION
32	Br	Bromine	225	1	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
33	Rb	Rubidium	225	10	PPM		NEUTRON ACTIVATION
34	Zr	Zirconium	225	500	PPM		NEUTRON ACTIVATION
35	Ag	Silver	225	0.1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
36	Cu	Copper	225	1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
37	Pb	Lead	225	2	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
38	Zn	Zinc	225	1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
39	Cd	Cadmium	225	0.2	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
40	Hg	Mercury	225	0.010	PPM	HCL:HNO3 (3:1)	COLD VAPOR AA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
T STREAM SED, SILT	225	1 -80	225	DRY, SIEVE -80	225

REPORT COPIES TO: MR. MICHAEL B. DUFRESNE

INVOICE TO: MR. MICHAEL B. DUFRESNE

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92

REPORT: V92-01179.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC001		<5	<100	<5	290	<2	<20	12	<10	8	1.0	3.0	<10	<20	1100	120	<200	<2	5	33	66	4.7	3	<1	<5	<.5	11.0	7	1	7.6	3.2	1.10	11	120	<500	<0.1	18	15	86	0.3	0.031
2JWC002		<5	<100	<5	<200	<2	37	12	<10	7	1.3	3.4	<10	<20	760	94	<200	<2	4	26	56	3.9	<2	<1	<5	<.5	13.0	5	<1	5.6	2.5	1.50	5	76	<500	<0.1	26	10	103	0.4	0.091
2JWC003		<5	<100	<5	250	<2	<20	<10	<10	5	1.2	2.8	<10	<20	800	110	<200	<2	2	27	52	3.9	<2	<1	<5	<.5	12.0	8	<1	5.3	2.2	1.70	5	64	<500	<0.1	16	9	90	0.3	0.032
2JWC004		<5	<100	<5	<200	<2	<20	11	<10	6	0.7	2.7	<10	<20	610	80	<200	<2	4	31	54	4.4	<2	<1	<5	<.5	10.0	5	<1	7.4	2.6	0.79	15	86	<500	<0.1	17	14	94	0.5	0.035
2JWC005		<5	<100	<5	<200	<2	<20	<10	<10	5	0.5	2.2	<10	<20	500	79	<200	<2	3	28	54	4.1	<2	<1	<5	<.5	8.6	7	<1	7.3	3.0	0.85	7	77	<500	<0.1	11	10	67	0.3	0.019
2JWC006		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	2.1	<10	<20	680	63	<200	<2	3	28	52	3.7	<2	<1	<5	<.5	6.3	6	<1	6.5	2.4	1.30	4	65	<500	<0.1	9	9	62	<.2	0.023
2JWC007		<5	<100	<5	<200	<2	<20	<10	<10	4	0.4	1.8	<10	<20	730	<50	<200	<2	2	28	49	3.3	<2	<1	<5	<.5	5.0	7	1	6.2	2.2	1.90	4	52	<500	<0.1	4	8	50	<.2	0.015
2JWC008		<5	<100	<5	<200	<2	<20	<10	<10	5	0.4	1.9	<10	<20	620	58	<200	<2	3	26	49	3.4	<2	<1	<5	<.5	5.7	7	<1	6.1	2.4	1.10	5	55	<500	<0.1	6	9	57	<.2	0.018
2JWC009		<5	<100	<5	<200	<2	<20	<10	<10	4	0.5	2.1	<10	<20	580	73	<200	<2	3	26	45	3.6	<2	<1	<5	<.5	6.6	7	<1	5.9	2.3	0.85	4	70	<500	<0.1	9	10	68	<.2	0.039
2JWC010		<5	<100	<5	<200	<2	<20	<10	<10	6	0.5	2.1	<10	<20	770	74	<200	<2	4	27	51	4.1	<2	<1	<5	<.5	8.0	7	<1	7.0	2.6	0.72	6	86	<500	<0.1	10	11	74	<.2	0.020
2JWC011		<5	<100	<5	<200	<2	31	<10	<10	6	0.5	2.3	<10	<20	860	84	<200	<2	4	30	53	4.2	<2	<1	<5	<.5	8.4	7	<1	7.4	2.8	0.72	6	88	<500	<0.1	10	10	74	<.2	0.019
2JWC012		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	2.0	<10	<20	840	68	<200	<2	2	26	53	4.1	<2	<1	<5	<.5	7.1	8	<1	6.6	2.5	1.30	2	53	<500	<0.1	9	10	58	<.2	0.023
2JWC013		<5	<100	<5	<200	<2	<20	17	<10	8	1.1	3.4	<10	<20	780	100	<200	<2	4	31	57	4.6	<2	<1	<5	<.5	13.0	4	1	7.6	2.9	1.00	3	98	<500	<0.1	26	14	86	0.4	0.033
2JWC014		<5	<100	<5	<200	<2	<20	<10	<10	7	0.8	2.5	<10	<20	910	89	<200	<2	3	30	59	4.4	<2	<1	<5	<.5	8.5	7	1	7.1	2.6	1.40	2	70	<500	<0.1	16	12	62	<.2	0.020
2JWC015		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.1	<10	<20	610	75	<200	<2	3	29	55	4.2	<2	<1	<5	<.5	8.0	7	1	6.8	2.2	1.20	3	71	<500	<0.1	12	11	60	<.2	0.021
2JWC016		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	1.9	<10	<20	650	73	<200	<2	2	27	45	3.7	<2	<1	<5	<.5	6.9	6	<1	5.7	2.2	1.50	6	67	<500	<0.1	9	11	63	0.2	0.012
2JWC017		<5	<100	<5	<200	<2	30	<10	<10	4	0.6	2.1	<10	<20	640	72	<200	<2	3	31	59	4.2	<2	<1	<5	<.5	6.9	8	<1	6.9	2.6	1.30	6	73	<500	<0.1	10	11	74	0.3	0.026
2JWC018		<5	<100	<5	<200	<2	<20	<10	<10	4	0.6	1.7	<10	<20	630	57	<200	<2	2	21	41	3.0	<2	<1	<5	<.5	6.0	5	<1	4.5	2.0	0.79	9	59	660	<0.1	10	11	59	<.2	0.020
2JWC019		<5	<100	<5	<200	<2	<20	<10	<10	4	0.6	1.7	<10	<20	610	62	<200	<2	3	27	47	3.6	<2	<1	<5	<.5	7.1	6	<1	5.8	2.2	0.81	6	67	<500	<0.1	10	9	59	<.2	0.019
2JWC020		<5	<100	<5	<200	<2	<20	12	<10	6	0.9	2.9	<10	<20	620	83	<200	<2	5	31	66	4.4	<2	<1	<5	<.5	10.0	6	<1	8.1	2.8	0.67	9	91	<500	<0.1	21	17	94	0.4	0.027
2JWC021		<5	<100	<5	<200	<2	<20	<10	<10	4	0.6	1.7	<10	<20	530	54	<200	<2	2	25	44	3.6	<2	<1	<5	<.5	6.0	7	<1	5.7	2.2	0.77	3	53	500	<0.1	8	8	47	0.3	0.011
2JWC022		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.4	<10	<20	590	68	<200	<2	3	29	52	4.0	<2	<1	<5	<.5	8.3	7	<1	7.3	2.7	0.68	8	75	<500	<0.1	15	11	78	0.4	0.028
2JWC023		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	1.4	<10	<20	450	51	<200	<2	2	25	46	3.5	<2	<1	<5	<.5	5.1	11	<1	5.4	2.2	0.55	2	57	590	<0.1	7	7	44	<.2	<.010
2JWC024		<5	<100	<5	<200	<2	<20	<10	<10	4	0.6	1.1	<10	<20	490	<50	<200	<2	2	22	41	3.1	<2	<1	<5	<.5	4.2	8	<1	4.7	2.1	0.40	6	48	500	<0.1	6	8	45	0.3	0.016
2JWC025		<5	<100	<5	<200	<2	<20	<10	<10	4	0.7	1.6	<10	<20	460	62	<200	<2	3	25	48	3.3	<2	<1	<5	<.5	5.3	7	<1	5.5	2.6	0.45	6	56	<500	<0.1	10	8	67	0.4	0.019
2JWC026		12	<100	<5	<200	<2	<20	<10	<10	4	0.5	1.6	<10	<20	570	58	<200	<2	1	26	47	3.6	<2	<1	<5	<.5	5.1	10	<1	6.0	2.3	0.70	2	51	570	<0.1	6	6	35	<.2	0.010
2JWC027		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	1.6	<10	<20	510	52	<200	<2	2	27	51	3.9	<2	<1	<5	<.5	6.1	10	<1	7.0	2.6	0.48	2	57	<500	<0.1	10	9	52	0.3	0.017
2JWC028		6	<100	<5	<200	<2	<20	<10	<10	7	1.3	3.1	<10	<20	790	79	<200	<2	4	30	59	4.5	<2	<1	<5	<.5	12.0	5	<1	7.0	2.7	1.20	21	58	<500	<0.1	26	14	94	0.5	0.041
2JWC029		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.5	<10	<20	690	85	<200	<2	3	34	67	5.1	<2	<1	<5	0.5	8.3	8	<1	7.9	2.6	0.70	9	88	<500	<0.1	14	12	61	<.2	0.023
2JWC030		<5	<100	<5	220	<2	<20	<10	<10	7	1.1	3.1	<10	<20	980	75	<200	<2	7	45	84	6.5	<2	<1	<5	<.5	12.0	6	1	10.0	5.0	0.75	10	140	<500	0.3	36	18	113	0.6	0.082

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92
PROJECT: NONE GIVEN PAGE 2

REPORT: V92-01179.0 (COMPLETE)

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC031		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	2.1	<10	<20	510	50	<200	<2	3	28	54	4.2	<2	<1	<5	<.5	6.1	5	<1	6.7	2.3	0.53	4	72	<500	<0.1	12	12	56	<.2	0.020
2JWC032		<5	<100	<5	<200	<2	<20	12	<10	8	0.8	2.9	<10	<20	960	77	<200	<2	5	42	70	6.6	<2	<1	<5	0.6	11.0	7	<1	10.0	3.4	0.71	16	110	<500	<0.1	19	25	73	<.2	0.032
2JWC033		<5	<100	<5	<200	<2	<20	12	<10	7	0.9	2.2	<10	<20	600	64	<200	<2	4	30	56	4.5	<2	<1	<5	<.5	7.3	7	1	8.0	3.1	0.57	3	76	<500	<0.1	12	13	71	0.3	0.022
2JWC034		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.3	<10	<20	1100	55	<200	<2	4	42	77	5.2	<2	<1	<5	<.5	6.5	8	1	8.7	3.2	1.00	6	110	<500	<0.1	15	15	58	<.2	0.023
2JWC035		<5	<100	<5	<200	<2	38	<10	<10	7	1.2	2.8	<10	<20	800	98	<200	<2	3	30	58	4.6	<2	<1	<5	<.5	11.0	6	<1	7.0	2.9	0.92	3	80	<500	<0.1	24	14	97	0.5	0.055
2JWC036		<5	<100	<5	<200	<2	33	<10	<10	8	1.0	2.2	<10	<20	990	76	<200	<2	5	34	56	4.7	<2	<1	<5	<.5	10.0	7	1	8.2	2.7	0.42	5	97	510	<0.1	16	13	97	0.4	0.046
2JWC037		<5	<100	<5	<200	<2	30	10	<10	8	1.2	2.6	<10	<20	1200	100	<200	<2	4	33	56	4.8	<2	<1	<5	<.5	11.0	7	<1	7.1	3.0	1.00	6	62	<500	<0.1	21	13	89	0.6	0.056
2JWC038		<5	<100	<5	<200	<2	25	<10	<10	6	1.1	3.0	<10	<20	1200	93	<200	<2	4	36	62	5.0	<2	<1	<5	<.5	11.0	7	<1	7.8	3.2	1.00	5	66	<500	<0.1	17	13	85	0.4	0.042
2JWC039		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.3	<10	<20	870	51	<200	<2	5	33	55	4.4	<2	<1	<5	<.5	8.1	5	1	7.9	3.1	0.79	6	87	<500	<0.1	16	14	75	<.2	0.043
2JWC040		<5	<100	<5	<200	<2	29	<10	<10	7	1.5	3.4	<10	<20	1000	100	<200	<2	4	32	60	4.9	<2	<1	<5	<.5	12.0	6	<1	7.5	2.8	1.40	2	85	<500	<0.1	21	12	79	0.3	0.035
2JWC041		<5	<100	<5	<200	<2	23	12	<10	7	1.2	2.8	<10	<20	840	83	<200	<2	4	32	58	5.0	<2	<1	<5	<.5	10.0	6	<1	6.9	2.9	0.90	5	98	560	<0.1	17	13	95	0.7	0.042
2JWC042		<5	<100	<5	240	<2	34	12	<10	8	1.4	3.7	<10	<20	1100	130	<200	<2	3	31	56	4.8	<2	<1	<5	<.5	14.0	5	<1	6.5	2.8	1.50	4	85	<500	<0.1	25	12	95	0.4	0.050
2JWC043		<5	<100	<5	270	<2	<20	<10	<10	8	1.0	3.6	<10	<20	1400	51	<200	2	6	45	89	6.4	<2	<1	<5	<.5	10.0	5	1	10.0	3.6	1.10	18	120	600	<0.1	30	22	94	0.4	0.056
2JWC044		<5	<100	<5	<200	<2	<20	11	<10	8	1.0	4.2	<10	<20	1500	62	<200	<2	6	49	80	6.3	2	<1	<5	<.5	11.0	6	1	10.0	3.5	1.20	17	130	<500	<0.1	32	21	95	0.3	0.049
2JWC045		<5	<100	<5	<200	<2	20	12	<10	5	0.8	2.8	<10	<20	910	60	<200	<2	5	40	76	5.7	<2	<1	<5	<.5	8.8	6	1	8.5	3.0	0.81	5	110	<500	<0.1	15	14	71	0.3	0.038
2JWC046		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.3	<10	<20	600	86	<200	<2	3	34	59	4.7	<2	<1	<5	<.5	7.9	6	<1	6.0	2.4	0.78	6	81	<500	0.2	13	12	86	0.3	0.041
2JWC047		<5	<100	<5	<200	<2	<20	10	<10	7	1.0	3.1	<10	<20	780	100	<200	<2	3	33	61	4.7	<2	<1	<5	<.5	11.0	7	<1	7.0	2.8	1.00	5	82	<500	<0.1	16	13	82	<.2	0.033
2JWC048		<5	<100	<5	<200	<2	<20	13	<10	8	1.1	3.2	<10	<20	720	110	<200	<2	3	33	62	5.2	<2	<1	<5	0.5	11.0	8	1	8.0	3.0	1.00	5	92	<500	<0.1	16	13	79	0.3	0.030
2JWC049		<5	<100	<5	<200	<2	<20	<10	<10	7	0.9	2.1	<10	<20	400	<50	<200	<2	4	26	52	4.4	<2	<1	<5	<.5	7.6	5	<1	6.7	3.2	0.32	29	100	<500	<0.1	13	18	51	<.2	0.040
2JWC050		<5	<100	<5	<200	<2	<20	15	<10	7	0.9	3.4	<10	<20	750	110	<200	<2	5	39	68	5.8	2	<1	<5	0.5	11.0	8	1	8.3	3.1	0.91	5	95	<500	<0.1	16	14	92	0.3	0.040
2JWC051		<5	<100	<5	210	<2	<20	<10	<10	7	1.1	1.7	<10	<20	260	110	<200	<2	2	31	38	4.5	<2	<1	<5	<.5	6.3	3	<1	4.4	2.9	0.32	10	59	<500	0.6	18	10	140	0.7	0.066
2JWC052		<5	<100	<5	<200	<2	<20	<10	<10	7	1.0	2.8	<10	<20	720	84	<200	<2	4	38	72	5.7	<2	<1	<5	0.7	10.0	8	1	9.0	3.1	0.84	2	100	<500	<0.1	13	12	51	<.2	<.010
2JWC053		<5	<100	<5	<200	<2	23	<10	<10	7	1.2	1.4	<10	<20	160	89	<200	<2	3	25	30	3.5	<2	<1	<5	<.5	5.2	2	<1	3.9	2.5	0.25	10	55	<500	0.5	15	13	109	0.7	0.056
2JWC054		<5	<100	<5	<200	<2	<20	<10	<10	6	0.8	1.8	<10	<20	410	65	<200	<2	3	27	45	4.0	<2	<1	<5	<.5	5.8	5	<1	5.0	2.3	0.48	8	66	<500	0.2	11	11	74	0.4	0.037
2JWC055		<5	<100	<5	<200	<2	<20	<10	<10	3	0.4	1.8	<10	<20	530	51	<200	<2	3	26	43	3.7	<2	<1	<5	<.5	6.0	5	<1	5.6	2.0	0.61	7	76	<500	<0.1	10	11	52	<.2	0.034
2JWC056		<5	<100	<5	<200	<2	<20	<10	<10	3	0.3	0.6	<10	<20	<100	<50	<200	<2	1	9	17	1.2	<2	<1	<5	<.5	2.1	<2	<1	1.9	1.0	0.16	4	17	<500	<0.1	6	9	29	<.2	<.010
2JWC057		<5	<100	<5	240	<2	<20	11	<10	7	1.2	3.3	<10	<20	970	94	<200	<2	4	32	61	4.8	<2	<1	<5	<.5	12.0	6	1	6.8	2.5	1.30	22	77	<500	<0.1	25	15	153	0.4	0.042
2JWC058		<5	<100	<5	<200	<2	22	<10	<10	5	0.9	2.8	<10	<20	900	80	<200	<2	3	32	61	4.9	<2	<1	<5	<.5	11.0	7	<1	7.0	2.5	1.30	10	72	<500	<0.1	19	10	70	0.3	0.052
2JWC059		<5	<100	<5	<200	<2	<20	13	<10	7	0.7	3.7	<10	<20	600	72	<200	<2	6	41	77	6.7	<2	<1	5	0.6	12.0	8	1	10.0	4.3	0.85	9	120	530	<0.1	14	12	45	<.2	0.017
2JWC060		<5	<100	<5	<200	<2	<20	<10	<10	7	0.8	3.2	<10	<20	580	73	<200	<2	6	40	84	6.7	<2	<1	<5	0.6	11.0	9	<1	10.0	4.2	0.87	9	140	<500	<0.1	15	13	44	<.2	0.019

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC061		<5	<100	<5	<200	<2	<20	<10	<10	8	0.9	2.5	<10	<20	970	81	<200	<2	9	43	78	8.0	<2	<1	6	0.8	13.0	4	<1	10.0	4.0	0.65	66	120	<500	<0.1	35	18	69	<.2	0.062
2JWC062		<5	<100	<5	240	<2	<20	11	<10	10	1.0	2.3	<10	<20	680	59	<200	<2	8	36	74	6.4	<2	1	<5	0.6	10.0	6	<1	8.4	5.1	0.46	45	110	<500	<0.1	51	13	80	<.2	0.035
2JWC063		<5	<100	<5	200	<2	<20	17	<10	10	1.0	4.0	<10	<20	650	58	<200	<2	7	39	81	6.4	<2	<1	5	0.7	14.0	7	<1	10.0	3.7	0.66	58	100	<500	<0.1	24	20	65	<.2	0.034
2JWC064		<5	<100	<5	<200	<2	<20	11	<10	19	1.2	2.8	<10	<20	780	57	<200	<2	6	36	72	5.7	<2	<1	<5	<.5	10.0	6	<1	11.0	3.7	0.48	13	120	<500	<0.1	21	26	63	<.2	0.026
2JWC065		<5	<100	<5	<200	<2	<20	12	<10	8	0.7	2.9	<10	<20	1000	69	<200	<2	5	34	64	5.4	<2	<1	<5	0.6	13.0	6	<1	8.8	4.3	0.57	78	110	<500	<0.1	39	21	66	<.2	0.054
2MDC001		<5	<100	<5	<200	<2	<20	<10	<10	7	1.1	2.8	<10	<20	960	76	<200	<2	4	33	62	4.6	<2	<1	<5	<.5	11.0	6	<1	6.9	2.9	1.20	8	82	<500	<0.1	20	12	75	<.2	0.029
2MDC002		7	<100	<5	240	<2	<20	13	<10	7	1.4	3.9	<10	<20	870	93	<200	<2	4	35	63	4.9	<2	<1	<5	0.6	13.0	7	1	7.6	2.9	1.50	2	79	<500	<0.1	27	13	98	0.4	0.035
2MDC003		<5	<100	<5	250	<2	<20	<10	<10	7	1.1	3.6	<10	<20	910	110	<200	<2	4	37	69	5.6	<2	<1	<5	<.5	12.0	11	<1	7.7	3.3	1.20	5	61	<500	<0.1	20	11	97	0.3	0.039
2MDC004		<5	<100	<5	<200	<2	<20	<10	<10	7	1.1	2.6	<10	<20	800	98	<200	<2	5	31	60	4.9	<2	<1	<5	<.5	8.9	7	<1	7.4	2.9	0.83	4	91	<500	<0.1	19	13	81	0.5	0.042
2MDC005		<5	<100	<5	<200	<2	33	14	<10	10	1.8	4.2	<10	<20	930	110	<200	<2	4	28	52	4.8	<2	<1	<5	0.5	16.0	6	<1	6.8	3.0	2.20	1	54	<500	<0.1	37	11	95	0.4	0.067
2MDC006		<5	<100	<5	<200	<2	<20	<10	<10	5	0.5	2.2	<10	<20	980	58	<200	<2	4	31	55	4.5	<2	<1	<5	<.5	7.3	9	<1	7.3	2.8	0.77	13	76	<500	<0.1	10	11	70	<.2	0.040
2MDC007		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	1.8	<10	<20	580	56	<200	<2	3	28	54	4.2	<2	<1	<5	<.5	6.7	7	<1	7.1	2.7	0.70	4	63	<500	<0.1	9	11	64	0.4	0.041
2MDC008		<5	<100	<5	<200	<2	<20	<10	<10	7	0.8	1.8	<10	<20	560	73	<200	<2	3	27	50	3.9	<2	<1	<5	<.5	6.4	5	<1	6.8	2.7	0.50	4	65	<500	<0.1	12	12	77	0.4	0.030
2MDC009		<5	<100	<5	<200	<2	<20	10	<10	6	1.2	2.3	<10	<20	600	69	<200	2	5	34	62	5.0	<2	<1	<5	<.5	8.1	7	1	9.1	3.0	0.65	2	99	<500	<0.1	15	15	74	0.4	0.021
2MDC010		<5	<100	<5	<200	<2	25	<10	<10	7	1.2	2.5	<10	<20	600	62	<200	<2	6	34	58	5.0	<2	<1	<5	<.5	8.5	7	<1	9.0	3.1	0.64	5	87	560	<0.1	17	15	89	0.5	0.028
2MDC011		<5	<100	<5	<200	<2	21	11	<10	7	1.2	2.5	<10	<20	600	56	<200	<2	5	35	60	5.1	<2	<1	<5	<.5	8.8	7	<1	8.9	3.1	0.63	5	95	<500	<0.1	16	14	89	0.5	0.040
2MSC001		<5	<100	<5	<200	<2	<20	13	<10	8	1.0	2.9	<10	<20	790	90	<200	<2	7	36	64	5.4	<2	<1	<5	0.6	11.0	5	<1	9.2	3.3	1.20	9	92	<500	<0.1	19	19	97	0.3	0.059
2MSC002		<5	<100	<5	<200	<2	28	<10	<10	6	0.6	2.5	<10	<20	860	81	<200	<2	5	34	58	4.8	<2	<1	<5	0.6	9.0	7	1	8.1	2.8	1.00	7	89	<500	<0.1	11	10	79	0.3	0.035
2MSC003		<5	<100	<5	<200	<2	<20	12	<10	7	1.2	3.1	<10	<20	930	93	<200	<2	3	36	65	5.4	<2	<1	<5	<.5	11.0	8	<1	8.0	3.3	1.30	7	86	560	<0.1	19	12	90	0.3	0.031
2MSC004		<5	<100	<5	<200	<2	<20	<10	<10	6	1.0	2.4	<10	<20	620	77	<200	<2	2	28	49	4.2	<2	<1	<5	<.5	8.9	7	<1	6.2	2.5	1.10	3	61	<500	<0.1	17	11	67	<.2	0.025
2MSC005		<5	<100	<5	<200	<2	<20	<10	<10	4	0.4	1.2	<10	<20	130	<50	<200	<2	2	12	21	2.0	<2	<1	<5	<.5	3.8	4	<1	3.1	1.9	0.18	50	66	<500	<0.1	8	9	70	<.2	0.017
2MSC006		<5	<100	<5	<200	<2	<20	12	<10	3	0.4	3.8	<10	<20	780	110	<200	2	7	41	72	4.9	<2	<1	<5	<.5	15.0	4	<1	11.0	2.5	0.61	29	170	<500	<0.1	25	13	55	<.2	0.031
2MSC007		<5	<100	<5	<200	<2	44	15	<10	4	0.4	3.9	<10	<20	740	120	<200	<2	7	40	75	5.1	<2	<1	<5	<.5	15.0	5	<1	10.0	2.3	0.59	27	170	<500	<0.1	25	13	56	<.2	0.019
2MSC008		<5	<100	<5	<200	<2	<20	12	<10	15	0.8	3.2	<10	<20	1300	100	<200	<2	4	31	63	4.9	<2	<1	<5	<.5	12.0	5	<1	8.5	2.6	1.30	<1	130	<500	<0.1	21	13	73	<.2	0.037
2MSC009		<5	<100	<5	<200	<2	<20	<10	<10	8	0.7	2.6	<10	<20	1000	77	<200	<2	4	37	72	4.9	<2	<1	<5	<.5	8.3	7	1	8.1	3.4	0.65	8	100	<500	<0.1	14	12	62	<.2	0.025
2MSC010		<5	<100	<5	<200	<2	<20	<10	<10	12	0.8	2.8	<10	<20	1300	96	<200	<2	5	38	70	5.6	<2	<1	<5	<.5	10.0	8	<1	9.4	3.7	0.61	4	97	<500	<0.1	17	14	84	<.2	0.038
2MSC011		<5	<100	<5	<200	<2	<20	<10	<10	8	0.7	2.1	<10	<20	540	<50	<200	<2	6	22	40	4.6	<2	<1	<5	<.5	9.5	3	<1	6.2	2.1	0.21	77	100	<500	<0.1	30	16	71	<.2	0.062
2MSC012		<5	<100	<5	<200	<2	<20	<10	<10	4	0.7	1.9	<10	<20	750	58	<200	<2	3	33	60	4.7	<2	<1	<5	<.5	6.8	7	<1	7.5	2.6	1.00	3	81	<500	<0.1	10	10	58	<.2	0.021
2MSC013		<5	<100	<5	250	<2	<20	<10	<10	7	1.2	3.1	<10	<20	1100	75	<200	<2	2	33	57	4.6	<2	<1	<5	<.5	11.0	5	1	6.8	2.9	1.60	2	84	<500	<0.1	23	11	82	<.2	0.034
2MSC014		<5	<100	<5	<200	<2	27	10	<10	5	1.1	3.4	<10	<20	980	110	<200	<2	3	30	57	4.2	<2	<1	<5	0.5	12.0	6	<1	5.9	2.7	1.70	3	77	<500	<0.1	22	10	87	<.2	0.033

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2MSC015		<5	<100	<5	<200	<2	<20	10	<10	5	1.2	3.2	<10	<20	1000	120	<200	<2	3	30	57	4.5	3	<1	<5	<.5	11.0	7	1	6.1	2.8	1.80	5	71	<500	<0.1	20	9	88	0.3	0.026
2MSC016		<5	<100	<5	<200	<2	<20	<10	<10	6	0.9	3.0	<10	<20	920	71	<200	<2	3	34	62	5.6	<2	<1	<5	<.5	8.7	8	1	6.6	2.7	1.20	4	88	<500	<0.1	15	11	68	<.2	0.042
2MSC017		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	2.5	<10	<20	930	92	<200	<2	4	32	64	5.6	<2	<1	<5	0.7	8.7	11	<1	9.2	3.1	0.68	11	120	610	<0.1	11	10	27	<.2	<.010
2MSC018		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.5	<10	<20	670	74	<200	<2	5	35	68	5.9	<2	<1	<5	0.6	9.0	9	<1	10.0	3.1	0.71	12	130	520	<0.1	11	9	33	<.2	<.010
2MSC019		<5	<100	<5	<200	<2	38	<10	<10	5	1.0	2.7	<10	<20	1100	63	<200	<2	4	33	61	4.4	<2	<1	<5	<.5	9.2	6	<1	7.8	2.8	1.40	11	79	<500	<0.1	22	12	71	0.4	0.032
2MSC020		<5	<100	<5	<200	<2	36	12	<10	7	1.0	2.9	<10	<20	1000	89	<200	<2	4	36	66	5.5	<2	<1	<5	<.5	10.0	8	1	7.4	3.0	1.20	1	88	<500	<0.1	17	11	85	<.2	0.028
2MSC021		<5	<100	<5	<200	2	<20	11	<10	6	1.0	2.3	<10	<20	1200	58	<200	<2	3	21	40	3.4	<2	<1	<5	<.5	8.5	3	<1	5.1	3.1	0.43	46	42	<500	<0.1	22	13	70	0.5	0.037
2MSC022		<5	<100	<5	<200	<2	<20	<10	<10	8	0.9	2.9	<10	<20	1200	64	<200	2	5	42	75	5.5	<2	<1	<5	0.6	9.0	8	1	10.0	3.7	0.94	12	120	<500	<0.1	25	15	100	0.3	0.027
2MSC023		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	1.9	<10	<20	690	51	<200	<2	3	34	63	4.7	<2	<1	<5	<.5	6.8	7	<1	7.9	2.7	0.92	4	79	<500	<0.1	10	9	54	<.2	0.016
2MSC024		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.4	<10	<20	800	56	<200	<2	4	34	67	5.1	<2	<1	<5	<.5	8.9	7	<1	8.3	2.6	0.80	8	96	<500	<0.1	16	13	75	0.3	0.023
2MSC025		<5	<100	<5	<200	<2	<20	<10	<10	7	0.9	2.9	<10	<20	810	<50	<200	<2	5	34	68	5.2	<2	<1	<5	<.5	8.9	5	<1	8.8	2.9	0.72	2	98	<500	<0.1	15	12	57	<.2	<.010
2MSC026		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.3	<10	<20	640	52	<200	<2	3	33	64	5.1	<2	<1	<5	0.5	7.9	9	<1	8.7	3.3	0.82	2	91	<500	<0.1	10	10	41	<.2	<.010
2MSC027		<5	<100	<5	<200	<2	<20	<10	<10	4	0.7	2.0	<10	<20	660	54	<200	<2	3	29	59	4.4	<2	<1	<5	<.5	6.5	8	<1	7.2	2.5	1.20	3	82	560	<0.1	10	10	54	<.2	0.014
2MSC028		<5	<100	<5	<200	<2	35	12	<10	5	1.0	2.7	<10	<20	750	86	<200	<2	3	34	63	5.1	<2	<1	<5	0.5	11.0	9	<1	7.4	2.8	1.30	2	88	<500	<0.1	17	10	74	<.2	0.020
2MSC029		<5	<100	<5	<200	<2	26	<10	<10	6	0.7	2.1	<10	<20	770	55	<200	<2	3	34	60	4.8	<2	<1	<5	<.5	7.8	8	<1	7.5	2.6	0.84	2	81	<500	<0.1	10	10	58	<.2	0.018
2MSC030		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.2	<10	<20	710	57	<200	<2	3	33	56	4.8	<2	<1	<5	<.5	7.7	8	<1	7.4	2.6	0.84	3	78	<500	<0.1	11	11	57	<.2	0.017
2MSC031		<5	<100	<5	200	<2	<20	10	<10	6	0.9	3.4	<10	<20	750	89	<200	<2	5	37	70	5.4	<2	<1	<5	<.5	12.0	6	1	9.4	2.9	0.76	9	98	<500	<0.1	22	15	146	0.4	0.026
2MSC032		<5	<100	<5	<200	<2	<20	<10	<10	5	0.4	1.7	<10	<20	270	<50	<200	<2	3	22	39	3.0	<2	<1	<5	<.5	5.4	4	<1	5.0	1.8	0.42	6	65	<500	<0.1	9	10	45	<.2	0.011
2MSC033		<5	<100	<5	<200	<2	<20	10	<10	7	0.9	3.0	<10	<20	1100	73	<200	<2	3	33	67	5.4	<2	<1	<5	<.5	8.2	4	<1	6.5	2.8	1.10	<1	93	<500	<0.1	15	13	74	0.5	0.020
2MSC034		<5	<100	<5	210	<2	<20	<10	<10	5	1.1	3.0	<10	<20	830	80	<200	<2	4	32	57	5.2	<2	<1	<5	0.5	10.0	6	<1	6.4	2.4	1.10	19	90	<500	<0.1	22	19	87	0.7	0.057
2MSC035		<5	<100	<5	<200	<2	<20	13	<10	8	1.1	3.2	<10	<20	990	63	<200	2	6	37	74	5.7	<2	<1	<5	0.6	10.0	6	<1	10.0	3.1	0.63	10	130	<500	<0.1	20	16	67	0.3	0.013
2MSC036		<5	<100	<5	<200	<2	<20	11	<10	10	1.1	4.0	<10	<20	1000	76	<200	<2	6	39	82	5.9	2	<1	<5	0.7	13.0	5	<1	9.3	3.4	0.66	63	130	<500	<0.1	25	20	68	<.2	0.035
2MSC037		<5	<100	<5	<200	<2	<20	11	<10	7	1.0	3.2	<10	<20	730	67	<200	<2	6	39	75	5.5	2	<1	<5	0.5	10.0	9	<1	10.0	3.4	0.71	10	120	<500	<0.1	13	14	61	0.4	0.021
2MSC038		<5	<100	<5	<200	<2	<20	<10	<10	6	0.8	2.7	<10	<20	850	66	<200	<2	4	31	60	5.1	<2	<1	<5	<.5	8.3	9	<1	9.4	3.4	0.86	7	160	780	<0.1	12	12	43	0.3	<.010
2MSC039		<5	<100	<5	<200	<2	<20	10	<10	9	0.9	3.7	<10	<20	1400	77	<200	<2	6	37	80	6.2	<2	<1	<5	<.5	11.0	12	<1	11.0	4.0	0.75	9	180	<500	<0.1	18	14	44	<.2	0.011
2MSC040		<5	<100	<5	<200	<2	<20	<10	<10	7	0.9	2.5	<10	<20	670	52	<200	<2	5	35	85	5.3	<2	<1	<5	<.5	8.3	8	1	9.2	3.1	0.71	3	130	<500	<0.1	15	12	50	0.2	0.011
2MSC041		<5	<100	<5	<200	<2	<20	13	<10	6	0.9	3.4	<10	<20	920	67	<200	<2	8	42	89	7.0	<2	<1	5	<.5	12.0	9	1	13.0	3.9	0.90	9	190	<500	<0.1	15	9	37	<.2	<.010
2MSC042		<5	<100	<5	<200	<2	<20	12	<10	9	0.9	3.0	<10	<20	1200	60	<200	2	7	37	86	6.2	<2	<1	5	<.5	10.0	11	1	11.0	3.9	0.76	19	160	<500	<0.1	19	15	48	<.2	<.010
2MSC043		<5	<100	<5	<200	<2	<20	15	<10	8	1.0	4.0	<10	<20	960	56	<200	<2	6	37	95	6.3	<2	<1	<5	<.5	12.0	8	1	11.0	3.7	0.85	21	150	730	<0.1	24	18	87	<.2	0.017
2MSC044		<5	<100	<5	240	<2	<20	11	<10	6	1.4	2.0	<10	<20	550	76	<200	<2	4	31	58	4.7	<2	<1	<5	<.5	10.0	7	1	7.8	3.0	0.47	21	97	<500	<0.1	26	16	109	1.3	0.067

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92

REPORT: V92-01179.0 (COMPLETE) PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2MSC045		<5	<100	<5	260	<2	<20	17	<10	8	1.0	3.7	<10	<20	830	96	<200	<2	5	33	64	4.8	<2	<1	<5	<.5	12.0	5	<1	9.5	2.8	0.73	8	110	<500	0.2	28	19	109	0.5	0.021
2MSC046		<5	<100	<5	<200	<2	<20	14	<10	9	1.2	3.9	<10	<20	700	59	<200	<2	6	35	76	5.1	2	<1	<5	<.5	13.0	5	<1	10.0	3.2	0.68	9	140	<500	<0.1	28	18	104	0.5	0.025
2MSC047		<5	<100	<5	<200	<2	28	<10	<10	6	0.9	3.0	<10	<20	670	62	<200	<2	4	31	75	4.6	<2	<1	<5	<.5	10.0	7	1	8.3	2.3	0.83	6	120	<500	<0.1	19	15	84	0.4	0.014
2MSC048		5	<100	<5	<200	<2	31	11	<10	6	0.7	3.4	<10	<20	2400	<50	<200	<2	6	50	100	5.5	<2	<1	<5	<.5	7.6	6	2	13.0	5.1	1.20	2	210	<500	<0.1	38	20	72	0.4	0.012
2MSC049		<5	<100	<5	<200	<2	<20	11	<10	7	0.8	2.5	<10	<20	940	63	<200	<2	4	31	66	4.8	<2	<1	<5	<.5	8.2	7	<1	8.2	3.1	0.86	6	110	<500	<0.1	13	11	74	0.4	0.021
2MSC050		<5	<100	<5	270	3	47	<10	<10	11	2.9	1.2	<10	<20	120	99	<200	<2	4	33	33	5.2	<2	<1	<5	<.5	5.0	3	<1	4.1	3.8	0.22	6	66	<500	0.5	17	10	213	1.9	0.066
2MSC051		<5	<100	<5	240	<2	<20	<10	<10	11	1.0	3.0	<10	<20	980	60	<200	2	5	36	74	5.7	<2	1	<5	<.5	11.0	8	<1	10.0	3.8	0.65	9	130	<500	<0.1	21	16	79	0.4	0.025
2MSC052		<5	<100	<5	<200	<2	23	<10	<10	6	0.9	2.1	<10	<20	480	<50	<200	<2	3	27	61	4.1	<2	<1	<5	<.5	7.7	8	<1	7.2	2.7	0.66	11	92	<500	<0.1	15	14	85	0.8	0.046
2MSC053		<5	<100	<5	270	<2	<20	<10	<10	6	1.0	2.2	<10	<20	490	58	<200	<2	3	27	53	4.1	<2	<1	<5	<.5	8.1	8	<1	7.2	2.7	0.68	15	68	580	<0.1	15	13	88	0.9	0.040
2PMC001		<5	<100	<5	<200	<2	<20	<10	<10	4	2.5	2.0	<10	<20	790	62	<200	<2	3	30	73	4.7	2	<1	<5	<.5	7.6	11	<1	7.5	2.8	1.10	15	83	530	<0.1	22	29	60	0.6	0.036
2PMC002		<5	<100	<5	<200	3	38	<10	<10	7	0.8	2.5	<10	<20	740	<50	<200	<2	3	28	63	3.9	<2	<1	<5	<.5	7.3	9	<1	6.6	2.8	0.84	10	93	<500	<0.1	12	11	75	0.4	0.026
2PMC003		<5	<100	<5	<200	<2	<20	<10	<10	7	0.8	2.3	<10	<20	950	74	<200	<2	6	32	66	4.9	<2	<1	<5	<.5	10.0	7	1	8.1	3.3	0.83	3	120	<500	<0.1	13	13	88	0.3	0.034
2PMC004		<5	<100	<5	<200	<2	<20	11	<10	7	1.2	2.8	<10	<20	790	58	<200	<2	5	30	58	4.5	<2	<1	<5	<.5	10.0	5	<1	8.1	3.3	0.94	8	94	<500	<0.1	18	15	94	0.7	0.058
2PMC005		75	<100	<5	230	<2	31	<10	<10	5	0.7	2.1	<10	<20	900	77	<200	<2	4	29	71	4.6	<2	<1	<5	<.5	7.6	9	<1	6.8	2.8	0.89	24	96	600	<0.1	13	12	67	0.5	0.040
2PMC006		<5	<100	<5	<200	<2	38	<10	<10	7	1.0	2.8	<10	<20	870	<50	<200	<2	3	29	65	4.4	<2	<1	<5	<.5	8.6	7	1	6.4	2.6	1.20	10	100	<500	<0.1	17	11	71	0.4	0.036
2PMC007		<5	<100	<5	330	<2	59	14	<10	10	1.6	3.9	<10	<20	1000	73	<200	<2	5	30	66	5.2	<2	<1	<5	<.5	14.0	7	<1	7.3	3.2	1.30	5	100	<500	0.4	40	18	113	0.8	0.065
2PMC008		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.2	<10	<20	1300	<50	<200	<2	4	35	78	4.5	<2	<1	<5	<.5	7.3	10	1	8.2	2.9	1.00	3	110	<500	<0.1	15	13	70	<.2	0.034
2PMC009		<5	<100	<5	<200	<2	<20	<10	<10	5	1.0	2.4	<10	<20	610	64	<200	<2	3	25	54	3.8	<2	<1	<5	<.5	9.0	9	<1	5.8	2.8	1.20	3	110	<500	<0.1	15	9	76	0.5	0.024
2PMC010		<5	<100	<5	<200	<2	<20	<10	<10	2	0.3	0.9	<10	<20	280	<50	<200	<2	2	13	23	1.7	<2	<1	<5	<.5	3.0	7	<1	2.7	1.6	0.60	11	44	<500	<0.1	4	6	33	0.3	<.010
2PMC011		<5	<100	<5	<200	<2	<20	<10	<10	2	0.3	0.8	<10	<20	320	<50	<200	<2	2	12	23	1.7	<2	<1	<5	<.5	3.2	7	<1	2.9	1.6	0.61	12	34	<500	<0.1	4	6	35	0.3	0.010
2PMC012		<5	<100	<5	<200	<2	36	<10	<10	7	1.0	2.1	<10	<20	860	50	<200	<2	5	29	69	4.5	<2	<1	<5	<.5	7.3	9	<1	8.1	3.2	0.60	3	81	<500	<0.1	13	13	61	0.5	0.016
2PMC013		<5	<100	<5	<200	<2	24	<10	<10	8	0.8	2.1	<10	<20	650	51	<200	<2	4	31	68	4.5	<2	<1	<5	<.5	7.0	10	1	7.7	3.1	0.71	3	81	590	<0.1	12	13	71	0.5	0.030
2PMC014		5	<100	<5	<200	<2	<20	<10	<10	7	0.8	2.3	<10	<20	650	67	<200	<2	4	31	65	4.5	<2	<1	<5	<.5	7.2	8	<1	7.8	2.7	0.68	3	66	<500	<0.1	10	12	70	0.3	0.042
2PMC015		<5	<100	<5	<200	3	<20	<10	<10	12	0.9	3.2	<10	<20	1500	60	<200	<2	6	39	87	5.5	<2	<1	<5	<.5	8.9	7	1	11.0	4.2	0.70	2	200	<500	<0.1	25	16	96	<.2	0.031
2PMC016		<5	<100	<5	<200	<2	32	<10	<10	6	0.5	1.6	<10	<20	580	60	<200	<2	3	27	48	3.9	<2	<1	<5	<.5	6.7	9	<1	6.5	2.5	0.47	3	88	<500	<0.1	9	10	67	0.4	0.032
2PMC017		<5	<100	<5	<200	<2	<20	<10	<10	7	0.8	2.1	<10	<20	530	74	<200	<2	4	30	57	4.4	<2	<1	<5	<.5	7.8	8	<1	7.7	2.9	0.52	7	86	<500	<0.1	11	11	87	0.6	0.044
2PMC018		15	<100	<5	200	<2	<20	<10	<10	6	0.8	2.5	<10	<20	870	66	<200	<2	5	33	71	4.7	<2	<1	<5	<.5	8.5	8	<1	7.4	3.1	0.74	4	110	<500	0.1	16	14	90	0.4	0.046
2PMC019		<5	<100	<5	<200	<2	<20	<10	<10	6	0.6	1.8	<10	<20	650	52	<200	<2	3	29	55	4.3	<2	<1	<5	<.5	7.1	10	<1	6.9	2.6	0.65	3	88	<500	<0.1	9	10	66	0.2	0.024
2PMC020		<5	<100	<5	230	<2	<20	<10	<10	5	0.6	1.6	<10	<20	470	<50	<200	<2	3	26	52	3.7	<2	<1	<5	<.5	5.9	8	<1	6.0	2.6	0.61	3	81	<500	<0.1	8	10	70	0.5	0.026
2PMC021		<5	<100	<5	<200	<2	24	11	<10	7	1.3	2.1	<10	<20	570	<50	<200	<2	5	31	67	4.7	<2	<1	<5	<.5	7.5	8	<1	8.6	3.1	0.69	<1	96	<500	<0.1	12	14	57	0.5	0.016

BONDAR-CLEGG

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2PMC022		6	<100	<5	240	<2	47	13	<10	8	1.6	4.4	<10	<20	1200	72	<200	<2	5	46	100	6.9	<2	1	<5	<.5	12.0	8	2	10.0	3.4	2.00	<1	120	820	<0.1	30	14	90	0.5	0.043
2PMC023		<5	<100	<5	<200	<2	51	13	<10	7	1.4	3.8	<10	<20	1100	61	<200	<2	5	41	80	6.0	<2	<1	<5	<.5	11.0	8	1	8.6	3.5	1.60	2	130	<500	<0.1	27	13	89	0.5	0.036
2PMC024		<5	<100	<5	<200	<2	<20	13	<10	7	1.5	3.1	<10	<20	790	80	<200	<2	3	30	61	4.4	2	<1	<5	<.5	10.0	7	<1	6.9	2.8	1.10	2	71	<500	<0.1	20	13	112	0.9	0.023
2PMC025		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.1	<10	<20	1000	78	<200	<2	4	30	70	4.5	<2	<1	<5	<.5	8.6	8	<1	6.8	3.0	1.00	2	84	<500	<0.1	13	11	80	0.4	0.030
2PMC026		<5	<100	<5	270	<2	51	<10	<10	7	1.4	2.3	<10	<20	970	100	<200	<2	5	27	66	3.9	<2	<1	<5	<.5	11.0	7	<1	6.6	3.2	0.76	5	110	<500	0.2	22	12	128	1.4	0.086
2PMC027		<5	<100	<5	<200	<2	<20	10	<10	6	1.0	2.4	<10	<20	640	64	<200	<2	3	29	59	4.3	<2	<1	<5	<.5	8.8	6	<1	6.5	2.6	0.72	3	81	<500	<0.1	14	11	89	0.5	0.062
2PMC028		<5	<100	<5	<200	<2	<20	11	<10	5	1.1	3.0	<10	<20	960	98	<200	<2	3	30	65	4.5	<2	<1	<5	<.5	11.0	6	<1	6.7	2.7	1.50	3	96	530	<0.1	16	11	89	0.5	0.042
2PMC029		<5	<100	<5	210	<2	<20	<10	<10	6	1.0	2.5	<10	<20	890	51	<200	<2	4	30	56	5.4	3	<1	<5	<.5	9.1	7	1	8.3	3.2	0.73	7	98	<500	0.4	18	14	89	0.9	0.089
2PMC030		<5	<100	<5	<200	<2	<20	<10	<10	8	0.9	2.4	<10	<20	670	80	<200	<2	3	26	48	4.0	<2	<1	<5	<.5	8.1	6	<1	7.2	2.7	0.92	2	78	540	<0.1	13	12	77	0.4	0.029
2PMC031		<5	<100	<5	200	<2	<20	<10	<10	7	1.0	2.5	<10	<20	710	76	<200	<2	4	25	39	4.0	<2	<1	<5	<.5	8.7	7	<1	7.3	2.6	0.94	2	86	<500	<0.1	14	13	81	0.4	0.031
2PMC032		5	<100	<5	270	<2	26	12	<10	7	1.5	2.5	<10	<20	790	90	<200	<2	4	30	59	4.5	<2	<1	<5	<.5	11.0	6	<1	6.5	3.0	0.59	8	99	<500	0.3	23	16	126	1.0	0.083
2PMC033		<5	<100	<5	<200	<2	<20	<10	<10	5	1.2	2.0	<10	<20	620	73	<200	<2	4	31	73	4.7	<2	<1	<5	<.5	8.7	7	1	7.0	2.7	0.29	3	110	<500	<0.1	13	12	91	0.9	0.062
2PMC034		<5	<100	<5	270	<2	40	<10	<10	8	1.3	3.1	<10	<20	700	65	<200	<2	4	31	62	4.7	<2	<1	<5	<.5	11.0	7	<1	7.5	2.9	1.00	4	99	<500	<0.1	21	12	102	0.9	0.053
2PMC035		<5	<100	<5	<200	<2	<20	13	<10	7	1.7	3.4	<10	<20	950	94	<200	<2	4	28	60	4.6	<2	<1	<5	<.5	13.0	5	<1	6.9	3.0	1.40	4	74	<500	0.2	31	15	100	0.9	0.069
2PMC036		<5	<100	<5	<200	<2	<20	12	<10	8	1.0	2.3	<10	<20	1200	87	<200	<2	4	31	64	4.8	2	<1	<5	<.5	10.0	9	1	8.3	3.3	0.73	1	100	<500	<0.1	17	13	82	0.4	0.036
2PMC037		<5	<100	<5	<200	<2	<20	11	<10	6	1.1	2.4	<10	<20	710	83	<200	<2	4	26	56	4.4	<2	<1	<5	<.5	8.7	8	<1	6.9	2.6	1.00	5	70	<500	<0.1	14	12	74	0.5	0.039
2PMC038		<5	<100	<5	<200	<2	24	<10	<10	6	0.8	2.4	<10	<20	690	84	<200	<2	3	26	48	4.0	<2	<1	<5	<.5	8.4	7	<1	7.3	2.5	1.00	1	78	540	<0.1	13	12	72	0.3	0.031
2PMC039		<5	<100	<5	<200	<2	35	<10	<10	6	0.8	1.9	<10	<20	640	65	<200	<2	3	26	50	4.0	<2	<1	<5	<.5	7.1	10	<1	6.6	2.8	0.55	3	70	<500	<0.1	11	11	89	0.6	0.020
2PMC040		<5	<100	<5	<200	<2	33	12	<10	8	1.5	3.0	<10	<20	820	67	<200	<2	4	29	65	4.5	<2	<1	<5	<.5	10.0	8	1	7.6	3.2	1.20	5	100	570	<0.1	19	15	98	0.8	0.032
2PMC041		<5	<100	<5	270	<2	<20	<10	<10	6	1.4	2.5	<10	<20	930	76	<200	<2	4	28	62	4.3	<2	<1	<5	<.5	9.1	5	<1	7.2	2.9	0.84	4	83	<500	<0.1	26	16	122	1.1	0.064
2PMC042		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.3	<10	<20	590	<50	<200	<2	3	25	61	3.6	<2	<1	<5	<.5	6.7	6	<1	6.6	2.6	0.62	27	98	<500	<0.1	12	15	77	0.5	0.040
2PMC043		<5	<100	<5	310	2	47	12	<10	7	1.3	3.5	<10	<20	800	70	<200	<2	4	28	61	4.4	<2	<1	<5	<.5	13.0	6	1	6.6	3.2	1.40	5	72	<500	0.3	29	13	113	0.9	0.053
2PMC044		7	<100	<5	210	<2	<20	12	<10	6	1.3	3.2	<10	<20	950	74	<200	<2	4	26	64	4.5	<2	<1	<5	<.5	13.0	6	<1	6.6	3.1	1.40	4	100	<500	0.2	29	17	116	0.9	0.049
2PMC045		<5	<100	<5	<200	2	<20	15	<10	7	1.2	3.2	<10	<20	860	98	<200	<2	3	30	68	4.5	<2	<1	<5	<.5	11.0	8	<1	7.0	2.9	1.20	3	96	<500	<0.1	20	15	103	0.8	0.034
2PMC046		<5	<100	<5	210	<2	37	12	<10	5	1.1	2.6	<10	<20	710	84	<200	<2	3	27	53	4.2	<2	<1	<5	<.5	9.4	8	<1	6.1	2.9	1.10	1	94	660	<0.1	14	10	78	0.4	0.023
2PMC047		<5	<100	<5	<200	<2	36	<10	<10	8	1.0	3.8	<10	<20	830	80	<200	2	3	23	45	3.5	<2	<1	<5	<.5	7.9	6	<1	5.3	2.5	0.71	12	78	<500	<0.1	17	11	96	0.9	0.042
2PMC048		<5	<100	<5	260	<2	<20	<10	<10	6	1.3	2.8	<10	<20	770	74	<200	3	4	35	77	4.9	<2	<1	<5	<.5	10.0	9	<1	8.7	3.2	0.67	6	110	<500	0.2	17	16	86	0.6	0.049
2PMC049		<5	<100	<5	210	<2	53	13	<10	7	1.4	3.3	<10	<20	860	62	<200	<2	4	31	60	4.7	<2	<1	<5	<.5	11.0	7	1	7.4	3.1	1.10	5	100	<500	0.3	25	12	98	0.8	0.056
2PMC050		<5	<100	<5	<200	<2	42	11	<10	9	1.3	3.2	<10	<20	720	84	<200	<2	4	31	76	5.0	2	<1	<5	<.5	12.0	7	1	7.2	3.0	1.10	4	82	<500	0.2	26	15	110	0.8	0.071
2PMC051		<5	<100	<5	270	<2	<20	12	<10	5	0.5	2.5	<10	<20	560	66	<200	<2	3	24	43	3.6	<2	<1	<5	<.5	6.7	7	<1	6.0	2.6	0.41	10	79	<500	0.1	10	10	77	0.5	0.045

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92

REPORT: V92-01179.0 (COMPLETE) PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2PMC052		<5	<100	<5	230	4	34	<10	<10	8	0.9	3.0	<10	<20	690	79	<200	<2	5	34	80	5.1	<2	<1	<5	<.5	11.0	10	1	10.0	4.0	0.84	4	100	630	0.2	23	15	109	0.9	0.043
2PMC053		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	2.3	<10	<20	340	91	<200	<2	4	28	64	4.0	<2	<1	<5	<.5	7.9	8	<1	7.0	2.6	0.25	12	89	<500	<0.1	12	11	90	0.5	0.044
2PMC054		<5	<100	<5	<200	<2	<20	<10	<10	6	0.8	2.4	<10	<20	330	100	<200	<2	4	31	60	4.2	<2	<1	<5	<.5	8.3	8	<1	7.0	3.0	0.25	13	88	<500	<0.1	11	11	85	0.5	0.030
2PMC055		9	<100	<5	<200	<2	43	20	<10	10	2.1	4.5	<10	<20	1100	100	<200	<2	5	30	69	5.6	<2	<1	<5	<.5	17.0	5	<1	7.6	3.5	1.80	2	76	<500	0.3	47	17	113	1.0	0.077
2PMC056		<5	<100	<5	210	<2	27	12	<10	7	1.1	3.2	<10	<20	860	68	<200	<2	4	29	70	4.8	<2	<1	<5	<.5	11.0	6	1	7.6	3.2	0.71	4	110	<500	0.2	25	14	94	0.6	0.046
2PMC057		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	2.1	<10	<20	320	63	<200	<2	4	22	41	3.3	<2	<1	<5	<.5	7.0	6	<1	5.1	2.6	0.28	7	79	<500	<0.1	11	15	112	0.9	0.036
2PMC058		<5	<100	<5	210	3	40	<10	<10	7	0.8	3.1	<10	<20	520	78	<200	2	5	33	75	4.6	<2	<1	<5	<.5	11.0	6	<1	9.3	3.6	0.65	8	130	<500	0.2	24	15	110	0.7	0.056
2PMC059		<5	<100	<5	210	7	<20	14	<10	10	0.8	4.2	<10	<20	530	95	<200	<2	6	39	88	5.6	2	<1	<5	<.5	13.0	5	1	10.0	4.0	0.47	5	150	<500	0.2	25	16	145	0.8	0.061
2PMC060		<5	<100	<5	330	6	79	<10	<10	8	0.9	2.9	<10	<20	530	96	<200	<2	6	35	73	5.3	<2	<1	<5	<.5	12.0	9	<1	8.8	4.3	0.43	7	130	<500	0.2	17	15	199	1.4	0.049
2PMC061		8	<100	<5	260	<2	51	12	<10	6	0.7	3.2	<10	<20	380	72	<200	<2	6	30	58	4.2	<2	<1	<5	<.5	11.0	6	1	7.5	2.9	0.39	52	100	<500	0.2	21	16	126	0.9	0.076
2PMC062		<5	<100	<5	<200	<2	<20	<10	<10	6	1.1	2.7	<10	<20	960	65	<200	<2	4	31	65	4.5	<2	<1	<5	<.5	11.0	6	1	7.9	2.8	0.60	6	88	<500	0.2	22	14	95	0.8	0.058
2PMC063		<5	<100	<5	<200	<2	<20	11	<10	4	0.9	2.1	<10	<20	610	76	<200	<2	3	26	53	3.9	<2	<1	<5	<.5	8.2	8	<1	6.1	2.5	0.64	5	88	<500	<0.1	13	10	86	0.6	0.029
2PMC064		<5	<100	<5	230	3	<20	<10	<10	4	0.4	1.2	<10	<20	280	52	<200	<2	4	15	22	2.1	<2	<1	<5	<.5	5.0	4	<1	4.2	2.4	0.21	75	51	<500	<0.1	11	10	124	0.4	0.032
2PMC065		<5	<100	<5	<200	<2	<20	<10	<10	5	1.0	2.0	<10	<20	400	65	<200	<2	4	26	54	3.7	<2	<1	<5	<.5	8.5	7	<1	6.5	2.9	0.42	5	86	<500	0.3	15	12	79	0.5	0.045
2PMC066		<5	<100	<5	<200	<2	41	<10	<10	7	1.4	3.4	<10	<20	770	81	<200	<2	5	31	66	4.8	<2	<1	<5	<.5	12.0	7	1	7.9	3.2	1.00	5	99	<500	0.3	25	14	94	0.7	0.038
2PMC067		<5	<100	<5	220	<2	<20	<10	<10	7	1.3	3.0	<10	<20	850	78	<200	2	4	30	65	4.8	<2	<1	<5	<.5	10.0	9	<1	6.6	2.9	1.10	4	77	<500	0.2	21	18	88	0.6	0.049
2PMC068		<5	<100	<5	260	<2	<20	<10	<10	6	1.0	2.8	<10	<20	810	81	<200	<2	4	30	47	4.6	<2	<1	<5	<.5	10.0	9	<1	6.8	3.1	0.79	6	110	<500	0.4	16	11	109	0.9	0.074
2PMC069		<5	<100	<5	<200	<2	<20	<10	<10	6	0.9	1.5	<10	<20	450	<50	<200	<2	2	22	49	3.3	<2	<1	<5	<.5	5.1	7	<1	4.9	2.2	0.55	4	61	<500	<0.1	9	11	109	0.4	0.024
2PMC070		<5	<100	<5	210	<2	31	<10	<10	9	1.1	2.7	<10	<20	840	83	<200	<2	3	28	64	4.1	<2	<1	<5	<.5	9.1	7	<1	7.3	2.7	1.00	8	81	<500	0.2	15	12	97	0.7	0.040
2PMC071		<5	<100	<5	220	2	44	11	<10	9	1.3	2.7	<10	<20	900	78	<200	2	4	27	59	4.0	<2	<1	<5	<.5	9.0	6	<1	7.1	3.1	1.00	8	79	<500	0.2	16	13	95	0.7	0.041
2PMC072		7	<100	<5	220	<2	35	11	<10	7	1.1	3.1	<10	<20	850	120	<200	<2	4	28	53	4.3	<2	<1	<5	<.5	10.0	9	<1	7.3	2.7	1.20	2	71	630	0.2	17	10	87	0.5	0.049
2PMC073		<5	<100	<5	240	<2	<20	<10	<10	5	1.2	2.7	<10	<20	870	98	<200	<2	3	28	66	4.3	<2	<1	<5	<.5	11.0	6	<1	6.6	3.1	1.40	9	100	<500	0.3	23	12	106	0.8	0.059
2PMC074		<5	<100	<5	280	<2	<20	<10	<10	6	1.1	3.5	<10	<20	1200	93	<200	<2	4	34	72	4.7	<2	<1	<5	<.5	11.0	7	<1	7.5	3.3	1.60	4	130	<500	0.2	26	13	99	0.7	0.049
2PMC075		<5	<100	<5	<200	<2	40	<10	<10	5	0.8	3.0	<10	<20	960	54	<200	<2	5	37	92	5.5	2	<1	<5	<.5	7.4	10	<1	8.7	3.1	1.20	5	110	600	0.2	17	14	83	0.4	0.027
2PMC076		<5	<100	<5	280	<2	<20	<10	<10	5	0.8	1.6	<10	<20	510	<50	<200	<2	4	22	47	2.8	<2	<1	<5	<.5	4.1	5	<1	5.0	2.1	0.70	5	84	<500	<0.1	11	26	172	0.4	0.012
2PMC077		<5	<100	<5	<200	2	34	<10	<10	6	1.0	2.2	<10	<20	420	57	<200	<2	5	27	63	4.0	<2	<1	<5	<.5	7.0	5	<1	7.3	2.8	0.55	7	100	<500	0.1	12	13	59	0.4	0.020
2PMC078		<5	<100	<5	<200	<2	<20	13	<10	6	1.1	2.7	<10	<20	1100	52	<200	<2	4	33	75	4.6	<2	<1	<5	<.5	8.3	7	<1	7.1	3.1	1.40	7	87	<500	0.2	16	11	88	0.6	0.019
2PMC079		<5	<100	<5	230	<2	<20	<10	<10	3	0.5	1.1	<10	<20	200	<50	<200	<2	2	15	33	2.4	<2	<1	<5	<.5	4.2	7	<1	3.9	2.3	0.31	27	63	520	<0.1	9	15	79	0.4	0.035
2PMC080		<5	<100	<5	<200	<2	<20	<10	<10	5	1.0	2.3	<10	<20	480	60	<200	<2	3	24	48	3.7	<2	<1	<5	<.5	8.4	8	<1	6.0	2.6	0.68	7	85	<500	0.2	16	10	88	0.5	0.035
2PMC081		<5	<100	<5	<200	<2	<20	<10	<10	5	1.0	2.0	<10	<20	530	73	<200	<2	2	22	45	3.5	<2	<1	<5	<.5	7.8	9	<1	5.6	2.7	0.68	4	62	<500	0.2	15	10	78	0.6	0.032

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01179.0 (COMPLETE)

DATE PRINTED: 23-NOV-92

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2PMC082		<5	<100	<5	<200	<2	<20	<10	<10	5	0.6	3.1	<10	<20	900	<50	<200	<2	5	38	78	6.0	<2	<1	<5	<.5	6.3	8	2	8.4	3.0	1.10	5	140	<500	0.2	16	14	74	0.4	0.025
2PMC083		<5	<100	<5	<200	<2	<20	<10	<10	6	0.7	1.6	<10	<20	380	<50	<200	<2	3	23	49	3.4	<2	<1	<5	<.5	4.9	6	<1	5.4	2.2	0.69	6	73	<500	<0.1	9	14	57	0.3	0.016
2PMC084		<5	<100	<5	<200	<2	36	11	<10	6	0.8	2.6	<10	<20	650	53	<200	<2	2	26	56	4.1	<2	<1	<5	<.5	8.1	7	1	6.9	2.5	1.40	2	100	<500	0.2	15	11	72	0.5	0.018
2PMC085		<5	<100	<5	<200	<2	<20	<10	<10	6	1.0	2.5	<10	<20	680	57	<200	<2	4	29	59	4.5	<2	<1	<5	<.5	8.0	9	<1	7.7	2.7	0.94	<1	78	520	<0.1	13	10	59	0.4	0.013
2PMC086		<5	<100	<5	<200	<2	<20	<10	<10	3	0.4	1.1	<10	<20	140	<50	<200	<2	2	14	25	2.2	<2	<1	<5	<.5	3.5	5	<1	3.1	2.2	0.16	33	53	<500	<0.1	7	6	65	<.2	<.010
2PMC087		<5	<100	<5	<200	<2	26	<10	<10	3	0.4	1.0	<10	<20	<100	<50	<200	<2	3	13	33	2.2	<2	<1	<5	<.5	4.2	5	<1	3.4	2.2	0.16	35	57	<500	<0.1	7	6	74	0.3	0.013
2PMC088		<5	<100	<5	<200	<2	<20	<10	<10	6	0.6	1.6	<10	<20	530	71	<200	<2	3	25	51	3.6	<2	<1	<5	<.5	5.9	7	<1	5.9	2.4	0.47	9	79	<500	0.2	10	10	70	0.4	0.028
2PMC089		<5	<100	<5	<200	<2	<20	<10	<10	2	0.4	1.1	<10	<20	640	51	<200	<2	2	19	44	2.5	<2	<1	<5	<.5	4.8	5	<1	4.0	1.8	0.63	18	49	<500	<0.1	7	6	58	0.4	0.033
2PMC090		<5	<100	<5	<200	<2	49	<10	<10	2	0.5	1.9	<10	<20	530	53	<200	<2	2	21	53	3.0	<2	<1	<5	<.5	6.8	5	<1	5.0	2.1	0.84	11	71	<500	0.1	10	8	62	0.4	0.022
2PMC091		<5	<100	<5	<200	<2	43	14	<10	5	0.9	2.8	<10	<20	680	70	<200	<2	3	29	67	4.4	<2	<1	<5	<.5	9.2	10	<1	7.2	2.9	1.30	6	95	<500	0.2	16	10	75	0.5	0.017
2PMC092		<5	<100	<5	280	<2	29	<10	<10	5	0.8	2.8	<10	<20	690	77	<200	<2	3	29	60	4.4	<2	<1	<5	<.5	10.0	7	<1	7.6	2.5	1.30	7	73	<500	<0.1	19	12	93	0.7	0.027
2PMC093		<5	<100	<5	<200	<2	<20	12	<10	4	0.8	2.7	<10	<20	620	88	<200	<2	3	27	52	4.1	<2	<1	<5	<.5	8.8	9	<1	7.0	2.7	1.50	5	64	510	<0.1	16	9	91	0.5	0.023
2PMC094		<5	<100	<5	<200	<2	25	10	<10	4	0.7	2.4	<10	<20	630	71	<200	2	2	26	48	3.8	<2	<1	<5	<.5	7.2	8	<1	6.4	2.2	1.50	3	97	<500	<0.1	10	9	60	0.4	0.013
2PMC095		<5	<100	<5	270	<2	31	<10	<10	5	0.7	2.4	<10	<20	590	70	<200	<2	4	27	50	4.0	<2	<1	<5	<.5	9.0	7	<1	6.9	2.9	0.80	15	97	<500	0.3	14	11	89	1.0	0.049
2PMC096		<5	<100	<5	<200	3	<20	<10	<10	7	0.7	3.2	<10	<20	900	73	<200	<2	4	34	71	5.1	3	<1	<5	<.5	11.0	7	<1	8.6	3.0	1.60	7	130	630	0.3	20	13	115	0.8	0.044

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92

REPORT: V92-01179.0 (COMPLETE) PROJECT: NONE GIVEN

STANDARD NAME	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
B-C GEOCHEM STD		140	<100	<5	300	<2	140	37	<10	141	0.9	7.9	<10	<20	150	400	<200	28	1	11	22	3.2	<2	<1	<5	0.6	29.0	3	<1	1.8	<.5	1.00	<1	31	<500	-	-	-	-	-	-
B-C GEOCHEM STD		190	<100	<5	<200	<2	130	44	<10	145	1.1	8.4	<10	<20	280	430	<200	30	<1	12	28	3.4	<2	<1	<5	0.6	30.0	3	<1	1.5	<.5	1.00	<1	35	<500	-	-	-	-	-	-
B-C GEOCHEM STD		260	<100	<5	320	3	200	49	<10	141	1.1	8.4	<10	<20	200	390	<200	32	2	11	<10	3.5	<2	<1	<5	<.5	30.0	4	<1	1.5	<.5	1.10	2	64	<500	-	-	-	-	-	-
Number of Analyses		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-
Mean Value		197	50	3	240	2	157	43	5	142	1.0	8.2	5	10	210	407	100	30	1	11	18	3.4	1	0.5	3	0.5	29.7	3	0.5	1.6	0.3	1.03	0.9	43	250	-	-	-	-	-	-
Standard Deviation		60	<1	<1	122	1	38	6	<1	2	0.1	0.3	<1	<1	66	21	<1	2	0.5	0.6	12	0.2	<1	<1	<1	0.2	0.6	0.7	<1	0.2	<.1	0.06	0.7	18	<1	-	-	-	-	-	-
Accepted Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	140	13	140	0.1	0.028
TRACE GEOCHEM STD		7	<100	<5	360	3	55	12	<10	28	0.5	3.3	<10	<20	450	200	<200	2	<1	14	35	3.4	<2	<1	<5	0.7	15.0	3	<1	3.3	1.1	2.20	<1	53	630	0.4	274	30	245	0.9	0.039
TRACE GEOCHEM STD		14	<100	<5	500	3	82	11	<10	26	0.6	3.1	<10	<20	410	170	<200	<2	<1	13	<10	3.3	<2	<1	<5	0.8	13.0	4	<1	2.9	1.0	2.30	<1	70	<500	0.4	279	31	245	1.0	0.023
TRACE GEOCHEM STD		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	268	30	253	1.0	0.020
Number of Analyses		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Mean Value		10	50	3	430	3	69	12	5	27	0.5	3.2	5	10	430	185	100	2	0.5	14	20	3.4	1	0.5	3	0.7	14.0	3	0.5	3.1	1.1	2.25	0.5	62	440	0.4	274	31	248	1.0	0.028
Standard Deviation		5	<1	<1	99	0.5	19	0.7	<1	1	0.06	0.1	<1	<1	28	21	<1	0.8	<1	0.7	21	.07	<1	<1	<1	.02	1.4	0.8	<1	0.3	.07	0.07	<1	12	269	0.06	6	0.6	5	.06	0.010
Accepted Value		9	-	-	250	4	41	11	-	28	0.5	2.6	-	-	390	160	-	<	0.8	11	21	3.3	-	0.7	3	0.5	11.0	3	-	3.0	1.2	1.60	-	35	-	0.5	290	33	255	0.8	-
GS89-2		565	<100	<5	680	580	560	63	<10	301	64.2	6.6	<10	<20	660	910	<200	4	3	15	32	2.5	<2	<1	<5	<.5	14.0	<2	<1	7.7	1.9	1.00	16	39	<500	7.3	778	246	523	2.5	3.475
GS89-2		621	<100	<5	600	613	640	59	<10	299	68.3	6.4	<10	<20	630	830	<200	7	3	14	24	2.4	<2	<1	<5	<.5	14.0	4	<1	6.7	2.3	1.10	21	42	<500	5.9	797	237	519	2.4	3.599
GS89-2		529	<100	<5	660	630	750	65	<10	314	70.7	7.1	<10	<20	640	760	<200	10	3	16	33	2.5	<2	<1	<5	<.5	15.0	<2	<1	7.9	2.0	1.10	21	29	<500	-	-	-	-	-	-
Number of Analyses		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2
Mean Value		572	50	3	647	608	650	62	5	305	67.7	6.7	5	10	643	833	100	7	3	15	30	2.5	1	0.5	3	0.3	14.3	2	0.5	7.4	2.1	1.07	19	37	250	6.6	788	242	521	2.4	3.537
Standard Deviation		46	<1	<1	42	25	95	3	<1	8	3.3	0.4	<1	<1	15	75	<1	3	0.2	1	5	.06	<1	<1	<1	<.1	0.6	2	<1	0.6	0.2	0.06	3	7	<1	1.0	14	6	3	.06	0.088
Accepted Value		564	-	5	580	760	660	61	-	310	69.0	5.4	-	-	560	650	-	6	2	14	19	2.2	-	0.6	-	-	12.0	-	0.6	7.0	2.3	0.83	14	42	-	5.0	820	250	500	2.0	-

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01179.0 (COMPLETE)

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STANDARD NAME	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	<1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	<1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	<1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	<1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
Number of Analyses		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7
Mean Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.5	1	0.7	0.1	0.005
Standard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<1	0.3	<.1	<.001
Accepted Value		5	5	.01	.005	.01	.01	.01	.01	.01	.005	<.1	.01	.01	.005	.01	.005	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.005	.01	.01	.005	.01	<.01	.01	.01	.005	0.1	1	1	1	1.0	0.005
GEO TRACE STD1(1989)		120	<100	20	<200	15	<20	<10	<10	7	6.6	5.6	<10	<20	530	180	<200	<2	1	13	19	2.7	<2	<1	<5	<.5	20.0	3	<1	1.9	1.2	1.90	6	26	<500	38.9	197	16	60	<.2	0.028
GEO TRACE STD1(1989)		-	<100	38	250	17	<20	17	<10	7	7.0	5.7	<10	<20	470	150	<200	<2	<1	12	31	2.7	<2	<1	<5	<.5	20.0	3	<1	1.7	1.0	1.90	5	37	<500	36.9	183	18	60	<.2	0.022
Number of Analyses		1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mean Value		120	50	29	175	16	10	11	5	7	6.8	5.7	5	10	500	165	100	1	0.8	13	25	2.7	1	0.5	3	0.3	20.0	3	0.5	1.8	1.1	1.90	5	32	250	37.9	190	17	60	0.1	0.025
Standard Deviation		-	<1	13	106	1	<1	8	<1	.07	0.3	.07	<1	<1	42	21	<1	<1	0.4	0.7	8	<.1	<1	<1	<1	<.1	<0.1	.07	<1	0.1	0.1	<.01	0.5	8	<1	1.4	10	0.9	<1	<.1	0.004
Accepted Value		108	-	35	180	21	17	12	-	7	6.4	4.6	-	-	460	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	36.0	190	15	62	-	-

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 23-NOV-92

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC005		<5	<100	<5	<200	<2	<20	<10	<10	5	0.5	2.2	<10	<20	500	79	<200	<2	3	28	54	4.1	<2	<1	<5	<.5	8.6	7	<1	7.3	3.0	0.85	7	77	<500	<0.1	11	10	67	0.3	0.019
Prep Duplicate		<5	<100	<5	210	<2	<20	11	<10	5	0.5	2.2	<10	<20	510	78	<200	<2	3	29	54	4.1	<2	<1	<5	<.5	7.9	8	<1	7.3	3.0	0.87	6	85	<500	<0.1	12	10	67	<.2	0.012
2JWC010		<5	<100	<5	<200	<2	<20	<10	<10	6	0.5	2.1	<10	<20	770	74	<200	<2	4	27	51	4.1	<2	<1	<5	<.5	8.0	7	<1	7.0	2.6	0.72	6	86	<500	<0.1	10	11	74	<.2	0.020
Duplicate		<5	<100	<5	<200	<2	27	<10	<10	5	0.5	2.2	<10	<20	710	86	<200	<2	3	25	43	3.6	<2	<1	<5	<.5	7.8	7	<1	6.8	2.8	0.66	5	79	<500	<0.1	12	12	74	<.2	0.030
2JWC027		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	1.6	<10	<20	510	52	<200	<2	2	27	51	3.9	<2	<1	<5	<.5	6.1	10	<1	7.0	2.6	0.48	2	57	<500	<0.1	10	9	52	0.3	0.017
Duplicate																																			<0.1	10	10	52	0.3	0.010
2JWC034		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.3	<10	<20	1100	55	<200	<2	4	42	77	5.2	<2	<1	<5	<.5	6.5	8	1	8.7	3.2	1.00	6	110	<500	<0.1	15	15	58	<.2	0.023
Duplicate		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.2	<10	<20	1100	55	<200	<2	4	38	66	4.7	<2	<1	<5	<.5	6.0	8	2	8.1	3.0	0.92	6	98	<500						
2JWC046		<5	<100	<5	<200	<2	<20	<10	<10	5	0.8	2.3	<10	<20	600	86	<200	<2	3	34	59	4.7	<2	<1	<5	<.5	7.9	6	<1	6.0	2.4	0.78	6	81	<500	0.2	13	12	86	0.3	0.041
Duplicate																																			0.2	13	11	86	0.3	0.041
2JWC057		<5	<100	<5	240	<2	<20	11	<10	7	1.2	3.3	<10	<20	970	94	<200	<2	4	32	61	4.8	<2	<1	<5	<.5	12.0	6	1	6.8	2.5	1.30	22	77	<500	<0.1	25	15	153	0.4	0.042
Duplicate		<5	<100	<5	<200	<2	24	13	<10	6	1.1	3.2	<10	<20	930	84	<200	<2	4	28	61	4.3	<2	<1	<5	<.5	11.0	7	<1	6.1	2.5	1.20	17	89	<500						
2JWC061		<5	<100	<5	<200	<2	<20	<10	<10	8	0.9	2.5	<10	<20	970	81	<200	<2	9	43	78	8.0	<2	<1	6	0.8	13.0	4	<1	10.0	4.0	0.65	66	120	<500	<0.1	35	18	69	<.2	0.062
Prep Duplicate		<5	<100	<5	<200	<2	<20	13	<10	9	1.0	2.7	<10	<20	970	57	<200	<2	9	41	79	7.9	5	1	6	0.8	12.0	7	<1	9.4	4.3	0.58	66	120	<500	<0.1	41	20	78	<.2	0.065
2JWC063		<5	<100	<5	200	<2	<20	17	<10	10	1.0	4.0	<10	<20	650	58	<200	<2	7	39	81	6.4	<2	<1	5	0.7	14.0	7	<1	10.0	3.7	0.66	58	100	<500	<0.1	24	20	65	<.2	0.034
Duplicate																																			<0.1	29	21	72	<.2	0.044
2MSC004		<5	<100	<5	<200	<2	<20	<10	<10	6	1.0	2.4	<10	<20	620	77	<200	<2	2	28	49	4.2	<2	<1	<5	<.5	8.9	7	<1	6.2	2.5	1.10	3	61	<500	<0.1	17	11	67	<.2	0.025
Duplicate		<5	<100	<5	<200	<2	<20	<10	<10	5	0.9	2.0	<10	<20	640	59	<200	<2	2	25	47	3.8	<2	<1	<5	<.5	7.4	7	1	5.9	2.3	0.89	2	50	<500						
2MSC006		<5	<100	<5	<200	<2	<20	12	<10	3	0.4	3.8	<10	<20	780	110	<200	2	7	41	72	4.9	<2	<1	<5	<.5	15.0	4	<1	11.0	2.5	0.61	29	170	<500	<0.1	25	13	55	<.2	0.031
Duplicate																																			<0.1	24	12	55	<.2	0.025
2MSC008		<5	<100	<5	<200	<2	<20	12	<10	15	0.8	3.2	<10	<20	1300	100	<200	<2	4	31	63	4.9	<2	<1	<5	<.5	12.0	5	<1	8.5	2.6	1.30	<1	130	<500	<0.1	21	13	73	<.2	0.037
Prep Duplicate		<5	<100	<5	230	<2	<20	17	<10	15	0.8	3.3	<10	<20	1300	100	<200	<2	4	29	61	4.8	<2	<1	<5	<.5	11.0	6	1	8.3	2.7	1.40	<1	110	<500	<0.1	25	14	75	0.3	0.041
2MSC023		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	1.9	<10	<20	690	51	<200	<2	3	34	63	4.7	<2	<1	<5	<.5	6.8	7	<1	7.9	2.7	0.92	4	79	<500	<0.1	10	9	54	<.2	0.016
Duplicate																																			<0.1	10	10	53	<.2	0.017

BONDAR-CLEGG

Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2MSC028		<5	<100	<5	<200	<2	35	12	<10	5	1.0	2.7	<10	<20	750	86	<200	<2	3	34	63	5.1	<2	<1	<5	0.5	11.0	9	<1	7.4	2.8	1.30	2	88	<500	<0.1	17	10	74	<.2	0.020
Duplicate		<5	<100	<5	<200	<2	<20	<10	<10	4	1.0	2.7	<10	<20	730	91	<200	<2	3	29	55	4.5	<2	<1	<5	0.6	10.0	8	<1	6.5	2.5	1.10	2	91	<500						
2MSC042		<5	<100	<5	<200	<2	<20	12	<10	9	0.9	3.0	<10	<20	1200	60	<200	2	7	37	86	6.2	<2	<1	5	<.5	10.0	11	1	11.0	3.9	0.76	19	160	<500	<0.1	19	15	48	<.2	<.010
Duplicate																																			<0.1	15	13	50	0.2	0.012
2MSC051		<5	<100	<5	240	<2	<20	<10	<10	11	1.0	3.0	<10	<20	980	60	<200	2	5	36	74	5.7	<2	1	<5	<.5	11.0	8	<1	10.0	3.8	0.65	9	130	<500	<0.1	21	16	79	0.4	0.025
Duplicate		<5	<100	<5	<200	<2	25	11	<10	10	1.0	3.0	<10	<20	930	75	<200	2	4	31	71	5.1	<2	<1	<5	<.5	10.0	9	1	8.9	3.4	0.56	8	120	<500						
2PMC006		<5	<100	<5	<200	<2	38	<10	<10	7	1.0	2.8	<10	<20	870	<50	<200	<2	3	29	65	4.4	<2	<1	<5	<.5	8.6	7	1	6.4	2.6	1.20	10	100	<500	<0.1	17	11	71	0.4	0.036
Duplicate																																			<0.1	19	12	73	0.5	0.026
2PMC012		<5	<100	<5	<200	<2	36	<10	<10	7	1.0	2.1	<10	<20	860	50	<200	<2	5	29	69	4.5	<2	<1	<5	<.5	7.3	9	<1	8.1	3.2	0.60	3	81	<500	<0.1	13	13	61	0.5	0.016
Prep Duplicate		7	<100	<5	<200	<2	<20	<10	<10	8	1.0	2.0	<10	<20	940	57	<200	<2	5	30	60	4.4	<2	<1	<5	<.5	7.2	9	<1	8.2	2.9	0.60	3	110	<500	<0.1	12	13	66	0.5	0.018
2PMC022		6	<100	<5	240	<2	47	13	<10	8	1.6	4.4	<10	<20	1200	72	<200	<2	5	46	100	6.9	<2	1	<5	<.5	12.0	8	2	10.0	3.4	2.00	<1	120	820	<0.1	30	14	90	0.5	0.043
Duplicate		<5	<100	<5	230	<2	<20	14	<10	7	1.5	4.0	<10	<20	1200	73	<200	<2	4	41	100	6.0	<2	<1	<5	<.5	11.0	10	2	8.4	3.3	1.70	<1	140	<500						
2PMC026		<5	<100	<5	270	<2	51	<10	<10	7	1.4	2.3	<10	<20	970	100	<200	<2	5	27	66	3.9	<2	<1	<5	<.5	11.0	7	<1	6.6	3.2	0.76	5	110	<500	0.2	22	12	128	1.4	0.086
Duplicate																																			<0.1	22	13	125	1.5	0.090
2PMC033		<5	<100	<5	<200	<2	<20	<10	<10	5	1.2	2.0	<10	<20	620	73	<200	<2	4	31	73	4.7	<2	<1	<5	<.5	8.7	7	1	7.0	2.7	0.29	3	110	<500	<0.1	13	12	91	0.9	0.062
Prep Duplicate		<5	<100	<5	240	<2	36	13	<10	5	1.1	2.2	<10	<20	660	81	<200	<2	4	34	75	4.9	<2	<1	<5	<.5	10.0	7	<1	7.9	2.9	0.31	4	110	<500	0.3	16	12	102	1.0	0.075
2PMC042		<5	<100	<5	<200	<2	<20	<10	<10	5	0.7	2.3	<10	<20	590	<50	<200	<2	3	25	61	3.6	<2	<1	<5	<.5	6.7	6	<1	6.6	2.6	0.62	27	98	<500	<0.1	12	15	77	0.5	0.040
Duplicate																																			<0.1	12	14	74	0.4	0.042
2PMC045		<5	<100	<5	<200	2	<20	15	<10	7	1.2	3.2	<10	<20	860	98	<200	<2	3	30	68	4.5	<2	<1	<5	<.5	11.0	8	<1	7.0	2.9	1.20	3	96	<500	<0.1	20	15	103	0.8	0.034
Duplicate		<5	<100	<5	210	<2	<20	12	<10	7	1.3	2.9	<10	<20	800	82	<200	<2	3	28	62	4.5	<2	<1	<5	<.5	11.0	7	<1	7.2	2.7	1.10	3	97	<500						
2PMC062		<5	<100	<5	<200	<2	<20	<10	<10	6	1.1	2.7	<10	<20	960	65	<200	<2	4	31	65	4.5	<2	<1	<5	<.5	11.0	6	1	7.9	2.8	0.60	6	88	<500	0.2	22	14	95	0.8	0.058
Duplicate																																			0.2	21	12	93	0.8	0.061
2PMC068		<5	<100	<5	260	<2	<20	<10	<10	6	1.0	2.8	<10	<20	810	81	<200	<2	4	30	47	4.6	<2	<1	<5	<.5	10.0	9	<1	6.8	3.1	0.79	6	110	<500	0.4	16	11	109	0.9	0.074
Duplicate		<5	<100	<5	250	<2	41	<10	<10	6	1.0	2.4	<10	<20	770	90	<200	<2	4	28	54	4.3	2	<1	<5	<.5	9.1	10	<1	7.1	2.7	0.67	7	88	<500						

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01179.0 (COMPLETE)

DATE PRINTED: 23-NOV-92
PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2PMC078		<5	<100	<5	<200	<2	<20	13	<10	6	1.1	2.7	<10	<20	1100	52	<200	<2	4	33	75	4.6	<2	<1	<5	<.5	8.3	7	<1	7.1	3.1	1.40	7	87	<500	0.2	16	11	88	0.6	0.019
Duplicate																																			0.2	18	11	85	0.6	0.032
2PMC092		<5	<100	<5	280	<2	29	<10	<10	5	0.8	2.8	<10	<20	690	77	<200	<2	3	29	60	4.4	<2	<1	<5	<.5	10.0	7	<1	7.6	2.5	1.30	7	73	<500	<0.1	19	12	93	0.7	0.027
Duplicate		<5	<100	<5	<200	<2	<20	14	<10	4	0.8	2.4	<10	<20	630	100	<200	<2	3	25	44	4.0	2	<1	<5	<.5	8.5	9	<1	6.4	2.2	1.10	7	76	620						
2PMC095		<5	<100	<5	270	<2	31	<10	<10	5	0.7	2.4	<10	<20	590	70	<200	<2	4	27	50	4.0	<2	<1	<5	<.5	9.0	7	<1	6.9	2.9	0.80	15	97	<500	0.3	14	11	89	1.0	0.049
Prep Duplicate		<5	<100	<5	<200	3	37	<10	<10	5	0.8	2.4	<10	<20	500	<50	<200	9	4	25	74	4.1	<2	<1	<5	<.5	8.7	7	<1	7.2	2.7	0.61	18	130	<500	0.3	17	13	110	1.1	

BONDAR-CLEGG

R.A. OLSON CONSULTING LTD.
MR. MICHAEL B. DUFRESNE
#18, 10509 - 81 AVENUE
EDMONTON, AB
T6E 1X7

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01281.0 (COMPLETE)

REFERENCE:

CLIENT: R.A. OLSON CONSULTING LTD.

SUBMITTED BY: M. DUFRESNE

PROJECT: NONE GIVEN

DATE PRINTED: 9-NOV-92

	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION		EXTRACTION	METHOD
1	Au	Gold	190	5	PPB		NEUTRON ACTIVATION
2	Ir	Iridium	190	100	PPB		NEUTRON ACTIVATION
3	Ag	Silver	190	5	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
4	Zn	Zinc	190	200	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
5	Mo	Molybdenum	190	2	PPM		NEUTRON ACTIVATION
6	Ni	Nickel	190	20	PPM		NEUTRON ACTIVATION
7	Co	Cobalt	190	10	PPM		NEUTRON ACTIVATION
8	Cd	Cadmium	190	10	PPM		NEUTRON ACTIVATION
9	As	Arsenic	190	1	PPM		NEUTRON ACTIVATION
10	Sb	Antimony	190	0.2	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
11	Fe	Iron	190	0.5	PCT		NEUTRON ACTIVATION
12	Se	Selenium	190	10	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
13	Te	Tellurium	190	20	PPM		NEUTRON ACTIVATION
14	Ba	Barium	190	100	PPM		NEUTRON ACTIVATION
15	Cr	Chromium	190	50	PPM		NEUTRON ACTIVATION
16	Sn	Tin	190	200	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
17	W	Tungsten	190	2	PPM		NEUTRON ACTIVATION
18	Cs	Cesium	190	1	PPM		NEUTRON ACTIVATION
19	La	Lanthanum	190	5	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
20	Ce	Cerium	190	10	PPM		NEUTRON ACTIVATION
21	Sm	Samarium	190	0.2	PPM		NEUTRON ACTIVATION
22	Eu	Europium	190	2	PPM		NEUTRON ACTIVATION
23	Tb	Terbium	190	1	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
24	Yb	Ytterbium	190	5	PPM		NEUTRON ACTIVATION
25	Lu	Lutetium	190	0.5	PPM		NEUTRON ACTIVATION
26	Sc	Scandium	190	0.5	PPM		NEUTRON ACTIVATION
27	Hf	Hafnium	190	2	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
28	Ta	Tantalum	190	1	PPM		NEUTRON ACTIVATION
29	Th	Thorium	190	0.5	PPM		NEUTRON ACTIVATION
30	U	Uranium	190	0.5	PPM		NEUTRON ACTIVATION
31	Na	Sodium	190	0.05	PCT		NEUTRON ACTIVATION
32	Br	Bromine	190	1	PPM	NOT APPLICABLE	NEUTRON ACTIVATION
33	Rb	Rubidium	190	10	PPM		NEUTRON ACTIVATION
34	Zr	Zirconium	190	500	PPM		NEUTRON ACTIVATION
35	Ag	Silver	190	0.1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
36	Cu	Copper	190	1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
37	Pb	Lead	190	2	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
38	Zn	Zinc	190	1	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
39	Cd	Cadmium	190	0.2	PPM	HCL:HNO3 (3:1)	ATOMIC ABSORPTION
40	Hg	Mercury	190	0.010	PPM	HCL:HNO3 (3:1)	COLD VAPOR AA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
T STREAM SED, SILT	190	1 -80	190	DRY, SIEVE -80	190

REPORT COPIES TO: MR. MICHAEL B. DUFRESNE

INVOICE TO: MR. MICHAEL B. DUFRESNE

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01281.0 (COMPLETE)

DATE PRINTED: 9-NOV-92
PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC066		9	<99	<5	<99	<2	28	11	<10	5	1.0	1.8	<10	<20	690	61	<99	<2	5	28	53	4.8	<2	<1	<5	<.5	6.6	9	1	8.0	3.2	0.63	7	120	<99	0.2	13	10	61	<.2	0.032
2JWC067		7	<99	<5	<99	<2	<20	<10	<10	9	0.8	3.2	<10	<20	770	71	<99	<2	5	31	73	4.7	<2	<1	<5	<.5	7.4	5	1	10.0	3.3	0.78	3	160	<99	<0.1	15	25	104	<.2	0.020
2JWC068		6	<99	<5	<99	3	<20	<10	<10	8	0.8	2.6	<10	<20	650	95	<99	<2	5	35	76	5.8	<2	1	<5	<.5	8.3	8	<1	11.0	3.3	0.71	20	150	<99	0.1	18	19	79	0.2	0.036
2JWC069		9	<99	<5	<99	<2	<20	<10	<10	4	0.9	1.5	<10	<20	540	53	<99	<2	5	26	47	4.4	<2	<1	<5	<.5	7.4	6	<1	7.1	2.9	0.65	43	130	920	<0.1	14	17	100	0.4	0.056
2JWC070		<5	<99	<5	<99	<2	43	<10	<10	4	0.7	1.5	<10	<20	480	<50	<99	<2	5	29	64	4.3	<2	<1	<5	<.5	6.9	5	<1	7.5	2.7	0.64	46	120	<99	<0.1	12	17	98	0.4	0.055
2JWC071		5	<99	<5	<99	<2	33	<10	<10	7	0.8	2.5	<10	<20	800	82	<99	<2	3	26	55	4.1	<2	<1	<5	<.5	8.1	6	<1	7.4	3.0	0.56	5	130	<99	0.2	18	10	100	0.5	0.025
2JWC072		<5	<99	<5	<99	<2	<20	<10	<10	7	0.8	2.4	<10	<20	750	59	<99	<2	3	24	44	3.8	<2	<1	<5	<.5	6.8	7	<1	6.6	2.6	0.63	6	120	<99	0.2	13	9	78	0.3	0.034
2JWC073		<5	<99	<5	<99	<2	<20	11	<10	8	1.0	3.2	<10	<20	810	110	<99	2	6	29	50	4.9	<2	<1	<5	<.5	11.0	6	1	9.0	3.1	0.70	3	110	<99	0.2	25	11	99	0.4	0.030
2JWC074		<5	<99	<5	200	<2	65	11	<10	8	1.2	3.1	<10	<20	900	100	<99	<2	4	28	55	4.6	<2	<1	<5	<.5	11.0	8	<1	6.9	3.2	1.20	1	100	<99	<0.1	21	8	100	0.3	0.047
2JWC075		<5	<99	<5	<99	<2	<20	11	<10	8	0.7	2.3	<10	<20	820	75	<99	<2	5	27	56	4.2	<2	<1	<5	<.5	8.5	7	<1	7.2	3.0	0.81	5	120	890	0.2	14	10	102	0.3	0.045
2JWC076		<5	<99	<5	<99	<2	<20	<10	<10	7	1.2	3.1	<10	<20	850	65	<99	3	4	29	57	4.5	<2	<1	<5	<.5	11.0	6	1	7.0	2.9	1.20	2	76	560	0.2	21	10	98	0.5	0.037
2JWC077		<5	<99	<5	220	2	47	13	<10	9	1.4	3.1	<10	<20	1100	96	<99	<2	4	28	64	4.6	<2	<1	<5	<.5	12.0	6	1	7.3	3.2	1.10	3	100	610	0.2	27	9	120	0.7	0.066
2JWC078		<5	<99	<5	<99	<2	<20	11	<10	7	0.8	2.9	<10	<20	710	70	<99	3	3	29	59	4.3	<2	<1	<5	<.5	9.2	7	<1	8.2	2.8	0.76	4	100	<99	0.2	21	11	94	0.4	0.015
2JWC079		<5	<99	<5	<99	<2	<20	<10	<10	7	0.8	2.0	<10	<20	930	83	<99	<2	3	27	58	4.3	<2	<1	<5	<.5	7.7	10	<1	7.4	2.9	0.81	2	79	660	0.3	14	10	74	<.2	0.049
2JWC080		<5	<99	<5	250	3	<20	<10	<10	7	0.9	2.6	<10	<20	1100	100	<99	3	6	30	66	4.6	<2	<1	<5	<.5	10.0	6	1	7.5	3.1	0.67	4	140	630	0.2	23	11	114	0.4	0.058
2JWC081		15	<99	<5	240	5	56	<10	<10	4	0.6	1.4	<10	<20	410	58	<99	<2	2	12	30	1.7	<2	<1	<5	<.5	4.2	4	<1	2.8	2.4	0.31	26	39	<99	<0.1	20	7	101	0.7	0.046
2JWC082		<5	<99	<5	220	<2	26	<10	<10	4	0.6	1.7	<10	<20	590	<50	<99	<2	2	23	43	3.5	<2	<1	<5	<.5	6.3	9	<1	6.1	2.5	0.67	4	72	<99	<0.1	10	7	56	0.4	0.016
2JWC083		<5	<99	<5	<99	<2	<20	<10	<10	5	0.6	1.6	<10	<20	580	<50	<99	<2	2	20	41	3.2	<2	<1	<5	<.5	5.6	6	<1	5.3	2.0	0.54	5	60	<99	<0.1	11	7	58	0.3	0.017
2JWC084		99	<99	<5	<99	<2	<20	<10	<10	4	0.5	1.6	<10	<20	570	<50	<99	<2	3	22	46	3.3	<2	<1	<5	<.5	5.4	7	<1	5.5	2.2	0.64	4	55	<99	<0.1	10	7	57	0.3	<.010
2JWC085		<5	<99	<5	<99	<2	<20	<10	<10	6	0.7	1.9	<10	<20	680	63	<99	2	4	29	48	3.9	<2	<1	<5	<.5	6.5	10	<1	7.3	2.6	1.10	3	100	<99	0.2	11	10	76	<.2	0.012
2JWC086		<5	<99	<5	<99	<2	<20	11	<10	6	0.9	1.8	<10	<20	860	53	<99	2	4	26	58	4.1	<2	<1	<5	<.5	7.0	6	1	6.5	2.5	0.63	3	80	<99	<0.1	15	11	72	0.3	0.023
2JWC087		7	<99	<5	<99	<2	29	<10	<10	4	0.6	1.7	<10	<20	560	<50	<99	<2	3	23	44	3.4	<2	<1	<5	<.5	6.1	8	<1	5.7	2.3	0.67	3	49	<99	0.2	12	8	63	0.3	0.015
2JWC088		<5	<99	<5	250	<2	<20	<10	<10	5	0.7	1.9	<10	<20	460	76	<99	<2	2	24	33	3.5	<2	<1	<5	<.5	7.1	5	<1	6.2	2.6	0.64	4	85	820	<0.1	14	9	78	0.3	0.022
2JWC089		<5	<99	<5	<99	<2	26	<10	<10	4	0.6	1.7	<10	<20	650	<50	<99	<2	2	20	34	3.3	<2	<1	<5	<.5	5.3	8	<1	5.7	2.5	0.54	6	66	<99	<0.1	11	8	70	0.3	0.024
2JWC090		8	<99	<5	200	<2	48	10	<10	7	1.0	3.1	<10	<20	770	78	<99	<2	4	28	52	4.3	<2	<1	<5	<.5	9.0	6	<1	8.3	3.2	0.53	2	110	<99	0.2	23	12	96	0.4	0.026
2JWC091		<5	<99	<5	<99	<2	<20	<10	<10	5	0.6	2.0	<10	<20	670	64	<99	<2	3	21	36	3.6	<2	<1	<5	<.5	5.7	7	<1	5.2	2.3	0.61	4	71	<99	<0.1	11	8	62	0.3	0.013
2JWC092		<5	<99	<5	<99	<2	<20	<10	<10	4	0.6	1.8	<10	<20	620	71	<99	<2	2	21	54	3.6	<2	<1	<5	<.5	5.1	8	<1	5.7	2.3	0.61	3	71	<99	<0.1	10	7	56	0.3	0.013
2JWC093		<5	<99	<5	<99	<2	31	<10	<10	5	0.7	1.7	<10	<20	690	53	<99	2	2	22	54	3.4	<2	<1	<5	<.5	6.1	7	<1	5.6	2.5	0.52	3	99	<99	<0.1	12	9	64	0.3	<.010
2JWC094		<5	<99	<5	<99	<2	<20	<10	<10	5	0.7	1.8	<10	<20	710	<50	<99	<2	4	22	43	3.5	<2	<1	<5	<.5	6.0	6	<1	5.9	2.6	0.52	4	67	<99	<0.1	12	9	72	0.3	0.017
2JWC095		<5	<99	<5	<99	<2	25	11	<10	6	0.7	2.0	<10	<20	670	71	<99	<2	4	25	54	3.9	<2	<1	<5	<.5	7.3	7	1	6.5	2.9	0.66	3	96	<99	<0.1	12	10	97	0.3	0.018

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01281.0 (COMPLETE)

DATE PRINTED: 9-NOV-92
PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC096		<5	<99	<5	<99	<2	<20	<10	<10	2	<0.2	<.5	<10	<20	<100	<50	<99	<2	<1	6	<10	0.8	<2	<1	<5	<.5	1.3	<2	<1	1.1	1.1	0.17	3	16	<99	<0.1	5	4	49	0.4	<.010
2JWC097		<5	<99	<5	<99	<2	<20	<10	<10	3	0.6	1.2	<10	<20	460	<50	<99	<2	3	13	21	1.8	<2	<1	<5	<.5	3.8	2	<1	3.3	2.5	0.25	14	43	<99	0.1	13	9	73	0.4	0.029
2JWC098		<5	<99	<5	<99	<2	34	<10	<10	4	0.7	1.5	<10	<20	610	73	<99	<2	2	21	43	3.5	<2	<1	<5	<.5	5.7	10	<1	5.1	2.5	0.82	3	69	<99	0.1	9	10	71	0.3	0.014
2JWC099		<5	<99	<5	<99	<2	<20	18	<10	11	1.0	4.2	<10	<20	980	68	<99	<2	5	29	60	4.6	<2	<1	<5	<.5	11.0	2	<1	8.6	3.2	0.49	16	140	<99	0.2	30	13	150	0.7	0.049
2JWC100		<5	<99	<5	280	<2	33	<10	<10	5	0.9	2.5	<10	<20	590	69	<99	2	4	26	62	3.9	<2	<1	<5	<.5	8.3	6	<1	6.6	3.2	0.58	6	120	<99	<0.1	17	11	97	0.4	0.028
2JWC101		<5	<99	<5	<99	<2	<20	<10	<10	3	0.5	1.7	<10	<20	620	<50	<99	<2	3	20	39	3.2	<2	<1	<5	<.5	5.8	6	<1	5.6	1.9	0.70	5	56	<99	<0.1	10	8	61	0.3	0.015
2JWC102		<5	<99	<5	<99	<2	38	10	<10	7	0.7	2.5	<10	<20	720	58	<99	<2	4	25	45	3.9	<2	<1	<5	<.5	7.1	5	<1	7.1	2.7	0.67	6	100	<99	0.2	16	10	78	0.4	0.028
2JWC103		<5	<99	9	230	<2	<20	11	<10	8	0.9	2.6	<10	<20	900	61	<99	3	3	27	58	4.3	<2	<1	<5	<.5	9.0	6	<1	7.2	3.1	0.83	5	94	<99	<0.1	17	11	81	0.4	0.031
2JWC104		<5	<99	<5	<99	<2	46	<10	<10	7	0.9	2.5	<10	<20	770	52	<99	<2	4	24	43	4.1	<2	<1	<5	<.5	8.4	6	<1	6.7	2.7	0.92	1	91	<99	0.2	19	10	83	0.3	0.028
2JWC105		<5	<99	<5	<99	<2	47	10	<10	6	0.7	2.2	<10	<20	760	<50	<99	<2	3	24	59	4.0	<2	<1	<5	<.5	7.4	8	<1	6.6	3.0	0.74	4	86	<99	0.2	15	11	78	0.3	0.018
2JWC106		<5	<99	<5	<99	2	<20	11	<10	8	0.9	2.6	<10	<20	1000	70	<99	<2	3	24	62	4.0	<2	<1	<5	<.5	8.0	6	<1	6.8	3.1	1.20	<1	86	530	0.4	16	9	63	<.2	0.038
2JWC107		<5	<99	<5	210	<2	27	<10	<10	7	0.6	1.8	<10	<20	720	55	<99	<2	2	23	38	3.8	<2	<1	<5	<.5	6.2	8	<1	6.0	2.3	0.83	3	73	<99	<0.1	10	8	63	<.2	0.010
2JWC108		6	<99	<5	220	<2	31	<10	<10	5	0.6	2.0	<10	<20	680	58	<99	<2	3	22	46	3.5	<2	<1	<5	<.5	5.4	7	<1	5.7	2.5	0.80	2	77	<99	0.1	10	7	58	<.2	0.015
2JWC109		<5	<99	<5	<99	<2	<20	<10	<10	6	0.5	2.2	<10	<20	750	<50	<99	<2	3	23	46	3.7	<2	<1	<5	<.5	6.7	6	<1	5.9	2.5	1.00	4	81	<99	<0.1	10	9	68	<.2	0.025
2JWC110		7	<99	<5	<99	<2	<20	<10	<10	7	0.7	2.6	<10	<20	670	72	<99	<2	4	25	59	4.1	<2	<1	<5	<.5	7.4	7	<1	6.7	2.7	1.00	3	62	<99	0.2	12	9	68	<.2	0.024
2JWC111		<5	<99	<5	<99	<2	70	14	<10	8	0.9	3.0	<10	<20	790	93	<99	<2	4	27	50	4.2	2	<1	<5	<.5	10.0	3	<1	7.7	2.9	0.53	5	100	<99	0.2	25	14	86	0.3	0.042
2JWC112		<5	<99	<5	300	<2	<20	<10	<10	8	0.7	2.2	<10	<20	750	73	<99	<2	2	22	41	3.8	<2	<1	<5	<.5	7.9	5	<1	6.4	2.8	0.50	6	92	<99	0.2	17	11	93	0.3	0.038
2JWC113		<5	<99	<5	<99	<2	<20	<10	<10	4	0.6	1.4	<10	<20	550	<50	<99	<2	2	19	29	3.2	<2	<1	<5	<.5	4.4	7	<1	5.1	2.1	0.61	2	61	<99	<0.1	8	8	47	<.2	<.010
2JWC114		<5	<99	<5	<99	<2	<20	<10	<10	5	0.7	2.1	<10	<20	620	<50	<99	<2	4	23	46	4.0	<2	<1	<5	<.5	6.8	8	<1	7.3	2.2	0.54	4	82	<99	0.1	14	10	67	0.3	0.026
2JWC115		5	<99	<5	<99	<2	<20	<10	<10	5	0.6	2.1	<10	<20	650	73	<99	2	4	25	49	3.9	<2	<1	<5	<.5	7.2	7	<1	7.0	2.8	0.66	4	92	<99	0.1	13	10	71	0.3	0.021
2JWC116		<5	<99	<5	<99	<2	<20	<10	<10	3	0.7	1.7	<10	<20	740	58	<99	<2	4	28	56	4.3	<2	<1	<5	<.5	7.5	6	<1	7.8	3.4	0.89	7	110	<99	<0.1	26	9	77	0.4	0.029
2JWC117		<5	<99	<5	240	<2	32	<10	<10	6	0.9	2.5	<10	<20	800	59	<99	<2	3	26	45	4.3	<2	<1	<5	<.5	7.8	5	1	7.0	2.8	0.67	5	120	<99	<0.1	17	11	73	0.3	0.026
2JWC118		<5	<99	<5	<99	<2	<20	<10	<10	5	0.9	2.4	<10	<20	760	60	<99	3	3	24	58	4.0	<2	<1	<5	<.5	7.4	5	<1	7.2	2.9	0.68	4	69	<99	<0.1	15	10	62	0.3	0.019
2JWC119		<5	<99	<5	<99	<2	54	<10	<10	6	0.8	1.8	<10	<20	700	<50	<99	<2	4	23	47	3.7	<2	<1	<5	<.5	6.3	5	<1	6.4	2.0	0.53	6	100	<99	0.1	15	10	65	0.3	0.023
2JWC120		<5	<99	<5	<99	<2	32	<10	<10	5	0.7	1.9	<10	<20	650	61	<99	<2	2	24	48	3.9	<2	<1	<5	<.5	5.9	7	<1	7.1	2.2	0.87	3	54	<99	0.1	11	9	54	0.3	0.013
2JWC121		<5	<99	<5	220	<2	60	12	<10	10	0.9	3.3	<10	<20	750	59	<99	<2	5	25	59	4.3	<2	<1	<5	<.5	8.4	5	<1	7.6	2.4	0.43	15	95	<99	0.2	22	15	114	0.7	0.038
2JWC122		<5	<99	<5	210	<2	<20	<10	<10	6	0.8	2.3	<10	<20	680	68	<99	<2	4	30	58	4.8	<2	<1	<5	<.5	7.7	10	<1	9.4	2.5	0.82	4	95	810	0.2	14	10	59	0.3	0.018
2JWC123		<5	<99	<5	<99	<2	<20	<10	<10	4	0.7	2.0	<10	<20	640	68	<99	<2	4	26	48	3.9	<2	<1	<5	<.5	6.8	8	<1	7.1	2.8	0.61	4	63	<99	<0.1	13	10	72	0.4	0.024
2JWC124		<5	<99	<5	<99	<2	<20	12	<10	8	0.8	2.8	<10	<20	770	70	<99	<2	5	30	61	5.0	3	<1	<5	<.5	10.0	6	1	8.9	3.2	0.72	2	110	<99	<0.1	22	12	80	0.3	0.039
2JWC125		<5	<99	<5	<99	<2	40	15	<10	9	1.1	3.5	<10	<20	860	71	<99	<2	5	30	65	4.8	<2	<1	<5	<.5	11.0	4	1	8.7	3.3	0.94	2	110	<99	0.2	26	13	88	0.3	0.030

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

DATE PRINTED: 9-NOV-92

REPORT: V92-01281.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC126		<5	<99	<5	<99	<2	<20	11	<10	7	0.9	2.8	<10	<20	850	79	<99	<2	4	27	54	4.5	<2	<1	<5	<.5	8.8	6	<1	8.2	3.1	1.20	2	88	<99	0.1	17	10	75	0.2	0.022
2JWC127		<5	<99	<5	<99	<2	52	<10	<10	6	0.6	2.5	<10	<20	690	65	<99	<2	4	30	64	4.9	<2	<1	<5	<.5	10.0	6	<1	8.7	3.0	0.68	<1	120	<99	<0.1	19	11	76	<.2	0.031
2JWC128		<5	<99	<5	330	<2	<20	15	<10	7	0.7	2.7	<10	<20	1000	100	<99	<2	3	26	59	4.4	<2	<1	<5	<.5	9.3	8	1	8.0	2.8	1.40	2	91	<99	0.2	17	11	75	<.2	0.031
2JWC129		8	<99	<5	<99	5	<20	12	<10	10	0.8	3.5	<10	<20	950	79	<99	<2	5	34	79	5.8	<2	1	<5	<.5	11.0	6	1	11.0	3.2	0.66	<1	130	<99	0.2	28	15	93	0.4	0.044
2JWC130		<5	<99	<5	<99	<2	24	<10	<10	7	0.7	2.0	<10	<20	660	57	<99	<2	2	26	52	4.0	<2	<1	<5	<.5	6.2	5	1	6.9	2.3	0.46	<1	75	<99	<0.1	17	11	68	0.3	0.056
2JWC131		<5	<99	<5	240	<2	<20	16	<10	4	0.8	2.5	<10	<20	630	74	<99	2	3	29	54	4.4	<2	<1	<5	<.5	8.1	7	<1	7.9	3.1	0.89	3	84	<99	0.2	17	10	77	0.5	0.050
2JWC132		<5	<99	<5	<99	3	59	<10	<10	9	0.8	2.7	<10	<20	610	58	<99	4	5	30	63	5.2	<2	<1	<5	<.5	10.0	8	<1	10.0	4.3	0.82	3	120	<99	0.2	24	12	102	0.6	0.047
2JWC133		<5	<99	<5	<99	<2	42	<10	<10	6	1.2	3.0	<10	<20	790	<50	<99	<2	4	30	69	4.8	<2	<1	<5	<.5	9.3	6	<1	8.0	3.5	0.33	3	100	<99	0.3	25	12	98	0.7	0.097
2JWC134		5	<99	<5	<99	<2	44	11	<10	8	1.8	2.9	<10	<20	950	110	<99	3	5	27	45	4.4	<2	<1	<5	<.5	13.0	6	<1	7.3	2.9	1.00	5	95	<99	0.3	32	11	104	0.8	0.070
2JWC135		<5	<99	<5	220	<2	<20	<10	<10	5	1.0	2.2	<10	<20	710	64	<99	<2	4	23	55	3.7	<2	<1	<5	<.5	7.8	4	<1	6.4	2.2	0.39	21	61	<99	0.3	23	10	105	1.0	0.124
2JWC136		<5	<99	<5	360	<2	84	<10	<10	7	1.3	2.4	<10	<20	960	70	<99	<2	6	33	67	5.1	<2	<1	<5	<.5	10.0	9	<1	8.8	3.7	0.66	6	130	<99	0.4	21	10	106	0.9	0.086
2JWC137		<5	<99	<5	<99	<2	<20	11	<10	6	0.9	2.1	<10	<20	850	56	<99	<2	3	26	45	4.1	<2	<1	<5	<.5	7.4	8	<1	6.8	2.7	1.00	2	61	<99	0.2	14	8	76	0.3	0.028
2JWC138		<5	<99	<5	200	<2	<20	11	<10	6	0.9	2.1	<10	<20	800	74	<99	<2	3	25	56	4.2	<2	<1	<5	<.5	7.0	7	<1	7.2	2.6	1.10	2	86	600	<0.1	12	9	69	<.2	0.046
2JWC139		5	<99	<5	<99	<2	<20	<10	<10	7	0.9	2.2	<10	<20	990	67	<99	<2	3	23	46	4.1	<2	<1	<5	<.5	7.2	6	<1	6.7	2.7	1.00	2	74	<99	<0.1	14	9	72	<.2	0.017
2JWC140		<5	<99	7	<99	<2	<20	<10	<10	6	1.1	2.1	<10	<20	860	60	<99	<2	4	25	52	4.4	<2	<1	<5	<.5	8.9	8	<1	7.0	3.1	0.93	2	93	<99	0.1	17	10	85	0.3	0.046
2JWC141		<5	<99	<5	240	<2	36	<10	<10	7	1.7	2.7	<10	<20	800	76	<99	4	4	30	65	4.9	<2	<1	<5	<.5	10.0	7	1	8.6	3.5	0.53	4	110	<99	<0.1	26	13	93	0.6	0.063
2JWC142		<5	<99	<5	<99	<2	46	13	<10	7	0.9	2.2	<10	<20	910	74	<99	<2	3	23	56	4.3	<2	<1	<5	<.5	7.0	7	<1	7.4	2.8	1.20	3	100	<99	0.1	14	10	71	<.2	0.035
2JWC143		<5	<99	<5	<99	<2	20	<10	<10	6	0.7	2.0	<10	<20	630	<50	<99	<2	3	24	56	3.8	<2	<1	<5	<.5	6.0	7	<1	6.2	2.7	0.69	2	90	<99	<0.1	12	9	61	0.2	<.010
2JWC144		<5	<99	<5	210	<2	<20	<10	<10	7	1.0	1.8	<10	<20	680	<50	<99	2	4	26	51	4.3	<2	<1	<5	<.5	6.2	8	<1	7.2	2.7	0.48	4	97	<99	<0.1	14	10	112	<.2	0.017
2JWC145		<5	<99	<5	<99	<2	30	<10	<10	6	0.7	1.4	<10	<20	540	<50	<99	<2	3	23	50	3.8	<2	<1	<5	<.5	5.0	8	<1	6.3	2.5	0.64	2	62	<99	<0.1	8	8	51	<.2	<.010
2MSC054		6	<99	<5	240	<2	<20	<10	<10	5	1.0	2.6	<10	<20	710	61	<99	<2	4	27	65	4.4	<2	<1	<5	<.5	8.6	6	<1	6.9	3.0	0.87	4	100	<99	<0.1	22	11	85	0.3	0.019
2MSC055		<5	<99	<5	320	<2	37	12	<10	7	1.0	2.9	<10	<20	730	91	<99	2	4	28	58	4.5	<2	<1	<5	<.5	10.0	6	<1	8.4	2.8	1.30	3	89	<99	<0.1	25	12	82	<.2	0.034
2MSC056		<5	<99	<5	<99	<2	67	11	<10	4	0.8	2.4	<10	<20	590	<50	<99	2	4	23	48	3.8	<2	<1	<5	<.5	6.9	6	1	6.8	2.5	1.10	7	82	<99	<0.1	14	9	69	<.2	0.019
2MSC057		<5	<99	<5	<99	<2	46	11	<10	7	1.0	2.2	<10	<20	720	60	<99	<2	5	27	55	4.5	<2	<1	<5	<.5	7.8	6	<1	8.1	3.3	1.00	2	100	560	<0.1	16	11	65	<.2	0.021
2MSC058		<5	<99	<5	<99	3	<20	12	<10	8	1.0	2.4	<10	<20	1000	80	<99	<2	4	27	62	4.7	<2	<1	<5	<.5	8.6	7	2	7.2	3.0	1.10	5	110	<99	<0.1	17	12	85	<.2	0.028
2MSC059		<5	<99	<5	<99	<2	<20	<10	<10	4	0.8	2.0	<10	<20	680	53	<99	<2	3	25	54	4.0	<2	<1	<5	<.5	6.6	8	<1	6.7	3.0	1.00	4	80	<99	<0.1	12	8	68	<.2	0.012
2MSC060		<5	<99	<5	<99	<2	<20	<10	<10	7	0.8	2.1	<10	<20	830	68	<99	<2	3	25	56	4.1	<2	1	<5	<.5	7.6	7	<1	7.6	2.4	1.60	3	96	<99	<0.1	15	11	75	<.2	0.028
2MSC061		<5	<99	<5	<99	3	<20	<10	<10	6	0.5	2.7	<10	<20	810	75	<99	<2	3	24	64	3.8	3	<1	<5	<.5	6.9	7	<1	6.7	2.6	1.80	4	100	<99	<0.1	12	9	71	<.2	0.027
2MSC062		<5	<99	<5	<99	<2	<20	<10	<10	6	0.9	1.5	<10	<20	660	72	<99	<2	2	27	51	4.1	<2	<1	<5	<.5	5.3	9	<1	7.0	2.6	0.62	3	66	<99	<0.1	9	7	71	<.2	<.010
2MSC063		<5	<99	<5	<99	<2	52	<10	<10	6	1.1	2.2	<10	<20	670	53	<99	<2	4	27	58	4.4	<2	<1	<5	<.5	7.4	6	<1	8.3	2.9	0.46	3	98	<99	<0.1	14	12	67	<.2	0.011

BONDAR-CLEGG

Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01281.0 (COMPLETE)

DATE PRINTED: 9-NOV-92
PROJECT: NONE GIVEN

SAMPLE	ELEMENT	Au	Ir	Ag	Zn	Mo	Ni	Co	Cd	As	Sb	Fe	Se	Te	Ba	Cr	Sn	W	Cs	La	Ce	Sm	Eu	Tb	Yb	Lu	Sc	Hf	Ta	Th	U	Na	Br	Rb	Zr	Ag	Cu	Pb	Zn	Cd	Hg
NUMBER	UNITS	PPB	PPB	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
2MSC064		26	<99	<5	<99	<2	<20	<10	<10	6	1.1	2.3	<10	<20	760	52	<99	<2	3	29	61	4.4	<2	<1	<5	<.5	6.3	11	1	8.0	3.3	0.74	3	71	570	<0.1	9	8	56	<.2	<.010
2MSC065		<5	<99	<5	<99	<2	<20	12	<10	5	0.8	2.5	<10	<20	720	88	<99	<2	2	25	51	4.0	<2	<1	<5	<.5	6.8	9	<1	6.6	2.8	1.40	6	53	<99	<0.1	12	8	59	<.2	0.012
2MSC066		<5	<99	<5	210	<2	<20	13	<10	7	0.9	2.8	<10	<20	820	85	<99	<2	3	27	63	4.2	2	<1	<5	<.5	9.1	9	<1	7.4	2.7	1.20	9	95	<99	<0.1	17	12	79	<.2	0.021
2MSC067		<5	<99	<5	280	<2	<20	<10	<10	7	1.0	2.8	<10	<20	710	85	<99	<2	5	26	50	3.9	<2	<1	<5	<.5	10.0	5	<1	6.4	2.9	0.84	7	87	<99	<0.1	25	13	80	0.3	0.032
2PMC097		<5	<99	<5	200	<2	<20	13	<10	5	1.0	2.4	<10	<20	790	98	<99	<2	4	22	46	3.7	<2	<1	<5	<.5	10.0	4	<1	5.4	2.2	1.00	28	73	<99	<0.1	19	10	93	0.7	0.050
2PMC098		<5	<99	<5	<99	<2	<20	12	<10	4	1.4	2.3	<10	<20	820	79	<99	<2	4	23	53	3.7	<2	<1	<5	<.5	10.0	5	<1	5.8	2.4	0.84	13	110	<99	0.2	26	12	102	0.6	0.101
2PMC099		<5	<99	<5	250	<2	47	<10	<10	4	0.8	2.0	<10	<20	600	<50	<99	<2	4	24	52	3.6	<2	<1	<5	<.5	8.0	7	1	6.5	2.9	0.29	8	78	<99	<0.1	16	10	79	0.6	0.098
2PMC100		<5	<99	<5	270	<2	<20	11	<10	8	1.6	3.3	<10	<20	960	68	<99	<2	4	21	55	3.7	<2	<1	<5	<.5	12.0	4	<1	5.4	2.7	1.40	12	94	<99	0.1	33	11	103	0.6	0.077
2PMC101		<5	<99	<5	230	<2	<20	<10	<10	5	0.7	1.9	<10	<20	740	78	<99	<2	4	28	55	4.0	<2	<1	<5	<.5	6.7	7	<1	7.4	3.1	0.71	6	110	<99	<0.1	10	9	61	0.2	0.037
2PMC102		6	<99	<5	<99	<2	<20	<10	<10	7	0.7	2.1	<10	<20	1000	78	<99	<2	5	28	63	4.4	<2	<1	<5	<.5	8.3	8	<1	7.8	3.2	0.49	5	130	<99	0.1	13	10	76	<.2	0.044
2PMC103		<5	<99	<5	<99	<2	<20	<10	<10	7	0.9	2.0	<10	<20	700	<50	<99	<2	3	28	54	4.5	<2	<1	<5	<.5	6.6	9	<1	7.7	3.0	0.72	3	85	<99	<0.1	12	11	64	0.2	0.019
2PMC104		<5	<99	<5	<99	<2	39	<10	<10	7	1.1	2.1	<10	<20	520	77	<99	<2	5	26	62	4.2	<2	<1	<5	<.5	6.5	7	<1	6.9	2.8	0.72	13	110	<99	<0.1	13	12	67	0.3	0.024
2PMC105		<5	<99	<5	<99	<2	<20	<10	<10	5	0.8	1.5	<10	<20	390	<50	<99	3	4	22	51	3.5	<2	<1	<5	<.5	5.0	5	<1	6.1	2.3	0.70	17	70	<99	<0.1	9	10	50	<.2	0.031
2PMC106		<5	<99	<5	<99	<2	<20	<10	<10	6	0.6	1.9	<10	<20	690	<50	<99	<2	4	27	46	3.9	<2	<1	<5	<.5	6.7	7	<1	6.9	2.7	0.90	4	110	<99	<0.1	10	11	68	<.2	0.043
2PMC107		<5	<99	<5	<99	<2	27	<10	<10	6	0.7	2.2	<10	<20	740	<50	<99	2	4	28	60	3.9	<2	<1	<5	<.5	6.2	6	1	7.3	2.6	1.00	4	110	<99	<0.1	10	11	69	<.2	0.032
2PMC108		<5	<99	<5	<99	<2	<20	<10	<10	5	0.5	1.5	<10	<20	730	<50	<99	<2	4	25	54	4.2	<2	<1	<5	<.5	5.8	9	<1	7.2	2.7	0.52	2	92	510	<0.1	8	7	52	<.2	0.028
2PMC109		<5	<99	<5	<99	<2	<20	<10	<10	7	0.5	1.9	<10	<20	770	51	<99	<2	3	24	52	4.1	<2	<1	<5	<.5	6.4	7	<1	6.6	2.3	0.51	4	80	<99	<0.1	8	8	54	<.2	0.041
2PMC110		<5	<99	<5	<99	<2	<20	<10	<10	7	0.7	1.8	<10	<20	540	<50	<99	2	5	25	50	3.6	<2	<1	<5	<.5	6.5	6	<1	6.6	2.4	0.51	16	100	<99	0.1	12	12	103	0.3	0.045
2PMC111		<5	<99	<5	220	<2	<20	<10	<10	9	0.9	1.9	<10	<20	700	<50	<99	<2	4	30	60	4.6	<2	<1	<5	<.5	6.4	9	1	8.1	3.1	0.73	2	90	<99	<0.1	13	12	62	<.2	0.022
2PMC112		<5	<99	<5	<99	<2	<20	<10	<10	6	0.9	2.1	<10	<20	760	54	<99	<2	5	30	61	4.8	<2	<1	<5	<.5	7.6	7	<1	8.1	3.4	0.81	5	130	<99	<0.1	11	12	66	<.2	0.041
2PMC113		<5	<99	<5	<99	<2	25	<10	<10	8	0.6	1.8	<10	<20	810	61	<99	<2	4	27	75	4.5	<2	<1	<5	<.5	7.1	9	<1	7.6	3.3	0.61	2	110	520	0.1	13	10	73	<.2	0.028
2PMC114		<5	<99	<5	<99	<2	<20	<10	<10	6	0.6	1.6	<10	<20	670	63	<99	<2	4	24	49	4.1	2	<1	<5	<.5	6.1	9	1	6.6	2.8	0.52	3	84	<99	<0.1	9	10	58	<.2	0.038
2PMC115		<5	<99	<5	<99	<2	47	<10	<10	7	0.8	1.6	<10	<20	620	<50	<99	<2	3	22	38	3.5	<2	<1	<5	<.5	5.7	7	<1	5.8	2.5	0.42	5	77	690	<0.1	8	9	82	0.5	0.019
2PMC116		<5	<99	<5	<99	<2	<20	<10	<10	6	0.9	2.2	<10	<20	780	87	<99	<2	3	25	55	4.1	<2	<1	<5	<.5	7.2	10	<1	6.6	2.9	0.56	1	77	<99	0.1	13	10	80	0.4	0.027
2PMC117		<5	<99	<5	<99	<2	<20	<10	<10	7	0.9	2.0	<10	<20	660	78	<99	<2	3	23	42	3.4	<2	<1	<5	<.5	6.7	9	<1	5.8	2.5	0.53	14	69	<99	0.1	11	14	77	0.5	0.035
2PMC118		<5	<99	<5	<99	<2	48	14	<10	9	1.0	2.8	<10	<20	980	100	<99	<2	3	24	47	4.1	<2	<1	<5	<.5	9.4	7	<1	8.5	3.4	1.30	2	89	<99	<0.1	19	13	71	<.2	0.040
2PMC119		<5	<99	<5	220	<2	38	<10	<10	7	0.9	1.8	<10	<20	670	63	<99	2	3	25	53	4.2	2	<1	<5	<.5	7.0	11	1	7.6	3.5	0.52	2	86	<99	<0.1	10	10	69	0.3	0.028
2PMC120		<5	<99	<5	<99	<2	25	<10	<10	8	1.3	2.5	<10	<20	960	68	<99	<2	4	26	57	4.5	<2	<1	<5	<.5	10.0	7	<1	7.2	2.8	1.00	1	90	<99	<0.1	22	10	76	0.3	0.045
2PMC121		<5	<99	<5	<99	<2	<20	11	<10	6	1.1	2.5	<10	<20	630	76	<99	<2	4	27	54	4.8	<2	<1	<5	<.5	8.7	9	<1	7.9	3.1	0.86	6	110	<99	<0.1	15	12	72	0.4	0.048
2PMC122		8	<99	<5	230	2	44	<10	<10	6	1.0	2.5	<10	<20	570	74	<99	<2	6	33	58	4.9	<2	<1	<5	<.5	10.0	6	<1	8.5	2.9	0.37	9	150	<99	0.4	21	15	91	0.5	0.093

BONDAR-CLEGG

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2PMC123		<5	<99	<5	260	<2	57	12	<10	7	1.9	3.1	<10	<20	870	90	<99	<2	3	27	57	4.7	<2	<1	<5	<.5	10.0	7	<1	7.0	3.3	1.00	2	78	<99	0.2	24	12	94	0.7	0.053
2PMC124		<5	<99	<5	260	<2	51	11	<10	8	1.8	3.9	<10	<20	950	68	<99	<2	4	30	70	4.9	<2	<1	<5	<.5	13.0	6	1	7.3	3.2	1.80	<1	81	<99	<0.1	34	13	91	0.5	0.030
2PMC125		<5	<99	<5	<99	<2	<20	<10	<10	6	1.0	1.8	<10	<20	740	68	<99	<2	5	32	67	5.0	<2	<1	<5	<.5	7.0	11	1	8.8	3.9	0.66	3	110	<99	<0.1	11	12	68	<.2	0.033
2PMC126		7	<99	<5	<99	<2	27	<10	<10	9	1.2	2.5	<10	<20	760	57	<99	2	6	33	66	5.6	<2	<1	<5	<.5	8.4	6	<1	8.9	3.9	0.63	3	120	<99	0.2	15	13	80	0.3	0.039
2PMC127		<5	<99	<5	<99	<2	<20	<10	<10	1	0.3	0.8	<10	<20	430	<50	<99	<2	2	9	12	1.4	<2	<1	<5	<.5	3.1	3	<1	2.2	0.9	0.26	19	35	<99	<0.1	9	9	53	0.4	<.010
2PMC128		<5	<99	<5	<99	<2	38	13	<10	8	1.4	2.8	<10	<20	1000	90	<99	<2	5	30	61	5.1	<2	<1	<5	<.5	10.0	6	1	7.6	3.2	1.30	3	110	520	<0.1	25	13	81	0.4	0.057
2PMC129		<5	<99	<5	340	<2	<20	13	<10	8	1.5	2.9	<10	<20	890	65	<99	4	4	28	64	4.8	3	<1	<5	<.5	11.0	6	<1	7.0	3.2	1.40	6	110	<99	<0.1	24	13	84	0.5	0.064
2PMC130		<5	<99	<5	400	<2	74	11	<10	7	1.3	3.7	<10	<20	860	76	<99	<2	4	23	40	5.1	<2	<1	<5	<.5	13.0	5	<1	7.0	2.9	0.67	21	130	<99	0.8	31	14	189	0.8	0.137
2PMC131		<5	<99	6	240	<2	<20	<10	<10	6	1.5	2.9	<10	<20	920	69	<99	<2	4	29	54	4.6	<2	<1	<5	<.5	11.0	6	<1	7.2	2.9	1.10	7	93	<99	<0.1	23	12	88	0.4	0.060
2PMC132		8	<99	<5	<99	<2	<20	13	<10	8	1.4	2.6	<10	<20	650	93	<99	<2	5	30	69	4.8	<2	<1	<5	<.5	11.0	7	<1	7.6	3.6	0.75	17	94	<99	<0.1	25	14	87	0.6	0.126
2PMC133		<5	<99	<5	210	2	<20	14	<10	10	2.0	3.2	<10	<20	850	90	<99	<2	4	33	72	5.3	<2	<1	5	<.5	11.0	8	1	9.3	3.7	0.60	1	120	<99	0.2	28	15	103	0.7	0.056
2PMC134		<5	<99	<5	<99	3	29	12	<10	9	2.0	3.0	<10	<20	840	81	<99	<2	4	31	72	5.2	<2	<1	<5	<.5	11.0	6	1	8.8	3.8	0.53	<1	120	<99	0.2	28	15	103	0.7	0.033
2PMC135		<5	<99	<5	<99	<2	<20	<10	<10	5	0.8	2.0	<10	<20	730	100	<99	<2	2	22	47	3.4	<2	<1	<5	<.5	7.1	6	<1	5.4	2.3	1.40	3	54	<99	<0.1	9	7	63	<.2	0.017
2PMC136		<5	<99	<5	<99	<2	<20	13	<10	7	0.9	2.9	<10	<20	860	86	<99	2	2	25	53	4.0	<2	<1	<5	<.5	9.3	4	<1	6.4	2.6	1.10	5	77	<99	0.1	16	10	89	0.4	0.048
2PMC137		<5	<99	<5	210	<2	<20	<10	<10	4	1.2	2.8	<10	<20	700	89	<99	<2	3	28	52	4.3	<2	<1	<5	<.5	10.0	8	<1	7.3	3.0	1.00	2	86	<99	<0.1	19	10	90	0.4	0.036
2PMC138		5	<99	<5	<99	<2	29	<10	<10	5	0.6	2.2	<10	<20	800	51	<99	<2	2	24	48	3.7	<2	<1	<5	<.5	6.7	7	<1	6.6	2.7	1.30	2	89	<99	<0.1	8	7	66	0.2	0.027
2PMC139		<5	<99	<5	<99	<2	<20	11	<10	7	0.6	2.6	<10	<20	750	71	<99	<2	3	23	49	4.0	<2	<1	<5	<.5	7.2	6	1	7.3	2.5	1.00	2	92	<99	<0.1	11	8	74	<.2	0.027
2PMC140		<5	<99	<5	<99	<2	<20	13	<10	8	0.8	2.4	<10	<20	890	50	<99	<2	4	27	45	4.1	2	<1	<5	<.5	8.3	8	<1	7.5	2.7	0.94	3	71	590	<0.1	12	10	69	<.2	0.031
2PMC141		<5	<99	<5	<99	2	33	<10	<10	6	0.8	2.0	<10	<20	750	90	<99	<2	3	22	67	3.7	<2	<1	<5	<.5	6.1	9	<1	6.6	2.5	0.75	2	72	<99	<0.1	9	9	58	<.2	0.018
2PMC142		<5	<99	<5	<99	<2	<20	12	<10	5	0.9	2.1	<10	<20	680	57	<99	<2	4	32	62	4.7	<2	<1	<5	<.5	7.6	11	<1	8.2	3.0	1.10	2	96	740	<0.1	11	10	56	0.3	<.010
2PMC143		<5	<99	<5	<99	<2	<20	<10	<10	7	1.1	2.2	<10	<20	630	84	<99	<2	5	28	69	4.4	<2	<1	<5	<.5	7.7	7	<1	7.9	3.0	0.65	4	94	<99	<0.1	13	12	66	<.2	<.010
2PMC144		<5	<99	<5	<99	<2	<20	12	<10	7	0.9	2.4	<10	<20	660	74	<99	2	3	27	53	4.5	2	<1	<5	<.5	7.7	6	1	7.4	2.9	1.40	7	100	<99	<0.1	14	10	65	<.2	0.018
2PMC145		<5	<99	<5	<99	<2	25	<10	<10	5	0.8	1.8	<10	<20	580	<50	<99	<2	2	25	47	4.0	<2	<1	<5	<.5	5.1	9	<1	6.7	2.6	0.79	2	49	<99	<0.1	6	7	49	<.2	<.010
2PMC146		<5	<99	<5	<99	<2	<20	<10	<10	6	0.8	2.7	<10	<20	600	<50	<99	<2	3	27	51	4.2	<2	<1	<5	<.5	7.3	6	<1	7.3	2.8	1.10	5	69	<99	<0.1	15	11	71	<.2	0.020
2PMC147		<5	<99	<5	<99	<2	<20	<10	<10	8	0.9	1.9	<10	<20	760	<50	<99	<2	3	26	61	4.4	3	<1	<5	<.5	6.7	8	1	7.1	3.0	0.83	3	56	<99	<0.1	11	8	50	<.2	0.012
2PMC148		<5	<99	<5	<99	<2	<20	<10	<10	3	0.6	1.2	<10	<20	450	<50	<99	<2	2	21	45	3.2	<2	<1	<5	<.5	3.9	8	<1	5.0	2.1	0.65	1	49	<99	<0.1	4	5	35	<.2	<.010
2PMC149		<5	<99	<5	<99	<2	<20	<10	<10	5	0.9	2.2	<10	<20	690	60	<99	<2	3	25	63	4.1	<2	<1	<5	<.5	6.5	7	<1	7.0	2.5	0.87	5	85	<99	<0.1	12	9	61	<.2	0.011
2PMC150		<5	<99	<5	290	<2	<20	12	<10	9	1.1	3.2	<10	<20	900	60	<99	<2	5	31	58	4.8	<2	<1	<5	<.5	11.0	6	<1	8.4	3.2	1.10	7	150	<99	<0.1	19	15	90	<.2	0.043
2PMC151		<5	<99	<5	230	<2	36	11	<10	7	1.0	2.8	<10	<20	850	82	<99	<2	4	29	57	4.5	<2	<1	<5	<.5	10.0	5	<1	8.4	3.1	1.10	5	94	<99	<0.1	17	14	81	<.2	0.022
2PMC152		7	<99	<5	260	<2	<20	16	<10	5	1.0	3.1	<10	<20	870	77	<99	2	3	27	49	4.4	<2	<1	<5	<.5	10.0	8	1	6.7	2.7	1.70	2	84	<99	<0.1	14	8	78	<.2	0.032

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2PMC153		<5	<99	<5	<99	<2	<20	<10	<10	6	1.3	3.0	<10	<20	910	100	<99	<2	4	26	52	4.5	<2	<1	<5	<.5	11.0	6	<1	6.2	3.1	1.50	5	72	<99	<0.1	21	9	91	0.3	0.059
2PMC154		<5	<99	<5	<99	<2	<20	<10	<10	4	0.8	2.2	<10	<20	690	58	<99	2	4	25	58	4.0	<2	<1	<5	<.5	7.8	7	<1	6.9	2.9	0.79	5	89	<99	<0.1	14	11	64	<.2	0.017
2PMC155		<5	<99	<5	230	<2	<20	<10	<10	3	0.7	1.8	<10	<20	570	61	<99	<2	3	24	57	3.8	<2	<1	<5	<.5	5.8	8	<1	5.5	2.7	0.70	6	74	540	<0.1	10	8	57	<.2	0.015
2PMC156		<5	<99	7	<99	<2	<20	<10	<10	4	0.6	1.7	<10	<20	630	59	<99	<2	4	24	57	3.6	<2	<1	<5	<.5	6.4	7	1	6.2	2.4	1.00	17	94	<99	<0.1	10	8	66	<.2	0.013
2PMC157		<5	<99	<5	<99	<2	<20	<10	<10	4	0.5	1.5	<10	<20	630	89	<99	<2	2	20	53	3.4	<2	<1	<5	<.5	6.5	7	<1	5.6	2.4	0.54	6	64	<99	<0.1	9	8	62	<.2	0.029
2PMC158		<5	<99	<5	<99	<2	48	<10	<10	6	0.5	2.1	<10	<20	740	<50	<99	<2	4	23	48	3.6	<2	<1	<5	<.5	6.5	7	<1	6.6	2.4	0.52	6	68	<99	<0.1	11	10	54	<.2	0.022
2PMC159		<5	<99	<5	<99	<2	<20	<10	<10	5	0.7	1.8	<10	<20	700	51	<99	3	3	25	51	3.9	<2	<1	<5	<.5	6.9	6	<1	6.7	3.1	0.75	8	100	<99	<0.1	13	11	84	0.2	0.028
2PMC160		<5	<99	<5	<99	<2	57	<10	<10	7	1.2	2.9	<10	<20	840	71	<99	4	4	28	62	4.5	<2	<1	<5	<.5	11.0	7	1	8.0	2.9	1.30	3	94	<99	<0.1	20	10	82	<.2	0.058
2PMC161		5	<99	<5	<99	<2	<20	10	<10	6	1.6	2.7	<10	<20	1400	72	<99	<2	4	27	52	4.3	<2	<1	<5	<.5	10.0	7	1	7.6	3.1	1.10	8	69	<99	<0.1	21	11	82	0.3	0.058
2PMC162		<5	<99	<5	370	<2	<20	<10	<10	2	0.8	2.1	<10	<20	640	74	<99	<2	2	15	41	2.5	<2	<1	<5	<.5	6.9	2	<1	4.3	1.6	0.44	11	66	<99	<0.1	19	9	82	0.5	0.021
2PMC163		<5	<99	<5	<99	<2	38	17	<10	5	1.1	3.2	<10	<20	900	69	<99	<2	3	27	37	3.9	<2	<1	<5	<.5	11.0	9	<1	5.8	2.7	1.40	16	110	<99	<0.1	22	10	96	0.4	0.047
2PMC164		<5	<99	<5	<99	<2	<20	14	<10	8	1.3	3.0	<10	<20	1100	93	<99	<2	5	27	47	4.5	<2	1	<5	<.5	11.0	6	1	7.5	3.2	1.00	8	110	<99	0.1	25	11	97	<.2	0.079
2PMC165		<5	<99	<5	<99	<2	<20	12	<10	6	1.2	3.2	<10	<20	930	92	<99	2	4	26	58	4.4	<2	<1	<5	<.5	12.0	7	<1	7.0	2.9	1.60	7	110	<99	0.1	22	9	86	<.2	0.044
2PMC166		5	<99	<5	<99	<2	<20	11	<10	8	1.3	3.4	<10	<20	1000	63	<99	<2	4	24	45	4.1	<2	<1	<5	<.5	12.0	6	<1	6.0	2.8	1.90	4	97	<99	<0.1	27	9	88	<.2	0.054
2PMC167		<5	<99	<5	<99	<2	<20	<10	<10	7	1.1	3.2	<10	<20	780	60	<99	4	4	31	71	5.1	<2	<1	<5	<.5	10.0	7	<1	9.2	3.5	1.40	6	130	<99	<0.1	19	13	95	<.2	0.034
2PMC168		<5	<99	<5	<99	<2	<20	<10	<10	8	0.7	2.3	<10	<20	870	72	<99	<2	3	26	61	4.2	2	<1	<5	<.5	7.4	8	<1	7.0	2.9	1.10	2	99	<99	<0.1	11	9	76	<.2	0.027
2PMC169		7	<99	<5	<99	<2	30	<10	<10	7	0.7	2.4	<10	<20	970	76	<99	<2	3	24	57	4.0	<2	<1	<5	<.5	7.1	6	<1	6.7	2.9	1.10	2	85	<99	<0.1	11	10	76	<.2	0.038
2PMC170		<5	<99	<5	200	<2	41	<10	<10	8	0.8	2.7	<10	<20	760	75	<99	<2	4	27	52	4.2	<2	<1	<5	<.5	9.0	8	<1	7.2	3.0	1.30	3	100	690	<0.1	15	11	81	<.2	0.041
2PMC171		<5	<99	<5	340	<2	<20	13	<10	7	1.6	3.2	<10	<20	810	66	<99	<2	4	29	51	4.7	<2	<1	<5	<.5	12.0	5	<1	7.0	3.5	1.20	3	94	<99	0.2	27	11	94	<.2	0.072
2PMC172		6	<99	<5	<99	<2	<20	13	<10	5	1.4	2.7	<10	<20	770	81	<99	<2	4	28	51	4.8	<2	<1	<5	<.5	11.0	7	<1	7.6	3.4	1.20	3	98	<99	0.2	21	10	94	0.3	0.060
2PMC173		<5	<99	<5	<99	<2	62	16	<10	7	1.3	3.4	<10	<20	940	55	<99	<2	4	30	62	5.2	<2	<1	<5	<.5	12.0	5	<1	7.6	3.4	1.40	4	99	<99	0.2	27	12	98	0.3	0.056
2PMC174		<5	<99	6	290	<2	<20	13	<10	6	1.6	3.3	<10	<20	950	100	<99	4	4	27	59	4.6	<2	1	<5	<.5	14.0	5	1	6.3	3.3	1.50	6	92	640	<0.1	31	11	94	0.3	0.063
2PMC175		<5	<99	<5	<99	<2	<20	15	<10	8	0.9	2.6	<10	<20	900	73	<99	<2	4	30	72	4.7	<2	<1	<5	<.5	10.0	8	<1	8.7	3.6	0.85	4	110	<99	<0.1	21	12	93	<.2	0.042
2PMC176		<5	<99	<5	<99	<2	43	11	<10	9	0.9	2.4	<10	<20	1300	84	<99	<2	4	26	60	4.3	<2	<1	<5	<.5	7.6	6	<1	7.3	2.8	1.10	<1	100	<99	<0.1	14	9	68	<.2	0.027
2PMC177		6	<99	<5	<99	<2	33	<10	<10	6	1.4	2.6	<10	<20	860	100	<99	3	4	24	44	3.9	<2	<1	<5	<.5	11.0	5	<1	5.6	2.7	1.10	5	71	<99	0.2	23	10	90	0.3	0.061
2PMC178		<5	<99	<5	280	<2	<20	<10	<10	5	0.6	2.5	<10	<20	610	<50	<99	3	3	19	43	2.8	<2	<1	<5	<.5	5.9	3	<1	4.5	1.6	0.28	57	47	<99	<0.1	13	9	78	1.2	0.112
2PMC179		7	<99	<5	290	4	35	12	<10	8	0.9	3.2	<10	<20	640	64	<99	<2	5	32	76	4.9	<2	<1	<5	<.5	10.0	5	1	9.0	3.7	0.43	8	120	<99	0.2	21	12	115	0.5	0.055
2PMC180		<5	<99	<5	<99	<2	39	10	<10	7	1.2	2.6	<10	<20	830	68	<99	<2	4	32	67	5.2	<2	<1	<5	<.5	10.0	6	<1	8.7	3.5	0.49	2	110	<99	<0.1	19	13	76	0.3	0.045
2PMC181		<5	<99	<5	<99	<2	29	11	<10	6	0.8	2.2	<10	<20	630	68	<99	<2	2	28	60	4.1	<2	<1	<5	<.5	7.1	8	<1	6.9	2.7	1.10	1	82	<99	<0.1	11	9	66	<.2	0.034
2PMC182		6	<99	<5	220	<2	39	12	<10	7	1.2	3.1	<10	<20	710	84	<99	<2	3	26	60	4.2	<2	<1	<5	<.5	9.0	8	<1	6.7	3.0	1.40	2	82	560	<0.1	17	9	81	0.2	0.054

BONDAR-CLEGG

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SAMPLE	ELEMENT	Au	Ir	Ag	Zn	Mo	Ni	Co	Cd	As	Sb	Fe	Se	Te	Ba	Cr	Sn	W	Cs	La	Ce	Sm	Eu	Tb	Yb	Lu	Sc	Hf	Ta	Th	U	Na	Br	Rb	Zr	Ag	Cu	Pb	Zn	Cd	Hg
NUMBER	UNITS	PPB	PPB	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
2PMC183		8	<99	<5	240	<2	<20	13	<10	8	0.8	3.2	<10	<20	720	55	<99	<2	3	26	62	4.1	<2	<1	<5	<.5	9.3	6	<1	7.5	3.1	1.50	3	82	670	<0.1	15	10	82	<.2	0.028
2PMC184		<5	<99	<5	200	<2	<20	12	<10	5	0.7	2.7	<10	<20	790	70	<99	3	4	27	48	3.7	<2	<1	<5	<.5	8.6	5	<1	6.6	3.0	1.50	8	100	<99	<0.1	12	9	87	0.2	0.038
2PMC185		<5	<99	<5	<99	<2	<20	11	<10	6	0.6	2.4	<10	<20	730	59	<99	<2	4	27	50	4.3	<2	<1	<5	<.5	8.9	7	<1	7.9	2.9	0.95	3	130	660	<0.1	15	10	87	<.2	0.043
2PMC186		<5	<99	<5	270	<2	<20	<10	<10	7	0.8	2.5	<10	<20	730	87	<99	<2	3	25	63	3.8	<2	<1	<5	<.5	6.5	9	<1	7.1	2.9	1.40	2	72	<99	<0.1	12	9	69	<.2	0.021
2PMC187		<5	<99	<5	<99	<2	<20	<10	<10	8	0.9	2.9	<10	<20	750	77	<99	<2	3	29	76	4.0	<2	<1	<5	<.5	8.6	9	<1	7.4	2.8	1.90	2	94	<99	<0.1	10	9	65	<.2	0.020
2PMC188		<5	<99	<5	<99	<2	39	<10	<10	6	0.8	2.1	<10	<20	740	77	<99	3	4	29	58	3.8	<2	<1	<5	<.5	6.6	9	<1	7.2	2.6	0.66	4	71	<99	<0.1	11	10	63	<.2	0.011
2PMC189		<5	<99	<5	<99	<2	<20	12	<10	6	0.9	1.9	<10	<20	560	<50	<99	<2	4	23	59	3.4	3	<1	<5	<.5	6.5	5	<1	6.0	2.7	0.36	11	82	<99	<0.1	14	11	81	0.4	0.032
2PMC190		<5	<99	<5	<99	<2	<20	<10	<10	6	0.9	1.8	<10	<20	630	<50	<99	<2	3	21	42	3.4	<2	<1	<5	<.5	5.6	8	<1	6.0	2.3	0.42	4	75	<99	<0.1	10	10	65	0.3	0.023
2PMC191		<5	<99	<5	<99	<2	<20	13	<10	6	0.8	2.4	<10	<20	710	80	<99	<2	3	26	62	4.2	<2	<1	<5	<.5	7.9	6	<1	7.4	2.4	0.70	4	77	<99	<0.1	14	11	74	0.3	0.030
2PMC192		<5	<99	<5	<99	<2	<20	<10	<10	5	0.8	1.7	<10	<20	500	67	<99	<2	2	21	46	3.3	<2	<1	<5	<.5	5.4	7	<1	5.5	2.3	0.57	2	82	<99	<0.1	9	8	52	<.2	<.010

BONDAR-CLEGG

Geochemical Lab Report

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STANDARD NAME	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
B-C GEOCHEM STD		280	<99	<5	320	3	160	50	<10	152	1.1	8.4	<10	<20	200	380	<99	37	<1	11	<10	3.6	<2	<1	6	<.5	28.0	<2	<1	1.7	0.5	1.10	2	67	<99	-	-	-	-	-	-
B-C GEOCHEM STD		190	<99	<5	260	3	190	42	<10	159	1.1	8.6	<10	<20	270	360	<99	35	1	10	29	3.8	<2	<1	<5	0.5	29.0	<2	<1	1.8	<.5	1.10	2	61	<99	-	-	-	-	-	-
B-C GEOCHEM STD		260	<99	<5	250	3	200	44	<10	155	1.1	8.5	<10	<20	200	370	<99	39	1	11	29	3.8	<2	<1	<5	<.5	28.0	<2	<1	1.0	<.5	1.10	2	59	<99	-	-	-	-	-	-
B-C GEOCHEM STD		220	<99	<5	350	<2	140	50	<10	159	1.2	8.4	<10	<20	170	400	<99	39	2	11	<10	3.7	<2	<1	<5	0.7	29.0	2	<1	2.4	0.9	1.10	2	80	<99	-	-	-	-	-	-
Number of Analyses		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	-	-	-
Mean Value		238	50	3	295	3	173	47	5	156	1.1	8.5	5	10	210	378	100	38	1	11	17	3.7	1	0.5	3	0.4	28.5	1	0.5	1.7	0.5	1.10	2	67	250	-	-	-	-	-	-
Standard Deviation		40	<1	<1	48	1	28	4	<1	3	0.05	.10	<1	<1	42	17	<1	2	0.6	0.5	14	.10	<1	<1	2	0.2	0.6	0.7	<1	0.6	0.3	<.01	0.3	9	<1	-	-	-	-	-	-
Accepted Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	140	13	140	0.1	0.028
GS89-2		537	<99	8	650	598	750	59	<10	299	67.6	5.9	<10	<20	390	790	<99	5	2	12	23	2.3	<2	<1	<5	<.5	12.0	<2	1	8.0	2.3	1.00	21	51	<99	5.8	842	243	548	2.4	3.947
GS89-2		593	<99	<5	680	622	770	56	<10	313	71.1	6.6	<10	<20	600	820	<99	8	1	15	34	2.5	<2	<1	<5	<.5	13.0	<2	<1	6.4	2.2	1.00	21	44	<99	7.0	826	263	537	2.2	3.681
Number of Analyses		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mean Value		565	50	5	665	610	760	58	5	306	69.4	6.3	5	10	495	805	100	6	2	14	29	2.4	1	0.5	3	0.3	12.5	1	0.9	7.2	2.3	1.00	21	48	250	6.4	834	253	542	2.3	3.814
Standard Deviation		40	<1	4	21	17	14	2	<1	10	2.5	0.5	<1	<1	148	21	<1	2	0.2	2	8	0.1	<1	<1	<1	<.1	0.7	<1	0.5	1.1	.07	<.01	<1	5	<1	0.8	11	14	8	0.1	0.188
Accepted Value		564	-	5	580	760	660	61	-	310	69.0	5.4	-	-	560	650	-	6	2	14	19	2.2	-	0.6	-	-	12.0	-	0.6	7.0	2.3	0.83	14	42	-	5.0	820	250	500	2.0	-
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	0.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
ANALYTICAL BLANK		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<2	1	<.2	<.010
Number of Analyses		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6
Mean Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.5	1	1	0.1	0.005
Standard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.01	<1	<1	<1	.04	<.001
Accepted Value		5	5	.01	.01	.01	.01	.01	.01	.01	.005	<.1	.01	.01	.005	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.005	.01	.01	.005	.01	<.01	.01	.01	.01	0.1	1	1	1	1.0	0.005

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STANDARD NAME	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
GEO TRACE STD1(1989)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.3	192	15	56	<.2	0.027
GEO TRACE STD1(1989)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.6	199	15	61	<.2	0.039
Number of Analyses		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2
Mean Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37.0	195	15	59	0.1	0.033
Standard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8	5	<1	3	<.1	0.008
Accepted Value		108	-	35	180	21	17	12	-	7	6.4	4.6	-	-	460	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	36.0	190	15	62	-	-
TRACE GEOCHEM STD		12	<99	<5	360	4	52	12	<10	28	0.5	2.9	<10	<20	430	180	<99	<2	<1	12	32	3.5	<2	<1	<5	<.5	12.0	4	<1	2.5	1.2	2.20	<1	39	<99	0.6	267	36	304	1.0	0.025
TRACE GEOCHEM STD		13	<99	<5	420	<2	<20	13	<10	31	0.5	3.4	<10	<20	400	180	<99	<2	<1	11	25	3.5	<2	<1	5	0.6	13.0	3	<1	3.1	1.1	2.30	<1	64	<99	0.5	-	31	254	0.8	0.020
Number of Analyses		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
Mean Value		13	50	3	390	2	31	13	5	30	0.5	3.2	5	10	415	180	100	1	0.5	12	29	3.5	1	0.5	4	0.4	12.5	3	0.5	2.8	1.2	2.25	0.5	52	250	0.6	267	34	279	0.9	0.022
Standard Deviation		0.7	<1	<1	42	2	30	0.7	<1	2	0.01	0.4	<1	<1	21	<1	<1	<1	<1	0.7	5	<.1	<1	<1	2	0.2	0.7	0.8	<1	0.4	.07	0.07	<1	18	<1	0.07	-	4	35	0.1	0.003
Accepted Value		9	-	-	250	4	41	11	-	28	0.5	2.6	-	-	390	160	-	<	0.8	11	21	3.3	-	0.7	3	0.5	11.0	3	-	3.0	1.2	1.60	-	35	-	0.5	290	33	255	0.8	-

BONDAR-CLEGG

Geochemical Lab Report

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REPORT: V92-01281.0 (COMPLETE) PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ir PPB	Ag PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	As PPM	Sb PPM	Fe PCT	Se PPM	Te PPM	Ba PPM	Cr PPM	Sn PPM	W PPM	Cs PPM	La PPM	Ce PPM	Sm PPM	Eu PPM	Tb PPM	Yb PPM	Lu PPM	Sc PPM	Hf PPM	Ta PPM	Th PPM	U PPM	Na PCT	Br PPM	Rb PPM	Zr PPM	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Cd PPM	Hg PPM
2JWC067		7	<99	<5	<99	<2	<20	<10	<10	9	0.8	3.2	<10	<20	770	71	<99	<2	5	31	73	4.7	<2	<1	<5	<.5	7.4	5	1	10.0	3.3	0.78	3	160	<99	<0.1	15	25	104	<.2	0.020
Duplicate																																			0.1	16	24	102	<.2	0.026
2JWC068		6	<99	<5	<99	3	<20	<10	<10	8	0.8	2.6	<10	<20	650	95	<99	<2	5	35	76	5.8	<2	1	<5	<.5	8.3	8	<1	11.0	3.3	0.71	20	150	<99	0.1	18	19	79	0.2	0.036
Duplicate		<5	<99	<5	<99	<2	<20	<10	<10	7	0.6	2.4	<10	<20	640	86	<99	<2	5	38	76	5.4	<2	<1	<5	<.5	10.0	8	<1	9.2	3.4	0.81	18	150	<99						
2JWC085		<5	<99	<5	<99	<2	<20	<10	<10	6	0.7	1.9	<10	<20	680	63	<99	2	4	29	48	3.9	<2	<1	<5	<.5	6.5	10	<1	7.3	2.6	1.10	3	100	<99	0.2	11	10	76	<.2	0.012
Duplicate																																			0.1	11	9	74	0.2	0.019
2JWC092		<5	<99	<5	<99	<2	<20	<10	<10	4	0.6	1.8	<10	<20	620	71	<99	<2	2	21	54	3.6	<2	<1	<5	<.5	5.1	8	<1	5.7	2.3	0.61	3	71	<99	<0.1	10	7	56	0.3	0.013
Duplicate		<5	<99	<5	<99	<2	<20	<10	<10	4	0.6	1.6	<10	<20	610	<50	<99	<2	2	20	47	3.2	<2	<1	<5	<.5	5.3	9	<1	5.5	2.2	0.57	4	78	<99						
2JWC104		<5	<99	<5	<99	<2	46	<10	<10	7	0.9	2.5	<10	<20	770	52	<99	<2	4	24	43	4.1	<2	<1	<5	<.5	8.4	6	<1	6.7	2.7	0.92	1	91	<99	0.2	19	10	83	0.3	0.028
Duplicate																																			0.1	19	9	83	0.3	0.041
2JWC116		<5	<99	<5	<99	<2	<20	<10	<10	3	0.7	1.7	<10	<20	740	58	<99	<2	4	28	56	4.3	<2	<1	<5	<.5	7.5	6	<1	7.8	3.4	0.89	7	110	<99	<0.1	26	9	77	0.4	0.029
Duplicate		<5	<99	<5	220	<2	<20	<10	<10	3	0.7	1.8	<10	<20	710	58	<99	<2	3	27	38	3.9	<2	<1	<5	<.5	7.5	7	<1	7.2	3.2	0.79	7	97	<99						
2JWC121		<5	<99	<5	220	<2	60	12	<10	10	0.9	3.3	<10	<20	750	59	<99	<2	5	25	59	4.3	<2	<1	<5	<.5	8.4	5	<1	7.6	2.4	0.43	15	95	<99	0.2	22	15	114	0.7	0.038
Duplicate																																			0.2	22	14	119	0.6	0.026
2JWC140		<5	<99	7	<99	<2	<20	<10	<10	6	1.1	2.1	<10	<20	860	60	<99	<2	4	25	52	4.4	<2	<1	<5	<.5	8.9	8	<1	7.0	3.1	0.93	2	93	<99	0.1	17	10	85	0.3	0.046
Duplicate		6	<99	<5	<99	<2	<20	11	<10	6	1.0	2.3	<10	<20	870	120	<99	<2	3	24	52	3.9	<2	<1	<5	<.5	7.8	8	<1	6.4	2.6	0.82	2	86	<99						
2JWC141		<5	<99	<5	240	<2	36	<10	<10	7	1.7	2.7	<10	<20	800	76	<99	4	4	30	65	4.9	<2	<1	<5	<.5	10.0	7	1	8.6	3.5	0.53	4	110	<99	<0.1	26	13	93	0.6	0.063
Duplicate																																			0.2	26	12	96	0.6	0.068
2MSC066		<5	<99	<5	210	<2	<20	13	<10	7	0.9	2.8	<10	<20	820	85	<99	<2	3	27	63	4.2	2	<1	<5	<.5	9.1	9	<1	7.4	2.7	1.20	9	95	<99	<0.1	17	12	79	<.2	0.021
Duplicate																																			<0.1	18	12	81	0.3	0.025
2PMC101		<5	<99	<5	230	<2	<20	<10	<10	5	0.7	1.9	<10	<20	740	78	<99	<2	4	28	55	4.0	<2	<1	<5	<.5	6.7	7	<1	7.4	3.1	0.71	6	110	<99	<0.1	10	9	61	0.2	0.037
Duplicate		<5	<99	<5	<99	<2	<20	10	<10	5	0.5	2.0	<10	<20	750	59	<99	<2	5	27	40	3.8	<2	<1	<5	<.5	6.5	7	<1	7.8	2.7	0.69	5	100	<99						
2PMC115		<5	<99	<5	<99	<2	47	<10	<10	7	0.8	1.6	<10	<20	620	<50	<99	<2	3	22	38	3.5	<2	<1	<5	<.5	5.7	7	<1	5.8	2.5	0.42	5	77	690	<0.1	8	9	82	0.5	0.019
Duplicate																																			<0.1	7	7	84	0.4	0.019

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2PMC125		<5	<99	<5	<99	<2	<20	<10	<10	6	1.0	1.8	<10	<20	740	68	<99	<2	5	32	67	5.0	<2	<1	<5	<.5	7.0	11	1	8.8	3.9	0.66	3	110	<99	<0.1	11	12	68	<.2	0.033
Duplicate		<5	<99	<5	240	<2	<20	<10	<10	8	0.9	2.4	<10	<20	710	64	<99	<2	6	33	77	4.8	4	<1	<5	<.5	7.3	14	<1	8.4	3.4	0.64	3	110	860						
2PMC132		8	<99	<5	<99	<2	<20	13	<10	8	1.4	2.6	<10	<20	650	93	<99	<2	5	30	69	4.8	<2	<1	<5	<.5	11.0	7	<1	7.6	3.6	0.75	17	94	<99	<0.1	25	14	87	0.6	0.126
Duplicate																																			0.1	25	12	89	0.5	0.133
2PMC149		<5	<99	<5	<99	<2	<20	<10	<10	5	0.9	2.2	<10	<20	690	60	<99	<2	3	25	63	4.1	<2	<1	<5	<.5	6.5	7	<1	7.0	2.5	0.87	5	85	<99	<0.1	12	9	61	<.2	0.011
Duplicate		<5	<99	<5	<99	<2	<20	<10	<10	5	0.8	2.0	<10	<20	590	<50	<99	<2	3	23	59	3.7	<2	<1	<5	<.5	6.7	9	1	5.7	2.5	0.87	5	68	<99						
2PMC152		7	<99	<5	260	<2	<20	16	<10	5	1.0	3.1	<10	<20	870	77	<99	2	3	27	49	4.4	<2	<1	<5	<.5	10.0	8	1	6.7	2.7	1.70	2	84	<99	<0.1	14	8	78	<.2	0.032
Duplicate																																			<0.1	14	7	79	<.2	0.056
2PMC169		7	<99	<5	<99	<2	30	<10	<10	7	0.7	2.4	<10	<20	970	76	<99	<2	3	24	57	4.0	<2	<1	<5	<.5	7.1	6	<1	6.7	2.9	1.10	2	85	<99	<0.1	11	10	76	<.2	0.038
Duplicate																																			<0.1	11	9	79	<.2	0.052
2PMC174		<5	<99	6	290	<2	<20	13	<10	6	1.6	3.3	<10	<20	950	100	<99	4	4	27	59	4.6	<2	1	<5	<.5	14.0	5	1	6.3	3.3	1.50	6	92	640	<0.1	31	11	94	0.3	0.063
Duplicate		<5	<99	<5	<99	<2	<20	15	<10	6	1.5	3.3	<10	<20	1000	75	<99	2	3	25	60	4.2	<2	<1	<5	<.5	13.0	8	<1	6.4	3.1	1.30	5	110	<99						
2PMC189		<5	<99	<5	<99	<2	<20	12	<10	6	0.9	1.9	<10	<20	560	<50	<99	<2	4	23	59	3.4	3	<1	<5	<.5	6.5	5	<1	6.0	2.7	0.36	11	82	<99	<0.1	14	11	81	0.4	0.032
Duplicate																																			<0.1	14	11	82	0.5	0.034