COLEGROVE RANCH GRAPHITE DEPOSIT

Owner: Delmar Colegrove, Brookings, Oregon.

Area: Deposit is on private land.

Location: The graphite occurrence is about half a mile northeast of ranch house, which is in SW¼, sec. 13, T. 39 S., R. 14 W., close to U. S. 101, about 4 miles south of Carpenterville.

History: Although the occurrence has been known for several years, no investigation of the deposit had ever been made until samples were studied by Mr. Willard Colegrove at the University of Oregon in 1944.

Topography: The immediate area has high rolling hills, a few of which are surmounted by buttes. Two of the buttes are blocks of a large rhyolite dike. One other butte, called Colegrove Butte, is made up of sediments. Just west of U. S. 101 in the ranch area there are ancient marine terraces, a mile or so wide, which slope down to the high sea cliff. The present beach bordering the sea cliff at the mouths of Whalehead and Thomas creeks contain concentrations of auriferous black sands. The concentration is especially heavy at the mouth of Whalehead Creek.

On one of the elevated terraces just above the sea cliff about 2 miles north of Thomas Creek in a dune area known as the "Sand Hills", relatively coarse gold and platinum are found in what may be commercial quantity. This locality is just north of the "Natural Bridge" - an erosional feature of a part of the sea wall which has broken away.

Development: There has been no development on the deposit.

Geology: A graphite seam, half an inch to an inch wide and dipping generally 41° west occurs in a large rhyolite dike which extends south from the Colegrove Ranch to just north of Brookings. The dike is reported to extend
northerly from the Colegrove ranch house several miles. At a point about one-
half mile northeast of the ranch house the dike is probably 500-600 feet wide. 

Here it appears to have been cut by a fault which has separated it into two 
or more blocks. On the east side of the fault block below Colegrove Butte the 
graphite is exposed in a portion of the steep west wall. All but the upper 10 
feet of the exposure is covered by talus. Near the bottom of the exposure the 
graphite enrichment has enlarged into a lenticular body 8 to 10 inches in 
diameter. Both the seam and the small lens would contain over 50 percent crys-
talline graphite in small flakes and seemingly of good grade. Spectrographic 
analyses of both the graphite and the associated gangue are attached to this 
report.

The rhyolite dike has intruded Eocene (?) sediments consisting of shales, 
sandstones, and conglomerates. In one place a large xenolith of shale was 
found enclosed in the rhyolite. The dike is very persistent as it extends 
southward with only minor faulting for about 8 miles, and is probably nearly 
a half mile wide as it goes into the ocean. Two or three stacks of rhyolite 
are located offshore.

Petrographic analysis of specimens of the rhyolite by Mr. W. J. Colegrove, 
University of Oregon, shows that the dike rock is composed essentially of:

1. Large crystals of orthoclase feldspar (sanidine).
2. Some fairly large crystals of plagioclase (probably 
   oligoclase) but in subordinate amounts.
3. Large crystals of quartz.
4. All of the above enclosed in a groundmass of fine-grained 
   but crystallised laths of orthoclase feldspar.
5. In addition the whole dike has a fairly considerable 
   amount of iron in the form of an indefinite limonite-
hematite series, probably about half way between the
two.

Some small crystals of zircon are embedded in laths of feldspar.

Quartz phenocrysts all enclose or partly enclose droplets of surrounding groundmass.

Because of its small size, the graphite seam appears to have little if
any commercial importance, but because of its good grade, a small amount of
exploration would be warranted. This could take the form of cleaning away
talus or slide material from the bottom of the exposure in order to determine
whether or not the seam widens, or more lenses of the graphite occur near the
seam. Bulldozer work would be very satisfactory for this exploration.

Reference: Butler and Mitchell, Preliminary Survey of the Geology and Mineral
Resources of Curry County, Oregon. Oregon Bureau of Mines and
Geology, 1916.

Report by: F. W. Libbey, April 4, 1945
QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.
   Silicon

2. Elements present in concentrations 10% - 1%.
   Aluminum, Iron, Sodium, Sulfur

3. Elements present in concentrations 1% - 0.1%.
   Calcium, Manganese, Titanium

4. Elements present in concentrations 0.1% - .01%.
   Magnesium, Lead, Copper

5. Elements present in concentrations .01% - .001%.
   Zirconium, Tin, Molybdenum, Vanadium,
   Lithium, Nickel, Boron

6. Elements present in concentrations below .001%.

Dr. H. C. Harrison, Spectroscopist
Spectrographic Laboratory Number 1133
Sample received from F. W. Libbey

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.
   Silicon

2. Elements present in concentrations 10% - 1%.
   Aluminum, Iron, Sodium

3. Elements present in concentrations 1% - 0.1%.
   Magnesium, Calcium, Manganese, Titanium

4. Elements present in concentrations 0.1% - 0.01%.
   Lead, Copper, Sulfur

5. Elements present in concentrations 0.01% - 0.001%.
   Zirconium, Tin, Molybdenum, Vanadium,
   Lithium, Nickel, Boron

6. Elements present in concentrations below 0.001%.

Dr. H. C. Harrison, Spectroscopist
Manganese oxides crop out in a reddish chert zone near the bed of a creek tributary to Whalehead Creek. The manganese occurs as a bedded deposit at the upper side of the reddish chert lens, and is exposed for a distance of thirty feet. The bed is a maximum of about two feet thick. The deposit is assessible.

Operator: H.C. Skeels, Golden Surf Mining Interests, has examined the property and may possibly operate it, if showings warrant.

Owner: Delmar Colegrove, Brookings, Oregon

Area: Deeded land

Location: Located about 3/4 miles west of U.S. Highway 101 on the southern tributary to Whalehead Creek, in the NW 1/4 of Sec. 2, T. 39 S., R. 14 W. Deposit may be most easily reached by following the ridge to the north of the deposit and creek westward to a prominent rock outcrop about 70 feet high, then south to the creek bed and the deposit.

Deposit is accessible to U.S. 101 at a point 10 miles north of Brookings, Oregon and 38 miles north of Crescent City, California. It is 115 miles south of Coquille, Oregon.

History: No production

Topography: Elevation about 1,000 feet above sea level. A large creek flows westward at the lower limit of the deposit. The top of the ridge to the north, up which the ore must be hauled to reach the highway, is 300 feet above the deposit and has an even slope of 15° or 27% grade.

Development work: Deposit has been trenches by bulldozer at three main levels, exposing the deposit for 30 feet along the creek.

Geology: The country rock of the area is Eocene (Arago?) sandstone, intruded by several rhyolite plugs. The manganese is located in a chert zone which strikes east-west and wherever exposed dips north from 20 to 30 degrees. The deposit is situated in the upper part of a red jaspery chert, which is in turn overlain by a thick series of white banded cherts which crop out at numerous points on the ridge. The thickness of the jaspery chert is not known as it crops out in the creek bed.

The manganese is principally pyrolusite, occurring as nodules and pods, replacing the chert and staining it on seams and fractures. The zone of greatest manganese concentration is at the top of the red chert zone, is two to four feet thick, and
dips northward at an angle of about 15°.

Mining and metallurgy: The deposit can be easily worked by open pit mining, although continued mining of the deposit will involve greater and greater amounts of overburden that would have to be removed. A road can be built on the south side of the ridge to the deposit by bulldozer and the ore hauled with little trouble the 3/4 mile to the highway.

The ore is low in silica along the zone of greatest concentration, apparently due to removal of the silica by leaching. Stratigraphically below this zone the manganese decreases rapidly and the silica increases in proportion.

Manganese in the richest zone may run as high as 50% manganese, but the average material below the richest zone will run only 20 to 25% manganese.

According to Mr. Colegrove, a second manganese deposit, containing some rich manganese float, occurs to the northeast of the deposit described here, within half a mile of US Highway 101, but no work has been done on it for some time, and it is now overgrown with brush to the point where it is difficult to locate. This deposit has been previously examined and reported on.

Owner: Delmar Colgrove
Brookings, Oregon

Location: Deposit #1 - NW¼ sec. 2, T. 40 S., R. 14 W. on the South Fork of Whalehead Creek.

Deposit #2 - NW¼ sec. 3, T. 40 S., R. 14 W. on Whalehead Creek 1¼ miles west of deposit #1.

Bulletin No. 17 states that "Many manganese outcrops are found in this locality..." but does not refer to them separately.

History: Nothing to be added to that noted in Bulletin No. 17.

Geology: Deposit #1 is found in a chert lens. The occurrence as described in G.M.I. Short Paper No. 9 was confirmed. The chert lens in which the mineralization was found is cut by Whalehead Creek. Whether or not the chert lens on the south side of Whalehead Creek is a split in the lens, and whether or not the chert south of Whalehead Creek contains appreciable manganese mineralization was not determined.

Deposit #2 is exposed by a 30' x 30' x 10' outcrop just south of and bordering a jeep road which runs along the north bank of Whalehead Creek about half a mile from the ocean. Scattered outcrops and large boulders of float are found north of the road on the hillside above the large outcrop for a distance of at least 250' to 300'. The manganese mineralization in the large outcrop is found in two bands of red chert that are about 10' wide and in a basic igneous rock 10' wide that divides the chert. In the outcrops and float above the road the manganese mineralization appears to be confined to the basic igneous rock as no chert was found. The extent of the mineralized basic rock was not determined.

Development: A very minor amount of development work with a bulldozer was done on deposit #1 and no development work has been done on deposit #2. Because of the heavy cover of soil and brush considerable development work must be done before the character of these two deposits can be determined.

Samples: The following samples were taken at the time of the visit:
Deposit #1

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample location</th>
<th>Assay results</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-10478</td>
<td>11½' chip sample along cut in chert lens.</td>
<td>Mn - 8.81%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Si - 68.52%</td>
</tr>
<tr>
<td>P-10477</td>
<td>5½' chip sample across 2&quot;-4&quot; bands of manganese-stained red chert. 15' SE of P-10478 and on west side of chert lens.</td>
<td>Mn - 1.40%</td>
</tr>
<tr>
<td>P-10476</td>
<td>Picked representative pieces from lower part of chert lens and bordering the creek. 30' south of P-10477.</td>
<td>Mn - 7.30%</td>
</tr>
</tbody>
</table>

Deposit #2

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample location</th>
<th>Assay results</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-10479</td>
<td>8' chip sample from the chert to the west of the basic igneous rock.</td>
<td>Mn - 1.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Si - 57.3%</td>
</tr>
<tr>
<td>P-10480</td>
<td>6' chip sample from chert to the east side of the basic igneous rock.</td>
<td>Mn - 2.5%</td>
</tr>
<tr>
<td>P-10481</td>
<td>From manganese-stained basic igneous rock between P-10479 and P-10480.</td>
<td>Mn - 2.2%</td>
</tr>
<tr>
<td>P-10482</td>
<td>Rind (8&quot; thick) on 2' boulder of manganese-stained basic igneous rock. The core of this boulder is P-10483, a petrographic description of which is given. This boulder was found as float about 200' north of P-10481.</td>
<td>Mn - 2.5%</td>
</tr>
<tr>
<td>P-10485</td>
<td>Representative pieces from outcrop at top of low hill approximately 250' north of P-10481.</td>
<td>Mn - 2.3%</td>
</tr>
<tr>
<td>P-10484</td>
<td>Specimen sample west and downhill from P-10485.</td>
<td>Mn - 1.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Si - 60.34%</td>
</tr>
</tbody>
</table>

Report by: H. M. Dole
Date of visit: October 11, 1950
Visited by: F. W. Libbey, H. M. Dole
Informant: Delmar Colgrove

On the next page is a petrographic description on a thin section cut from the core of a 2' manganese-stained boulder. P-10482 is an analysis on the outer portion of this sample. This is sample P-10481.
PETROGRAPHIC DESCRIPTION
From Colegrove No. 42
Oregon Department of Geology and Mineral Industries
Field No. Colegrove #73

Classification: Basalt breccia
Portland No.: Calageve #73

Collector: H.M.D. Date collected: 10/11/59

Location: Sec. 1, T. 40 S., R. 16 W., Unmapped
Quad. Elev. 2501.

County, Oregon


Relationships: Chart to east, followed by author

Requested by: H.M.D. Attention to: F.M.L.

Diagnostic or special features: Description, probably due to faulting.

Megascopic Description:
1. Color: Greenish-black
2. Texture: Vesicular
3. Minerals: Pyrite, disseminated & minute
4. Structures and features: Massive

Microscopic Description:
1. Texture: Oolithic or flaser
   A. Crystallinity: Micaceous
   B. Granularity: Micaceous
   C. Fabric: Mylonitic, subhedral
2. Minerals (Summary):
   A. Primary: 1. Glass 45 
      2. Feldspar 35 
      3. Anatite 15 
      4. Magnetite 1
   B. Secondary: 1. Calcite 1
      & Tertiary: 2. Pyrite
3. Alteration:
   A. Minerals formed: Antigorite, kamesite
   B. Type(s) of alteration

PA-31a

Signed: H.M. Dale
<table>
<thead>
<tr>
<th>Generation &amp; %</th>
<th>Name</th>
<th>%</th>
<th>Size Range (mm)</th>
<th>Shape</th>
<th>Optics</th>
<th>Assoc. minerals &amp; features</th>
<th>Order of Xtn.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feldspar</td>
<td>35</td>
<td>.1 mm</td>
<td>Sub.</td>
<td>Shows bending and shattering. Surprisingly little alteration.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Augite</td>
<td>15</td>
<td>Average .05 mm, maxima 2 mm</td>
<td>Sub. to amhedral</td>
<td>Most free from alteration. Some completely masked by residues of antigorite. Probable 2 ages. Some crushing and floence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magnetite</td>
<td>1</td>
<td>.1 -.9 mm</td>
<td>Sub.</td>
<td>Opaque</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calcite</td>
<td>5</td>
<td>2 mm</td>
<td>Amhedral</td>
<td>Good cleavage traces. Fills interstices - probably secondary.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pyrite</td>
<td>1</td>
<td>2-3 mm, average 1 mm</td>
<td>Sub.</td>
<td>Opaque</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The examination of this rock was only preliminary.
The most distinctive thing about this rock is its crushed character. Unoriented angular fragments (from .5 to 1 cm in diameter) of basalt are cemented by wide (several mm) bands of crushed basalt. Feldspar reflect stress in their fractured and bent forms. Identification of feldspar difficult because of this. Feldspar clear, show very minor alteration.

It is thought that this rock is part of a fault zone. The presence of short (on the east of this rock) along short lines seem to be the role in the Galice and Dathan formations.

Other tests: Lab. No. Analyst

Type & Origin:

Economic Value:

Remarks:
Memorandum

Geology: The investigation of November 14, 1950, indicates that the description of the geology noted in the memorandum report of October 11 and in G.M.I. Short Paper No. 9 needs some revision.

Deposit #1: This deposit is approximately 100 feet long (N-S) and 60 feet wide (E-W) and is cut near the center by a ravine or trench approximately 20 feet deep. The trench has been deepened by bulldozing. Shallow trenches are also found at the crest and on the east side of the northern part of the deposit. The bulk of the manganese rich chert and manganese oxide enrichment is found in these cuts. No material, chert or manganese oxides were found definitely in place in the cuts or in any part of the northern part of the deposit. Considerable loose chert showing some manganese oxide staining can be found over a lateral distance of over 250 feet northward up the hillside. Near the ridge top one-fourth of a mile to the north is an outcrop of white chert 20 to 30 feet wide, 30 to 40 feet long and extending above the land surface 15 to 25 feet; this is thought to be in place. From this outcrop to the creek the surface of the ground over a width of 200 to 400 feet forms a broad shallow ravine; the surface is mamecky and irregular. This evidence indicates that this is an area of landsliding and that the manganese ore of the deposit is an accumulation of residual or lag material and has reached its present position as the result of landsliding. Originally the ore may have been the enriched portion of the extension of the chert outcrop found near the crest of the ridge.
Banded, red chert which appears to be in place is found to the south and west of the 20-foot deep trench that cuts this deposit. The east side of this part of the deposit shows banded, red chert and basalt, the relation of these materials could not be determined. It is possible that the southern part of the deposit is in place but it is thought that its position, too, is due to landsliding.

Chert, some showing manganese staining, is found across Whalehead Creek to the south and can be traced nearly to the summit of the ridge. The strike (N. 10° E.) is the same as noted on the outcrop on the ridge to the north of Whalehead Creek and apparently the chert on both sides of the creek is the same lens or within the same band or zone.

A grab sample (P-10598) from a 3-foot high pile of sorted ore found near the mouth of the open cut at the top of the north of this deposit showed 10.44 percent manganese.

Deposit #2: Re-examination of this deposit indicates that there is a possibility that the outcrop (mentioned in the October 11, 1950 report) along the road owes its position to landsliding. Also the chert band appears to be a large accidental inclusion (xenolith) in the basalt intrusion. Across the road (to the north) another outcrop of basalt contains so many accidental inclusions that it has the appearance of an agglomerate. Most of the pebbles in this outcrop are rounded and some are granitics; a few chert xenoliths were found.

The basalt intrusion was traced up the hill for approximately 500 feet laterally. A few outcrops showed minor manganese replacement and staining but nowhere was there found the concentration of manganese oxide that was noted on the basalt just above the road. The quantity of the manganese oxide found in the basalt is not commercial.
In contact with the basalt to the east of the intrusion is a mottled red, green and white chert. The chert zone has been severely affected by landsliding and is now the site of a small ravine.

To the east of the chert, quartz mica schist outcrops.

Four samples were taken at the time of this visit. Location of samples and results obtained follow:

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-10599</td>
<td>West end under intrusive. Left section. 5 feet.</td>
<td>Mn - 1.60%</td>
</tr>
<tr>
<td>P-10600</td>
<td>West end under intrusive. Right section. 5 feet.</td>
<td>Mn - 1.35%</td>
</tr>
<tr>
<td>P-10601</td>
<td>Iron-manganese stained chert. East side. 3 feet.</td>
<td>Mn - 2.80%</td>
</tr>
<tr>
<td>P-10602</td>
<td>Grab sample from high-grade nodules found on ridge to north of outcrop. Sample by Delmar Colegrove.</td>
<td>Mn - 2.35%</td>
</tr>
</tbody>
</table>

Report by: H. M. Dole
Date of visit: November 14, 1950
Visited by: F. W. Libbey, H. M. Dole
Accompanied by: Delmar Colegrove
Economics: The rich ore is distinctly limited both vertically and laterally. Extensions may be possible but are doubtful. The dip of the manganese bed to the north beneath the ridge is a distinct disadvantage. With increasing depth and distance from the ground level, it is believed that the ore will become more highly siliceous, although it is conceivable that in this type of a deposit, the pyrolusite may be fairly constant.

Tonnage of manganese exposed is small. Tonnage available may be considerable, yet the cost of operation and removal of the overburden in addition to the cost of building the road makes the operation of the deposit a very doubtful proposition.

Recommendation: It is recommended that the deposit be very thoroughly prospected before further development work is done.

Informants: Delmar Colegrove

Randall E. Brown
CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
RECORD NO.............. M061515
RECORD TYPE............ XM
COUNTRY/ORGANIZATION.. USGS
DEPOSIT NO.............. DOGMI 93-218
MAP CODE NO. OF REC...  

REPORTER
NAME.................. JOHNSON, MAUREEN G.

NAME AND LOCATION
DEPOSIT NAME........... COLE GROVE
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..... 01
QUAD SCALE............ 1: 62500
QUAD NO OR NAME...... CAPE FERRELO
LATITUDE.............. 42-08-44N
LONGITUDE............. 124-19-41W
UTM NORTHING.......... 4666575.0
UTM EASTING........... 390250.0
UTM ZONE NO........... +10
TWP............. 40S
RANGE........... 14W
SECTION........... 02
MERIDIAN... W.M.

COMMODITY INFORMATION
COMMODITIES PRESENT..... MN
MAIN COMMOD............. MN

ORE MATERIALS (MINERALS,ROCKS,ETC.): MANGANESE OXIDES, MANGANIFEROUS CHERT
DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
- FRACTURES

FORM/SHAPE OF DEPOSIT: 2 CHERT LENSES

SIZE/DIRECTIONAL DATA
- SIZE OF DEPOSIT: SMALL
- MAX LENGTH: 28 FT.
- MAX WIDTH: 19 FT.
- MAX THICKNESS: 13 FT.
- STRIKE OF OREBODY: N50-53E
- DIP OF OREBODY: 56° & 42°

PRODUCTION
- NO PRODUCTION

ANNUAL PRODUCTION (ORE, COMMOD., CONC., OVERBURD.)

PRODUCTION COMMENTS:
- EXPLORED 1941 & 1953

GEOLGY AND MINERALOLOGY

AGE OF HOST ROCKS: JUR
- HOST ROCK TYPES: CHERT

IMPORTANT ORE CONTROL/LOCUS:
- FRACTURES IN SANDSTONE CONTACT ("FOOTWALL") ON EAST SIDE OF CHERT LENS

GEOLOGICAL DESCRIPTIVE NOTES:
- CHERT IS THIN BEDDED, REDDISH BROWN, OR GRAY; LAYERS ARE 0.5" TO 5" THICK, CUT BY QUARTZ VEINLETS.

LOCAL GEOLOGY
- NAMES/AGE OF FORMATIONS, UNITS, OR ROCK TYPES
  1) NAME: DOTHAN
     AGE: JUR

GENERAL REFERENCES
1) RAMP, L. AND OTHERS, 1977, GEOLOGY, MINERAL RESOURCES AND ROCK MATERIAL OF CURRY COUNTY, OREGON; USGS BULL. 938-P. 45
2) APPLING, R.N., 1958, MANGANESE IN SOUTHWESTERN OREGON; USBM REPT. INVEST. 5269, P. 6
CRIB MINERAL RESOURCES FILE 12

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<table>
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<th>REPORTER</th>
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<tbody>
<tr>
<td>NAME</td>
<td>FERNS, MARK L. (BROOKS, HOWARD C.)</td>
</tr>
<tr>
<td>AFFILIATION</td>
<td>D0GMI</td>
</tr>
<tr>
<td>DATE</td>
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NAME AND LOCATION

<table>
<thead>
<tr>
<th>DEPOSIT NAME</th>
<th>COLEGROVE PROSPECT</th>
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<table>
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<tr>
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<th>CURRY</th>
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<tr>
<td>PHYSIOGRAPHIC PROV.</td>
<td>13 KLAMATH MOUNTAINS</td>
</tr>
<tr>
<td>LAND CLASSIFICATION</td>
<td>01</td>
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</tbody>
</table>

| QUAD SCALE             | 1: 62500 |
|                       |         |
| QUAD NO OR NAME        | CAPE FERRELO 1954 |

| LATITUDE               | 42-08-45N |
|                        |         |
| LONGITUDE              | 124-19-31W |

| UTM NORTHING           | 4666600  |
|                        |         |
| UTM EASTING            | 390500   |
| UTM ZONE NO            | +10     |

| TWP                    | 040S    |
|                        |         |
| RANGE                  | 014W    |
|                        |         |
| SECTION                | 02      |
|                        |         |
| MERIDIAN               | WILLAMETTE |

COMMODITY INFORMATION

| COMMODITIES PRESENT    | MN     |
|                       |         |
| OCCURRENCE(S) OR POTENTIAL PRODUCT(S): |   |
| POTENTIAL              |   |
| OCCURRENCE             |   |

| DRE MATERIALS (MINERALS,ROCKS,ETC.): |   |
EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. 2

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
CHEMICAL SEDIMENTARY

FORM/SHAPE OF DEPOSIT:

SIZE/DIRECTIONAL DATA
SIZE OF DEPOSIT...... SMALL

DESCRIPTION OF WORKINGS
SURFACE

PRODUCTION
NO PRODUCTION

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS............. JUR
HOST ROCK TYPES............. CHERT AND PILLOW LAVAS

GEOLOGY (SUPPLEMENTARY INFORMATION)
REGIONAL GEOLOGY
TECTONIC SETTING............. MELANGE

LOCAL GEOLOGY
NAMES/AGE OF FORMATIONS, UNITS, OR ROCK TYPES
1) NAME: DOTHAN
   AGE: JUR

GENERAL REFERENCES
1) RAMP, L. AND OTHERS, 1977, GEOLOGY, MINERAL RESOURCES AND ROCK MATERIAL OF CURRY COUNTY, OREGON; ODGMI BULL. 99, P. 45
2) LIBBEY, F.W. AND OTHERS, 1942, MANGANESE IN OREGON; ODGMI BULL. 17, P. 30