

The State of Wyoming
Office of State Geologist
Cheyenne

TO HIS EXCELLENCY,
JOHN B. KENDRICK,
GOVERNOR OF WYOMING.

Dear Sir:

I have the honor to submit herewith the
Biennial Report of the State Geologist for the
two year period ending September 30, 1916.

Very respectfully yours,

State Geologist.

Cheyenne, Wyoming.
October 31, 1916.

BIENNIAL REPORT
of the
State Geologist
Oct.1,1914 to Oct.1,1916.

The following tabulation shows the expenditures from the State Geologist's Contingent Fund for the period, October 1,1914 to April 1,1915, from the new contingent April 1,1915 to September 30,1916, and the totals for the two year period.

EXPENDITURES DURING TWO YEAR PERIOD, OCTOBER 1, 1914 to OCTOBER 1, 1916.

	Oct. 1, '14 to Apr. 1, '15	Apr. 1, '15 to Oct. 1, '16	TOTALS.
Traveling Expenses	\$228.60	\$1,133.84	\$1,362.44
Hotel & Board	114.15	510.72	624.87
Stenographer & Clerk Hire....	385.00	1,285.00	1,670.00
Drafting & Office Assistants..	263.30	233.70	497.00
Postage, Telephone & Telegraph.....	89.63	266.47	356.10
Printing, Records & Stationery.....	848.25	768.08	1,616.33
Instruments & Furniture	124.46	233.34	357.80
Miscellaneous (Analyses, Papers, etc.)	8.00	151.98	159.98
Field Expenses:			
Auto & Team.....	215.00	774.25	
Driver & Cook.....	95.00	319.75	
Board & Provisions	19.85	747.09	
Assistants' Salaries.....	431.87	1,152.00	
Total field expenses	761.72	2,993.09	3,754.81
Total spent from present contingent.....		\$7,576.22	
Total expenditure two year period.....			\$10,599.33

This leaves the sum of \$2,423.78 to meet the regular expenses of the office from October 1, 1916 to April 1, 1917. The printing of certain bulletins will, however, have to wait till April, 1917, in order to use money from the new contingent to meet such expense.

GEOLOGIC PUBLICATIONS.

The constant demand for the geologic bulletins issued by this office is surprising, not only in that the demand is so great, but in the geographic distribution. We have requests from almost every corner of the world. The demand for the bulletins and the respect shown for the accuracy and trustworthiness of the data given are matters of considerable pride to the writer, and should be, we think, to yourself and to the State in general.

During the present biennium the office has had to reprint several editions of the older bulletins and has published the following new bulletins.

- Bulletin No. 10. Basin & Greybull Oil & Gas Fields.
- Bulletin No. 11. Little Buffalo Basin & Grass Creek Oil & Gas Fields.
- Bulletin No. 12. Light Oil Fields of Wyoming. 2 editions.
- Bulletin No. 1. Scientific Series,
 - Part I-Petroleum in Granite.
 - Part II-Effect of Structure upon the Migration and Separation of Hydrocarbons.
- A general map of the State showing thousand foot elevations (in colors).

The data for the following new bulletins are now being worked into shape, the field work having been

completed.

"Geology of a Portion of Western Park County"
"The Byron & Garland Gas & Oil Field."
"The Oregon Basin Gas Field."
"The Pilot Butte Oil Field".

These will all issue with detailed geologic maps, showing the results of careful field surveys.

The data for a general report upon the various gas fields of the State are practically all gathered and will be used in a new bulletin some time during 1917. Also, the copy for a bulletin, giving the Bibliography and Index of Wyoming Geology, is ready to be printed whenever the necessary funds are available.

Our supply of Bulletin 6, "Mining Laws", Bulletin 8, "Salt Creek Oil Field", Bulletin 10, "Basin & Greybull Oil & Gas Fields", and Bulletin 11, "Little Buffalo & Grass Creek Oil & Gas Fields", is exhausted and reprints or revisions should be made as quickly as possible. The demand still continues and should be met.

VISITORS AND CORRESPONDENTS.

Unless one knows of the great number of visitors and the heavy correspondence with investors and geologists who come to this office, he has no idea of one of the greatest benefits resulting to the State from the work of the office.

Practically every one of the representatives of

the various large operating oil companies of other states, who come to investigate the conditions and possibilities of the oil business in this State, now come to the office for information, both printed and oral, and frequently make several visits until they find the writer in the office. The writer always gives all the time necessary to these visitors and frequently spends half a day with one man. If the State Geologist's Office produced no other results, the cost of the office to the State would be money well spent.

MINE INSPECTION AND MINE ACCIDENTS.

Fortunately, there have been no accidents of a nature requiring a report to the mine inspector during the biennium.

All precious metal mining and prospecting have been practically dead during the past two years. It is hoped that with the general revival of mining throughout the world that this State may renew activity in its rather limited gold and copper (prospective) areas. It is reported that an hydro-electric plant is being built upon the Pope Agie River, not far from the Atlantic City-South Pass mining district. With the possibility of reasonable power expenses, this district should become active.

The so-called "Voluntary Publicity Act" is a dead letter and should be repealed.

NEW DEVELOPMENT.

The State Geologist is directly responsible for the development of the Pilot Butte oil field and the Rock Springs gas field, which may yet become an oil producer, but has not to date. The writer found both these structures and brought them to the attention of local people who were urged to develop them.

Other new fields developed during the biennium are Elk Basin, Big Muddy, and Lost Soldier. Elk Basin is now producing about 6,000 barrels per day; the other two fields are as yet largely prospective.

Drilling is being done in many parts of the State at points which cannot produce either oil or gas. Whenever possible the writer discourages the spending of money at such places, but no reports of such nature are printed unless there seems to evident intent, on the part of the promoters, to defraud the general investing public.

FEDERAL WITHDRAWALS.

Unfortunately for the West, the policy of the Department of the Interior, regarding prospective oil and gas lands, remains unchanged. As soon as any promising territory comes to the attention of the Department, a presidential order of segregation is issued. This condition makes it necessary for the operators on new structures to prevent, if possible, any news of their prospecting getting into the local papers. It also makes it inexpedient for the State Geologist to publish much new data which would otherwise be well worth issuing in the form of bulletins or newspaper articles.

STATE GEOLOGIC MAP.

Hardly a week passes that the office does not receive requests for a general geologic map of the State. The office has such a map in manuscript form, which has proven of tremendous benefit. It is, of course, available to any person who can visit the office, and many have done so since we advertised that such a map existed.

We have now practically all data necessary to complete the map, and could print and distribute the same during the coming year if the Legislature will

provide the funds. It will cost about \$4,000 to print this map, due to the multiplicity of colors and patterns used. We think the money would be well spent.

CHEMICAL ANALYSES.

As emphasized in our last biennial report, this office is handicapped in not being able to do, or have done, analytical and assay work except by paying the regular custom fees for the same. For this reason the office is not collecting samples of a variety of mineral products which will eventually demand attention, and about which we know very little, until an accurate analysis is obtained. Among these are Oils, Gas, Clays (fire, brick and pottery), Fuller's Earth, Cement Materials, Potash and other alkalis, Phosphates, Mineral and Spring Waters, of which the State has great numbers and probable variety. The office should be collecting analyses upon all these minerals, for the time will surely come when such information will surely be needed. The collection of samples can be made as other work is being done, at practically no expense.

RAILROAD PASSES.

The last Legislature placed an "Anti-Pass" law upon the books of the State. It prohibits the use of passes except by a few of the appointive officers of the State, but does not except the State Geologist from such prohibition.

Certainly no state employee is the indirect cause of more railroad business than is the Geologist, and it would seem strange that other employees are allowed to use passes and he is not. The Geologist is of necessity traveling most of the time from April 1st to December 1st, and the buying of railroad transportation is a heavy charge upon the contingent fund. Nor has the contingent been increased to care for this added expense. I would ask you to recommend either that the Geologist be allowed to use passes, or that the contingent expense fund be increased by about \$1,000 to pay railroad transportation.

WELL RECORDS.

It is a matter of regret that the last Legislature refused to pass a law requiring well drillers or owners to file an accurate record or log of each well upon its completion. Such records are of much more

value than merely for the securing of scientific information. Where it becomes necessary to shut off gas or water in an old well, it is extremely important that accurate information regarding depths to sands, length and sizes of pipes used, etc., be available. Other states require such reports, and even go much farther in their supervision of the oil and gas industries. I would urge that you recommend the passage of a law, requiring the filing of logs of all new wells with the State Geologist's office. The office has blank forms, and has, in fact, gathered many such logs already, but many cannot be obtained unless there be a law compelling the filing of the same.

WASTE OF GAS.

I would again bring to your attention the necessity for some law, or revision of present laws, whereby the owners of wells can be compelled to stop waste of gas. Under the present law, owners and drillers are not required to report the drilling of wells, the striking of oil, gas, or water, or even to file a log of the well upon its completion. Nor has the State Geologist any

authority by which he may demand any of the above information. In the case of wastage he has no authority to compel the stoppage of such waste, nor the beginning of suit under the present law.

I have no recommendation to make as to the form of a new law. I am not a lawyer. I would call your attention to the very rigid and strict laws of the State of California, and the fact that those laws are proving excellent in actual operation. The time will most certainly come when the present governing bodies will be most severely criticized for not having exercised supervision over the drilling of the oil and gas pools within the State.

Law Trumbull,