## PROSPECTING AND SAMPLING REPORT

## ON THE

## MARISA MINERAL CLAIMS

## NORTH VANCOUVER ISLAND, BRITISH COLUMBIA

NTS: 92L/11W and 12E
Latitude: $50^{\circ} 40^{\prime}$
Longitude: $127^{\circ} 31^{\prime}$

For
Universal Trident Industries Ltd.


By
Ron Bilquist
and
P. G. Dasler, M.Sc.

July 19, 1991


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## SUMMARY

The Marisa property is located five kilometres northwest of BHP-UTAH's Island Copper Mine. The property is predominantly underlain by andesitic volcanics of the Bonanza formation and is intruded by several phases of diorite and granodiorite.

This survey identified ore grade copper mineralization in the andesitic volcanics and in a nearby diorite intrusive.

Further exploration including IP and possible drilling is recommended for areas within the claims

## INTRODUCTION

At the request of Mr Ron Philp, President of Universal Trident Industries Ltd., Daiwan Engineering Ltd. conducted 13.5 man-days of prospecting on the Marisa claim group. The property consists of four contiguous modified grid claims consisting of 76 units. The claims are located northeast of Quatse Lake, approximately six kilometres south of Port Hardy on Northern Vancouver Island.

All road cuts and major drainages on the claims were prospected. Silt samples were taken from streams where possible. Rock samples were taken where mineralization was discovered and two exploratory geochemical soil lines were run over one new discovery.

The work program was carried out between July 03 and July 14, 1991. A total of $\$ 7,923.00$ was spent prospecting on the claims.

## ACCESS

Access to the claims is from the Port Hardy-Coal Harbour road which cuts through the middle of the claims north to south. From this road a network of old logging roads give good access to the claims.

## PROPERTY

The property consists of the following contiguous claims located in the Nanaimo Mining Division. The claims are depicted on Figure 2:

| Name | Record No. | Units | Expiry | Registered owner |
| :--- | :---: | :---: | :---: | :---: |
| Marisa 1 | 3939 |  |  |  |
| Marisa 2 | 3940 | 18 | July 25, 1991 | Daiwan Engineering Ltd. |
| Marisa 3 | 3941 | 18 | July 25, 1991 | Daiwan Engineering Ltd. |
| Marisa 4 | 3942 | 20 | July 20,1991 1991 | Daiwan Engineering Ltd. |
| Maiwan Engineering Ltd. |  |  |  |  |

## PROSPECTORS REPORT

The whole Marisa property was prospected to get a general overview of the geology. This overview was in order to determine favourable areas for future exploration, and to locate and assess new mineral occurrences.

Three main rock types were identified on the property:

Andesitic Volcanics consisting of either a medium grained quartz/epidote amygdaloidal andesite or a fine grained, strongly magnetic andesite with rare quartz/epidote amygdules;

Intrusive which appears to be a quartz diorite perhaps grading to granite in places;

Limestone which is massive and grey in colour.



There were two significant discoveries found while prospecting the claims. The samples collected in these areas are located on figure 4, and assays are listed in appendix 1.

## AREA 1.

The first discovery (samples 60766 to 60769 ) was disseminated chalcopyrite with traces of molybdenite in an intrusive near the centre of the Marisa \#1 claim. This intrusive is within a larger intrusive body called the Quatse Diorite, by Muller, in the regional mapping carried out in the 1960's. The discovery is significant in that no exploration has previously been carried out for Diorite hosted porphyry copper deposits in the North Island area. All previous exploration has discounted (mainly airborne) anomalies within the intrusives as they do not conform to the Island Copper type.

The mineralization can be traced in outcrops of a fine grained diorite (?) along a stream bed for approximately 450 meters. Prospecting is made difficult in that there is little or no difference between the weathered surfaces of mineralized and unmineralized outcrops. In several areas there is pinkish felsic alteration in the diorite, and locally the composition is probably more that of a granite, because of increased biotite mineralization, k feldspar, and possibly fine quartz. The mineralization does not appear to be confined to fractures, and the rock is generally competent. Most samples within the zone show coarse chalcopyrite, with the better zones being in excess of $1 \%$ copper, because of copper on fractures as well as disseminations.

Two exploratory geochemical soil lines were run over this occurrence. On line 2 showed significant copper enrichment, for about 150 metres north of the creek. In this area it is possible that poor sample results could be obtained because of glacial overburden, and/or the disruption of the soil horizon by logging in the 1960's.

About one kilometre to the northwest of samples 60767-8 minor chalcopyrite, bornite and pyrite was found in shears (samples 60712 and 60714) cutting the intrusive rocks. Further sampling after the identification of the zone to the southeast also showed disseminated chalcopyrite in the diorite (97246-7). There is no outcrop between these two localities, because of swamps or glacial overburden.

The diorite which forms the Quatse stock has minimal pyrite and magnetite mineralization. There should be a significant chargeability difference between the mineralized intrusive and the enclosing diorite.

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## AREA 2.

The second discovery was that of copper mineralization in the andesites near the intrusive contact in the Marisa \#2 and \#3 CLAIMS.

It is generally quite common in the andesite to find traces of chalcopyrite in the quartz/epidote amygdules. Traces of chalcopyrite were found in amygdules in the northeastern part of Marisa \#1 as well as throughout Marisa \#3 and also near the southeast corner of Marisa \#2. As the intrusive/volcanic contact is approached there is increased quartz/k-spar/zeolite veining along with fracturing and brecciation within the andesite. Occasional intrusive dykes cutting the andesite are also found near the contact.

Copper mineralization as malachite and chalcopyrite in amygdules and as disseminated chalcopyrite also increases near the contact. Samples 60716 and 60717 were taken near the contact near the southwest corner of Marisa \#3. One of these samples (60717) is a pale green, epidote-rich amygdaloidal andesite with amygdules entirely replaced with pyrite and chalcopyrite and the matrix consisting of about $30 \%$ chalcopyrite and pyrite.

## AREA 3.

Good copper mineralization was also found along the road about 650 meters northeast of the Little Joe occurrence. Disseminated pyrite and chalcopyrite in quartz/epidote filled amygdules in a grey blue andesite was found here (sample 60746). In a rock pit 350 meters further along this road more wide spread mineralization (samples 60747 and 60748) was found in the form of malachite and disseminated chalcopyrite in an intensely fractured and sheared andesite. Epidote and quartz masses and veins are found in the immediate vicinity of the mineralization.

AREA 4.

In the extreme eastern area of Marisa \#4 occasional traces of chalcopyrite and malachite were found near or along quart/epidote veins in shears in quite tight amygdaloidal andesites. A little bornite and malachite was found along a felsic dyke in Marisa \#4 but this too appeared very small and is probably not significant. Sample 60770 was taken at this location.

The limestone is also a worthwhile target on the property. The Little Joe skam occurrence is along the south boundary of Marisa \#3. The limestone appears to trend into Marisa \#3 and should be explored further for similar skarn occurrences.

## Daiwan Engineering Ltd.

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FOR Location
See Insert. Fig. 3.

LEGEND


## CONCLUSIONS

The copper mineralization found on the Marisa claims is not similar to that found at the nearby Island Copper mine. The mineralization on the property is a mixture of contact skarn, disseminated replacement in volcanics, and sulphide bearing intrusive.

The Quatsino limestone is intimately associated with the Little Joe "skarn". This area is within the Marisa 3 claim, but there is an earlier claim over the showings. A drill program conducted in 1980 by Energex (AR 11407) detailed the mineralization. Short lengths of $1-2 \%$ copper were reported at the contact with a diorite intrusive.

The disseminated chalcopyrite in the volcanics on the Marisa 3 claim northeast of the Little Joe showing appears to be a more widespread phenomenon. In this area the rocks probably are part of the upper Karmutsen Formation. These basaltic rocks often have chalcopyrite and bornite mineralization in vesicles within apparent flow tops. On the Marisa 3 claim the copper appears to be more disseminated, and there is potential for a moderate tonnage of $0.3 \%-0.4 \%$ copper in the area. This mineralization may continue to the west onto the Marisa 4 claim (area 4).

Approximately 2 km north west of the Little Joe showing within the coarse grained diorite which comprises the "Quatse Diorite" mapped by Muller in the 1960's, is a fine grained, more felsic intrusive. This intrusive has significant copper mineralization associated, as both fracture fillings and as disseminations. Individual specimen samples from the area of samples 60767-8, were estimated to contain over $1 \%$ copper. The samples submitted for assay were representative of more average rock composition however. This zone requires further work, including IP and possible drilling to assess its full potential.

## Daiwan Engineering Ltd.

## STATEMENT OF COSTS

### 1.0 Personnel

MOB (pro rata) ..... 260.00
P.G. Dasler, Snr Geologist - 1 day @ 380 ..... 380.00
R. Bilquist Prospector - 5 days @ \$260/day ..... 1,300.00
L. Allen Prospector - 5 days @ $\$ 260$ ..... 1,300.00
S. Oakley Prospector - 5 days @ \$250/day ..... $1,250.00$

### 2.0 Food and Accommodation

17 man days @ \$75/man day ..... $1,275.00$
3.0 Transportation
4x4 truck-6 days @ \$65/day (incl. gas) ..... 390.00
4.0 Assays
21 rocks, Au /AA; 30 el. ICP @ \$13.40 ..... 281.40
4 silts, Au /AA; 30 el. ICP @ \$11.04 ..... 44.16
42 soils, Au /AA; 30 el. ICP @ \$11.04 ..... 43'6.68 ..... 762.24
4.0 Field Supplies
(flagging, topo, etc.) ..... 50.00
5.0 Office Costs
Report, R. Bilquist, 1 day ..... 260.00
(typing, copying, drafting) ..... 195.00
sub total ..... 7,422.24
GST519.55

## CERTIFICATE OF QUALIFICATIONS

I, Ron Bilquist, do hereby certify that:
1.0 I am a prospector employed by Daiwan Engineering Ltd. with offices at 1030-609 Granville Street, Vancouver, B.C. V7Y 1G5.
2.0 I have been employed as a prospector for the past 22 years in various parts of Canada and the United States, and am President of Lone Trail Prospecting Ltd., at Box 81, Gabriola, B.C.
3.0 I have acquired a working knowledge of the techniques of prospecting over the past 22 years.
4.0 This report is based on a property examination between July 1 and July 19, 1991.
5.0 I have no interest in the Marisa property or in Universal Trident Industries Ltd nor do I expect to receive anything.


Prospector
July 19, 1991

## CERTIFICATE OF QUALIFICATIONS

I, Peter G. Dasler, do hereby certify that:

1. I am a geologist for Daiwan Engineering Ltd. with offices at $1030-609$ Granville Street, Vancouver, British Columbia.
2. I am a graduate of the University of Canterbury, Christchurch, New Zealand with a degree of M.Sc., Geology.
3. I am a Fellow of the Geological Association Of Canada, a Member, in good standing, of the Australasian Institute of Mining and Metallurgy, and a Member of the Geological Society of New Zealand.
4. I have practised my profession continuously since 1975, and have held senior geological positions and managerial positions, including Mine Manager, with mining companies in Canada and New Zealand.
5. This report is based on supervision of the work programmes on the Marisa property, from a one day examination of the showings, and from reports of Professional Engineers and others working in the area.
6. This report was prepared for assessment purposes only.


July 19, 1991

## APPENDIX I

## Assay Certificates

## APPENDIX II

## Sample Descriptions

## ROCK DESCRIPTIONS

The total number of samples submitted for analysis was 67 of which 21 were rocks, 4 were silts and 42 were soils. Sample descriptions are as follows:

## Number Description

60711 subangular skarn float; massive pyrite, pyrrhotite chalcopyrite.
60712 shear in intrusive with pyrite and traces of chalcopyrite.
60713 clay altered intrusive with disseminated pyrite and possible bornite.
60714 shear with quartz/carbonate veining and traces of chalcopyrite.
60715 fractured and brecciated andesite with disseminated pyrite and traces of chalcopyrite.
60716 angular quartz/epidote float with pyrite and chalcopyrite.
60717 angular pale green amygdaloidal andesite with pyrite replaced amygdules and about $30 \%$ disseminated pyrite and chalcopyrite.
60721 quartz/epidote amygdaloidal andesite with pyrite and chalcopyrite disseminated in the amygdules.
60723 fractured amygdaloidal andesite with quartz amygdules and about $30 \%$ disseminated pyrite and chalcopyrite.
60724 pale green amygdaloidal andesite with a trace of chalcopyrite in the quartz/epidote amygdules.
60766 quartz diorite with disseminated pyrite and chalcopyrite.
60767 same as 60766
60768 same as 60766
60769 same as 60766
$60770 \quad 60 \mathrm{~cm}$. wide acid dyke cutting amygdaloidal andesite with pyrite, malachite and bornite.
60742 fracture in coarse diorite with pyrite and epidote.
60743 skarnified pyroclastic float with pyrite and possible chalcopyrite.
60744 fine grained grey blue volcanic float with pyrite and possible chalcopyrite.
60746 fine grained blue grey andesite with disseminated pyrite and chalcopyrite in epidote filled vesicles.
60747 malachite and chalcopyrite with epidote in very fractured andesite.
60748 epidote and quartz in andesite with malachite and disseminated chalcopyrite.

## Silt Samples

| 60718 | silt |
| :--- | :--- |
| 60719 | silt |
| 60722 | silt |
| 60745 | silt |

## Soil Samples

## line 1

$0+00 / 0+00$ to $0+00 / 2+50 \mathrm{~N}$.
$0+00 / 0+25 S$. to $0+00 / 2+50 \mathrm{~S}$.
line 2
$2+00 \mathrm{~W} . / 0+00$ to $2+00 \mathrm{~W} . / 2+50 \mathrm{~N}$.
$2+00 \mathrm{~W} . / 0+25 \mathrm{~S}$. to $2+00 \mathrm{~W} . / 2+50 \mathrm{~S}$.


| SAMPLE* | $\begin{gathered} \text { Mo } \\ \text { Pp } \end{gathered}$ | $\mathrm{Cu}$ | $\begin{gathered} \mathrm{Pb} \\ \mathrm{ppm} \end{gathered}$ | $\begin{array}{r} 2 n \\ p o m \end{array}$ | $\underset{\text { Ag }}{\mathrm{Ap}}$ | $\underset{N i}{\mathrm{Nf}}$ | $\begin{array}{cc} \text { co } \\ \text { ppm } \end{array}$ | $\begin{gathered} \mathrm{Mn} \\ \mathrm{ppm} \end{gathered}$ | $\mathrm{Fe}$ | $\begin{gathered} \text { As } \\ \text { ppm } \end{gathered}$ | un |  | Au ppm | $\begin{aligned} & \text { in } \\ & \text { ppm } \end{aligned}$ | $\begin{array}{r} \mathrm{sr} \\ \mathrm{ppm} \end{array}$ | $\mathrm{Cd}$ | $\begin{array}{r} \text { Sb } \\ \text { ppm } \end{array}$ | $\begin{array}{r} 81 \\ \mathrm{ppm} \end{array}$ | $\mathrm{v}$ | $\mathrm{Ca}$ | $\begin{aligned} & P \\ & \alpha \end{aligned}$ | $\mathrm{La}$ ppm | $\mathrm{cr}$ | $\begin{gathered} M g \\ X \end{gathered}$ | $\begin{gathered} \text { Ba } \\ \text { ppm } \end{gathered}$ | $\begin{array}{r} 7 i \\ \% \end{array}$ |  | $\begin{aligned} & \mathrm{Al} \\ & \mathbf{x} \end{aligned}$ | $\begin{gathered} \mathrm{Ne} \\ \chi \end{gathered}$ | $\begin{aligned} & x_{1} \\ & x_{1} \end{aligned}$ | $\underset{p p m}{W}$ | $81$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| L2+00N $2+50 \mathrm{~N}$ | 2 | 53 | 2 | 56 | . 2 | 25 | 22 | 1113 | 4.60 | 7 |  | 5 | No | 1 | 20 | .2 | 2 | 2 | 148 | . 40 | . 041 | 5 | 80 | . 33 | 19 | . 53 |  | 4.32 | . 02 | . 02 | 3 | 2 | 3 | 4 |
| $12+00 \mathrm{~W} 2+25 \mathrm{~N}$ | 1 | 37 | 4 | 56 | . 1 | 22 | 15 | 509 | 6.25 | 9 |  | 5 | ND | 1 | 21 | . 5 | 2 | 2 | 182 | . 37 | . 026 | 4 | 80 | . 23 | 16 | . 54 |  | 3.83 | . 02 | . 02 | 2 | 2 | 3 | 4 |
| $12+00 \mathrm{~W} 2+00 \mathrm{~N}$ | 1 | 32 | 10 | 56 | .1 | 15 | 11 | 186 | 7.16 | 9 |  | 5 | ND | 1 | 24 | . 5 | 2 |  | 213 | . 42 | . 022 | 2 | 85 | . 23 | 15 | . 64 |  | 3.29 | . 02 | . 02 | 2 | 2 | 1 | 7 |
| L2+00W 1+75N | 1 | 39 | 7 | 55 | . 2 | 13 | 22 | 458 | 8.57 | 8 |  | 5 | ND | 1 | 17 | . 6 | 2 | 2 | 209 | . 33 | . 028 | 6 | 94 | . 17 | 15 | . 61 | 2 | 5.49 | . 02 | . 02 | 1 | 2 | 1 | 5 |
| L2+00W 1+50N | 1 | 37 | 7 | 70 | . 4 | 16 | 11 | 211 | 7.38 | 13 |  | 5 | ND | 1 | 21 | .4 | 4 | 2 | 221 | . 43 | . 018 | 4 | 86 | . 23 | 18 | . 62 | 8 | 4.58 | . 02 | . 02 | 3 | 4 | 3 | 3 |
| L2+004 1+25 | 5 | 190 | 10 | 86 | .1 | 31 | 98 | 5112 | 4.45 | 3 | 5 | 5 | MD | 1 | 21 | .2 | 2 | 2 | 255 | . 40 | . 053 | 8 | 99 | . 27 | 44 | . 36 |  | 7.41 | . 02 | . 02 | 1 | 2 | 2 | 6 |
| L2+00W 1+00N | 4 | 25 | 10 | 61 | . 2 | 10 | 16 | 487 | 8.11 | 9 | 5 | 5 | ND | 1 | 24 | . 7 | 2 |  | 276 | . 47 | . 019 | 4 | 70 | . 16 | 22 | . 80 | 2 | 2.76 | . 02 | . 02 | 1 | 2 | 1 | 3 |
| $\mathrm{L} 2+00 \mathrm{NO} 0+75 \mathrm{~N}$ | 2 | 92 | 7 | 70 | . 2 | 29 | 25 | 1453 | 3.49 | 9 | 5 | 5 | ND | 1 | 26 | . 2 | 2 | 3 | 3122 | . 64 | . 039 | -8 | 74 | . 42 | 23 | . 43 |  | 4.94 | . 02 | . 02 | 3 | 2 | 3 | 2 |
| L2+00W $0+50 \mathrm{~N}$ | 2 | 68 | 6 | 59 | . 1 | 22 | 9 | 230 | 2.26 | 5 | 5 | 5 | ND | 1 | 23 | . 5 | 2 | 2 | 128 | . 49 | . 019 | 5 | 84 | . 35 | 22 | . 58 |  | 4.70 | . 02 | . 02 | 1 | 2 | 1 | 3 |
| $12+00 \mathrm{HO}$ | 2 | 20 | 5 | 33 | . 1 | 7 | 8 | 109 | 9.66 | 6 | 5 | 5 | no | 1 | 12 | . 2 | 2 | 2 | 2325 | . 24 | . 009 | 2 | 95 | . 13 | 7 | . 87 |  | 2.52 | . 01 | . 01 | 1 | 2 | 1 | 2 |
| L2+00W 0+00 | 11 | 113 | 4 | 41 | . 3 | 14 | 10 | 303 | 1.80 | 10 |  | 5 | ND | 1 | 59 | . 5 | 2 | 2 | 82 | 1.11 | . 036 | 6 7 | 40 | . 53 | 52 | . 28 |  | 4.00 | . 02 | . 04 | 2 | 2 | 1 | 9 |
| L2+00W 0+25s | 2 | 21 | 8 | 28 | . 2 | 4 | 7 | 95 | 6.77 | 5 | 5 | 5 | No | 1 | 11 | . 2 | 2 | 2 | 327 | . 24 | . 012 | 3 | 84 | . 12 | 9 | . 80 | 2 | 3.49 | . 01 | . 02 | 1 | 2 | 1 | 5 |
| L2+00W 0+50S | 1 | 30 | 13 | 34 | . 1 | 10 | 8 | 195 | 5.73 | 9 | 5 | 5 | ND | 1 | 26 | . 2 | 2 | 2 | 2181 | . 53 | . 008 | 4 | 78 | . 30 | 10 | . 58 |  | 4.04 | . 02 | . 01 | 1 | 2 | 1 | 5 |
| L2+00W 0+75s | 1 | 31 | 3 | 48 | . 6 | 12 | 8 | 147 | 4.50 | 3 | 5 | 5 | NO | 1 | 22 | . 2 | 2 | 2 | 2182 | . 48 | . 025 | 3 | 65 | . 29 | 12 | . 61 |  | 2.97 | . 02 | . 02 | 2 | 2 | 2 | 1 |
| 12+00W 1+00S | 1 | 23 | 4 | 31 | . 1 | 8 | 6 | 127 | 3.98 | 3 | 5 | 5 | ND | 1 | 22 | . 2 | 2 | 2 | 2219 | . 41 | . 013 | 3 | 57 | . 18 | 13 | . 84 | 2 | 2.06 | . 01 | . 01 | 1 | 2 | 2 | 5 |
| L2+00w 1+25s | 1 | 60 | 2 | 44 | . 2 | 29 | 12 | 230 | 3.90 | 5 | 7 | 7 | NB | 1 | 22 | . 5 | 2 |  | 2125 | . 58 | . 025 | 7 | 60 | . 47 | 16 | . 49 |  | 4.46 | . 02 | . 02 | 2 | 2 | 1 | 1 |
| L2+00N 1+50S | 1 | 26 | 9 | 45 | . 3 | 9 | 9 | 152 | 8.44 | 7 | 5 | 5 | ND | 2 | 16 | . 7 | 2 |  | 2236 | . 34 | . 018 | 3 | 83 | . 17 | 10 | . 69 |  | 3.99 | . 02 | . 02 | 2 | 2 | 1 | 4 |
| L2+00N 1+75S | 1 | 26 | 3 | 36 | . 1 | 13 | 7 | 203 | 5.39 | 7 | 5 | 5 | N0 | 1 | 16 | . 2 | 2 |  | 2189 | . 34 | . 019 | 3 | 71 | . 19 | 16 | . 60 |  | 4.33 | . 01 | . 02 | 1 | 2 | 2 | 3 |
| L2+00W 2+00s | 1 | 40 | 2 | 36 | . 1 | 12 | 9 | 231 | 1.95 | 4 | 5 | 5 | ND | 1 | 24 | . 2 | 2 | 2 | 288 | . 52 | . 035 | 4 | 44 | . 28 | 19 | . 38 | 3 | 3.07 | . 02 | . 01 | 2 | 2 | 2 | 4 |
| L2+00W 2+25S | 1 | 34 | 6 | 39 | . 4 | 15 | 9 | 127 | 7.64 | 14 |  | 5 | ND | 1 | 13 | . 6 | 3 | 2 | 2190 | . 32 | . 018 | 85 | 198 | . 22 | 9 | . 61 | 3 | 6.51 | . 01 | . 01 | 2 | 3 | 2 | 2 |
| L2+00W 2+50S | 1 | 53 |  | 80 | . 1 | 33 | 43 | 2096 | 3.93 | 11 |  |  | ND | 1 | 32 | . 3 | 2 |  | 2124 | . 64 | . 050 | 5 | 61 | . 59 | 25 | . 43 |  | 4.77 | . 02 | . 03 | 2 | 2 | 2 | 2 |
| $10+002+50 \mathrm{H}$ | 1 | 42 | 3 | 62 | . 1 | 8 | 4 | 194 | . 74 | 2 | 5 | 5 | ND | 1 | 37 | . 2 | 2 | 2 | 262 | . 86 | . 056 | 67 | 39 | . 18 | 31 | . 19 |  | 2.23 | . 03 | . 03 | 1 | 2 | 1 | 4 |
| $10+002+25 \mathrm{~N}$ | 1 | 70 | 3 | 64 | . 4 | 28 | 11 | 245 | 5.64 | 15 |  | 5 | ND | 1 | 24 | . 6 | 6 | 2 | 2155 | . 54 | . 029 | 5 | 94 | . 46 | 22 | . 51 |  | 7.29 | . 02 | . 03 | 2 | 3 | 4 | 14 |
| $10+002+00 \mathrm{~N}$ | 1 | 29 | 7 | 53 | . 1 | 11 | 10 | 188 | 7.73 | 5 | 7 | 7 | ND | 1 | 20 | . 2 | 2 | 2 | 2243 | . 36 | . 024 | 4 | 76 | . 18 | 16 | . 68 | 2 | 3.78 | . 02 | . 02 | 1 | 2 | 1 | 2 |
| $10+001+75 \mathrm{~N}$ | 1 | 51 | 4 | 60 | . 2 | 19 | 11 | 220 | 6.26 | 10 |  | 7 | ND | 1 | 21 | . 2 | 2 | 2 | 2178 | . 43 | . 018 | 84 | 84 | . 30 | 17 | . 54 | 5 | 6.47 | . 02 | . 02 | 2 | 2 | 1 | 2 |
| LO+00 $1+50 \mathrm{~N}$ | 1 | 25 | 5 | 47 | . 2 | 10 | 9 | 175 | 6.71 | 11 |  | 5 | ND | 1 | 21 | .2 | 2 | 2 | 2282 | . 46 | . 014 | 4 | 65 | . 18 | 16 | . 84 |  | 2.72 | . 02 | . 02 | 2 | 2 | 1 | 2 |
| LO+00 1+25N | 1 | 46 | 2 | 45 | . 3 | 18 | 11 | 201 | 4.35 | 10 |  | 5 | no | 1 | 22 | . 2 | 2 | 2 | 2150 | . 55 | . 017 | 7 | 67 | . 40 | 10 | . 60 | 2 | 3.64 | . 02 | . 02 | 3 | 2 | 1 | 2 |
| L0+00 1+00N | 1 | 19 | 11 | 39 | . 4 | 90 | 10 | 114 | 10.37 | 9 | 5 | 5 | ND | 1 | 15 | . 6 | 2 |  | 2317 | . 34 | . 011 | 13 | 81 | . 15 | 10 | . 83 |  | 2.50 | . 01 | . 02 | 1 | 2 | 1 | 6 |
| $10+000+75 \mathrm{~N}$ | 1 | 28 | 8 | 44 | . 1 | 15 | 11 | 222 | 4.96 | 6 | 5 | 5 | ND | 9 | 21 | . 2 | 2 |  | 2206 | . 50 | . 020 | 0 3 | 63 | . 30 | 17 | . 67 |  | 3.07 | . 02 | . 02 | 1 | 2 | 1 | 2 |
| LO+00 $0+50 \mathrm{~N}$ | 1 | 29 | 4 | 42 | . 1 | 19 | 6 | 120 | 4.02 | 5 | 5 | 5 | ND | 1 | 22 | .2 | 2 | 2 | 2193 | . 42 | . 013 | 3 | 69 | . 17 | 19 | . 75 | 2 | 2.20 | . 02 | . 01 | 1 | 2 | 1 | 5 |
| L0+00 $0+25 \mathrm{~N}$ | 1 | 42 | 6 | 69 | . 1 | 26 | 20 | 278 | 2.91 | 11 |  | 5 | ND | 1 | 36 | . 2 | 2 | 2 | 2112 | . 94 | . 015 | 5 | 45 | . 56 | 60 | . 54 | 10 | 2.69 | . 03 | . 02 | 1 | 2 | 1 | 3 |
| L0+00 0+00 | 21 | 90 | 9 | 51 | . 1 | 8 | 36 | 549 | 9.29 | 15 |  | 5 | NO | 1 | 20 | . 9 | 3 | 4 | 4194 | . 37 | . 040 | 3 | 51 | . 29 | 17 | . 36 | 4 | 3.19 | . 02 | . 02 | 3 | 4 | 1 | 2 |
| $10+000+255$ | 2 | 16 | 12 | 48 | . 2 | 5 | 4 | 103 | 1.87 | 2 | 5 | 5 | ND | 1 | 20 | . 2 | 2 |  | 2164 | . 33 | . 045 | 5 | 35 | . 10 | 18 | . 67 |  | 1.06 | . 04 | . 07 | 9 | 2 | 1 | 6 |
| LO+00 0+50s | 1 | 59 | 5 | 46 | . 2 | 28 | 12 | 215 | 6.06 | 12 |  | 5 | ND | 1 | 20 | . 3 | 2 |  | 2156 | . 48 | . 019 | 9 6 | 101 | . 53 | 15 | . 59 | 2 | 6.24 | . 02 | . 02 | 1 | 2 | 1 | 3 |
| $10+000+755$ | 1 | 55 | 7 | 56 | . 1 | 19 | 8 | 203 | 4.34 | 3 | 5 | 5 | ND | 1 | 24 | . 2 | 2 | 2 | 2142 | . 50 | . 032 | 25 | 53 | . 33 | 19 | . 44 | 4 | 2.60 | . 02 | . 03 | 1 | 2 | 1 | 5 |
| LO+00 1+00S STANDARD C/AU-S | 19 | 21 58 | 9 42 | 31 133 | 1 7.1 | 7 74 | 4 32 | 98 1092 | 1.52 4.03 | 40 | $\begin{array}{r}5 \\ 20\end{array}$ | 5 | ND 7 | 1 39 | 21 53 | 18.8 | 2 | 20 | $\begin{array}{r}2110 \\ \hline 58\end{array}$ | . 38 | . 014 | $4 \begin{array}{rr}3 \\ 39\end{array}$ | 39 | . 17 | 18 180 | . 64 | 3 | 1.41 1.91 | . 02 | . 02 | 11 | 2 | 1 | 49 |

ICP - . 500 GRAM SAMPLE IS DIGESTED WITH SML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO IO ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B $W$ A AND LIMITED FOR NA K AMO AY AU DETECTION LIMIT $8 Y$ ICP IS 3 PPM.

- SAMPLE TYPE: P1 TO P2 SOIL P3 SILY P4 ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 1S GM SAMPLE.



ISP - . 500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O 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. AU DETECTION LIMIT BY IMP IS 3 PPM.
SAMPLE TYPE: P1 SOIL/P2 SILT P3 MOSS MAT P4 ROCK AU* ANALYSIS BY ACID LEACH/gA FROM 10 GM SAMPLE.



ICP - . 500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-NNO3-H2O AT 9S DEG. C FOR ONE HOGR AND IS DILUTED TO 10 ML WITH MATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AMD LIMITED FOR WA K AND AL AU DETECTION LIMIT BY ISP IS 3 PPM.

- SAMPLE TYPE: PT 10 PL SOIL PS SILT PG ROCK AU ANALYSIS BY ACID LEACH/AA FROM IO GM SAMPLE.

DATE RECEIVED: JUL 71991 omer armorer mantra: Gr dy "I/4 41. stamper ax

