STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
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Josephine County

Bulletin No. 14-C, Volume II, Section I
(Second Edition)

Oregon Metal Mines Handbook

By the Staff

Bulletin 14-A—Northeastern Oregon—East Half
14-B—Northeastern Oregon—West Half
14-C—Southwestern Oregon
Vol. I—Coos, Curry, and Douglas Counties
Vol. II, Sec. 1,—Josephine County
Sec. 2,—Jackson County
14-D—Northwestern Oregon
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1952

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PRICE $1.25

FOREWORD
(First Edition)

Bulletin No. 14, the handbook of Oregon metal mines, is being issued in the form of a series of separate bulletins. This is the fourth of the series and covers Josephine County in southwestern Oregon. As originally planned, Bulletin 14-C, Volume 2, would have covered both Jackson and Josephine counties. Such a volume, however, would have contained some 400 pages, so it seemed best to divide Volume 2 into two sections to expedite the issue and to reduce the size.

Section 2 of Volume 2, covering Jackson County, is now in manuscript form and will be issued as early as possible in 1943.

Much of Josephine County is commonly regarded as being mineralized. Consequently, many mining claims have been staked and operations have been started in many parts of the county during the years since the 1850's. Some claims were never developed; some, carrying well-known old mine names, were active for various lengths of time; and a considerable number are still active.

It has been a 5-year task to compile this comprehensive record of Josephine County mining properties. Certainly inaccuracies will be found in the record since names of properties along with ownerships have been changed from time to time. The records of mining activity at some old properties have also been inadequately reported in the past.

Much of Josephine County has been covered by geological surveys, and a generalized geologic map is included in this bulletin. The Grants Pass quadrangle was mapped in detail by the U. S. Geological Survey, and a colored geologic map of the quadrangle was issued by this Department in 1940.

The map of the Kerby quadrangle, lying west of the Grants Pass, has been all but completed by the U. S. Geological Survey, but it now appears that the map cannot be issued until after the war.

To those who use this bulletin or to engineers seeking information on mining properties in Josephine County, it may be pointed out that a field office-assay laboratory of this Department is located at Grants Pass, the county seat. In some cases, more recent or more detailed information than is included in this bulletin may be obtained by visiting or by addressing an inquiry to the field geologist at the State Assay Laboratory, Grants Pass.

Earl K. Nixon
Director

Portland, Oregon
October 1942

FOREWORD
(Second Edition)

The first edition of this bulletin was exhausted in 1949. Because of the continuing demand, increased by resumption of chromite mining in southern Oregon, it was decided to prepare and issue a second edition. An appendix has been added which contains such up-to-date information as is available.

Since the first edition was issued mapping of the Kerby quadrangle covering much of western Josephine County was completed by the U. S. Geological Survey. The geologic map and accompanying text was published as department Bulletin 40.

F. W. Libbey
Director

Portland, Oregon
August 1952

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INTRODUCTION

Oregon has deposits of many useful minerals, but because of its large area of more than 96,000 square miles - parts of which are not readily accessible - knowledge of the location and extent of its mineral deposits is incomplete. Certain areas are very difficult to prospect. Both discovery and development have been handicapped by rugged mountains with dense timber growth in some sections and great arid stretches of country in others. In spite of these difficulties, Oregon produced in excess of $405,000,000 worth of mineral products from 1850 to 1950.

Ores of the precious metals have been mined in the southwestern counties of the State since 1851 and in the various mountainous sections of eastern Oregon since 1861. From year to year many of the streams in these sections have furnished a consistent production of placer gold. Gold and a small amount of platinum metals have been recovered from beach sands along the coast since the early days of Oregon mining. Oregon was second among the states in quicksilver production from 1931 to 1945, at which time a decrease in production lowered it to third place. Many chromite deposits are known, and production of this strategic mineral is becoming increasingly important.

Oregon has abundant resources of nonmetallics such as building and monumental stone, common and refractory clays, as well as raw materials for making high-calcium lime and portland cement. In normal times, making brick and tile and the manufacture of cement are among the important industries of the State. Oregon has inexhaustible supplies of sand and gravel suitable for construction purposes. Tremendous reserves of diatomite and pumice in eastern Oregon await industrial demand. Although coal has been mined for years in the vicinity of Coos Bay, Coos County, great reserves remain, and lignites and sub-bituminous coals are known to exist in various other parts of the State.

Geography

Cutting across Oregon from north to south are two main ranges of mountains - the Cascades and the Coast Range - both of which continue into Washington on the north and California on the south. The Cascade Mountains form the "backbone" of the State, dividing it into two parts commonly referred to as Eastern (including Central) Oregon and Western Oregon. The portion east of the Cascades is about twice as large as that to the west. The Coast Range of mountains parallels the coast line very closely for the northern two-thirds of its length. The southwestern part of the State is occupied by the Klamath Mountains, an area of old mineralized rocks, while the northeastern quarter of the State is largely occupied by the Blue and Wallowa mountains, also composed of old rocks.

The Columbia River runs along Oregon's northern border for 300 miles. Its scenery is world famous; it is a transportation artery of major importance; its economic possibilities from a power standpoint are beginning to be realized. In short, the Columbia River is probably Oregon's greatest natural resource. Between the Cascades and the Coast Range and extending from the Columbia River southward for nearly 200 miles is the Willamette Valley. In places the floor of this valley is 25 miles wide and, with the contiguous foothills, comprises more than three million acres of productive farm lands. The Willamette River flows north, emptying into the Columbia northwest of Portland.

South of the Willamette Valley and separated from it by low mountain ranges is the valley of the Umpqua River. Still farther south and separated from the Umpqua Valley by higher mountains is the Rogue River, famous for its fertile valley as well as its fishing and placer mining. Both the Umpqua and the Rogue drain west into the Pacific Ocean.

Beyond the mountainous areas, much of northeastern Oregon consists of rolling uplands utilized for wheat growing and the raising of livestock. Thus it will be noted that Oregon possesses a great diversity of land surface and a corresponding variation in climate.

Transportation

Main railroad trunk lines now reach practically all parts of the State except certain southeastern areas and a coastal strip in southwestern Oregon. The Southern Pacific Railroad, with its many feeders, traverses the western portion of the State from north to south, passing through the most productive portions of western Oregon and California, and connects with both water and rail lines at Portland on the northern border of the State. Coastal points are reached by rail and highways through many passes in the Coast Range and by means of coastwise boats between San Francisco, Portland, and Seattle. Throughout nearly all of its 300-mile course as the north boundary of the State, the Columbia River, besides supporting large barges and medium-sized freighters as far east as Arlington, is paralled by two transcontinental railway lines, the Spokane, Portland & Seattle Railway, or "North Bank" (on the Washington side), and the Union Pacific Railroad on the Oregon side of the river. The main Portland-Ogden line of the Union Pacific cuts across and taps the most important mining, farming, and stock-raising sections of north-central and northeastern Oregon, while branch lines from both of these roads reach far south into the interior of central and eastern Oregon. In addition, the Great Northern Railroad traverses the center of the State from north to south, part of the way over tracks of other roads, and enters California by way of Klamath Falls.

The Oregon system of State highways in 1951 consisted of nearly 7,313 miles of which more than 6,363 miles are surfaced. In addition to the State system a network of county and forest roads extends into mining districts, making most properties readily or reasonably accessible.

Geologic features

The Cascade Range is the dominating physiographic feature of the State. The lower mountains constituting the western half of the range are igneous in origin and represent vast ancient outpourings of volcanic material together with subordinate intrusive sheets, dikes, and masses. The high peaks such as Hood, Jefferson, Thielsen, Three Sisters, and McLoughlin which surmount the east edge of the range in a line from north to south are relatively young and probably extinct volcanoes. Lesser peaks and cinder cones dot the region of the high Cascades and represent outpourings of lava in still more recent times.

The west slopes of the Cascades are composed of a variety of rocks, including lavas, volcanic tuffs, conglomerates, shales, and sandstones which in places have been intruded by dioritic masses. Most of the ore deposits are found in association with these intrusives. The east slopes of the Cascades and the adjacent country are commonly covered with pyroclastics and lava flows. Only in a few places have streams cut sufficiently deep to expose earlier rocks.

The Coast Range is composed largely of shales and sandstones, with small amounts of conglomerates and interbeds of volcanic material. These beds are faulted and folded; in many localities they have been intruded by dikes and sills of basaltic lava; and in the northern part they are covered with basaltic lava flows. Because of dense vegetation the Coast Range has not been thoroughly prospected, but coal, iron ore, stone, and an abundance of useful clays have been found. In addition there are the scattered gold and platinum-bearing sands located along the beaches and on some of the coastal streams.

The Klamath Mountains in southwestern Oregon are composed of sedimentary, metamorphic, and igneous rocks principally of Mesozoic or earlier age; they are much older than the Cascade or Coast ranges. In these mountains are located the chief placer and quartz mines of Jackson, Josephine, Curry, Coos, and Douglas counties, from which has come a large production of precious metals. Many of the mountain ranges of eastern Oregon are made up of ancient sedimentary beds that have been intruded by igneous granitoid rocks. The beds have been folded, broken, and tilted at various angles, greatly modifying their original condition and altering them to argillites, slates, and marbles. Other ranges are composed of later lavas. There is evidence here of greater movement and alteration of the rocks

than in most other sections of the State. Some entire ranges seem to have been produced by uplift and movement along vast breaks that, in places, extend for many miles. Such faulting has assisted in the uplifting of the Blue Mountains, the Wallowa Range, Steens Mountain, and others in eastern Oregon.

Historical geology

While this publication is primarily devoted to the metallic minerals of Oregon it might be of interest to include a table showing the major divisions of geologic time together with events in the geologic history of the State. In this table is an estimate of the percent of time that elapsed during each major division as compared to the total age of the earth. The earth is thought to be 500,000,000 to 2,600,000,000 years old. If we use the average of the two figures, we are able to give some approximate ages to the different time divisions. On this basis the gold veins were formed a hundred million years ago; the old gold channels were laid down 50 million years ago; the basalt flooded Eastern Oregon 30 to 40 million years ago; the glaciers carved out the deep valleys of the Wallowas one-half to one million years ago (or even more recently).

Time Divisions of the Geologic Past
(Read from bottom up)

Major Divisions	Time %	Minor Divisions	Some Events in Eastern Oregon	Some Events in Western Oregon
		Recent	Lowest gold placers	Lowest gold placers & gravels
			Volcanic ash and tuff	Cascade volcanoes
Quaternary Man	1%		Glaciers	Conglomerates & gravels around Portland
		Pleistocene	Diatomite	
			Later gold placers	Quicksilver deposits
		Pliocene	Later rimrock lavas	
		Miocene	Beginning of building of of Cascade volcanoes	Cascade lavas & granodiorite with some copper, lead, zinc
			Columbia river basalt flood	Columbia river basalt floods
Tertiary Mammals	3%	Oligocene	Fossil beds of John Day river	Fossil beds of Willamette Valley
				Limestone as at Markham and Dallas
		Eocene	Old gold channels	Old gold channels of southern Oregon and coals as of Coos Bay
		Cretaceous	Intrusion of granites and formation of gold veins, molybdenum and tungsten	Fossil beds of the Rogue River area
		Jurassic		Intrusion of granite & formation of gold & other metalliferous veins
Mesozoic Reptiles	11%	Triassic	Limestones and argillites of Wallowas and elsewhere	Chromite and serpentine
			Greenstones of copper belt	Limestones, argillites & greenstones
		Permian		
Paleozoic		Carboniferous	Elkhorn Ridge argillites	
Amphibians		Devonian		
Fishes	30%	Silurian	Burnt River schist (?)	
Shellfish		Ordovician		Older schist (?)
		Cambrian		
Pre-Cambrian Almost no life	55%			

Formation of the Earth

Mineral production

Statistics of Oregon mineral production dating from the discovery of gold were not recorded for many years. Even now, a segregation of the production of some of the nonmetallics is not reported by the U.S. Bureau of Mines. As compiled from available official sources, Oregon has produced 146 million dollars' worth of metals and 259 millions of nonmetals, giving a total mineral production of 405 million dollars. These are minimum figures. How much greater the total production actually has been cannot be determined.

Statistics of production are now compiled by the U.S. Bureau of Mines, but complete figures from all producers are difficult to get promptly. This is especially true for producers of nonmetallics, reports from some of whom are never secured.

Recorded mineral production in the last 10 years is shown in the following table.

Mineral Production - 1940 to 1950, Inclusive

Year	Metals[1]	Nonmetals[2]	Total
1940	$5,794,018	$ 5,751,951	$11,545,969
1941	5,296,557	7,533,619	12,830,176
1942	3,152,000	10,913,572	14,065,572
1943	1,342,249	10,924,751	12,267,000
1944	765,844	8,891,156	9,657,000
1945	679,542	8,718,458	9,398,000
1946	756,090	11,050,910	11,807,000
1947	801,906	15,771,094	16,573,000
1948	630,402	24,240,598	24,871,000
1949	687,688	21,791,312	22,479,000
1950(estimated)	417,765	21,124,000	21,542,000

[1] Metals are gold, quicksilver, silver, copper, chrome, lead, zinc, and platinum in approximate order of value.

[2] The most important nonmetals are stone, sand and gravel, cement, and clay products in the order of their value. Coal, diatomite, lime, pumice, and mineral waters, etc., are included in the production figures.

During 1940 and 1941 prospecting for strategic minerals (especially chromite, quicksilver, manganese, and antimony) was active but, except for quicksilver, actual production was small. Production of chromite increased between 1942 and 1945, at which time the United States Government's stockpiling program was discontinued. Gold production was affected both by priorities and higher costs, and was drastically reduced during and following the World War II period. In 1951 because of the increased need for strategic minerals resulting from the Korean conflict a Government chrome purchase depot was again established at Grants Pass and production of chromite was accelerated. There has also been stimulated activity for production of other strategic minerals.

MINERAL DEPOSITS

Western Oregon

Although gold was reportedly found in Oregon (on the headwaters of the John Day River) as early as 1845, the earliest mining of gold in Oregon was in Jackson and Josephine counties in 1851 and 1852. In 1852 the Jacksonville mining district was organized following the discovery of placer gold on a tributary of Jackson Creek. In the fall of 1852 gold was found on Josephine Creek and in the spring of 1853 there was a rush to Althouse Creek, where the bed of the stream was found to be uniformly rich. From Sailor Diggings, a famous placer region on the upper Illinois River, a 15-mile ditch was paid for out of one year's production. In the two or three years following, practically every part of southern Oregon was prospected for gold and many productive districts were organized. After the most accessible gravel deposits were largely exhausted, placer miners turned to benches, wherever such deposits could be worked by water under considerable pressure. Hydraulic mining was done in southern Oregon as early as 1856 and has been carried on almost continuously ever since.

Tracing placer gravels to find the source of the gold led to the discovery of quartz veins. In 1859 quartz was found at Gold Hill so rich that $400,000 is said to have been taken out the next year. A similar rich deposit at Steamboat, found at about the same date, yielded $350,000 in a short time. The quick exhaustion of the many rich strikes gave the region a reputation of being a "pocket" country, and this caused prospectors to search for near-surface pockets rather than to do underground development work. It is a region where many bonanzas have been found, but developments now indicate that it also contains extensive bodies of lower-grade ores of gold and copper.

Metallic mineral production has come from three general areas in western Oregon. The first in value of production is roughly classified as southwestern Oregon and includes Douglas, Jackson, and Josephine counties. Value of production has been practically all in gold, but chromite, quicksilver, and copper resources assume greater importance in war emergencies. The second area, embracing parts of the western Cascades, includes, from north to south, the mining districts of North Santiam, Quartzville, Blue River, and Bohemia (characterized by gold-bearing base-metal sulphides), as well as the Black Butte and Bonanza quicksilver districts. The third includes Coos and Curry counties along the coast. Past production here has resulted from mining of the so-called "black sands" for gold and platinum. During World War II concentrates of chromite and some other minerals were made from these sands.

Eastern Oregon

From the standpoint of value of metallic production, the most important mining region in eastern Oregon, as well as the entire State, is that of the Blue Mountains, situated in the northeastern part of the State and extending westward from the Idaho line for 130 miles. This region includes several mining districts. Its total gold production is at least three-fourths that of the entire State.

The first gold mining in eastern Oregon was at Griffin Gulch, a few miles southeast of Baker, in the fall of 1861. In 1862 the large placer deposits of Auburn Gulch were discovered, and the following year Auburn camp had a population of 5,000. By 1864 nearly all of the mining districts of eastern Oregon were known. Supplies were brought in from The Dalles, 300 miles away.

In 1863 the Auburn canal was completed; the next year the Rye Valley ditch was constructed; and nine years later Sparta ditch was built. The Eldorado ditch, with its total length of more than 100 miles, built by Chinese labor to supply water to the Malheur diggings, was also completed in this period. But by this time the principal hydraulic placer deposits were largely exhausted and a gradual decline in production began. The introduction of standard and dragline gold dredges in the middle 30's caused an increase in placer gold production.

The Virtue quartz mine was discovered soon after the discovery of placer gold. Quartz mines were worked at Susanville and at Mormon Basin as early as 1865 and 1868. One of the first mills was built at Susanville in 1869. Connor Creek and Cable Cove mines were worked, but the necessity of shipping ore on horseback for several hundred miles hindered their development. Real activity in quartz mining followed the construction of a transcontinental railroad in 1885, and the development of the many camps was thereafter placed on a more permanent and productive basis.

Production previous to 1904 was for some years above the million-dollar mark, but, beginning with that year, there was a decreasing annual production to 1911, when $463,439 was produced. From 1911 to 1942 there was a marked increase. The Government gold mine closing order in October 1942 cut production figures drastically and production has been fading away ever since.

In addition to the productive Blue Mountain region, there are several widely scattered mining districts, namely Pueblo Mountain district in southern Harney County; the Harney or Idle City district in the northern part of the same county; the High Grade district in southern Lake County, south of Lakeview near the California line; the Ochoco Creek area in northeastern Crook County; the Ashwood district in Jefferson County; and the Spanish Gulch district in southeastern Wheeler County. These scattered districts have had only a small production except in the Ashwood district where quicksilver valued at several hundred thousand dollars has been produced by the Horse Heaven mine, which has been shut down since November 1944.

Metals

Copper

Copper production in Oregon has usually been incidental to gold production. Copper-gold ores are found in the Homestead district in the northeastern corner of Baker County on the Snake River, occurring as chalcocite and chalcopyrite along shear zones in greenstones. They are also found along the "copper belt" of the lower Powder River Valley where chalcopyrite, chalcocite, and cuprite are found in bunches and disseminated through sheared greenstone. Some copper prospects are found in the Wallowa area, where mineralization consists mainly of chalcopyrite with other sulphides in contact deposits between granodiorite and limestone.

Another important district is near Takilma and the old town of Waldo in Josephine County, some 40 miles southwest of Grants Pass. Here copper occurs as chalcopyrite in serpentine and metavolcanics. The production from this district to 1949 amounted to more than 7 million pounds, in spite of the long haul to market; there has been only a minor amount produced since then.

Other districts where copper ores are found are the Imnaha and Quartzburg in eastern Oregon, the South Umpqua in Douglas County, the Klamath Mountains in Curry and Josephine counties, and the Bohemia in Lane County.

The total production of copper in Oregon to December 31, 1950, was approximately 24,796,000 pounds. The mine production for 1950 was reported by the U.S. Bureau of Mines to be 38,000 pounds. Most of the total production was prior to 1943.

Lead

At the present time no mines in Oregon are operated primarily for the production of lead. It is a common constutuent of the base ores of gold and silver and occurs in minor quantities in several districts of both western and eastern Oregon, especially in Lane and Baker counties.

The production of lead in 1949 was 24,000 pounds. This production came from Grant, Wheeler, and Lane counties, with Lane County producing the greatest amount.

Zinc

Because of high transportation and smelting charges, value of zinc production in Oregon has been very small. Sphalerite is a relatively common mineral in the sulphide deposits of the western Cascades. It is in notable concentrations in the Little North Santiam and Bohemia districts.

Platinum

The streams and beaches of southwestern Oregon and Northern California have long been known as a source of platinum metals. Although the output of platinum from Oregon is small (119 ounces in 1940) the scarcity of the metal in the United States makes the occurrences of interest.

Basic rocks such as peridotite, and serpentine derived from it, are generally considered to be the source rocks of platinum; and the abundance of these rocks in southwestern Oregon may account for the occurrence of platinum in alluvial deposits, although it has not been found in place.

The production comes chiefly from small beach placers which are worked primarily for gold, although a small quantity of platinum metals is recovered from gold dredging and hydraulic operations. Both gold and platinum are associated with the so-called "black sands."

Quicksilver

From 1882 to 1950 Oregon has produced about 91,000 flasks of quicksilver, with a total value of about $11,000,000. It was still second in production in the United States in 1940, the peak year, with an output of 9,040 flasks, valued at $1,599,436.

Deposits occur in the western, central, and southeastern parts of the State. The Bonanza mine, Douglas County, was the most important of two properties reporting production in 1942. According to the U.S. Bureau of Mines Minerals Yearbook, 1949, this mine was the third largest producer in the United States in 1949 and had been the leading producer in Oregon for 12 years. It shut down in November 1949, but resumed operations in March 1951.

Chromium

Chromite is ordinarily found in serpentine, peridotite, or other ultrabasic rocks. Extensive areas of these rocks occur in Josephine, Jackson, Curry, and Douglas counties in southwestern Oregon and in Grant and Baker counties of northeastern Oregon.

The localities of greatest importance where chromite was mined during World War I were those near Canyon City in Grant County, and the Waldo and Illinois River areas in Josephine County. Total production of chromite in Oregon up to the end of 1925 consisted of 36,500 tons from more than 100 properties. From November 1941 to December 1945 the Metals Reserves Company bought chrome ore and concentrates for the United States Government stockpiling program. Buying depots were established at Grants Pass, Josephine County; Seneca, Grant County; and Coquille, Coos County. During these years Oregon produced 32,070 short tons of chromite from properties in Josephine, Jackson, Curry, Grant, and Coos counties. There were 27 producers in 1944, 10 in 1945, and 1 (the Oregon Chrome mine) from 1946 through 1948. Some chromite concentrates were produced from beach sands along the Oregon coast in Coos and Curry counties. As a result of the government establishing a chromite purchasing depot in Grants Pass in August 1951, several mines were reopened and prospecting for new properties was stimulated.

Nickel

A deposit of garnierite (nickel silicate) occurs on Nickel Mountain about 5 miles northwest of Riddle, Douglas County. The nickel is believed to have been derived from olivine in the surrounding peridotite. According to a report by Pecora and Hobbs (1942)* about 162 acres are underlain by more than 6,000,000 tons of material containing 1 to 2 percent nickel, and about 80,000 tons was proved to contain 2 to 3 percent nickel. In 1943 the Freeport Sulphur Company explored this deposit by diamond drilling and developed a large tonnage of low-grade nickel silicate. Larger tonnages will probably be developed by exploration begun at the deposit in 1951 by Hanna Development Company. Research on the metallurgy of the ore was started in 1950 and continued by the Hanna Development Company and the U.S. Bureau of Mines in 1951.

The Department of Geology and Mineral Industries at various times from 1946 to 1949 conducted geological investigations of nickel-bearing laterite deposits in Curry and Josephine counties. Since 1948 the U.S. Bureau of Mines has been making field investigations of nickel occurrences (both nickel-bearing pyrrhotite and nickel silicate deposits) in southwestern Oregon.

Molybdenum

Molybdenite has been found in a few localities in northeastern and southwestern Oregon. Perhaps the most important of these are in the Wallowa area, occurring as contact deposits, previously referred to under copper. Molybdenite occurs associated with pyrite, magnetite, quartz, calcite, garnet, epidote, and scheelite.

Tungsten

Scheelite is found in 17 localities (8 in Jackson County, 5 in Baker County, and 4 in the Wallowa Mountains mainly in Wallowa County). Some of these occurrences have been known for many years. Considerable interest in prospecting for deposits containing tungsten was stimulated by discovery of scheelite in two deposits of possible economic interest near Ashland in 1949. A minor amount of ore was mined from one of these deposits, the Bratcher property. Scheelite occurs in quartz veins and in contact zones between metamorphosed calcareous rocks and granitic intrusives. In the Wallowa Mountains many of these contact zones contain chalcopyrite, pyrite, and molybdenite, as well as scheelite.

Antimony

Stibnite, antimony sulphide, is found in several sections of the State. Promising deposits occur in the Upper Applegate area, Jackson County, near Watkins, and on Forest Creek, in the same area. A deposit is reported in Jackson County 12 miles west of the Pacific Highway at the Siskiyou Mountain summit. Stibnite is also found in the Bohemia district, Lane County, and on Big Boulder Creek 4 miles east of Susanville in Grant County. Several carloads were shipped from the Gray Eagle mine, near Baker, during both World War I and World War II. Shipments of antimony ore were made from the Jay Bird and Lowry mines in the Upper Applegate area in World War II.

Coal

There are several regions in Oregon which contain coal. The most important of these is the Coos Bay field, which surrounds Coos Bay in Coos County. This field has had a continuous production since its discovery, producing more or less actively for the past 83 years. It has a recorded production of more than two and one-half million tons, reaching a maximum in 1904, when 111,540 tons was produced.

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*Bibliography in back of this bulletin.

The coal in this section is of sub-bituminous grade with analysis about as follows:

Moisture	11-20	percent
Volatile matter	30-40	"
Fixed carbon	35-45	"
Ash	8-12	"
Sulphur	1.3-1.6	"
B.t.u.	9,000-10,000	

The production in this region has been greatly reduced in the past several years because of the competition of other fuels, particularly fuel oil from California. In 1947, 18,000 short tons was produced. At present, 1952, the South Slough mine, owned by Leonard Gibbs, is producing a small amount of coal for local heating purposes.

Another locality of possible commercial interest is the Eden Ridge field in the southeastern part of Coos County. This field has been sufficiently prospected to demonstrate the existence of two veins of coal, one 7 feet and one 10 feet thick. Washing would be necessary to obtain a commercial grade. A logging railroad now out of repair was constructed to a point within 10 miles of the deposits.

Other coal fields have been prospected in different parts of the State. The chief localities are the Upper Nehalem in Columbia County, the Lower Nehalem in Clatsop and Tillamook counties, the Yaquina field in Lincoln County, the Eckley and Shasta fields in Curry County, the Rogue River Valley field in Jackson County, and the John Day field in Wheeler, Gilliam, Morrow, and Grant counties.

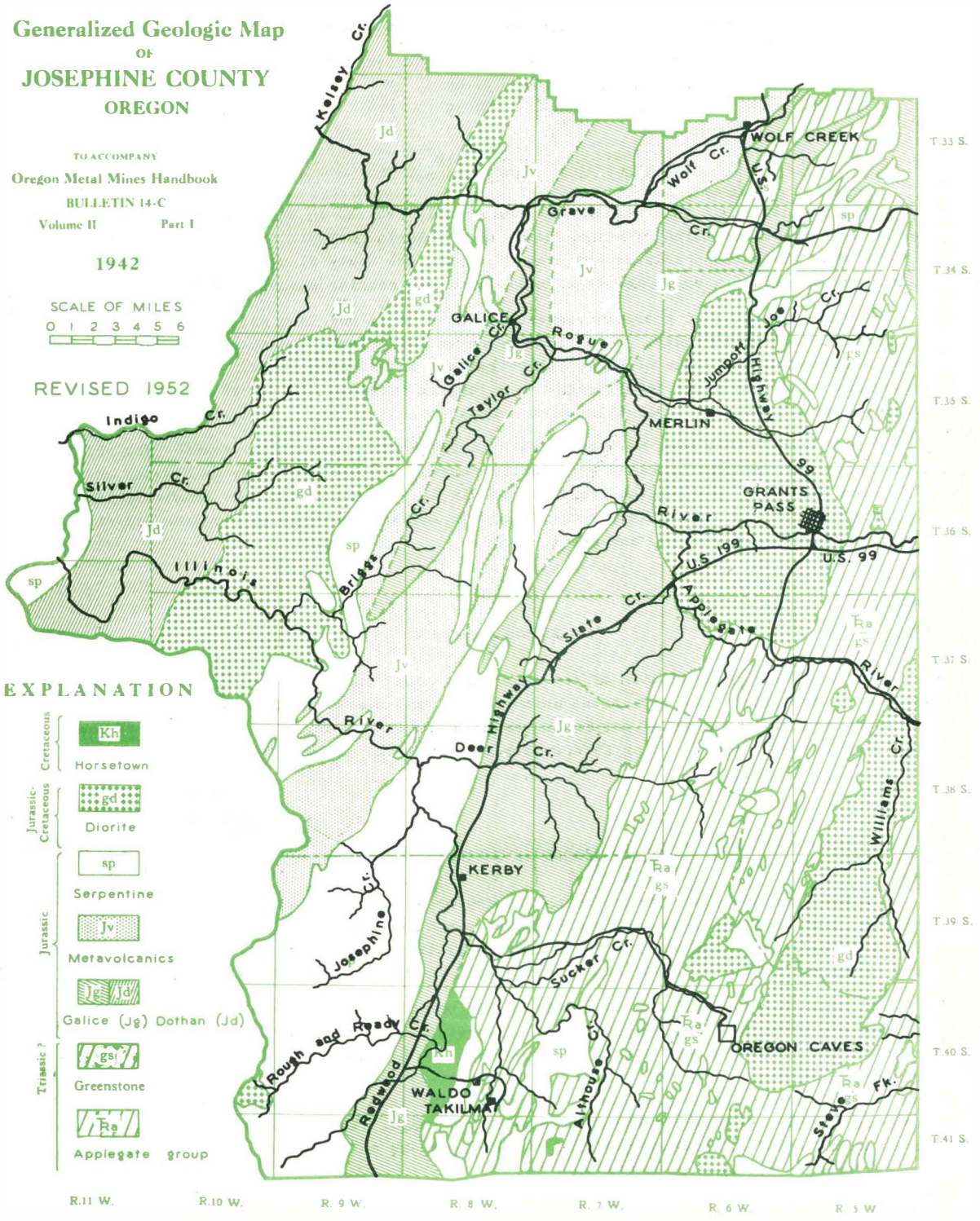
ACKNOWLEDGMENTS

Field work on this section of the catalog of mines was done principally by J.E.Morrison and Ray C. Treasher. The Department acknowledges with appreciation valuable assistance rendered by a large number of people in southwestern Oregon who gave generously of their time and knowledge in providing information on individual properties.

MINING AREAS IN SOUTHWESTERN OREGON

It has been the custom to refer any mining property to a so-called mining "district" for its legal location. No absolute boundaries have ever been outlined for these districts, with the result that any miner who had a property located somewhere between two more or less adjacent districts could not determine with assurance in which one his property lay.

In order to provide definite limits to the various regions in which mining and prospecting are conducted, while at the same time retaining as many of the old terms as possible by which the districts have been known, the term "area" is used in this volume to define and include various known "districts." These "areas" adjoin and are laid out so that no unclassified land lies between them. The term "district" is thus restricted to certain portions of the area where custom has established usage. Each area is named after the most familiar district included within it. The mining areas of Josephine County are outlined and numbered on the map opposite page 17.


Generalized Geologic Map
OF
JOSEPHINE COUNTY
OREGON
TO ACCOMPANY
Oregon Metal Mines Handbook
BULLETIN 14-C
Volume II Part I
1942
SCALE OF MILES
0 1 2 3 4 5 6
REVISED 1952
EXPLANATION
Cretaceous
Kh
Horsetown
Jurassic-Cretaceous
gd
Diorite
Jurassic
sp
Serpentine
Jv
Metavolcanics
Jg Jd
Galice (Jg) Dothan (Jd)
Triassic ?
gs
Greenstone
Ra
Applegate group
Kelsey Cr.
Indigo Cr.
Silver Cr.
Illinois
Briggs Cr.
Grave Cr.
Wolf Cr.
WOLF CREEK
Galice Cr.
GALICE
Rogue River
Taylor Cr.
Jumpoff Joe Cr.
Highway 99
MERLIN
GRANTS PASS
U.S. 199
U.S. 99
Slate Cr.
Applegate River
Deer Cr.
Williams Cr.
KERBY
Josephine Cr.
Sucker Cr.
Rough and Ready Cr.
Redwood Cr.
WALDO
TAKILMA
Althouse Cr.
OREGON CAVES
Fk.
T.33 S.
T.34 S.
T.35 S.
T.36 S.
T.37 S.
T.38 S.
T.39 S.
T.40 S.
T.41 S.
R.11 W.
R.10 W.
R. 9 W.
R. 8 W.
R. 7 W.
R. 6 W
R. 5 W

GEOLOGY

Geologic maps of most of Josephine County have been published as follows: the Riddle quadrangle, covering the northeast quarter, in 1924 (Diller 1924); the Grants Pass quadrangle, covering the southeast quarter, in 1940 (Wells and others 1940); and the Kerby quadrangle, covering the southwest quarter in 1949 (Wells, Hotz, and Cater 1949). The northwest quarter, including most of the Galice area, has been mapped by Wells and will probably be published sometime in 1952.

Descriptions of the geological formations which have been recognized and mapped in Josephine County are summarized below. Some of the early work has been revised owing to changed interpretations founded on later studies (see generalized geologic map of Josephine County on opposite page).

Applegate Group (Upper Triassic ?)

The oldest rocks of the county, the Applegate group, cover the east side of the county except where intruded by diorite and related granitic rocks. Wells (1949) named the Applegate group for the drainage basin of the Applegate River, where the group underlies most of the area. These rocks have been eroded into mature mountains with steep slopes. The zone of weathering is deep and a brick-red soil frequently develops. Vegetation is heavy; brush forms almost impenetrable "jungles" of manzanita, "goat brush," and poison oak; timber includes hardwoods such as scrub and live oak and madrona, together with conifers such as pine, fir, and hemlock.

Diller (1924) used the term "greenstone" for the greenish-colored, partly altered volcanics of this area. The volcanics of the Applegate group include flows and pyroclastics with considerable variation in composition. Because of their diverse composition and altered condition the term "metavolcanics" as used by Wells (1940) is more appropriate than "greenstone." The term is also applied to the Jurassic volcanic rocks which are closely associated with the Dothan and Galice formations. The term "meta" means altered or changed.

The Applegate group as described by Wells and others (1949) is a thick assemblage of metamorphosed volcanic rocks with lens-shaped interbeds of argillite, chert, quartzite, conglomerate, and marble. Efforts to trace this series northward from the Grants Pass quadrangle to the Riddle quadrangle led to the suggestion that Diller's May Creek schist is merely a more highly metamorphosed phase of the metavolcanics and metasediments of the Applegate group.

Mineralized quartz veins are common in the Applegate series. They may occupy fracture zones and may contain metallic sulphides along with gold. Most of the famous "pockets" were found associated with quartz in the Applegate rocks. Known tungsten deposits of southwestern Oregon are restricted to rocks of the Applegate group.

The Applegate group has a general north-northeasterly strike. Diller (1914) proposed that the series was part of the east-dipping limb of a major overturned fold. Wells (1940), however, indicates that the series represents close folding of a series of folds. According to Wells, Hotz, and Cater (1949), re-examination of Diller's fossil collections coupled with the study of other collections by the U.S. Geological Survey indicates that a Devonian age for these rocks must be abandoned, and that more properly they are to be classed as upper Triassic (?).

Galice and Dothan Formations (Jurassic)

The Jurassic sedimentary series and its associated volcanic rocks are exposed in the western part of Josephine County. Erosion of these rocks has formed steep-sided mountains which are covered with heavy vegetation, particularly along the boundary between Josephine and Curry counties. The zone of weathering is deep and where underlain by slate the soil is clayey. The series was originally divided into the Galice and Dothan sedimentary series, separated for the most part by intervening "greenstone" (metavolcanics). These metavolcanics, now considered part of the Galice formation (Wells 1949), range in composition from andesite to dacite and rhyolite. A gray to greenish-gray, fine-grained porphyritic andesite is the most common type.

The sedimentary part of the Galice formation is predominantly black slate that breaks into thin plates. It also contains some light-colored conglomerates, grit, tuffaceous sandstone, and shale. The Dothan formation is similar to the Galice formation but has less slate and more sandstone and conglomerate. Volcanic rocks, particularly altered andesite flows interlayered with flow breccias, grit, and shale, predominate in some places. Bodies of chert are also characteristic of the Dothan formation.

Quartz veins, mineralized with various sulphides and some free gold, occupy fractures along the contact of the sediments and the altered volcanics and other dissimilar rocks as well as occurring within the sediments themselves.

The structural trend of the Jurassic sedimentary series is north-northeast and roughly parallel to that of the Applegate group; dips are usually at high angles to the southeast or northwest. Minor faulting is common, being parallel to the structural trend. Major faulting is also recognized, as along the west side of the Illinois Valley. (Wells, personal communication).

Diller (1914) identified the Galice formation as Jurassic on the basis of fossil collections made at various points. The type locality is at the Almeda mine three miles north of Galice. He interpreted the Dothan formation as being younger than the Galice, either being faulted up, or representing the west limb of an east-dipping overturned fold. More recent studies suggest that if the Dothan is a separate formation, it is older than the Galice (Taliaferro 1941) and the structure is that of a series of north-northeast-trending close folds. The metavolcanic rocks that are interbedded with and lie between the two formations, as in the northwest portion of the Riddle quadrangle, are not to be associated with the metavolcanics of upper Triassic (?) age but more properly should be classed as Jurassic metavolcanics or even included with the sedimentary series of the Dothan and Galice formations.

Peridotite and Serpentine (Jurassic)

Peridotite is an ultrabasic rock that lies in relatively narrow bands across Josephine County from the southwest corner toward the middle of the north boundary. The largest mass is at the southwest. Small discrete patches are found throughout the county. The rock is resistant to erosion and steep-walled canyons are the rule. On some of the intervening plateaulike areas deep weathering has produced a peculiar shade of mahogany-red soil. Timber is more scrubby and is usually restricted to pine. Serpentine is an alteration product of peridotite; vegetation on these areas is so sparse that one can map true serpentine areas from a hilltop with a fair degree of accuracy.

Peridotites form a group of ultrabasic rocks that range from pyroxenite, through saxonite to dunite. Peridotite is dark colored on fresh fractures and frequently contains phenocrysts of enstatite or diallage. Olivine is an essential mineral component, and occasionally may be abundant enough to cause the rock to be classified as a dunite, as on lower Rough and Ready Creek. The ultrabasic rocks weather to a tan or buff color and are locally called "Buckskin Rocks." The enstatite phenocrysts weather more slowly than the olivine groundmass and stand

out as knots on the rock surfaces. Many of the ultrabasic rocks are altered or "serpentinized." During this change they took on water and increased in volume. Pressures thus set up caused intense movements within the rock and minor faulting, thus giving the "slick" surfaces. Serpentine is very dark green to black on fresh fracture and at first glance may resemble black marble. Further alteration produces a rock with a yellowish-green color and a waxy luster.

Chromite is an accessory mineral of economic importance; it may be found as disseminated grains throughout some of the rock or it may be concentrated as "high grade" in pods or kidneys. For a more detailed description of this mineral occurrence, see Allen (1938). Nickel is recognized as occurring in very small amount and may be concentrated as the greenish silicate garnierite in the overlying red soil.

Structural relationships suggest that the ultrabasic rocks were intruded into the Jurassic sedimentary series and the Applegate group as sills or laccoliths (Wells 1940). Minor faulting is common. The contacts of the ultrabasic rocks and associated rocks frequently are faulted and sheared and many mineral discoveries have been made in these zones. Wherever found, they should be prospected with care.

Field relationships suggest that the ultrabasic rocks are late Jurassic in age - younger than the Jurassic sedimentary series and older than the diorite intrusions.

Diorite and Related Granitic Rocks (Late Jurassic to Early Cretaceous)

Several large, irregular masses of granitoid intrusive rocks are exposed in Josephine County. One large mass lies east of the Oregon Caves; a second is in the Grants Pass area; and a third is found near the middle of the west boundary line. Smaller bodies from a fraction of a mile square to several miles square are found scattered throughout the southeastern portion of the County. The rock weathers readily and it is not uncommon to find road cuts more than 30 feet deep exposing "rotten granite." Hills are lower and more smoothly rounded than those underlain by other rocks. Vegetation is scrubby; brush is dense and trees are stunted. The soil is light colored and is full of rock granules. Enough clay is present so that the soil tends to pack under pressure and become almost impervious.

This group of granitoid intrusives includes diorite, quartz diorite, granodiorite, and granite. For the most part they are light-gray, fairly coarse, and even-grained holocrystalline rocks. Small aplite dikes are common but the pegmatite dikes found in the Ashland granite mass seem to be absent. Porphyritic varieties are rare.

Little can be said of the structure of these rocks. Study of the various geologic maps of southwestern Oregon plainly shows the north-northeasterly trend of the pre-diorite rocks. There is a slight suggestion of a more northerly alignment of dioritic rock bodies as if these intrusives cut across the earlier trend of the rocks. Wells (1940) has mapped contact aureoles around a number of the intrusives.

The diorite masses themselves have not been productive of mineral deposits. Some of the aplite dikes may carry some free gold. However, areas immediately surrounding these dioritic masses have been productive and this fact suggests that they should be carefully prospected for additional discoveries.

The granitic rocks intrude all the Jurassic formations and are overlain in other areas by Cretaceous sediments. They are thus either late Jurassic or early Cretaceous in age.

Horsetown Formation (Cretaceous)

The only exposures of Cretaceous sediments in Josephine County are in the Takilma area. Shenon (1933b) describes them either upper Horsetown or lower Chico. Wells and others (1949) mapped this area as Horsetown. The lower beds are largely coarse conglomerate with some interbedded sandstone, and the upper beds are almost wholly sandstone. Conglomerate beds

somewhat resembling those of the gold-bearing Tertiary conglomerate are exposed along the West Fork of Illinois River. The sandstone is grayish green when fresh and has a tendency toward spheroidal weathering.

Tertiary Deposits

The known Tertiary rocks include the Eocene gold-bearing conglomerate of the Waldo-Takilma area, and the so-called "old channel" gold-bearing conglomerates.

Old gold-bearing Tertiary channels that have little relation to present drainage are a well known feature of northern California and southwestern Oregon. The old channel in the Waldo-Takilma area is described by Shenon (1933b) who says that the conglomerate is composed of large boulders in a sandy matrix and that it was indurated at an early date and is not cut by minor faulting. The boulders are thoroughly decomposed. He concludes that the precious metals were derived from the decomposition of the boulders and that the formation is Eocene in age instead of Cretaceous as suggested by Diller (1914).

An old channel is recognized on Josephine Creek at the Golden Princess and Independence placers. The boulders are well "rotted" and the formation is sufficiently indurated to permit bedrock drifting. Coarse gold slugs the size of pumpkin seeds are common on bedrock. The Big Four placer on Pickett Creek seems to be part of an old channel. Here, the formation is indurated, the boulders are decomposed but no unusual concentration of gold on bedrock is reported. The Old Channel placer at Galice is another in this series. Conditions are similar to those at the Big Four placer. Whether these old channel placer mines are on the same old Eocene channel has never been determined satisfactorily.

High-level placer mines on Grave Creek, Butte Creek, The Benson, Three L's, Vindicator, and other places may be part of an old channel. The conglomerate is indurated and the boulders are deeply weathered. In fact, they are called "wooden boulders" because they give a sound similar to a piece of wood when dropped.

These old channels have contributed materially to the gold deposits in many of the later stream gravels, especially where modern drainage has cut through the old channel and distributed its precious metals throughout the younger gravels. A notable example of this is at the Sterling placer in Jackson County.

High-Level Channels (Pleistocene ?)

The Rogue River canyon is characterized by high terraces along its walls, many of which are productive. They are most conspicuous downstream from Hell Gate canyon. The gravel is moderately indurated and most of the boulders are fairly fresh although some of them are weathered. The gold is fine in size.

Shenon (1933b) describes a gravel formation in the Waldo-Takilma area that gave rise to the most productive placers in the County. He suggests that these gravel deposits are of Pleistocene (Wisconsin) age and that the gold was largely derived from the erosion of the Eocene conglomerates.

Stream Placers (Recent)

The bars and channels of practically all the streams in southwestern Oregon show some trace of gold. The gold may have been derived partly from the erosion of gold-bearing stringers cut by the streams, and partly as a reconcentration of gold that has escaped from placer operations upstream. This latter process is in operation at the present time.

Many of the small streams and gulches have been richly productive. The gold has resulted from the erosion of gold-bearing stringers and pockets in the immediate drainage basin.

MINERAL PRODUCTION

Since the earliest days of mining in the State, Josephine County has been important in production of gold. For nearly 100 years gold placers and lode mines have been worked. Gold mines were shut down at the beginning of World War II, and the high costs of exploration and operation, as well as the fixed price of gold, have been effective in throttling gold mining ever since.

During World War II Josephine County was important in production of chromite. In 1951 a government chrome-purchasing depot was established at Grants Pass and large-scale chrome production from mines in the county is expected. Copper was produced mainly from mines in the Takilma-Waldo district from 1904-1930. Shenon (1933b) reported this production as 7,041,533 pounds of copper valued at $1,700,000. Only 61,400 pounds of copper have been produced from this district since 1930.

Value of nonmetallic minerals is principally in sand, gravel, crushed rock, and limestone. Total metallic and nonmetallic production figures for Josephine County are not available.

GALICE AREA (1)*

The Galice mining area is in northwestern Josephine County, west of R. 6 W., and north of T. 36 S. (see map of mining areas opposite p. 17). Its area is about 300 square miles.

Geography

The area is mountainous, with elevations ranging from 600 feet at the Rogue River to 4000 feet on some of the higher peaks. Maximum relief is, therefore, of the order of 3500 feet. The Rogue River is the master stream, flowing northward through the eastern part and westward through the northern part. It cuts across resistant rocks and its valley is gorge-like in certain sections. The main tributary streams are Grave Creek on the northeast, and Galice Creek on the west. Other tributaries have steep, short gradients.

The district is well forested with conifers on the more exposed slopes and hardwoods in the gulches. The hillsides are covered with a dense growth of brush containing manzanita, buckthorn, and poison oak, so that the dense vegetation coupled with steep slopes and deep soil cover makes prospecting difficult. The district lies within the Siskiyou National Forest.

Transportation is limited to secondary roads and Forest Service truck trails. Poor transportation has been a decided handicap to mining activities.

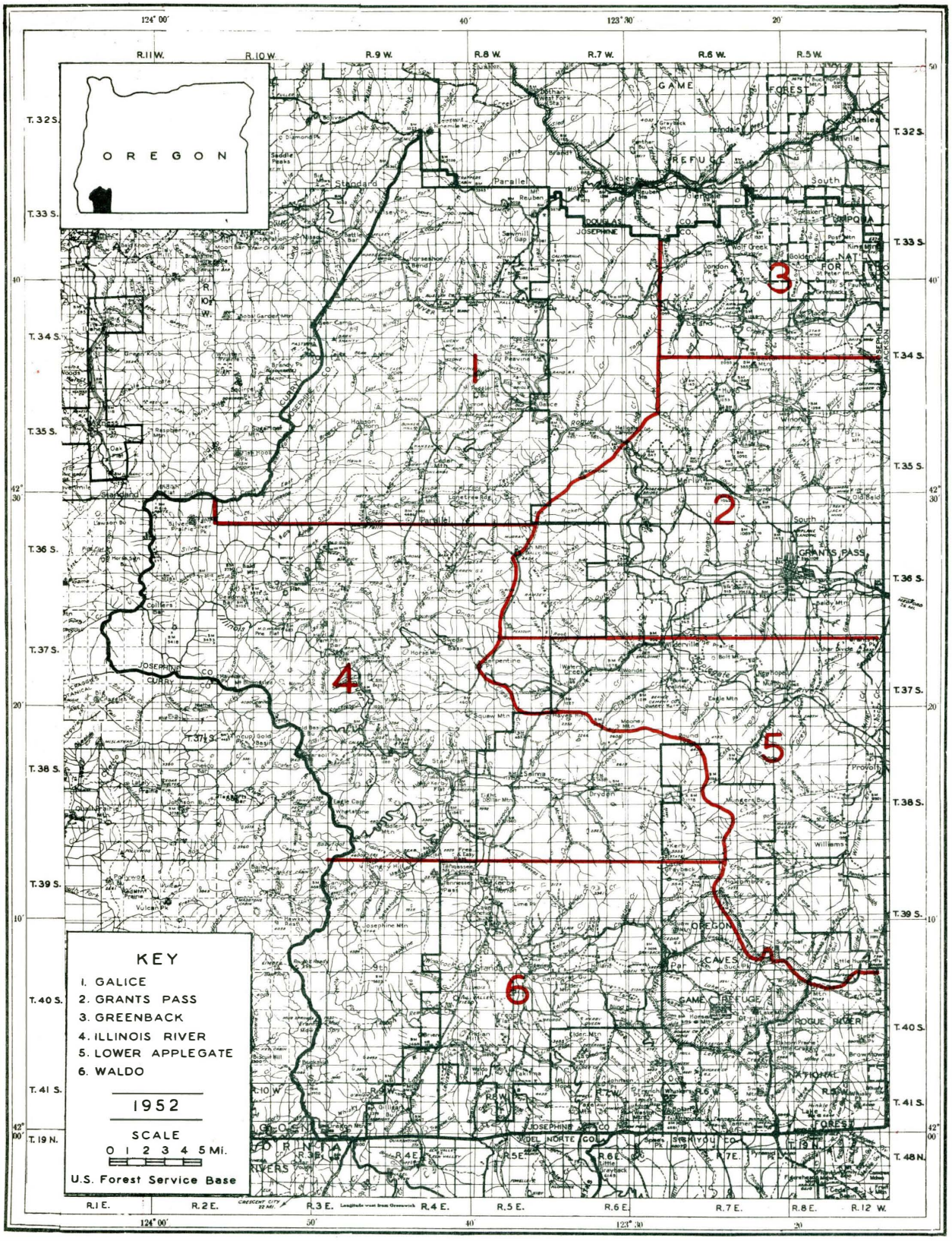
Rainfall, occurring mainly in the winter and spring months, is about 40 inches a year. Maximum and minimum temperatures range from 0° to 90°.

Geology

Wells has completed geologic mapping of the Galice quadrangle and his work should be published in 1952. Most of the areal geologic information available is the result of reconnaissance work of Diller (1914) during the early part of the present century together with inferences drawn from work in adjoining areas. A small amount of detail mapping was done by Shenon (1933c) in the vicinity of the Robertson mine.

The rocks consist of the Jurassic sedimentary series, which includes the Galice and Dothan formations and the Jurassic metavolcanics. These were intruded by ultrabasics (peridotite and serpentine) and diorite. The most prominent structural feature is the fault zone, locally known as the Big Yank Ledge, that trends north-northeast through the Almeda mine. Remnants of the old placer channels are found at the Old Channel placer and along Grave Creek. High-terrace placers are found along the Rogue River. These formations and their relationships are discussed in the section on the general geology of Josephine County.

*Numbers after mining areas refer to key numbers on the mining area map opposite page 17.



MINING AREAS OF JOSEPHINE COUNTY, OREGON.

Mining

About 1854 placer mining began on Galice Creek, with the work during the 1850's being prosecuted on the most accessible and richest deposits. Activity diminished during the 1860's and by the 1880's the small placers were being worked by Chinese. In 1883 the Galice Creek district had an output estimated at $8000. Quartz mining was started about 1886 and in the 1890's the quartz mines of the Mt. Reuben area became prominent; in 1897 the principal quartz mining in southern Oregon was in this district. In 1898 the Gold Bug mine had a 5-stamp mill which yielded good returns; and the Golden Wedge was crushing its ore in an arrastre. Activity continued for the next five years. In 1905 the Almeda mine was developing ore and in 1908 a 100-ton matting furnace was built at the mine. In 1907 the Oriole was active, an activity that has contined sporadically to the present. In 1908, 3000 feet of underground workings were driven at the Almeda, and three quartz mines of the district produced $23,580 worth of metals. In 1910 the producing mines were the Oriole, Gold Road, Nesbit, and Sugar Pine, the Sugar Pine using a 10-stamp mill. In 1912 the Almeda smelter was operated for 30 days and for about the same length of time during the next year. The Almeda mine was worked in a small way during 1915-1916.

During 1940 and 1941 some gold mines were productive. The Benton mine on Whisky Creek was the largest underground mining operation in southern Oregon when the war emergency of 1942 caused a cessation of mining activity. Interest in the Almeda was revived by diamond drilling and underground exploration. In March 1941 Robertson Brothers mined in just a few days ore worth $20,480 from the Bunker Hill property.

There were 18 placer properties and 7 underground mines in operation during 1941. In 1950 one lode and 3 placer mines were operated.

Favorable areas for prospecting

The gold-bearing gravels of the old high channels have been fairly well located although it is possible that, as the courses of these channels are plotted, "breaks" between the known areas may indicate additional gold-bearing gravels.

According to those who are familiar with the district, there are three "lodes" along which mineralization seems to have occurred. The most easterly is the Almeda, or as it is better known, the Big Yank ledge, having a trend slightly east of north. Next, to the west is the Chieftain "lode," cutting through the California claims. The most westerly is the General Grant "lode" that cuts through the Benton mine. Whether these "lodes" exist as units with metallization throughout their lineal extent is not known, but the alignment of ore deposits and other evidence warrant a detailed study of the area.

Favorable prospecting areas for chrome are the bodies of serpentine; especially where shearing has taken place.

Mining Properties

ALMEDA MINE (gold, silver, copper) — Galice area

The Almeda mine is one of the well-known mines of the Galice area. Its principal period of operation was between 1908 and 1916, during which time production was valued at more than a hundred thousand dollars. A matte smelter was operated at the property for a short time. Operations were suspended in 1916 and little work was done until 1940 when work was started under the direction of P. H. Holdsworth, who had been in charge of the property during early operations. Work was discontinued in the spring of 1942 because of inability to secure priorities on mining equipment.

Operator: P. H. Holdsworth, Galice, Oregon. L. A. Levensaker, Seattle, Washington.

Location: On the east bank of the Rogue River, about 4 miles north of Galice in the SE¼ sec. 13, T. 34 S., R. 8 W.

The following information is reported by Shenon (1933a:24-35):

"History and production: The Almeda Mine has been known for many years because of the great extent of the mineralization and because some fairly large masses within the mineralized zone contain enough gold and other metals to attract notice. Consequently, a small smelter was built in 1908, but no production was reported until 1911. From 1911 to 1916, 16,619 tons of ore that yielded 1,539.87 ounces of gold, 48,387 ounces of silver, and 259,800 pounds of copper was produced. A total of 7,197 pounds of lead was also reported as produced from 5,189 tons of ore during 1913, 1915, and 1916. No lead was reported in 1911, 1912, or 1914. The gross value of the ore produced, on the basis of these figures, is, in round numbers, $108,000.

"Development: The Almeda Mine is one of the most extensively developed mines in southwestern Oregon. A mineralized zone has been prospected for more than 1,000 feet along its strike for about 900 feet vertically. Five adits have been driven, and a shaft with levels at intervals of 100 feet was sunk to a depth of about 450 feet below the Rogue River. The shaft is no longer accessible, but most of the workings above the river are open.

"General geology: The Almeda Mine is near the contact of the Galice formation and a thick series of **greenstone** rocks. Near the contact both formations have been intruded by sill-like bodies of porphyritic dacite. At least six of these sill-like bodies are found in the Galice beds within a distance of 800 feet to the east of tunnel 1, and several of them are exposed in the **greenstone** rocks west of the Almeda Mine. All of the formations strike approximately north and are vertical or dip at very steep angles to the east or west.

"The Galice formation in the vicinity of the mine is composed principally of dark-colored argillite and slate, which on the basis of fossils collected about 100 feet east of the mine have been assigned by Diller to the Jurassic period. The rocks are composed largely of subangular quartz and feldspar grains and sericite. The original minerals have clearly undergone considerable recrystallization, and near the ore bodies they are largely replaced by calcite and quartz and contain much disseminated pyrite.

"The **greenstones** consist of greatly altered even-grained and fragmental igneous rocks containing much secondary chlorite and epidote.

"The porphyritic dacite, where fresh, is a dark-colored rock with abundant large phenocrysts of dark-green hornblende, less abundant and smaller crystals of plagioclase, and a few scattered quartz phenocrysts which are noticeably rounded. The appearance of the porphyritic dacite changes gradually, depending upon the amount of mineralization, from the fresher rock just described to a rock in which the feldspars have been altered almost entirely to sericite, from that to a rock composed almost entirely of silica and fine-grained pyrite but retaining shadow outlines of the original texture, and finally to the sulphide ore, a rock composed essentially of fine-grained quartz, barite, and massive sulphides in varying proportions. The microscope shows that the feldspar of even the fresher-appearing porphyritic dacite is mostly altered to a mass of saussurite, calcite, zoisite, and epidote. Unaltered areas remaining here and there have the composition of andesine. In the fresher-appearing rocks the hornblende is only slightly altered, but near areas of mineralization it has been changed to masses of chlorite, epidote, and zoisite, and finally in the silicified rock it has been almost entirely replaced by fine-grained quartz. The groundmass of the fresher rock is composed of very finely granular feldspar and quartz, saussuritic materials, and chlorite.

"'Composition of the porphyritic dacite footwall from the Almeda Mine.18/
(S. W. French, analyst)

"'Analysis		"'Approximate mineral composition	
SiO_2	55.92	Quartz	15.6
TiO_2	.75	Orthoclase	2.3
Al_2O_3	19.66	Plagioclase	56.4
Fe_2O_3	1.94	Chlorite)	
FeO	4.76	Epidote)	22.1
MgO	5.27	Magnetite	2.8
CaO	5.77	Ilmenite	1.4
Na_2O	3.26		100.6
K_2O	.38		
H_2O+	2.90		
H_2O-	.06		
	100.67		

"Although classified by Diller as a quartz porphyry or alaskite, the porphyritic rock described above is both mineralogically and chemically a porphyritic dacite.

"Ore Bodies: The ore bodies at the Almeda Mine occur in a wide zone of intense silicification, known as the Big Yank lode, that follows close to the contact of porphyritic dacite and argillite (slate) of the Galice formation. According to Diller 19/ who made a broad study of the general region, 'the contact between the slates and the igneous rock, with which the Big Yank lode is associated, may be traced for over 20 miles in a direction about N. 30° E. from Briggs Creek Valley to Cow Creek at Reuben Spur. Although the general course is maintained with considerable regularity, there are many small variations, and the contact dips to the southeast in the same direction as the slates. The plane of the contact is generally a fault plane and is for the most part followed by the lode. The contact is apparently most irregular and the quartz porphyry (porphyritic dacite) most cut by shearing planes in the vicinity of the ore bodies.'

"The Big Yank lode, for the most part, consists of intensely silicified rock with variable amounts of pyrite, but in places masses of the silicified rock have been partly or wholly replaced by barite and sulphides, which constitute the richer ore shoots. The mineralized zone constituting the Big Yank lode varies in width from place to place but at the Almeda Mine is about 200 feet wide. Two types of ore have been previously described; 'siliceous gold-silver ore' and 'copper ore with barite'.20/ The 'siliceous gold-silver ore' is the intensely silicified rock with variable amounts of pyrite described above; the 'copper ore with barite' comprises those portions of the Big Yank lode that have been partly or wholly replaced by barite and sulphides.

"The 'siliceous gold-silver ore' consists largely of intensely silicified porphyritic dacite. The rock is composed almost entirely of quartz, but pseudomorphic outlines of the original texture are shown in thin sections. Although the quartz in general is fine-grained, it tends to be slightly coarser along veinlets.

18/ Winchell, N. H., Petrology and Mineral Resources of Jackson and Josephine Counties, Oreg.: Mineral Resources of Oregon, vol. 1, no. 5, p. 209, Oregon Bur. Mines and Geology, August 1914.

19/ Diller, J. S. op. cit. (Bull. 546), pp. 74-75.

20/ Diller, J. S. op. cit., p. 75.

There are two and possibly three generations of quartz. One and possibly two preceded the sulphides, and one clearly cuts the sulphides. In general, the older quartz is very fine grained. It is traversed by some veinlets of coarser quartz that is believed to be of the same age, but because this coarse quartz crystallized in the fractures through which it was introduced, it tended to form larger grains than in the replaced wall rock. Barite is sparingly present in the 'siliceous gold-silver ore'. It was introduced after the older quartz but preceded the sulphides.

"According to P. H. Holdsworth, 21/ engineer for the Almeda Mine in 1911, the average analysis of the 'siliceous-gold-silver ore' is as follows:

"'Average analysis of siliceous gold-silver ore of Almeda Mine

"'SiO_2	percent.	62.9
FeO	do	11.5
CaO	do	2.1
BaO	do	8.1
Al_2O_3	do	5.6
S	do	6.3
Cu	do	.3
Au	ounces per ton	0.14
Ag	do	6.40

"The gold and silver content shown above is higher than in the siliceous material collected by Diller in the west crosscut of the 500-foot level. He reports that assays of his specimens contain very little gold and only a trace of silver.22/ The writer cut three channel samples across the body of the 'siliceous gold-silver ore' which are believed to be fairly representative of the places sampled but, like Diller's specimens, indicate only that this type of ore is low-grade material. The partial analyses of these samples made in the chemical laboratory of the United States Geological Survey given on page 30 are therefore not presented as representative of the average metal content for this type of ore throughout the mine.

"Partial analyses of 'siliceous gold-silver ore' from the Almeda Mine
(E. T. Erickson, analyst)

	17	18	13
Copper, percent	Less than 0.01	0.01	Less than 0.01
$BaSO_4$, do	.4	Trace	2.1
SiO_2, do	66.2	88.8	64.2
Gold, do	Trace	Trace	Trace
Silver, ounces per ton	.17	.08	.01

17. From crosscut starting 200 feet from portal of west adit of level 1 and running west. Sample represents width of 10 feet; from face of crosscut to point 10 feet east of face.

18. Same crosscut as 17. Sample represents width of 20 feet, between points 34 and 54 feet east of face.

13. West crosscut 110 feet south of face of River level. Sample taken across 20 feet of ore.

21/ Diller, J. S., op.cit., p.77.
22/ Diller, J. S., op.cit., p. 78.

"The richer ore at the Almeda Mine, the 'copper ore with barite', occurs as shoots close to the contact of porphyritic dacite and argillite in the broad silicified zone described above. A longitudinal section of the mine workings above the Rogue River indicates that two mineralized zones have been partly mined but that most of the production has come from one that is more or less parallel with and from 20 to 50 feet below the surface. The other zone, which has not been developed sufficiently to determine its pitch, is about 250 feet below the surface. As shown by assays of samples collected by Diller, and P. H. Holdsworth, ore of good grade was found on the 300-foot level (below the Rogue River), but because the shaft is no longer accessible the relation of this ore to the shoots above is not known. The shoots of better-grade ore range in thickness from a few feet to 60 feet and in length from less than 100 feet to over 200 feet. The greatest known width is exposed on level 1, where the main ore shoot is 60 feet thick and 220 feet long. On the river level the greatest visible thickness is 15 feet, but the entire thickness is probably not exposed. According to Diller the thickness of the principal ore body on the 300-foot level (below the Rogue River) is about 15 feet.23/ He also reports the absence of a considerable body of ore at the contact by the shaft on the 500-foot level but states that, according to the pitch, the ore shoot found on the 300-foot level should project to a position south of the shaft on the 500-foot level.

"The ore from the higher-grade shoots is composed principally of barite, quartz, and sulphides. The barite was introduced into the intensely silicified porphyritic dacite before the sulphides, and locally it has almost completely replaced the quartz. The sulphides, in turn, have replaced the barite as well as the quartz. Some specimens clearly show veinlets of sulphides cutting coarse-grained barite. The sulphides include pyrite, chalcopyrite, galena, sphalerite, chalcocite, and covellite. Pyrite is by far the most abundant. It occurs throughout the mineralized zone but is concentrated as massive bodies in the richer ore shoots. The pyrite is cut and replaced by all the other hypogene sulphides and by covellite, which is clearly supergene. In the better-grade ore exposed in the accessible stopes tiny veinlets containing covellite are plainly visible cutting the other sulphides and the gangue minerals.

"According to P. H. Holdsworth,24/ the 'copper ore with barite' across widths of 6 to 20 feet was analyzed as follows:

"Analyses of copper ore from Almeda Mine

SiO_2	8.8 to 5.1
FeS_2	27.0 to 48.1
CaO	Trace to 0.8
$BaSO_4$	47.8 to 28.2
Al_2O_3	8.0 to 10.9
$CuFeS_2$	6.4 to 6.8

"Assays of copper ore from Almeda Mine

Cu	percent	1.5 to 4.5
Au	ounces per ton	0.12 to 0.42
Ag	do	3.32 to12.18

23/ Diller, J. S., op. cit., p. 78.
24/ Diller, J. S., op. cit., p. 76.

"A partial analysis of a sample collected by Diller[24] on the 300-foot level just north of the crosscut from the shaft was made by Chase Palmer, of the United States Geological Survey, and the sample was assayed for gold and silver by E. E. Burlingame & Co., with the following results:

"Analysis of ore from Almeda Mine

SiO_2	percent	0.31
$BaSO_4$	do	68.21
CaO	do	1.01
Cu	do	6.02
Au	ounces per ton	0.10
Ag	do	7.78

"Numerous faults cut both types of ore. Strike faults are made evident in places by gouge along the contact of the ore with the footwall argillite and by numerous gouge seams and shattering in the ore. Other faults, particularly those striking about N. 50° W., have offset the ore in many places.

"Both siliceous and copper-barite ores have greatly leached outcrops. The siliceous ore at the surface is a white rock, resembling quartzite. It contains many spots that are porous, owing to the removal of pyrite. The outcrop of the copper ore is strongly stained yellowish and brown by iron oxides and is composed largely of porous aggregates of barite and quartz. Oxidation is not abundant, however, in either type of ore at depths exceeding 50 feet below the surface. Sulphide enrichment is made evident in the stopes examined by the presence of tiny veinlets of covellite cutting both gangue and primary sulphide minerals.

"Origin of the ore: The ore at the Almeda Mine has been formed almost entirely by the replacement of porphyritic dacite close to the contact with argillite. Other bodies of porphyritic dacite have intruded argillite beds, but so far as known the only contact that has been extensively mineralized is the one at the Almeda Mine known as the Big Yank Lode. Both Diller [25] and Winchell [26] have stated that the Big Yank Lode occurs along a zone of faulting. Faulting along the contact probably caused the development of the fractures through which the quartz has so plainly penetrated the rocks. Replacement occurred near the contact in both porphyritic dacite and argillite, but in the argillite to a much lesser degree. After intense silicification and possibly pyritization, the brittle silicified rocks were again fractured. Barite and probably additional quartz were introduced along the fractures and particularly along the zones of greatest shattering. After the barite, sulphides were introduced--pyrite first, and then the other sulphides, apparently as an overlapping series. Like the barite the sulphides tended to follow the zones of most intense shattering, which, as shown by the concentration of barite and sulphides, developed close to the contact of the prophyritic dacite and argillite, thus forming the higher-grade ore shoots. Faulting made evident by gouge, shattering, and displacement of the ore continued after the deposition of the sulphides. Ultimately erosion brought the ore bodies close to the surface, and oxidation attacked the sulphides. Much of the oxidized material was removed, and some of the metals were carried downward to be redeposited as supergene sulphides. However, erosion has nearly kept pace with oxidation, so that today there is but a thin zone of oxidized minerals.

24/ Diller, J. S., op. cit., p. 76.
25/ Diller, J. S., op. cit., p. 14.
26/ Winchell, A. N., op. cit. p. 208.

"The source of tho ore minerals is purely speculative. Most of the sulphides at the Almeda Mine are characteristically hypogene minerals and hence, in the light of our present knowledge, were derived from some magmatic source below. Diller states that the porphyritic dacites are thought to be genetically related to the granodiorite masses that are so extensive in southwestern Oregon.27/ With this assumption it may be expected that the ore-bearing solutions were derived from the same parent magma as the porphyritic dacite.

"Economic Considerations: Two possibilities must be considered in discussing the economic outlook for the Almeda Mine--(1) the possibility of developing an enormous tonnage of very low grade ore that would be minable when metal prices recover; (2) the possibility of developing and working smaller shoots of higher-grade ore.

"Without question there is, at the Almeda Mine, an enormous deposit of silicified rock containing variable amounts of pyrite and some silver and gold. This is the 'siliceous gold-silver ore' mentioned by Diller. When conditions are favorable for the exploitation of large low-grade deposits containing silver, gold, and copper, consideration should be given to the mineralized zone at the Almeda Mine. The material, excluding the shoots of better ore, is certainly of low grade, but there is a possibility that under very favorable conditions a large part of the mass might be workable. Only careful and complete sampling will determine the feasibility of such a venture.

"Mining has demonstrated the occurrence of good-sized bodies of the richer ore. At least two have been partly developed. The larger and higher-grade body has been partly blocked out for a pitch length of about 800 feet. The smaller body lies about 250 feet north of the larger one and has been only slightly developed. It is not known by the writer whether the continuations of these bodies were found on the levels below the river.

"The south ore body is practically as long on the river level as on level 1, 100 feet above, and if it has not been found on the 300-foot or shallower levels below the altitude of the Rogue River, the reason is probably because prospecting has not been carried far enough to the south. The north ore body has not been developed sufficiently to determine its pitch. However, it apparently has not been found on the River level. Diller has suggested that the ore found near the shaft on the 300-foot level might be the extension of this body. However, if the pitch is approximately constant, it should have been intersected by the River level. Therefore, it seems probable that the north ore body may have a steeper pitch than the south ore body and that the ore body on the 300-foot level may be a separate one. This inference is in accord with the interpretation of the origin of the ore--that is to say, tho higher-grade shoots might be expected along the argillite contact wherever intense shattering formed permeable openings for the ore-bearing solutions to follow.

"The shoots of richer ore have been found at or very close to the contact of argillite, and there is a possibility that careful study might reveal undiscovered shoots along the contact of the Big Yank Lode. The outcrops of the better ore differ considerably from those of the lower-grade siliceous ore.

"Sulphide enrichment undoubtedly increased the metallic content of the ore near the surface. Tiny seams filled with supergene covellite are plainly visible in all the stopes examined. It is clear, however, that sulphide enrichment

27/ Diller, J. S., op. cit., p.21.

has not been the chief factor in the formation of the better-grade ore shoots. Most of the minerals of the shoots are of hypogene origin, and hence their development was not dependent upon surface agencies. The supergene minerals have affected the shoots only by adding somewhat to their metallic content, particularly to the copper and possibly to the silver.

"Apparently local smelting of the Almeda ore was not successful. The appearance of the slag indicates that considerable difficulty was encountered. The slag is stony, is not uniform in composition, and is shot through with metallic globules and some undissolved pyrite. According to Holdsworth 28/ the composition of the slags from the Almeda matting furnace was as follows:

"Composition of slags from Almeda furnace

	1	2	3	4
SiO_2	30.9	31.8	31.1	38.9
Al_2O_3	10.6	13.5	9.9	4.7
FeO	24.9	24.0	25.3	22.3
CaO	3.1	3.9	4.8	1.3
BaO	30.4	26.9	29.1	32.9

"If a reasonable tonnage of ore of a grade indicated by the analyses of Holdsworth and Diller can be demonstrated the higher-grade shoots should receive serious consideration when metal prices justify it, in view of the recent improvements in metallurgy, particularly in flotation."

Recent Activity: Holdsworth has unwatered the "river level" and diamond drilled the area north of the old workings. The shaft from the "river level" to the next level above was retimbered. A cable way was constructed across the Rogue River across which all supplies were transported. The work probably will be discontinued in the spring of 1942 as a result of difficulty in securing competent labor and inability to secure necessary priority ratings on equipment.

Reference: Diller, J. S., 14:72-81.
Parks and Swartley 16:8.
Shenon, P. J., 33a:24-35. (quoted)
Winchell, A. N., 14:209.
Treasher, R. C. 1942.

AKRON GOLD MINING & MILLING CO. (gold) — Galice area

see Keystone Group

ALMEDA CONSOLIDATED MINES COMPANY — Galice area

see Almeda Mine (P & S)

ALTA VISTA MINE (gold) — Galice area

Location: NE¼ sec. 13, T. 35 S., R. 8 W.

History: "The Alta Vista Mine is in the NE¼ of sec. 13, T. 35 S., R. 8 W. It is reached by a trail from Soldier Camp, on the Robertson Mine road. A short tunnel and several open cuts explore a quartz vein in dark-colored metagabbro. The vein, which

28/ Diller, J. S., op.cit., p.8.

strikes N. 28° W. and dips 90°, is about 18 inches wide in the face of the tunnel. It contains numerous angular fragments of country rock, and around some of them indistinct banding is visible. No information was gained about the gold content of the quartz."

Reference: Shenon, P. J., 33c:48 (quoted)

ANKENY HYDRAULIC MINE (placer) Galice area

See Old Channel Mine Originally located 1871 - became "Blue Gravel".

ARCHER PLACER Galice area

See also Carnegie Placer

Owner: L. B. McLean, Wolf Creek, Oregon, leased to Dan Carnegie, of Coquille, Oregon.

Location: Sec. 3, T. 34 S., R. 7 W.

Fifty-two acres of bedrock have been exposed on this property in past years. At present, Carnegie is working a small dragline outfit. This property is part of the old, high channel.

Informant: C. E. Gray, 4/4/40

Report by: R. C. Treasher.

ARGO GROUP (gold) Galice area

Owner: Ed Baerlocher Estate, Grants Pass, Oregon.

Location: Sec. 14, T. 34 S., R. 8 W., 2 miles below the Almeda Mine.

History: "The Argo group of claims is on the west side of Rogue River, about 2 miles below the Almeda Mine. It is opened by 3 short adits near the river level, two of which are now caved shut. The other adit extends S. 37° W. about 70 feet and thence S. 57° W. about 20 feet. The country rock is a light colored somewhat schistose "greenstone", which on microscopic examination appears to be a dacite, probably tuffaceous. According to Diller, 'Irregular quartz veins, stringers and kidneys occur in a belt about 3½ feet wide. They strike N. 28-35° E. and are generally vertical, but in some places dip 76° N.W.' In the workings still open no distinct vein was seen by the writer. The Argo is equipped with a 16-ton rotary ball and tube mill and a water wheel; it has been idle for several years.

"This group of claims is now owned by Bigelow brothers."

Reference: Parks & Swartley, 16:15 (quoted).
Diller, 14:51 (called "Arago Group").

BAILEY GULCH MINING & MILLING COMPANY Galice area

See Golden Wedge Mine.

BENSON PLACER Galice area

Owner: C. E. Gray and Viola Gray, Box 741, Wolf Creek, Oregon.

Location: E½ E½ sec. 2, T. 34 S., R. 7 W.

Area: 162 acres, patented claims.

History: Originally staked by Mr. Benson about 60 years ago. The ground was held for a time by the Lewis Investment Company. Value of production is estimated at about $250,000.

Development: About 1,000,000 yards of material has been moved. There is about 2,000,000 yards of gravel remaining.

Equipment: None.

Geology: Fairly soft and reasonably smooth diorite bedrock; boulders are small and well rotted; gold is medium in size; no clay; very little black sand; traces of platinum. This is part of the old high channel.

Informant: C. E. Gray, 4/4/40.

Report by: Ray C. Treasher.

BENTON MINE (gold) Galice area

Owners: Lewis Investment Company, Portland, Oregon. C. H. Lewis, president; W. L. Bingham, vice president & treasurer; R. L. Sabin, Jr., secretary.

Location: Secs. 22, 23, 27, T. 33 S., R. 8 W., on Drain Creek about 21 miles S. W. of Glendale. Elevation of mine, 1000 feet. It is about 2½ miles from mine to road forks at an elevation of 2300 feet.

Area: Seven and a fraction patented claims and eight unpatented claims located in 1935, 1937, and 1940.

History: The Benton mine was located in 1893 by Joe Ramsey and purchased in 1894 by John C. Lewis who worked the property until 1905. It remained idle until 1935, when it was opened by the Lewis Investment Co., and equipment was in by January 1936. The mill started operating in August 1937. (Albert Burch 3/24/42)

The mine has been in production ever since except for short shut-downs for repairs and replacements. In the spring of 1942 the mine was shut down due to priorities on mining equipment.

Development: Underground workings total 10,000 ft. (July, 1940) including 320 feet on the 500 level, 500 feet on the 700 level, 1200 feet on the 780 level, 800 feet on the 900 level, and 1200 feet on the 1020 level. The Kansas adit crosscut, 1500 feet long, is the main haulage way. There are several hundred feet of adit in the Georgia and Texas levels. Ore was being pulled from all levels in 1941. Stopes are about 80 feet to 90 feet long.

Equipment (Mine): The mine is self-ventilating. Trackage totals 4500 feet of 12-lb. rail. Compressed air line totals 5000 feet, the main line being 3-inches in diameter. Compressor is an Ingersoll-Rand, 650 cubic foot capacity, powered by a Fairbanks-Morse 120 h.p. Diesel; main receiver is 6 ft. x 3½ ft. There are five R104 Gardiner-Denver stopers; one D89 and two PF89 Gardiner-Denver drifters; one I-R jackhammer; a drill-steel sharpener and a jack-bit furnace. Jack-bits are used throughout. Haulage equipment consists of six 22 cubic foot mine cars and six that are 16 cubic foot. Mule haulage is employed in the main tunnel.

Cut and fill stoping methods are used; there are a few narrow stopes.

Equipment (Mill): Mill equipment consists of a 50 ton ore bin with a shaker-screen washing table; a Blake-type 9 x 12 Allis-Chalmers type B crusher that crushes to 2½ inch; a 16 inch conveyor belt, 20 feet centers; a Traylor type TY gyratory crusher which reduces the ore to minus 3/4 inch; conveyor belt 12 inches wide by 60 inches between centers and inclined 16 degrees to fine ore bin; fine ore bin 100 ton capacity; conveyor belt 16 inches wide by 12 feet between centers controlled by a U.S. variable-speed drive motor; a 5 x 6 Williamson ball mill having a 10,000 lb. ball load; a 3 x 18 Dorr Duplex Classifier powered by a 2 h.p.

900 rpm motor with a General Engineering lime feeder having a 500 lb. capacity; Classifier discharges through a flume to cyanide tanks.

Cyanide equipment is installed for counter-current flow. The first Dorr thickener is 20 feet by 10 feet, the other five thickeners are 16 feet by 10 feet. Three agitators are 12 feet by 12 feet and an Oliver filter is 8 feet by 8 feet.

Solution goes to a metering device and is then pumped to a 175 ton Merrill-Crowe 40-bag precipitation plant. The clarifier is in an 8 ft. tank with nine 4 ft. by 6 ft. leaves. Vacuum tower (de-aeriation tower) is 6 ft. by 2 ft. Merrill-Crowe type chrome-zinc feeder using cone and drum. The precipitate is shipped to Selby.

Equipment (Power): A 140 h.p. 8 x 9½ Atlas marine, type P & H, six cylinder Diesel motor drives a 125 KVA generator that delivers 440 volt 60 cycle current. Stand-by equipment is a 40 h.p. Fairbanks-Morse 4 cylinder Diesel that powers a small single-stage Sullivan compressor and a 35 KVA generator.

Equipment (General): Buildings include an assay laboratory and mine office, a cook house-mess hall, nine bunk houses, four staff houses, and a change room.

Fuel-oil storage tanks have a capacity of 30,000 gallons that will run the mine and mill operations for about three months.

Mining Facilities: Water system is all gravity from Drain Creek and Bannister Gulch. Water is covered by water rights which include Whiskey Creek. Mine timbers are shipped in from Grants Pass and are all sawed timber. Shipping points are at Grants Pass, 39 miles, and Glendale, 18 miles. The Grants Pass road is open practically all the year.

Geology: Parks and Swartley report as follows:

"The main adit is a drift following a vein for 600 feet to a fault, which strikes N. 70° W. and dips 85° S.; about 100 feet farther on the adit picks up a vein again, which it follows for about 500 feet. This vein is also opened by an upper adit for about 800 feet. The ore has not been removed. Assays said to have been made by Mr. Bishop, former superintendent of the Greenback Mine, are reported as follows:

"Upper adit, 40 samples taken.	Per ton
Average value of ore from portal to raise 2	$5.32
Average value of ore from raise 2 to breast	4.42
Main Benton adit, 127 samples taken.	
Av. val. of 34 samples between portal and point 47 ft. N.E. of rise 1	2.75
Av. val. of 43 samp. bet. same point and main crosscut....	4.30
Av. val. of 50 samp. bet. main crosscut and breast	1.80

"The Texas adit of the Benton group crosscuts 300 feet to the vein, which is opened by a drift each way; to the south it is cut off by a fault (dipping 50° northerly) about 150 feet from the crosscut entry; to the north it is displaced slightly by another fault about 50 feet from the crosscut. While the latter fault causes little displacement it twists the hanging wall so much as to locally cause reversal of the dip of the vein; normally this vein dips about 40° east, locally it dips west. The strike of the fault is not shown in the drawing because it is somewhat indeterminate; in one place it seems to strike N. 47° W. and dip about 60° N.E. Near and for some distance south of this fault the vein has 1 to 3 feet of solid quartz; northward a much smaller vein is exposed. The raise shown in the drawing inclines upward at an angle of 30° and reaches the surface about 100 feet above the adit level. The country rock of this adit is tonalite.

"The Georgia adit of the Benton group is quite irregular, as shown in the drawing, and discloses no important vein. Its longest straight course is along a sheared zone about 3 feet wide showing very little quartz.

"Tonalite (locally called "gabbro") is present in this region, not only in the Texas adit, but also at the face of the long crosscut (called "Georgia crosscut") from the main Benton adit, where the rock is sheared and contains quartz stringers running in various directions. The minerals present include abundant plagioclase and quartz with some chlorite, epidote, rutile, calcite, sericite, and pyrite."

Country rock is diorite; that on the east is darker than that on the west. There is a well-defined vein system; the main quartz veins trend north-south, and are cut by east-west veins. Metallization is the result of metasomatic replacement. There is some metallization in the footwall but all veins seem to end at the hanging wall.

The ore minerals have been determined as:

Pyrite	(approx. 95%)
Marcasite	(approx. 4% plus)
Chalcopyrite	
Sphalerite	
Magnetite	
Gold	

with quartz, sericite, chlorite, calcite and dolomite as gangue minerals. Chalcopyrite, sphalerite, and magnetite, are in combined percentage of much less than 1 percent.

Pyrite occurs in knots and seams within the quartz and in some instances it is possible to judge approximate grade of ore by the "looks" of the pyrite. Again, it is impossible to judge ore values from hand specimens. Some of the footwall diorite is mined as ore.

The country rock has been identified by thin-section methods as a quartz diorite or granodiorite that has been altered and silicified to a certain extent. From the main workings, it is about 1000 feet westward to the Dothan (?) formation contact, and about 1500 feet eastward to the serpentine contact.

Reference: Parks & Swartley 16:28-29 (quoted)

Informant: Lewis Investment Company, Albert Burch, and Ray C. Treasher, July 31, 1940, March 24, 1942, and Feb. 1942.

Report by: Ray C. Treasher, 8/3/40.

BLACK BEAR MINE (gold) Galice area

also known as:
Dan Green Mine
Black Bear Mining and Milling Company
Highland Improvement Co.

Owners: E. B. Roberts, Alden Roberts, and Robert Radcliffe, all of Galice, Oregon.

Location: Sec. 35, T. 34 S., R. 8 W., two miles west of Galice and 16 miles from Merlin, the nearest railroad point.

Area: Five claims, 103.3 acres, held by location before 1900, and recorded at Grants Pass, Oregon. The claims are named as follows: Black Bear, Brown Bear, Elk Horn, Rising Star, and Casa Grande.

History: The Black Bear Mine was originally the Old Dan Green property and was purchased by the Highland Improvement Co. Mr. E. B. Roberts, one of the stock holders of the Highland Improvement Co., took it over in 1918. His heirs now own the property. Robert Radcliffe has worked the property intermittently since 1930.

Parks and Swartley reported as follows:

"The Black Bear Mine is on the south fork of Rocky gulch, about 2½ miles northwest of Galice, at an elevation of about 1650 feet, as measured by barometer. It was formerly owned by the Black Bear Mining & Milling Company, but is now controlled by the Highland Improvement Company. The main adit is over 700 feet in length and follows a well defined fault for more than 500 feet, as seen in a drawing of the workings. The fault is marked by 12-20 inches of soft gouge which strikes about north 15 degrees E., and dips about 80 degrees E. The ore consists of lenticular bodies of quartz with pyrite and greenstone, which are found on both sides of the fault gouge. No ore has been milled from the main adit, though about 4 tons of rich surface ore was mined from old workings above it. The shorter adit discloses a zone showing scattered quartz near the breast as well as stringers crossing the main course as shown; one is about 2 feet wide and strikes S. 45 degrees E., with a dip of 70 degrees S. W. The country rock is a hard amphibolite, schistose in places, and containing many small quartz stringers or lenses. One to two hundred yards southwest of the Black Bear adits the country rock is dunite (or cortlandite), consisting of granular olivine with patches of tremolite, and antigorite and a sprinkling of magnetite. Diller states that at the Black Bear: 'A vertical belt of quartz veinlets and kidneys 2½ feet in width runs nearly north and south. The ore, which is rich in pyrite, with some chalcopyrite, is scattered rather irregularly in the vein belt. Some of the ore is cut by shearing planes, on which the slickensided ore shows decided movement since the ore was deposited'".

Development: There are eight tunnels on the property: No. 1, the Black Bear adit, trends S. 12° W., 20 feet with a 30 ft. winze 10 feet from the portal. No. 2, crosscut tunnel trending N. 80° W. for 230 feet to cut Black Bear vein. No. 3, the long tunnel, 810 feet of workings, described in the old report, is now caved and inaccessible. No. 4, Bill's tunnel, 380 ft., caved. No. 5, Green tunnel, 110 ft. with a 40 ft. winze on a slope, caved. No. 6, tunnel across South Fork of Rock Creek, from the Black Bear adit, caved. No. 7, Elk Horn tunnel, trends easterly, and has 403 ft. of tunnel plus 113 ft. of drifts. No. 8, trends N. 31° E., 102 ft.

Equipment: Hand driven coal augers used for drilling. One ½-ton ore car, 100 feet of 16-lb. rails; 350 feet of 8-lb. rails, 500 feet of 2" x 4" strap iron rails; 700 feet of miscellaneous rail. Mill equipment consists of a 15 ton ore bin at the mine, connected by a cable way with a 10 ton ore bin at the mill. The primary crusher is a corrugated roll crusher with a capacity of one ton per hour. A home-made 36" x 30" ball mill, turning 32 RPM with a 500 to 700 lb. load of steel balls (2" maximum); pulp discharges through a 50 mesh screen to a 4' x 7' plate. Oversize returns to the mill by a home-made classifier. A 20 ft. overshot water wheel furnishes power during part of the year; a 20 h.p. gas engine provides power the balance of the year.

Geology: The country rock of this area is greenstone, probably meta-igneous, with dunite reported a short distance to the southwest. The rock is cut by shear zones, the most prominent trending N. 20° E. Mr. Roberts stated that the face of the tunnel in the amphibolite assayed consistently $25 to $30 across the 36 inches. On the north side of South Fork of Rocky Creek, the country rock is porphyry which is schistose along fault planes. There are many quartz veinlets and stringers occurring in the porphyry and in places it is said to carry some values. Two samples were taken in the Elk Horn tunnel. One in the face of the first drift to the left ran 35¢. At a point 230 ft. from the portal, a sample was taken across 10 feet of porphyry. This sample ran $6.30 in gold and $0.15 in silver. Strike of

the porphyry is N. 12° E. The values in the porphyry are probably due to surface enrichment. However, the sample that ran $6.45 was at a depth of approximately 60 feet.

Mining and Milling: Ore being milled at present is obtained near the surface. Underground ore comes from narrow seams through which percolating waters have passed with resultant oxidation. At depth the oxidized ore changes to base ore as evidenced by the sulphide ore on the dump near the mill.

Reference: Parks and Swartley, 16:33 (quoted)

Informant: J. E. Morrison, 1937
Robert Radcliffe, 1940
R. C. Treasher, February 19, 1941

BLACK BEAR MINING & MILLING CO. Galice area

see Black Bear Mine

BLACK HAWK PROPERTY (gold) Galice area

History:

"The Black Hawk property lies on Quartz Creek, not far from the eastern contact of the Peavine serpentine belt. Development work only has been reported for the last year.

"The Black Jack group is near the Black Hawk. Although neither of these mines was visited, I have learned from good authority at Galice that the ore of the Black Jack group is free milling and that between $6,000 and $7,000 in gold was won from a pocket by hand mortaring."

Reference: Diller, 14:57 (quoted)

BLACK JACK PROPERTY (gold) Galice area

Owner: Western Metal Mines Co., J. J. Seidel, Medford, Oregon. (See also Sugar Pine Mine)

Location: Secs. 3-4, T. 35 S., R. 8 W.

History: "The Black Jack Group is on Quartz Creek, not far from the eastern contact of the Peavine serpentine belt. The ore is free milling and between $6000 and $7000 in gold was won from a pocket by hand mortaring".

Reference: Parks and Swartley, p. 34, 1916 (quoted)
List of Mines in Oregon.
Diller, 14:57.

BLUE BELL PROSPECT (gold) Galice area

History:

"The Blue Bell prospect is situated 6 miles northwest of Galice, on a branch of Howard Creek, a mile above the Red Elephant. It was opened up some years ago by nearly 200 feet of tunnels. A number of tons of ore were mined, but none of it was shipped. The ore is chiefly pyrite, like that of the Red Elephant, but contains also some chalcopyrite and dark bluish scales of molybdenite. This prospect was not examined, though the neighboring greenstone was seen on the hill to

the northeast, where it is so rich in pyroxene as to be practically a pyroxenite. Some of the ore samples from this locality are much sheared and slickensided. The molybdenite appears to be the latest deposit on the shearing planes but before the final movements."

Reference: Diller, 14:55 (quoted)

BRADBURY MINE (gold) Galice area

Owner: Leased by Frank West, Galice, Oregon from Bradbury estate.

Location: Sec. 12, T. 34 S., R. 8 W.

History: Parks and Swartley reported as follows:

"The Bradbury Mine is on the east side of Rogue River about 1¼ miles below the Almeda. It is opened by 3 adits at elevations about 150, 420, and 525 feet above the river. The upper adit enters as a crosscut in schistose country rock extending N. 90° E. 160 feet where it turns southward to drift about 70 feet on a lead varying from 1 to 50 inches wide, which strikes N. 17° E., and contains 0 to 40 inches of quartz. The middle adit is caved shut at the portal. From the dump it is clear that this adit is several hundred feet long in schistose greenstone, containing a vein of white quartz, carrying a little pyrite and rare free gold. The lower adit extends N. 8° E. about 120 feet in greenstone, containing thin seams and a few bunches of quartzose ore."

The mine was operated by Frank West during 1934-1935-1936 but is not active at present (1941), pending settlement of the estate. The property consists of one patented claim. Mr. West put up a mill to treat the sulfide ore. Equipment consists of a 5-9 ton Straub ball mill, a Wilfley type concentrating table 4 ft. x 12 ft., and two Kraut flotation cells. Property will be developed when estate is settled.

Reference: Parks and Swartley, 16:41 (quoted)

Informant: Frank West, 3/2/40

Report by: Ray C. Treasher.

BRASS LEDGE QUARTZ CLAIM (gold) Galice area
see also Copper Eagle Mine

Owner: Western Metal Mines Co., J. J. Seidel, Medford, Oregon, Agent.

Location: Sec. 22, 27, T. 34 S., R. 8 W.

Area: The property now consists of one claim instead of three claims.

History: Parks and Swartley reported as follows:

"The Copper Eagle Mine is situated about four miles northwest of Galice on the south side of Pea Vine Mountain, and is owned by J. F. Reddy and P. B. Wickham of Grants Pass.

"A well defined fissure vein in greenstone 12-30 inches wide containing quartz and chalcopyrite is seen in an upper drift for 400 feet along the vein. A tunnel 200 feet long and 120 feet below the drift above mentioned approaches the strike of the vein at an angle of about 25°. A careful survey would determine the change in direction of this lower tunnel to cut the vein in the shortest distance. The vein is said to run 4-5 percent copper and about $2.00 in gold."

Reference: Parks and Swartley, 16:72 (quoted).
List of Mines in Oregon.

Informant: J. E. Morrison, 1939.

BUFFALO GROUP (gold, copper) Galice area

Location: Sec. 27, T. 34 S., R. 8 W.

History: Parks and Swartley reported as follows:

"The Buffalo Group is at the head of Quartz Creek on the slope of Peavine Mountain, at an elevation of about 4000 feet. The Chieftan Claim, owned by Mr. Wayment, is about 2 miles west of the Oriole Mine. According to Diller, a belt of quartzite about 300 feet wide passes through this group; it has serpentine to the west and greenstone to the east of it. On the Dixie Claim irregular veins and bunches of quartz carrying pyrite and chalcopyrite strike N. 23° E., and dip 68° N.W."

According to J. R. Harvey, Grants Pass, Oregon, 3/12/40, the property is now idle.

Reference: Parks & Swartley, 16:45 (quoted)
List of Mines in Oregon.
Diller, 14:55-56.

BUNKER HILL MINE Galice area

see Robertson Mine

BUTTE CREEK PLACER Galice area

Owner: C. E. Gray and Viola Gray; Mary Gray and C. W. Gray; T. L. Garcia and Virginia Garcia.

Location: Alice Hall claim, N½ SW¼ NW¼ sec. 2; Rebecca McMichael claim, S½ SW¼ NW¼ sec. 2; Gebhard Karg claim, N½ NW¼ SW¼ sec. 2; T. 34 S., R. 7 W., 60 acres, patented. Three unpatented claims; Viola, E½ NW¼ SE¼ sec. 3; High Channel, S½ NW¼ SW¼ sec. 2; Prospect Placer, E½ SE¼ NE¼ sec. 3; all in T. 34 S., R. 7 W., located about 1930.

Area: Three patented and three unpatented claims, 118 acres.

History: Mined each winter since 1930.

Development: Small amount of piping along the creek bottom.

Equipment: One no.1 giant, 500 feet of 11" and 8" pipe; water will come from Butte Creek; ½ mile ditch at present, 1½ mile being added.

Geology: Slate bedrock, slacks with exposure to weather so that it can be cleaned with a shovel; very few yard-size boulders, most of them are small; clay, small amount. Gold is medium fine, nuggets up to $5 have been recovered.

Informant: Mr. Gray and Ray C. Treasher, 4/4/40.

Report by: Ray C. Treasher.

CALIFORNIA MINE (gold) Galice area

(See also Hercules Mining Company)

Owner: E. R. Wheeler, Grants Pass, Oregon.

Location: Secs. 25, 26, T. 33 S., R. 8 W., and sec. 30, T. 33 S., R. 7 W. on Mt. Reuben Creek, tributary to Graves Creek.

Area: Seven lode claims held by location and one patented claim. Total area 160 acres. Mt. Reuben tunnel site 3000 feet x 3000 feet, 210 acres.

History: Originally known as the Mt. Reuben Mining Company of which Parks & Swartley report:

> "This company was organized in January, 1916. It has the "Anna", "California", "Virginia", "Albany", fraction of the "Oversight", "Arthur C.", and "Utica" claims located on a spur of Mt. Reuben in Josephine County. Some tunneling, sinking shaft and stoping has been done."

Some development was done on the California claim about 1920. Mr. Wheeler purchased the property from the Mt. Reuben Mining Company. From Jan. 1, 1922 to April 11, 1929, Mr. Wheeler constructed the longest tunnel in southwestern Oregon. The property was idle until Nov. 1938 when Phillip Suetter leased it and started reconditioning. Thirty-two men were employed. The Hercules Mining Company took over Suetter's holdings and now hold under lease the California Group as part of their property.

Development: Near the top of the mountain there is a 630 foot adit which trends N. 83° W. At a distance of 550 feet from the portal the vein was tapped and there is a connection with the surface through a shaft at this point, a vertical distance of 240 feet. A short drift was driven on the Oversight vein. Some drifting and stoping was done on the California vein. A small mill with two stamps was operated for a short time. In 1939 tho "California" workings were reopened by the Hercules Mining Company.

The long crosscut tunnel, now known as the Wheeler tunnel trends N. 87° W. for 7364 feet. There is a horizontal core drill hole 609 feet long from the face of the tunnel, making a total of 7973 feet. The maximum vertical depth of ground penetrated by the tunnel is 2325 feet. Very little timbering is required. There are several drifts on the numerous veins, the principal one being no. 13.

Geology: The Wheeler tunnel cuts through a series of rocks that are classed as greenstone. Phases of the "greenstone" appear to be altered sediments that have been silicified, so that in some cases they appear to be quartzites. Other phases of the greenstone have white spots, or porphyroblasts. There are a few basic igneous dikes.

Trending slightly east of north and varying in width from a few inches to several feet, shear zones have cut through the greenstones. These shear zones contain quartz stringers, and following the introduction of quartz, there must have been a second period of shearing. Flat lying, S.E. dipping faults have displaced the shear zones to some extent.

Some metallization has been effected in the shear zones so that the sheared greenstones contain sprinklings of pyrite cubes. No. 13 "vein" is the only one in which metallization of quartz was noted.

Remarks: The long crosscut tunnel was presumably driven to explore at depth the vein found in the old California workings above. There seems to be some doubt as to the values reported from the old workings. In any event, it is reported that the long tunnel failed to find a commercial deposit below the old California workings, and was driven farther to intersect the Molly Hill and Gold Bug veins which were mined at the top of the mountain. Both the tunneling and diamond drilling reportedly failed to find lower extensions of these ore bodies.

Informant: Ray C. Treasher, January 1940.

CALIFORNIA-OREGON MINING & DEVELOPMENT CO. Galice area

see California-Oregon Placer Mine

CALIFORNIA-OREGON PLACER MINE Galice area

(see also Dan Green Property; Cal.-Ore. Mine; Galice Consolidated Mines Co.; Calif.-Oreg. Mining & Development Company.)

Owner: California-Oregon Mining & Development Company, 1630 S. Union Avenue, Los Angeles, California, L. C. Hudson, Supt., Galice, Oregon.

Location: On Galice Creek 2 miles S. W. of Galice in secs. 2 and 3, T. 35 S., R. 8 W.

History: This is the old Dan Green Property. The California-Oregon Co. was formed in March 7, 1937. It purchased the W. P. Barclay and H. P. Spradling water rights. About 30 acres have been mined. Informant thinks this was the old Galice Consolidated Mines Company's ground.

The Grants Pass Courier, January 31, 1941, reports:

"Fred Leipold and Frank West have been repairing the flume and pipe line at the Calif.-Oreg. Mine. They have also made a complete new 'setup' for hydraulics. On Jan. 27th the men started to pipe, with two giants working".

Geology: California-Oregon ground appears to be a remnant of the "old channel" or "high level" placer deposits near Galice. The gravel is only 9 feet thick and has an argillite bedrock. Overburden is about 10 feet in thickness; numerous boulders are found up to the size of a water bucket; gravel contains some clay; metal is largely fine channel gold with small amount of coarse gold.

Water Rights: 20 c.f.s. out of South Fork of Galice Creek, 20 c.f.s. out of North Fork of Galice Creek.

General: Operating season is from November to July. Maximum 2 feet of snowfall. Elevation, 1000 feet by aneroid.

Equipment: No's. 1 and 2 giants. 1600 feet of 11 to 24-inch pipe.

Informant: J. E. Morrison, 1938.

Reference: Grants Pass Courier, January 31, 1941.

CAL.-ORE. PLACER Galice area

see California-Oregon Placer Mine

CARLTON GROUP (Copper) Galice area

Location: Sec. 10, T. 35 S., R. 8 W.

"The Carlton Group, embracing 9 claims, lies on both sides of the South Fork of Galice Creek 3 miles southwest of Galice, at an elevation of nearly 1,400 feet. The country rock is slate and greenstone, and their contact corresponds to the position of the Great Yank lode on which the Almeda Mine is situated. Two tunnels, aggregating about 250 feet in length, run into the greenstone near the contact. The greenstone in places where sheared is richly impregnated with pyrite and some chalcopyrite. The rock is so richly pyritized that if auriferous it would afford a concentrating ore. An assay made for the Geological Survey by E. E. Burlingame and Company yielded a trace of gold. Some ore bodies are reported on the hillside

a short distance south of the tunnels referred to, but the tunnels have not yet reached them."

Reference: Diller, 14:60 (quoted); also in
Parks & Swartley, 16:51
Idle for years (J. R. Harvey 3/12/40)

CARNEGIE PLACER Galice area
see Archer placer

CHIEFTON CLAIM Galice area
see Buffalo Group

CLEVELAND GROUP Galice area
see Three Lodes Mining Company

COLD SPRING MINE (copper) Galice area

Location: NW¼ sec. 9, T. 35 S., R. 8 W.

"The Cold Spring copper mine lies on the southwest slope of the West Fork of the Galice Creek nearly opposite the Sugar Pine. It was lately examined in detail under option by the Almeda Company and half a ton of ore shipped for test. Although I did not see the mine, Mr. Daniel Green informs me that large bodies of copper ore, chiefly chalcopyrite, is in sight. The ore is said to be of good grade, but it has no associated galena, as at Sugar Pine."

Reference: Diller, 14:60 (quoted); also in
Parks & Swartley, 16:57
Not active. (J. R. Harvey 3/12/40)

COPPER EAGLE MINE Galice area
see Brass Ledge Quartz Claim

COPPER STAIN (gold, copper) Galice area

Location: Sec. 35, T. 33 S., R. 8 W.

Owner: Susan Z. Lawrence.

"The Copper Stain Group is not far from the Gold Bug in the Mount Reuben District. It consists of 7 claims owned by Mrs. S. L. Dana, of Springfield, Illinois. The main adit is caved at the portal but may be entered through stopes reaching the surface. The ore is white quartz with some pyrite, and free gold in a few samples. As at the Gold Bug that part of the ore which is stained by copper minerals is said to be richest in gold. The country rock, at least near the vein, seems to be largely serpentine. There has been no work done here for several years. The equipment (now incomplete) consisted of a Tremaine 2-stamp mill with a crusher, a 3 by 10-foot amalgamating plate and a 'cannon-ball' amalgamator. Some work is now being done at the property in preparation to operate again."

Reference: Parks & Swartley, 16:73 (quoted)

COURTNEY HYDRAULIC MINE — Galice area
see Old Channel Mine

CRAMER GROUP — Galice area
see Reno Group

DAN GREEN MINE — Galice area
see Black Bear Mine

DAN GREEN PROPERTY — Galice area
see California-Oregon Placer

DEAN & DEAN PLACER — Galice area

Owners: Lydia H., & James N. Dean, Galice, Oregon.

Location: E½ sec. 25, and sec. 36 (?), T. 34 S., R. 8 W. Elevation 700 feet.

Area: 99 acres of patented land.

Development: 4 or 5 acres have been mined.

History: The property was located and operated by J. N. Dean's father and has been operated by the Dean's since 1895.

Equipment: 4½ miles of ditch; 2000 feet of 11 inch to 20 inch pipe; four giants (two no.1 and two no. 3 giants).

Geology: Slate bedrock; boulders are small and will average about 12 inches. There is some clay in spots, but most of the fine material is silt that goes freely through the sluices. The gold is 920-935 fine and is small in size.

Economics: This is part of the "high channel" and has been productive for years. Ditches and equipment are kept in good condition.

Informant: J. N. Dean, 4/6/40.

Report by: Ray C. Treasher.

DINGMAN MINE (gold) — Galice area
see Lucky Shot Mine

EL RIO ORO — Galice area
part of Standard Group

ELWILDA GROUP — Galice area
see Reno Group

FOUR L's PLACER — Galice area
see Three L's placer

FOWLER GROUP (Placer) Galice area

Owner: J. W. Fowler

Location: On south fork of Galice Creek in sec. 10, T. 35 S., R. 8 W. Elevation 800 feet. 3½ milos to Galice postoffice. Forest road open the year around.

Area: 3 placer claims, 60 acres, held by location.

Operation: Active; 2 men at work. One acre mined. Water right, four miners inches from Sailor Jack Creek; some water all year around.

Equipment: One no. 1 giant, 300 feet of pipe, 3/4 mile of ditch.

Geology: Bench and old Galice Creek channel. Fine to heavy gold, some large nuggets.

Informant: J. W. Fowler, 4/12/40.

Report by: R. M. Alden, Galice, Oregon.

FRIDAY GROUP Galice area

see Richmond Group

GALICE CONSOLIDATED MINES CO. Galice area

see California-Oregon Placer Mine

GARRY JOHNSON GROUP (gold, copper) Galice area

Owner: Garry Johnson Estate.

Location: NW¼ sec. 12, T. 33 S., R. 8 W.

History: This property has been worked, off and on for a number of years. About four or five years ago a small mill was operated here but no record of any shipments is available.

Development: There is a 30 foot winze that is open. Another winze to the north has a small stope. There are several cuts.

Economics: The vein cannot be seen in place but pieces on the dump indicate a 2 foot width. It is reported that the vein averages $1.40 in gold with some higher grade up to $14. Apparently the vein has not been worked for its copper content.

Geology: Heavy sulfides are scattered and bunched in quartz. Principal sulfide is pyrite. Chalcopyrite is abundant. There is some copper stain near the surface.

Informant: E. A. Youngberg, 12/11/41.

Report by: Ray C. Treasher, 12/12/41.

GOFF (VIRGIL E.) PLACER Galice area

Owner: Virgil E., and Leland Goff, Leland, Oregon.

Location: SE¼ NE¼ sec. 33, T. 33 S., R. 7 W., just west of Poorman Creek.

General: This placer was located about seven years ago (1935?) and operated for some time. It is idle at present.

Informant: Mrs. Virgil Goff, 4/9/40

Report by: Ray C. Treasher

GOLD BUG MINE (Gold) Galice area

Owners: C. E. Romig, Grants Pass, Oregon, and Annie M. Neil, c/o Christopherson, Matthews & Long, Attorneys, Portland, Oregon.

Location & Area: Six patented mining claims. 110½ acres in sec. 26, T. 33 S., R. 8 W. Location is not on Whiskey Creek as given below by Parks & Swartley. It is on ridge between California mine and China Gulch.

History: "The Gold Bug Mine is on Whiskey Creek in sec. 26, T. 33 S., R. 8 W. near Mt. Reuben at elevations of 2400 to 2600 feet as measured by aneroid barometer. The old main adit is now completely blocked by fallen timbers at about 350 feet from the portal. The vein contained gold-bearing quartz with some pyrite and chalcopyrite. The vein was only 1 to 2 feet wide where seen, but even this was stoped out, and thicker vein quartz was reported farther in. The country rock of the old main adit is an andesite containing phenocrysts of plagioclase feldspar in a matrix of plagioclase, green biotite, isotropic chloritic material, and a little magnetite and epidote. The illustration is a copy of an old mine map showing a plan and a vertical section of the old workings.

"A narrow dike of serpentine may be observed crossing the road within a quarter mile of the mine. Next to the dike the enclosing andesite is considerably altered to epidote, chlorite and quartz. An adit near this outcrop drifts 100 feet on a fissure 1 to 4 feet wide containing 6 inches to 2 feet of quartz striking N. 5°E. and dipping 45°E. The mine is now owned by Romig and Neal. A new incline shaft shows a quartz vein striking N. 35°W. and dipping 70°S.W. The vein-filling here is 12 to 14 inches thick and chiefly quartz stained by chrysocolla. A new crosscut adit extends N. 21°E. about 100 feet in andesite. Work was in progress here in the summer of 1913. The mine is connected with the railroad at Reuben Spur by a good mountain road."

The main adit was opened about 1936 to allow a lessee to do a small amount of development work on the no. 2 level near the shaft. This adit is still in fair shape. The vein was a large lens 18 feet wide at its widest; it supplied milling ore for 10 years, and was mined to the 600 foot level. The rake of the ore-shoot was between 30 and 40 degrees. The vein has a general N-S strike and a 45° east dip. The lower workings have been closed since 1907. The main working shaft is open and is dry. The serpentine dike mentioned by Parks & Swartley is nearly a mile from the mine.

Reference: Parks & Swartley 16:102 (quoted).
Diller, 14:52

Informant: C. E. Romig

Report by: Ray C. Treasher, February 16, 1940.

GOLD DOLLAR MINE Galice area

see Gold Plate Mine

GOLDEN BAR PLACER Galice area

Owner: G. E. Thompson, Galice, Oregon.

Location: On Galice Creek road, one mile from Galice postoffice in sec. 2, T. 35 S., R. 8 W. Elevation 750 feet.

Area: Four mining claims, 80 acres.

Equipment: Giant, pipe, 1500 ft. ditch, living quarters. There are two water rights of 2 o.f.s. each.

Informant: C. E. Thompson.

Report by: R. M. Alden, March 18, 1940

Reference: Diller, 14:113

GOLDEN CYCLE MINE Galice area

see Sugar Pine Mine

GOLDEN EAGLE PLACER Galice area

Owner: W. C. Miller, Galice, Oregon.

Location: sec. 36, T. 34 S., R. 8 W.; elevation 680 feet; hillside location; Rogue River frontage.

Area: 2 claims, 40 acres held by location.

General: Active; one man employed; one-quarter acre mined; pump is driven by gas engine; red fir timber plentiful; property has living quarters.

Informant: W. C. Miller

Report by: R. M. Alden, March 11, 1940

GOLDEN PHEASANT GROUP (gold) Galice area

"The Golden Pheasant group lies about 1 3/4 miles directly west of Galice near the contact between the slates of the Galice formation and the greenstones. A number of tunnels have been run into the greenstone at several levels. In quartz veins and kidneys running N. 30° E., in the lower tunnel, a bluish-black foliated mineral occurs sparsely. Chemical tests prove it to be molybdenite. From a pile of chloritic schist containing films of calcite on the shearing planes samples of the reported tin ore were taken, but careful tests by Dr. Palmer in the chemical laboratory of the Survey failed to show any tin.

"The slates of the Galice formation and the greenstones are particularly well exposed near their contact at the falls in Blanchard Creek. Except that the country rock is greenstone instead of quartz porphyry, the mine seems to be at the horizon of the Big Yank lode of the Almeda mine, but from outcrops in view in Blanchard Gulch there is no evidence of the existence of important ore bodies."

Reference: Diller, 14:58 (quoted)

GOLDEN WEDGE MINE (gold) Galice area

Owner: Mary E. Detwiler, Galice, Oregon.

Location: Secs. 14 & 23, T. 34 S., R. 8 W.

Area: 106.66 acres.

"The Golden Wedge Mine is about 4 miles northwest of Galice on Bailey Gulch. It is said to have been discovered by Mr. Hutchins in 1893. About 1908 the mine passed into the control of the Gold Road Mining & Milling Company, which was

reorganized about 1911 as the Bailey Gulch Mining & Milling Company. Diller suggests that the total production of this mine may have reached $50,000 and that future production may result if the Oriole fault is found. The main ore body is opened by about 1200 feet of underground workings, reaching a depth of about 500 feet on the incline. The lode strikes about N. 20°E. and dips 50°-60°E. The ore body pitches southward at an angle of about 20°. According to Diller, the 'quartz veins and lenses in the sheared greenstone are irregular, as if folded, and many of the quartz lenses or kidneys that have a covering of graphitic material with grains of pyrite are said to average $10 to $20 a ton in gold. Considerable ore has been stoped out of a belt ranging from 16 inches to 5 feet. The graphitic material interferes with handling the ore.' The country rock here is a greenstone with intrusions of dacite, containing abundant dark green hornblende with fine granular quartz, sericitized plagioclase, and unusually abundant granular titanite.

"An adit near the mill on Bailey Gulch is (1913) being extended. It exposes a thick fault gouge, which suggests an important fault. The gouge is grayish blue when dry and nearly black and soft when wet. It consists chiefly of quartz, siderite, pyrite and sericite, and is therefore finely divided vein material. The hanging wall is serpentine; on the other side the same rock is sheared and mineralized, containing bunches and stringers of quartz. When seen this adit extended southerly about 220 feet; the vein near the breast strikes N. 10°W. and dips 88°E.

"The Golden Wedge is equipped with a 10-stamp mill, having two more 2-stamp batteries not in condition to use, and also 7-foot amalgamating plates, a crusher, an air compressor, 2 Pelton wheels, and 12 tanks used as a 25-ton cyanide plant. Power is available only during the wet season."

Reference: Parks & Swartley, 16:108 (quoted)
Diller, 14:51

GOLD PLATE MINE (gold) Galice area

Owner: Mrs. Emma Wellmarth, Grants Pass, Oregon.

Location: On Galice Creek, five miles west of Galice, in sec. 4, T. 35 S., R. 8 W.

Area: Two full size unpatented lode mining claims, known as the Gold Plate and the Gold Dollar.

Equipment: Buildings at the mine consist of a small mess hall, a large bunkhouse, mill building, blacksmith shop and toolhouse. Equipment at the mine consists of mine cars, trackage, air-hammers, drill steel, picks, shovels and blacksmith equipment. The mill is equipped with a Straub Stamp Mill consisting of eight stamps arranged in a circle, all operated by a single cam. Ore is fed at the center of the mill with a full circular screen discharge; inside amalgamation is used. The capacity is five tons in 24 hours (the mill is rated by builders at 10-ton daily capacity); 7 h.p. is the power requirement. The mill was shipped sectionalized and was "packed" in to the mine; the heaviest piece weighed 260 pounds. Mill pulp is discharged to an amalgamation plate and then to a concentrating table. Informant estimates the capital outlay as follows:

Mill equipment	$3,000.00
3,000 ft. flume, installed	800.00
Mining and Air Compressor	1,000.00
Buildings, replacement cost	650.00
Development cost (estimate)	5,000.00
Miscellaneous	1,000.00
TOTAL	$11,450.00

Water: The Gold Plate Mine is supplied with water taken from the North Fork of Galice Creek about 3,000 feet westerly from the mine. Sufficient quantity is available to operate the present mill equipment with water power (25 h.p.). This supply, however, is affected by prior water rights for two or three months in the year.

Development: No. 1 tunnel, No. 2 main tunnel, and many surface open cuts and short tunnels expose the vein at several different and widely removed locations over a distance of probably 1,000 feet in an easterly and westerly direction. The vein, strikes north and slightly east over a considerable distance.

No. 2 tunnel was driven north 20° west for 52 feet; then was turned to an easterly course for 69 feet, making a total distance of 121 feet to a point where the tunnel is partly caved; examination beyond this point is unsafe. At a point 52 feet from the portal of the tunnel, a drift has been driven southwesterly for 159 feet, and at the 109 foot point the tunnel bears northwesterly a distance of 50 feet. 25 feet from the face of this tunnel a drift has been extended to the south for 25 feet. The total distance of the No. 2 tunnel development is 280 feet.

No. 1 Tunnel: The next development of any consequence is what is termed the No. 1 tunnel located approximately 500 feet in a westerly direction from the No. 2 tunnel. The course of this tunnel is north 17° east. The total length is 178 feet. Low grade ore was found at a point thirty feet from the portal of the tunnel.

Informant: William F. Hayden, 36

Reference: Diller, 14:59

GOSS MINE — Galice area

see Standard Group

GRUBSTAKE MINE — Galice area

Owner: Clement Bradbury.

Location: sec. 13, T. 34 S., R. 8 W.

Reference: List of Mines.

HELL GATE MINING AND DEVELOPMENT COMPANY (placer) — Galice area

Parks and Swartley (16:118) report as follows:

> "The Hell Gate Mining and Development Company (dissolved January 3, 1912,) has done considerable work on a deposit of gravel on the southwest side of Rogue River near the mouth of Hog Creek at a level high above the present stream. The resultant excavations are in plain view from the County road across the river. No activity for several years."

HELL GATE PLACER — Galice area

Owners: Lou Robertson and Virgil Hull.

Location: Sec. 10, T. 35 S., R. 7 W.

Equipment: One giant and pipe line from reservoir on the hill.

General: This property has a limited water supply and operates only during the rainy season. It has operated every winter since 1938.

Informant: Ray C. Treasher, 1940

HERCULES MINING COMPANY Galice area

See also California Mine

Owner: The Hercules Mining Co. has leased the California Mine, the Ajax group, and ground on the south side of Grave Creek known as the Hercules group.

Location: The Ajax group is in sec. 36, T. 33 S., R. 8 W. The Hercules group is in secs. 5, 6, 7, T. 34 S., R. 7 W. and sec 31, T. 33 S., R. 7 W.

Development: Several holes have been drilled and eight bulldozer cuts have been made in the Hercules group. A road has been constructed from the camp on Mt. Reuben Creek to the Ajax claims.

Area: The Hercules Group consists of 15 mining claims held by location, 160 acres of patented land, and two mining claims purchased. The Ajax Group consists of 12 mining claims.

Equipment: RD7 caterpillar with bulldozer. Blacksmith shop equipped with Gardener-Denver drill sharpener; acetylene welding outfit; electric welder; "cut-up saw" with gas engine power. Compressor house contains an I-R compressor run by Pelton wheel; two 110 volt D. C. generators; 125 h.p. Diesel engine for auxiliary power; Pelton wheel for air fan; Portable I-R compressor furnishes air for 2 jackhammers; Bucyrus-McCormick well drilling rig, complete; 3 tons of 1¼" drill steel; fully equipped assay laboratory; 10,000 feet of track with 16 lb. rails; 10,000 feet air ventilating pipe, both 10 inch and 11 inch; 10,000 feet of water pipe in the Wheeler tunnel and 9000' of 4" pipe in air main; 600 feet of 6" water pipe from a 10 foot square reservoir; 800 feet of 2-inch water pipe for camp distribution; 1600 feet of 2-inch water pipe at Camp No. 2; 700' of 15"-30" penstock pipe; 4800 feet of flume; drag saw and other tools. A 3500-gallon steel storage tank for Diesel oil; two 1000-gallon tanks with pumps for gasoline. Buildings consist of 4 bunk houses, mess hall, administration building, assay office, 40' x 90' garage-bunk house; compressor house, blacksmith shop at main camp. At Camp No.2 there are 3 cottages, garage and machinery house.

Geology: As explained under California Mine.(which see)

The Hercules Group is underlain with shale (Galice formation?) with black, slaty cleavage, cut by numerous small quartz stringers. This area may include an extension of the "Big Yank" lode on which the Almeda property is located.

Informant: Ray C. Treasher & D. F. McCormick, Jan. 1940.

HIGH CHANNEL PLACER Galice area

see Old Rogue Channel Mine

HIGHLAND IMPROVEMENT COMPANY Galice area

see Black Bear Mine

HOLY TERROR Galice area

see Standard Group

INDEPENDENCE CLAIM (gold) Galice area

Owner: Western Metal Mining Company, J. J. Seidel, Medford, Oregon, Agent.

Location: sec. 13, T. 34 S., R. 8 W. This is the north extension of the Almeda Mine.

Area: One claim.

Informant: J. E. Morrison, 1939.

J. C. L. GROUP (gold) Galice area

Owner: The Lewis Investment Company, Portland, Oregon.

Location & area: Eight patented mining claims, a total of 164.74 acres in secs. 34 and 35, T. 33 S., R. 9 W.

"V. E. Hughes and J. B. Fanchini are transporting machinery, tanks, supplies, etc., to the Rogue River trail ten miles down the river from Galice, and from there to J.C.L. mine, a distance of two miles. Charles McNeill packs the items via pack train. Five loads have been delivered to the mine and about ten more truck loads are due there this week. Hughes and Fanchini are operating a cyanide plant at the Greenback Mine on Grave Creek, employing six men. Either Mr. Hughes or Mr. Fanchini will remain at the Greenback supervising the work there and the other will be in charge of operations at the J. C. L. Mine. Fanchini stated they would employ four or five men to start the work in the near future." (Grants Pass Courier, October 12, 1938)

Reference: Press report, 38.

Informant: J. E. Morrison, 37.

JEWELL & LEWIS PLACER Galice area
see Rocky Gulch Placer

JUANITA PROPERTY (copper) Galice area
also known as Seven-Thirty mine

Owner: Western Metal Mines Company, J. J. Seidel, agent.

Location: Formerly known as the Seven-Thirty Mine, secs. 10, 11, 14, and 15, T. 34 S., R. 8 W.

History: "The Seven-Thirty mine is about 2 miles northwest of the Almeda Mine and 1 mile west of Rogue River. It is said to have produced good ore, but has been closed for some years. It is now under option by H. B. Wickham of Galice."

Informant: J. E. Morrison, 39.

Reference: Parks & Swartley, 16:200 (quoted)

KARG DIGGINGS Galice area
see Butte Creek Placer

KEYSTONE GROUP (gold) Galice area

Location: sec. 24, T. 33 S., R. 8 W. (List of Mines)

"The Keystone group, belonging to the Akron Gold Mining and Milling Company (dissolved January 11, 1916), is on the south slope of Rogue River nearly opposite the mouth of Whiskey Creek. It was not visited by the writer. According to Diller:

'"There are two openings far above the river. One of them 115 feet in length, cuts the ledge at a depth of 100 feet; the other, 160 feet lower, is only partly completed. The country rock is greenstone near its contact with intruded serpentine. The gold occurs in irregular quartz veins or stringers, forming a

belt about 3 feet in thickness and approximately parallel to the serpentine contact. The ore appears to be pyrite in fine particles sparsely disseminated through the quartz.'"

Reference: Parks & Swartley, 16:136 (quoted)
Diller, 14:53

KLUM PLACER — Galice area

Owner: Fred Morgan, Oklahoma City, purchased from J. W. Anderson, Grants Pass, Oregon.

Location: SE.¼ sec. 1, T. 34 S., R. 7 W.; 1½ miles northwest of Leland.

Area: 85 acres of patented ground.

History: Said to have been patented in 1890 and worked intermittently. No record of production. 12 acres mined. Owned by Anderson for the last 30 years.

Water right: 500 inches out of Tom East Creek (not the same creek as at the Greenback Mine). One 2 foot ditch 4 miles long delivers water to the property at 100 foot head. In 1938 Mr. Morgan constructed a diversion dam on Wolf Creek and reconditioned the old Klum ditch which is 13 miles long. One hundred thousand feet of lumber was used in the flume and 4000 feet of 28 inch pipe is required to deliver the water to the mine.

Geology: About 25 acres of high bar, with gravel about 35 feet in thickness showing in the pit. Values are said to be 20 cents a yard.

Informant: J. E. Morrison, 38.

KRAMER GROUP — Galice area

see Reno Group

LAST CHANCE PLACER — Galice area

Owners: F. C. Schlegel, C. W. Clydewunder, and Wayne Gowman, Galice, Oregon.

Location: sec. 26, T. 34 S., R. 8 W., Elev. 1000 feet.

Area: 1 mining claim, 20 acres.

Development: 3 acres mined, 50 feet overburden. Small cabin on ground.

History: Formerly owned by Old Channel Mining Company; Wallace Robertson sold to present owners.

Informant: F. C. Schlegel, March, 1940.

Report by: R. M. Alden, March 15, 1940.

LEGAL TENDER GROUP (gold) — Galice area

History: "The Legal Tender group embraces three claims located on the east fork of Rum Creek at an elevation of 2,850 feet. A tunnel 100 feet long penetrates what appears to be rotten greenstone, but farther up the ridge the rock is seen to be more or less distinctly banded quartzite cut by serpentine. There are about 5 tons of ore at the mouth of the tunnel. It consists largely of decomposed ferruginous quartz with some pyrite unchanged and is reported to have assayed $12 per ton. The owner plans to erect a 5-stamp mill on the property."

Reference: Diller, 14:54 (quoted)

LEIPOLD PLACER CLAIMS Galice area

Owner: Fred Leipold.

Location: Sec. 3, T. 35 S., R. 8 W., Elevation 850 feet.

Area: 5 mining claims, 100 acres.

Equipment: 7500 ft. ditch and flume; giant; 5 second ft. water; small cabin on ground.

Informant: Fred Leipold, March 1940.

Report by: R. M. Alden, March 14, 1940.

LEWIS INVESTMENT COMPANY Galice area

see Benton Mine

LEWIS PLACER Galice area

see Rocky Gulch Placer

LEWIS & LOWELL PLACER Galice area

see Rocky Gulch Placer

LITTLE MEADOWS PLACER MINING COMPANY (placer) Galice area

History: Parks & Swartley reported as follows:

"Local name, Tennessee Bar.

"Office: 31 North First St., Portland, Oregon. F. E. Myers, Pres.; R. F. Myers, Sec.-Treas. Capital stock, $4,800; par value $50; all subscribed, issued and paid up. (1916 report).

"This company has 2 claims, the "Tennessee Bar" One and Two on Rogue River, Josephine County."

Reference: Parks & Swartley, 16:142 (quoted)

LOST FLAT MINE (gold) Galice area

History:

"The Lost Flat mine is on Chieftain Gulch about 4 miles southwest of Galice. It was discovered in the latter part of the seventies and operated irregularly for four or five years with an arrastre. Its production, however, is said to have been less than that of the Sugar Pine. A small amount of ore was shipped, but for test only, and the mine was closed."

Reference: Diller, 14:60 (quoted)

LOWELL & LEWIS PLACER Galice area

see Rocky Gulch Placer

LUCKY SHOT MINE (gold) Galice area

Owner: W. A. And Claude Dingman, Galice, Oregon.

Location: Six miles north of Galice on River Road in sec. 12, T. 34 S., R. 8 W. Elevation 700 feet.

Area: Four unpatented lode claims. 80 acres.

History: Located in 1935 by the Dingmans. No production.

Development Work: About 25 feet below the road is a shaft 10 feet deep on a ledge about two feet wide which strikes N. 15° W. and dips 75° E. A sample taken across the ledge in bottom of shaft showed .34 oz. of gold and .2 oz of silver. A short distance east of the shaft and about 40 feet below is a tunnel running west on a ledge. At the face of the tunnel the ledge strikes N. 35° W. and dips 35° N. A sample was taken across about 28 inches which showed 0.24 oz. of gold and .2 oz of silver. The probable intersection of the two veins as indicated should be investigated.

Plans are being made for starting a cross cut tunnel lower down on the mountain near the river which would give one hundred feet in depth on the vein.

Geology: The wall rock is porphyritic dacite which is intrusive in the Galice formation. The dacite is fractured and many quartz veins run in all directions through it.

Informant: J. E. Morrison, 38.

MAGNOLIA CLAIM Galice area

see Standard Group

MARVIN MINE (copper) Galice area

Location: Sec. 22, T. 34 S., R. 8 W.

History: "The Marvin Mine is near the top of Peavine mountain at an elevation of 3,400 feet, as measured by barometer. A lode 30 feet wide, containing some quartz with chalcopyrite in pyroxenite somewhat altered to chlorite and serpentine, is opened by an adit which extends N. 40° W. about 150 feet. The lode strikes north of east and dips about 45° S."

Owner deceased and property is abandoned. (J. R. Harvey 3/12/40).

Reference: Parks & Swartley, 16:149 (quoted)

MATTISON PLACER Galice area

see Standard Group

MAYFLOWER GROUP (gold) Galice area

Location: Sec. 27, T. 34 S., R. 8 W.

History: "The Mayflower group is on the south fork of Rocky Gulch at an elevation of about 2,800 feet, about 1½ miles west of the Oriole Mine. It is a group of three claims located in 1910 and now owned by Robertson and Sutherland. The garnetiferous mica schist here strikes N. 10° E. and locally dips only 35° E. An adit in chloritic serpentine discloses many small lenses and stringers of quartz. Other small openings are on a fault, east of which is a hard banded rock, succeeded westward by three feet of radiating light green amphibole, platy serpentine

and fault goupe. West of the fault is massive gray talc (?), followed by black chloritic serpentine. The general strike of the rock formations on Peavine Mountain is N. 15 to 20° W., with a steep dip to the east. The banded rocks include quartzite, quartz mica schist, fine and coarse amphibole schist and graphitic mica schist. The Mayflower group is equipped with a Chilian quartz mill run by a Pelton wheel. Diller states that:

"'The gold is free or is in the pyrite, and chiefly, if not wholly, in the rotten quartz of the greenstone schist adjoining the contact. There is little if any gold in the white quartz. A small amount of chalcopyrite is present.'"

Reference: Idle: J. R. Harvey 3/12/40
Parks & Swartley, 16:151 (quoted)
Diller, 14:56

MOLLY HILL (gold quartz) Galice area

Part of Hercules Mining Co. holdings.

Owners: Kamm Estate, David B. Simpson, Wilcox Building, Portland, Oregon, Manager.

Location: On top of Mount Reuben in sec. 26, T. 33 S., R. 8 W.

Area: One patented claim.

Development: There are 2 shafts, both caved. Mr. E. E. Romig did the last work done on the property. He states that there is a ledge of quartz showing in one of the old shafts.

Geology: Diorite country rock. Veins strike north and south and dip about 80° to the west. Quartz is in a shear zone. (see Hercules Mining Co.)

Miscellaneous: This claim is parallel to and adjoins the California Mine Claim on the west. The long California tunnel running in from Reuben Creek cuts very close to the south end of the Molly Hill. No one knows if the Molly Hill vein was cut. Elevation, 3,500 feet. Maximum snow-fall 10 feet. No timber or water on property.

Informant: J. E. Morrison, 37.

MT. REUBEN MINING COMPANY Galice area

see California Mine
absorbed by Hercules Mining Company.

NESBIT GROUP (gold) Galice area

Location: Sec. 34, T. 34 S., R. 8 W.

History: "The Nesbit group is about 2 miles west of Galice and at least 2 miles southwest of the Oriole Mine at an elevation of about 175 feet above sea level. The group is prospected by three adits, the lowest being a crosscut S. 50° W. about 75 feet showing no vein. The middle adit is a drift extending N. 65° W. about 30 feet in a lode in a talc schist at an elevation of about 1,900 feet. The upper adit runs N. 42° W. and at the face discloses the contact between talc schist and a dark bluish rock resembling dunite. The contact is marked by a fault which dips 60° N.W. Diller states that the mountain slopes at the Nesbit are covered by a deep capping of yellowish iron-stained residual material which in places yields free gold. Considerable gold has been won from this residual material by panning. The average of a number of assays is said to be $6.50 a ton, and it seems probable that it would pay well to hydraulic the whole slope."

Reference: Parks & Swartley, 16:161 (quoted)
Diller, 14:57

NORTH CHANNEL MINE (placer) Galice area

Owner: Old Channel Mine; leased to F. Krieg, E. B., J. A., and W. E. Rapp.

Location: Part of the Old Channel Mine.

Area: 169 acres.

History: See Old Channel Mine.

Development: 5 acres mined.

Geology: See Old Channel Mine.

Equipment: 1700 ft. pipe line, one no.4 giant, 1000 feet flume, 400 ft. ditch, 25 sec. ft. of water.

Informant: W. E. Rapp and Mr. Alden. 3/20/40.

Report by: R. M. Alden.

OLD CHANNEL MINE (placer) Galice area

Owner: J. R. Harvey, Grants Pass, Oregon.

Location and area: According to the Assessor's Records the Old Channel Mine consists of mineral lots 37,38,39,40,42 and 43, a total of 757 acres, and includes 3 sections as follows: The Old Channel, 509 acres in sec. 35, T. 34 S., R. 8 W.; the Courtney Hydraulic, 92 acres in sec. 10, T. 35 S., R. 8 W.; and the Akney Hydraulic, 156 acres in secs. 9, 10, 15 and 16, T. 35 S., R. 8 W.

According to Parks and Swartley (16:166):

"The Old Channel Hydraulic Mining Company (dissolved January 5, 1914) controls a large area of 'high level' placer deposits near Galice; they form a gravel terrace parallel to Galice Creek and Rogue River and more than 2 miles long. The terrace is about 600 feet above the creek and has a thickness of over 100 feet. The bedrock consists chiefly of argillites of the Galice formation. The main ditch from Galice Creek is said to supply 5,000 miner's inches of water during the rainy season; the giants work under a head of about 350 feet. According to Diller, who gives a detailed description of this deposit with several drawings:

"'The coarse gravel at the bottom is well rounded and composed largely of greenstone with considerable quartz. Cobblestones as large as 8 inches in diameter are common. North of Rich gulch boulders are numerous, but on the south side boulders are few, and the gravel is quite firmly cemented. This coarse bottom layer of gravel and boulders is limited to the main channel and contains most of the gold, although some gold is said to be distributed throughout the great thickness of overlying fine gravel and sand. A large body of available gravel lies south of Rich Gulch where most of the recent work has been carried on. The bedrock is chiefly slate with some sandstone, but near the western border of the mine north of Rich Gulch the slates are cut by dikes and both rocks are affected by a small fault that strikes N. 80° W. and dips 72° S. W.'

"Other faults are believed to exist in the bedrock of these deposits."

According to press report:

"From the standpoint of ditch capacity, the pressure under which the water is used and the size of the deposit, the Old Channel Mine in the Galice district, 500 feet above the Rogue River, probably ranks as one of the largest hydraulic

operations in the United States. A. R. McGuire is the present operator. The mine was formerly owned and operated by J. R. Harvey who still retains an interest in it.

"Rehabilitation work was started May 15, 1935, with a peak crew of about 75 men. The average number of men employed on the operating crew is 20. More than $50,000 has been spent in new equipment and the mine is now ready for operation on a large scale. The property has been worked in a smaller way since 1853 when the first high-line ditch was built.

"Past operations have removed gravel from some 60 acres of bedrock and from early times to the present from 10 to 30 men have been able to make a living by "sniping" on old bedrock. When Mr. McGuire took over the property 28 people were taking out small amounts of gold in this fashion.

"The property, which covers some 760 acres, is from one-half to one mile wide and about four and one-half miles in length. It is bisected by the north fork of Galice Creek. The rim of the bedrock of this ancient river channel was discovered in the early '60s.

"In its present rehabilitated state the mine has some ten miles of completely cleaned and widened ditch with all new flumes. The ditch capacity is 125 second feet of water. At the end of the ditch, which is 510 feet above bedrock, are two reservoirs. Two pipe lines serve the three high-pressure, Hendy giants.

"Past operations have proven the gravel to be from 400 to 2,000 feet in width and from 70 to 225 feet in depth. Most geologists agree that the present deposit is just a remaining fraction of an ancient river channel which at one time extended north and south at least 400 miles and was not less than four miles in width.

"From a physical standpoint the property has all the prerequisites of a low cost hydraulic operation. Erosion of later days has provided precipitous gross channels, 200 feet or more in depth, into which the gravel is dumped after the values have been extracted.

"The first mining on the property was started about 1860 and not a quarter of it is worked out yet, according to the opinion of various mining engineers.

"A colorful history surrounds the early working of the mine. The first miners who ventured on the property worked with pick and shovel. This was followed by a crude form of hydraulic operation with canvas hose, water being used under pressure for the first time. The first hydraulic plant was brought in by pack train from Crescent City over 125 miles of rough mountain trails. The mandrel on which the pipe was riveted is still at the property embedded in an oak tree about 36 inches in diameter. The mandrel apparently was stuck into the tree when the big oak was but a sapling." (Grants Pass Courier, Jan. 27, 1937)

Informant: J. E. Morrison, 39

Reference: Parks & Swartley, 16:166 (quoted)
Press Reports.
Diller, 14:98-101

OLD RAND PLACER Galice area

see Rand Placer

OLD ROGUE CHANNEL MINE (placer) Galice area

"High Channel Mine" in List of Mines in Oregon.

Owner: Old Rogue Channel Mining Corporation, Galice, Orogon, Mr. Ora E. Otto, President.

Location: On Rogue River highway about two miles east of Galice in sec. 1, T. 35 S., R. 8 W.

Area: 6 placer claims, 120 acres.

History: Has not been worked until present operation.
The Mining and Contracting Review, December 14, 1937, reports the following:

"B. Inman, B. Massie, and J. Yodges have resumed operations in the High Channel property, five miles from Galice."

Equipment: One giant; 500' of pipe; Diesel engine and two stage pressure pump will elevate water from Rogue River to placer ground on high bench channel 60 feet above the river.

Informant: Joe Hendrickson.

Report by: R. M. Alden, March 2, 1940.

OLD ROGUE CHANNEL MINING CORPORATION Galice area

see Old Rogue Channel Mine

OREGON PLACERS, INC. Galice area

see Rocky Gulch Placer

ORIOLE MINE (gold) Galice area

Owners: Rocky Gulch Mining Company, Oregon Corporation. A. F. Thane, President, San Francisco, California. Harry Sordy, Sec.-Treas., Galice, Oregon. Capitalization, $50,000.

Location: Sec. 26, T. 34 S., R. 8 W. Two miles northwest of Galice on Rocky Gulch.

Area: Fourteen lode claims held by location. 280 acres.

The Rocky Gulch Mining Company acquired the property shortly after 1916, and has operated it in a small way ever since. In 1936 it was leased to E. B. McNaughton and was operated for several months. Approximately 5,000 tons, which averaged $9.65 a ton, was said to have been mined and milled. Due to inability to recover the values, the project was abandoned.

Development: All of the old workings have been cleaned up and re-timbered. A connecting raise has been driven between levels 3 and 4 approximately 50 feet north of the stope on the third level. Two sub-levels have been established between levels 3 and 4, and the ore mined came from these sub-levels. The 4th level has been continued to the north about 90 feet. Last year a 75 foot crosscut was driven which exposed the vein at a higher elevation than that on the number 1 level.

History: According to Parks & Swartley:

"The Oriole mine is about 2 miles northwest of Galice on Rocky gulch at an elevation of about 1,100 to 1,400 feet above sea level and 300 to 600 feet above Galice. The Oriole Gold Mining Company, which was organized in 1909, owns 9 claims, 8 of which are arranged in 2 tiers with common end lines extending about 3,000 feet north and south and 2,400 feet east and west. The vein is opened on 4 levels to a maximum depth of about 500 feet below the outcrop and 325 feet between levels. The total length of underground workings on the four levels is more than 3,200 feet.

"The company has installed a power plant consisting of a Pelton wheel under a head of 350 feet; sufficient water is available, at least in the wet season, to run a 12 x 12 air compressor for two drills and a $7\frac{1}{2}$ kilowatt D. C. generator at 115 volts. Stamp mill machinery was on the ground, but not yet installed in 1913. It included a jaw crusher, 10 stamps of 1,000 pounds each, two plates, and 2 vanners.

"The Oriole workings disclose a fault marked by 6 to 12 inches of soft bluish-gray to dark green gouge and continuous with little variation in strike and dip for considerable distances. The average strike of the fault is N. 5° E.; the walls vary locally to N. 7° W. and N. 12° E.; the average dip is about 75° E. and the variations are usually between 65° and 80°. The fault is on the contact between greenstone and a rhyodacite porphyry, showing evidence of brecciation, apparently due to flowage while cooling. In thin section the rock shows phenocrysts of quartz and of more or less broken orthoclase and plagioclase, partly altered to zoisite and epidote, in a finely granular party banded matrix of quartz, feldspar, sericite, and biotite.

"It is more siliceous than an average quartz latite or rhyodacite and too high in soda and too low in potassa for a granite. But the alkali ratio combined with the microscopic study make it clear that the rock must be considered a silicified rhyodacite.

"The greenstone near the vein is much sheared and chloritized. The ore is a milky to grayish quartz which occurs in lenses near the fault in the greenstone footwall, and carries a little pyrite and chalcopyrite. The ore is said to average $15 to $20 a ton."

According to the Mining Journal:

"New ore developments are reported from the Oriole mine at Galice, Oregon, Harry Sordy, manager. A new tunnel is being run on the No. 3 level to open a known ore body. The tunnel starts from a crosscut which is stated to cut a mineralized zone 210 feet wide. When completed it will be used for haulage, and hoisting from the No. 4 level will be obviated. High grade is reported to have been opened in drifts below the No. 1 level. The air compressor used is run by water power." (The Mining Journal, March 15, 1938.)

Informant: J. E. Morrison, 37.

Reference: Parks & Swartley, 16:175 (quoted)
Diller, 14:48-50

PYR MINE (gold) Galice area

Owner: C. E. Romig and Annie M. Neil. (also owners of the Gold Bug)

Location: At the head of Drain Creek in sec 26, T. 33 S., R. 8 W., located about 1909. Elevation 2400 feet.

Area: One mining claim.

Production: Production has been small, limited mostly to development work.

Development: No. 1 shaft is down 105 feet on an incline. A drift was driven 50 feet at the 50 foot level. A winze was sunk 17 feet on ore from the end of the drift above No. 1 shaft. No. 2 shaft was sunk 40 feet on the vein. A crosscut 200 feet long under the No. 2 shaft intersects the vein 120 feet below the surface.

Equipment: An arrastre operated by a 6 h.p. gas engine discharges onto an amalgamation plate; small roll crusher; portable Gardner-Denver compressor with one drifter and one stoper.

Geology: The footwall is greenstone; the hanging wall is porphyry. The vein strikes about N. 30° W., with a 30° dip to the southwest. Vein width averages 40 inches of solid quartz, but the maximum thickness between walls is 8 feet. The vein is made up of quartz and sheared greenstone with a 2 inch gouge seam on the hanging wall. Gangue minerals are pyrite, some chalcopyrite, with dendritic manganese oxides on quartz surfaces. Sulfides occur in the quartz, and pyrite cubes are found in the sheared greenstone. Values are both in free gold and in sulphides.

Informant: C. E. Romig, 2/16/40

Report by: Ray C. Treasher.

RAND PLACER Galice area
(Old Rand Placer)

Owners: Wallace Robertson and Roy Hillis.

Location: Sec. 23, T. 34 S., R. 8 W.

"The Rand Placers located two and one-half miles north of Galice are being fitted up with pipe, giants, and other necessary equipment and as soon as enough rainfall is available operations will start.

"Wallace Robertson and Roy Hillis are putting the property in production by bringing in Bailey Creek water through the old Cope ditch three and one-half miles long.

"The ditch has been cleaned and 8,000 feet of lumber packed in over mountain trails on mule back by Charles McNeill, to complete over 1,000 feet of necessary flume.

"This is one of the old time placers of the Galice district, and has not been in operation for 30 years. Everything is ready to go, but like many other miners this winter, the boys are waiting for an Oregon rain." (Grants Pass Courier, Jan. 13, 1939).

"Roy Hillis, owner of 'Rand Placers' at Rand, had a reservoir made recently for storing water. This will enable him to mine on a larger scale." (Grants Pass Courier, January 31, 1941).

RED ELEPHANT CLAIMS (gold) Galice area

"The Red Elephant consists of two claims at an elevation of 1,500 feet, on Howard Creek about 7 miles northwest of Galice Mountain trail. The claims are opened up near the creek level by four tunnels aggregating about 165 feet in length, on which active work is continued. The country rock is greenstone and dacite porphyry permeated by a multitude of small veins and veinlets of quartz running in all directions. Both rocks are well exposed in the bluff of Howard Creek above the cabin. Thus the rocks are highly silicified and at the same time both veins and country rock are richly impregnated with pyrite. The mineralization is such as to render it difficult to trace the boundary between the dacite porphyry and greenstone. In fact, the presence of the dacite porphyry, though suspected in the field, was demonstrated only by the microscopic examination of the sections after returning to the office. The dacite porphyries cut the

greenstones and the serpentines, and in all probability come from the source of the mineralizing agents of the region.

"The mineralized belt is several hundred feet wide, and if the pyrite contains considerable gold, it might be well worth concentrating for shipment or treatment on the ground. A sample, assayed for the Survey by E. E. Burlingame & Co., of Denver, Colo, yielded 0.023 ounce of gold to the ton.

"Near the southeast side of the impregnated belt a 6-foot vein of gray quartz runs N. 35° E. The quartz contains a small amount of pyrite. It is said to have assayed $119 a ton in platinum and 15 percent in tin, but there is no visible evidence in the hand specimen of the presence of such rich ore."

Reference: Diller, 14:54 (quoted)

RENO GROUP (gold) Galice area

Also known as Elwilda or Kramer Group

Owners: Jack T. Brady, W. C. Smith, Harold Speker, and R. E. Kelley of Grants Pass, Oregon.

Location: This property is about a mile southwest of the Benton Mine in secs. 27, 28, 33, and 34, T. 33 S., R. 8 W. The road has been extended from the Benton Mine to this property.

The common corner for the above mentioned sections is about the middle of this group of claims which consists of 7 unpatented mining claims of about 140 acres.

History: "The Elwilda or Kramer group is about 8 miles by trail from the Almeda Mine and consists of 11 claims extending from Rogue River up Whiskey Creek. The mill was formerly a rotary 4-stamp Parker mill; it is now an arrastre run by a Pelton wheel. The group is opened chiefly at two places called the north and south 'works'. In both places the country rock is greenstone; at the latter it is cut by a dike of quartz monzonite aplite. At the south 'works' 2 short adits disclose a quartz vein about 3 feet thick, which is much crushed and faulted. One fault strikes N. 67° E. and dips about 55° S.E. The chief vein strikes nearly east and dips about 60° northward. At the north 'works' 2 adits open one or more veins, which vary considerably in strike and dip. The richest portion has a strike of N. 4°E. and a dip varying from 45°W. above the level to 78°W. below in a 40-foot winze. Near the breast a quartz vein strikes N. 20°E. and dips 70° N.W. The gold in the ore from this adit is reported to amount to $5 a ton."

A crosscut tunnel has been run 130 feet and cuts the vein about 30 feet east and at the bottom of the 40 foot winze mentioned by Parks & Swartley. From this crosscut tunnel the vein has been drifted on 85 feet to the east and 50 feet to the west. This whole hillside is a honeycomb of workings and probably is best described as having three levels approximately 25 feet apart vertically, two raises and one winze, a total of approximately 500 feet of workings.

Equipment: One Straub Mill 36 by 48 inches, approximately 15 tons daily capacity; one 6 h.p. Fairbanks-Morse Gas Engine; one 6 by 8 Risdon Iron work crusher; 2 ore cars; mill building, blacksmith shop; and two bunk houses.

There is plenty of timber and water on the property for mining purposes. Mountainous topography. The property has been idle since 1936. Elevation 1,000 feet.

Informant: R. E. Kelley, October, 1937.

Reference: Parks & Swartley, p. 90, 1916 (quoted)
Diller, 14:52

RICHMOND GROUP (gold) Galice Area

Location: sec. 23, T. 34 S., R. 8 W.

History: "B. F. Rowland, Portland, Pres.; Edward Friday, Galice, Sec.-Treas. Capital stock, $1,000,000; par value 10 cents; $725,618 subscribed and paid up, $25,618.50 issued. (1916 report).

"The property of this company is known as the Richmond or Friday group and is located 3 miles northwest of Galice. Concerning it Diller says:

"'The Richmond group, north of the Oriole, embraces 12 claims in the head of Rocky Gulch and laps over into the head of Deer Lick, a branch of Bailey Creek. Seven tunnels, aggregating 600 feet or more, have been run in various directions into the sheared greenstone, exposing some quartz near the summit on both sides of the divide. A ball mill and an old arrastre, both in ruins, were once in operation. The Oriole fault and lode enter the Richmond group, but farther north, near divide, are not so well marked, though quartz veins are more numerous, some striking west of north toward the Golden Wedge, whereas others run east of north toward the Arago. The only work in progress in July, 1911, was on the Deer Lick slope, where an 18-inch rusty quartz vein appears, which is said to assay $15 to $20 a ton.'"

Reference: Parks & Swartley, 16:193 (quoted)
Diller 14:50

ROBERTSON & HULL PLACER Galice area
see Hell Gate Placer

ROBERTSON MINE (gold) (Bunker Hill Mine) Galice area

Owner & Operator: Bill Robertson, Galice, Oregon.

Location: sec. 2, T. 35 S., R. 9 W., elevation 4500 feet.

Area: Eight full sized lode claims held by location; 165 acres.

History: "The Bunker Hill lode was located in 1914 by John Robertson and sons, of Galice, and its history for the next decade, like that of many other prospects, is one of hard work and expenses instead of dividends. In 1925, however, rich ore was struck, and in the next three years, by means of a small 5-stamp mill, a large amount of gold was produced. In 1928 the mine was purchased by the Robertson Mines Co., which, under the direction of K. Dean Butler, did a great deal of underground development and increased the capacity of the mill plant to 30 tons daily by adding five additional stamps and two concentrating tables. In September, 1930, about 30 men were employed in underground development, surface improvements, and the operation of the mill. A main haulage crosscut 520 feet long was completed, and over 1,200 feet of drifts and several raises were driven from it. A winze was sunk on the No. 1 vein to a depth of 91 feet, and most of the mining was being done below the main haulage level and above the 91 foot level. The ore is conveyed from the mine to the mill, a distance of 1,500 feet, by an aerial tram. The mine is well equipped, and good quarters are available for the accommodation of 30 men. The production reported since 1924 is, in round figures, $138,000. This amount was the value of more than 6,900 ounces of gold and 546 ounces of silver obtained from 1,376 tons of ore. The gold content of the ore ranged from 19.50 ounces to the ton in 1925 to 1.97 ounces to the ton in 1929. It averaged 2.04 ounces to the ton in 1930. In 1929 and 1930 the output of the ore was greatly increased because of added milling facilities.

"Geology: The workings of the Robertson mine partly explore a group of small quartz veins formed along fractures in greenstone near a tongue of quartz diorite. Four veins have been prospected underground and on the surface, but thus far nearly all of the production has come from the No. 1 vein. This vein, like the other principal veins, strikes northwest and dips at steep angles to the southwest. One fairly large quartz vein encountered in the No. 4 drift, however, strikes north and dips east at a steep angle. All the quartz veins are lens-shaped and have slickensided and, in most places, horizontally striated surfaces, and the surface are usually in contact with 1 inch to several inches of dark-grayish gouge.

"The quartz in the No. 1 vein is continuous horizontally for practically 140 feet, but in places it pinches to almost nothing. The average width is estimated at about 1 foot, although, where observed, the width ranged from less than 2 inches to almost 2 feet within short distances. The vein splits above the haulage level at about 100 feet below the surface and at the surface the two branches are about 35 feet apart. Practically the entire length of the vein, including both branches, contained commercial ore, and in September, 1930, except for several blocks and pillars, the vein was stoped for a vertical distance of 260 feet. The quartz in the vein everywhere contains some gold, but it is not at all evenly distributed, and according to G. T. Vandel, mine foreman, some gold occurs in the mineralized wall rocks next to the veins. In both oxide and sulphide zones free gold is in some places plainly visible scattered through the quartz, though in other places it can be detected only by panning. Mr. Vandel states that the ore in the No. 1 vein, outside of the rich spots, generally runs from $25 to $35 a ton, of which $10 is recovered by plate amalgamation, and most of the remainder is saved in a sulphide concentrate on tables. The Nos. 2, 3, and 4 veins have all been explored on the main working level, but because the quartz in all of them has a low gold content they have not been stoped.

"The greenstone inclosing the ore is a very dense greenish-gray to almost black rock which the microscope shows to have a basaltic texture typical of the fine-grained greenstones of the region. Underground, except in close proximity to the quartz veins, it is not greatly different in composition from the normal fine-grained greenstone. Near the veins, however, the greenstone is altered to a light-green greasy-appearing rock consisting largely of fine-grained epidote, chlorite, quartz, and a white, nearly opaque material which under high magnification is seen to be composed largely of epidote and quartz. Where the alteration is most intense--for example, along the walls in contact with the ore--and in rock fragments included in the vein quartz, chlorite is less abundant and the fine-grained alteration product makes up the bulk of the rock. Part of the quartz, calcite, and epidote, as well as the ore minerals, have been introduced. The principal ore minerals are native gold, petzite (a gold-silver telluride), and pyrite, and chemical tests show the presence of some bismuth in the sulphide concentrate. Microchemical tests on the petzite indicate a high percentage of gold and an almost total absence of silver, but the mineral is isotropic, a fact which indicates isometric crystal form; hence it is petzite rather than calaverite or sylvanite. There are at least two generations of quartz. Coarse-grained quartz was introduced before the ore minerals, whereas fractures filled with fine grained quartz, epidote, and calcite clearly cut the pyrite. The pyrite, gold, and petzite were introduced along shattered portions of the coarse-grained quartz and are therefore younger. The petzite is locally replaced by gold.

"Origin of the Ore: The evidence available suggests that the ore at the Robertson mine was formed at moderately shallow depths and under conditions of moderate temperature. The mineral assemblage does not offer conclusive evidence to support this inference, but the presence of gold telluride and the occurrence of

open vugs are not characteristic of the deep-zone type of mineralization. On the other hand, neither do the veins exhibit an abundance of features characteristic of very shallow mineralization.

"The ore bodies appear to be related genetically to the intrusive quartz diorite. The quartz diorite is not far from the veins and is the most probable source of the ore-bearing solutions. Study of thin sections indicates that during mineralization considerable lime, ferric iron, alumina, and quartz were added to the rock next to the veins, and apparently soda, potash, and magnesia were removed. More or less granular quartz has been introduced into the greenstone inclusions and into the wall rocks immediately adjacent to the veins. The manner in which the quartz has penetrated along fractures of microscopic size shows clearly that the quartz must have been introduced in a very tenuous state and not as a viscous substance.

"The ore has been deposited along numerous small fractures and along a few larger and more persistent ones. However, the longest horizontally continuous vein thus far exposed is only 140 feet in length, although the same vein has been followed downward for 260 feet. The parallel alignment of the principal veins, the manner in which they terminate, and the distribution of the numerous fractures near the veins suggest that they have been formed by east-west shearing stresses. Such stresses are believed to have formed the openings along which the quartz was deposited and later to have produced the slickensiding and gouge along the walls of the veins.

"Economic Considerations: The lenslike form of the veins is believed to be largely an original feature and not entirely the result of later faulting. If the evidence is interpreted correctly, long-continuous ore shoots can not be expected at the Robertson Mine, but there is a good probability that undiscovered quartz veins exist parallel to the known veins. A favorable area for prospecting appears to be between No. 1 and No. 4 veins, southeast of the stoped area of the No. 1 vein. Prospecting would have to determine whether undiscovered veins would contain sufficient gold to be commercially valuable, because thus far only one out of four of the known veins has proved to be of commercial grade."

Development: One shaft 240 feet deep; one tunnel 150 feet from surface, 500 feet long. From three to six men are employed.

Equipment: One compressor; 10 stamp mill operated by a gas-engine.

Recent Activity: From the Grants Pass Courier, March 15, 1940: "On March 15, 1940, it was reported that V. E. Hughes and J. B. Fanchini were moving their cyaniding plant from the Kubli Mine, Gold Hill district, to the Robertson Mine, in order to cyanide tailings".

The most recent activity is reported by the Grants Pass Courier, April 1940 as follows:

"The dream of every miner, a sudden rich strike, came true at the old Bunker Hill quartz mine near Galice during the last fortnight when a ledge was uncovered that produced 640 ounces of gold, valued at about $20,480, in four days of mining.

"The owners, William Robertson and Virgil E. Hull, and their crew came to Grants Pass Saturday to "cash in", bringing three hefty bars of the yellow metal, the result of five and one-half days of milling. The strike was made Monday, March 18.

"The Bunker Hill mine had lain idle for years until Robertson and Hull reopened it in October. It was worked for a few weeks and then dropped until January, when further digging led to the strike. The ledge has been modestly named "Ham'n Eggs".

"The Bunker Hill has had an up-and-down fortune, at various times yielding quantities of ore, and then its ledges petering out until operations were suspended."

Reference: Shenon, pp. 2-45, 1933 (quoted)

Informant: John Robertson and R. M. Alden, 3/2/40.

Report by: Ray C. Treasher

ROCKY GULCH MINE (placer) Galice area

Also known as Lewis Placer, Jewell & Lewis Placer, Lewis & Lowell Placer, Lowell & Lewis Placer, Rock Gulch Placer.

Owner: H. L. Lewis, Galice, Oregon.

Location: secs. 25 and 36, T. 34 S., R. 8 W. ($\frac{1}{4}$ corner between 25 and 36 is 193 feet west of highway)

Area: 160 acres of deeded land of which 35 acres in sec. 25 and 25 acres in sec. 36 between the highway and River are leased to Oregon Placers, Inc., (July, 1940).

History: According to reports the placer was worked first in 1856. Chinamen placered rich ground along the river's edge and on bars. Most of the 160 acres above the highway and 5 or 6 acres below the highway have been hydraulicked. Production, in excess of $150,000, is reported. In recent years, sniping along the river margin has yielded as much as $8 per man per day in good years. Oregon Placers, Inc., moved onto ground below the highway on July 23, 1940, from the Illinois River below the mouth of Josephine Creek.

Parks and Swartley report as follows:

"The Jewell & Lewis placer, now known as the Rock Gulch placer, is owned by H. L. Lewis, of Galice, and associates. It is located on Rogue River, about 1 mile below the mouth of Rocky Gulch. It was worked by hydraulic methods with water from Rocky Gulch, but was inactive in 1913. The gravel forms a bar in the river and also rises to a bench about 15 feet above water level. The gravel has been raised by a steam shovel and then washed by a giant through a revolving screen to remove the coarse material, after which the fine sand passes into the sluice boxes."

According to the Mining Journal, August 30, 1940:

"Equipment of the Oregon Placers, Inc., has been moved from the Illinois River placers to the Rock Gulch placers, one mile north of Galice, Oregon, where a one-yard shovel and a dragline washing plant will be used. R. Y. Hanlon, Selma, Oregon, is dredgemaster. The company is headed by Ernest Stent, Crocker First National Bank Building, San Francisco, California."

Informant: H. L. Lewis & Ray C. Treasher, July 23, 1940.

Report by: Ray C. Treasher, July 29, 1940.

Reference: Parks & Swartley, pp. 133-134, 1916.(quoted)
Diller, 14:113
Mining Journal, August 30, 1940.

ROCKY GULCH MINING CO. Galice area

see Oriole Mine

SCANDINAVIAN-AMERICAN COMPANY (placer) Galice area

Operated about 2 miles below Almeda on Rogue River; Company defunct.

Parks and Swartley (16:199) report:

"This company installed a dredge to work gravels about 2 miles below the Almeda Mine on Rogue River, but it was evidently not successful, as it has not been in operation for several years. It is reported that this company is defunct."

SEVEN-THIRTY MINE Galice area

see Juanita Mine

SILVER CREEK MINE Galice area

see Silver Creek Mines Company

SILVER CREEK MINES COMPANY (gold, copper) Galice area

"Eleven claims are owned by the Silver Creek Mines Co., Inc., in sec. 24, T. 35 S., R. 9 W., near the headwaters of one of the tributaries of Silver Creek, about three-quarters of a mile south of the mapped area. The mine is reached by a trail from Soldier Camp, on the Robertson Mine road. The discovery was made in 1926 by G. L. Howland, of Grants Pass. C. L. Schumacher, of Grants Pass, is now president of the company. About 700 feet of underground openings have been driven, a good camp constructed, and a small Ellis ball mill and amalgamator installed.

"The principal workings are on the north side of the creek, along a mineralized fault zone in metagabbro, which strikes N. 55° E. and dips 60° N. Soft gouge along the fault is usually from 2 to 3 inches thick. The vein has been explored for about 250 feet along its strike, and portions of it have been mined from some small stopes.

"A small quartz vein 1 to 3 inches wide, striking N. 25° E. and dipping 70° S., has been intersected in a tunnel that runs for about 90 feet into the hill on the south side of the creek. The wall rock here also is dark-colored metagabbro. The quartz contains a little pyrite and chalcopyrite and is said to assay $25 a ton in gold. Two other tunnels, with short crosscuts, and some open cuts have been excavated on the south side of the creek, but no ore is exposed in them. The gravel along the creek bottom has been mined by hand sluicing and is said to have produced considerable gold. It seems likely that the gold was derived from small veins such as those described."

Reference: Shenon, 33c:48 (quoted)

SORDY CLAIM (gold) Galice area

Location: sec. 26, T. 34 S., R. 8 W. (List of Mines)

"Harry Sordy's claim is about half a mile north of the Oriole, at an elevation of 3,000 feet, as measured by barometer. It is N. 31° W. of Galice at least 2 miles. The vein is opened by an adit and several shorter workings. The former is about 150 feet long, and the vein, in small lenses, strikes N. 40° E. and dips 55° northwest. The country rocks are serpentine and greenstone. This claim was formerly owned by John Carlson."

Reference: Parks & Swartley, 16:209 (quoted)

SORDY PLACER Galice area

Owner: Harry Sordy, Galice, Oregon

Location: sec. 36, T. 34 S., R. 8 W., elevation 680 feet. The Galice Post office is on this property.

Area: 73 98/100 acres, patented.

History: Not in operation. The property was drilled as dredge ground in 1941.

Geology: Ancient channel.

Informant: Harry Sordy

Report by: R. M. Alden, March 12, 1940.

SPOKANE GROUP (gold) Galice area

Location: sec. 27, T. 34 S., R. 8 W.

History: Parks & Swartley reported as follows:

"The Spokane group is near the head of Rich gulch, at an elevation of about 2,200 feet, as measured by barometer. An adit extends N. 10° W. about 190 feet in a serpentinous rock, containing irregular kidneys and stringers of pyritiferous quartz, associated with a fault marked by soft gouge. The footwall of the lode is a garnetiferous mica schist. The group is owned by Robertson and Sutherland."

Reference: Parks & Swartley, 16:210 (quoted)
Diller, 14:57

SPRADLING PLACER Galice area

Owner: F. G. Peck, Grants Pass, Oregon, representing Los Angeles group.

Location: Galice Creek.

History: The placer property formerly belonged to W. P. Spradling and H. P. Barclay who operated it in a small way for about 4 years. Prior to that, for the last 20 years it was worked in a small way by various owners.

Development: 1600 feet of new flume and 1600 feet of pipe line together with a flood light have been installed. The dam and buildings have been repaired and about a mile and a half of ditch has been cleaned.

Informant: Grants Pass Courier, January 27, 1937.

STANDARD GROUP (gold) Galice area

Owner: P. B. Wickham

Location: sec. 24, T. 34 S., R. 8 W.

Includes: El Rio Oro, Goss, Holy Terror, Magnolia, Mattison.

Highway construction destroyed the pipe line which was later repaired; property was expected to resume operation.

Informant: J. R. Harvey 3/12/40.

STRENUOUS TEDDY CLAIM (gold) Galice area

"The Strenuous Teddy claim is situated about 3½ miles southwest of Galice, on the West Fork of Galice Creek at an elevation of about 1,620 feet. Two belts of vertically banded siliceous rocks, probably quartzites, running N. 15° W., form prominent bluffs. Each belt is about 150 feet thick and the two belts are separated by 125 feet of intrusive greenstone similar to that which bounds the quartzite on both sides. Tunnels have been run into both belts of quartzite, and the sheared rock has been found impregnated by pyrite - richly for 2 feet and sparsely for 5 feet. Part of the dark rock so rich in pyrite appears indistinctly micaceous. To test the auriferous character of the pyrite a specimen of this rock was assayed for the Geological Survey by E. E. Burlingame & Co., of Denver, Colorado, and yielded a "trace" in gold, but no silver. Farther up the slope are quartz veins containing cavities lined with quartz crystals and free gold."

Reference: Diller, 14:59 (quoted)

SUGAR PINE MINE (gold) Galice area

Owner: Western Metal Mines, Walter Kraft, President, 1518 N. Dearborn St., Chicago, Illinois. Julius J. Seidel, Sec.-Treas. Capitalization, $1,000,000.

Location: sec. 3 and 4, T. 35 S., R. 8 W.

Area: 6 unpatented claims.

History: Parks & Swartley reported as follows:

"The Sugar Pine mine was one of the earliest quartz mines discovered in the Galice district. It is said to have been opened by Cassidy and Draper in 1860 and worked by Green brothers from about 1875, when it was sold to the Sugar Pine Mining and Milling Company. It is now owned by Mrs. Mollie Belding, of Grants Pass.

"It is on the north fork of Galice creek, about 2½ miles southwest of Galice. It is opened by nearly 3,000 feet of underground workings. At the lower adit at an elevation of about 1,700 feet the vein seems to be a narrow dike intrusive in amphibole schist. This entry has a length of about 1,100 feet, of which about half is following one or more veins. The main lode is 1 to 5 feet in width and contains many stringers and lenses of quartz; it strikes about north and dips 65 to 70° W. The workings are shown as platted from a rapid Brunton compass survey in the illustration. In one place on the upper adit level, 150 feet above the lower, the lode is widened to about 5 feet and crossed diagonally by quartz veins. The ore consists of quartz, often adhering solidly to greenstone, and carrying a little pyrite, chalcopyrite and galena. The ore from a rich shoot mined out by the Green brothers is said to have yielded more than $25,000 when treated in an arrastre. A 10-stamp mill, erected in 1908, was run a few months and later moved to the Oriole mine."

Vein 6 to 36 inches of good grade in the shoots.

Reference: Parks & Swartley, 16:215 (quoted)
Diller, 14:58-59

SUGAR PINE MINING & MILLING COMPANY Galice area

see Sugar Pine Mine

TENNESSEE BAR PLACER Galice area

see Little Meadows Placer Mining Co.

TEXAS OREGON POWER AND PLACER MINING CO. Galice area

Location: sec. 7, T. 35 S., R. 7 W. (List of Mines)

History: Parks & Swartley reported as follows:

"Office: Merlin, Oregon. John M. Penn, Pres.; John McM. Byers, Sec., both of Merlin. Capital stock, $130,000; par value $1.00; $129,900 subscribed, issued and paid up. (1915 report).

"This company has 204.3 acres of placer ground 10 miles northwest of Merlin at the mouth of Taylor creek, near Galice."

Reference: Parks & Swartley, 16:221 (quoted)

THREE L's PLACER Galice area

also known as Yokum placer; Four L's placer.

Owner: L. L. Yokum; J. L. Yokum.

Location: NE¼ SE¼ sec. 3, T. 34 S., R. 7 W.

Area: Four claims, held by location dated 12 to 14 years ago.

History: The Bureau of Mines Minerals Yearbook for 1939 calls this property the Three L's. Locally it is also known as the Yokum, or the Four L's placer.

Development: Some two acres have been mined and 75,000 yards of material moved.

Equipment: One no. 2 giant; 1300 feet of 11 inch pipe and 50 feet of 14 inch pipe; one ditch is a mile in length; the other is 1¼ miles in length.

Geology: Bedrock is slate (Galice formation?). Boulders average 1 foot in size and the number is relatively small. No clay; the fine material is silt and washes freely through the sluices. Gold is medium coarse, wheat-grain in size, and nuggets up to $10 have been recovered. It is estimated that the property can operate four months each year under present water conditions.

U. S. Geological Survey Mineral Yearbook, 1939, is quoted as follows:

"Hydraulicking at the 3 L's mine on Grave Creek resulted in the recovery of 71 ounces of gold from 11,000 cubic yards of gravel".

Informant: L. L. Yokum and Ray C. Treasher 4/4/40

Report by: Ray C. Treasher

THREE LODES MINING COMPANY (molybdenum) Galice area

Location: sec. 34, T. 34 S., R. 8 W. (List of Mines In Oregon)

History: Parks & Swartley reported as follows:

"Office: Medford, Oregon. C. E. Wickstrum, Rogue River, Oregon, Pres.; N. L. Townsend, Medford, Sec.; George Lindley, Medford, Treas. Capital stock, $350,000; par value 35 cents; all subscribed, issued and paid up. (1916 report).

"This company owns the Three Lodes group of 9 claims and has bonded the Golden Pheasant group of 9 claims. These claims are located about 2 miles west

of Galice on a contact between greenstone and serpentine.

"This property has been exploited at various times during the past several years as a tin, tungsten, and platinum property. Lately it is supposed to be a molybdenum property."

Reference: Parks & Swartley 16:222 (quoted)
Diller, 14:57

TIBBETS SPRINGS GROUP (gold) Galice area

Owner: Edward N. Santee. The lessees can be reached by writing to Herbert S. Cline, P. O. Box 121, Glendale, Oregon.

Location: sec. 1, T. 33 S., R. 8 W., ½ mile north of Mount Reuben Lookout.

Area: 4 mining claims, 80 acres, called Reuben, Reuben Extension, Superior and Phonolite.

History: Cline, Hotchison and Henderson leased and are operating the property. Said to have produced gold valued at a few hundred dollars, but there is no production record.

Development: Two shafts, 15 feet and 24 feet respectively about 6 feet apart, together with a shallow open cut.

General: No equipment; mountainous topography; andesite porphyry country rock; aneroid elevation about 4,200 feet; plenty of mining timber; no water except a small amount for domestic use; about five miles to closest water for mill; snow maximum about 10 feet during winter.

Geology and Metallurgy: Resilicified quartz vein with gossan formed in a shear zone in porphyry. Vein minerals are pyrite, limonite, chalcopyrite, gold and silver. Strike is N. 25° W.; dip is 70° East. Vein varies greatly in width with a maximum of 3 feet. Two samples submitted by Mr. Cline give the following results: one with limonite and quartz, weight about 3 pounds, 0.32 ounces of gold and 0.24 ounces of silver; the other contained limonite and clay, weighing about 3 pounds, gold 0.38 ounce and silver 1.38 ounces.

The ore is medium hard and is estimated to be 50 percent free milling. At the present time the ore is hauled about three miles to a small homemade mill, which has a capacity of about one ton a day.

This property is not developed to a point where any estimate of tonnage can be made; however, the showing in two shafts is good. It is relatively inaccessible during winter months, due to steep mountain grades and deep snow.

Informant: J. E. Morrison, 37.

TREASURY GROUP (gold, copper) Galice area

Location: sec. 22, T. 34 S., R. 8 W. (List of Mines)

History: Parks & Swartley reported as follows:

"The Treasury group, about 4½ miles northwest of Galice, is noteworthy because its ore contains not only quartz and pyrite, but also chalcopyrite, malachite, and sphalerite."

Reference: Parks & Swartley, 16:223 (quoted)
Diller, 14:54

TYEE BAR PLACER Galice area

Location: sec. 33, T. 33 S., R. 8 W. (List of Mines)

History: Parks & Swartley reported as follows:

"The Tyee Bar placer mine is on the south bank of Rogue River about a mile below Whiskey Creek. It was worked years ago and reopened in 1911. The bedrock is argillite."

Reference: Parks & Swartley, 16:224 (quoted)
Diller, 14:114

VICTOR MINE (gold) Galice area

Location: sec. 32, T. 34 S., R. 8 W.

History: "The Victor mine is about 7 miles from Galice on the West Fork of Galice Creek. When in the region in 1911 I was unable to visit it, but Mr. C. L. Barlow, of Galice, informs me that the owners struck a rich vein and took out about $2,500 in a month with a hand mortar. In 1912, 5 men were still at work and were averaging more than $14 to the man a day."

Reference: Diller, 14:59 (quoted); also in
Parks & Swartley, 16:228

VINDICATOR PLACER MINE (gold) Galice area

Owner: N. B. Barton, Pittock Block, Portland, Oregon. Leased to L. D. and V. E. Goff of Leland, Oregon.

Location: On Grave Creek, six miles west of Leland in sec. 34, T. 33 S., R. 7 W.

Area: 21½ acres of patented ground; not all mining ground.

History: This was one of the first placer mines discovered on Grave Creek. It has been worked during periods of plentiful water during the past few years. Virgil E. Goff leased it and worked it during 1939-1940 with one giant.

Geology: An old high channel about two hundred and fifty feet above Grave Creek. Bed rock argillite; no big boulders or clay; 20 to 50 feet of gravel; values are low near surface; no overburden; 7 acres have been mined.

Equipment: One No. 2 giant and 900 feet of 15 and 16 inch pipe.

Water Right: 2 c.f.s. out of Middle Creek. Ditch is about one mile long. During rainy part of the season water is used from Fall Creek. 600 foot ditch delivers the water to the pit.

Informant: J. E. Morrison, 38.

WESTERN METAL MINES CO. Galice area

see Black Jack
Brass Ledge Mine
Copper Eagle
Golden Cycle
Independence Claim
Juanita
Seven Thirty
Sugar Pine
Victor Mine

YANKEE CHIEF GROUP (placer) Galice area

Owner: Harold Locke, c/o Wheeler Store, Galice, Oregon.

Location: center sec. 16, T. 35 S., R. 8 W.

Area: One claim, 1500 ft. x 600 ft., and one 750 ft. x 600 ft., paralleling creek bed of south fork Galice Creek. Location notice dated May 7th, 1935.

History: The ground has been worked at various intervals throughout the years. The full sized claim was known as the Canyon. It had been staked by N. J. Thomas and later abandoned. It was re-staked by Locke on May 6, 1935. A quit-claim deed was recorded to Locke April 25, 1938. The fractional claim, the Bogus, was located May 7, 1935. Since then, they are known as the Yankee Chief group.

Equipment: Three hand winches with three gear ratios apiece, manufactured by Locke, and equipped with $\frac{1}{4}$ inch and 3/8 inch steel cable. Two derricks. 200 ft. of 6 inch pipe and a small length of hose and a nozzle. The sheet metal cabin is 12 ft. x 16 ft.

Geology: Mineable ground is about 100 ft. wide- a gulch operation. It is 6 ft. to bedrock in the main channel and average depth of gravel and overburden is 15 ft. Gold is concentrated on bedrock. There are a few large boulders up to 12 ft. in diameter; average size is two ft. There is some clay, mostly from the soil overburden. A large quantity of black sand is reported. Gold is coarse; largest nugget was valued at $18. Many nuggets are rough and have quartz sticking to them.

It is reported that the "Big Yank" (Almeda) and "Chieftan" lodes come together near here.

Rock is exposed in place along the stream channel; it appears to be slate, but actually is sheared meta-sediment or meta-volcanic. A large amount of quartz has been injected into the rock, and is visible as small pods and stringers so that the rock looks as if it were striped. Just downstream from the Bogus claim, there is a mass of vein quartz about 6 ft. wide that seems to be in place.

The trend of this "vein", as well as the schistocity is N. 20° E.

Quantities of quartz float appear on the hillslopes above the placer, and probably represents quartz that has weathered out of the shear zone that is called the "Big Yank" ledge.

Mining Facilities: Water right for 2 second-feet of water from the South Fork of Galice Creek, application No. 18831, dated July 8, 1940. Water will be brought 1500 ft. and will have an average effective head of 50 ft. There is plenty of timber. Water permits mining for about 7 months of the year.

Informant: Harold Locke, and Ray C. Treasher, Oct. 10th, 1940.

Report by: Ray C. Treasher, 10/11/40

YOKUM PLACER Galice area

see Three L's Placer

GRANTS PASS AREA (2)

The Grants Pass area is in east-central Josephine County (see map opposite p. 17) and occupies all the drainage of the Rogue River above the mouth of and including Jump-Off-Joe Creek. Its area is about 245 square miles. It includes the old mining districts known as Jump-Off-Joe, Winona, Merlin, Louse Creek, Rogue River, Dry Diggings, Pickett Creek, and Grants Pass.

Geography

The area is mountainous except for the wide valley of the Rogue River. Elevations range from 800 feet to 4000 feet. Rogue River valley has been eroded in granitoid rocks and is limited at both the east and west by harder rocks into which the river has cut narrow gorges. Jump-Off-Joe, Louse, and Pickett creeks are the principal tributaries of the Rogue River in the area.

Precipitation averages about 25 inches annually, with very little snow except on the higher mountains. Approximate maximum-minimum temperatures range from 0° to 90°. The climate is generally equable and pleasant.

Railroad transportation is by the Siskiyou branch of the Southern Pacific which enters the district from the north to the city of Grants Pass and thence runs east up the Rogue River. U.S. Highway 99 nearly parallels the railway, and recent highway relocations within the Grants Pass mining district have been of assistance in speeding up traffic. The Redwoods Highway, U.S. 199, from Crescent City, California, connects with U.S. 99 at Grants Pass. The C. & O. C. Railroad at one time had track laid south of Grants Pass for 25 miles to Waters Creek. Part of the track from Wilderville to Waters Creek has been removed. The Pacific Portland Cement Company discontinued use of the trackage to Wilderville and the spur to Marble Mountain quarry in October 1950, when the railroad bridge over the Applegate was washed out. The bridge has since been rebuilt but the company found it more economical to continue shipment of limestone by truck. Secondary roads serve most of the area.

Geology

The rocks of the Grants Pass mining area consist of the Applegate group, Galice sediments, Jurassic metavolcanics, serpentine, and dioritic intrusives. The Jurassic metavolcanics are on the west, with Galice slates between them and the dioritic intrusive. Rocks of the Applegate group are on the east. Serpentine, in north-northeast-trending zones, intruded the Applegate group and Jurassic metavolcanics. The only post-Cretaceous rocks are the Pleistocene (?) and Recent alluvial gravels. For a more complete description of these formations and their relationships, see the section on general geology of Josephine County (p. 11).

Mining

Mining did not become important in the Grants Pass mining area until after the more productive placers of other areas became less active. Placer miners spread to Pickett and Jump-Off-Joe creeks, and some of the placer mines worked in those early days are still producing. Lode mining activity began with the discovery of quartz vein deposits. An 8-stamp mill at the Jewett mine erected in 1863 was not successful and this venture seems to have delayed lode mining development for at least a decade. The Lucky Queen mine had a 10-stamp mill in 1886; the Fidelity mine had a small production in 1889. The Hammersley (Daisy) mine on Bummer Gulch, the Baby mine on Walker Mountain, and the Granite Hill mine on Granite Hill have been active since the 1890's. The Jewett mine was an important producer in 1898.

The Flanagan placer on the Rogue River near Shan Creek produced $18,500 in 1891. In 1909 the Swastika hydraulic placer produced about $10,000. In 1911 three of the better

placer mines on Jump-Off-Joe Creek were the Swastika, the Sexton, and the Cook and Howland. The Dry Diggings at the east city limits of Grants Pass was one of the productive placer mines during this period.

Three placer operations were active in the Grants Pass district during the 1950-1951 season. They were Jump-Off-Joe, Sexton, and Sunset placers. The Sunset operated one giant and each of the others operated two giants.

Favorable areas for prospecting

Most of the Grants Pass mining area lies in the heart of the granitoid intrusion, and such areas are considered to be unfavorable for the development of sizeable ore bodies. The northeast portion from Granite Hill northward probably has the better possibilities; in 1940 several prospects were developed in this part of the area. The Big Four placer is situated on a "high channel" and it is expected that this placer, with its extensions, will be productive for some time.

Prospecting of serpentine masses in the area for chromite is warranted. Contact aureoles surrounding the diorite intrusives are favorable localities to find scheelite.

Mining Properties

BABY MINE — Grants Pass area

see Lambtongue Mine

BIG FOUR PLACER — Grants Pass area

Owner: J. E. Bartlett, Route 2, Box 488, Grants Pass, Oregon.

Location: W½ sec. 26, T. 35 S., R. 7 W., one half mile from the mouth of Pickett Creek, 14 miles from Grants Pass, on a terrace at an elevation about 300 feet above the Rogue River.

Area: 137 acres of patented land.

History: The property has been mined off and on for 40 years.

Development: Mr. Bartlett estimates that about 20 acres have been placered and that there are some 60 acres of placer ground left to mine with 4 million yards of mineable gravel left on the property. Mining season is from November 15 to June 1, of a normal mining year. There are 3 open pits showing a 300-foot face with 45 to 60 feet of back.

Equipment: Two No.1 giants; 1600 feet of 8- to 16-inch pipe. The ditch is about 8 miles long. Flume is 4000 feet long, all new within the last three years. Gas donkey with a 100-h.p. Mack engine; pair of Willamette 30-inch drums and 1000 feet of 5/8-inch cable; two Delco lighting plants, 850 watt, and two 500-watt floodlights; 2000 feet of No.8 insulated, waterproofed wire; two tons of railroad iron riffles; sluice boxes are 2 by 100 feet; blacksmith shop; 300 to 400 feet of 2-inch fire hose; two 10-inch gate valves; bunk house 12 by 24 feet; modern log-house living quarters, 28 by 32 feet.

Mining facilities: Water right calls for 38 second feet of water from Pickett Creek and tributaries; delivered under a 276-foot head.

Geology: "The gravel ranges from 30 to 70 feet in thickness, and is in part clearly stratified. The 14 feet of red earthy sand and clay overburden is said to contain fine gold that can be saved, but the larger pieces are in the bottom gravel. The lower 12 feet of gravel contains well-rounded cobblestones, the largest being six inches in diameter. At the bottom a few boulders, generally slate, rest on bedrock, and from 2 to 4 feet of the bottom gravel is partly cemented. The rim rock

rises abruptly and slates are much crushed and faulted, forming a terrace on the northwest toward Pickett Creek. The old channel is 250 feet in width and 30 feet in depth below the slate-rim terrace, from which the gravel capping has been in part mined away. The water is supplied from Pickett Creek at a head of 276 feet, two giants being run for a large portion of the year. The mine has been operated, during the season when water is obtainable, for many years."

Some $2 pieces have been recovered from the red overburden as opposed to the statement that only fine gold occurs in the overburden. The gold is well worn. The bottom gravel is fairly soft so that a 3 inch nozzle cuts it readily. Bedrock is slate, probably Galice formation, soft enough to clean readily.

Reference: Parks & Swartley, p. 36, 1916 (quoted)
Diller, 14:111-112

Informants: Morrison 1938
J. E. Bartlett, 4/13/40

Report by: Ray C. Treasher

BRITTON MANGANESE Grants Pass area

"Based on information supplied by Mr. J. R. Harvey of Grants Pass, Oregon, this property is located at the forks of Shan Creek in sec. 7, T. 36 S., R. 7 W. Harvey reports that considerable underground work was done but that the workings are caved at present. The deposit is considered as non-commercial.

"Pardee (21:223) reports as follows:

"'The claims of G. W. Britton and others are on Shan Creek 4 miles east of Rogue River and about 15 miles northwest of Grants Pass. They include several lenslike bodies of rhodonite and cherty-appearing quartz lying along bedding planes in steeply tilted slaty rocks of pre-Tertiary age. The largest body exposed is 18 feet long and 6 feet wide. Near the surface it is oxidized and contains a little ore.'

"In this general area is the George McAllister-Wax Campbell manganese property (sec. 5?) and farther northeast nearer Pickett Creek, J. E. Bartlett of Grants Pass, Oregon, reports outcrops of manganese oxides associated with rhodonite."

Reference: Libbey 42:27 (quoted)

BUCKEYE MINE (copper) Grants Pass area

Location: sec. 25, T. 36 S., R. 8 W.

History: Parks & Swartley reported as follows:

"The Buckeye Mine is owned by an Ohio company. It is about 5 miles northwest of Waters Creek station on Oregon and California Coast Railway, on the east fork of Slate Creek, at an elevation of about 2,650 feet, as measured by barometer. An adit extends N. 20° W. 65 paces without disclosing any ore or any distinct vein. At 50 paces crosscuts have been run both ways a few feet. A cyclone drill has been used. The ore on the dump contains pyrite, pyrrhotite, chalcopyrite, bornite, malachite and chrysocolla. The country rocks are serpentine, andesite, diorite, and shale grading toward argillite. The shale strikes east of north and dips about 45° S. E. Two adits higher up are said to

be 60 and 70 feet long, respectively. The ore is in the andesite near the contact."

Reference: Parks & Swartley, 16:45 (quoted)
Diller, 14:61

BYBEE PLACER — Grants Pass area

see Flanagan Placer

CENTENNIAL GROUP (gold, quicksilver) — Grants Pass area

Owner: Charles R. Archert, Grants Pass, Oregon.

Location: Center sec. 25, T. 35 S., R. 5 W., elev. 3300' - 2200'. Adjoins the Ida Consolidated on the north and west. About ¼ mile from Elk Mt. logging road.

Area: Three claims, located Sept. 1, 1939.

History: Area has been relocated, off and on, for 20 years. It was formerly known as Columbian Mine.

Development: One 200 ft. adit in solid greenstone; one 50 ft. adit driven many years ago to take out a pocket; several development cuts.

Geology: Country rock is granite and greenstone. All ledges but one are in granite. "Sexhour" ledge trends N. 40° W. No. 2 ledge trends N-S, as do No. 1 and No. 4. No. 4 carries some quicksilver.

Informant: Charles R. Archert, 4/2/40

Report by: Ray C. Treasher

COLUMBIAN MINE — Grants Pass area

see Centennial Group

CONTACT GROUP (gold, copper) — Grants Pass area

Owner: E. T. Carnegie, Rt. 2, Box 293, Grants Pass; Laura Farrington, Los Angeles, California.

Location: sec. 28, T. 35 S., R. 7 W., on the divide between Panther and Pickett Creeks. Spring Gulch cuts across the property.

Area: Nine claims 3 of which are owned by Carnegie and 6 are owned by Carnegie and Farrington.

Development: There are four tunnels and an 18 ft. shaft. Mention is made of another shaft. Length of No. 3 tunnel is given as 20 feet; lengths are not given for the others.

Geology: The vein apparently is between a greenstone footwall and a slate hanging wall. It has a N.E.-S.W. strike and a dip of 75° S.E. The ore is in a shear zone some 125 feet wide. The filling between walls is "chiefly a dark gray to nearly black slaty metamorphic rock, showing both hematite and manganese iron stain, with numerous veinlets and stringers of quartz from ¼ inch to several inches in thickness. The entire mass is filled with fine gray and bronze sulfides." There is a 60 ft. manganese stained zone about 25 feet from the footwall. The vein outcrops on the ridge to the south. There is indication of strong movement along the hanging wall.

The average of 10 samples indicate 0.17 oz. gold and 0.15 oz. silver.

Mining: There has been no work in the past ten years.

Informant: Report signed by G. F. Bodfish, E. M. not dated. (Received March 9, 1939)

COOK & HOWLAND PLACER — Grants Pass area

see Jump-Off-Joe Placer

COUNTY LINE MINE — Grants Pass area

see Mount Pitt Mine

CRAMER PROSPECT (gold) — Grants Pass area

Location: sec. 18, T. 35 S., R. 5 W.

History: Parks & Swartley (16:83) report as follows:

"The Cramer Prospect, 4 miles east of Merlin, is on Walker Mountain, in sec. 18, T. 35 S., R. 5 W., at an elevation of about 2350 feet above sea level. It is opened by an adit in greenstone, which extends N. 55°E., 60 paces to a shaft to the surface. There are other minor workings. The main fissure vein strikes N. 55°E., and dips 40°N.W. There is only a little vein material disclosed, and there has been no work done for several years."

Development: There is nothing to add to this 1916 report.

Reference: Parks & Swartley 16:83 (quoted).

Informant: Ray C. Treasher, 1940.

DEPRESSION BREAKER (placer) — Grants Pass area

Owners: Jim Rush, C. A. Snider, Glenn McKy, Grants Pass, Oregon.

Location: SE¼ sec. 29, T. 34 S., R. 5 W., on Horse Creek, two miles above Jump-Off-Joe Creek.

Area: One claim, located in 1935.

Development: Has worked for three winters. (1938 to 1940 inclusive)

Equipment: One No. 1 giant. There is a water right for 3 sec.-feet of water which is taken from Horse Creek - enough for 4-5 months operation.

Geology: About same bedrock as Swastika. There are some ton-size boulders. Gold is coarse; some of it is derived from pockets.

Informant: C. A. Snider & Jim Rush, 4/9/40

Report by: Ray C. Treasher

DICK MINE (gold) — Grants Pass area

Owner: Earl Knox, 304 West K. St., Grants Pass, Oregon.

Location: 8 miles north of Grants Pass in W½ NE¼ sec. 8, T. 35 S., R. 5 W.

Area: 80 acres of patented homestead.

History: "The Dick Mine is 8 miles east of Hugo, in the NE¼ sec. 8, T. 35 S., R. 5 W., on the northeast side of Walker Mountain, at an elevation of about 2400 feet as measured by barometer. It belongs to Fetch and Long. An adit has been driven about 200 feet in a westerly direction to quartzite. Gold ore taken out has been run down the hill in a flume to an arrastre."

Development: No work done since the 1916 report. Present owner purchased the property at sheriff's sale for the timber. He is not a miner and not likely to engage in mining.

Reference: Parks & Swartley, 16:86 (quoted)

Informant: J. E. Morrison (not visited)

DRY DIGGINGS (placer) Grants Pass area

Location: sec. 16, T. 36 S., R. 5 W. (List of Mines)

History: Parks & Swartley reported as follows:

"About 10 years ago the "Dry Diggings" a short distance above the county seat were the scene of considerable activity and a big dam across the river was constructed to aid in the work; after a few years of considerable output work ceased and very little has been done since that time. There are several other placer mines at various points along the river, but none of them has been a large producer. One difficulty in the way of developing important placer mines in this area has been the fact that in many deposits the rich gravel just above bedrock was buried too deeply by later sands and boulders."

Reference: Parks & Swartley, 16:88 (quoted)

EAGLE MINE (gold) Grants Pass area

Owner: Norman Harper, Grants Pass, Oregon

Location: SW¼ sec. 6, T. 35 S., R. 5 W.

History: Parks & Swartley (16:88) report as follows:

"The Eagle Mine is 6 miles northeast of Merlin on the east side of Walker Mountain in the SW¼ sec. 6, T. 35 S., R. 5 W., at an elevation of 2550 feet as measured by barometer. It is owned by Jim Rush and Herbert Corless of Grants Pass.

"The country rocks here include argillite and a sheared pyroxenite or augite diorite rich in dark minerals, as well as some talc schist and black material, probably carbonaceous. The ore is quartzose vein material with very little sulphide. A vein strikes southwest and dips about 40° S.E. The mine has been opened by shafts and adits which are now caved and inaccessible. From the size of dumps it is probable that several hundred feet of underground work was done, but the mine has been idle for several years."

There is a 200 ft. adit on the west side that was reopened in 1937. On the east side there is a 150 ft. adit with two drifts each 30 feet long. The ore is in a shear zone and is reported to assay $12 a ton. The mine has not been worked in the last 3 years.

Reference: Parks & Swartley 16:88 (quoted)

Informant: J. R. Rush, and R. C. Treasher, 3/28/40

EDWARD MINING COMPANY Grants Pass area

see Ida Consolidated

EMERSON PLACER Grants Pass area

see Flanagan Mine

EMPIRE MINE (quicksilver) Grants Pass area

Owner: Lester R., Lela, Uleda, and Loris Briggs, Route 2, Box 520, Grants Pass, Oregon.

Location: center sec. 3, T. 36 S., R. 7 W., elev. 1500 feet.

Area: Four claims, 80 acres, held by location.

Development: One adit 65 feet long; one 45 feet long; one shaft 35 feet deep; all are caved at present. Three men are working, reopening the lower adit. Some of the ore is stockpiled at the portal.

Equipment: Two ore bins, one 8 by 10 feet; the other 12 by 16 feet. Four hundred feet of mine rail. One-half ton ore car. Small tools.

Geology: Country is "porphyry schist", the vein is "porphyry". Cinnabar is disseminated through the rock. Width of the ore body is eight feet, and has been traced on the surface for 1500 feet, and in underground workings for 400 feet. According to the owners the ore is classed as 1 percent cinnabar ore.

Informant: Lester Briggs, 4/16/40
See also Grants Pass Courier 6/5/40; 11/8/40

Report by: Ray C. Treasher

FLANAGAN & EMERSON MINE (placer) Grants Pass area

see Flanagan Mine

FLANAGAN MINE (placer) Grants Pass area

Also known as: Bybee Mine; Flanagan & Emerson Mine; Emerson Mine.

Owner: Held principally by Lester Briggs, Rt. 2, Box 520 Grants Pass, Oregon; others include M. M. Houston, Portland; Walter G. Paul, Roseburg; William Roth, Coquille, Oregon.

Location: sec. 35, T. 35 S., R. 7 W.; secs. 2 and 3, T. 36 S., R. 7 W., on the west bank of the Rogue River.

Area: 200 acres, covered by patent (Bybee mine) and by location.

History: The mine was originally opened by Mr. Bybee and the upstream portion is still known by that name, locally. The Bybee ground and additional location were held by W. H. and Viola Flanagan, and sold, in part, to Lester Briggs in 1923. Three years ago (1937) Mrs. Flanagan sold a portion to a group of men, as given under ownership.

Parks & Swartley (16:94) report as follows:

> "About 10 miles west and 3 miles north of Grants Pass the Flanagan and Emerson placer mine is located on a gravel terrace on the west side of Rogue River about 30 feet above the water. It is owned by Dr. W. H. Flanagan, of Grants Pass. According to Diller:
>
> 'The mine face exposes 50 feet of fine gravel containing a small amount of sand near the middle and top. On the river side of the mine a portion of

the gravel appears to have been washed away and replaced by a later deposit. The slate bedrock is much twisted and faulted. The strike is N. 20° E. and the dip is 45° S. E.'

"Near this mine to the south in secs. 2 and 11, T. 36 S., R. 7 W., there are extensive deposits of alluvial gravels which have been tested by Clarence H. Mace. He reported 25 cents to $1.60 per cubic yard with a channel 600 to 700 feet wide and the richest streaks on the concave side of the river. Conditions here seem to be favorable for the introduction of dredging. The gold is coarse with rough edges, which indicates that it has not traveled far. For the most part the boulders are small, averaging under 6 inches in diameter, and there is no clay except in part of the overburden. There are places along the present channel where the gravel is only 4 feet thick, and others where it is evidently at least 30 feet, but where the ancient channel is exposed by hydraulic operations it varies from 75 to 150 feet in thickness. Bedrock consists of upturned slate beds."

The mine has not been operated in the last three or four years.

Development: Ten acres were mined in the Bybee mine; about 25 acres in the present Flanagan property. The water right, which extends back prior to 1900, calls for 1500 miners inches of water.

Equipment: Two no. 3, and one no. 1 giants; 2000 feet of 24 inch to 11 inch pipe; 4½ miles of ditch, the water coming from Shan Creek; 7½ miles of ditch with water coming from Limpey Creek.

Geology: Bedrock is slate, probably Galice formation; no clay. Boulders are of average size, very few will weigh over 500 lbs. Gravel will average 30 feet in thickness with 20 feet of overburden. Gold is on bedrock and in a zone about 17 feet above bedrock. The overburden carries enough gold to justify sending it through the sluices. Briggs reports that the gold is small in size and is placer type.

Reference: Parks & Swartley, 16:94 (quoted)
Diller, 14:112

Informant: Lester Briggs, 4/16/40

Report by: Ray C. Treasher

FOREST QUEEN PLACER — Grants Pass area

see Surety Placer

FRECKLES PLACER — Grants Pass area

Owner: Edwin L. Davis, Wonder, Oregon.

Location: On Waters Creek two and one-half miles from Highway No. 199 and in the W.½ SW¼ SE¼ sec. 32, T. 36 S., R. 7 W.

Area: Twenty acres.

General: The claim is at the mouth of Long John Creek, a tributary to Waters Creek. Five test holes have been sunk and show that there is a small channel on the east side of Long John Creek which contains three to five feet of gravel. Argillite bedrock stands on edge, making an irregular bottom. There is no water right. Water can be secured from Waters Creek, but it is questionable if water from this source can be secured under a satisfactory head. Elevation is 1300 feet; 12 inches of snow, maximum.

Informant: J. E. Morrison, 38.

GEORGE MCALLISTER-WAX CAMPBELL MANGANESE Grants Pass area

Owners: George McAllister and Wax Campbell.

Location: Center of S.½ of sec. 5, T. 36 S., R. 7 W., near the summit of the slope north of Shan Creek at an elevation of 3000-3500 feet.

Area: Four claims; Manganese Mystery No. 1, 2, & 3, and Manganese Mystery Extension.

Geology: The locality is made up principally of granitic rocks, probably tonalite, (Winchell 14). The country rock in the vicinity of the deposit is a porphyritic variety, resembling a diorite, in places much altered and having a schistose structure.

The deposit has been explored mainly for gold on the Manganese Mystery No. 1 claim where it is reported that high grade gold ore has been found. There are several open cuts and two shallow shafts have been sunk. The area thus explored represents about 200 ft. by 150 ft. in extent.

The outcrop appears to represent a siliceous phase in the diorite, characterized by small quartz lenses and stringers with considerable rhodonite, now mainly altered to manganese oxides. There are large blocks, up to two or three hundred pounds in weight, at or near the surface, which have the appearance of being nearly pure, hard manganese oxides, but on being broken, most of them show remnants of unaltered rhodonite with quartz. The largest opencut showed that in sinking 10 or 15 feet below the surface, the manganese oxides became perceptibly smaller in quantity. It seemed probable that exploration to the west of the present openings would show more of the oxidized rhodonite.

The altered porphyry wall-rock has been permeated and stained by manganese oxides over the area opened up; and, in places close to the original rhodonite croppings, the oxides have been deposited in irregular small veins and stringers making up a third to a half of the rock. These oxides decrease in proportion to the distance away from the quartz-rhodonite outcrops until it becomes a very thin staining.

A wall on the west side of the outcrop, probably indicating the trend of the deposit, strikes due north and dips steeply to the east.

Further surface work would probably expose more of these oxidized rhodonite outcrops, but it is improbable that more than a small tonnage of selected manganese oxides could be made available, and that would be a highly siliceous product. A sample of manganese stained porphyry over a thickness of 6 feet was taken in the face of the largest opencut and returned 2.87 percent manganese. A sample of hand-sorted ore on the largest dump gave a return of 17.3 percent manganese.

Informant: Libbey, 37

Reference: Libbey & Others; 42:26-27

GOLD CHIEF MINE (gold) Grants Pass area

Operators: Gold Chief Mines, Inc., Grants Pass, Oregon; R. C. Stanton, Sec.; E. A. Thomas, City Engineer, Klamath Falls and Mr. Stanton are sole owners of the company. Capitalization, $50,000.

Location: sec. 3, T. 36 S., R. 5 W., 3 miles northeast of Grants Pass.

Area: Four full claims--Gold Chief No. 1, Black Hawk, Dominions 1 and 2.

History: Discovered by R. C. Stanton in 1934; yearly assessment work until 1937; completed a small mill in 1937; about 35 tons milled in 1938; 20 tons plated $8; three men were employed in 1938.

Development: One crosscut tunnel 100 feet long cuts vein 35 feet below surface. There are three drifts 18 feet, 12 feet and 22 feet long, respectively. There are several open cuts above the tunnel.

Equipment: Ore bin; 1-Huntington 5-ft. mill; 1 Overstrom 6-ft. table, a Star "4" Engine. The mine is about 700 feet distant from the mill and is connected by a tram on 33 percent grade, using a car on a wood track. The mine is 280 feet above mill as measured by barometer. The ore car is operated by $\frac{1}{4}$ inch cable and the hoist is powered by a Star "4" engine.

Metallurgy: About 50 percent of the gold is free in crushed quartz easily milled. Concentration ratio is about 70 to 1. Approximate value of ore is $12 to $15 per ton. Mill capacity is 5 tons per day.

Topography: mountainous; elevation 2000 feet by barometer; plenty of fir for mine timbers on property; not sufficient water to operate small mill year round; water can be developed; average 2 feet snow.

Geology: Country rock is altered diorite-porphyry. Some greenstone is also found. A movement took place in a northwest-southeast direction forming many openings along the line of movement. Quartz veins filled in the cavities. Later, more movement took place, as the vein matter is shattered and broken up. The strike and dip vary greatly but in general the strike is N. 46° E. Vein minerals are quartz, gold, pyrite and chalcopyrite. Near the surface the values are in an oxidized seam, but in the tunnel the values are in quartz. Maximum width of vein is 4 feet.

Remarks: This is a small mine requiring approximately five men with present equipment and development. The ground caves easily when wet. Development will have to be planned and carried ahead. At present there is no ore blocked out.

Informant: J. E. Morrison, 38.

GOLD DRIFT MINE — Grants Pass area

see Oro Fino Mine

GOLD STAR MINE (gold) — Grants Pass area

Owner: Frank H. Horsfall, 4705 Second Ave., Seattle, Washington.

Location: sec. 27, T. 35 S., R. 5 W.

Reference: List of Mines in Oregon. No further data.

GOPHER MINE (gold) — Grants Pass area

Owner: Earl Knox, 304 W. K Street, Grants Pass, Oregon.

Location: 8 miles north of Grants Pass in W$\frac{1}{2}$, SE.$\frac{1}{4}$ of sec. 8, T. 35 S., R. 5 W. Patented homestead.

History: See below. The owner purchased the ground for the timber and knows very little about the mine. Parks & Swartley reported as follows:

> "The Gopher Mine, 8 miles east of Hugo, is on the northeast side of Walker Mountain, at an elevation of 2300 feet, as measured by barometer. It is owned by Mr. Dean, of Oakland, California. The main level has about 600 feet of crosscuts and drifts, besides raises, winzes and stopes. The vein material is similar to

that of the Baby Mine and the country rock is also similar. Several veins run in various directions in gabbro. In some places stopes are 7 feet wide. A crushed fault zone strikes N. 20° E. near the breast. The mine has been idle for several years."

Development: No change since 1916. The portal is now caved.

Informant: J. E. Morrison, 38 (not visited)

Reference: Parks & Swartley, 16:110 (quoted)

GRANITE HILL MINE (gold) Grants Pass area

Owner: Mrs. Inez D. Wilkinson, 704 N. 7th. Street, Grants Pass, Oregon.

Location: About 9 miles NE. of Grants Pass in sec. 26, T. 35 S., R. 5 W.

Area: 460 acres of patented land. Granite Hill is in secs. 26 and 27. The Red Jacket, which is now included with the Granite Hill, includes the E.$\frac{1}{2}$, SE.$\frac{1}{4}$, NE.$\frac{1}{4}$ sec. 34.

Equipment: No equipment on the property. The mill was removed during World War I. Water stands approximately 165 feet in the shaft.

History: Parks & Swartley report as follows:

"The Granite Hill Mine was bought in 1901 by the American Goldfields Company, and developed extensively between 1902 and 1907 with a resultant production of about $75,000. It was closed early in 1908, and is now owned by the Oregon Gold Mines Company.

"The mine is equipped with a 20-stamp mill, having four 10-foot amalgamating plates, 6 Frue vanners installed and 2 more vanners available, a crusher, a 150 h.p. electric motor, and other accessories. The mine has also an air compressor, a steam hoist, and 5 machine drills.

"The mine is opened by a vertical shaft said to be 430 feet deep, now filled with water. It is reported to be developed by about 5000 feet of workings on the 2nd level and about 7000 feet on the other levels. The vein is said to attain a width of 12 feet on the 3rd level and 14 feet on the 4th level; it has an average width of about 5 feet, and strikes about east and west and dips about 70°S. The vein filling consists of quartz, chalcopyrite, galena, and pyrite, carrying gold. The sulphides make up less than one percent of the ore and as concentrates they carry from $75 to $100 a ton, and are shipped to the smelter at Selby. The average value of all the ores treated in 1907 was about $5 a ton.

"The country rock is a tonalite grading toward granodiorite containing abundant plagioclase and quartz with some orthoclase, and pale green hornblende altering to chlorite. According to Kay this outcrop is part of a narrow tongue which extends southward into the Grants Pass quadrangle from a larger area of tonalite in the Riddle quadrangle. To the east of the tongue is greenstone, to the west is serpentine. At the Granite Hill Mine the ores are found in a vein in tonalite; at the neighboring Red Jacket and Ida Claims, owned by the same company, they occur in greenstone.

"According to C. M. Morphy, former superintendent of the mine, the richest ores were found in 3 shoots each having a length along the vein of about 150 feet and a pitch to the west of south. The zone of oxidation extends to a depth of more than 200 feet from the surface, and the oxidized ores were more valuable than the sulphide ores.

"The Red Jacket Claim has quartzose ore carrying chalcopyrite, galena and pyrite; alteration produces malachite and chrysocolla. The vein is said to be about 18 inches wide and of high grade in gold. It is reported to strike about northeast and dip about 45° NW.

"The main adit on the Ida Claim is at an elevation of 2300 feet as measured by barometer; a quartz vein here strikes N. 65° W. and dips 70° SW.; the vein is 3 to 30 inches thick and nearly pure quartz; it is cut off at 46 paces from the portal by a fault which strikes N. 25° W. and dips 45° SW."

In 1941, an attempt was made to cyanide tailings and dumps at the mine but the project is reported as having been unsuccessful. (Ray C. Treasher)

Reference: Parks & Swartley, 16:171 (quoted)

Informant: J. E. Morrison, 38.

GRANITE HILL PLACER — Grants Pass area

"This placer was opened and first worked by Gage and Seeley, and after doing considerable work, consisting of a drainage tunnel about 1000 feet long, it was found that the tunnel was some 12 feet above bedrock and they then abandoned the property. Only a small amount of work has been done on the property since that time. Numerous test pits have been dug, with values stated to range from 25 cents to $1.25 per yard.

"The property was purchased and a company has been formed with the intention of working the ground by means of a dredge."

Informant: Charles Archert, 1938, (quoted)

GROUSE MOUNTAIN MINE (gold) — Grants Pass area

Owner: Geo. W. Kearns, Grants Pass, Oregon.

Location: On Grouse Creek Mountain about 5 miles southeast of Grants Pass in sec. 27, T. 36 S., R. 5 W.

Area: Six claims trending N. 20 degrees E., beginning with No. 1 claim on the southwest.

Topography: Property lies on the side of a moderately steep mountain at an elevation of 1740 feet. Precipitation is abundant during the winter months with some snow fall, but not enough to hamper operations for more than a short time. There is an abundance of timber suitable for mining on the property.

Development: According to Mr. Kearns, development consists of a 50 foot shaft; one 208 ft. tunnel with 48 ft. winze 140 ft. from portal; one 448 ft. tunnel running S. 20° W. for 328 feet, due E. for 120 feet, with a 65 ft. crosscut running SE. from a point 130 feet from portal.

Geology: Quartz veins have greenstone on the foot wall and a granular igneous rock for the hanging wall. The principal vein is 120 feet wide and strikes northeast. There are feeder veins which strike east and west. The surface near the apex of Grouse Mountain is covered with gossan.

Informant: Mr. Geo. W. Kearns, November 20, 1939.

HAMMERSELY MINE (chrome) Grants Pass area

Location: sec. 31, T. 34 S., R. 5 W.

History: "The Hammersely Mine, near the Lucky Queen Mine on Shorthorn Creek, is a good-looking chrome prospect."

Reference: Parks & Swartley, 16:116 (quoted).

HAVENS CLAIMS (placer) Grants Pass area

Owner: James Clinton Havens, Rt. 2, Grants Pass, Oregon.

Location: On Shan Creek ten miles air line west of Grants Pass. Legal description is S.½, S.½, NW.¼, sec. 10, T. 36 S., R. 7 W.

Area: Two placer claims - 40 acres. Located June 20, 1938 and recorded in Book 38, page 175.

History: Shan Creek has been placered only since the death of Mr. Ogden. He owned almost a mile along Shan Creek, and would not allow any mining to be done on his land. Above his property there is so much forest debris that it discouraged prospecting. Since his death, snipers have been working the creek.

Geology: Conglomerate bedrock of Galice (?) formation. No test pits. The small amount of ground sluicing in Shan Creek averaged 35¢ per yard. Channel gold; few big boulders; no clay. Largest nugget found was worth $2.75.

Informant: J. E. Morrison, 38.

HIBBARD PROSPECT (gold) Grants Pass area

Owner: Alvin Knox, Grants Pass, Oregon.

Operators: Emil Sappe and John Robertson.

Location: SW ¼ sec. 23, T. 35 S., R. 7 W. on Little Pickett Creek.

Area: 2 claims, originally located prior to 1900.

Development: A number of cuts and small test pits.

Geology: The main vein trends east-west and dips 45 degrees S. Rock in the vein has been serpentinized; originally it was either greenstone or a sill of diabase. Offshoots from this vein intersect it at acute angles. Country rock on the north is metavolcanic and on the south is "diorite". All the rocks are deeply weathered and altered so the determination is very difficult.

The vein contains some free gold and abundant iron sulfides. No work has been done with the sulfides. Present operations consist of "gophering" for pockets of free gold.

Report by: Ray C. Treasher, April 4, 1941.

HIDDEN TREASURE CLAIMS (gold) Grants Pass area
also known as Ten Spot.

Owner: Josephine County Court, Grants Pass, Oregon. (Reverted to County for taxes.) This property is now reported to be owned by N. A. Peterson, Bend, Oregon, 1940.

Location: Three miles southeast of Grants Pass on the north side of Baldy Mountain in NE.¼ sec. 27, T. 36 S., R. 5 E. Elevation 1900 feet.

Area: 3 patented mining claims containing 61.98 acres.

History: No work has been done on the property for years. Workings are all caved.

"The Ten Spot Claim, 5 miles southeast of Grants Pass, is near the north side of sec. 27, T. 36 S., R. 5 W., on Baldy Mountain. It is owned by G. E. Everson and R. E. McDaniels, of Creswell, Oregon. The country rock is decomposed or "rotten" tonalite, locally called granite. The vein is not now exposed, but is said to be a small quartz vein which has been prospected by surface pits and a shaft 30 feet deep all in "rotten granite". The vein seems to strike N. 58° E. A crosscut adit is being driven by contract; it extends 140 feet S. 40° E. in "rotten granite", so soft as to be dug with pick and shovel and to require careful lagging to hold the ground. The vein has not yet been reached by the crosscut."

Informant: J. E. Morrison, 39

Reference: Parks & Swartley, p. 221, 1916 (quoted)

HUGO SILICA MINE (silica) Grants Pass area
also known as Snowball Group

Owners: Charles Snyder, Jim Havens, of Grants Pass, Oregon, and Glen Mackie, of Hugo, Ore.

Location: 3 miles south-west of Hugo in the NE¼ of sec. 5, T. 35 S., R. 6 W., at an elevation of 1300 feet. Hugo is a station on the Southern Pacific Railroad, about 13 miles north of Grants Pass.

Area: Consists of 5 full size lode claims held by location.

History: Hodge, 38:1 reports as follows:

"Location: This deposit is located on the east side of the valley of Bummer Creek in the NE¼ sec. 5, T. 35 S., R. 6 W., in Josephine County. It is roughly 3 miles from Hugo and 4 miles from Merlin by gravelled county road. It is jointly owned by Glen Mackie and C. A. Snyder, Grants Pass, Oregon.

"Topography: The deposit forms a small nose on the west side of a steep ridge, being about 300 feet above the creek, and 0.4 mile by winding dirt road from the Hugo-Merlin road.

"Geology: The quartz crops out in an area about 50 feet across and has been opened by a 50-foot open cut with a maximum depth of 15 feet. A smaller shallow cut 30 foot long extending westward from the main opening was for exploration only.

"The deposit is a mass of pegmatitic quartz partly in greenstone and partly in a weathered granitoid rock and is undoubtedly genetically related to the latter. The quartz is cut by feldspar pegmatite dikes up to 18 inches thick, and feldspar crystals are scattered sparsely through the main quartz mass. The quartz is highly shattered and somewhat stained in places, though some of it is exceptionally pure.

"Development: A loading platform at the north end of the cut is placed on a level with the floor of the pit. The rock is transported by wheelbarrow.

"Economics: The commercial quartz area is about 25 feet square, or about 1/3 the area of the pit. Blocks of pure quartz 12 inches on a side may be obtained, but the small size and nature of the deposit may preclude possibility of production of pure silica on a large scale.

"Production: Present production is limited to about 50 tons a month for use in sandblasting in Portland. The price paid is reported to be $5.50 a ton, quarry run, f.o.b. Hugo or Merlin."

Production: 5 cars were shipped in 1936 and 4 cars in 1937 to the Columbia Steel and Electric Steel, Portland, Oregon. Property has been idle since spring of 1937.

Equipment: 1-Gyratory Crusher and 1-Medford Ball Mill.

Geology: A granitic country rock in which the quartz is probably of pegmatitic origin. The owners have traced this vein and opened it up at intervals for approximately one-half mile. They feel that a very large tonnage is represented. That this is the case would be questionable because pegmatites cannot be depended upon until they are fully developed. About 2000 tons are exposed in the deposit. The silica is of good grade but will necessitate hand picking and washing before it can be sold as a commercial product. Mining cost will thus be relatively high.

There is a 3 mile haul to the railroad. No water is available on the property.

Informant: J. E. Morrison, 1939

Reference: Hodge 38:1 (quoted)

HYDRAULIC MINING COMPANY (placer) Grants Pass area

see Jump-Off-Joe Placer also - Cook & Howlands Placer

IDA CONSOLIDATED GOLD MINES, INC. Grants Pass area

see Ida Mine

IDA MINE (gold) Grants Pass area

see also Granite Hill

Owner: Charles R. Archerd, Ida Mine, Grants Pass,Oregon.

Location: secs. 25, 26, T. 35 S., R. 5 W., on Louse Creek a mile above the Granite Hill Mine.

Area: 5 claims of the Ida Group, namely Blackjack and Blackjack No. 1, Buckskin, Wild Rose, and Oregon. Four claims of the Little Mac Group, namely, Big Rock, Big Mac, Little Mac, and Little Mac Junior. The last three are fractional claims.

History: The Ida Mine is mentioned by Parks & Swartley under the description of Granite Hill.

"Owner: Edwards Mining Company, Charles R. Archerd, Grants Pass, president; D. G. Granger, Salem, secretary.

"Location: sec. 26, T. 35 S., R. 5 W., on Louse Creek, a mile above the Granite Hill mine.

"Area: Three unpatented lode claims.

"History: Originally located about 1890 by Reno, and taken over by the Granite Hill in 1904. Relocated in 1920, and a small mill built. Archer has had the property since 1924. A news note in the Mining Journal, Oct. 15, 1938, stated that Archerd planned to start development on a large scale.

"On September 9, 1941, it was reported that the mine was being operated by a Dr. Bowser and a Mr. Turner of California. The mill has been placed in working order, using flotation. Five men were employed."

The following history is quoted from a report by Mr. E. L. McNaughton:

"The discoverer of the Ida Mine is unknown but it is known that the American Goldfields Company opened the mine with a drift about 50 feet above the present adit; this drift is about 150 feet long and tapped the first ore shoot about where the present tunnel cuts the main vein. Ore was hauled from the Ida to the Granite Hill mill. No record can be found as to production of the mine during their ownership, but on the statement of men who worked in the mill, the Ida ores were the richest that they handled.

"After the Granite Hill mine was closed in 1915 due to being flooded, the Ida mine was restaked by E. Young who installed a 2 stamp mill and worked through the Granite Hill drift; later he sold the property to Freeman, who drove the present drift and tapped the ore shoot at a lower level; he in turn installed a 6 foot Lane mill and worked the property until 1921, when it was purchased by J. C. Edwards, who did a small amount of work and in 1925 sold the mine to the Edwards Mining Company, and the first real attempt at mining was commenced.

"The total amount of development work done by them, consists of 1600 feet of drifts, crosscuts, stopes opened, and a shaft 86 feet deep, also a raise 125 feet to the surface.

"Milling under the Edwards Mining Company had a checkered career and underwent many changes. The first attempt on the part of the company under the management of Mr. Edwards, was the installation of a cyanide leaching plant. The leaching of this ore is a very simple process, but leaching the ore ground in a Lane mill without the separation of the sand and slimes proved its downfall, due to the slimes forming a water seal in the leaching vats, and without any attempt whatever towards separation of the sand and slimes Mr. Edwards junked the entire plant. In 1928, the management was turned over to Mr. Potter who built the present mill. During construction of this mill Mr. Potter had a complete test made on the ore by the Denver Equipment Company, which is quoted in the report on the Ida Mine, which showed the possible recovery of 95 percent, but when the mill was constructed and put into operation by him this report was ignored, and this together with the following quotation from a former report on the Ida Mine as follows: 'gross mismanagement and complete ignorance of practical milling practice', resulted in the closing down of the mine in 1930 by the directors of the Company. In 1931 Mr. Archerd, president of the Company, took over the management of the mine and on the advice of two reliable mining engineers changed the flow sheet to conform to the above mentioned report, and over a period of three months proved that the values could be saved, in fact he states that the recovery of values was about 95 percent. Much credit for the results must be given Mr. Bartels whose competent advice chiefly enabled Mr. Archerd to make this recovery. The mine is at present closed, the only work that has been done since 1932 has been confined to opening up new ore bodies chiefly on the surface, and to a small extent underground."

Development: Underground workings total 1589 feet, consisting of: adits, 315 feet; drifts, 750 feet; crosscuts, 313 feet; shaft, 86 feet; raise, 125 feet. Eight stopes have been opened; 4 in the main drift, 2 in the Right drift; 1 in the Right angle and 1 in the left drift. Of these, No. 1 in the main drift and No. 1 and No. 2 in the Right drift have been stoped out. The others are partially stoped but can be worked and contain good millable ore. Surface work consists of some 30 open cuts of various sizes and 4 tunnels. The tunnels are inaccessable at present.

Equipment: Inventory of equipment: power plant,- 110 h.p. Atlas Diesel engine complete, 100 KVA generator and switchboard, 6 h.p. gas engine; mill-crusher, elevator, feeder, ball mill, flotation equipment, classifier, oil feeder, table, 5 h.p. motor, belt conveyor, dewaterer, drier, 2 pumps; assay office completely equipped; blacksmith shop,- compressor, motor, drill sharpener, forge, power emery wheel and motor, miscellaneous tools, mine; Truax ore car, 1260 feet of rail; Sullivan drifter, stopers, Buffalo 30 inch blower with 2400 feet of pipe, hoist, cable, and buckets, miscellaneous drilling steel, etc.; camp equipment,- truck, drag saw, camp buildings, fuel oil tanks. Total value is estimated at $41,040.

Mining Facilities: Water right was issued about 1924 for water from Middle Fork of Louse Creek. Hills are thickly wooded with fir, cedar, pine and tamarack. Weather conditions permit year around operation. There is a good road to the property.

Geology: The country rocks consist of greenstone, serpentine, granodiorite, quartz diorite, dacite porphyry; general relationships are given in the Riddle folio. The main ore body is found in sheared and brecciated greenstone and diorite, the shear zones being confined to a series of narrow, parallel belts with widths varying from 8 to 25 feet. The general trend is east-west. It is believed that quartz was the first gangue mineral. Fracturing followed with metallization by pyrite chalcopyrite, minute amounts of arsenic, antimony and mercury with some calcite. The ores are considered as hypogene (primary) and belong to Lindgren's mesothermal type. The source of the solutions is believed to be the granodiorite batholith.

The ascending solutions effected alteration to distances of 3-4 feet from the quartz stringers.

Visible minerals are quartz, calcite, pyrite together with small amounts of chalcopyrite and some arsenopyrite and stibnite. Gold is both free and associated with sulphides.

Only one fault has been found, this being at the end of the main drift some 50 feet beyond the shaft. The fault trace is irregular; in the Right Drift it strikes N. 88° W., dips 65° S.E.; in the main drift, strike is S. 65° W., dip is 55° S.E.; 50 feet north of the vein strike is S. 61° W., dip is 55° S.E.

Four veins have been opened and fairly well developed in the present underground workings, and two other veins have been cut by crosscuts. Of those, the most important from size and development are the Main, Right, Right angle, and the Left vein. The Draw and Surprise veins have had no work done on them. A seventh vein called the Mother-lode has been opened by a tunnel 160 feet long at a higher elevation than the present workings. Also a vein called the Little Mac vein has been opened by a tunnel on the Little Mac Claim.

Mill flow-sheet: Mill capacity is 50 tons per 24 hours.

The friable and easily crushed ore is drawn from a 45-ton bin to a 3 ton per hour Blake jaw crusher, delivering 3/4-inch size to a bucket elevator. The crushed ore is stored in a 75 ton bin. A 14" x 10' belt conveyor feeds direct to a 5 x 4 Williamson ball mill, running at 26 r.p.m. in closed circuit with a Dorr classifier. Ball charge is 4800 lbs. The Dorr Simplex Classifier, 3' x 16'8" is set for 85 mesh. Pulp goes to a 4 x 4 conditioner tank in which the impellor is driven from the jack shaft of the flotation machine. A Fahrenwald flotation machine, 3 cells, with a capacity of 50 tons per 24 hours, delivers finished gold concentrates; tails are returned to the rougher cells; while the rougher cells tails are passed directly to a No. 6 Wilfley table.

Reference: Parks & Swartley, 16:171-172.

Informant: Reports submitted by Charles Archerd and by E. L. McNaughton.

Report by: Ray C. Treasher

JACKS CREEK PLACER Grants Pass area

Owners: LaVonne Colvig, 2 claims; Harry Walker, 2 claims, Route 1, Box 730, Grants Pass, Oregon.

Location: seo. 28, T. 34 S., R. 5 W., on Jacks Creek, a tributary of Jump-Off-Joe Creek. The claims adjoin the Swastika Placer to the south.

Area: Four claims; two owned by Colvig and two by Walker.

General: Two No. 2 giants. Seven miles of ditch for water from Jump-Off-Joe Creek, the water right belonging to the Swastika Placer. Two miles of ditch, water from Jacks Creek, water right owned by Jacks Creek Placer. Ordinarily about six months of placer operation. Season of 1939-1940, and 1940-1941 the water conditions permitted only about two months of work.

The placer is worked by two men every winter.

Report by: Ray C. Treasher, March 10, 1941.

JEWETT MINE (gold) Grants Pass area

Owners: Anna, Herman, Flora and Rheinold Schmidt, Grants Pass, Oregon.

Location: In an area near the common corner of secs, 27, 28, 33, and 34, T. 36 S., R. 5 W.

Area: Seven patented claims containing 104 acres.

History: Parks & Swartley reported as follows:

> "The Jewett Mine was discovered about 1860 by Thomas Jewett, and was recently sold to Claus Schmidt, of Grants Pass. In 1863 it was provided with an 8-stamp mill, which proved a failure, and was converted into a sawmill. At present it is equipped with a 5-stamp mill, but is not in operation."

Claus Schmidt never operated the mine and upon his death it became the property of his children, who have leased it from time to time.

Geology: "The country rock is often called greenstone, but much of it is fine grained tonalite, containing abundant plagioclase, quartz and pale green hornblende. Coarse grained tonalite forms a large outcrop on the north side of Baldy Mountain, on the south side of which the Jewett Mine is situated, and a dike of the same rock is visible at the portal to the main adit. The ore body, in general, has no definite walls, but occupies a sheared and brecciated zone, which is irregular in thickness and direction. The general direction of the ore body is N. 20° to 55° W., with an average dip of about 75° N.E. The ore has been produced partly by replacement and partly by deposition as a cement of the breccia. The gangue minerals are chiefly quartz and calcite (with the former dominant), with some chlorite and pale brown mica. The ore minerals include native gold, pyrite, sylvanite and pyrrhotite. Considerable ore was mined and milled. In portions of the mine the ore body is more than 8 feet wide. For some years past the mine has not been operating."

Development: No new work since 1916 report. All of the old workings are inaccessible.

General: Elevation about 2500 feet; plenty of mining timber; not sufficient water on the property for mill; snow about 4 feet maximum.

Informant: J. E. Morrison, 38

Reference: Parks & Swartley, 16:134 (quoted)

JUMP-OFF-JOE PLACER (gold) Grants Pass area
also known as Cook & Howland Mine

Owner: W. F. Harriman and J. J. Cotter, P.O. Box 444, Grants Pass, Oregon.

Location: Sec. 25, T. 34 S., R. 5 W., Josephine County, and sec. 30, T. 34 S., R. 4 W., Jackson County.

Miscellaneous Information: One ditch three miles long giving a working head of 80 feet. Mining season is from November 15 until May 1; elevation 3000 feet; side hill operation; rolling topography; irregular greenstone bedrock. Gravel is mixed with soil and a small amount of clay. Apparently gold is disseminated through the gravel with no concentration of values on bedrock. There are few boulders; gold is coarse; maximum snowfall is about 5 feet.

Equipment: Two No. 4 giants, 600 feet of 24" pipe, 1500 feet of 11" pipe.

History: "Local name, Cook and Howland Mine.

"Office: Three Pines, Oregon. G. E. Howland, Pres., Grants Pass, Oregon; Jefferson D. Cook, Sec., Three Pines, Oregon. Capital stock, $25,000; par value $100; $18,100 subscribed, issued and paid up. (1914 report).

"This company is out of business. Its property, 9 miles east of Hugo and about 4 miles southeast of the Hammersely Mine, located on upper Jump-Off-Joe Creek, in secs. 24 and 25, T. 34 S., R. 5 W., is now owned by Elizabeth Smith, of Grants Pass, and leased by L. T. Corliss, of Three Pines, Oregon.

"The property has only been operated in a small way the past year. Dissolved by proclamation in January, 1917."

Informant: J. E. Morrison, 1938.

Reference: Parks & Swartley 16:126 (quoted).

KING TUTT PROSPECT (gold) Grants Pass area

Owner: Property located Aug. 15, 1928 by G. W. Mackie, Chas. Snyder, and J. R. Rush.

Location: SE¼ NW¼ sec. 29, T. 34 S., R. 5 W., on Horse Creek, a tributary of Jump-Off-Joe Creek.

General: The property is inactive (March, 1941) and all workings are caved. Two tunnels, both caved at the portal, have a general northwesterly trend. The dump of the lower tunnel shows quartz and sheared rock (slickentite). The upper dump shows white, sugary quartz, containing sparse chalcopyrite segregations about 1/8 inch in diameter. Inclusions of sheared country rock occur in the quartz. The country rock is a fine-grained granite which could be classed as a diorite. The ferro-magnesium minerals are well altered toward chlorite minerals.

There has been some placering in Horse Creek just below the prospect. (see Depression Breaker Placer).

Something that looks like the ruin of a small mill was found below and about 100 yds. south of the mine dumps.

Report by: Ray C. Treasher, March 10, 1941

KLONDIKE MINE (gold) Grants Pass area

Owner: E. F. Ayers, Rural Route, Grants Pass, Oregon.

Location: 7 miles northwest of Grants Pass in sec. 22, T. 35 S., R. 6 W. The last five miles are over a gravel and dirt road, four miles of which are impassable during winter months. Elevation is 2100 feet.

Area: Six unpatented mining claims.

History: The ground was located about 1905 by a Mr. Jordan and a small gold pocket was mined. Mr. Jordan sold the property to a Mr. Merritt who erected a 2-stamp mill. Five tons of ore were milled and plated $22.00 per ton. Mr. Merritt sold the property to a Mr. Sharp who installed a small Hardinge mill and put through a small tonnage. Mr. Sharp sold to the present owner.

Development: There are about 660 lineal feet of underground workings consisting mainly of crosscut tunnels together with a small amount of drifting on the vein. The best ore showing is in one crosscut to the vein about 39 feet long. Here one foot of quartz averages about $21.00 to the ton. The vein strikes approximately northwest and dips 75° northeast. In one of the upper tunnels, 110 feet in length, a quartz stringer 6 to 10 inches wide is exposed.

Equipment: A small mine car and track; a wheelbarrow; small tunnels; a small cabin and tent house.

General Information: There are no water rights and water supply is limited. Timber is plentiful. Maximum depth of snow is about 2 feet. Country is mountainous.

Informant: E. F. Ayers

Report by: A. A. Lewis, March, 1940

LAMBTONGUE MINE (gold) Grants Pass area
also known as Baby Mine

Owner: Ben Baker, Grants Pass, Oregon.

Location: On the east side of Walker Mountain, 8 miles north of Grants Pass in $SE\frac{1}{4}$ of $SE\frac{1}{4}$ of sec. 8, T. 35 S., R. 5 W.

Area: One unpatented lode claim.

History: "This mine was located in 1897, and is said to have yielded more than $20,000 worth of gold. It is equipped with a 2-stamp mill (formerly 5 stamps), with an 8-foot plate, a crusher, 2 concentrating tables and 2 boilers. It is opened by 2 adits with about 1500 feet of underground work. The main adit is a crossout for more than 300 feet leading to about 500 feet of drifts. There are several quartz veins in gabbro country rock. The most important vein averages about 4 feet in width, but varies to fissure zones more than 10 feet wide. The vein strikes northwest and dips to the northeast usually at high angles, but locally at much lower angles. Faults are abundant; certain prominent faults strike N. 80° E. with a dip of about 50° W., or strike N. 45° E. and dip 50° SE. The vein material consists of coarse vein quartz, partly brecciated, with a little calcite and some pyrite. Free gold occurs in the quartz. Sulphide concentrates are said to contain $75 a ton in gold. The gabbro country rock contains abundant labradorite and augite with some chlorite, clinozoisite, sericite and serpentine, and very little chalcopyrite. The mine has been idle for several years."

Little if any development work has been done since 1916. The present owners located the mine in January, 1937, and have operated it intermittently since then producing about $6,000.00. The ore is hauled about one mile to a mill at the Oak Mine.

Development: A crosscut tunnel extends N. 83° W. 295 feet to the vein, and from this tunnel a drift extends in each direction on the vein; one drift is S. 40° E. for 115 feet, and the other is N. 40° W. for 45 feet to a fault. Drifts north of the fault totaling 600 feet in length on this level have been driven in prospecting for the vein. An upper level, 110 feet vertically above this tunnel, was driven and consists of a crosscut tunnel which intersects the vein 40 feet from the portal together with a drift on the vein 250 feet long to the fault. A large part of the ore has been stoped between the two levels. There is one connecting raise which starts where the fault cuts the vein in the lower tunnel.

Geology: The country rock is metagabbro in which a vein was formed along a fracture. Later movement took place along the main fault which strikes N. 56° E. and dips 50° to 60° to the southeast. Subsequently another period of mineralization took place which formed the larger quartz bodies. The vein deposited along the main fracture contains the best values; it averages about one foot in width. The vein has not been found beyond the large fault. Minor faults are abundant, probably due to the proximity of the larger one along which the movement took place. The vein minerals are quartz, free gold, pyrite and chalcopyrite.

Equipment: Small compressor run by Fordson Tractor and miscellaneous small equipment and ore bin.

Miscellaneous: The ore mined since 1937 has plated $19 per ton and the concentrates average about $200 per ton. In 1938 about 109 ounces of gold was produced from ore averaging $12 per ton.

There is a fair road to property; elevation, 2200 feet; plenty of timber for mining purposes; ground stands well without timbering; 2 feet of snow, maximum; mine makes enough water for mining purposes.

Informant: J. E. Morrison, 38

Reference: Parks and Swartley, 16:18 (quoted)

LINDH AND WEBB PLACER Grants Pass area

Owner: Arthur Lindh, Grants Pass, Oregon.

Location: SE¼ sec. 23, T. 35 S., R. 7 W., on Little Pickett Creek.

General: Equipment consists of one No. 1-giant and a derrick for handling large boulders.

Geology: The stream bed is very steep; boulders are large and plentiful; gold may have originated from the Hibbard Prospect, and others farther up; gold is coarse and many small nuggets are recovered; property is worked each season.

Report by: Ray C. Treasher, April 4, 1941.

LITTLE MAC MINE Grants Pass area

see Ida Consolidated Gold Mines, Inc.

LITTLE MARVEL (placer) Grants Pass area

Owner: Robert Savage and L. Krewson, Rt. 1, Box 749, Grants Pass, Oregon.

Location: NW¼ NE¼ sec. 3, T. 35 S., R. 5 W., Jump-Off-Joe Creek.

Area: 20 acres, held by location, purchased from Mr. Olson Aug. 1, 1938.

Development: 500 yards per year handled; lots of big boulders taken out with a high line; not a great deal of clay; values mainly on bed rock; averages gravel 12' deep. Gold is coarse; part of it is rough; both placer and pocket gold are found. Has been operated for 5 years; bed rock is both hard and soft serpentine, very uneven.

Equipment: 800 feet of 7"-11" pipe, 1 No. 1-giant, 2 men operate the property; high line and winch for removal of boulders.

Informant: L. Krewson 3/28/40

Report by: Ray C. Treasher.

LITTLE PICKETT CREEK MINING COMPANY Grants Pass area

Location: sec. 22, T. 35 S., R. 7 W., on Pickett Creek.

Area: One patented claim, 37.414 acres.

History: Josephine County records show that this patented claim originally was owned by J. T. Duffey (Deeds vol. 48, pp. 597-599); sold to Little Pickett Creek Mining Company (Deeds vol. 66, p.322); acquired by Josephine County (Deeds vol. 69, p. 513); purchased by Thomas Hinton who sold it (Deeds, vol. 78, p. 320) to Arthur Lindh who now owns it.

No Further data.

Informant: Ray C. Treasher, 4/10/42

LUCKY QUEEN MINE (gold) Grants Pass area

Owner: J. R. Rush, Rt. 1, Box 718, Grants Pass, Oregon.

Location: Five miles east of Hugo in the W½, SE¼ sec. 31, T. 34 S., R. 5 W.

Area: Six lode mining claims held by location. First recorded in 1899, amended in 1901.

History: "The Lucky Queen Mine ..... is owned by Rush Brothers. A 10-stamp mill was built here in 1886 but it has since been removed."

Geology: "The ore is in quartz veins in argillaceous quartzite. At the face of a crosscut on the lower level the sediments strike N. 40° E. and dip 50° S.E. The auriferous veins strike and dip in about the same directions. On the lower level the main vein is cut off to the northeastward by a fault which strikes N. 70° W. and dips 65° N.E. The vein varies in thickness from about 6 to 30 inches, and the ore is said to average $10 a ton in gold. The mine has been idle for many years, but two of the adits are still in good condition."

The Lucky Queen dike is 40 feet wide, trends northeast-southwest, and dips about 80° E. The Double Eagle ledge, having the same trend and dip as the Lucky Queen dike, lies between diorite walls. The Lozier Dike, called a "talc dike" is from 20 to 50 feet wide, trends north and south and dips 80° E. The ore is reported to contain tellurides but some of the gold is free. Mineralization occurs in both the quartz and sheared country rock. The Lucky Queen dike is in a mineralized shear zone.

Development: The Lucky Queen adit is 500 feet long, the last 100 feet of which is caved. At a distance of about 400 feet from the portal a raise has been driven 65 feet to the adit above. The upper tunnel, about 40 feet in length, is now caved. The West Side adit is 200 feet long with one drift 20 feet in length. The Double Eagle adit is 120 feet to the vein; a drift 100 feet long from this intersection was driven on the vein. A raise 65 feet

long connects this adit with the surface. The "Porphyry Vein" was driven about 70 feet including 30 feet of drifting. An adit now caved was driven 200 feet on the Lozier claim.

Equipment: 750 feet of light weight rails, one 16 cu. ft. mine car, 3 small cyanide tanks.

Informant: J. R. Rush

Report by: Ray C. Treasher 3/28/40

Reference: Parks and Swartley 16:145 (quoted)

MAY QUEEN MINE (gold) Grants Pass area

Location: "The May Queen Mine, 5 miles southeast of Grants Pass, is on the east slope of Baldy Mountain in secs. 26 and 27, T. 36 S., R. 5 W., on the west side of Green Creek, at an elevation of about 1500 feet, as measured by barometer."

Geology: "The country rock is a hard, dense greenstone, in which the vein strikes N. 55° W. and dips 30° N.E. A drift on the vein extends 280 feet to the northwest; about 100 feet from the breast a raise on the vein extends 125 feet to the surface. Some ore was stoped out near the raise. There are no very distinct walls or fault gouge; the vein quartz varies from a mere stringer to a foot in width. At the southern end the vein seems to fork into 2 smaller veins."

Reference: Parks & Swartley, 16:152 (quoted)

McALLISTER, GEORGE Grants Pass area

see George McAllister-Wax Campbell Manganese

MOUNTAIN TREASURE MINING CO. Grants Pass area

Location: sec. 34 or 35, T. 34 S., R. 5 W.

History: Parks & Swartley reported as follows:

"About 1908, the Mountain Treasure Mining Company (dissolved Jan. 1, 1915) put in a 2800-foot pipe line to develop power to open their mine which is in sec. 34 or 35, T. 34 S., R. 5 W., north of Jump-Off-Joe Creek and 8 miles east of Hugo. Apparently only an overshot wheel was installed, and an arrastre built. The underground development accomplished by the company was not seen by the writer. No work has been done for some years."

Reference: Parks & Swartley, 16: 157-158 (quoted)

NORTHERN CALIFORNIA DREDGING CO. Grants Pass area

Operators: J. C. Boyle, Applegate, Oregon, and J. E. Ely, 654 N. 3rd Street, Grants Pass, Oregon.

Location: sec. 25, T. 36 S., R. 5 W., on Jump-Off-Joe Creek. All patented ground except 80 acres of Sexton placer. (Reached via Hwy. 99, to the road intersection 10 miles north of Grants Pass, then up Jump-Off-Joe road 5 miles and east up Jump-Off-Joe Creek, an additional 6.4 miles. Total, 21.4 miles from Grants Pass.) Altitude, 3000 feet.

Area: 200 acres containing an estimated 2,000,000 cubic yards along 3 miles of channel. The ground is patented except 80 acres of Sexton placer.

History: Dredge started digging about Aug. 11, 1941. Plans include dredging the old Cotter & Harriman and the old Sexton hydraulic placers.

Equipment: Bodinson floating plant, steel pontoons, rated capacity 1500 cu. yds. per day; Trommel is 48" x 16', six feet unperforated, remainder with 3/8" holes and nugget slots near retaining ring; ten sluice boxes, 2' x 6' with Hungarian riffles; stacker is 30 feet. All Diesel powered.

Dragline is a 1¼ yd. Lima Diesel, with a 50' boom and a 1 yard bucket. A TD40 Diesel cat. welding outfit, P. C. Hansen, 300 amps. Nine men are employed on three shifts.

Dredging Conditions: The channel is 500 feet wide, average. Maximum depth to be dredged is 12 feet, average 7 feet. Maximum size of boulders is 24" - 30", with 5 percent over 12". Very little sand less than 3/8". There is a clay zone on top that is stripped and very little clay below this. Bedrock is soft and uneven; it is dug 2 feet deep. The gold is fairly heavy and coarse; it amalgamates freely and has practically no black sand or platinum. The ground is reasonably tight and holds water. Ground water level is that of the pond, and water comes from Jump-Off-Joe Creek the year 'round.

Report by: Ray C. Treasher, 8/26/41

MOUNT PITT MINE (gold) Grants Pass area
also known as County Line Mine

"The Mount Pitt Mine, now known as the County Line Mine, is owned by G. E. Howland, of Grants Pass. It is located almost on the line between Jackson and Josephine Counties in sec. 31, T. 34 S., R. 4 W. (and in sec. 36 adjoining) 10 miles east of Hugo, at an elevation of about 3050 feet, as measured by barometer. It is equipped with a 5-stamp mill with 2 boilers, a 40 H. P. engine, a crusher, a Frue vanner, an 11-foot Pinder concentrator, a 10-foot amalgamating plate, an air compressor, and a cyanide plant. It is opened by about 800 feet of underground work of which more than 500 feet is in the main adit which enters as a crosscut S. 75° E. for 190 feet, and continues as a drift S. about 10° E. some 300 feet. It terminates in a fault or slip containing no ore. The ore consists of pyrite in quartz and calcite forming a vein in plicated argillite associated with serpentine."

Reference: Parks & Swartley, 16:158 (quoted)

OAK MINE (gold, silver, copper, zinc) Grants Pass area

Owners: George A. Baker, Ben Baker, and George Buell, Route 1, Grants Pass, Oregon.

Location: 9 miles north of Grants Pass in SW¼ sec. 4, T. 35 S., R. 5 W.

Area: Four full claims containing 82.66 acres.

Geology: Ore deposit is in a pronounced fracture in the greenstone (probably an altered andesite). There is a small gouge seam with quartz and limonite, together with similar more or less parallel fractures in places. Veins are probably resilicified shear zones in the greenstone. Average length of lenses is 50 to 60 feet not exposed at widest part. A lens about 130 feet south of crosscut is about 5 feet wide. The vein in most places is tunnel width. A vein was cut by the crosscut tunnel 65 feet southwest of the main vein. It is sixteen feet wide in the crosscut and contains streaks of sulphides, oxides, and greenstone throughout its entire width. No work has been done on this vein. Minerals noted are chalcopyrite, sphalerite, pyrite, pyrrhotite, small amounts of galena and quartz. Strike is N. 25° to 30° W., dip 70° to 75° W. In the north drift about 222 feet from the crosscut tunnel a drift runs east 65 feet cutting a dike 35 feet wide which carries values. The intersection of this dike and the fracture causes enrichment at the winze.

"The main adit enters as a crosscut in greenstone (probably an altered andesite); N. 60° E. about 200 feet from the portal a winze follows the vein down about 50 feet. At the winze solid chalcopyrite ore is visible in the footwall on the main gold-bearing vein which here strikes N. 13° W. and is nearly vertical. At three other points along the drift following the gold-bearing vein small veins of copper ore are visible in the walls. The workings have a total length of about 800 feet. The minerals present in ore of the Oak Mine include chalcopyrite, pyrite, pyrrhotite, sphalerite, galena, quartz, and rare malachite and pyrolusite. One or two veins contain good copper ore."

Metallurgy: The sulphide ore will have to be treated by selective flotation so as to separate the copper and zinc. Average of 63 samples was over 1% copper, .07 oz. gold and .6 oz. silver. (Assays were run by C. L. Lull). The above 63 samples were taken at 10 foot intervals. Indicated tonnage above lower level is 10,200 tons. Outcrop has not been sampled. The average value per ton would be $5.12 with copper at 10¢ a lb. and silver at 70¢ per ounce. Zinc should increase the value per ton about 60¢.

A few hundred tons of gossan have been milled and yielded about $3.00 per ton in free gold. Depth of the free gold zone is 50 feet.

Development: Two tunnels, upper one S. 40°E., 127 feet; lower tunnel N. 43° E., 200 ft. crosscut to vein; drifts S. 31° E., 262 feet. North drift 312 feet meanders about N. 30° E., with a 65 foot crosscut to east. One winze 50 feet deep just north of point where crosscut tunnel cuts veins.

General: No equipment; steep mountainous topography; elevation 1600 feet; some good pine and fir suitable for mine timber; water for milling available from Jump-Off-Joe Creek; work all year; little snow; road built to property.

Reference: Parks & Swartley, 16:165 (quoted)

Informants: J. E. Morrison, 1937
Ben Baker, 3/29/40

OREGON GOLD MINES COMPANY (gold, copper) Grants Pass area

History: Parks and Swartley reported as follows:

"Local name: Granite Hill Mine.

"Office: 1208 West Monroe St., Chicago, Ill. Elmer E. Dick, 736 W. Jackson Blvd., Chicago, Pres.; J. M. O'Grady, 854 Lakeside Place, Chicago, Sec.; Henry F. Comstock, 1262 Carmen Ave., Chicago, Treas.; H. D. Norton, Grants Pass, Oregon, attorney in fact. Capital stock $2,000,000; par value $1.00; $2,000,000 subscribed and paid up, $1,657,436 issued."

Reference: Parks and Swartley, 16:171-172 (quoted)
See Granite Hill Mine for balance of report.

ORO FINO MINE (gold) Grants Pass area
Also known as Gold Drift Mine.

Owner: J. E. Verdin, Grants Pass, Oregon.

Location: Three miles east of Winona and 12 miles north of Grants Pass in secs. 2 and 3, T. 35 S., R. 5 W.

Area: 3 unpatented lode mining claims. Area 56.75 acres.
Elk Horn No. 1 S½ of SE¼ of SE¼ sec. 3.

Elk Horn No. 2 S½ of SW¼ of SW¼ sec 2.
" " " 3 S½ of SW¼ of SE¼ sec.3.

Geology: "The main adit of the Oro Fino leads to about 1300 feet of crosscuts and drifts, nearly 1000 feet being on one or more veins which are persistent and fairly regular in their course. The country rock is a greenstone, which seems to be an altered andesite, containing abundant small crystals of hornblende, some plagioclase phenocrysts, some epidote, little pyrite, quartz and chlorite. The vein filling consists of quartz which has been broken in many places with later introduction of calcite and pyrite. The iron sulphide is also found commonly scattered through the country rock, especially in fragments of the latter, which are in or near the veins. Work was in progress at the Oro Fino in 1913, but for the most part it was in shallow workings some distance from the main adit."

General: In 1933 a tunnel 165 feet long was driven about 80 feet above the lohg tunnel. Informant did not visit this tunnel. The long tunnel is over 680 feet, and is almost caved closed near portal. The vein varies from 6 to 20 inches in width. No other changes since 1916 report.

Informant: J. E. Morrison, 38

Reference: Parks & Swartley, p.176, 1916 (quoted)

PROW'S MILL Grants Pass area

Owner: Dale Prow, Grants Pass, Oregon.

Location: 4 miles east of Grants Pass, along Rogue River, in sec. 23, T. 36 S., R. 5 W.

History: Construction of the mill was completed about the 1st of June, 1940. The mill was constructed by Mr. Prow for the purpose of making mill tests on ores from different mines in southwestern Oregon. The construction of the mill is such that the capacity may be increased by replacing the present machinery with larger sized equipment. Approximately 60 tons of ore from several different mines was treated between June 1, 1940,and Dec. 20, 1940. Financially, the project was unsuccessful, principally because the customers did not settle in full for the milling costs. In the spring of 1942, the mill was not in operation, but Mr. Prow was considering revamping it as a concentrator for chrome ore.

Equipment: Trucks dumped onto a 4' x 8' grizzly having 1¼" openings; oversize went through a 6" x 9" Joshua Hendy jaw crusher and mixed with the under-size in an 8-ton ore bin. A pan feeder and bucket elevator brought the ore to a 22" x 48" trommel screen with 1/16" holes; the oversize going back to the crusher and the undersize to two 50-ton bins. Fed by a pan feeder ore went to a 30" x 30" Marcy type ball mill and 50-mesh screen, the sands going back to the ball mill by means of a drag classifier; overflow went to a 30" x 66" amalgamating plate and a 5' x 12' Economy Table (Wilfley type). Tailings were rejected. Power was supplied by 3 kerosene engines: 1 1½-h.p.; 1 3-h.p.; and 1 15-h.p. A 750 gallon tank is used for storing the fuel oil. Fresh water from a deep well is stored in a 1200 gallon tank.

Informant: A. A. Lewis, Dec. 20, 1940.
Ray C. Treasher, Feb., 1942.

QUEEN MINE (gold, copper) Grants Pass area

Location: sec. 247, T. 36 S., R. 8 W.

History: Parks and Swartley reported as follows:

"The Queen gold and copper mine is about 4 miles northwest of Waters Creek station, on California-Oregon Coast Railway, on the divide between Waters and Limpey Creeks, the former being a tributary of Slate Creek. The country rocks are reported to be greenstone, argillites and serpentine by Diller, who says further:

"'A small placer at the head of one of the forks of Waters Creek near the contact between greenstone and serpentine yielded $3,000 in gold some years ago and started prospecting to find its source. A number of tunnels and crosscuts aggregating over 800 feet of underground workings have been run in the greenstone. An interesting breccia of greenstone, cemented by quartz and about 12 feet in thickness, is exposed by the tunnel on the Limpey Creek side of the divide and may be locally mineralized. Outcrops of this breccia were seen as far west as Slate Creek, two miles below the Buckeye Mine'".

Reference: Parks & Swartley, 16:184 (quoted)
Diller, 14:60

RAMSEY MINE (gold) Grants Pass area

Location: sec. 24, T. 36 S., R. 8 W.

History: Parks & Swartley reported as follows:

"The Ramsey Mine is near the Buckeye and Queen Mines in the Slate Creek region; the ore at the Ramsey carries gold with little or no copper; the mine is located on the west fork of Slate Creek about 6 miles northwest of Wonder and 1½ miles above the forks at an elevation of about 2800 feet, as measured by barometer. The workings are shallow and disclose no regular vein. The ore is due to surface enrichment; and much of it has been treated by placer sluicing methods. The mine is owned by W. H. Ramsey who has an arrastre in which some ore has been treated on the creek just below the workings. According to Diller:

"'In the upper tunnel the fault contact of the serpentine overlying the greenstone is well exposed, striking N. 25° W., and dipping 62° N.E. That is, however, in a bend of the contact, for the general trend of the contact of serpentine and greenstone is N. 30° E., and the dip is 40° S.E. Some distance west of the contact toward the creek another tunnel has been run into crushed greenstone, and the iron-stained rock has been reported by local assayers to contain a small percentage of tungsten. A sample selected by Mr. Ramsey and myself to test this matter was sent to the laboratory of the Geological Survey where it was tested by R. C. Wells and found to contain no tungsten, but a small fraction of 1 percent of vanadium'".

Reference: Parks and Swartley 16:187 (quoted)
Diller, 14:61-62

RED JACKET CLAIM Grants Pass area

see Oregon Gold Mines Company

RED JACKET PLACER Grants Pass area

"This placer was opened by Hull and Beck shortly after Hull sold the Red Jacket Mine to the Granite Hill. A ditch was run connecting the North Fork, Middle fork, and the South Fork a distance of about 2½ miles, and from there to the head of the Red Jacket Hill, giving a head of about 125 feet. The ground worked by Hull and Beck consisted of about 5 acres. Hull is reported to have stated that the placer yielded about $65,000".

SEXTON PLACER — Grants Pass area

Owner: George M. Kebelbeck, Grants Pass, Oregon.

Location: sec. 24, T. 34 S., R. 5 W., on Jump-Off-Joe Creek.

Area: Eighty acres of patented land.

History: Worked intermittently for past 10 years. Mr. W. G. Knox sold the property to the present owner in the summer of 1938. About one acre has been mined.

Water Rights: A water right calls for all the water out of Bummer Gulch. Two ditches, being about 2½ miles long, collects water from French and Crocket Creeks. The water is delivered to the property under about an 80 foot head. Length of mining season is from November to May. Insufficient water or pressure to operate the property economically.

Geology: Slate bedrock is very rough; gold fairly coarse; many boulders and some clay.

General: Elevation, 3100 feet. Gulch and side hill operation. Mountainous topography. Maximum 5 feet of snow. No exploration work, but owner thinks he has sufficient ground to operate for ten years. Equipment consists of two No. 1 and one No. 2 giants; 1500 feet of 8 to 18" pipe.

Informant: J. E. Morrison, 38.

SINGING WATER PLACER CLAIM — Greenback area

Owner: O. F. Smith, Route 2, Box 327A, Grants Pass, Oregon.

Location: NE¼ sec. 3, T. 35 S., R. 5 W.

Geology: Bedrock is very rough greenstone with many boulders. Some coarse gold is found in the main channel. Boulders are moved with a hand derrick.

Informant: J. E. Morrison, 6/29/39

SNOWBALL GROUP — Grants Pass area

see Hugo Silica Mine

SURETY PLACER — Grants Pass area

also known as Forest Queen.

Owner: Surety Placers, Inc. Mrs. Mary Peak, Sec.-Treas., 512 Cambridge Apartment, Seattle, Washington; W. D. McIntosh, Operating Foreman, Route 1, Box 801, Grants Pass, Oregon.

Location: On Louse Creek, seven miles by road north of Grants Pass in secs. 21, 22, 27 and 28, T. 35 S., R. 5 W. Elevation, 1700 feet.

History: This property has been a fairly steady producer for years. No record of production.

Area: The company owns 140 acres and has a lease on 80 acres.

Water Right: A vested water right of 15 c.f.s. and 40 c.f.s. water right, which has no priority. There is a ditch 1½ miles long that takes the water out of Louse Creek and delivers it to the property under a 200 foot head. Average season is from November 15 to May 15.

Equipment: Seven giants, five No. 3's and two No. 2's; several hundred feet of pipe and a small donkey engine; an overhead cable for moving big boulders.

Geology: Gold deposited in Louse Creek by quartz ledges up stream. Very little clay and many boulders up to size of a wash tub. Bedrock fairly easy to clean.

Informant: J. E. Morrison, 38.

SWASTIKA MINE Grants Pass area

see Swastika Mining Company

SWASTIKA MINING COMPANY (placer) Grants Pass area

Owner: N. A. Peterson, Bend, Oregon.

Location: On Jacks Creek, a tributary of Jump-Off-Joe Creek, in sec. 32, T. 34 S., R. 5 W.

History: Parks & Swartley reported as follows:

> "Office: 19 Congress St., Boston, Mass. Bernard C. Pratt, 53 State St., Boston, Mass., Pres.; Fred C. Cox, Malden, Mass., Sec.-Treas.; E. A. Rathbone, Grants Pass, Oregon, Attorney in Fact. Capital stock, $200,000, par value $1.00; all subscribed, issued and paid up.
>
> "This company has been exploiting a low gravel bank in the forks where Jack Creek flows into Jump-Off-Joe, 4 miles east of Hugo, known as the Swastika Placer Mine. It was operated for several years before 1910; since then very little has been done, aside from work on a small scale by lessees. During the operation of the mine by the company two 18-inch pipes were used, one under a head of 150 ft. and the other about 75 ft. According to Diller:
>
> "'The gravel is 15 to 30 feet deep and is composed of greenstone pebbles. It is coarsest below, the largest boulders being 2 feet in diameter. In many places the whole mass is rotten, so that many of the boulders go to pieces under the stream from the giant. The bedrock in the Swastika Mine and throughout the slopes of Jack Creek is greenstone.'".

The Swastika Mining Company has ceased to exist. The placer was tested as possible dredge ground in the fall of 1941.

Development: The placer ground extends up Jack Creek a distance of nearly a mile and areas up to 100 yards wide have been hydraulicked. Colvig (Vonne) has been mining at the upstream end of the property (Jacks Creek Placer), using water brought from Jump-Off-Joe Creek by a ditch with intake near the Little Marvel placer property. A new ditch line, taking water from Jack Creek, has been built along the lower, west side of the property to test some ground. A short sluice box was built just above the county road in 1940. Bedrock was not seen but the fine material is granitic and the cobbles are greenstone and serpentine. There are few boulders.

Informant: Ray C. Treasher, 3/28/40 and 1942.

Reference: Parks & Swartley 16:219 (quoted)
Diller, 14:105

TEN SPOT CLAIM Grants Pass area

Location: sec. 27, T. 36 S., R. 5 W.

History: Parks & Swartley reported as follows:

> "The Ten Spot Claim, 5 miles southeast of Grants Pass, is near the north side of sec. 27, T. 36 S., R. 5 W., on Baldy Mountain. It is owned by G. E.

Everson and R. E. McDaniels, of Creswell, Oregon. The country rock is decomposed or "rotten" tonalite, locally called granite. The vein is not now exposed, but is said to be a small quartz vein which has been prospected by surface pits and a shaft 30 feet deep all in "rotten granite". The vein seems to strike N. 58° E. A crosscut adit is being driven by contract; it extends 140 feet S. 40° E., in "rotten granite", so soft as to be dug with pick and shovel and to require careful lagging to hold the ground. The vein has not yet been reached by the crosscut".

Reference: Parks & Swartley 16:221 (quoted)

WOOD PROSPECT (chromite) Grants Pass area

Owner: Vic Woods, Hugo, Oregon.

Location: On the northwest slope of Sexton Mountain, 250 feet in elevation above and one-half mile east of the highway at the summit, and about 1¼ miles north of Grants Pass in the NE¼ of sec. 23, T. 34 S., R. 6 W.

Area: 1 claim.

Geology: The ore exposed in a cut consists of a few small lenses varying in width from narrow stringers up to 2 feet, and in length up to about 5 feet. There may be two such parallel lenses, but at the time of examination, the cut was partly caved, making this determination difficult. The ore is in part disseminated in irregular streaks throughout yellowish green serpentine. The high-grade is shiny black, suggesting a high iron content.

The country rock consists of normal somewhat altered dark-green dunite and peridotite. About 100 feet south and west of the deposit there is a contact with a dark colored greenstone. An irregular serpentinized zone from 3 to 15 feet wide contains scattered grains of chromite. This zone parallels the contact in a north-south direction and includes the deposit.

Report by: John Eliot Allen, April 21, 1938.

GREENBACK AREA (3)

The Greenback mining area comprising about 100 square miles is in northeastern Josephine County, in T. 33 S. and the north half of T. 34 S., Rs. 5 and 6 W. (see map opposite p. 17). Parts of this area have been known as the Wolf Creek, Grave Creek, Coyote Creek, and Leland districts.

Geography

The area is mountainous with elevations ranging from 1,000 feet on Grave Creek to 5,274 feet on Kings Mountain. The only arable land of consequence is along Grave Creek. The mountains are well timbered with conifers; hardwoods grow in the gulches. Slopes are thickly covered with brush and soil, making prospecting difficult.

Precipitation averages 35 inches annually, most of which is in the form of rain although the higher elevations receive considerable snow. Maximum and minimum temperatures range between 90° and 0°.

The Siskiyou branch of the Southern Pacific Railway traverses the western part of the area, with stations at Wolf Creek and Leland. The Pacific Highway (US 99) runs from north to south at some distance east of the railway. The two converge at Wolf Creek. Secondary roads follow most of the stream valleys, and Forest Service truck trails reach most regions in the Siskiyou National Forest.

Geology

Jurassic metavolcanics lie in the northwestern part of the area, and a narrow band of Galice slates separates them from the older Triassic (?) Applegate group. To the east serpentine has intruded the Applegate group and a small area of Galice sediments. The rocks have been sheared and fractured and quartz veins with some metallizing solutions have entered the fracture planes. The contact of serpentine and slate or metavolcanics seems to be a favorable zone for metallization.

Mining

Little is known of the early history of this area or the date of gold discovery. It is known that the Grave Creek placers produced $20,000 in gold in 1883. In 1895 there were small producing mines near Leland and Grave Creek as well as on Coyote and Wolf creeks. As early as 1898 the Greenback mine was a producer and its ore was treated in an arrastre. The Victor Junior Gold Mining Company owned the Greenback in 1900; in 1902-1903 a 40-stamp mill and a 100-ton cyanide plant were constructed; and in 1904 it was second in the State in value of production. The Martha mine was producing about the same time. The Lewis Placer near Leland and the Columbia Placer on Tom East Creek were operated in 1905. The Greenback closed in August 1906 and was idle until 1910 when it was again a large producer; however, the mine was closed soon after this time. In 1912, ten placers on Grave Creek and four placers on Wolf Creek produced most of the gold. In 1916 the Greenback reopened under new management, and the Dorothea and Jim Blaine mines were producers.

During World War I, there was some activity in chromite and manganese. Mines were opened for the production of both of these ores, but their activity ceased with the Armistice.

By 1940, almost the entire activity of the district was confined to placer mines, among which were the Brass Nail, Buckhorn Mining Company, Columbia, Egger, Forsythe, Goff, Payne's, Speaker, and Steam Beer placers. Active underground mines were the John Hall group, Macabee, and Reed mines, and these in the manner of development rather than production. The Greenback was operated by P. B. Wickham, but was shut down late in 1940. In 1942 there was small-scale placering and some activity in chrome and manganese. In 1950 two lode and five placer mines had some production.

Favorable areas for prospecting

It is generally believed that economic lode deposits are found close to serpentine contacts in this area. According to this belief, the most favorable area for prospecting would be in the vicinity of the Greenback mine and east and north from this point. Many prospects have been opened in this area, and, while the gold values are not generally high, possibilities exist for developing productive mines.

Most of the possible placer lands are now held under location, lease, or deed, so that new locations are improbable. Some ground believed worked out and some low-grade unworked land may be susceptible of profitable operation by using improved methods of handling gravel.

Mining properties

Descriptions of mining properties of record are given in the following pages.

AMAN RANCH (placer) Greenback area

Owner: Gene Aman, Wolf Creek, Oregon.

Location: NW¼ SW¼ sec. 23, T. 33 S., R. 6 W., on Coyote Creek, about ½ mile above the point where highway 99 crosses Wolf Creek.

Area: 40 acres of patented land, of which about 5 acres were mined by drag line operation in 1937 by Carlson and Sandberg. Idle since 1937.

Informant: J. E. Morrison, 1939.

ANACONDA MINE (gold) Greenback area

Owner: O. L. Moore, Wolf Creek, Oregon.

Location: sec. 29, T. 33 S., R. 5 W.

History: The property has been worked since the 1890's; most activity has been in hunting for high-grade pockets. Most of the old tunnels are caved and inaccessible. The tunnel which Mr. Moore has reopened was used in early days. Some stoping was done on the vein and most of the stopes have been back-filled and lagged-off.

Equipment: One small ore car; hand tools; a small mill is in process of construction. It is designed to grind the contained arsenopyrite fine enough to release the gold so that it may be amalgamated. Concentrates will be saved for shipment.

Development: Former operators opened three or more levels most lineal footage of which is caved and inaccessible. The present operators have opened the upper tunnel, retimbered it, and are doing some mining adjacent to old stopes. This level is open for about 200 feet with two entries into small stopes. One small prospect tunnel has been driven in hard slate.

Geology: The property is located near the contact of Galice slate and what is locally called diorite but has been mapped as greenstone in the Riddle folio. The quartz vein is exposed in slate which has been sheared so that most of it resembles clay gouge. The vein is rather flat with minor "rolls". The ore seems to be very loan at the edge of the "rolls" but is richer on the flat portions. Arsenopyrite content is unusually high. Some of the gold is free and much of it is finely divided in the arsenopyrite. By allowing the arsenopyrite to weather or by treating it with acid, nuggets of free gold can be released. Much of the gold, however, is intimately mixed with sulfides. The quartz vein seems to have two sections: one consists mainly of white glassy quartz which may or may not contain free gold and sulfides; the other portion is "ribbon quartz". The black streaks through this zone consist of sulfides containing the gold. The ore is exceptionally rich and the property is one of the small high-grade mines of the area.

Informant: Ray C. Treasher, July 1941

BOULDER MANGANESE AND MINERAL LEDGE Greenback area

Owner: Dan N. Trudell, 329 West L Street, Grants Pass, Oregon.

Location: sec. 25, T. 33 S., R. 5 W., on King Mt. road, just east of its crossing with Boulder Creek.

Area: One claim, held by location, dated Aug. 31, 1940, recorded at Grants Pass, Oregon.

History: It is reported that this deposit produced a small amount of manganese during the first World War; as nearly as could be determined the operating company was called the Oregon Manganese Company (see Parks and Swartley, p. 173).

Development: There is one short adit about 100 feet long. Manganese stained rock shows at the portal and inside about 40 feet a small pocket was taken out. Just above the tunnel is a shallow prospect trench that exposes a brownish rock which might be mistaken for manganese ore. There are reports of more workings up the hill, but none could be found. There is also a report of workings about $\frac{1}{4}$ mile northwest, but these could not be found.

Geology: The country rock is classed by Diller as Galice formation but the U.S.G.S. has identified it as similar to the Applegate series of the Illinois Valley. The rock is quite slaty and seems to be quartzose to cherty. Manganese oxides stain many cleavage surfaces and in some places make the rock appear quite black.

No samples were cut, as the "good ore" was situated at a place where it was considered unsafe to cut a sample. However, "ore" piled on the dump was collected - it would not run over 5 percent manganese oxide.

The structural trend is N. 35° E., dip is 45° S.E.

Conclusions: The manganese ore consists of country rock stained by manganese bearing solutions. It is possible that further development might expose material which has had sufficient concentration of oxides to make ore.

Reference: Libbey 42:25-26

Report by: Ray C. Treasher, April 8th, 1941

BRASS NAIL PLACER Greenback area

Owner: Floyd and Merle Burrough.

Location: On Brass Nail Gulch upper Jump-Off-Joe Creek 15 miles north of Grants Pass in sec. 13, T. 34 S., R. 5 W.

Area: Two claims, 40 acres, held by location. Elevation 3200 feet. Maximum 5 feet of snow.

Water: Water is taken out of Brass Nail Gulch in a ditch ¼ mile long to a reservoir from which water is used intermittently to supply the giants.

Equipment: 2 - No. 1 Giants and 800 feet of 8, 11, and 16-inch pipe.

Geology: Flat gulch operation. Irregular greenstone bedrock. Few large boulders. Coarse gold.

Informant: J. E. Morrison, 38.

BUCKHORN MINING COMPANY (placer) Greenback area

Owner: F. W. Gilliam and others.

Location: sec. 7, T. 33 S., R. 5 W. on Wolf Creek.

Area: About 2 acres of placer ground along one-half mile of Wolf Creek.

History: The property was formerly operated by the Yak Mining Company, a Yakima, Washington company. At present the property is owned by the Buckhorn Mining Company, which is represented by Mr. Gilliam. During the season of 1941, Verne Strong operated the property using a Ruble elevator.

Equipment: About a thousand feet of pipeline and two giants plus the Ruble elevator were recently installed.

Development: Most of the placer ground has been worked. Present operations consist of cleaning some virgin ground on the margins and reworking some of the tailings.

Informant: Ray C. Treasher, April 1941.

BULLION MOUNTAINS, INC. Greenback area

see Greenback Consolidated

CARLSON & SANDBERG (drag-line) Greenback area

see Aman placer

COLUMBIA PLACER Greenback area

see also Greenback Consolidated

Owner: Columbia Placer Company.

Location: Sec. 32, T. 33 S., R. 5 W.

The old Tom East portion is being mined (1940). It is estimated by owners' representative that about 400 acres of dredgeable ground averaging 20 feet in thickness and carrying 50 cents a cubic yard could be mined. It is reported that between the Columbia Placers and the Pacific Highway, dredging ground four miles in length will average 70 feet in depth.

Informant: Dr. Rex Ross, March 1940

Reference: Diller, 14: 104-105

COPPER QUEEN MINE (gold, silver, copper) Greenback area

Owners: O. S. Blanchard, Herman Schmidt, Phil Starr, and L. L. Wartes, Grants Pass, Oregon.

Location: sec. 15, T. 34 S., R. 6 W.

History: Parks & Swartley reported as follows:

> "The ore body has irregular masses of chalcopyrite, pyrrhotite and pyrite between serpentine and greenstone. General occurrence is much the same as ore bodies in the Queen of Bronze and Waldo Mines in southwestern Josephine County. Several carloads of copper ore were shipped from this property during the spring and summer of 1916. The property at that time was under lease to P. B. Wickham."

During the fore part of 1941, a Portland group brought in machinery to begin operation on both the gossan and underground deposits. Lon Shannon of Portland was the engineer. Operations were discontinued later in 1941.

Development: The property is developed with 7 tunnels and a large number of test pits.

References: Parks & Swartley 16:73 (quoted), Grants Pass Courier, April 2, 1941.

Informant: J. E. Morrison, 1939.

COUGAR MINE (gold) Greenback area

Owners: H. J. Stephens, P.O. Box 405, Grants Pass, Oregon; and M. L. Hickerson, Grants Pass Auto Court, Grants Pass, Oregon.

Location: On Coyote Creek in NE¼ sec. 22, T. 33 S., R. 5 W.

Area: 100 acres - 6 claims.

History: One small pocket is reported to have been taken out.

Development: Two shafts, 40 feet deep on vein. One open cut and two crosscut tunnels.

Geology: Porphyritic greenstone country rock (Riddle folio) forms contact with serpentine to the east. Soft and crushed quartz and wall rock make up the filling in the zone of fracture. No sulphides or gold observed in the samples; the pocket was said to consist of free gold. Pyrite is common in that district. Strike of vein N. 36° E., dip 78° N. on Cougar claim. Strike N. 33°E., dip 66° N. on Rex claim.

General: Old model T. Engine made into a compressor; one Ingersoll-Rand rock drill. Elevation 3200 feet; plenty of mine timber; very little water; no water power. Maximum snow is two feet; all year work.

Informant: J. E. Morrison, 38.

DAISY MINE (gold) Greenback area
also known as Hammersley Mine

Owner: C. F. Campbell, Eugene, Oregon. Under lease and bond to and being operated by W. D. McIntosh, Palace Hotel, Grants Pass, Oregon, and W. C. Barker, Grave Creek, Oregon.

Location: sec. 14, T. 34 S., R. 5 W., at the headwaters of Jump-Off-Joe Creek. Reached via the road from Jump-Off-Joe to Placer.

Area: Eight mining claims, held by location.

History: Parks & Swartley report as follows:

"The Daisy Mine, 10 miles east of Hugo, was known at one time as the Hammersley Mine, and is still frequently so called. It is just east of the divide between Jack Creek and Bummer Gulch, at the head of the latter, at an elevation of 3800 feet, as measured by barometer. It is owned by G. R. Smith of Grants Pass. It was discovered in 1890 and has produced more than $200,000 in gold, according to the owner. It is equipped with a 5-stamp mill, having a 14-foot amalgamating plate and one concentrating table, as well as steam boiler and engine. The workings are shown in the illustration, which is section in the plane of the vein based on a similar drawing made by A. H. Gunnell, of Grants Pass, in 1908. A long crosscut adit is now being driven to reach the ore body at considerably greater depth. The vein strikes nearly east and west in andesitic country rock. The main shaft follows the vein on a steep incline. The ore consists of vein quartz, with some calcite and brecciated fragments of argillite, serpentine and quartz cemented by epidote, quartz, calcite and kaolin."

Mr. McIntosh began work in 1938. He pumped out the mine and cleaned out the lower level. The mine is again filled with water up to the 80 foot level, out of which water drains. Some years ago 540 feet of tunnel was driven at a lower elevation to drain the mine and open the vein at greater depth. Hughes and Inman cyanided part of the dump in 1940.

Development: An inclined shaft reaches the 80-foot, 110-foot, and 175-foot levels. Ore has been stoped around the shaft from near the surface to the lower level. A tunnel, 76 feet below the 175-foot level was started to drain the mine and open the vein at greater depth. Retimbering of the 540 feet of tunnel is in progress (Sept. 1941), following which about 500 feet of new tunnel will be required to tap the old workings. A small saw mill is in operation producing mine timbers. Machinery and equipment, other than the saw mill, are in poor condition.

Geology: The underground workings were flooded at the time of the visit. Geological notes are given as reported by Frank M. South, who states that there are five veins. Three are parallel and two cut the others at right angles. The country rock is "diorite and porphyry." "In the eastern part of the group the diorite is altered and has on the surface the appearance of serpentine, but it is simply 'altered diorite'". The vein trends east-west and dips north. Both walls of the vein in the lower level show numerous small stringers coming into the main vein at angles. These stringers range from an inch to 8 inches in width and reportedly have some bearing on the metallization. The ore is "base".

Production: No accurate data available. South indicates a probable production of $250,000.

Reference: Parks & Swartley (16:84)
Private report by Frank M. South.

Informant: W. D. McIntosh

Report by: Ray C. Treasher, 9/8/41

DOROTHEA MINE (gold, silver) Greenback area

Owners: J. P. Reddy, Trustee, Los Angeles, Calif., Lessee: P. B. Wickham, Ashland, Oregon.

Location: NW¼ sec. 22, T. 33 S., R. 5 W.

Area: One hundred acres of patented land.

History: Parks & Swartley reported as follows:

"Dorothea (Marshall) mine is owned by Mrs. J. F. Reddy who purchased it from Glendale Mining & Milling Company.

"The Marshall mine is located on the north side of Coyote Creek near the N.W. corner of section 22, T. 33 S., R. 5 W., 5 miles east of the Pacific Highway, the nearest railway station being Leland. It has been opened by several adits and a shaft. A crosscut adit about 500 feet long is wholly in serpentine. A shaft about 100 feet deep exposes a good looking white quartz vein between a serpentine hanging wall and greenstone footwall striking east and west and dipping steeply to the north. A shearing movement has taken place since the vein was formed, approximately in the plane of the vein and involving portions of it in the crushed zone. On the footwall the better part of the vein is found which varies from 1 to 4 feet in width. An adit cuts the vein at about 150 feet in depth and from this level considerable stoping has been done. The mill has 5 stamps and a Fairbanks-Morse standard concentrating table driven with steam power."

Equipment: Ten-stamp mill building, compressor room, skip, and old camp. Five-stamp mill battery installed. Rock crusher, concentrator, plates, engine, etc.

Development: Main working level 700 feet in length. Shafts and raises about 200 feet. Total raises including sublevels amount to about 1500 feet.

Geology: The country rock consists of a diorite hanging wall and a serpentine footwall. The vein has a width of from 8 to 20 feet with an east-west strike and a north dip.

Whether there is one or several definite shoots cannot be determined from present development which is confined mostly to one locality; but the surface showing of the deposit appears to be of the same character for some 1500 feet or more in both directions from the workings.

There are at least two distinct classes of ore. One is a massive white quartz lying next to the footwall and the other a darker more highly laminated quartz in a shear zone of dark gangue along the east contact of the massive quartz. Each stratum seems to have an average width of about 4 feet in the developed area. Value of ore in the developed zone as determined from sampling and milling has a range of from $5.00 to $12.00 per ton, mostly free milling to present depth of 200 feet.

Production: Records are incomplete, but it is estimated that the mine has produced about $50,000, of which $30,000 was milled from shallow workings along the hanging wall across the apex of the vein. The ore was crushed in a stamp mill, followed by amalgamation and gravity concentration. The owners estimate that they have 10,000 tons blocked out.

Informant: P. B. Wickham, 1939.

Reference: Parks & Swartley 16:87 (quoted)

DUTCH GIRL MINE — Greenback area

see Shot Mine

EGGER PLACER MINE — Greenback area

also known as Laymen Placer

Owner: Fannie M. Egger, Wolf Creek, Oregon. Leased to Olen Bell, Wolf Creek, Oregon.

Location: On Wolf Creek six miles east of Wolf Creek Post Office in secs. 9 and 10, T. 33 S., R. 5 W.

Area: 11 placer claims. 220 acres held by location. The claims lie along Wolf Creek for a distance of $1\frac{1}{4}$ miles.

History: The history prior to 1929 when Mr. Egger purchased the property is unknown. He sold it in 1931 and it was repossessed in 1935. Since then the ground has been leased.

Geology: Gulch operation, steep mountainside. Greenstone and slate bedrock. No large boulders or clay. Both fine and coarse gold.

General: One ditch one and one-fourth miles long. Mining season is from November to June. No exploration work. About one acre has been mined. Elevation, 1960 feet. Maximum of 3 feet of snow. In cold weather the water freezes in the ditch. Two no. 2 giants and 1500 feet of 11 to 26-inch pipe.

Informant: J. E. Morrison, 38
Rex Ross, 40

EPPERLY CHROMITE — Greenback area

see Graves Creek Chromite

FORSYTHE PLACER — Greenback area

Owner: Melvin Davis, operator.

Location: Coyote Creek, sec. 23, T. 33 S., R. 6 W. (Adjoins Payne Placer)

Operation: Five giants, two operating to a Ruble elevator. Giants so placed that gravel from any part of the property can be washed to the elevator.

Informant: Percy Williams, March 1940

GILBERT ERI PROSPECT (gold) — Greenback area

Owner: Gilbert Eri.

Location: sec. 11, T. 33 S., R. 5 W.

History: According to F. W. Gilliam, this property "consists of a small high-grade pocket. This is an old mine but development work has been pushed in the last few years. Some nice gold is reported to have been taken from this property. Older name could not be recalled."

Informant: F. W. Gilliam 3/14/40.

GILLIAM PLACER — Greenback area

see Buckhorn Mining Co.

GLENDALE MINING & MILLING COMPANY (gold) — Greenback area

see Dorothea Mine (Marshall Mine)

GOFF MINE (Placer) — Greenback area

Owner: Lewis Investment Company, Portland, Oregon. Contractors are T. J. Clark, Leland, Oregon.

Location: NW¼ sec. 5, T. 34 S., R. 6 W.

Area: 160 acres deeded land.

History: Known as the Goff mine for over 60 years. 15 acres has been mined.

Equipment: One No. 1 giant; 450 feet of 8 inch pipe; over 200 feet of head; at present prospecting work. During winter of 1939-1940, water was pumped from Flume Gulch ditch, lifted 30 feet and pumped to 40 lbs. pressure. Pump is a Fairbanks-Morse high pressure 2½ inch pump with a 28 h.p. Chev. motor. Operating time is about 2 months during the spring of each year.

Geology: Porphyry bedrock, quite soft. Not many boulders. Gold is all fine in size.

Informant: T. J. Clark, 4/4/40

GOLD COIN MINE (gold) Greenback area

History: "The Gold Coin Mine is about half a mile northeast of the Martha Mine in sec. 22, T. 33 S., R. 5 W. and is reached by the wagon road up Coyote Creek. It is opened by 3 adits having a total length of about 450 feet; all 3 are in greenstone and serpentine and disclose no well defined vein, but instead numerous bunches and stringers of pyritic ore in calcite and quartz in serpentine. The pyrite also extends into the serpentine irregularly. In places the serpentine is so penetrated by calcite that the rock is properly designated an ophicalcite. This mine is equipped with a 3-stamp mill."

Reference: Parks & Swartley, 16:103 (quoted)

GOLD NOTE (gold, copper) Greenback area

Owners: E. R. and E. O. Crouch, Rt. 1, Grants Pass, Oregon.

Location: About twenty-five miles northwest of the town of Rogue River in sec. 25, T. 33 S., R. 5 W. and in sec. 30, T. 33 S., R. 4 W. (Jackson County).

Area: 20 acres (patented) in Josephine County and 3 unpatented mining claims in Jackson County.

History: Parks & Swartley reported as follows:

"This mine is located on the Baker Creek branch of Grave Creek, 17 miles from the railway station at Leland and 9 miles east of Placer. It is owned by E. B. Crouch, of Grants Pass, and associates.

"Some 300 feet of development work has been done, exposing oxidized and sulphide ores, which it is claimed run between 4 and 5 percent copper, with some gold values. It is proposed to treat some of these ores by leaching processes."

Equipment: Small ball mill, rolls, and small leaching tank. Ore crushed to about ¼" and leached with cyanide solution for about one week.

General: An iron gossan is mined. Ore runs from $8.00 to $13.00 a ton. Mining has been done in an open-cut about 12 feet deep and 9 feet wide.

Informant: E. R. Crouch, 2/20/39; Dan Wollfolk, 3/19/40.

References: Parks & Swartley, 16:109 (quoted)

GRAVES CREEK CHROMITE Greenback area
(also known as Epperly Chromite)

Location: NW¼ sec. 6, T. 34 S., R. 5 W., Josephine County.

"Geology: The deposits lie on the east slope of a south-trending ridge at an elevation of about 3000 feet, perhaps 200 feet below the top of the ridge. The country rock is an extremely hard serpentine, which, although broken somewhat by shear planes, still is very tough, and stringers of green pyroxene are not uncommon.

"Several parallel lenses of ore strike north and dip about 45°W. Two of these lenses show in cuts. The soil is 1-2 feet thick and may easily cover other bodies.

"During the wartime, ore was apparently taken from a crosscut reached by two short adits, as well as from the surface cuts. The tunnel entrances are now nearly hidden, and their location can only be inferred. Three new outs lie about 6 feet above the old workings. At one place a cut breaks into the old subterranean crosscut, but the latter was not entered.

"Fifteen tons of ore have been taken from the new cut and lie piled on the dump. A still more recent slide has covered the ore face in one cut, but has exposed a kidney which is at least 5 feet long and 1-2 feet wide. This kidney was the only ore seen in place on the property.

"The ore is very hard, dense, and tough. It is coarse-grained, and assays 35 percent chromic oxide. It breaks cleanly from the wall rock."

The deposit lies about 1½ miles by sled road and 2 miles by graveled road from the Pacific Highway at Grave Creek (18 miles from Grants Pass, or 6 miles from the railroad at Leland), a total distance of only 22 miles from Grants Pass.

Reference: Allen, 38:49 (quoted)

GREENBACK MINE (gold) Greenback area

Owner: Pearl E. Klump, Grave Creek, Oregon.

Location: On Tom East Creek, north of Placer in secs. 32 and 33, T. 33 S., R. 5 W., and sec. 4, T. 34 S., R. 5 W. Placer is about 5 miles east of the Pacific Highway at Grave Creek.

Area: 8 mining claims and 80 acres of patented land.

History: Parks & Swartley give the following description:

"The Greenback Mine is situated near the head of Tom East Creek, a tributary of Grave Creek, about 1½ miles north of the town of Placer, which is 8 miles from Leland, the nearest railway point, in sec. 33, T. 33 S., R. 5 W. Its presence has probably had much to do with making Tom East Creek the site of one of the most important placer mines in Oregon.

"The mine was discovered in 1897 and yielded rich returns from the first. In 1898 it was a producer of some importance, although at that time its ores were treated in an arrastre at Placer. The mine was then sold to the Victor Junior Gold Mining Company, from which it passed in 1902 to the Greenback Gold Mining and Milling Company. It is now owned largely or wholly by R. C. Robinson of Parish, N. Y. It has the largest milling equipment in southern Oregon, consisting of 40 stamps, operated first by steam and later by electric power, and

the following additional machinery: one 12 by 14 air compressor, 3 large Risdon crushers, 8 amalgamating plates each 12 feet long (now removed), 5 Frue vanners and 7 other concentrating tables, several Pelton wheels, 4 cyanide tanks each 4½ by 30 feet, besides solution and sump tanks, and an aerial tramway about 7000 feet long.

"The mine is opened on 12 levels, as shown in the accompanying plan. Above the 9th level most of the ore is stoped out to the surface. Below that level it is opened only by a winze, which is full of water, and these lower workings shown in the drawing are taken from a map at the mine. The vein strikes about east and west and varies in dip from about 30° to 60°N. The average dip from the 1st. level to the 9th is about 45° N.; it is less above the 5th level, and about 55° to 60° below that level. The vertical depth reached by the 9th level is less than 500 feet. The vein averages about 20 inches in width, but varies from less than 6 inches to more than 4 feet. The vein filling consists of quartz, calcite and pyrite, with quartz dominant in most places. The average content of the ore mined from the first and second levels was more than $8 per ton, and 75 percent of this ore was free-milling, according to Captain Buck. The concentrates ran about $75 a ton, and after cyaniding the waste product contained less than $1 to the ton.

"The country rock at the Greenback Mine is largely greenstone, which is the result of alteration of an andesitic mass. Southeast of the mine serpentine is abundant, while an area of argillite lies to the north. The vein is out off to the eastward by serpentine, which is apparently later than the mineralization, since the latter is not known to extend into the serpentine, either with or without faulting at the contact. To the westward the main vein is cut off by an important fault which strikes N. 35-40° W. and dips 75-80° N.E. Between these 2 limits, which are about 600 feet apart on the 9th level, the vein is continuous, although exhibiting variations in both strike and dip. Outside of these limits it has nowhere been found. In the stopes on the 6th level there is some indication of a branch vein or stringer going downward into the footwall and diverging also on the strike to the westward, but it has not been explored.

"About 80 feet south of the Greenback vein on the 5th level the Irish Girl vein strikes N. 70° W., almost exactly parallel with the former, and dips about 60° N. Where opened it is a vein similar to the Greenback in mineral contents, but only 1 to 3 feet thick and lower in grade. It has been opened only by a drift 75 feet long and a short raise. The long crossout into the footwall discloses two more veins, which are about parallel, but they are still smaller.

"The Greenback Mine is at present under lease and bond to Dr. W. L. Baker, of Buffalo, New York, and H. L. Holmes, of Geneva, New York, who are prosecuting some systematic work of rejuvenation of the property, under the efficient management of Mr. Childers of Montana. They are at present working a force of 30 men."

Some years later the property was acquired by L. E. Klump. According to the Grants Pass Courier, Jan. 27, 1937, Finley and McNeil of San Francisco undertook operations. In 1939, P. B. Wickham took a long term lease and opened the mine, but a series of accidents caused the mine to be closed in 1940. The Grants Pass Courier, April 3, 1941, reported that H. Anderson and Jess Wimer had reopened the mine but the work was discontinued in the fall of 1941. The mine is now idle.(1942)

According to P. B. Wickham, past production has amounted to 3½ million dollars.

Topography: The mine openings are at an elevation of 2000 feet on the east side of Tom East Creek. Snowfall does not hamper work for more than a short time each year. Rain-

fall is abundant during the winter months. Sufficient water for operating purposes is available. The property has a good stand of timber and there is ample space for tailings disposal.

Development: Total underground workings aggregate about 7000 feet. The main working level (No.9) has a length of 1750 ft. with a 350 foot winze. Total depth on the pitch of the vein is about 1000 feet. Most of the work since the 1916 report has been in extending previous development work. Some engineers' reports indicate from 25,000 to 50,000 tons of ore above the "1000" level.

Geology: The mine is on a serpentine and greenstone contact. The simple fissure vein strikes east-west and has a 60° dip N., with an average width of 3 feet. The quartz in the vein is white to gray to almost black, often quite massive and associated with a dioritic gangue. Ore minerals are gold, silver, chalcopyrite, pyrite, and some arsenopyrite. Commercial values are mostly in gold, partly free milling. There is probably one ore shoot on the Greenback vein which is offset by a fault at about the center. The section west of the fault has not been explored extensively.

Equipment: The mill used stamps, followed by amalgamation and gravity concentration. Old tailings have been retreated to a limited extent by cyaniding. Equipment consisted of 3 ten-stamp batteries, 2 rock crushers, jig, amalgamation plates, etc.; mine cars, track, pipe lines, etc. Much of this equipment was installed by Wickham, who removed it when he gave up his lease.

Reference: Parks & Swartley, 16:112-114 (quoted)

Informant: P. B. Wickham, 1939
Ray C. Treasher, 1942.

GREENBACK CONSOLIDATED MINES (lode and placer, gold) Greenback area

Owner: Bullion Mountain, Inc., Selling Building, Portland, Oregon. D. Witt Connell, President. Leased to Greenback Consolidated, Inc. (Greenback Consolidated Mines is the operating company for the Bullion Mountain, Inc. with the same directors in both companies.)

Location: In secs. 32 and 33, T. 33 S., R. 5 W. and secs. 3, 4, 5, 7, and 8, in T. 34 S., R. 5 W. On Grave Creek 21 miles by road north of Grants Pass and three miles east of Grave Creek Post Office which is on Highway 99.

Area: This company owns 2240 acres on Tom East and Grave Creeks. There are 7 unpatented placer claims and 11 unpatented lode claims; the remainder is patented ground. A large portion of this acreage is not mining ground but is held for the purpose of protecting ditch right-of-ways, etc. The unpatented lode mining claims make up the Yellowhorn-Jim Blaine Group which contains about 150 acres in secs. 4 and 5. The company still owns all the placer ground (Columbia Placer) on Tom East Creek.

History: There was very little activity on any of the properties from 1916 to 1929 at which time the Bullion Mountain, Inc., purchased the major part of its holdings from the Lewis Investment Co. The Greenback Consolidated was formed in 1934 and took over the property under lease from the Bullion Mountain, Inc. Development work on the lode claims has been carried on in a small way since 1929. Possibly 400 feet of tunnels has been driven since the property was acquired. There has been no production from the lode claims. Mr. Glen Booth and associates leased the lower part of the Columbia Placer in 1934 and the placer has been worked by them each season since then.

General: Steep mountainous topography; elevation 1700 to 2100 feet; maximum snow is two feet; plenty of timber for mining purposes; good road to the property; 23/100 c.f.s. water right for milling purposes.

Development: The Yellowhorn workings are described by Parks & Swartley (16:240). 225 feet of these old workings have been reopened. From the face of the tunnel a drift was run about 234 feet in a southwest direction through the mountain to connect with the Sherington workings. These consist of 3 tunnels with a total length of 350 feet, believed to be on a continuation of the Yellowhorn Vein. At a point 78 feet in on the Yellowhorn tunnel a drift was driven in a northerly direction 100 feet for the purpose of picking up the Vulcan vein, which is a parallel vein about 260 feet north of the Yellowhorn. The Vulcan vein was never reached. The workings on the Vulcan vein consist of a tunnel now inaccessible which runs in a westerly direction 200 feet. The Jim Blaine vein is about 1000 feet north of the Vulcan.

There are six tunnels on the Jim Blaine vein with total length of 1250 feet. The Jim Blaine Claim is described by Parks and Swartley (16:134). On the west side of the ridge there are two tunnels, the lower of which runs S. 85° E. for 206 feet. The upper tunnel which is about 120 feet vertically above the lower tunnel trends S. 75° E. for 240 feet. On the east side of the ridge at an elevation of 2109 feet there is a tunnel which trends N. 50° W. for 108 feet. Tunnel No. 2 at an elevation of 2075 feet trends N. 50° W. for 150 feet. Tunnel No. 3 at an elevation of 2075 feet has a general direction of N. 60° W. for 110 feet with a drift at a point 55 feet in, running in a northerly direction for 70 feet. Tunnel No. 4 at an elevation of 1960 feet is a crosscut tunnel and trends N. 29° W. for 150 feet. There is a drift to the west 100 feet on a vein, and one to the east for 40 feet. Each of the other claims has a small amount of workings but they are inaccessible at the present time (1938).

According to Dr. Rex Ross, (March, 1940) a new drift on the Jim Blaine is 300 feet long.

Geology: The country rock at the Yellowhorn-Jim Blaine group is largely greenstone resulting from alteration of andesitic lavas which in places show dark colored phases. About 300 feet east of the Yellowhorn tunnel is a contact with serpentine. This contact runs in a general N. 30°E. direction and is thought to be the same contact reported to occur in the Greenback Mine workings. There are three parallel east-west veins which can be traced for a distance of almost 1000 feet. All three exhibit variations in strike and dip. They vary in width from a fraction of an inch to 4 feet and excluding enriched portions will average about two or three dollars in gold to the ton. Rich ore shoots which may run very high are encountered in the veins. These shoots are seldom over 25 to 30 feet in their greatest dimension and are found near intersections with branch veins of which there are many; the inter-sections of all the branch veins do not produce rich ore shoots. The vein filling is chiefly white quartz with some calcite, pyrite and a small amount of galena. The Yellowhorn is the most southerly vein and has the most development work on it.

Equipment: One Ingersoll Rand compressor of two drill capacity; 80 h.p. Buda Diesel engine and miscellaneous small equipment for carrying on the development work.

Columbia Placer: As now known, the Columbia Placer, under lease to Glen Booth and associates of Placer, Oregon, consists of all the placer ground on Tom East Creek; it has been worked from the mouth of Tom East Creek to the Greenback Mine, a distance of approximately two miles. The grade of the lower part of Tom East Creek is very low and due to this fact the original operators did not go to bedrock. The present operators started in at the Tom East Creek bridge and are mining to bedrock about 6 feet below the original operations. They have installed hydraulic lifts in order to dispose of the tailings.

Bedrock is fairly smooth greenstone; no clay; few boulders larger than a water bucket; fine to coarse gold, which came from veins near the head of Tom East Creek.

Water Right: A water right for 6200 miner's inches was taken out in 1895 on Grave Creek and its tributaries. Two ditches were constructed to deliver the water to the property. The upper ditch is shown on the Riddle quadrangle topographic sheet, and is 16 miles long with a capacity of 3000 miner's inches. If this ditch were used, it would deliver the water to the present workings under a 900 foot head. The lower ditch is three miles long and has a capacity of 3200 miner's inches and delivers the water under a head of 350 feet.

Equipment: The property is operated with three hydraulic giants under 145 pound pressure. Six men are employed.

Informant: J. E. Morrison, 38.

HAMMERSLEY MINE — Greenback area

see Daisy Mine

HAYDEN MINE (gold) — Greenback area

also known as Little Dandy Mine

Owner: Miss Doris Hayden, 251 West 1 St., Grants Pass, Oregon. Leased since October, 1939, to Ben Baker, Grants Pass.

Location: 20 miles by road north of Grants Pass and 2 miles S. of the Grave Creek Post Office on the Grave Creek side of Sexton Mountain in sec. 13, T. 34 S., R. 6 W.

Area: Two full size unpatented lode claims and 40 acres of patented ground. Elevations approximately 1600 feet.

General: There are two tunnels on the property. The lower one was driven 375 feet on the vein. The upper tunnel is caved (1939). The rim is about 2 feet wide. It has been stoped from 20 to 35 feet above the level. It is reported that about $1000 was produced from October, 1939 to January, 1940.

Equipment: Jaw crusher, two small ball mills, revolving screens, plates, card table.

Informants: J. E. Morrison, 1939, Percy Williams, 3/40, Ben Baker, 40.

HOLE IN THE GROUND PLACER — Greenback area

see Speaker Placer

HORSESHOE LODE (gold) — Greenback area

Owner: Mr. & Mrs. G. H. Miller.

Location: NW¼ sec. 28, T. 33 S., R. 5 W., about a mile north of the Greenback Mine. Property is at an elevation of 1800 feet and is accessible the year around by good country road up Coyote Creek.

Area: One mining claim of 19,988 acres.

Development: Improvements consist of one discovery cut, 2 open cuts, 2 tunnels, and 2 inclined shafts. One tunnel has a drift 60 feet on vein No. 1, cutting the vein at a depth of 30 feet. Tunnel No. 2 was driven 94 feet to vein No. 1, cutting it at a depth of 84 feet.

Geology: Country rocks are serpentine and greenstone. There are two veins exposed; no. 1 strikes east-west and dips north; no. 2 strikes NW-SE and dips to the west cutting no.1. The vein is a "true fissure" vein in which iron pyrite, chalcopyrite, gold and silver are found in quartz. There is a trace of tellurides. The veins contain some rhodochrosite. Horizontal cross fractures cut vein no. 1 without displacement. The cross fractures contain mineralized quartz.

The known pay shoots lie between cross fractures at their junction with the veins. The ore is both free milling and "base".

History: a 7-ft. Lane mill was installed but never used. About $5,000 has been produced.

Informant: R. V. Miller report, dated March 11, 1940

IVERSON & POHLMAN PLACER Greenback area

Owner: Iverson & Pohlman (see Miller placers)

Location: sec. 7 or 8, T. 34 S., R. 6 W. on Brimstone Gulch.

Informant: Percy Williams, March, 1940

JASON PLACER Greenback area

see Payne's placer

JIM BLAINE MINE (gold) Greenback area

Location: NW¼ sec. 4, T. 34 S., R. 5 W.

History: "The Jim Blaine Mine is located in the NW¼ sec. 4, T. 34 S., R. 5 W. about half a mile south of the Greenback Mine and half a mile northeast of the town of Placer. It is equipped with small stamp mill and concentrator operated by water power, which has proved to be not very efficient in saving the values. It is owned by George Epperly of Placer, who proposes to ship some of the ore to Tacoma and abandon the Mill."

Reference: Parks & Swartley, 16:134-135 (quoted)

JOHN HALL GROUP (gold) Greenback area

Owner: John Hall Mines, Inc.

Location: sec. 18, T. 34 S., R. 5 W., on south side Graves Creek and 5 miles by gravelled road from Pacific Highway.

Area: Seven claims.

Reported to have produced $90,000 from high-grade enrichments. Much surface work and several short tunnels totaling 1000 feet, and one short raise have been driven. There are many veins and stringers; some of the veins are reported to be very wide. One vein, 3-5 feet wide is reported to have produced $5.50 per ton in free gold from 50 tons of ore. Plans are being made to install a small mill.

Informant: Dr. Rex Ross, March 1940

JOSEPHINE, OREGON, & G. & A. CLAIMS Greenback area

Owner: L. K. Huntington, Emporium, Pa.

Location: sec. 22, T. 33 S., R. 5 W.

Reference: List of Mines in Oregon. No further data.

Informant: Ray C. Treasher

KAVIJU MINE Greenback area

see Macabee Mine

KLUM PLACER MINE (gold) Greenback area

Owner: J. W. Anderson, 1213 Pine, Grants Pass, Oregon. Leased to Fred Morgan in March, 1938.

Location: 1½ miles northwest of Leland, in sec. 1, T. 34 S., R. 7 W.

Area: 85 acres of patented ground.

History: Said to have been patented in 1890 and worked intermittently. No record of production. 12 acres mined. Present owner has had the property for 30 years.

Water Right: 500 inches out of Tom East Creek (not the same creek as at the Greenback Mine). 2 foot ditch four miles long to deliver water to property with 100 ft. head. No equipment.

Geology: About 25 acres of high-bar. About 35 ft. of gravel showing in pit is said to run 20¢ a yard.

Informant: J. E. Morrison, 38

LAYMEN PLACER Greenback area

see Egger Placer

LEWIS PLACER Greenback area

Owner: Lewis Investment Co., Portland, Oregon.

Location: sec. 6, T. 34 S., R. 6 W.

Area: About 80 acres.

Development: Has not been worked to any extent since 1903.

Informant: R. E. Reed, 4/4/40

Report by: Ray C. Treasher

LITTLE DANDY MINE Greenback area

see Hayden Mine

LIVINGSTONE MINE (gold) Greenback area

also known as Spotted Fawn

Operator: Frank C. Livingstone, P.O. Box 40, Wolf Creek, Oregon.

Location: On Coyote Creek, sec. 22, T. 33 S., R. 5 W., 6 miles east of Laurel Camp, and 7 miles from Wolf Creek, nearest shipping point on the Southern Pacific Railroad.

Area: Three unpatented claims, namely, Spotted Fawn, Orel, and Dewey; 62 acres.

History: Discovered by W. H. Thompson in 1901. His son-in-law, F. C. Livingstone has worked the property regularly in recent years. Production has been about $20,000.

Development: 4 tunnels besides the main workings, all of which are on the Spotted Fawn Claim. No. 2 crosscut tunnel trends S. 55° E. for 65 feet. No. 3 crosscut tunnel was driven S. 40° E. for 15 feet. Several other old workings are caved.

Equipment: One Dodge No. 3 small crusher, one Chilian mill of 5 ton capacity, one 6 h.p. gas engine.

Geology: As mapped by Diller in the U.S.G.S. Riddle folio, the country rock of the area is greenstone, probably originally an andesite porphyry. This porphyry has been cut by serpentine, and the Spotted Fawn vein on the west and the Dewey vein on the east, (500 feet apart) have been formed on the contacts between the serpentine and porphyry. The Dewey vein has a porphyry hanging and a serpentine footwall. The general strike is northerly. The Spotted Fawn vein has a strike of N. 10° E. and dips about 50° to the east, with a serpentine hanging wall and porphyry foot wall. These contacts are strong and can be traced over long distances. Mineralization has taken place over widths up to ten feet. In some places the values are found along the contact; elsewhere the values are in the porphyry away from the contact. The vein matter is mainly white quartz. Other minerals noted were calcite, pyrite, and chalcopyrite. All the mining has been done on one ore shoot which is about 100 feet long and 10 feet thick. This ore shoot was cut off on the north by a fault which strikes N. 57° E. displacing the vein about 50 feet. The faulted segment was recently picked up. The ore averages at least $10 a ton (exclusive of the high-grade) as indicated by 127 samples taken by two engineers. This property has produced some ore in excess of $2,000 per ton.

Metallurgy: Very hard quartz ore, estimated 60% free milling. Concentrates average about $125 a ton. A cyanide test on this ore showed a recovery of 85% at 40 mesh.

General: Steep mountainous topography; 3000 feet elevation; plenty of timber; not enough water on property for mill, but sufficient water can be developed lower down; no water power. Maximum snowfall is 2 feet. Work can be carried on all year.

Remarks: The owner has confined his efforts to mining and milling of the high-grade ores only. Consequently development of ore in the underground workings, as well as on the surface has been neglected.

Informant: J. E. Morrison, 37

MACABEE MINE (gold) Greenback area
also known as Kaviju Mine

Owner: Hugh H. Earl, 408 State Office Building, Salem, Oregon, has interest, and A. J. Bennett, Wolf Creek, Oregon, has 1/3 interest.

Location: SE¼ sec. 20, T. 33 S., R. 5 W., on the south slope of ridge between Coyote and Wolf Creeks, elevation 2500 feet aneroid.

Area: 3 unpatented lode claims, one of which is a fraction.

History: This is an old property. The first 100 feet of tunnel was driven prior to the World War. The present locations were made in 1932 by Mr. Bennett and two associates who were later bought out by Mr. Earl. The tunnel has since been extended about 200 feet. A road 3800 feet long was built to connect the property with the Coyote Creek road.

Equipment: Ore car, track, and prospecting equipment.

Development: A crosscut tunnel trends N. 83° E. 100 feet to the vein. Thence the tunnel meanders along the vein for a distance of 283 feet northeasterly. It does not attain any great depth, probably not over 100 feet.

Geology: Country rock is altered, but the vein appears to be near a contact between slate (footwall) and greenstone (locally called porphyry). There is a maximum of 3 feet of gouge along the contact. Strike is about N. 25° E. and dip in places is flat, averaging 15° (as at the face), S.E. In places it is as high as 25°. Ore minerals are gold, pyrite and chalcopyrite. A large part of the values are free milling.

Informant: J. E. Morrison, 1939.

MARSHALL MINE Greenback area

see Dorothea Mine

MARTHA MINE (gold) Greenback area

Owner: Ollie L. Wenzel of Middletown, California (according to records of County Assessor's Office as of March 1, 1938).

History: "The Martha Mine is in the SW¼ sec. 28, T. 33 S., R. 5 W., about 1 mile north of the Greenback Mine. It is 2½ miles north of the town of Placer, which is 8 miles west of Leland, the nearest railroad point. It is on the steep western slope of St. Peter Mountain overlooking Coyote Creek. It is opened by 4 adits at different elevations, having a total length of about 3000 feet. It was opened as a separate mine, but in 1904 it was purchased by the Greenback company and developed more fully by means of electric power from the Greenback Mine. In 1906 the Martha was connected with the Greenback mill by means of an aerial tramway. After the Greenback Mine was closed the Martha was leased to J. M. Clarke, of Golden, Oregon, who erected a 5-stamp mill on the ground and treated ore previously developed and partly mined.

Geology: "The country rock is greenstone and the ore is similar to that of the Greenback, though not as rich. It occurs in veins and stringers in zones of shearing. In adit 2 the chief vein strikes N. 70° W. and dips at an angle of 55° to 60°; it varies in width from a few inches to about 4 feet with an average of about 2 feet for the first 600 feet; the adit beyond was not accessible; it was said to extend 800 feet. At about 350 feet from the portal a fault which strikes about N. 60° W. causes an offset of about 15 feet toward the north."

General: 4 patented claims, 76.56 acres. Elevation about 3300 feet.

Reference: Parks & Swartley, 16:149 (quoted)

Informant: J. E. Morrison, 38.

MILLER PLACERS Greenback area

"Small placer operations are being conducted on the Miller placers in Brimstone Gulch in the Greenback district north of Grants Pass, Oregon. A small half-swing shovel is used and gravel is trucked to a washing plant. J. V. Pohlman, Standard Stock Exchange Building, Spokane, Washington, is the operator. Iverson is the engineer in charge."

Reference: Mining Journal (Arizona) March 15, 1941 (quoted).

MINNEHAHA GOLD HYDRAULIC & DREDGE CO. Greenback area

History: "Office: Portland, Oregon. A. R. Tozier, 365 Morrison St., Portland, Pres.; J. P. Kennedy, 680 Flanders St., Portland, Sec.; J. E. Fallas, 365 Morrison St., Portland, Treas. Capital stock, $500,000; par value $1.00; $296,000 subscribed and paid up, $204,000 issued. (1913 report).

"This company owns placer claims near Wolf Creek in Josephine County. The property has been idle for several years. Dissolved by proclamation in January, 1917."

Reference: Parks & Swartley, 16:153-154 (quoted).

NEW ELDORADO PLACER Greenback area

Owner: William Preston, Graves Creek, Oregon.

Location: sec. 17, T. 34 S., R. 5 W.

Informant: List of Mines in Oregon. No further information.

OREGON MANGANESE COMPANY Greenback area

History: Parks & Swartley reported as follows:

"This company has filed on a number of claims on Coyote Creek, 6 miles east of Wolf Creek Station. Development work has been prosecuted on a showing of manganese ore but December first, 1916, was stopped on account of the winter weather. Further work will be undertaken at this property in the spring.

"Office: Portland, Oregon. J. H. Haak, 311 Lumbermens Building, Portland, Pres.; H. K. Haak, Portland, Vice-Pres.; I. Lowengart, Broadway and Burnside Streets, Portland, Sec.-Treas. Capital stock, $20,000."

Libbey (42) reports as follows:

"Local residents report that the Boulder Manganese claim covers the ground formerly held by the Oregon Manganese Company. If so, this deposit should be included under Boulder Creek Manganese & Mineral Ledge.

"Authority: Pardee (21:224)

"'The claims of the Oregon Manganese Company, on Coyote Creek about 6 miles east and southeast of Wolf Creek station on the Southern Pacific Railroad, include a crushed zone in pre-Tertiary slats that shows in places films of manganese oxides. No ore was developed when the workings were examined in October, 1917'".

Manganese showings on the south side of King Mountain were reported in 1941 by Ben Baker, Grants Pass, Oregon, but no definite information could be obtained from him, or other people of whom inquiry was made, concerning location or development of the Oregon Manganese Company.

References: Libbey 42:25 (quoted)
Parks & Swartley, 16:173 (quoted)
Pardee 21:224
Ben Baker, 1941

PAYNE'S MINE (placer) Greenback area

Owner: M. H. Davis, Wolf Creek, Oregon.

Location: SW¼ sec. 19, T. 33 S., R. 5 W., just north of the Forsythe Placer.

History: Parks & Swartley reported as follows:

"Payne's placer mine is near Foley Gulch in SW¼ sec. 19, T. 33 S., R. 5 W., about 3 miles east of the Pacific Highway on Coyote Creek and about 5 miles from the station of Wolf Creek. According to Diller:

"'The mine stretches up from the creek level to the terrace nearly 100 feet above. Coyote Creek has but little fall, and the Ruble elevator has been used to advantage. The greenstone pebbles are completely rotten; those of slate are not so thoroughly decomposed. An underlying dark gray gravel is fresh and unaltered.'"

General: It is reported that Payne's Mine is now also known as the Jason Placer, and is operated by Mr. Shelley with one giant. The property is not the same as the Forsythe Placer, on which a Ruble elevator is being worked in 1940.

Clem Cleveland and Robert Price mined the ground during the 1937-38 season. The property has been worked intermittently during periods of high water since that time.

It consists of red, oxidized material; boulders are not plentiful.

Reference: Parks & Swartley, 16:178 (quoted).

Informant: Percy Williams, Wolf Creek, Oregon, March 1940.

Report by: Ray C. Treasher.

PLACER DEVELOPMENT COMPANY — Greenback area

This Company tested ground owned by the Greenback Consolidated. The Company is headed by Fred J. Bodinson. Test pits were started to prove the area, but the work was discontinued upon the death of Mr. Bodinson in 1940. Since that time little work has been done.

PORPHYRY GROUP (gold) — Greenback area

Operators: Dr. Rex B. Ross, Grave Creek, Oregon; and R. E. Reed, Merlin, Oregon.

Location: Sec. 28, T. 33 S., R. 5 W., 6 miles to Wolf Creek, nearest railroad. 5 miles from Laurel Camp on U. S. Highway 99.

Area: 8 claims, total of 160 acres.

Development: Two crosscut tunnels were started, but the ground caved so badly that they have been abandoned. The last work to be done was five open cuts across the porphyry, using a bulldozer.

Geology: The country rock is andesite-porphyry; it has a general east-west trend and varies in dip, but is generally nearly vertical. There are many fractures in the porphyry and quartz veinlets have been formed in many of these fractures. The porphyry is greatly altered and apparently mechanical concentration accounts for the values near the surface. There are no distinct walls and the ore can only be determined by testing. Pieces of clean porphyry which did not contain any veinlets in them assayed $0.35 per ton. Another sample was taken of the quartz veinlets and ran $3.15 in gold and $0.08 in silver.

Metallurgy: The porphyry is soft and the gold occurs free. There were no sulphides found. A cyanide test on 10 pounds recovered $5.50 per ton on ore crushed to $\frac{1}{4}$ inch. The tailings assayed $1.40 a ton.

General: No equipment; claims are on the steep north side of St. Peter's Mountain at an elevation of 2000 feet. The country rock is andesite-porphyry. Plenty of timber on property and one-half second foot of water has been approved by State Water Commissioner on Coyote Creek. Snowfall maximum 2 feet; work all year; no water power.

Informant: J. E. Morrison, 37.

REED MINE (gold) — Greenback area

Owner: R. E. Reed, Leland, Oregon.

Location: sec. 28, T. 33 S., R. 5 W.

Area: Nine claims, held by location, dated 1929.

Development: Three veins are explored by three tunnels 260 feet long, 30 feet long, and 100 feet long respectively. In addition, there are several pits and trenches.

Equipment: A small ball mill operated by a 2½ h.p. gas motor.

Geology: Diorite and greenstone country rock abutting against serpentine on three sides. Gold is mainly in the quartz although there is some in the country rock. A small quantity of sulfides occur in the quartz, and a less amount in the country rock. According to Mr. Reed the big vein will average $3 - $15 per ton for 15 to 40 feet of width.

Informant: R. E. Reed, 4/4/40.

Report by: Ray C. Treasher.

ROGUE RIVER GOLD COMPANY — Greenback area

Owner: Rogue River Gold Co., D. H. Ferry, Rogue River, Oregon, vice president and manager.

Location: On Grave Creek upstream from Leland in secs. 9 & 10, T. 34 S., R. 6 W.

History: The dredge was moved from its original location on Foots Creek, and began digging on September 25, 1935. Operation was discontinued in 1939 and later the dredge was dismantled and moved to Idaho.

Equipment: The dredge was a connected bucket type having a daily capacity of 8000 cubic yards. It was powered by 15 motors aggregating 700 h.p. Average daily employment was 40 men.

General: An old channel of Grave Creek south of the present stream was dredged. Settling basins were constructed to settle mining mud. Work upstream was halted as bedrock became so deep it was impossible to clean bed rock.

Informant: Grants Pass Courier, January 27, 1937.

SHOT MINE (gold) — Greenback area
Also known as Dutch Girl

Owner: Will C. Smith, Box 421, Grants Pass, Oregon.

Location: On St. Peter Mt. in the NW¼ sec. 33, T. 33 S., R. 5 W. Surface workings are on the Forest Service King Mountain road about 7 miles from U. S. Highway No. 99.

History: The property has been worked for about 50 years, starting about the same time as the Greenback Mine. Some of the ore was treated in an arrastra. Recently ore was treated at the Dale Prow mill.

Development: There are three tunnels containing underground work as follows: One is 200 feet long containing a raise 100 feet in length starting at a point 150 feet from the portal. The second tunnel is 258 feet long containing one raise now caved. The third tunnel is 180 feet long; the portal is now caved.

Geology: Country rock is gabbro and quartz diorite. There are three quartz veins roughly parallel included in a distance of 120 feet. One vein averages about 12 inches in width, trends east-west and dips 70° N. It has greenstone footwall and quartz diorite hanging wall, both walls showing gouge. This vein is lenticular and ranges up to 2 feet in width. Average value is reported to be $40 per ton. Gold is both free and in combination with the sulphides galena and pyrite, the latter occurring in small cubes.

A north-south vein dipping 40° W. has not yet been explored by underground work. It is reported to assay about the same as the east-west vein mentioned above.

Informant: Will C. Smith and Alex Watts, July 5, 1940.

Report by: Ray C. Treasher.

SILENT FRIEND MINE Greenback area

Owner & Operator: G. A. Fitzpatrick, Myrtle Creek, Oregon.

Location: In sec. 15, T. 33 S., R. 5 W., on the north slope of Post Mt. at the head of Wolf Creek, 9 miles by Forest Service road east of Wolf Creek station on the Southern Pacific Railroad. Part of the distance is by poor dirt road. Elevation is 3800 feet.

Area: 120 acres patented land.

History: Parks & Swartley (16:202) give the following description:

> "The Silent Friend Mine is located in sec. 15, T. 33 S., R. 5 W., on the north slope of Post Mt. at the head of Wolf Creek, 9 miles east of Wolf Creek station on the Southern Pacific Railroad. It is owned by John Scribner of Wolf Creek, Oregon.
>
> "According to Kay:
>
> "'The chief development has been 2 adits. The lower of these is 320 feet in length and crosscuts several stringers. The upper is 75 feet in length, and has an upraise to the surface. The country rock is greenstone, which is strongly chloritized adjacent to the veins. The ores are found in veinlets and stringers which run in various directions, but the majority of them have a general trend between southwest and west. The filling consists of quartz, calcite, pyrite, arsenopyrite, and locally, chalcopyrite. Some specimens of ore, which are found to consist largely of calcite, chlorite, and arsenopyrite, showed considerable free gold visible to the unaided eye.'
>
> "Mr. Scribner states that from the oxidized material on the surface overlying a network of small stringers, he has taken gold to the value of more than $7000."

Mr. Scribner sold the ground to a Mr. Crans in 1915. Crans transferred the property to a Mr. Hoverly who later sold to Bert Hoard. Mr. Fitzpatrick leased from Hoard in 1932 and later acquired title. It is reported that Scribner with his partner Anderson took out $30,000 from a pocket. Fitzpatrick produced about $4000 from 1935 to 1940

Development: Development work consists of two adits. The lower, 5 feet long, crosscuts to the vein at the 300 foot station where there is a winze 22 feet deep and a raise 20 feet in length together with a 10 foot drift on the vein in each direction from the crosscut. The upper adit is 80 feet long but does not reach the vein.

Equipment: Mine car, rails in lower adit, hand steel and tools; small jaw crusher, ½ inch wire screen, "home-made" Straub type ball mill, amalgamation plates; a Sampson tractor, and two 3-h.p. gasoline engines.

General: Water, available in Bummer Gulch, is plentiful. Sufficient timber is also available. Maximum snowfall is 3 feet. Ore is complex and reported to assay from $12 to $15 per ton.

Informant: G. A. Fitzpatrick, 3/18/40

Reference: Parks & Swartley, 16:202 (quoted)

Report by: A. A. Lewis

SPEAKER PLACER Greenback area

Owner: Lem Speaker, Wolf Creek, Oregon.

Location: On Wolf Creek 6 miles above Wolf Creek Post Office in sec. 9, T. 33 S., R. 5 W. Elevation is about 1800 feet.

Area: Records in the County assessor's office show ownership by Mr. Speaker of the SW¼ less the NE¼ of SW¼, sec. 9, T. 33 S., R. 5 W.

History: Henry Speaker and father, Lem Speaker, have operated this placer intermittently for about 40 years. They have kept no record of production. One giant was operated in 1940.

Geology: Bedrock is rough greenstone; no clay; many small boulders present; gravel will average 2-3 yards in depth in a ¼-mile wide channel that is fairly level. Ground has never been tested but the general location of the old channel is known and will average about 10 cents per yard.

Equipment: Two no. 2 giants, two no. 3 giants, several hundred feet of hydraulic pipe.

General: Owner has first priority on 10 c.f.s. from Wolf Creek, the water being brought in by means of a 3-foot ditch that is 3/4 mile long and develops 135-foot head. Operating season is from Nov. 15 to June 1st for normal years.

Informant: J. E. Morrison, 1938.
Percy Williams, 3/14/40.

SPOTTED FAWN MINE — Greenback area

see Livingstone Mine

STAR MINE (gold) — Greenback area

Location: SE¼ sec. 7, T. 34 S., R. 5 W.

History: "The Star mine is in the SE¼ sec. 7, T. 34 S., R. 5 W., about half a mile south of Placer. It was opened by two shafts about 250 feet apart, but as the workings are full of water no examination was possible. From the dumps and trenches the vein evidently strikes about east and west in a greenstone country rock, while the ore is gold-bearing quartz."

Reference: Parks & Swartley, 16:211 (quoted)

STEAM BEER PLACER — Greenback area

Owner: J. W. Anderson, 1213 Pine, Grants Pass, Oregon.

Location: One-half mile west of Leland in SE¼ sec. 6, T. 34 S., R. 6 W.

Area: 170 acres of patented ground.

History: This is one of the old placer mines that has been operated almost every season since gold was discovered on Grave Creek. No record of production is available. The Grants Pass Courier, 4/2/41, contained the following: "John Anderson is working the upper part of the Steam Beer placer mine on lower Grave Creek near Galice."

Equipment: Two No. 1 Giants and 1100 to 1200 feet of 11 to 32-inch pipe.

Geology: The bedrock is slate. 20 acres have been mined. About 50 acres of mining ground remain. Ground is said to average 29¢ per yard. Gravel averages 29 feet thick.

General: Owner has water right of 3000 miners inches from Grave Creek, also 500 miners inches from Brimstone Gulch. There is a 2-foot ditch 2 miles long. Mining season is from November to June.

Reference: Diller, 14:104

Informant: J. E. Morrison, 38

STOVE PIPE MINE (placer) Greenback area

Owner: Robert Burns, Route 1, Box 263, Grants Pass, Oregon.

Location: On east side of Brimstone Gulch, one and one-half miles south of Leland in the NW¼ sec. 17, T. 34 S., R. 6 W.

Area: 3 unpatented placer claims, total 60 acres. Elevation 1700 feet.

History: Morrison Mining Company, W. H. Peters, Superintendent, had a lease on this property for three seasons. Mr. Peters closed down in the spring of 1936 and all the equipment was removed from the property.

General: The workings are in an ancient channel of decomposed gravel located high on the east rim of a deep, wooded ravine which carries about two thousand miners inches of water for several months in the winter season. The ditch, not much larger than a plow furrow, comes down the west rim of the ravine, and leads the water down through a pipe line to a point near the bottom where a 120 h.p. Diesel engine and centrifugal pump is located in the line. The water is then pumped through an inverted siphon and up the other side of the ravine through a long pipe line to the mine pit on the high east rim.

Informant: J. E. Morrison, 38 (not visited)
E. K. Nixon, 36

TOUGHNUT PROPERTY Greenback area

According to Dr. Rex Ross (March, 1940), Inman brothers have been working this property and have driven about 1000 feet of drifts. (Inactive in 1940)

WARNER PROSPECT (gold) Greenback area

Owner: H. B. Warner, Azalea, Oregon.

Location: About 9 miles from Azalea on head of Last Chance Creek in sec. 4, T. 33 S., R. 4 W. The property is reached by two miles of trail.

Area: 138 acres of deeded land.

General: A vein up to one foot in width lies on a serpentine-porphyry contact. There is a shaft 30 feet deep containing a drift 40 feet long. Elevation is 4000 feet. Equipment includes a Gibson prospecting mill and a 1½ h.p. Stover gas engine.

Informant: J. E. Morrison, 38 (not visited).

WOLF CREEK LOGGING & MINING COMPANY (placer) Greenback area

Operator: A. C. Smith, Wolf Creek, Oregon.

Location: East center of sec. 9 to the west center of sec. 10, T. 33 S., R. 5 W., on Upper Wolf Creek above Speaker Placer.

General: This property has been worked for a number of years and quite an area along the creek has been placered. At present operations are confined to a pit on the north side of the channel. Water comes from a reservoir some distance back in the hills. Equipment includes a mechanical stacker.

Report by: Ray C. Treasher, Feb. 25, 1941

WOLF CREEK MINING & DEVELOPMENT COMPANY (placer) Greenback area

"Office: 702 Spalding Bldg., Portland, Oregon. A. N. Wills, Pres.; M. B. Boxworth, Sec.-Treas., both of Portland. Capital stock, $1,000,000; par value, $1.00; $15,806 subscribed, issued and paid up. (1916 report.)

"This company owns 80 acres of placer ground on Wolf Creek in Josephine County. The property has been idle for several years."

Reference: Parks & Swartley, 16:239 (quoted)

YAK MINING COMPANY Greenback area

see Buckhorn Mining Company

YELLOWHORN MINE (Au) Greenback area

"The Yellowhorn mine is in the SW¼ sec. 4, T. 34 S., R. 5 W., about a mile south of the Greenback mine and ½ mile northeast of Placer, Oregon. It is owned by Mr. Clemens, of Placer. It is opened by an adit about 800 feet long in greenstone which follows a vein for 650 feet. The vein varies in thickness from 6 inches to 4 feet with an average of about 10 inches, and is in a rock which contains many stringers. The vein filling is chiefly white quartz with some calcite, pyrrhotite, chalcopyrite, pyrite, and galena. A thin section shows that the calcite is of later origin than the quartz. Pyrite is more abundant in the wall rocks near the vein than in the vein itself. The vein strikes nearly east and west."

Reference: Parks & Swartley, 16:240 (quoted)

ILLINOIS RIVER MINING AREA (4)

The Illinois River mining area includes the drainage of the Illinois River and its tributaries in Josephine County above the mouth of Indigo Creek, with the exception of the area lying north of T. 36 S. and south of T. 38 S. (see map opposite p. 17). The area comprises about 356 square miles.

Geography

The Illinois River valley broadens southwest of the beginning of its gorge at Eight Dollar Mountain. Elevations range from 1,000 feet in the valley to 5,000 feet on the ridges. Except for the valley itself, the district is mountainous, with steep slopes that are heavily forested with conifers. Hardwoods fill the gulches. Brush and soil obscure most of the outcrops, and prospecting is difficult.

No railroads serve the district. Through traffic is accommodated by the Redwoods Highway, from which county and secondary roads branch off to the east. To the west, the roads are less numerous. The mountainous regions are relatively inaccessible by automobile, but the Forest Service network of truck trails for fire use have provided certain mines in the area with access roads.

Annual precipitation is about 40 inches, with a maximum-minimum temperature range of 80° to 0°. Snow may remain on the higher elevations until late in the spring but the lowlands seldom have snow for more than a few days.

Most of the area is within the Siskiyou National Forest. The U.S. Geological Survey Kerby quadrangle map shows the topography.

Geology

All rock formations of Josephine County are found in the Illinois River mining area except the Cretaceous Horsetown formation. Dothan sedimentary rocks are on the west. They are separated from the Galice formation by a large intrusive diorite mass, intrusive serpentine, and Jurassic metavolcanics. A prominent fault separates the serpentine from the Galice formation along the west side of the Illinois Valley. In the southeast corner, rocks of the Triassic (?) Applegate group are found.

Chromite occurs in the ultrabasic rocks, periodotites, dunites, and serpentines. The origin of the chromite, together with a description of the mines has been discussed by Allen (1938), who states:

> "The deposits vary in form from thin stringers through narrow lenses to thicker and shorter kidneys; and in size from a few inches up to masses whose outcrops are 40 feet in width and 150 feet or more in length. . . .When ore bodies occur in groups, which is common, individual masses often follow a recognizable scheme of orientation; they may be in line, staggered or overlapping, parallel, or irregularly placed with respect to each other. Nearly all the ore bodies are considerably broken and faulted, and they usually lie in a sheared and altered zone in the country rock."

Mining

Mines of the area fall under three classifications, namely, gold placers, gold quartz, and chromite. From the standpoint of value of production, the placers have been the most important. Values occur both in the gravels of the lower bench along the creek and in an ancient "high channel." In the latter, gravel is cemented, and mining is done by bedrock drifting. The Independence Placer at the mouth of Josephine Creek is one of these drift mines. Some platinum is recovered with the gold.

The rare mineral, josephinite, a natural nickel-iron alloy ($FeNi_3$), is found in the alluvial material of Josephine Creek. This mineral is valued by collectors. The largest pieces are about the size of a walnut and may sell for as much as $10.00. Attempts have been made to find the source of josephinite, but so far such efforts have been unsuccessful.

Only two gold quartz mines were reported active during 1940. These were the Gold Blanket and the White Pine; both operations were on a small scale. Two placer mines in this area operated on a small scale in 1950.

There was marked activity in chromite prospecting during 1941. Several properties were put into production during 1942 because of the World War II emergency and by virtue of the retail buying program set up by Metals Reserve Company of the War Production Board. A Government ore-purchasing depot was operated at Grants Pass from 1942 to 1945. The Oregon Chrome mine on the Illinois River south of Oak Flat was the largest producer of chromite in Oregon during that period, and production continued through 1948. In 1951 chrome ore from mines in the Illinois River area was shipped to the Government chrome-purchasing depot re-established at Grants Pass in August of that year.

While most of the placers in the area have been tested, at least in a preliminary way, systematic prospecting is required in order to prove or disprove commercial ground. Since all potential placer areas have not been systematically prospected, the chances are that new projects will from time to time be undertaken.

Considerable silicification of the rocks in the northeastern and eastern parts of the area indicates a favorable locality for prospecting. This silicified zone is an extension of the Frog Pond-Rainbow-Tip Top mineralization in the Waldo mining area.

Chromite is a critically essential mineral, and Government requirements make it necessary that a maximum production of domestic chromite be obtained. Areas of ultrabasic igneous rocks should be carefully prospected especially in the western part of the area.

The nickel silicate (garnierite) is known to occur at the Woodcock property and may be found elsewhere. The mineral, like chromite, should be searched for in or near ultrabasic igneous rock occurrences.

Mining Properties

ADYLOTT MINE — Illinois River area

see Williams & Adylott Mine

ALBRIGHT MINE — Illinois River area

see Calumet Mine

ALTA MINE (gold) — Illinois River area

History:

"The Alta mine on Josephine Creek, 4 miles west of Kerby, consists of three claims. For some years the mine was worked only as a placer, but recently a lode mine was opened in the bluffs bordering the placer and a mill erected to crush the ore. The country rock is serpentine derived from peridotite and out by a large dike composed of a rock related to dacite porphyry. The dike ranges from 25 to 40 feet in width between serpentine walls and is practically vertical. It strikes N. 40° E. and has been traced by Mr. Wilson about a mile and a half. Many smaller parallel dikes of the same material cut the serpentine of that region, so that the relation of the ore-bearing rock to the serpentine is evident.

"The ore is chiefly pyrite, occurring in scattered grains through the rock and more abundantly in small quartz veins, apparently with some chalcopyrite and possibly pyrrhotite. In some places when the rock is pulverized and panned it is found to contain not only pyrite but apparently considerable free gold. As

the mine is in the early stage of its development, little is known of the distribution and extent of the disseminated ore. A good sample of the fresh rock with conspicuous blotches and scattered grains of pyritic ore in joints and veinlets of quartz was assayed by E. E. Burlingame and Company of Denver, for the Geological Survey, and it yielded 0.02 ounces in gold per ton. About a dozen sectional samples assayed by local assayers were reported to me by Mr. Wilson and they averaged about $5 in gold per ton.

"A 'Lane slow-speed Chilean mill' has been erected to crush the ore. The rock is first run through a breaker, and after it issues from the mill is run over plates to Johnson concentrators. The mill is run by a 25-h.p. steam engine and has a capacity of 40 tons in 24 hours. Mr. Wilson reports a satisfactory test run of about 500 tons, made in the fall of 1911, at a cost of 80 cents a ton by water power and $1 a ton by steam. After amalgamation and concentration the tailings are reported to show no trace of gold. The overburden of the mine is gravel, and during the winter the water is used for hydraulicking."

Reference: Diller, 16:70 (quoted)
(Also in Parks & Swartley, 16:11)

ANDERSON MINE (placer) Illinois River area
also known as Holiday Mine.

Owner: C. W. Hickok, Selma, Oregon (head office, 915 Shreeve Bldg., San Francisco, California).

Location: sec. 18, T. 38 S., R. 8 W., on Illinois River, 4½ miles west of Redwoods Highway.

Area: 90 acres.

History: The ground was located in 1865 by Anderson Brothers. Most of it has been hydraulicked. Hickok, who called the property the Holiday Mine, has dredged the tailings piles and some river bottom. In 1940 he sold to J. M. Bullpit (125 Santa Clara Ave., Santa Anna, Calif.) and O. V. Barkman of Santa Anna who planned to enlarge capacity to handle 2000 yds. a day. During 1941 a freshet wrecked the plant. Early in 1942 plans were made to rebuild the plant.

Equipment: Dry-land plant serviced by a high-line. Trommel is 14 ft. x 5 ft. and has daily capacity of 750 yd., provided with ¼" mesh on primary and 8-mesh on secondary screen. Two sets of jigs; 24 x 36 Denver rougher jig; Denver finishing jig is 12 x 14. Sluice box has 100 ft. of mohair carpet covered with 1" mesh hydraulic screen; no riffles. A Denver amalgam barrel, 3 ft. x 4 ft., grinds a 900 lb charge to 200 mesh. Waste is sluiced to dump. Digging equipment consists of a Washington double-drum hoist using a 1 yd. bucket, and a slack line with scraper 600 ft. long. Equipment can dig a circle 900 ft. in diameter; then plant is dismantled and moved.

Geology: Bedrock is very rough serpentine that is soft enough to dig. Biggest boulders are 2 ft. in diameter but only constitute a small percentage of the whole. No clay. Gravel depth is 2 ft. to 15 ft. along the river. Gold is very fine; platinum-group metals, mainly iridium, are present in a 1:5 ratio to gold. Black sand is reported to run about 10 lb. to the yard and is 50% magnetic.

Mining Facilities: Water for the washing plant is pumped from the Illinois River.

Reference: Diller, 14:122-123

Informant: C. W. Hickok and Ray C. Treasher, Aug. 8, 1940

Report by: Ray C. Treasher, 3/42

B & B MINING COMPANY, INC. Illinois River Area

Owner: W. B. Shafer

Location: Center sec. 29, T. 37 S., R. 9 W.

Oregon corporation; J. R. O'Niel, Pres., 52 N. E. Tillamook Street, Portland, Oregon; John A. Hogg, Sec.-Treas., City Hall, Vancouver, Washington; capitalization, $50,000.

12 unpatented claims on Illinois River in secs. 17 and 18 below Oak Flat. No production (1937 report).

Reference: J. E. Morrison, 1937
List of Mines in Oregon

BEAR PLACERS, INC. Illinois River area and Waldo area

Owner: George C. Foster and others.

Location: On Josephine Creek between Day's Gulch and Fidler Gulch, mainly in sec. 36, T. 38 S., R. 9 W., Illinois River mining area; and in sec. 1, T. 39 S., R. 9 W., Waldo mining area.

Area: 14 claims.

Development: Eleven hundred feet of bedrock drifting in cemented gravel. (see Independence placer). This old channel of cement-gravel lies 200 feet above the creek; it is 100 feet deep, 200 feet wide, and 5000 feet long. Geology same as for Independence placer.

Informant: George C. Foster, 4/3/40

BECCA AND MORNING GROUP (gold) Illinois River area
formerly known as Casey Prospect

Owner: R. E. McCalob, Selma, Oregon.

Location: On west fork of Rancherie Creek in sec. 7, T. 38 S., R. 9 W., 12 miles U.S.F.S. road and three and a half miles of trail from Selma. Elevation is about 3000 feet.

Area: 5 unpatented mining claims.

History: A Mr. Casey discovered the property in 1915 and until 1926 the property was relocated from time to time. No real work was done. Since 1926 Mr. McCalob has driven three tunnels and excavated a number of shallow open cuts. No production.

> "On the west fork of Rancherie Creek, at an elevation of about 3,200 feet and nearly 11 miles in a direct line northwest of Kerby, a group of 6 claims is being actively prospected. The openings are near the contact of greenstone and serpentine, and a soft black deposit rich in pyrite has attracted attention on account of its rapid oxidation and the development of heat when exposed. The material had not been assayed at the time of my examination, but when panned and treated with nitric acid to remove the pyrite it yields numerous colors. The serpentine shows some copper stains, and the decomposed greenstone deeply covering the hill slope is said to pan well in free gold. Assays of the ore by a local assayer are said to indicate a content of $60 a ton. Water is being turned on this property to wash the crushed material at the contact."

Development: A tunnel 185 feet long was driven in a southerly direction; portal is now caved. A second tunnel 102 feet long trends S. 30° E. and contains a drift trending N. 30° E., for 30 feet; a third tunnel trends S. 30° W. 20 feet.

Geology: The deposit is located on a serpentine-greenstone contact that runs in northerly and southerly direction from the Calumet Mine to the head of Slide Creek. All the rocks are altered; gossan strikes N. 55° E.

Equipment: Braun assay crusher, homemade 2-stamp mill, 2 ft. x 3 ft. plate and 3 h.p. Sattley engine.

General: 12 feet of snow; plenty of timber; water for power is available; mountainous topography.

Informant: J. E. Morrison, 38

Reference: Diller, 14:64 (quoted)
Parks & Swartley, 16:52

BLACK BEAR CLAIM (gold) Illinois River area

Location: sec. 3, T. 38 S., R. 9 W.

History:

"The Black Bear Claims, located on the ridge between Hoover Gulch and Fall Creek, recently yielded some rich samples of free gold that atracted considerable attention. It is described as a well-defined quartz ledge plainly traceable on the surface of the steep mountain slope. The ledge was opened at four different points. It extends northeast and southwest, and where the rich samples were taken it was not less than a foot thick."

Reference: Diller, 14:65 (quoted)
Parks & Swartley, 16:32

BLACK BEAR PLACER Illinois River area
see Bear Placer

BLACK ROCK (chromite) Illinois River area

Owner: C. E. Osborne and Joe Powell, Grants Pass, Oregon.

Location: SW¼ sec. 9, T. 37 S., R. 8 W. Elevation 3900 feet. One half mile south of Swede Basin road.

Geology: About 7 tons of medium grade ore have been mined from a 4 by 4 foot shaft 25 feet deep which plunges about 48° in a S. 55° W direction. The ore occurs as small irregular segregations of crystals in a somewhat banded and not badly jointed massive dark green serpentine. No ore was seen in place. The bands in the rock (flowage?) strike N. 20°E. and dip 80° E.

Report by: J. E. Allen 7/15/37

BRIGGS CREEK CHROMITE Illinois River area
see Sordy's Chromite

BRIGGS CREEK MINING CO. (placer) Illinois River area
see Elkhorn Placer

CALUMET MINE (gold) Illinois River area
also known as Albright Mine; Elder property

Owner: Carrie E. G. Elder, 817 East D Street, Grants Pass, Oregon.

Location: secs. 5 & 8, T. 38 S., R. 9 W., on Rancherie Creek. Elevation 3000 ft.

Area: 186 acres by location.

History: "The Calumet mine embraces 9 claims, extending from Illinois River at the mouth of Rancherie Creek southwest by the forks of the creek for a mile and a half. The country rock is serpentine and tuffaceous greenstone. The fragmental character of the greenstone demonstrates its volcanic origin and also shows that it is intruded by the serpentine. As a result the greenstone at a number of places on or near the contact is more or less richly mineralized with pyrite, pyrrhotite and some chalcopyrite and galena.

"The principal openings of this mine for pyrrhotite and auriferous chalcopyrite are near the mouth and forks of Rancherie Creek. They are described in this report under the head of "Copper Mines" because of their relation to the deposit on Fall Creek. It is reported, however, that most of the value is in gold.

"The greater underground workings of the Calumet Mine are in a hill of tuffaceous greenstone nearly surrounded by serpentine about a mile southwest of the forks, higher up the spur than the outcrops of pyrrhotite. On the summit of the hill is a prominent quartz ledge said to carry $4 to $8 a ton in gold. The hill has been tunneled from all sides by nearly 2,000 feet of workings designed to test its ores. Quartz veins are common and run in various directions from N. 40° W. to N. 70° E. centering in the hill. The best quartz veins visible carry chalcopyrite and galena, but the material generally carries free gold. The hill contains a great deal of low-grade ore that might be concentrated, and if the large 500 foot tunnel now far beneath the summit ledge strikes paying ore it might furnish a convenient means of removing a large body of ore."

The present owners acquired the property in 1916.

General: At present (1938) all workings are caved; no equipment; mountainous topography, maximum 3 feet of snow; ample water and timber with possibility that water power could be developed.

Reference: Diller, 14:63-64, (quoted); also in Parks & Swartley, 16.49

Informant: J. E. Morrison, 1938

CASEY PROSPECT Illinois River area
see Becca and Morning Group

COBALT GROUP (gold, silver, cobalt) Illinois River area

Location: sec. 19, T. 36 S., R. 10 W. Near Bald Mountain.

History: "This group of olaims is owned by Frank Berry, of Agness, and is situated at the base of Bald Mt. on the east side of the Illinois River. Here is a serpentine hill about 800 feet high, 2 miles long, and two-thirds of a mile wide. It looks like a slide, but as Bald Mt. is oomposed of different material, the serpentine is doubtless in place.

"The serpentine is practically free from overburden, and great patches of it are heavily iron-stained at the surface. It has been opened by means of numerous

cuts and shafts, and it is claimed that all these openings run into sulphides, principally pyrite, at no great depth. It is stated that independent examinations showed that the ore ran on an average about $10 a ton in gold and silver, and that other elements present, including copper and cobalt, brought the total value to between $15 and $16 a ton. The quantity of ore available is certainly enormous, and if the figures quoted prove correct, it ought to be possible to develop a mine here. It was impossible, because of limited time, to visit more than a few of the openings. From one of these in which many feet of solid pyrite was exposed, a sample was taken which assayed not a trace of gold. Another sample of the porous, iron-stained gossan yielded the same result. From this, it is evident that all the mineral is not gold-bearing, but there are so many exposures and the mineralization has been so extensive that it is not unlikely large bodies of good ore exist elsewhere on the hill."

Reference: Parks & Swartley, 16:57 (quoted).

CHATTY MINE (gold) Illinois River area

Location: Sec. 26, T. 38 S., R. 9 W.

"The Chatty Mine is situated in Days Gulch, nearly 5 miles northwest of Kerby, at an elevation of 3,160 feet. The country rock is greenstone and is much decomposed near its contact with serpentine, where the original owner some years ago found a rich pocket which is reported to have yielded approximately $8,000.

"The mine was worked to a depth of 30 feet before it came into the hands of the present owner, who has run a tunnel 110 feet to a fault with a well-defined gouge, but no valuable ore is yet in evidence. The fault runs N. 4° W. and has a steep dip to the west, being approximately parallel to the adjacent contact between the greenstone and serpentine.

"This pocket, of small extent, was in oxidized material and its contents were completely removed some years ago. Early prospectors found traces of gold on the surface. Later these traces were followed to a depth of 15 or 20 feet into the oxidized rock, where in the rich pocket the quartz veins were found rusty and black. The quartz in the vicinity is porous, and where compact between the cavities is fairly rich in pyrite. The cavities are lined with quartz crystals, generally coated with limonite like that filling the late fissures in the rock. No free gold was seen with the quartz in any of the cavities, although pocket hunters of the region assert that such quartz is characteristic of pockets. An extension of the pocket has been sought for in all directions, apparently without avail, although the work continues."

Reference: Diller, 14:67 (quoted); also in
Parks & Swartley, 16:53

DALEY CREEK CHROMITE Illinois River area

"The Black Bear and Chrome King Claims are at an elevation of about 3000 feet; near the center of E. ½ sec. 36, T. 37 S., R. 10 W., 1½ miles northeast of Pearsall Peak, Josephine County.

"The country rock in this area is a peridotite porphyry; and north-east trending ore zones are recognizable by a deeper red color of the overlying residual soil. In these zones a green non-porphyritic dunitic rock often appears. Near the kidneys small lentils and stringers of low-grade ore from

½ to 3 inches wide commonly extend outwards for short distances from the kidneys. The rock often can be seen to contain minute chromite crystals.

"Chrome King Claim. (800 feet to the southwest of the Little Bear Claim and 200 feet higher in elevation.) The ore-bearing zone on the Chrome King seems to be 30-50 feet wide (judging by the red soil, abundant chromite float, the physiographic saddle and flat) and extends N. 70° E., dipping steeply south. Some float was found over a distance of 200 feet, and it is thickly scattered for at least half that distance along the zone. A narrow (4-6 feet wide) ledge of hornblende schist appears to parallel the zone on its south side for part of its extent, trending N. 65° E.

"In this area as elsewhere, the kidneys seem to lie more or less at right angles to the zones. At present the kidney as exposed in one side of the badly caved pit about 10 feet below the surface is 4 feet wide and seems to strike N. 60° W. and dip 80° S. Mr. Cox says that the pit originally was 20 feet deep (and at least 6 feet wide and 10 feet long) and that at that depth the kidney, which widened downwards, was 8 feet in width. The ore is medium in appearance, and during the time since it was mined has slacked down and become very soft and friable, so that at present it is mostly in small pieces or sand. It assays 43.5 per cent chromic oxide.

"Little Bear Claim. At present no ore shows in the pit, now caved in, but which was originally about 12 feet deep, 10 feet long, and 6 feet wide. The ore removed seems to have come from a kidney striking N. 65° W. and dipping 80° N., which was about 2 feet wide. Ed Cox, one of the owners, says that it widened downwards, and when operation ceased it was 2½ feet wide and at least 8 feet long in the bottom of the 12-foot pit. The ore is fair in appearance, with only a small amount of interstitial rocky material, and fairly coarse crystallization. This ore has stood up under weathering, and after 18 years exposure is still for the most part in solid blocks and chunks. It assays 40 per cent chromic oxide.

"Unclaimed locality 600 feet to the northeast of the Chrome King Claim along zone, and 450 feet due south of the Little Bear Claim. At this undeveloped spot several large boulders of medium grade ore lie on the ridge-top, just north of a ledge of hornblende schist which strikes N. 60° E.

"The claims lie a little over two miles and 2000 feet in elevation from the nearest road, about half of this two miles being over steep and rugged terrain. From the Illinois River crossing it is about 10 miles by good forest road to Selma, and thence 22 miles by paved highway to Grants Pass; a haul in all of about 35 miles."

Reference: J. E. Allen, 38:44 (quoted)

DEEP GORGE CHROMITE Illinois River area

Owners: J. M. and M. N. Grissom, Selma, Oregon.

Location: NE¼ NE¼ sec. 32, T. 37 S., R. 9 W., on the Illinois River across from the mouth of Dailey Creek. It is 13 miles to Selma; the last ¼ mile of road to the property is very steep.

Area: One claim, located September 7, 1939.

History: It is reported that the California Chrome Company formerly operated the property and produced $14,000 worth of chromite from it and some pits across the river. The lower adit, now caved, is said to have produced ore valued at $62 a ton, which returned $1,400. Ownership of the claim changed hands several times and in 1941, the owners shipped 18 tons;

to June, 1942, 28 tons were shipped. The ore averaged 46 percent Cr_2O_3. Work is continuing.

Development: The old workings, principally the lower adit and shaft, are not accessible. Numerous cuts expose varying amounts of chrome.

Geology: Country rock is serpentine. Hillsides are very steep and there is topographic evidence of creep (minor landslide). Cuts into the hillside expose huge blocks of serpentine. The chrome is very "spotty". Pods are not large and are discontinuous. The general setup suggests that the serpentine is not "in place" but has slumped as the river deepened its gorge. If this is the case, the ore bodies will be hard to trace.

Reported by: John E. Allen and Ray C. Treasher, 6/18/42

EIGHT DOLLAR MOUNTAIN GROUP — Illinois River area

see Nickel-Chrome Group

ELDER PROPERTY — Illinois River area

see Calumet Mine

ELKHORN CREEK (chromite) — Illinois River area

"There are two deposits east of what is known as the Briggs Creek Chrome Deposit: (1) The Nigger, lying north of the old chrome trail and (2) Rose City, near the corner common to secs. 13-14-23-24, both in T. 36 S., R. 9 W., Briggs Creek Mining District, Josephine County.

"1. Nigger. An open cut, about 15 feet deep, extends for 30 feet into the rather steep hillside, with a tunnel (now caved) continuing in a N. 50° W. direction, probably not for any great distance. The banded meta-peridotite appears to strike N. 85° W., dipping 37° N. The contact with the older metamorphic rocks (quatzites and schists) lies only a hundred feet or so downhill to the east. Some chlorite schist float nearby suggests inclusions of this older rock within the peridotite. A smaller cut 20 feet above the first shows rock with the same attitude, and a few pounds of float ore

"This deposit is said to be the only one in the Briggs Creek area from which chromite was actually shipped in any quantity. It is said that about five or six carloads (250-300 tons) of ore were taken from the large cut and tunnel, and packed by mule to the road, over five miles away. Now only a few hundred pounds of loose chromite remain. It is probable, however, that the deposit is not exhausted. The ore is said to have averaged just above 47 per cent chromic oxide.

"2. Rose City. One shallow location cut has exposed a face of ore in the bottom, said to be (it was filled with snow when visited) limited on only one side of the cut, the boundary cutting across the bottom at an angle. N. 80° E. Only about 200 pounds of ore have been taken out. Heavy float (boulders from 6 inches to 2 feet in diameter) extends for 200 feet to the east, and for 100 feet to the west; perhaps as much as one ton in all. It is said that smaller float extends further east down the hill for another quarter mile.

"The ore appears to be of good grade, and assays 45.87 per cent chromic oxide.

"It is about one mile down a very steep trail to Briggs Creek, and thence one and a half miles to the forest road at the Ferren Ranger Station. By forest

road it is about 16 miles to the Redwood Highway at the foot of Hayes Hill (Butcher Knife Creek) and thence about 14 miles to Grants Pass. The total is about 41 miles from claim to town."

Reference: Allen, 38:41, 1938 (quoted)

ELKHORN CREEK MANGANESE Illinois River area

"Location: NW¼ sec. 13, T. 36 S., R. 9 W., in the saddle west of Manganese Point at an elevation of 3680 feet.

"There are three 2-foot parallel ledges, striking north 35° west. dipping 70° south-west in contorted banded quartzite, composed of rhodonite and yellow garnet (andradite) stained by black oxides along jointing. Five open cuts total nearly 100 feet, one of them 35 feet long.

"The occurrence as manganese silicate precludes economic use of this material under present conditions.

"Informant: Allen, 36"

Reference: Libbey & Others, 42:28 (quoted)

ELKHORN PLACER MINE Illinois River area

Owner: Briggs Creek Mining Company, C. L. Demsey, Manager, Grants Pass, Oregon.

Location: On Briggs Creek by road 42 miles SW. of Grants Pass in sec. 24, T. 36 S., R. 9 W. Accessible by road only about 6 months out of the year. Elevation 2050 feet.

History: This is an old property and was acquired by Mr. E. E. Young in 1927. It was worked in a small way until 1936 when Mr. Young sold to a Seattle group under the managership of R. T. Davison. This group had the property for three years. Very little mining was done. The property was recovered by Mr. Young in October, 1938. It was bonded to Briggs Creek Mining Company, C. L. Demsey, Manager, February 5, 1939.

Area: The Elkhorn Placer Mine consists of 8 unpatented placer mining claims--160 acres.

Equipment: 3500 feet of pipe up to 16 inches; 3 giants: 2 No. 2 and 1 No. 1; electric generator and turbine; 3 cabins; a small sawmill.

General: There are three ditches. One is 3½ miles long and the other two are about 3/4 of a mile each in length. Gravel up to 35 feet deep but averages about 12 feet. It is estimated that 120 of the 160 acres is mining ground. Mr. Young states that his 10 years of operations showed about 15¢ per yard recovery. About 7 acres have been mined off. Gold runs from 912 to 964 fine. No record of the total production is available.

Informant: J. E. Morrison, 39

EUREKA MINE (gold) Illinois River area

Owner: John C. Shade, Selma, Oregon.

Location: In sec. 22, T. 37 S., R. 9 W., near the top of the divide between Soldier Creek and the Illinois River. The property can be reached by going eight miles west from Selma on the Illinois River road to Six Mile Creek, thence five miles by trail to the mine. Elevation 2500 feet.

History: The owner was watchman for the Eureka Company for a number of years and finally located three claims, namely, Black Cat, Log Cabin, and July. Two different companies have

had leases on the property but neither did any development work. Mr. Shade ran a cross-cut tunnel 90 feet to cut the vein. This new work is west of the old workings. Mr. Shade reported that other than this tunnel there has been no change in the property since the Diller report. (see reference) Old workings are all caved.

Geology: "The country rocks are greenstone and serpentine and the ore occurs in irregular but abundant veins or bunches of quartz on the contact or near it in the adjacent greenstone. The quartz streaked with a dark ore mineral, reputed to be a telluride, is richest and is said to run as high as $500 a ton. Such ore was rare and is not now available. The general average is low, much of it about 40 cents a ton. The ribboned veins of quartz strike N. 50° W. and dip 75° NE. The contact has been worked 250 feet in depth and 500 feet in length horizontally.

General: "The Eureka Mine on a branch of Soldier Creek, about 12 miles northwest of Kerby, is owned by a company in Eureka, California. The property embraces 6 or more claims and is reached by trail only. There are probably 1000 feet of underground workings, also air drills, electric lights, and a 10 stamp mill with concentrator and cyaniding plant now idle. The mine was operated more or less irregularly for about 4 years, beginning in 1901, with a Huntington mill. The output, though considerable, is not definitely known."

Reference: Diller, 14:62-63 (quoted); also in Parks & Swartley, 16:92

Informant: J. E. Morrison, 38 (not visited)

FREEHOLD MINING SYNDICATE — Illinois River area

see Gold Bond Placers

GOLD BLANKET (gold) — Illinois River area

Owner: Shird Wheeler.

Location: sec. 14, T. 38 S., R. 9 W., at head of Hoover Gulch.

History: The mine has a small mill and the property is worked intermittently.

Informant: R. L. Hammer, 4/3/40

GOLD HILLS REFINERY (placer) — Illinois River area

see Anderson Placer

GOLD BOND PLACER — Illinois River area

Owner: Gold Bond Placers, Inc., A. O. Thomas, Pres., 641 N. 7th St., Grants Pass, Oregon. Operated under lease last season to G. P. McClanahan, Paulina, Oregon; R. S. Shelly, Eugene, Oregon; H. P. Spradling, foreman, 805 N. 8th St., Grants Pass, Oregon.

Location: On Briggs Creek, one and one-half miles above the mouth, 20 miles via U.S.F.S. road down the Illinois River in secs. 4 and 5 , T. 37 S., R. 9 W. Elevation 1500 feet.

Area: 1200 acres held by location.

History: Parks & Swartley reported on the Freehold Mining Syndicate as follows:

"Office: 506 McKay Bldg., Portland, Oregon. Samuel Weldon, Pres.; T. J. Bernard, sec., both of Portland. Capital stock $1,000,000; par value $1.00; all subscribed, issued and paid up. (1914.)

"This company owns five placer claims about 24 miles northwest of Kerby, on Briggs Creek, a branch of the Illinois River, 20 miles southwest of Galice. Nothing but assessment work done on this property for some time."

The presence of placer gold in this district has been known for many years but until the present owners acquired the property in 1935, there were no commercial operations. The property was inactive in 1940.

General: Rough mountainous topography; granitic bedrock; coarse gold; considerable clay and many large boulders. There is water for all-year operation available by a water right out of the Briggs Creek of 70 c.f.s. delivered by a ditch four miles long discharging at a 225 foot head. Equipment consists of two No. 3 Giants, 400 feet of 30 inch pipe and 600 feet of 12 inch pipe.

Informant: J. E. Morrison

Reference: Parks and Swartley 16:97 (Freehold Mining Syndicate)

GOLDEN PRINCESS MINES CORPORATION (placer) Illinois River area

Owner: Oregon corporation; F. W. Cutler, Pres., 512 S. E. Mill St., Portland, Oregon; T. W. Veness, Sec., Pacific Bldg., Portland, Oregon. A. B. Cutler, Treas., 512 S. E. Mill St., Portland, Oregon; capitalization, 5000 shares, no par value.

Location: S.½ SW.¼ sec. 30, also that part of NW.¼ NW. ¼ sec 21 on south and east side of Josephine Creek and W.½ NE.¼ NW.¼ sec. 31, all in T. 38 S., R. 8 W.

History: The above includes as much of the following mining claims as are within the above described limits: Hans Groschen Claim recorded 1/25/08, P. 137, Vol 18, Mining Records; Antidiluvian Claim, recorded 6/29/25, P. 78, Vol. 27, Mining Records; Osmiridium Claim recorded 6/29/25, P. 78, Vol. 27.

Approximately $8,800.00 spent in improving property for operation since the time of filing.

The value of output from Jan. 1, 1936, to Dec. 31, 1936, is $411.05.

"The Golden Princess Mines Corporation, 512 Southeast Mill Street, Portland, Oregon, is reported to have leased its Golden Princess hydraulic property in the Illinois River District of Josephine County to W. B. Grant, F. J. Pike, and A. C. Reade. The mine is near Grants Pass. A. B. Cutler is treasurer of the Golden Princess Company." (taken from The Mining Journal, March, 1938)

Not active during the winter of 1940 because available water was used on the "Independence Group" of George Foster, just across the creek. (A. C. Reade, Selma 2/7/40)

In 1941, the property was worked by George Foster of the Independence Placer which adjoins it.

Informant: Ray C. Treasher.

GOLD RIDGE PROSPECT Illinois River area

Location: Sec. 12, T. 38 S., R. 9 W. (see Josephine County Mining Conveyance records, Vol. 12, p. 568.)

History: "Pocket Knoll and the divide between Mike and Days gulches, 5 to 7 miles northwest of Kerby, have long been noted for their pockets of free gold. Pocket Knoll is composed of serpentine with a greenstone contact near its western base. From this contact northwest on the divide, to the head of Hoover Gulch and beyond, the ancient lavas and tuffs include much reddish and siliceous slates of sedimentary origin. The cherty masses, especially about the head of Hoover and Mike gulches, have recently been prospected. With a small hand outfit consisting of a Simplex rock crusher weighing 150 pounds and a 25-pound muller and plate for pulverizing. T. M. Anderson, of Kerby, is said to have taken much gold out of a number of rich pockets.

"There are a number of claims, 4 or more, on the flat divide at the head of Hoover and Mike gulches. The divide is occupied by a belt of more or less cherty slates, about 100 feet in width and covered by a thick layer of rotten rock, bounded on both sides by greenstone with serpentine nearby to the northwest. The greenstone is in places granular, but mostly compact and in general contains much auriferous pyrite. The cherty belt and its quartz veins trend N. 20° E. and dip 50° SE. A tunnel is being run across the belt in the rotten rock to locate the richest portion. A shaft has been sunk 20 feet in this soft rock and gold has been panned from the oxidized material at the bottom. The little swale on the northwest has been sluiced with good returns, and if water were cheaply available it is possible that considerable pay ground could be found.

"A short distance northeast of the tunnel mentioned above is the Beauty claim, on which a pocket recently opened is said to have yielded $5000 or more of free gold in quartz. The country rock is compact greenstone lying east of the siliceous slates, and the narrow pay streak, about 10 feet in length and within 2 feet of the surface, runs northwest and southeast perpendicular to the general course of the formations."

The property was advertised for sheriff's sale on April 3, 1939.

Reference: Diller, 14:66-67; (quoted)
Parks and Swartley, 16:110
Grants Pass Courier

GOSHEN PLACER — Illinois River area

See Independence Placer

GRANTS PASS CHROME COMPANY — Illinois River area

See Shade Chromite

GRIFFIN CHROMITE — Illinois River area

Owner: Frank Griffin, Selma, Oregon

Location: NE¼ NW¼ sec. 18, T. 38S, R. 8W, ¼ mile west of the mouth of Deer Creek, at an elevation of 1500 feet.

Area: Two parallel north-south lode claims, the Nickle Plate Nos. 1 and 2, and one placer claim bisected by the Illinois River.

Geology: The deposit lies on an east sloping hillside with a 20° gradient, at a point 350 feet in elevation above and about 1500 feet west of the Illinois River. Ore appears in place in two large cuts and as float 1000 feet North. The main cut lies 200 feet N. 35° E. of the southern one, and 50 feet in elevation below. Four prospect trenches cross the ground between the cuts but expose no ore.

Banded chromite ore outcrops at the southwest end of the main cut, striking N. 50° E. and dipping 65° N. Its width at this point is difficult to determine, but is probably not more than 4 feet and may be less. The southeast side of the cut consists of one large plane of movement striking N. 50° E. and dipping 40° N., which may have been the footwall of the ore body. The ore appears to have been glory-holed from a tunnel driven at about 20 foot depth. The cut is now badly caved. Twenty feet south of this cut several large boulders containing contorted bands of chromite are exposed.

At the west end of the southern cut a narrow lens of banded ore striking N. 55° E. and dipping 65° N. crops out for several feet with a width of at least 3 feet, and possibly more. Twenty feet farther east, a small outcrop (which may not be in place) suggests a third parallel body, striking N. 30° E. and standing vertical.

The country rock of the region is a serpentine, with much whitish tremolite and chrysotile stringers on the surface, especially near the deposits. In places farther from the deposits, the original porphyritic textures are apparent. The ore is predominantly banded, with narrow irregular layers of high-grade chromite lying between nearly barren serpentine, and making up from 15 to 30 percent of the rock in the ore body. The high-grade has a shiny metallic lustre, which suggests a high-iron content. The bands are usually only a fraction of an inch thick, although they may widen to several inches. The banding is often much contorted and folded. There have been minor displacements of the bands. No evenly disseminated ore was seen on the property, the chromite occurring only in the bands and the interstitial rock containing probably less than 5 percent chromic oxide. Assay of the cobbed ore from a pile in the south cut gave 44.52 percent Cr_2O_3. A sample of the ore from another dump was pan concentrated and yielded 53.47 percent Cr_2O_3.

Informant: J.E.Allen, 1938.

HOLIDAY MINE — Illinois River area

see Anderson Placer

HORSE MOUNTAIN CHROMITE — Illinois River area

"Located near the center of NW¼ sec. 3, T. 37 S., R. 9 W. The deposits lie at elevations of 2500 to 2700 feet on the northwest ridge of Horse Mountain, east of Briggs Creek, Josephine County.

"The chromite lies in narrow bands, stringers, and fatter lenses occurring along a fairly narrow zone for 600 feet, in a country rock of medium- to fine-grained banded dunite which strikes generally north-south, varying from N. 15° E. on the lower (northern) part of the zone to N. 8° W. on the upper (southern) portion. The narrow stringers and lenses within the zone occur en echelon, being offset progressively as one goes southwards.

"The zone lies approximately parallel to, and 100 to 200 feet from, the contact of the dunite intrusive with the older schists lying to the east. This contact governs the course of a small creek, and outlines the ridge upon which the zone lies. To the west the ridge drops off steeply in a series of cliffs to Briggs Creek, 1000 feet below.

"The ore appearing in all the chromite outcrops was low-grade, disseminated in character, and soft. A few portions towards the center of the larger bodies are more compact with less gangue, but the average is perhaps not over 35 percent chromic oxide. The characteristic occurrence in this vicinity seems to be in narrow stringers, which vary from the center, where the chromite grains are fairly well-packed, outwards to the edge with more and more olivine being included and the individual grains becoming more and more sparse.

"Although the Briggs Creek chrome bunkers and road are only 3/4 of a mile to the north, and lie at about the same elevation, the steep-sided 1000-foot valley of Swede Creek lies between. From the bunkers to the highway it is about 12 miles, thence 14 miles to Grants Pass."

Reference: John E. Allen, p. 43, 1938 (quoted)

HORSESHOE LODE CHROME Illinois River area

Owner: Thomas W. Kennedy, Selma, Oregon.

Location: E½ SW¼ sec. 33, T. 37 S., R. 8 W., on Squaw Creek, 2½ miles north of Oak Flat road and ¼ mile north of Kennedy Ranch. Located Nov. 14, 1941.

Area: One mining claim.

Development: One surface trench about 50 feet long on a hillside trends about S. 15° E. Only the overburden has been removed.

Geology: Country rock is ultrabasic rock with black serpentine derived from it. At the trench, the serpentine has been sheared, developing "slickentite." Some chrome grains can be seen in the black serpentine, but there was no ore in place. It is reported that a small amount of chrome was found at the south end of the trench and that it "assayed 55 percent."

Informant: RCT, April 24, 1942.

HORSTMAN GROUP Illinois River area

see Nichel-Chrome Group

HOWLAND MINE (gold) Illinois River area

Owner: George L. Howland and N. W. Williams.

Location: Ridge between Rogue River and Illinois River.

Area: Eleven claims.

History: The mine was discovered by Howland in 1929.

Development: About 300 feet of tunnel.

Geology: Country rock consists of serpentine and gabbro. The vein is quartz.

Equipment: A small mill is run by water power.

Informant: Grants Pass Courier, January 27, 1937.

ILLINOIS RIVER CHROMITE Illinois River area

see Oregon Chrome Mines, Inc.

INDEPENDENCE PLACER Illinois River area

also known as Goshen Placer

Owner: George C. Foster, Box 114, Kerby, Oregon.

Location: sec. 19 and 30, T. 38, R. 8 W., at mouth of Josephine Creek.

Area: Nine placer claims, held by location, dated June 1929.

History: Originally located by Hans Goshen and Known as the Goshen placer. Later operated

by a Mr. Anderson and finally located and operated by Foster.

Development: 12,000 yards of loose gravel. About 80 feet of bedrock drifting in cemented gravel.

Equipment: Two No. 3 Giants; 800 ft. of 15 inch pipe. 6 miles of the 11-mile Anderson ditch. Water right calls for 20 second-feet of water, and develops about 130 feet of head at present workings. The water right dates back to 1873. One Southwest Engineering Co. concentrating table driven by a 2 h.p. gas engine; pumping plant for domestic water; 2 inch pump, bulldog type with a 6 h.p. International gas engine; hydraulic derrick with a 30-foot boom; blacksmith and machine shop; four cabins for living quarters.

Geology: Bedrock is serpentine and peridotite. The peridotite weathers to a light brownish rock on which the olivine granules stand out as distinct bumps. Serpentine is developed along the joint planes. There are two deposits of gravel. The first bench above the river consists of the "soft gravel", that is, material that can be hydraulicked. It is approximately 9 feet deep with an areal extent on the property of 400 feet x 5000 feet. Boulders are medium sized, gold is fine, and uniformly distributed throughout the depth with no particular concentration on bedrock. Cemented gravel, representing an old channel, lies on the second bench about 130 feet in elevation above the first bench. This gravel is thoroughly indurated and cemented with calcareous material. Bedrock is the same as that of the "soft gravel". The total thickness is 150 feet, and its areal extent is 900 feet by 5000 feet. Since the top of the second bench is 130 feet above the first bench, and since the cement gravel is 150 feet thick, it is evident that the old channel is cut some 30 feet in rock below the surface of the first bench and that the first bench represents more recent deposition by Josephine Creek. Gravel is mined by bedrock drifting. Gold is coarse, averages 960-980 fine and nuggets average $5. The cemented gravel stands well and no timbering is needed during any one mining season, but after being opened for some time, the cement slacks and the ground caves. There is considerable black sand which contains relatively high platinum and iridium. One platinum nugget, reported to weigh five pennyweight, 3 grains, was seen. The black sand contains considerable chromite, hematite, and magnetite.

Values are concentrated in the seven inches just above bedrock. Mined gravel is washed and some gold is recovered; the tailings are stockpiled for a season and weathering causes the calcareous cement to disintegrate after which the tailings are re-run with a recovery approximately equivalent to the original run. It does not pay to run the gravel a third time.

Economics: Normal hydraulic run is 150 days. Bedrock drifting is carried on for the balance of the year.

Informant: George C. Foster and RCT, 4/3/40

Report by: RCT

JOSEPHINE CREEK PLACERS Illinois River area

Operator: J. B. Akley

Informant: R. L. Hammer, February 7, 1940

MACFARLANE BRICK PLANT (Ceramics) Illinois River area

Owner: F. E. MacFarlane, 319 Rogue River Ave., Grants Pass, Oregon

Location: E½ SE¼ SW¼ sec. 24, T. 37 S., R. 8 W., just south of the summit of Hayes Hill.

Area: Seven placer claims, located March 29, 1939

History: New location and new brick plant.

Development: Between two and three acres have been cleared of brush and timber. The brick plant has been constructed. There is a small clay pit back of the plant.

Equipment: Equipment consists almost entirely of the brick plant itself. It is reported to have a capacity of 15,000 bricks per day. The machinery was purchased from the old Ashland Brick & Tile Company and is as follows: a 110 h.p. Leroy gas motor for a power plant; disintegrator to break clay for 50,000 brick per day; brick machine is a Hummer model rated at 15,000 brick per day; pug mill has a 20,000 brick capacity; tile cutter will cut up to 12 inches x 12 inches tile; wire brick cutter 20,000 capacity. Buildings consist of a 100 ft. x 20 ft. drying shed; a 26 ft. x 40 ft. power house; machinery plant is 10 ft. x 12 ft.; shop is 20 ft. x 50 ft. All buildings have metal roof for fire protection. A wood-fired kiln is to be constructed by October 1st, - size not yet decided.

Mining Facilities: Water is obtained from a 40 ft. dug. well. This well will be deepened as brick-making operations are started. There is plenty of second-growth timber for firing the kiln.

Geology: The clay appears to be the deeply weathered slate of the Galice (?) formation. It is interbedded with a decomposed sandstone. Depth of weathered zone is from 10 ft. to 25 ft. and it appears that there is sufficient clay for many years of operation.

Informant: F. E. MacFarlane & Ray C. Treasher, July 19th, 1940

Report by: Ray C. Treasher, 7/20/40

MCPHERSON PROSPECT — Illinois River area

see Winters & McPherson prospects

MOOD PROSPECT — Illinois River area

Owner: W. S. Mood, 1512 Wilson Avenue, Spokane, Wash.

Area: 6 claims

Location: Sec. 34, T. 38 S., R. 9 W.

History: "Near the forks of Fiddlers gulch, about 7 miles nearly west of Kerby, are situated the 6 claims of the Mood mine. Like most of the lode mines of that region, this mine is in the vicinity of the western border of the great serpentine belt. It is said that the mine has nearly 2000 feet of underground workings and an old arrastre in which ore was ground that yielded some thousands of dollars. Tunnels are being run to the northeast along a shear zone approximately parallel to the contact. There is a small but distinct gouge, some irregular veins of quartz, and a lense of very hard rock rich in pyrite.

"In the same vicinity, but farther west, between the forks and along the main branch of Fiddlers gulch, there are a number of openings that were not seen, among them those of Watson and Andrews. The greenstone is in places full of pyrite, but its value has not been proved."

The property was worked by George Mood for a number of years. In 1927, W. S. Mood caused some development work to be done, and two tunnels, now caved, one 125 ft. and one 25 ft. were driven. Nothing but assessment work has been done since then.

Informant: W. S. Mood, February 24, 1942

Reference: Diller, 14:68 (quoted) also in
Parks & Swartley, 16:155

NEIL MINE (gold) Illinois River area

Location: Sec. 34, T. 38 S., R. 9 W.

"On the south fork of Fiddlers Gulch, at an elevation of nearly 2400 feet, 6 miles west of Kerby, is the mine owned by Neil brothers and recently sold to the Segno-Tomek Gold Mining and Milling Company for $80,000, according to report.

"The discovery of the Neil Mine was made by a short tunnel that yielded, it is said, some remarkably rich dark telluride ore. The discovery tunnel is near the contact of the greenstone and serpentine. It has caved in,water issues from it, and the rich ore reported is inaccessible at the present time.

"The Segno-Tomek Company has run a large tunnel N. 68° W. for about 300 feet to a contact and then followed the contact south for nearly 100 feet in an attempt to strike the rich ore several hundred feet beneath the original discovery.

"The rocks along the contact are much crushed and for 6 to 12 inches have much sheared material which is decidedly serpentinous. As far as seen it contains little evidence of ore."

Reference: Diller, 14:68 (quoted)
Parks and Swartley, 16:160

NICKEL - CHROME GROUP (chromite) Illinois River area
also known as Eight Dollar Mountain Group and as Horstman Group

Owners: Mrs. Karl Horstman, and William Wescott, Kerby, Oregon.

Location: Sec. 20, and N½ sec. 29, T. 38 S., R. 8 W., on Eight Dollar Mountain, 3 miles S. W. of Selma, Oregon; elevation between 3000-4000 feet.

Area: 38 claims, held by location, dated 1935 and 1938.

History: About 30 years ago a Mr. Lewis made a map of the group showing two ore zones that intersect N. E. of the summit of Eight Dollar Mountain. It is reported that in 1925-1929 a Mr. Smith had some assays made in Germany by Dr. Phil O. V. Grossman, which showed the presence of chromite and a fraction of one percent nickel. This sample was reported as representing 50 million tons of ore all from Eight Dollar Mountain. Since the death of Karl Horstman in 1939 most of the claims are held by the above mentioned owners.

Development: Principal development work is in the nature of cuts and trenches; several small adits have been run with the object of developing chrome ore.

Geology: The roads along Illinois River, Deer Creek, and Redwood Highway, cut through ultra-basic rocks in which there is some serpentinoid rock. The ultra-basics weather is a tan color and their surface is studded with resistant enstatite (?) crystals. Some chromite float has been found and present prospecting is directed toward locating the chrome bodies. It is claimed that the ultra-basic rocks contain nickel and tin in commercial quantities.

Informant: W. W. Wescott, 11/19/40

Report by: Ray C. Treasher, 11/22/40

NORTON PLACER Illinois River area

Owner: Phil Suetter

Location: Secs. 25 and 36, T. 38 S., R. 9 W., on Josephine Creek.

General: The old Norton placer was taken over by Phil Suetter who planned to use a mechanical washing plant. The Mining Journal (Arizona), May 30, 1938, reported:

> "Dragline equipment is being installed by the Suetter Placer Mines, Inc., of Kerby, Oregon. The company has taken over the St. Johns Bosco property and will start active mining as soon as possible."

Little work was done at the property and it has been idle for the past three years. Practically all of the equipment has been removed.

Informant: Ray C. Treasher, May 18, 1942.

OAK FLAT PLACER — Illinois River area

see Gold Bond Placer

> "Four years' preparation for extensive placer gold mining operations have been just completed in the Oak Flat area by a company headed by Owen A. Thomas, it was learned this week when the firm filed application for a 50 second foot water permit with County Watermaster Tom. R. Pearce.
>
> "Mr. Pearce said that a ditch five feet deep, 10 feet wide and three miles long has been dug so as to carry water from Soldiers Creek to the source of operations, near the mouth of Briggs Creek. It is understood that a sizeable dam has also been constructed." Grants Pass Courier, December 22, 1938.

OLD GLORY MINE (gold) — Illinois River area

Owners: Ben Baker, J. E. Morrison, Grants Pass, Oregon.

Location: NE¼ sec. 12, T. 36 S., R. 10 W., 25 miles due west of Grants Pass. Elevation is 1600 feet.

Area: Four lode claims and one placer claim, held by location, dated July 1939.

History: "This company owns the Old Glory mine on Silver Creek, 25 miles due west from Grants Pass, which consists of 4 lode and 2 placer claims, said to show a large lode of low-grade copper ore carrying gold and silver values.

> "In 1914 the development work consisted of 2 tunnels 40 feet in length exposing a quartz vein which is said to average $10 a ton in gold. The ledges run in a general east and west direction. In 1915, $1200 worth of development was done."

It is reported that a few tons of ore were packed out of the property at a cost of 4¢ per pound and that the high transportation costs caused the company to shut down.

Development: The two tunnels mentioned above have been extended. One is in ore and is 100 feet long; the other is 50 feet long. The placer was worked during the winter of 1939-1940 with a No. 3 giant. An access road has been constructed. The property was idle in 1942.

Equipment: Mining equipment consists of an 8 x 8 Chicago Pneumatic compressor, 3 stopers, 2 jackhammers. Mill equipment consists of a 30 x 36 Straube ball mill, an 8 x 10 jaw crusher, one concentrating table. There are 1200 feet of 11-inch pipe, and one No. 3 giant, two large-sized Pelton wheels, a 1-ton Ford truck, a 3 K.V.A. generator.

Mining facilities: There is a water right for 2 second feet of water from Little Todd Creek and ½ mile of ditch that delivers water under 300 feet of head. Pelton wheels will be used to develop power to run the compressor, mill, and electric lights for the camp.

Geology: In this locality metasediments have been cut by quartz veins. Quartz is white and loaded with chalcopyrite and pyrite. Values are found in the sulfides which are more or less confined to the quartz.

References: Parks and Swartley, 16:167 (quoted)
Diller, 14:62

Informant: J. E. Morrison, July 16, 1940

Report by: Ray C. Treasher, July 16, 1940

OLD RAY MINE (placer) Illinois River area

Owner and operator: Oregon Placers, Inc., Selma, Oregon. Officers of organization: Ernest Stent, pres.; Robert G. Hooker, vice-pres. and treas.; Ferdinand R. Stent, sec.; and R. G. Hanlon, operating manager. Nevada corporation.

Location: Secs. 19, 29, and 30, T. 38 S., R. 8 W., at mouth of Josephine Creek.

Area: Claims cover 2½ miles along Illinois River.

Equipment: Gasoline electric shovel, washing plant with Pan-American jigs, 2000-yard capacity. Equipment was moved to Rooky Gulch placer, Galice area, July 23, 1940.

Informant: Ernest Stent, April 1940

Report by: A. A. Lewis

OREGON CHROME MINES, INC. Illinois River area

Owner: Oregon Chrome Mines, Inc., P.O. Box 475, Grants Pass, Oregon.

Operator: W. S. Robertson, 1225 N.W. Washington Blvd., Grants Pass, Oregon.

Location: Secs. 16 and 21, T. 37 S., R. 9 W., on the east side of the Illinois River at about 1500 feet elevation. The property is reached from Grants Pass via Highway US 199 te Selma (23 miles) thence northwest on the Oak Flat road about 15 miles to the mine.

Area: 7 claims.

History: The mine, which is the State's largest producer of chromite, was operated by the California Chrome Company from 1917 through 1918. Diller (1921:33) reports:

> ". . .The largest body of chrome ore found in the county was on Illinois River (3), and the mining of this body was begun in 1917 and completed in 1918, yielding a total of about 4,600 tons of shipping ore. The orebody was made up of a number of parallel lenses, one of which was 65 feet in length N. 10° W. and 20 feet thick and dipped about 45° E. The ore generally contained 50 percent or more of chromic oxide, and but little low-grade ore was found. No purple chrome chlorites or green chrome garnet, such as are commonly seen elsewhere, was noted at this locality. The country rock, dunite, is completely changed to serpentine. . . ."

> Allen (1938:43) states: ". . .According te Ed Cox, who was in charge of operations for the California Chromite Company during the war, there were three kidneys (new almost completely mined out) which yielded over 5000 tons of ore, averaging 47 percent chromic oxide."

The mine was inactive from 1918 through 1940. In 1941, The Oregon Chrome Mines, Inc., was organized by S. Dilsheimer. The mine was reopened, but there was little if any preduction during that year. Management was assumed by W. S. Robertson, present operator, in 1942. No sizeable ore bodies were located until the fall of 1943 when a large kidney of ore was discovered. This ore body accounted for much of the production during 1943 and 1944. Use of diamond drilling for location of new ore bodies was begun in 1945 continuing through 1946 until operations were discontinued. Work at the mine since 1946 has been sporadic. In 1947 an 800-foot haulage tunnel was driven but there was no production. Diamond drilling was started late in 1947 and continued into 1948. An inclined raise from the haulage tunnel

(1390-foot level) was driven to the 1512-foot level in 1947 and 1948. The mine began production early in 1948 continuing until August of that year when operations were discontinued because of high costs compared to market price of ore. The property remained inactive until September 1950 when development, including diamond drilling, was resumed. This work continued for several months in 1951 but there was no production. Diamond drilling was being done early in 1952. Department records show the following production from 1942 through 1948:

Year	Long Tons	% Cr_2O_3	Cr:Fe Ratio
1942	139.40	Average 43.4	2.59:1
1943	586.24	36.55 to 47.01	2.33:1 to 2.80:1
1944	5,101.82	42.17 to 48.43	2.49:1 to 3.11:1
1945	2,148.40	Average 44.87	2.69:1
1946	2,382.69	----	----
1947	No production	----	----
1948	2,755.19	Average 44.74	2.71:1
Total	13,113.74		

The foregoing figures are believed to be incomplete and therefore represent a minimum production figure for this period. W. S. Robertson estimates the production for the 1942-1948 period at 14,000 long tons and a total production for the mine at about 20,000 long tons.

Informant: W. S. Robertson, 1952

References: John E. Allen, 38:43 (quoted)
Diller, 21:33 "

PANTHER CREEK MINING COMPANY (placer) Illinois River area

Location: S½ sec. 6, T. 37 S., R. 9 W., just across from Oak Flat, ½ mile below mouth of Briggs Creek. Inactive.

Informant: J. H. Whitrock, 1940

PHILLIP (Vanguard) PROPERTY (gold) Illinois River area

Location: W½ sec. 23, T. 38 S., R. 9 W. ("List of Mines in Oregon")

History: "The Phillips property, known also as the Vanguard, is on the north slope of Days Gulch near Pocket Knoll. Several openings have been made in the hillside and an 80-foot tunnel run in greenstone not far from its contact with cherty slates. Some sulphide ores carrying copper and gold were obtained, although no considerable bodies were visible at the time of my examination. The tunnel is to be extended 500 feet farther into the hill. A small and very crude arrastre on the creek is said to have been used to grind some of the pocket ore from the ridge near the knoll." There was no activity in that region in 1940.

Informants: W. R. Burner, February 28, 1940
J. H. Whitrock, Kerby, January 1940

Reference: Diller, 14:67 (quoted)

PLACER MINES COMPANY Illinois River area

Owners: The Placer Mines Company, 707 S. Sheridan Street, Tacoma Washington, and Milo M. Shier, President and General Manager, 709 N. 5th Street, Grants Pass, Oregon.

Location: Near the mouth of Briggs Creek 20 miles NW of Selma in sec. 5, T. 37 S., R. 9 W.

Area: 7 placer claims, total 140 acres.

General: At the time of the informant's visit Mr. Shier stated they had spent $15,000 on equipment.

Informant: J. E. Morrison, 1938

RED DOG GOLD PLACERS Illinois River area

see also Gold Bond Placers and Placer Mines Company

"The Associated Placer Claims on Briggs and Red Dog creeks four miles east of Oak Flat on the Illinois River, Josephine County, Oregon, are the latest of early day gold diggings to be reclaimed.

"Gold was first discovered in the Briggs Creek District at the mouth of Red Dog Creek, in the spring of 1868, by a party of prospectors from Kerby. There was no road down the Illinois River Canyon, which was too rough for even a pack trail and the only way to get through the country was by following high ridges. The distance from Kerby to Red Dog at that time was about 25 miles.

"P.W.McGuire, later known as 'Steamboat' was the original discoverer of Gold at Red Dog, and we are indebted to his son, Lon McGuire, for the principal facts of this review.

"McGuire states that the first attempt at mining at Red Dog Creek was very crude, inasmuch as the miners were unable to secure any lumber for sluice boxes and were forced to confine their operations to what is known as ground sluicing in the channel of the creek.

"The first cleanup of this mining reported a powder box full of nuggets; the miners ignored the fine gold worth about $12,000 at the price paid to miners at the time, which was $16.00 per ounce.

"Later on lumber was whipsawed and sluice boxes were used and the channels of both Briggs and Red Dog creeks were worked at such places as could be drained. The miners not having any pumps were able to work the creek bed only at the higher bars. About two-thirds of the channel of both creeks has never been mined.

"An estimate of $100,000 in gold was taken out of this district. This estimate was quoted by Bulletin No. 94, U.S. Bureau of Mines, but is not official, as no records were kept at that time other than the bank at Jacksonville, Oregon.

"After the creek channels were worked out, that is, what could be drained, it was discovered that benches or terraces of ancient river gravel were from ten to thirty feet above the creek channel, and the depth of these gravel deposits were from eight to twenty feet, with large boulders on the bedrock. The gold was generally coarse, the largest nugget recovered and reported officially was $812.60 taken from McDow Diggings, Briggs Creek.

"In order to mine these gravel deposits, ditches were built out of the creek to convey water to a sufficient height to enable miners to work these bars with sluice boxes. This mode of mining was not successful as the miners were unable to move with pick and shovel enough ground to pay in the hard-packed gravels. These miners would not work ground at that time for less than an ounce of gold per day to the man.

"About 20 percent of these gravel deposits was mined and today a conservative estimate of 200,000 yards remain to be mined by hydraulic methods and a low estimate from prospecting the ground will go over 40 cents to the cubic yard, present prices of gold.

"The Associated Claims comprise three groups of placer mining claims located right on Briggs and Red Dog creeks. The Johnson Claims, 264 acres, and Whittig Claims, 80 acres, are not included; but the Knight Claims of 40 acres are included. Estimated gravel yardage is 200,000 cubic yards. Equipment consists of 1,000 feet of 11-inch hydraulic pipe and one No. 2 giant.

"There is one ditch 480 rods in length, 4 x 3 x 2 feet carrying water from Red Dog Creek to bars on Briggs Creek. On the north side the ditch reaches an elevation above bar of 260 feet; it will have to be partly rebuilt. One other ditch out of west fork of Red Dog, 180 rods, supplies water to the Knights Claims; head is 160 feet; very little repair is necessary.

"There is sufficient water in Briggs and Red Dog Creeks to enable hydraulic mining about eight months out of the season. During the low water period in the summer the creek channel mining can be carried on. At present there is no ditch out of Briggs Creek.

"There is sufficient timber; fir, pine, and white cedar on all claims for all mining purposes.

"At present there is a road, one mile up Briggs Creek from Red Dog to the mouth of Swede Creek. Also, a road is being built to the Dasher Place, at the mouth of Soldier Creek, about one mile down Briggs Creek from Red Dog. This road will be three miles to Oak Flat on the Illinois River. From this point there is a good truck road nineteen miles to Selma on the Redwood Highway. From Selma it is 22 miles to Grants Pass.

"The gap of two miles between Soldier and Swede Creek will be completed this summer. The Red Dog District has until the present time been so remote from transportation that its mining possibilities have been overlooked.

"At the present time a large mining company of Portland and Seattle men have secured large placer holdings between Soldier Creek on the main Briggs Creek and the Illinois River. They have expended considerable money in equipment and are now ready to operate on a large scale. Also, many miners and prospectors are coming into the district and locating all open claims."

Informant: George D. Young, 38 (?), (quoted)

RED HILL CLAIM (chromite) Illinois River area

Owner: Lou Hammer, Selma, Oregon.

Location: Sec. 28, T. 37 S., R. 9 W., on McGuire Gulch, about 1 mile east of the Oak Flat Road.

Area: One claim.

History: The claim was first worked in 1939. About 25 tons of ore are piled on the dump and there is more ore in place.

Geology: The serpentine "belt" is a continuation of the Dailey Creek mass which is quite productive of chromite. The chromite lens seems to be pitching down into the serpentine. No estimate of the total quantity is available but it should run into several carloads. The ore can be skidded out by sled.

Informant: Lou Hammer 4/6/42

REVELL PLACER Illinois River area

Owner: James D. Revell, Selma, Oregon

Location: NE¼ SW¼ sec. 7, T. 38 S., R. 8 W., on south bank Illinois River. Reached via Selma, a distance of 3.6 miles on Oak Flat road, then southwestward on road marked "mouth of Deer Creek", 1.3 miles to forks, thence westward down Illinois River .8 mile to Revell s cabin.

Area: 3 claims, namely Buena Vista, Meander No. 1 and Meander No. 2.

History: The history of the claims is complicated by several locations, transfers to various individuals of the located land by deed and by wills, etc. Apparently no divided ownership resulted. The Buena Vista claim was last located in 1936, under that name.

Development: There has been a small amount of hydraulicking in the past. Present operation consists of a small pit in the bank. The "ore" is trammed to a 10 yard hopper where it is allowed to soak and slack. Slimes are washed out and the remainder is run through a sluice box.

Equipment: A 10 yard flat hopper, about 50 feet of sluice box (upper third has no riffles), a punched-screen-netting riffle for one third, then metal lath for last one-third. An automobile engine raises water some 15 feet for sluicing the material. A small skip is used to raise the muck from the pit to the hopper.

Geology: Principal country rock is serpentine with inclusions of greenstone which would be classed probably as meta-volcanic.

The placer material appears to be a mixture of river-worn gravel and hillside slump. Angular, blocky material in a clayey sand filling lies between lenses of river gravel. According to Revell the river gravel material carrys little gold; the gold seems to be concentrated best in the clayey-sandy filling of the talus. It is suggested that river-bar material was covered intermittently by slump and talus, and then by river-bar material. The gold in the river gravel became concentrated on and within the talus material which acted as a false bedrock.

The gold is exceedingly fine so that 100 to 150 colors are equivalent to one cent. These tiny flakes are flat and well rounded; none was seen that showed any suggestion of roughness. It may be that this rounding and flattening of exceedingly small gold particles indicates that the gold came down the Illinois River. Free quicksilver associated with the rock is further evidence of this idea. Some quartz was mortared, and yielded a small amount of black sand and amalgam. When the piece of quartz was examined at least one small globule of quicksilver was noted in a cavity that was lined with mud. Further, Revell states that more quicksilver is recovered than is added.

It is concluded, therefore, that the origin of the gold is from river wash by the Illinois River and is a concentration principally from former workings upstream. If a former, higher channel can be found, it may be that some of this gold is from such an old high channel. The small size of gold flakes indicates however that it is not "high channel gold.

Mining problems: Gravity concentration yields metallic gold. The tailings consist of a barren gray sand; a brown sand that yields gold upon fine grinding; and black sand that contains some fine gold and platinum. It is reported that Revell's partner obtains gold from the brown sand by mulling it, and then treating it with chemicals; information concerning the process used was not available.

A small amount of free gold is recovered but the owner estimates that about $4 in gold from the brown sand is lost. Insufficient work has been done to permit any sort of sampling that would be indicative.

Report by: Ray C. Treasher, August 7, 1940

RIHA CHROMITE Illinois River area

Owner: F. J. Riha, 4316 Claybourn Street, Burbank, California

Location: W½ SW¼ sec. 23, T. 37 S., R. 8 W., on Squaw Creek, about 2 miles north of Oak Flat road and 500 feet off the Squaw Creek road.

Area: Deeded land, formerly part of the Green Ranch.

History: At various times some exploration work has been done on this ground and several trenches were opened. Recently Riha acquired the property and is planning to open up the chromite.

Development: There several trenches. One is 75 feet long and must have been at least ten feet deep. It is now filled with slumped soil; bedrock could not be seen.

Geology: The area contains ultra basic rocks and serpentine. Bedrock is poorly exposed so that little information concerning the extent of the ore could be obtained. A sample of the ore assayed 53.5 % Cr_2O_3 and 15.3 % iron which gives a chrome iron ratio of 2.4:1.

References: Grants Pass Laboratory analysis CG-197.

Informant: Ray C. Treasher, 4/23/42.

RIVERSIDE CLAIM (Oregonite) Illinois River area

Owner: A. S. and A. Donley Barnes, Grants Pass, Oregon

Location: NE¼ sec. 33, T. 37 S., R. 9 W.

Orbicular silica that is sometimes classed as a semi-precious gemstone. It is known locally as "Oregonite".

Informant: A. S. Barnes, December 11, 1941

SHADE CHROMITE Illinois River area

Formerly known as Grants Pass Chrome Co.

"Located in sec. 21, T. 37 S., R. 9 W., Josephine County.

"The country rock is a massive serpentine, the chromite-bearing zone lying between two hard outstanding cliffed ridges. The deposit lies 1700 feet above the Illinois River, within 400 feet of the top of the mountain, on an extremely steep slope.

"The ore crops at the surface in several small irregular patches and bands, the largest 4 feet long and 2 feet wide, whose general trend is E.-W., dipping about 20° S. They are cut and offset by several steeply dipping faults. A 40-foot drift has intersected the ore about 25 feet below the surface, and perhaps 150 tons have been removed, leaving at least that much in place. The face of the stope at the end of the drift is nearly all ore, which measures 20 feet wide by 8 feet high, with the same attitude as at the surface.

"The mine is located practically on a cliff face; during the war the ore was chuted down 200 feet to the end of a sled road a mile in length to the main river road, and trucked 16 miles to Selma on the Redwood Highway, which is 22 miles from Grants Pass."

The property was leased and mined by Sherman Smith and associates in 1941. The ore was delivered to the Rustless Mining Corp. In 1942 ore was sold to Metals Reserve Company at the Grants Pass ore purchasing depot.

Reference: John E. Allen, 38:44 (quoted)

SHERMAN PLACER Illinois River area

Owner: T. N. Sherman

Location: N½ sec. 32, T. 37 S., R. 9 W. The property was worked in 1940 with one small giant.

Informant: R. L. Hammer, February 7, 1940.

SORDY'S, BRIGGS CREEK CHROMITE Illinois River area

"These claims are located along the summit of "Chrome Ridge," west of Briggs Creek, mostly in sec. 14, T. 36 S., R. 9 W., Josephine County.

"Deposits in eleven localities, with a total of about 40 openings (tunnels, open cuts, pits) were visited. All of these deposits lie upon the surface of or just below the rim of the plateau, which averages 4,000 feet in elevation, rising steeply from an average drainage level of about 200 feet. All the deposits visited lie within sec. 14.

"Most of the deposits lie within a few hundred yards of the 'chrome road,' built by Harry Sordy during the war, and shown on Siskiyou forest map, in T. 36S., R. 9 W., Josephine County, as it passes through sec. 14. This three miles of road was built to connect with the mile-long cable across the Briggs Creek canyon, 2,000 feet deep and 5,000 feet wide, in secs. 26 and 35. The cable was used for carrying over the trucks and for getting out one car of ore before the armistice of 1918. From the old bunkers at the south end of the cable, it is 13 miles by forest road to the highway at the foot of Hayes Hill, and thence 16 miles to Grants Pass.

"It is four miles by trail on steep switchbacks to the end of the forest road at Ferren Guard station on Briggs Creek, and thence 27 miles to the highway at the foot of Hayes Hill.

"It is three to four miles by trail north along the ridge to the end of the Galice Creek forest road at Lone Tree Mountain; and thence six miles to Galice, and thirteen miles by gravel highway to the railroad at Merlin.

"Thus, the property can be approached from two points, one from the Redwoods Highway near Waters Creek, and the other from Merlin on the Southern Pacific.

"The country rock of the region is the usual 'buckskin' or peridotite-porphyry, which commonly varies, especially near the orebodies, to a dense dunite, and more rarely to the nonporphyritic equigranular peridotite or the equigranular pyroxenite.

"Serpentinization is present occasionally, but it appears that in this region it is more or less linear in its extent rather than regional, being restricted to zones of movement or shearing.

"The ore croppings fall into three main trends. The first and most definite lies about N. 48° W., the alignment of the bodies in five of the areas studied being in this order.

"The second and less distinct alignment is N. 70° E., which represents a trend from deposit to deposit and the third alignment is even less distinct in a N. 10° E. direction. This last corresponds with the trend of the peridotite-schist contact, which lies half a mile to the east, and dips to the west.

"Structures in the region are shown by distinct flow banding in the peridotite, common but not always present, and by banding in some of the low-grade ores. These trend in all directions, but those in the 80° of azimuth around north are most frequent. These usually have dips from 60 to vertical, more commonly towards the east.

"In this region jointing is on a rather large scale of several feet, and apparently quite irregular. Locally (especially when complicated with faulting movements) it grades through highly broken rock into true shear zones.

"Faulting is present in most of the openings examined, although not to a prominent degree. Those noted all strike between N. 40° and 75° W. and dip 60-80° N.

"The orebodies are of two distinct types, of low-grade (10-30 per cent chromic oxide) disseminations, (often more or less distinctly banded), which sometimes grade into deposits of fair grade (30-35 per cent), and small lens-shaped kidneys of high-grade ore (above 35 per cent and averaging 40.37 per cent chromic oxide, according to a list of 23 assays taken in 1918 and furnished by the owner). Quite often small kidneys of high-grade occur within deposits of the predominant low grade.

"The low grade usually occurs disseminated in fine-grained to aphanitic dunite, in bands or streaks of what might be called 'birdseye' ore. In the largest deposit the zone is 6 to 10 feet in width, and at least 190 feet long, depth undetermined. Some of the ore here is of fair grade, with a few high-grade bodies. Other deposits are of smaller size, not opened up or developed, and are also usually more irregular and discontinuous, with the banding broken, with some good grade ore showings.

"What is said to be the largest showing of high-grade ore, described by the owner as 'an open cut 5 feet deep with high grade full width and still going down', lies one mile north by trail and was not visited for lack of time.

"The genetic and practical significance of the trends or alignments of the orebodies might be interpreted as follows:

"1. The north trend is primary, and represents the original schlieren formed during the intrusion of the liquid rock.

"2. The N. 48° W. trend was established during the late or deuteric stages of the cooling , when viscous chromite was squeezed up from the basal contact (below and to the east) along major strain lines delineated by this trend. It may be that the set of N. 70° E. cross fractures was established at much the same time, and helped govern the emplacement of ore at the intersections with the first trend.

"3. In development of individual prospects, the trend lines (especially N. 48° W.) must be kept in mind as the ore is followed down."

A more recent and detailed report and geologic map by Wells, Page, and James; "Chromite Deposits in the Sourdough Area, Curry County, and the Briggs Creek Area, Josephine County", has been published as U. S. Geological Survey Bulletin, 922-P., 1940, pp 477:496.

References: John E. Allen, 38:52 a (quoted)
Diller, 21:33
Wells, Page, and James, 41: 477-496

SQUAW CREEK CHROME — Illinois River area

Owner: Ed Dailey, located Sept. 20, 1939

Location: NE¼ SW¼ sec. 4, T. 38 S., R. 8 W., on Squaw Creek, 0.5 miles north of junction with Oak Flat road.

Development: One cut about 50 feet long and 10 ft. deep, trending slightly west of north; a second smaller cut just above it to the south; a third cut just above the road. A loading platform was in use at one time, suggesting that some ore was shipped.

Geology: Allen describes the deposit as the Squaw Creek chrome as follows:

"Located one-half mile up Squaw Creek north of Illinois River road, about two miles west of Selma, near the center of sec. 4, T. 38 S., R. 8 W., Josephine County.

"The deposit lies in diallage-peridotite porphyry, composed of crystals averaging 2-3 mm. in diameter, in a fine-grained olivine matrix. Locally the rock has been highly altered, both irregularly and along east-west areas, into sheared and broken green shiny serpentine. Elsewhere in other areas it apparently grades into dunite.

"The chromite deposit lies within a sheared, faulted, and altered zone at least 500 feet wide; and the orebodies themselves are broken and displaced. The ore appears as various sized lenses within the more or less serpentinized peridotite. The centers of the broken blocks of country rock often remain unaltered, but their rims are of dense, porcelaneous serpentine. The cross-section of one small lens of chromite exposed in the cut is 6 inches wide and 2 feet long, dipping to the east, and striking north-south. A larger body is exposed on three sides, apparently being 30 inches thick, and having minimum other dimensions of 6 by 7 feet. Its lower surface strikes north-south and dips 30° E. Little can be told from structure, due to the broken character of the rock.

"These two deposits appear in place near the end of a 50-foot open cut, which extends northwest into the hillside, and probably was dug to follow a "lead", or stringer, of chromite. It is over 10 feet deep at the end, coming in under the larger ore-body. Another shallow ditch runs N. 70° W. for 50 feet, 20 feet south of the first, and a third cut lies 300 feet down the hill to the southeast. No ore appears in either of these.

"Although the ore is of fair appearing grade in uncontaminated pieces, it is usually somewhat mixed with and frozen to associated serpentine, which would make cobbing necessary. It also varies from compact near the center to disseminated at the edges of the bodies."

No ore was seen in place. Local residents could give no information concerning production.

Reference: John E. Allen, 39:45-46 (quoted)

Informant: Ray C. Treasher, 4/23/42

STECHER PLACER — Illinois River area

Owner: Frank C. Stecher

Location: N½ sec. 2, T. 38 S., R. 9 W.

Operated in 1940 with one small giant.

Informant: R. L. Hammer, February 7, 1940

SUETTER PLACER MINES, INC. — Illinois River area

see Norton placer

SUMMIT GROUP (gold) — Illinois River area

Owners: M. E. Normile, C. H. Berseth, and R. E. McCaleb, all of Selma, Oregon.

Location: Six claims, namely, Summit No. 1 to Summit No. 6, respectively. (124 acres) in sec. 20, T. 38 S., R. 9 W., in Josephine County. A part of two claims are in Curry County. The locality is on the west side of Fiddler Mt., 21 miles from Selma, 12 miles to McCaleb Ranch and 9 miles by trail to the mine. It is estimated that a 3 to 4 mile road would connect with road on Josephine Creek which is in very poor condition.

History: This property has been located and relocated for years. Last location was in July 1935, by present owners. No production.

Development: Two short tunnels and a number of shallow open cuts. One tunnel runs south 40 feet; the other tunnel is caved.

General: No equipment; mountainous topography; elevation 3700 to 4000 feet; plenty of timber and water with the possibility of developing water power; maximum 12 feet snow; working season from May to January.

Geology: Andesite-porphyry country rock with quartz stringers, in which some residual enrichment has taken place. Pyrite, chalcopyrite, and calcite were observed.

Metallurgy: Ore breaks easily and should be about 50 percent free milling. The owners hope to have a large tonnage of low-grade ore. Their assays indicate an average of $3.85 per ton.

Report by: J. E. Morrison, 38

UNITED COPPER GOLD MINES COMPANY — Illinois River area

Location: sec. 4, T. 38 S., R. 9 W.

History: Parks and Swartley reported as follows:

"Office: Room 4 Murphy Block, Salem, Oregon. W. S. Low, Pres.; Daniel Webster, Sec.; C. E. Lebold, Treas.; all of Salem, Oregon. Capital stock, $ 500,000; par value, $1.00; $219,654 subscribed, issued and paid up. (1916 report)

"This company owned property on Pickett Creek near Merlin which has been sold. It now owns 12 claims in Illinois District about 12 miles northwest of Selma, on Fall Creek, one-half mile above its junction with the Illinois, at an elevation of about 1400 feet.

"The copper ore of this locality has attracted attention many years. Early in the sixties of the last century a small smelting furnace was located at the mouth of Rancherie Creek. The matte was packed out about 30 miles across the mountains to the coast. Another small furnace was built on Fall Creek in 1894, but was not a commercial success, owing to the difficulties of transportation. In 1899, several hundred tons of ore was packed out to Selma, hauled to Grants Pass and shipped to Tacoma, where it is said to have been smelted at a profit. The mine has now been idle for several years.

"The geology is described by Diller as follows:

"'The country rocks of the deposit are greenstone and serpentine. The greenstone is an ancient volcanic mass, a mixture of lava flows and tuffs of Mesozoic age that are greatly altered. Its fragmental character, though not a prominent feature, may be clearly seen on close examination of the clean exposure near the mouth of Fall Creek, where the rock is made up of many lapilli. The serpentine is an altered saxonite, evidently of later eruption than the greenstone with which it is in contact.

"'The ore minerals are chalcopyrite and pyrrhotite, generally more or less intermingled, and either may be most abundant. Malachite is rare. In some

places the pyrrhotite appears as small streaks in the chalcopyrite. The ore bodies removed were in the serpentine near its contact with the greenstone. It is possible that some ore occurred in the greenstone, but the greater portion, if not all of it, appears to belong to the serpentine. The ore bodies were comparatively small and were in irregular bunches, not in distinct veins. The pyrrhotite was tested for nickel by R. C. Wells in the chemical laboratory of the Geological Survey. A mere trace of nickel was found, possibly 0.001 per cent.'

"The following statement is made by the management: There is 1000 feet of development work, including a 500-foot tunnel, and a 200-foot crosscut, exposing 1000 tons of ore. A dark gossan sometimes stained with copper is underlain at 15 feet in depth by ore carrying 18 per cent copper and 5 to 10 ounces silver and upwards of $1.00 in gold."

Reference: Parks and Swartley, 16:226 (quoted)
Diller, 14: 84-85

WHITE PINE MINE — Illinois River area

Owner: Leo Hassler

Location: sec. 14, T. 38 S., R. 9 W., adjoining the Gold Blanket.

The property is worked intermittently by 2 men; a small ball mill is used to grind the ore.

Informant: R. L. Hammer, 2/7/40

WILLIAMS & ADYLOTT MINE (gold) — Illinois River area

History: "A number of claims on Hoover gulch, about 8 miles directly northwest of Kerby, are owned by Williams and Adylott. The claims were seen from a distance only. The country rock is mainly greenstone and greenstone tuffs, which are well exposed in the bluffs about the head of the gulch, but there is an intruded mass of serpentine also in the neighborhood and possibly, too, some cherty slates and quartzites related to those at the head of Hoover gulch.

"A shaft has been sunk 40 feet in rock that is said to contain gold all the way down. The residual material has been piped off and $500 cleaned up, though much of the gold is reported to have been lost."

Reference: Diller, 14:66 (quoted)
Parks and Swartley, 16:237

WINTERS & McPHERSON PROSPECTS (gold) — Illinois River area

History: "Lightning gulch is a tributary of Canyon creek west of the serpentine belt and traverses essentially the same horizon as the north fork. The greenstones are greatly sheared and cut in some places by dikes related to dacite porphyry. Near by are banded siliceous rocks which resemble quartzites and probably, like the cherts of the North Fork of Canyon creek, belong to sedimentary masses.

"Near the mouth of Lightning gulch, J. A. Winters has run a number of prospect tunnels into black slates or along their contacts with greenstone. The rocks at this place are much disturbed by slides, and although they may in some places

average several dollars a ton, the source of the gold is difficult to trace. Some of the gold, however, appears to be in the slates, whose bronze slickensides are due to shearing movements after the deposition of the ore.

"Some distance up Lightning gulch Eugene McPherson has a mine tunnel 200 feet in length that follows the contact between greenstone and banded quartzite. Tho greenstone is greatly altered and tho contact is very irregular. A small quantity of rich telluride ore is reported to have been stoped from this tunnel. I was unable to obtain a sample of the ore at the mine, but a small fragment was given me by Mr. Bowden, who assured me that it came from the McPherson tunnel. Mr. Bowden also gave me a sample from his own prospect farther northwest, on Lightning gulch. Both samples reacted strongly for the tellurium, giving a decided purple solution when boiled in concentrated sulphuric acid."

Reference: Diller, 14: 69-70 (quoted)
Parks and Swartley 16:238

YOUNG PLACERS — Illinois River area
(also see Elkhorn Placer, adjoining)

Owners: E. E. Young and Ovid V. Johnson, Grants Pass, Oregon

Location: On Briggs Creek 40 miles by road SW. of Grants Pass in secs 7 and 18, T. 36 S., R. 9 W. Elevation, 2050 feet.

General: Property located May 13, 1929 by present owners, is in litigation. Three test pits indicate 10 to 15¢ per yard. No production; no equipment. A 2-mile ditch from Dutchy Creek has been built.

Informant: J. E. Morrison, 39

LOWER APPLEGATE AREA (5)

The Lower Applegate mining area includes that part of the Applegate River drainage in Josephine County south of the south line of T. 36 S. (see map opposite p. 17). It has an area of approximately 210 square miles. Within it are the old mining districts called Applegate, Davidson, Missouri Flat, Murphy, Oscar Creek, Powell Creek, Slate Creek, and Williamsburg or Williams Creek.

Geography

Although this area is mountainous there is good farming land in the valleys of the Applegate River, Williams Creek, and Missouri Flat. Elevations range from 1,000 feet to 5,200 feet. The mountain slopes are heavily timbered with conifers; hardwoods grow in the gulches. Brush and soil obscure most of the outcrops and make prospecting difficult.

Annual precipitation is about 35 inches and is mostly in the form of rain, although snow may remain on the higher ridges until late in the spring. Maximum-minimum temperatures range from 90° to 0°.

The western part of the district is served by the Wilderville branch of the California and Oregon Coast Railroad with a spur built in to Marble Mountain. State Highway 238 parallels the Applegate River; county roads run up most of the other stream valleys; secondary roads and Forest Service truck trails serve some of the mountainous areas.

Geology

The rocks of the Lower Applegate mining area are principally Triassic (?) Applegate group that were intruded by a large diorite mass on the southeast and north end, and by serpentine, now represented by scattered outcrops over the area. Galice sediments and serpentine occur in the western portion. The Applegate group contains metavoloanics and some metasediments which include limestone lenses.

The mineralization is probably genetically connected with the diorite intrusions. The better prospects and old mines are near but not within the diorite. Chromite is found in the serpentine, as at Mungers Butte.

Mining

Parks & Swartley (1916) discuss the early mining of the district as follows:

> "Mining began in the Lower Applegate District very soon after the discovery of gold on Josephine Creek in 1852. The first mining in the district was probably in the gravels of Williams Creek. But veins were discovered in Slate Creek Valley about 1860, and their exploration continued during that decade. However, the chief mining in the district continued to be confined to the placers all through the '70's. The Horsehead Placer mine was the next important one on Williams Creek in 1882; the following year it produced $3000 in gold. The Watts Placer near Murphy was also productive about this time, while the Josephine Mine on Slate Creek was sold for $3740 in 1882. The Mountain Lion Mine near Davidson was discovered in 1889, and its development, with some output continued during the next decade. Powell Creek Placers and the Rising Star Quartz Mine were productive in 1900. The next year the Savage and Mellen Placer on Missouri Flat near Davidson was active and the Sunshine and Combination mines in the same region were developed soon afterward. In 1910 the Mountain Lion Mine had 2000 feet of underground work and was equipped with a 5-stamp mill having electrolytic chlorination and amalgamation. Placer mining has continued on Williams Creek, Oscar Creek, and elsewhere up to the present (1916), but there is now very little activity in the deep mines of the district."

Since 1916 placers on Oscar Creek were worked by hydraulicking and by two dragline dredges; the Humdinger mine (Shenon 1933b) was opened; and the Oregon Bonanza mine produced high-grade ore that ran several thousand dollars to the ton. In 1940 the Porcupine mine was active and the Horsehead was the only operating placer. In 1950 the Humdinger mine was operated on a small scale.

The Beaver-Portland Cement Company's quarry at Marble Mountain southeast of Wilderville is southern Oregon's largest limestone producer. The lime rock is transported by truck to the cement plant at Gold Hill. Some of this lime rock has been shipped to paper mills. The Washington Brick and Lime Company worked the old Oregon Lime Products quarry on Powell Creek and produced chemical-grade lime in 1942. Later it closed down and has not been reopened although a new horizontal continuous kiln was installed.

Favorable areas for prospecting

There seems to be a zone of mineralization west of Williams Creek that includes the Humdinger and Oregon Bonanza mines. The ore occurs in a silicified rock megascopically similar to that of the Rainbow and Tip Top mines in the Waldo area, farther south. Several limestone lenses occur in the same zone, the more important of which are those of the Washington Brick and Lime Company, Turvey quarry, and Jones quarry.

Chromite occurs on Mungers Creek, where this ore was mined during World War I. It is seldom that these lenses occur singly; therefore other pods or lenses should occur in the same general area.

It is reported that the alluvial fans on the east side of the range that flanks the west side of Williams Creek valley carry some placer gold. It may be that these coalescing fans contain enough gold to justify working the deposits by mechanical means under proper economic conditions.

Mining properties

Descriptions of mining properties of record are given in the following pages.

ANDES & HOWARD PROSPECTS (gold) Lower Applegate area

Owner: M. E. Andes and G. V. Howard, Grants Pass, Oregon.

Location: SE¼ SE¼, and NE¼ sec. 15, T. 37 S., R. 5 W.

Area: Five claims held by location.

History: This group includes two new claims together with claims of the old Bee Hive and Ingram claims group. Parks and Swartley reported as follows:

> "The Ingram Claims, 8 miles southeast of Grants Pass, are on Oscar Creek and across the divide on Savage Creek. On Oscar Creek, in sec. 14, T. 37 S., R. 5 W., the country rocks are Paleozoic argillites, sandstones, and limestone cut by porphyty and serpentine. The limestone near Ingram's cabin strikes N. 10° E. and dips about 45° E. Ingram's adit No. 1 at an elevation of about 3100 feet, shows some porphyry in its 150 feet of length, but does not reach unoxidized ore. His adit No. 2, at an elevation of about 2900 feet, is about 120 feet in length, the last 20 feet being in a green shaley rock with black indurated talc or gouge in seams, while the adit elsewhere is in andesitic porphyry. Ingram's adit No. 3, at an elevation of about 2300 feet, is only 30 feet long; it discloses gold ore, said to be high grade, but no well-defined vein."

Property inactive in 1940.

Development: 100 feet of adit on the Black Point ledge. The Bee Hive ledge has between 200 feet and 300 feet of tunnel and stopes, most of which have caved.

Equipment: Cabin, blacksmith shop, steel and miscellaneous small tools.

Reference: Parks & Swartley 16:129 (quoted).

Informant: G. V. Howard, 3/29/40

Report by: Ray C. Treasher

ARROWHEAD MINE (gold) Lower Applegate area

Location: Sec. 24, T. 38 S., R. 6 W.

History "The Arrowhead mine, 14 miles south of Grants Pass, near head of Powell Creek, is owned by Mr. Wooster,and is at an elevation of about 2,900 feet, as measured by barometer. The trail to the mine leaves Powell creek at a small reservoir. An adit extends S. 52° W. 58 paces, and thence S. 35° W. 20 paces to the breast. The last course is on a vein of quartz, which is 4 to 15 inches wide; pyrite occurs in the quartz and also in the greenstone wall rocks."

Reference: Parks & Swartley, 16:15 (quoted)

BEAVER PORTLAND CEMENT CO. Lower Applegate area

see Marble Mountain Quarry

(Now owned by Pacific Portland Cement Co., Gold Hill, Oregon)

BEE HIVE GROUP Lower Applegate area

see Andes & Howard Prospect.

BILLY BLUE MINE (gold) Lower Applegate area

Location: Sec. 1, T. 37 S , R. 5 W.

"The Billie Blue Mine, owned by Messrs. Joe Shaska and Wm. Swinden, is located 8 miles southeast of Grants Pass, about 2½ miles up Savage Creek from the Pacific Highway. The property is developed by a 65-foot shaft and a few short tunnels and open cuts, exposing in numerous places small quartz lenses in a schist or soapstone. Free gold is found in several places on the property in these development pits and shafts, often plastered upon faces of the country rock. Good prospects were obtained by panning. A 200-foot tunnel is now being driven, which is intended to cut the vein at a depth of 125 feet."

Reference: Parks & Swartley, 16:37 (quoted)

BISHOP & STURTEVANT WASHING PLANT Lower Applegate area

Owners: Oscar Placers (which see); D. O. Hayes, Grants Pass, Oregon

Location: Center sec. 22, T. 37 S., R. 5 W.

This ground was operated by Bolton Brothers in 1934, and in 1937 the Bishop and Sturtevant dredge operated for one season only.

Equipment: "1¼ yard Marion electric shovel, a 5' x 24' screen, stacking conveyor 55 feet long and an automatic feeder 24 feet in length. The plant is operated by electric power and can be easily moved from one place to another on its own power. About one to two thousand gallons of water a minute are used in running the plant."

Reference: Grants Pass Courier, January 27, 1937

Informant: Ray C. Treasher, 3/29/40

BLUE JAY CLAIM (gold) Lower Applegate area

Operator: B. J. Jackson, Williams, Oregon

Location: Five miles from Williams. Road goes within a quarter of a mile of the property.

Area: 20.65 acres. W½ of sec. 31, T. 38 S., R. 5 W.

History: Discovered July 11, 1935. Yearly assessment work only since discovery. Not active in 1940.

Equipment: No equipment; mountainous topography; 2,700 feet elevation; sufficient timber; water available for a small mill; 4 feet maximum snowfall; no power available.

Development: An open cut along the strike of the vein runs N. 28° W. 45 feet; there is 8 feet of tunnel. The vein has been traced on surface by pits for 800 feet.

Geology: Contact vein between diorite foot wall and dacite or andesite-porphyry hanging wall. The vein is five feet wide; the quartz is soft and is crushed by movement. Two inches of talc shows on the foot wall. The hanging wall is very irregular and mixed with the vein material. Vein strikes N. 28° W. dips 75° W. Galena, pyrite, and chalcopyrite were observed. The mine makes a small amount of water. Soft quartz ore estimated to be 50 percent free milling. Concentrates would have to be shipped to Grants Pass, a distance of 26 miles.

Informant: W. C. Fixley, 1940
J. E. Morrison, 1938

BLUE MULE CLAIM (gold) Lower Applegate area

Owner: T. E. Hudson, Grants Pass, Oregon

Location: On Dark Canyon, a tributary to Powell Creek, in sec. 20, T. 38 S., R. 5 W. It is 9 miles from Provolt 3 miles of which is trail.

Area: One mining claim held by location.

Geology: Narrow stringers lie in fractures in andesite-porphyry. A small amount of white iron sulphides is visible in the porphyry.

Miscellaneous: No equipment. Elevation, 3,000 feet. Maximum 4 feet of snow. Plenty of mine timber, but water will have to be developed. The discovery work consists of an open cut 30 feet long with a 12 foot face. Not active in 1940.

Informant: J. E. Morrison, 1938
W. C. Fixley, 3/4/40

BOLTON BROTHERS WASHING PLANT Lower Applegate area

see Oscar Creek Placers

BONE OF CONTENTION MINE(gold) Lower Applegate area

"The Bone of Contention mine, 15 miles southeast of Grants Pass, is on the line between secs. 24 and 25, T. 38 S., R. 5 W., on the east side of Williams creek, at an elevation of about 1700 feet, as measured by barometer. It is near the border of an area of tonalite, which extends northward about 2 miles. The tonalite is here in contact with argillite; it is also cut by dikes of aplite. The mine is equipped with two ore bins, water power obtained from a ditch, and Pelton wheel, a 15-stamp mill with 2 amalgamating plates each 42 by 120 inches, and a concentrating table. The main adit enters S. 77° E., but contains too much water to permit inspection. It is evident from the dump that it leads to several thousand feet of workings. The mine has been idle for several years."

Since 1916 it has been worked in a very small way.

Reference: Parks & Swartley, 16:39 (quoted)

CALCIUM PRODUCTS COMPANY (limestone) Lower Applegate area

see Turvey Limestone

ELDER MANGANESE Lower Applegate area

Owner: J. R. Elder

Location: Sec. 6, T. 39 S., R. 5 W., south of Mungers Creek

Geology: The rocks of the locality are old, highly metamorphosed sediments. The only opening in the deposit is an opencut about 10 ft. long with a face about 8 ft. high, all in a black, siliceous, metamorphosed sediment, into which hydrothermal solutions have penetrated, depositing quartz, rhodonite, and a small amount of rhodochrosite in irregular small seams and lenses. A thin coating of hard manganese oxides covers some fracture planes, and a little soft black oxide occurs in joint cracks near the surface.

The rock may be cobbed to show fairly large pieces of deep pink rhodonite, and several hundred pounds has been sold to collectors and lapidaries. The work on the deposit has been done to obtain rhodonite for this purpose.

The surface indicates a considerable area of similar country rock, and probably trenching would show a greater extent of the rhodonite occurrences. From the standpoint of producing a metallurgical manganese ore, however, the prospect shows little promise.

Informant: Libbey, 37

Reference: Libbey & Others, 42:27 (quoted)

EXCHEQUER MINE (gold) Lower Applegate area

Owner: Exchequer Mines, Inc.

Oregon corporation, George Lowd, Pres., 720 Meed St., Grants Pass, Oregon; H. F. Byram, Sec.-Treas., Redwood Hotel, Grants Pass, Oregon. Capitalization, $15,000. 1937 report.

Area: Holdings consist of 1 patented claim 600 feet long, 11.7 acres, in the SW¼ of sec. 35; also one unpatented mining claim held by location in SE¼ of sec. 34, T. 37 S., R. 5 W. Elevation 1400 to 1800 feet.

History: Parks & Swartley reported as follows:

> "The Exchequer mine, 11 miles southeast of Grants Pass and 2 miles north of Provolt, is in Sec. 35, T. 37 S., R. 5 W., on a hill near the Applegate river. The lower adit is about 150 feet long in argillite; the drift is on a small vein which strikes N. 60° W. and dips about 70° N. E. Nearby a vertical shaft said to be 200 feet deep is now caved and full of water. The dump shows pyritized quartz and a vein at least a foot wide. The country rock here is greenstone. The Exchequer Mine is owned by W. H. Flanagan, of Grants Pass. It was formerly equipped with a Huntington mill and a concentrator."

The upper workings (above No. 2 level) are inaccessible due to cave-ins, and the lower workings are full of water. No. 2 tunnel, runs in a general N. 66° W. direction, and was, in 1937, extended along the vein until it is now approximately 50 feet beyond No. 2 shaft. Proportion of quartz in the vein would be about 25% of the whole. If this quartz was mined clean, it would not average more than 12" in width. The remainder of vein filling is so broken that it would be nearly impossible to keep separate from clean ore. The cost of mining would be greatly increased and available tonnage decreased far below estimated tonnages. Previous samples taken by others were channels taken from wall to wall and gave values perhaps even higher than the quartz alone. The need of selective mining necessarily increases the mining cost above estimates which were based on the known expense of wall to wall mining or at least over an average of four feet width.

The unstoped ore below the adit level will need close sorting to hold up grade to $20.00 per ton, and it is probable that those who worked the property in the past took all that they thought would pay. On the second vein, the sampling was for a length of only ten feet and therefore cannot be counted on to show continuity without further development.

The future of the mine depends on drifting west to explore a possible ore shoot previously mined above. If reached, considerable tonnages would be available above the adit level and downward to bottom level; hearsay evidence indicates the presence of this ore shoot and also very good values. If this work could be done, it would then pay to extract all possible paying ore from present exposures in conjunction with the mining of the newly uncovered ore.

Informants: J. E. Morrison, 1939
H. F. Byram, 1937

Reference: Parks & Swartley 16:92 (quoted)

GLENDA LOU PROSPECT (gold) Lower Applegate area

Owners: Dudley Curl (deceased); Walter Curl; George F. Greene; L. E. Greene

Location: NE¼ sec 11, T. 37 S., R. 5 W., just south of Grants Pass peak.

Area: One claim, held by location, dated 1933.

Development: 35 feet of adit, caved, with several small cuts.

Geology: Narrow, high-grade stringers in "porphyry rock". No production. Property has been inactive since 1933.

Informant: G. F. Greene, 3/25/40

Report by: Ray C. Treasher

GOLCONDA MINE Lower Applegate area

"The Golconda Mine is 11 miles east of Grants Pass and about 2½ miles northwest of Provolt in sec. 34, T. 37 S., R. 5 W., at an elevation of about 1500 feet. It is equipped with a 3-stamp mill with a plate, now partly dismantled. Two adits were run into the hill, but they are now caved shut. The country rocks are quartzite and argillite cut by intrusions of aplite and tonalite, the main area of the latter being apparently to the south."

Reference: Parks & Swartley, 16:100 (quoted).

HORSEHEAD PLACER Lower Applegate area

Owner: Ben S. Watts, Murphy, Oregon.

Location: S½ and NW¼ SE¼; and SE¼ SW¼; sec. 21; N½ of NE¼; and NE¼ of NW¼ sec. 28; T. 38 S., R. 5 W., for which definite locations were given. All on Horsehead Creek about 5 miles southeast of Provolt, adjacent to Williams Creek.

Area: A total of 279 acres of patented land.

History: This placer was first located and worked in 1861 by Alex I. Watts. It has been operated intermittently ever since by Mr. Watts or his son, Ben S. Watts. There is no record of production, but Mr. Watts believes it may have been from $200,000 to $250,000. The lowest recovery for any working season was $500 and the highest recovery was $7,000. About 25 acres have been placered.

Geology: The area is adjacent to Horsehead Creek, and the placer consists of a series of channels, or elongated "hot spots" that trend east-west, and head into the range of hills west of Williams Creek, south of the Humdinger and Oregon Bonanza mines. Essentially, it is a hillside operation. Bedrock is variously reported as greenstone and decomposed granite. Bedrock is cleaned readily. Average gravel depth is 16 feet up to a maximum of 30 feet with very little overburden. There is only a small amount of clay and no large boulders. Fine and coarse gold is fairly well distributed throughout the gravel. Some fair-sized nuggets are recovered, averaging around an ounce in weight; one 12-ounce nugget was found which was sold to the bank and has since passed from the record.

Water right: Mr. Watts has a water right for 10 second-feet of water from Munger Creek (dated 1898) and from China Gulch (dated 1861). Additional water rights are being procured.

Miscellaneous information: Mining season is from November to June. Average snowfall accumulates to a depth of 8 inches during these months. Mr. Watts estimates that 150 acres of ground remain to be placered.

Equipment: Equipment consists of one No. 1 and one No. 2 giant, and 2000 feet of 8-inch to 16-inch hydraulic pipe. Elevation of the placer is 1800 feet.

Reference: Diller, 14:117-118.

Informants: J. E. Morrison, April 1, 1938 (revised)
Ben S. Watts

Report by: Ray C. Treasher, August 28, 1940.

HUMDINGER MINE (gold) Lower Applegate area

Owner: Mrs. M. E. Butcher, San Francisco, California.

Operator: Under option to George H. Shan, Williams, Oregon.

History: "The claims of the Humdinger Mine are in the NW¼ sec. 21 and the SW¼ sec. 16, T. 38 S., R. 5 W., near the head of a gulch tributary to Williams Creek. The mine is 4 miles west of Williams and 23 miles south of Grants Pass. Ore was discovered on the property 20 or 30 years ago, and work was done near the present mine, but the excavations made at that time are not now accessible. A Mr. Butcher and associates located the property in 1912 and did some work. In 1925 A. W. Constans and George Pike procured a lease, erected a small 2-stamp mill, and ran what is known as the mill tunnel. In 1926 Mr. Constans bought an interest in the mine, and in November, 1929, the property was sold to D. H. Perry, who has since, as the result of continued work, developed a considerable body of gold ore. The more recently worked vein is said to have been discovered in 1929 at a spring near the portal to the No. 2 tunnel."

The mine was active, in a small way during the 1939-1940 season. In 1941 J. C. McDonald and Mr. Grant leased the mine from Mrs. Butcher and sampled the property.

Reference: Shenon 32:48 (quoted)

INGRAM CLAIMS — Lower Applegate area

see Andes & Howard Prospect

JEWELL AND MOORE GROUP (placer) — Lower Applegate area

Also known as Osoar Creek Consolidated Mining Company

"Office: First National Bank Bldg., Grants Pass, Oregon. Charles Burkhalter, Pres.-Treas.; Alva H. Gunnell, Sec., both of Grants Pass, Oregon. Capital stock $250,000; par value $1.00; all subscribed, issued and paid up. (1916 report).

"This company has the Jewell and Moore Group of 5 placer claims, 3 being patented; the Swinded Claim, unpatented; Carson Group of 2 claims, unpatented; together with 92 additional acres of patented right of way and dump grounds located in secs. 14, 15, 22 and 21, T. 37 S., R. 5 W., 2 miles east of Murphy and about 10 miles south of Grants Pass.

"The equipment on this property consists of 2 giants, 1100 feet of pipe, 300 feet of flume and 3 miles of ditches. The water supply is sufficient for operations about 4 months in the year. It is said that the property has produced more than $40,000 to date."

Reference: Parks & Swartley, 16:177 (quoted)

JONES LIMESTONE QUARRY — Lower Applegate area

Owner: F. I. Bristol and Mrs. F. I. Bristol, Rogue River, Oregon.

Location: W½ NE¼ sec.31, N½ SE¼ sec.31, T. 38 S., R. 5 W.

Area: Three placer claims, two of which have their long direction north-south on the W½ NE¼ sec. 31, T. 38 S., R. 5 W., and one has its long direction east-west on the N½ SE¼ of the same section. Held by location.

History: The quarry was originally worked by Al and Lum Jones (deceased) as a source of monumental stone. They made a living for 30 years, quarrying the stone and dressing it by hand at their home. The claims were purchased by Bristol from the Jones Brothers.

Winchell (14:232-233) reported on this limestone deposit in 1914 as follows:

"For several years a deposit of marble about 4 miles west of Williams has been exploited by a man named Jones, so that the deposit has come to be known as the Jones marble quarry. It is in section 31, T. 38 S., R. 5 W., at an elevation of about 2650 feet, as measured by barometer. The limestone here strikes N. 45° E., and dips about 65° S. E. The rock is a variegated marble in this opening, being white and blue; in some places it is stained by limonite derived from the alteration of pyrite. The marble forms a lens which is about 2000 feet long and about 300 feet wide as a maximum. At the northeast end it is cut off abruptly; at the southwest end it tapers to a point. It forms a cliff on the side away from the dip, that is, on the northwest side. It contains argillaceous streaks and "knots" in some places. It is said to be on railroad land.

"This deposit has been used under very unfavorable conditions. It is about an eighth of a mile from the nearest wagon road, and it is about six miles from the place where the stone cutting and polishing has been done. Naturally the results have not been satisfactory, although the stone is of good quality.

"An analysis of this marble made by R. C. Wells (U.S. Geological Survey Bull. 419, p. 209, 1910) of the U.S. Geological Survey resulted as follows:

Composition of Marble Near Williams

SiO_2	0.13
$Al_2O_3 + Fe_2O_3$	0.38
MgO	none
CaO	55.55
H_2O	0.26
CO_2	43.63
	99.95

"The analysis shows that the marble is over 99 percent pure calcite."

Hodge (37:295) reported on the same property in 1936 as follows:

"This quarry is about 24 miles by road south of Grants Pass in sec. 31, T. 38 S., R. 5 W., 4 miles west of Williams by poor dirt road.

"The marble outcrops at 3400 feet elevation. The quarried blocks have been rolled down the steep hill to the old chromite road below, where it was loaded onto trucks and wagons. By this slow and laborious method only small amounts have been taken out.

"The lower outcrops show a very pleasing black and white variegated marble, but that from higher up the hill varies from gray to white. It appears to be quite pure. The limestone occurs as beds of variable thickness, from 6 inches to upwards of 100 feet, in schists and slates. The general strike is about N. 40° E., the dip 45° S.E., nearly parallel to the mountain slope. The ridge summit is a bare limestone hogback forming a 50-foot cliff. In places there are numerous knots of pyrite and quartz which replace the limestone. Utilization of these deposits would necessitate construction of a tram one-third to one-half mile long and reconstruction of about three miles of road. The total truck haul to Grants Pass would be 26 miles."

The property was idle in the spring of 1940.

Development: The only development on the property was that done by the Jones Brothers in getting out monumental stone. There are three large cuts of which the upper two are one-above-the-other. Bristol has done quite a bit of clearing and trail slashing.

Work has been done on the one mile of unimproved road so that it is now passable.

Transportation: According to Hodge (37:295), the property is 26 miles from Grants Pass. However, recent highway improvements have brought a hard surfaced road to within one mile of the property. The mile of unimproved road is the "chrome road" mentioned by Hodge, and this has been worked by Bristol so that it is passable the year 'round. The grade is moderate, and the alignment satisfactory. Heavy hauling would necessitate further widening and surfacing.

Mining Facilities: The deposit is in the foothills of the "Oregon Caves" country where an elevation of 3400 feet means very little snow. It is doubtful if snow would close operations for more than a few days each year. Timber is plentiful; Douglas fir, yellow pine, and madrona being most common. The conifers frequently attain a diameter of 3 feet.

Topography: The area is mountainous. The limestone forms a hog back, the ridge of which has a southward trend The west side of the deposit is quite steep, and in places is precipitous.

Geology: A check on the elevations indicates an error in the Hodge report. The lower end of the limestone is at elevation 2350' and the upper quarries are at 2900'. There is a good possibility that the limestone lens continues northward.

The limestone is variegated, black and white to pure white, the white portion being nearer the center of the lens. It is quite crystalline and should be classed as marble. Inclusions of siliceous shale are not uncommon, but it is doubtful if these inclusions are more plentiful than in any Southern Oregon limestone deposit. One inclusion at least 20 feet long was noted. Near the contacts the limestone contains masses of siliceous material that stand out when the stone weathers as small, resistant knobs. The masses are small and should have but little effect on the total analysis. Narrow, one-half inch dikes of basic, fine-grained igneous rock (basalt?) were found at one place, and some metallization with pyrite at the contacts. No other evidence of metallization was seen.

The "quarries" or pits that have been opened show limestone with shale or schist on one wall. This foreign material represents some of the "inclusions", and appears to be very local in extent.

The limestone seems to pinch to a blunt "nose" at the south. The width increases rapidly to 200 feet, and then less rapidly to more than 600 feet. The outcrop was followed with a fair degree of consistency across a portion of the N½ SE¼ and W½ NE¼ so that Vinchell's estimate of 2000 feet x 600 feet is not exaggerated.

An estimate of quantity was reached in the following manner. 2000' x 600' x 1' thick = 1,200,000 cu. ft. With limestone at 165 lbs. per cubic foot, this would represent 100,000 tons. If the deposit is 10 feet thick there would be 1,000,000 tons. If 100 feet thick, there would be 10,000,000 tons. The limestone lenses of this area are usually lenticular, that is, long and narrow. The depth of the pods or vertical extent, is seldom less than one-quarter the length.

Vertical difference in elevation between the low and highest points of limestone outcrops on the claims is 550', so that an average thickness of 100', and an average tonnage of 10,000,000 is not out of reason. The owners claim a reserve of 5,000,000 tons, which on the basis of above estimate would permit 50 percent inclusions of shaly material.

These estimates and conclusions are reached after studying the other limestone deposits of Josephine and Jackson counties and noting their irregularities.

Economics: Quarry face could be established, either at the lower south end where a maximum of 600 feet could be obtained, or along the west side using the preciptous canyon wall as the beginning of a quarry face. Overburden is negligible; normal quarry waste will exceed the quantity of overburden.

References: A. N. Winchell, 14:232-233
E. T. Hodge, Available raw materials for use in connection with Bonneville Power, U. S. Army Engineers; Limestone, Vol. I, p.295, 1937.

Informant: F. I. Bristol; Ray C. Treasher

Report by: Ray C. Treasher, 3/15/40

KING MINE (gold) Lower Applegate area

Owner: Mr. King, caretaker at Fair Grounds, Grants Pass

Location: On Powell Creek, in sec. 17, T. 38 S., R. 5 W.

Area: 40 acres deeded ground.

Development: 100' tunnel and 100' shaft. Construction of tram line to a mill on the creek was started. The mill never operated.

Geology: Formations are similar to those at the Humdinger but there are no well defined veins. Assays range from $12 to $14 to the ton.

Informant: F. I. Bristol, 3/27/40

Report by: Ray C. Treasher

MARBLE MOUNTAIN QUARRY (limestone) Lower Applegate area

Operator: Pacific Portland Cement Co., formerly Beaver Portland Cement Company, Gold Hill, Oregon.

Location: Sec. 30, T. 37 S., R. 6 W.

The property was examined by the U. S. Engineer Dept. (Hodge, 38: 285-295) and the following extracts from this report are given:

"DEPOSITS: The limestone body now quarried is the most northerly of six, spaced at irregular intervals in a chain 2 miles long lying close to the range line between Ranges 6 & 7 W., in the S 1/3 of T. 37 S. Their shape and position are shown on plate 59. None of them except the northern one is now accessible for large production, though some development has been done on body C, a small output some years ago having been hauled by wagon road (now impassable) down a branch of Cheney Creek. When it becomes advisable to operate at C, a 1½-mile tram route can be established on practically a level grade around the north end of the mountain spur, delivering to the present crusher and shipping bin. Limestone bodies C, E, and F are characterized by high precipitous cliffs, affording excellent opportunity for the rapid development of large tonnages with little attention to overburden. Bodies B and D occupy more gentle slopes, heavily timbered and covered with soil.

"RESERVES: The tonnages of limestone accessible in the several bodies above the level of the lowest present exposure in each have been estimated as follows:

Body	Area Square Feet	Tons of Limestone
A	590,000	20,000,000
B	53,200	440,000
C	450,930	12,000,000
D	324,000	3,600,000
E	534,600	9,000,000
F	333,000	3,500,000
Total	2,285,730	48,540,000

"In all cases, including the present quarry, it would be possible to enter the limestone body 100 to 200 feet below the lowest croppings by a tunnel only a few hundred feet through wall rock. The downward extent of the limestone lenses has not been ascertained, but the massiveness of the exposures indicates bodies likely to persist to depths at least equal to their respective lengths.

"QUALITY: The quality of the limestone from the several localities is shown by the following analyses of chip samples, except that of body A which is an average of numerous shipments to the cement plant.

Analyses of Limestone from Marble Mountain:

Constituents	1	2	3	4	5	6
SiO_2	0.87	0.06	2.31	0.34	1.73	3.20
Al_2O_3	0.35	0.01	1.72	0.06	1.69	0.93
Fe_2O_3	0.31	0.31	0.33	0.32	0.30	0.30
CaO	54.60	55.85	54.06	55.44	54.16	54.05
MgO	0.80	0.33	0.41	0.25	0.40	0.36
Ignition loss	43.41	42.09	41.33	42.07	41.57	40.74
Total	100.34	98.65	100.16	98.48	99.85	99.58

1 Body A
2 Body B -- U.S.E.D. Sample 190A.
3 Body C -- U.S.E.D. Sample 184A, composite from middle and south ends.
4 Body D -- U.S.E.D. Sample 188A.
5 Body E -- U.S.E.D. Sample 182A, composite from middle north, and south ends.
6 Body F -- U.S.E.D. Sample 186A, south end.

"The limestone is uniformly fine-grained and dark gray in color, but sometimes mottled, probably due to admixtures of light colored aragonite; a 2-foot seam of the latter mineral is exposed at locality C, and it also occurs in smaller segregations at the Marble Mountain quarry. Predominating wall rocks are metamorphic sedimentaries, conveniently called greenstones.

"QUARRYING AND SHIPPING PRACTICE: The northern limestone lens, Body A, is about 600 feet wide, stands, nearly vertical, and rises rapidly to a height of 700 feet above the present quarry floor, at 2300 feet elevation. The northeastern end of the lens thus offers excellent opportunity for opening a high and wide quarry face, which is already 354 feet above the working level.

"During suspensions at the cement plant, only a particularly high-grade portion of the deposit, occurring along its eastern margin, is worked for paper-mill rock, shipping about 100 tons a day. This is loosened from a projecting face by ordinary methods, using relatively light charges; the large blocks are reduced by sledging and bulldozing, and the hand-picked rock, in pieces between 6 and 18 inch size, is loaded by hand into 5-ton Ford dump trucks. The haul is 1500 feet over dirt road down a gentle grade to the receiving bin at the top of the gravity plane, described later. By these methods a crew of 9 men and a foreman could produce 150 tons of paper-mill rock in 8 hours.

"The deposit has been opened for cement rock by a modified glory-hole method which requires a minimum of hand labor after the rock has been broken. At the two points shown on plate 60, the limestone belt has been entered end-wise by steep and narrow V-cuts. The bottom of each cut has been timbered with posts and cap of 18-inch or larger round timber, with heavy lagging along the top, reaching only from cap to cap, thus forming a tunnel 10 feet wide and of the same height. At present, each of these "tunnels" has advanced about 200 feet, and is laid with standard gauge track which is part of the main haulage system. The rock loosened from the sides and end of the cut thus buries the "tunnel" under broken rock and forms what is, in effect, a glory hole. The short lagging is then removed from between the sets just outside the toe of the pile and the rock is barred down into 9-ton, flat-bottomed, side-dumping cars spotted underneath the opening. An 18-ton Plymouth gasoline locomotive draws a train of 6 cars a maximum distance of 2200 feet to the crushing plant, where the cars dump one at a time directly into the first crusher.

"The top of the limestone is covered by overburden, up to 3 or 4 feet thick in places, consisting of strongly colored dark red soil containing about equal parts of lime, silica, and iron plus aluminum oxide. No particular care is taken to remove this except to clear a space for the uppermost row of blast holes, as the relatively small amount does not seriously affect the average composition of the rock output. Blast holes are drilled by jackhammers; steel and explosives are transported by a light, one-cable tram making a single span from the blacksmith shop to a high point on the upper edge of the quarry face.

"CRUSHING EQUIPMENT: The first crusher, set with its top just below and to one side of the haulage track, and receiving the 9-ton loads as fast as they can be dumped... is a Worthington 30-inch McCully gyratory (rated capacity 3000 tons per 24 hours) belt-driven from a 150 h.p. General Electric induction motor. This discharges directly into two Worthington No. 5 McCully gyratories set to about 1½ inch size, each belt driven by a 50 h.p. motor. These deliver together to a 30-inch belt conveyor 75 feet long (20 h.p. motor) carrying the rock across a bridge and into the larger, or 600-ton, compartment of the crib-work timbered receiving bin. The other compartment, of 200-ton capacity, is used for the lump paper-mill rock delivered to it by trucks crossing on another bridge from the hillside.

"TRANSPORTATION OF CRUSHED ROCK: The bin has two rows of bottom-discharge gates, one row over each of two tracks and loading into one or the other of two skips by which the rock is lowered to the railroad. The gravity plane has

three rails except at a 600-foot passing section at the middle and a 200-foot section at the bottom. The total length is 4500 feet and the total descent is 1400 feet. The 1-1/8 inch cable makes four turns around a bull wheel controlled by band brakes and geared to a 40 h.p. braking motor. Each skip holds 15 tons of crushed cement rock and makes 4 round trips per hour; tram capacity is thus 960 tons of cement rock in 6 hours. For coarse lump rock, the capacity is less.

"There is no storage pocket at the railroad; the skips discharge automatically through a chute to the cars which stand on a light down-grade to assist the hand spotting.

"When shipping paper-mill rock, a grizzly with 4-inch spaces is placed in the chute, and fines are discharged to another car standing on a parallel track under the tipple. The Beaver Portland Cement Company owns a private track 3 miles long, connecting at Wilderville with the California and Oregon Coast Railroad, which it leases and operates for 9 miles to Grants Pass. Remainder of the haul, 16 miles to the cement plant 1 mile west of Gold Hill, is by Southern Pacific Lines. Total cost of haul, loading point to cement plant, is $0.53 per ton, of which one-half goes to the Southern Pacific System.

"COSTS: An estimate of the cost, exclusive of depreciation, depletion, interest, and taxes, of quarrying cement rock and delivering it to railroad cars, at the rate of about 525 tons a day, is:

	Per Ton
Labor (50 tons per man-shift at $4.50)	$0.09
Explosives	.05
Other supplies	.03
Repairs	.05
Power	.05
Supervision	.02
Crushing	.03
Loading	.02
Indirect charges (insurance, legal, shutdown expense, general)	.10
Total	$0.44

An estimate of the cost of paper-mill rock along similar lines would be:

	Per Ton
Labor (12 tons per man-shift at $4.50)	$0.38
Explosives	.07
Other supplies	.05
Repairs	.10
Power	.10
Supervision	.05
Hauling & Loading	.10
Indirect charges(insurance, legal, shutdown expense, general)	.10
Total	$0.95

"The railroad freight rate from the quarry at Wilderville to Oregon City is $2.20. Should the proposed railroad from Grants Pass to Crescent City, California, be built a competent authority states that the combined rail and water haul from the quarry to Portland would not be more than $2.00 per ton."

Reference: Hodge, 38:285-295 (quoted)

MICHIGAN MINE (gold) Lower Applegate area

Owner: Wm. G. Wisner, 5019 Franklin Ave., Los Angeles, California.

Location: George H. Jackson, a real estate agent, 210 N. 6th St., Grants Pass, has an exclusive listing on this property. The Oregon Strong Ledge Mines Company has gone out of existence a long time ago, and the 80 acres which is in the S½ of the SW¼ of sec. 16, T. 37 S., R. 5 W., is all that is left of the property.

History: Parks & Swartley reported as follows:

"Local name: 'Michigan Mine.'

"W. G. Wisner, Pres.; D. C. Hoedemaker, Sec.; F. J. Knight, Treas., all of Charlotte, Michigan. Capital stock $1,000,000, par value $1.00; $636,893 subscribed, issued and paid up. (1916 report).

"This company owns 80 acres deeded land, 3 lode claims of approximately 60 acres and a placer claim of 20 acres in sec. 16, T. 37 S., R. 5 W. The Michigan mine is about 6 miles south of Grants Pass and about 1½ miles west of Murphy, near the mouth of Board Shanty Creek at an elevation of about 1300 feet as measured by barometer. It is equipped with a 64 h.p. engine, a hoist, and an air compressor operated by steam power, as well as a 5-stamp mill having a rock crusher, an 8-foot amalgamating plate, 2 jigs, 3 settling tanks and 1 slimer. The ore has been concentrated 10 into 1, and the concentrates sent to a smelter. The vertical shaft is said to be 130 feet deep with two levels; being full of water it could not be inspected when the mine was visited in August, 1913. The main vein strikes S. 73° E. and dips about 75° N.E.; it is 1 to 3 ft. wide and contains pyritized quartz. It has been stoped out for about 100 feet along the surface to a depth of about 60 feet. An adit has been driven N. 38° W. about 45 paces to tap another vein which has not yet been reached. There has been no activity at this property since 1913."

Equipment: All equipment has been removed and the workings are caved. No work has been done since about 1915.

Reference: Parks & Swartley, 16:174 (quoted)

Informant: J. E. Morrison, 1939.

MOUNTAIN LION MINE (gold) Lower Applegate area

"The Mountain Lion Mine is 12 miles southeast of Grants Pass and 1 mile north of Davidson is sec. 25, T. 37 S., R. 5 W. It is owned by L. L. Jewell, of Grants Pass, and is under bond and lease to C. C. Murphy, of Applegate.

"When visited in August, 1913, the main adit was caved and could not be seen; the upper adit (No. 2) is about 500 feet long, with more than 300 feet on the vein which is 4 to 36 inches wide with 0 to 24 inches of quartz and the remainder crushed greenstone. A sample of the country rock contains rare phenocrysts of augite in a matrix of abundant green hornblende (altering to serpentine) and plagioclase, almost wholly sericitized with the production of some secondary calcite and quartz. The main adit is said to be more than 1200 feet long with the ore stoped out above.

"The Mountain Lion Mine is equipped with a boiler, engine, air compressor, and a 5-stamp mill having 900-pound stamps, a crusher, an 8-foot plate with riffles below, and a concentrator. Adolf Meyer experimented here with a magneto-electric process which is no longer in use. According to Kay,

"'The property has been extensively developed, there being about 8000 feet of crosscuts, drifts and other workings. Work has been done on two veins which are in greenstone and slates and which are close to the contact of these rocks within an area of granodiorite. The slates occur as narrow lenses in the greenstones and the best ore of the veins has been obtained near the contacts of the greenstones and the slates. The better-defined vein of the two strikes N. 80° W. and dips 65° S. It averages about 1 foot in width and is faulted at many places. The vein filling consists chiefly of quartz, calcite, and sulphides, the sulphides constituting about 1 per cent of the whole. Owing to the prevalence of faults the vein has been difficult to follow.'

"The mine has been idle during the last few years."

Reference: Parks & Swartley, 16:157 (quoted)

MUNGERS CREEK CHROMITE — Lower Applegate area

"Three claims named Silver Tip 1, 2, and 3, lie at an elevation of 3700 feet, near the center of ½ sec. 25, T. 38 S., R. 6 W.

"This deposit lies in a north-south band of serpentine, bounded on both sides by older schists, sandstones and limestones. The band is at least half a mile wide and the rock is a much sheared non-porphyritic serpentine, in which fine disseminated chromite is not infrequently found. The ore occurs principally in two areas, an eastern and western, lying about 400 feet apart. These will be discussed separately.

"Eastern: Two and perhaps three high-grade ore-bands have here been mined by open cuts for a distance of perhaps 200 feet, to an average depth of 10 feet and a maximum of 20 feet. The bands strike N. 30° to N. 40° E., and dip from 30° to 60° S. E. They are more or less discontinuous and lenticular at their widest points; those that could be measured were 18 to 30 inches in width. An average continuous width would be about 6-8 inches. The more or less parallel bands are about 3-4 feet apart.

"Western: The ore-bands about 8 feet apart have here been mined by tunnel and open cut for a distance of 50 feet and a depth of 10 20 feet. These bands strike N. 15° W., dip 75° E., average 1-4 feet wide and consist of smaller sheared irregular lenticular bodies of ore (40%) lying in a matrix (60%) of broken serpentine.

"Another ore-body lies 100 feet to the N. 40° E. This body strikes N. 50° E. and apparently is vertical. It is over 20 feet long as exposed, and 12-20 inches wide.

"From the end of the road at the deposits, it is four miles to the valley by forest road, and from there (near Williams) 22 miles to Grants Pass, a total of about 26 miles."

Reference: John C. Allen, 38:48 (quoted)
Diller, 21:33

MURPHY PLACER — Lower Applegate area

Owner: J. G. Murphy, Murphy, Oregon.

Location: Sec. 25, T. 37 S., R. 5 W.

Reference: List of Mines, State Dept. of G. & M. I., 1939.

OLD ROSE CHROME — Lower Applegate area

A small serpentine area contains numerous small pods of high grade chromite. Little development work has been done.

Owner: E. W. Kubli, Applegate, Oregon, and C. E. Rose.

Location: Sec. 5, T. 38 S., R. 5 W. It is No. 78 on the Grants Pass geologic map, (Wells,'40).

Area: One claim.

Development: Six trenches.

Geology: A small serpentine area in metavolcanics contains numerous small pods of high grade chromite. The "chrome belt" is probably not over 50 by 75 feet. Three small pods, averaging about 3 feet in diameter and surrounded by serpentine, are exposed. The chrome appears to feather out into the walls. About five tons of chrome are stock-piled.

It is 2½ miles by trail to the deposit, from the road.

Informant: Paul Richards, 1/28/42

Report by: Ray C. Treasher, 1/30/42

OREGON BEAUTY (gold) — Lower Applegate area

Owners. Glen C. Hunter, 216 West D. St., Grants Pass, Oregon; F. I. Bristol, Rogue River, Oregon.

Location: SW¼ sec. 15, NE¼ sec. 21, NW¼ sec. 22, T. 38 S., R. 5 W. It adjoins the Oregon Bonanza on the east and south.

Area: One full claim, the Oregon Beauty, and one fractional claim, the Triangle Fraction; total about 23 acres, held by location dated July, 1938.

Development: One 32-foot adit and a 20 foot shaft on the Oregon Beauty; a 15 foot shaft on the Triangle Fraction.

Geology: Same relationships as for Oregon Bonanza.

Informant: Glen C. Hunter and F. I. Bristol.

Report by: Ray C. Treasher, 3/12/40

OREGON BONANZA MINE (gold) — Lower Applegate area

Owner: Powell Creek Mining Co., [illegible] V. Long, Pres.; Leon C. Osteyee, Sec.; Emmet J. Chapman, Treas., 580 Market St., San Francisco, California. An Oregon corporation, dated May 1, 1939.

Location: SE¼ sec. 16, T. 38 S., R. 5 W., at elevations between 2100 and 2300 feet on the south side of Powell Creek, 19 miles by road southeast of Grants Pass.

Area: 80 acres of patented land.

History: Quoting from Parks & Swartley (16:170):

> "The Oregon Bonanza mine 12 miles south of Grants Pass and 3 miles southwest of Provolt, is in the SW¼ (his should be SE¼; Ed.) sec. 16, T. 38 S., R. 5 W., south of Powell Creek at an elevation of 2100 feet, as measured by barometer. The country rock is greenstone cut by aplite dikes. All the adits are caved and the mine buildings are in ruins. It is at present under option by Edward Layton of Applegate and J. M Letherow of Grants Pass."

The property was purchased by R. C. Hanford and associates from Edward Layton in 1936. In 1939 the Powell Creek Mining Company was incorporated and took possession. The mine was operated more or less steadily since 1936, and at present (1940) is under the management of Mr. A. J. Lindquist. Sizeable amounts of high-grade ore have been removed, some of which ran $17 per lb. in gold. Property inactive in 1942.

Development: The old workings contain at least 1000 feet of lateral work and a shaft 250 feet deep. Most of this work is now inaccessible. In addition there is surface evidence of several old shafts. The Bonanza tunnel, portal elevation 2100 feet, is 496 feet long. The direction is generally S. 60° W. to station 7. A shear zone that is parallel to the "lime dike" cuts across the tunnel about 100 feet from the portal and a sizeable stope here shows no ore. The north wall is siliceous limestone and the south wall is metasediment. At station 7, a north-south shear zone in metasediment forms the "hanging wall vein". Several stopes were developed, particularly where cross-shearing intersects the main north-south shear zone. These stopes are as wide as the tunnel. It is reported that an intermediate level, 15 feet above the Bonanza tunnel, connected the three stopes in the vicinity of station 7 and 8.

A short cross-cut extends S. 60° W., from station 7. An inspection of the mine map shows that the face would need to be extended a considerable distance to intersect a diorite dike, reportedly the objective of this crosscut. South of station 12 the tunnel connects with a shaft from the surface. Presumably this is the "Old Shaft", now caved and inaccessible.

A cross-cut through the diorite dike which is about 30 feet wide cuts a hanging wall shear zone that trends S. 55° E., dips 75° N. E., and contains some quartz. On the south, there is an opening reportedly connecting with a stope from below. At station 13, the tunnel is in the footwall shear zone which trends S. 45° E. and dips 68° N. E. This shear zone contains quartz with serpentinoid rock, both well mineralized. A shaft from the surface is reported to intersect the tunnel at this point. When seen (9/19/40) the winze and lower levels were filled with water, and the tunnel beyond the winze was caved.

The winze levels, inaccessible when the inspection was made, are shown on the mine map. In 1936, J. E. Morrison reported that the winze was 115 feet deep on the incline or 100 feet vertically and had 3 levels, namely, the Layton drift at 41 feet, the 70-foot level, and the 100-foot level, all referring to vertical distances. The Layton drift trends N. 53° W. for 62 feet and S. 35° W. for 65 feet to a bulkhead; the 70-foot level trends N. 48° W. for 42 feet and S. 39° E. for 70 feet; the 100-foot level at the bottom of the winze trends southeast for 10 feet. It is reported that the 100-foot level has been extended somewhat since 1936. Little in the way of timbering is required.

Most of the production has come from the Bonanza tunnel workings. Surface inspection showed three shafts north of the "Old Shaft". The most southerly is open at the surface; the other two are caved. Still farther north are two cuts, the most northerly being alongside the "lime dike".

The Eclipse tunnel, portal elevation 1948 feet, was driven into the hill several hundred feet northeast of the Bonanza tunnel. It encounters the hanging wall of a diorite dike; the shear zone encountered trends N. 30° W., and is practically vertical. Some stoping was done on this level.

The Lime Gulch tunnel, elevation of portal 1841 feet, was driven to cut the diorite dike exposed in the Eclipse tunnel. It crosscuts the dike and a drift was extended southwest in the footwall shear zone which trends N. 30° W. and is vertical. The diorite dike is about 23 feet thick here. Siliceous limestone shows on the walls of the footwall drift.

Equipment: 160 cu. ft. Gardner-Denver compressor, one G-D drifter, one G-D stoper, one G-D tugger hoist carrying 150 feet of ½-inch wire cable; one 8-inch American blower, 950 feet of 8-inch air pipe; one 4 h.p. Cushman gas engine to drive blower; ½-ton mine car; 1500 feet of 12-lb. rail; 1100 feet of 1½ inch pipe, one duplex pump 4 x 3 x 3½, one duplex pump 4½ x 5 x 4; compressor house and machine shed.

Topography: The area is mountainous. Elevations range from 1500 ft. at Powell Creek to over 2500 ft. on the slope southwest of the property. The workings lie between 1841 ft. (Lime Gulch Tunnel) and 2230 ft. (Old Shaft). Hill-slopes average 30°; vegetation is dense; timber consists of fir and madrona; manzanita brush grows to over 7 ft. high in places; and poison oak is profusely scattered. Weathering and hillside creep extend to depths in excess of five ft. and outcrops are practically non-existent. The exceptions are the "lime dike" from the portal of the Bonanza tunnel (2100 ft.) to an elevation of 2370 ft., along and above the Powell Creek ditch at about 1700 ft. elevation.

Geology: Rocks: The rocks are metamorphosed sediments (metasediments) that contain lenses of siliceous limestone, and quartz stringers that are associated with shear zones. Diorite dikes cut the structure at right angles. Occurrence of serpentine is reported but none was found.

The metasediments have been so intensely altered and silicified that in places they resemble impure quartzites. Toward the southwest the slaty character becomes more prominent. The siliceous limestone is gray and may contain masses that are more nearly calcareous quartzite. The diorite is medium fine-grained with altered phenocrysts. Saussuritization is suggested. In the Bonanza tunnel, amphibole needles form an interlocking network in the diorite rock, similar to what Wells (41) terms a spessartite in the Grants Pass quadrangle. Specimens of diorite dike rock from other areas do not show this development of hornblende needles to such a marked extent.

"Slickentite" is developed is some of the shear zones. Apparently some of the quartz was injected forcably and the metasediments were intensely sheared. The result is a mass of quartz pods that are surrounded by a slick greenish rock, consisting of chlorite, epidote, etc. Some of the metasediments into which no quartz was injected, also developed "slickentite". This "slickentite" markedly resembles serpentine.

Mineralization: The gangue minerals of the veins are principally quartz with subordinate calcite. The ore minerals are free gold, pyrite, and a small amount of galena. The pyrite may carry some gold.

Apparently quartz was injected in at least two periods. The first deposition was accompanied by considerable stress, developing "slickentite". The second period covered deposition of pure quartz; metals were either deposited with the quartz of the second period or came later. The quartz of the second period usually occurs nearer the center of the vein. Some sulphides are found in the "slickentite" portion of the quartz vein (the pyrite frequently occurs as distinct, small crystals) and these portions are not, as a rule, good ore.

Some of the sulphides are fine-grained and massive, occurring in narrow veinlets; some occur as small crystals. All galena observed was in the quartz. Little, if any, metallization occurred in the wall rocks.

There is evidence of re-silicification and re-crystallization as a result of mineralizing solutions and dynamic stresses.

Gold is usually free. It is reported as occurring in thin sheets where the quartz splits along sulphide veinlets. Laboratory specimens of some of the $34,000 ore shows free gold in such fine grained quartz that the quartz looks like chalcedony. Some of the gold is in the pyrite, particularly when it occurs in the non-"slickentited" portion of the vein.

The ore is hand sorted; high grade is shipped and the low grade is sent to the mill at the Humdinger Mine.

Structure: The structural trend of the rocks is generally N. 50° E., varying from N. 40° E., to N. 60° E. There has been shearing parallel to the major structure, as evidenced by the shear zone in the Bonanza tunnel where the metasediments that contact the "lime dike" have been sheared and laminated. Along the Powell Creek ditch, the metasediments show considerable evidence of shearing parallel to the general structure (N.50°E.) although joint planes give a suggestion of a structure at tight angles.

The diorite dikes cut across the major structure roughly at right angles. Dikes both in the Bonanza and Lime Gulch tunnels have been sheared on footwall and hanging wall, and these shear zones have been mineralized to varying degrees. Bulldozer outs to the northwest of the Bonanza tunnel and at the upper end of the Powell Creek ditch traverse rocks that appear to be granular, and approximate diorite in composition. However they do not have the hornblende needles characteristic of the Bonanza dike.

There is a strong north-south shear zone that shows in the Bonanza tunnel between stations 7 and 12 and metallization is more concentrated where this shear zone is cut by cross shearing. Whether this particular zone cuts the "lime dike" is not known.

Another group of shear zones may be generalized as N. E. - S. W. - trending zones.

The "lime dike" strikes about N. 57° E., and dips 67° S. E. The surface outcrop is on a hillside with a 20° - 30° slope and the trend of the outcrop is N. 67° E. The dip is such that 100 ft. difference in elevation produces a 42-ft. offset in the horizontal projection of the lens. The outcrop extends from the portal of the Bonanza tunnel, elevation 2100 ft., along the N. 67° E. trend to an elevation of 2370 ft. where it can no longer be traced. Outcrops do not show downhill from the Bonanza portal. The outcrops are so prominent, and so easily distinguished, that the lack of outcrops leads to the conclusion that the "lime dike" is in reality a small lens, that it has little more lateral extensions than shown by the outcrops.

The amount of displacement along any one shear zone appears to be small. Intersecting shear zones show little evidence of displacement. The conclusion is that any one shear zone produces little displacement but the total displacement resulting from a great number of shear zones may be great. Thus, if no one shear zone produced pronounced displacement, it is doubtful if the two diorite dikes as exposed in the Bonanza and Lime Gulch tunnels represent one dike that is faulted.

Ore Shoots: High grade lenses of ore are found in the quartz of the sub-levels of the winze in the Bonanza tunnel. These lenses have a maximum width of 12 inches and are about 20-25 ft. in their greatest dimension. According to J. E. Morrison, they rake about 45° to the northwest. Mr. Lindquist confirmed this information, but stated that in his opinion the individual lenses did pitch toward the northwest, but that the lenses seemed to be en echelon to the southwest.

The stopes in the north-south shear zone between stations 7 and 12, Bonanza level, rake downward to the south at a 50° angle. However, the cross-shear zones have their dip in the same direction, and if concentration is more pronounced at the intersection of these shear zones, this would account for the alignment of ore shoots at this point.

There is no report of cross fractures for the hanging or footwall veins of the diorite dike.

References: J. E. Morrison, 36
Parks & Swartley, 16:170 (quoted)
Shenon, 33 c: 48-51

Informants: Francis G. Wells, U. S. Geological Survey
A. J. Lindquist, operator of Oregon Bonanza Mine

Report by: Ray C. Treasher, October 4, 1940.

OREGON LIME PRODUCTS COMPANY Lower Applegate area

see Washington Brick and Lime Company

OREGON STRONG LEDGE MINES COMPANY Lower Applegate area

see Michigan Mine

OSCAR CREEK CONSOLIDATED MINING COMPANY Lower Applegate area

see Andes and Howard Prospects

see Jewell and Moore Group

OSCAR CREEK PLACER Lower Applegate area

Owner: D. O. Hayes, Grants Pass, Oregon.

Location: Central part sec. 22, T. 37 S., R. 5 W., on Oscar Creek between Murphy and Provolt.

Area: Two placer claims.

History: Bishop and Sturtevant operated a washing plant on this property in 1937, but discontinued after one season. It was worked by Bolton Brothers for about a year in 1934 with a large steam shovel and a washing plant.

Equipment: The Bishop and Sturtevant plant was described by the Grants Pass Courier, January 27, 1937, as follows:

> "1¼-yard Marion electric shovel, a 5 by 24-foot screen, stacking conveyor 55 feet long, and an automatic feeder 24 feet in length. The plant is operated by electric power and can be easily moved from one place to another on its own power. About one to two thousand gallons of water a minute are used in running the plant."

Geology: The placer ground is said to be about 100 feet wide and 15 feet deep. The property upstream from the B. & S. washing plant has been hydraulicked and some work is done on the property each season.

Reference: Diller, 14:118.

Report by: Ray C. Treasher, March 29, 1940.

PACIFIC PORTLAND CEMENT COMPANY Lower Applegate area

see Marble Mountain Quarry

PORCUPINE MINE Lower Applegate area

Owner and Operator: Charles Ethell and Clarence Bartow, Grants Pass, Oregon.

Location: sec. 23, T. 37 S., R. 5 W.

Development: one 60-foot tunnel, 30-foot shaft.

Equipment: 2-ton Ball Mill.

Ore is quartz containing free gold and hessite (telluride of silver).

Informant: Charles Ethell, February 1940.

Report by: A. A. Lewis.

RED ROSE MINE (gold) Lower Applegate area

Owners: Peter L. Rapkock, Los Gatos, California; Dr. H. E. Elliott, Fort Sumner, New Mexico; H. E. Ellsworth, Grants Pass, Oregon; Dr. Knowles, Los Angeles, California; an association.

Location: Centers of secs. 19 & 20, T. 38 S., R. 5 W., south of headwaters of Powell Creek, tributary to Williams Creek.
Area: Six claims, about 100 acres.
History: As nearly as can be determined, the principal claims were located about 40 years ago by a Mr. Holman.

Development: On the Wild Rose claim the Bristol tunnel is 50 feet long. A winze 25 feet deep has been sunk in ore near the portal. The Elliott tunnel is about 40 feet long and has a crosscut 12 feet in length. Located about 200 feet east, the Yellow Jacket workings consist of two tunnels, one 25 feet and the other 30 feet in length. Underground work on the Red Rose claim consists of a crosscut 138 feet long and a drift 87 feet in length. On the 50-foot level a crosscut and drift 149 feet long have been driven; also there is a shaft 45 feet deep and an underhand stope sunk about 10 feet. In addition there are several surface cuts on the vein. On the Wildcat claim a shaft 80 or 90 foot deep has been sunk.

All work except the 45-foot shaft and two tunnels on the Yellow Jacket Claim has been done by Mr. Ellsworth since 1937.

Geology: Country rocks are diorite and slate. There are four veins containing quartz with some calcite. The veins cut the diorite and slate, but in one case there is a diorite hanging wall and a slate footwall. Vein width averages 2 to 4 feet. Ore in the Bristol vein is free milling; the other veins contain about 50 percent of the values in heavy sulphides. There is evidence that the ore occurs in shoots.

General: A wagon road 5100 feet and a pack trail 4200 feet long together with two bridges have been built. Camp buildings consist of a bunkhouse, dimensions 16 ft. x 32 ft., a sorting shed and a blacksmith shop.

Ore is hand-sorted and the high grade shipped. It is planned to install a small mill.

Informant: H. E. Ellsworth, 1/3/41

Report by: Ray C. Treasher, 1/3/41

RISING STAR MINE (gold) Lower Applegate area

"The Rising Star Mine, 12 miles south of Grants Pass, is in the northern part of sec. 21, T. 38 S., R. 5 W., about half a mile southwest of the Oregon Bonanza, at an elevation of about 2200 feet, as measured by barometer. The mine is owned by Mr. St. John who has kept the main adit open. The latter is about 1500 feet long as shown in the sketch. The first part of the adit, going northwest, discloses a vein striking northeast and dipping about 75° S. W. which contains quartz varying from 0 to 48 inches thick. The thicker portions have been stoped out. In the second part of the adit, running southwest, only quartz stringers are found, and even these are less abundant near the face. The country rocks here include diorite and hornblende schist. The Rising Star Mine was formerly equipped with an air compressor, a 5-stamp mill with a concentrator, and other machinery, now removed. In 1900 it was owned and operated by the Champion Gold Mining Company. Very little work has been done recently."

Reference: Parks & Swartley, 16:193 (quoted)

TURVEY LIMESTONE Lower Applegate area

(also known as Calcium Products Company)

Owner: Calcium Products Company, Glen C. Hunter, 216 West "D" Street, Grants Pass, Oregon, President-Treasurer.

Location: E½ SE¼ NW¼ sec. 29, T. 38 S., R. 5 W., on a ridge west of Williams Creek, about 25 miles from Grants Pass by highway.

Geology: A limestone lens, trending N. 30° E. and dipping 45° to 55° S.E., lies between meta-igneous rock on the west and metasediment on the east. The metasediment is fine grained, has blocky fracture, and looks like an argillaceous quartzite. The limestone crops out along the crest of a "hogback" at an elevation of 1,000 feet. The lens crops out for 400 feet and varies in width from a maximum of 40 feet to points where it pinches out midway of its length; average width is about 25 feet.

The limestone is very impure on the hanging wall where there are numerous siliceous inclusions. The southwest portion of the lens generally is white in color and coarsely crystalline. The northeast portion is banded and appears to be lower grade.

Transportation: It will be necessary to build a couple of miles of road from the county highway to the deposit. The haul to Grants Pass will be of the order of 30 to 35 miles.

Informant: Glen C. Hunter, March 15, 1940.

Report by: Ray C. Treasher, November 22, 1941.

WASHINGTON BRICK AND LIME COMPANY Lower Applegate area

(also known as Oregon Lime Products Company)
(Limestone quarry, kiln, and crushing plant)

Owner: Washington Brick and Lime Company, Spokane, Washington; Neil Fosseen, Pres.; Wolf Bauer, Manager.

Location: S½ NE¼ SW¼ (17 acres); W½ SE¼ SW¼ (20 acres); NE¼ NW¼, and N½ SE¼ NW¼ (60 acres) of section 22, T. 38 S., R. 5 W.; a total of 97 acres of deeded property.

In addition the following placer claim locations have legal descriptions as follows: SW¼ SW¼ sec. 16 (40 acres); NW¼ NW¼ sec. 22 (40 acres); E½ NE¼ sec. 21 (80 acres) of T. 38 S., R. 5 W. The eight claims are reported to contain 257 acres.

Area: 97 acres of deeded property and 8 placer claims containing 257 acres. Total land area is 354 acres.

History: The property previously was owned by the Oregon Lime Products Company. On February 17, 1940, the Grants Pass Courier reported that mortgages on the property were being foreclosed; on July 15, 1940, that B. P. Johns, Portland, Oregon, had transferred title to the Washington Brick, Lime, and Sewer Pipe Company; on August 19, 1940, that the property was still in litigation. Shortly thereafter, the Washington Brick, Lime, and Sewer Pipe Company took over, and Mr. V. Z. McCreary was sent to Grants Pass to reopen the property.

In 1938, Hodge reported as follows:

> "The plant and quarry of the Oregon Lime Products Company are in the SW¼ sec.15, T. 38 S., R. 5 W., on the nose of the ridge south of Powell Creek at an elevation of 1600 feet. Production in 1936 consisted of raw lime products, chiefly agricultural lime, poultry grit, and lime flour for use in the fruit canning industry. All material is hauled by truck to Grants Pass, a distance of 26 miles, of which 15 miles is paved and the remainder good gravel road.

"The quarry is at the northeast end of a narrow limestone belt which extends southwestward from the center of sec. 15 through sec. 31 of the same township. The general strike of the beds is N. 50° E., the dip is 45° S.E. The limestone is interbedded with schist and cut by basic igneous dikes. The thickest lens in the quarry is about 25 feet tapering to 10 feet or less. Waste amounts to about 60 percent of all rock handled, and the quarry cost of rock in the storage bin is about $1.85 per ton of limestone. The limestone is reported to be very pure, running over 99 percent $CaCO_3$.

"The quarry layout has an opening 200 feet long, 35 feet wide, and the face is 40 to 45 feet high. The rock after blasting is broken to "one man" size and loaded by hand, then trammed about 400 feet by hand to the kiln or jaw crusher for grinding. The rock is crushed and screened, the oversize being returned by bucket elevator. The fines are carried by belt conveyor to vibrating screens, if it is to be used as poultry grit, or to a model 36 Fairbanks-Morse hammer mill where it is ground for agricultural lime or lime flour. The "Ag" rock passes 16 mesh and 50 percent passes 100 mesh; the flour passes 100 mesh.

"The kiln, a 10-foot continuous feed stack kiln, fired with wood at $3.50 a cord, was just being fired up at the time of the visit. The company intends to sell lump, pea, and ground lime, but not the hydrated product. From the kiln the rock passes over a sorting table where the large lumps are removed, then goes through a small jaw crusher, and is screened. The over-sized material is returned to the crusher, and the fines are rescreened, the retained portion going by bucket conveyor to a steel storage bin for sacking, while the fines go to a F-M hammer mill, are ground to 16 mesh, and blown into a steel storage bin, from which it will be sacked by an automatic weighing machine. The plant capacity is 30 tons of raw rock per 8 hours, and 15 tons of burned lime per 24 hours. All power is supplied by two wood burning steam boilers.

"Analysis of the rock (U.S.E.D. Sample No. 90) from the Oregon Lime Products quarry is given below:

SiO_2	0.05
Al_2O_3	0.21
Fe_2O_3)	
FeO)	0.28
CaO	55.61
MgO	0.34
Ignition loss	42.88
Total	99.37

"The Oregon Lime Products Company was organized in 1934, with H.W.Bergman of Genoa, Ohio, as president (also chief stockholder), succeeding the Oregon Limestone Products Company. The manager is Glenn C. Hunter of Williams, Oregon. The company owns all of the $SW\frac{1}{4}$ sec. 15 except the $N\frac{1}{2}$ $NE\frac{1}{4}$; it also controls, by virtue of mining claims, the $N\frac{1}{2}$ $NW\frac{1}{4}$ sec. 22, and the $E\frac{1}{2}$ $NE\frac{1}{4}$ $NE\frac{1}{4}$ sec. 22 all in T. 38 S., R. 5 W."

On January 7, 1941, the Washington Brick, Lime, and Sewer Pipe Company was employing about 12 men, relining the kilns, repairing buildings and machinery, and reopening the quarry.

Development: Details of development of the quarry are given, in part, in the quotation under "History." In addition to the quarry face, later operations consisted of opening up a large room and mining the limestone underground. In 1941, the quarry face was being cleaned and it will be operated as a quarry and not by underground mining.

Geology: Given under quotation in "History." The country rock is part of the Applegate Series (Paleozoic?) of metamorphics and there is a sizeable outcrop of granitoid rock to the east.

General: Road improvements and paving have resulted in about 24 miles of hard-surfaced road and about 2 miles of graveled road. Opening of the Water-Gap cutoff will decrease this mileage to about 23 miles.

Products planned include ground lime, four sizes of agricultural lime, chicken grit, plaster lime, lump, pebble and pulverized lime, and hydrated lime. It is expected that some 20 to 25 men will be employed when the plant begins production about February 1, 1941.

References: 1/ Hodge, Edwin T., Market for Columbia River hydroelectric power using Northwest minerals; Section III, Northwest limestone: War Dept., Corps of Engineers, U. S. Army Office of Division Engineer, North Pacific Division, Portland, Oregon, pp. 295-298, 1938.

Informant: V. Z. McCrary and Ray C. Treasher, January 7, 1941.

Report by: Ray C. Treasher, January 8, 1941.

WILD ROSE MINE Lower Applegate area

see Red Rose Mine

WALDO AREA (6)

The Waldo mining area of about 380 square miles includes all of Josephine County lying south of T. 38 S., with the exception of the small area drained by Williams Creek and its tributaries (see map opposite p. 17). It contains the mining districts variously known as Sucker Creek, Browntown, Althouse Creek, Holland, Sailors' Diggings, Takilma, Bolan Creek, and Indian Creek.

Geography

The area is mountainous with elevations ranging from 1400 feet to more than 6,000 feet. The valleys are narrow and deep, with the exception of the Illinois Valley which is quite wide and fertile. The hill slopes are heavily timbered with conifers and hardwoods grow in the gulches. Brush and soil obscure the outcrops and make prospecting difficult.

Annual precipitation, mostly in the form of rain, is about 40 inches, snow remaining on the higher ridges until late spring and early summer. Maximum-minimum temperatures range from 80° to 0°.

Transportation is entirely by means of highways, roads, and trails. The Redwood Highway (US 199) cuts through the area from north to south, and county roads parallel most of the major stream valleys. Secondary roads and Forest Service truck trails penetrate most of the mountainous districts. The area is within the Siskiyou National Forest.

Geology

The geology of the Waldo area is similar to that of the Lower Applegate Area. The western serpentine body is larger, however, and contains good chrome prospects.

Mining

Mining began in the Waldo area in 1852 when a group of sailors deserted ship at Crescent City, California, and headed for the Rogue River Valley in search of gold (Spreen 1939). The sailors established the town on Waldo (originally called "Sailors' Diggings") and worked the famous diggings named for them, so rich that a $75,000 ditch line is reported to have paid for itself in one year. The gold strike on the Althouse was made in 1853. The gravels on Sucker Creek were mined extensively from 1854 to 1860. In 1860 the Waldo copper mine was discovered by Mr. Hawes, and quartz veins on Althouse Creek were opened soon afterward. The early work at the Waldo mine gave poor returns because of the extremely high cost of transportation and materials. Work in the gravel of Scotts Gulch near Waldo began in 1861 and continued for about 35 years. The Waldo Hydraulic Mining Company began work in 1877, and the ground is not yet exhausted. In 1878 Wimer and Sons bought a half interest in the Deep Gravel mine, originally opened by the Simmons Brothers, and in 1888 they secured the remaining half of the property. The Deep Gravel Mining Company became the owner in 1900 and later sold to the Waldo Consolidated Gold Mining Company. The Queen of Bronze mine, probably the best known copper property in the area, had periods of activity from 1904 to 1929, producing, according to Shenon (1933b), about $1,350,000. A semi-pyritic blast furnace was installed in 1904 and operated for a while. The Esterly mine was a leading hydraulic placer operation for years. It is still operated intermittently and, in addition to gold, supplies a part of Oregon's platinum output. The Plataurica Company has hydraulicked some of the old Eocene "high channels" in recent years.

During 1940 there were 17 placer operations in the Waldo area; in 1950, two placers reported production. Seven lode properties were active in 1940, most of which were in the southeastern part of the district. Because of the strategic nature of copper, efforts to obtain copper production in this area were begun in 1950. One lode mine was active in the area at that time.

Chromite was mined in the western part of the area during World War I, and during World War II several shippers delivered chrome to the Metals Reserve ore-purchasing depot at Grants Pass.

Mining Properties:

Descriptions of mining properties of record are given in the following pages.

AJAX PLACER Waldo area

Owners: Clark Dix, Cave Junction, and Austin Jack, Grants Pass, Oregon.

Location: In sec. 12, T. 40 S., R. 7 W., on Sucker Creek one mile by trail above the Rainbow Mine.

General: The property was first located by a Mr. McIrvin. Water is delivered to the giant by a 6-inch centrifugal pump at the rate of about 1000 g. p. m. The pump is driven by a turbine which develops about 67 h. p. at 180 r. p. m. from a 10-foot head of water in a ditch 300 feet long and delivering 70 c. f. s.

Informant: J. E. Morrison, 36

AKERS MINING COMPANY Waldo area

Owner: William Akers.

Location: NW¼ sec. 1, T. 40 S., R. 7 W. At mouth of Johnson Gulch, California Bar.

Informant: W. R. Burner, 40

AKERS PLACER Waldo area

see California - Bar Mining Corporation

ALBRIGHT MINE (copper, gold) Waldo area

Owners: G. H. Grover, Clarence Hunt, and E. M. Albright, all of Grants Pass, Oregon.

Location: SE¼ sec. 16, T. 41 S., R. 9 W., 2½ miles from the Redwood Highway and 45 miles from Grants Pass. The property lies on the ridge between the west fork of the Illinois River and Blue Creek.

Area: 260 acres of patented ground plus some unpatented ground to the east.

History: Old names are: Mammoth mine; Turner mine; Turner and Albright mine.

The original discoverer is unknown. Albright and his partner, Mr. Turner, have worked on the property intermittently since 1900. They also worked unpatented claims just east of this patented ground. The property has been sold on bond and lease several times. In 1940 the present owners leased to Gilbert Stewart and others of Medford, Oregon. The lessees made a deal with Hughes and Fanchani, local cyaniders, to assist in treating the ore. Three shipments were made. It is reported that the first shipment cyanided from 100 tons of gossan netted $497 from ore that was supposed to assay $11. There is no record of the value of the other two shipments. The Stewart lease was later turned over to the Standard Cyanide and Chemical Company. A road was built to the property and some work was done on the gossan with a power shovel. A cyanide plant was planned, but activity ceased when it became evident that gold mines would have difficulty in obtaining priorities. In the summer of 1942 the property was idle, but was being examined to evaluate possibilities of producing copper.

General: Elevation is 3200 feet. Plenty of timber. There is a good mill site on the west fork of the Illinois River 1200 feet below the mine. Water power could be developed. The road constructed late in 1941 suffered considerable erosion during the winter but a slight amount of work would put it in shape. Snow might hamper operation for about two months of the year.

Development: It is reported that there are some 14 tunnels.

Geology: "The Turner or Albright Mine is just north of the California line, 45 miles southwest of Grants Pass, and 2½ miles by trail from the Redwood Highway. Between the highway and the mine the trail gains 1200 feet in altitude. Waters Creek, the nearest railroad point, is 35 miles to the northeast. (This station was on the old C. & O. C. railroad which does not function as a public carrier south of Grants Pass. The roadbed is of use no farther south than Wilderville; it is used by the Pacific Portland Cement Co. to haul lime rock from Marble Mountain to Grants Pass. Ed.) The property was located about 35 years ago and now belongs to Edward Turner and James Albright. It includes, according to Mr. Turner, three claims in sec. 15 and 260 acres of patented ground in sec. 16, T. 41 S., R. 8 W. Nine tunnels with numerous crosscuts have been driven which, in all, have a total length of over 3000 feet. No production has been reported.

"Two large bodies of porous iron-stained rock or 'gossans,' enclosed in fine-grained greenstone, crop out at the Turner Mine. One is about 80 feet wide and can be traced on the surface for 900 feet. The other averages about 20 feet in width and is well defined on the surface for over 300 feet. Both gossans crop out prominently, but the narrower one is much more conspicuous because of the fact that it rises 30 to 50 feet above its surroundings. The larger gossan is partly prospected by tunnels 5 and 6. Both tunnels are near the surface and run through soft brown oxidized material and iron-stained greenstone. Some pyrite occurs near the face of tunnel 5, but the oxidation is elsewhere nearly complete. The smaller gossan is composed of porous brown, highly silicified material, which in places contains cores of unoxidized pyrite. In other places practically all of the iron has been removed, and there remains a cavernous white residium composed principally of silica ribs. However, because of the abundant silica, a prominent outcrop has been maintained in spite of the thorough leaching. Beautiful specimens of the type of gossan described by Locke as 'botryoidal jaspery limonite' have been mined from one of the workings known as the 'picture rock' tunnel. Sulphides are exposed in several tunnels beneath the smaller gossan. Of these, pyrite is by far the most abundant, although considerable chalcopyrite is associated with it in tunnels 2 and 3. In spite of the fact that the development work has thus far shown a high proportion of pyrite in the sulphide ore, the presence of considerable chalcopyrite with the pyrite at the face of tunnel 3, and below in tunnel 2, seems to justify more exploration on these levels. Because silicification makes the rock hard to mine by hand methods, work was stopped in the tunnels in the two places appearing most favorable for prospecting. An extension of tunnel 3 another 200 or 300 feet would add a great deal of information as to the probable worth of the property."

Reference: Shenon, 33b:192 (quoted).

Informant: G. H. Grover, June 3, 1942.

Report by: Ray C. Treasher, June 1942.

ALSEN GULCH PLACER Waldo area

see Johnson Placer

ALTA MINE (placer and lode) Waldo area

"The Alta Mine on Josephine Creek, 4 miles west of Kerby, consists of 3 claims. For some years the mine was worked only as a placer, but recently a lode mine was opened in the bluffs bordering the placer and a mill erected to crush the ore. The country rock is serpentine derived from peridotite and cut by a large dike composed of a rock related to dacite porphyry. The dike ranges from 25 to 40 feet in width between serpentine walls and is practically vertical. It strikes N. 40° E. and has been traced by Mr. Wilson about a mile and a half. Many smaller parallel dikes of the same material cut the serpentine of that region, so that the relation of the ore-bearing rock to the serpentine is evident.

"The ore is chiefly pyrite, occurring in scattered grains through the rock and more abundantly in small quartz veins, apparently with some chalcopyrite and possibly pyrrhotite. In some places when the rock is pulverized and panned it is found to contain not only pyrite but apparently considerable free gold. As the mine is in the early stage of its development, little is known of the distribution and extent of the disseminated ore. A good sample of the fresh rock with conspicuous blotches and scattered grains of pyritic ore in joints and veinlets of quartz was assayed by E. E. Burlingame and Company of Denver, for the Geological Survey, and it yielded 0.02 ounces in gold per ton. About a dozen sectional samples assayed by local assayers were reported to me by Mr. Wilson and they averaged about $5 in gold per ton.

"A 'Lane slow-speed Chilean mill' has been erected to crush the ore. The rock is first run through a breaker, and after it issues from the mill, is run over plates to Johnson concentrators. The mill is run by a 25-horsepower steam engine and has a capacity of 40 tons in 24 hours. Mr. Wilson reports a satisfactory test run of about 500 tons, made in the fall of 1911, at a cost of 80 cents a ton by water power and $1 a ton by steam. After amalgamation and concentration, the tailings are reported to show no trace of gold. The overburden of the mine is gravel, and during the winter the water is used for hydraulicking."

Reference: Diller, 14:70 (quoted).
Parks and Swartley, 16:14.

ALTHOUSE MINE (placer) Waldo area

Owner: J. J. Skinner, Grants Pass, Oregon. Leased in 1939-1940 by C. O. Taylor and Andy Wilson.

Location: Secs. 7, 11, 12, T. 41 S., R. 6 W.

Informant: G. W. Thrasher, January 1940.

Report by: Ray C. Treasher, January 1940.

ALTHOUSE - RUN GULCH PLACER Waldo area

Owner: A. N. Steele, Holland, Oregon.

Location: Sec. 26, T. 40 S., R. 7 W., on Run Gulch. Reached via Holland to "Old Tiger Town," thence 2 miles up No. 8 trail.

Area: Eight claims.

History: Original location goes back to 1875. Some time later the claims were acquired by Mr. Sheaffer, who called the placer the Sheaffer Placer. Steele acquired the claims by purchase from Mr. Sheaffer.

Development: One No. 1 giant is being operated.

Equipment: One No. 1 giant; two No. 3 giants; 2200 ft. of 7 - 18 inch pipe.

Water: Water is taken from Run Gulch through three miles of ditch and 2200 ft. of pipe, giving a 120 foot head. Gravel can be mined throughout the year except during July-August-September; it is then necessary to wait 2 hours for the reservoir to fill which allows piping for two hours.

Geology: At present, the operators are working an old channel 300 ft. wide. Bedrock is soft serpentine. There are quantities of boulders some of which are small-room-size. These are blasted and removed with a hand derrick. The ground is reported to average 40¢ per cubic yard.

Informant: A. M. Steele, 4/10/41

Report by: Ray C. Treasher, 4/10/41

ARNOLD MINE (gold) Waldo area

Owners: H. J., & M. L. Arnold, Jacksonville, Oregon.

Location: Center sec. 16, T. 41 S., R. 5 W., elevation 5500 feet; southwest of Whiskey Pk., and southeast of Lake Peak.

Area: Five claims, staked in 1914-1915 by E. Arnold.

Development: There are at least two tunnels. Lower tunnel was driven since 1934. About 500 tons removed before 1934; 100 tons since then. There is a small mill having two stamps and amalgamation plates.

Geology: The mine is located in metasediment near a serpentine contact. Ore is quartz with gold and a small amount of sulphides. Average tenor of ore is $20. Ratio of gold to silver is 6-8 oz. gold to 1 oz. silver.

General: The property is operated in a small way by Arnold Brothers.

Informant: Francis G. Wells, 41

Report by: Ray C. Treasher, 41

ATLAS GOLD DREDGING CORPORATION (placer) Waldo area

Owners: Property leased from R. S. Leonard by Atlas Gold Dredging Corporation of Los Angeles, California; Frank E. Ford, Pres; W. E. Moffett, Sec.-Treas; Edison Building, Los Angeles, California; H. J. Ackley, General Manager; J. Youmans, Dredgemaster.

Location: Secs. 4, 7, 8, 18, T. 40 S., R. 7 W., on Althouse Creek.

Area: 3,000,000 cubic yards sampled out with about 4,000,000 cubic yards yet to sample. Property extends along Althouse Creek for about 2½ miles.

History: Property includes the old Leonard Placer with extensions.

Development: Plant construction began Jan. 20, 1940. Operation started about Feb. 7, 1940, and was discontinued in March, 1941.

Equipment: Bodinson washing plant: Hull consists of four 10 x 36 x 3½ feet wooden pontoons and two 8 x 36 x 4 feet steel pontoons; hopper is 12 x 10 feet; trommel is 5 x 38 feet, 26 feet of which is drilled section with 3/8- to 1/2-inch holes having 2-inch bridge at upper end to 1/2-inch bridge at lower end; three banks of Hungarian riffles; expanded metal cloth and cocoa matting. Power plant; main pump is a 60-hp 10-inch Byron-Jackson, capacity 5,000 gallons per minute; fire pump, 5-hp 3-inch high pressure; stacker motor is 10 hp; trommel is 30 hp; the stacker has a 36-inch belt and is 70 feet long.

A K-55 Link-Belt dragline having a 3-yard bucket with a 2½-yard extra heavy mining bucket; a 70-foot boom; powered by a 250-hp GE motor. (This was changed in May 1940 to a diesel-electric Marion-Walker-type dragline with 5-yard Esco bucket.) Other equipment includes an R.D.-7 Diesel caterpillar tractor with bulldozer, two pick-up trucks, two large GM trucks (one a 4-ton and the other a 14-ton capacity). There is a well-equipped welding and blacksmith shop to take care of all work, and a neatly arranged tool house.

Geology: The minable channel has a width of about 500 feet over a distance of 2½ miles along Althouse Creek. Bedrock is predominantly soft, decomposed granite, with a few serpentine "reefs." The granite is normally decomposed so that the dragline can dig it to a depth of 18 inches. The surface is uneven or rolling. Normally the serpentine can be dug to a depth of 12 inches, except in a few places such as the nose of a hill where the serpentine is quite hard. Practically barren overburden, mostly soil, will average about 6 feet. There is an increase in gold content to a point about 6 feet above bedrock. This last 6-foot zone contains most of the gold. There is practically no clay; the top soil is silty enough so that it does not clog the washing plant. "Large" boulders are 18 inches in diameter.

Informant: H. J. Ackley, general manager, March 26, 1940.

Report by: Ray C. Treasher.

BAILEY GROUP PLACERS — Waldo area

Owner: A. L. Bailey, 122 East 14th, Medford, Oregon.

Location: Secs. 20, 33, T. 40 S., R. 8 W.

Development: Idle in 1939-1940. Worked by Fred Galeno in 1938.

Informant: Harry Messenger, January 1940.

Report by: Ray C. Treasher, January 1940.

BEAR PLACERS, INC. — Waldo area and Illinois River area

See Illinois River area, Bear Placers, Inc.

BLANKET LEDGE MINE (gold) — Waldo area

see Happy Day Group

BOLAN LAKE PLACER — Waldo area

Owners: W. H. Miller, Grants Pass, Oregon; R. L. Miller, Gold Hill, Oregon; and W. D. Meissner, Glendale, Oregon.

Location: Along east edge of sec. 1, T. 41 S., R. 7 W., and in SW¼ sec. 6, R. 6 W., on Bolan Creek, ¼ mile below lake.

Area: Three unpatented placer claims, 60 acres.

General: Elevation 4300 to 5000 feet. Bedrock is argillite, greenstone, and slate, very rough, with many large boulders. Operation to be in old channel 50 feet deep and 100 to 150 feet wide with fewer boulders, no clay, and gray sandy material. No overburden. Some timber. Gold fine and medium coarse, about 900 fine. Prospecting said to show values of 50 cents per yard.

Equipment: No equipment at present, but clearing has been made for 1000 feet of pipe, 11- and 15-inch, to operate a No. 1 giant. A 300-foot head is available.

Informant: J. E. Morrison, 1939.

BOSWELL MINE (gold) Waldo area

Owner: Robert Boswell, 905 East "D" Street, Grants Pass, Oregon. Under option to Mr. H. K. Patterson of Toronto, Ontario, Canada. Mr. Don Kemerer, engineer.

Location: On the west side of Sucker Creek in sec. 36, T. 39 S., R. 7 W., 42 miles by road south of Grants Pass.

Area: 244 acres of patented land in the S½ of sec. 36.

History: The mine was discovered by Mr. Robert Boswell and his son in 1914 and they operated it until 1921. A pocket was found and a material amount of gold was taken out by Mr. Boswell. In 1921 the property was sold to the Boswell Mining Company which had the following officers: Mr. Norden, Pres., Mr. Barton, Sec., and Mr. Crouch in charge of the milling operations. This company mined the remaining portion of the pocket. There is no record of the total production of the mine which has come from the one pocket. The property has been idle since 1921, and in January of 1939 Mr. H. K. Patterson secured an option on the property.

Development: Mr. Boswell's work consisted of a 20-foot shaft with two drifts each running 25 feet in opposite directions from the bottom of the shaft. The Boswell Mining Company drove a 120-foot crosscut tunnel, out the vein, and drifted on the vein about 150 feet each way from the crosscut tunnel.

Geology: Andesitic country rock is much weathered and altered at the surface. Vein appears to be in resilicified shear zone.

General: Elevation is 3000 feet; sufficient water is available for mining operations in Sucker Creek which also could develop some water power; mountainous topography; considerable timber for mining operations; maximum 3 feet of snow.

Informant: J. E. Morrison, 1939
Robert Boswell.

BOWDEN PROSPECT (gold) Waldo area

"Mr. Samuel Bowden, of Grants Pass, has opened a number of claims on the North Fork of Canyon Creek and Lightning Gulch, in greenstone on shear zones, veins of quartz or dikes of dacite porphyry cutting the greenstone, and reddish cherts that are radiolarian and certainly of sedimentary origin. In all these places the greenstone is more or less impregnated with pyrite and in some of them with chalcopyrite. The shear zones and quartz veins run N. 20° E. and dip 40° S.E. The greenstone in places is practically a chlorite

schist and is then most probably full of pyrite. The reddish chert is closely related to that of the Pocket Knoll region and lies only a short distance beyond the western limit of the great serpentine belt that crosses the North Fork of Canyon Creek at the falls, half a mile above its mouth. In the same region the Telluride Gold Mining Company of Seattle has 5 claims. It is reported by Mr. Bowden that several tons of ore were shipped to Tacoma as a test and yielded good returns."

References: Diller, 14:69 (quoted); also in
Parks and Swartley, 16:41.

BROOKLYN MINE (gold) Waldo area
see also adjacent State Claim

"The Brooklyn Mine, formerly known as the Gold Pick, about 9 miles southeast of Holland, is about three quarters of a mile, as the crow flies, from the mouth of Bolan Creek, at an elevation of about 3,500 feet. The main adit is about 300 feet long, entering in a direction west of north; it opens a vein about 12 to 20 inches thick, containing 2 to 12 inches of quartz, which strikes N. 35° W. and dips 55° N.E. This adit is connected by a tramway with a mill on Bolan Creek about 600 feet lower. Near the mine Paleozoic argillitic rocks are intruded by amphibolite, diorite, and diorite aplite. The ore is white quartz, with very little pyrite; there is more pyrite in the adjoining greenstone. The ore is stoped out above the adit level, but the stopes have a short length horizontally. The ore was apparently of higher grade near the surface."

Reference: Parks and Swartley, 16:44 (quoted)

BUCKHORN MINING COMPANY (gold) Waldo area

Owner: Mr. Gregg.

Location: On Buckhorn Mountain, T. 41 S., R. 9 W. Not active.

Informant: Don Cameron, March 1, 1940.

Report by: Ray C. Treasher.

CALIFORNIA BAR MINING CORPORATION Waldo area
Known also as Akers Placer
see also Akers Mining Company

Owners: California Bar Mining Association, Roy Barnett, Salt Lake City, Utah, President; William Akers.

Location: S½ sec. 36, T. 39 S., R. 7 W., on Sucker Creek.

CAMERON MINE (placer) Waldo area
see Esterly mine

CAMP BIRD CLAIM (gold) Waldo area

"The Camp Bird Claim, owned by Herz and Tibbits, about 11 miles southeast of Holland, is near Bolan Lake at the place formerly called Gold Center, at an

elevation of about 5300 feet, as measured by barometer. The adit extends S. 70° W. fifty paces in a fine-grained auganite containing phenocrysts of labradorite and colorless augite with rare pale brown hornblende in a felsitic matrix of the same minerals with chlorite and a black mineral suggesting ilmenite. At the face of the adit a quartz stringer strikes N. 65° W. and dips about 80° S.W. At the discovery shaft a quartz vein about 6 inches wide strikes west and dips about 75° S.; this shaft is about 300 feet N. 60° W. of the portal of the main adit, and about 120 feet higher."

Not active in 20 years. (W. R. Burner, February 28, 1940)

Reference: Parks and Swartley, 16:49 (quoted)

CANNON AND CONNACHER PROSPECT (gold) Waldo area

Owner: W. J. Cannon and Peter Connacher, Holland, Oregon.

Location: S½ sec. 34, T. 39 S., R. 7 W.

Development: 126-foot adit with face 100 feet below surface; 251-foot tunnel; 26-foot incline shaft on vein; 250 feet of outcrop exposed. The vein is 1½ to 4½ feet wide.

Informant: W. J. Cannon, 1939

Report by: A. A. Lewis

CANYON CREEK CONSOLIDATED GOLD MINES (gold) Waldo area

"The property of the Canyon Creek Consolidated Gold Mines Company embraces 7 claims near the head of the North Fork of Canyon Creek,about 8 miles directly west of Kerby, at an elevation of about 2,900 feet. After a number of prospect openings, more or less promising, were made high up on the slope, a tunnel was run 500 or 600 feet below to find their downward extension. The tunnel is of good size and 300 feet long in greenstone. No important body of ore has yet been reached. A small stringer was cut, yielding $65 in gold and silver to the ton. About 90 feet of rock tunneled is more or less impregnated with pyrite and is said to assay from $2 to $4 a ton. It is proposed to continue the search for the rich ore.

"An opening on the creek nearly a mile above the mine exposes a slickensided fault plane striking N. 60° E. and dipping 60° S.E."

References: Diller, 14:68-69 (quoted)
Parks and Swartley, 16:50

COHN LEDGE Waldo area

Location: Sec. 35, T. 39 S., R. 7 W.

Not active. A shaft was put down 300 feet; the ore being mined by Chinese and packed to the mill. It is reported to be the oldest quartz mine in southern Oregon.

Informant: W. R. Burner, February 28, 1940

CHOLLARD CHROMITE (also known as Golconda) Waldo area

Owner: Guy Fetterly, Holland, Oregon.

"The main workings lie at an elevation of about 2300 feet, on the southwest bank of Sowell Creek, across from the Kerby Queen Mine, in sec. 17, T. 40 S., R. 7 W.

"The deposits lie within a wide band of dense fine-grained serpentine and dunite, the borders of which are over a fourth of a mile to the east, and west from the main workings. Occasional variations of composition (such as magnesitic bands) within the serpentine indicate that the formational dips are about 45° to the east, with a strike approximately north-south. The main orebody lies upon a gently north-sloping ridge, at its upper junction with the larger main ridge to the west. On the east there is a steep drop of about 200 feet to the bed of Sowell Creek. The chromite-bearing zone seems to vary in width from a few feet to as much as 30 feet.

"The previous somewhat extensive operations seem to have been confined to a north-south lenticular area at least 80 feet long with a maximum width of 30 feet. The open cut and glory hole workings are now 15 to 30 feet in depth. Unreliable indications are that the orebody was in the shape of a north-south elongated chute, plunging to the north or northeast.

"About 1600 cubic yards of material (rock and ore) have been removed from the two large pits. They were tapped from the north by a tunnel, driven at a 20- to 30-foot level. Another 200-foot tunnel was driven from the northeast, at a depth of at least 40 feet below the first. The pits were in part stoped out from this level.

"The narrow lenses or bands of high-grade ore run as high as 49.44 percent chromic oxide when analyzed, but apparently these compose only a small part of the ore-bearing zone, within which an average crosscut sample might run only 10 percent.

"Apparently when the mine was previously in operation, the procedure was to run the ore through a jaw crusher which operated at the mouth of the lower tunnel, and then chute the ½- to 1-inch material 200 feet down the hill to bins at the mill just above the creek, where it was ground and concentrated. The method of concentration could not be told from what evidence still remains, but a sample of the concentrates assayed 45.51 percent chromic oxide.

"The concentrates were formerly trucked down the creek bed about 1 mile and thence another mile by third-grade road to graveled county road and 6 miles on this to the paved highway near Cave Junction, 31 miles from Grants Pass. The total haul is 39 miles."

References: John E. Allen, 38:47 (quoted).
Parks and Swartley, 16:100

CONTINENTAL MINE (copper) — Waldo area
see Queen of Bronze

COPPER KING MINE (copper) — Waldo area
see Queen of Bronze

COPPER MOUNTAIN MINING COMPANY (copper) — Waldo area
see Queen of Bronze
see also Continental Mine

COWBOY MINE (copper) Waldo area

"LOCATION AND DEVELOPMENT: The Cowboy Mine is in the NE¼ sec. 11, T. 44 S., R. 8 W., 3 miles by road southeast of Takilma, at an altitude of about 2600 feet on a steep slope overlooking Page Creek. A serviceable road has been built as far as the lower tunnel, but ore from the upper and principal workings must be hauled on sleds for about an eighth of a mile over a rough course.

"The orebody is developed through tunnels and by various raises, stopes, and winzes. About 2,000 feet of tunnels have been driven 350 feet on the upper level, 200 feet on the intermediate level, 500 feet on level 2, about 100 feet at the East Cowboy, and, largely during 1930, 850 feet on the lower (No. 3) tunnel. Tunnel 3 was driven with the hope of intersecting the west orebody 200 feet below the present stopes, but at the time of the writer's visit, in August 1930, it had not reached its objective.

"HISTORY AND PRODUCTION: According to E. H. Messenger, the superintendent, a Mr. Strong discovered ore on what is now known as the East Cowboy about 1900 and excavated ore from an open pit. However, little work was done prior to 1903, when C. L. Tutt and associates of Colorado Springs, Colorado, purchased the property. The Queen of Bronze Mining Company, the present owner, acquired the mine in 1916 and, although the property has been leased at various times, has mined most of the ore produced. From 1916 to 1919 a total of 842 tons of ore was mined, and it is reported that ore was treated at the Queen of Bronze smelter between 1906 and 1910. However, most of the production is credited to the period from 1928 to 1930, when 75 cars were shipped. Mr. Messenger estimates a total production of about 100 cars, or roughly, 5,000 tons. The value of the production is estimated at $300,000.

"GEOLOGY: The orebodies at the Cowboy Mine are found near the contact of greenstone and serpentine. The prevailing greenstones in the vicinity of the orebodies are even grained and fragmental varieties of metabasalt and medium-grained metagabbro. A highly altered greenish rock with large white phenocrysts, tentatively classed as metadiorite, has recently been exposed in the lower tunnel. Numerous masses of greenstone are included in the serpentine near the contact, and many of them have been found underground. The serpentine is normally dark green and, in general, has a high luster. Near the orebodies, however, it contains much calcite and has a stony appearance resembling that of the altered greenstones.

"The ore occurs along a fault zone in serpentine as a series of slightly curved lenslike bodies separated and surrounded by dark grayish-green gougy material consisting principally of fine-grained, felted antigorite (serpentine). The fault zone, in places from 6 to 8 feet wide, extends to the north and south beyond the ore limits. The lenses of ore are composed of rounded lumps of massive sulphide minerals or serpentine lumps with sulphide stringers, but, although the ore as mined resembles blocks of serpentine, it is easily distinguished by its greater weight. In general, the ore lenses strike north and dip 45°-65° E. The angle of dip has increased with depth. The maximum length of the series of ore lenses is about 170 feet, and the thickness ranges from that of thin stringers to 7 or 8 feet. Oxidation and enrichment have occurred to a noteworthy extent only near the surface. An increase in copper content in the ore mined from the open pit was undoubtedly caused by sulphide enrichment, but the process has not added materially to the copper content below a depth of 50 feet.

"MINERALOGY: The abundant hypogene sulphides are cobaltite, chalcopyrite,

cubanite, sphalerite, and pyrrhotite. Chalcocite occurs as a supergene sulphide, and malachite, cuprite, tenorite, hematite, and limonite are the more common oxidation products. In order of abundance the gangue minerals are serpentine, calcite, quartz, and epidote. With the exception of serpentine the gangue minerals are not readily visible in hand specimens, although post-sulphide calcite is in some places evident along fracture surfaces. The microscope shows, however, that calcite constitutes a considerable part of the ore and of the wall rocks next to the ore.

"The cobaltite resembles pyrite in hardness and crystal outline but differs from it in color. Although microchemical tests reveal considerable iron in the cobaltite, the crystal form and lack of anisotropism distinguish it from glaucodot (a cobalt-iron-arsenic sulphide). Cubanite and chalcopyrite differ considerably in color and degree of anisotropism. Pyrrhotite resembles cubanite but is readily distinguished from it in polished sections by a greater relief. Sphalerite is fairly abundant and is readily distinguished by its gray color. In addition, it almost everywhere contains oriented blebs of chalcopyrite or pyrrhotite.

"The succession in the deposition of the sulphide minerals is the normal one as defined by Lindgren despite the fact that repetition occurs. There appears, however, to be a reversal in the succession of the gangue minerals. According to Lindgren the normal order of mineral deposition in deposits of this general class is silicates, quartz, carbonates, and other gangue minerals, cobaltite, pyrrhotite, sphalerite, and chalcopyrite. The order of formation as actually determined is serpentine, calcite, epidote, quartz, cobaltite, sphalerite, chalcopyrite and cubanite, pyrrhotite, sphalerite, and calcite. The succession was thrice interrupted by fracturing - once after the deposition of the gangue minerals, again after the formation of the cobaltite, and again after the deposition of the sulphides but before the deposition of the later calcite. Serpentine was formed before the deposition of the older calcite, because veinlets of this calcite clearly cut felted plates of the serpentine, thus illustrating that serpentinization had taken place, in part at least, before the deposition of the ore. Epidote appears to have formed after the older calcite, possibly in part from the reaction of hydrothermal solutions upon it. Quartz veinlets clearly cut the epidote, and veinlets of sulphides, in turn, cut all three of these gangue minerals. The sulphides have replaced calcite more readily than the other gangue minerals, and in most places this differential replacement of calcite it very noticeable. Cobaltite was the first sulphide mineral deposited. A period of fracturing followed, and then later sulphides were introduced, for the most part along the fractures. Sphalerite is the first sulphide known to have formed after the cobaltite. If other sulphides preceded the sphalerite the evidence of them in the ores studied has been completely destroyed. Chalcopyrite and cubanite formed after the sphalerite and, where associated, they occur as bladelike intergrowths. Of the two, chalcopyrite is considerably more abundant. Pyrrhotite succeeded the cubanite and chalcopyrite. It occurs as irregular masses, as veinlets in or along grains of older minerals, as lentils in chalcopyrite and cubanite, and as oriented blebs and laths in sphalerite. The blebs and laths were certainly formed by replacement along cleavage directions in the sphalerite, as they occur only where sphalerite is known to be replaced by pyrrhotite. At other places oriented blebs of chalcopyrite are numerous, but blebs and laths of pyrrhotite are missing. Lentils of pyrrhotite cut intergrowths of cubanite and chalcopyrite at various angles and in some places are parralel to the intergrowths. Some of the lentils merge into irregular-shaped masses, others terminate at grain boundaries, and still others appear isolated within grains

of cubanite and chalcopyrite. Veinlets of pyrrhotite cut chalcopyrite and are numerous along grain boundaries of sphalerite and of cubanite and chalcopyrite. Some veinlets clearly cut across twinned crystals of chalcopyrite. The more massive bodies of pyrrhotite replace cobaltite, chalcopyrite, and sphalerite, whereas the pyrrhotite in turn is replaced by a later generation of sphalerite. This sphalerite, the last of the sulphides to form, replaces both chalcopyrite and pyrrhotite, and veinlets and masses of it transverse the boundaries of these two minerals. Fracturing followed the deposition of the later sphalerite, and at some time later calcite was introduced along the fractures.

"The proportions of the different sulphides vary greatly from place to place. In general, the shipping ore is said to average about 14 percent of copper, $1 in gold to the ton, considerable zinc, and a little silver. A sample reported by C. M. Stowell, mining engineer, as taken in the Rose stope across a lens measuring 3 feet by 10 feet assayed 15.1 percent copper and 0.08 ounce of gold and 8 ounces of silver to the ton. No analyses are known to have been made of the run-of-mine ore for cobalt, nickel, zinc, arsenic, or the platinum group. A partial analysis of one of the 'boulders' containing little or no visible cobaltite, made by E. T. Erickson in the chemical laboratory of the United States Geological Survey, showed copper 18.65 percent, zinc 0.24 percent, cobalt 0.15 percent, arsenic 0.11 percent, nickel 0.11 percent, and chromium 0.04 percent. Tests were made of metals of the platinum group (osmium, ruthenium, iridium, rhodium, palladium, and platinum), but they were not found even in small amounts (less than 0.01 to 0.02 ounce to the ton).

"ORIGIN OF THE ORE: The ore bodies at the Cowboy Mine resemble the 'boulder' deposits in serpentine, described by Hershey in northern California and by Butler and Mitchell in Curry County, southwestern Oregon, but differ from some of them in mineral constitution. Some of the deposits described by Hershey and by Butler and Mitchell contain magnetite and chalcocite as the principal metallic minerals and bornite, native copper, chromite, and oxidation products in smaller amounts. Other deposits described by Butler and Mitchell contain chalcopyrite and pyrrhotite as the principal ore minerals and, as described, appear to resemble the Cowboy deposit very closely. In all the deposits described by Hershey and by Butler and Mitchell little or no quartz or calcite is reported. Butler and Mitchell apparently believe that the ore minerals in the 'boulder' deposits described by them were originally distributed throughout the igneous rocks but have been segregated in the positions now found during the changes accompanying the serpentinization of the containing rocks. For the deposits in northern California Hershey says:

"'Perhaps the molten rock came into contact with and absorbed rocks containing ordinary copper deposits, thus deriving an unusual copper constituent which was widely disseminated in certain portions of the peridotite and related basic rocks but during serpentinization became segrated with the iron minerals. However, it remains an open question as to whether the segregation was connected with the solidification of the magmas or with the subsequent serpentinization.'

"The presence of cobaltite, pyrrhotite, and chalcopyrite in a basic igneous rock and the apparent scarcity of quartz, calcite, or other gangue minerals characteristic of veins is at once suggestive of a deposit formed by magmatic segregation. The mineral association undoubtedly indicates that the ore was formed at high temperatures and at considerable depth, but the fact that the sulphides have been introduced into calcite, epidote, and quartz, which, as shown by the microscope, are abundant, points to another mode of origin--that is, to a hydrothermal deposit originating under conditions of high temperature and at considerable depth but in and along fractures. According to Schwartz

the presence of chalcopyrite and cubanite intergrowths indicates a temperature of formation above 400° C. and probably above 450° C.

"The mineral assemblage in the Cowboy ore, in the light of present knowledge, points quite definitely to a deep-seated origin. The source of the ore minerals, however, can only be surmised. Granitic rocks have been intruded into the serpentine in areas closely adjacent to Takilma and no doubt are not far beneath the surface in the Takilma vicinity, although none were found at the surface. These later granitic rocks are believed by most investigators to be the source of many ore deposits in southwestern Oregon, particularly of the gold-quartz veins. However, the occurence of copper deposits in very close association with serpentine, or in greenstone at or close to serpentine contacts, is so general that Diller felt that the serpentine had much to do in producing the ore deposits, although he points out that the serpentine itself rarely contains bodies of ore except copper.

"The shape of the original ore bodies is not easily interpreted. Tiny sulphide stringers and disseminations are found in the wall rocks next to the more massive sulphide ore, and stringers usually extend for some distance beyond the termination of the ore lenses. It is therefore believed that the original ore bodies were roughly lens-shaped but that the lens shape has been accentuated by postmineral movements. The strongest postmineral movements were probably an accompaniment of the general deformation of the region, although the processes attending serpentinization, which is essentially a hydration process producing a considerable increase in rock volume, may have contributed to the stresses causing the movements, at least locally. Movements resulting from stresses, whatever their origin, normally cause adjustments along numerous irregular fractures in serpentines, but where harder rocks are included in the serpentine the adjustments would tend to follow fractures passing around the more resistant bodies. Well-defined, slickensided fractures of this type can be observed in the Cowboy Mine next to the ore bodies and around greenstone inclusions. Attempts have been made to follow these fractures away from the ore bodies, particularly the well-defined hanging-wall fracture on the No.2 and intermediate levels, but without success, owing to the fact that the fracture tends to lose its identity a short distance from the ore.

"The principal events in the genesis of the ore at the Cowboy Mine may be outlined as follows: After the peridotite rocks had become solid and while these rocks were deeply buried, fractures or lines of weekness developed parallel to the greenstone-peridotite contact. Ore-bearing solutions, derived either from the parent magma or from a younger intrusive body, in places forced their way along the fractures, or lines of weakness, and deposited gangue and ore minerals. Calcite appears to have been introduced first, followed by epidote, which may have developed partly by the reaction of the hot solutions with the introduced calcits. Quartz was next introduced. After the deposition of the quartz, stresses within the rocks caused fracturing, and the fractures controlled in a large measure the deposition of the sulphides that followed. Cobaltite was the first sulphide introduced. It was fractured, and the later sulphides were introduced along the fractures. Sphalerite was the first sulphide to form after the cobaltite. It was followed without interruption by chalcopyrite, cubanite, pyrrhotite, and sphalerite. The cubanite was probably deposited as a solid solution in chalcopyrite but separated out during cooling as bladelike intergrowths when the proper temperature was reached. The occurrence, late in the series, of pyrrhotite followed by sphalerite indicates a recurrence of higher temperature before the succession was completed. Fracturing followed the deposition of the sulphides, and the younger calcite

was introduced along the fractures. Eventually the deposits were exposed by erosion, which recently has kept pace fairly well with oxidation and enrichment, as there is very little evidence of either below a depth of 50 feet.

"ECONOMIC CONSIDERATIONS: At the Cowboy Mine, as at the Queen of Bronze, very little reserve ore is blocked out, owing in large measure to the nature of the deposit. Development and mining of necessity proceed simultaneously because of the irregular outline of the ore bodies. In other words, it is necessary to mine the ore in order to delineate its outline. The present ore shoot has been followed downward on its dip for about 170 feet. Within this distance six major lenses were found, and it seems likely that with further prospecting downward others will be discovered. The ore body on level 2 is shorter horizontally than on the levels above, but there is no reason to suspect that the ore will end abruptly at this point. The feasibility of further prospecting down the dip, however, will depend largely upon the demand for copper. Thus far, prospecting has not revealed a series of lenses in horizontal alinement on level 2, despite the fact that the prospecting has been done along the fault in which the ore occurs. However, if the genesis of the deposit is correctly interpreted, there is no reason to believe that other ore lenses do not exist at the Cowboy Mine in the unexplored ground in the immediate vicinity of the proved ore. Recent work on the East Cowboy has disclosed oxidized copper ore of good grade, and this deposit appears worthy of further prospecting when the copper market justifies the expenditure.

"The mineralization at the Cowboy Mine is of the deep-zone type, and as oxidation and enrichment have occurred only near the surface, the ore cannot be expected to differ greatly from that on level 2 for another several hundred feet, providing it should continue downward for that depth. Furthermore, the mineralogy and metal content of undiscovered ore bodies in the immediate vicinity, if they exist, should not differ greatly from those of the bodies already known."

The property has been worked in a small way, shipping "high grade" to the Tacoma smelter in more recent years. It is now affiliated with Queen of Bronze group. (W. R. Burner, February 28, 1940.)

References: Shenon, 33b:170 (quoted)
Parks and Swartley, 16:83.

DAISY MINING COMPANY (gold-copper) Waldo area

History: Parks and Swartley reported as follows:

"The property of the Daisy Mining Company is located ½ mile southwest of Takilma. It has 2 adits in the NE¼ sec. 34, T. 40 S., R. 8 W. A large fault crosses the lower adit, striking N. 10° W., and dipping 75° to the west. The upper adit is about 45 feet above the lower. The ore observed here is chiefly pyrite with pyrolusite, hematite, and serpentine, and traces of bornite and malachite. It is said to carry gold and chalcopyrite in valuable amounts."

Reference: Parks and Swartley, 16:84-85 (quoted).

DEEP GRAVEL MINE (placer) Waldo area

Owner: Deep Gravel Mining Company, Medford, Oregon. A. E. Reames, Medford, Oregon, is Secretary-Treasurer.

Location: secs. 16, 17, 20, 21, [illegible], T. 40 S., R. 8 W., along Butcher Gulch.

Area: 740 acres held by patent; 180 acres held by location; total 920 acres.

History: Shenon reported on the property in 1933 as follows:

"The Deep Gravel mine is in Butcher Gulch, in secs. 16, 17, 20, 21, T. 40 S., R. 8 W. Four deep pits covering a total area of approximately 50 acres and shallow pits covering well over 15 acres constitute the principal workings. The deep pits are designated, from north to south, Joe Smith Gulch, Wadleigh No. 2, Weimer, Wadleigh No. 1, and Johnson pits. The mine was first worked about 1874 by George and Walter Simmons. W. J. Weimer and sons purchased the property in 1878. In 1900 the ownership passed to the Deep Gravel Mining Co., in which Mr. Weimer retained an interest. In 1911 the Waldo Consolidated Mining Co. obtained an option on the property, but when the payments were not completed the ownership reverted to the Deep Gravel Mining Co. A. E. Reames, of Medford, Oregon, at present owns two-thirds of the stock and acts as the representative of the company. Mr. Weimer stated that until 1900 about $130,000 had been expended on the property, and it had produced $250,000. Since 1907 the mine has produced about $26,316 in gold. The Deep Gravel Mining Co. owns 350 acres of patented placer land, 410 acres of land held by mineral location, and a water right to take 2,000 inches of water from the East Fork of the Illinois River at a point a short distance west of Takilma.

"Most of the production of the Deep Gravel mine has come from the Llano de Oro formation, but recently Charles Johnson, of Takilma, excavated a small cut in Tertiary conglomerate in the S½ sec 21. The Tertiary formation is here almost identical in appearance with the exposures at the Cameron mine, in Scotch Gulch. The lower beds are purplish conglomerate and sandstone; the upper beds are tan conglomerate composed of poorly sorted, coarse boulders which are fairly well indurated with sandy material. Like those at the Cameron mine, the boulders of the Tertiary conglomerate in the Johnson cut are for the most part highly decomposed. On the west they are in fault contact with Cretaceous sandstone.

"At the Deep Gravel Mine, as elsewhere, the Llano de Oro formation is composed of gravel, sand, and clay and except in the lower 10 feet contains but few boulders over 6 inches in diameter. Stratification is well shown in some places. The thickness of the formation ranges from less than 1 foot near the edges to over 80 feet. Joe Johnson, of Takilma, assisted in the sinking of two prospect pits south of Mr. Potter's house. According to Mr. Johnson, the shafts passed through sand and clay containing lenses of fine gravel and at about 70 feet entered sandstone bedrock. A 2-foot layer of gravel on bedrock prospected very well, but above this layer the gold was sparsely distributed. So far as known, the bedrock in the various pits is either Cretaceous sandstone or Tertiary conglomerate. According to Kay the bedrock in Joe Smith Gulch was 30 feet below the stream bed of the West Fork of the Illinois River, and hence hydraulic elevators were necessary to lift the gravel after the coarse gold had been removed on the riffles of a short sluice. After being elevated, the gravel was washed through another sluice 400 feet long in which the finer gold was collected. According to Kay the average value of the pay gravel over a period of five years was about 25 cents to the cubic yard."

Equipment: Hydraulic equipment, including elevator.

Mining Facilities: The water right calls for 2800 miner's inches, or 70 second-feet, through the Hunt or Wimer ditch, and an additional 500 miner's inches through the Quinn or Darkis right. There is very little snow and a rainfall of about 30 inches.

The water season for hydraulic mining is from December to the early days of July. There is sufficient timber for mining purposes. The gravel is too deep to be worked by hydraulic-elevator method at present. The acreage includes the width of the valley, and the surface is practically level, except as to the slopes on the rims of the property.

Development: About 40 to 50 acres have been excavated to bedrock. The property is cut its entire length by an artificially constructed race, from the serpentine at the upper end of the property to the dump in the West Fork of the Illinois River. This race has an average depth of 50 feet. The elevator was used to lift into this outlet race. The property has had expended upon it considerably more than $100,000 in the piping out and construction of this race, and in the construction of the Hunt or Wimer ditch. It has produced what would be, at the present gold price, upwards of $500,000. It is estimated to have about 20,000,000 cubic yards of gravel untouched, and to average better than 20 cents per cubic yard. The principal recoveries are in gold which at the old price brought $19.30 and $19.50 an ounce. The gold is about the size and shape of bran flakes. There is also considerable platinum recoverable.

Geology: The geology of the property and the Waldo-Takilma area in general is discussed by Shenon (33b). The bedrock at the extreme upper or higher end is serpentine. There are places where the bedrock is Cretaceous sandstone (Horsetown ?). For the most part the bedrock is soft, rotten, Tertiary gravel, soft enough that the boulders may be out with a knife. There are no boulders of large size except upon the bedrock, and most of these are not over one foot in diameter.

The conglomerate bedrock is Tertiary age and is tentatively correlated with the Miocene gold-bearing gravels of the Trinity River area in California instead of Cretaceous in age, according to Shenon. This conglomerate is locally known as the "Cretaceous conglomerate." It has suffered some faulting.

Frye Gulch has been one of the rich early day streams flowing through sec. 20, and it is thought that it was diverted through and into the Deep Gravel.

References: Shenon, 33:188 (quoted)
Parks and Swartley, 16:85
Diller, 14:119-120

Informant: A. E. Reames, May 6, 1940.

Report by: Ray C. Treasher.

DEEP GRAVEL MINING COMPANY Waldo area

see Deep Gravel Mine

DICK AND DICK CLAIMS (chromite) Waldo area

Owners: Located on May 15, 1940, by R. P. Thompson and Richard Naue, O'Brien, Oregon.

Location: Sec. 28, T. 40 S., R. 9 W. Elevation 3000 feet. The claims lie along the crest of the divide between Rough and Ready Creek and the West Fork of the Illinois River. The property is about 47 miles from Grants Pass, 38 miles of which is by way of the Redwood Highway. Leaving the Redwood Highway at O'Brien, the Old Stage Road is followed for some 7 miles to the beginning of the trail near the Forest Service section line board on the west line of sec. 26, elevation 1500 feet. Distance by trail is 1½ miles; the first mile gains 1500 feet in elevation; the last half mile between 200 and 400 feet. It would not be difficult to construct a skid road from the property to either the West Fork or Rough and Ready Creek.

Area: Four standard size lode claims.

History: Three lenses were mined here during the first World War by a Mr. Reynolds; since that time the property has been idle.

Development: There are four open cuts from which small lenses of chromite were mined. The lower cut trends N. 15° E. and is about 30 feet by 5 feet by 3 feet. Elevation is 3000 feet. At elevation of about 3300 feet another pit with a volume of 15 feet by 5 feet by 2 feet trends N. 25° E. At 3400 feet elevation a third pit trends N. 25° E. and has about the same size as the second pit. To the southwest, another pit trends N. 45° E.; only a portion of the lens has been mined here.

Geology: The country rock is peridotite with associated ultra-basic rocks. They are cut by lenses of serpentine; two dikes of a dark fine-grained igneous rock similar to andesite were noted. The country rock frequently shows narrow bands of serpentine developed along joint and fracture planes. These ultra-basics weather to a light tan color and weathered surfaces are studded with resistant crystals; some of these resistant crystals are chromite.

The chromite lenses appear to be associated with serpentine, and in the three pits from which ore was mined the serpentine is slickensided so that the lenses seemed to have been surrounded by an envelope of serpentine. A peculiar mahogany-red soil is associated with some of the chromite lenses.

Some of the ultra-basics have a banded appearance, and some of these bands are narrow stringers of chromite.

Chromite float ranging from pieces the size of a pea to the size of one's fist covers certain areas. This float may have originated from chromite lenses part of which are still in place, or it may represent the eroded remnants of a chromite lens or narrow chromite stringers.

General: There is a small amount of water that might serve for domestic use, but it would be insufficient for milling purposes. Sufficient timber consisting of cedar and fir is available for mining purposes. Under present conditions the property could be worked about eight months of the year.

Area is mountainous. The crest of the long ridge between Rough and Ready Creek and the west fork is rather flat, and the ridge slopes to the NE at a rate of about 300 feet per mile. Below about a thousand feet above the stream levels the slopes become steeper in the order of a thousand feet to the mile. Soil overburden is thin and rock outcrops are frequent.

Report by: Ray C. Treasher, 5/20/40.

DUCOMMUN PROPERTY — Waldo area

see Elephant property

ELECTRIC CAMP — Waldo area

see Canyon Creek Consolidated Gold Mines

ELEPHANT OR (DUCOMMUN) PROPERTY (copper) — Waldo area

"The Elephant or Ducommun property is located in the SE¼ of sec. 18, T. 40 S., R. 7 W., 3 miles northeast of Takilma. A 440-foot adit on this property shows some copper ore. The minerals found in the ore are marcasite, pyrite, chalcopyrite, chalcanthite and gypsum."

Reference: Parks & Swartley, 1:90 (quoted).

ENTERPRISE PLACER Waldo area

Owners: M. H. and H. L. Akerill

Location: 15 miles from Holland via Bolan Lake road on Indian Creek.

Area: 620 acres.

History: The original claim was purchased from George Colvin. There are several short tunnels. Other claims were located to include additional ground and to make certain of a clear water right.

Equipment: Two giants, 1700 feet of pipe line, 100 feet of 4-foot sluices, a mile of highline ditch and automatic reservoir or "self shooter," skyline derrick, saw mill, lumber cabin, and miscellaneous small tools.

Informant: Grants Pass Courier, January 27, 1937.

ESTERLY MINE (placer) Waldo area

also known as Llano de Oro
Cameron Placer
Logan Placer
Simmons Placer
Logan, Simmons, and Cameron

"A crew of 10 men is employed at the Esterly mines at O'Brien, Oregon, which are being operated under lease from G. W. Hales. Production was made from November to July and preparations are now being made for operations during the winter season. Ditches and flumes have been prepared and the pipe line laid. Open pit methods of mining are employed and the gold, platinum, and silver values are recovered by riffles and jigs. About 250 yards of material are handled daily. C. R. Stout of O'Brien is general manager." (The Mining Journal, October 15, 1938.)

Shenon (33b) reports:

"The Llano de Oro mine, formerly the Logan, Simmons, and Cameron mine, has for many years been the most productive gold-platinum placer in Oregon. The property includes over 3,000 acres of land in secs. 8, 9, 10, 15, 16, 21, 22, and 27, T. 40 S., R. 8 W., although practically all of the mining has been confined to the S½ sec. 15, the S½ sec. 22, and the N½ sec. 27. The property is operated by George M. Esterly, of Waldo.

"The first important work on the Llano de Oro property was done south of the highway near the center of sec. 27 by early-day miners. C. H. White, who was acquainted with one of the miners, states that they mined gold worth $80,000 from this place. Later George Simmons, Frank Ennis, and Theodric Cameron took $110,000 out of Carroll Slough. J. T. Logan mined the gravel on French Flat from 1907 to 1917, when the property was sold to G. M. Esterly. Mr. Esterly has worked the property almost continuously, during the mining seasons, up to the present time. He estimates the production in gold and platinum since 1917 at about $225,000 and the total production of the entire property at about $500,000.

"Since 1907 most of the work at the Llano de Oro mine has been confined to the vicinity of French Flat. Four pits have been excavated, covering in all an area of over 30 acres. The depths of the pits vary considerably from place to place. For example, the depth to bedrock in pit 3 is about 8 feet on the

west side and about 18 feet on the east side, whereas the average depth of the Logan or no. 1 pit is more than 30 feet, and at one place in it the tailings were elevated 50 feet. The company owns three ditches known as the upper, middle, and lower, together with three water rights to 500, 518, and 1,100 miner's inches from the East Fork of the Illinois River. The total length of the ditches is over 15 miles. During the mining season, which averages about 7 months yearly, sufficient water is available to operate 2 giants in the pits, 2 hydraulic elevators, and 1 giant for stacking tailings. When the plant is operating steadily, from 15,000 to 30,000 cubic yards of gravel, depending largely upon the seasonal water supply, is washed each month.

"Both the Tertiary conglomerate and the Quaternary Llano de Oro formation have been worked at the Llano de Oro mine, but the latter has been by far the most productive. In only one place on Llano de Oro ground, in the SW¼ sec. 15, has the Tertiary formation been washed for its gold content. At this place the formation is well exposed in several cuts, where it can be seen resting upon serpentine in fault contact. The fault, which in part defines the eastern boundary of the Tertiary formation, strikes north and dips 65° W., whereas the normal contact dips 20° W.

"The Llano de Oro formation consists of gravel, sand, and clay, is in general poorly sorted, and ranges in thickness from less than 1 foot near the edges to nearly 50 feet, but within the prospected areas on French Flat averages about 18 feet. Few boulders with diameters exceeding 6 inches are present. The bedrock varies at different localities. At several places it is Tertiary conglomerate; at other places serpentine or Horsetown (?) sandstone. The gold and platinum are concentrated near bedrock, although prospect holes show that some gold is distributed throughout most of the formation.

"Most of the gold is angular and is associated with platinum chromite, magnetite, ilmenite, hematite, limonite, epidote, zircon, and other heavy minerals. Chromite was abundant enough in some of the areas of serpentine bedrock to be troublesome in the sluice boxes. The platinum occurs as flattened scales with rounded corners, which range in size from tiny grains to pieces over 2 millimeters in cross-section. Picked grains of platinum from the concentrate were analyzed by E. T. Erickson of the chemical laboratory of the United States Geological Survey, who reports that 'the sample consists largely of platinum and ruthenium with smaller proportions of iridium and osmium. A small quantity of gold and slight quantities of palladium and rhodium were also detected.' According to Mr. Esterly, platinum accounted for one-tenth of the value of the clean-ups when it was worth $110 an ounce. In other words, the ratio of platinum to gold in the mined areas on French Flat is about 1 to 50.

"In 1921 L. A. Levensaler, mining engineer in charge of prospecting for Mr. Esterly, estimated that the unmined gravel on French Flat within the prospected areas would average about 18 cents to the cubic yard. According to Mr. Levensaler, the value of the ground worked by J. T. Logan in the upper (No. 1) pit averaged 22½ cents a cubic yard, and that worked by Mr. Esterly at the other places in the same pit averaged 33½ cents a cubic yard. Kay states that the gold content of the gravel mined in Carroll Slough was about 12½ cents a cubic yard."

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"The pit here called the Cameron Mine is near the head of Scotch Gulch, in the SW¼ sec. 34, T. 40 S., R. 8 W. It is owned by F. H. Osgood of Seattle, Washington, but has been worked principally by lessees, chiefly J. T. Logan, C. D. Cameron, C. E. White, E. N. Bayse, and C. P. Johnson. A pit roughly 400 by 500 feet has been excavated by hydraulic giants. Water for the operation

of the giants is supplied by the Osgood Ditch, which takes water from the East Fork of the Illinois River south of the Oregon-California boundary. The tailings are removed by natural run-off. Most of the mining was done during the period 1926-27 although some gold was produced prior to 1909. The total production is estimated at about $9,000-$10,000 before 1909 and $7,500 during the period 1924-1927.

"The gold occurs in Tertiary conglomerate. As elsewhere, the lower beds are sandy and dark purple, and the upper exposed beds are light tan and consist principally of large, well-indurated boulders. Bedrock is not exposed beneath the conglomerate at the Cameron Mine, but at the south side of the pit greenstones of the bedrock series are in fault contact with it. The fault that has dropped the conglomerate into contact with the greenstone strikes east and dips about 65° N., whereas the bedding in the conglomerate strikes N. 10° E. and dips 14° W. Boulders of greenstone, argillite, a talcy-appearing rock that is probably decomposed serpentine, and granitic rocks are most abundant in the conglomerate. The boulders are all well rounded and, for the most part, are highly decomposed. Even the granitic rocks readily fall to pieces when broken from their matrix. The matrix is principally sandstone, but the deposit is sufficiently indurated to make hydraulic mining difficult.

"The gold is flat and flaky, and because much of it is covered with a black coating, amalgamation is difficult. According to C. H. White, the gold is distributed throughout the Tertiary beds but appears to be more abundant in areas of intense alteration. Mr. White estimates that the Tertiary formation in the Cameron Mine contains on an average from 2½ to 3 cents in gold to the cubic yard."

Reference: Shenon, 338:pp. 165-166, pp. 164-5 (quoted).

ESTERLY CHROMITE MINE — Waldo area

"Located near the center of the N½ of section 22, T. 40 S., R. 8 W., Josephine County. Elevation 1600 feet.

"The main workings lie on a gentle south slope at the north edge of the Esterly swamp (French Flat).

"The country rock is composed of irregularly north-south trending ledges of more massive and resistant peridotite porphyry alternating near the deposit with at least two zones of more highly serpentinized and sheared rock. This terrane slopes gently southward under the overlapping gravels of the Esterly placer mine. The workings lie in a serpentine-talc-magnesite zone from 6 to 10 feet wide within one of these serpentinized areas. Numerous kidney shaped bodies of white magnesite averaging perhaps 2 feet in diameter are exposed in both walls of the main cut.

"The ore-bearing zone may be traced N. 20° E. up the hill for 1000 feet by means of these lenses of magnesite and the higher degree of serpentinization of the country rock.

"The main workings are 100 feet long, striking N. 20° to 30° E. Two ore bodies appear to have been mined, the southern (smaller) having been bounded on the east by a well defined vertical fault trending N. 30° E. At the present time the pits are filled with water, but they appear to be of considerable depth. It is said that the ore was mined down to 40 feet in depth, and not bottomed. Very little ore can be seen in place.

"A shallow cut in green sheared serpentine 100 feet north up the hill shows no ore.

"Three hundred and fifty feet north of the main workings a 30-foot north-south cut shows some magnesite lenses but no ore in place. Several shallow prospecting ditches apparently failed to pick up any ore here.

"Eight hundred and twenty-five feet north of the main workings (175 feet from the top of the ridge) about half a ton of ore has been mined from narrow lenses, only a small one-inch stringer now appearing in place.

"If the ore-bearing zone has an eastward dip, all these workings would lie accurately upon a N. 20° E. strike.

"The ore varies from the predominantly spotted and nodular medium grade variety to a small amount of dense massive high grade with a metallic lustre on fresh surfaces.

"The property is ½ mile west of the market road (old highway) at a point 6 miles south of Cave Junction, which is 33 miles from Grants Pass, south on the Redwood Highway."

Reference: John E. Allen, 38:47 (quoted)

FIDELITY GROUP Waldo area

see Roseburg and Fidelity Group

FOUR LEAF CLOVER PLACER Waldo area

Owners: Clark Dix, Cave Junction, Oregon, and Austin Jack, Grants Pass, Oregon.

Location: In the W½ of sec. 19, T. 40 S., R. 6 W., on Sucker Creek at the mouth of Cedar gulch, 5½ miles above Grayback (about 3 miles of trail). Elevation 2,000 feet.

Area: Two 20-acre unpatented placer claims, purchased from Bonny Roman and Ed Stulzman, located in 1932. Claims have been worked fairly steadily since that time.

Development: 150 feet of bedrock tunnel driven in a southerly direction in the old channel. Some work has been done along the creek in reworked old gravel.

General: Placer ground is up to 300 feet in width. Many very large boulders occur with best values found around them. Largest piece of gold found was about 17 pennyweight, 860 fine. In some places the values run as high as $2.50 per foot of tunnel. Old workings with much old timbering are encountered.

Equipment: 400 feet of 8-inch pipe, hydraulic giant, and fire hose. Cabin, home-made donkey engine. Timber is abundant.

Informant: J. E. Morrison, 1939.

FOUR STAR PLACER Waldo area

Owner: R. E. Golding, 21150 Malibu Road, Pacific Palisade, California.

Location: Sec. 13, T. 40 S., R. 7 W.

General: This ground is reported to be used as a summer residence. Other than work by "snipers" the property is inactive.

Informant: G. W. Thrasher, January 1940.

FREE AND EASY MINE (gold) Waldo area

Location: Sec. 7, T. 39 S., R. 8 W.

History: "'The Siskiyou Sunset Mining and Developing Company has a deserted mine, generally known as the Free and Easy, in the large serpentine area 2½ miles west of Kerby. Several tunnels and other openings were made in the serpentine on the south slope of the ridge, but they are now caved in. In the valley, a few hundred feet below the mine, there is a small Huntington mill long unused.' This company was dissolved January 7, 1911."

The mine produced flaky "greasy" gold.

Reference: Diller, 14:71 (quoted)
Parks & Swartley, 16:96

Informant: G. W. Thrasher, Holland, Oregon, January, 1940.

Report by: Ray C. Treasher, 1940.

FRY GULCH MINE (placer) Waldo area

Owner: Leased to C. R. Stout, O'Brien, Oregon.

Location: One mile east of O'Brien, Oregon in secs. 20, 28 and 29, T. 40 S., R. 8 W. Elevation approximately 1400 feet.

Area: 479 acres of patented land.

Geology: The present operations are in sec. 28 where the gravel will average about six feet, but to the west nearer the river, the gravel is expected to be much deeper. There are no large boulders and very little clay. Bedrock is argillite.

Equipment: The property is operated with one giant and a hydraulic elevator. Water comes from the Illinois River and is delivered to the property through the middle ditch.

"Fry Gulch is in secs. 28 and 33, T. 40 S., R. 8 W. Much of the gravel in it was worked in the early days, but some unworked ground remains. Two northward-trending branches of Fry Gulch join near the quarter corner between secs. 28 and 33. Both branches, as well as the main gulch for about 1,500 feet below the junction, have been mined. The east branch heads at the High Gravel mine, and the gold in it was clearly derived from the Tertiary conglomerate. The west branch heads near a flat summit close to the quarter corner of secs. 32 and 33. The boulders in it are similar to those in the east branch, but the source of the gold is not known, although it probably came from a patch of the Tertiary conglomerate, now completely eroded. Like Sailor Gulch and other small gulches receiving the wash from the Tertiary conglomerate, Fry Gulch was undoubtedly a rich placer, but, because much of the mining was done in the early days, no records of production are available.

"In 1930 A. L. Bailey was working in a small cut near the mouth of the west branch. The gravel in the cut is composed of dark-red sand with pebbles of greenstone, serpentine, granitic rocks, sandstone, hematite, and chromite. The material is principally sand, and only a few of the boulders exceed 6 inches in diameter. Patches of unworked material of this sort extend up the west branch for about 2,500 feet. The bedrock in Bailey's cut is Cretaceous sandstone, but in the east branch and farther up the west branch the gravel rests upon serpentine. According to J. L. Eggers, the production from about 1,650 cubic yards of gravel in Bailey's upper cut was $1,000 or about 60 cents a cubic yard."

Informant: J. E. Morrison, 38

Reference: Shenon, 33b:189. (quoted)

FROG POND MINE (gold-silver) Waldo area
(Morning Star Group)

Owners: C. H. and M. D. Elliott, Takilma, Oregon. Under lease to E.L. McNaughton, Route 1, Box 800, Grants Pass, Oregon.

Location: Secs. 10, 15, T. 41 S., R. 7 W., on Johnson gulch, a tributary to Althouse Creek.

Area: 17 unpatented lode claims.

Development: The workings consist of a crosscut tunnel 127 feet long; No. 1 shaft, 17 feet deep with a 26-foot drift at the bottom; and No. 2 shaft 10 feet deep lying at the bottom of a large open cut. A 30-foot drift was run from the bottom of No. 2 shaft, and two other tunnels each about 25 feet long were run from the open out. Two other shafts are caved. Numerous open cuts and old placer workings expose a total of three well-defined ledges, namely, the West Ridge (trends N. 10° W., dips 60° E.), the Shale (trends N. 60° E., dips 60° S.E.), and the Blue (trends N. 60° W., dips 42° N.E.); there are nine other outcrops which show some values.

Geology: The following has been abstracted from a report by Mr. E. L. McNaughton:

The rocks of the property correspond in general to those of the whole area and include argillites, quartzites, and limestones, together with some amphibole and chlorite schists. Igneous rocks exposed include granodiorite, andesite, greenstone, and serpentine. As a whole, rock formations strike east of north and dip about 45° easterly.

The sediments have undergone considerable fracturing and faulting much of which is post-mineral; considerable talc is found between bedding plains.

The ore deposits occur as replacement bodies in the various rocks. Quartz, calcite, and sulphides are the principal replacement minerals. Sulphides occur both disseminated through the rock and as veinlets in cleavages and fractures. The principal sulphide is pyrite. Quartz is usually dark colored, but white quartz also occurs in small veins usually parallel to the foliation. Calcite is found in small veinlets in fractures. Gold occurs both free and associated with sulphides. Tourmaline has been observed.

Mineralization occurred in two periods. During the first period, quartz and pyrite were deposited. Then, after fracturing, there was a second period of quartz deposition accompanied by pyrite, pyrrhotite, and small amounts of copper, arsenic, antimony, and mercury minerals. These depositions occurred in an overlapping series, probably in the order as given.

The mineralized zone is shown by assays of samples obtained in the main crosscut to be at least 104 feet wide. Insufficient work has been done to delimit the ore zone definitely.

Miscellaneous: There is sufficient timber for all mining purposes. Water from Johnson gulch, Silver gulch, and Frog pond is ample. Depth of snow in winter is from 5 to 10 feet. The Bolan Lake forest road traverses the south boundary of the property.

Equipment: Cookhouse, bunkhouse, blacksmith shop, compressor room, mill building. The mill consists of a Universal crusher, 6-foot Huntington ball mill, Monarch table, plates, and engines.

Values are reported to range from $4 to $22 in gold and silver in the main crosscut, with an average of over $10.

Informant: Report by E. B. MacNaughton, Dec. 20, 1938.

The Frog Pond mine is now known as the Morning Star Group of which the Frog Pond is in Oregon and the remainder in California. The group is owned by James V. C. McCauley, 308 Wells Fargo Bldg., San Francisco, California. Assessment work only has been done, and the property is now in controversy.

Informant: W. R. Burner, 2/28/40.

GATES CLAIMS — Waldo area

see Tomlinson, Gates, & Thomas Claims.

GEM QUARTZ MINE (gold) — Waldo area

Owners: John and Charles Clark, Holland, Oregon.

Location: On Sucker Creek in the S½ sec. 36, T. 39 S., R. 7 W., about one-half mile south of the Oregon Caves Highway on a new road which crosses Sucker Creek just above Graybuck Creek. The property is about 40 miles south of Grants Pass, or 70 miles from Crescent City.

Area: 64 acres, patented.

History: The property was originally school land and came into the possession of a Mr. Southerland who deeded the land to his hospital nurse. The Clark brothers bought the land from the nurse in 1932.

Southerland made a living from the property for years by gouging out quartz and sledding it down the mountain to an arrastra. Southerland and some nephews drove the existing drifts. The property was idle for about 30 years until about 1930 when the Clark brothers reopened the tunnels and made some additional surface cuts. They built a "mill" out of an old Ford car, a large truck wheel (with which they made a ball mill), and two amalgamation plates.

Development: There two adits. The lower is about 150 feet long; the upper about 200 feet long. In addition there are a number of surface cuts and small pits.

Geology: The dominant country rock is andesite, weathered and altered at the surface. At one point underground a fine-grained diorite was noted; however, veins are mainly enclosed in basic igneous type rocks. Residual red clay soil covers the surface. Veins are of the order of 6 inches to 24 inches thick and are composed of rusty quartz with pyrite and chalcopyrite mineralization. Usually walls are not distinct, but in a few places definite vein walls with fault gouge appear. The "veins" which do not have distinct walls may represent resilicification of shear zones in the greenstone. On the whole the shear zones show no great continuity; an average length of the quartz lenses would be 50 feet to 100 feet, with "pinches" at both ends. Clark brothers report that the best values are in the "swells"; that the "pinches" carry no values. The veins dip steeply, 70 to 80 degrees. Values are of the order of about $15 to the ton. Due to indistinct and "slabby" walls, hand picking would be very difficult in the upper zone. The quartz crumbles and breaks fine, mingling with the gangue.

Probably about 2000 tons of ore is indicated in (above and below) the two main drifts.

General: There is little in the way of equipment. Clark brothers have a good cabin on the road near the creek.

Value of production by Southerland is not known; it probably amounted to a few hundred dollars a year for many years. Clark brothers have produced less than $2000.

Climate favors all year mine operations. Power can be generated at Sucker Creek. Area is heavily timbered with virgin fir. Elevation of tunnels is about 3000 feet. Relief is about 1500 feet within the limits of the property. Mining may be entirely from adits.

The property adjoins the Boswell on the north. A few years ago a pocket valued at about $75,000 was taken out on the Boswell within a few hundred feet of the Clark property line.

Specimens showing free gold may be found on the Clark property.

Informant: Earl K, Nixon, 36.

Reference: Parks & Swartley, 16:142.

GOLCONDA MINE (chromite) Waldo area

see Collard Chromite Mine

GOLD & PLATINUM CO. (placer) Waldo area

"Office: Grants Pass, Oregon. I. F. Peck, Pres.; Sec.-Treas. vacant. Capital stock, $1,000,000; par value $1.00; $500,000 subscribed, issued and paid up. (1916 report).

"This company was formed in January, 1916, and has 1280 acres of placer associations claims on Cave Creek, in Josephine County. The development work consists of a dam 60 feet long by 9 feet high, about 350-foot flume, 400-foot tail race, sluice boxes, and camp equipment."

Reference: Parks & Swartley, 16:101 (quoted).

GOLD PICK MINE (gold) Waldo area

see Brooklyn Mine; State Claim

GYPSY QUEEN MINE Waldo area

Owner: Lloyd Lewis

Location: T. 40 S., R. 7 W.

Informant: J. R. Burner, 2/26/40.

HAPPY DAY GROUP (gold) Waldo area

also known as Blanket Ledge Mine

Owner and Operator: Harry Welch, Cave Junction, Oregon.

Location: Near Bolan Lake in sec. 13, T. 41 S., R. 7 W., on divide between Althouse and Indian creeks, at an elevation of about 4000 ft. The group is 65 miles from Grants Pass, and 25 miles from the highway. A good forest road, passable from June to November, runs through the ground.

Area: Four claims lying 2400 feet east-west, and 1500 feet north-south. Recorded in vol. 37, pp. 120-123, mining records, Grants Pass, Oregon.

History: Several attempts have been made to operate this property and at one time construction of a mill was started. W. D. Bowser in 1939 is said to have milled 20 tons, plating 3.35 ounces gold, with 200 pounds of concentrate running $51 and tailings running $3.85 per ton.

Development: There are several cuts and three tunnels, one of which trends westerly for 125 feet and another 300 feet below trends northwesterly for 500 feet.

Geology: There is an extensive "blanket" or vein of quartz about a foot thick that lies at an average of 9 feet below the surface. The "blanket" dips gently to the west. According to one report, assay values reported from the "blanket" average about $35 in gold, and the overburden is said to average about $5. It is reported that there are 12,000,000 tons of milling ore that can be handled by power-shovel methods.

General: Water can be brought to either of two mill sites by gravity. Topography is mountainous, but the claims are generally flat-lying.

Informant: Harry Welch.

Report by: Ray C. Treasher.

Date: February 19, 1940.

HIGH GRAVEL MINE (placer) Waldo area
also known as Osgood Mine

"The High Gravel (Osgood) mine is at the head of Allen Gulch, in secs. 33 and 34, T. 40 S., R. 8 W., near the drainage divide between the East and West forks of the Illinois River, and is owned by F.H.Osgood, of Seattle, Washington. The mine includes several pits covering an area of approximately 150,000 square yards. Water for mining is taken from the East Fork some distance south of the Oregon boundary and is brought to the cuts through the Osgood ditch. The tailings are removed by natural run-off. The mine has been worked at different times by W. J. Logan, C. D. Cameron, an English syndicate, and others. Logan and Cameron leased the property during the period 1912-1917 and in the first 3 years took out $13,700 and in the last 2 years $2,000. Mr. Cameron estimated the total production of all the cuts of the High Gravel mine, excluding the old workings along the bottoms of Allen and Scotch gulches, at about $90,000.

"The gold at the High Gravel mine is found in the Tertiary conglomerate, which is well exposed in several different banks and is composed mostly of poorly sorted boulders in a sandy matrix. Bedding is not plainly visible except in the lower part of the formation. The lower beds are sandy and have a purplish tint; the upper part of the formation exposed in the cuts is tan-colored and composed principally of large, poorly sorted boulders and sandy material. Distinct joints and veinlets occur throughout the formation. The conglomerate rests upon greenstone bedrock in several places. In the most westerly cut the contact strikes about N. 10° E. and dips about 20° E. At the High Gravel mine, as elsewhere, the conglomerate is composed of highly altered yet firmly cemented boulders of various types. Because of the induration, attempts have been made to loosen the banks with explosives before hydraulicking, but according to reports this proved too costly for economical mining. The bedrock has a purplish tint and is highly decomposed wherever it is exposed beneath the conglomerate. It is cut by numerous fractures and small veins.

"According to Mr. Cameron, the gold is distributed throughout the Tertiary conglomerate but is more abundant near the surface, where the formation is exposed to weathering. Much of it is coated with black material which makes amalgamation difficult. Mr. Cameron estimates the average gold content in the

Osgood pits at about 3 cents a cubic yard."

Reference: Shenon, 33b:183 (quoted)
Parks and Swartley, 16:120
Diller and Kay, 09:72, also in
Diller 14:94-95

HOLLAND MINE — Waldo area

see Portland Group

HOLTON CREEK LIMESTONE — Waldo area

Owner: W. C. Smith, Grants Pass, Oregon.

Location: 3 miles south of Kerby by road and trail from Chapman Creek in NE¼ NE¼ sec. 14, T. 39 S., R. 8 W. The locality is usually designated as Lime Rock Peak.

Area: 40 acres (two unpatented mining claims).

History: The property was discovered and located by J. E. Verdin in 1910. It was sold to the present owner in 1912.

General: The outcrop is about 200 feet long and 185 feet high. The stone is fine-grained and is said to run over 98 percent $CaCO_3$. A sample returned 0.96 percent insoluble. Elevation is about 2,800 feet and about 1,000 feet above the end of the road. Maximum snowfall is 6 feet. There is a spring with sufficient water for domestic purposes.

Informant: J. E. Morrison, 1939.

HORSE SHOE PROPERTY — Waldo area

"The Horse Shoe property is in the NE¼ sec. 17, T. 40 S., R. 7 W., 4 miles south from Holland. These workings were not examined. The size of the dump indicates several hundred feet of development."

Reference: Parks and Swartley, 16:124 (quoted).

HULL MINE — Waldo area

see Brooklyn Mine; State Claim

HYDROPLASS MINING COMPANY — Waldo area

see Plataurica Placer

INSPIRATION CLAIMS — Waldo area

see Lost Prospect; Swan Mountain Group

JANUARY FIRST MINE (gold) — Waldo area

see Rainbow Group
see also Siskron Mine

JOHNSON PLACER Waldo area

(also known as Alsen Gulch Placer)

Owner: Joe E. Johnson, Takilma, Oregon.

Location: 8 miles south of Holland on West Fork of Althouse Creek in sec. 9, T. 41 S., R. 7 W. The easiest way to reach the property is by way of Takilma and the Happy Camp road for a distance of about 7 miles to a sign pointing to Johnson Placer; thence 1¼ miles by trail.

History: Althouse Creek was first worked in the fifties. There is no record of the earliest locations, but the claim was located and relocated for years until the present owner took possession in 1914. Except for 2 years he has operated it every year since 1914.

Area: 4 claims - 75 acres - held by location.

Elevation 3500 feet; steep mountainous topography; gulch operation; 5 feet of snow maximum; 5 acres mined; no exploration work; plenty of grade and dump room.

There is a first priority water right of 1500 miner's inches out of West Fork of Althouse. A ditch 1500 feet long with capacity of 10 c.f.s. gives a 150-foot head. A new ditch is needed; one a mile long would give about 500-foot head.

Equipment: Three No. 2 Giants and 1,000 feet of 8- to 16-inch pipe.

Geology: Greenstone and slate bedrock; little clay; many large boulders; 10 feet maximum thickness of gravel.

Informant: J. E. Morrison, 1938.

JOSEPHINE MINING COMPANY Waldo area

see Plataurioa Placer

KERBY QUEEN (SOWELL) MINE (copper) Waldo area

History: "This property is now (1916) under option to John Hampshire, Grants Pass, and Twohy Brothers, Portland, who are doing some development work with a view to opening up other bodies of copper ores. It is located in the SE¼ sec. 17, T. 40 S., R. 7 W. The workings consist of 2 adits; the upper is about 240 feet in length and is mostly in weathered rock. The ore is a mixture of the sulphide and oxide minerals. Ore on the dump shows pyrite and a small amount of marcasite, associated with the chalcopyrite, and pyrrhotite. The ore is said to run $6 in gold in carload lots.

"The lower adit is about 700 feet long (August 1913) and in serpentine all the way. Ore is expected when the limit of the serpentine is reached, estimated to be 60 or 70 feet farther.

"Twelve or thirteen years ago a 10-ton smelter was installed in connection with this property and operated for 26 days, producing 32 tons of matte carrying copper and gold, to the value of $2,000.

"On the west end of this property an important deposit of chrome iron ore has been developed by D. W. Chollard and son. (see Chollard mine) More than a thousand tons of chrome were mined and shipped during the summer of 1916. For more details, see description of the Golconda mine."

Reference: Parks and Swartley, 16:136 (quoted).

LEONARD PLACER Waldo area

(see also Atlas Gold Dredging Corporation)

Owner: Rathfield Leonard, Holland, Oregon

Location: Sec. 4, T. 40 S., R. 7 W.

Area: SE¼ SW¼ and part of the SW¼ SE¼ sec. 4, a total of about 63 acres.

General: This placer was operated in 1938 with a shovel and washing plant by William and Hugo Von der Hellen. Atlas Gold Dredging Corporation (which see) mined this ground in 1940-1941.

Informant: J. E. Morrison, 1938.

LILLY MINE (copper) Waldo area

History: "The Lilly mine is in the SE¼ sec. 35, T. 40 S., R. 8 W., about 2 miles by road southeast of Takilma. The property, consisting of eight claims, was located in 1897 by Kameel Khoeery of Takilma who sold it to the Knob Hill Mining Company in 1910. It was relocated by Mr. Khoeery in 1911, and a half interest was sold to Mrs. Charlotte Johnson, also of Takilma, in 1915. According to Mr. Khoeery the mine has produced about 300 tons of copper ore which contained from 16 to 28 percent of copper. Part of the ore was mined from open cuts and part from underground openings. A tunnel several hundred feet long and with several crosscuts has been driven in the direction of the open cuts.

"The ore occurs as irregular bodies in greenstone rocks that are completely surrounded by serpentine. The ore mined from the open cut was partly oxidized, but only hypogene sulphides have been found in the lower tunnel. The ore from the lower tunnel is much like the ore from the Cowboy mine and is composed principally of chalcopyrite, oubanite (copper-iron sulphide), pyrrhotite, and sphalerite in a gangue of altered greenstone, quartz, and calcite. Quartz has preceded the sulphide minerals. Chalcopyrite and cubanite occur as irregular masses and as lathlike intergrowths. Pyrrhotite in irregular veinlets cuts the intergrowths of cubanite and chalcopyrite and is therefore considered to be somewhat younger. Sphalerite is present in small amounts, but its textural relationship was not determined."

Reported to have been worked during summer of 1939. (G. W. Thrasher, January 1940)

Reference: Shenon, 33b:168 (quoted).

LITTLE GEM MINE (gold) Waldo area

Location: SW½ sec. 36, T. 39 S., R. 7 W.

History: "The Little Gem Mine, owned by D. K. Sutherland, is in the SW¼ sec. 36. T. 39 S., R. 7 W., about 3 miles east of Holland on the west side of Sucker Creek, at elevations ranging from 2300 to 2900 feet, as measured by barometer. It is opened by several adits having a total length of more than 800 feet. The lower adits are shorter and do not disclose a vein in the greenstone country rock. The upper adits reach a quartz vein, which strikes N. 65° E. and dips about 85° S.E., which seems to finger out downward. The uppermost and longest adit was being reopened and extended in 1913. The country rock here is andesite containing abundant pale green hornblende, lathshaped oligoclase, some nearly colorless epidote, dirty-gray siderite, and greenish chlorite."

Reference: Parks and Swartley, 16:142 (quoted).

LOGAN, SIMMONS, AND CAMERON (placer) Waldo area

see Esterly Mine

(also known as: Logan Placer, Simmons Placer, Cameron Placer, Waldo Corporation, and Llano de Oro Placer)

LOGAN PLACER Waldo area

see Esterly Placer

LOGAN'S SAILOR GULCH (placer) Waldo area

Owner: J. L. Logan and Son, Cave Junction, Oregon.

Location: Sec. 27, T. 40 S., R. 8 W.

Area: 60 acres, patented ground.

History: This property is part of the old Sailor Gulch property, a portion of which produced $51,000 out of 46,000 yards by hand labor from 1892 to 1899. Logan and son purchased from a Mr. Osgood in 1925 and when transfer was made to Plataurica the 60 acres here described were reserved.

Development: Ground is up to 84 feet deep in places. At one spot, 3 acres contain 400,000 yards of mineable ground. Prospecting was done in 1940 to investigate dredging possibilities.

Informant: J. L. Logan, April 15, 1940.

Report by: Ray C. Treasher.

LONE STAR PLACER Waldo area

Owner and operator: George Maiden, Holland, Oregon.

Location: 7.2 miles south of Holland on Althouse Creek in secs. 28 and 33, T. 40 S., R. 7 W.

Area: 100 acres held by location.

History: This property has been worked by hand for some 80 years. There is no record of production. The present owner has worked the ground for 7 years.

Development: One pit shows an average of 60 cents per yard. The ditch and flume measure about 300 feet. The season of operation is from November until July.

Geology: Elevation 2,600 feet; gulch operation; very irregular porphyry and shale bedrock. At places there are many large boulders and considerable clay. Four feet maximum snowfall.

Informant: J. E. Morrison, 1938.

LOST PROSPECT, INSPIRATION, AND SWAN MT. GROUP Waldo area

Owners: Jack Maloney, 417 Davis Building, Portland, and J. A. Robins.

Location: On the head of the left fork of Sucker Creek, sec. 2, T. 41 S., R. 6 W. There is (1940) a road to within 8¼ miles of the property. A road which will connect with Bolan Lake Road and will pass the mine is being built in cooperation with the Forest Service.

Area: Ten claims, nine of them placed side by side.

History: Discovered in August 1939 by Joseph L. Peters.

Development: About 400 feet of open pit work has been done along the Lost Prospect vein.

Geology: There are five parallel veins from five to twenty feet in width. Strike of the vein system is N. 65° W., dip is 82° S. The Swan Mt. vein is about 5 feet wide; the Lost Prospect vein is up to 20 feet in width. The ore is highly oxidized, free milling, with slight amounts of malachite stain. Values are said to run around $50 per ton. Country rock is greenstone from andesite and granitic intrusion.

Equipment: Crusher, vertical "Crescent," 10-ton ball mill (primary classification takes place within the mill), jig, amalgamation plates. There is a compressor and assay equipment now on the property.

Informant: Jack Maloney.

Report by: John E. Allen, March 27, 1940, (not visited).

LUCKY DOG PLACER Waldo area

Name taken from "List of Mines in Oregon." No information from G. W. Thrasher; Harry Messenger; W. R. Burner; January and February 1940. These men should know something about the property if it were in existence, and operating. (RCT)

LUCKY SEVEN MINING COMPANY Waldo area

"Office: Grants Pass. Richard Smith, Holland, Oregon, Pres.; Edward H. Richard, Grants Pass, Secretary; Inez Murphy, Grants Pass, Treasurer. Capital stock, $6,000. par value $1,000; all subscribed issued and paid up. (1914 report)

"According to information given by the secretary of this company, the prospect was recently abandoned and relocated by six individuals. It is located about 10 miles south of Holland near the California line.

"A 100-foot crosscut tunnel has been driven during the past year."

Reference: Parks and Swartley, 16:145 (quoted).

LUCKY STRIKE MINE (gold) Waldo area

Owner: John A. Fetterly, R.F.D., Kerby, Oregon.

Location: 1½ miles by trail west of Bolan Lake, in Iron Gulch, sec. 1, T. 41 S., R. 7 W.

Area: Three quartz claims (60 acres) held by location.

History: Discovered in 1932. Worked by hand until 1937 when they put in a self-shooter 12 feet high by 3 feet wide.

General: Contact of altered greenstone and serpentine; no water right; stripping contact by the use of self-shooter; water sufficient to operate from November to June; elevation 4,400 feet; gulch operation; many boulders; mountainous topography; no clay; talc about 12 feet wide; gold comes from pockets along contact; produced $1200 to July 1937.

Informant: J. E. Morrison, 1938.

LYTTLE MINE (copper) Waldo area

"The Lyttle mine is on the north side of Page Creek in the SW¼ sec. 1, T. 41 S., R. 8 W., at an altitude of about 2,700 feet. By road the property is about 3 miles southeast of Takilma, and in an air line it is a mile directly south of the Waldo mine.

"Most of the ore was mined through a glory hole, now about 110 feet long by 80 feet wide and 20 feet deep. Maps show that an upper tunnel, 160 feet long, was driven under the glory hole. At approximately 100 feet from the portal an inclined winze was sunk which is said to be in ore at a depth of 60 feet. These workings are now caved and inaccessible. A lower tunnel, at a considerable distance below the upper workings, is 570 feet long. From it a raise, 53 feet long, has been run toward the bottom of the 60-foot winze on the level above but has not connected.

"The Lyttle mine is said to have produced 1,500 tons of ore, part of which was smelted at Takilma. The property is now owned by the Queen of Bronze Mining Company.

"The ore is found in greenstone not far from a serpentine contact. The greenstone in the vicinity of the mine is completely surrounded by serpentine, and much serpentine was cut in the lower tunnel. The ore deposit appears to be similar to those at the Queen of Bronze mine, although the mineralogy more nearly resembles that of the Cowboy ore. Chalcopyrite, cubanite, and pyrrhotite are the principal sulfide minerals. Malachite, azurite, and iron oxides can be observed in the open pit and in the dumps."

References: Shenon 33:168 (quoted)
Parks and Swartley, 16:145

MABLE MINE (copper) Waldo area

see Queen of Bronze

MAMMOTH MINE Waldo area

see Albright Mine

MARK TWAIN MINE Waldo area

Mining Journal (Arizona), May 15, 1941, reports:

"Efforts are being made to return the Mark Twain mine near Waldo in Josephine County, Oregon, to production. The property is owned and operated by Gilbert Stewart of Medford who was recently at the mine."

MAY QUEEN PLACER Waldo area

Owner and operator: Charles Austin, bought from John Apple, Holland.

Location: 6½ miles by road south of Holland on the Althouse and near the corner of secs. 27, 28, 33, and 34.

Area: 7 claims (140 acres) held by location. The property has been worked off and on for 30 years.

Geology: Serpentine and porphyry bedrock; gulch and sidehill operation; very red clay and many fairly large boulders. The gold is coarse.

General: There is no record of production. An area of about 2 acres reported to average about 30 cents per yard was mined with giants. An equal area on Althouse Creek has been worked by hand.

There is a first priority of 71½ second feet of water out of the Althouse and Snow gulch. One ditch from Althouse Creek is 1 3/4 miles long, and one from Snow gulch is 1 mile long. This property has sufficient water to operate the year around under normal conditions.

Informant: J. E. Morrison, 1938.

MERRILL PLACER Waldo area

Owner: Fred Merrill, Takilma.

Location: Sec. 27, T. 40 S., R. 8 W.

It is reported that the property is worked each summer. (W.R.Burner, Feb. 28, 1940.)

MIDDLEMAN PROSPECT (gold) Waldo area

Owner: A. E. Williams and L. E. Lewis.

Location: Sec. 24, T. 40 S., R. 7 W., head of No. 7 gulch. A road leads to the property.

Area: 7 claims.

Development: There are 3 adits, 100 feet, 75 feet, 150 feet long respectively.

Geology: Quartz veins in slate and shale.

Informant: A. E. Williams, May 5, 1939.

Report by: A. A. Lewis.

MITCHELL PROPERTY (gold) Waldo area

see Mountain View Claims

MORNING STAR GROUP (gold, silver) Waldo area

see Frog Pond Mine

MOUNTAIN VIEW CLAIMS (gold) Waldo area

Owners: Russell Mitchell and William F. Mitchell, Jacksonville, Oregon.

Location: NE¼ sec. 23, T. 40 S., R. 5 W., on Steves Peak between the forks of Carberry Creek. Elevation 4000 feet.

Area: Three claims, located in 1936.

History: Also known as the Mitchell Property. In 1911-1912, a Mr. Serran drove a 100-foot crosscut on the present no. 1 claim but no ore was found. In 1925, Dressel Bros. had claims on no. 2 and no. 3, but no ore was shipped.

Development: No. 1 claim has 115 feet of tunnel with two 50-foot open cuts. There is a 35-foot shaft in one of the cuts. No. 2 claim has a 75-foot tunnel and one open cut with a 30-foot shaft. No. 3 claim has an open cut that opens the vein to 20-foot depth and has a 70-foot shaft. A small mill, formerly on the property, has been removed.

Geology: Gold is free in the oxide zone; the sulfide zone has not been reached. The vein is quartz; no gold is found in the wall rock. Claim No. 1 exposes a 2½-foot vein that assays $35, with a few high-grade pockets. No. 2 claim has some high-grade ore. No. 3 claim exposes an 18-inch vein that widens to 30 inches at the bottom of the shaft. Four hundred dollars has been produced from this claim. The veins trend east-west and dip north at high angles. Some scheelite is reported on No. 2 claim.

According to the Grants Pass geologic map, the country rock consists of metavolcanics, with a small body of serpentine exposed in the No. 1 claim.

Informant: Russell Mitchell, March 11, 1941.

Report by: Ray C. Treasher, March 12, 1941.

OSGOOD MINE (placer) Waldo area

see High Gravel Mine

OWEN MINE (chromite) Waldo area

"Located in the N½ sec. 11, T. 41 S., R. 8 W., 2 miles south of Takilma.

"The soil mantle is very heavy, and both drifts, dug during the war, have collapsed so that all data are taken from surface indications, or by word of mouth from Mr. Owen.

"The north-south trending ore-bearing zone of sheared serpentine is about 35 feet wide, bounded by outcrops of massive gabbroid rock on both sides. It lies on a south slope, near the top of the east-west ridge. A change in the vegetation 200 feet north of the tunnel entrances on the level ridgetop also apparently marks the edge of the serpentine in that direction.

"According to Mr. Owen, most of the ore was taken from the drift driven along the east wall of the zone, following along a chromite seam located by a small ore outcrop. Three kidneys, each larger than the last, were taken out as the drift progressed over a distance of about 75 feet; the last giving about 50 tons of ore.

"Another tunnel driven in at a level 10 feet below and 20 feet to the west of the first, intersected a kidney at 30 feet, at a point only 10 feet from the end of the first tunnel.

"No estimate of reserve can be made, as no ore outcrops and both drifts are closed. C. Owen says that when the mine was closed down they were working in solid chromite in the east drift, and the west drift had just reached a solid face of ore. One hundred and fifty tons were said to have been taken out by that time, thirty tons of which remained piled at Takilma and was taken out in 1936.

"A sled road leads from the deposit one mile to the main road; thence 2 miles to Takilma and 6 to Redwood Highway at Waldo junction; thence 40 miles to Grants Pass."

References: Allen, 38:46 (quoted)
Shenon 33:178

OW YUEN CLAIMS (manganese) Waldo area

Owners: Tom Brown, J. S. and J. R. Kelly, Roseburg, Oregon.

Location: NW¼ sec. 5 and NE¼ sec. 6, T. 40 S., R. 6 W., just south of Caves Highway, 46.4 miles from Grants Pass, and 14.4 miles from the junction at Cave Junction.

Area: Three claims, held by location.

History: Located by Tom Brown, May 21, 1915, and relocated by the above owners about 8 years ago. An easement for the Caves Highway has been granted to the Oregon State Highway Commission across the Ow Yuen claim.

Development: About ¼ mile of road is being constructed from the Caves Highway to the center of the claims where there are two cabins. The deposits lie on both sides of Cave Creek. There are three groups of shallow cuts; one group has 4 cuts, another has 2 cuts, and the third has 1 cut. No underground work has been done.

Geology: According to the Grants Pass geologic map, the country rock is metavolcanic with some serpentine to the west in sec. 6. According to the field examination, it appears that the rock associated with the rhodonite is a quartzite, or at least a highly silicified rock. The quartzite (?) is sheared with the development of some sericite. Near the rhodonite the quartzite (?) is stained greenish or pinkish.

The rhodonite appears to lie in small pods or in bouldery masses. There is a slight suggestion of bedding with a north-east trend in one spot. The rhodonite masses seem to grade into the siliceous country rock and with the amount of development work which has been done no definite limits could be set.

The outcrops and exposures have the appearance of being high-grade oxide. However, the oxide is merely a thin "skin" and a light hammer blow exposes pinkish rhodonite, some of which has a beautiful deep color.

Informant: Ray C. Treasher, May 15, 1941.

Report by: Ray C. Treasher, May 15, 1941.

PLATAURICA MINE (placer) Waldo area

Owners: According to the Grants Pass Courier of September 4, 1940, the Plataurica property was purchased at sheriff's sale by A. D. Patterson, C. N. Oldfield, Walter Leek, R. M. Grauer, and Charles Harrison.

Location: Sec. 28, 33, and 34, T. 40 S., R. 8 W. Near the head of Allen Gulch, about a mile west of Takilma.

General: "During the winter and spring of 1929-30 a small cut was excavated by the Plataurica Mining Co. in the NW¼ sec. 34 and the SW¼ sec. 27, T. 40 S., R. 8 W., near the head of Allen Gulch, about a mile west of Takilma. The gravel is mined by hydraulic giants, and the tailings are disposed of by natural runoff. Shallow workings southeast of the Plataurica pit were excavated by early-day miners.

"The Plataurica Mining Co. has worked the lower beds of the Tertiary conglomerate, which where exposed in the pits is composed largely of greatly altered, rounded boulders in a sandy matrix. Numerous joints and some faults cut the conglomerate. Near the center of the cut an east-west normal fault, dipping about 45° N., has dropped the conglomerate into contact with the greenstone bedrock. The bedrock has a purplish tint, is greatly decomposed, and is traversed by numerous veins filled with quartz, epistilbite, and calcite. An assay of the material from the veins showed they contained no gold. According to J. L. Eggers, superintendent of operations, the gold occurs throughout the Tertiary conglomerate but is more abundant near bedrock. Here, as elsewhere, a large percentage of the gold is coated with black material. Much of it is collected in a black-sand concentrate along with chromite, magnetite, hematite, platinum, and other heavy minerals. It is reported that the hematite contains gold, although none was seen in polished sections of it. Mr. Eggers states that the conglomerate above bedrock averages about 2½ cents in metallic content to the cubic yard."

Reference: Shenon 33:185 (quoted).

PONY SHOE GROUP (gold, chrome) Waldo area

Owners: Moses Geo. LaMore and Fritz Ivor Johnson, Grants Pass Hotel, Grants Pass, Oregon.

Location: SW¼ NW¼ sec. 14 and SE¼ NE¼ sec. 15, T. 41 S., R. 7 W., with south end lines on Oregon-California boundary. Discovery pit on Pony Shoe No. 1 in 150 feet north and 100 feet east of section corner. Elevation 5,000 feet.

Area: Four quartz claims; Pony Shoe, located July 11, 1936; Pony Shoe No. 2 located October 1, 1936; Pony Shoe Quartz, located July 25, 1936; Southern Cross, located April 18, 1940.

History: There has been a small amount of prospecting in this immediate area mainly for pockets, but little or no development. For practical purposes it may be said that the property has no mining history prior to the first location on July 11, 1936.

Development: Various openings are as follows: a discovery shaft, now caved ; No. 1 adit is 185 feet long; No. 2 adit is 90 feet long; No. 3 adit is 100 feet long; No. 4 adit is 50 feet long; an inclined raise between the No. 3 and No. 2 adits is 70 feet in length; and an open cut is about 20 feet long. Underground work totals about 500 lineal feet.

Geology: Rocks consist of metavolcanics (locally called greenstone) and serpentine. Mine workings are entirely in the metavolcanics. These rocks are very fine grained and dark colored, except near shear zones where they are silicified and light greenish colored. They are extensively fractured and contain considerable fault gouge.

A strong shear zone trending S. 40° W. and dipping about 80° SE is exposed in the face of No. 1 tunnel. Near the fault zones the metavolcanics are lighter colored, more silicified, so that they resemble quartzite. In this zone the metavolcanics have been reduced to black clayey masses that contain small lenses and pods of quartz and calcite. There is little metallization in the quartz and none in the calcite or clay gouge.

In two places in No. 1 tunnel, and also in No. 2 tunnel as well as in the inclined raise there is a series of fault zones which trend S. 15° E. and dip 45° NE. The hanging and foot walls are not regular, and the fault zone pinches and swells within narrow limits. The material between the hanging and foot walls is either brecciated or, in part, forms a clayey gouge. Small quartz seams and stringers cut through this mass more or less at random. In No. 1 tunnel these quartz seams and adjacent rock have some sulfide metallization consisting of pyrite, galena, a very small amount of chalcopyrite, and perhaps a small amount of arsenopyrite (?). In No. 2 adit and the intermediate level between No. 2 and No. 3 there is some indication that the quartz stringers in the fault zone are cut off by the hanging wall. Assays which were made for the owners indicate that the fault zones will average from $3 to $5 in gold.

The serpentine metavolcanic contact roughly trends N. 20° E. and has not been cut by any of the mine workings. The contact is not exposed at the surface so that dip measurements could not be made. With the serpentine there is a small amount of peridotite and some chrome float is found. A sizeable chrome lens was removed from the area during the World War and the present owners are attempting to locate additional lenses.

General: There is an ample supply of fir for mine timbers. Water can probably be developed from a spring near the serpentine-greenstone contact. The mine is snowed-in between January and May. A good forest service truck trail cuts across the south end of the property.

Informant: Ray C. Treasher, July 24 and 25, 1940.

Report by: Ray C. Treasher, July 26, 1940.

PORTLAND GROUP (gold) Waldo area

Location: sec. 3, T. 40 S., R. 7 W.

"The Portland group is located 1½ miles southeast of Holland, and owned by V. C. McKinney, of Holland, Oregon; W. V. Lewis, of Portland; and R. M. Lewis of Idaho.

"The ore deposit is found in a quartz vein which varies in thickness from 4 inches to more than 3 feet.

"Development work consists of a shaft 115 feet deep, at the bottom of which is a drift 50 feet each way. There is an adit driven on the vein 350 feet long at about the same elevation as the bottom of the shaft. Considerable stoping has been done from the adit level, the ore body averaging about 2½ feet wide, from which, according to the manager, $3 to $4 of gold is saved per ton.

"The property has a small Gibson mill of about 20 tons capacity."

A small mill was built during the summer of 1939.

Reference: Parks and Swartley 16:182 (quoted)

Informant: G. W. Thrasher, January, 1940.

QUEEN OF BRONZE MINE (copper) Waldo area

Shenon (336:163-167) reports:

Location and History: "The Queen of Bronze mine is in the NW ¼ sec. 36, T. 40 S., R. 6 W., about 1½ miles by road east of Takilma, on a prominent ridge between Elder Creek and the East Fork of the Illinois River, at an altitude of about 2,400 feet. A winding road, easily passable except during periods of heavy rains, connects the mine with Takilma.

"Copper was discovered in the Takilma district in 1860 by a miner named Hawes, and the Queen of Bronze mine was located October 22, 1862, by P. Androit. Little development work was done, however, until 1903, when C. L. Tutt and associates, of Colorado Springs, bought the property. Their company, known as the Takilma Smelting Co., erected a smelter of the semipyritic type in 1904. It had a capacity of 100 tons a day and operated more or less continuously until 1910. More than 20,000 tons of ore, with an average copper content of 6½ per cent, was smelted, and in 1907 the mattes from the smelted ores contained about 40 per cent of copper. Lessees shipped a few thousand tons of ore during the period from 1910 to 1916. In April, 1916, the property was sold to John Twohy, John Hampshire, and others, with Hampshire acting as trustee. They operated continuously, under the direction of Roy B. Clark, until 1919, when the price of copper became too low for profitable mining. During this period of 3 years, according to G. E. Stowell, mining engineer, the mine shipped 183 cars (9,992.3 tons) of ore varying in metal content from 5.16 to 16.33 per cent of copper and from 0.04 to 0.44 ounce of gold to the ton. From 1919 to 1928 lessees made intermittent shipments. John Hampshire obtained a lease on the property in June, 1928, and operated until May 31, 1929, when the Queen of Bronze Mining Co. was incorporated. The new company continued to ship ore until May, 1930, when operations were suspended because of the low copper market. During the period from June, 1928 to May, 1930, 1,552.941 tons of ore was shipped. On the basis of the above figures, the total production of the Queen of Bronze mine is estimated at about 35,000 tons of ore with a gross value of approximately $1,350,000.

"Development and Mining Methods: Ore has been mined at the Queen of Bronze from what are known as the north-end workings and south-end workings. They are about 1,100 feet apart. The north-end workings----include over 7,000 feet of drifts and crosscuts a large open pit, numerous stopes, and several hundred feet of raises and winzes, all of which are restricted to a roughly circular area about 500 feet across and most of which, with the exception of some openings on the upper levels, are accessible. The deepest level is about 225 feet below the open pit. The larger ore bodies at the north

end were mined from stopes known as the Johnson, McCauley, East, Stevens, Messenger, Cameron, Twohy, Hampshire, Staisy, and Erwin stopes. The McCauley stope, the largest, was followed for a vertical distance of about 70 feet and at its greatest horizontal extent measured approximately 40 by 50 feet. The open out has an outline measuring roughly 80 by 150 feet. The south-end workings are less extensive and inolude about 800 feet of crosscuts on two levels, in addition to an open out, stopes, and a shaft 109 feet deep. None of these workings are now accessible.

"The larger ore bodies are mined by square-setting and partial filling. The smaller stopes are supported by stulls, and at least one ore body was mined by shrinkage stoping. The square-set method allows rough sorting underground and is better adapted to mining the large irregular-shaped ore bodies and for supporting the slickensided rocks near them. After rough sorting underground the ore is trammed to outside bins and from them drawn to sorting tables, where the low-grade material is discarded and the ore of shipping grade is dropped to loading bins.

"Geology: The ore at the Queen of Bronze mine occurs as disconnected bodies, irregular in outline, and ranging in size from mere stringers to deposits containing as much as 10,000 tons. The ore minerals do not form a solid body within the limits of the deposits but are interspersed with bands and irregular areas of altered wall rock, much after the manner of a mineralized shear zone. The more persistent bodies strike approximately east, some trending a little north of east and some a little south of east. Dips vary greatly, but the rake of the deposits, with exception of the Hampshire ore body, is to the south. The Hampshire ore body rakes to the west. The deposits everywhere show effects of intense postmineral faulting. Slickensided surfaces and brecciated rock are conspicuous within the ore bodies and in the enclosing rocks, but are much less evident away from the mineralized areas. Drag effects and crushing are pronounced near faults in some of the more tubular deposits.

"The ore is enclosed in greenstone, including both metabasalt and metagabbro, and is found near the contacts with serpentine but was not observed within serpentine. Next to the ore the original characteristics of the greenstones are usually obliterated by processes which have changed the rocks to a mass of chlorite, quartz, and calcite containing disseminated sulphides. Very little sericite was observed in thin sections.

"Oxidation extends as much as 100 feet below the surface, but sulphide minerals prevail below 50 feet. Surface processes have produced high-grade oxidized ore near the surface, and sulphide enrichment undoubtedly was an important process at shallow depths, though it has not contributed greatly to the copper content below a depth of 100 feet.

"Before sorting, the ore in some of the stopes, as indicated by samples taken by C. E. Stowell, mining engineer, has a metal content of 4 to 7 percent of copper and 0.04 to 0.1 ounce of gold to the ton. The average copper content of the oxidized ores near the surface was considerably higher and according to Kay was over 10 percent. A sample taken by Mr. Stowell across 5 feet of the ore in the East stope assayed 4.8 percent of copper and 0.04 ounce of gold to the ton. Another sample from the same stope taken across 7.8 feet assayed 4.0 percent of copper and 0.10 ounce of gold to the ton. A sample across 6 feet in the top of the east end of the same stope assayed 4.7 percent of copper and 0.08 ounce of gold, and a sample across 7.5 feet on the sill floor directly below assayed 7.0 percent of copper and 0.06 ounce of gold. A sample across 12 feet of ore in the south drift of the 50 level assayed 5.4 percent of copper and 0.06 ounce of gold. A "bunch" of ore 3 feet wide from the top of the stope above the 70 level assayed 6.4 percent of copper. If these assays represent the average metal content of the ore in place, it follows that considerable waste is readily eliminated by sorting, as the shipping ore in the past has averaged about 8.3 percent of copper and about 0.13 ounce of gold and 0.16 ounce of silver to the ton.

"Mineralogy: The mineralogy of the ore is comparatively simple. The hypogene sulphide

minerals include pyrite, chalcopyrite, and in much smaller amounts, pyrrhotite and sphalerite. The proportion of each varies considerably from place to place, and as a result rough sorting is practiced underground to eliminate the material high in pyrite and low in chalcopyrite. Textural relations indicate that two generations of pyrite are present. Older massive pyrite is cut by well-defined fractures containing chalcopyrite, whereas the younger pyrite occurs as disseminations or as grains in more or less parallel arrangement along irregular fractures in chalcopyrite. Supergene chalcocite is present near the surface, where it replaces hypogene sulphides. The supergene replacement has been selective, chalcopyrite being replaced to a much greater extent than pyrite. The abundant oxidation products include malachite, azurite, cuprite, iron oxides, and chrysocolla; tenorite and native copper have also been reported. The sulphides follow fractures in the quartz, whereas the calcite cuts both quartz and sulphides and, in places, is abundant enough to deplete the grade of the ore seriously.

"Economic considerations: The largest ore shoot had a vertical extent of about 70 feet, but most of the stopes are less than 50 feet high. The horizontal outlines of the ore bodies are irregular and vary greatly at different altitudes. Projections of the ore bodies as a basis for tonnage estimates of ore in place are therefore hazardous and not reliable.

"Many faults cut and displace the ore bodies, and it seems likely that the numerous disconnected shoots represent segments of larger and more continuous deposits. Gouge-filled faults and stringers containing quartz, calcite, and sulphides become increasingly numerous toward the larger ore bodies and if used in conjunction with wallrock alteration should serve as a guide toward mineralized areas.

"Ore bodies probably exist in some of the unexplored areas. Recent prospecting has proved the presence of good-sized deposits as deep as the D (lower) level, and the type of mineralization does not indicate that other ore bodies are not present, even below this level. Winchell states that 'the apparent relation of the ore bodies to the present erosion surface suggests that they owe their final position to the work of downward percolating surface waters.' This is interpreted to assume that the present position of the ore bodies is largely due to sulphide enrichment. Sulphide enrichment has undoubtedly been an important process near the surface, but evidence of it is lacking in the deposits below a depth of 100 feet. The wallrock alteration, the presence of pyrite, chalcopyrite, and pyrrhotite as the principal ore minerals, and the absence of chalcocite or other supergene (secondary) copper minerals in the deeper ore bodies confirm the hypogene origin of these deposits. Therefore little change in the mineral composition or metal content of the ore can be expected for at least several hundred feet below the zone of enrichment."

The Continental and Mable mines, now parts of the Queen of Bronze holdings, have been reported on by Parks and Swartley (16:72 and 146) as follows:

"The Continental Mine, property of the Copper Mountain Mining Company, is located one mile southeast of Takilma in the SE¼ sec. 35, T. 40 S., R. 8 W. The workings comprise three adits, one with 180 feet of drift following a very slightly mineralized fissure zone. Some distance north of this is another adit with about 100 feet of work. Some ore observed here was chiefly pyrrhotite with some chalcopyrite. West of this working and at about 100 feet lower elevation a crosscut was being driven to intersect the mineralized zone at greater depth. This was 100 feet long when examined. It is said that some good ore has been hauled to Grants Pass from this property.

"The Mable mine, or Copper King, is located on Page Creek south of the NE corner of sec. 11, T. 41 S., R. 8 W., 2½ miles southeast of Takilma. It is controlled by the Tutt estate, Colorado Springs, Colorado. At present it is under option to John Hampshire, Grants Pass, and the Twohy Bros., Portland. This mine is similar to the Queen of Bronze in the character of its ores, their modes of occurrence and associations,

which see for description."

References: Shenon, 33b: 163-167 (quoted)
Parks and Swartley, 16:72, 146, 184 (quoted)
Diller and Kay, 09:76-78
Diller, 14:81-83

RAINBOW MINE (gold) Waldo area

Formerly known as the Siskron Mine; January First Mine.

Owner: H. W. Finch, 1516 Euclid Avenue, Berkeley, California. Operator is Ralph Burr, Cave Junction, Oregon.

Location: NW¼ sec. 12, T. 40 S., R. 7 W., on Sucker Creek, 15 miles from Cave Junction and 43 miles from Grants Pass. Paved road is within 3 miles of the mine.

Area: Five claims, 88 acres.

History: The mine was discovered in 1915 by Mr. Siskron who worked it from 1917 to 1927. Associates Developing Company purchased it in 1927 and operated it until 1929. H. W. Finch secured control and operated from 1929 to 1935. The Oregon Gold Mines, Seattle, Washington, operated until December 1937. Finch took over at that time and operated intermittently until Burr started work in 1940. Reported production is:

1917-1927	$15,000
1927-1929	3,000
1929-1935	22,000
1935-1937	6,500
	$46,500

Development: There are a number of open outs, short tunnels, and stopes, most of which are inaccessible. They represent work done prior to 1929. The main workings open at present are the 200 level, with stopes above it, and two winzes to the 300 level on which some work has been done.

Mining conditions: Steep mountainous topography; elevation 2100-2900 feet. There is ample timber for mine timbers. Water for mill operation is available about 8 months of the year; water from Sucker Creek sufficient to operate a 25-ton mill is available by pumping at all times. Maximum snow fall is three feet, but snow seldom interferes with operations for more than a few days at a time. Climate is generally mild.

Geology: The principal rock types of the area are fine-grained meta-igneous, both flow and intrusive. Small serpentine bodies lie west and southwest of the mine. Some faulting has occurred. The U.S. Geological Survey party under direction of F. G. Wells has mapped one fault trending generally N. 20° W. through the area and another trending generally N. 20° E., which is cut off by the N.W. fault.

The meta-igneous rock exposed on the property has been silicified and altered to some extent, and near the surface the rock shows considerable weathering. The quartz vein (Siskron vein) contains rusty to glassy quartz and small inclusions of wall rock.

The main or Siskron vein has been cut off by a fault, trending N. 62° W. and dipping 35° NE. The fault contains some quartz. It is exposed at the surface and also on the 300 level about 8 feet south of the south winze. Southwest of this fault is a shear zone that trends N. 20° W. and dips 60° NE. As plotted on the mine map, the shear zone extends to the south winze, but evidence on the ground to verify this extension could not be found.

The Siskron vein has a variable strike, but generally strikes N. 20° E., and dips 35° NW.

The vein pinches and swells to a maximum of 5 feet. The "vein" is a network of quartz veinlets and meta-igneous rock - the quartz content varying from thin seams to veins 8 inches wide. According to advice of the operators, there appears to be an ore-shoot system that rakes N. 15° W.

One particularly rich ore shoot was mined adjacent to the quartz-filled fault that cuts off the Siskron vein. Others to the north seem to parallel this ore shoot and grow progressively leaner toward the north.

The ore contains free gold together with some pyrite and a small amount of chalcopyrite.

Pinches and swells within the vein seem to bear a relation to ore deposition. Ore is richer in the "swells." Stopes A, B, and C indicate a width of 4 to 8 feet. Five other veins are reported on the property but no work has been done to prove them. 800 tons of ore is indicated below the main level. There is some ore in pillars and in the "fines" along the footwall in the stopes above the main or 200 level.

Metallurgy: Ore is hard quartz, of which 50 percent is free milling. The mill has a Harding 25-ton ball mill, amalgamation traps; flotation was used at one time. At present the ore is ground in the Harding mill, goes through a launder, then to impact-amalgamators, and to waste. Contemplated improvements include a hydraulic trap between the ball mill and the launder, and the tabling of the discharge from the amalgamators.

Sulphides in the ore appear to be sufficient in quantity and value to justify concentration.

Report by: Ray C. Treasher, February 18, 1941.

REYNOLD'S COPPER MINE (copper, nickel) Waldo area

Owner: Unknown.

Location: Sec. 27, T. 40 S., R. 9 W., elevation about 2800 feet; located in a gulch south of the trail.

Area: Unknown.

History: "A prospect near Rough and Ready Creek, about 12 miles northwest of Waldo, with 850 feet of tunnels, lies in the midst of the great serpentine area and has attracted the attention of prospectors for copper. I was unable to visit the prospect, but Mr. Reynolds kindly sent me at my request a series of samples to illustrate the ores of his prospect. The material is much altered and weathered serpentine, stained green by carbonate of copper together with delicate pinkish or bluish gray tints, suggesting the presence of cobalt. Some pyrrhotite seems to be present, but it is evident that the samples are so altered that they afford an unreliable basis for judging the ores. Both nickel and cobalt have been reported in these ores. Tests by Chase Palmer in the chemical laboratory of the Geological Survey showed the presence of 0.29 percent nickel, but no cobalt was found."

Development: There are at least three adits which are badly caved, and it is unsafe to enter. Work valued at over $3000 was done.

Report by: Ray C. Treasher, May 15, 1940.

References: Diller, 14:84 (quoted)
Parks and Swartley, 16:193.

ROSEBURG AND FIDELITY GROUP Waldo area

Location: Sec. 7, T. 39 S., R. 8 W.

History: "The Roseburg group of six claims and the Fidelity group of four claims lie about the head of Tennessee Gulch, 3 miles southwest of Kerby, at an elevation of nearly 2,500 feet. These claims cluster about the southwest end of an area of granular greenstone surrounded by serpentine whose relations were not fully determined.

"Portions of Tennessee Gulch have afforded rich placers. Claims were taken up and a little arrastre built 40 years ago near the head of the gulch. Two tunnels have been run, one N. 70° E. and the other N. 70° W. near the contact of the greenstone and serpentine. The cellular quartz veins containing free gold are in the greenstone and are approximately parallel to the irregular contact, ranging from N. 50° to 80° E., with nearly vertical dip. Pyrite is the most abundant ore. No distinct trace of copper minerals were observed.

"A large tunnel is being run at a considerably lower level. It is already in 170 feet in greenstone and nearing the supposed horizon of the veins which appear at the surface."

References: Diller, 14:70-71 (quoted); also in Parks and Swartley 16:195.

SAILOR GULCH PLACER — Waldo area

see Logan's Sailor Gulch Placer.

SARAH BELLE MINING COMPANY — Waldo area

History: "Office: Kelso, Washington. R. W. Welch, Pres.; W. P. Ely (deceased), Sec., both of Kelso, Washington. Capital stock, $100,000; par value $1.00; all subscribed, issued, and paid up. (1913 report)

"Properties near Golden, Oregon. Dissolved by proclamation in January 1917."

Reference: Parks and Swartley 16:199 (quoted).

SHEAFFER MINE (hydraulic) — Waldo area

see Althouse-Run Gulch Placer

SILVER NUGGET PLACER — Waldo area

Owner: Mrs. Catherine Bidache, Kerby, Oregon.

Location: SW¼ SW¼ sec. 12, T. 39 S., R. 9 W., on Josephine Creek, 4 miles west of Kerby. Trail from Tennessee Pass.

Area: Two placer claims of 20 acres each.

Geology: Cemented gravel on a serpentine and porphyry bedrock. In the stream bed there are many boulders and some clay.

General: Elevation is 1,600 feet; gulch operation; mountainous topography; maximum snowfall, 18 inches; no water rights; no equipment; three shallow open cuts; about 25 yards mined out of the three cuts.

Informant: J. E. Morrison, 1938.

SIMMONS PLACER — Waldo area

see Esterly Mine; Logan, Simmons and Cameron Mine; Logan Placer; Waldo Corporation.

SISKIYOU SUNSET MINING & DEVELOPMENT CO. (gold) Waldo area
see Free & Easy Mine

SISKRON MINE Waldo area
see Rainbow Group

SIXMILE CREEK MINE (gold) Waldo area

History: "Below the mouth of Deer Creek there are several small placers near the river level, but a larger one was operated some years ago on a bench at the mouth of Sixmile Creek, between 500 and 600 feet above the river. The bench is longest parallel to the river. About an acre of the gravel capping has been washed away, leaving the greater portion in place. The gravel is 20 feet thick, moderately coarse, and in part decomposed. The bedrock is serpentine, but has not furnished many pebbles.

"A prominent terrace, corresponding approximately to that of the Sixmile Creek mine, occurs at several points along the river trail above the mouth of Sixmile Creek. The gravel capping exposed in some of the gulches is thick and a considerable portion is cemented firmly, reminding one of the old-channel gravel on Briggs Creek. This high terrace of cemented gravel occurs at a point where the old channel might be expected to leave the present course of Illinois River and it is possible that it is a remnant of the old channel of the Illinois to Rogue River at Galice. There appears to be a large mass of gravel on top of this terrace, and I saw no place where it had been fairly tested."

Reference: Diller, 14:123-24 (quoted).

SOWELL MINE (copper) Waldo area
see Kerby Queen Mine

SPENCE MINE (gold) Waldo area

History: "The Spence property is in Sec. 19, T. 40 S., R. 7 W., 2½ miles east of Takilma. The size of the dump at the main adit indicates 500 feet to 700 feet of workings. It could not be entered because of a cave near the portal. The ore on the dump is chiefly pyrite. A 60-foot tunnel in the vicinity is a cross-cut and does not show any ore. Another tunnel not examined is said to be 200 feet long and shows somewhat better ore than that on the dump of the long tunnel."

Reference: Parks & Swartley, 16:209 (quoted).

STATE CLAIM (gold) Waldo area
Also known as Hull Mine. See also adjacent Brooklyn mine.

Owners: John T. Maloney, Graves Creek, Oregon, and William H. Emrick, deceased.

Location: At the mouth of Bolan Creek in secs. 19 and 30, T. 40 S., R. 6 W., four miles above the Rainbow Mine on Sucker Creek trail. The Bill Frisch cabin is very near the west line of claim. Elevation 2700 feet.

Area: One unpatented quartz claim.

History: This claim has been located and relocated for years. Last location by present owners September, 1937. Tunnel was driven by former locators.

Development: An inclined shaft 80 feet deep started at a point about 200 feet from Sucker Creek and 60 feet east of Bolan Creek; a 250-foot tunnel driven generally south and above the inclined shaft.

General: Mountainous topography; vein was formed along contact of greenstone (hanging wall) and porphyry, and contains free gold together with some pyrite. Maximum snowfall is 4 feet; ample timber and water; water power development possible.

Informant: J. E. Morrison, 1938 (not visited).

SURPRISE MINING COMPANY (placer) Waldo area

Location: In sec. 3 (?), T. 41 S., R. 6 W., above Johnson Point and Althouse Groups. Options turned over to Skinner or to Allison and Moulton (W. R. Burner, February 28, 1940.)

History: "Office: 619 Henry Building, Portland, Oregon. H. Taylor Hill, Pres.; T. I. Loughlin, Sec.; M. E. Freeman, Treas., all of Portland. Capital stock, $18,000; par value $1.00; all subscribed and issued and paid up. (1916 report)

This company owns 7 placer claims or approximately 140 acres on the east fork of Althouse Creek, 5 miles east of Takilma. In the fall of 1916 operations were in progress putting the mine in shape for winter operations. It is understood that some concentrating machinery for saving the fine gold is being installed."

Reference: Parks and Swartley, 16:218 (quoted).

SWAN MOUNTAIN GROUP Waldo area

see Lost Prospect; Inspiration

TAKILMA SMELTING COMPANY Waldo area

see Queen of Bronze

TANNEN PLACER MINE Waldo area

The following information was obtained from a report by Mr. G. A. Bigelow made in 1934:

The Tannen Placer Mine is located on the headwater of Sucker Creek in Josephine County, Oregon, a few miles north of the California-Oregon boundary in T. 41 S., R. 6 W.

Travel to the property is eastward on the Oregon Caves Highway from the Junction to a point well within the valley of Sucker Creek and about 10 miles from the property. From this point a Forest Reserve road runs 2 miles up the creek, and thence by pack trail 8 miles to the property.

There are 11 placer locations included in the property, 8 of which are arranged two abreast for 4 claims lengthwise along Sucker Creek. One claim lies across the valley at the mouth of Grizzly Creek, the lower, or north end of the property, and the balance of the claims are up Tannen Gulch, to the south about midway of the property.

The elevation along the lower end of the property is about 3,000 feet; in 2 miles up the creek it is 3,500 feet, and in $3\frac{1}{2}$ miles it is 4,000, which indicates the available grade lines for hydraulic work.

Benches on Sucker Creek are very pronounced throughout its length. At the property, the lowest bench is less than 20 feet above the bedrock of the present stream; the second bench seems to occur from 60 to 80 feet above the creek level; and a third, less well-preserved, lies at about 100 to 120 feet.

Rough calculation indicates a volume for the second bench of from 500 to 600 cubic yards per lineal foot of channel. The overburden accumulated on the up-hill side will be offset by the sloughing on the downhill side.

The value of this gravel is unknown except as to the indications supplied from two small pits. One at the present point of operation, of about 1,500 yards, produced about $225 or at the rate of 15 cents per yard.

About 1,000 feet upstream a small pit of about 100 cubic yards yielded $30, and on the adjacent property below, but on the left limit below Grizzley Gulch, a pit of about 2,000 yards is said to have produced over $300. These pits were on the outer rim and free of top gravels, and may therefore yield higher values than the average run, unless offset by the richer central trough.

The proximity of this bench to the creek valley, the steep slopes about 35°, a grade line of about 5 percent for Sucker Creek, and an apparent agreement with this for the bench channels make an ideal set-up for hydraulic grade.

The bottom gravel for a depth of over 20 feet can be classed as heavy gravel, in which the boulders cannot easily be forced through the sluice. This bottom gravel will form about 20 percent of the volume. Overlying this is medium and fine sizes of gravels in strata of varying thicknesses that will yield to hydraulicking very easily. The overburden of talus from the hillsides is mostly fine, broken, angular schist and will offer no unusual difficulty. Water supply appears to be adequate for this deposit.

Timber of excellent quality is abundant on the property. The present equipment consists of a small ditch not over 3,500 feet long, with a capacity of about 500 miner's inches. It ends opposite the camp some 600 feet above the lower end of the property on the right limit where a working head of about 100 feet is obtained. Equipment consists of about 500 feet of pipeline, a small giant, a hand derrick, blacksmith shop, cookhouse and bunkhouse, with necessary utensils and small tools. A survey for a highline ditch shows that working head of about 350 feet can be secured opposite to the camp from a point on this survey some 7,000 feet from the proposed intake.

Informant: G. A. Bigelow, 1934.

THOMAS CLAIMS Waldo area

see Tomlinson, Gates, and Thomas claims

TIP TOP MINE (gold) Waldo area

Owner and operator: Tip Top Mining Company, Inc., Holland, Oregon. Ray Denton, owner; J. A. Sollitt, operator. Property is being purchased from Ray Denton by Tip Top Mining Company.

Location: Sec. 12, T. 40 S., R. 7 W.; elevation 3200 feet. The mine is 15 miles to the nearest post office at Cave Junction, and 4½ miles by CCC dirt road from Caves Highway; last 2½ miles of which are impassable during winter months. Property may be reached by ½ mile of trail from the CCC road.

Area: 7 lode claims (unpatented). Recorded under the name of Ray Denton.

Development: Principal development work consists of one crosscut tunnel 275 feet in length, which crosses a 3-foot vein at the 90-foot station from which there is a 15-foot drift. The face of the tunnel is in the quartz vein, and is about 50 feet below the surface. All veins are gold bearing; highest assay obtained was $90 per ton.

Equipment: One 25-ton Gibson Balanced Rod Mill; one 10-inch jaw crusher; two 4 by 4-foot amalgamating plates; one 15-foot Gibson table; two water pumps; one 1½-horsepower gasoline motor; one 7-horsepower gasoline motor; one 15-horsepower gasoline motor; one 3/4-ton mine car; track to face of tunnel; 3 cabins and mill building.

General: Water from springs is sufficient for milling; timber is plentiful; average maximum depth of snow is 4 feet; mountainous country; veins strike in various directions; a small quantity of sulphides occurs in the veins.

Informant: James Sollitt, April 1940.

Report by: A. A. Lewis.

TOMLINSON, GATES, AND THOMAS CLAIMS (copper) Waldo area

"The copper prospect belonging to Tomlinson, Gates, and Thomas, 12 miles southeast of Holland, is on top of the ridge east of Grizzly Gulch, at an elevation of about 4,850 feet as measured by barometer.

"At the upper shaft the vein strikes N. 60° W. and dips about 75° S.W. It is about 18 inches wide, but the adjoining ground contains quartz and some copper minerals to a width of about 4 feet. The copper occurs in chalcopyrite, bornite, chalcocite, chrysocolla, and malachite. Pyrite is also abundant."

Reference: Parks and Swartley, 16:222 (quoted).

TURNER MINE Waldo area

see Albright Mine

VALEN PROSPECT (chromite) Waldo area

Owners: John Valen and George James, Holland, Oregon.

Location: ¼ mile west of Elder Creek, at the end of the first switchback on the Happy Camp road; in the SE¼ sec. 31, T. 40 S., R. 7 W. From the Happy Camp road on the north side of Elder Creek, the deposit lies across the small creek and about ½ mile south up the hill at an elevation 200 feet higher than the road. It is 12 miles to the Redwood Highway at Cave Junction, and thence 33 miles to Grants Pass.

Geology: The country rock is normal, dark green, partly serpentinized peridotite-porphyry, associated with greenstone which crops out within 50 feet of the deposit. Due to the caved condition of the cuts and the broken character of the rock, the ore structures are hard to interpret, but the banded and disseminated ore in the largest northern cut (6 by 20 by 10 feet) appears in three sides of the cut, and seems to lie in a thin horizontal "blanket," probably only 1 to 2 feet thick. The banding in the ore itself strikes N. 30° to 50° E., and dips 55° to 65° east. In the southernmost of the three cuts, 40 feet away, the ore appears to strike N. 15° W. and dip 50° east, and is less than 2 feet thick.

Report by: John Eliot Allen, April 23, 1938.

WALDO COPPER MINE Waldo area

"The Waldo mine is in the SW¼ sec. 36, T. 40 S., R. 8 W., about a mile east of Takilma and half a mile south of the Queen of Bronze mine. The property is developed through several tunnels, which are now inaccessible. The property, *under option to the Queen of Bronze Mining Company in 1930, is owned by the Waldo* Smelting and Mining Company. No complete production records of the Waldo mine are known to be available, although considerable of its ore was treated at the Takilma smelter, and it is said that shipments from this mine were made through Grants Pass after the smelter ceased operating.

"The ore is found near the contact of serpentine and greenstone. Near the mine a roof pendant of greenstone, about 500 feet across, is surrounded on all sides by serpentine, and numerous smaller isolated blocks of greenstone occur in the serpentine near the contact. According to Winchell, the ore on one of the levels had a vaguely veinlike form trending about N. 60° E. and dipping about 45° S.E., whereas in a stope 30 feet above the strike was apparently N. 70° W. and the dip 50° S.W. At a higher level the ore occurred in a well-defined fissure striking N. 75° E. and dipping 55° S.E. The ore on the dump more nearly resembles that of the Cowboy mine than the Queen of Bronze ore. It is commonly rounded and enclosed in slickensided gouge. Chalcopyrite is the principal ore mineral. No cubanite was found in the samples collected. Pyrrhotite tends to follow incipient fractures and is more abundant than at the Queen of Bronze, but pyrite is less abundant. Malachite, azurite, and iron oxides are the most common oxidation products."

According to the Mining Journal (September 30, 1938):

"Production was recently started by the Waldo Copper Company, M. E. Hughes of Takilma, Oregon, president and general manager, and capacity output of 50 tons daily is being maintained. Ore carries values in copper and gold and is treated in the company's 50-ton flotation mill. A new 1350-foot tunnel is being driven and is expected to cut three known ore bodies. This ground is owned in fee by the company and is developed chiefly by a tunnel to a depth of 350 feet. H. Petrolo Collins is consulting engineer and mill superintendent and James and Max M. Hughes are foremen, all of Takilma. A crew of 14 is employed. Besides the Waldo Mine the company is operating the Sunbeam gold property and taking out about 20 tons of ore daily."

References: Shenon 33b:167 (quoted)
Parks and Swartley 16:230.

WALDO CORPORATION Waldo area

see Esterly Mine; Logan, Simmons, and Cameron Placer; Logan Placer; Simmons Placer.

WALDO PLACER Waldo area

Owner: Jane Sommers, Grants Pass, Oregon; operated by Fred Galeno.

Location: Sec. 28, T. 40 S., R. 8 W.

Informant: Harry Messenger, Takilma, Oregon, January 1940.

WALDO SMELTING AND MINING COMPANY Waldo area

see Waldo Mine

WINTERS AND McPHERSON PROSPECTS (gold) Waldo area

Location: Sec. 8, T. 39 S., R. 9 W.

History: "Lightning Gulch is a tributary of Canyon Creek west of the serpentine belt and traverses essentially the same horizon as the north fork. The greenstones are greatly sheared and out in some places by dikes related to daoite porphyry. Nearby are banded siliceous rocks which resemble quartzites and probably, like the oherts of the North Fork of Canyon Creek, belong to sedimentary masses.

"Near the mouth of Lightning Gulch, J. A. Winters has run a number of prospect tunnels into black slates or along their contacts with greenstone. The rocks at this place are much disturbed by slides, and although they may in some places average several dollars a ton, the source of the gold is difficult to trace. Some of the gold, however, appears to be in the slates, whose bronze slickensides are due to shearing movements after the deposition of the ore.

"Some distance up Lightning Gulch, Eugene McPherson has a mine tunnel 200 feet in length that follows the contact between greenstone and banded quartzite. The greenstone is greatly altered and the contact is very irregular. A small quantity of rich telluride ore is reported to have been stoped from this tunnel. I was unable to obtain a sample of the ore at the mine, but a small fragment was given me by Mr. Bowden, who assured me that it came from the McPherson tunnel. Mr. Bowden also gave me a sample from his own prospect farther northwest, on Lightning Gulch. Both samples reacted strongly for tellurium, giving a decided purple solution when boiled in concentrated sulphuric acid."

References: Diller, 14:69-70 (quoted); also in Parks and Swartley, 16:238.

WOODCOCK GARNIERITE (nickel) Waldo area

Owners: Ed J. Wilbur, Kerby, Oregon; Henry C. Leming, Henry S. Payne, and John K. Wilber, Harbor, Oregon; Herbert E. Scheidt, Brookings, Oregon; Collier H. Buffington, Gold Beach, Oregon (see Mining Records, book 41, pp. 128, 129, 141, 142, 143, 144).

Location: The claims are grouped around the common section corner of secs. 25 and 36, T. 39 S., R. 9 W., and sec. 31, T. 39 S., R. 8 W., on the southwest end of Woodcock Mountain at an elevation of 3,000 feet.

Area: Five standard quartz claims.

Topography: Steep peridotite hillside, with numerous rock outcrops; elevation is 2,500 feet to 3,000 feet and about 1,700 feet above the Illinois Valley floor. Rainfall is heavy during winter months; little, if any, snowfall; no water supply during summer months.

Development: One inclined shaft, reported as 90 feet deep but now filled with water; one large cut, 30 feet long; one smaller cut 10 feet long; another about 15 feet long. Numerous other pits are reported. Such development work as has been done is scattered over a wide area.

Geology: The country rock is peridotite, or saxonite, with large crystals of enstatite. It is fairly fresh and unweathered at the surface outcrops; weathering is not deep. The soil is mahogany red and ranges in depth from a few inches to several feet.

Secondary chalcedonic silica is common. On the surface, it is cellular and porous. Below the surface it is more massive and seems to occupy fracture planes. No organization of these "silica dikes" was noted on account of the poor outcrops. Garnierite (?) may be scattered through the silica in varying amounts, and some may be found in the overburden.

The area is characterized by relatively steep slopes and shallow overburdens.

Mining: Little work beyond assessment work has been done.

Report by: Ray C. Treasher, February 6, 1942.

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APPENDIX

Chromite in Josephine County

As has been previously stated, chromite occurs in southwestern Oregon in ultramafic intrusives such as peridotite and dunite, which in many places have been altered to serpentine. Deposits are known to occur in Josephine, Jackson, Curry, and Coos counties. The chromite is found as thin stringers, pods or kidneys, disseminated deposits, and beach sand deposits. The pods or kidneys are irregular in shape and vary in size from a few tons to more than 1,000 tons. Chromite in this type of deposit is often massive enough to be mined, sorted, and shipped as lump ore. Many of the pods or kidneys occur in shear zones along which the containing peridotite or dunite has been altered to serpentine. The disseminated types consist of dunite or serpentine in which scattered grains of chromite make up from a few to more than 30 percent of the mass; and the beach sands mined during World War II contained 5 to 10 percent chromic oxide. Concentration of the chromite in these two types of deposits is necessary to produce a marketable product.

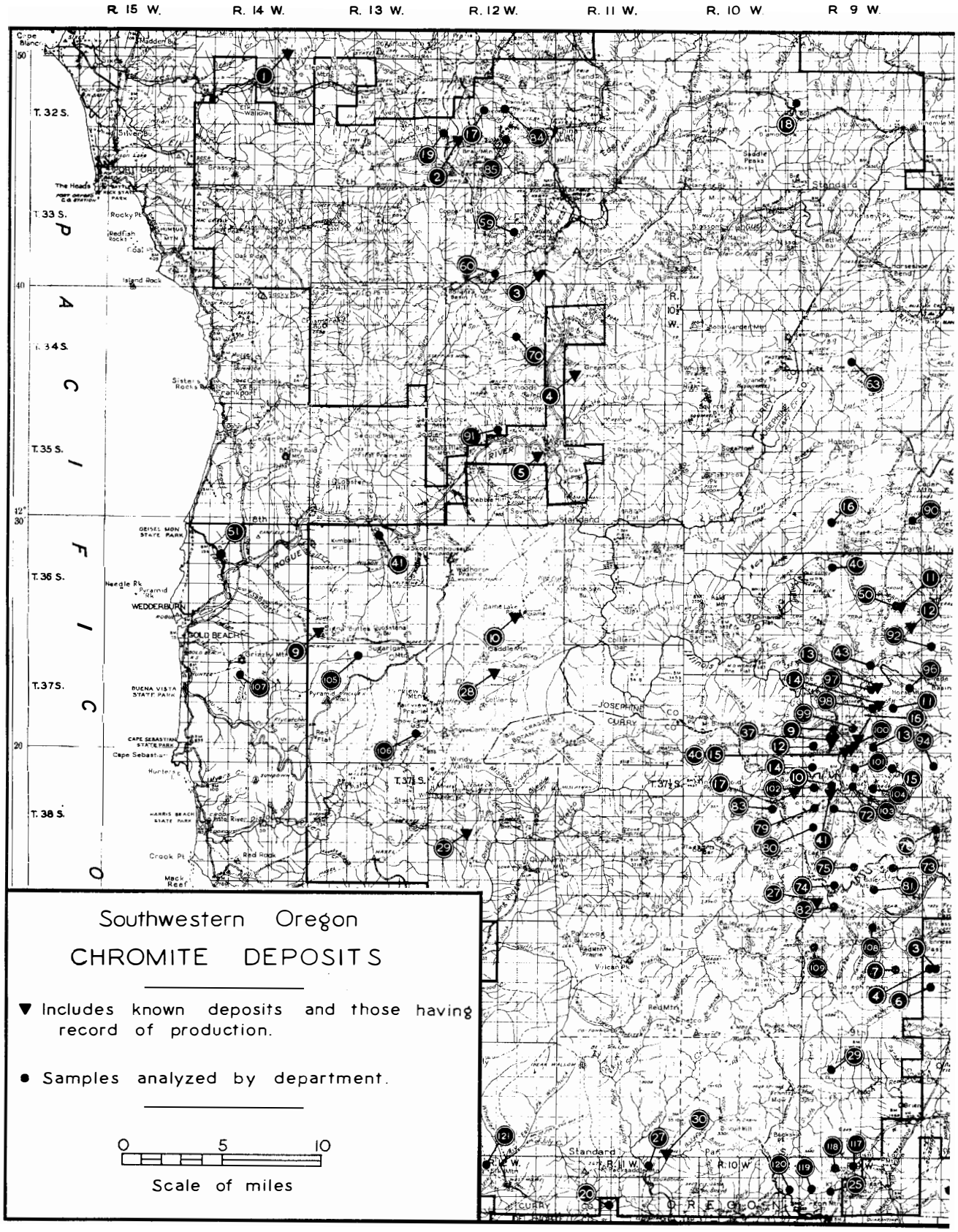
The importance of Josephine County in the production of chromite is indicated by the relative number of properties shown on the chromite deposits map of southwestern Oregon (pages 226 and 227) and by the production statistics discussed later. The locations of known deposits, several of which have records of production, and of samples submitted to the Department, most of which contained 40 percent or more chromic oxide, are shown on the map. Tables accompanying the map list locations, the names of some producing properties, and assay results.

Shipments of chrome ore from Josephine County properties to the Grants Pass purchasing depot during World War II, from April 1942 through December 1945, amounted to approximately 13,600 short tons. The Oregon Chrome Mines, Inc., was the largest and most consistent producer in the county. This company produced almost 9,000 tons of the above total.

The following table lists the chromite production of Oregon from 1941 to 1948, and as much of the production from Josephine County and the Oregon Chrome Mines, Inc., as could be approximated. All figures are in short tons.

Year	Oregon (Taken from USBM Minerals Yearbooks)	Josephine County (Approx.)	Oregon Chrome Mines, Inc. (Approx.)
1941	840	Unknown	Unknown
1942	2,683	1,399	156
1943	16,363	2,303	657
1944	7,818	6,931	5,714
1945	4,366	2,978	2,419
1946	2,669	2,669	2,669
1947	None	None	None
1948	3,345	3,086	3,086
Totals	38,084	19,366	14,701

According to the U.S. Bureau of Mines Minerals Yearbook, 1943, of the total production for Oregon for that year, 11,918 short tons were concentrates produced at the special concentrating plant of the Defense Plant Corporation at Coquille. These concentrates averaging



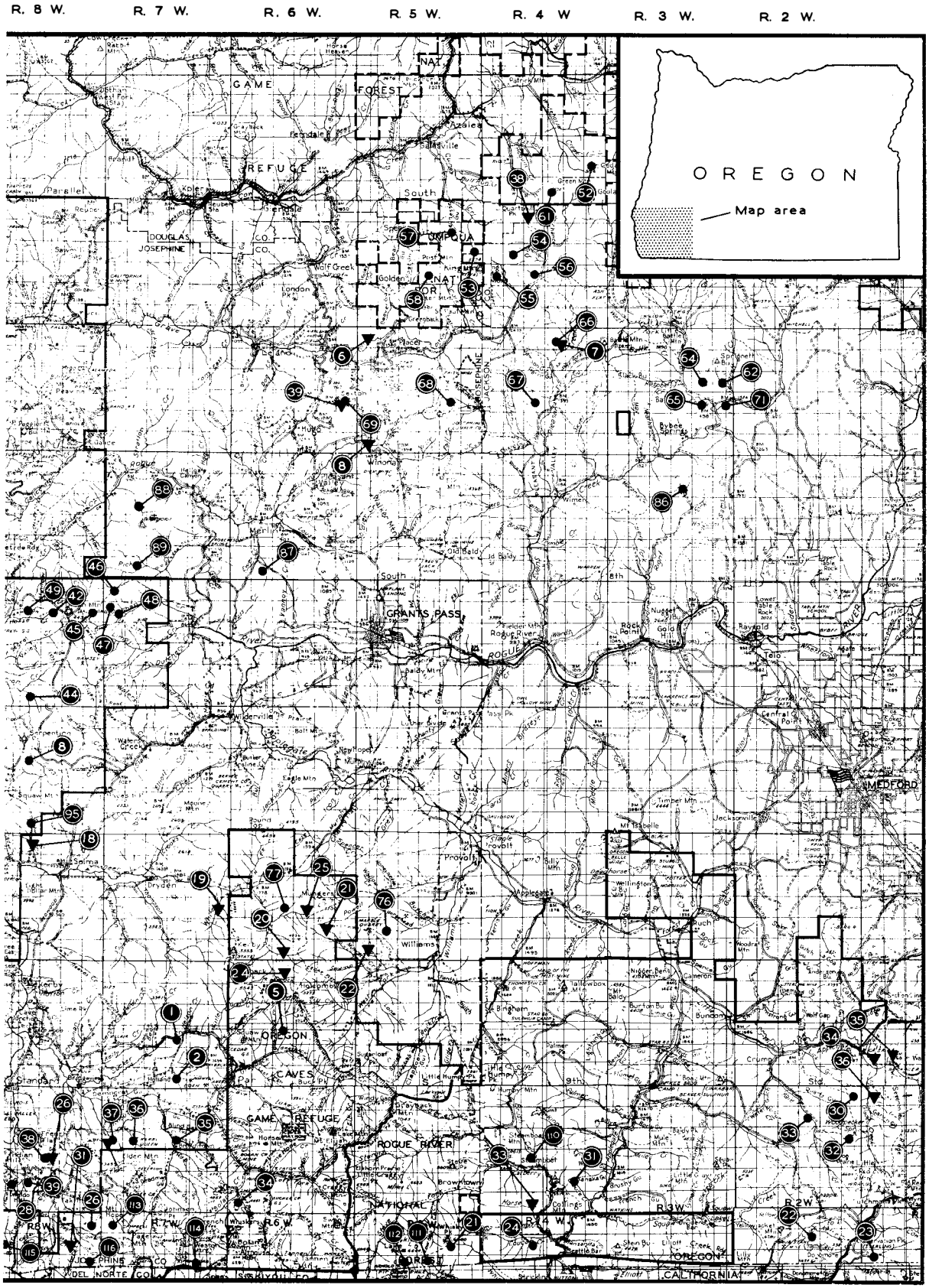
Southwestern Oregon
CHROMITE DEPOSITS

▼ Includes known deposits and those having record of production.

● Samples analyzed by department.

0 5 10

Scale of miles


R. 8 W.
R. 7 W.
R. 6 W.
R. 5 W.
R. 4 W
R. 3 W.
R. 2 W.
OREGON
Map area
GRANTS PASS
MEDFORD
OREGON CAVES
CAVES
GAME REFUGE
ROGUE RIVER
NATIONAL FOREST
DOUGLAS CO.
JOSEPHINE CO.
JACKSON CO.
CURRY CO.
DEL NORTE CO.
CALIFORNIA
R.8W.
R.7W.
R.6W.
R.5W.
R.4W.
R.3W.
R.2W.

39.3 percent Cr_2O_3 were obtained by secondary concentrations of 87,840 short tons of primary concentrates produced by the Humphrey Gold Corporation and the Krome Corporation from beach sand deposits in Coos County. By discounting production from these beach sand concentrates, it may be seen that Josephine County furnished more than 50 percent of the primary ore production for 1943.

Chrome concentrating plants

At present (March 1952) there are three chrome concentrating plants in the county. Three others, located in Jackson County at Eagle Point, at Ashland, and at the Homa mine about 2 miles southeast of the town of Rogue River, may obtain ore from deposits in Josephine County.

The concentrating plants located in Josephine County are reported briefly as follows:

BOWERS MILL — Galice area

The mill is owned by Dana W. Bowers, 48 Rose Avenue, Medford, Oregon. It is about 3 miles southwest of Galice in sec. 3, T. 35 S., R. 8 W., on the Dickey placer claims.

The plant was constructed during the summer of 1951. It began operation in the fall of that year and continued operation into 1952.

Milling equipment includes a hammer mill, 25-ton ball mill with classifier, and one concentrating table. Concentrates delivered to the Grants Pass stockpile are reported by the owner to average about 53 percent Cr_2O_3 with a 2.6:1 chrome-iron ratio. Ore for the mill comes from the Sordy mine located in the Briggs Creek area, which is under lease to Bowers from the Harry Sordy estate. Trucking distance from the Sordy mine to the mill site is about 19 miles.

Report by: Harold D. Wolfe, March 7, 1952.

CHROME MILLING COMPANY — Waldo area

The owners are Jesse L. Rice, president; Louie J. Rice, secretary and general manager; Louis F. Rice, vice-president and treasurer.

The concentrating plant is on a 20-acre site leased from the Esterly mine about 2 miles northwest of Takilma in sec. 23, T. 40 S., R. 8 W.

Milling equipment includes a portable Cedar Rapids crusher, 5 by 6-foot Williamson ball-mill with classifier, and three concentrating tables. It is expected to have a capacity approaching 100 tons daily. Ore will come from several properties in southern Oregon and northern California. The plant was expected to be in operation early in March 1952.

Report by: Harold D. Wolfe, March 7, 1952.

STRATEGIC MINERAL CORPORATION MILL — Galice area

Owner is Strategic Minerals Corporation, Ltd., 307 Laurel Street, Medford, Oregon. Officers in the company are W. D. Plumley, president; James Daley, vice-president; and Robert Bremer, secretary-treasurer.

The plant is about 3 miles southwest of Galice in sec. 3, T. 35 S., R. 8 W. The mill site is under lease from Dana W. Bowers, Medford. It was constructed in the fall of 1951 and began production November 24, 1951. Production continued into 1952.

Milling equipment includes a hammer mill, a ball mill (rated at about 50 tons per day) with classifier, and two concentrating tables. Ore for the mill comes from the Sordy mine in the Briggs Creek area. Trucking distance from the Sordy mine to the mill is about 19 miles.

Report by: Harold D. Wolfe, March 7, 1952.

Chromite Occurrences in Southwestern Oregon

Samples Analyzed by Department*

Map No.	Location Sec.	T(S)	R(W)	Percent Cr_2O_3
1	3	39	7	41.50
2	34	39	7	40.18
3	18	39	8	42.60
4	18	39	8	55.40
5	4	39	6	47.20
6	19	39	8	48.14
7	14	39	9	41.81
8	16	37	8	42.57
9	17	37	9	44.60
10	32	37	9	46.67
11	11	37	9	46.69
12	19	37	9	40.50
13	22	37	9	48.30
14	30	37	9	54.52
15	26	37	9	47.50
16	29	35	9	44.03
17	16	32	12	45.19
18	12	32	10	49.50
19	19	32	12	50.10
20	16	41	11	40.83
21	11	41	5	48.99
22	10	41	2	42.20
23	18	41	1	47.50
24	9	41	4	43.10
25	8	41	9	50.80
26	1	41	8	40.92
27	2	41	11	52.60
28	29	40	8	56.08
29	8	40	9	43.95
30	1	40	2	51.00
31	26	40	4	55.90
32	13	40	2	47.10
33	10	40	2	42.20
34	31	40	6	42.90
35	15	40	7	43.70
36	17	40	7	47.80
37	18	40	7	41.00
38	22	40	8	58.52
39	28	40	8	42.20
40	5	36	9	40.37
41	3	36	13	47.12
42	10	36	8	49.10
43	34	36	9	54.10
44	33	36	8	47.90
45	12	36	8	57.87
46	6	36	7	52.40
47	7	36	7	46.80
48	7	36	7	49.10
49	9	36	8	51.56
50	14	36	9	41.60
51	8	36	14	42.40
52	25	32	4	48.23
53	13	33	5	48.70
54	17	33	4	46.72
55	19	33	4	45.10
56	21	33	4	43.15
57	11	33	5	54.20
58	22	33	5	55.40
59	23	33	12	45.50
60	34	33	12	48.80
61	34	32	4	45.00
62	13	34	3	46.60
63	16	34	9	40.85
64	14	34	3	49.20
65	23	34	3	49.10
66	3	34	4	46.30

*Analyses below 40 percent not listed.

Map No.	Location Sec.	T(S)	R(W)	Percent Cr_2O_3
67	21	34	4	50.40
68	23	34	5	46.30
69	24	34	6	47.06
70	14	34	12	45.80
71	24	34	3	52.50
72	5	38	9	44.44
73	23	38	9	54.10
74	29	38	9	45.30
75	21	38	9	40.04
76	29	38	5	40.90
77	21	38	6	47.60
78	7	38	8	55.40
79	6	38	9	41.60
80	7	38	9	45.80
81	27	38	9	45.80
82	32	38	9	45.28
83	2	38	10	46.01
84	15	32	12	45.40
85	21	32	12	49.00
86	10	35	3	55.04
87	32	35	6	49.30
88	17	35	7	49.30
89	32	35	7	45.00
90	25	35	9	49.15
91	10	35	12	49.10
92	30	36	8	40.80
93	21	37	9	44.80
94	30	37	8	48.50
95	33	37	8	53.50
96	1	37	9	46.20
97	3	37	9	41.60
98	10	37	9	46.60
99	16	37	9	48.30
100	21	37	9	51.60
101	28	37	9	52.40
102	31	37	9	47.00
103	33	37	9	48.50
104	34	37	9	44.43
105	4	37	13	42.40
106	25	37	13	40.90
107	9	37	14	47.80
108	3	39	9	45.80
109	8	39	9	45.30
110	21	40	4	43.08
111	15	41	5	41.00
112	16	41	5	43.30
113	6	41	7	46.30
114	14	41	7	41.70
115	8	41	8	44.20
116	13	41	8	50.40
117	4	41	9	62.40
118	5	41	9	51.20
119	7	41	9	43.56
120	12	41	10	41.60
121	4	41	12	43.45

A list of former producers of chromite as well as some additional known occurrences is given on the following page. Analyses of samples of three of these occurrences show less than 40 percent Cr_2O_3.

Map No.	Name	Location Sec.	T(S)	R(W)	Percent Cr_2O_3
1	Trails End	35	31	14	
2	Salmon Mt.	20?	32	12	
3	Independence	36	33	12	
4	Illahe	29	34	11	48.00
5	Agness	13	35	12	
6	Graves Cr.	6	34	5	35.00
7	Chrome King	3	34	4	
8	Hammersley	31	34	5	
9	Signal Buttes	31	36	13	50.00
10	Game Lake	27	36	12	
11	Sordy (Briggs Cr.)	14	36	9	40.00
12	Elkhorn	24	36	9	47.00
13	Horse Mt.	3	37	9	35.00
14	Black Rock	10	37	9	
15	Oregon Chrome	21	37	9	47.01
16	Shade	21	37	9	
17	Dailey Cr.	36	37	10	44.73
18	Squaw Cr.	4	38	8	
19		24	38	7	
20		33	38	6	
21	Mungers Cr.	26	38	6	
22		31	38	5	
23		22	38	6	
24		4	39	6	
25	Chollard	18	40	7	49.00
26	Esterly	22	40	8	
27		31	38	9	
28	Windy Valley	9	37	12	
29	Chetco	8	38	12	
30	Sourdough	36	40	11	43.03
31	Owen	11	41	8	
32	Burro Claim	30	37	9	35.84
33		33	40	4	
34		30	39	1	
35	Cass Ranch	29	39	1	
36	Horseshoe	6	40	1	
37	Oregon Chromite No.1	20	37	9	44.32
38	Starveout Cr.	5	33	4	40.00
39	Sexton Peak	24	34	6	
40	Black Beauty	21	37	9	45.59
41	Deep Gorge	32	37	9	45.17

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STATE OF OREGON
Department of Geology and Mineral Industries
702 Woodlark Building, Portland, Oregon
EARL K. NIXON, Director

Map of Mining Areas

SOUTHWESTERN OREGON

to accompany

Bulletin 14-C (Volumes 1 and 2) Oregon Metal Mines Handbook

Map base courtesy U. S. Forest Service

Issued November, 1940

Scale — ¼-inch = 1 mile

For convenience, areas with their contained mining districts (see index map) are outlined below:

Volume 1—Coos, Curry and Douglas Counties

AREAS	Includes mining districts formerly known as:
COOS COUNTY	
1—Beach	Beach
2—Coos Bay	Coos Bay
3—Powers	Eden Ridge, Iron Mountain, Mt. Bolivar, Powers, Rock Creek, Salmon Mountain
4—Coquille	Coquille (eastern Coos County)
CURRY COUNTY	
5—Agness	Agness, Colliers Creek
6—Chetco	Chetco, China Diggings, Gold Basin, Mount Emily, Smith River, Tincup Creek
7—Gold Beach	Gold Beach, Pistol River, Signal Buttes
8—Lobster Creek	Euchre Creek, Lobster Creek, Ophir Mountain
9—Mule Creek	Mule Creek
10—Sixes River	Elk River, Sixes River
DOUGLAS COUNTY	
11—Nonpariel-Bonanza	Nonpariel-Bonanza
12—Riddle	Green Mountain, Silver Peak, Starveout Creek, Riddle
13—Tiller-Drew	Drew Creek, Tiller-Drew
14—Umpqua	Umpqua (unclassified)

Volume 2—Jackson and Josephine Counties

AREAS	Includes mining districts formerly known as:
JACKSON COUNTY	
15—Ashland	Ashland, Forty-Nine Diggings
16—Gold Hill	Evans Creek, Foots Creek, Gold Hill, Sardine Creek, Upper Graves Creek
17—Jacksonville	Jacksonville
18—Lake Creek	Butte Creek, Lake Creek
19—Upper Applegate	Applegate, Buncom, Carberry Creek
20—Unclassified	Elk Creek, Trail Creek
JOSEPHINE COUNTY	
21—Galice	Galice, Mount Reuben
22—Grants Pass	Dry Diggings, Grants Pass, Jump-off-Joe, Louse Creek, Merlin, Pickett Creek, Rogue River, Winona
23—Greenback	Coyote Creek, Grave Creek, Greenback, Leland, Wolf Creek
24—Illinois River	Illinois River, Josephine Creek, Selma
25—Upper Applegate	Applegate, Davidson, Missouri Flat, Murphy, Oscar Creek, Powell Creek, Slate Creek, Williamsburg or Williams Creek
26—Waldo	Althouse Creek, Bolan Creek, Browntown, Holland, Indian Creek, Sailor Diggings, Sucker Creek, Takilma

Generalized Geologic Map
OF
JOSEPHINE COUNTY
OREGON

TO ACCOMPANY

Oregon Metal Mines Handbook

BULLETIN 14-C

Volume II Part I

1942

Scaled for use as overlay on U. S. Forest Service base of the Siskiyou and Rogue River National Forests.

Compiled by R. C. Treasher

Drafted by J. E. Allen

EXPLANATION

Cretaceous
- Kh — Horsetown

Jurassic-Cretaceous
- gd — Diorite

Jurassic
- sp — Serpentine
- Jv — Greenstone
- Jg / Jd — Galice (Jg) Dothan (Jd)

Triassic ?
- gs — Greenstone

T.33 S.
T.34 S.
T.35 S.
T.36 S.
T.37 S.
T.38 S.
T.39 S.
T.40 S.
T.41 S.

R.11 W. R.10 W. R. 9 W. R. 8 W. R. 7 W. R. 6 W. R. 5 W.