

RECORD IDENTIFICATION

RECORD NO..... MO15607  
RECORD TYPE..... XIM  
COUNTRY/ORGANIZATION. USGS  
DEPOSIT NO..... DDGM 93-75  
MAP CODE NO. OF REC..

REPORTER

NAME..... BRADLEY, ROBIN; WALKER, GEORGE W.  
DATE..... 79 03  
UPDATED..... 81 04  
BY..... FERNS, MARK L. (BROOKS, HOWARD C.)

NAME AND LOCATION

DEPOSIT NAME..... SOURDOUGH FLAT *ni*

COUNTRY CODE..... US  
COUNTRY NAME: UNITED STATES

STATE CODE..... OR  
STATE NAME: OREGON

COUNTY..... CURRY  
DRAINAGE AREA..... 17100312 PACIFIC NORTHWEST  
PHYSIOGRAPHIC PROV..... 13 KLAMATH MOUNTAINS  
LAND CLASSIFICATION..... 43

QUAD SCALE            QUAD NO OR NAME  
1: 62500            PEARSON PEAK ( 1954 )

LATITUDE            LONGITUDE  
42-16-21N            123-50-36W

UTM NORTHING        UTM EASTING        UTM ZONE NO  
4680150.            430450.            +10

TWP..... 088S  
RANGE..... 010W  
SECTION.. 11 14  
MERIDIAN. WILLAMETTE

POSITION FROM NEAREST PROMINENT LOCALITY: ABOUT 20 MILES FROM SELMA ON U.S. 199

COMMODITY INFORMATION

COMMODITIES PRESENT..... NI    CR    CO

MAIN COMMOD..... NI

ANALYTICAL DATA(GENERAL)

SOIL AND SAPROLITE AVERAGE ABOUT 1.00 % NI; 0.07 % CO; 1.25 % CR

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 2

WORK DONE BY OTHER ORGANIZATIONS

YEAR WORK TYPE ORGANIZATION AND RESULTS

1) 1974 RECON RAMP, ODGMI HAD NOT PREVIOUSLY RECOGNIZED AS A NICKEL PROSPECT.

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:

LATERITES

FORM/SHAPE OF DEPOSIT: LARGE LANDSLIDE BLOCK

SIZE/DIRECTIONAL DATA

SIZE OF DEPOSIT..... SMALL

MAX THICKNESS..... 50 FT

COMMENTS(DESCRIPTION OF DEPOSIT):

AMT. UNWEATHERED ROCK IN SOIL IS ESTIMATED TO BE FROM 30 TO 80 %.

DESCRIPTION OF WORKINGS

COMMENTS(DESCRIP. OF WORKINGS):

SMALL PITS AND TRENCHES

PRODUCTION

UNDETERMINED

GEOLOGY AND MINERALOGY

HOST ROCK TYPES..... LATERITES

LOCAL GEOLOGY

COMMENTS (GEOLOGY AND MINERALOGY):

LANDSLIDE MADE UP OF VERY COARSE-GRAINED DUNITE, HARZBURGITE, SERPENTINITE, OCCASSIONAL DIKE ROCK FRAGMENTS AND RED TO YELLOW-BROWN LATERITIC SOIL.

GENERAL REFERENCES

- 1) RAMP, LEN, 1978 , INVESTIGATIONS OF NICKEL IN OREGON: ODGMI MISC. PAPER NO. 20 , P. 55 .
- 2) RAMP, L. AND OTHERS, 1977, GEOLOGY, MINERAL RESOURCES AND ROCK MATERIAL OF CURRY COUNTY, OREGON; ODGMI BULL. P.50

*Chetco*

Name: Sourdough Flat Nickel Prospect

Owner: When examined in Sept. 1974, no evidence of claims was seen.

Location: 42°16'18" N. Lat; 123°50'58" W. Long. SW $\frac{1}{4}$  sec. 11 and NW $\frac{1}{4}$  sec. 14, T. 38 S., R. 10 W., in Curry County, Oregon; near the edge, but within the Kalmiopsis Wilderness area. Elevation is between 805 and 914 meters. The area is reached via the Illinois River Road and Chetco Pass road and is a total of about 30 kilometers from Selma on U. S. 199. The distance to electrical power is about 28 kilometers. Adequate water is nearby.

Climate, vegetation and land use:

The average annual precipitation is about 200 cm. The average summer temperature is about 11° C and in winter about 3° C.

Vegetation consists of scrub pine and brush. Species include knob cone, azalea, cascara, ceanothus, live oak, labrador tea, etc. The principal use of the area historically has been mining for both gold and chromite. The deposit lies inside the boundaries of the Kalmiopsis Wilderness.

History: The area has not previously been recognized as a nickel prospect. Small pits and trenches in the area have been for chromite. The area was explored for chromite during the early 1950's (Ramp, 1961, p. 100-107).

The present investigation done Sept. 18-19, 1974 consisted of auger sampling and reconnaissance mapping.

General Geology: The area of the prospect is in landslide debris; largely a mixture of very coarse-grained dunite (olivine crystals up to 2 inches in diameter), harzburgite, serpentinite and red to yellow-brown lateritic soil. The surrounding rocks are mainly harzburgite and dunite that are in part serpentinitized. The ultramafics are intruded

by diorite dikes that outcrop a short distance to the northeast and southwest of the prospect. The ultramafics have a thrust fault contact with gabbro of the Illinois-Chetco mafic igneous complex to the west and are faulted and infolded with sediments and volcanics of the Rogue Formation to the southeast near Slide Creek (See Geologic Map DOGAMI Bull 88, Ramp, 1975)

Description of the deposit: The soil appears to be in part a talcy, clayey saprolite intermixed with abundant peridotite and coarse-grained dunite boulders. The percentage of rock in the soil is estimated to vary from about 40 to 95 percent and over the total area may average 70 percent. There is minor silica boxwork float and occasional chunks of high-grade, massive chromite float mixed in the soil. Dimensions of the deposit average about 250 meters wide and 600 meters long. The area is about 15 hectares. The average depth is estimated at about 4.5 meters. The maximum depth of soil and saprolite development is estimated to be about 15 meters.

Grade and Tonnage estimates: An average of 16 samples from 14 sites in the area shows that the soil and saprolite contain 1.00 percent Ni and 0.49 percent Co. (Additional  $\% \text{Fe} = 24$   
 $\% \text{Cr} = 12$   
 $\% \text{Co} = 0.07$  analyses for Cr and Fe are forthcoming. A check on the accuracy of Co is also being made as I suspect it is a little high) An analyses of the very coarse-grained dunite (AFG-80) showed that the fresh unweathered rock contains 0.22 percent Ni and Trace  $\text{Cr}_2\text{O}_3$ .

Gross tonnage of rock and soil in the area to 4.5 meters depth, using a factor of 1.9 m.t./cu.m. is about 1,283,000 tonnes. Net tonnage of soil and saprolite, excluding the 70 percent rock and using a factor of 1.60 m.t./cu.m. is about 325,000 tonnes. Grade of the gross tonnage is calculated at 0.44 percent Ni and 0.06 Co.

References:

Ramp, Len, 1961, Chromite in Southwestern Oregon, Oregon DOGAMI Bull. 52.

Ramp, Len, 1975, Geology and Mineral Resources of the Upper Chetco Drainage, Oregon DOGAMI Bull. 88.

Report by:

L. Ramp 11-7-75.

and gneiss at the pit strikes about N. 35° E. and dips 35° W. About 100 feet southeast of this point, banding strikes N. 30° E. and dips 25° SE.(variable).

Production: A number of specimens have been removed for ornamental and lapidary rock.

#### OTHER MANGANESE OCCURRENCES, Nos. 48 and 69

An occurrence of manganese was noted in the form of large float boulders of dark-brown to black manganese oxide-stained ferruginous chert in the west fork of the Mislatah Creek just above the junction of Craggie Creek in the N.  $\frac{1}{2}$  sec. 2, T. 38 S., R. 12 W. No analyses were made of this rock but it is believed to be similar in origin to the Long Ridge deposit.

A small prospect pit was noted on the ridge east of Hawks Rest, near the north edge of the NE $\frac{1}{4}$  sec. 22, T. 39 S., R. 10 W., at about 3,680 feet elevation. Pieces of magnetite with manganese oxide apparently came from a small lens about 1 foot thick in banded metavolcanics which strike about N. 75° W. and dip nearly vertically. No assays were obtained.

#### Mercury

There are no known quicksilver deposits in the area, but cinnabar can be panned from stream sediments in a few places and has shown up in the geochemical stream-sediment sampling. During mapping, cinnabar was panned from Miller, Slide, Carter, and Babyfoot Creeks. A high mercury anomaly was obtained in a stream-sediment sample (No. 54, Appendix A) from the tributary of Babyfoot Creek near the north edge of the NE $\frac{1}{4}$  sec. 31, T. 38 S., R. 9 W. A minor amount of cinnabar can also be panned at various places on the Little Chetco River.

#### Nickel

Nickel normally occurs in ultramafic rocks (peridotite and serpentinite) in the range from 0.1 to 0.3 percent. Weathering processes tend to concentrate nickel as a residual oxide and secondary silicate in lateritic soils and saprolites developed over peridotites. These laterites often contain about 1 percent of nickel. Areas of gentle topography such as flat-topped ridges and benches, including landslide areas, are considered favorable sites to prospect for nickel.

Red lateritic soils have been noted in four areas: a landslide area in the southwestern part of Sourdough Flat, small patches on the ridge between Little Chetco and the main Chetco Rivers, to the southeast in the vicinity of Doe Gap, and small areas in sections 24 and 25, T. 39 S., R. 10 W., just south of Square Lake. A few other areas in the large peridotite mass southwest of the Chetco River also appear to have some soil cover and may be worthy of further investigation.

Exploration work done during the course of this study by the writer and assistants has consisted of shallow hand auger sampling that in a few spots reached a maximum depth of 10 feet (Figure 23). Augering of the red soil areas (No. 67) on the hillside and ridge northeast of the Chetco River from about 1 mile to 2 miles north of the mouth of Broken Cot Creek produced samples from a depth of 2 to 4 feet which assayed from 0.30 to 0.73 percent nickel. Shallow samples taken on the slopes about 3,000 feet N. 55° E. of Doe Gap assayed from 0.50 to 0.99 percent nickel.

The landslide area in the southwestern portion of Sourdough Flat, in sections 11 and 14, T. 38 S., R. 10 W. (see sketch map, Figure 24) apparently contains a higher nickel concentration than the other areas. Auger samples taken at 14 sites over the slide area are listed on the map (Figure 24). The area, which is about 1,200 feet wide and 2,000 feet long, occupies about 40 acres. Depth of the soil and saprolite development has not been accurately determined, but for most of the area it appears to be quite shallow and rocky. Only two of the sample sites augered reached to 10 feet without encountering rocks. An estimated maximum depth of 100 feet and an average depth of 10 feet of soil and saprolite development may be a reasonable potential for this deposit. The parent rock involved in the slide is mostly a peculiar

coarse-grained dunite having olivine crystals, some as large as 2 inches in diameter and possibly others to 1 inch in diameter. The olivine is characteristically highly fractured and also displays good cleavage. Two analyses of the unweathered coarse-grained dunite show a nickel content of 0.22 and 0.313 percent.

The geochemical stream-sediment sampling project (Appendix A) indicated six sites in the area with anomalous nickel content in the range of 3,000 to 5,000 parts per million. These sites include Madstone Creek (No. 96); two sites on the branch of Box Canyon Creek which drains the Vulcan Lake moraine area (Nos. 64 and 65); a site near the head of the main Chetco (No. 99) in the NE $\frac{1}{4}$  sec. 28, T. 39 N., R. 10 W.; Broken Cot Creek (No. 98); and the stream between Broken Cot and Madstone Creek (No. 77). The anomalous samples from Box Canyon Creek may be evidence of nickel concentration in the extensive glacial moraine deposited northeast of Vulcan Lake. Preliminary investigation of anomalous nickel in similar stream-sediment samples from Josephine Creek by the U. S. Bureau of Mines (ORE BIN, 1970) failed to isolate concentratable nickel minerals but showed that further investigation may be justified.



Figure 23. Auger sampling nickel-bearing lateritic soil on ridge northwest of Hawks Rest (no. 67).