

## GEOLOGIC MAP OF THE SOUTHEAST QUARTER OF THE PEARSOLL PEAK QUADRANGLE, CURRY AND JOSEPHINE COUNTIES, OREGON GEOLOGY AND MINERAL DEPOSITS

The amphibolite (unit am) has been interpreted as a tectonic slice of metamorphosed oceanic crust (Coleman and others, 1976) that was

parently subducted or underthrust through the lower crust and upper mantle, where it was infolded with the mafic and ultramafic rocks.

Fluids, silica, and volatile materials rendered from this wet, subducted oceanic crust may have contributed to partial melting of the

surrounding rocks and the formation of a diorite magma (unit Jhd/Jdi) in a process similar to that discussed by McBirney (1969) and Gill

of the ultramatic sheet. Amphibolite bodies also occur within the diorite and along the diorite-gabbro margin. Amphibolites within the

because much of it is gradational.

occurring in an ophiolite

ultramafic rocks appear to be more highly metamorphosed than those bodies mapped along or adjacent to the diorite-gabbro margin. It should

be noted that, except for a few control points, the contact between the diorite and gabbro is poorly defined and, in places, somewhat arbitrary

Faulting: A major thrust fault occurs at the base of the main peridotite sheet. Most of this contact has the appearance of an intrusive

The high-angle faults may be divided into two major sets: (1) north- to northeast-striking faults, and (2) northwest-striking cross-faults,

most of which show later movement. Both sets of high-angle faults appear to be younger than the thrusting. A broad zone of intensely

erable vertical displacement and appears to separate the harzburgite-dunite (unit um/we) from the clinopyroxene-rich serpentinite (unit

often displays two sets of tight isoclinal folds (Page and others, 1981). Ptygmatic folds also occur in the amphibolites. The volcaniclastic

unit has been folded rather extensively along N. 70° W.- to N. 70° E.-trending axes, most frequently in a northerly to northeasterly direction. Overturned beds of graded volcanic wacke with generally steep eastward dips have been recognized in some of the better

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4. Oregon Department of Geology and Mineral Industries, 1952, Oregon metal mines handbook (Josephine County) (2nd ed.): Oregon Department of Geology and Mineral

exposures. Folding of this unit also probably developed during thrusting.

Folding: Folding occurs in the ultramafic rocks, the amphibolite, and the volcaniclastic unit. Some of the folds in the ultramafic rocks are of relatively small magnitude and are interpreted as dragfolds developed at the time of thrusting. Alignment of orthopyroxene layers in harzburgite and chromitite schlieren suggests a pattern of broader open folding of the ultramafic rocks (Ramp, 1961). The amphibolite

sheared serpentinite extending in a northeasterly direction from Chetco Pass to McCaleb Ranch and beyond probably represents consid

contact, and probably little or no thrusting has occurred after emplacement of the diorite. Field relationships suggest that some of the

diabasic dike complex bodies may be bounded by thrust faults, although little evidence of thrusting such as fault gouge has been recognize at the contacts. Such thrusting, however, may explain why some of these diabasic dike complex bodies are found out of the sequence normally

1981) for the origin of andesites. Some of the amphibolites are infolded with the ultramafic rocks and appear to be concentrated near the base

## **GMS-30** Geologic Map of the Southeast Quarter of the Pearsoll Peak Quadrangle, Curry and Josephine Counties, Oregon

By Len Ramp Plate 1

Funded in part by United States Department

of Agriculture - U.S. Forest Service A variety of mineral deposits, notably chromite, copper, gold (both placer and lode), and small areas of nickel-bearing laterite, occur within the map area. Basic data for mines and prospects are shown in Table 1. The chromite and nickel deposits are described in earlier Department publications (Ramp, 1961, 1978). Essentially all of the chromites sampled were analyzed for platinum and palladium, though only a few showed more than a very low background quantity (Table 2, Plate 2). The copper deposits are mainly stratabound volcanogenic sulfides within both volcaniclastic rocks and serpentinite. Sulfide mineralization occurs also along or adjacent to contacts of the diabasic like complex unit with serpentinite and with volcaniclastic rocks. Low gold and cobalt values occur in these sulfide deposits (Table 2,

Plate 2), with cobalt content being highest where associated with serpentinite. The only identified cobalt mineral, erythrite, was found Lode gold occurs in quartz veins and in shear zones within units Jvc, Jsp, and Jdc and along contacts between these units. The Calumet Group (50), Robert E. (75), and Peck (78) Mines are examples of quartz veins in volcaniclastic rocks. Examples of shear-zone deposits are the Becca and Morning (57), Golden Dream (61), and Hustis (72) Mines.

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> s from the Roque River area, western Jurassic belt, Klamath Mountains, Oregon [abs.]: Geological Society of America Abstracts Map GQ-25.

							Table 1. MINES	S AND PROSPECTS IN THE SOUTHEAST QUARTER OF THE PEARSOLL PEA	KQUADRANGLE	
Map Mine or	<b>C</b>			L	ocation	Elevation	Geologic			
no. prospect	Com- modity	1/4/1/4	Sec.	T.(S)	R.(W)	(ft)	formation	Description	Workings	Productio
<ol> <li>Saturday Anne</li> <li>Baker Creek</li> </ol>	Cr Au	SE/NW SE/NE	9 18	37 37	9 9	2,170 1,220	Jdi, um	Small body of banded-disseminated chromitite in serpentinized dunite Diorite hanging wall, serpentinite footwall, 6-ft fault gouge has minor sulfides and malachite stain	Shallow open cut 200-ft(?) adit, caved	100 tons milled to 2 Unknown
3. Gray Buck Group	Cr	NE/SW	16	37	9	2,140	um	Zone of disseminated chromite averaging 3 ft thick in serpentinized dunite and lens of massive ore near amphibolite	Five bulldozer cuts and caved shaft	60 to 100 tons low- tons lump ore mine
4. Sally Ann	Cr	NW/SW	16	37	9	1,600	um	Discontinuous narrow stringer of chromite in serpentinized dunite striking northeast and dipping about 40° SE.	Open cut and short drift with winze	12 tons lump
5. Unnamed 6. Low Ridge	Cr	NW/SE SW/SW	16 16	37 37	9 9	2,160	um	No information Narrow lenses of chromitite in sheared altered dunite	Small cut Small cut	None None
7. Carter Creek 8. Robertson (Oregon	Cr	SW/SW	15 16-21	37 37	9 9	2,640 1,350	um	Chromitite lenses with talc matrix in sheared serpentinite Several 2,000- to 5,000-ton lenticular masses lying in a north- to northeast-striking,	Shallow cuts Extensive underground	None 32,000 long tons
Chrome) 9. Unnamed	Cr	NW/NW	22	37	9	2,700	um	east- to southeast-dipping plane in serpentinite Small stringers of disseminated chromite in serpentinized dunite	Shallow cut	None
10. Lucky Star 11. Unnamed	Cr Cr	NW/NW NE/NW	21 20	37 37	9 9	,950 2,110	um um	Layers of crushed chromitite up to 4 ft thick in serpentinite landslide block Small area of disseminated chromite in dunite	Short adits and large open cut Small cut	500 tons None
12. Jim Buss	Cr	SW/NW	21	37	9	900	um	North-striking, east-dipping lenticular layer disseminated to massive chromitite a few inches to 4 ft thick in serpentinite	Open cut and shaft	300 to 500 tons
13. High View	Cr	NE/SE	24	37	10	4,240	um	Small lenticular stringer of nearly massive chromitite striking N. 15° W., dipping nearly 90° Sand and gravel on bench about 20 ft above river with diorite bed rock and slide-	Four small cuts Small pit	None Unknown, probably
<ol> <li>Unnamed placer</li> <li>Shade</li> </ol>	Au Cr	SE/SE SE/SE	20	37 37	9	950 2,700	Jdi, Qal um	debris cover Small segments and patches of massive and nodular chromite dissected by several	About 400 ft in three levels	350 tons
16. Dirty Face Group	Cr	NE/NW	29	37	9	2,080	Qis (um)	high-angle faults in serpentinized dunite Disseminated to massive float chromitite in red soil and weathered peridotite and, in	Shallow cuts	135 tons
17. Unnamed	Au	NE/NW	28	37	9	2,220	am	part, dunite slide debris Iron-stained siliceous zone in amphibolite, with limonite after pyrite	Small cut	None
18. Crown (Hammer)	Cr	NE/NE	28	37	9	3,040	um	Massive, nodular, and disseminated chromite was mined from offset lenses a few inches to 4 ft thick in serpentinized dunite	Open cut shaft and short drifts	Approximately 200
19. High Ridge	Cr	NW/NW	29	37	9	2,600	um	3-ft vertical zone of banded, disseminated chromite striking N. 30° W. in serpen- tinized dunite	Open cut	None
20. Black Diamond and Butte	Cr	SE/NW	30	37	9	3,400	um	Schlieren-banded, disseminated chromitite in dunite with one layer of massive ore to 10 in. thick. Zone trends N. 20° E. and dips steeply east	Shallow cuts	100 tons of milling
21. Hansen	Cr	SE/NW	29	37	9	2,000	QIs (um)	One narrow zone of banded chromite (disseminated and massive) in a slide area of partly serpentinized dunite strikes east and dips 55° N. Faulted layers of chromitite 8 to 18 in. thick in dunite; strikes north and dips 37° W. in	Open cut and short drift Two open cuts	± 50 tons (?) 300 tons of mill ore
22. Castle Springs and Lucky Strike	Cr	NE/SE	30	37	9	2,560	um	one pit; banded disseminated ore 4 to 8 ft thick strikes N. 30° E. and dips streeply W. in other northeast pit	Two open cuts	concentrates
23. Unnamed 24. Mockingbird	Cu Cr	NE/SE SW/SE	28 29	37 37	9 9	2,450	Jsp um	This sinuous zone of iron and copper stain with minor sulfides in serpentinite Massive and disseminated chromite occurs in narrow layers about 200 ft apart which	Small pit Open cut, short adit, winze, and drift	None 100 tons
24. Mockingbird 25. Good Friday	Cr	NW/NE	32	37	9	1,000	um	strike N, 15° E. and dip 45° ES. in blocky serpentinite Banded, disseminated chromite in pale-green dunite (float)	Open cut in slide area	Small but unknown
26. Deep Gorge	Cr	NW/NE	32	37	9	1,150	um	Two thin parallel chromite layers about 200 ft apart strike northeast, dip southeast, and were mined where lenses reached 1 to 4 ft thickness in places	Large cut and several adits	2,000 tons
27. Unnamed (Good Friday	Cr	NW/NE	32	37	9	1,110	um	Thin streaks (schlieren) of disseminated to massive chromite in dunite strike north and dip 30 $^{\circ}$ E.	Small cut	None
Extension) 28. Dark Star	Cr	NE/SE	25	37	10	2,960	Qis (um)	Chromitite boulders to 2 ft in diameter found mixed in landslide debris	Shallow cuts	7 tons None
29. Berseth Copper	Cu	NW/NW	33	37	9	1,445	um	Malachite occurs in sheared serpentinite about 2 ft thick. Strike is northeast, dip is vertical. One or more lenticular chromite layers from few inches to maximum of 8 ft thick in	25-ft adit Two shafts, 400 ft tunnel, stopes, and shallow cuts	1,400 tons
30. Chrome King 31. Unnamed placer	Cr	NE/NE SW/NW	36 33	37 37	10	3,120	um Qtg, um, am	blocky serpentinized dunite and harzburgite Terrace gravel and slope wash about 5 to 20 ft thick. Amphibolite-serpentinite	Old hydraulic cuts	Unknown
32. Riverview	Jasper	SE/NE	33	37	9	2,450	Jvc	contact exposed in pit. Main lenticular body of spherulitic jasper mined for jewelry rock was about 1 ft thick		1½ tons
(Oregonite)	ouopei	02,112						with strike of N. 55° W. and dip of 50° NE. Interpreted as interflow zone in amygdaloidal basalt		No en antici
33. McCaleb Ranch placer	Au	SE/NE	32	37	9	1,000	Qal, um	Illinois bar gravels worked by hydraulic methods. Stacked boulders remain on sheared serpentinite bed rock	Surface hydraulic area	Unknown
34. Millers Dream 35. Early Sunrise	Cr Cr	NE/SW SE/SE	32 35	37 37	9 10	1,900 3,960	um um	Thin zone of disseminated chromite in pale-green dunite Thin chromite schlieren produced one pod up to 3 ft thick that strikes N. 20° W. and	Shallow cuts Open cut and short adit	None 4 tons
36. February	Cr	SE/SE	33	37	9	1,560	Jsp	dips 50° SW. in dunite and olivine-rich harzburgite Minor disseminated to massive chromite in bleached serpentinized dunite seen on dump	Shallow cuts	None
37. Unnamed	Au	SE/SW	32	37	9	1,620, 1,540	Jvc, um	Vein quartz in volcaniclastic rock near serpentinite contact; lower cut in narrow sheared serpentinite body about 800 ft to northeast	Small cuts	None
38. Lucky Hunch	Cr	SE/SE	33	37	9	1,250	Jsp	Minor float; massive chromite in sheared and landslide serpentinite produced one large elliptical pod of ore $6 \times 8 \times 10$ ft weighing 46 tons	Shallow cuts	150 tons
39. Pearsoll 40. Youngs Dailey	Cr Cr	NW/NE NW	2	38 38	10	4,700 2,800 to	um	Displaced segments of disseminated to massive chromite in serpentinized dunite Disseminated chromite in dunite occurs in zone up to 12 ft thick	Shallow cuts and two adits Several open cuts	250 tons mill ore 800 tons mill ore
Dozen 41. Saddle	Cr	NE/NW	6	38	9	3,200 2,970	um	Several small lenticular pods of disseminated to massive chromite in north-trending	Shallow cuts, short drifts	240 tons mill ore
42. Fall Creek Group	Cu	W1/2/	4	38	9	1,200 to	Jsp	shear zone Pods or lenses of massive sulfides; pyrrhotite with chalcopyrite and some chalcocite	Several cuts and caved adits	425 tons
		NE¼				1,580		in sheared serpentinite		
43. Rancherie Prospect (part of Calumet	Au	SW/NE	5	38	9	1,120	Jvc	Minor sulfide mineralization in volcaniclastic rocks near serpentinite contact	Caved adit	Unknown
Group) 44. Old Casey	Cr	SW/NE	. 6	38	9	2,020,	um	Small pods of massive chromite with intergranular talc and some chrome chlorite and	Small cuts and shallow inclined adit	None
45. Unnamed	Cr	NE/SE	1	38	10	2,500 3,520	um	uvarovite in sheared serpentinite Small schlieren of disseminated, in part massive, chromite in dunite	Shallow cuts	None
(part of Youngs Dailey Dozen)?	17277						144620		Challen and	None
46. Unnamed prospect (part of Youngs Dailey Dozen)?	Cr	NW/SW	6	38	9	3,280	um	Small chromite schlieren in dunite	Shallow cut	None
47. Mohawk	Cr	NE/SW	5	38	9	1,650	Jsp	Pods of sheared massive chromite in sheared serpentinite	Shallow cuts and two adits	180 tons
48. Pearsoll Group	Cr	SE	2	38	10	4,230	um	Several offset segments of small disseminated to massive chromite schlieren in dunite	Three shallow cuts	None
49. Twin Cedars	Cr	NE/SW	6	38	9	2,440 to 2,500	um	Sheared massive chromite pods with talc chrome and conspicuous uvarovite	Three open cuts	Very small
50. Calumet Mine	Au	S1/2	5	38	9	1,580 to 2,100	Jvc	Quartz fissure veins with minor sulfides in volcaniclastic rocks	Several adits, shaft cuts	Unknown
51. Unnamed	Cu	SW/SE	6	38	9	2,100	Jsp	Minor sulfides and malachite in sheared serpentinite	Small cut	None
52. Unnamed 53. White Water lode	Cu Cr	SE/SE SE/SE	5 5	38 38	9 9	1,540 1,500	Jsp Jsp	Small stringers of sulfides, limonite gossan, and malachite in sheared serpentinite Small lenses of massive chromite in sheared serpentinite	Small cut Small cut and adit caved	None 5 tons
54. Eagles Nest	Cr	NW/NE	11	38	10	3,910	um	Thin lenticular layer of chromitite in serpentinized dunite has been offset by small faults	Open cut	Small
55. Unnamed	Au(?)	NW	10	38	9	2,720 to 2,820	Jvc	Shallow pits on ridge in deeply weathered volcaniclastic rock	Hand-dug pits	Unknown
56. Sourdough 1	Cr	SW/NW	12	38	10	3,640	um	3-ft thick band of disseminated chromite in dunite strikes N. 35° E. and dips nearly vertically	Small cut	None
57. Becca and Morning (Casey)	Au	SW/NW SE/NE	7 12	38 38	9 10	3,130 to 3,050	Jvc, Jdc, Jsp	Sulfide mineralization occurs in diabasic dikes, pillow basalt, and serpentinite mainly along a northeasterly-trending fault zone About 25 cares of boorth download Interitie coll circling to the Sourdough Elet deposit	Three short adits (two caved) and shallow cuts	Unknown (small) None
58. Unnamed laterite	Ni	SW/NE	10	38 38	10 10	2,880	Qlat	About 25 acres of poorly developed lateritic soil similar to the Sourdough Flat deposit (68) Stretched offset chromitite layer ½ to 45 in. thick in dunite strikes about N. 30° W. and	None Shallow cuts	Small
59. Prospectors Dream 60. McCaleb's	Cr	NW/SW NE/SE	11	38	10 10	3,500	um	Stretched offset chromitte layer v2 to 45 in. thick in durite strikes about N. 30° W. and dips 55° NE. Banded disseminated chromite in serpentinized durite 5 to 12 ft thick strikes about	Large open cut and short adit	1,200 long tons of
Sourdough 2	0		(6)5					north to northeast and dips steeply west but has been offset by faulting and possibly sliding		concentrates
61. Golden Dream (Higgins Group)	Au	NW/SW	12	38	10	3,300	Jvc, Jsp	Minor sulfides and gold occur in sheared serpentinite and volcaniclastic rocks	Short adits and sluiced open cuts	Unreported
62. Uncle Sam	Cr	NE/SE	11	38	10	3,370	QIs, (um)	Small lenses of chromitite rake to southwest. Ore is disseminated to nearly massive with talc matrix	Open cut	Approximately 100
63. Little Siberia 64. Lost is Found	Cr Cr	NE/SW NE/SE	11 11	38 38	10 10	3,400 3,300	um Qls, (um)	Faulted irregular patches of disseminated to massive chromite in dunite Narrow stringer of low-grade chromitite reported in open cut	Open cuts and short adit Open cuts and short adit	About 200 tons mi Unreported
65. Stone	Cu	NE/SW	12	38	10	3,600	Jsp, Jvc	Massive sulfides, pyrrhotite, chalcopyrite, and pyrite in limonite gossan. Lenticular zone strikes about N. 30° E., dips 70° SE, and is as much as 3½ ft thick in sheared	Small cuts, short adits	None
66. Big Four	Cr	SW/SE	7	38	9	2,800 to	Jsp	serpentinite surrounded by volcaniclastic rock Small pods of massive chromite in sheared serpentinite and recovered from float	Small cuts, two short adits	15 tons lump ore
67. Wonder	Cr	SE/SW,	11	38	10	3,040 3,000	QIs, (um)	Lenses of thickly disseminated to massive chromite with talc matrix occur in large	Several surface cuts	Small
68. Sourdough Flat	Ni	SW/SE SW	11	38	10	2,960	Qlat	broken serpentinite slide block Red lateritic soil has developed in a landslide area of about 45 acres. The parent rock is coarse-grained dunite	Few shallow cuts	None
laterite 69. Eagle Mountain	Cr	NW NE/NW	14 13	38	10	4,000	Jsp	is coarse-grained dunite Small lenses or pods of disseminated to massive chromite in serpentinized dunite and wehrlite	Shallow cuts	None
70. Unnamed prospects (several)	Au	NW, NE	13	38	10	3,800 to 4,200	Jvc, Jdc	siliceous breccia with small limonite gossan areas in volcaniclastic and dike complex rocks	Shallow cuts	None
71. Fall Creek placers	Au Au,	NW Center	16 14	38 38	9 10	1,800 2,480 to	Qal, Jsp, Jdc Jvc, Jdc, Jsp	Small-scale placer operations along Fall Creek Minor sulfides, malachite, and gold in sheared serpentinite fault zone contact	Stacked boulders Placer pits and caved adits	Unknown Unknown
72. Hustis (in part Higgins?)	Au, Cu	Center	14	30	10	2,480 to 2,640	576, 506, 58p	between diabasic dike complex and volcaniclastic rocks	And a second state of the second states	
73. Miller Creek chrome	Cr	NW/SW	14	38	10	1,945	um	Small pods of massive chromite with minor chrome chlorite in blocky serpentinite landslide area	Small cut	Unknown
74. Miller Creek	Au, Cu	NW/SW	13	38	10	2,880	Jvc	Layers of disseminated to massive pyrite with quartz matrix about 15 ft thick strike north and dip 15° W. in volcaniclastic rocks. Includes larger area of disseminated	Small cuts	None
75. Robert E.	Au	NW/NE	23	38	10	2,490	Jvc, Jsp	pyrite and gossan Workings on contact of sheared serpentinite and volcanic wacke and small quartz	Two tunnels with stopes and sluice pits	Unknown; some
(Miller)	Cr	NE/NE	22	38	10	2,550	um	vensing to contact and strategies and volume water and small quarter vensing in the volcaniclastic rock Small stringer of banded disseminated chromite in dunite	Open cut	Peck Mine Small amount mille
76. Bowser		NW/NW	23					Several occurrences of massive to disseminated sulfides in and along contacts of	Small cuts	None (?)
76. Bowser 77. Eagle Creek	Cu,	NW.	24	38	10	700 to	Jsp, Jvc, Jdc		Cincil Outo	inone (i)
	Cu, Au		24	38	10	2,975 2,100	Jvc, Jsp	Serveral occurrences of massive to disseministic soluces in and along contacts of serveral number works and along complex rocks. Rich ore occurs in northeast-striking, southeast-dipping, small guartz fissure vein in	2.000 ft in four levels with raises and stopes	At least \$120,000 I

Mineral deposit

in the Fall Creek Mine (42).

Geological Society of America Abstracts with Programs, v. 8, no. 3, p. 363.







Polyconic projection. 1927 North American datum

UTM GRID AND 1954 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 80 FEET

QUADRANGLE LOCATION

STATE OF OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES DONALD A. HULL, STATE GEOLOGIST

Adit where sample taken

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## SAMPLE LOCATION MAP OF THE SOUTHEAST QUARTER OF THE PEARSOLL PEAK QUADRANGLE, CURRY AND JOSEPHINE COUNTIES, OREGON 1984

	Geologic formation		1/2	Sec.		tion R.(W) El	evation (ft)	. Rock description	Au	Ag	Pt	A Pd	ssay result Cu	s (µg/g [ppm] Pb	) Zn	Mo	Со	N
51PR001 51PR002	KJd Jvc	=	SE/SE SW/SW	32 33	37 37	9 9	980 1,000	Light-colored, altered diorite dike Graywacke							 43			
31PR003 31PR004 31PR005	Jsp Jvc Jsp	Fall Creek Group Fall Creek Group	SW/SE SW/SW SW/NE	33 33 4	37 37 38	9 9 9	1,050 1,040 1,210	Gossan in serpentinite Coarse volcaniclastic conglomerate Copper-stained gossan (18-in. chip sample)	0.23	0.50	0.02 <0.02	0.02 <0.02	14,300	15 17	34	0.4	116 289	
31PR006 31PR007 31PR008	um am KJd	Dailey Dozen Group	W/NW SE/NW SE/NW	6 5 5	38 38 38	9 9 9	3,135 1,150 1,120	Disseminated chromite in altered dunite Amphibolite Coarse gabbro dike with clinopyroxene, calcic plagioclase,	< 0.01	<u></u>	<0.02	<0.02	2	12				
31PR009 31PR010	Jdc Jvc		SE E/NE	5 18	38	9	1,320	epidote Medium-fine diabase dike float Serpentinized greenstone with chlorite		22	100	22	22	22				
1PR011 1PR012 1PR013	Jsp Jsp KJd	Unnamed chromite Fall Creek Group	N/NW NE/NW E/SE	8 4 4	38 38 38 38	999	2,285 2,300 1,575 2,150	Massive chromite pods Copper-stained gossan in sheared serpentinite Porphyritic andesite dike	< 0.01 0.097	0.38	<0.02 <0.02	<0.02 <0.02	27,300	26	113	< 1	506	1
31PR014 31PR015 31PR016	Jvc Jvc Jvc	22	W/SW SW/SW N/NW	3 3 10	38 38 38	9 9 9	2,400 2,710 2,865	Andesite or diabase dike in basalt Aphanitic basalt White and red manganese-stained chert	< 0.008	 0.34			127		 31		 12	
31PR017 31PR018 31PR020	KJd KJd um		NW N/NW NE/NE	3 3 28	38 38 37	9 9 9	1,245 1,340 3,075	Hornblende gabbro dike Light-colored diorite dike Serpentinized dunite	< 0.01		<0.02	<0.02			55 55		Ξ	
31PR021 31PR022 31PR023	um um Jdi	Crown Mine	SE/SE N/NE NW	21 28 17	37 37 37	9 9 9	2,830 3,040 1,450	Serpentinized olivine-rich harzburgite Nodular chromitite Hornblende, biotite, quartz diorite	< 0.01 < 0.034		<0.02 <0.068	<0.02 <0.068						
31PR024 31PR025 31PR026	am gb Jdc		SW NE NW/NW	18 18 22	37 37 38	999	2,940 2,060 3,670	Actinolite schist, phyllite, and quartzite Coarse poikilitic gabbro Coarse-, medium-, and fine-grained dikes										
31PR027 31PR028 31PR029	Jvc Jvc Jvc		NW/NW N/NE SW/NW	22 15 10	38 38 38	9 9 9	3,675 3,240 2,710	Reddish-brown to white chert Coarse- and medium-grained volcanic wacke Aphanitic basalt										
31PR031 31PR032	KJd am		NE/SE SE/NE	32	37 37	9	1,000	Medium-grained andesite containing plagioclase and pyroxene with minor biotite Amphibolite with quartz, plagioclase, hornblende, and mica										
31PR033 31PR034 31PR035	am am		SE/NE S/NE S/NE	32 32 32	37 37 37	999	990 985 980	Metachert with quartz, chlorite, and zeolite(?) Coarse hornblendite Gneissic amphibolite with green hornblende, quartz, plagioclase,	< 0.01		<0.02	<0.02	250	14	39	1.2	37	
31PR036 31PR037	um um	Good Friday	NE NW/NE	32 32	37 37	9	1,040	epidote Olivine-rich harzburgite Streaks of massive to disseminated chromite in dunite	< 0.01		<0.02	<0.02				25		
31PR038 31PR039 31PR040	Jdi Jdi Jdi		NW/SE NW/SE NW/SW	31 31 31	37 37 37	9 9 9	1,760 1,900 2,380	Hornblende quartz diorite Dark-colored quartz diorite with minor pyrite Light-colored diorite with quartz, plagioclase, biotite,	<_0.01	3.0	<0.02	<0.02	68	12	37	3.6	11	
31PR041 31PR042	um	Saddle prospect Jim Bus prospect	N/NW NW	6 21	38 37	9	2,970 910	and chlorite Massive chromite with serpentinite Banded disseminated chromite in dunite	< 0.01 < 0.01		<0.02 <0.02	<0.02 <0.02						
31PR043 31PR044 31PR045	Jdi am Qls		SE SW N/NE	20 20 29	37 37 37	9 9 9	1,200 1,780 1,450	Hornblende biotite quartz diorite with pyrite Folded gneissic amphibolite (float) Fine-grained dark hornblende diorite					43					
31PR046 31PR047	(KJd) Jhd um	Little Siberia	NW/SW NE/SW	21 11	37 38	9 10	930 3,350	Very coarse hornblende plagioclase rock Disseminated to massive chromite in dunite	< 0.01		<0.02	<0.02	~~		52		Ξ	
31PR047 31PR048 32PR001 32PR002	um um am, Jd KJd	Prospectors Dream	NW/SW SE/NE NW	11 29 4	38 37 38	10 10 9 9	3,480 950 1,960	Layer of massive chromite in dunite Gneissic amphibolite in diorite Medium-grained hornblende quartz diorite dike	< 0.01		<0.02	<0.02						
32PR003 32PR004	Jsp Jvc	2000 2000	NW NW/SW NW/NW W/NW	4 9 9	38 38 38 38	9999	2,240 2,440 2,520	Medium-grained normblende quartz diorite dike Serpentinized clinopyroxenite Pyroxene andesite(?), crystal tuff, and amygdaloidal andesite Medium-grained volcanic wacke with disseminated pyrite						12	1	ii.		
32PR005 32PR006 32PR007 32PR008	Jvc Jvc am Jbd		W/NW SW/NW SW/SW S/SW	999	38 38 37 37	9999	2,520 2,800 2,260 2,410	Medium-grained volcanic wacke with disseminated pyrite Chert Dark quartz-rich gneissic amphibolite Weathered dark hornblende diorite	< 0.01	0.59	<0.02	<0.02	58	18	54	2.0	18.	
B2PR008 B2PR009 B2PR010 B2PR011	Jhd am KJd		NE/SW NE/SW	28 28	37 37	9 9 9	1,445 1,620	Dark gneissic amphibolite with some pyrite Medium-grained hornblende quartz diorite				=			15 13			
32PR011 32PR012 32PR013	Jvc Jsp Jvc		NW/SE NE/SE SW/SE	28 28 28 22	37 37 37 37	9999	1,950 2,450 2,405 2,950	Medium-fine-grained graywacke sandstone Iron- and copper-stained serpentinite with minor sulfides Iron-stained metachert Metachert	0.22 < 0.01 < 0.01	1.2 0.30 0.23	<0.02 <0.02 <0.02	<0.02 <0.02 <0.02	20,100 55 115	26 6 14	79 8 30	0.9 1.2 0.1	198 9 27	
B2PR014 B2PR015 B2PR016 B2PR017	Jvc Jvc um	(near Eureka Mine) Carter Creek	S/SW	22 22 15 22	37 37 37 37	9	2,800 2,600	Gossan on serpentine contact Thickly disseminated chromite with talc	< 0.01 < 0.01	0.34	<0.02 <0.02	<0.02 <0.02 <0.02 <0.02	24	8	35	0.1	165	1
B2PR017 B2PR018 B2PR019	um am Jdi, u		NW/NW SE/SE SW/NW	22 16 15	37 37 37	9999	2,700 2,620 2,080	Disseminated chromite in bleached serpentinized dunite Hornblende-rich amphibolite Fault gouge Cabbre disbase componentic andesite	< 0.01	0.24	<0.02 <0.02	<0.02	78	22	33	< 1	89	1
32PR019a 32PR020 32PR021	Jdc Jdc Jvc		NE/NE N/SW NW/SW	19 17 17	38 38 38	9 9 9	3,670 3,300 3,100	Gabbro, diabase, porphyritic andesite Serpentinized wehrlite Siliceous metasediments, in part chert Medium to fine annioed andesitic and diabasic dikes									Ξ	
82PR022 82PR024 82PR025	Jdc Jsp Jsp	Fall Creek Group Fall Creek Group	SE/NE NW/NE NW/NE	13 4 4	38 38 38	10 9 9	4,150 1,500 1,450	Medium- to fine-grained andesitic and diabasic dikes Brecciated serpentinite gossan Massive pyrrhotite and chalcopyrite	3.5 5.2	4.4 11.3	<0.02 <0.068	<0.02 <0.068	5,550 156,000	16 22	120 464	2.1 0.2	124 3,450	1,
82PR026 82PR027 82PR028 82PR029	KJd Jsp um	Mohawk	NW/SW NE/SW NW/NE	555	38 38 38	999	1,650 1,650 1,025	Fine-grained andesite Massive chromite Serpentinized olivine-rich harzburgite	<_0.034		<0.068	<0.068		50 50			-22	
82PR030	01s Jvc		S/NW NW/SW	5	38 38 38	9 9	1,285 1,500	Medium-grained andesite (float) Volcanic conglomerate including siliceous andesite and amygdaloidal basalt clasts										
B2PR031 B2PR032 B2PR033	Jvc Jvc KJd		NE/SE SE/SE NW/NE	665	38 38 38	999	1,585 1,680 1,270	Siliceous metasediment (chert?) with minor pyrite Quartz fissure with pyrite Medium-grained andesite	< 0.008 0.58	0.27 1.20	<0.02 <0.02	<0.02 <0.02	162 477	14 51	72 328	3.2 89.4	38 55	
82PR034 82PR035 82PR036	Jvc Jvc Jsp		SW/SE SE/SW N/NW	6 6 7	38 38 38	9 9 9	1,900 2,030 2,350	Clinopyroxene-rich tuff(?) Argillite Sheared serpentinite gossan	0.016		<0.02 <0.02	<0.02 <0.02	278 3,950	46 24	129 80	4.6	61 371	1
82PR037 82PR038 82PR039	Jvc Jvc Jsp		NE/SE NW/NW NE/SE	6 7 12	38 38 38	9 9 10	1,730 2,525 3,400	Siliceous gossan (10-ft chip sample) Altered diabase or basalt(?) Brecciated, serpentinized clinopyroxene-rich diabase from	0.048	0.70	<0.02	<0.02 	1,120	22	1,030	5.8 	31	
82PR039 82PR040 82PR041	22	sp Stone prospect Chrome King	NE/SE NE/SW	12 12 36	38 37	10 10	3,600 3,120	serpentinite vent breccia(?) Pyrrhotite gossan (3-ft chip sample) Massive chromite (grab dump)	2.6 < 0.01	4,45	<0.02 0.89	<0.02 <0.02	20,000	19	434	0.1	1,070	1
82PR041 82PR042 82PR043 82PR044	um um	McCaleb's Mine Pearsoll Mine Calumet Mine	NE/SE NW/NE SE/SW	11 2 5	37 38 38 38	10 10 10	3,120 3,280 4,600 2,060	Thickly disseminated chromite in serpentinized dunite Chromite with minor serpentinite Vein quartz in iron-stained metasediments (4-ft chip sample)	< 0.01 < 0.01 < 0.01 < 0.01	0.70	<0.02 <0.02 <0.02	<0.02 <0.02 <0.02 <0.02		45	135	0.5	14	
82PR045 82PR046	Jvc Jvc Jsp	Calumet Mine Calumet Mine Unnamed prospect	S <sup>1</sup> 2 SE/SE	5 5	38 38	9 9	1,960 1,540	Vein quartz from dump Copper-stained serpentine gossan	0.008	0.70 0.54 4.6	<0.02 <0.02 <0.02	<0.02 <0.02 <0.02	148 36 40,700	45 8 14	21 524	1.0	10 548	1
82PR048 82PR049	Jdi Jdi		SW/SE	17 18	37 37 37	9	960 2,075 2,110	Light-colored quartz diorite with muscovite, uralite, and chlorite Fine-grained, dark-gray quartz diorite Discominated chromite in dunite		22					K			
82PR050 82PR051 82PR052	um gb Jdc	Unnamed prospect	NE/NW NE/NW NW/NE	20 13 24	37 37 38	9 10 10	2,110 2,600 3,200	Disseminated chromite in dunite Medium-coarse-grained gabbro with minor sulfides Light-colored dacite(?) with tremolite	< 0.01 0.013	1.2	<0.02	<0.02	126	8	27	1.5	23	
82PR053 82PR054	Jsp Jvc	Eagle Creek Group Eagle Creek Group	NW/NW SE/NW	24 24	38 38	10	2,975 2,700	Serpentine gossan (10-ft chip sample) Siliceous metasedimentary rock; disseminated pyrite (random chip sample)	3.4 0.016		0.068**	0.034*		33 20	604 86	0.8	298 34	
82PR055 82PR056 82PR058	Jvc Jvc um	Eagle Creek Group Eagle Creek Group 	SE/NW SE/NW NE/NE	24 24 35	38 38 37	10 10 10	2,690 2,710 4,870	Same as above with more abundant sulfides Same, with pyrite chalcopyrite (selected high grade from dump) Coarse-grained, slightly serpentinized harzburgite	0.64	4.3 7.0	0.068**	<0.02	* 10,360 17,720	38 167	556 214	3.5 3.5 	197 109	
82PR059 82PR060 82PR061	um um Jvc	 High View prospect Robert E. Mine	SE/SW NE/SE NW/NE	25 24 23	37 37 38	10 10 10	4,160 4,240 2,490	Olivine-rich harzbugite with disseminated chromite Massive chromitite from dump Vein quartz and altered rock (4-ft chip sample)	< 0.01 < 0.01 15.7	4.35	<0.02 <0.02 <0.02	<0.02 <0.02 <0.02	144	218	202	1.2	21	
82PR062 82PR063	Jvc Jvc	Miller Creek	W/SW NE/SE	13 22	38 38	10 10	2,880 1,630	Disseminated to massive pyrite in quartz Fine-grained siliceous metasediments with minor disseminated pyrite	0.31 0.056	5.3 2.4	0.103 <0.02	<0.02 <0.02	374 26	24 8	99 47	2.2 2.8	37 11	
82PR064 82PR065 82PR066	um um Jsp,Jv	Bowser prospect Miller Creek vc,Hustis pit	NE/NE NW/SW SW/NE	22 14 14	38 38 38	10 10 10	2,550 1,945 2,480	Massive chromitite from dump Massive chromitite with chromium chlorite Sheared weathered serpentinite with clay and abundant malachite	< 0.01 < 0.01		<0.02 <0.02	<0.02 <0.02		51		53 -	60) 100	
82PR066 82PR067 82PR068	Jdc um KJd	Uncle Sam	NE/SE N cent.	11	38 38	10 10	3,360 2,260	Chromitite with chlorite and talc Medium-grained pyroxene andesite dike	< 0.01		<0.02	<0.02						
82PR068 82PR069 82PR070 82PR071	KJO UM UM UM	Float Crater Creek	N CENT. SE/NE N/NE NE/NE	10 10 10	38 38 38 38	10 10 10	2,280 3,650 2,620 2,670	Partly serpentinized dunite Massive chromite with chlorite and talc Streaks and disseminated chromite in dunite	< 0.01 < 0.01		<0.02 0.034**	<0.02 <0.02		1	1		11	
82PR071 82PR072 82PR073 82PR074	um um	Pearsoll Group Eagles Nest	NE/NE SE NW/NE NE/NE	10 2 11 11	38 38 38 38	10 10 10	4,230 3,910 3,880	Streaks and disseminated chromite in dunite Granular massive chromite Sausuritized hornblende gabbro with disseminated pyrite	< 0.01 < 0.01 < 0.01		<0.02 <0.02	<0.02 0.034* <0.02					22 52	
82PR075 82PR076	hgb Jvc Jvc	Calumet Mine Calumet Mine	SW/SE S cent.	5	38 38	10 9 9	1,600 1,835	Vein quartz with minor sulfides, pyrite, galena, and chalcopyrit Vein quartz with minor sulfides (grab from dump)		5.1 9.8 64.7	<0.02 <0.02 <0.02	<0.02 <0.02 <0.02	390 14,900 6,470	1,350 680 20,600	343 41 464	2.4 3.1 4.0	20 6 5	
82PR077 82PR078 83PR001	Jvc Jvc Jvc	Calumet Mine Calumet Mine	S cent. NE/SW SE/NW	53	38 38 38	9 9 9	1,875 1,950 1,035	Quartz with mixed sulfides (grab from dump) Mixed vein quartz and volcanic wacke (5-ft chip sample) Fine-grained andesite Coarse- medium, and fine-grained diabase dike rock	7.2	4.0	<0.02 <0.02	<0.02 <0.02	6,470 198 	20,600	464 56 	4.0 3.4	11 	
83PR002 83PR003 83PR004	Jdc Jdc Jsp	February prospect	SE/NW SW/NW SE/SE	3 33	38 38 37	9 3 3	1,030 1,020 1,560	Coarse-, medium-, and fine-grained diabase dike rock Coarse gabbro with clinopyroxene and plagioclase Massive to disseminated chromite in bleached serpentinized dunite	< 0.03		0.07**	 <0.03	3 <b>44</b> 3 3 <b>44</b> 7 7,773		200 200 200			
83PR005	um	Twin Cedars	NE/SW	6	38	9	2,430	dunite Massive chromite with minor serpentinite and uvarovite on fractures	< 0.03		<0.03	<0.03						
83PR005a 83PR006 83PR007	Jvc Jvc Jdc	-	E/SE E/SE SW/SW	6 5	38 38 38	9 9 9	1,840 2,040 2,080	Iron-stained metachert with disseminated pyrite Iron-stained amygdaloidal andesite(?) or agglomerate(?) Medium- to fine-grained diabasic dikes and altered siliceous dikes with discominated limenite often purits	< 0.01 < 0.01	13.6 1.8			160 142	13 18	38 65	2.6	24 42	
83PR008 83PR009	Jsp KJd		NW/NE W/NE	12 12	38 38	10 10	3,120 3,100	dikes with disseminated limonite after pyrite Partly serpentinized clinopyroxenite Medium-grained andesite or diorite dike rock			 55					ä		
83PR010 83PR011	KJd Jvc		SW/SE NE/SE	5/6 7	38 38	9	2,000	Light-colored, foliated, coarse-grained dike with plagioclase, quartz, biotite and chlorite Medium- to fine-grained volcanic wacke									25 	
83PR012 83PR013	Jsp Jvc	Chromite float Unnamed prospect	SE/SE NW/SW	6 13	38 38	9 10	2,000 3,475	Massive chromite broken from large float boulder 2 ft x 2.5 ft : 1 ft Limonite, pyrite, quartz gossan	0.010		<0.03	<0.03	185	12	9	13.5	108	
83PR014 83PR015 83PR016	Jvc,Jo Jvc Jdc,Js	dc Unnamed prospect	SE/NW SW/SW SE/NW	13 12 24	38 38 38	10 10 10	3,940 3,630 2,850	Siliceous gossan breccia Manganese- and iron-oxide-stained chert Limonite gossan with malachite (grab from dump)	0.041	9.8  9.2	Ξ		197 33,800	53  28	46	1.3 1.9	30 230	
83PR017 83PR018	Jsp KJd	Eagle Group Near Golden Dream	N cent.		38	10	2,975	Massive pyrite, pyrrhotite, and chalcopyrite with malachite (7 ft-chip sample from east face)	1.28	5.7	20 20		111,600	50 	1,840	1.6	840	
83PR019 83PR021 83PR022	Jvc KJd Jvc	Near Golden Dream	NW/SW NW/SW SW/SE	12 12 12	38 38 38 38	10 10 10	3,280 3,450 3,360	Medium-grained andesite dike with plagioclase, augite Iron-stained siliceous breccia (10-ft random chip) Medium-grained diorite like 83PR018 Phyllitic, chloritic, limy tuffaceous sediment with minor	0.021	5.6			168	16	74	1.8	42	
83PR022	Jvc		SE/SW	1	38	10	4,000	disseminated chalcopyrite Pale-greenish-gray siliceous and partly limy phyllite with minor chlorite			-	**		-				
83PR024 83PR025	Jvc KJd		SE/SW NW/NW	1 5	38 38	10 9	3,840 1,760	minor chlorite Iron-stained metachert Dark-colored, medium-grained hornblende plagioclase quartz diorite with secondary epidote	< 0.01	1.6		31	34	9	21	1.1	42	
83PR026 83PR027	um Jsp,Jo	Miller's Dream dc	SE/SW SW/NW	32 3	37 38	9 9	1,910 1,100	diorite with secondary epidote Disseminated chromite in dunite with talc (grab from dump) Altered clinopyroxenite and metagabbro of dike-complex environment	< 0.03	844 005	<0.03	<0.03	=			11		
83PR028 83PR029	um um	Berseth Copper Deep Gorge	NW/NW NW/NE	33 32	37 37	9 9	1,445 1,070	environment Sheared serpentinite with malachite Massive chromite with serpentinized dunite and minor talc (arab ore pile)	0.18 < 0.03	9.5	<0.03	<0.03	56,400	73	112	1.6	1,440	3
83PR030	Jvc Jhd		N/NE NW/NW	32 33	37 37	9	1,270 1,410	(grab ore pile) Contact-altered metagabbro including talc-tremolite schist (float) Medium-grained foliated hornblende diorite		23 22			÷2			3÷		
83PR031 83PR032 83PR033	Jhd am Jdc	Road cut	NW/NW NE/SW SE/SW	33 21 9	37 37 38	9 9 9	1,410 1,400 2,000	Medium to coarse hornblendite with disseminated pyrite Medium- to coarse-grained clinopyroxene-rich diabase and	0.010		(## (## (87		618	10	41	0.9	102	
83PR034	am,Jho		SW/SW	16	37	9	890	clinopyroxenite Coarse hornblende pyroxenite with abundant magnetite and some pyrite Nixed fine to counce andecisio(2) tuff with disbase and										
83PR035 83PR036	Jvc Jvc		SE/NE SW/NE	21 21	38 38	9 9	3,440 3,780	Mixed fine to coarse andesitic(?) tuff with diabase and andesite porphyry dike Quartz-veined diabase and siliceous tuff(?)		A11 202		20 22			1999) 1990)			
83PR037 83PR038	hgb Jdi		SE/SE SE/SW	2 32	38 37	10 9	4,400 1,630	Hornblende gabbro with uralite, augite, and saussuritized plagioclase and hornblende Light-colored quartz diorite with minor muscovite and hornblend		57 57				~	(200) (207)			
83PR039 83PR040 83PR041	Jvc Jvc KJd	Unnamed prospect	NE/NW W line NE/SW	32-5 3 8	38 17-38 38	9 9 9	1,615 1,620 1,900	Recrystallized white limestone underlying serpentinite Vein quartz from small vein in unit Jvc Coarse clinopyroxene gabbro	< 0.01	0.20								
83PR042 83PR043 83PR044	Jvc Jvc Jsp	Fall Creek Group	NW/SW SW/SE NW/NE	4 33 4	38 37 38	999	2,190 1,040 1,040	Fine-grained andesitic dikes and volcanic wacke(?) Impure limestone (graywacke) Massive sulfide breccia with pyrite, pyrrhotite, chalcopyrite,		20 22			10		(53)	55		
83PR045 83PR046	um hgb		NE/SE NW/SE	26 1	37 38	10 10	3,600 3,485	with calcite, serpentine, and talc Serpentinized coarse dunite Medium-grained hornblende gabbro, coarse-grained hornblendite,										
83PR046 83PR047	Jdi	Castle Rock	NW/SE SE/NW	30	38	9	3,365	and hornblende diorite with minor quartz Light-colored, medium- to coarse-grained plagioclase, quartz, chlorite, and limonite after pyrite			2221		122	122		200 120		
83PR048 83PR049	am gb	Unnamed prospect	NE/NW NW/SE	28 7	37 37	9 9	2,220 860	Fine-grained, iron-stained siliceous zone in amphibolite Dark hornblende, biotite, quartz diorite with poikilitic	< 0.01 < 0.01	0.28							107 107	
83PR050 83PR051 83PR052		vc Hustis Mine	₩2 NW/SE SW/NE	14 14	38 38	10 10	2,050 2,635 2,300	texture Pale-green chlorite phyllite Leached, iron-stained volcaniclastic rock Chloritized saussuritized and foliated tuff			(201) 1993			1221				
83PR052 83PR053 83PR054	Jvc um Jdi	Unnamed prospect Baker Creek	SW/NE NE/SE SE/NE	14 10 18	38 38 37	10 10 9	2,300 3,050 1,220	Chloritized, saussuritized, and foliated tuff Massive to disseminated chromite in dunite Sheared, altered diorite-serpentinite gouge (6-ft chip sample) Medium carried hearbleade bittie output diorite	0.010	555							1	
83PR055 83PR056	KJd Qls,we	e	E cent. SE/SE	. 32 36	37 37	9 10	1,220 2,870	Medium-grained hornblende biotite quartz diorite Partly serpentinized, very coarse-grained, poikilitic wehrlite (float)	0.010	0.33								
		Au in camples with u	alues for . All of	only	Pt. and	Pd) were	determined by the	U.S. Bureau of Mines, Reno, Nevada, using fire assay pre-concentra	1-									

1984 By Len Ramp Plate 2