#### Daiwan Engineering Ltd. 1030-609 Granville Street, Vancouver, B. C. Canada. V7Y 1G5 Phone: (604) 688-1508

## **GEOLOGICAL AND GEOCHEMICAL SAMPLING REPORT**

#### **ON THE**

#### KING MINERAL CLAIMS

#### NORTH VANCOUVER ISLAND, BRITISH COLUMBIA

## NTS: 92L/13E

Latitude: 50° 47' Longitude: 127° 43'

For

Consolidated T.C. Resources Ltd. 1030 - 609 Granville Street Vancouver, B.C. V7Y 1G5

By

David J. Pawliuk, B.Sc., P.Geol.

and

**Ron Bilquist** 

June 15, 1991

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### **INTRODUCTION**

In August 1990, at the request of Mr. Ron Philp, Director of Consolidated T.C. Resources Ltd. (formerly Transtel Communications Corporation), Daiwan Engineering Ltd. continued mapping and sampling activity on the King claim group. This work was follow-up to prospecting carried out in June 1990. In October the company staked additional claims to the west of the original claim block, and extended the area of sampling. In April of 1991 further reconnaissance exploration was carried out in the northwest of the claim block.

This report details the geology of the claim area, and provides maps and sample descriptions for the current work program.

## LOCATION, ACCESS AND TOPOGRAPHY

The eastern portion of the King claims is easily accessed by a good logging road which runs north from the Port Hardy-Holberg road approximately 7 km west of Port Hardy. The road follows the south side of Georgie Lake, and enters the property at the west end of Georgie Lake. It then continues through recently logged forest land on the eastern portion of the claims and terminates near the Shushartie River in the vicinity of the King 25 claim.

Much of the eastern area of the property has been disrupted by logging activity and some of the creeks shown on the 1:50000 topographic map-sheet no longer exist.

Access to the western portion of the enlarged claim block is either by foot, helicopter or float plane into Lake of the Mountains. There was on old trail across the western portion of the property, which headed to Shushartie and on to Shuttleworth and Cape Scott. This, however was abandoned early this century.

## HISTORY

Prior to exploration on the property by Consolidated T.C. Resources Ltd. there was no recorded work on the property, except for the 1989 moss mat sampling program by the BC Government, and the 1962 Government aeromagnetic survey.





The claim map for the area shows one group of old claims located to the west of Lake of the Mountains. These claims were staked for Imperial Oil in 1972, however no work was reported, and the claims lapsed the following year. There is a moderate aeromagnetic anomaly within the area covered by the old claims.

In June 1990 the property consisted of 28 contiguous 2-post claims originally staked in June 1989 to cover anomalous moss matt samples reported in the B.C.G.S. Regional Geochemical Release.

The June 1990 exploration program was carried out over the entire 28 units and consisted of reconnaissance prospecting and the panning of several creeks on the property to check for the presence of heavy metals.

In August and September 1990, further mapping and sampling was carried out on the property. In October a further 24 claims, (totalling 43 units), were staked to protect mineral showings on the western portion of the claims. Further mapping and sampling was carried out after the claim staking. In April 1991 an attempt was made to determine the geology of the northwestern portion of the claim block. A prospecting program on the adjacent ground to the west was continued onto the King claims. This prospecting was hampered by a late snowfall and excess water in the creeks.

### **REGIONAL GEOLOGY**

Vancouver Island north of Holberg and Rupert inlets is underlain by rocks of the Vancouver Group. These rocks range in age from Upper Triassic to Lower Jurassic. They are intruded by rocks of Jurassic and Tertiary age and disconformably overlain by Cretaceous sedimentary rocks. Figure 4 shows the 1:1,000,000 geological mapping of the northern part of the island.

Faulting is prevalent in the area. Large-scale block faults with hundreds to thousands of metres of displacement are offset by younger strike-slip faults with displacements up to 750 metres (2,500 feet).

The Vancouver Group is described as follows:

#### (a) Basal Sediment - Sill Unit: Middle and Upper Triassic Age

The basal sediment-sill unit consists of laminated to graded-bedded black shales and siltstones, silicified and invaded by diabase sills. The entire unit is estimated as 750-900 metres (2,500-3,000 feet) with the sedimentary portion being about 180 metres (600 feet) thick.

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### (b) Karmutsen Formation: Upper Triassic Age

Karmutsen Formation consists of 3,000-6,000 metres (10-20,000 feet) of volcanic flows, pyroclastics and minor sediments. It includes three distinct units: a lower pillow lava unit, a middle pillow breccia unit, and an upper lava flow unit. The latter consists of predominantly porphyritic and amygdaloidal basalt flows, individual flows of which range from 1-30 metres (to 100 feet) thick.

Two thin bands of limestone occur near the top of the Karmutsen Formation. The distribution of limestone outcrops is erratic and suggests a series of lenses at the same general stratigraphic horizon rather than one continuous bed.

The lower contact of the formation has not been observed on the northern part of Vancouver Island. The upper contact with limestone of the Quatsino Formation generally is sharp and easily recognized, although limestones and basalt locally are interbedded over a narrow stratigraphic interval at this contact.

Low-grade metamorphism of the Karmutsen Formation rocks has resulted in pervasive chloritization and amygdules filled with epidote, carbonate, zeolite, prehnite, chlorite, and quartz.

Basaltic rocks along contacts with intrusive stocks are in many places converted to dark-coloured hornblende hornfels. Skarn zones occur sporadically along these contacts, both in the inter-lava limestones and in the basalts.

#### (c) Quatsino Formation: Upper Triassic Age

The Quatsino Formation ranges from 60-1,000 metres (200-3,500 feet) in thickness and consists almost entirely of limestone with a few thin andesite or basalt flows. It has conformable contacts with both the overlying Parson Bay sediments and the underlying Karmutsen volcanics. The upper contact with the Parson Bay Formation is gradational with limestone grading upward into carbonaceous argillites.

Within the contact metamorphic/metasomatic aureoles adjacent to intrusive stocks, skarn development and silicification of limestone, accompanied by chalcopyrite-magnetite or galena, sphalerite and silver mineralization has been noted.

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#### (d) <u>Parson Bay Formation: Upper Triassic Age</u>

The Parson Bay Formation consists of between 60-360 metres (200-1,200 feet) of argillite, minor limestone, agglomeratic and tuffaceous limestone, tuff, quartzite and minor conglomerate. At both its base and top, the unit exhibits gradational contacts with the Quatsino and Harbledown formations.

On a regional scale, the rocks are unmetamorphosed. Locally, adjacent to intrusive contacts, pyritemagnetite replacement bands up to one-half inch thick in banded tuffs have been observed.

#### (e) Harbledown Formation: Lower Jurassic Age

The Harbledown Formation consists of 485 metres (1,600 feet), a non-volcanic argillite-greywacke sequence separating the Parson Bay from the Bonanza Formation.

#### (f) Bonanza Formation: Lower Jurassic Age

The Bonanza Formation is approximately 1,500 metres (8,500 feet) thick. The lower portion consists of bedded and massive tuffs, formational breccias and rare amygdaloidal and porphyritic flows, in the compositional range andesite to basalt. Porphyritic dykes and sills intrude the lower part of the unit. In the upper part of the Bonanza, rhyodacite flows and breccias become more numerous and are interbedded with andesite and basalt flows, tuffs and tuff breccias.

Regional metamorphism within the Bonanza Volcanics is very low grade, possibly zeolite facies. Plagioclase commonly is albitized and saussuritized. Chlorite, epidote and laumontite occur within the matrix of volcanic breccias, in veinlets, and in amygdules. Coarse intraformational breccias locally are hematized.

Biotite and amphibolite hornfelses occur adjacent to stocks which intrude the Bonanza Volcanics.

"Pyrobitumen", a black hydrocarbon erratically distributed within the Bonanza rocks, generally occurs as fracture fillings or in the centre of zeolite-carbonate veins. Its distribution is not related to the position of the intrusive stocks.

#### Cretaceous Sediments

The Vancouver Group is unconformably overlain by non-marine Cretaceous sediments of the Longarm Formation which are estimated to be about 300 metres (1,000 feet) thick in the Port Hardy area. These

sediments, consisting of conglomerate, sandstone, greywacke, and siltstone and some carbonaceous and impure coal seams, occupy local basins. Early coal mining in the district was from several of these basins.

## Intrusive Rocks

The Vancouver Group rocks are intruded by a number of Jurassic-aged stocks and batholiths. In the Holberg Inlet area a belt of northwest-trending stocks extend from the east end of Rupert Inlet to the mouth of Stranby River on the north coast of Vancouver Island.

Quartz-feldspar porphyry dikes and irregular bodies occur along the south edge of the belt of stocks. Dykes are characterized by coarse, subhedral quartz and plagioclase phenocrysts set in a pink, very fine grained, quartz and feldspar matrix. They are commonly extensively altered and pyritized. At Island Copper Mine, these porphyries are enveloped by altered, brecciated, mineralized Bonanza wallrocks. The porphyries, too, are cut by siliceous veins, pyritized, extensively altered, and are mineralized where they have been brecciated. The quartz-feldspar porphyries are thought to be differentiates of middle Jurassic, felsic, intrusive rocks.

Other intrusive rocks of lesser significance include felsic dykes and sills around the margins of some intrusive stocks; dykes of andesitic composition, which cut the Karmutsen, Quatsino and Parson Bay formations, and represent feeders for Bonanza volcanism; and Tertiary basalt-dacite dykes intruding Cretaceous sediments.

## **Structure**

The structure of the rocks north of Holberg and Rupert inlets is that of shallow synclinal folding along a northwesterly fold axis. The steeper southwesterly limbs of the folds have apparently been truncated by faults roughly parallel to the fold axis. Failure of limestone during folding may have influenced the location of some of the faulting as indicated by their proximity of the Dawson and Stranby River faults to the Quatsino horizon. Transverse faulting is pronounced and manifested by numerous north and northeasterly trending faults and topographic lineaments (Figure 4).

The northern part of Vancouver Island lies in a block faulted structural setting with post Lower Cretaceous northwesterly trending faults apparently being the major system (Figure 4). This system causes both repetition and loss of parts of the stratigraphic section, with aggregate movement in a vertical sense in the order of tens to hundreds of metres. The most significant of these fault systems trends west to northwest following Rupert and Holberg inlets. Near the west end of Holberg Inlet this fault splits, with the main branch following Holberg Inlet and the other branch passing through the west side of the Stranby River valley. Another northwesterly to westerly system passes through William Lake and still another, smaller system passes through Nahwitti Lake.

Northeasterly trending faults comprise a subordinate fault system. In some cases, apparent lateral displacement, in the order of a several hundred metres, can be measured on certain horizons. Movement, however, could be entirely vertical with the apparent offset resulting from the regional dip of the beds.

Recent computer modelling of the airborne magnetometer data has provided a very clear understanding of the relationship of secondary conjugate sets of northeast and north westerly faults related to the major west-northwest trending breaks. These conjugate fault sets appear to relate directly to the significant mineralization at the Island Copper, Hushamu, Hep and Red Dog copper/gold deposits.

Generally, regional dip of the bedding is gentle to moderate southwesterly. Locally, in the area west of Holberg, dips are much steeper, but these are in close proximity to major faults. There is little folding or flexuring of bedding visible, except along loci of major faults where it is particularly conspicuous in thinly bedded sediments of Lower Bonanza. Bedding is generally inconspicuous in massive beds of Karmutsen, Quatsino and Bonanza rocks, particularly inland where outcrops are widely scattered.

## **REGIONAL MINERALIZATION**

A number of types of mineral occurrences are known on Northern Vancouver Island. These include:

- 1. Skarn deposits: copper-iron and lead-zinc skarns
- 2. Copper in basic volcanic rocks (Karmutsen): in amygdules, fractures, small shears and quartzcarbonate veins, with no apparent relationship to intrusive activity
- 3. Veins: with gold and/or base metal sulphides, related to intrusive rocks
- 4. Porphyry copper deposits: largely in the country rock surrounding or enveloping granitic rocks and their porphyritic phases.

Figure 5 shows the location and diversity of the mineral deposits recognized in the North Vancouver Island area.

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Utah Mines Ltd., in their many years of exploration in the Holberg-Rupert Inlets area, focused their attention on the search for copper porphyry deposits. Their exploration resulted in locating and developing the Island Copper Mine. In addition, they located other areas of porphyry mineralization, as well as two areas anomalous in gold and one area with massive sulphide mineralization within their properties.

### PROPERTY GEOLOGY AND MINERALIZATION

A compilation of the geology is presented in figure 3 with notes against significant outcrops and mineralization.

The geology on the claims appears to be primarily Karmutsen Formation light to dark green amydgaloidal andesite and basalt flows with some pyroclastic rocks and some metasediments in the central portion of the claims.

The pyroclastics occur in outcrop near the end of the spur road in the north central part of the claims. Malachite in float was found in road fill about half way up the spur road. This was traced to outcrop a little further up the road. Disseminated bornite was located in a dark green amygdaloidal "andesite" at a quarry. This rock unit has a discrete contact with a light green amygdaloidal andesite which has been altered at the contact. Occasional malachite can be found along the contact. Further up the road quartz veinlets up to 1 cm in width are found cutting green amygdaloidal andesites. Some of these veinlets are mineralized with malachite, chalcopyrite and bornite.

The B.C.G.S. regional sampling program showed a high (180 ppb) gold value from a creek draining from the west-northwest in the southeastern part of the property. A few tiny quartz veins were found in this creek and one was sampled but no extensive alteration was found.

Further siliceous alteration found was in outcrops along a creek in the southeast corner of the property. This creek flows out of the Lake of the Mountains into Georgie Lake. The rock appears to be a very light green amygdaloidal andesite which has been highly fractured and in some areas flooded with silica. Epidote occurs on some fractures. One larger quartz vein was sampled.

The September and October exploration continued with the heavy mineral sampling and sample collection. The main areas of activity were to the western portion of the claim block, and in the newly staked ground.

A number of large boulders of quartz containing pyrite, chalcopyrite and bornite, with occassional malachite and azurite were found along the north shore of Lake of the Mountains when the water was low. Samples from these assayed up to 0.65% Cu, with traces to 300 ppb gold (Appendix 1). These boulder trains appear to be fairly much in place, indicating a sizeable area of veining up to 0.5 metres in width.

To the northeast of Lake of the Mountains, at the west end of a small linear east-west trending lake, quartz boulders containing bornite and chalcopyrite assayed 0.22% Cu and 1150 ppb Au(#50237).

Southeast of Lake of the Mountains, heading towards Georgie Lake, a number of quartz veins were noted cutting an altered andesite tuff. One of the larger quartz veins showed disseminated chalcopyrite (#50230-31). Upstream of this locality later sampling (#50240-46) of similar quartz veins within altered andesitic pyroclastics gave copper values to 1.7% Cu.

Later traverses were completed along the drainage east of Shusharite Mountain, and along lines north of Lake of the Mountains following the claim lines.

The drainages east of Shushartie Mountain show widely spaced zones of small quartz veins and stringers which assay up to 0.45% copper, and in places up to 103 ppb gold (#50250-70). Further prospecting is required in this area when water levels are lower. In the north central portion of the area a large area of epidote skarn indicates a probable intrusive into the metasediments. Sample 50215 was from this area. This metasediment showed some arsenopyrite mineralization. Further mapping and prospecting is required to evaluate this area.

The Shushartie River bed was extensively sampled for gold mineralization following the discovery of a number of parallel, large quartz veins in shear zones along the river bed. These quartz veins are associated with epidote and calcite mineralization and locally contain chalcopyrite and pyrite. Just west of the west end of the King 30 claim this veining showed traces of chalcopyrite, but assayed only 0.03% Cu (#50211, 57548). The June 1990 moss mat sampling gave values of 590 ppb gold (#32669) in the river east of this occurrence. Further prospecting located quartz float assaying up to 0.16% Cu in the river bed on the eastern side of the King 24 claim (#57546). The government moss mat sampling gave values of 52 ppm copper further upstream and east of sample site 57546 (Figure 3).

The extensive quartz vein systems located in the river bed require further mapping and sampling, as they appear to be related to a major regional fault system. On the south side of the river the rocks are predominantly amygdaloidal andesites with locallized quartz-sulphide veining. On the north side the andesites are relatively fresh and unaltered. Little or no quartz was seen in the northern drainages.

### SAMPLE COLLECTION AND ANALYSIS

Locations for all of the samples collected on the property are shown on figure 3, and sample descriptions are detailed in appendix 2. The rock samples were all analyzed for 30 element ICP and for gold by acid leach/atomic absorption on a 10 gm sample at Acme Analytical Labs in Vancouver. The panned samples collected during the programs were sieved to -100 mesh and also analyzed using the same analytical technique. All certificates of analysis are to be found in appendix 1.

A total of eighty three samples was collected from the property between June 20, 1990 and April 20, 1991. Fourteen of these samples were heavy mineral panned concentrates.

### CONCLUSIONS AND RECOMMENDATIONS

The King property is located in a previously unexplored region of northern Vancouver Island. The preliminary exploration carried out on the property has identified a number of areas mineralized with copper-bearing quartz veins, and further areas with extensive epidote alteration. In one area a quartz vein sample yeilded a gold value of 1150 ppb, along with 0.22% copper.

A major zone of quartz veining in a regional shear system along the bed of the Shushartie River was discovered in the program. The BC Government Moss Mat sampling program identified significant gold values at this locality. The present program identified significant copper mineralization within the veins, however gold values were low in the samples taken.

The shoreline of Lake of the Mountains hosts a large number of chalcopyrite- and bornite-bearing quartz boulders which appear to have been locally derived. Quartz veins were found west and east of this area within altered andesitic tuffs.

The present program has highlighted the potential of the property to host high grade copper mineralization in veins, and has confirmed the auriferous character of some of the mineralization. This auriferous nature was indicated by the regional sediment surveys by the BC Government.

The next phases of exploration on the property should be directed to detailing the extent of the quartz vein mineralization, and delineating the more significant auriferous vein sets. This can be accomplished by further detailed prospecting and mapping, and by gechemical soil sampling across the more prospective areas of the property.

One of the least explored prospective areas is the epidote skarn zone near the centre of the property. The most extensive zones of presently known mineralization, however, are in the south and southeast, near the Lake of the Mountains and along the drainage between Lake of the Mountains and Georgie Lake.

## STATEMENT OF COSTS

1.0 Personnel		
P. Dasler, Project Supervisor - 2.7 days @ \$380/day	\$ 1,026.00	
D. Pawliuk, Geologist - 1.0 day @ \$340/day	340.00	
R. Husband, Geologist - 0.5 day @ \$260/day	130.00	
G. Sutton, Geologist - 1.0 day @ \$250/day	250.00	
R. Bilquist, Prospector - 21.5 days @ \$260/day	5,590.00	
K. Bilquist, Field Technician - 16.0 days @ \$200/day	3,200.00	
L. Allen, Field Technician - 2.0 days @ \$260/day	520.00	
T. Sheridan, Office Assistant - 2.0 days @ \$220/day	<u>440.00</u>	11,496.00
2.0 Food and Accommodation	713.62	
3.0 Transportation (4x4 truck, supplies)	1,802.67	
4.0 Field Supplies (flagging, topo, etc.)	40.26	
5.0 Office Costs (typing, copying)	83.89	
6.0 Helicopter	1,558.69	
7.0 Drafting, Maps	172.08	
8.0 Equipment rental	45.00	
9.0 Telephone	5.25	
10.0 Analyses	1,053.00	
11.0 Miscellaneous	301.16	
12.0 Disbursement fee	1,152.13	
13.0 GST (1991 only)	181.73	_7,109.48
	TOTAL	\$ <u>18,605.48</u>

#### **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 21 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 21 years.
- 4.0 This report is based on property examinations during September and October, 1990 and during April, 1991.
- 5.0 I have no interest in the King property or in Consolidated T.C. Resources Ltd. nor do I expect to receive anything.

Ron Bilguest .

Ron Bilquist Prospector June 15, 1991

#### **CERTIFICATE OF QUALIFICATIONS**

- I, David J. Pawliuk, do hereby certify that:
- 1.0 I am a geologist for Daiwan Engineering Ltd. with offices at 1030 609 Granville Street, Vancouver, British Columbia, V7Y 1G5.
- 2.0 I am a graduate of the University of Alberta, Edmonton, Alberta with a degree of B.Sc., Geology.
- 3.0 I am a Member, in good standing, of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
- 4.0 I have practised my profession continuously since 1975.
- 5.0 This report is based on my personal fieldwork on the King property and on other properties at northern Vancouver Island, and from reports of Professional Engineers and others working in the area.
- 6.0 I have no direct nor indirect interest in the King and surrounding properties, or in the shares of Consolidated T.C. Resources Ltd., nor do I expect to receive any such interest.
- 7.0 This report is prepared for British Columbia Ministry of Energy, Mines and Petroleum Resources assessment purposes only.



## <u>APPENDIX I</u>

## **Certificates of Analysis**

#### 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

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#### GEOCHEMICAL ANALYSIS CERTIFICATE

Daiwan Engineering Ltd. File # 90-4260 Page 1

1030 - 609 Granville St., Vancouver BC V7Y 1G5

SAP	IPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe ۲	As ppm	U ppm	Au ppin	Th ppm	Sr ppn	Cd ppna	Sb ppm	Bi ppm	V ppm	Ca X	P X	La ppm	Cr ppm	Hg X	Ba ppm	Ti X	BAL ppm X	Na X	K X	<b>N</b> N	Au* ppb
A 5	7543	3	165	7	19	े.1	21	14	414	2.60	4	6	ND	1	31	.2	2	2	89	4.73	010	2	30	.28	2	.32	6 2.58	-01	.01	3	23
A 5	7544	1	70	8	19	89 <b>1</b> .	18	10	364	2.49	7	5	ND	1	6	.2	2	2	83	1.50	006	2	23	.78	2	.22	4 1.52	-01	.01	2	8
A 5	7545	2	152	- 3	28	•1	27	15	370	3.88	6	7	ND	1	23	2.8	2	2	141	6.10 :.	027	2	26	.65	2	_45	7 2.99	•01	.01	2	33
A 5	7546	1	1639	- 4	- 44	<b>1</b>	- 34	- 21	615	4.74	8	5	ND	1	172	.2	2	2	161	4.02	063	5	18	1.41	3	.60	13 2.68	.03	.01		3
A 5	7547	2	1062	9	46	-3	24	17	526	5.55	7	6	ND	1	24	.6	3	2	137	7.12	058	7	20	.91	5	.34	25 4.72	.01	.01	2	4
A 5	7548	1	373	2	51	.1	61	28	678	5.27	3	5	ND	1	107	.2	5	2	126	2.90	040	2	62	2.24	3	.44	11 3.28	.01	.01		3
A 5	7549	1	2621	9	- 29	3 <b>. 1</b>	- 46	19	567	4.76	3	5	ND	1	- 36	.5	5	2	137	5.92 🖟	036	2	- 47	1.80	3	.32	13 4.02	.01	.01		13
A 5	7550	1	264	9	29	ી મા	- 38	18	400	4.21	2	5	ND	1	47	.2	2	2	132	5.40	045	2	38	1.35	1	.43	11 3.75	.01	.01	2	1
D 5	0202	2	694	6	53	.2	27	19	559	5.23	6	8	ND	1	21	- <b>4</b>	6	2	149	6.94 .	057	5	25	.97	5	.32	25 4.68	.01	.01		- 4
D 5	0203	1	83	2	35	.1	25	15	754	3.41	7	5	ND	1	65	.2	2	2	107	5.29	020	2	29	1.24	1	.26	2 1.97	.01	.01	1	78
0 5	0204	1	51	2	23	1	19	11	590	2.40	3	5	ND	1	66	.2	2	2	79	2.89	012	2	26	.99	1	.21	4 1.44	.01	.01		4
0 5	0208	2	50	3	7	1	15	6	187	1.78	- 3	5	ND	1	21	.2	2	2	52	3.64	007	2	11	.26	1	.13	3 2.04	.01	.01	1	- 3
0 5	0209	1	50	5	32	_ <b>1</b>	29	17	. 468	4.41	3	5	ND	1	17	.2	2	2	137	5.06 .	025	2	33	1.01	6	.33	16 3.60	.01	.01	- 3	42
0 5	0211	1	30	5	11	.1	20	8	184	2.02	3	5	ND	1	21	.2	2	3	86	4.38	019	2	- 14	.30	2	.28	11 2.49	.01	.01		1
D 5	0212	1	1148	6	43	1	61	28	563	5.10	3	5	ND	1	93	.2	4	2	133	3.56	046	2	45	1.96	2	.52	6 3.32	.01	.01	t	1
0 5	0213	1	40	2	18	<b>.</b> 1	23	10	188	2.44	2	6	ND	1	71	.2	2	2	80	3.90	005	2	36	.41	1	.22	9 2.59	.01	.01	2	5
lo 5	0214	2	20	8	29	S.1	25	12	320	4.43	4	5	ND	1	11	.2	2	2	153	3.36	030	3	53	.78	1	.41	6 2.54	01	.01	2	· 1
0 5	0215	5	71	3	37	.4	47	11	- 99	2.41	12	5	ND	1	62	.4	2	2	- 34	1,93	154	7	17	.05	32	.11	3.81	. 19	.04	2	5
<b>10</b> 5	0216	2	185	5	13	.3	21	9	219	1.99	3	5	ND	1	5	.2	2	2	41	3.02	800	2	20	.37	1	.12	2 1.90	.01	.01	2	- 4
0 5	0218	Z	2274	3	1	1.3	9	2	74	.58	2	5	ND	1	2	.2	2	4	13	.85	001	2	11	.07	1	.02	2.49	.01	.01		300
D 5	0219	4	2825	4	7	4.7	11	4	129	1.37	2	5	ND	1	3	.6	2	3	33	2.18	.001	2	42	. 15	1	<b>.06</b>	2 1.26	.01	.01		190
0 5	0220	1	2534	2	3	2.0	6	2	73	.78	2	5	ND	1	1	.3	2	2	14	1.46	001	2	7	.07	1	.02	2.8	.01	.01		27
D 5	0221	3	2691	4	1	3.1	10	1	67	.54	2	5	2	1	5	.3	2	2	17	.73 ,	001	2	10	.05	1	.01	2 .41	.01	.01	- 1 - <b>1</b> -	190
D 5	50222	2	4522	5	7	5.1	10	3	104	1.27	2	5	ND	1	2	.7	2	2	24	1.98	001	2	10	.11	1	.06	4 1.00	.01	.01	ſ	- 34
0 5	50223	5	6180	5	1	6.9	10	2	84	.56	2	5	ND	1	1	.3	2	2	16	1.72	001	2	46	.05	1	.01	3 1.0	.01	.01		55
0 9	50224	2	5924	3	1	2.8	12	4	88	.88	2	5	ND	1	9	.6	2	2	11	1.36	.001	2	9	.17	1	.01	2.9	.01	.01	1	17
D 5	50226	2	254	9	40	िंग	33	14	503	3.50	2	5	ND	1	114	.2	2	2	120	3.54	032	3	40	1.09	2	.39	4 2 7	.01	.01	3	27
DS	50227	2	458	7	30	4	21	11	355	3.37	3	5	ND	1	41	.2	2	ź	97	2.60	046	4	18	.69	1	.38	4 1.7	3 .01	.01	2	18
DS	50229	3	137	8	23	.2	26	10	385	2.23	3	7	ND	1	165	2	2	2	82	6.33	020	2	50	.70	ź	.27	426	.01	.01	2	25
DS	50230	2	511	5	6	.2	23	5	149	1.55	2	5	ND	1	50	.2	Ź	2	66	1.93	.017	2	33	.33	Ĩ	<b>.</b> 26	2 1.10	.01	.01	1	4
D 5	50231	1	144	9	51	.1	54	19	458	4.34	2	5	ND	1	31	.2	4	2	139	4.85	034	3	56	1.42	1	.40	8 3.70	.01	.01	2	6
STA	NDARD C/AU-R	18	60	38	130	7.0	71	31	1056	3.99	41	16	7	37	53	18.6	15	21	56	.52	098	37	61	.90	181	.07	35 1.89	.06	. 14	. <b>11</b>	480

ICP - .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 ICP IS 3 PPM. - SAMPLE TYPE: P1 ROCK P2 PAN-CONC. AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

#### 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

#### GEOCHEMICAL ANALYSIS CERTIFICATE

Daiwan Engineering Ltd. File # 90-4483 Page 1 1030 - 609 Granville St., Vancouver BC V7Y 1G5 Submitted by: RON BILQUIST

King ĸ W Au\* SAMPLE# Mo Pb Ni As U Au Th Sr Cd Sb Bi V. Ça P La Ĉr Mg Ba Ŧi В AL Na Cu Zn Ag °Co Mn Fe \* X x ppm X X ppm ppm X ppm % ppm x **DDIE** ppb DOM DOM DOM **DOM** ppm ppm DOM **DD DD**M ppm ppm ppmppm ppm DDM pom: .34 8 4.92 7 163 6.69 .039 5 .01 .01 1 D 50234 125 2 53 .2 50 20 570 4.38 5 ND 7 1.7 2 2 4 111 1.24 1 4 1 2 2 104 4.85 .009 2 63 .67 2 .27 7 3.33 .01 .01 1 8 202 2 24 :3 37 14 255 3.28 2 5 ND 1 6 1.3 D 50235 1 11 1 18 33 3 38 3.63 ,002 2 15 .31 4 2.34 .01 .01 9 7 147 1.82 2 ND 7 6 4 D 50236 2 11 6 .4 15 5 1 7.12 2.91 350 7 119 1.25 2 5 ND 6 .7 2 3 27 1.57 .003 2 1 3 .06 .01 .01 ្រ D 50237 2783 5 6 3.1 4 1 1 .27 .01 .01 2 26 2 2 24 1.44 5 5 2.61 76 1.2 2 86 3.85 .019 D 50239 144 5 42 .3 30 15 440 3.03 2 5 ND 1 1 5 3.40 .01 26 1.2 2 2 102 3.73 .037 3 93 2.13 3 .35 .01 1 1286 52 19 482 3.33 3 242 1.3 D 50240 4 60 5 ND 1 1 109 1.32 , 15 3 3.29 .01 .01 2 67 199 7 2 3 66 4.59 .034 3 1 D 50241 298 5 29 :5 68 10 285 1.82 2 5 ND 1 1 2 2 88 3.75 .040 3 119 1.91 4 .13 4 3,18 .03 .01 19 2 35 ា 77 12 332 2.07 2 5 ND 1 130 .4 0 50242 66 1 3 NÐ 39 .3 5 2 92 2.27 .031 5 9 1.60 6 .21 3 2.83 .02 -06 5 99 50 891 3.47 5 1 D 50243 1 12 .4 8 14 .54 7 2.11 .01 .01 2 8 70 22 640 3.32 2 5 ND 1 377 2.6 4 2 112 3.96 .037 3 79 1.72 5 D 50244 4365 5 36 1.1 1 2 5 2 51 2.24 .051 3 4 1.44 3 .21 4 2.15 .01 .02 D 50245 1 5327 6 36 .8 8 14 524 2.80 2 5 ND 1 161 ST:3 2 2 2 3 2 1.25 1 .20 2 1.66 .01 .01 1 13 D 50246 3 17356 5 32 1.6 8 13 493 3.30 3 5 ND 1 152 2.9 38 1.60 .045 2 MÐ 17 3 2 74 4.03 .013 2 11 .48 1 .22 10 2.60 .01 .02 10 17 12 214 3.39 2 5 1 1.3 D 50247 1 100 10 18 .3 ी 18 D 50248 2 1092 5 27 .5 32 13 378 2.94 2 5 ND 1 40 .6 2 2 103 4.48 .025 3 55 .78 3 .29 4 2.89 .01 .01 25 2 23 .45 3 40 3 1.30 .01 .01 1 D 50249 304 4 .6 19 8 250 2.01 4 5 ND 1 54 1.0 4 2 59 2.16 .024 16 1 33 22 .9 2 2 127 5.38 .001 2 61 .82 4 .22 17 3.94 .01 .01 1 8 D 50250 3 34 17 511 3.40 2 ND 47 1 5 1 1 .37 1.7 53 1.17 11 5.18 .01 3 2 2 5 ND 2 9 2 2 152 6.88 .028 2 4 .01 1 D 50251 17 41 .3 42 21 414 5.03 1 .38 930 2 62 38 22 455 5.42 2 5 ND 2 8 1.7 2 2 152 5.74 .054 5 23 1.18 4 10 4.29 .01 .01 1 -5 D 50252 1 .6 2 1150 19 50 2.21 ,004 2 11 .25 3 .13 5 1.36 .01 -01 D 50253 2214 5 10 2.6 8 7 138 1.89 3 5 2 1 .2 5 3 1 93 1.03 13 .2 2 7 24 1.12 .002 2 19 .10 4 .08 2 .62 -01 .01 1 37 5 2.2 3 5 1 D 50254 3 3567 6 14 4 ND .01 2 1.01 .01 .01 87 D 50255 .2 2 9 1.76 .001 2 2 .05 1 3768 3 3 2.2 4 4 300 .90 2 5 ND 1 18 2 1 5 44 .8 3 3 53 2.30 .009 2 23 .60 .20 2 1.60 .01 .01 2 139 D 50256 2 548 6 18 .5 24 10 376 1.95 3 ND 1 1 55 17 5.51 2 13 D 50257 2 ្នា 37 20 442 4.47 2 5 ND 1 12 1.1 2 5 127 7.53 .009 2 .95 5 .26 -01 .01 42 41 1 19 40 1 .18 4 1.95 .01 .01 1 9 5 71 4.99 .012 2 .65 D 50258 2 75 4 16 .3 22 8 339 2.30 28 ND 1 .8 2 3 2 5 116 3 2 59 4.82 .014 2 27 .74 3 .23 4 1.80 .01 .01 1 118 D 50259 5958 3 26 3.3 27 12 361 1.96 ND 1 -4 1 16 3.94 .01 .01 14 D 50260 5537 5 25 2.8 11 11 315 2.53 5 ND 1 20 .8 2 10 111 5.68 .058 3 7 .70 1 .20 4 1 9 1 59 795 3.36 5 77 .8 2 2 61 2.80 .046 3 5 2.09 3 . 17 5 3.38 .01 .01 2216 2 1.3 15 15 2 ND 1 D 50261 1 2 67 .73 .01 .01 ٩Đ -3 96 .8 2 2 62 3.21 .017 1 .28 2 1.64 D 50262 2 79 3 20 .2 43 11 264 1.85 3 5 ND 1 1230 2 47 .8 2 103 5.39 .013 2 38 1.11 1 - 18 6 3.30 .01 .01 16 17 D 50263 1 4 32 1.2 25 11 445 2.05 3 5 ND 6 22 4 5 ND 1 35 1.6 2 2 165 5.69 .040 4 58 1.78 7 .39 8 4.65 -01 .01 1 2 593 5.47 D 50264 1 383 59 **.**1 56 26 3 13 3.83 .01 .01 28 24 2 .58 .28 1 D 50266 2325 2 24 28 15 291 3.36 5 5 ND 1 1.5 3 2 112 6.18 .016 61 1.1 1 26 2 2 2 2 49 .69 2 .40 9 3.21 .01 .01 1 D 50268 139 4 29 .2 35 17 266 3.08 5 ND 1 13 1.0 73 4.74 .021 1 .27 3 6 2.54 .01 18 33 5 2.3 7 193 1.84 13 5 ND 1 30 .9 3 2 45 4.22 .006 2 19 .10 .01 D 50269 11 11 1 4462 .02 14 7 .05 15 .12 6 2.82 .26 10 D 50270 12 107 2.65 21 5 ND 1 150 .7 2 2 21 4.20 .102 8 5 82 13 30 .7 33 130 2 5 21 .7 3 3 43 3.69 .002 2 7 .20 2 .08 6 2.11 .01 .01 D 50271 1 2947 6 10 1.1 12 7 181 1.75 ND 1 20 .01 D 50272 2 4558 1.2 11 5 140 1.22 2 5 ND 24 ..8 3 6 28 2.28 .003 2 13 .17 1 .06 5 1.18 .01 4 8 1 5 13 1.0 4 24 3.75 .001 2 .09 .01 3 2.13 .01 .01 912 92 D 50273 4 2 ND 6 1 1 1 4822 6 5 1.6 4 157 1.10 1 13 510 37 53 19.3 15 21 55 .52 .093 38 55 .90 182 .07 37 1.89 .06 .14 STANDARD C/AU-R 18 59 38 131 6.6 73 31 1053 3.97 41 21 6

> ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-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. AU DETECTION LIMIT BY ICP IS 3 PPM. AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. - SAMPLE TYPE: P1 ROCK P2 PAN-CONC.

DATE RECEIVED: SEP 17 1990

DATE REPORT MAILED: Suff 21/90 SIGNED BY. M. M.M. D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Daiwan Engineering Ltd. FILE # 90-4260

Page	2
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SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Ço	Mn	Fe	As	U	Âu	Th	Sr	Cd	Sb	Bi	v	Ca	P	La	Cr	Mg	Ba	Ti	B A	Na	K	Aut
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	*	ppm	ppm	ppm	ppm	ppm	<b>pbu</b>	ppm	ppm	ррт	X	*	ppm	ррт	X	ppm	*	ppm 3	5 X	X pp	n ppb
n 32800	1	81	2	72		36	25	886	5.84	6	5	ND	2	22	1.0	2	5	105	2.96	030	5	31	1 43	16	53	5 3.1/	02	.02	t 1
D 50201	l i	29	3	65		32	21	657	4.08	ž	ś	ND	2	30	2	2	ź	125	2.07	014	2	30	1.02	ŏ	30	8 2.43	.02	.01	1 2
D 50205	l i	34	2	57		33	25	906	5.80	5	5	ND	- ī	26	1.0	ž	ž	169	2.90	.013	3	37	1.45	8	.47	7 3.19	.02	.01	1 1
D 50206	1	53	2	64	.1	41	27	867	5.50	- 4	5	ND	2	44	1.1	3	2	160	2.50	.018	3	41	1.76	9	.46	4 3.24	.02	.01	1 1
D 50207	1	80	2	64	<b>1</b>	- 38	- 31	1178	5.98	- 4	5	ND	2	- 33	.6	2	2	174	2.82	.017	- 3	30	1.42	7	.48	4 3.34	.02	.01	2 1
																								:	이는 것.				¥
D 50210	] 1	108	2	- 73	÷-2	35	- 33	1166	6.42	3	5	ND	2	- 34	1.6	2	2	180	3.40	-02Z	- 4	- 31	1.71	9	.53	5 3.99	.01	<b>.01</b>	2 2
D 50217	1	23	- 3	- 45		- 26	21	645	5.57	3	5	ND	2	- 47	.9	2	2	168	3.14	.007	2	- 30	1.12	1	.45	3 3.17	.02	.01	1 <u>2</u>
D 50225	1	68	2	54	<b>.</b> 1	43	21	721	5.19	2	5	ND	1	112	. 3	2	2	167	2.39	.019	3	53	1.52	1	.45	2 2.74	.02	.01	¶⊟ 1.
0 50232	t	198	- 3	- 77		92	30	815	4.93	4	5	ND	1	277	1.0	2	2	137	2.52	.021	3	138	3.01	1	,45	3 3.80	.01	.01	ti 1.
0 50233	1	63	2	51	- 83 <b>- 1</b> -	40	21	708	4.75	4	5	ND	1	78	.6	2	2	147	2.22	.018	- 3	- 44	1.40	2	.44	4 2.6	.03	.01	19 4
					000000000 202000 202000																								
STANDARD C/AU-S	18	58	41	131	6.7	70	- 31	1050	3.95	40	18	7	37	52	18.6	16	20	- 53	.52	.089	36	56	.90	179	.08	33 1.89	.06	.14 🔄 1	3 50

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**Daiwan Engineering Ltd.** FILE # 90-4483

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SAMPLE#

									,						"		-					ruge 1
Мо	Cu	Pb	Zn 🕺	gi Ni	Co	Mn	Fe As	U	Au	Th	Sr Cd	Sb	Bi	٧	Ca P	La	Cr	Mg	Ba Ti	B AL	Na	K 🖉 W Au*
ppm	ppm	ppm	ppm pp	n ppr	n bbw	ppn	% ppm	ppm	ppm	ppm	ppm ppm	ppm	ppm	ppm	X X	ррт	ppm	X	ppm % p	x mqc	*	% ppni ppb
1	22	2	33 .	2 22	: 13	397	3.11 2	5	ND	1	28 .4	2	4	98	1.55 .012	2	27	.80	6.31	4 1.64	.02	.01 1 16

				\$4860.000							1999 - H			· · · · · · · · · · · · · · · · · · ·						1 A. A.	
0 50228	1	22	2	33 .2	22	13	397 3.11 2	5	ND	1	28 .4	2	- 4	98 1.55 .012	2	27.80	6.31	4 1.64	.02	.01 1	16
D 50238	1	32	3	52 .2	33	20	820 4.80 2	5	ND	1	27 .2	2	2	139 2.49 .024	3	32 1.18	9.40	4 2.48	.03	.01	4
0 50265	1	43	3	43 .4	29	15	511 5.16 2	5	ND	1	34 .2	2	2	176 2.13 .024	3	35 ,94	8.36	7 1.98	.03	.01 1	103
D 50267	1	52	2	50 .4	34	18	562 5.03 2	5	ND	1	35 .3	2	4	158 2.23 .028	3	36 1.12	9.38	6 2.21	.02	.01 1	8

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#### GEOCHEMICAL ANALYSIS CERTIFICATE

Daiwan Engineering Ltd. PROJECT KING File # 91-0971 1030 - 609 Granville St., Vancouver BC V7Y 165 Submitted by: D.J. PAWLIUK

SAMPLE#		Mo	Cu	РЬ	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au T	Th :	Sr Ca	sb	<b>8</b> i	۷	Ca P	La	Cr	Mg	Ba Ti	B AI	Na	K W	Au#
	P	pm	ppm	ppm	ppm	pon.	ppm	ppm	ppm	X p	pm p	pm p	ow bb	om pi	pm pp	n ppm	ppm	ppm	* *	ppm	ppm	×	ppm 🕺	ppm 7	<u> </u>	X ppra	ppb
D 57825		1	640	9	116	.1	53	39	1120	<b>8.3</b> 0	2	55 I	ND	1	11	2 6	2	213	5.09 .054	4	42	2.92	6.52	10 5.71	.01	.01 7	1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-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. AU DETECTION LIMIT BY ICP IS 3 PPM. AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. - SAMPLE TYPE: ROCK

DATE RECEIVED: APR 15 1991 DATE REPORT MAILED: Hpri / 16/91 

# APPENDIX II

Sample Descriptions

## MAY-JUNE 1990 ROCK DESCRIPTIONS

## Sample Number

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32663	fine grained dark green volcanic; dissem. bornite and pyrite
32664	small banded quartz veins in purple andesite tuffs; malachite
32665	small banded quartz veins in purple andesite tuffs; malachite
32666	purple tuff with 1 cm. wide quartz vein; malachite, bornite
32670	pyrite and quartz veinlets in purple volcanics
32672	small quartz vein cutting amyg. andesite
32674	"bull quartz" with epidote in light green fractured volcanic (tuff?)

# SEPTEMBER 1990-APRIL 1991 SAMPLE DESCRIPTIONS

32800	panned sample
50201	panned sample
50202	aphanitic pale green amyg. andesite; pyrite, poss. chalcopyrite
50203	quartz-calcite stringers cutting "tight" green andesite
50204	1 to 1.5 m wide quartz "vein" (quartz flooded shear ?); trace pyrite
50205	panned sample
50206	panned sample
50207	panned sample
50208	angular quartz float
50209	angular float; andesite with quartz veins; trace pyrite
50210	panned sample
50211	angular quartz float; epidote
50212	angular quartz float; epidote, chalcopyrite in andesites
50213	5 cm wide quartz vein cutting andesite
50214	1 cm wide quartz vein
50215	subrounded float; cherty metasediment; blue metallic mineral
50216	angular float; quartz cutting andesite
50217	panned sample
50218	large quartz boulders near source; bornite, chalcopyrite, malachite and azurite
50219	as above
50220	as above
50221	as above

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as above
large quartz boulders at source: bornite and malachite
large quartz boulders near source; bornite and malachite
named sample
1-2 cm quartz vein cutting dark green andesite: epidote
2 cm quartz vein in "cooked-up" andesite
2 cm quarz ven m cookei-up ancesne
15 cm wide questa veint anideta
15 cm whee quartz veni, epidote
quartz vein system 0.75 m wide, chalcopyrite
quartz vein system 0.75 m wide; chalcopyrite
panned sample
panned sample
quartz I cm wide; amyg. andesite with smokey quartz amygdules; pyrite and
chalcopyrite
quartz veins 1 to 4 cm wide in amyg. andesite; trace domite
angular quartz boulders; no sulphides seen
angular quartz boulders; bornite, chalcopyrite and malachite
panned sample
siliceous masses in andesite; traces chalcopyrite and bornite
approx. 5 m wide shear with slickensides, quartz veins; traces pyrite, chalcopyrite and bornite
fractured andesite; quartz veins (some ribboned); traces pyrite and bornite
as above
andesite breccia float; drusy open space filling; pyrite and trace chalcopyrite
acid fragmental; quartz matrix with disseminated chalcopyrite
as above
acid fragmental; secondary calcite; chalcopyrite, bornite and pyrite
small limonitic quartz veins in amyg. andesite
3 cm wide quartz vein; traces bornite
angular meta-volcanic (andesite) with quartz stringers; trace bornite, pyrite
meta-volcanic (andesite) outcrop; bornite
quartz veins 0.5 to 4 cm in aphanitic green amyg. andesite; trace bornite
1 cm quartz vein in amyg. andesite; pyrite and chalcopyrite in both; smokey quartz amygdules
local quartz float; bornite, chalcopyrite and malachite
local quartz float; bornite, malachite and azurite

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50255	local quartz float; bornite and malachite
50256	local quartz float; possible molybdenite specks
50257	angular float; meta-andesite with quartz veins
50258	angular andesite float with quartz vein; pyrite, +/- chalcopyrite in vein and andesite
50259	angular quartz with epidote; bornite
50260	as above
50261	quartz/epidote stringers in outcrop; bornite, azurite and malachite
50262	3 m (minimum) quartz-epidote veins; fractures and shears
50263	"top" of quartz vein at 50262; malachite and bornite
50264	angular float; quartz veinlets in andesite; chalcopyrite and trace malachite
50265	panned sample
50266	quartz veins with epidote in amyg. andesite; chalcopyrite
50267	panned sample
50268	angular float; quartz veins in andesite; chalcopyrite
50269	angular float; quartz veins with epidote; chalcopyrite, bornite and malachite
50270	subrounded float; cherty metasediment; disseminated arsenopyrite and trace
	chalcopyrite
50271	small pieces angular vein quartz float; bornite
50272	angular vein quartz float; subcrop; bornite and malachite
50273	as above
57543	angular float; limonitic quartz veins in andesite; trace pyrite
57544	as above
57545	as above
57546	quartz veins in pale green amyg. andesite; pyrite +/- chalcopyrite
57547	as above .
57548	local angular vein quartz float; pyrite, trace chalcopyrite, malachite
57549	angular float; andesite with veins; pyrite +/- chalcopyrite
57550	quartz veins in andesite; epidote, pyrite +/- chalcopyrite
57825	amygdaloidal andesite with disseminated chalcopyrite

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