GEOLOGICAL, GEOCHEMICAL AND


NTS 82M/8E
51 26N, $11807^{\circ} \mathrm{W}$

For
YO-YO EXPLORATIONS INC. 709700 West Pender Street

Vancouver, B.C.
V6C 1G8

By
Stephen P. Kenwood, P.Geo.
sin *- JI January 18 1996


## SUMMARY

Yo-Yo Explorations Inc. has reached an agreement with Keystone Mountain Resources Ltd. whereby Yo-Yo may acquire an interest in the Rain property in the Revelstoke Mining District in southeastern British Columbia. The property is located approximately 60 kilometres north of Revelstoke, B.C. and is comprised of 14 claims totaling 158 units.

The Rain property is underlain by north-northwest trending metasedimentary rocks of the Proterozoic Horsethief Creek and lower Paleozoic Hamill Group, Badshot Formation and Lardeau Group. Three phases of deformation and regional lower greenschist metamorphism have complexly folded and altered these rocks. Lower Lardeau Group metasediments and metavolcanics host several $\mathrm{Cu}-\mathrm{Pb}-\mathrm{Zn}$ massive sulphide deposits in the region, including the 3.5 million tonne Goldstream Mine which is located 20 kilometres northwest of the Rain property. Previous work performed on the property confirmed that a stratigraphic package of rocks found on the Rain property is similar to, if not identical to, that found hosting the Goldstream deposit. Soil geochemistry results from a program done in 1991 strengthens the comparison of the two properties. A similar sized soil anomaly to that at the Rain property was all that was found at the Goldstream deposit, with copper and zinc concentrations being approximately the same.

The 1995 program consisted of the reestablishment and extension of a grid that was originally laid out in 1991. Soil geochemical sampling, VLF-EM geophysics, and limited prospecting and mapping was carried out over half of this new grid. The soil geochemistry results confirmed the presence of the anomaly found in the 1991 program, but failed to significantly expand it to the west. With a now well confined soil anomaly, it is recommended that this be drill tested, by providing road access to stations higher up the hill from where previous drilling took place.

## TABLE OF CONTENTS

Summary ..... 1
Introduction ..... 3
Location, Access, and Physiography ..... 3
Claim Status ..... 5
Regional Geology ..... 6
Regional Economic Setting ..... 7
Property History ..... 11
Property Geology ..... 13
Work Program ..... 14
Discussions and Recommendations ..... 15
Bibliography ..... 17
Appendix 1 -Statement of Costs ..... 18
Appendix 2 - Statement of Qualifications ..... 19
Appendix 3 - Analytical Results ..... 20

## LIST OF FIGURES

Figure 1 - Location Map
Figure 2 - Claim Map
Figure 3 - Regional Geology
Figure 4 - Property Geology
Figure 5 - Soil Geochemistry - Copper
Figure 6 - Soil Geochemistry - Zinc
Figure 7 - VLF-EM profiles
following page 3
following page 5
following page 6
following page 14
following page 15
following page 15
following page 15

## INTRODUCTION

A work program consisting of the re-establishment and extension of the existing grid and geological mapping was carried carried out on the Rain property between September 10 and October 16, 1995. This program was the initial step of a Phase one reassessment of an area that displays excellent potential to host copper-zinc mineralization. The grid work and limited mapping/prospecting was followed by grid soil geochemical sampling and VLF EM geophysics of this new grid and will allow a comparison of results from the existing grid. The surface expression and geology of the Rain target is believed to be identical to that found at the nearby Goldstream deposit (McAndless, personal comm., 1996).

The Rain property is comprised of claims owned by Goldstream Mine joint venture partners Goldnev Resources Inc. and Bethlehem Resources Corp. Previous work performed by Bethlehem between 1990 and 1992 resulted in the expenditure of $\$ 168,500$ over the three year period. A small mapping and sampling program was carried out on a different portion of the property in 1994. The cost of that program was $\$ 32,00$. Yo-Yo Explorations Inc. has an option to earn up to $75 \%$ interest in the entire claim group by incurring $\$ 750,000$ in exploration expenditures over four years.

## LOCATION, ACCESS, AND PHYSIOGRAPHY

The Rain property is located approximately 80 road kilometres north of Revelstoke, British Columbia (Figure 1). It is centered at $5126^{\prime}$ north latitude and 11807 ' west longitude on N.T. S. map sheet $82 \mathrm{M} / 8 \mathrm{E}$. The property lies along


Downie Creek between Standard Creek and Murder Creek. The property is accessible along Highway 23 north from Revelstoke, along the Columbia River to the Downie Loop; from here the Downie logging road runs east and passes through the centre of the claims between the 15 and 29 kilometre marks.

The topography is moderate to steep, with elevations ranging between 670 and 2530 metres above sea level. The valley walls are moderate to steep and the ridge tops can be very sharp. Small ice fields occur in the upper reaches of the claims. The property is covered by mature forest for the most part, however some recent clearcutting has cleared some areas in the lower portion of the property. Bedrock exposure is limited to creek beds and steep slopes over most of the property.

The climate consists of warm dry summers and cool wet winters. Temperatures range between -20 to +30 degrees Celsius. Annual precipitation averages approximately one metre, over half of which falls as snow, which translates into an average snowpack of up to six metres. The average field season is from late April to early November. Several creeks drain the centre of the property and sufficient water for all stages of exploration would be available throughout the field season. The Revelstoke Canyon Dam lies 65 kilometres south of the property and the Mica Dam lies 60 kilometres to the north. The power lines from Mica pass five kilometres west of the property.

## CLAIM STATUS

The Rain property consists of 14 mineral claims totalling 158 units registered in the Revelstoke Mining Division (Figure 2). The recorded owner of the claims is Bethlehem Resources Corporation. The particulars of the claims are as follows:

## CLAIM NAME RECORD \# UNITS LOCATION DATE EXPIRY DATE

| RAIN 1 | 248282 | 15 | Oct. 18, 1989 | Oct. 18, 1996 |
| :--- | :---: | :---: | :---: | ---: |
| RAIN 3 | 248284 | 9 | Oct. 18, 1989 | Oct. 18,1996 |
| RAIN 4 | 248285 | 12 | Oct. 18, 1989 | Oct. 18,1996 |
| DROP 1 | 248425 | 18 | Sept. 24, 1990 | Sept. 24, 1996 |
| DROP 2 | 248426 | 15 | Sept. 24, 1990 | Sept. 24, 1996 |
| DROP 6 | 248430 | 6 | Sept. 25, 1990 | Sept. 24, 1996 |
| DROP 7 | 248431 | 16 | Sept. 24, 1990 | Sept. 24, 1996 |
| DROP 8 | 248432 | 20 | Sept. 25, 1990 | Sept. 25, 1996 |
| DROP 9 | 248433 | 10 | Sept. 25, 1990 | Sept. 25, 1996 |
| DROP 10 | 248434 | 15 | Sept. 25, 1990 | Sept. 25, 1996 |
| DEER 1 | 248451 | 8 | Dec. 6, 1990 | Dec. 6, 2002 |
| DEER 2 | 248452 | 6 | Dec. 5, 1990 | Dec. 5, 2002 |
| DEER 3 | 248453 | 4 | Dec. 6, 1990 | Dec. 6, 2002 |
| MIT | 302917 | 4 | Aug. 8, 1991 | Aug. 9, 2003 |

Yo-Yo Explorations Inc. has option to earn a 75\% interest in the Rain property by incurring exploration expenditures of $\$ 750,000$ over four years. Any legal aspects of claim ownership or of the option deal involving the Rain property are beyond the scope of this report.


## REGIONAL GEOLOGY

The geology of the region was first described by Gunning in 1928. Since that time the area has been re-mapped and reclassified by several authors and is yet to be firmly established. The regional work by Logan and Drobe in 1993 provides the most recent interpretation and is summarized below.

The Selkirk Allocthon is a composite terrain comprised of at least four fault bounded tectonic assemblages: The Upper Proterozoic Horsethief Creek Group, the Lower Cambrian Hamill Group, the Cambrian Badshot Formation and the Lower Paleozoic Lardeau Group (Figure 3). Together these units comprise the miogeoclinal wedge of ancestral North America.

The Horsethief Creek Group consists of phyllitic and slaty pelites, interbedded sandstone, conglomerate and minor carbonate rocks. Unconformably overlying these are sandstones and mafic metavolcanic rocks of the Hamill Group. Archaeocyathid bearing limestones of the Badshot Formation conformably overlie the Hamill Group. The Lardeau Group conformably overlies the Hamill Group rocks. Within the study area, the Lardeau Group is composed of at least two distinct formations; the lower Index Formation and the upper Broadview Formation. The Index Formation consists of dark grey and green phyllite, limestone, minor quartzite and, near the top, phyllitic volcanic rocks. Mafic intrusions (altered to talc schist) occur in the uppermost green phyllite unit. Overlying the Index Formation are grey quartz-feldspar grit, foliated micaceous quartzite and phyllite of the Broadview Formation.

The Goldstream slice is comprised of pelitic rocks with interlayered quartzites, grit, carbonates, impure metasandstone and volcanic rocks. These rocks were assigned to the Ordovician to Devonian Lardeau Group by Wheeler (1965). Specific correlations and stratigraphic definition within the slice are made difficult by the following problems;

the slice is entirely fault bounded, fossil-bearing strata are absent, repeated deformation has made structure identification difficult and the Lardeau Group closely resembles the Horsethief Creek and Hamil Groups in composition.

The Goldstream slice is believed to be the inverted limb of an early nappe structure developed during phase 1 deformation. Phase 1 deformation resulted in kilometre scale west verging nappes and westerly directed thrust faults. This deformation is believed to be pre Middle Jurassic. This early structure has been further deformed by map-scale phase 2 folding. Phase 2 folds are tight to isoclinal, overturned to recumbent north, northwest, to west trending with east, northeast or north dips. The Downie Peak, Keystone and Standard antiforms are all phase 2 folds. Phase 2 folding is thought to be synmetamorphic. This phase 2 folding is further deformed by phase 3 folding. Phase 3 folds are east trending open chevron and kink folds that deform $\mathrm{S}_{2}$ schistosity.

Massive sulphide occurrences in the region are hosted in chloritic schists, sericite schist and dark banded graphitic calcareous phyllite associated with basic volcanism. Stratigraphy that hosts the Standard deposit has been correlated with the Lower Paleozoic Index Formation while lead isotope data from the Goldstream deposit gives a Devonian age (Campbell, 1991).

The area is intruded by several quartz monzonite plutons of Middle Jurassic age that cross the phase 2 deformation.

## REGIONAL ECONOMIC SETTING

The Selkirk Allocthon is host to three major types of mineral occurrences; hydrothermal replacement or vein deposits, carbonate hosted lead - zinc deposits and

Besshi-type volcanogenic massive sulphide deposits (Figure 3).

Examples of vein type deposits include the Lanark Mine which is located 50 kilometres southeast of the Rain property. Discovered in the 1880's and open until the mid 1920's, this deposit represents one of the first discoveries in the area. Mineralization is described as silver bearing galena in quartz and silicified limestone. The lower workings contained elevated zinc values and one of these workings reportedly contained chalcopyrite with copper values as high as $3.4 \%$.

Other examples of vein deposits include the Snowflake/Woolsey and Waverly/Tangier workings. At the Snowflake working, mineralization occurs in a series of sub-parallel quartz veins hosted by slates. The veins vary from a few centimetres up to six metres wide and contain argentiferous galena, sphalerite, pyrite and minor chalcopyrite. By 1940, the Snowflake property had 609 metres of underground workings and by 1969, the Woolsey had 5940 metres of underground workings on 14 levels and six parallel quartz veins. In 1982, there were reported reserves on the Woolsey property of 590,703 tonnes grading 71.6 grams/tonne silver, $2.66 \%$ lead, $1.26 \%$ zinc, $1.1 \%$ copper, $0.13 \%$ tin, and $0.015 \%$ tungsten (Minfile).

The mineralization on the Waverly/Tangier property is reported as vein-like orebodies within a limestone or marble unit at or near the contact with schist. At the Waverly deposit, two replacement vein-like orebodies have been developed by over 914 metres of underground workings. Average assays for samples taken from the main oreshoot were 606.7 grams/tonne silver and $5.8 \%$ lead (Minfile).

The carbonate hosted massive sulphide deposits in the area are closely related to vein type deposits in some instances and exhalative massive sulphide deposits in others. The correct classification of some deposits in the region is not fully agreed upon even now. Examples of carbonate hosted massive sulphide deposits include the Rift, Keystone, J \& L , and KJ showings. The Rift is described as a massive sulphide layer occurring within
a calc-silicate unit. The massive sulphide body is exposed for 25 metres along strike and varies in thickness from 0 to 1.4 metres. A sample of the sulphides assayed $29.47 \%$ zinc, $6.93 \%$ lead, $0.03 \%$ copper over 0.8 metres (Minfile).

The Keystone showing is reported as an approximately one metre thick band of massive sulphide replacing limestone. Mineralization consists of pyrrhotite, sphalerite, galena, pyrite, and minor chalcopyrite. A one metre sample assayed $1.0 \%$ lead, $0.25 \%$ zinc, $0.27 \%$ copper, 2.0 grams/tonne gold, and 17.8 grams/tonne silver (Minfile).

The $\mathrm{J} \& \mathrm{~L}$ deposit is a stratiform, massive sulphide body that has been traced on surface for over 1.85 kilometres and underground for over 800 metres with an average true width of 1.6 metres. The mineralization consists of pyrite, arsenopyrite, sphalerite, and galena with lesser amounts of chalcopyrite, pyrrhotite, tetrahedrite, and silver-leadantimony sulphosalts. The ore body tends to follow the limestone-phyllite/schist contact and the thickness tends to follow the thickness of the limestone unit. Indicated reserves on the J \& L property are 4.77 million tonnes grading $2.7 \%$ lead, $4.3 \%$ zinc, 7.2 grams/tonne gold, and 72 grams/tonne silver. An additional 910,000 tonnes grading $7.4 \%$ zinc, $2.6 \%$ lead, and 55 grams/tonne silver are indicated in the recently discovered Yellowjacket zone (Minfile).

The third type of mineralization in the region is the Besshi-type stratabound volcanogenic massive sulphide deposits. This type of deposit is the most significant in the region as it is the category that the Goldstream mine, the only current producer, and other important showings fit into.

The Standard property is known to host this type of mineralization and is located 20 kilometres south of the Rain property. Here the mineralization is reported as a series of layers and lenses of massive pyrrhotite and pyrite with minor chalcopyrite and sphalerite. The mineralization occurs most dominantly within greenstones on both sides of the Standard antiform. On the east limb, mineralization has been traced along strike for

1,500 metres and drill holes have intersected massive sulphides from 0.2 to 2.0 metres thick. A sample of the massive sulphide mineralization reportedly assayed 1.0 grams/tonne gold, 29.0 grams/tonne silver, $0.84 \%$ zinc and $9.98 \%$ copper (Minfile).

The Goldstream mine is the most significant deposit found to date in the region and is located twenty kilometres northwest of the Rain property. The deposit was first located in 1973 by Noranda Exploration Company Ltd. and reportedly contained 3.175 million tonnes grading $4.49 \%$ copper, $3.12 \%$ zinc, and 19 grams/tonne silver (Hoy, 1979). The mine was opened in 1983 but forced to close less than a year later due to depressed metal prices.

The mine was purchased by the Bethlehem Resource Corp. and Goldnev Resources Inc. in 1989 and went back into production in May 1991. Reserves are currently reported at 1.436 million tonnes grading $4.48 \%$ copper and $3.03 \%$ zinc (Logan and Drobe, 1994).

The Goldstream Mine is a strata-bound copper-zinc deposit consisting of a thin sheet of massive sulphides in dominantly calcareous and graphitic schists of probable early to middle Paleozoic age. A manganiferous, iron-rich chert unit structurally overlies the sulphide layer. Regional structures suggest that the deposit is inverted and, therefore, that the chert horizon, referred to as the garnet zone, is interpreted to have formed as a siliceous exhalite stratigraphically below the massive sulphide deposit.

The massive sulphide layer consists primarily of intermixed pyrrhotite, sphalerite, and chalcopyrite, with numerous subrounded inclusions of quartz, carbonate, and phyllite fragments. The sulphides are locally swirled around the gangue inclusions to produce a durchbewegung fabric (Hoy et al., 1984), a texture common to many-deformed and metamorphosed massive sulphide deposits. Contacts with the hanging wall and footwall range from sharp to gradational over a few meters.

Goldstream and other copper-zinc deposits in the Goldstream camp are interpreted to be exhalative massive sulphide deposits that formed in an unstable subsiding basin, near the continental margin. Host rocks include thick accumulations of coarse terrigenous clastics, calcareous shale, and basalt. They are similar to the Besshi-type deposits of Japan.

The ore body at the Goldstream mine averages between 1 and 3 metres in thickness, has a strike length of over 400 metres and extends down dip for over 1,200 metres. The massive sulphide layer is well defined only on its western and southern boundaries, it thins toward the east and one barren hole 300 metres east of the last one to intersect massive sulphides serves as its eastern boundary. The extent that the layer dips north is not as yet definitely defined, it is known to occur at least as far as the Goldstream river where it is 350 metres below the surface.

Concentrations of copper, zinc and silver within the massive sulphide layer tend to increase toward the central, thicker part of the layer. The sulphide layer has a pronounced lateral zonation with respect to $\mathrm{Zn} /(\mathrm{Zn}+\mathrm{Cu})$. Zinc vs. copper ratios tend to increase to the east irrespective of the thickness of the sulphide layer or copper and zinc grades. No vertical zonation is apparent in the massive sulphide layer. This lateral zonation of the massive sulphide layer is an important exploration guideline. Although a massive sulphide body may be uneconomic at one site, this may change as it is tested along strike (or at depth if vertical zonation is present).

## PROPERTY HISTORY

Work in the immediate area of the Rain property was first performed by Noranda Exploration Company in 1976. Regional mapping in connection with
exploration of the Standard-Keystone area extended to the western boundary of the Rain claims (Wild, 1990). Noranda held portions of the Rain property in the late 1970's. A small copper-tungsten showing immediately north of the confluence of Downie Creek and Sorcerer Creek was examined during this period.

In 1989, Bethlehem Resources Corp. staked the Rain property based on a reevaluation of the Goldstream Mine stratigraphy which suggested that similar host rocks existed at both locations. Initial reconnaissance was performed in 1990, and confirmation of the existence of Paleozoic Lardeau Group rocks lead to further work being recommended. This first program was performed at a cost of $\$ 22,000$.

More detailed exploration was focused on the Murder Creek area by Orequest Consultants Ltd. is 1991. This program consisted of the establishment of a grid used for soil geochemistry, magnetometer/VLF-EM survey, prospecting, and geological mapping. Geochemical results from sampling of $B$ horizon yielded two anomalous zones of copper-zinc-lead in soils. The most significant of these anomalies exists in the northern portion of the Murder Creek grid where soil results returned values up to 2066 ppm copper and 8992 ppm zinc. The combined copper-zinc anomaly is approximately 400 by 600 metres in size and is centred at $0+00$ West and $2+00$ South. Values greater than 75 ppm copper and 350 ppm zinc were considered anomalous; within the main portion of the zinc anomaly, 22 of 37 values are greater than 1000 ppm zinc.

A second anomaly, approximately one kilometre south of Murder Creek, yielded results up to 577 ppm copper, 1084 ppm zinc, as well as high manganese. The latter is of significance in that it is also found to be abundant within the garnet zone that encloses the Goldstream deposit. This anomaly is based on only three stations but like the major anomaly to the north, it also remains open to expansion. This program was performed at a cost of $\$ 40,000$.

A diamond drilling program was performed in 1992 to test the more significant northern soil anomaly. Results from the five hole, 900 metre program were inconclusive but encouraging. The drilling intersected stratigraphy very similar to that seen at the Goldstream Mine. Although no significant economic results were obtained, several garnet/semi-massive sulphide zones were encountered with up to $30 \%$ pyrrhotite and traces of chalcopyrite and sphalerite over 50 cm . Assay results for these zones returned values that do not suitably explain the soil anomaly; copper values ranged from 44 to 573 ppm while zinc values ranged from 54 to 443 ppm . The presence of the garnet zones is however significant because a well defined garnet zone is located structurally above the ore zone at the Goldstream deposit and it is believed that these zones are indicators of similar types of massive sulphide deposits (Cavey, 1992). Further drilling was recommended after analysis of this program and a subsequent bore hole EM survey program. Combined costs of these two programs was $\$ 106,500$.

## PROPERTY GEOLOGY

The Rain Property is underlain by rocks of the Proterozoic Horsethief CreekGroup, Proterozoic to Lower Paleozoic Hamill Group and Paleozoic Badshot Formation and Lardeau Group.

Structurally these units trend northwest with moderate east to northeast dips.Second phase isoclinal folding and a dominant axial planar foliation are the dominant structural elements. Fold axes plunge gently to the southeast and northeast end of Keystone Peak. East of Downie Creek, plunges are moderate to the northeast, steepening northward toward Downie Peak. Broad, open third phase folds warp the foliation and original layering kink folds and crenulation cleavage are the dominant third phase structures
showing near vertical axial planar cleavage and gentle east-west plunges (Wild, 1990).

Chloritic and calcareous metasediments dominate from Downie Creek westward to Standard Creek. These rocks tend to become more chloritic to the south and west, eventually becoming metavolcanic greenstones near Standard Peak. To the north, graphitic dark banded phyllites are more common. These metasediments are overlain to the east by older Badshot Marble and Hamill quartzites indicating the entire section to be overturned.

The Murder Creek area is underlain by graphitic dark banded phyllite, sericite to quartz sericite schist, siliceous silstones and marble. The dark banded phyllite is similar, if not identical, to the enclosing strata of the Goldstream ore body (Campbell, 1991).The unit generally trends north-south with dips ranging from 40 to 65 degrees to the east (Figure 4).

The dark banded phyllite is overlain by sericite to quartz sericitic siliceous schists and siliceous siltstones. Interbedded marble units have been noted within the dark banded phyllite and the sericitic schists.

## 1995 WORK PROGRAM

Work outlined in this report entailed the re-establishment and western extension of a portion of a grid cut previously by Orequest Consultants in 1991. This was the first phase in an exploration program that included grid soil geochemical sampling, VLF-EM geophysics, property scale prospecting and mapping that was completed by the end of October, 1995.


## GEOLOGY LEGEND FOR FIGURE 4

LARDEAU GROUP - Paleozoic
4F Quartz-Chlorite-Sericite Schist, minor Marble, Quartzite
4E Marble

4D Sulphide layer
4C "Garnet Zone" cherty and graphitic Schist
4B Quartz-Graphite-Biotite Schist, strongly calcareous
4A Talc Schist

## BADSHOT FORMATION -Paleozoic

3B Marble
3A Calc Schist

## HAMILL GROUP

2B Quartzite
2A Quartz-Biotite--Muscovite Schist, Quartzite
HORSETHIEF CREEK - Proterozoic
1B Dolomite, Micaceous Quartzite, Chlorite Schist
1A Marble
if Bedding, Foliation


Combined copper-zinc anomaly
( $\mathrm{Cu}>75 \mathrm{ppm}, \mathrm{Zn}>350 \mathrm{ppm}$ )
Geological Contact - defined, assumed
Diamond Drill Hole Surface Trace
$\square$ Legal Corner Post
$=ニ===$ Logging Road
Claim Boundary
Drainage

The area chosen was one which contains a significant copper-zinc soil anomaly, roughly measuring 250 by 400 metres, centered at roughly $2+50$ South, $0+00$ West, and remained open to the west (Figure 4). Early reconnaissance noted that the original grid had either grown in or deteriorated to the point that re-establishment of the grid became necessary. The original baseline was recut, chained, and picketed from $0+00$ South to $20+00$ South. Crosslines were slashed and flagged to $7+00$ West. A tie line was cut, chained, and picketed at $5+00$ West as well. Limited prospecting and mapping over this part of the grid yielded very little, as the property has very poor exposure at lower elevations.

Geochemical sampling of B horizon was done at 25 metre stations over the northern half of the grid. A total of 271 samples were collected, from an average depth of about 30 cms . Overburden depth is $1-3$ metres over much of the grid area. Samples were taken to Acme Laboratories in Vancouver and the complete results are listed in Appendix 3.

Copper results closely matched those of previous work, outlining a main anomaly between $0+00$ South to $3+00$ South and from $0+00$ West to $2+00$ West. Values in this area reached as high as 377 ppm (Figure 5). Results to the west, where previous anomalous results were left open, were disappointing; a two station anomaly in the 100 ppm range occurs at $3+50$ West, $0+00$ and $1+00$ South.

Zinc results are similar to copper in that they confirm the results of the 1991 program. Only a portion of the major zinc anomaly east of the $0+00$ baseline was sampled, but results confirm its' presence, with results up to 515 ppm (Figure 6). This anomaly, the largest in dimension ( $200 \times 300$ metres) is interpreted to have been mobilised to its' present position from an uphill source (personal communication, Wild, 1995).




## GEOLOGY LEGEND FOR FIGURE 4

## LARDEAU GROUP－Paleozoic

4F Quartz－Chlorite－Sericite Schist，minor Marble，Quartzite
4E Marble

4D Sulphide layer
4C＂Garnet Zone＂cherty and graphitic Schist
4B Quartz－Graphite－Biotite Schist，strongly calcareous
4A Talc Schist
BADSHOT FORMATION－Paleozoic
3B Marble

3A Calc Schist
HAMILL GROUP
2B Quartzite
2A Quartz－Biotite－－Muscovite Schist，Quartzite
HORSETHIEF CREEK－Proterozoic
1B Dolomite，Micaceous Quartzite，Chlorite Schist
1A Marble


Bedding，Foliation
Combined copper－zinc anomaly
（ $\mathrm{Cu}>75 \mathrm{ppm}, \mathrm{Zn}>350 \mathrm{ppm}$ ）
Geological Contact－defined，assumed
Diamond Drill Hole Surface Trace
$\square \quad$ Legal Corner Post
$ニ ニ=ニ ニ=$ Logging Road
Claim Boundary
Drainage

The area chosen was one which contains a significant copper-zinc soil anomaly, roughly measuring 250 by 400 metres, centered at roughly $2+50$ South, $0+00$ West, and remained open to the west (Figure 4). Early reconnaissance noted that the original grid had either grown in or deteriorated to the point that re-establishment of the grid became necessary. The original baseline was recut, chained, and picketed from $0+00$ South to $20+00$ South. Crosslines were slashed and flagged to $7+00$ West. A tie line was cut, chained, and picketed at $5+00$ West as well. Limited prospecting and mapping over this part of the grid yielded very little, as the property has very poor exposure at lower elevations.

Geochemical sampling of B horizon was done at 25 metre stations over the northern half of the grid. A total of 271 samples were collected, from an average depth of about 30 cms . Overburden depth is 1-3 metres over much of the grid area. Samples were taken to Acme Laboratories in Vancouver and the complete results are listed in Appendix 3.

Copper results closely matched those of previous work, outlining a main anomaly between $0+00$ South to $3+00$ South and from $0+00$ West to $2+00$ West. Values in this area reached as high as 377 ppm (Figure 5). Results to the west, where previous anomalous results were left open, were disappointing; a two station anomaly in the 100 ppm range occurs at $3+50$ West, $0+00$ and $1+00$ South.

Zinc results are similar to copper in that they confirm the results of the 1991 program. Only a portion of the major zinc anomaly east of the $0+00$ baseline was sampled, but results confirm its' presence, with results up to 515 ppm (Figure 6). This anomaly, the largest in dimension ( $200 \times 300$ metres) is interpreted to have been mobilised to its' present position from an uphill source (personal communication, Wild, 1995).

A very low frequency electromagnetic (VLF-EM) survey was completed over half of the grid, from $0+00$ South to $10+00$ South. A Sabre VLF unit was used with the Seattle transmitter. The survey outlines a number of anomalies (Figure 7), which most probably define bedrock conductors. The conductors trend south-southeast, with the strongest lying along a ridgetop and trending from $3+25$ West, $1+00$ South to $2+50$ West, $6+00$ South. This conductor appears to step to the west between lines $6+00$ South and 7+00 South, possibly indicating an east-west fault in that area. A weaker conductor centered at $0+50$ West and 3+00 South is probably indicative of a parallel bedrock conductor, perhaps a graphitic horizon within the dark banded phyllite that was intersected in the previous drilling program.

## DISCUSSIONS AND RECOMMENDATIONS

Previous work performed on the Rain property has confirmed the presence of a stratigraphic package of rocks similar to those found to be hosting the Goldstream deposit twenty kilometres to the northwest. Diamond drilling failed to intersect economic mineralization but did contribute information that makes the comparison between the two properties to be even more compelling. At Goldstream, a garnet zone is found to be structurally above the ore zone and is believed to be unique to the Goldstream deposit itself (Cavey, 1992). Of the five holes drilled at the Rain property, four intersected multiple garnet/semi-massive sulphide horizons. If the garnet zones are indicators for the presence of massive sulphides in the area then the results of the drilling program at the Rain property provide significant reason to continue exploration of the property.

A combination of soil results, ground magnetometer survey, and surface mapping and prospecting will help determine the contacts between limestone and phyllites. Personal communication with Chris Wild (1995), mine geologist at Goldstream, suggests that the steepness of the hill and dip slope orientation of limestone units provide strong arguments for downhill migration of the soil anomaly. It was suggested that the limestone units could also act as aquifers, providing a conduit for downhill migration of fluids. If this proves to be the case, it is conceivable that previous drilling tested the anomaly area but not the possible uphill source. The Bethlehem Resources geological staff is now convinced that this is indeed the case (McAndless, personal comm., 1996).

It is recommended that a road building program be implemented to provide access for diamond drilling further up the hill to drill the parts of the stratigraphy that remain untested. The road building itself will be instructive, as there is a good possibility that bedrock exposures will be encountered as the road is built, providing more geologic information on a hillside with little or no exposure.

## BIBLIOGRAPHY

Campbell, I. Report of Exploration on Murder Creek Project, Rain Property, for Bethlehem Resources Corp., Orequest Consultants Ltd., October 25, 1991.

Cavey, G. and Raven, W. Report of Diamond Drilling of Murder Creek Project, Rain Property, for Bethlehem Resources Corp., Orequest Consultants Ltd., October 22, 1992.

Gunning, H.C. Geology and Mineral Deposits of the Big Bend Map Area, British Columbia. Canada Geol. Survey Preliminary Report. pages 136A-193A. 1928.

Hoy, T. Geology of the Goldstream Area. B.C. Ministry of Energy, Mines and Petroleum Resources Bulletin 71, 1979.

Hoy, T., Gibson, G. and Berg, N.W. Copper-Zinc Deposits Associated with Basic Volcanism, Goldstream Area, Southeastern Britislı Columbia; Economic Geology, Vol. 79, pp. 789-814, 1984.

LeBel, J.L. Report on Bore Hole Electromagnetic Survey. Murder Creek Project, Rain Property for Bethlehem Resources Corp. Orequess Consultants Ltd., December 7, 1992.

Logan, J.M. and Drobe, J.R.,Summary of Activities. North Selkirk Project Goldstream River and Downie Creek Map Areas. Geological Fieldwork 1993, British Columbia Ministry of Energy, Mines and P'erroleum Resources, Paper 1994-1, pages 153-169.

Reynolds, P. Geological Report on the Brew Property. for OTM International Development Inc., February 15, 1994.

Wild, C.J. Geological and Geochemical Report on the Rain 1-17 Mineral Claims. Assessment Report, October 18, 1990.

Wild, C.J. Personal Communication, May, 1995.

## APPENDIX 1

## STATEMENT OF COSTS

## September 25 - October 16, 1995

## 1. Field Personnel

S.P. Kenwood, P. Geo. - 20 days @ 400.00 ..... $8,000.00$
Linecutters (4) - 16 man-days $\quad 4,000.00$
Soil Sampling/Geophysics - 80 man days $20,000.00$

$$
32,000.00
$$

2. Food and Accommodation
116 mani-days @ \$125.00 ..... 14,500.00
3. Transportation
truck rental/mileage ..... 5,000.00
Tavel expenses ..... 2.923.14
4. Field Supplies ..... $4,000.00$
5. Analytical
271 soil samples @ $\$ 15$ ..... 4,065.00
6. Report ..... 5,000.00
64,988.14

## APPENDIX 2

## STATEMENT OF OUALIFICATIONS

I, Stephen P. Kenwood, of 814 Surrey Street, New Westminster, British Columbia hereby certify that:

1. I am a graduate of the University of British Columbia (1987) and hold a B.Sc. degree in geology.
2. I am presently self employed as a consulting geologist and have been practicing my profession since graduation in 1987.
3. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.
4. I have no interest, directly or indirectly, nor do I expect to receive any interest, directly or indirectly in the Rain property, or any other property of Yo-Yo Explorations Inc. or any affiliate, nor do I beneficially own, directly or indirectly, any securities of Yo-Yo Explorations Inc. or any affiliate.


## APPENDIX 3

## ANALYTICAL RESLLTS

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SAMPLE\# | $\begin{array}{r} \text { Mo } \\ \text { ppon } \end{array}$ | $\begin{gathered} \mathrm{Cu} \\ \text { ppron } \end{gathered}$ | Pb ppm | $\begin{array}{r} \text { 2n } \\ \text { ppm } \end{array}$ | $\underset{\underset{\mathrm{ppm}}{\mathrm{pg}}}{ }$ | $\underset{\mathrm{Ni}}{\mathrm{Ni}}$ | $\begin{array}{r} \text { Co } \\ \text { ppm } \end{array}$ | $\begin{array}{rr} \mathrm{Mn} & \mathrm{Fe} \\ \mathrm{ppm} & \mathrm{Z} \\ \hline \end{array}$ | $\begin{gathered} \text { As } \\ \text { pprn } \end{gathered}$ | $\begin{array}{r} \text { U } \\ \text { ppin } \end{array}$ | $\underset{\mathrm{ppm}}{\mathrm{pp}}$ | Th pprn | $\begin{array}{r} \mathbf{S r} \\ \mathbf{p p m} \end{array}$ | $\begin{gathered} \mathrm{Cd} \\ \mathrm{ppm} \end{gathered}$ | $\begin{array}{r} \text { Sb } \\ \text { ppin } \end{array}$ | $\begin{array}{r} \text { Bí } \\ \text { ppm } \end{array}$ | $\begin{array}{r} v \\ p p m \end{array}$ | $\begin{gathered} \mathrm{Ca} \\ \mathrm{Z} \end{gathered}$ | $\begin{aligned} & \mathbf{P} \\ & \mathbf{Z} \end{aligned}$ | $\begin{array}{r} \text { La } \\ \text { pppon } \end{array}$ | $\underset{\text { pron }}{\mathbf{C r}}$ | $\begin{gathered} \mathrm{Hg} \\ \boldsymbol{\chi} \end{gathered}$ | $\begin{array}{r} \mathbf{B a} \\ \mathbf{p p m} \end{array}$ | $\begin{array}{r} \mathbf{T i} \\ \mathbf{\%} \end{array}$ | $\begin{array}{rr} \text { B } & \text { Al } \\ \text { ppm } & \chi \end{array}$ | $\begin{gathered} \mathrm{Ma} \\ \mathbf{z} \end{gathered}$ | $\begin{aligned} & \mathrm{K} \\ & \mathbf{z} \end{aligned}$ | $\begin{array}{r} \mathrm{H} \\ \mathrm{pppan} \end{array}$ |
| 0+00S $7+00 \mathrm{~W}$ | $<1$ | 31 | 16 | 122 | <. 3 | 73 | 26 | 3724.77 | 9 | < 5 | $<2$ | 10 | 15 | $<.2$ | $<2$ | $<2$ | 46 | . 29 | . 057 | 25 | 54 | 1.06 | 117 | .16 | $<33.09$ | . 01 | . 43 | $<2$ |
| 0+005 6+75W | $<1$ | 6 | 13 | 21 | <. 3 | 5 | 3 | 561.25 | 4 | $<5$ | $<2$ | 4 | 3 | <. 2 | $<2$ | $<2$ | 27 | . 02 | . 012 | 22 | 8 | . 06 | 23 | . 04 | $<3.60$ | . 01 | . 03 | $<2$ |
| $0+0056+50 \mathrm{~W}$ | $<1$ | 20 | 20 | 126 | <. 3 | 47 | 29 | 5193.99 | 6 | $<5$ | $<2$ | 7 | 14 | $<.2$ | $<2$ | $<2$ | 37 | . 23 | . 070 | 25 | 34 | . 64 | 68 | . 13 | <3 2.66 | . 01 | . 20 | $<2$ |
| $0+0056+25 \mathrm{~W}$ | $<1$ | 20 | 12 | 104 | < 3 | 41 | 20 | 3014.50 | 5 | <5 | <2 | 5 | 15 | <. 2 | $<2$ | $<2$ | 43 | . 25 | . 053 | 19 | 32 | . 53 | 81 | . 14 | <3 2.60 | . 01 | . 17 | <2 |
| $0+0056+00 \mathrm{~W}$ | $<1$ | 16 | 14 | 122 | <. 3 | 36 | 15 | 2324.37 | 9 | $<5$ | $<2$ | 7 | 8 | $<.2$ | 3 | $<2$ | 44 | . 10 | . 040 | 23 | 35 | . 69 | 84 | . 15 | $<2.63$ | . 01 | . 23 | $<2$ |
| $0+0055+75 \mathrm{~W}$ | $<1$ | 19 | 19 | 116 | . 5 | 43 | 18 | 3834.16 | 10 | $<5$ | $<2$ | 9 | 13 | . 3 | <2 | $<2$ | 40 | . 45 | . 053 | 23 | 38 | . 79 | 99 | . 16 | $<33.17$ | . 01 | . 23 | <2 |
| $0+0055+50 \mathrm{H}$ | $<1$ | 17 | 84 | 278 | . 8 | 38 | 15 | 5044.33 | 11 | $<5$ | $<2$ | 10 | 12 | 1.6 | $<2$ | 4 | 42 | . 26 | . 054 | 28 | 39 | . 76 | 96 | . 13 | $<32.82$ | . 01 | . 15 | $<2$ |
| 0+00S 5+25W | <1 | 8 | 153 | 343 | 3.3 | 9 | 2 | 60901.69 | 9 | $<5$ | <2 | $<2$ | 102 | 11.6 | $<2$ | 7 | 13 | 16.47 | . 031 | 2 | 7 | 9.11 | 123 | <. 01 | $<3.35$ | <. 01 | . 02 | $<2$ |
| $0+0055+00 \mathrm{~W}$ | $<1$ | 24 | 188 | 305 | 3.7 | 34 | 15 | 8764.45 | 21 | $<5$ | <2 | 10 | 16 | 2.3 | $<2$ | 11 | 35 | . 72 | . 055 | 26 | 35 | . 94 | 73 | . 11 | $<2.38$ | . 01 | . 12 | $<2$ |
| 0+00S 4+75W | $<1$ | 31 | 161 | 489 | 2.1 | 35 | 18 | 7914.59 | 11 | $<5$ | $<2$ | 8 | 16 | 4.0 | $<2$ | 8 | 36 | . 71 | . 082 | 20 | 37 | . 75 | 87 | . 08 | $<2.73$ | . 01 | . 12 | $<2$ |
| 0+00S $4+50 \mathrm{~W}$ | $<1$ | 31 | 39 | 133 | <. 3 | 34 | 21 | 6413.29 | 13 | $<5$ | $<2$ | 10 | 23 | . 9 | 2 | 2 | 19 | . 47 | . 070 | 26 | 22 | . 51 | 35 | . 05 | <3 1.14 | . 01 | . 10 | $<2$ |
| 0+00S 4+25W | 1 | 48 | 76 | 167 | . 6 | 35 | 16 | 7273.39 | 16 | < | <2 | 8 | 81 | 1.1 | 3 | $<2$ | 32 | 3.29 | . 094 | 18 | 26 | . 86 | 58 | . 07 | <3 1.33 | . 04 | . 14 | $<2$ |
| RE $0+00 \mathrm{~S} 4+25 \mathrm{~W}$ | 1 | 44 | 72 | 149 | . 7 | 33 | 15 | 6483.11 | 11 | $<5$ | $<2$ | 8 | 79 | . 9 | 2 | <2 | 29 | 3.22 | . 087 | 16 | 24 | . 78 | 54 | . 07 | $<31.23$ | . 03 | . 13 | $<2$ |
| 0+00S $4+00 \mathrm{~W}$ | 2 | 26 | 34 | 148 | . 7 | 43 | 15 | 3994.20 | 12 | $<5$ | <2 | 3 | 19 | . 3 | $<2$ | $<2$ | 55 | . 39 | . 058 | 19 | 40 | . 91 | 87 | . 08 | <3 2.91 | . 01 | . 08 | $<2$ |
| 0+00S 3+75W | 4 | 101 | 40 | 180 | . 5 | 74 | 20 | 11234.99 | 26 | $<5$ | $<2$ | 7 | 27 | 1.0 | 4 | $<2$ | 84 | . 43 | . 162 | 24 | 46 | 1.66 | 109 | .11 | $<34.59$ | . 02 | . 16 | $<2$ |
| 0+00s 3+50W | 2 | 42 | 27 | 129 | <. 3 | 39 | 12 | 10733.67 | 13 | $<5$ | <2 | 2 | 15 | . 5 | $<2$ | $<2$ | 67 | . 27 | . 080 | 20 | 31 | . 86 | 72 | . 09 | $<32.80$ | . 01 | . 07 | $<2$ |
| $0+0053+25 \mathrm{~W}$ | 2 | 38 | 21 | 115 | <. 3 | 37 | 13 | 8783.80 | 13 | < | <2 | 4 | 15 | . 6 | <2 | <2 | 63 | . 35 | . 119 | 20 | 35 | . 87 | 68 | . 10 | $<35.48$ | . 01 | . 06 | $<2$ |
| $0+0053+004$ | 2 | 50 | 25 | 170 | <. 3 | 77 | 15 | 6204.55 | 12 | < | $<2$ | 3 | 17 | . 4 | <2 | 2 | 51 | . 29 | . 077 | 19 | 36 | . 79 | 101 | . 08 | $<33.09$ | . 01 | . 08 | $<2$ |
| $0+0052+75 \mathrm{~W}$ | 2 | 74 | 20 | 143 | <. 3 | 70 | 14 | 5514.14 | 12 | < | <2 | 5 | 13 | . 3 | $<2$ | $<2$ | 58 | . 24 | . 069 | 18 | 38 | . 87 | 82 | . 10 | $<33.38$ | . 01 | . 07 | $<2$ |
| $0+00 \mathrm{~S} 2+50 \mathrm{~W}$ | 2 | 37 | 25 | 115 | < 3 | 49 | 12 | 3624.01 | 14 | < 5 | <2 | 3 | 14 | . 2 | 4 | $<2$ | 58 | . 28 | . 072 | 45 | 33 | . 78 | 75 | . 09 | $<33.67$ | . 01 | . 05 | $<2$ |
| 0+00S $2+25 \mathrm{~W}$ | 2 | 97 | 28 | 158 | <. 3 | 94 | 18 | 4874.86 | 17 | <5 | $<2$ | 8 | 132 | . 6 | 5 | $<2$ | 61 | . 32 | . 088 | 22 | 44 | 1.24 | 115 | . 12 | $<33.90$ | . 01 | . 09 | $<2$ |
| $0+0052+00 \mathrm{~W}$ | 5 | 119 | 23 | 133 | . 6 | 68 | 17 | 7274.82 | 11 | $<5$ | $<2$ | 5 | 59 | . 8 | 2 | $<2$ | 52 | . 78 | . 153 | 16 | 34 | 1.13 | 77 | . 08 | $<32.39$ | . 04 | . 10 | $<2$ |
| 0+00s 1+75 W | 6 | 307 | 65. | 403 | 1.1 | 262 | 28 | 38308.86 | 35 | <5 | <2 | 5 | 110 | 2.3 | 8 | 3 | 79 | 6.99 | . 144 | 13 | 36 | 1.57 | 128 | . 07 | $<32.03$ | . 05 | . 20 | $<2$ |
| 0+00s 1+50W | 1 | 36 | 14 | 162 | <. 3 | 46 | 11 | 10903.58 | 9 | < | $<2$ | 3 | 12 | . 3 | $<2$ | $<2$ | 40 | . 32 | . 099 | 16 | 29 | . 58 | 102 | . 09 | $<33.41$ | . 01 | . 11 | $<2$ |
| $0+00 \mathrm{~S} 1+25 \mathrm{~W}$ | 1 | 13 | 14 | 64 | .4 | 15 | 8 | 3311.95 | 3 | 5 | $<2$ | 3 | 22 | . 2 | $<2$ | $<2$ | 23 | . 67 | . 085 | 7 | 12 | . 16 | 61 | .13 | $<34.99$ | . 03 | . 03 | $<2$ |
| 0+00S 1+00w | 1 | 37 | 29 | 209 | <. 3 | 40 | 12 | 17663.09 | 5 | $<5$ | <2 | $<2$ | 30 | 1.0 | 3 | <2 | 67 | . 77 | . 149 | 15 | 34 | 1.01 | 152 | . 07 | $<33.12$ | . 01 | . 06 | $<2$ |
| 0+00s $0+75 \mathrm{~W}$ | 3 | 56 | 39 | 223 | <. 3 | 53 | 14 | 8863.88 | 6 | $<5$ | <2 | 5 | 43 | 1.5 | 3 | $<2$ | 94 | 1.06 | . 170 | 18 | 54 | 1.51 | 157 | . 14 | $<34.34$ | . 04 | . 09 | <2 |
| 0+005 0+50W | 3 | 44 | 66 | 319 | . 3 | 59 | 14 | 11523.95 | 13 | < | $<2$ | 6 | 36 | 1.9 | <2 | $<2$ | 52 | 2.37 | . 526 | 33 | 36 | . 94 | 133 | . 06 | <3 3.27 | . 02 | . 09 | $<2$ |
| $0+0050+25 \mathrm{~W}$ | 2 | 21 | 40 | 333 | <. 3 | 32 | 8 | 27222.67 | 10 | $<5$ | $<2$ | 2 | 48 | 2.0 | 2 | $<2$ | 35 | 4.55 | 1.105 | 22 | 19 | . 38 | 203 | . 09 | $<34.34$ | . 03 | . 06 | $<2$ |
| $0+00 \mathrm{~S} 0+00 \mathrm{~W}$ | 7 | 66 | 33 | 372 | <. 3 | 121 | 23 | 14104.99 | 10 | 7 | $<2$ | 9 | 64 | 2.5 | 2 | <2 | 127 | 1.24 | . 182 | 21 | 53 | 1.28 | 94 | . 10 | 33.51 | . 08 | . 19 | $<2$ |
| $1+0057+00 \mathrm{~W}$ | $<1$ | 23 | 10 | 106 | <. 3 | 38 | 17 | 2874.01 | 5 | $<5$ | $<2$ | 7 | 10 | . 2 | 3 | $<2$ | 37 | . 13 | . 052 | 23 | 37 | . 84 | 91 | . 13 | $<32.31$ | . 01 | . 32 | $<2$ |
| $1+0056+75 \mathrm{~W}$ | $<1$ | 22 | 9 | 109 | <. 3 | 46 | 16 | 5474.03 | 5 | $<5$ | $<2$ | 9 | 7 | . 2 | 3 | $<2$ | 38 | . 08 | . 033 | 28 | 42 | . 95 | 93 | . 16 | $<32.58$ | . 01 | . 38 | $<2$ |
| $1+0056+50 \mathrm{~W}$ | <1 | 28 | 13 | 87 | <. 3 | 50 | 18 | 2534.76 | 9 | < | $<2$ | 9 | 8 | . 4 | 6 | 2 | 38 | . 14 | . 070 | 24 | 40 | . 84 | 68 | . 14 | $<32.89$ | . 01 | . 36 | $<2$ |
| 1+00S 6+25W | $<1$ | 25 | 82 | 108 | . 7 | 46 | 22 | 6663.94 | 13 | $<5$ | $<2$ | 7 | 11 | . 8 | $<2$ | 4 | 25 | . 21 | . 061 | 24 | 30 | . 71 | 57 | . 07 | $<32.61$ | . 01 | . 18 | $<2$ |
| $1+00 \mathrm{~S} 6+00 \mathrm{~W}$ | $<1$ | 20 | 46 | 73 | .5 | 27 | 14 | 4104.11 | 22 | $<5$ | $<2$ | 6 | 15 | . 6 | 3 | $<2$ | 29 | . 30 | . 034 | 21 | 24 | . 52 | 55 | .13 | $<32.22$ | . 01 | . 14 | $<2$ |
| STANDARD C | 22 | 55 | 42 | 123 | 6.1 | 72 | 31 | 9653.70 | 43 | 17 | 6 | 37 | 50 | 17.7 | 16 | 17 | 58 | . 54 | . 091 | 41 | 61 | . 87 | 170 | . 07 | 221.77 | . 06 | . 13 | 10 |

ICP - . 500 GRAM SAMPLE IS DIGESTED HITH 3ML 3-1-2 HCL-HNO3-h20 at 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL
DATE RECEIVED: JAN 31996 DATE REPORT MAILED: QU~ $9 / 96$ SIGNED BY...........TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS


[^0]|  | Progroup geological Lta. FILE \# 96-0034 Page |
| :---: | :---: |
| Smure |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

[^1]| SAMPLE\# | $\begin{gathered} \text { Mo } \\ \text { Pp } \end{gathered}$ | $\begin{array}{r} \mathrm{Cu} \\ \text { ppm } \end{array}$ | $\begin{array}{r} \text { Pb } \\ \text { Ppin } \end{array}$ | $\begin{array}{r} 2 n \\ \text { PP } \end{array}$ | $\begin{array}{r} \mathrm{Ag} \\ \mathrm{Pp} \text { } \end{array}$ | $\begin{array}{r} \mathrm{Ni} \\ \mathrm{pp} \mathrm{~m} \end{array}$ | $\begin{array}{r} \mathrm{Co} \\ \mathrm{ppm} \end{array}$ | Mn ppm | $\begin{gathered} \mathrm{Fe} \\ \mathbf{Z} \end{gathered}$ | As ppm | $\begin{array}{r} U \\ \text { Ppm } \end{array}$ | $\underset{\substack{\text { AU } \\ \hline}}{ }$ | $\begin{array}{r} \text { Th } \\ \text { ppm } \end{array}$ | $\begin{array}{r} \mathrm{Sr} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \text { Cd } \\ \text { Ppom } \end{array}$ | $\begin{array}{r} \mathrm{Sb} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \text { Bi } \\ \mathbf{p p x} \end{array}$ | $\begin{array}{r} v \\ \text { ppom } \end{array}$ | $\begin{gathered} \mathrm{Ca} \\ x \end{gathered}$ |  | La <br> pprn | $\begin{gathered} \mathrm{Cr} \\ \mathrm{ppm} \end{gathered}$ | $\begin{gathered} \mathrm{Mg} \\ \mathbf{Z} \end{gathered}$ | $\begin{gathered} \mathbf{B a} \\ \text { ppm } \end{gathered}$ | $\begin{gathered} \mathrm{Ti} \\ \mathbf{Z} \end{gathered}$ | $\begin{array}{r} B \\ \text { ppran } \end{array}$ | $\begin{gathered} A! \\ X \end{gathered}$ | $\begin{gathered} \mathrm{Ka} \\ \% \end{gathered}$ | $\begin{aligned} & \mathrm{K} \\ & \mathbf{Z} \end{aligned}$ | $\begin{array}{r} \mathrm{H} \\ \mathrm{ppm} \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $3+0053+25 W$ | 2 | 13 | 33 | 69 | <. 3 | 13 | 6 | 467 | 3.84 | 8 | $<5$ | $<2$ | $<2$ | 9 | . 9 | 2 | $<2$ | 32 | . 13 | . 073 | 17 | 19 | . 20 | 42 | . 07 |  | 1.68 | . 01 | . 05 | $<2$ |
| $3+00 \mathrm{~S} 3+00 \mathrm{~W}$ | 1 | 38 | 15 | 85 | . 3 | 16 | 7 | 1969 | 1.94 | 6 | $<5$ | $<2$ | $<2$ | 43 | 2.9 | <2 | 2 | 28 | 1.24 | . 159 | 13 | 26 | . 25 | 87 | . 03 | $<3$ | 2.13 | . 03 | . 05 | $<2$ |
| $3+0052+75 \mathrm{~W}$ | 1 | 14 | 9 | 43 | . 3 | 7 | 5 | 1043 | 1.80 | $<2$ | 8 | <2 | <2 | 43 | 1.0 | <2 | $<2$ | 28 | 1.16 | . 108 | 9 | 14 | . 13 | 36 | . 05 | $<32$ | 2.77 | . 04 | . 03 | $<2$ |
| $3+0052+50 \mathrm{~W}$ | 2 | 20 | 30 | 197 | <. 3 | 27 | 13 | 742 | 4.46 | 6 | < | <2 | <2 | 14 | 1.4 | 2 | $<2$ | 58 | . 33 | . 043 | 14 | 31 | . 69 | 59 | . 10 | 31 | 1.96 | . 01 | . 06 | $\leqslant 2$ |
| 3+005 2+254 | 1 | 9 | 20 | 66 | <. 3 | 9 | 5 | 759 | 2.22 | 3 | <5 | <2 | <2 | 25 | 1.0 | <2 | 3 | 32 | . 75 | . 067 | 7 | 11 | . 11 | 137 | . 11 | <3 | 2.79 | . 02 | . 03 | $<2$ |
| $3+0052+004$ | 13 | 64 | 25 | 129 | . 5 | 26 | 7 | 1274 | 4.58 | 8 | $<5$ | $<2$ | $<2$ | 24 | 1.1 | $<2$ | $<2$ | 63 | . 25 | . 093 | 12 | 26 | . 77 | 165 | . 07 | 32 | 2.39 | . 01 | . 11 | $<2$ |
| RE 3+OOS 2+00N | 14 | 64 | 28 | 132 | . 5 | 29 | 8 | 1325 | 4.67 | 8 | $<5$ | $<2$ | <2 | 24 | 1.2 | <2 | $<2$ | 64 | . 26 | . 094 | 12 | 26 | . 80 | 165 | . 07 | < 3 | 2.40 | . 01 | . 11 | $<2$ |
| $3+00 \mathrm{~S} 1+75 \mathrm{~W}$ | 2 | 33 | 33 | 168 | < 3 | 34 | 10 | - 541 | 3.18 | 5 | < | <2 | 2 | 14 | 1.2 | <2 | 2 | 41 | . 20 | . 092 | 14 | 23 | . 65 | 122 | . 10 | < 3 | 3.82 | . 01 | . 07 | $<2$ |
| $3+00 \mathrm{~S} 1+50 \mathrm{~W}$ | 2 | 41 | 30 | 116 | . 3 | 33 | 11 | 567 | 3.25 | 11 | < | <2 | <2 | 25 | 1.0 | 2 | 2 | 50 | . 39 | . 089 | 15 | 29 | . 88 | 121 | . 06 | < | 3.09 | . 01 | . 08 | 2 |
| 3+00S 1+25W | 2 | 42 | 27 | 140 | . 4 | 43 | 12 | 421 | 3.82 | 8 | <5 | $<2$ | 2 | 21 | 1.1 | 3 | $<2$ | 82 | . 37 | . 116 | 16 | 46 | 1.32 | 123 | . 11 | < 3 | 3.96 | . 02 | . 09 | $<2$ |
| $3+0051+00 \mathrm{~W}$ | 2 | 18 | 22 |  | <. 3 | 15 | 7 | 974 | 2.28 | 5 | $<5$ | <2 | <2 | 14 | . 5 | <2 | 2 | 40 | . 25 | . 039 | 18 | 17 | . 23 | 111 | . 05 | $<3$ | . 79 | . 01 | . 07 | <2 |
| 3+00S 0+75W | 2 | 22 | 30 | 118 | <. 3 | 26 | 10 | 2164 | 3.23 | 5 | $<5$ | <2 | 2 | 34 | 1.6 | 2 | $<2$ | 47 | . 77 | . 095 | 17 | 27 | . 72 | 234 | . 10 | $<$ | 3.54 | . 03 | . 08 | $<2$ |
| $3+0050+50 \mathrm{~W}$ | 2 | 48 | 26 | 133 | < 3 | 44 | 13 | 470 | 4.12 | 13 | < | $<2$ | 3 | 31 | 1.1 | 3 | 2 | 81 | . 71 | . 180 | 16 | 49 | 1.46 | 200 | . 08 | < 3 | 3.14 | . 01 | . 09 | 2 |
| $3+00 S 0+25 \mathrm{H}$ | 3 | 46 | 24 | 138 | . 3 | 34 | 10 | 1418 | 3.99 | 6 | $<5$ | <2 | <2 | 19 | 1.1 | <2 | <2 | 61 | . 38 | . 178 | 14 | 30 | . 90 | 101 | . 08 | $<3$ | 3.35 | . 01 | . 06 | $<2$ |
| $3+00 \mathrm{~S} 0+00 \mathrm{~W}$ | 2 | 14 | 15 | 96 | < 3 | 15 | 6 | 445 | 2.64 | 5 | < | <2 | 3 | 19 | . 7 | $<2$ | $<2$ | 33 | . 35 | . 073 | 16 | 15 | . 29 | 100 | . 08 | $<$ | 1.70 | . 01 | . 06 | $<2$ |
| $4+0055+00 \mathrm{~W}$ | 1 | 18 | 41 | 65 | <. 3 | 27 | 10 | 564 | 3.40 | 6 | < 5 | <2 | 3 | 11 | .4 | <2 | 2 | 20 | . 14 | . 112 | 28 | 26 | . 57 | 55 | . 03 | $<3$ | 1.53 | . 01 | . 11 | <2 |
| $4+00 \mathrm{~S} 4+75 \mathrm{~W}$ not received | - | - | - |  |  | - | - | - | - | - | - | - | - | - | , | - | - | - | - | . 19 | - | - | - | - | - | - | , | - | - | - |
| $4+00 \mathrm{~S} 4+50 \mathrm{~W}$ | 1 | 17 | 192 | 208 | 1.0 | 21 | 8 | 745 | 3.35 | 9 | $<5$ | $<2$ | $<2$ | 33 | . 5 | $<2$ | 11 | 21 | . 38 | . 076 | 21 | 19 | . 37 | 66 | . 02 | $<3$ | 1.29 | . 01 | . 10 | $<2$ |
| 4+00S 4+25 | 1 | 16 | 27 | 70 | <. 3 | 23 | 9 | 517 | 2.89 | 5 | $<5$ | $<2$ | 2 | 11 | . 7 | <2 | <2 | 19 | .11 | . 052 | 25 | 19 | . 34 | 59 | . 03 | $<3$ | 1.38 | . 01 | . 09 | $<2$ |
| 4+00S 4+00W | 1 | 20 | 24 | 71 | <. 3 | 25 | 9 | 511 | 2.72 | 9 | < 5 | $<2$ | 2 | 10 | . 4 | 3 | $<2$ | 18 | .10 | . 058 | 29 | 18 | . 37 | 66 | . 03 | $<$ | 1.25 | . 01 | . 10 | $<2$ |
| $4+0053+75 \mathrm{~W}$ | 1 | 15 | 32 | 63 | <. 3 | 17 | 8 | 798 | 3.89 | 8 | $<5$ | <2 | <2 | 8 | . 6 | 2 | 5 | 30 | . 08 | . 104 | 21 | 18 | . 22 | 54 | . 06 | $<3$ | 1.16 | . 01 | . 06 | $<2$ |
| $4+00 \mathrm{~S} 3+50 \mathrm{~W}$ | 1 | 25 | 29 | 147 | . 3 | 29 | 12 | 1974 | 3.58 | 12 | <5 | $<2$ | $<2$ | 30 | 1.0 | $<2$ | 2 | 30 | . 51 | . 196 | 27 | 27 | . 55 | 77 | . 05 | $<3$ | 3.66 | . 02 | . 09 | <2 |
| $4+0053+254$ | 1 | 17 | 38 | 88 | <. 3 | 26 | 10 | 448 | 5.85 | 7 | $<5$ | $<2$ | 4 | 9 | . 9 | 2 | <2 | 30 | . 09 | . 081 | 25 | 29 | . 53 | 50 | . 07 | $<$ | 2.50 | . 01 | . 09 | $<2$ |
| $4+0053+00 \mathrm{H}$ | 2 | 14 | 29 | 89 | < 3 | 23 | 8 | 342 | 4.32 | 10 | < | <2 | 3 | 8 | .4 | 3 | <2 | 28 | . 09 | . 098 | 25 | 24 | . 51 | 49 | . 07 | <3 | 1.80 | . 01 | . 08 | $<2$ |
| 4+00S $2+75 \mathrm{~W}$ | 2 | 11 | 26 | 67 | < 3 | 17 | 6 | 358 | 3.91 | 7 | $<5$ | $<2$ | 2 | 7 | . 3 | 2 | 2 | 35 | . 07 | . 203 | 19 | 16 | . 29 | 46 | . 10 | $<3$ | 1.62 | . 01 | . 05 | $<2$ |
| $4+0052+504$ | 1 | 7 | 14 | 34 | <. 3 | 6 | 2 | 84 | 1.75 | 3 | < 5 | <2 | <2 | 3 | . 3 | 2 | $<2$ | 27 | . 02 | . 025 | 18 | 8 | . 08 | 41 | . 06 | $<3$ | 1.46 | . 01 | . 03 | $<2$ |
| $4+00 \mathrm{~S} 2+25 \mathrm{H}$ | 2 | 43 | 33 | 208 | . 4 | 34 | 13 | 979 | 4.31 | 9 | < | $<2$ | 3 | 21 | 1.3 | 3 | <2 | 93 | . 80 | . 189 | 17 | 42 | . 92 | 114 | . 07 | < | 5.69 | . 01 | . 05 | 3 |
| $4+00 \mathrm{~S} 2+00 \mathrm{H}$ | 3 | 51 | 19 | 208 | . 3 | 57 | 14 | 580 | 3.97 | 15 | $<5$ | $<2$ | 3 | 24 | . 7 | 5 | $<2$ | 89 | . 36 | . 110 | 17 | 48 | 1.60 | 169 | . 12 | <3 | 3.83 | . 01 | . 08 | <2 |
| $4+00 \mathrm{~S} 1+75 \mathrm{~W}$ | 2 | 25 | 28 | 115 | . 4 | 28 | 9 | 751 | 3.17 | 8 | $<5$ | <2 | $<2$ | 16 | .4 | 2 | <2 | 46 | . 25 | . 071 | 16 | 26 | . 61 | 110 | . 10 | <3 | 3.05 | . 02 | . 07 | <2 |
| $4+00 \mathrm{~S} 1+50 \mathrm{~W}$ | 2 | 33 | 23 | 77 | <. 3 | 25 | 10 | 506 | 3.32 | 9 | < | $<2$ | $<2$ | 10 | .4 | <2 | <2 | 59 | . 13 | . 051 | 17 | 31 | . 69 | 88 | . 07 | <3 | 1.85 | . 01 | . 07 | $<2$ |
| $4+00 \mathrm{~S} 1+25 \mathrm{~W}$ | 2 | 28 | 36 | 188 | . 3 | 46 | 10 | 566 | 3.16 | 11 | $<5$ | $<2$ | $<2$ | 40 | . 6 | 2 | <2 | 31 | . 41 | . 086 | 20 | 21 | . 50 | 130 | . 05 | <3 | 2.70 | . 01 | . 10 | <2 |
| $4+00 \mathrm{~S} 1+00 \mathrm{~W}$ | 2 | 41 | 15 | 182 | < 3 | 42 | 10 | 1542 | 3.76 | 62 | $<5$ | <2 | <2 | 21 | . 7 | <2 | <2 | 47 | .30 | . 104 | 13 | 23 | . 54 | 96 | . 09 | <3 | 3.19 | . 02 | . 06 | $<2$ |
| $4+00 \mathrm{~S} 0+75 \mathrm{~N}$ | 5 | 59 | 34 | 129 | . 3 | 44 | 13 | 1334 | 4.02 | 97 | < | $<2$ | <2 | 27 | . 5 | 2 | <2 | 76 | . 42 | . 151 | 21 | 33 | . 76 | 90 | . 04 | <3 | 1.84 | . 01 | . 09 | $<2$ |
| $4+0050+50 \mathrm{~W}$ | 1 | 21 | 19 | 122 | . 3 | 23 | 7 | 725 | 2.49 | 8 | $<5$ | <2 | 2 | 8 | . 5 | <2 | <2 | 25 | . 09 | . 058 | 19 | 18 | . 32 | 87 | . 08 | <3 | 3.23 | . 01 | . 04 | <2 |
| $4+00 \mathrm{~S} 0+25 \mathrm{~W}$ | 3 | 46 | 34 | 171 | <. 3 | 49 | 14 | 539 | 3.87 | 14 | < 5 | $<2$ | 3 | 19 | . 6 | 3 | <2 | 60 | . 38 | . 140 | 21 | 38 | 1.15 | 80 | . 08 | $<3$ | 4.10 | . 01 | . 09 | 2 |
| STANDARD C | 21 | 54 | 39 | 123 | 6.1 | 69 | 30 | 968 | 3.71 | 40 | 18 | 7 | 35 | 50 | 18.2 | 18 | 19 | 58 | . 54 | . 093 | 30 | 57 | . 89 | 172 | . 08 | 25 | 1.81 | . 06 | . 14 | 10 |

[^2]

[^3]

[^4]| SAMPLE\# | Mo ppin | $\begin{array}{r} \mathrm{Cu} \\ \mathrm{PPP} \end{array}$ | $\begin{gathered} \mathrm{Pb} \\ \mathrm{ppmp} \end{gathered}$ | $\begin{array}{r} \mathbf{Z n} \\ \mathbf{p p r n} \end{array}$ | $\begin{array}{r} \mathrm{Ag} \\ \mathrm{ppm} \end{array}$ | $\underset{\text { Ni }}{\mathrm{Ni}}$ | $\begin{array}{r} \text { Co } \\ \text { pprn } \end{array}$ | $\begin{array}{r} \mathrm{Mn} \\ \mathrm{ppm} \end{array}$ | $\begin{gathered} \mathrm{Fe} \\ \mathrm{Z} \end{gathered}$ | $\begin{array}{r} \text { As } \\ \text { ppm } \end{array}$ | $\begin{array}{r} U \\ \text { ppon } \end{array}$ | $\begin{array}{r} \text { Au } \\ \text { ppm } \end{array}$ | $\begin{array}{r} \text { Th } \\ \text { ppm } \end{array}$ | $\begin{array}{r} \mathrm{Sr} \\ \mathrm{ppm} \end{array}$ | $\begin{gathered} \mathrm{cd} \\ \mathrm{ppon} \end{gathered}$ | $\begin{array}{r} \mathrm{Sb} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} 8 i \\ \text { ppm } \end{array}$ | $\begin{array}{r} v \\ \text { ppm } \end{array}$ | $\begin{array}{r} \mathrm{Ca} \\ \mathbf{x} \end{array}$ | $\begin{aligned} & P \\ & X \end{aligned}$ | $\begin{array}{r} \text { La } \\ \text { ppm } \end{array}$ | $\underset{\text { ppr }}{\mathrm{Cr}}$ | $\begin{gathered} \mathrm{Mg} \\ \mathbf{K} \end{gathered}$ | $\begin{gathered} \mathrm{Ba} \\ \mathrm{pam} \end{gathered}$ | $\begin{gathered} \mathrm{Ti} \\ \mathbf{X} \end{gathered}$ | $\begin{array}{r} B \\ p p m \end{array}$ | $\begin{gathered} \text { Al } \\ \text { \% } \end{gathered}$ | $\begin{gathered} \mathrm{Ma} \\ \mathrm{Z} \end{gathered}$ | $\begin{aligned} & \mathrm{K} \\ & \mathbf{X} \end{aligned}$ | $\underset{\text { ppon }}{\mathbf{H}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $8+00 \mathrm{~S} 2+50 \mathrm{~W}$ | 2 | 24 | 33 | 103 | <. 3 | 25 | 9 | 859 | 3.38 | 5 | $<5$ | $<2$ | $<2$ | 14 | . 5 | $<2$ | $<2$ | 34 | . 28 | . 074 | 14 | 18 | . 39 | 88 | . 06 |  | 2.96 | . 02 | . 04 | $<2$ |
| $8+0052+25 \mathrm{~W}$ | 1 | 21 | 29 | 81 | <. 3 | 29 | 10 | 445 | 2.98 | 5 | $<5$ | $<2$ | 5 | 14 | . 2 | $<2$ | $<2$ | 16 | . 19 | . 083 | 24 | 20 | . 53 | 83 | . 02 | $<3$ | 1.61 | . 01 | . 09 | $<2$ |
| $8+0052+00 \mathrm{~N}$ | 2 | 23 | 34 | 76 | <. 3 | 24 | 9 | 619 | 3.96 | 10 | $<5$ | $<2$ | 2 | 8 | . 3 | 2 | $<2$ | 27 | . 09 | . 041 | 22 | 21 | . 39 | 52 | . 04 | <3 | 1.42 | . 01 | . 05 | 2 |
| $8+0051+75 \mathrm{~W}$ | 1 | 19 | 31 | 60 | <. 3 | 27 | 10 | 383 | 3.22 | 5 | < 5 | $<2$ | 4 | 13 | <. 2 | $<2$ | $<2$ | 18 | . 15 | . 056 | 26 | 24 | . 49 | 45 | . 03 |  | 1.22 | . 01 | . 06 | $<2$ |
| $8+005 \mathrm{~S}+50 \mathrm{~W}$ | 1 | 16 | 33 | 115 | <. 3 | 27 | 11 | 1189 | 3.54 | 7 | $<5$ | $<2$ | 2 | 10 | . 5 | $<2$ | $<2$ | 22 | . 14 | . 072 | 23 | 22 | . 44 | 86 | . 04 |  | 3.01 | . 01 | . 04 | $<2$ |
| 8+005 1+25w | 1 | 45 | 28 | 88 | <. 3 | 22 | 9 | 648 | 3.93 | 5 | $<5$ | $<2$ | 3 | 14 | . 5 | $<2$ | $<2$ | 23 | . 28 | . 111 | 16 | 22 | . 32 | 76 | . 08 |  | 4.35 | . 01 | . 06 | $<2$ |
| $8+00 \mathrm{~S} 1+00 \mathrm{~W}$ | 1 | 14 | 43 | 132 | <. 3 | 33 | 13 | 1218 | 4.14 | 5 | $<5$ | $<2$ | 4 | 17 | . 6 | $<2$ | $<2$ | 23 | . 37 | . 150 | 22 | 26 | . 47 | 93 | . 04 |  | 3.50 | . 01 | . 06 | $<2$ |
| $8+0050+754$ | 1 | 19 | 43 | 126 | . 5 | 20 | 10 | 3301 | 2.98 | 6 | $<5$ | $<2$ | $<2$ | 12 | . 5 | $<2$ | $<2$ | 24 | . 22 | . 049 | 17 | 16 | . 23 | 81 | . 05 |  | 2.10 | . 01 | . 05 | $<2$ |
| $8+005 \mathrm{O}+50 \mathrm{~W}$ | 1 | 15 | 29 | 80 | <. 3 | 18 | 8 | 844 | 2.97 | 4 | $<5$ | $<2$ | 2 | 11 | . 3 | $<2$ | <2 | 25 | . 18 | . 047 | 20 | 15 | . 27 | 102 | . 10 | 3 | 2.87 | . 01 | . 06 | <2 |
| $8+00 \mathrm{~S} 0+25 \mathrm{~W}$ | 1 | 27 | 39 | 117 | <. 3 | 38 | 15 | 734 | 3.58 | 12 | $<5$ | $<2$ | 6 | 22 | . 3 | $<2$ | $<2$ | 19 | . 42 | . 080 | 33 | 21 | . 64 | 105 | . 03 | 3 | 1.81 | . 01 | . 13 | $<2$ |
| 8+005 $0+00 \mathrm{~W}$ | 1 | 11 | 21 | 74 | <. 3 | 15 | 7 | 665 | 2.87 | 2 | $<5$ | <2 | 2 | 9 | . 3 | <2 | $<2$ | 30 | . 10 | . 042 | 17 | 15 | . 23 | 111 | . 07 |  | 2.71 | . 02 | . 04 | $<2$ |
| $9+005 \mathrm{~S}+00 \mathrm{~N}$ | 1 | 22 | 27 | 114 | <. 3 | 42 | 13 | 748 | 3.83 | 6 | < 5 | <2 | 9 | 22 | . 5 | $<2$ | <2 | 29 | . 97 | . 094 | 26 | 33 | . 70 | 139 | . 07 |  | 3.74 | . 02 | . 08 | 3 |
| $9+0056+75 \mathrm{H}$ | 9 | 56 | 41 | 252 | . 3 | 113 | 20 | 1214 | 4.92 | 29 | < 5 | <2 | 11 | 18 | 1.6 | <2 | $<2$ | 32 | 1.21 | . 156 | 51 | 27 | . 83 | 113 | . 05 |  | 3.71 | . 01 | . 08 | $<2$ |
| $9+0056+504$ | 2 | 27 | 34 | 105 | <. 3 | 47 | 16 | 634 | 4.06 | 11 | $<5$ | $<2$ | 11 | 23 | . 4 | $<2$ | 3 | 27 | . 51 | . 093 | 43 | 30 | . 78 | 111 | . 04 |  | 2.52 | . 01 | . 09 | $<2$ |
| $9+00 \mathrm{~S} 6+25 \mathrm{~W}$ | 3 | 30 | 25 | 95 | <. 3 | 42 | 13 | 915 | 3.62 | 12 | $<5$ | $<2$ | 8 | 65 | . 9 | 6 | $<2$ | 44 | 1.71 | . 098 | 32 | 37 | 2.18 | 73 | . 02 | $<3$ | 2.18 | . 01 | . 15 | $<2$ |
| $9+0056+004$ | 1 | 12 | 22 | 58 | <. 3 | 18 | 9 | 490 | 3.26 | 4 | < 5 | <2 | 4 | 14 | . 4 | 2 | $<2$ | 26 | . 66 | . 053 | 17 | 18 | . 30 | 62 | . 05 |  | 2.10 | . 01 | . 05 | $<2$ |
| $9+0055+75 \mathrm{~W}$ | 2 | 16 | 25 | 84 | <. 3 | 24 | 9 | 575 | 3.18 | 2 | $<5$ | $<2$ | 2 | 12 | . 4 | $<2$ | $<2$ | 29 | . 19 | . 051 | 21 | 18 | . 38 | 139 | . 07 | $<$ | 3.35 | . 02 | . 06 | $<2$ |
| $9+00 \mathrm{~S} 5+50 \mathrm{~W}$ | 1 | 16 | 27 | 112 | <. 3 | 35 | 11 | 539 | 3.58 | 11 | $<5$ | $<2$ | 4 | 16 | . 5 | $<2$ | $<2$ | 28 | . 41 | . 085 | 29 | 24 | . 57 | 126 | . 08 |  | 3.84 | . 01 | . 07 | $<2$ |
| RE 9+00S 5450W |  | 17 | 31 | 114 | <. 3 | 34 | 11 | 562 | 3.61 | 6 | $<5$ | $<2$ | 5 | 16 | . 5 | $<2$ | $<2$ | 28 | . 42 | . 084 | 29 | 23 | . 58 | 129 | . 07 | $<3$ | 3.97 | . 01 | . 07 | $<2$ |
| $9+00 \mathrm{~S} 5+25 \mathrm{~W}$ | 4 | 38 | 22 | 115 | <. 3 | 66 | 18 | 500 | 3.96 | 11 | $<5$ | $<2$ | 7 | 13 | . 3 | 2 | $<2$ | 33 | . 17 | . 049 | 37 | 30 | . 89 | 77 | . 03 | < | 2.05 | . 01 | . 08 | $<2$ |
| $9+0055+00 \mathrm{~W}$ | 1 | 18 | 21 | 104 | <. 3 | 27 | 9 | 519 | 3.25 | 6 | $<5$ | $<2$ | 3 | 10 | . 2 | $<2$ | $<2$ | 27 | . 13 | . 054 | 26 | 21 | . 40 | 103 | . 09 |  | 4.10 | . 01 | . 06 | $<2$ |
| $9+00 \mathrm{~S} 4+75 \mathrm{~W}$ | 2 | 20 | 33 | 150 | <. 3 | 26 | 10 | 1199 | 3.15 | 9 | $<5$ | $<2$ | 2 | 23 | . 8 | <2 | <2 | 29 | 1.57 | . 172 | 18 | 19 | . 39 | 150 | . 06 | $<3$ | 3.01 | . 02 | . 06 | $<2$ |
| $9+00 \mathrm{~S} 4+50 \mathrm{~W}$ | 1 | 18 | 33 | 173 | <. 3 | 30 | 13 | 1589 | 3.73 | 10 | $<5$ | <2 | 3 | 20 | . 7 | <2 | $<2$ | 28 | 1.36 | . 160 | 24 | 23 | . 64 | 132 | . 07 |  | 4.33 | . 01 | . 07 | $<2$ |
| $9+00 \mathrm{~S} 4+25 \mathrm{~W}$ | 1 | 17 | 31 | 129 | <. 3 | 17 | 6 | 388 | 3.10 | 9 | $<5$ | <2 | 3 | 18 | . 3 | $<2$ | $<2$ | 25 | . 85 | . 217 | 18 | 13 | . 25 | 91. | . 16 | <3 | 6.21 | . 02 | . 04 | $<2$ |
| $9+00 \mathrm{~S} 4+00 \mathrm{~W}$ | 2 | 15 | 31 | 106 | <. 3 | 23 | 10 | 1431 | 3.39 | 14 | $<5$ | $<2$ | 2 | 19 | . 3 | $<2$ | <2 | 27 | . 69 | . 130 | 17 | 16 | . 37 | 120 | . 09 | $<3$ | 5.49 | . 02 | . 05 | $<2$ |
| $9+0053+754$ | 2 | 18 | 31 | 164 | <. 3 | 38 | 13 | 1205 | 3.92 | 12 | <5 | $<2$ | 4 | 16 | . 6 | $<2$ | $<2$ | 26 | . 63 | . 093 | 27 | 24 | . 66 | 109 | . 03 | $<3$ | 3.13 | . 01 | . 07 | $<2$ |
| $9+0053+50 \mathrm{~W}$ | 1 | 20 | 28 | 105 | <. 3 | 27 | 12 | 791 | 3.33 | 10 | <5 | $<2$ | 3 | 17 | . 2 | 3 | <2 | 22 | . 58 | . 073 | 29 | 19 | . 52 | 107 | . 04 |  | 2.54 | . 01 | . 05 | $<2$ |
| 9+00S 3+25W | 2 | 21 | 36 | 169 | <. 3 | 40 | 15 | 573 | 4.07 | 13 | $<5$ | $<2$ | 7 | 15 | . 3 | $<2$ | <2 | 24 | . 27 | . 083 | 27 | 24 | . 59 | 116 | . 05 | $<3$ | 3.95 | . 01 | . 06 | $<2$ |
| $9+00 \mathrm{~S} 3+00 \mathrm{~W}$ | 3 | 31 | 39 | 200 | . 4 | 50 | 13 | 1954 | 4.46 | 13 | $<5$ | $<2$ | 7 | 41 | . 6 | $<2$ | <2 | 27 | 2.50 | . 106 | 34 | 27 | 1.89 | 213 | . 03 | <3 | 3.14 | . 02 | . 08 | $<2$ |
| $9+0052+734$ | 2 | 14 | 25 | 96 | <. 3 | 25 | 8 | 349 | 3.63 | 9 | $<5$ | $<2$ | 3 | 9 | $<.2$ | $<2$ | $<2$ | 27 | . 17 | . 042 | 21 | 21 | . 48 | 76 | . 06 | $<3$ | 2.08 | . 01 | . 05 | $<2$ |
| 9+00S 2+50W | 1 | 22 | 43 | 86 | <. 3 | 33 | 14 | 622 | 3.35 | 11 | $<5$ | $<2$ | 4 | 22 | . 2 | 4 | $<2$ | 20 | . 37 | . 089 | 30 | 23 | . 60 | 76 | . 04 | $<3$ | 2.22 | . 02 | . 08 | $<2$ |
| $9+00 \mathrm{~S} 2+25 \mathrm{~W}$ | 1 | 14 | 30 | 79 | <. 3 | 23 | 9 | 217 | 3.11 | 8 | $<5$ | $<2$ | 4 | 8 | <. 2 | 2 | 3 | 28 | . 09 | . 032 | 26 | 19 | . 32 | 57 | . 05 | $<3$ | 2.08 | . 01 | . 04 | $<2$ |
| $9+00 \mathrm{~S} 2+00 \mathrm{~W}$ | 2 | 31 | 34 | 109 | <. 3 | 43 | 13 | 450 | 3.78 | 13 | < | $<2$ | 5 | 17 | . 2 | $<2$ | $<2$ | 23 | . 31 | . 068 | 27 | 26 | . 81 | 123 | . 04 | <3 | 2.66 | . 01 | . 10 | $<2$ |
| $9+00 \mathrm{~S} \mathrm{1+75W}$ | 1 | 18 | 20 | 65 | <. 3 | 29 | 10 | 314 | 3.13 | 9 | <5 | $<2$ | 2 | 9 | $<.2$ | 3 | $<2$ | 22 | . 12 | . 053 | 25 | 25 | . 56 | 45 | . 03 | $<3$ | 1.98 | . 01 | . 06 | 2 |
| $9+00 \mathrm{~S} \mathrm{1+50W}$ | 2 | 11 | 12 | 31 | <. 3 | 12 | 4 | 121 | 2.19: | 5 | < | $<2$ | $<2$ | 4 | < 2 | 2 | $<2$ | 28 | . 02 | . 022 | 26 | 12 | . 10 | 22 | . 03 | $<3$ | . 71 | . 01 | . 04 | 2 |
| STANDARD C | 22 | 57 | 43 | 126 | 6.3 | 71 | 32 | 1035 | 3.94 | 41 | 17 | 7 | 37 | 50 | 17.6 | 17 | 19 | 60 | . 50 | . 087 | 43 | 62 | . 90 | 181 | . 07 | 26 | 1.88 | . 06 | . 14 | 11 |

[^5]

[^6]
[^0]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reiect Reruns.

[^1]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^2]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^3]:    Sample type: SOll. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^4]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^5]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^6]:    Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

