MINERAL RESOURCE PROGRAMS - PRESENT AND FUTURE

FEBRUARY 1964

Mineral resource programs in the Division of Mines and Geology are broadly classified as (1) geologic investigations, (2) mineral commodity investigations, and (3) administrative. All the work done in the fields of geologic and mineral commodities is of a service nature rather than regulatory or law enforcement. Most of the Division's work that is classed as administrative is also in the nature of service to industry and individuals, but an increasing amount of regulatory activity is included here (in administration of the Oil and Gas Conservation Act, RCW 78:52:001-:550).

Mineral resource activities of the Division, as required by law (RCW 43:21:070 and 43:92:), are:

(1) Examining geology and mineral deposits of the State, and publishing reports and maps of this work.

(2) Collecting, compiling, and publishing statistics and information on mining, milling, and metallurgy in the State.

(3) Assembling and exhibiting mineral specimens and mineral resource displays.

(4) Assembling and operating a public reference library on mineral industry and geologic subjects.

(5) Identifying specimens of ores, minerals, and rocks submitted by the public.

(6) Cooperating with the U.S. Geological Survey in making topographic and geologic maps, cooperating with the U.S. Bureau of Mines, and with all departments of State Government.

(7) Administering the Oil and Gas Conservation Act, regulating drilling and production of oil and gas.

Mineral commodity and geologic investigations comprise about 63 percent of the total effort of Division personnel in terms of time expended—about 36 percent for mineral commodity investigations and 27 percent for geologic investigations. Practically all of this work would be classified as research, both basic and applied, in acquiring information to be made available to the public for use in industrial development.

About 37 percent of the time of Division personnel is used in distributing mineral resource and geologic information to those who request it. This includes correspondence; office, field, and public conferences; and publication and sales of reports and maps.

Regulatory and enforcement activities in connection with the Oil and Gas Conservation Act occupy about 3 percent of the time of the Division personnel.

In recent years there has been a steadily increasing demand for services. More publications are being sold and more inquiries of all kinds for mineral resource and geologic information are received each year. A rapidly increasing demand for information is coming in from amateurs and expecially from teachers and school children. Responding to these requests is becoming more and more of a problem, as it detracts greatly from time available for more serious requests and for field and laboratory examinations that are necessary to develop new and more complete knowledge of the State's mineral resources. Requests for our publications are being received at a rapidly increasing rate from schools and students, ranging from the third grade through university, and from bookstores serving these schools. Requests such as these are coming in for our publications in lots of several

hundred at a time in some instances, and this is straining our budget. Predictions from educators (such as James Garner, ~~Administrator~~ of ~~Secondary~~ Science Curriculum for the Department of Public Instruction) indicate that Earth Science is a very rapidly expanding subject in schools throughout the State and that in the next few years we can expect very greatly increased demands from schools for some of our geologic and mineral resource reports. If we are to meet these demands, much more money for printing will have to be made available.

Administration of the Oil and Gas Conservation Act has been a duty of the Division ~~that started in~~ since 1954, and this has been a fluctuating but not a large time-consuming duty until this past year. Oil well drilling permits issued in the past 7 years have totalled 71, as follows:

Year	Permits	Year	Permits
1957	10	1960	8
1958	6	1961	14
1959	8	1962	12
		1963	13

In 1963 new rules were adopted regulating offshore oil and gas exploration and requiring the presence of State Drilling Observers aboard ships drilling off the shore of Washington to obtain bottom samples and shallow cores. Three offshore drilling permits, in addition to those listed above, were issued in 1963, and this required that we hire three new men to function as Drilling Observers. Because of very irregular working conditions this has occupied an inordinately large amount of our administrative time. Offshore exploration for oil and gas will be at a much faster pace and will be done by perhaps twice as many companies this year as last, and the consequent demand on our time will greatly be increased.

The increased offshore oil exploration has stimulated much greater demand for information on geology and paleontology for use in guiding this exploration. We are fortunate in having on our staff one of the very few experts on Northwest micropaleontology, and through his work we are able to give excellent service to the oil companies exploring for oil and gas here. However, additional nontechnical help is needed to prepare samples for his microscopic study and to help prepare, catalog, and store drill core and well cuttings samples for our core library. Our core and well cuttings collection is being used increasingly by the oil company exploration geologists and is rapidly outgrowing the space allocated for it in the basement of the General Administration Building. Additional space will be needed soon. Also, we are in critical need of laboratory space for micropaleontological sample preparation.

Still further space problems are presented by our rapidly growing collection of periodicals and State and Federal publications in our library. We are required by law to maintain this library, and since 1958, when we hired a professional geologist-librarian, we have reorganized the library and have it in a very useble condition. Practically all available shelf space is occupied now, and room for expansion will have to be provided soon.

Although the mineral resource programs carried on directly by Division personnel have had to be curtailed somewhat because of a smaller appropriation this biennium than last, our programs of topographic mapping and geologic mapping carried on cooperatively with the U.S. Geological Survey have been increased substantially during the current biennium. This increase was made possible by an appropriation for this specific purpose. Under these cooperative programs the actual topographic and geologic mapping is done by Federal personnel and the costs are shared equally by the Federal and State governments. The topographic maps produced are published by the U.S. Geological Survey, but the geologic maps are published by the State Department of Conservation. At the beginning of the current biennium, three new 15-minute topographic quadrangle maps (of about 200 square miles each) were started and three new geologic maps of the areas of the same size were started. A much greater increase in rate of cooperative topographic and geologic mapping has been urged by the Industrial Raw Materials Advisory Committee to the Department of Commerce and Economic Development.

As mineral deposits have become more and more difficult to discover by conventional surface exploration methods, there have been developed a whole group of geophysical and geochemical exploration techniques. These more sophisticated scientific exploration methods have been used throughout the world by governmental agencies as well as private companies. The Canadian government has been a leader in this field, and the American government has been somewhat less active. Some of the more advanced State Geological Surveys have made use of geophysics and geochemistry. In 1959 we made the first use of an aeromagnetic geophysical survey in the search for ore deposits in Washington. This survey of a thousand square mile area in Ferry and Okanogan Counties showed that the technique could be useful here, and we have recommended that funds be appropriated so that all of Okanogan, Ferry, Stevens, and Pend Oreille Counties can be covered by aeromagnetic survey.

Geochemical prospecting has been proven to be a valuable tool in mineral exploration in many areas. A number of people in the mineral exploration business in this State have recommended that we start a State-wide geochemical survey similar to the one recently initiated in Oregon. We are preparing to start such a survey, but, although the work is relatively inexpensive, no effective geochemical survey program can be gotten underway unless new funds are made available for the purpose.