1994 REPORT
DIAMOND DRILLING PROGRAM
ON THE SEATTLE CLAIM
THIMBLE MTN PROJECT

Greenwood Mining Division
British Columbia

NTS 82E/1 W
Latitude 49° 09' N
Longitude 118° 30' W

Ian Thomson
and
Doyle Albers
Orvana Minerals Corp

January, 1995

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INTRODUCTION

The Thimble Mtn Project is located approximately 20 Km north of Grand Forks, British Columbia (Fig. 1). The project area lies on the eastern side of the Phoenix-Greenwood Mining Camp, which has been a significant producer of Cu-Au ores from skarn deposits. The largest deposit thus far in the camp was at Phoenix, where almost 27 million tonnes of ore grading 0.85% Cu and 1.1 grams/tonne Au were mined. The Thimble Mtn Project is underlain by a stratigraphic package similar to that in the Phoenix camp. The property is accessed from the Granby River (North Fork) Road, the Brown Creek Road, and the old CP Kettle Valley railroad grade.

PROPERTY

The Thimble Mtn Group consists of four 4-post mineral claims, nine 2-post mineral claims, and fourteen reverted crown grants, for a total of 93 units. The Strawberry Crown Grant claim also forms part of the project area. Pertinent information is summarized below:

Thimble Mtn Group

Claim	Tenure #	Units
Rathful 1 & 2	216173-74	40
Lime	214998	18
Packrat	214605	1
Shickshock	216645	1
Sailor Boy	216646	1
RAD 1-8	215243-50	8
Hummingbird	215533	1
Hummingbird Fr.	215536	1
Seattle	214959	1
No.1	215000	1
Bunker Hill	215001	1
Loyal Canadian	215002	1
Virginia City	215003	1
Amie	214980	1
Blacktail	215098	1
No. 3 Fr.	215099	1
Mammie	215537	1
OK	215532	1
Straw	215120	12
Strawberry Crown Grant		

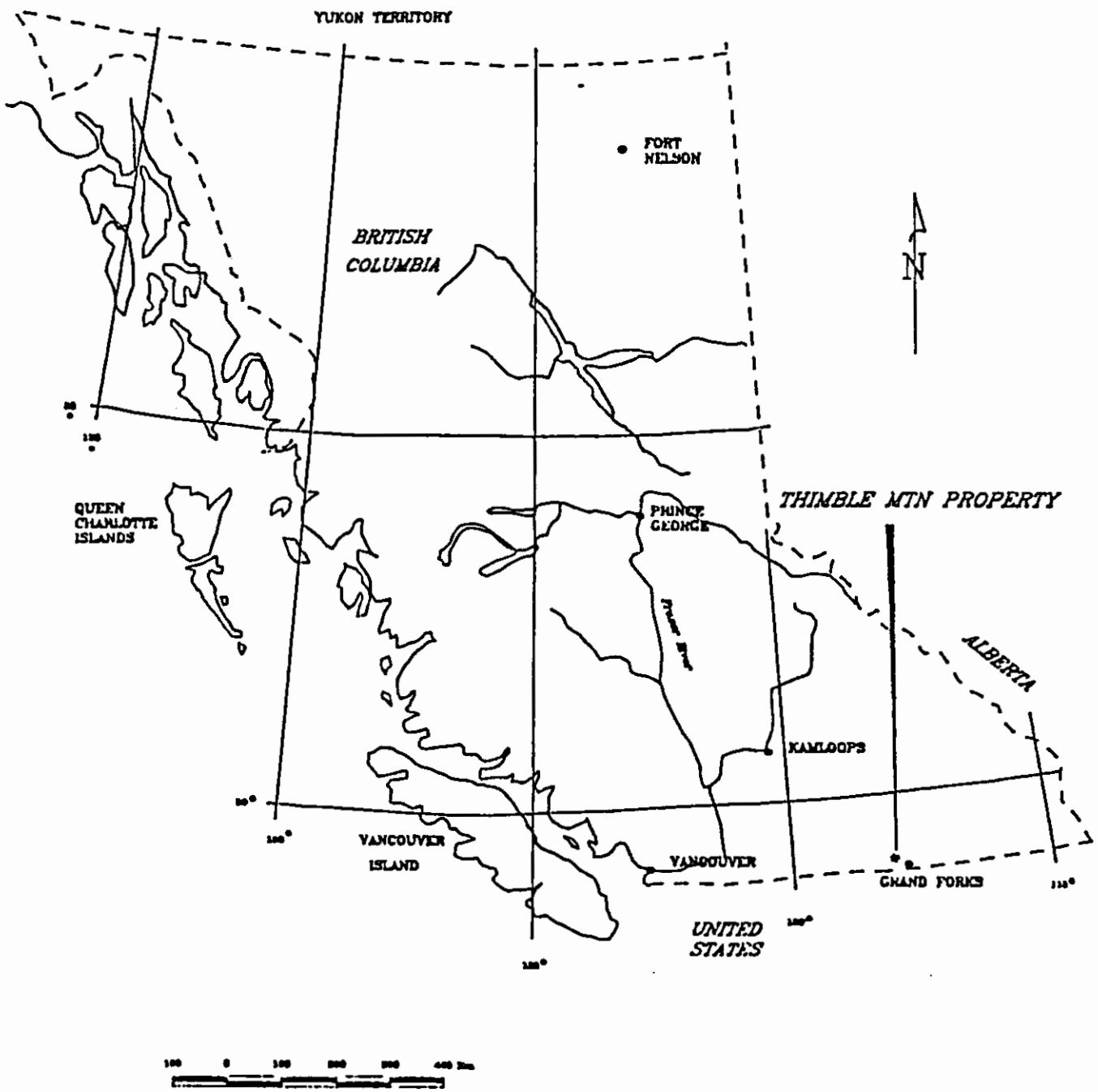

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Fig. 1

LOCATION MAP

OK SYNDICATE
Northeastern Washington and southern British Columbia

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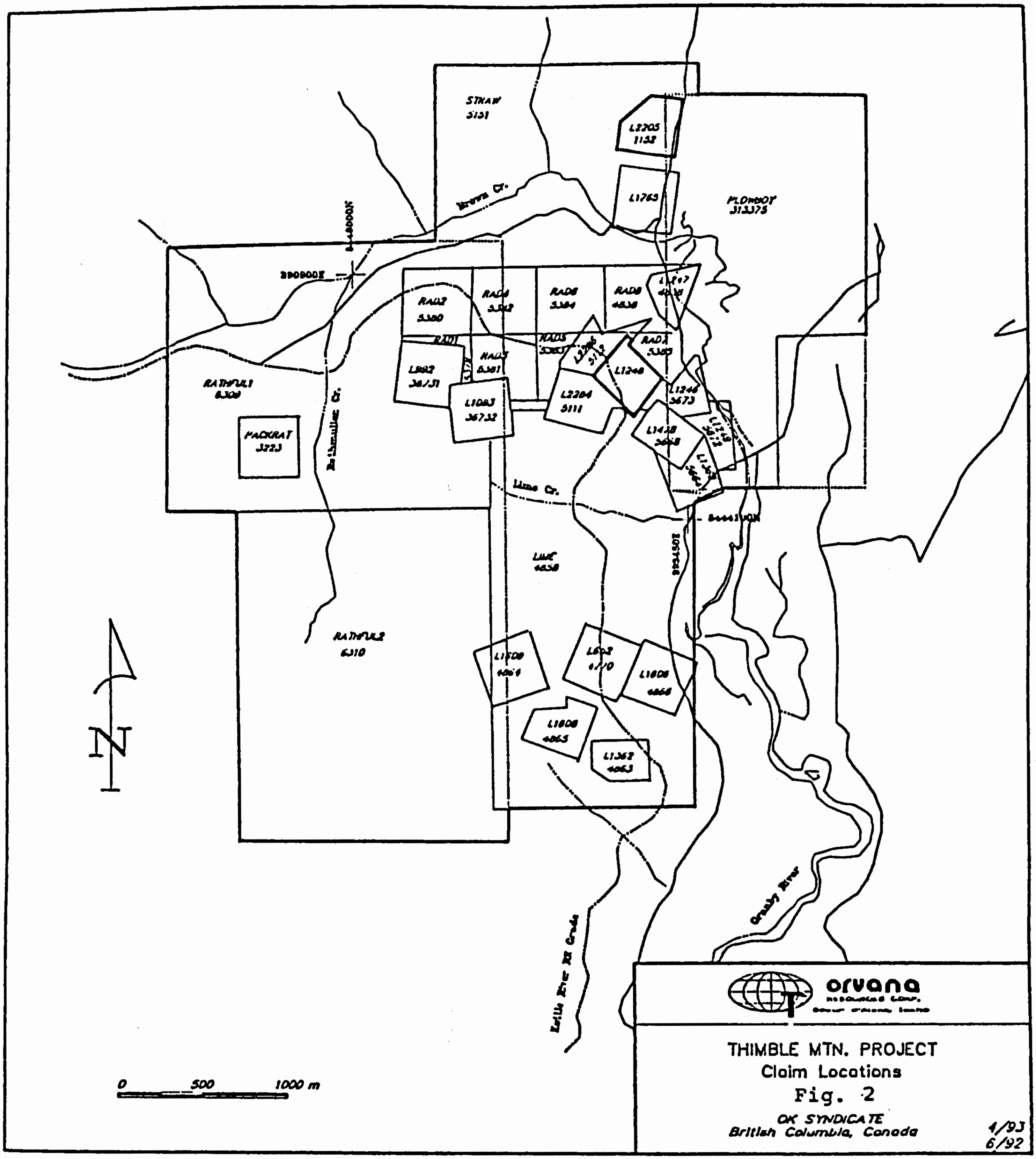

THIMBLE MTN. PROJECT
Claim Locations
Fig. 2
OK SYNDICATE
British Columbia, Canada
4/93
6/92

PREVIOUS WORK

No production records are known to exist for any of the claims on the property, with the exception of brief mention in the Reports To The Minister Of Mines at the turn of the century. Skarn and sulphide mineralization were noted on the Strawberry and Seattle claims, and sulphide mineralization described on the Hummingbird claim and at the Senator mine (Packrat claim). Gold and copper were identified as the metals of interest. Prior to Orvana's involvement at Thimble Mtn numerous groups conducted limited exploration within various parts of the project. Most of the effort was focused towards copper and much of the geochem was not assayed for gold. Orvana's consolidation of the district is the first attempt to understand the larger system responsible for the many small high grade showings.

Orvana assessed the potential of the project on similarities between it and the Phoenix and Greyhound/Motherlode copper-gold skarn systems. Production at Phoenix is recorded at 27 million tonnes at 0.85% Cu and 1 gram Au/t. Recorded production at the Mother Lode mine is 4.5 million tonnes at 0.82% Cu and 1.27 grams Au/t. The area was determined to have potential for hosting a large tonnage skarn-hosted, copper-gold deposit. Property acquisition began in early 1991, with the staking of the Rathful claims. During 1991 and 1992, pre-existing claims were acquired through exploration/mining leases with options to purchase. Additionally, Orvana staked the 18 unit Plowboy claim in 1992.
Extensive geologic mapping, grid installation, soil sampling, ground magnetics, and I.P. surveys were also conducted in 1992 by Orvana personnel.

REGIONAL GEOLOGY

Geologic mapping within the Grand Forks and Greenwood areas has been published by Little (1983), Church (1986), and Fyles (1990). The area is underlain by moderately deformed volcanic and sedimentary rocks of late Paleozoic to Mesozoic age, which are intruded by Cretaceous to Tertiary rocks of various compositions. Younger volcanic and sedimentary rocks overlie the pre-Teriary rocks in places, marking small, relatively recent depositional basins.

The oldest stratified rocks belong to the Knob Hill Formation. It and the overlying Attwood Group are Carboniferous or Permian age. Both groups consist of andesitic volcanics and interbedded limestone, chert, siltstone, argillite, and conglomerate. The Triassic age Brooklyn Formation unconformably overlies the older rocks. It consists of andesitic volcanics (commonly clastic) and interbedded limestone, siltstone, sandstone and sharpstone conglomerate. These old rocks have been folded and faulted with a general northeast structural trend. They commonly exhibit lower greenschist grade metamorphism, with minor, more intense higher grade regional metamorphism.

The oldest intrusive rocks in the camp are diorite dikes and sills, which possibly represents feeders to the volcanic rocks of the Knob Hill Fm. Serpentinite occurs as lenticular bodies within the Knob Hill Fm, and along major faults. The age of these rocks is uncertain. Fyles (1990) suggests that the serpentinites are part of an ophiolite sequence that was obducted during post-Triassic time.

During the Cretaceous Period, extensive intrusion of rocks grouped as Nelson Intrusives occurred. These rocks reach batholithic proportions, and range compositionally from diorite to granodiorite. They are generally hypidiomorphic to equigranular, though on occasion are porphyritic.

Tertiary (Eocene) rocks in the camp belong to the Penticton Group. This consists a basal series of immature sedimentary rocks and volcaniclastics, and an unconformably overlying

series of volcanic flows. These volcanics include andesite, trachyte, and phonolite. Intruding the stratified Tertiary rocks are a variety of dikes, sills and plugs, with wide compositional variations. These rocks include syenite, pulaskite, monzonite, and diorite. They have been grouped with the Coryell Intrusions.

Structural geology within the camp is complex. Fyles (1990) has identified five thrust sheets that are Mesozoic age - post Brooklyn Fm depositional time and probably pre-Nelson intrusive time. Rocks within these sheets have been folded, and the thrust planes are characterized by serpentinite emplacement and intense deformation. Tertiary age deformation occurred within an extensional environment, and is evinced by northerly striking normal faults with shallow to steep dips.

1994 PROGRAM

The 1994 exploration program was designed to drill test copper-gold mineralization and skarn alteration in Triassic Brooklyn carbonates at the Seattle showing, which are down-dropped along the eastern margin of the Republic Graben. Detailed geologic mapping and sampling in this area yielded 1-2 meter rock chip samples with gold values up to 0.2 OPT Au and 0.5% Cu.

The drill program, which began November 4, 1994 and ended November 28, 1994, was conducted near the historic Seattle workings where Cretaceous diorites (believed to be Nelson equivalent) intrude a sequence of Triassic Brooklyn Limestones and marine volcanics. All work took place on the Seattle claim. The core is stored under cover in Greenwood.

The first diamond drill hole (TM94-1) is oriented at 300° azimuth with an inclination of -45°. This orientation intercepted the raise pits at depths previously unsampled, although only minor zones of alteration and mineralization were intersected. This hole continued to a total depth of 247 m (811 feet), intersecting a portion of the main diorite body mapped at the surface.

The second diamond drill hole is approximately 120 m north of TM94-1. This hole (TM94-2) was drilled at 280° azimuth with an inclination of -45°. It intersected 5.5 m of garnet-pyroxene skarn with some pyrite and chalcopyrite in the upper portion of the hole. Gold values are low, generally <100 ppb; copper values are anomalous, but not substantially high-grade (see Appendix 3).

The third hole (TM94-3) was drilled from the same pad as TM94-2, and at the same azimuth (280°), but with an inclination of -70°. This hole intersected more garnet-pyroxene skarn than TM94-2, with zones of alternating diorite and skarn down to 41 m (135 feet). This sequence of alternating skarn/diorite from 28-41 m (92-135 feet) is thinly banded, calcite-rich (40-50%), and generally contains 1-2% pyrite and chalcopyrite. These skarn zones may be replacement of tuffaceous volcanic rocks or calcareous sediments interbedded within the volcanic sequence.

Cross sections indicate that these skarn zones may be lense-like,as they seem discontinuous and difficult to trace from surface to depth (see cross sections A-A' and B-B').

Diamond drill hole TM94-4 is collared about 100 m southwest of TM94-1. It is oriented at 270° azimuth with an inclination of -50°. This hole was projected to intersect the volcanic/limestone contact at approximately 150 m. A small fault zone was intersected near 150 m (500 feet), so the hole was continued for an additional 15 m (50 feet), but this hole failed to intercept the limestone/volcanic contact. The hole was terminated at 167.6 m (550 feet) due to the lack of hydrothermal alteration and mineralization. Some silification and epidote alteration was seen from 21-30.5 m (70-100 feet) where the raise pits alteration zone projects to the southwest, but very limited alteration and mineralization was seen along this projection.

EXPLANATION

EOCENE

Penticton Grp.	Epl	Coryell syenite, monzonite, diorite
	Eps	Kettle River Fm. sediments and Marron Fm. andesite, trachyte

CRETACEOUS

Nelson Int.	qd	Granodiorite, quartz diorite, diorite

TRIASSIC

Brooklyn Fm.	TRbv	Greenstone, microdiorite
	TRbl	Limestone
	TRbs	Sandstone, siltstone, hornfels
	TRbbx	Chert breccia or sharpstone conglomerate, tuff, tuffaceous siltstone

PERMIAN

Knob Hill Fm.	Pkc	Chert, argillite, limestone
	Pkv	Greenstone, pillow lava, breccia

References: Fyles, J. T., 1990
Geology of the Greenwood-Grand Forks Area, B.C. - MEMPR
Open File, 1990-25

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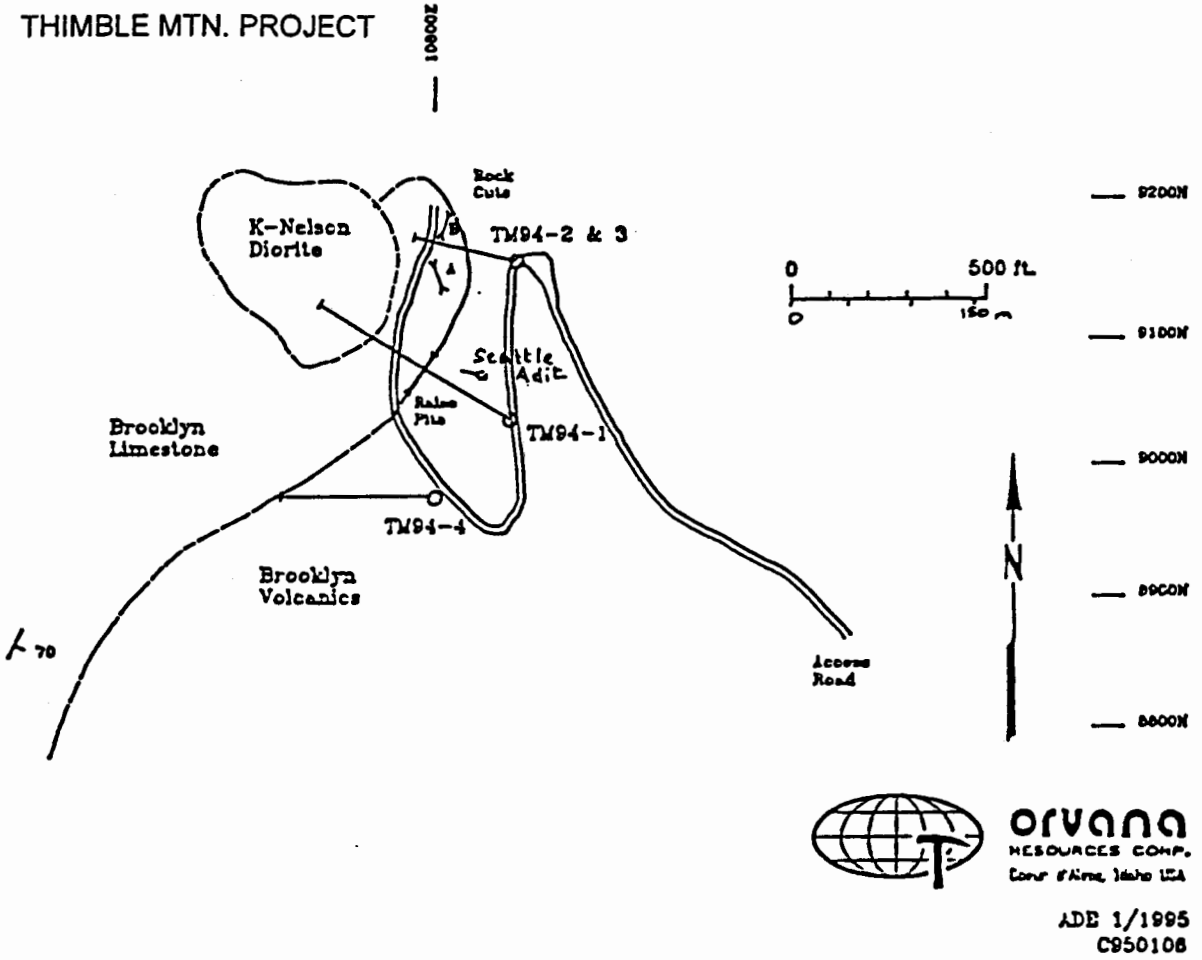
RESOURCES CORP.
Coeur d'Alene, Idaho

DATE 5/93		FIG. 3
REVISED BY	DATE	THIMBLE MTN. PROJECT Regional Geology Seattle Workings (Drill Sites)
DATA BY RF	SCALE 1:50000	SHEET NO. PLATE NO.

Figure 4
Drill Hole Location Map
Seattle Claim
THIMBLE MTN. PROJECT



HOLE #	TOTAL DEPTH (m)	AZIMUTH	INCLINATION
TM94-1	247.2 (811 ft)	300°	-45°
TM94-2	101.5 (333 ft)	280°	-45°
TM94-3	86.9 (285 ft)	280°	-70°
TM94-4	167.6 (550 ft)	270°	-45°

CONCLUSIONS

The objective of this drill program was to test the extent of skarn alteration and mineralization associated with the diorite stock near the Seattle workings. The limited amount of drilling conducted in 1994 indicates that the skarn alteration in this area is limited to thin contact zones about the intrusive, and the mineralization associated with this alteration is anomalous in copper and gold, but values are sub-ore grade.

RECOMMENDATIONS

Other potential areas of skarn alteration and mineralization exist on the property and should be further evaluated. Plans to carry out this review are being finalized, and a decision on the next stage of exploration is expected soon.

STATEMENT OF COSTS

	$Cdn
Drilling	
Mob-Demob, set-up, plus 603.2 m (1979 feet) NQ	37,602
Salaries	
50 days @ $200/day	10,000
Room and Board	
45 days @ $60/day	2,700
Laboratory Assays	
100 samples @ $15/sample	1,500
Vehicles/Transportation	4,000
Field Supplies	2,000
Total	$57,802

STATEMENT OF QUALIFICATIONS

I, Doyle F. Albers, of Sagle, Idaho, U.S.A., certify that:

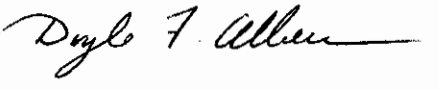
1. I am a geologist employed by Orvana Minerals Corporation, 710 - 1177 West Hastings Street, Vancouver, B.C., V6E 2K3, in their office located at 1755 Silver Beach Loop Coeur d'Alene, Idaho 83814 U.S.A.

2. I am a graduate of the University of Idaho, Moscow, Idaho, and hold a M.S. degree in Geology.

3. I have been practicing my profession for the past nineteen years.

4. This report is based on information that I and others under my supervision obtained while on the Thimble Mtn property for the period December, 1994.

Doyle F. Albers
Geologist, Orvana Minerals Corporation.



STATEMENT OF QUALIFICATIONS

I, Ian Thomson of 1628 West 66 Avenue, Vancouver, British Columbia, V6P 2S2, do hereby certify that:

1. I am a graduate (1967) of the University of London, England, with a Bachelor of Science degree in Geology and a graduate (1971) of the University of London, England, with a Doctor of Philosophy degree in Applied Geochemistry.

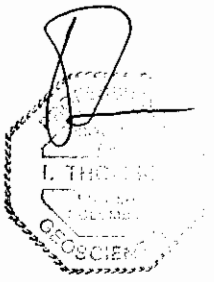
2. I am a registered Professional Geoscientist in the Province of British Columbia.

3. I have been continuously employed as a geologist-geochemist involved with mineral exploration for 21 years.

4. I hold the position of Chief Geologist with Orvana Minerals Corp.

5. This report is based on information obtained by myself and others working under my guidance and from analytical data obtained from commercial laboratories.

Ian Thomson, B.Sc., Ph. D., P. Geo.
Chief Geologist, Orvana Minerals Corporation



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APPENDIX 1
DIAMOND DRILL LOGS

DIAMOND DRILL HOLE LOG

Company: Orvana Resources Corp

Property: Thimble Mtn.	Hole No.: TM94-1
Location: Seattle Showing	Bearing at Collar: 300°
	Inclination at Collar: -45°
Coord. - Collar N: 9034 N	
E: 10860 E	Length: 811 feet
Elev. - Collar: 650m	Core Size: NQ
Date started: Friday, Nov. 4, 1994	
Completed: 11/13/94	Logged by: ADE

LEGEND

Silicification / silica vlts	Pyrite
Fault/Fract.	Calcite (vlts/fract.)
Broken Core	wkly or fox Hematite
Epidote	Chlorite

SURVEY

Footage	Bearing	Inclination

RQD = ≤ 2.5 × C.D.

LITHOLOGY, ALTERATION, MISC.	FT.	MINERALIZATION + Alteration	RQD + Run	Run length	Core	%	Sample	Interval	BOX
∴ magnetite; ⁒ chalcopyrite; biotite; garnet; clinopyroxene; pyrrhotite. Legend: Tert. dike/sill aporphyritic; Cret. Nelson qtz dior-dior; Hypabyssal intrus. / intrusive bx; Greenstone/Volcanic bx; Crystal and/or lithic tuff. Casing to 23′	10, 20	Note: Pervasive chlorite alteration as the result of lower greenschist facies metamorphism has been omitted from the alteration column for simplicity.							
ab. 23-29.5′ - Mix. aph-maf flows, whcc, + volclastic boulders, lesser rubble w/mod oxidation. Pastey clay w/rubble zones			N/A	10	12.5	100			
29.5-38.5 Ts - Tertiary syen? dike md bn-gy aphan-porph dike. Local pink cast suggest ab K-spar in groundmass. Phenos of alt dk gr-bk bio, + wh subhedral plag. local amph phenos. (wk calcite vlt @ 50° ∡)	30	moderately mag. tr py as cubes and → mafics.	33 RQD = 48	9	9	100			1
38.5-47.3′ ℞b - Brooklyn gnst. md-dk green-gray aph flow w/scattered lithic fragments. Hard → wkly sil. Lithics display wk ep ± clays calc. alt. Mult generations of fract + crosscut/offset vlts. (Cc vlts →)	40	wkly mag. < 1/2% fn-gn pyrite assoc w/ep-cc vlts + alt of lithics. 41′ py coat fract @ 40° ∡	42 (54)	6	6	100	38.5 – 43.5	5.0′	2
47.3-62.5 ℞b - Hypabyssal volc. rx mottled lt-md gray, md gn equigran rock w/ milky, gray groundmass partially repl by pyrite. Felds phenos display gran w/h bleaching? assoc. w/ qtz vlts.	50 (Over lap)	V wkly mag. 1/2 - 3/4 % threads + diss of anhedral pyrite.	48 (25) 53	5	5	100			

GRAPHIC LOG (wk, silic., calc., silica)

IM 14-1 r 205 12

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
Silicification + Bleaching dom alt. ~55'↓ fract. w/ ep halos, clots of v fgr ep. Hypabyssal volc. ep — Fract + qtz vlts w/ granular wt bl halos. Halos consist of sim material as bl feldspar phenos.	50		py ½–¾% as but fgr. diss + thin threadlike stringers.
	60		ep clots incr'g → feldspars
62.5-244.5' Kb grnstone. — claylar coat broken core. Md-dk gray, aphanitic characterized by perv. wk silic. + calcite coat fract + diss in groundmass. Scatt volc + lithic fragments, autobreccia? Individual cooling units difficult to distinguish. Primary variations in shades of gray and degree of cc veining.			V wkly mag to ~108'. Py var throughout. Ave <½%, locally up to 1% as diss + stringers.
	70		
sporadic dk gr chloritic vlts	80		Scatt Fe-ox coating on fragments
local autobrecciation w/ carb cem. — cc + hm filled fract gives purple color to core	90		diss cc in groundmass. abundant clay + grit coatings on core fragments. Numerous narrow fracture zones, ∴ lower RQD
hydrobx? cem by qtz + cc ± chl? med gy aph, homogenous flows. micro fract coat w/ cc	100		
spotty silicification alone, appears to increase w/ depth. Calcareous rubble zone			Strong Fe-ox, ab cc coat fract @ ~20°C
persistent cc assoc w/ stockwork of microfract + joint coatings.	110		
dk green mottling to core is probably diss chlorite	120		lim coat fract, cuts earlier cc stockwork

Run (RQD=)	Run length	Core	%	End
33	9	9	100	62
25	6	6	100	68
73	5	5	100	73
69	10	10	100	83
13	10	10	100	93
37	10	10	100	103
18	10	10	100	113
22	8	8	100	121↓

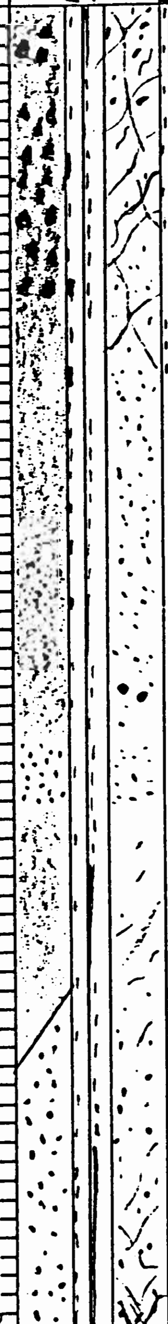
Sample	Interval
57.5 – 62.5	5.0'
82.5 – 87.5	5.0'
87.5 – 93.0	5.5'
113.0 – 120.0	7.0'

BOX: 2 (~55), 3 (~65), 4 (~83), 5 (~101), 6 (~115)

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
62.5'–244.5' (cont) Rb Greenstone dk gn-gngy aph intermediate flows becoming more chloritic below ~115' threads of f-g py assoc w/chl vlts below ~130' stockwork alteration is epidote, ±calcite w/diss chl in groundmass	130, 140		hm-cc vlt w/ 3x chlorite selv. @45° ∢ Phoenix-style alt seq @129.5'  the epidote halo can be seen elsewhere in core & may indicate additional hm-cc alteration ↕ tr py, locally up to ½% v. hd core, sil incr ↓
flows locally display small fragments, dominantly monolithic, rarely exotic. relatively homog., dk green aph; silic flows marked by vlt-selvts of pale gn ep.	150, 160		Incr in py (diss) assoc w/ incr ep clots; py up to 1% seams of hd, pale dk gn-gy qtz + chl? chl coat on fract 3/4–1% finely diss py assoc w/ ep??
~171–183'±: volc has a gritty ?bedded? fabric suggesting a possible volclastic origin. mssv mod gy andesite? chl-cc + ep-cc vlts @ 70° ∢ give a wkly laminated fabric	170, 180, 190		epidote ± cc stkwk w/ clots of ep in wallrock py ≤ 1% irreg clots of dk gn chlorite cut by epidote

RECOVERY				ANALYTICAL		BOX
Run	Run length	Core	%	Sample	Interval	
121/123	8	8	100	121.0		6
(44)	9	9	100	125.5	4.5	
130				128.0		
(57)	6	6	100	132.5	4.5'	7
136						
(32)	7	7	100			
143						
(45)	10	10	100			8
153				153.0		
(71)	10	10	100	158.3	5.3'	
163				163.0	4.7'	
(54)	10	10	100			9
173						
(18)	10	10	100	182.0		
183						10
(62)	10	10	100	187.0	5.0'	
193↓				192.7↓	5.7↓	

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG (HCl, silica)	MINERALIZATION
62.5-244.5' Ꞧb Greenstone Massv md-dk gy-gn aph. Var in color + txt due to var in ep, chl + cc cont. Remnant primary fabric rare. ~195-205' - Volcanic sandstone/lithic tuffaceous sandstone. Md-dk gray, gritty groundmass w/scattered lithics <2cm diam.	190 200		v slightly mag. ≤½% v f-gn py as diss and discontinuous threads assoc w/ ep, chl widely-spaced ep ± cc stkwk fract. 2 vein paragenesis: ① ep ± cc → ② chl + py → ③ cc
massv dk gn chl grnstone wkly silic, scattered ep clots, alt frags	210 220		silica → out sparse, vfn-ly diss py.
~228-233.5±: aph-ppy plag phenos in volc groundmass; Hypaby intrusive?	230 240		Py locally absent Veining absent mafics → chl ~235± vug  open space filling by carb + chl + py 238± 2cm wh cc vn @ ~15° ¢ wk-mod mag
Intrusive Cont @ 35° ¢ (Sharp) 244.5-261±: Ꞧb Hypabyssal diorite? Md-dk gn aph-ppy w/wh equant plag phenos in an aph ground, similar in color + text to above greenstone. Local aph grnstn fabric w/phenos → out. lower cont grad. @ 261±	250 260		minor alt of plag phenos to calcite. ppy ¢ have fairly diss wt & mod-str mag. ¼-½% subhed fn-gn py as diss thru rock. + threads



Run	Run length	Core	%	Sample	Interval	BOX
(62) 190-193	10	10	100	192.7	5.7'	10
(72) 193-203	10	10	100			
(58) 203-211	8	8	100			11
(36) 211-221	10	10	100			12
(0) 221-227	6	6	100			
(0) 227-230	3	3	100			
(19) 230-243	13	11	85	233.0 238.0	5.0	13
(12) 243-253	10	10	100	253.0		14
(19) 253-261	8	8	100	259.5	6.5	

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	BOX
261±-280± Ŧb Greenstone md gy-dk gn gy mssv grnst Var chl, sporadic carbonate // gy gritty, wk vuggy fabric ? lithics? xtal-rich diked?	260–280		sli-wk mag, ½-¾% v fn gr diss py + vlts } v wk chl alt. ↕ veining fract greatly reduced discont wh cc vlts, filled geodes?	15
280-297.5±' Intermixed aph vole + crpl-ppy subvolcanic rocks ppy- wh equant plag phenos, often crowded in grnstn-like groundmass. Cont w/aph grnstn often gradational over x cm. mssv dk grn greenstone and crystal-rich grnstn/subvolcanics v gradl lwr cont	280–297.5		bk hi chl alt. 284-285½' gy qtz vns @ 45° ⊄ w/ wh cc selv + bl haloes fract @ 40° w/ drusy py coat rare veining ½-¾% fn gr py evenly diss in xtal-rich section	16
±297.5-319' Ŧb Greenstone Dk gy generally aph, mssv amyg to w/ local xtal-rich clots (see log) Black mottling probably due to chl alt prior to silicification as entire zone is v. hard	297.5–319		x-mn py stkwk, py as diss threads, older assoc w/ ep, chl ½-1% selvs. ep+py vlts/clots irreg (?) qtz vn @ ~25° ⊄ ep+py clots: ± qtz ep + cc vlt @ 20° ⊄  sheared py on fract @ 45° ⊄	17
319'- 326'- Ŧb Hypabyssal or Kd? Lightly var dk gn gy to lt gy salt&pepper txt.	319–326		319-326' - ok vlts of py, qtz, cc, cc° ⊄ areas of x-mn cc+chl vlts @ 25° ⊄ probably predates ¾% py in vlts + wallrock haloes megacrystal wh cc vn, x-cm @ 45° ⊄	18
326'- 350' Ŧb Greenstone	326–330		scattered cc veining wkly mag, stronger mag. in xtal-rich fractions	

RECOVERY

Run	RQD	Run length	Core	%
261–269	41	8	8	100
269–279	68	10	10	100
279–283	92	4	4	100
283–293	45	10	10	100
293–301	65	8	8	100
301–311	41	10	10	100
311–314	28	3	3	100
314–323	85	9	9	100
323–333	77	10	10	100

ANALYTICAL

Sample	Interval
283.0	
	5.0'
288.0	
296.0	
	5.0'
301.0	
303.0	2.0'
	5.0'
308.0	
	5.0'
313.0	
	6.0'
319.0	
	5.0'
324.0	
326.0	2.0'

LITHOLOGY, ALTERATION, MISC.

326-350' Ꞧb Greenstone - dark gn-gy, mssv, aph to aph-ppy local patches of plag xtals in greenstone groundmass with diffuse contacts betw aph + ppy portions.

Volc agglom/breccia w/erratic lithic frags (bk arg? + volc/intr frags)

350-350.7' Kd? Dior dike/clot/shp upper cont @ 35°.

351.7-449' Kd? Nelson Diorite? alternative interp: Ꞧb Hypabyssal Intrusive. Var md-dk gy, md grained equigranular diorite. Upper and lower cont sharp, local dk gy alt. clouds intrusive txt but pervasively visible. Generally lt gy, milky plag xtals w/interstitial bk mafics. → amph → chl; bio → chl Locally, bl̶/or more leucocratic

Mafics are bk - gnbk + glassy but almost entirely now chlorite bio ≫ amph? $\Sigma_{bio} \approx 40\%$

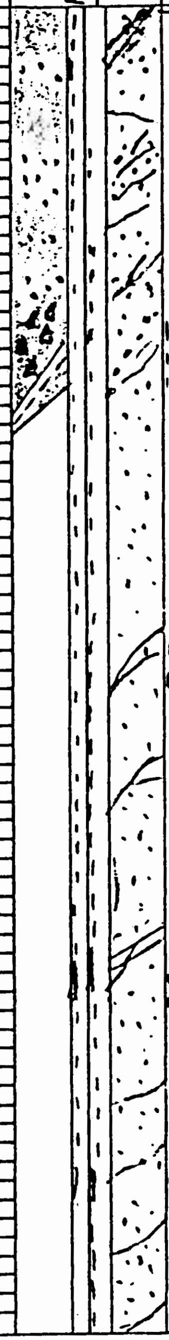
md milky gray alt of groundmass

FT.

330, 340, 350, 360, 370, 380, 390, 400

GRAPHIC LOG

HCl · Silica · SILICA



MINERALIZATION

1cm white + chl + py vlt @ 40° ⊄

< ½ % py in vlts + lesser dissem.

Sporadic silicification

diss mt in ppy zones

py < ¼ % assoc w/micro fract. Cuts lithics.

0.4mm op stkwk, 0.4mm py d.velet-str mag. vlts HCl rx ltd to widely-sp cc vlts

351.7-449' - v wkly mag - nonmag; ¼-½ % py dominantly the result of sulfidation of mafics. Veining ltd to widely-sp cc vlts. Rare op.

Pervasive chl alt of mafics

379-381 - bl dior resulting from qtz veining + wallrock silic. Invaded by late cc ± chl vein

non mag qtz vlts @ 60° ⊄

diss clots of fgn op.

0.4mm py vlt

RECOVERY

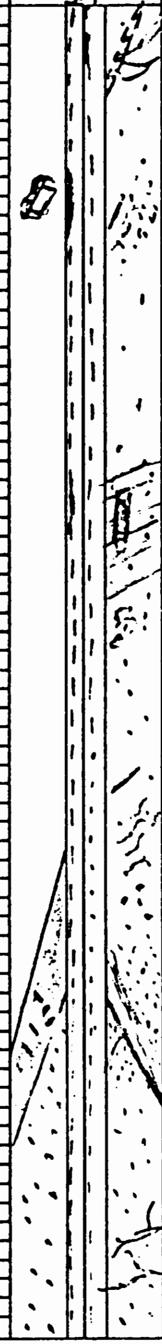
Depth	Run	Run length	Core	%
333	(77)	10	10	100
343	(81)	10	10	100
353	(68)	10	10	100
363	(88)	10	10	100
373	(82)	10	10	100
383	(70)	10	10	100
393	(89)	10	10	100
403↓	(70)	10	10	100

ANALYTICAL

Sample	Interval
378.0 – 383.0	5.0'
398.0' –	5.0'

BOX

18, 19, 20, 21, 22

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY Run	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
351.7-449'; Probable Kd-Diorite	400		400-402.5: bl diss assoc w/ qtz + cc vlts (sim to 379-381') Flt @ 25° ∢ truncates qtz + cc vlts	70 (403)	10	10	100	403.0	5.0'	22
								408.0		
f-gn, str calc ϕ, convoluted cc bands, possible digest carbonate xenolith	410		Str cc + chl ± hm alt/bands in fg dior? poss tg gn cpy assoc. w/ str calc clots. rare ep	69 (412)	9	9	100	412.0	6.0'	
			py → mafics	68 (422)	10	10	100	417.0	5.0'	23
	420							425.0		
Homogeneous mssv equigran dior cut by widely scat cc vlts, py → mafics sporadic dark, fg mafic enclaves	430		wk cc alt of plag. Cc coated fracts @ 65° cut 1cm qtz vn w/ py + chl + unkn. f-gn blk opaque (non mag) @ 428' hm?? py ass w/ chl clots + ep → fl	76 (432)	10	10	100	430.0	5.0'	24
	440			71 (442)	10	10	100			
Lower Kd cont. @ similar attitude to Tb hyp upper cont. @ 457 lower cont shp @ ~15-20°			Fracts w/ bl haloes, tr py in fracts, chl fracture vlts, rare f-g gn diss mt v wkly mag. ½% diss anhed py ↓	60 (452)	10	10	100	452.0		25
449-457± Tb Greenstone Dk gn-gygn mssv aph andes?, chl, locally ppy w/ 1-2 mm plag phenos.	450		groundmass cc alt; cc + qtz + chl vlt @ 20° [illegible] shearing	67 (459)	7	7	100	457.0	5.0'	
457 ~ 492.5 Tb Hypabyssal Intrusion md-dk gy, highly var text from cloudy gy aph groundmass to f-gn equigran to ppy w/ plag + amph [illegible]	460		mod mag. groundmass carb. alt (cc → plag?)	79 (463)	4	4	100			26
	470		Contains less veining than greenstone flows. Unit cont only mnr py-? mafics [illegible]	43 (473↓)	10	10	100			

LITHOLOGY, ALTERATION, MISC.	FT.	MINERALIZATION
457-492.5 Kb Hypabyssal Intr. Generally more mag than volcanic flows w/ersr of having rare vis mag. Gradational contacts + less dist xtal fabric than Kd above.	470	f-n gn diss magnetite
mafics → chl - probable amph > bio	480	Scattered cc-sch vlts mnr fract-controlled py
	490	groundmass cc crs sub-euh pyrite accent.
~492.5-561±' Kb Greenstone. Dk gn-gy, mssv aph chl andes. Rare scat frags alt to ep. Local ppy clots, zones and possible subvolcanic dikelets	500	Contact is a grad zone of aph + ppy grnst. Silic is sporadic + wk cc filled fract, dom set @ 30° ¢
Frags of phan intr; argillite; + ep-alt rock	510	wk to locally mod mag. hm. vlt @ 45° ¢ w/chl selv retro alt ep. chl selv only where hm cuts ep
irreg clots & wh plag phe		diss fg mt
5th groundmass alt by cc.	520	py-chl vlts. py var from tr to ½% as irreg f-c clots, rare vlts. Sometimes assoc w/ep
527-528': heterolithic bx - subang frags of crowded ppy + aph grnst in a dk gn chl groundmass. Little fragment motion? Volcanic bx or tect bx?	530	dk gn chl bx: lt gy volc frags in a chl mtx. Rare py
St cc alt of groundmass	540	mod mag. irreg clots of ep + py + cc [illegible]

Run	Run length	Core	%	Sample	Interval	BOX
(43) 473	10	10	100	–		26
(73) 483	10	10	100			27
(47) 493	10	10	100	485.0 – 492.5	7.5'	
(60) 501	8	8	100			28
(74) 511	10	10	100	506.0 – 511.0	5.0'	
(60) 521	10	10	100			29
(63) 531	10	10	100	520.0 – 525.0	5.0'	
(77) 541½	10	10	100			30

LITHOLOGY, ALTERATION, MISC.	FT.	MINERALIZATION
~492.5-561'± Ћb Greenstone mssv dk gn gy aph andes/basalt w/ incr cc ± ep alt twds lwr cont. Vague pp/ or intr txt	540–561	v wkly to non magnetic. Cc veining incr below 543. py < ½% finely diss. } case w/ cc clots/frags? partially rimmed by ep. ep-cc vlt w/ halo of ech py. chl-ep-py alt, vlts & clots. Scat groundmass carb alt. 556- wk chl ± alt of ground. cc alt of groundmass
561-598' Ћb mixed Hypabyssal and Volcanic Rocks. (chilled cont?) Highly var color, from v lt gy to dk gr, and texture, from aph to breccia to phaneritic. ~566-569': Hydrot bx? Lt gy-bn gy aph volc frag in a complex mt of silica-chl-cc trace py. 571.5-574±': 61 intrusiv bx: angular to rounded phan igneous xtal frags? cut by cc vlts. Scatt chl, silica alt. ~581-585': Int bx or volc bx. subrounded phaneritic frags in a blk aph mtx. Local incr py. Ep to 2%] acicular omph forms → chl	561–598	Variable alteration styles and intensities. ep-cc ± py clots, repl frag? Generally non-mag. Local cc and cc ± chl vlts, bleaching? Diss ep + lt cn cky speckl (TiO₂?). Py content from nil → ½% as vl diss & discont vlts; sparse py; int carb alt w/ dk gn chl. 565-566.5: py-chl vlts/ fract fill. @ 20°. 569-571.5- md bn silic of groundmass + clay alt or plag phenos. 583'- diss ep + cc vlt w/ 1-2% diss py in wallrock. bio? + py alt of groundmass
598-622.5 Ћb Xtal-lithic Tuff. var. lt gn gy to dk gy volcaniclastic. Lighter colored rock tend to be more lithic-rich, dark colored rock more xtal & ash rich. Frags consist of blk gn gy phan intr, and chl gy + aph volc.	598–610	v wkly to wkly magnetic. widely spaced cc stkwk. Minor fgn diss py → matrix, lithics & xtal frags. banded cc-qtz vr @ 65-70° ∠

GRAPHIC LOG (Silica)

RECOVERY

Run	Run length	Core	%
541	10	10	100
R&D			
541–551 (73)	10	10	100
551–561 (80)	10	10	100
561–571 (90)	10	10	100
571–581 (78)	10	10	100
581–591 (87)	10	10	100
591–601 (85)	10	10	100
601–611 (78)	10	10	100

ANALYTICAL

Sample	Interval
545.0	
550.0	5.0'
555.0	5.0'
565.0	
570.0	5.0'
575.0	5.0'
580.0	5.0'
585.0	5.0'
590.0	5.0'
606.0	
611.0	5.0'

BOX: 30, 31, 32, 33, 34

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
598-622.5 Tkb xtal-lithic tuff. wh plag xtal frags locally abundant. bk ashy lenses cont bn clay flakes + erly rare pyrite	610–620		ep vlts + repl clsts. 616.5' py vlt @ 25°∠ w/ ep halo.
Vague cont @ 35°∠			
622.5-683± Tkb Greenstone. Mssv dkgn-gy to dk gy aph chl andesite? Local wh plag phenos obs. Grad contact w/overlying mafic tuff bed.	630		non magnetic. py vlts common, up to 1.1% py locally, lesser as diss in wallrock. assoc w/ cc±chl alt.
	640		py-cc vlts @ 25-35°∠ xm-1cm wide, nil halo. x-cm py±cc vlts w/ wallrk ep alt. Cut by cc vlts. Fracts w/ spar ep clots @ 25-35°∠
wkly ppy txt rounded intrusives @ 643'			braided cc-py±chl vlts. rare py
no volc structure remains ↓	650		cc-chl vns @ 40°∠ w/ chl frags
	660		irreg ep±cc±ch → frags
md gn-gy aph flows w/ patchy ep-alt rare phenos			pale gn epx? ass w/ vns
	670		
plag ppy txt w/ bio? alt of groundmass	680		tight cc stkwk and incr groundmass cc w/ depth ↓ 675-683' ...

RECOVERY

Run	Run length	Core	%
611	10	10	100
620	9	9	100
630	10	10	100
640	10	10	100
650	10	10	100
660	10	10	100
670	10	10	100
675	5	5	100
683	8	8	100

Circled run numbers: 81, 73, 89, 83, 80, 85, 27, 59

ANALYTICAL

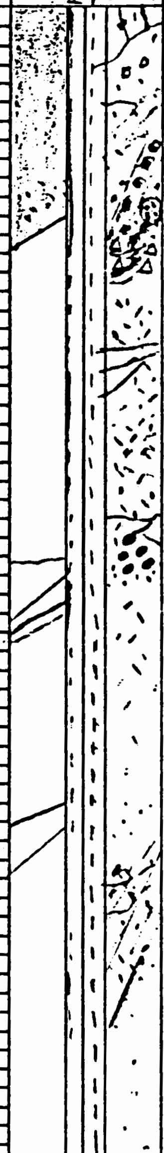
Sample	Interval
611.0	5.0'
630.0	
635.0	5.0'
640.0	5.0'
648.0	
653.0	5.0'
660.0	
665.0	5.0
670.0	5.0

BOX: 34, 35, 36, 37, 38

FT.	LITHOLOGY, ALTERATION, MISC.	MINERALIZATION	Run	Run length	Core	%	Sample	Interval	BOX
680	Ꞧb Greenstone	widely-spaced cc vlts	59 (683)	8	8	100	683.0		
690	683–713± Ꞧb Tuffaceous lithic tuff. Gradational up+lw contacts. Interm to mafic, md gy to dk gn-gy [illegible] w/ scat wh plag xtal frags and rounded [illegible] frags.	wk-mod mag; widely scattered cc stkwk, groundmass cc alt; ~687-688 - Ird cc-py-qtz [illegible] of grnst.	73 (693)	10	10	100	688.0	5.0'	38
		Mnr vf gn diss py, locally up to ½% over ltd areas; cc alt ltd to stkwk	68 (700)	7	7	100			
700	~700–713 - xtal-rich tuff	[illegible] alt [illegible] -> frags?; mnr diss py in [illegible] frags	75 (705)	5	5	100			39
710		cc cont fract @ 35° ℄ (late)	63 (713)	8	7.8	98			
720	±713–762': Ꞧb Greenstone. Mssv, md gy-md gn-gy aph, featureless grnst/andes.	non, to locally mod mag. sli incr in cc veining from above tuff; sper ep assoc w/ cc vlts	63 (723)	10	10	100			40
730	vague lithic fragments, detrital fabric? synvol dikelet @ 40° ℄ ~1cm wide; scat plag xtals	sparse py	70 (733)	10	10	100	734.0		
740		diss- fract controlled py; cc-chl-ult-ep bx, x-cut & offset by cc vlt, ep alt [illegible] -> frags?	81 (743)	10	10	100	739.0	5.0'	41
750	Poridic frag txt. Suggest entire unit may be tuff in origin. lithic frag. Some crse epclots may -> lithics?	cc in groundmass; disking of core; ltd cc veining to lower contact	67 (753)	10	10	100			42

GRAPHIC LOG

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
713-762': Tb Greenstone msv mdgy to gn gy grnd, featureless other than periodic frag txt. gritty, clastic txt?	750–760		wk-nonmag, sparse py, scat ep. (sparse scat py + diss vfg py ≤ ½%) mod calc groundmass, scat cc stkwk. Carbonate-filled fractures w/ vale frags @ ~15°∢ caliche? (chl+mt+py clot @ contact)
762-811.0 TD Kd qtz diorite dior. Var color & txt to 780'. AH cont zone. Kd is distinguished from Tb Hypaby by presence of tab amph phenos & rel unalt mdgn ign txt. (contact zone: 762-779: 762-763.5 - H bn int frag w/ phenos & frag cem by qtz & cc. 763.5-779.5: mdolkgy cloudy phen txt w/ apl chill zn from 763.5-765.0.)	760–780		762-763.5 - 2x chl py ⊄. wh plag xtals + felsic frags cem by gy silicat whcc. Tr py w/sil. Weak but perv silic 763.5-779.5 - alt dior. Most amph the alt to sec bn bio. Mor chl; tr-mnr fg pyrite. threads of vfg py. clay crust on frags
779.5-781.3 - Tertiary mafic dike, irreg, shp up cont. lk apl grnd w/ locally abund. plag phenos. (diluted)	780		tr diss vfg py, nonmag. lwr cont @ 50°∢ (Bio ↑)
781.3-811' Mostly wkly alt q dior. Hmdgy equigran, phen 'salt+pepper' dior. Tab, euh bk amph & wh plag xtals dom rock. Vfg gn mafics & qtz dom groundmass. 793-795' - bk plag ppy Tert dike? Becomes lighter gy towards lower cont.	780–811		Dior is wkly silic & all mafics are alt to chl. Hd cc in stkwk vlts. nonmagnetic. rare vfg py. (← Chlorite) Scat @ 25°∢. 795-804 - H gy, milky alt of dior. Incr diss py to ½% Tetch y bio → mafics. nil cc. chl→out. tr-po & mnr fg py
TD @ 811.0'	820		



RECOVERY

Run	Run length	Core	%
67 (to 753)	10	10	100
46 (to 763)	10	10	100
72 (to 773)	10	10	100
52 (to 781)	8	8	100
59 (to 791)	10	10	100
64 (to 801)	10	10	100
76 (to 811)	10	10	100

ANALYTICAL

Sample	Interval
757.0	
762.0	5.0'
763.5	1.5'
769.0	5.5'
774.0	5.0'
779.5	5.5'
781.3	1.8'
787.0	5.7'
793.0	
795.0	2.0'
800.0	5.0'
804.0	4.0'

BOX: 42, 43, 44, 45

DIAMOND DRILL HOLE LOG

Company: Orvana Resources Corp

Property: Thimble Mt.	Hole No.: TM 94-2
Location: Seattle Showing	Bearing at Collar: 280°
	Inclination at Collar: -45°
Coord. - Collar N: 9162N	
E: 10865E	Length: 333'
Elev. - Collar: 645m	Core Size: NQ
Date started: 11/13/94	
Completed: 11/16/94	Logged by: 24- ADE;

LEGEND
- Quartz/Silica
- Fault/Fract
- Broken Core w/clay or FeOx
- Epidote
- Pyrite
- Calcite
- Hematite
- Chlorite (Hydrothermal)

SURVEY

Footage	Bearing	Inclination

LITHOLOGY, ALTERATION, MISC.

- magnetite
- chalcopyrite
- biotite
- garnet
- clinopyroxene
- Tert dike/sill /porphyritic
- Cret. Nelson q. dior-dior
- Hypabyssal intrus /intrusive bx
- Greenstone/volcanic bx
- Crystal and/or lithic tuff

Casing to 24' - Bedrock

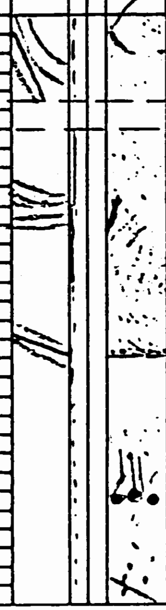
24-42'± Probable Jb Volcaniclastic Calcsilicates obscur orig protolith, however disturbed (convol) mineral bands & dash

CORE STOLEN

green, greenstone-like fabric where not completely replaced suggest a tuffaceous? volcanic origin. Calc-sil habit + rel low cc content do not indicate limestone proto. Poss calc-siltstone bands vary from ~20 to 90°
skarn devel where more bed-controlled

±42'-83' Kd?? Nelson Diorite, mgy, salt + pepper txt dior w/ mafic ?bio tempt → chl, plag →(minor) ep, scattered volc xenol., local endoskarn

GRAPHIC LOG (Silica / Alt / Silica)



MINERALIZATION + Alteration

Note: Pervasive chlorite alteration resulting from L. Greenschist metamorphism has been omitted from the alteration column for simplicity

ltd py assoc w/chl ± ep

Gt-cpx sk. Bands of granular lt rd-bn gt + pale gn cpx w/ minor chl ± cc retro alt. Some gt → by dk cin-bn gt along fract. v. kw sy

Memory: masv bn gt w/ gt vlts

24-34': 20% gt, 60% cpx + q, 10% chl

below 33' - dis bn gt
isol clots dk bn gt in matrix of cpx + ep ± chl
gt repl vlt = chl selv ≈ 20%

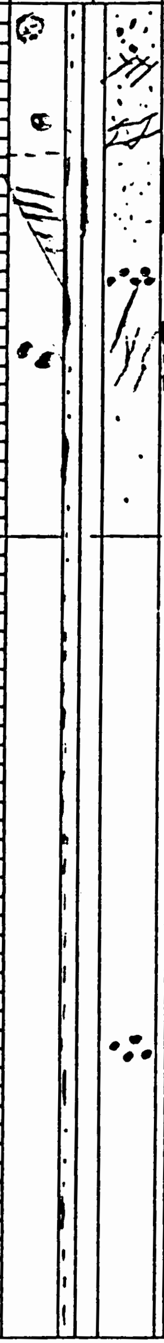
ind retro alt? of masv gt ± ep?
vary cpx repl + green cpx engulfed by chl ± ep alt
vlts cp > py ≤1% diss in lam sk

4% vlts cp + py + in cont.
ep ± rd FeOx → equant plag phenos
widely mag ↕
FeOx coat fract, cl ± py selv ± fract

widely sp cc + ep vlts.

widely sporadic diss py diss ...

FT.	RQD	Run length	Core	%	Sample	Interval	BOX
0							
10							
20					24.0	4.5'	
					28.5		
30	50	9	9	100	CORE STOLEN		
33					30.0	5.0'	1
	77	10	10	100	35.0	5.0'	
40					40.0	5.0'	
43					42.0	5.0'	
	17	10	10	100	47.0		2
50							
53		10	10	100			



LITHOLOGY, ALTERATION, MISC.	FT.	MINERALIZATION	RECOVERY Run (RQD)	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
~42-83': Kd / local intense fract, Fe-ox gouge, ltd sx. f g equigran w/cloudy groundmass	60	scd wt, mnr py (< ½ %); chl, Fe-ox on fract; rare PY	23	10	10	100	63.0		2
63-67° xenolith? of lam volcl rock similar to skarn host @ top of hole. shp cont @ 30°		gt-ep-cpx-py sk Band w/ md-dk brn gt hosting vfg diss py up to 2½ %	63 / 44	10	10	100	67.0	4.0'	3
	70	Fe-ox scd + clay, invaded by wh bull qtz vlt.					72.0	5.0'	
		ep selv on fract; 71-72: gt-ep endosk? 1-2% py + rd hem assoc w/ dk brn gt	73 / 71	10	10	100	77.0	5.0'	
	80	tr fg diss py					83.0	6.0'	
			83 / 68	10	10	100			4
	90		93 / 74	10	10	100			
	100		103 / 43	10	10	100			5
	110		113 / 44	6	6	100			
	120		119 / 58	7	7	100			6
			126↓						

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY: Run	Run length	Core	%	ANALYTICAL: Sample	Interval	BOX
	60									
	7									
	70									
	80			83				83.0		4
				RQD						
83.0 – 164				(68)	10	10	100			
	90			93				93.0	2.5	
								95.5		
				(74)	10	10	100		3.5	
	100							99.0	4.0	5
				103				103		
	110			(43)	10	10	100			
				113						
				(44)	6	6	100			6
	120			119						
				52	7	7	100			

LITHOLOGY, ALTERATION, MISC.

83.0 – 164
TIB - Greenstone dk gn-gray aph texture ... the rock ... of green weak ... gray ...

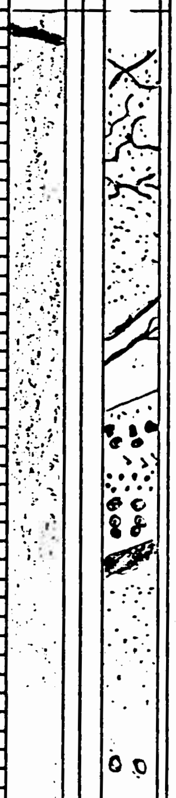
84-84.5 - dikelet of Cret Nelson diorite? or hypabyssal inte

TIB - Greenstone has phenocrysts of epidote?

109-111 fractured green volcanic Fe oxidation along the fractures. Intensive development of chlorite along the fxs development of pyrite along the fxs (slick) pyrite has almost ideal shap

fault

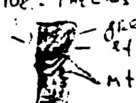
GRAPHIC LOG



MINERALIZATION

presence of magnetite It's weakly magnetic
83.0-83.5 patches of garnet
disseminated & ... also pyrite associates with calcite, epidote veinlets
Fractures are presented by epidote + calcite or by epidote itself, or calcite itself
93-94.0 epidote + 3-5% of pyrite
100-100.5 calcite veins

108 - Patches of massive mt

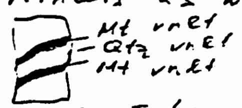


→ calcite vnlt
Magnetic

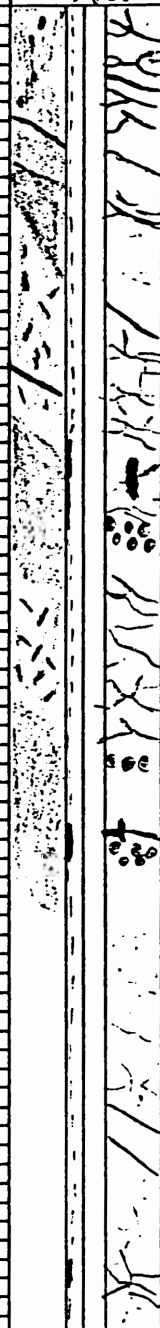
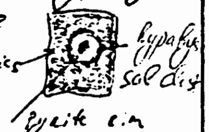
silica vnlts

1-2% of dessiminated Pyrite

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
TrG- greenstone, it's green, dark grey, grey aphanitic locally bedding is preserved (< 60° CA) 126-133- greenstone (color: green + light green (epidote?) This interval characterized by moderate- intense silicification) 133- 143- greenstone there are phenocrysts of epidote Possibly, epidote altered plagioclase It's slightly magnetic It's cut by microfractures of calcite. Also, calcite in groundmass (fine-grained)	130, 140, 150, 160		126-128.5 - 1-2% Py 128.5- Ck resiad unit with clasts of greenstone Mt is disseminated, and Mt clasts veinlets as well. 133-138.5 Propylitic alteration, Py + epid + pyrite. 133-143- phenocrysts of epidote Mt distributes as disseminated and as veinlets as well.
			148-153- Intense silicification + epidote 133-163 1-2% of Py development of calcite veins, epidote veins and patches there are quartz veins
164-168.5- Tr hypabyssal intrusion? or, Nelson diorite? Groundmass has green color (chlorite?) Phenocrysts of plagioclase (mostly) + amphibole It has gradational contact with volcanics ⇒ It's hypabyssal diorite?!	170, 180		1/2-1% of Py Pyrite is represented as disseminated grains as well as in veinlets Abundant amount of microfractures of calcite
171-181 TrG- Greenstone Med. grey This interval represents s/t intermediate between volcanics and hypabyssal ultramafic? autobreccia - clasts of hypabyssal in volcanics.	190		Calcite + ep veins ± pyrite



Run	Run length	Core	%	Sample	Interval	BOX
126	7	7	100	126	3.0	
(69) 133	7	7	100	129	4.0	7
(71) 143	10	10	100	133		
(45) 153	10	10	100	148.0	5.0	8
(66) 163	10	10	100	153.0	6.0	
(64) 173	10	10	100	159.0		9
183	10	10	100	175.5	5.0	
193	10	10	100	180.5		10

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY Run	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
TR B - Greenstone Md gray, Aph. It has clasts of hypabyssal intrusive	200		Abundant microfxs of cc + epidote associates with the fxs 1/2% of desseminated py the majority of py associates with clasts of hypabyssal intrusive 	203	10	10	100			10
205-216 - TR B - hypabyssal intrusive phenocrysts of plagioclase(?) and amphibole(?) Ground mass aphanitic, dark green. Some grains of plagioclase altered to epidote	210		At the contact between volcanics and hypabyssal intrusive - development of hematite. Abundant of fxs of calcite + epidote	213	10	10	100	202.5 – 205.5	2.0	11
	220		Calcite + hematite	223	10	10	100			12
	230		microfractures of epidote + calcite. epidote selvages on fractures	233	10	10	100			
	240		calcite + hem	240	7.0	7.0	100	237	3.0	
241 - 333 - Kd? Nelson diorite. It has salt + pepper texture Xenoliths of volcanics			veinlets of calcite dissem epidote + veinlets of epidote + patches of epidote	247	7.0	7.0	100	240 – 245	5.0	13
Some plagioclase altered to epidote. More intensely (propylitic alteration) plagioclase altered to epidote near the contact	250			253	6.0	6.0	1[illegible]			
between volcanics and diorite	260		Pervasive chloritization. Calcite veins	263	10	10	100			14

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LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY Run	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
After ≈ 270 ft biotite is relatively unaltered Typical salt + pepper texture scattered xenoliths of volcanics. In some places plg → ep. amph (?) or biotite → chlorite when both, or amp. altered to chlorite biotite. Has light green color. Epidote more associated with altered biotite.	270		1/2 % py - widely sporadic dissem. py	271	8.0	8.0	100			15
	280			281	10.0	10.0	100			
				283	2.0	2.0	100			
	290			293	10.0	10.0	100			16
	300		Intense propylitic alteration along some fxs, selvages of epidote on fractures and epidote grains mostly distr. close to selvages	303	10.0	10.0	100			
	310			313	10	10	100			17
	320			323	10	10	100			
	330			333	10	10	100			18
			EOH							

Pg of

DIAMOND DRILL HOLE LOG

Company: ORVANA Resources Corp

Property: THIMBLE MTN.	Hole No.: TM94-3
Location: Seattle Showing	Bearing at Collar: 280°
	Inclination at Collar: -70°
Coord. - Collar N: 9162N	
E: 10865E	Length: 284.5 ft
Elev. - Collar: 645m	Core Size: NQ
Date started: 11/17/94	
Completed: 11/20/94	Logged by: SW

LEGEND

Silicification (silica veins)	[symbol]	Pyrite	[symbol]
Fault/Fracture	[symbol]	Calcite (on fract)	[symbol]
Broken core / clay or FeOx	[symbol]	Hematite	[symbol]
Epidote	[symbol]	Chlorite	[symbol]

SURVEY

Footage	Bearing	Inclination

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY: Run	Run length	Core	%	ANALYTICAL: Sample	Interval	BOX
∴ Magnetite; Chalcopyrite; Biotite; Garnet; Clinopyroxene; Epidote Trt. dike/sill / porphyritic; Cret. Nelson qt dior. - dior; Hypabyssal intr. / intrusive ex; Greenstone/volc ex; Crystal and/lithic tuff Casing to 15'	10 15		[symbol] - SKARN							
15-24 ℞B Greenstone Aph. dark grey w scattered cc vnlts, also, cc in groundmass dissim garnet, py, and ep.	20		½% py. large - dissem patches + vein of ep.(?) (bright green) garnet 22-23.5 Px-skarn 2.5% Py	10	10	100	15.0	5.0	
							20.0	4.0	
24-30- Ga ± cpx ± ep skarn. Locally It is relatively calcareous. It preserves original banding. ≈45°CA Protolith — limestone?	25 30		25-26 Ga-Px-skarn ± ep. 26-30.5 - Massive Ga skarn. Red brown Ga Hem + cc + Py vn	10	8	80	24.0	6.0	1
32- fault zone, Intense FeOx + clay 33-35. crystal tuff (?)	35		cc + hem vnlt				30		
35-44.5 - ℞B Greenstone (?) It has distinctive banding ≈50-60°CA It has bands of massive Ga skarn, ep, cpx, scattered cc vnlts + hem	40		Garnet Bands + garnet patches % - Py grains	10	10	100	35	5.0	
							40	4.0	
45-49- Ga-skarn	45		Chlorite + Garnet Massive Ga skarn — calcite vein				44	6.0	2
49-52- Tr Greenstone There are two distinctive layers ① Aph dk gn ② cp+Py enriched greenstone	50 55		2-5% Py + cp w/ magnetite	10	10	100	50	3.0	
							52		

LITHOLOGY, ALTERATION, MISC.

52-89 K - Cretaceous Nelson diorite (?) Salt + pepper texture Med grained. There are some "phenocrysts" of plagioclase. Equigranular. Scattered veinlets of calcite. Selvages of epidote on calcite vnlets. Upper and lower contacts are sharp with meta-volcanics.

Mineralogy: Plagioclase + amph ± biotite

89-91.5 - Greenstone (?) Aphanitic texture Med. green Scattered vnlets of cc, ep, hem, quartz. There is a clast of diorite (?) It means diorite is older than volcanics (?). I think it could be highly altered fine grained diorite (or cooling unit)

91.5-92 - Diorite.

92-92.5 - Garnet skarn

92.5-94 - Metavolcanics. Greenstone aphanitic. Dark green-grey

94-97 Ga + ep ± cpx skarn. This part of skarn is endoskarn. It preserves texture of diorite

97-103 - Bands of Ga + ep + cpx skarn and greenstone. Abundant pyrite associates with skarn (up to 10%)

95.5 - Broken core (development of FeOx)

103-104.8 - Greenstone

104.5-108 - Nelson diorite Salt + pepper texture (104.8-107) - more mafic than (107-108) 107-108 - Grains have orientation

FT.

60, 70, 80, 90, 100, 110, 120

GRAPHIC LOG (HCl SiC.cs)

MINERALIZATION

52-55 - Mafic minerals are altered to chlorite. Diorite has kind of greenish color. 1/2% of dissemin Py. Locally development of epidote

54.5 - Intense development of epidote (plag → epidote)

Fault clast (?) of metavolcanics chloritic + epidote. Higher content of cc

Calcite veins

1/2 of dissem Py. Scattered vnlts of cc + ep. "Phenocrysts" of epidote

Abundant silica vnlets. Microfractures with cte vnlets of epidote. Clots of epidote

ga + ep + cpx (?) skarn 3-5% Py in skarn

cpx (?) skarn with clots of garnet. Rims of magnetite around garnet

1/2-1% - Py

intense development of epidote at the lower contact b/w diorite volcanics

vnlts of calcite silicified

Ga ± cpx ± ep skarn

local development of epidote (plag → epidote)

vnlts of epidote

RECOVERY / ANALYTICAL / BOX

Run	Run length	Core	%	Sample	Interval	BOX
65	10	10	100			3
75	10	10	100			
85	10	10	100			4
95	10	10	100			5
105	10	10	100	94 - 97	3.0	
				97 - 103	6.0	
115	10	10	100	111 - 113	2.0	6
125	10	10	100			

LITHOLOGY, ALTERATION, MISC.

113 - 127.5 Kt Nelson diorite? Salt and pepper texture. Both contacts are sharp. It's medium grained of gray color. In some places plag → epidote completely. Scattered vnlts of cc, ep, quartz, epidote, amp + Py dissem. Py. amp → chlorite (recrystallized)

127.5 - 131 - Light green highly silicified rock with bands of garnet skarn (?) It preserves original banding ≈ 30-40° CA. At the lower contact vein of pink colored mineral

131 - 190

TrB - Greenstone

Aphanitic, porphyritic. Color varies from dk green to light green. Scattered cc veinlets. Hard to weakly silicification.

138 - 139 - "Clasts". Clasts of garnet skarn. The clasts are cc because rims of epidote and quartz around the skarn

150 - 190 TrB - Greenstone (metavolcanics) Texture is either aphanitic (mostly) or porphyritic locally. The greenstone is pretty silicified. Silicified zones are usually enriched by epidote, and pyrite

FT.

130, 140, 150, 160, 170, 180, 190

GRAPHIC LOG

MINERALIZATION

1% Py scattered vnlts of epidote

Bands of highly silicified rock and garnet skarn

131 - 136 - highly silicified epidote vnlts associate with silica vnlts. Pyrite occur to the vnlts

Clasts of garnet skarn

epidote + silica vnlts

ep. vnlts

147 - 154 - Silicified light green volcanics silica vnlts + ep + cc dark green chlorite vnlts.

≤ 1% of dissem Pyrite

157' - Clast of silicified rock with pyrite and epidote. cc vnlts epidote vnlts weak silicification ≤ 1% of Py majority of pyrite distributes in veinlets with cc, epidote. Minor pyrite - dissem

164 - 165 - Highly silicified rock with Py and ep

15 cm cp quartz vein

epidote vnlts

silicified zone

epidote vein (173.4)

Garnet (?) skarn + Py + Quartz

silica vein

fault

fault

RECOVERY

Run	Run length	Core	%
135	10	10	100
145	10	10	100
155	10	10	100
165	10	10	100
175	10	10	100
185	10	10	100
195	10	10	100

ANALYTICAL

Sample	Interval
127.5 – 131	3.5
138 – 140	2.0

BOX

7, 8, 9, 10

LITHOLOGY, ALTERATION, MISC.

190-2EUS - Kd? Nelson diorite? Type of rock: Diorite – granodiorite. Med grained equigranular Salt & pepper texture
Color: med grey, milky grey
Mineralogy: plag, bio > amph.
Scattered veinlets of cc.
upper contact with volcanics – fault (?)

190 - 209 - Green-grey diorite relatively leucocratic mafic minerals are altered to chlorite
Locally: plagioclase → ep

209-225 Relatively fresh diorite. It has more mafic minerals

225-250 Weakly altered greenish grey diorite Scattered veinlets of cc

250-253 - milky diorite It's undergone the most intense alteration than other diorite it is "fragile" It doesn't have solid matrix it's weakly broken out

FT.

200, 210, 220, 230, 240, 250, 260

GRAPHIC LOG

MINERALIZATION

weak but pervasive silicification [illegible]. All mafic minerals → chlorite 1-2% of dissem. py [illegible] microveinlets with cc

< 1% of py
veinlets of epidote more intense propylitic alteration along these veinlets

weak pervasive silicification
1/2 - 1% of dissem py.
not magnetic
amph. bi → chlorite or sec. biotite

244 - clast of greenstone (?)

cc vein

RECOVERY / ANALYTICAL / BOX

Run	Run length	Core	%	Sample	Interval	BOX
205	10	10	100			11
215	10	10	100			
225	10	10	100			12
235	10	10	100			
245	10	10	100			13
253	8.0	8.0	100	250 – 253	3.0	
263	10	10	100			14

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LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY Run	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
270-273 - Almost unaltered diorite. Salt + pepper texture ~~more~~ "Mafic" diorite. There are several clasts of greenstone. Size of clasts varies from 5mm up to 1 inch.	270		Low percent of epidote veinlets 1/2 - 1% of Py		10	10	100			14
	273									
	280				10	10	100			15
			EOH							

DIAMOND DRILL HOLE LOG

Company: ORVANA RESOURCES CORP

Property: THIMBLE MTN	Hole No.: TM 94-4
Location: Seattle Skoning	Bearing at Collar: 270°
	Inclination at Collar: -50°
Coord. - Collar N: 8980N	
E: 10800E	Length: 550'
Elev. - Collar: 672 m	Core Size: NQ
Date started: 11/20/94	
Completed: 11/25/94	Logged by: SU

LEGEND

Quartz/Silica	Pyrite
Fault/Fract	Calcite
Broken core with FeOx and clay	Hematite
Epidote	Chlorite (Hydrothermal)

SURVEY

Footage	Bearing	Inclination

LITHOLOGY, ALTERATION, MISC.

∴ Magnetite
⁒ Chalcopyrite
⁚ Biotite
Garnet
⁚ Clinopyroxene

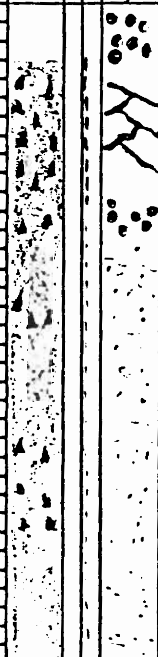
Tert dike/sill / porphyritic
Cret Nelson g. dior - dior
Hypabyssal int / int. bx
Greenstone / volcanic bx
Crystal and/or lithic tuff

Casing 20' - (Probably, Drillers didn't put a wood block for the top of the hole.)

23-30 - ҠB - Greenstone
Aphanitic texture, dark green, pervasive weak → hard silicification, scattered gc/veinlets. Core is fractured on the joints, development of FeOx and gc. Multiple generations of fractures

30-55 ҠB Greenstone
It has porphyritic texture, color varies from light green → dark green → red grey due to chloritic alteration.
39.5 - 42 - Hypabyssal intrus (???)

54- Aplite dikelet width (1in.) 45° CA. It's cut by cc and hem veinlets



MINERALIZATION

Broken core.

Magnetic veinlets of hem + mt ± py ± cc.

Weakly magnetic scattered mt, mt veinlets, < 1/2 % of py

Abundant amount of epidote veinlets of diff. orientation

… % of Pyrite locally, development of secondary Biotite (?)

FT.	Run	Run length	Core	%	Sample	Interval	BOX
20							
23–31	23–31	8	5	63			1
31–37	31–37	6	5	83			2
37–43	37–43	6	6	100	37.0–43.0	6.0	2
43–53	43–53	10	8.5	85			

LITHOLOGY, ALTERATION, MISC.

58.7-59.5 - Diorite (?) or hypabyssal intr. leucocratic 10 mafics → chlorite, visible lineation orientation (flow(?), stress(?))

59.5' - 95' TR6 Greenstone Mssv dk gr-gy to light green due to content of chlorite. Tph andes/grst weak - moderate silicification Scattered cc veinlets. locally porphyritic with phenocrysts of plagioclase (?)

71.5 - 72 - massive epidote vein

There are several clasts of crystal-lithic tuff (?) or hypabyssal intrusive (?) (clasts - 84')

FT.

60, 70, 80, 90, 100, 110, 120

GRAPHIC LOG

MINERALIZATION

Abundant ep-cc veinlets plagioclase → epidote along these veinlets

Clots of magnetite replacement. In some places greenstone has dark grey color due to high content of magnetite

73-74 - cc vein (‖ CA) intense chloritization plag → epidote mafics → chlorite

1-2% of pyrite dissem magnetite or clots of magnetite relatively intense propylitic alteration plag → epidote

95-97 - stockwork calcite veins

Mt + py - dissem few green epidote veinlets

massive Mt replacement

Hem veinlets They associate with cc

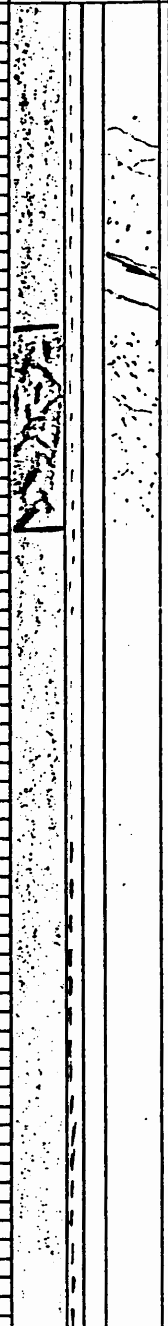
2-5% of py - py veinlets dissem py

Epidote - everywhere scattered clots of Mt

RECOVERY / ANALYTICAL / BOX

Run (to ft)	Run length	Core	%	Sample	Interval	BOX
61	8	7	88			3
70	9	9	100	66–70	4.0	4
79	9	8	89			
87	8	6.5	81			5
92	5	5	100			
101	9	6.5	72			6
110	9	7	76	104–110	6.0	
120	10	9.5	95			7

1MJ4-4 p- of -

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
125 – 142 Trb Greenstone Aphanitic or Porphyritic texture (phenocrysts of plagioclase, plag. → epidote) Characterized by weak pervasive silicification Scatt volcanic and lithic Fragments Scattered cc veining. color green or gray due chlorite (major) and magnetite (minor)	130 140		ep vnlts dissem ep (plag → ep) 1-2% dissem. Py. - Py + mt veinlet. Magnetite replacement, Groundmass has dark gray color almost black due to Magnetite
142 - 153 - Trb X-tal lithic tuff gradational upper contact white plag x-tal frag and subrounded phaneritic intr.	150		Few ep vnlts. ~1% of pyrite — Py veinlets or dissem Py
142 - 169 Trb Greenstone clasts of x-tal lithic tuff (with magnetite)	160		
169 - 192 - Trb Greenstone very fine grained Color: with brownish tint. Scattered cc vnlts of diff orientation (multiple generations of fractures) + cc in groundmass. silicified)	170 180 190		Intense development of secondary Brownish biotite Possibly mafics → biotite - silicified zone

RECOVERY

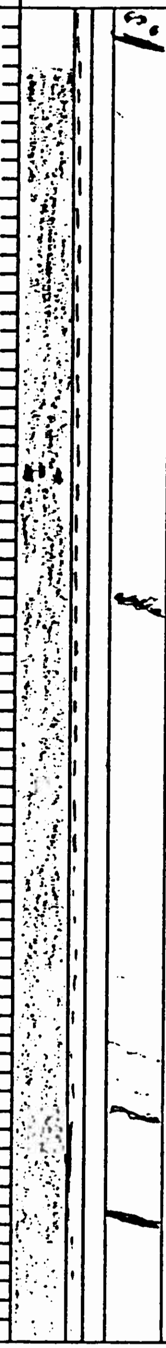
Run	Run length	Core	%
128	8	5	63
133	5	5	100
143	10	10	100
153	10	9.5	95
161	8	8	100
169	8	7.5	94
179	10	9.5	95
188	9.0	9.0	100
191	3.0	3.0	100

ANALYTICAL

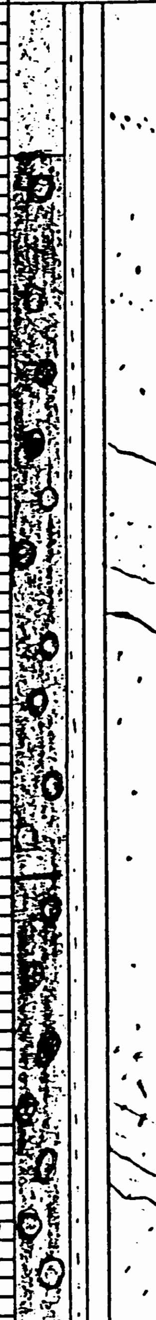
Sample	Interval
144	6.0
150	
180	5.0
185	6.0
191	
192	5.0

BOX: 8, 9, 10, 11

TM 011-H / 4663

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG HCC	MINERALIZATION	Run	Run length	Core	%	Sample	Interval					BO
192-197.5 - Zone of intrusive(?) It's small grained. It is altered: mafic minerals → chlorite partly, sec biotite partly; plag. → sandy look (leached)	200		broken core; cc vein. Pervasive development of secondary brownish biotite. 1-2% of dissem Py and Py veinlets. Not magnetic	201	10	10	100	197						
197.5-243 — TRB Greenstone, very fine grained. Color: brownish gray. Hardly silicified. Scattered cc veinlets. There are grains of light brown mineral (three) — possibly garnet (?), or sphene (?)	210			211	10	9.5	95							12
	220			220	9	9	100	220	5.0					13
			– cc veining		10	10	100	225	5.0					
232-243 - This zone has lighter color (light brown) with small clasts of x-crystal lithic tuff and chloritized clasts. It's silicified	230		silicified zone	230	10	10	100	230 / 233	7.0					
243-253 - TRB Greenstone. Color: dark green - light green. Relatively content of calcite. There are few epidote (?) vnlts 60° CA. Epidote vnlts are absent in the rock with secondary bg biotite	240			240	9	9	100	240						14
	250		– cc veins.	249	4	4	100	250	3.0					
	260		calcite zone	253	10	10	100	252 / 259	6.0					15
				263										

1M94-4 p s u F u

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	BOX
253-273- Tr b Greenstone Color: Brown. Scattered mlts of calcite. Pervasive silicification. Scattered x-tal (plag?) and lithic frag	270		Secondary Biotite 1-2% of pyrite - plag → epidote 1% of dissem py	
273-316 - Tr b x-tal-lithic tuff. Var lt gn-gy to dkgy Dark colored rock is more ash rich (273-292) (302-316). Locally abundant of white plag (clasts) possibly phaneritic intr fragments.	280 290 300 310		- plag → epidote cc with py - epidote cc vein	16 17
314-315- Highly chloritized zone				18
319 - 324 - Biotite rich zone	320		- silica vein Secondary biotite - cc + ep vnlts	
327-335 tuff with clasts of intrusive (possibly hypabys-sal intrusive; groundmass aphanitic, phenocrysts: plag amphibole	330			19

RECOVERY

Run	Run length	Core	%
	9	9	100
270	10	10	100
280	10	10	100
290	10	10	100
300	10	10	100
310	9	9	100
319	10	10	100
329	6	6	100
335			

ANALYTICAL

Sample	Interval					

LITHOLOGY, ALTERATION, MISC.

335-373 - Tr b Greenstone
aphanitic, locally phy. phaneritic
Color: light green, gray — dark gray. It's silicified

336-352 - gray altered rock highly silicified. fine-grained phenocrysts of amphibole (?) and plagioclase. It looks like intrusive

352-373 - massive, aphanitic highly silicified scattered veinlets of cc. Local development of brown biotite

373-375 - hypabyssal intrusive
Minerals: plagioclase
All mafic minerals altered to chlorite + brown secondary biotite

380.5-381 - Possibly a dikelet of hypabyssal. Plag. completely altered to epidote. All mafics → chlorite. It could be just a clast of intrusive.

381-403 - Tr b Greenstone
md-dk gray - light green
Aphanitic. There are some clasts of hypabyssal intr. (?) (381-387)
Characterized by pervasive silicification.

FT.

340, 350, 360, 370, 380, 390, 400

GRAPHIC LOG

MINERALIZATION

development of secondary biotite. Intense development of biotite along some fractures
2-3% of py - dissem. and py veinlets

silicified vein ≈ 70° CA
< 1% of pyrite

— cc veining.
secondary biotite

plag → epidote

≤1% of py

quartz vein with pyrite, high content of calcite

RECOVERY / ANALYTICAL / BOX

Run	Run length	Core	%	Sample	Interval	BOX
343	8	8	100	343	5.0	
353	10	10	100	348		20
363	10	10	100			
373	10	10	100			21
383	10	10	100			
393	10	10	100			22
403	10	10	100			23

[illegible]

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION
403 - 472.5 - dark grey Teb x-tal - lithic tuff. It's more x-tal rich + ash rich tuff & x-tal fragments of plag and amph. Gradational upper - lower contacts. Numerous lithic clasts - ie med grained hypabyssal volc. - some v.f.g cherty frags (diopside?) also, some clasts are pyritic. Matrix dominantly altered to chl w weak to moderate f.g. calc.	410, 420, 430, 440, 450, 460, 470		2-5% of Py. Py associated with cc and chl. vnlts. dissem. Py. cc veining. 423 - 426 - moderately silicified zone
472.5 - 485 - Hypabyssal intrusive - abundant plag (60-70%) with 10-15% secondary biotite. sharp lower contact - upper contact shows			

RECOVERY				ANALYTICAL							BOX
Run	Run length	Core	%	Sample	Interval						
	6	6	100								23
409	7	7	100								
416	7	7	100								
423	10	10	100	422.0 - 426.0	4.0						24
433	10	10	100								25
443	10	10	100								
453	10	10	100								26
463	10	10	100	468.0 - 472.5	5.5						
473											

Fig. 4 p. 6 of 6

much qtz veining + some brx.

485 - 526. Moderate - light green xtal - lithic taff with abundant heterolithic clasts. Dominantly f.g. chl-Rich matrix.

526 - 550. - Medium - dark green porphyritic volcanic RX with some hypabyssal volcanic brx clasts. weak silicification + weak calcite throughout

MINERALIZATION

495 - 498 FeOx - Limonite along fxs.

502 - 504. small fault zone - Lt green - white bleached zone, brkn core abundant calcite - some silica.

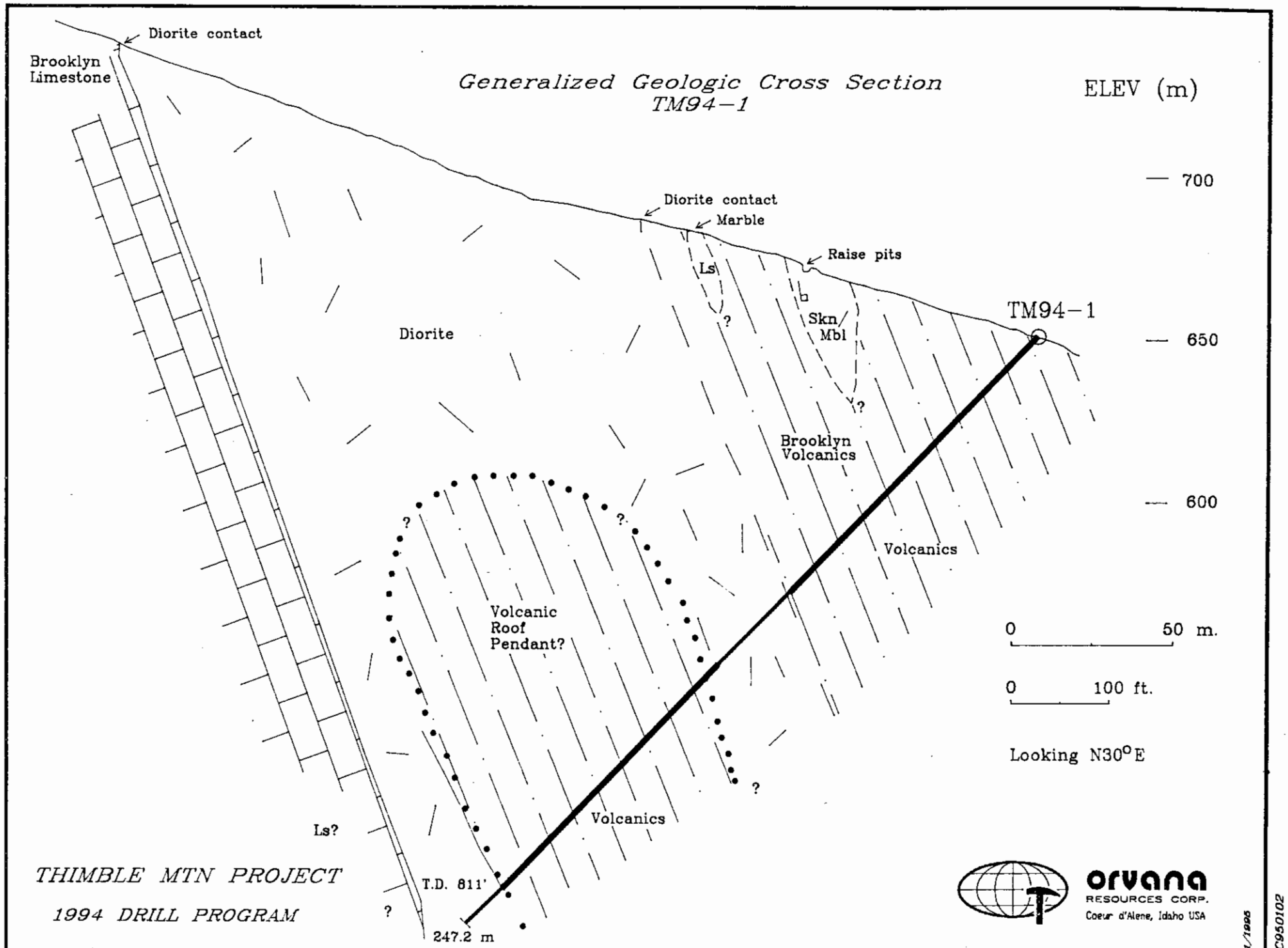
moderate epidote alteration below fault zone particularly along fxs, assoc calc vns.

RECOVERY Run	Run length	Core	%	ANALYTICAL Sample	Interval	BOX
483	10	9.5	95			27
493	10	10	100			
500	7	7	100			28
510	10	9	90	501.5	6.5	
				508.0	5.0	
520	10	10	100	513.0	5.0	29
				518.0		
530	10	10	100			
540	10	10	100			30
	10	10	100			

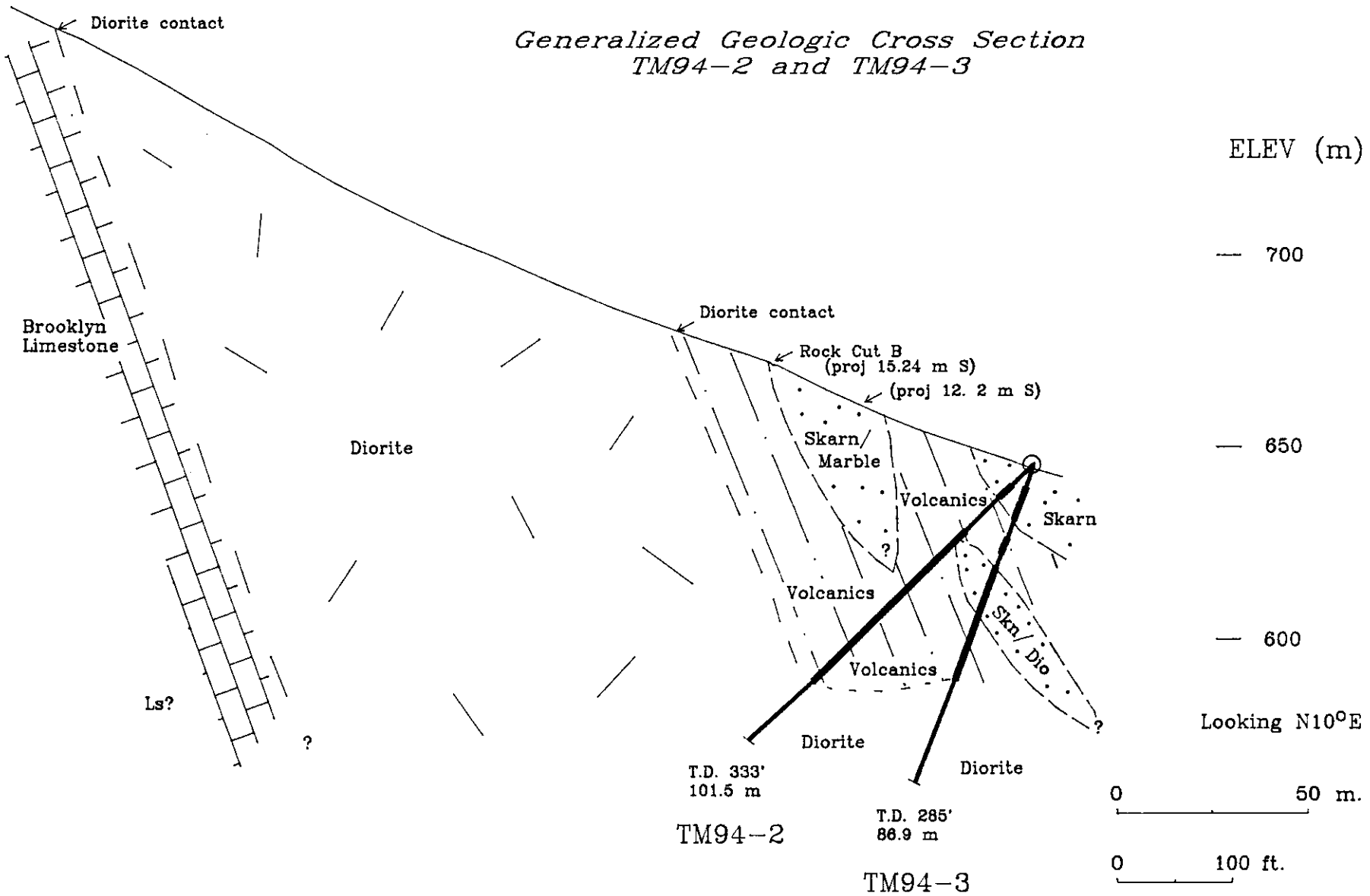
IM94-4 p. 904 3

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL							BOX
				Run	Run length	Core	%	Sample	Interval						
	550		EOH												

APPENDIX 2
GEOLOGIC CROSS SECTIONS


Generalized Geologic Cross Section
TM94-1
ELEV (m)
700
650
600
Diorite contact
Brooklyn Limestone
Diorite contact
Marble
Raise pits
Ls
?
Skn/Mbl
?
TM94-1
Diorite
Brooklyn Volcanics
Volcanics
Volcanic Roof Pendant?
? ?
?
Volcanics
Ls?
T.D. 611'
247.2 m
?
0 50 m.
0 100 ft.
Looking N30°E
THIMBLE MTN PROJECT
1994 DRILL PROGRAM
orvana
RESOURCES CORP.
Coeur d'Alene, Idaho USA
1/1995
C950102

Generalized Geologic Cross Section
TM94–2 and TM94–3



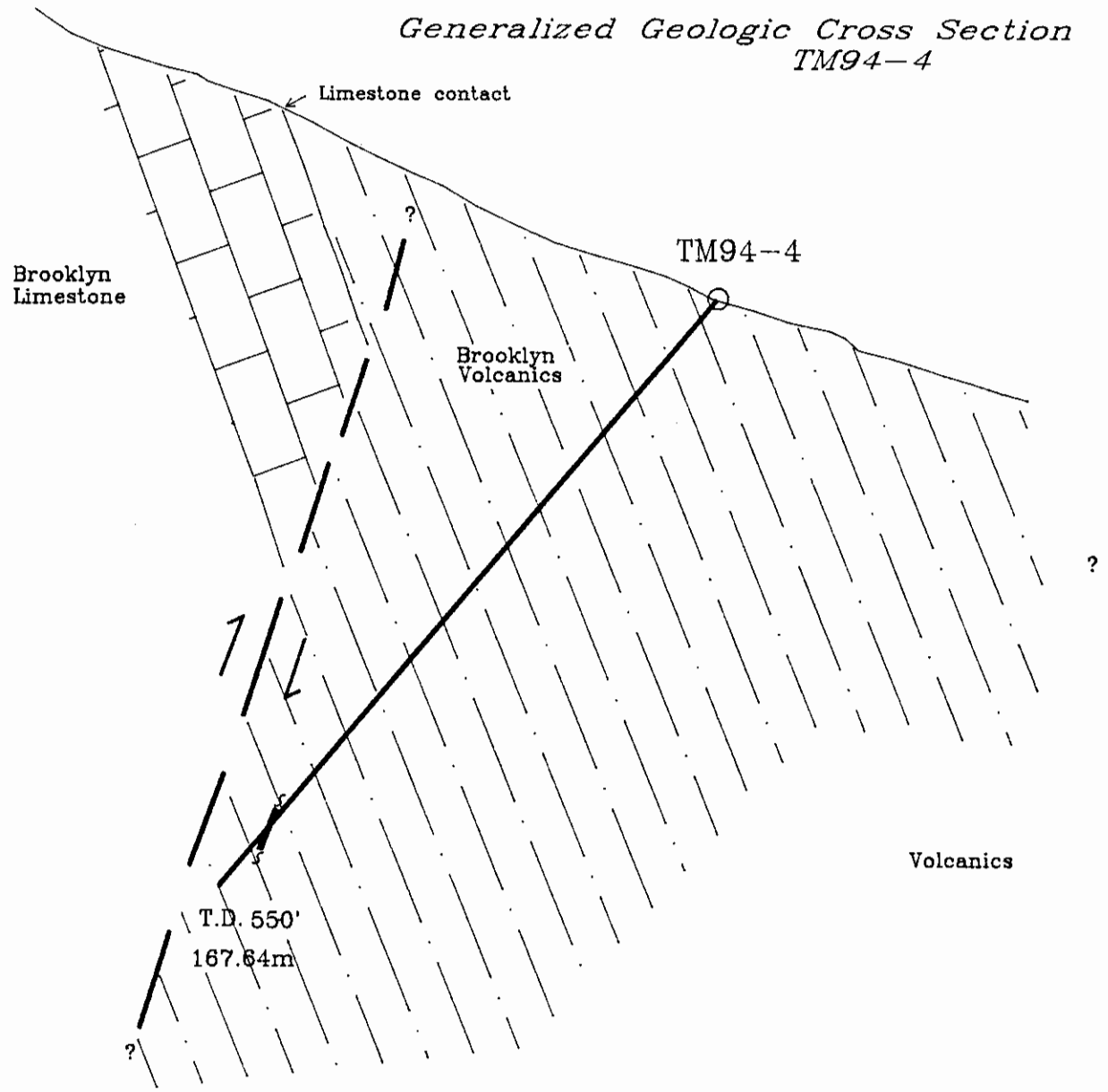
THIMBLE MTN PROJECT

1994 DRILL PROGRAM

orvana RESOURCES CORP.
Coeur d'Alene, Idaho USA

1/1996 C960103

Generalized Geologic Cross Section
TM94–4



ELEV (m)

— 700

— 650

— 600

0 50 m.

0 100 ft.

Looking North

THIMBLE MTN PROJECT

1994 DRILL PROGRAM

orvana RESOURCES CORP.
Coeur d'Alene, Idaho USA

1/1996

C950104

APPENDIX 3
LABORATORY ASSAYS

SVL ANALYTICAL, INC.
REPORT OF ANALYTICAL RESULTS

SVL Job Number :X40330
Sample Receipt :11/29/94
Date of Report :12/12/94
No. of Samples : 19 Core
P.O. No. :THIMBLE MTN

Client: PAUL DIRCKSEN
ORVANA RESOURCES
1755 SILVER BEACH LOOP
COEUR D'ALENE ID 83814

ATTN: DOYLE ALBERS

CLIENT SAMPLE ID	Test : Units : Method:	Au ppb FA+AA	Ag ppm FA+AA	As ppm ICP	Bi ppm ICP	Co ppm ICP	Cu ppm ICP	Pb ppm ICP	Mo ppm ICP
TM94-1:38.5-43.5		<5	<.1	<10	<10	10	92	16	<2
TM94-1:57.5-62.5		41	.8	15	<10	10	350	13	<2
TM94-1:82.5-87.5		<5	<.1	<10	<10	12	120	6	<2
TM94-1:87.5-93.0		<5	<.1	<10	<10	9	92	8	<2
TM94-1:113.0-120.0		24	.2	24	<10	9	180	8	<2
TM94-1:121.0-125.5		14	.2	<10	<10	15	89	11	<2
TM94-1:128.0-132.5		<5	<.1	<10	<10	6	19	6	<2
TM94-1:153.0-158.3		42	.5	<10	<10	12	220	13	<2
TM94-1:158.3-163.0		37	.4	<10	<10	15	200	13	<2
TM94-1:182.0-187.0		19	.3	<10	<10	11	110	8	<2
TM94-1:187.0-192.7		5	.1	<10	<10	11	62	12	<2
TM94-1:233.0-238.0		20	.2	<10	<10	8	190	8	<2
TM94-1:253.0-259.5		118	.4	20	<10	10	230	7	10
TM94-1:283.0-288.0		16	.5	<10	<10	12	150	15	<2
TM94-2:24.0-28.5		113	.9	<10	<10	<2	250	7	<2
TM94-2:30.0-35.0		18	.2	<10	<10	<2	120	<5	<2
TM94-2:35.0-40.0		44	1.1	<10	<10	5	490	230	<2
TM94-2:40.0-42.0		90	3.4	<10	<10	13	1700	21	<2
TM94-2:42.0-47.0		19	.1	<10	<10	6	37	9	<2

SVL ANALYTICAL, INC.
REPORT OF ANALYTICAL RESULTS

SVL Job Number :X40330
Sample Receipt :11/29/94
Date of Report :12/12/94
No. of Samples : 19 Core
P.O. No. :THIMBLE MTN

Client: PAUL DIRCKSEN
ORVANA RESOURCES
1755 SILVER BEACH LOOP
COEUR D'ALENE ID 83814

ATTN: DOYLE ALBERS

CLIENT SAMPLE ID	Test : Zn Units : ppm Method: ICP	Ba ppm ICP
TM94-1:38.5-43.5	31	99
TM94-1:57.5-62.5	21	45
TM94-1:82.5-87.5	14	96
TM94-1:87.5-93.0	16	130
TM94-1:113.0-120.0	25	59
TM94-1:121.0-125.5	28	120
TM94-1:128.0-132.5	22	100
TM94-1:153.0-158.3	31	73
TM94-1:158.3-163.0	37	100
TM94-1:182.0-187.0	22	81
TM94-1:187.0-192.7	22	97
TM94-1:233.0-238.0	23	120
TM94-1:253.0-259.5	22	67
TM94-1:283.0-288.0	25	31
TM94-2:24.0-28.5	60	38
TM94-2:30.0-35.0	75	19
TM94-2:35.0-40.0	1000	17
TM94-2:40.0-42.0	1300	37
TM94-2:42.0-47.0	48	71

Reviewed By: Carol Williams Date: 12/12/94 Charges : $318.25

SVL ANALYTICAL, INC.
REPORT OF ANALYTICAL RESULTS

SVL Job Number :X40343
Sample Receipt :12/21/94
Date of Report : 1/06/95
No. of Samples : 98 DC
P.O. No. :SKARN PACKAGE

Client: PAUL DIRCKSEN
ORVANA RESOURCES
1755 SILVER BEACH LOOP
COEUR D'ALENE ID 83814

ATTN: DOYLE ALBERS

CLIENT SAMPLE ID	Test : Zn Units : ppm Method: ICP	Ba ppm ICP
TM94-1:296-301	70	92
TM94-1:301-303	58	85
TM94-1:303-308	38	180
TM94-1:308-313	39	82
TM94-1:313-319	28	130
TM94-1:319-324	23	44
TM94-1:324-326	24	34
TM94-1:378-383	71	120
TM94-1:398-403	58	92
TM94-1:406-412	53	79
TM94-1:412-417	48	82
TM94-1:425-430	88	110
TM94-1:452-457	44	49
TM94-1:485-492.5	87	160
TM94-1:506-511	N/S	N/S
TM94-1:520-525	64	41
TM94-1:545-550	100	78
TM94-1:550-555	200	50
TM94-1:565-570	230	47
TM94-1:570-575	140	470
TM94-1:575-580	100	170
TM94-1:580-585	140	490
TM94-1:585-590	N/S	N/S
TM94-1:606-611	71	480
TM94-1:630-635	110	320
TM94-1:635-640	120	320
TM94-1:648-653	140	330
TM94-1:660-665	100	31
TM94-1:665-670	80	160
TM94-1:683-688	69	110
TM94-1:734-739	42	29
TM94-1:757-762	100	120
TM94-1:762-763.5	56	690
TM94-1:763.5-769	77	160
TM94-1:769-774	200	69
TM94-1:774-779.5	94	300
TM94-1:779.5-781.3	88	440
TM94-1:781.3-787	56	160
TM94-1:793-795	85	87
TM94-1:795-800	53	29

SVL ANALYTICAL, INC.
REPORT OF ANALYTICAL RESULTS

SVL Job Number :X40343
Sample Receipt :12/21/94
Date of Report : 1/06/95
No. of Samples : 98 DC
P.O. No. :SKARN PACKAGE

Client: PAUL DIRCKSEN
ORVANA RESOURCES
1755 SILVER BEACH LOOP
COEUR D'ALENE ID 83814

ATTN: DOYLE ALBERS

CLIENT SAMPLE ID	Test : Zn Units : ppm Method: ICP	Ba ppm ICP
TM94-1:800-804	56	46
TM94-2:63-67	310	80
TM94-2:67-72	64	53
TM94-2:72-77	36	46
TM94-2:77-83	42	73
TM94-2:93-95.5	70	180
TM94-2:95.5-99	65	440
TM94-2:99-103	46	160
TM94-2:126-129	53	53
TM94-2:129-133	25	52
TM94-2:148-153	21	22
TM94-2:153-159	39	150
TM94-2:175.5-180.5	50	220
TM94-2:203.5-205.5	41	230
TM94-2:237-240	78	61
TM94-2:240-245	44	70
TM94-3:15-20	130	150
TM94-3:20-24	120	150
TM94-3:24-30	100	57
TM94-3:30-35	210	30
TM94-3:35-40	51	100
TM94-3:40-44	43	22
TM94-3:44-49	24	59
TM94-3:49-52	20	65
TM94-3:94-97	11	2
TM94-3:97-103	29	11
TM94-3:111-113	23	3
TM94-3:127.5-131	720	7
TM94-3:138-140	36	110
TM94-3:250-253	54	26
TM94-4:37-43	N/S	N/S
TM94-4:66-70	54	140
TM94-4:104-110	75	45
TM94-4:144-150	76	190
TM94-4:180-185	600	210
TM94-4:185-191	1000	170
TM94-4:192-197	95	66
TM94-4:220-225	290	320
TM94-4:225-230	110	200
TM94-4:233-240	83	120

SVL ANALYTICAL, INC.
REPORT OF ANALYTICAL RESULTS

SVL Job Number :X40343
Sample Receipt :12/21/94
Date of Report : 1/06/95
No. of Samples : 98 DC
P.O. No. :SKARN PACKAGE

Client: PAUL DIRCKSEN
ORVANA RESOURCES
1755 SILVER BEACH LOOP
COEUR D'ALENE ID 83814

ATTN: DOYLE ALBERS

CLIENT SAMPLE ID	Test : Units : Method:	Zn ppm ICP	Ba ppm ICP
TM94-4:250-253		66	150
TM94-4:253-259		150	280
TM94-4:343-348		51	200
TM94-4:422-426		77	38
TM94-4:468-472.5		180	67
TM94-4:501.5-508		60	71
TM94-4:508-513		30	11
TM94-4:513-518		39	120
E94-1:26-31		80	46
E94-1:113-118		87	280
E94-1:118-123		77	410
E94-1:170-175		35	23
E94-1:301-306		61	380
E94-1:407-410		87	56
E94-1:410-414		55	55
E94-1:461-466		110	57
E94-1:567-572		52	16
TM94-4:137-143 EXTRA		33	140

Reviewed By: Carol Williams Date: 1/6/95 Charges : $1,591.25