STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
702 Woodlark Building
Portland 5, Oregon

Bulletin No. 38

Sixth Biennial Report

of the

State Department of Geology and Mineral Industries

of the

STATE OF OREGON

July 1, 1946, to July 1, 1948

TO HIS EXCELLENCY THE GOVERNOR
and the
FORTY-FIFTH LEGISLATIVE ASSEMBLY

To His Excellency, John H. Hall,
Governor of the State of Oregon
and to
The Forty-fifth Legislative Assembly of the State of Oregon

Sirs:

We submit herewith the Sixth Biennial Report of the Department of Geology and Mineral Industries, covering activities of the Department for the period from July 1, 1946, to and including June 30, 1948.

Respectfully,

Niel R. Allen
E. B. MacNaughton
H. E. Hendryx

Governing Board

Portland, Oregon
October 1, 1948

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Illustrations

INTRODUCTION

This report describes the activities of the Department from July 1, 1946, to July 1, 1948, which is the end of the fiscal year immediately preceding a regular meeting of the Legislature.

The Department has had a serious problem in trying to maintain a capable and experienced staff during this period due to the combination of constantly increasing cost of living, the general shortage of scientific and technical personnel, and the relatively low salaries of State employees. There has been keen competition for services of experienced geologists among private industry, Federal agencies, and colleges. Loss of three Department geologists slowed up some of the most important Department work, especially that on the State Geologic Map and on quadrangle mapping.

Mineral industry exploration activities in which the Department has been particularly interested have been conducted by Alcoa Mining Company; Dant and Russell Incorporated, Dantore Division; Solar Development Company; and the Texas Company.

Exploration work of Alcoa Mining Company on high-iron bauxite ore, as described in the preceding biennial report, has been continued during this biennial period. Many tracts of land have been intensively drilled both in Columbia and Washington counties. Several bulldozer pits have been opened up in order to obtain carload samples for metallurgical testing work at the Alcoa plant, East St. Louis, Illinois. The exploration activities by this company are the direct result of discoveries by the Department. The amount of new money spent in the State by Alcoa Mining Company approximates $2,000,000 and greatly exceeds the total amount of appropriations for the Department since it was established in 1937. The expenditures by the company are continuing at a substantial rate and there is no evidence, after four years of exploration, of a slackening of the company's interest in the deposits.

Exploration work in northwestern Oregon by major oil companies was described in the preceding biennial report. The third test of the Texas Company, and the last by any of the major oil companies for the period, was drilled near Mist in Columbia County. It reached a depth of 8501 feet and was abandoned June 30, 1947. Formation tests were made, but no evidence sufficient to encourage further work was encountered.

The only other oil prospecting activity was in eastern Oregon where there was some sporadic drilling, mainly in Harney County.

The new Oregon industry of perlite production by Dant and Russell, Incorporated, Dantore Division, has grown substantially during the past two years. The mine on the Deschutes River at Frieda in Wasco County has been set up for open-pit mining, and the mill capacity, operating two shifts, has been increased. It is planned to move the furnace plant at St. Helens to a larger site at Portland.

Exploration work on the North Pole-Columbia Lode in Baker County by the Solar Development Company was stopped early in 1947. This company was a subsidiary of the Consolidated Mining and Smelting Company of Canada, one of the world's large mining companies which had originally planned to do a considerable amount of development work in this lode gold area. Difficulty of obtaining labor and supplies and the burden of the exchange situation reportedly discouraged the company, and the project was abandoned.

Reopening to mineral entry and location of Oregon and California revested lands and Coos Bay Wagon Road grant lands was accomplished early in 1948 by legislation sponsored by Representative Harris Ellsworth and Senator Guy Cordon. These lands, embracing about $2\frac{1}{2}$ million acres in western Oregon, had been closed to application of the United States mining laws since August 1937 by a decision of the Department of the Interior. The reopening to mineral location of this area should encourage prospecting and mine development in Oregon. However, compliance on the part of the claim owner requires filing affidavits in the United States district land office both of location notice and annual labor. This is in addition to requirements of filings under State law. This requirement of filings on mining claims on O and C and Coos Bay Wagon Road grant lands is something wholly new in United States mining law and duplicates the filings at county offices under State law. The confusion inherent in this federal requirement is apparent if it is realized that originally these revested and reconveyed lands were in odd-numbered sections, but because of exchanges there are now even-numbered sections also contained in these lands. There appears, as this is written, to be no easy way for a claim owner or claim locator to determine whether or not his claim is on the revested or reconveyed lands.

During 1946 the Department made a field canvass of nonmetallic mineral production. The results of this canvass are given in the succeeding heading "Oregon Mineral Production."

The Department has continued its study of the nickel-bearing laterite areas of southwestern Oregon during this report period.

The Umatilla County Court requested the Department to make a geological study of sources of underground water in Umatilla and Morrow counties, and this work was undertaken in 1947-48 as a reconnaissance project after it was determined that the Ground Water Division of the U. S. Geological Survey could not undertake the work in the immediate future.

Departmental activities are described in detail in the pages which follow:

Introduction

The period covered by this report has been characterized by dormant metal mining and an increase in production of nonmetallics, especially those used in construction.

In normal times gold has always been the principal metal produced. Copper, lead, and zinc have been minor in importance and generally recovered as by-products of gold ore shipped to custom smelters.

Oregon is one of the relatively few states which have commercial deposits of mercury and chromite. Both these metals have been produced during this report period but the large war production has tapered off to a very small amount.

Value of Production

The total value of Oregon's mineral production in 1946 was $12,452,000 of which metallic products, including quicksilver, were valued at $752,000, according to the U.S. Bureau of Mines, and nonmetallics at $11,700,000, according to a Department canvass. The U.S. Bureau of Mines estimated that the total value of production in 1947 was $16,100,000 of which metallic products were valued at $800,000 and nonmetallics at $15,300,000. This was a record high for value of mineral production in the State. It represents a 29-percent increase over the value for 1946. The highest previous production was in 1942 and was valued at $14,065,572. In 1947 the ratio of value of nonmetallic to metallic production was nearly 20 to 1.

The U.S. Bureau of Mines preliminary estimate of Oregon's 1947 mineral production according to products is as follows:

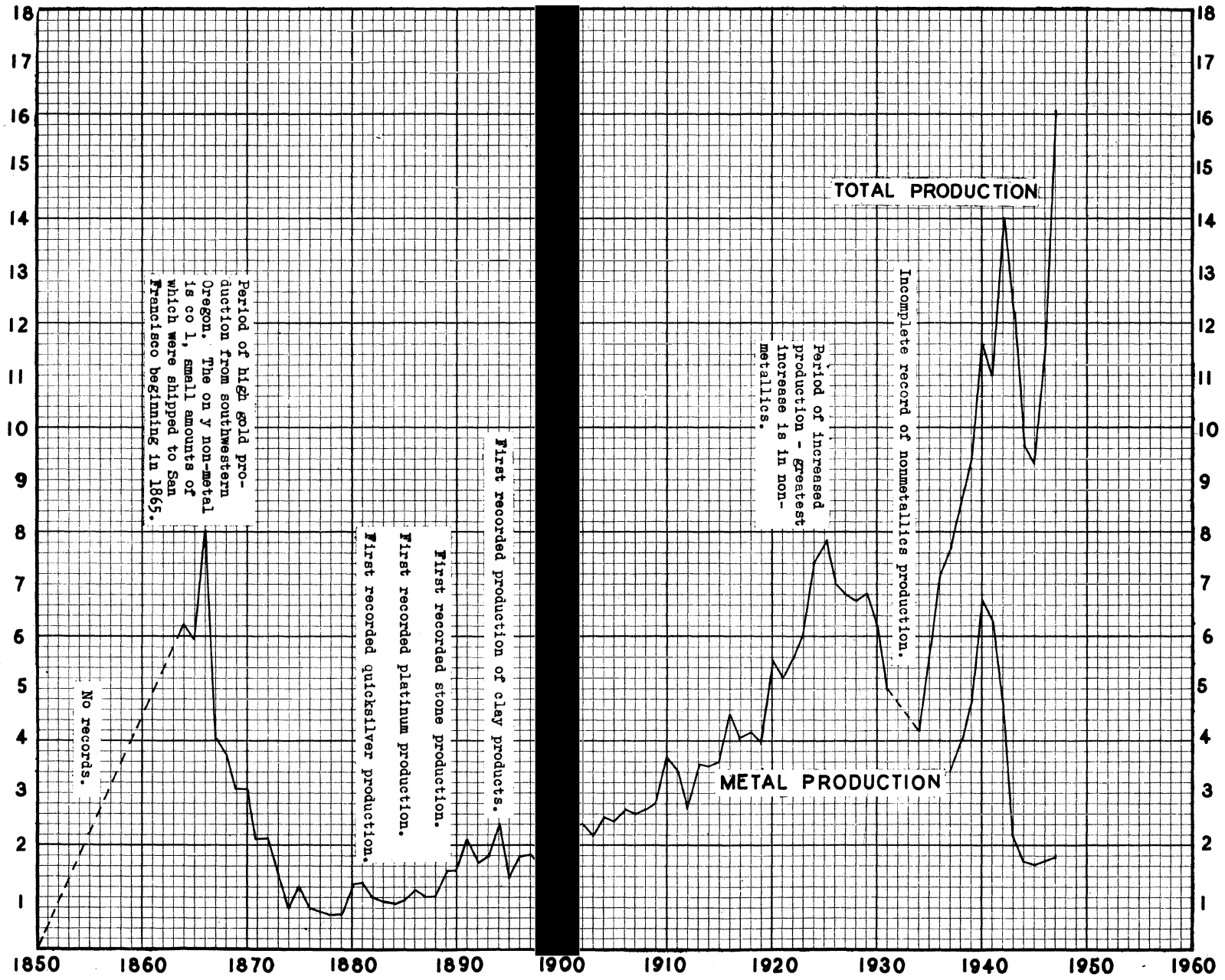
Mineral Production of Oregon in 1947

Metallic	Quantity	Value
Chromite . . . . . short tons	----	---
Copper . . . . . pounds	28,000	$ 5,880
Gold . . . . . troy ounces	18,979	664,265
Lead . . . . . short tons	12	3,456
Mercury . . . . . flasks	1,185	99,232
Ores:		
Copper . . . . . short tons	109	1/
Dry and siliceous (gold and silver) . . . . . short tons	3,168	1/
Platinum . . . . . troy ounces	----	---
Silver . . . . . do	30,379	27,493
Zinc . . . . . short tons	1	230
Total metallic	----	800,000
Nonmetallic		
Clay, raw . . . . . short tons	220,000	145,000
Pumice . . . . . do	33,240	111,380
Sand and gravel . . . . . do	6,000,000	5,600,000
Stone . . . . . do	2,650,000	4,000,000
Cement, clay products, coal, diatomite, lime, and silica (quartz)	----	5,443,620
Total nonmetallic		15,300,000
Grand total		$16,100,000

1/ Not valued as ore; value of recoverable metal content included with the metals.

VALUE OF OREGON MINERAL PRODUCTION

IN MILLIONS OF DOLLARS



Metallics

Gold and silver

Practically all of Oregon's gold production during 1946 and 1947 has come from dredges. The largest producers were the Sumpter Valley Dredging Company (now Baker Dredging Company) and Porter Bros. Dredging Company, in Baker and Grant counties respectively. Relatively small amounts of gold have been produced by the Buffalo mine in Grant County and two or three shippers in the Bohemia district of Lane County. Some small-scale prospecting has been carried on at other lode mines, but there has been little in the way of production and no systematic exploration by large companies, except that of the Solar Development Company mentioned under "Introduction." Ore containing both gold and silver, but with major values in silver, was shipped from the Oregon King mine in Jefferson County. Value of gold and silver produced in 1946 was reported by the U.S. Bureau of Mines as $621,527. In 1947 the Bureau reported $691,758 which may be compared with more than $4,000,000 produced in 1940. This comparison shows strikingly the depressed state of gold mining in Oregon.

Gold mining has the severe handicap of operating on a prewar fixed price of gold with postwar inflated costs. There has been also the additional burden, principally applicable to reopening lode mines, of high costs incident to heavy repair work which was occasioned by the Government closing order L-208. This order shut down all gold mines during World War II, and no provision was made in this order for property loss occasioned by the shutdowns. The United States was the only nation to issue an order closing gold mines - an order which, in effect, meant destruction of property without recompense.

Those gold dredges which had proved dredgable ground remaining after they were allowed to operate again have continued during 1946 and 1947. A few small operations have attempted to get started without much success. Some dredges have moved out of the State. There has been almost no interest shown in exploring unproved potential dredge areas, and this reflects the general lack of interest among mining people in new gold mining projects.

One factor which is clouding the gold dredging picture in Oregon is the opposition of certain groups to surface mining because of the alleged destruction of farmland by dredging operations. Those who would shut down gold dredges have not studied the subject from an unbiased standpoint. Usually the land dredged is of very small value as agricultural land. The amount of land destroyed by dredging has been and would be but a drop in the bucket compared to the percentage of the State's farmland which has been lost by soil erosion and soil depletion through improper methods of farming, by soil erosion caused by overgrazing, by erosion caused by logging on steep hillsides, and by the enormous loss from floods. The new wealth produced by dredges in most cases exceeds many times the loss to the State in destruction of the land.

The opposition to gold dredging has resulted in bills, sponsored by the Grange, which have been introduced in the last two legislatures. Although these bills failed to pass, the last Legislature passed a resolution setting up a legislative interim committee to hold hearings and draw up legislation, based on these hearings, which would regulate surface mining in some fashion. The matter will be acted upon by the Legislature which assembles January 1949.

In this period of farm prosperity it should not be forgotten that the mineral industry is very important to the State's economy; also that certain kinds of surface mining are essential to national preparedness and defense.

One development of interest to Oregon placer miners during 1947 was an interpretation by the United States Treasury of the Gold Reserve Act of 1934 as amended to April 15, 1942, to the effect that Section 19 of the Act permits purchase, sale, and transportation of gold in its natural state, as defined, without the necessity of holding a license. Buyers of gold have reportedly appeared and purchased placer gold at a figure considerably above the Government pegged price of $35 an ounce. That this market could develop to any considerable proportions in this country appears doubtful in the absence of the Government's ban on export of gold without a license.

Mercury

Oregon now (July 1948) has but one quicksilver producer, the Bonanza mine near Sutherlin, Douglas County. Postwar conditions in the quicksilver industry have forced the closing of all but a few of those mines throughout the West which supplied the country during World War II. There are two or three mines left in California, one in Nevada, one in Idaho, and one in Oregon. The wartime price of $196 per flask has been reduced to about $75-76 at a time when costs have increased greatly and appear to be still rising. The reason for the weakness in the domestic industry is that large quantities of foreign quicksilver have been brought in and sold on the domestic market, some of it under Government sponsorship. Seemingly, the need for maintaining a reasonably healthy quicksilver industry as a nucleus for emergency production of this important war mineral is not appreciated by those in authority.

Chromite

As this is written (July 1948) Oregon has one chromite producer, the Oregon Chrome mine on the Illinois River in Josephine County. During World War II this mine was an important producer of chromite. During 1947 it resumed development and production with shipments going to the Ohio Ferro Alloys Company, Tacoma, Washington. The margin between price received and increasingly high costs is forcing the operator to discontinue development work and confine his activities to mining. When the ore in sight is mined out, he will be forced to shut down. Once this chromite mine closes it will be lost within a short time because of the nature of the underground openings; hence the closing of this source of a very important war mineral will be a serious matter from a national defense standpoint. In spite of this critical situation, the national stockpiling agency appears to have no interest in contracting for the ore at a price that would allow the operator to maintain his workings.

Nonmetallics

Limestone

Demand for limestone has continued at a high rate. Consumption is principally for making portland cement, but there is an insistent and continuing demand for agricultural stone and for making calcium carbide. During the period covered by this report the Oregon Portland Cement Company, with quarries at Lime in Baker County and Dallas in Polk County and with kilns at Lime and at Oswego, more than doubled the capacity of its Oswego plant. Agricultural limestone is being used more and more on Willamette Valley farms, as its value in dollar return is becoming recognized, but the amount now used is far below that which should be used. More than 75,000 tons of agricultural stone was used by Willamette Valley farmers in 1947, only 7,000 tons of which was furnished by the Production and Marketing Administration of the U.S. Department of Agriculture.

Lime was used by the Pacific Carbide Company and the Electro Metallurgical Corporation, both of Portland, in the manufacture of carbide, in which process lime, made by burning limestone, is combined with coke. The Pacific Carbide Company has kilns for making lime out of limestone, while the Electro Metallurgical Corporation does not.

There has been a shortage of portland cement in the Northwest because of the large amount of construction in progress. In order to help relieve this shortage and also to provide for making a more satisfactory cement where an excess of alkali is present, companies have been searching for sources of pozzolanic materials in this area. Such materials provide natural cement qualities and in addition, as stated above, react with excess alkali in the cement and thus prevent or retard destructive reactions.

Sand, gravel, and crushed rock

Large demand for sand, gravel, and crushed rock has continued because of the construction boom. Logging companies have built more roads than ever before because of the great expansion in the demand for lumber. Building of logging roads has meant a large increase in the quarrying and use of crushed rock on these roads, and some of this production does not get into the records.

In 1947 the Pacific Building Materials Company completed a large crushing and screening sand and gravel plant at Portland. This company supplies ready-mix concrete and, because of the clean fractions produced at this plant, it is estimated that a substantial reduction in cement will be effected in making the concrete mix. Nearly all of the concrete used in the building industry now is supplied by ready-mix plants.

Clay

As in other departments of the building industry, brick and tile plants have had a large demand for their products and all plants have been busy. Only one other clay-working industry uses any substantial amount of clay, and that is the Pacific Stoneware Company of Portland which makes several types of stoneware, jars, and flower pots. A small quantity of clay is used in a few ceramic studios in the State. There is a large demand for white kaolin for filler and coating clay in paper making, and the clay now used for these purposes is brought here from Georgia. The Department has tried to find a suitable kaolin in the State, but has been unsuccessful so far.

Lightweight aggregate

Pumice, perlite, diatomite, and haydite are being used to an increasing degree in construction. Pumice excavated east of the Cascades, mainly near Bend and Chemult, is shipped into western Oregon and Washington for use in making building blocks. Haydite, a porous cellular product made by heating siltstone or shale, is used for the same purpose. A quarry and plant for producing haydite was started up in 1947 by the Northwest Aggregate Company. The location is near the Sunset Tunnel on Sunset Highway in Washington County.

Perlite, produced by Dant & Russell, Inc., Dantore Division, as given under "Introduction," is an expanded volcanic glass and is now sold widely as a plaster sand. The material has great advantage in providing insulating qualities as well as reducing the weight of plaster. This reduction in weight is highly important, especially in large buildings.

Nearly all of the diatomite produced comes from the Dicalite quarry of Great Lakes Carbon Corporation on the Deschutes River near Terrebonne in Deschutes County. Although diatomite is used as a lightweight aggregate, its principal uses are as a filter aid, filler, and insulating agent.

Coal

The Southport mine of the Coast Fuel Corporation at Coos Bay suspended operations in 1947 and employees of the company took the operation over under a lease arrangement. Production of coal has continued somewhat sporadically as required to fill the demand. A few other coal producers in the Coos Bay area have mined and sold coal locally in relatively small amounts. A coal mine near Wilhoit Springs in Clackamas County has been in the development stage for the last few years. Another prospect near Vernonia, Columbia County, has been opened up.

Quartz and silica sand

The quartz and granite quarries of the Bristol Silica Company have continued to operate mainly to supply a demand for poultry grit, although some metallurgical silica has been sold.

The silica sand plant of Silica Products, Oregon, Ltd., located at Eugene, was sold by the War Assets Administration to a local company which dismantled the plant in order to build a lumber mill. The quality of the sand produced by Silica Products was excellent for steel foundry use but difficulties of financing caused suspension of operations. This is especially unfortunate because, from a national defense standpoint, it would be highly desirable to have a local source of high-grade steel foundry sand in the Northwest instead of, as in the past, depending upon steel foundry sand brought across the continent, mainly from Illinois.

Gemstones

This Oregon industry is a combination of commercial lapidaries and hobbyists. Oregon is famous for its agates and "thunder eggs," and collectors from all over the West come to the State in order to obtain the material. Part of it is sold to lapidaries and part goes into private collections. Some collectors buy and sell agates and other mineral specimens as a business aside from their regular employment. It is impossible to determine the dollar value of this business but it is relatively large. If it were possible to separate the commercial from the noncommercial production, it would probably be found that the value of the raw stones sold commercially would be many thousands of dollars; the value of the cut and polished stones would be of the order of several hundred thousand dollars.

SERVICES PERFORMED
by
State Department of Geology and Mineral Industries

Governing Board
Director
Staff

Field Office
Field Geologist
Baker, Oregon

HEAD OFFICE
702 Woodlark Building, Portland 5, Oregon

Field Office
Field Geologist
Grants Pass, Oregon

Information Service	Laboratory Division	Publication Work	Geology and Mineral Resources Studies	Library	Museum	Miscellaneous Services
Information on: mines minerals and rocks mineral economics geology ore deposits treatment processes oil prospecting	chemical analysis fire assaying spectrographic analysis ceramic testing petrographic analysis ultraviolet light test radioactivity test research	Publication of: bulletins short papers special reports press releases Ore.-Bin maps interoffice forms preparation, editing, and multigraphing	a. Geology: geologic mapping State (quadrangle and reconnaissance) stratigraphic studies paleontology well log studies b. Mining inspection of mines and mineral deposits metallurgical studies production and industrial surveys	Department publications exchange publications Government publications Geol. Survey Bur. Mines geological and technical magazines maps	Collection of: rocks minerals fossils photographs industrial samples thin section file	copies of unpublished geol. reports made available speakers provided small mineral collections furnished

SET-UP OF THE DEPARTMENT

Duties of the Department, as set forth in the law which created it (Oregon Laws, 1937, Chapter 179), are outlined as follows:

(1) Conduct geological and mineral resource studies.

(2) Carry out economic studies pertaining to utilization of mineral raw materials.

(3) Cooperate with Federal and other agencies in studies of value to the State.

(4) Serve as a bureau of mineral and geological information, compile and keep up-to-date a mines catalog, prepare and publish reports of investigations, mineral statistics, etc.

(5) Conduct a State geological survey.

(6) Collect specimens and develop a museum of mineral and geological specimens, maps, and other objects representative of mineral industry activities.

(7) Collect a mining and geological library.

(8) Make qualitative mineral determinations.

(9) Study minerals and ores as well as processes for improved ore treatment.

(10) Make quantitative determinations of ores and minerals.

The Department is administered by a Governing Board of three citizens who serve for four-year periods. The Governor of the State selects the Governing Board, subject to the approval of the State Senate. The Board members serve without compensation but receive traveling expenses. They meet at least four times each year. The Board may make contracts with Federal and other State agencies and may receive gifts and legacies and make use of them for the best interests of Oregon.

The Board causes to be published a biennial report of departmental activities, as well as reports of investigations and surveys as required under the law. It selects the Director of the Department who has charge of the work of the Department and who subscribes to the same oath of office as other State officers. The Director employs assistants and fixes their remuneration with the approval of the Governing Board. Money received from sale of maps and bulletins and from other sources is paid to the State Treasurer to be credited to a "departmental fund." The accounts of the Department are audited annually.

The Board has continued to maintain a head office of the Department at Portland and field offices both at Baker and at Grants Pass.

PERSONNEL

The Governing Board of the Department was composed of the following members as of June 30, 1948:

Niel R. Allen, Grants Pass, Chairman, reappointed 1948.

E. B. MacNaughton, Portland, appointed 1946.

H. E. Hendryx, Baker, reappointed 1947.

Mr. S. H. Williston resigned from the Board on January 21, 1947, because business interests required him to be away from the State a large part of the time, and Mr. H. E. Hendryx, Baker, was appointed to serve as a member of the Board for the unexpired term of Mr. Williston. On March 16, 1947, Mr. Hendryx was reappointed for a full term.

The regular personnel of the Department as of June 30, 1948, was as follows:

F. W. Libbey, Director

Hollis M. Dole, Geologist

L. L. Hoagland, Assayer and Chemist

Ralph S. Mason, Mining Engineer

Thomas C. Matthews, Spectroscopist

Margaret L. Steere, Geologist

R. E. Stewart, Geologist

Norman S. Wagner, Geologist, Baker

Harold D. Wolfe, Geologist, Grants Pass

F. A. Steeble, Accountant

June A. Roberts, Secretary

Lillian F. Owen, Multigraph Operator

Dorothy J. Edgerton, Stenographer

Anna J. Rose, Stenographer, Grants Pass

Marguerite L. Beedon, Stenographer, Baker

Some temporary employees have been hired during the period covered by the report for clerical and miscellaneous office work, drafting, laboratory, and field work. They are included in a list on a following page giving compensation and expenses of employees.

ORGANIZATION WITHIN THE

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

- **Director**
  - **Laboratory Division**
    - Assay and chemical laboratories (Hoagland)
    - Spectrographic laboratory (Matthews)
    - Ceramics (Matthews)
    - Petrographic examination (Dole)
  - **Mines Division**
    - Info. service on mines (Libbey, Mason, Wagner, Wolfe, Dole)
    - Metallurgy and mineral economics (Libbey, Mason)
    - Mine investigations (Libbey, Mason, Dole, Wagner, Wolfe)
    - "The Ore.-Bin" (Libbey, Owen)
    - Annual production data (Libbey, Mason)
    - Editorial and publication (Libbey, Steere, Mason, Dole, Owen)
    - Industrial surveys (Libbey, Mason)
  - **Geologic Division**
    - Info. service on geology (Dole, Stewart, Wagner, Wolfe)
    - Geological surveys (Dole, Wagner, Wolfe)
    - Petrology (Dole)
    - Stratigraphy (Stewart, Dole, Wagner, Wolfe)
    - Paleontology (Stewart)
    - Map making (Mason, Dole, Wagner, Wolfe)
    - Editorial & Publication (Libbey, Steere, Mason, Dole, Stewart, Owen)
  - **Reference Division**
    - Library and catalog (Steere)
    - Collection of rocks, minerals, and ores with index (Steere)
    - Map collection and index (Mason)
    - Mine reports and card files (Mason, Dole, Edgerton, Steere)
    - Thin section file (Dole)
    - Photograph file (Roberts)
  - **Government Cooperation**
    - Negotiations and cooperation with USGS, USBM, etc. (Libbey)
  - **Clerical Division**
    - Secretarial (Roberts, Edgerton)
    - Bookkeeping (Steeble)
    - Purchasing (Steeble)
    - Property (Steeble)

POLICIES

Under the law which created the Department, certain duties are specified. Supplementing and implementing these duties, the Governing Board must determine and promulgate general policies and rules for the conduct of the Department.

As has been pointed out in previous reports industrial minerals are becoming more and more important in the State's economy. The Board realizes, as it has always realized, that there is an ever increasing need for industrial mineral studies both of sources of supply and of markets. Industries are constantly making inquiries of the Department concerning possible sources of industrial minerals, and the Department should be in a position to answer such inquiries fully. At the same time it is recognized that in order to give complete answers exploration is usually required, and any extensive exploration is beyond the available facilities and funds of the Department. This applies to metallic as well as nonmetallic investigations. Insofar as personnel has been available the Department has studied markets and technology of industrial minerals known to occur in Oregon with the end in view of encouraging new industries to establish operations in this State. These activities will be continued.

Although the Board recognizes that there is an increasing need for industrial mineral studies, it does not believe that there should be a decrease in geological surveying or strictly scientific studies, since these usually form the necessary foundation for economic studies.

The Board decided that during the biennium reported upon, the time was not appropriate for reestablishing field laboratories. The quantity of work was handled capably by the one laboratory at Portland, and it was felt that until conditions change, the expense of reopening laboratories at Baker and Grants Pass is not warranted.

MINERAL INDUSTRY INFORMATION SERVICE

One of the most important duties of the Department is to provide information on the mineral industry of the State, as well as to answer inquiries concerning a wide range of subjects relating to mineral occurrences and the geology of Oregon and other states. Requests for information are continually received by letter, telephone, telegraph, and personal calls. Although the larger proportion of inquiries comes from residents of the State, a great many are received from people living outside the State and not uncommonly from residents of foreign countries. Federal Government departments and bureaus frequently make use of this departmental service.

During the past two years, perhaps the most frequent inquiries have been concerned with sources and markets of industrial minerals, but there have been many questions received on mining regulations relating to location and assessment work, coal deposits, oil possibilities, economic geology of specific mines and areas, mineral localities in the State, and for publications. In spite of the depression in gold mining, prospecting for gold has a widespread attraction, and persons often inquire of the Department for advice concerning the localities where there are the best chances of finding gold.

APPROPRIATIONS

The Department's activities are supported by money appropriated by the Legislature out of the State's general fund. Appropriations received by the Department are divided into accounts classified as follows: Salaries and wages; general, operating, and maintenance expense; capital outlays; and special requests. Funds appropriated for use under one classification may not be used for expenditures in a different classification. All departmental expenditures are evidenced by warrants drawn on the State Treasurer and are audited by the office of the Secretary of State.

In addition to the receipt of appropriative funds, the Department maintains a separate account with the State Treasurer into which go monies received from sale of departmental publications, from gifts, or from cooperating agencies. Warrants are then drawn on this account to cover payment of expenses incurred by the Department, but the fund is used principally to augment amounts allotted for printing since the fund comes mainly from sale of publications.

The following headings give appropriations made by the last two legislatures as well as funds requested for the biennium 1949-1951.

Department of Geology & Mineral Industries	1945-1947 July 1 - June 30	1947-1949 July 1 - June 30	Requested 1949-1951 July 1 - June 30
Salaries and wages	$ 94,920.00	$112,024.00	$135,853.12
Gen., Oper. & Maint.	29,900.00	38,755.00	45,495.98
Capital outlays	5,000.00	2,900.00	5,950.00
Special requests	11,000.00	11,500.00	12,500.00
Totals	$140,820.00	$165,179.00	$199,799.10

The increase in appropriations requested for the 1949-1951 biennium is due to the greatly increased cost of operating in all phases of the Department's work. State Civil Service salary ranges, although below equivalent classifications in Federal service and in private industry, still provide for annual increases. A "cost of living" increase of $30 per month as suggested by the Budget Division is included. Rent for quarters in the Woodlark Building during the 1949-1951 biennium has been increased by the owners of the building to a minimum of 18 percent and a maximum of 31 percent, the exact amount depending upon the increase in building operating costs before expiration of the current biennium. The increase under "Special requests" and "Capital outlays" is occasioned by the need for pushing work on the state geologic map, as well as making provision for re-establishing field laboratories should the Board decide that such action is in the public interest. $2500 is included in "General, Operating, and Maintenance" to take care of probable moving of office from 702 Woodlark Building to a new State office building in Portland.

HEAD OFFICE AND ASSAYING SERVICE

The administrative office of the Department is at 702 Woodlark Building, Portland. Included at this location are a spectrographic laboratory, a chemical laboratory including fire assaying equipment, a petrographic laboratory, crushing and grinding equipment, cutting and polishing equipment, drafting room, museum, multigraphing equipment, library, and offices for the staff.

Principal duties at this office are, aside from clerical, taking care of the information service; preparing, editing, and multigraphing reports for publication; analytical and testing work on mineral samples; and cataloging publications and specimens for the library and museum.

A free assaying service is maintained by the Department. Samples are received at either the field offices or the head office and are assayed at the head office laboratory. According to the law establishing the Department, a single person or group of persons may submit no more than two samples in a 30-day period. Such samples must be from an original prospect or property within the State, and the service is given without charge in return for information on the origin of the sample including the location from which it was obtained. This service may not be given to engineers in the sampling of properties for the purpose of evaluation nor to operating mines which are milling or shipping ore.

Statistics of activities at this office from July 1, 1946, to July 1, 1948, are given below:

Number of visitors at the Portland office	3,559
Pieces of mail received at Portland office	18,675
Pieces of mail sent out of Portland office (not including new publications)	18,294
Number of qualitative determinations made	600
Number of quantitative determinations made	4,780
Petrographic examinations (excluding thin sections)	485
Number of thin sections analyzed	51

Similar data for field offices at Baker and Grants Pass are given on the following page.

FIELD OFFICES

Two field offices are maintained, one for eastern Oregon at Baker and one for western Oregon at Grants Pass.

Each field office is staffed with a field geologist and a part-time stenographer and clerk. Duties of the geologist include obtaining information on mines and prospects for the Department's files and mines catalog, supplying information on minerals and mineral properties, advising prospectors concerning their problems, and inspecting mines and prospects at owner's requests as a part of mineral resource studies.

The field geologists are continually called upon for mineral industry and geological information in their territories by prospectors, examining engineers, and geologists.

Pertinent statistics concerning the work of these field offices for the two-year period are as follows:

	Qualitative Determinations	Business Callers	Business Letters
Baker	220	1,998	930
Grants Pass	282	1,985	701
Total	502	3,983	1,631

SPECTROGRAPHIC LABORATORY

The spectrographic laboratory has three principal functions from the standpoint of division of work of the spectroscopist; (1) Qualitative analysis of mineral samples to determine presence or absence of specific elements. Such determinations can usually be made much more quickly and dependably with the spectrograph than by any other method. (2) Quantitative analysis of samples in which all elements are determined in percentages within the accepted limits of accuracy, and in a small fraction of the time required for quantitative chemical analysis. Very small percentages of some elements may be determined more accurately with the spectrograph than by any other method. (3) Research work on specific problems, usually in determining minute quantities of diagnostic elements. Such work may be done acceptably only with the spectrograph.

In October 1946 the operation of the spectrographic laboratory was taken over by T. C. Matthews, a physicist. During the biennium the principal use of the spectrograph has been for qualitative determinations of all types. It has been especially valuable in determining presence or absence of rarer metals in which interest has greatly increased since World War II. Custom analyses included quantitative control work on alloys for casting and heat treating operations. A research problem on the percentage of various platinum metals which are picked up by a silver bead in the fire assay was carried on with the assistance of the assayer, Mr. Hoagland.

A new dark booth was set up in the laboratory for more definite examination of specimens for fluorescence and phosphorescence under ultraviolet light. In June 1947 a Geiger-Müller counter was secured and since that time all samples sent to the Portland office have been tested for radioactivity. Instruments are on order for setting up equipment for thermal analysis of mixtures of minerals, especially clays.

The Governing Board has set up rules for the commercial analysis of samples by the spectrograph. These rules are given in detail in a Department publication describing the spectrographic laboratory. Statistics covering the work of the laboratory are given below:

Total number of analyses made	798
Custom analyses made	84
Receipts from custom analyses	$ 489.60

VIEW OF THE SPECTROGRAPHIC LABORATORY AT THE PORTLAND OFFICE OF THE STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES.

CERAMICS

The Department ceramist left in August 1946 to accept a fellowship at a university, and ceramic work by the Department was greatly curtailed. In the absence of a ceramist a Department geologist received instructions in the testing of paper clays from a chemist of one of the paper companies, and a considerable amount of testing was done in order to further the search for a suitable paper clay. Also many samples of common clays were received and tested for suitability for making brick and tile. Samples of bentonitic clays were often received for identification.

Near the end of the period covered by this report the Department entered into a co-operative arrangement with the Oregon Ceramic Studio, in which arrangement the Department and Studio agreed to employ a ceramist jointly on work divided equally between the two agencies. An experienced ceramist from the New York College of Ceramics has been employed and started work July 1, 1948.

There is an almost unlimited field for development of uses for Oregon clays and clay-working industries. There is also the need for seeking sources of certain types of clay to meet a particular demand. This has been brought home to the Department by the need of one of the paper companies for a local source of white kaolin now brought across the continent in large amounts from Georgia. The Department hopes to render a valuable service to the State in the development of ceramic industries.

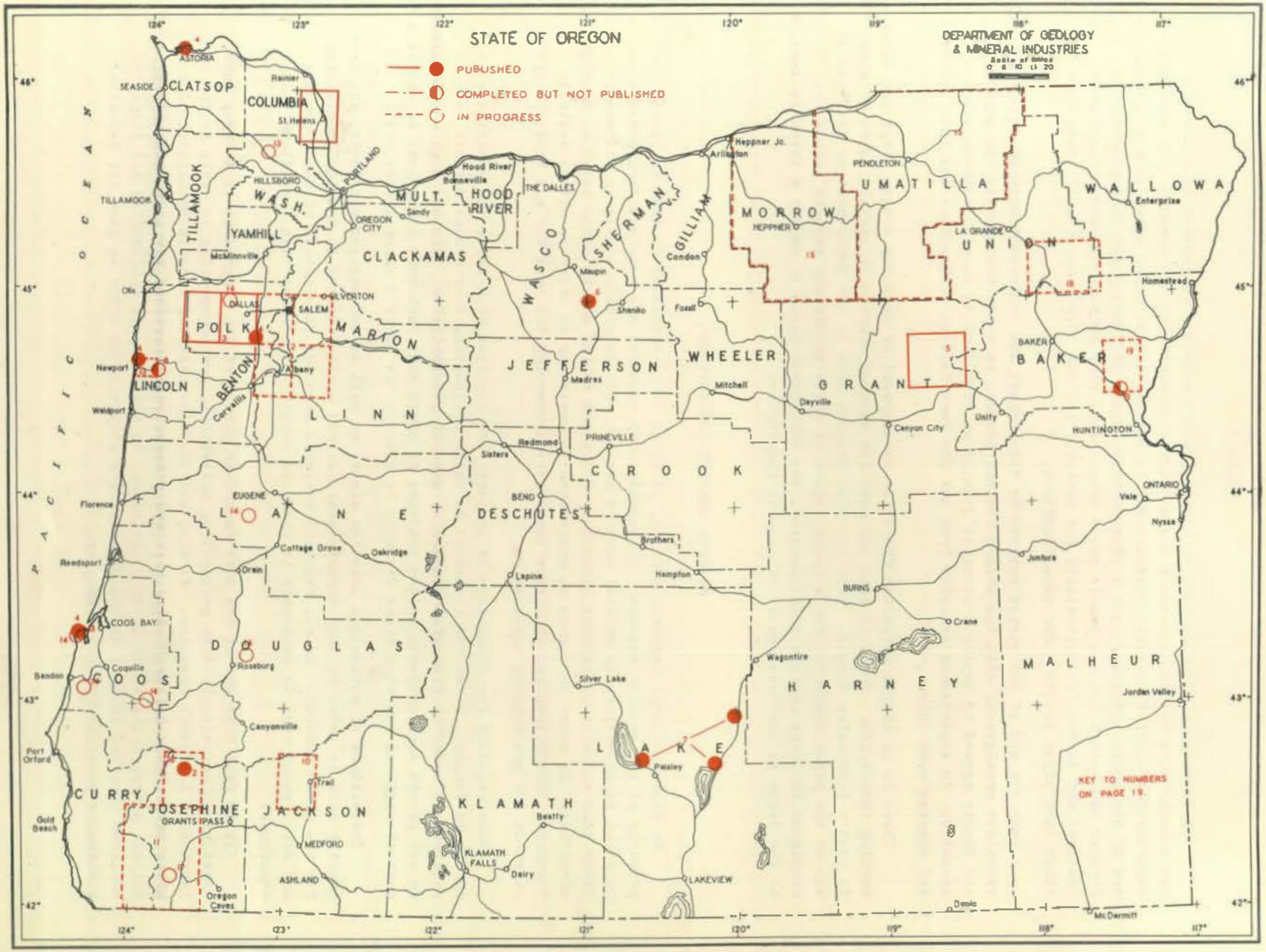
MINERAL DEPOSIT INSPECTIONS

In making mineral resource studies, it is at times necessary to make an inspection of property at the owner's request. Frequently such requests are received from persons who have had no experience in mineral matters and who wish to obtain advice on whether or not their land contains commercial minerals. Sometimes advice may be given based on samples submitted. In other instances an inspection is necessary in order to obtain reliable technical information and to advise the owners concerning the need for and kind of work required for preliminary exploration.

Some requests for inspection of property are received with which the Department is unable to comply. These are instances in which prospecting over a considerable area is required in order to determine commercial mineral possibilities. Limited time and personnel do not permit such projects unless evidence is plain that such work might bear on and be a part of regional investigations designed to develop the State's mineral resources.

Inspections of active and inactive mines, as well as undeveloped prospects, are frequently made in order to keep departmental records up-to-date and to provide information for the Mines Catalog. In all regional geologic mapping, examination of mine openings and development work is necessary in order to obtain evidence on rock formations and structure.

It is felt that one of the most important duties of the Department is to keep in as close touch as possible with prospecting activities, for prospecting is basic to the existence of a mineral industry. To this end the free assaying service is maintained as given under "Head Office." Also rock and mineral determinations are made which often include petrographic study of thin sections. In addition new discoveries are inspected whenever they are brought to the Department's attention in order to give all technical assistance possible to the prospector.



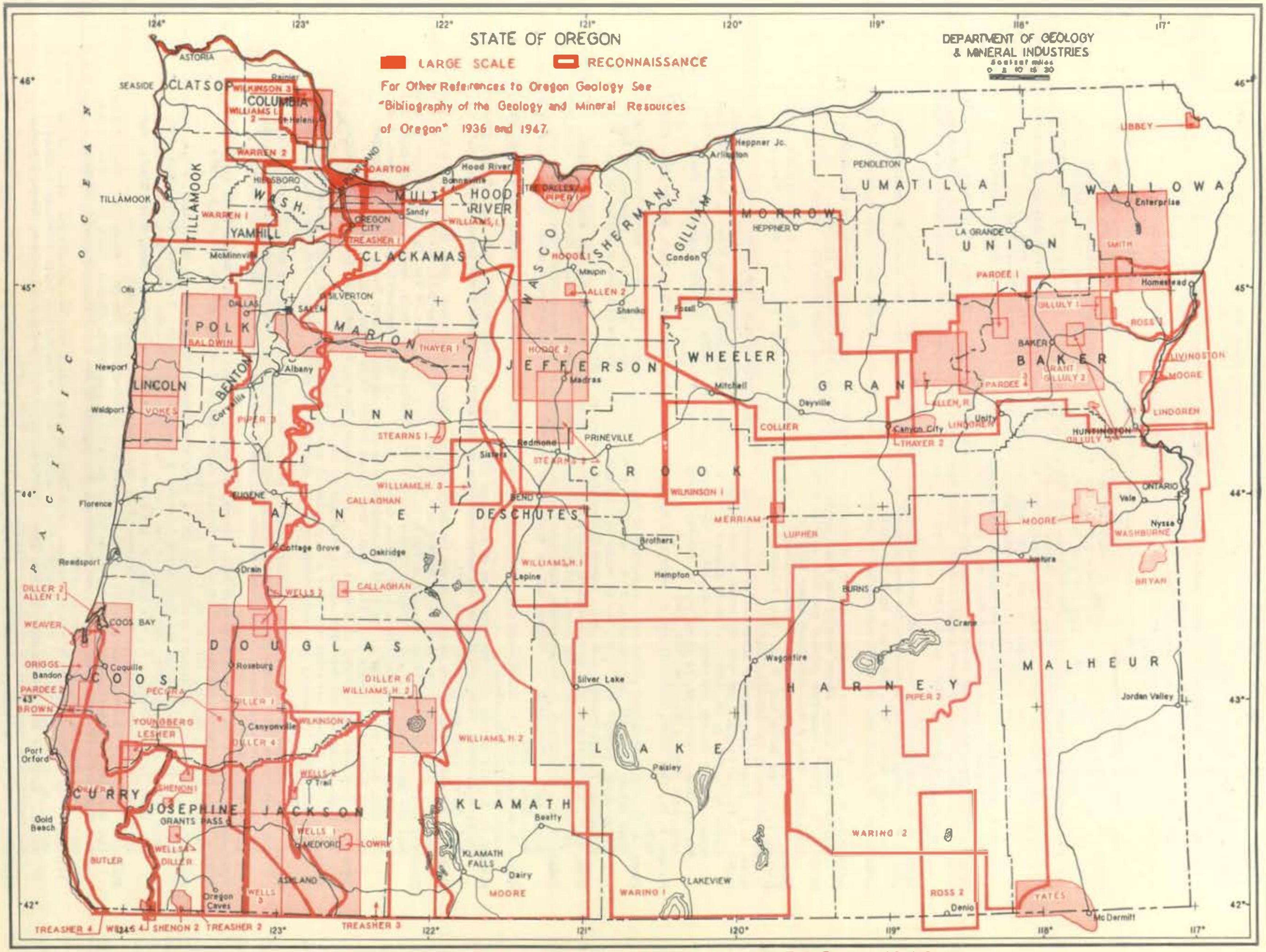
INDEX MAP SHOWING AREAL DISTRIBUTION OF FIELD STUDIES
1946 - 1948

LIST OF STUDIES MADE

Number on Index map	Series Number	
		(A) Studies published during the period July 1, 1946, to June 30, 1948:
		Bulletins -
1	31	Geology of the St. Helens quadrangle.
---	32	Fifth biennial report of the Department 1944-1946.
---	33	Bibliography (Supplement) of the geology and mineral resources of Oregon, 1947.
2	34	Mines and prospects of the Mt. Reuben mining district, Josephine County, Oregon.
3	35	Geology of the Dallas and Valsetz quadrangles, Oregon.
4	36 (Parts I-V)	Five papers on foraminifera from the Tertiary of western Oregon, 1947.
		I Astoria Miocene foraminifera from the northwest corner of Tenth Street and Harrison Avenue, Astoria, Clatsop County, Oregon.
		II Astoria Miocene foraminifera from Agate Beach, Lincoln County, Oregon.
		III Upper Coaledo (upper Eocene) foraminifera from Yokam Point, Coos County, Oregon.
		IV Lower Coaledo (upper Eocene) foraminifera from Sunset Bay, Coos County, Oregon.
		V Eocene foraminifera from Helmick Hill, Polk County, Oregon.
5	39	Geology and mineralization of the Morning Mine and adjacent region, Grant County, Oregon.
---	16	(Reprint) Field identification of minerals for Oregon prospectors and collectors.
		G.M.I. Short Papers -
6	16	Perlite deposits near the Deschutes River, southern Wasco County, Oregon, 1946.
7	17	Sodium salts of Lake County, Oregon, 1947.
		Miscellaneous Papers
---	---	Oregon quicksilver localities map. Oregon mineral localities map. Index to geologic mapping. Index to topographic mapping. THE ORE.-BIN, monthly publication, vols. VIII - X.

Number on Index map	Series Number	
		(B) Studies completed but not published during the period July 1, 1946, to June 30, 1948.
		Bulletins -
---	36	Foraminifera from the Tertiary of Western Washington and Oregon.
8	36	VI Upper Eocene foraminifera from the Toledo formation, Lincoln County, Oregon.
---	36	VII Quinault Pliocene foraminifera from Western Washington.
---	36	VIII Local relationships of the mollusca of the Wildcat coast section, Humboldt County, California.
		G.M.I. Short Papers -
---	---	Blending tests on Oregon clays.
		Miscellaneous Papers -
9	---	Geology of a travertine deposit in Baker County.
		(C) Studies in progress.
		Bulletins -
10	---	Geology of the Trail quadrangle, Jackson County.
11	---	Geology of the Kerby quadrangle, Josephine County.
12	---	Geology of the Albany, Lebanon, Salem, and Stayton quadrangles.
13	36	Foraminifera from the lower Oligocene of northwestern Oregon.
14	36	(Middle Eocene) foraminifera from northwestern Oregon.
15	---	Water resources of Morrow and Umatilla counties, Oregon.
16	---	Geology of the Galice quadrangle, Josephine County, Oregon.
---	37	Clay products of Oregon.
		G.M.I. Short Papers -
---	18	Department activities.
		Miscellaneous Papers -
17	---	Nickel-bearing laterite in southwestern Oregon.
		Geologic Maps -
10	---	Geologic map of the Trail quadrangle.
11	---	*Geologic map of the Kerby quadrangle.
18	---	Geologic map of the south half of the Telocaset quadrangle.
12	---	Geologic map of the Albany, Lebanon, Salem, and Stayton quadrangles.
16	---	Geologic map of the Galice quadrangle.
19	---	Geologic map of the southwest quarter of the Pine quadrangle.
---	---	Geologic map of the State of Oregon.

*Field mapping by the U.S. Geological Survey; to be published by the Department.



PUBLISHED GEOLOGICAL MAPS IN OREGON, 1948.

PUBLISHED GEOLOGIC MAPS IN OREGON - 1948

Allen, J. E. (and Baldwin, E. M.) (1) Geology and coal resources of the Coos Bay quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 27, 1944; (2) Perlite deposits near the Deschutes River, southern Wasco County, Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 16, 1946.

Allen, R. M., Jr., Geology and mineralization of the Morning Mine and adjacent region, Grant County, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 39, 1948.

Baldwin, E. M., Geology of the Dallas and Valsetz quadrangles, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 35, 1947.

Brown, R. E., Some manganese deposits in the southern Oregon coastal region: Oreg. Dept. Geol. & Min. Ind. Short Paper 9, 1942.

Bryan, K., Geology of the Owyhee irrigation project: U.S. Geol. Survey Water-Supply Paper 597-A, 1929.

Butler, G. M. (and Mitchell, G. J.) Preliminary survey of the geology and mineral resources of Curry County, Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 2, no. 2, 1916.

Callaghan, E. (and Buddington, A. F.) Metalliferous mineral deposits of the Cascade Range in Oregon: U.S. Geol. Survey Bull. 893, 1938.

Collier, A. J., The geology and mineral resources of the John Day region: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 1, no. 3, 1914.

Darton, N. H., Structural materials in parts of Oregon and Washington: U.S. Geol. Survey Bull. 387, 1909.

Diller, J. S., U.S. Geol. Survey Atlas (1) Roseburg folio (no. 49), 1898; (2) Coos Bay folio (no. 73), 1901; (3) Port Orford folio (no. 89), 1903; (4) (and Kay, G. F.) Riddle folio (no. 218), 1924; (5) Mineral resources of southwestern Oregon: U.S. Geol. Survey Bull. 546, 1914; (6) (and Patton, H. B.) The geology and petrography of Crater Lake National Park: U.S. Geol. Survey Prof. Paper 3, 1902.

Gilluly, J., (1) Copper deposits near Keating, Oregon: U.S. Geol. Survey Bull. 830-A, 1933; (2) Geology and mineral resources of the Baker quadrangle, Oregon: U.S. Geol. Survey Bull. 879, 1937; (3) (and Read, J. C., and Park, C. F., Jr.) Some mining districts of eastern Oregon: U.S. Geol. Survey Bull. 846-A, 1933.

Grant, U. S. (and Cady, G. H.) Preliminary report on the general and economic geology of the Baker district of eastern Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 1, no. 6, 1914.

Griggs, A. B., Chromite-bearing sands of the southern part of the coast of Oregon: U.S. Geol. Survey Bull. 945-E,1945.

Hodge, E. T., Geologic map of north central Oregon: Oregon Univ. Pub., Geol. ser., vol. 1, no. 5, 1932; also Oreg. State Mon., Studies in Geol. no. 3, 1942; (2) Geologic map Madras quadrangle, Oregon: Oregon State Mon., Studies in Geol. no. 1, 1941.

Lesher, C. E., The Eden Ridge coal field, Coos County, Oregon: U.S. Geol. Survey Bull. 541, 1914.

Libbey, F. W., Some mineral deposits in the area surrounding the junction of the Snake and Imnaha Rivers in Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 11, 1943.

Lindgren, W., The gold belt of the Blue Mountains of Oregon: U.S. Geol. Survey 22nd Ann. Rept., pt. 2, pp. 551-776, 1901.

Livingston, D. C., A geologic reconnaissance of the Mineral and Cuddy Mt. mining district, Washington and Adams Counties, Idaho (incl. Oregon side of the Snake River): Idaho Bur. Mines & Geol. Pamph. 13, 1925.

Lowry, W. D., Tyrrell manganese deposit and other similar properties in the Lake Creek district, Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 10, 1943.

Lupher, R. L., Jurassic stratigraphy of central Oregon: Geol. Soc. America Bull., vol. 52, no. 2, pp. 219-269, 1941.

Merriam, C. W. (and Berthiaume, S. A.) Late Paleozoic formations in Central Oregon: Geol. Soc. America Bull., vol. 54, no. 2, pp. 145-171, 1943.

Moore, B. N., Nonmetallic mineral resources of eastern Oregon: U.S. Geol. Survey Bull. 875, 1937.

Pardee, J. T., (1) Faulting and vein structure in the Cracker Creek gold district, Baker County, Oregon: U.S. Geol. Survey Bull. 380, p. 87, 1909; (2) Beach placers of the Oregon coast: U.S. Geol. Survey Circ. 8, 1934; (3) (and Hewett, D. F.) Geology and mineral resources of the Sumpter quadrangle, Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 1, no. 6, 1914; (4) (et al) Preliminary geologic map of the Sumpter quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1941.

Pecora, W. T., (and Hobbs, W. S.) Nickel deposits near Riddle, Douglas County, Oregon: U.S. Geol. Survey Bull. 931-I, 1942.

Piper, A. M., (1) Geology and ground-water resources of The Dalles region, Oregon: U.S. Geol. Survey Water-Supply Paper 659-B, 1932; (2) (and Robinson, T. W., and Park, C. F., Jr.) Geology and ground-water resources of the Harney basin, Oregon: U.S. Geol. Survey Water-Supply Paper 841, 1939; (3) Ground-water resources of the Willamette Valley, Oregon: U.S. Geol. Survey Water-Supply Paper 890, 1942.

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Shenon, P. J., (1) Geology of the Robertson, Humdinger, and Robert E. gold mines, southwestern Oregon: U.S. Geol. Survey Bull. 830-B, 1933; (2) Geology and ore deposits of the Takilma-Waldo district, Oregon: U.S. Geol. Survey Bull. 846-B, 1933.

Smith, W. D. (and Allen, J. E.) Geology and physiography of the northern Wallowa Mountains, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 12, 1941.

Stearns, H. T., (1) Geology and water resources of the upper McKenzie River Valley, Oregon: U.S. Geol. Survey Water-Supply Paper 597-D, 1929; (2) Geology and water resources of the middle Deschutes River basin, Oregon: U.S. Geol. Survey Water-Supply Paper 637-D, 1931.

Thayer, T. P., (1) Geology of the Salem Hills and the North Santiam River basin, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 15, 1939; (2) Chromite deposits of Grant County, Oregon: U.S. Geol. Survey Bull. 922-D, 1940.

Treasher, R. C., (1) Geologic history and map of the Portland area: Oreg. Dept. Geol. & Min. Ind. Short Paper 7, 1942, Map; (2) Geologic map of Josephine County (Oregon Metal Mines Handbook): Oreg. Dept. Geol. & Min. Ind. Bull. 14-C, vol. 2, sec. 1, 1942; (3) Geologic map of Jackson County (Oregon Metal Mines Handbook): Oreg. Dept. Geol. & Min. Ind. Bull. 14-C, vol. 2, sec. 2, 1943; (4) Reconnaissance geologic survey in Curry County along coast highway from Gold Beach to California State line: Geol. Soc. Oregon Country News Letter, vol. 9, no. 13, 1943.

Vokes, H. E. (and Norbisrath, Hans, and Snavely, P. D., Jr.) Yaquina, Toledo, Waldport, and Tidewater quadrangles: U.S. Geol. Survey Oil and Gas Investigations, Preliminary map 88, 1948.

Waring, C. A., (1) Geology and water resources of a portion of south-central Oregon: U.S. Geol. Survey Water-Supply Paper 220, 1908; (2) Geology and water resources of the Harney Basin region, Oregon: U.S. Geol. Survey Water-Supply Paper 231, 1909.

Warren, W. C., (1) (et al) Geology of northwestern Oregon, west of the Willamette River and north of latitude 45° 15'; U.S. Geol. Survey Oil and Gas Investigations, Preliminary map 42, 1945; (2) (and Norbisrath, Hans) Stratigraphy of upper Nehalem River basin, northwestern Oregon: Am. Assoc. Petroleum Geologists Bull., vol. 30, no. 2, pp. 213-237, 1946.

Washburne, C. W., Gas and oil prospects near Vale, Oregon, and Payette, Idaho: U.S. Geol. Survey Bull. 431-A, 1911.

Weaver, C. E., Stratigraphy and paleontology of the Tertiary formations at Coos Bay, Oregon: Washington Univ. (Seattle) Pub. in Geology, vol. 6, no. 2, pp. 31-62, 1945.

Wells, F. G., (1) (et al) Preliminary geologic map of the Medford quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1939; (2) (and Waters, A. C.) Quicksilver deposits of southwestern Oregon: U.S. Geol. Survey Bull. 850, 1934; (3) (et al) Preliminary geologic map of the Grants Pass quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1940; (4) (and Page, L. R., and James, H. L.) Chromite deposits in the Sourdough area, Curry County, and the Briggs Creek area, Josephine County, Oregon: U.S. Geol. Survey Bull. 922-P, 1940.

Wilkinson, W. D., (1) Reconnaissance geologic map of the Round Mountain quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1940; (2) Reconnaissance geologic map of the Butte Falls quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1941; (3) (and Lowry, W. D., and Baldwin, E. M.) Geology of the St. Helens quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 31, 1946.

Williams, H. (1) Newberry Volcano of central Oregon: Geol. Soc. America Bull., vol. 46, pp. 253-304, 1935; (2) The geology of Crater Lake National Park, Oregon, with a reconnaissance of the Cascade Range southward to Mount Shasta: Carnegie Inst. Washington Pub. 540, 1942; (3) Volcanoes of the Three Sisters region, Oregon Cascades: California Univ. Dept. Geol. Sci., Bull., vol. 27, no. 3, pp. 37-84, 1944.

Williams, I. A., (1) The Columbia River Gorge: Its geologic history interpreted from the Columbia River Highway: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 2, no. 3, 1916; (2) (and Parks, H. M.) The limonite iron ores of Columbia County, Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oreg., vol. 3, no. 3, 1923.

Yates, R. G., Quicksilver deposits of the Opalite district, Malheur County, Oregon, and Humboldt County, Nevada: U.S. Geol. Survey Bull. 931-N, 1942.

Youngberg, E. A., Mines and prospects of the Mount Reuben mining district, Josephine County, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 34, 1947.

PUBLICATIONS

A complete list of departmental publications is given on the final page of this report. Descriptions of publications issued prior to July 1, 1946, are contained in preceding biennial reports. Following are descriptions of publications issued during the period from July 1, 1946, to July 1, 1948.

(A) Studies published during the period July 1, 1946, to July 1, 1948:

Bulletin 31

Title: Geology of the St. Helens quadrangle, Oregon, by W. D. Wilkinson, W. D. Lowry, and E. M. Baldwin.

Purpose and scope: The area described in the bulletin, which is issued in conjunction with the quadrangle map of the same name, is of especial importance because of studies of oil possibilities by major oil companies. The quadrangle also contains ferruginous bauxite and limonite deposits.

Cost: $337.24 for 1014 copies. Price 45 cents.

Bulletin 32

Title: Fifth biennial report, State Department of Geology and Mineral Industries, July 1, 1944, to July 1, 1946.

Purpose and scope: According to the law setting up the Department a biennial report must be prepared for the period as specified in Section 92-802, O.C.L.A., which changed the period of State biennial reports from calendar to fiscal years.

Cost: $226.11 for 602 copies. Free.

Bulletin 33

Title: Bibliography (Supplement) of the geology and mineral resources of Oregon, 1947, compiled by John Eliot Allen.

Purpose and scope: The former State Planning Board issued a bibliography of published reports on the geology and mineral resources of Oregon in 1936. During the succeeding ten years more than 1000 reports on Oregon geology and related subjects were issued, and the titles and authors' names have been organized in index form in the supplemental volume. This bibliography is invaluable to researchers as a supplement to the first volume.

Cost: $715.75 for 1030 copies. Price $1.00.

Bulletin 34

Title: Mines and prospects of the Mt. Reuben mining district, Josephine County, Oregon, 1947, by Elton A. Youngberg.

Purpose and scope: The area described contains many old properties which had produced for many years. It also contains the Benton mine which, just prior to World War II, was the largest lode gold producer in the State. The study was made to obtain and record all available pertinent information concerning the properties in the district and to present the information in a form which would be useful to the prospector, examining engineer, and geologist.

Cost: $439.52 for 933 copies. Price 50 cents.

Bulletin 35

Title: Geology of the Dallas and Valsetz quadrangles, Oregon, 1947, by Ewart M. Baldwin.

Purpose and scope: The survey which resulted in this bulletin was made principally for the purpose of finding limestone occurrences of better economic grade than those already known. Although the object was not realized, valuable information concerning geological conditions to look for in prospecting for limestone, as well as better knowledge of the structure of the Coast Range, was obtained. The bulletin is supplemented by two geologic quadrangle maps.

Cost: $632.76 for 916 copies. Price 75 cents.

Bulletin 36
(Parts I-V)

Title: Five papers on foraminifera from the Tertiary of Western Oregon, 1947, by Joseph A. Cushman and Roscoe E. and Katherine C. Stewart. Prepared in cooperation with the U.S. Geological Survey.

Purpose and scope: This volume is one of a series designed to give the results of stratigraphic studies in sedimentary formations of Oregon. These five illustrated papers are descriptive of foraminifera found in certain Miocene and Eocene formations of western Oregon. The over-all object of the series has both economic and academic aspects in the proper correlation of strata.

Cost: $1311.38 for 1122 copies (printed by State Printer). Price $1.00.

Bulletin 39

Title: Geology and mineralization of the Morning mine and adjacent region, Grant County, Oregon, 1948, by Rhesa M. Allen, Jr.

Purpose and scope: Geologic studies such as this supply valuable basic information to the prospector, examining engineer, and geologist. Such studies are also greatly needed to fill in gaps in the knowledge of areal geology of the State so that progress may be made on the state geologic map. The bulletin gives especial attention to the economic geology of mining properties of the area described.

Cost: $611.25 for 963 copies. Price 50 cents.

Bulletin 16
(Reprint)

Title: Field identification of minerals for Oregon prospectors and collectors, by Ray C. Treasher.

Purpose and scope: Prospectors, both experienced and amateur, have found this bulletin very useful as evidenced by the demand. Physical characteristics of the common minerals are described and directions given for making simple tests.

Cost: $279.58 for 456 copies. Price 50 cents.

G.M.I. Short Paper 16

Title: Perlite deposits near the Deschutes River, Southern Wasco County, Oregon, 1946, by John Eliot Allen.

Purpose and scope: The study was made to obtain geological information on the genesis and geological relationships of the deposits in the belief that this information would be of value in prospecting for other commercial perlite deposits. Because of the underground development at the Lady Frances Mine of Dant & Russell, Inc., there was exceptionally good opportunity of studying the geology of perlite deposits in that locality. The work consisted of field studies, petrographic work on samples obtained in the field, and a study of the results obtained in furnacing of perlite at the company's plant at St. Helens.

Cost: $132.63 for 1032 copies. Price 15 cents.

G.M.I. Short Paper 17

Title: Sodium salts of Lake County, Oregon, 1947, by Ira S. Allison and Ralph S. Mason.

Purpose and scope: The over-all reason for publishing this report was to supply information on the mineral resources of Lake County. In addition, there has been a very large postwar demand for sources of natural sodium carbonate, and the Department has received a large number of inquiries concerning commercial possibilities of the saline deposits at the lakes in Lake County. Dr. Allison has specialized in recent years in geological studies in this area. Mr. Mason had charge of the drilling which was done principally with soil augers. The report describes methods of sampling and gives lists of analyses of samples obtained at deposits located at Summer, Abert, and Alkali lakes respectively.

Cost: $92.42 for 1028 copies. Price 15 cents.

Miscellaneous Publications

Title: Oregon quicksilver localities map, by Francis Frederick.

Purpose and scope: Compilation of the map was originally planned as a part of a report on quicksilver deposits in Oregon which report was contracted for with Francis Frederick, consulting geologist of San Francisco. Mr. Frederick compiled a map but there has been a long delay in completion of the report. In order to make available the information on the map it was published independently of the report. Date of publication of the latter is uncertain. Besides location of all known quicksilver deposits in the State, the map contains organized production data of the various mines. Scale of this map is 1:1,000,000.

Cost: $190.72 for 1200 copies. Price 25 cents. 15.9¢ EACH

Title: Oregon mineral localities map.

Purpose and scope: This map was compiled in order to show graphically the location of commercial mineral deposits in the State for the use of schools, prospectors, and others. Marginal descriptions are included of the various minerals which are now produced commercially or are potentially of commercial value. Scale of the map is 1:1,000,000.

Cost: $229.94 for 2100 copies. Price 10 cents. 10.9¢ EACH

Title: Index to geologic mapping, 1946.

Purpose and scope: The map shows areal distribution of geological reports made in the State and a key list of these reports is given on the back of the map.

Cost: $4.15 for 500 copies. Free.

Title: Index to topographic mapping, 1946.

Purpose and scope: This index map provides information on topographic mapping similar to that provided on the "index to geologic mapping."

Cost: $3.20 for 125 copies. Free.

The Ore.-Bin

This small monthly periodical is prepared and multigraphed in the office of the Department. Monthly circulation is 710 copies, 459 of which are sent free to legislators, Oregon libraries, educational institutions, and a restricted exchange list. A yearly subscription charge of 25 cents is made to cover cost of assembling and mailing.

The Ore.-Bin is designed to provide information on the mineral industry of interest to the layman as well as to persons directly connected with the industry. The circulation is not a true measure of its widespread effect, as it is frequently quoted in the press.

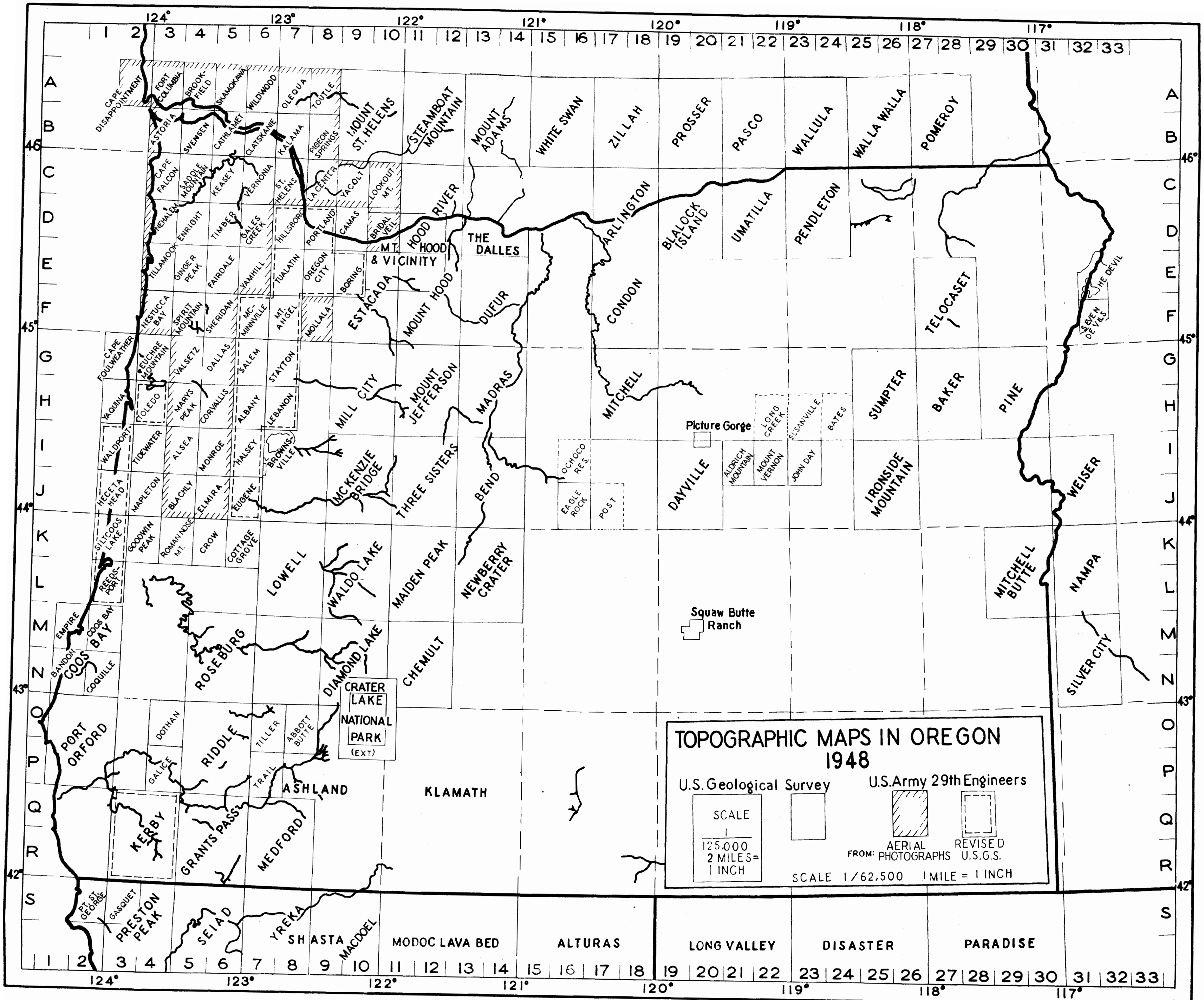
The principal value of such a publication is to present the mineral industry viewpoint on problems affecting that industry, and to provide pertinent information on Oregon mining and geology. The Ore.-Bin serves also for announcement of new publications, and publishes statistics on Oregon mineral production as soon as they are available.

Geologic Maps

Title: Geologic maps of the Dallas and Valsetz quadrangles, Oregon, by Ewart M. Baldwin.

Purpose and scope: These two 15-minute quadrangle maps were prepared as a project of the State geological survey. The maps accompany Bulletin 35.

Cost: $651.00 for 1200 copies of each map. Price with bulletin, 75 cents.



REVISED 1948.

TOPOGRAPHIC MAPS OF OREGON — 1948

15-Minute Quadrangles (Scale 1:62,500)

	Name	Location coordinates		Contour interval	Date last printed
*	Abbott Butte	O	8	50	1947
"	Albany	H	6	25	1944
*	Aldrich Mountain	I	21	50	1943
o	Alsea	I	4	50	1942
o	Astoria	B	3	20	1939
*	Bandon	N	1	50	1944
*	Bates	H	24	Underway	
o	Blachly	J	4	50	1942
**	Boring	E	9	25	1944
o	Bridal Veil	D	10	100	1942
x	Brownsville	I	7	25	1938
*	Camas	D	9	25	1942
o	Cape Falcon	C	3	50	1940
*	Cape Foulweather	G	2	50	1944
o	Cathlamet	B	5	20	1941
o	Clatskenie	B	6	25	1942
*	Coos Bay	M	2	50	1945
*	Coquille	N	2	50	1945
o	Corvallis	H	2	50	1942
*	Cottage Grove	K	6	25	1921
*	Crow	K	5	50	1945
o	Dallas	G	5	50	1942
*	Dutchman Butte	O	4	Underway	
*	Eagle Rock	I	16	50	1948
o	Elmira	J	5	50	1942
*	Empire	M	1	50	1944
o	Enright	D	4	100	1941
*	Euchre Mountain	G	3	50	1943
**	Eugene	J	6	5 & 10	1940
o	Fairdale	E	5	100	1942
o	Gales Creek	D	6	25	1943
*	Galice	P	4	50	1948
o	Ginger Peak	E	4	100	1942
*	Goodwin Peak	K	3	50	1943
**	Halsey	I	6	10 & 25	1941
**	Heceta Head	J	2	50	1944
x	He Devil	E	32	50	1922
"	Hillsboro	D	7	25	1943
*	John Day	I	23	50	1943
o	Kalama	B	7	20	1943
o	Keasey	C	5	100	1943
**	Lebanon	H	7	25	1944
*	Long Creek	H	22	Underway	
*	Mapleton	J	3	50	1945
o	Marys Peak	H	4	50	1942
"	McMinnville	F	6	25	1943
o	Molalla	F	8	25	1943
o	Monroe	I	5	50	1942
"	Mount Angel	F	7	25	1943
*	Mount Vernon	I	22	50	1943
o	Nehalem	D	3	100	1943
o	Nestucca Bay	F	3	100	1942
*	Ochoco Reservoir	I	16	Underway	
"	Oregon City	E	8	25	1945
"	Portland	D	8	25	1940
*	Post	J	17	Underway	
**	Reedsport	L	2	50	1942
*	Roman Nose Mountain	K	4	100	1945
o	Saddle Mountain	C	4	100	1943
**	Salem	G	6	25	1940
x	Seven Devils	F	32	50	1920
o	Sheridan	F	5	100	1942
**	Siltcoos Lake	K	2	50	1942
o	Spirit Mountain	F	4	100	1942
*	Stayton	G	7	25	1944
o	St. Helens	C	7	25	1943
*	Susanville	H	23	Underway	
o	Svensen	B	4	20	1940
*	Tidewater	I	3	50	1945
o	Tillamook	E	3	100	1942
*	Tiller	O	7	50	1946
o	Timber	D	5	100	1941
*	Toledo	H	3	50	1946
*	Trail	P	7	50	1945
**	Tualatin	E	7	25	1943
o	Valsetz	G	4	50	1942
o	Vernonia	C	6	25	1943
"	Waldport	I	2	50	1942
o	Yamhill	E	6	100	1942
*	Yaquina	H	2	50	1946

30-Minute Quadrangles (Scale 1:125,000)

Name	Location coordinates		Contour interval	Date last printed
*Arlington	CD	17-18	50	1941
*Baker	GH	27-28	100	1934
*Bend	IJ	13-14	50	1940
*Blalock Island	CD	19-20	50	1944
*Chemult	MN	11-12	50	1941
*Condon	EF	17-18	50	1916
*Coos Bay	MN	1-2	100	1937
*Dayville	IJ	19-20	100	1936
*Diamond Lake	MN	9-10	100	1926
*Dufur	EF	13-14	100	1945
*Estacada	EF	9-10	100	1938
*Grants Pass	QR	5-6	100	1930
*Hood River	CD	11-12	100	1940
*Ironside Mountain	IJ	25-26	100	1908
*Kerby	QR	3-4	100	1942
*Lowell	KL	7-8	100	1942
*Madras	GH	13-14	100	1931
*Maiden Peak	KL	11-12	100	1944
*McKenzie Bridge	IJ	9-10	100	1940
*Medford	QR	7-8	100	1945
*Mill City	GH	9-10	100	1941
*Mitchell	GH	17-18	100	1926
*Mitchell Butte	KL	29-30	50	1921
*Mt. Hood	EF	11-12	100	1944
*Mt. Jefferson	GH	11-12	100	1938
*Newberry Crater	KL	13-14	100	1935
*Pendleton	CD	23-24	50	1935
*Pine	GH	29-30	100	1941
*Port Orford	OP	1-2	100	1944
*Riddle	OP	5-6	100	1942
*Roseburg	MN	5-6	100	1942
*Sumpter	GH	25-26	100	1939
*Telocaset	EF	27-28	100	1932
*The Dalles	CD	13-14	50	1941
*Three Sisters	IJ	11-12	100	1941
*Umatilla	CD	21-22	50	1921
*Waldo Lake	KL	9-10	100	1944
*Weiser	IJ	31-32	100	1916

SPECIAL MAPS

Name	Location coordinates		Contour interval	Scale
Crater Lake Nat'l Park	NO	9-10	50	1:62,000*
Crater Lake and vicinity	NP	9-11	50	1:48,000
Mt. Hood and vicinity	DE	10-11	100	1:125,000
Picture Gorge (advance)	HI	20	5	1:24,000
Squaw Butte Ranch (advance)	M	19-20	50	1:48,000

River Surveys (Various scales and contour intervals)

Name	Location coordinates		Date last printed
Applegate River, 4 sheets	QR	5-6	1940
Catherine Creek, 1 sheet	F	28	1933
Chewaucan, 3 sheets	PQ	16	1938
Clackamas River (W.S.P. 349)	F	10	1914
Columbia River	B-D	3-22	1929-30
Coquille River	N	1-2	1926
Cow Creek, 1 sheet	O	6	1939
Crooked River	I	14-15	1926
Deep Creek and Camas Creek, 4 sheets	R	18-19	1939
Deschutes River (W.S.P. 344)	D-J	14-15	1911
Evans Creek, 2 sheets	PQ	6	1938
Gales Creek, 1 sheet	D	5	1934
Grande Ronde River, 7 sheets	CD	27-29	1937
Grave Creek, 1 sheet	P	6	1938
Hood River, 4 sheets	DE	12	1939
Illinois River (see Rogue River)			
John Day River (W.S.P. 377)	D-G	16-20	1909
Jump-off Joe Creek, 1 sheet	P	5	1937
Klamath River, 16 sheets	R-T	5-10	1926
Little Butte Creek, 3 sheets	Q	7-8	1938
Lookout Point, 4 sheets	K	9	1938
Luckiamute River, 1 sheet	GH	4-5	1938
McKenzie River, 6 sheets	J	6-10	1926
Metolius River	H	12-13	1912
Nehalem River, 7 sheets	C	4-6	1938
North Santiam River, 2 sheets	GH	8-11	1944
North Umpqua River	M	5-10	1923
Rogue River, 14 sheets	O-Q	1-9	1925
Sandy River (W.S.P. 348)	E	11	1927
Santiam River (W.S.P. 349)	GH	8-11	1914
Santiam River (see North and South Santiam)			
Separation Creek	J	10	1928
Siletz River	GH	3	1926
Snake River, 17 sheets	C-K	30-33	1939
South Santiam River, 5 sheets	I	8-9	1938
South Umpqua River, 3 sheets	O	6-7	1938
South Yamhill River, 2 sheets	F	4	1938
Umatilla River, 3 sheets	D	25	1938
Umpqua River, 9 sheets	LM	3-4	1926
Walla Walla River, 4 sheets	C	25-26	1932
White River, 3 sheets	F	12-14	1932
Willamette River (W.S.P. 349 and 378)	KL	9-10	1938
Willamette River (see Lookout Point)			
Willamina Creek, 1 sheet	F	5	1937
Yamhill River (see South Yamhill)			

KEY TO SYMBOLS

* Map published by U.S. Geological Survey, obtainable from the Director, U.S. Geol. Survey, Washington, D.C.

x Map published by U.S. Geological Survey, quadrangle incomplete.

o Map printed by the U.S. Army, 29th Engineers.

" Map revised by U.S. Army, 29th Engineers, on U.S. Geol. Survey topographic base.

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
702 WOODLARK BUILDING
PORTLAND 5, OREGON

(B) Studies completed but not published during the period July 1, 1946, to June 30, 1948:

Bulletin 36
(Parts VI-VIII)

Title: Foraminifera from the Tertiary of Western Oregon, Washington, and Northern California: Part VI. Upper Eocene foraminifera from the Toledo formation, Lincoln County, Oregon; Part VII. Quinault Pliocene foraminifera from Western Washington; and Part VIII. Local relationships of the mollusca of the Wildcat coast section, Humboldt County, California.

Purpose and scope: As in the first five papers of Bulletin 36 described on page 22, the object of the studies described in the three papers is to provide further evidence which will help to place geological formations in Oregon in their proper position in the stratigraphic column. Geological formations do not recognize geographical boundaries, and the description of specimens obtained in Washington and California provide evidence which may be applied to formations in Oregon.

G.M.I. Short Paper

Title: Blending tests on Oregon clays.

Purpose and scope: The object of these tests was to determine ceramic properties of different blends of Oregon light-colored clays and some other easily available light-colored materials. Some clays used alone are not satisfactory for ceramic wares, but may be made suitable by blending with other clays having somewhat different properties. Test pieces were made and fired, and the results are tabulated. Before final editing was completed the author of this report left the employ of the Department in order to do graduate work in ceramics. Publication date is uncertain.

Miscellaneous Publication

Title: Geology of a travertine deposit in Baker County, Oregon.

Purpose and scope: Travertine is a spring deposit of calcium carbonate. Because the travertine located south of Durkee, Baker County, is relatively free of impurities, the Department made a reconnaissance survey and prepared a topographic and geologic map of the deposit. This map is a part of the publication describing the occurrence. The study was designed to provide preliminary information that might encourage exploration and production. The present potential market for such material appears to be for agricultural stone in the Willamette Valley, but railroad freight cost from eastern Oregon is a great obstacle to marketing this travertine.

(C) Studies in progress:

Bulletins

Title: Geology of the Trail quadrangle, Jackson County, Oregon.

Purpose and scope: This bulletin will be issued in conjunction with the geologic map of the Trail quadrangle which has been prepared by Dr. W. D. Wilkinson, professor of geology at Oregon State College. The field work has been nearly completed and it is hoped that both the bulletin and map will be published early in 1949. The area has some interesting mineral deposits including those of quicksilver and nickel.

Title: Geology of the Kerby quadrangle, Josephine County, Oregon.

Purpose and scope: This report was prepared in conjunction with the mapping of the Kerby quadrangle by the U.S. Geological Survey. The work was a cooperative project under which the field work was completed and the map and descriptive text prepared by the U.S. Geological Survey, with the expense of publication met by the Department. The bulletin and map should be available late in 1948.

Title: Geology of the Galice quadrangle, Josephine County, Oregon.

Purpose and scope: This survey is a part of a cooperative project with the U.S. Geological Survey. The project provides for field work by the U.S. Geological Survey on a fifty-fifty expense basis, together with publication of map and bulletin by the Department.

Title: Geology of the Albany, Lebanon, Salem, and Stayton quadrangles.

Purpose and scope: These four 15-minute quadrangles were mapped under the supervision of Dr. I. S. Allison, professor of geology at Oregon State College. A bulletin accompanied by the four quadrangle maps will be published and will contain descriptive matter in four parts, each of which will be devoted to one quadrangle. It has been determined that some revision is necessary in two of the quadrangles and these revisions will be made by Dr. Allison.

Title: Foraminifera from the lower Oligocene and middle Eocene of northwestern Oregon.

Purpose and scope: These two papers are a continuation of the project described on page 25 under Bulletin 36.

Title: Bulletin 14-D, Oregon metal mines handbook for northwestern Oregon.

Purpose and scope: As in other volumes of the mines handbook series, this is a compilation of reports on mining properties and mineral deposits of record. The area covered is north of Douglas County and west of the summit of the Cascades to the coast and comprises thirteen counties. Because of lack of personnel this volume has not been finally edited.

Title: Water well data and other information relating to ground water supplies of Umatilla and Morrow counties.

Purpose and scope: This study was undertaken at the request of the County Court of Umatilla County to obtain preliminary information on the location and characteristics of ground water resources in the two counties. It is hoped that the results of this reconnaissance survey will form the basis for a more detailed and extensive future study. Publication is scheduled late in 1948.

Title: Bulletin 37, Clay products of Oregon.

Purpose and scope: In 1946-1947 the Department made a field canvass to obtain information on the nonmetallic mineral production of the State as well as information on brick and tile plants. The data thus obtained has been supplemented with some analysis of the production data to comprise a bulletin which will be issued early in 1949.

G.M.I. Short Paper

Title: Department activities.

Purpose and scope: This paper which is nearly completed will set forth, principally in tabular form, the set-up and various services of the Department.

Miscellaneous Publication

Title: Nickel-bearing laterite deposits of southwestern Oregon.

For three field seasons the Department has studied occurrences of nickel-bearing laterite deposits in southwestern Oregon, principally in three separate localities. Two articles describing the results of the field work have been published in the Ore.-Bin. The third article will be published in the near future. Subsequently the three articles will be issued in the form of a Department report.

Geologic Maps

Title: Geologic map of the Trail quadrangle.

Purpose and scope: This 15-minute quadrangle was mapped by Dr. W. D. Wilkinson of Oregon State College during the summer of 1946 (see bulletin on the geology of the Trail quadrangle given on page 26).

Title: Geologic map of the Kerby quadrangle.

Purpose and scope: Field work on this 30-minute quadrangle map was completed in 1946. The map was sent to the lithographers in 1947 (see bulletin on geology of the Kerby quadrangle given on page 26).

Title: Geologic map of the south half of the Telocaset quadrangle.

Purpose and scope: Because of press of other work, mapping in this quadrangle by Mr. N. S. Wagner, field geologist stationed at Baker, was suspended during the period covered by this report.

Title: Geologic maps of the Albany, Lebanon, Salem, and Stayton quadrangles.

Purpose and scope: These four maps are the result of field work by Dr. Ira S. Allison and graduate students at Oregon State College. The maps will accompany the bulletins describing the geology of the four quadrangles as listed on page 26.

Title: Geologic map of the Galice quadrangle.

Purpose and scope: This map will be completed by the U.S. Geological Survey as stated under the bulletin on the geology of the Galice quadrangle as given on page 26.

Title: Geologic map of the southwest quarter of the Pine quadrangle.

Purpose and scope: Mapping of this quadrangle was started before World War II by Mr. J. Paul Fitzsimmons who undertook the project as a part of his doctorate at the University of Washington. Mr. Fitzsimmons has now returned to complete the field work and his doctorate. It is hoped that the map and accompanying descriptive text may be issued during 1949.

Title: Preliminary geologic map of the State of Oregon.

Purpose and scope: Progress on this map was made during 1946 by Dr. W. D. Lowry who had supervision of this work. Dr. Lowry left the Department in 1947 and the work was interrupted due to a shortage of personnel.

PRESS RELEASES
Issued from July 1, 1946, to July 1, 1948

No.

82 "Oregon Minerals Mapped" - August 20, 1946.
(Mineral Localities Map)

83 "Oregon Quicksilver Map" - October 17, 1946.

84 "State Geology Board Elects Chairman" - November 12, 1946.

85 "Columbia County Geology Described" - November 20, 1946.
(Bulletin No. 31)

86 "Oregon Perlite Report" - January 7, 1947.
(G.M.I. Short Paper No. 16)

87 "Oregon Sodium Deposits Described" - February 4, 1947.
(G.M.I. Short Paper No. 17)

88 "Oregon's 1946 Nonmetallics Production" - May 27, 1947.

89 "Southern Oregon Mining Bulletin" - August 12, 1947.
(Bulletin No. 34)

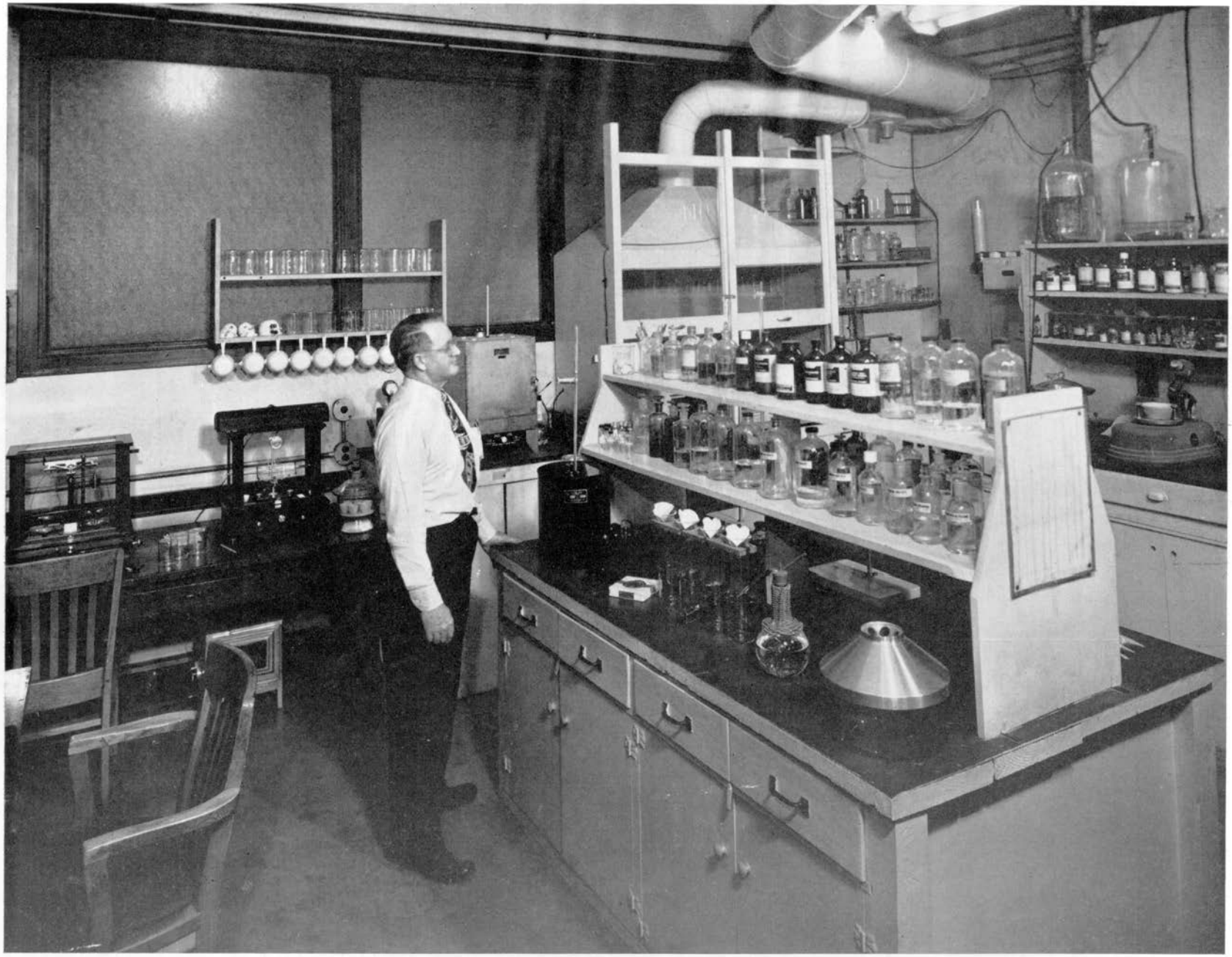
90 "New Geology Bibliography" - November 6, 1947.
(Bulletin No. 33)

91 "Polk County Geology Described" - May 14, 1948.
(Bulletin No. 35)

92 "Microfossil Report Published" - May 25, 1948.
(Bulletin No. 36)

93 "Safety Pamphlet" - June 7, 1948.

94 "Oregon 1947 Mineral Production Reaches New High" - July 20, 1948.



VIEW OF THE CHEMICAL LABORATORY AT THE PORTLAND OFFICE OF THE STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES.

COOPERATIVE WORK

Formal cooperative work has been continued with the Geologic Branch of the U. S. Geological Survey. The agreement calls for matched funds, and $3000 was provided for the State's share in the 1947-1949 budget.

The Department has cooperated on an informal basis with the Oil and Gas Division of the Survey in its mapping project in northwestern Oregon.

An arrangement, effective July 1, 1948, was made with the Oregon Ceramic Studio to share the services of a ceramist on a fifty-fifty basis.

The Department has worked in close cooperation both with Oregon State College and with the University of Oregon on mutual problems connected with the State's mineral industry. Members of the departments of geology, engineering, and chemistry cooperated helpfully in work on the various problems. Some special projects in which members of the staffs of these institutions participated are listed under publications.

In connection with silicosis studies by the State Board of Health, the Department cooperated by determining petrographically the silica content of samples submitted by the State Board.

In response to a continual and increasing demand by teachers and students for mineral and rock specimens, the Department has begun the preparation of collections of Oregon specimens. Three types of sets are being assembled: (1) A set of 16 minerals and rocks, packed in a box measuring 6 by 6 by 1 inches. This set is sold to students for 40 cents, and to adults for 75 cents. (2) A set of 30 minerals and rocks packed in two boxes each measuring 9 by 10 by 1 inches. Cost of this set is $1.00. (3) A set of 60 minerals and rocks packed in four boxes each measuring 9 by 10 by 1 inches. This set is to be circulated to schools throughout the State on a loan basis, mailing costs to be defrayed by the schools. Brief descriptions of the specimens accompany each of the above sets. The circulation set is further augmented with a mineral localities map and a landforms map of the State.

SUMMARY AND RECOMMENDATIONS

(1) During the last half of the period covered by this report the Department has been handicapped by lack of professional personnel.

(2) The exploration work by Alcoa Mining Company on ferruginous bauxite deposits, discovered by the Department in Washington and Columbia counties, has continued with no appreciable lack of interest by that company. Expenditures in the State on this exploration have so far amounted to about $2,000,000 and are continuing at a substantial rate.

(3) The perlite project of Dant & Russell, Inc., in the inception of which the Department had a part, has continued to enlarge. The demand for the expanded product is excellent and a new, growing industry for the State seems assured.

(4) Early in 1948 the Oregon and California revested lands and Coos Bay Wagon Road grant lands were reopened to mineral entry and location by act of Congress. A provision in the act requires filing in the U.S. District Land Office of location notices and statements of the amount of assessment work done. This provision is an innovation in Federal mining law and if not corrected is likely to lead to confusion and loss of possessory rights among prospectors and claim owners of western Oregon.

(5) Value of Oregon's 1947 mineral production was $16,100,000 according to an estimate of the U.S. Bureau of Mines. This figure shows an increase of 29 percent compared to the 1946 production. Nonmetals represent practically all of the increase. The ratio of value between nonmetals and metals in 1947 is about 20 to 1.

(6) Gold mining, which before World War II was the mainstay of Oregon's mineral production, is depressed. High operating costs and a fixed price for gold combine to make gold mining unprofitable. A few dredges with ground already proved are continuing to operate. Only a very few small owner-operated lode gold mines are active. State legislation which will work further hardships on dredging and other surface mining projects is a possibility.

(7) The world situation in mercury, which allows cartel-controlled Spanish and Italian metal produced with low-cost labor to be imported into this country, has served to depress the industry to the near-vanishing point. The Bonanza mercury mine in Douglas County, Oregon, is one of the few remaining producers in the United States.

(8) One Oregon chromite mine, the only producing chromite mine in the United States, is still active (August 1948). However, the margin between costs and market price is small and the operator may close at any time. Because of the strategic nature of chromite, the probable closing of this mine is of concern from a national defense standpoint. If the mine is closed down, the workings will cave and the mine will be lost.

(9) That part of the mineral industry of the State which is connected with supplying materials for construction has been and is producing at capacity. This activity has resulted in the record-breaking mineral production for 1947.

(10) The Department's testing work on Oregon clays should be continued and accelerated in order to assist and to build up the ceramic industry of the State.

(11) As soon as personnel is available, further work on Oregon salines should be done.

(12) Because of the strategic nature of nickel as a war mineral, the study of Oregon nickel deposits, begun by the Department in 1946, should be continued in order to obtain information on the extent of distribution and quality of these deposits.

(13) Use of lightweight aggregates is becoming increasingly important and it would be highly desirable for the Department to carry out a study of pumice deposits in the State. This study should include laboratory tests on pumice used as an aggregate in concrete building blocks. Such a study would be of great assistance to operators in enabling them to produce the most desirable product.

(14) The Department is receiving more and more requests for assistance from industries which need local mineral raw material supplies. These include clays, puzzolanic materials, fillers of various kinds, and materials used in making roofing. The Department should give added attention to studies of sources of such industrial minerals.

(15) There is a lack of definite knowledge on kinds and amounts of mineral raw materials brought into the State from outside to supply Oregon industries. It may be that some of these materials could be supplied adequately from Oregon sources if requirements were known. A study of this subject is greatly needed and the Department should engage in such a study when time and personnel are available. It should be mentioned, however, that some companies which have become accustomed to using a particular commodity object to changing to a different source of supply even if the latter is equivalent in quality and means a money saving. This was shown in the efforts of the producer of Eugene steel foundry sand to obtain markets in Portland in competition with silica sand which for many years has been brought in from Ottawa, Illinois.

(16) As in previous biennial reports, the Board wishes to emphasize the basic need of geologic mapping in studying sources of supply of mineral raw materials, and also the need for greater emphasis on scientific research projects which have application to the mineral industry. An example of this type of research is the departmental project of stratigraphic correlation studies including studies of foraminifera as evidenced in Department Bulletin No. 36. These studies are basic in setting up an authentic geologic column for the State, and such information would have many practical applications.

OREGON STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

Comparative Statements of Expenditures 1943-45, 1945-47, and 1947-49

	1943-45		
	Expenditures 7/1/43-6/30/45	G&MI Expenditures 7/1/43-6/30/45	Total Expenditures 7/1/43-6/30/45
Salaries and Wages	$ 74,727.04		74,727.04
General, Operation & Maint.	23,475.57	1,496.47	24,972.04
Office Supplies	840.85		840.85
Telephone & Telegraph	1,084.43		1,084.43
Postage, Freight & Express	997.68	100.00	1,097.68
Printing	2,046.21	1,275.98	3,322.19
Rents	8,543.25		8,543.25
Premiums	115.41		115.41
Contributions-Pub.Emp.Ret.Fd. -State Civ.Serv. -State Ind.Acc.Com.	266.57		266.57
Assessments - Restoration etc.	143.61		143.61
Auditing	235.70		235.70
Private Car Mileage	215.20		215.20
Fares on R.R. etc.	289.81		289.81
Meals and Lodging	1,689.83	117.72	1,807.55
Motor Vehicles	2,597.46		2,597.46
Heat-light-water-power	592.09		592.09
Laundry	37.93		37.93
Laboratory	1,805.79		1,805.79
Educational	203.35		203.35
Bldgs. & Fixtures	630.65		630.65
Photos & Blueprints			
Out-of-state-Travel			
Reestablishing field laboratories			
All Other	1,139.75	2.77	1,142.52
Capital Outlays	2,381.65	364.91	2,746.56
Office Furniture & Equipt.	248.85		248.85
Laboratory & field	1,951.50		1,951.50
Motor Vehicles	4.56	364.91	369.47
Books	176.74		176.74
All Other			
Special Requests	5,617.89		5,617.89
State Geological Survey	2,820.35		2,820.35
Coop. U.S. Geological Survey	1,000.00		1,000.00
Strategic & Critical Minerals	1,797.54		1,797.54
Nonmetallic Survey	0		0
Investigation of salt deposits			
Commodity mineral survey			
Reestablishing field laboratories			
TOTAL EXPENDITURES	$106,202.15	1,861.38	108,063.53

	1945-47		1947-49	1949-51
Expenditures 7/1/45-6/30/47	G&MI* Expenditures 7/1/45-6/30/47	Total Expenditures 7/1/45-6/30/47	Estimated Expenditures 7/1/47-6/30/49	Funds Requested 1949-51**
86,537.82		86,537.82	102,081.95	135,853.12
27,341.41	533.93	27,875.34	35,000.00	45,495.98
974.46		974.46	900.00	1,000.00
759.20	320.37	1,079.57	1,000.00	1,000.00
1,199.09		1,199.09	1,000.00	1,200.00
2,323.16	208.22	2,531.38	3,500.00	3,500.00
10,327.00		10,327.00	13,042.00	16,000.00
148.95		148.95	150.00	200.00
			4,394.25	6,270.98
			275.00	275.00
306.62		306.62	400.00	500.00
158.48		158.48	200.00	300.00
175.02		175.02	250.00	400.00
136.95		136.95	200.00	200.00
395.29		395.29	500.00	500.00
2,215.89		2,215.89	1,834.78	3,000.00
3,886.43		3,886.43	2,795.63	3,000.00
764.16		764.16	750.00	750.00
64.80		64.80	103.20	100.00
2,035.79		2,035.79	1,293.76	2,500.00
241.42		241.42	320.00	300.00
123.88		123.88	191.38	200.00
			400.00	300.00
1,104.82	5.34	1,110.16	1,500.00	4,000.00
4,216.53	1,267.84	5,484.37	2,252.90	5,950.00
555.28		555.28	350.00	350.00
958.36		958.36	1,002.90	3,400.00
2,685.42	1,267.84	3,953.26	800.00	2,000.00
17.47		17.47	100.00	200.00
10,684.96		10,684.96	9,500.00	12,500.00
5,948.89		5,948.89	5,000.00	6,000.00
3,000.00		3,000.00	3,000.00	3,000.00
852.25		852.25		
883.82		883.82		
			1,500.00	2,000.00
				1,500.00
128,780.72	1,801.77	130,582.49	148,834.85	199,799.10

*Items paid out of G&MI Account (see page 34).

**State Department G&MI and Spectrographic Laboratory combined.

GEOLOGY AND MINERAL INDUSTRIES ACCOUNT
(section 7, chapter 179, Oregon Laws 1937)

for period July 1, 1946, to July 1, 1948

Balance June 30, 1946		$ 1467.10
RECEIPTS:		
Sale of publications	$ 1866.14	
Sale of mine report copies, maps, etc.	49.43	
Geological Society of Oregon Country refund for printing expenditures	164.99	
State Board of Control, fleet sales refunds	75.16	
Refunds for telephone and telegram tolls, etc.	92.51	
Sale of mineral collection sets	2.30	
Refund Tidewater Associated Oil Co. for duplicate payment	16.74	
Refund of postage expended	.89	
Refund of U.S. Geological Survey on unfilled order	5.25	
Refund freight and express	5.81	
Sale of five Chevrolet auto wheels	30.00	
Refund Washington Dept. of Mines for share of expenses of Sheldon Glover on trip to Custer, S.D., with F.W.Libbey	24.40	
Refund Securities & Exchange Commission for H.M.Dole's testimony at Eureka, California, 174 miles at 5¢	8.70	
Sale Chevrolet pickup E6-067 (1946)	1000.00	
Sale Ford panel truck E4-630 (1947)	710.00	
Sale Chevrolet coupe E4-503 (1947)	900.00	
Refunds for 500-mile checkups on new cars	6.00	
Old oilstove at Grants Pass sold	20.00	
Refund 1 gal. thermex	1.40	
Total receipts		4979.72
		6446.82
EXPENDITURES:		
Printing	451.94	
Attorney fees for checking Oregon laws for Bulletin 1	25.00	
Purchase new Firemaster safe-file	213.50	
Niel R. Allen, expenses in attending Governing Board meetings	120.00	
F.W.Libbey, expenses in attending meeting at Denver, Colorado, at request of Governor Hall	133.75	
Telephone and telegraph	215.07	
Purchase new Chevrolet truck E8-217 (1948)	486.35	
Purchase new Chevrolet truck E8-123 (1948)	1267.84	
Total expenditures		2913.45
BALANCE June 30, 1948		$ 3533.37

COMPENSATION AND EXPENSES OF EMPLOYEES

Name	Title	Compensation 7/1/46-7/1/48	Travel and Expenses 7/1/46-7/1/48
F. W. Libbey	Administrator	(10,520.01	(964.27
		(	(54.85 (1)
F. A. Steeble	Accounting Clerk	4,448.00	
June Roberts	Clerk Stenographer II	4,033.00	
Lillian F. Owen	Clerk Typist II	3,758.00	
Ralph S. Mason	Mining Engineer	(6,940.75	(161.82
		(71.25 (1)	(132.86 (1)
John Eliot Allen*	Geologist II	(4,277.97	(64.10
		(160.00 (1)	(18.25 (1)
Norman S. Wagner	Geologist II	(6,673.05	(1,010.56
		(137.50 (1)	(
Wallace D. Lowry*	Geologist II	(3,453.50	(172.78
		(137.50 (1)	(26.75 (1)
Ewart M. Baldwin*	Geologist II	(4,207.00	(154.20
		(	(246.43 (1)
Esther W. Miller*	Spectroscopist	500.00	
Laurie L. Hoagland	Chemist II	6,636.00	
R. E. Stewart	Geologist III	(7,949.46	(49.38
		(343.33 (1)	(
Eugene R. Ellis*	Student Worker	207.00	
Frances H. Furniss*	Stenographer I	711.68	
Joy B. McCoy*	Clerk Typist I	632.97	
Vivian Clay*	Engineering Aide II	584.55	
Hollis M. Dole	Geologist II	6,769.00	575.33
Anna J. (Ritter) Rose	Clerk Stenographer I	1,637.83	
Thomas C. Matthews	Spectroscopist	7,174.50	1.90
Philip N. Tyler*	Student Worker	978.77	
John F. Dinkel Jr.*	Engineering Aide II	173.35	
Lois Rankin*	Clerk Stenographer I	25.20	
Naomi I. Powell*	Clerk Stenographer I	780.32	
Margaret Saehtler*	Clerk Typist I	789.21	
Elizabeth E. Bruhn*	Engineering Aide II	320.60	
Phyllis H. VanDermark	Laboratory Assistant	681.03	
Donna J. A. Cogswell*	Clerk Stenographer I	39.00	
Frederick B. Dewey	Student Worker	339.77	
Dorothy J. Hagey*	Clerk Stenographer I	230.48	
Patricia J. Conro*	Clerk Stenographer I	6.25	
Elizabeth V. Bauman*	Laboratory Assistant	205.20	
Frances V. Givens*	Clerk Stenographer I	265.48	
Harold D. Wolfe	Geologist II	3,085.81	163.00
Dorothy J. Edgerton	Clerk Stenographer I	1,415.00	
Marguerite L. Beedon	Clerk Stenographer I	710.00	
Margaret L. Steere	Geologist I	2,099.36	
Donald I. Burkhart*	Engineering Aide II	1,076.35	
Ruth E. Wilson*	Clerk Stenographer I	14.00	
Irving W. Jones	Laborer I	101.92	
Bonnie E. McCosh	Engineering Aide II	75.40	
J. Paul Fitzsimmons	Geologist II	140.00 (1)	56.80 (1)
		95,516.35	3,853.28
Charged to Department Salaries and Wages and G.e.M.		94,526.77	3,317.34
(1) Charged to Special Requests		989.58	535.94

*Persons who were on staff or were regular employees for some portion of the period.

ACTIVE MINING OPERATIONS IN OREGON
September 1948

Name	Location	Product	Producing	Developing	Remarks
Afterthought claims Rockne & Lambert Haines, Oregon	Baker County T. 7 S., R. 38 E.	Lead & silver		x	
Argonaut Mine Argonaut Mine, Oregon, Ltd. Baker, Oregon	Baker County NW¼ sec. 19, T. 8 S., R. 37 E.	Gold		x	Lode
Buffalo Mine Ramsey, Kissock, & Amidon New York, N.Y. Granite, Oregon	Grant County SW¼ sec. 14, T. 8 S., R. 35½ E.	Gold	x		Lode
Blue Channel Placer M. H. Davis Wolf Creek, Oregon	Josephine County Sec. 19, T. 33 S., R. 5 W.	Gold	x		Hydraulic
Bonanza Mine Bonanza Mines, Inc. Sutherlin, Oregon	Douglas County Sec. 16, T. 25 S., R. 4 W.	Quick-silver	x		
Bristol Silica Company Rogue River, Oregon	Jackson County SE¼ sec. 30, T. 36 S., R. 3 W.	Crushed quartz & granite	x		
Brockton Nevada Mining Synd. (former Harris property) Sumpter, Oregon	Baker County About sec. 3, T. 10 S., R. 37 E.	Gold	x		Dragline placer operation
Bull Run Mine Vinson & Leonhardy Unity, Oregon	Baker County NE¼ sec. 2, T. 14 S., R. 36 E.	Gold		x	Lode
C & D Mining Company Jacksonville, Oregon	Jackson County Sec. 14, T. 38 S., R. 3 W.	Gold	x		
Chemical Lime Company Palmer Building Baker, Oregon	Baker County Sec. 10 T. 9 S., R. 39 E.	Lime-stone		x	
Chisholm Mine R. D. Semon Rt. 2, Box 29 Medford, Oregon	Jackson County Secs. 19 & 20, T. 34 S., R. 2 W.	Nickel		x	
Christean Bros. Dredge Rogue River, Oregon	Jackson County Sec. 10, T. 38 S., R. 4 W.	Gold	x		
Chrystallite Aggregates (Christy Pumice) Wisby & Christy P.O.Box 61, Chemult, Oregon	Klamath County Tps. 26-27 S., R. 8 E.	Pumice	x		
Clear Creek Placer Porter Bros. Dredging Co. Granite, Oregon	Grant County T. 9 S., R. 35 E.	Gold	x		Bucket-line dredge

Name	Location	Product	Producing	Developing	Remarks
Conley Placer Cecil Conley East D Street Grants Pass, Oregon	Josephine County Sec. 2, T. 35 S., R. 8 W.	Gold	x		
Cottonwood & Pine Creek Placers Progress Mining Company Bridgeport, Oregon	Baker County T. 12 S., R. 41 E. & Tps. 12-13 S., R. 42 E.	Gold	x		Dragline placer
Coyote Mine H. D. Ramsey Sumpter, Oregon	Malheur County near Brogan, sec. 31, T. 14 S., R. 41 E.	Antimony		x	Lode
Coyote Mine Wolf Creek, Oregon	Josephine County NE¼ sec. 22, T. 33 S., R. 5 W.	Gold		x	
Deschutes Concrete Products Co. Deschutes County Municipal Improvement Dist. Rt. 2, Bend, Oregon	Deschutes County T. 16 S., R. 12 E.	Pumice	x		
Deschutes Concrete Products Co. City of Redmond Redmond, Oregon	Deschutes County T. 14 S., R. 13 E.	Pumice & Cinders	x		
Dicalite Quarry The Dicalite Company Terrebonne, Oregon	Deschutes County Sec. 16, T. 14 S., R. 12 E.	Diatomite	x		Processing plant located at quarry
Dimmick Mine V. L. Dimmick 615 Dimmick Street Grants Pass, Oregon	Josephine County Sec. 3, T. 38 S., R. 9 W.	Gold		x	
Dunham Miles Claims (see Oliver Property)					
El Rio Dredging Corp. F. C. Stillwell 2600 Ramona Blvd. Los Angeles, California	Josephine County Sec. 34, T. 40 S., R. 8 W.	Gold		x	
Esterly Mine R. F. Oliphant Cave Junction, Oregon	Josephine County N½ sec. 27, T. 40 S., R. 8 W.	Gold	x		
Eureka Mine E. Young 414 N. 2nd Grants Pass, Oregon	Josephine County Sec. 22, T. 37 S., R. 9 W.	Gold		x	
Federal Placer O. N. Snavely Rt. 2, Box 35 Jacksonville, Oregon	Jackson County Sec. 13 T. 39 S., R. 3 W.	Gold	x		Hydraulic
French Diggings Sam Marrotte Whitney, Oregon	Grant County Secs. 20 & 29, T. 7 S., R. 36 E.	Gold		x	Placer

Name	Location	Product	Producing	Developing	Remarks
Golden Gate Mine Klein & Manley Baker, Oregon	Grant County near old townsite of Greenhorn. T. 9 S., R. 35 E.	Gold	x		Small scale prospect development with limited production
Gray Eagle Mine A. Brandenthaler Baker, Oregon	Baker County NW¼ sec. 7, T. 9 S., R. 41 E.	Antimony & gold		x	Former producer
Greenhorn Mine W. E. Keister 950 Savage Street Grants Pass, Oregon	Jackson County Sec. 8, T. 37 S., R. 3 W.	Gold		x	
Hellickson Dredge George Hellickson Wolf Creek, Oregon	Josephine County NE¼ sec. 1, T. 34 S., R. 8 W.	Gold		x	Suction dredge in Rogue River near Grave Creek
Hole-in-the-ground Placer L. O. Krewson Wolf Creek, Oregon	Josephine County NW¼ sec. 16, T. 33 S., R. 5 W.	Gold	x		Hydraulic
Horsehead Lime Corporation 319 Leverette Building Medford, Oregon	Josephine County SW¼ sec. 15, T. 38 S., R. 5 W.	Lime products		x	
Ida Mine Braeco Mines Co., lessee East G. Street Grants Pass, Oregon	Josephine County Secs. 25 & 26, T. 35 S., R. 5 W.	Gold		x	
Independence Mine Schmidt & Cassidy Kerby, Oregon	Josephine County Sec. 19, T. 38 S., R. 8 W.	Gold	x		
Jump-off-Joe Placer J. J. Colter Frank Heath Box 444 Grants Pass, Oregon	Josephine County Sec. 25, T. 34 S., R. 5 W.	Gold	x		
Lady Frances Mine Dant & Russell, Inc. Portland, Oregon	Wasco County on Deschutes River via Maupin. NE¼ sec. 24, T. 6 S., R. 13 E.	Perlite	x		Furnace plant at St. Helens, Oregon
Lewis Placer Bud Lewis Galice, Oregon	Josephine County Sec. 36, T. 34 S., R. 8 W.	Gold	x		
Lloyd A. Williamson Clinic Apts. Bend, Oregon	Deschutes County Sec. 6, T. 17 S., R. 12 E.	Pumice	x		
McIntosh Placer Harold McIntosh Wolf Creek, Oregon	Josephine County Sec. 20, T. 33 S., R. 5 W.	Gold	x		

Name	Location	Product	Producing	Developing	Remarks
McMannus Placer R. E. McMannus Gold Hill, Oregon	Jackson County Sec. 1, T. 37 S., R. 4 W.	Gold	x		Hydraulic
Mammoth Mine Rush & Piper Baker, Oregon	Baker County, Secs. 35 & 36, T. 8 S., R. 36 E.	Gold		x	Lode
Merrick Mine G. P. Merrick 120 Riverside Medford, Oregon	Jackson County Sec. 24, T. 39 S., R. 3 W.	Gold	x		Hydraulic
Miller Bros. Mine Wolf Creek, Oregon	Josephine County Sec. 29, T. 33 S., R. 5 W.	Gold		x	
Minnie Marie Claims Walter Graven & Associates 1737 S.W. Cable Portland, Oregon	Baker County on Powder River Sec. 10, T. 9 S., R. 44 E.	Gold		x	Lode
North Fork Placer Calhoun & Howell Dale, Oregon	Grant County just below Oriental Creek T. 7 S., R. 33 E.	Gold	x		Dragline placer setup
Northwestern Granite Quarry Haines, Oregon	Baker County Sec. 27, T. 7 S., R. 39 E.	Monumental granite	x		Quarries, saws, and polishes monuments
Oliver Claims East Eagle Mining Company Seattle, Washington	Baker County on East Eagle Creek Sec. 20, T. 9 S., R. 42 E.	Gold & copper		x	Lode
Oregon Portland Cement Co. Portland, Oregon	Baker & Polk counties Secs. 26, 27, 34, & 35, T. 13 S., R. 44 E., & Sec. 12, T. 8 S., R. 6 W.	Cement & raw limestone	x		Kilns at Lime & Oswego; quarries at Lime & Dallas
Pankey Placer Bert Pankey Merlin, Oregon	Josephine County Sec. 10, T. 35 S., R. 8 W.	Gold		x	
Pacific Portland Cement Co. Gold Hill, Oregon	Josephine County Sec. 30, T. 37 S., R. 6 W.	Cement & limestone	x		Kiln and shale quarry at Gold Hill; limestone quarry near Wilderville
Pine Creek Placers Pine Creek Placer Company Hereford, Oregon	Baker County Secs. 2, 3, & 10 T. 12 S., R. 39 E.	Gold	x		Placer
Pum-brick Tile Company Olaf Anderson Redmond, Oregon	Deschutes County Secs. 7 & 8, T. 18 S., R. 12 E.	Pumice	x		

Name	Location	Product	Producing	Developing	Remarks
Rainbow Mine C. H. Kapschull Deerfield, Illinois	Baker County Sec. 22, T. 13 S., R. 42 E.	Gold		x	Lode
Robert E. Mine W. D. Bowser 803 East D Street Grants Pass, Oregon	Curry County Sec. 23, T. 38 S., R. 10 W.	Gold	x		Small high-grading operation
Schleigh Placer W. C. Schleigh Wolf Creek, Oregon	Josephine County Sec. 19 T. 33 S., R. 5 W.	Gold	x		
Sexton Placer Schroeder & Knox Grants Pass, Oregon	Josephine County Sec. 24, T. 34 S., R. 5 W.	Gold	x		
Southport Mine Coast Fuel Corporation Coos Bay, Oregon	Coos County Secs. 14, 15, 22, & 23, T. 26 S., R. 13 W.	Coal	x		Operated by leasers
South Slough Mine Leonard Gibbs Bandon, Oregon	Coos County S½ sec. 2, T. 27 S., R. 14 W.	Coal	x		
Sumpter Valley Placers (former Sumpter Valley Dredging Co.) Now operated by Baker Dredging Co. Baker, Oregon	Baker County T. 10 S., R. 37 E.	Gold	x		Bucket-line dredge
Sunset Placer F. B. Cooper Grants Pass, Oregon	Josephine County Sec. 24, T. 34 S., R. 5 W.	Gold	x		
Sylvanite Mine Gold Hill, Oregon	Jackson County Sec. 2, T. 36 S., R. 3 W.	Gold		x	
Takilma Mining Company H. D. Beasley Takilma, Oregon	Josephine County Sec. 27, T. 40 S., R. 8 W.	Gold		x	Dredging operation
Thomas Placer Frank Thomas Sunny Valley, Oregon	Josephine County Sec. 9, T. 34 S., R. 7 W.	Gold	x		
Thomason Mine (Lucky Boy) Vinson & Leonhardy Unity, Oregon	Baker County Secs. 7 & 8, T. 14 S., R. 37 E.	Gold	x		Lode

Name	Location	Product	Producing	Developing	Remarks
Tumalo (Tum Pum) Pumice J. A. Elder Bend, Oregon	Deschutes County NW¼ sec. 29, T. 16 S., R. 12 E.	Pumice and cinders	x		
Volcanic Materials Company Deschutes County Municipal Improvement District Rt. 2, Bend, Oregon	Deschutes County Sec. 31, T. 15 S., R. 12 E.	Pumice	x		
Volcanic Materials Company W. Harris Deschutes, Oregon	About sec. 22, T. 16 S., R. 12 E.	Cinders	x		
Webster Placer Ray B. Webster Sunny Valley, Oregon	Josephine County Sec. 9, T. 34 S., R. 7 W.	Gold	x		
Wilhoit Coal Mine T. G. Mandrones 2747 N. E. 18th Avenue Portland, Oregon	Clackamas County W½ sec. 15, T. 6 S., R. 2 E.	Coal		x	
Yokum Mine C. W. Gray Wolf Creek, Oregon	Josephine County Sec. 2, T. 34 S., R. 7 W.	Gold	x		

SAND AND GRAVEL PRODUCERS IN THE STATE OF OREGON

Baker County

Baker-Union Concrete Products Company
Baker, Oregon

Cass Moeller
709 Valley Avenue
Baker, Oregon

Aaron Logsdon
1304 Valley Avenue
Baker, Oregon

Benton County

Corvallis Sand and Gravel Company
J. H. Gallagher, Superintendent
Crystal Lake Cemetery Road
Corvallis, Oregon

Harrisburg Sand and Gravel Company
2nd Street
Harrisburg, Oregon

Hub City Sand and Gravel Company
Corvallis, Oregon

W. J. Miller
321 N. 33rd Street
Corvallis, Oregon

A. H. Saxton & Sons, Contractors
Route 2
Corvallis, Oregon

Skelton and Wiecks
Yaquina Building
Toledo, Oregon

T. J. Starker
3790 Oak Creek Road
Corvallis, Oregon

Willamette Gravel Company
Corvallis, Oregon

Willamette Sand and Gravel Company
Rt. 3
Corvallis, Oregon

William E. Taylor
1252 Pierce Street
Corvallis, Oregon

Clackamas County

J. N. & M. J. Conley
607 N. E. Laddington
Portland, Oregon

Deep Creek Gravel Plant
Boring, Oregon

Bell Sand & Gravel Company
Bell Station (Johnson Creek Road)
Portland, Oregon

Mt. Scott Gravel Company
75th & Johnson Creek Blvd.
Portland, Oregon

Oregon City Sand & Gravel Company
Oregon City, Oregon

J. H. Rigdon
Barlow, Oregon

Schuld Bros. Sand and Gravel Company
Johnson Creek Blvd.
Portland, Oregon

Portland Road and Driveway Company
Kings Road & 82nd Avenue
Milwaukie, Oregon

Clatsop County

Astoria Crushed Rock Company
465 Commercial Street
Astoria, Oregon

McEwen-Wilson Rock Crusher
Seaside, Oregon

Columbia County

Parker-Schramm Company
Scappoose, Oregon

Rainier-Goodat Sand and Gravel Company
Rainier, Oregon

Wilbur Tichenor
Clatskanie, Oregon

Leslie Watters
6th and Columbia Blvd.
St. Helens, Oregon

Coos County

Benham Transfer Company
275 S. Hall Street
Coquille, Oregon

Coos Bay Dredging Company
Coos Bay, Oregon

Hillstrom Rock Quarry, Inc.
Box 477
Coos Bay, Oregon

Coos County (Cont.)

Ferris Laws
742 - 4th Street
Myrtle Point, Oregon

Harley Miller
Box 26
Myrtle Point, Oregon

Fred Robertson
Bandon, Oregon

Rogers and Kuni
P. O. Box 727
Coos Bay, Oregon

Crook County

Duffy Knorr
Redmond, Oregon

Ochoco Sand & Gravel Company
Prineville, Oregon

Prineville Sand & Gravel Company
Prineville, Oregon

Curry County

Elmer Bankus
Brookings, Oregon

T. H. Bierman
Langlois, Oregon

I. G. Fitzhugh
Port Orford, Oregon

Jerry Fondrich
Gold Beach, Oregon

Jack Storm
Langlois, Oregon

Louie Stoller
Harbor, Oregon

A. E. Walker
Pistol River, Oregon

Leland White
Brookings, Oregon

W. T. White
Port Orford, Oregon

C. C. Woodworth
Sixes, Oregon

Deschutes County

Bend Sand and Gravel Company
Bend, Oregon

Ochoco Sand & Gravel Company
917 E. 3rd
Prineville, Oregon

Prineville Sand & Gravel Company
7th and Fairmont
Prineville, Oregon

J. A. Struss
Redmond, Oregon

Douglas County

Paul Casey
857 West Mosher
Roseburg, Oregon

J. C. Compton Company
Box 748
Roseburg, Oregon

Sam Crites
Rt. 2, Box 450
Roseburg, Oregon

Douglas County Lumber Company
c/o S. E. Comfort
Box 108
Roseburg, Oregon

Darby & Foster
165 E. Second Avenue, S.
Roseburg, Oregon

Tom Lillebo
Reedsport, Oregon

Pre-Mix Concrete, Inc.
4449 E. Second Avenue, N.
Roseburg, Oregon

Roseburg Sand & Gravel Company
Box 1207
Roseburg, Oregon

Umpqua River Navigation Company
Gardner, Oregon

Whipple Logging Company
Drain, Oregon

Grant County

C. B. & T. Company
Box 514
John Day, Oregon

John Day Gravel Company
John Day, Oregon

Harney County

A. E. Howell
Hines, Oregon

Earl Sitz
Box 982
Burns, Oregon

Hood River County

Frank Gatchel
Hood River, Oregon

Loft & Son
Bridge Road
Hood River, Oregon

Jackson County

Bateman & Son
1232 N. Riverside
Medford, Oregon

G. C. Glass
619 Thomas Road
Medford, Oregon

Ray Gossett
Rt. 4, Box 383-D
Medford, Oregon

Guerin Bros.
Medford, Oregon

H. A. Hogan
Box 262
Central Point, Oregon

Lininger & Son
P. O. Box 1386
Medford, Oregon

L. W. Lull
Rt. 2, Box 426
Medford, Oregon

Medford Concrete and Construction Company
1320 N. Riverside
Medford, Oregon

Mrs. Prozzie
Ashland, Oregon

Scheffel & Gilman Construction Company
Sparta Building
Medford, Oregon

Jefferson County

R. M. Florey
Madras, Oregon

D. C. & A. L. Williams
Madras, Oregon

Josephine County

Dean Axtell
Upper River Road
Grants Pass, Oregon

G. A. and Mark Axtell
R.F.D. Fruitdale Drive
Grants Pass, Oregon

C. W. Dean
102 W. Burgess
Grants Pass, Oregon

Grants Pass Sand & Gravel Company
Grants Pass, Oregon

Ray Reeves
R.F.D.
Grants Pass, Oregon

Rogue River Sand & Gravel Company
Grants Pass, Oregon

Klamath County

Baker Bros.
P. O. Box 68, Pelican City Road
Klamath Falls, Oregon

J. Benbow
Klamath Falls, Oregon

Farmers Sand & Gravel Company
J. M. and M. J. Barnes
111 Sheldon Street
Klamath Falls, Oregon

Gladney & Adams
P. O. Box 838
2000 Midland Road
Klamath Falls, Oregon

H. B. Graham Bros.
624 High Street
Klamath Falls, Oregon

Ervin Grayson
Box 166
Merrill, Oregon

Ivory Pine Company
724 Main Street
Klamath Falls, Oregon

O. A. McCord
4444 Crosby Avenue
Klamath Falls, Oregon

Tru-Mix Concrete Company
Klamath Falls, Oregon

W. D. Miller Construction Company
1900 S. Sixth Street
Klamath Falls, Oregon

Klamath County (Cont.)

A. J. Tracy
1248 Morrison Street
Klamath Falls, Oregon

Klamath Concrete Pipe Company
805 Market Street
Klamath Falls, Oregon

Lake County

L. A. Decker
Lakeview, Oregon

N. R. Green
Lakeview, Oregon

A. B. Seymour
Box 1151
Lakeview, Oregon

Lane County

Allison & McFadden
Pacific Highway N.
Eugene, Oregon

Cascade Gravel Company
Vida, Oregon

John T. Conser
685 Ivy
Junction City, Oregon

Cottage Grove Sand & Gravel Company
R. R. Woods, Manager
Cottage Grove, Oregon

Eugene Concrete Pipe & Products Company
135 Blair Street
Eugene, Oregon

Eugene Sand & Gravel Company
8th Street
Eugene, Oregon

Lloyd M. Hill, Inc., Sand & Gravel Co.
Salem, Oregon

M. A. Horn
Saginaw, Oregon

Intercity Sand & Gravel Company
West Springfield, Oregon

Koon Sand & Gravel Company
Junction City, Oregon

Lane Gravel Company
P. O. Box 375
Eugene, Oregon

Martin Sand & Gravel
1698 - 7th
Eugene, Oregon

Red-E-Mix Concrete Company
Pacific Highway South
Eugene, Oregon

Springfield Sand & Gravel Company
Seavey Road
Springfield, Oregon

J. D. Walling
Florence, Oregon

T. C. Wildish
1072 W. 9th Street
Eugene, Oregon

Willamette Sand & Gravel Company
Eugene, Oregon

Yachats Sand & Gravel Company
Yachats, Oregon

Lincoln County

Guy E. Abraham
Siletz, Oregon

Altree Quarry
Virgil Landes, Manager
Route 1
Toledo, Oregon

Delake Sand & Gravel Company
Delake, Oregon

G. P. Hunter
Waldport, Oregon

Newport Sand & Gravel Company
Box 624
Newport, Oregon

North Lincoln Rock Products Company
Lloyd and Ed Calkins
Ocean Lake, Oregon

Ocean Lake Sand & Gravel Company
Ocean Lake, Oregon

Jack R. Robinson
Waldport, Oregon

Charles Thomas
Depoe Bay, Oregon

Linn County

Albany Concrete Pipe & Products Company
15th & Ferry Streets
Albany, Oregon

Albany Sand & Gravel Company
204 N. Broadalbin Street
Albany, Oregon

O. L. Bowman
Albany, Oregon

Leonard Haglund & Merle Salmon
637 W. 10th Street
Albany, Oregon

Harrisburg Sand & Gravel Company
W. F. Morris
Harrisburg, Oregon

Keebler Bros.
Lebanon, Oregon

Sweet Home Sand & Gravel
Sweet Home, Oregon

Malheur County

George E. Corliss
B. J. Schram Ranch
Ontario, Oregon

Eastern Oregon Pipe Company
Walter K. Flynn and James Smith
Ontario, Oregon

Lackey Sand & Gravel Company
Ontario, Oregon

L. H. Snodgrass
301 S. 3rd Street
Nyssa, Oregon

Strasbaugh Sand & Gravel Company
F. J. Strasbaugh
Nyssa, Oregon

Marion County

Anunsen Company
1405 N. Front Street
Salem, Oregon

Bosley & Meyer Gravel Company
1984 State Street
Salem, Oregon

Cascade Sand & Gravel Company
Frank Hrubetz and Bushnell
North Front Street
Salem, Oregon

Marion County (Cont.)

Commercial Sand & Gravel Company
Salem, Oregon

Engineer Sand & Gravel Company
1790 N. Summer Street
Salem, Oregon

W. C. Hill Sand & Gravel Company
Independence, Oregon

Charles H. Hoyt
Silverton, Oregon

Valley Concrete Company
Independence, Oregon

Jungwirth Sand & Gravel Company
Lyons, Oregon

Keizer Sand & Gravel Company
1130 Spruce
Salem, Oregon

Newberg Sand & Gravel Company
Newberg, Oregon

River Bend Sand & Gravel Company
642 - 7th
Salem, Oregon

Stayton Sand & Gravel Company
Stayton, Oregon

H. C. Walling Sand & Gravel Company
E. Hoyt Street
Salem, Oregon

Multnomah County

Bell Sand & Gravel Company
6435 S. E. Johnson Creek Blvd.
Portland, Oregon

City Paving and Mtls. Company
6500 N. E. Ainsworth
Portland, Oregon

Columbia Sand & Gravel Company
2234 N. E. 122nd Avenue
Portland, Oregon

Deep Creek Sand & Gravel Company
Sandy, Oregon

Gresham Sand & Gravel Company
190th Avenue N. of Division
Portland, Oregon

H. J. Kane
Boring, Oregon

Logan & Taylor, Inc.
7800 N. E. Killingsworth
Portland, Oregon

Multnomah County (Cont.)

Roscoe Morrison
7720 S. E. 82nd Avenue
Portland 6, Oregon

Pacific Building Materials Company
400 N. Thompson Street
Portland, Oregon

Porter W. Yett
6500 N. E. Ainsworth
Portland, Oregon

Portland Gravel Company
Columbia Bottom Road
Portland, Oregon

Portland Sand & Gravel Company
10717 S. E. Division
Portland, Oregon

P. E. Reed
9319 S. E. Foster Road
Portland, Oregon

Rocky Butte Quarry
9400 N. E. Mason Street
Portland, Oregon

Rose City Sand & Gravel Company
2806 N. E. 82nd Avenue
Portland, Oregon

Roselawn Sand & Gravel Company
N. E. 74th & Roselawn
Portland, Oregon

Ross Island Sand & Gravel Company
4129 S. E. McLoughlin Blvd.
Portland, Oregon

Troutdale Sand & Gravel Company
Troutdale, Oregon

Union Construction Company
5926 N. E. Columbia Blvd.
Portland, Oregon

Willamette Tug & Barge Company
Foot of N. Portsmouth
Portland, Oregon

Polk County

Robert S. Burch
Sheridan, Oregon

Dallas Sand & Gravel
Dallas, Oregon

Lambert Rock Company
406 Academy Street
Dallas, Oregon

Tillamook County

Dolan Construction Company
Tillamook, Oregon

Art Feldschau & Son
Tillamook, Oregon

Umatilla County

V. C. Christopherson
Lexington, Oregon

O. O. Felthouse
Box 254
Hermiston, Oregon

Hobsen & Schock
Box 455
Freewater, Oregon

Stewart Excavating Company
Veterans Housing Project
Milton, Oregon

Jones Scott Company
Umatilla, Oregon

Pendleton Sand & Gravel Company
Pendleton, Oregon

Van Petten Lumber Company
604 S. W. Dorion
Pendleton, Oregon

Union County

Hart Construction Company
10th & M Streets
LaGrande, Oregon

Archie Hiatt
LaGrande, Oregon

LaGrande Concrete Pipe Company
Island City, Oregon

Wasco County

George H. Locken
P. O. Box 365
The Dalles, Oregon

Mid Columbia Sand & Gravel Company
The Dalles, Oregon

The Dalles Sand Company
204 W. 14th Street
The Dalles, Oregon

Washington County

Gales Creek Sand & Gravel Company
Forest Grove, Oregon

L. H. Cobb Company
105 S. E. Farmington Road
Beaverton, Oregon

Tigard Sand & Gravel Company
Tigard, Oregon

Vanakin Sand & Gravel Company
Forest Grove, Oregon

Yamhill County

Crabtree Sand & Gravel Company
O. D. Crabtree, Manager
Dundee, Oregon

Grand Island Sand & Gravel Company
Box 314
McMinnville, Oregon

McKibbon Bros.
Sheridan, Oregon

Newberg Sand & Gravel Company
Newberg, Oregon

Northwest Rock Company
Newberg, Oregon

Willamette River Gravel
Dayton, Oregon

O. C. Yokum
Box 566
McMinnville, Oregon

BRICK AND TILE MANUFACTURERS IN THE STATE OF OREGON

Corvallis Brick & Tile Company
A. M. Woodcock & Esten Winegar
Crystal Lake Cemetery Road
Corvallis, Oregon

Monroe Brick & Tile Company
E. A. Wiedman
Monroe, Oregon

Molalla Brick & Tile Company
C. W. Key, George Wright, &
Arnold Shaver
Rt. 3
Molalla, Oregon

Needy Brick & Tile Company
Edward Kenagy & Kenneth Berkey
Hubbard, Oregon

MacFarlane Brick Plant
F. E. MacFarlane
319 Rogue River Avenue
Grants Pass, Oregon

Klamath Falls Brick & Tile Company
Ralph Smith
P. O. Box 537
Klamath Falls, Oregon

Albany Brick & Tile Company
L. R. Harrison
Albany, Oregon

Oregon Clay Products, Inc.
Robert D. Lytle
Vale, Oregon

Donald Brick & Tile Company
J. S. Fisher & Son
Donald, Oregon

Columbia Brick Works
Gresham Plant
Franze Olbrich, Supt.
Gresham, Oregon

Columbia Brick Works
Sylvan Plant
Charles E. Jensen, Supt.
Sylvan, Oregon

Pacific Stoneware Company
L. W. M. Scott
9217 Peninsula Avenue
Portland, Oregon

Monmouth Brick & Tile Company
G. P. Partridge
Monmouth, Oregon

Tillamook Clay Works
R. G. Krebs
Rt. 2, Box 221
Tillamook, Oregon

La Grande Brickyard
N. P. & J. L. Jensen
Box 636
La Grande, Oregon

Forest Grove Clay Products Company
E. L. Jones, Supt.
Forest Grove, Oregon

O. K. Brickyard
E. G. Krebs
Sherwood, Oregon

Scholls Tile Company
Jesse C. Snyder & Son
Scholls, Oregon

McMinnville Brick & Tile Factory
S. B. Nicoll & Son
McMinnville, Oregon

Willamina Clay Products Company
O. K. Edwards
0132 S. W. Mill
Portland, Oregon

Oregon Department of Geology and Mineral Industries
702 Woodlark Building, Portland 5, Oregon

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	A. Baker, Union, and Wallowa counties, 1939	(out of print)
	B. Grant, Morrow, and Umatilla counties, 1941	(out of print)
	C. Vol. I, Coos, Curry, and Douglas counties, 1941	(out of print)
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Geologic maps of the Dallas and Valsetz quadrangles, Oregon, 1947: E. M. Baldwin (also in Bull. 35)	0.25 ea.

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