

Thirteenth Annual Report
OF THE
STATE GEOLOGIST
OF THE STATE OF WYOMING



For the Period
October 1, 1924 to and Including
September 30, 1926

Thirteenth Biennial Report
OF THE
State Geologist



FOR THE PERIOD
OCTOBER 1, 1924
TO AND INCLUDING
SEPTEMBER 30, 1926

ALBERT B. BARTLETT, State Geologist
Cheyenne, Wyoming

ALBERT B. BARTLETT.....State Geologist
VAL B. MAGHEE.....Oil and Gas Inspector
MILLARD J. COFFEY.....Oil and Gas Inspector
THERESA McINERNEY.....Clerk

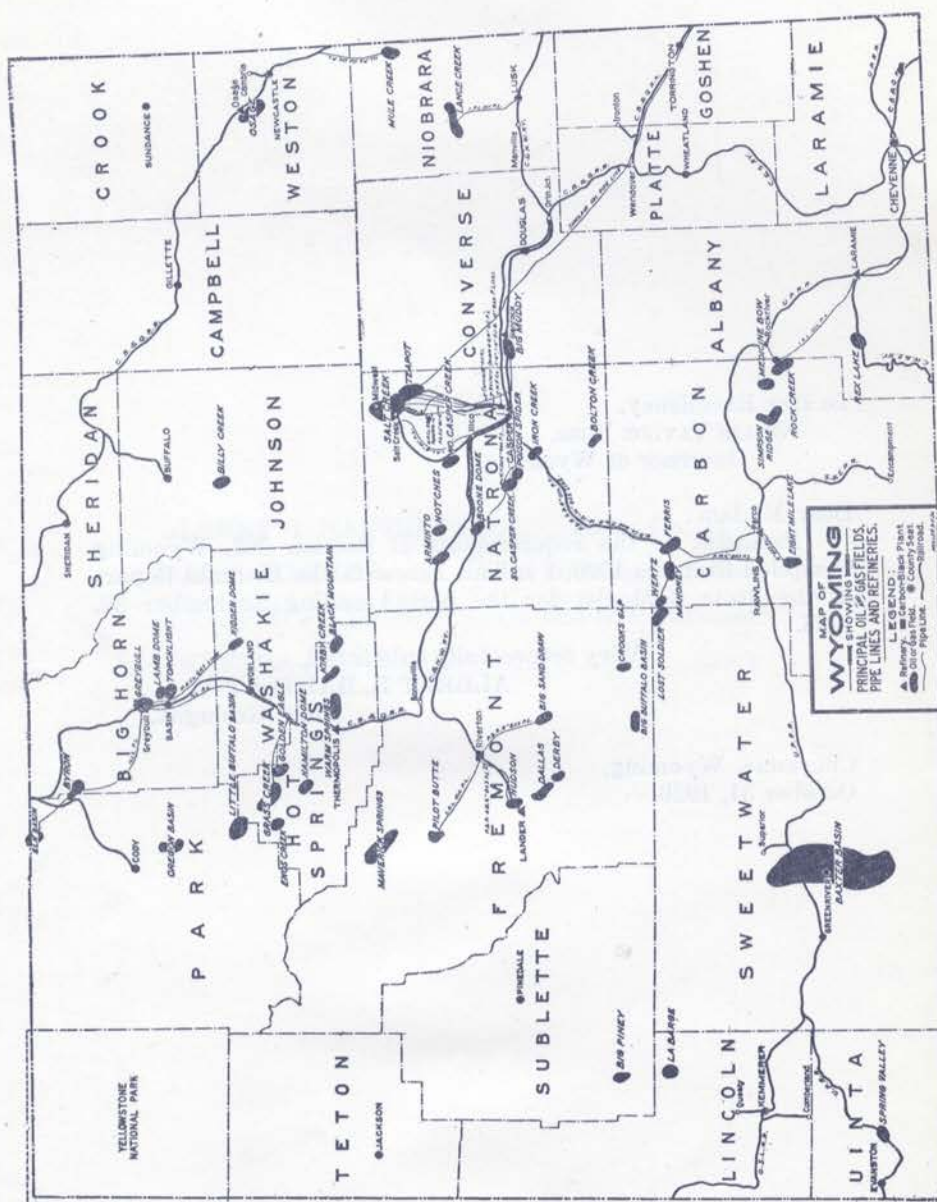
To Her Excellency,
NELLIE TAYLOE ROSS,
Governor of Wyoming.

Dear Madam:

Pursuant to the requirements of Section 302, Wyoming
Compiled Statutes 1920, I submit herewith the Biennial Report
of the State Geologist for the period ending September 30,
1926.

Very respectfully submitted,
ALBERT B. BARTLETT,
State Geologist.

Cheyenne, Wyoming,
October 31, 1926.



Thirteenth Biennial Report of the State Geologist

October 1, 1924, to and including September 30, 1926

MINES AND MINING

The original intent of the law creating the office of State Geologist was that that official should make reports on mining property, to collect official information relating to the various mines and mining projects of the State, and to publish and circulate such information as he may deem advisable for advertising the mineral wealth of the State, and also to take any steps which would be likely to advance the development of the mining industry.

The duties of the State Geologist were increased by the enactment of a law in 1903 making the State Geologist ex-officio Inspector of Mines, with power to examine into the condition of any mine, mill, or part thereof, and all matters or things connected with or relating to the safety of the persons employed in or about the same; to examine into and make inquiry respecting the condition of machinery or mechanical devices, and, if necessary, to have same tested; to appear at all coroner's inquests respecting accidents and, if necessary, to examine and cross-examine witnesses. These duties do not apply to coal mines, as they are under the supervision of the Coal Mine Inspectors who are not connected with the office of the State Geologist, but do apply to quarries, metal mines and other mining operations.

The requirements of the State Geologist were still further enlarged by the action of the Legislature in 1919 making it the duty of the State Geologist to make examinations and reports on any State or school lands when so requested by the State Land Board or the State School Land Board, and to make written report concerning the geology of any lands in which the State of Wyoming is or may hereafter become interested, and on such other matters as the respective State Boards have to do with State lands or State school lands may desire information upon. He is further charged with the duty of enforcing the laws of the State of Wyoming relating to the oil industry.

The laws of 1921 provide for conservation of the natural resources of the State under the supervision of the State Geologist relating to the oil and gas wells and have caused a further increase in the activities of the office. Under this law has been formed a Department for the conservation of oil and gas as part of the State Geologist Department. At the present time this consists of two oil and gas inspectors, located at Casper, their duties being to make inspections of wells throughout the State, to supervise repair work, together with other duties along the same general lines, including production tests of both oil and gas and reporting on their activities.

The work of the State Geologist Department under the four lines of activity mentioned above will be described more fully in the succeeding pages of this report.

MINING INDUSTRY

As the result of the industrial depression following the late war, the mining industry has been suffering from inactivity, not only in Wyoming but throughout the entire Nation, as the result of over-supply in iron, copper and other metallic minerals as well as a number of non-metallic minerals. On account of high cost of operation, the mining of gold and silver was less profitable than before, and not attractive from an investment point of view. The surplus stock of metals has been gradually absorbed by the industries but the process was slow, as mining operators found it more profitable to shut down entirely than to continue operations even at a slight loss. It was the logical result of these operations that new mining enterprises were not being developed; capital was not seeking investment in mining ventures and the mining industry in Wyoming has made little progress during the last few years. Although Wyoming probably has the greatest undeveloped mineral resources of any state in the Union, the development has been backward, mainly because these resources include a smaller proportion of precious metals, which are the first to attract mining development, and which bring in lines of transportation which later result in the development of the less precious metals, which often are really resources of greater extent and value in the end. Wyoming's principal resources include coal, oil, phosphates, potash and a number of other minerals in immense quantities but of comparatively small value per ton, which with high freight rates and long distances to points of consumption bring them into competition with similar products having advantages of low freight rates and short hauls, so that the development

of these resources, with the exception of oil, has been comparatively slow. It seems to be the problem in the development of the mining resources of this State to secure low freight rates and to find and build up large markets.

The State Geologist's Office is endeavoring to be of every possible assistance to the mining industry in finding markets for its products, and in future years can be of still greater assistance. Manufacturing has become the greatest industry of the United States and its development is being aided by research work of engineers and chemists who are continually seeking new products for accomplishing certain definite objects in manufacturing processes. In these investigations it is frequently found that some mineral hitherto considered of interest only as a mineralogical specimen is of actual commercial value for some manufacturing process. As an example of this, it has been found that cyanite and sillimanite, silicates of aluminum, are very valuable in manufacturing porcelains for spark plugs, and the United States is being combed by representatives of spark plug manufacturers for deposits of these minerals. Wyoming is known to contain one of these minerals but whether it occurs in commercial quantity and purity has not yet been determined.

Through the newspapers and other agencies the State Geologist is endeavoring to keep mining operators informed as to the market and demand for these and other mineral products, with the hope that commercial deposits may be brought to light, resulting in their development. Owing to the fact that new uses are being found continually for minerals previously considered to be of no value, it is important that the State Geologist should keep informed on this subject and be prepared to identify all minerals sent in for examination, and to learn of deposits of such minerals, their extent and location with respect to transportation, even though the minerals at this time may not be considered of commercial value. In order to keep informed on these subjects and also to be in a position to inform the public, the State Geologist has commenced to assemble specimens of the various minerals of the State, and is also securing from outside of the State specimens of minerals which have not previously been known in Wyoming but which should occur in this State, and which may be brought to light at any time. Many of these materials are of very ordinary appearance. Some of them resemble each other closely and it is almost impossible for the average prospector to make tests in the field by which he could determine one from another.

In view of the ever increasing value and demand for these minerals, it is very important that the State should have an

agency capable of making these determinations and of identifying such minerals when they are sent in for inspection. This office at the present time has but very little equipment for determination of minerals, its equipment being limited to a small blow-pipe outfit. This outfit is useful only for determining the ordinary minerals but is inadequate for the identification of rare and unusual minerals. In order to be in a position to keep the public fully informed regarding the identification of all minerals, the office should either be equipped with a good laboratory or else funds should be made available by which the State Geologist can send the specimens to well equipped laboratories for full determination. Determination of rare and unusual minerals are expensive but valuable. The present intent of the laws regarding the identification of minerals by the State Geologist is that he should not make an assay but merely make an inspection of the specimen and give the operator the result of that inspection. Methods of this kind were satisfactory a few years ago when the presence and importance of rare and unusual minerals in Wyoming were not known and probably not even suspected. With the new minerals which are coming to light, it is impossible for any one to make a reliable identification without having access to a complete laboratory, and as there does not seem to be space available for the State Geologist to have such a laboratory in the Capitol Building, it is recommended that for the next two years the State Geologist be allowed a small additional amount annually to be used according to his own judgment for having assays, tests and determinations made on any minerals on which he considers these tests to be justified.

The State Geologist's Office is occupying the same quarters that it has occupied for the past fifteen or twenty years and it is now doing about four times as much business as it formerly did, and as a considerable volume of records have accumulated, and the library has grown, larger quarters should be provided for this Department. Although the State has had a Geologist for a great many years, there has been no collection of rocks and minerals in this Office by which to display to callers and visitors the variety, quality and extent of the mineral resources of this State. Feeling that the preparation of such an exhibit is a vital part of the duties of the State Geologist, it has been the policy of this administration to commence the assembling of such an exhibit. Some good results have been accomplished in the past two years but a great deal is still to be desired. Before it is possible to have a comprehensive exhibit of the specimens of the minerals considered in representing Wyo-

ming's principal resources, it is necessary to have more space in which to display these minerals and this makes another reason for more room in the Capitol for this Department.

INSPECTION OF OIL AND GAS WELLS

The Legislature in 1921 enacted the laws which are now in force providing for a Department of Oil and Gas Conservation and placing the operation for oil and gas on State and patented lands under the supervision of the State Geologist, the intent of this law being to have this Department to co-operate with the United States Bureau of Mines in preventing waste of the oil and gas resources through negligent methods of operation, prescribing and enforcing rules and regulations governing the drilling, casing and abandonment of oil and gas wells in the State of Wyoming, excepting public lands subject to the Act of Congress approved February 25, 1920. The rules and regulations shall be those from time to time adopted by the Bureau of Mines governing methods of operations of operators upon lands embraced within permits or leases issued under said provisions, and it shall be the duty of all persons and corporations drilling or operating oil or gas wells upon patented or state land to comply with said rules and regulations, and to file with the State Geologist all logs of wells and other reports required thereby, and to case, control and plug all wells therein prescribed.

As this law was passed only in 1921, a great majority of the wells in Wyoming had previously been drilled or were being drilled at that time and during the first two years it was necessary for the State Geologist to organize this Department and endeavor to find and inspect all of the wells in the State coming under its supervision. A great many of the operators were not aware of the new law and it was necessary to find them and notify them. The work was well organized and in successful running condition at the beginning of the biennial period covered by this report, there were still however some operators who were drilling on patented or State lands who had not yet been made familiar with the provisions of the law and were not filing the necessary reports. Even at the present time, when practically all of the operating companies in the State are familiar with this law, there are occasionally new concerns coming in and commencing drilling operations without communicating with the State Geologist, or without making any effort to determine whether there are any laws regulating the oil and gas operations. It is very important that these operators be found immediately, as soon as their operations

commence, in order that they may be given the proper advice and supervision. They are usually smaller concerns and are often not familiar with the best practices in drilling operations and the supervision and advice of our oil and gas inspectors are often of great value to them.

The general public has a very vague idea of the difficulties to be encountered in drilling for oil or gas. They do not appreciate the fact that before drilling operations are commenced an extensive and complete geological examination is necessary, in order not only to determine the depth of the oil sands and whether they should be oil bearing at any particular location, but also the presence and extent of water sands that have caving forms. For drilling a well in new territory it is very essential to know in what sands water is likely to be encountered and to start with a hole of sufficient size, so that water sands can be properly cemented and cased off and drilling continued with smaller sized tools. Some of the smaller concerns, not familiar with geological conditions in this State, will attempt drilling operations without proper understanding of the conditions to be encountered. Such operations are often doomed to failure before they commence. It is the endeavor of this Department to assist these operators with these problems and to insist upon their starting their holes of sufficient size to permit them to be drilled to a depth sufficient to test the formations in which production is to be expected and, in this manner, our services are not only of value to the operating companies but also to the entire State, as it is very important, when an oil structure is being tested, to see that it is fully and properly tested and not abandoned until all of the prospective oil producing formations have been drilled into, if within reach of the drill. The structure which is partially drilled often receives a black eye as the result of abandonment and it may be many years before another company will go back to it and make the necessary expenditure to drill deeper and fully test the structure.

As contemplated by the Wyoming Laws of 1921, this Department has adopted the rules and regulations of the United States Bureau of Mines and has consulted the local members of the Bureau of Mines force very freely and co-operated with them at every opportunity. We wish to take this opportunity to express our sincere appreciation of the splendid co-operation and assistance rendered us by the members of the United States Bureau of Mines. The operations on government lands are under the supervision of the Bureau of Mines and it very frequently happens that an oil structure will contain lands which are under the supervision of the State Geologist. In making

a study of underground conditions for the purpose of prescribing regulations tending to prevent the waste of oil or gas, either at the surface or by escaping somewhere in the wells into porous formations, or by entrance of water from water bearing formations into the oil formations through defective casing or other causes, it is very necessary that the State and Bureau of Mines co-operate to the greatest possible extent in studies of these conditions. It has been very gratifying to our Department to have been able to co-operate with the Bureau of Mines successfully in every case.

This Department wishes to acknowledge also the co-operation we have received from practically all of the principal operating companies in Wyoming. In the beginning some of these companies were inclined to resent supervision of their operations by a State Department, but they have now come to realize that our supervision is not inimical to their best interests but, on the other hand, is of a great benefit to them. In the early stages of the oil and gas development of Wyoming there was not apparent the same regard for the conservation of these valuable resources that is now apparent. This change has come as the result of two things: First, a realization on the part of operating companies that oil and gas are exhaustible and limited and when once extracted from the ground they are gone and can never be replaced.

The supervisory operation of the Bureau of Mines has also had a great influence in reducing the waste. A recent bulletin issued by the Bureau of Mines calls attention to the fact that while all of the supervisory work done cannot be directly translated into dollars and cents, some of the work can be. For example, four of the jobs conducted by the Bureau of Mines men amounted to over \$307,000 gained to the industry due to a return for the oil recovered, the drilling expense saved, and the preventable losses demonstrated. This amount of money was part of the earnings on an appropriation of \$47,000 in a two year period and did not include fifty or more other jobs where companies were benefitted in various ways. When such savings as these are demonstrated to the operating companies it is only natural that they should be greatly in favor of proper supervision of their operations, and should co-operate fully with the Bureau of Mines and with the State Department, as they have done during our administration, with very few exceptions.

During the last four years there has been a great deal less preventable waste of oil and gas than in the former biennial periods, due largely to the fact that the oil and gas operations are under State and Federal supervision, and also to the grow-

ing recognition on the part of the operating companies to the fact that prevention of waste is their best policy. If the history of the waste of oil and gas in prior years were fully known, the figures would be something staggering. For example, there is one gas well in the Big Horn Basin which is reported to have burned for a period of three years something like 50 million cubic feet of gas per day, having a fuel value of at least \$5000.00 per day, in a community where gas could be utilized or, at current prices for gas in some of our larger cities, a value of possibly \$25,000.00 per day. At \$5000.00 per day, the loss in one year is estimated at \$1,825,000.00, and in three years amounts to nearly 5½ million dollars, while, at the prices obtaining in some of the larger cities, this waste could have had a value of possibly 25 million dollars.

Another well in Big Horn Basin caught fire and burned for a year and a half and the estimated loss was anywhere from three million to fifteen million dollars, depending on what estimate is put on the value of this gas. The value of a Conservation Department in preventing such losses is at once apparent.

A few years ago, when a gas field was discovered a great many miles from the nearest town, it was a cause of great disappointment to the operators who had been drilling in the expectation of finding oil. At such a distance from consuming centers the gas was not considered to have any value and the operator did not look far enough in the future to realize that Wyoming is a growing state and that before many years this gas could be used in the building up of prosperous communities and would yield the operators a pretty profitable return. Not having sufficient foresight to realize the opportunity of their discovery, they made no effort to control their gas. The well getting out of control it was allowed to blow into the air and, if it caught fire, little effort was made to extinguish it. This, of course, was not true in every case but that it did happen in several cases is a well known fact. In some cases gas wells were allowed to blow in the hope that they would turn to oil. This policy is not permitted by the present administration.

While there is still considerable waste of natural gas in Wyoming, practically all of this is a waste which cannot be prevented under present operating conditions and every effort is being made to reduce these wastes to an absolute minimum. The fact that the State has an Oil and Gas Conservation Department with inspectors continuing to make examinations of oil and gas wells in all parts of the State is a very favorable safeguard against such wastes. As an example of improvement in such conditions will be cited a gas well which accidentally

caught fire in the Lance Creek field in 1923 and which was extinguished by prompt methods after burning only about two weeks, which is quite different from the way gas wells were allowed to burn or blow several months at a time several years ago.

Owing to the increase in the activities required of the State Oil and Gas Inspectors, there has been tremendous increase during this biennium in the reports and inspections made by them. The activities of inspectors are briefly and partially set out in the following capitulations:

PHIL S. HOYT, OIL AND GAS INSPECTOR

Field	Date	Reason.
Megown Dome	10- 8-24	General Report.
Hudson	10-14-24	General Report.
Megown Dome	10-12-24	Subsequent development.
So. Pass District	11- 1-24	General Report.

VAL B. MAGHEE, OIL AND GAS INSPECTOR

Field	Date	Reason.
Osage	10- 4-24	General Report.
North Casper Creek	10-14-24	Operations in General.
Big Muddy Field	10-20-24	Tests.
Pine Mountain Dome	11- 7-24	Report.
Bolton Creek Field	11-17-24	Report of operations.
Big Muddy Field	12- 6-24	Repairs.
Salt Creek	1-29-25	Report.
North Casper	2- 7-25	Report.
North Casper	2-13-25	Report.
North Casper	2-24-25	Mineral Report.
Salt Creek	3-24-25	Report.
Brenning Basin	3-28-25	Report.
Big Muddy	3-28-25	General Inspection.
Miscellaneous	3-24-25	Report.
Split Hill	3-28-25	Drilling conditions.
Salt Creek	3-24-25	Cleaning out.
North Casper Creek	4- 3-25	Report
Lamb Anticline	4-15-25	Gas conditions.
North Casper Creek	4-14-25	Test.
Notches Dome	4-29-25	General Inspection.
Sage Creek Structure	4-29-25	Report.
Powder River Station	4-23-25	General Inspection.
North Casper Creek	4-23-25	General Inspection.
Salt Creek	5- 6-25	General Inspection.

VAL B. MAGHEE, OIL AND GAS INSPECTOR—Continued

Field	Date	Reason.
Miscellaneous	5-11-25	Report in vicinity of Bonneville.
Bolton Creek	5-12-25	General Inspection.
Dallas Oil Fields	6-18-25	General Inspection.
LaBarge Field	6-20-25	General Report.
Billy Creek	6- 1-25	General Report.
Miscellaneous	6- 8-25	General Report.
Nebel Dome	6-15-25	General Inspection.
Muskrat	6-19-25	General Inspection.
Dry Piney	6-20-25	General Inspection.
Spring Valley	6-23-25	General Inspection.
Baxter Basin	6-29-25	General Inspection.
Field southeast of Casper	7- 3-25	General Inspection.
Black Mountain	7-16-25	Report.
Earthquake report	7-16-25	
Salt Creek	7-17-25	General Inspection.
Ferris Field	7-31-25	General Inspection.
Medicine Bow Structure	7-31-25	General Inspection.
G. P. Dome	7-31-25	General Inspection.
Mahoney Dome	7-31-25	General Inspection.
Lost Soldier Field	7-31-25	General Inspection.
E½NW¼ 11-26-90	7-31-25	Drilling operations.
Osage Field	8- 7-25	Report.
Salt Creek	8-13-25	General Report.
Notches Dome	8-15-25	General Inspection.
Lost Creek Structure	8-26-25	General Inspection.
Red Desert Country	8-26-25	General Inspection.
Quealey Dome	8-28-25	General Inspection.
Rock Creek Field	8-28-25	General Inspection.
Cooper Cove	8-28-25	General Inspection.
Foot Creek Structure	8-28-25	General Inspection.
Mahoney Dome	9-12-25	General Inspection.
Mule Creek	9-24-25	Report.
Town of Manville	9-24-25	Report.
Lance Creek Field	9-24-25	Report.
Shawnee Structure	9-24-25	Report.
Orin Junction Field	9-24-25	Report.
Salt Creek from Newcastle	9-25-25	Report.
Soda Creek	9-25-25	Report.
Oil Creek	9-25-25	Report.
Osage Field	9-25-25	Report.
Arch Creek	9-25-25	Report.
Fiddler Creek	9-25-25	Report.

VAL B. MAGHEE, OIL AND GAS INSPECTOR—Continued

Field	Date	Reason.
Bull Creek	9-25-25	Report.
Moorcroft	9-26-25	Report.
Stoner Dome	9-26-25	Report.
Pump Creek	9-25-25	Report.
Nebel Dome	10- 3-25	Report.
Big Horn Basin	10- 5-25	Report.
Mahoney Dome	10- 5-25	Report.
Osage	10- 6-25	Report.
Warm Springs	10- 6-25	Report.
Willow Creek	10-15-25	Report.
Osage	10-15-25	Report.
Half Moon Dome	10-19-25	Report.
Lost Soldier	10-19-25	Report.
Little Sage Creek Dome	10-22-25	Report.
Osage Field	10-20-25	Report.
Black Mountain	10-24-25	Report.
Big Muddy	10-24-25	Test Arrangement.
Arvada District	11- 4-25	Drilling conditions.
Newcastle District	11-14-25	Report.
Baggs Structure	11-14-26	Report.
Crooks Gap	11-25-25	Report.
Golden Eagle Dome	12-21-25	Report.
Hot Springs at Thermopolis (Pyrite Report)	12-28-25	Report.
Colter Structure	1-28-26	General Report.
Salt Creek	2-10-26	Deep test.
Warm Springs	3-16-26	Test oil.
Warm Springs	3-26-26	Cement.
Carroll Ranch	4-14-26	Abandonment.
East of Casper	4-14-26	Inspection.
Salt Creek	4-15-26	Inspection.
Lost Soldier	4-20-26	Inspection.
Wertz	4-20-26	Inspection.
Mahoney	4-20-26	Inspection.
Ferris	4-20-26	Inspection.
G. P. Dome	4-20-26	Inspection.
Eight Mile Lake	4-21-26	Inspection.
St. Mary's	4-21-26	Inspection.
Simpson Ridge	4-21-26	Inspection.
Medicine Bow	4-21-26	Inspection.
Rock River	4-22-26	Inspection.
Dutton Creek	4-22-26	Inspection.
Cooper Cove	4-22-26	Inspection.

VAL B. MAGHEE, OIL AND GAS INSPECTOR—Continued

Field	Date	Reason.
Quealy Dome	4-22-26	Inspection.
Rex Lake	4-22-26	Inspection.
Lingle	4-23-26	Inspection.
Jay Em	4-23-26	Inspection.
Lance Creek	4-24-26	Inspection.
Manville	4-24-26	Inspection.
McKinley	4-24-26	Inspection.
Carey Ranch	4-24-26	Inspection.
Big Muddy	4-26-26	Notices on well.
Irvine	5-24-26	General Inspection.
McKinley	5-24-26	General Inspection.
Glendo	5-24-26	General Inspection.
Guernsey	5-24-26	General Inspection.
Lingle	5-24-26	General Inspection.
Jay Em	5-24-26	General Inspection.
Mule Creek	5-25-26	General Inspection.
Osage	5-25-26	General Inspection.
Soda Creek	5-26-26	General Inspection.
Pump Creek	5-26-26	General Inspection.
Moorcroft	5-26-26	General Inspection.
Rozet	5-26-26	General Inspection.
Billy Creek	5-26-26	General Inspection.
Buffalo Basin	6- 9-26	General Inspection.
Bush Creek	6-10-26	General Inspection.
Lost Creek	6-10-26	General Inspection.
Pickett Lake	6-10-26	General Inspection.
Red Desert	6-10-26	General Inspection.
Crooks Gap	6- 9-26	General Inspection.
Sheep Creek	6- 9-26	General Inspection.
Fremont Pet.	6- 9-26	General Inspection.
Warm Springs	6-25-26	General Inspection.
Lake Creek	6-26-26	General Inspection.
Elk Mountain	6-26-26	General Inspection.
Hidden Dome	6-26-26	General Inspection.
Torchlight	6-27-26	General Inspection.
Danker	6-27-26	General Inspection.
Byron	6-27-26	General Inspection.
Guernsey ?	6-27-26	General Inspection.
Guernsey ?	6-27-26	General Inspection.
Elk Basin	6-28-26	General Inspection.
Shoshoni	6-28-26	General Inspection.

VAL B. MAGHEE, OIL AND GAS INSPECTOR—Continued

Field	Date	Reason.
Oregon Basin	6-28-26	General Inspection.
Buffalo Basin	6-29-26	General Inspection.
Grass Creek	6-29-26	General Inspection.
Baxter Basin	7- 6-26	General Inspection.
North Baxter Basin	7- 6-26	General Inspection.
Spring Valley	7- 8-26	General Inspection.
LaBarge	7- 9-26	General Inspection.
Derby Dome	7-11-26	General Inspection.
Dallas	7-11-26	General Inspection.
Hudson	7-11-26	General Inspection.
Salt Creek	7-15-26	General Inspection.
Big Muddy	7-19-26	General Inspection.
Danker	8-12-26	Repair well.
Big Muddy	8-18-26	Repair well.
Wheeler Ranch	9- 2-26	Repair well.
Pine Mountain	9- 7-26	Repair well.
Lingle	6-25-26	Inspection
Greyrocks	6-24-26	Cement Pipe

MILLARD J. COFFEY, OIL AND GAS INSPECTOR

Field	Date	Reason.
Miscellaneous, Sec. 36-36-94	7-21-25	Examination.
Vicinity of Thermopolis	7-21-25	General Inspection.
Warm Springs	7-21-25	General Inspection.
Gebo Dome	7-21-25	Drilling Conditions.
Hidden Dome	7-21-25	Drilling Conditions.
Sherard Dome	7-21-25	Drilling Conditions.
Torchlight	7-21-25	Report of cleaning out.
Miscellaneous, Sec. 24-51-93	7-21-25	General Inspection.
Red Dome	7-21-25	General Inspection.
Crystal Creek	7-21-25	General Inspection.
Miscellaneous, SW ¼ 29-56-97	7-21-25	Drilling.
Garland Structure	7-21-25	Drilling.
Miscellaneous, Sec. 10-55-97	7-21-25	General Inspection.
Miscellaneous, Sec. 33-56-97	7-21-25	General Inspection.
LaBarge	8-29-25	Drilling conditions of Various Companies.
Fossil Field west of Kemmerer	8-29-25	General Inspection.
Vicinity of Evanston	8-29-25	Drilling.
Miscellaneous, 30-16-118	8-29-25	Drilling.
Vicinity north of Wamsutter	8-26-25	General Inspection.
Ferris Dome	9-29-25	Report.

MILLARD J. COFFEY, OIL AND GAS INSPECTOR—Continued

Field	Date	Reason.
Lost Soldier	9-29-25	General Conditions Regarding Drilling, Etc.
Mahoney Dome	9-29-25	General Conditions.
G. P. Dome	9-29-25	General Conditions.
Bolton Creek	9- 9-25	Drilling Conditions.
Pine Mountain Structure	9- 9-25	Drilling Conditions.
Wallace Creek	9-19-25	Drilling Conditions.
Miscellaneous, SE¼ 23-45-62	11-30-25	General Conditions.
Bolton Creek	6-29-26	General Inspection.
Osage	6-28-26	General Inspection.
Osage, E½ 36-37-64	6-28-26	General Inspection.
Osage	11-30-25	General Inspection.

The above tabulation does not include a large number of inspections made by the State Geologist, either alone or in company with one of the inspectors, and does not include other activities of the inspectors, such as conferences with operators, office and telephone calls, letters received and sent, well logs secured and filed, sundry notices passed on and other similar activities. It is evident from the tremendous increase in the work required of the oil and gas inspectors, that certain changes should be made in the arrangements. In the first place, the Legislature of 1925 appropriated enough money to provide the salary of one inspector during the entire year and the salary of the other inspector during only six months of the year. Owing to the great increase in the amount of work, it is very essential that the Legislature should provide sufficient salary to employ both inspectors during the entire year and also to provide a greater contingent expense to take care of the additional travelling expenses resulting from the increased activities.

During the past two years the Oil and Gas Inspectors have had an office at Casper at Room 306, Producers and Refiners Building. Here they have been accumulating records of their work, and they are accessible to the public.

With an office, they can be more promptly located by operators, and are able to carry on their duties more efficiently. The office should be continued.

During the past season the State Geologist has been collecting data for the preparation of a bulletin and the oil and gas possibilities of Platte, Laramie and Goshen Counties. This has been in response to a large number of inquiries, not only from residents of the three counties who wish to know the possibilities of their own localities, but also from oil operators of

Wyoming and from other states contemplating drilling operations. The discoveries of oil and gas in Northern Colorado, a short distance from the Wyoming line, have made it evident that oil bearing formations exist in the three counties mentioned, and there is considerable inquiry as to whether geological conditions indicate the possibility of commercial oil pools. This bulletin will be finished in the near future and will be distributed free of charge.

In this report will be found a number of tables and tabulations relative to the mineral and oil industries of the State, including the following:

List of publications of the State Geologist's Office.

List of oil refineries and natural gasoline plants in Wyoming.

List of pipe lines.

Tabulation of the mineral resources of Wyoming.

Mineral production of Wyoming for 1925.

Correlation table showing geological formations.

Tables relating to oil well casing, tanks, etc.

RECENT MINING ACTIVITY

The South Pass Atlantic Lewiston District, our oldest and most important gold mining camp, shows unmistakable evidence of renewed activity which will undoubtedly, result in the development of this camp into a gold producing district again.

A company has taken hold of the Miners Delight and is preparing to resume developments having commenced installation of machinery for unwatering the mine. The Carissa, the best developed property in the entire district is being kept in good condition and can be examined at any time through all of the lower workings.

At Lewiston a small mill has been installed on the Hidden Hand property to work the dump which is said to run \$40.00 per ton in free milling ore. Developments have been resumed on the old Burr property and it was reported that a contract had been let for sinking a double compartment shaft preliminary to active mining development.

Among the important placer deposits of the Lewiston District, the Titanic Gold Producing Company holds some of the most valuable property and has been carrying on development for the past year, testing the ground and making preliminary runs. This Company hopes to install a dredge in the near future.

In the Centennial District, there has not been much change in the platinum situation. A Bulletin of the United States Geological Survey states that samples from the dump of the old Rambler ran \$25.00 per ton in platinum, palladium and iridium. It further stated that there were several thousand tons on the dump. This property has been in litigation for a number of years and has been idle but litigation has been concluded and development of the property may be possible now.

The Wyoming Platinum and Gold Mining and Milling Company has continued development on the Queen property where a shaft is being sunk in an immense dike of amphibolite which shows commercial values according to numerous assays obtained by the operators.

It is reported that some high grade platinum ore has been found again in the Empire property, the scene of the discovery in 1923 by Jake Schnitzler. This property has never been prospected by following the stringers of ore found in this original discovery until recently.

The Cliff Gold Mining Company has made successful financial connections and is installing a one hundred ton mill on its property. This mill is expected to be in operation this winter.

It is reported that the Commercial and Utopia properties near Centennial are being financed and that operations will commence in the spring.

Sulphur and fertilizer products are being produced and shipped from Thermopolis by The Sulphogerm Corporation which has established a plant at Cheyenne for the distribution of its fertilizer products. This promises to be an important industry.

With the construction of additional sugar factories in this region, the demand for Wyoming limestone increases. The Holly Sugar Company has taken a lease on the lime quarries near Guernsey and will operate same. Mr. A. B. Fowler is opening a new quarry about two miles southwest of Guernsey.

The zinc and copper of the Hecla District, west of Cheyenne, are soon to be tested by milling operations conducted by Prof. E. P. McCarty and associates. This company has taken a lease on the John T. Morris zinc property and is installing a small portable mill on this property. It is understood that the same people are taking leases on the more important copper properties in the district and are intending to mill the ores.

The Esterbrook property at Esterbrook appears to be one of Wyoming's best chances for becoming a shipping mine. Samples taken this summer indicated that there are 7,200 tons of ore above the 80 foot level running \$30.00 per ton mainly in lead with some gold and silver. The operators are endeavoring to finance the construction of a small mill to concentrate this ore.

The cyanite west of Wheatland, has been prospected a little more with encouraging results although the cyanite discoveries have not been prospected sufficiently yet to determine whether or not they are commercial. The outcrops show rock in which cyanite amounts to probably 50%, the gangue being mica and feldspar. Milling operations to recover the cyanite would recover mica and feldspar as marketable by-products which should be an attractive venture in case the deposits are extensive enough; further prospecting is recommended.

The development of mica appears to be on the increase. It has been reported that the Stein and Lauk property near Sunrise has been leased by a New Mexico concern, and shipments of mica and chlorite have been made from the Encampment districts to eastern markets during the past two years.

New uses of bentonite are continually being found in arts and manufactures and many inquiries are being made for deposits of this mineral. It occurs in many parts of the state and deposits near the railroad will, undoubtedly, receive attention. The Owyhee Chemical Company of Cheyenne, the principal pro-

ducers of bentonite are enlarging their operations to take care of increasing business.

Market for the phosphate found in the southwestern part of the state is expanding rapidly and the shipments of phosphates has increased materially within the past two years. A large plant has been erected by the Cokeville Phosphate Company represented by F. M. Bresee of Cokeville.

The potash occurring in the leucite deposits, also, in the southwestern part of the state, is one of the most important resources in Wyoming and its development should be encouraged.

In 1926, samples of this leucite were secured by this Department and were shipped east to parties who had made inquiry for it for the purpose of making tests to determine whether it could be treated commercially. The Italians have a commercial process for treating their leucite in the Mt. Vesuvius region and it is believed that this could be applied to the Wyoming deposits.

Wyoming is one of the leading states in the Union in its deposits of oil shale and the beginning of this development is seen in the operations of the Wyoming Oil Products Company at Green River, where a plant has been erected for the purpose of treating shale.

A device for separating gold from placer deposits which saves fine gold in addition to black sand and other products has been invented by F. A. Homewood of Glendo, Wyoming, and has been tested in various places in Wyoming during the past year. Installations of this machine will be made during the coming year and should it prove successful, it will, undoubtedly, result in the development of some of the placer deposits which have heretofore resisted other methods of extraction.

CONCLUSION

In conclusion we wish to call attention to the increase in the activities and accomplishments of this Department during the biennium period covered in this report. The mining industry, which has been going through a period of depression similar to that affecting agricultural and livestock interests, is beginning to revive and the mineral possibilities of Wyoming are attracting the attention of investors. It is important that this Department be prepared to furnish complete and reliable information regarding the undeveloped resources of this State, which are probably not exceeded by those of any other state in the Union. Information collected by this office shows that the Geological Department of the State of Wyoming receives

smaller appropriations for geological work and for the dissemination of information regarding minerals than almost any of the other states which are important producers of mineral products.

Wyoming is now the fourth state in the Union in the production of petroleum. It ranks sixth in the production of natural gas. The development of these resources in Wyoming during a period when financial conditions were unfavorable to almost every other line of endeavor has helped to keep the people of Wyoming in a fairly prosperous condition. The oil fields and cities at which refineries are located have furnished an excellent market for all sorts of livestock and agricultural products, which has been favorable to those who are able to market such products, and the immense amount of drilling and construction work in connection with the oil and gas development has furnished a market for labor, which has greatly reduced unemployment. As shown elsewhere in this report, the mineral production for Wyoming for the year 1925 amounts to the immense sum of \$79,000,000.00 (an increase of \$2,652,498.00 over 1923), making it by far the most important industry of the State and the chief source of revenue during the past two years.

It is realized, of course, that the livestock and agricultural industries of this State have been going through a very serious period of depression and that land owners have had great difficulty in endeavoring to pay their taxes, and that it is the desire of the Governor and the Legislature to keep expenses of the State Departments as low as possible. This Department has made every effort to accomplish the greatest amount of work for the least expenditure of money and will continue to follow this policy. To secure the maximum development of Wyoming resources would bring an immense amount of money into this State, which would be of great assistance to the agricultural interests, not only in contributing to the taxes and thus lowering taxes on agricultural property, but also in furnishing a good market for agricultural products and labor. It would, therefore, seem to be the truest economy to give adequate support to the Geological Department in its efforts to reduce preventable waste of oil and gas and to secure the development of Wyoming oil and mineral lands.

LIST OF PUBLICATIONS

Albert B. Bartlett, State Geologist,
Cheyenne, Wyoming

Mineral:

- *Albany County: Beeler 1906.
- *Grand Encampment Copper District: Beeler, 1905.
- *Laramie Peak Copper District: Beeler, 1904.
- *Mines in 1907: Beeler, 1908.
- *South Pass Gold District: Beeler, 1903.
- South Pass Gold District: Beeler, 1904.
- *Bull. 1, Mineral Resources: Jamison, 1911.
- *Bull. 7, Atlantic City Gold District: Trumbull, 1914.
- *Press Bull. 10, Mineral Resources: Morgan, Oct. 1, 1920.

Miscellaneous:

- *State Geologist's Report: Beeler, 1903.
- *Bull. 6, Mining Laws: Trumbull, 1913.
- *Bull. 9, Biennial Report, 1913-14: Trumbull, 1915.
- *Bull. 16, Mining Laws: Trumbull, 1917.
- *Bull. 17, Bibliography and Index: 1918.
- Bull. 18, Mining Laws, State and Federal: Morgan, 1921.
- Bull. 19, Mineral Hot Springs of Wyoming: Bartlett, May 6, 1926.
- Bull. 20, Atlantic City South Pass Gold Mining District: Bartlett, July 15, 1926.
- Map, State Topographic, 1000 ft. contour: Price \$1.00.
- *Map, State Geologic: April 1, 1921.
- Map, Wyo. Oil and Gas Fields, U. S. G. S., 1921.

Oil:

- *Bull. 2, Fremont County (Lander Field): Jamison, 1911.
- *Bull. 3-a, Douglas Oil Field: Jamison, 1912.
- *Bull. 3-b, Muddy Creek Oil Field: Jamison, 1912.
- *Bull. 4, Salt Creek Oil Fields: Jamison, 1912.
- *Bull. 5, Prospective Oil Fields: Trumbull, 1913.
- *Bull. 8, Salt Creek Oil Field: Trumbull, 1914.
- *Bull. 10, Basin-Greybull Oil and Gas Fields: Hintze, 1915.
- *Bull. 11, Pt. 1, Little Buffalo Basin Gas Fields: Hintze.
- Pt. 2, Grass Creek Oil & Gas Field: Hintze, 1915.
- *Bull. 12, Light Oil Fields: Trumbull, 1916.
- *Bull. 13, Pilot Butte Oil Field: Ziegler, 1916.
- Bull. 14, Byron Oil and Gas Field: Ziegler, 1917.
- Bull. 15, Oregon Basin Gas Field: Ziegler, 1917.
- *Sci. Ser., Bull. 1, Pt. 1, Petroleum in Granite.
- Pt. 2, Effect of Structure Upon Migration of Oil: Trumbull, 1916.

- *Map, Big Muddy-Douglas Oil Field: Trumbull, 1915.
- Map, Rock Springs Uplift, (Dry Lake Dome: Trumbull 1915).
- *Press Bull. 2, Rawlins and Vicinity: Morgan.
- Press. Bull. 4, Laramie Basin: Morgan, Oct. 24, 1919.
- Press Bull. 7, Rock Cr. Oil Field: Morgan, April 1, 1920.
- Press Bull. 8, Osage-Newcastle Oil Field: Morgan, July 8, 1920.
- Press Bull. 9, Dry Piney-LaBarge Oil Field: Morgan, Aug. 1920.
- Press Bull. 11, Fossil Oil Field: Morgan, Aug. 1921.
- Eleventh Biennial Report, Morgan, 1922.
- Twelfth Biennial Report: Bartlett, 1924.
- Press Bull. 14, Present Condition of Oil and Gas Developments of Big Horn Basin: Bartlett, 1923.
- Press Bull. 15, Oil and Gas Developments of Laramie-Medicine Bow District: Bartlett, 1924.

*Out of print.

OIL REFINERIES IN WYOMING

Name of Company	Location	Capacity Per Day
Midwest Refining (Std. Oil Co. of Ind.)	Casper	50,000 bbls.
Midwest Refining Co. (Std. Oil Co. of Ind.)	Greybull	12,000 bbls.
Midwest Refining Co. (Std. Oil Co. of Ind.)	Laramie	4,000 bbls.
Mutual Oil	Glenrock	3,000 bbls.
Alliance Oil & Refining	Thermopolis	1,500 bbls.
Riverton-Wyoming Refining	Riverton	2,000 bbls.
U. S. Oil & Refining	Osage	200 bbls.
Osage-Upton Oil	Osage	100 bbls.
Clay Spur Refinery	Osage	100 bbls.
McAully Producers & Refiners	Upton	100 bbls.
Southwestern Oil	Thornton	50 bbls.
White Eagle	Casper	6,000 bbls.
The Texas Company	Casper	6,000 bbls.
Producers & Refiners Corporation	Grenville	6,000 bbls.
Total.....		94,000 bbls.

GASOLINE PLANTS IN WYOMING

Company	Location	Method	Gas Capacity Cu. Ft.	Approximate Yield Per Day—Gallons
Midwest Ref.	Salt Creek	Comp. 6 plants	43,000,000	60,000
Midwest Ref.	Elk Basin	Comp.	1,500,000	6,000
Carter	Salt Creek	Comp. & Abs.	10,000,000	10,000
Ohio	Grass Creek	Comp.	750,000	2,000
E. T. Williams	Salt Creek	Comp.	750,000	1,500
Wyo. Kans. Oil	Salt Creek	Abs.	500,000	1,000
Lovell Gasoline	Byron	Refrig.	3,000,000	1,500
Armstrong Co.	Rock Creek	Pressure Abs.	3,000,000	3,000
Producers & Ref.	Wertz	Natural Conden.		4,000
Producers & Ref.	Casper	Abs.	30,000,000	50,000
Producers & Ref.	Riverton	Abs.	6,000,000	3,000
Ohio Oil Co.	Lance Creek	Abs.	4,500,000	9,000
New York Oil	Teapot	Comp.	6,000,000	

PIPE LINES IN WYOMING

Company	Length	Size	From	To
Anglo United Oil Fields, Ltd.	5. mi.	4 in.	Derby Dome	Dallas
	11. mi.	6 in.	Dallas	Wyo. Pt.
Allen Oil Co.	9. mi.	3 in.	Byron	Lovell
Alliance Oil & Ref. Co.	6. mi.	6 in.	Warm Springs	Thermopolis
Bolton Oil Co.	32. mi.	6 in.	Bolton Creek	Casper
Continental Oil Co.	6. mi.	6 in.	Big Muddy	Glenrock
Fremont Gas Co.	(12. mi. 6 in.)		Riverton	Lander
	(10. mi. 4 in.)			
Fremont Gas Co.	23. mi.	6 in.	Sand Draw	Riverton
Fremont Natl. Gas	24. mi.	4 in.	Baxter Basin	Rock Springs
Fargo Oil Co.	22.5 mi.	6 in.	So. Casper Creek	Casper
Gallatin Natural Gas	(3.72 mi. 8 in.)		Elk Basin	Billings, Mont.
(Gas Line)	(29.2 mi. 10 in.)			
General Petroleum	9. mi.	3 in.	Byron	Lovell
Illinois Pipe Line	21.43 mi.	8 in.	Big Muddy	Casper
Illinois Pipe Line	3. mi.	6 in.	Big Muddy	Glenrock
Illinois Pipe Line	49.35 mi.	8 in.	Grass Creek	Greybull
Illinois Pipe Line	29.16 mi.	6 in.	Grass Creek	Greybull
Illinois Pipe Line	63.39 mi.	6 in.	Elk Basin	Greybull
Illinois Pipe Line	7.58 mi.	6 in.	Rock Creek	Rock River
Illinois Pipe Line	25.55 mi.	6 in.	Lance Creek	Lusk
Illinois Pipe Line	14. mi.	3 in.	Mule Creek	Dakoming
Illinois Pipe Line	38.11 mi.	6 in.	Rock Creek	Laramie
Illinois Pipe Line	29. mi.	3 in.	Pilot Butte	Riverton
Illinois Pipe Line	13.9 mi.	6 in.	Hamilton Dome	Grass Creek
Illinois Pipe Line	6.2 mi.	3 in.	Osage	Clay Spur
Illinois Pipe Line	30. mi.	8 in.	Salt Creek	Illeo
Illinois Pipe Line	14. mi.	8 in.	Illeo	Casper
Illinois Pipe Line	1.85 mi.	6 in.	Rex Lake	Hatten Siding
Lovell G. & E.				
(Gas Line)	8. mi.	5½ in.	Byron	Cowley
Midwest Refining	45. mi.	6 in.	Salt Creek	Casper
Midwest Refining	(26. mi. 8 in.)		Salt Creek	Casper
	(16. mi. 6 in.)			
Midwest Refining	(26. mi. 8 in.)		Salt Creek	Casper
	(16. mi. 6 in.)			
Midwest Refining	45. mi.	6 in.	Salt Creek	Casper
Midwest Refining	8. mi.	3 in.	Torchlight	Greybull
Midwest Refining	7. mi.	2 in.	Notches	Lox
Midwest-Wyoming Gas				
(Gas Line)	35. mi.	8 in.	Hidden Dome	Greybull
Natrona Pipe Line	45. mi.	6 in.	Salt Creek	Casper
New York Oil Co.	36.5 mi.	8 in.	Salt Creek	Casper
New York Oil Co.	22½ mi.	10 in.	Casper	Glenrock
New York Oil Co.	30. mi.	10 in.		
	45. mi.	12 in.	Sand Draw	Poison Spider
New York Oil	28.5 mi.	(8 in.)		
(Gas Line)	(10 in.)		Poison Spider	Casper
	(12 in.)			
Ohio Oil Co.	28. mi.	4 in.	Grass Creek	Chatham
Ohio Oil Co.	19.5 mi.	2 in.	Lance Creek	Manville
Occidental O. & G. Co.				
(Gas Line)	6. mi.	10 in.	Byron	Cowley
Producers & Ref. Corp.	52.42 mi.	6 in.	Lost Soldier	Ferris-Parco
Producers & Ref. Corp.	104.66 mi.	6 & 8 in.	Salt Creek	Casper-Ferris
Producers & Ref. Corp.				
(Gas Line)	14.93 mi.	6 in.	Baxter Basin	Rock Springs
Producers & Ref. Corp.				
(Gas Line)	22.78 mi.	6 in.	Big Sand Draw	Riverton
Producers & Refiners Corp.				
(Gas Line)	22.2 mi.	4 & 6 in.	Riverton	Lander
Producers & Ref. Corp.				
(Gas Line)	14.42 mi.	6 in.	Hatfield	Parco
Producers & Refiners Corp.	(18. mi. 10 in.)			
and Midwest Refining	(23. mi. 12 in.)		Lost Soldier	Casper
(Gas Line)	(48. mi. 14 in.)			
Producers & Ref.	10. mi.	3 in.	Simpson Ridge	Hanna
Producers & Ref.	16. mi.	10 in.		
	16. mi.	8 in.	Mahoney	Parco
Rocky Mt. Nat. Gas	3½ mi.	6 in.		
	9. mi.	4 in.	Byron	Powell

PIPE LINES IN WYOMING—Continued

Company	Length	Size	From	To
Rocky Mt. Gas Co.	28. mi.	6 in.	Mahoney Dome	Rawlins
Rocky Mt. Gas Co.	11. mi.	4 in.	Oregon Basin	Cody
Sinclair Pipe Line	49.6 mi.	8 in.	Teapot	Nebr. State Line
Sinclair Pipe Line	37.6 mi.	10 in.	Teapot	Nebr. State Line
Sinclair Pipe Line	75.6 mi.	12 in.	Teapot	Nebr. State Line
Thermopolis Gas Co.	22.5 mi.	4 in.		
	15.5 mi.	5 in.	Little Grass Creek	Thermopolis
U. S. Oil & Refining	3. mi.	3 in.	Osage Field	Osage
Western Pipe Line Co.	(29. mi. 8 in.)		Salt Creek	Casper
	(14.8 mi. 6 in.)			

MINERAL PRODUCTION OF WYOMING IN 1925

(Subject to revision)

(From the United States Department of Commerce, Bureau of Mines)

Product	Quantity	Value
Clay products, Est.		\$99,000
Clay, raw, short tons	2,584	(a) 63,657
Coal, short tons	6,553,232	18,275,000
Gypsum, short tons	(b)	(b)
Iron Ore, long tons	489,622	(b)
Natural Gas, M cubic feet	45,539,000	4,149,000
Natural-gas Gasoline, gallons	32,777,000	3,227,000
Petroleum, barrels	29,173,000	51,467,000
Phosphate Rock, long tons	6,697	30,000
Sand and gravel, short tons	586,450	192,137
Sodium Salts (carbonate and sulphate) from natural sources, short tons	(b)	(b)
Stone, short tons	(c) 133,410	(c) 245,058
Miscellaneous (d)		1,069,949
Total value, eliminating duplications		\$79,000,000

- a. Value not included in total value for State.
b. Value included under "Miscellaneous."
c. Exclusive of sandstone, value for which is included under "Miscellaneous."
d. Includes minerals indicated by (b) and (c) above.

MINERAL RESOURCES OF WYOMING

From Estimates of United States Geological Survey and State Geologist

Coal	1,076,620,100,000 Tons	@ \$0.10	\$107,682,010,000
Oil	553,500,000 Bbls.	2.00	1,107,000,000
Oil shale	20,000,000,000 Bbls.	2.00	40,000,000,000
Gas	7,000,000,000,000 Cu. Ft.	0.10	700,000,000
Iron ore	500,000,000 Tons	1.00	500,000,000
Phosphates	200,000,000 Tons	1.00	200,000,000
Potash and Alumna	1,973,000,000 Tons	0.20	394,700,000
Metallic Minerals—Gold, Silver, Copper, etc., estimated			51,250,000
Other Minerals, Asbestos, Mica, Platinum, Graphite, Sulphur, Sodas, Gypsum, Clays, Building Stone, Limestone, etc., estimated			1,000,000,000
Total			\$151,634,960,000

**PRODUCTION OF CRUDE OIL FROM WYOMING FIELDS
IN 1925 BY PIPE LINE RUNS**

Salt Creek	21,481,390
Big Muddy	1,191,750
Grass Creek	1,301,727
Elk Basin	311,052
Greybull	50,610
Rock River	1,116,955
Lance Creek	319,655
Poison Spider	260,155
Osage	139,430
Hamilton Dome	225,855
Lander	114,891
Pilot Butte	26,740
Lost Soldier	1,745,940
Ferris	33,740
Rex Lake	16,065
Mule Creek	130,480
Notches	30,590
Miscellaneous	17,500

Tabulation of Wyoming Oil Structures

In the following order:

Big Horn Basin.

Central, Northeastern, and Southeastern Wyoming in alphabetical order.

Southwestern, Rawlins, Lost Soldier, Lander District, Laramie, Medicine Bow.

CORRELATION TABLE SHOWING THE GEOLOGICAL FORMATIONS IN THE OIL PRODUCING AREAS OF WYOMING

SYSTEM OR SERIES	GROUP					FORMATIONS						
		Southwestern Wyoming	Wind River Basin	Big Horn Basin	Shoshone River Basin	Central Wyoming	Rawlins Area	Laramie Basin	Eastern Wyoming	Northeastern Wyoming	Southeastern Wyoming	
Tertiary	Wasatch	Bridger Green River	Wind River	Wasatch	Wasatch	White River	Wasatch	Undifferentiated	White River		Ogallalla Arikaree Brule Clay Chadron	
		Knight Fowkes Almy				Wind River						
		Evanston				Fort Union			Fort Union			Fort Union
Tertiary or Cretaceous		Laramie				Lance	Laramie		Lance			
Cretaceous	Montana	Adaville	Mesaverde	Meeteetse	Meeteetse	Lewis	Lewis	Lewis	Fox Hills	Fox Hills	Fox Hills	
				Mesaverde (Eagle sand)	Gebo (Eagle)	Mesaverde (Teapot sand) (Parkman sand)	Mesaverde	Mesaverde				
		Hilliard (Blair) (Baxter shale)		Pierre	Cody	Steele (Shannon sand)	Pierre	Steele	Pierre	Pierre	Pierre	
				Basin (Niobrara)		Niobrara	Niobrara	Niobrara	Niobrara	Niobrara	Niobrara	
	Colorado	Frontier	Mancos	Frontier (Torchlight-Peay sands)	Frontier (sands)	Frontier (Wall Creek sands)	Frontier (Wall Creek sands)	Benton (Frontier sands) (Mowry shale) (Muddy sand)	Greenhorn	Greenhorn	Benton (Mowry shale) (Newcastle sand)	
		Aspen		Mowry (Kimball sand) (Oeth Louie sand)	Mowry	Mowry	Mowry (Shale & sand)		Granerous (Mowry shale) (Newcastle sand)	Granerous (Mowry shale) (Newcastle sand)		
				Thermopolis (sand)	Thermopolis (sand)	Thermopolis (sand)	(Muddy sand)					
		Lower Cretaceous		Bear River	Dakota (sand) (Shale and sand)	Cloverly (Greybull sands)	Cloverly (Greybull sands)		Dakota (sands)	Dakota (sands)		Cloverly (sands)
	Cretaceous ? Jurassic ?	Beckwith	Morrison	Morrison (sand)	Morrison (Byron sand)	Morrison	Morrison	Morrison	Morrison	Morrison	Morrison	Morrison
	Jurassic		Twin Creek Nugget	Sundance	Sundance	Sundance	Sundance	Sundance	Missing	Sundance	Sundance	Sundance
Triassic		Ankareh Thaynes Woodside	Chugwater	Chugwater	Chugwater	Chugwater	Chugwater	Chugwater	Spearfish	Spearfish	Chugwater	
Permian (Carboniferous)		Park City	Embar (sand)	Embar (sand)	Embar	Embar (sand)	Casper		Minnekahta Opeche	Minnekahta Opeche		
Pennsylvanian (Carboniferous)		Weber		Tensleep Amsden		Tensleep Amsden		Forelle Santanka Casper	Hartville	Minnelusa	Casper	
Mississippian (Carboniferous)				Madison		Madison			Guernsey	Pahasapa		

TABULATION OF OIL STRUCTURES BIG HORN BASIN

[1]

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Sheep Mountain					Madison	Madison	Open Anticline	Tested for Black Oil showing in Embar.
Shell Creek	Embar (Showing)				Morrison	Amsden	Dome	Tested through Amsden—unfavorable.
Cherry Creek					Sundance	Embar ?	Sharp Anticline Terraced	Test not thorough for Black Oil.
Morris					Chugwater		Sharp Mountain—Ward Fold	Favorable—to be drilled.
Greybull	Tensleep	Greybull	850 ft.	660 Acres	Mowry	Madison	Dome Favorable	Thoroughly tested to all sands—possible commercial production in Tensleep—Light Oil production in Greybull small and declining.
Lamb	Peay (Gas)	Greybull (Gas)	1,375 ft.	180 Acres	Cody Shale	Cloverly	Dome	Deep test drilling favorable for Black Oil at about 3,200 feet.
Torchlight		Peay, Och-Louie and Kimball	225 ft. to 450 ft.	800 Acres	Frontier	Greybull	Sharp Anticline	Light Oil production declining—deep test standing at 1,750 feet favorable for Black Oil at about 3,500 feet.
Potato Ridge					Cody Shale		Narrow Anticline	Deep test to be drilled.
Eight Mile Or Dry Dome					Cody Shale	Greybull	Dome	Frontier, Muddy and Cloverly Sands are water bearing—not favorable for deeper test.
Mercer					Sundance	Tensleep	Mountain—Ward Anticline	Unfavorable. Tested barren.
Paintrock					Sundance	Tensleep	Sharp Anticline	Test wells have proven possibilities to be unfavorable.
Manderson					Cody Shale	Greybull	Plunging Anticline	Unfavorable for further test.
Bonanza					Thermopolis Shale	Cloverly	Narrow Anticline	Wells drilled have not reached most likely sands—deep test drilling.
Zeisman					Tensleep		Sharp Anticline	Untested—Remote possibilities in Amsden and Madison.
Broken Back					Tensleep		Plunging Anticline	Untested—Remote possibilities in Amsden and Madison.
Nowood					Chugwater	Amsden	Sharp Anticline	Drilling at 1,500 feet.
Hidden Dome		Greybull ?			Mowry Shale ?		Terraced Anticline	Favorable for deep test—oil showings in Cloverly. Deep test drilling.
Sherrard	Frontier				Frontier	Greybull	Small Faulted Dome	Small production at 100 feet. Unfavorable for deeper test.
Tensleep					Torchlight	Thermopolis Shale ?	Sharp Anticline	Test well not favorable as to location and depth, structure promising.
Bud Kimball					Chugwater		Elongated Dome	Untested—Black Oil possibilities are favorable.

TABULATION OF OIL STRUCTURES BIG HORN BASIN (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Morton					Cody Shale		Narrow Anticline	Structure small. Test 2,500 feet, possibly reach the Frontier.
Mahogany Butte					Chugwater and Embar		Faulted Terraced Anticline	Faults across strike may effect accumulation possibilities for both Light and Black Oils.
Chabot					Mowry Shale		Faulted Anticline	Possible production in faulted area structure small and undrilled.
Lysite Mountain					Mowry Shale	Morrison	Sharp Anticline	Tested through all Cretaceous sands—results unfavorable.
Black Mountain		Embar	3,400 ft.		Mowry Shale	Tensleep	Narrow Anticline	Black Oil.
Lake Creek		Tensleep			Frontier	Tensleep	Sharp Anticline	Black Oil.
Murphy	Frontier	Frontier (Gas)	1,600 ft.	Not Determined	Cody Shale	Frontier	Sharp Anticline	Test to lower sands justified, considering showing in Frontier. P. & R. rigging up deep test well.
Hale or Wildhorse Butte		Embar	1,200 ft.		Chugwater	Tensleep	Plunging Anticline	Embar production.
Blue Springs					Mowry Shale		Narrow Anticline	Favorable—titles in litigation.
Red Springs		Amsden	800 ft.		Embar	Amsden	Small Sharp Anticline	Oil found in Amsden of very low gravity and small amount.
Kirby Creek	Frontier (Oil)				Cody Shale	Mowry	Small Dome	Small production in Frontier—worthy of deep test.
Zimmerman Butte	Frontier (Gas)				Cody Shale	Cloverly	Sharp Anticline	Not thoroughly tested—deep tests drilling.
Warm Springs		Embar	1,000 ft.	320 Acres	Embar and Chugwater	Tensleep and Amsden	Domes on Anticline	Production small per well—pipe line to railroad—field shut in account present depression in market.
King					Chugwater	Embar	Dome	Tested to Embar. Lower sands doubtful producers.
Thermopolis Red Rose					Chugwater and Embar	Amsden	Dome	Tested for Black Oil, further exploration unfavorable.
Thermopolis Town					Chugwater	Tensleep	Dome	Well drilled in Town of Thermopolis is abandoned permanently.
Shelburne					Chugwater	Amsden	Open Anticline	Test well abandoned.
Lucerne					Morrison	Tensleep	Broad Anticline	Unfavorable.
Gebo					Cody Shale	Frontier	Broad Anticline	Tested water.
Gyp Springs					Chugwater	Embar	Open Anticline	Open on mountainward side and unfavorable.
Richard					Chugwater	Madison ?	Sharp Anticline	Tested through all oil bearing formations.
Neiber					Fort Union	Base of Mesaverde	Broad Basinward Anticline	Tested by Midwest and abandoned.

TABULATION OF OIL STRUCTURES BIG HORN BASIN (Continued)

[3]

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Colter					Fort Union	Cody Shale	Anticlinal Nose Unfavorable	Test by Curtis, et al., abandoned—showing of oil at 2500 feet.
Sand Draw					Cody Shale		Dome	Test well drilling.
Waugh					Cody Shale	Frontier	Sharp Plunging Anticline	Frontier found water-bearing—Lower sands doubtful.
Golden Eagle		Frontier (Gas)	2,700 Ft. to 3,000 Ft.	Not Determined	Lower Mesaverde	Frontier	Narrow Dome	Large gas production. Gas line to Thermopolis. 7 gas sands.
Mud Creek Dome					Chugwater		Dome	Doubtful.
Kelly					Chugwater	Embar	Dome	Test to Embar found water—Lower sands unfavorable.
Duncan					Chugwater	Embar	Dome	Embar found water bearing.
Yankee					Thermopolis Shale	Sundance	Open Dome	Tested through Sundance unfavorable.
Embar					Embar		Eroded Anticline	Not favorable for test well.
Hamilton		Embar	2,400 Ft.	600 A.	Mowry Shale	Embar	Sharp Anticline	One well in red beds. Daily production about 500 bbl. black oil.
Brooks					Embar	Tensleep	Faulted Anticline	Not favorable as no closure evident—Drilled.
Wagon-hound					Cody Shale	Greybull	Flat Narrow Anticline	Tested unfavorable through Greybull at about 1,800 feet. Closure doubtful.
Grass Creek	Morrison (Oil)	Frontier (Oil & Gas)	800 Ft. to 1,000 Ft.	900 A.	Cody Shale	Tensleep	Narrow Anticline	Showing of black oil in Morrison—Tensleep big producer—Wells being deepened—Light oil production shallow and holding up well—One of best fields of state.
Enos Creek		Third Wall Creek (Gas)	2,800 Ft.	Not Determined	Cody Shale	Dakota	Sharp Anticline	Dakota tested and found dry—Well plugged back to gas production in Frontier.
Little Grass Creek		Frontier (Gas)		Not Determined	Cody Shale	Frontier	Dome	Gas well shut in—Capacity about 40,000,000 cu. ft.
Buffalo Basin		Frontier (Gas)	1,400 Ft.	Not Determined	Cody Shale	?	Domes on Anticline	Gas line to Grass Creek loop.
Gooseberry					Cody Shale	Mowry Shale	Domes on Anticline	Drilling at 3,590 feet.
Sunshine	Embar				Thermopolis Shale	Tensleep	Sharp Plunging Anticline	Tested through lower Cretaceous to Tensleep with showing of oil in Embar.
South Sunshine					Morrison		Dome	Drilling at 1,440 feet.
Four Bear					Mowry Shale	Embar ?	Sharp Anticline	Well drilled 1,700 feet—Reached Embar? without obtaining oil or gas.
Pitchfork					Mowry Shale		Sharp Anticline	Well drilling doubtful.
Spring Creek					Mowry Shale	Chugwater	Narrow Anticline	Well drilled to 2,310—probably reached base of Chugwater well drilling at 2,800 ft. Drilling.

TABULATION OF OIL STRUCTURES BIG HORN BASIN (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Frost Ridge					Mesa Verde		Dome	Test to Frontier would be about 3,500 ft.—Dome small.
Red Dome 35-55-95								Drilling.
Oregon Basin		Cloverly Sands	1,300 Ft.	Not Determined	Frontier and Cody Shale	Morrison	Domes on Anticline Faulted	Deep test with rotary rig to test for oil below gas sands.
Shoshone					Frontier	Cloverly	Broad Anticline Favorable	Drilling at 2,130 feet.
Cottonwood					Mowry	Morrison ?	Narrow Anticline	Test well drilled results unfavorable.
Skull Creek					Thermopolis Shale		Small Dome	Test well not deep enough.
Badger Basin					Mesa Verde		Broad Anticline	Probably 4500 feet to Frontier—closure doubtful on north west—not tested.
Elk Basin		Frontier (Oil) Greybull (Gas)	1,400 Ft. 2,400 Ft.	400 A.	Cody Shale	Greybull	Broad Faulted Anticline	One of ranking fields of state in light oil production—several favorable sands untested.
Little Pole Cat					Cody Shale	Mowry	Small Dome	Small gas well. Shut in at 3600 ft. Tested to 4400 ft.
Pole Cat	Frontier (Gas)				Cody Shale	Frontier	Structural Terrace	Small gas production in Frontier—should be tested to deeper sands.
Frannie					Cody Shale	Thermopolis ?	Narrow Anticline	Tested to 2400 ft. without favorable results.
Sage Creek					Cody Shale	Base of Cody	Sharp Anticline	Well drilled to 1800 ft. Not deep enough. Deep test drilling.
Garland	Peay (Oil)	Greybull (Gas)			Cody Shale	Morrison	Narrow Anticline	Gas going to Cowley. Deep test drilling by Royalty Holding Co.
Byron					Mesa Verde	Frontier ?	Faulted Anticline	One small gas well shut in—Three dry holes probably due to improper location—Well drilling by California Co. Light oil.
Gyp Creek					Sundance	Embar ?	Sharp Anticline	Drilled to water in Embar?.
Crooked Creek					Chugwater	Chugwater	Small Dome	Test well did not reach all possible saturated black oil sands.
Lovell					Mowry	Greybull	Elongated Anticline	Several test wells failed to get production to lowest sand tested the Greybull at 1200 ft.
Ionia					Frontier	Chugwater	Small Dome Doubtful	Test well drilled to base of Chugwater.
Little Sheep Mountain					Tensleep	Madison	Eroded Anticline	Tested to all possible producing sands.
Alkali	Tensleep		2,000 Ft.		Morrison	Amsden	Sharp Anticline	Test well drilled through Tensleep possibly not thorough due to water in well from lower sand.
Spence	Embar		500 Ft.	Not Determined	Chugwater	Embar	Narrow Anticline	Small wells in Embar.
Crystal Creek		Tensleep	800 Ft.	Not Determined	Chugwater	Amsden	Sharp Anticline	Small wells in Embar and Tensleep not producing. Water in Amsden 1050 feet.

TABULATION OF OIL STRUCTURES—Central, Northeastern and Southern Wyoming in Alphabetical Order

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Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Alcova					Carlisle Shale	Granite	Pitching Anticline	Hole drilled to 2,410 in Sec. 31-30-81—Dry—Not favorable.
Arminto 18-37-86					Pierre	Third Wall Creek 2,008 Ft.	Dome	Some gas found in 3rd Wall Creek Sand ? at 2,008 ft. Abandoned.
Arvada					Tertiary		Tertiary Dome ?	No tests have been drilled although the C., B. & Q. got gas enough to run a small engine.
Burris Dome 28-42-79					Pierre	Shannon 1,300 Ft. Barren	Monocline Sealed on North, South and West by Faults	Drilling at 1,320 ft.—intend to drill 5,000 ft. if necessary.
Bolton Creek	Sundance 1050 (Oil)	Stray ? Sand in Red Beds	2,050 Ft. (Oil)	640 A.	Mowry Shale	Tensleep 2,530 Ft.	Sharp Anticline	Produces oil—pipe line to field.
Mellon Dome 13-29-82 West of Bolton Creek				Tertiary Frontier or Carlisle ?			Dome	Dakota 1915 feet water, Ohio Oil Co. drilling
Boone Dome	Shannon 1,695 Small Am't. (Gas)	Wall Creek (Gas)	2,190 Ft. (Gas)	600 A.	Parkman	Dakota 4,800 Ft.	Dome	Deep-test drilling at 4,800 ft. with core drill.
Billy Creek		Wall Creek (Gas)	3,000 Ft.	1,000 A.	Pierre	Muddy 4,200 Barren	Dome	Heavy gas in Wall Creek Sand at 3,000 ft.
Big Muddy	Shannon 1,000 Ft. (Oil)	Wall Creeks (Oil)	3,100 Ft. +	2,500 A.	Pierre	Dakota	Dome	Producing oil.
Big Sulphur Springs T. 37 & 38, Rg. 83-84					Carlisle Shale	Wall Creeks 2,000 Ft. Barren	Anticline Faulted	Well drilled to 2,000 ft. on Sec. 31-38-80. Some gas in shale above Wall Creek. Drilling.
Bull Creek Tps. 57-58 Range 62					Benton Shale		Dome	Water in Dakota. Abandoned.
Bates Park 23-29-81					Morrison	Sundance 1,965 Ft. (Water)	Plunging Anticline	This well was not located correctly and another test should be drilled.
Bodie 33-31-80					Thermopolis Shale	Embar 2,165 Ft. (Water)	Plunging Anticline	Not favorable.
Butte Field Near Moorcroft, Wyo.		Dakota	300 Ft.		Cloverly	Dakota 300 Ft.	Monocline	Produces some oil in a few wells which have been drilled.
Beaver Creek						Lakota (Water)		
Brenning Basin or Douglas Field		Shales	300 Ft. to 1,000 Ft.		White River	Pierre 1,705 Ft.	Monocline Unconformity	About 40 wells drilled getting oil and gas in small amounts.
Clark Dome T. 31, R. 81					Niobrara		Plunging Anticline	Closure very small—not very favorable.
Colony					Thermopolis Shale	Tensleep 2,290 Ft. (Water)	Dome	Drilled by Roxanna—may not be fully tested.

TABULATION OF OIL STRUCTURES—Central, Northeastern and Southeastern Wyoming in Alphabetical Order (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Coal Creek 27-35-77					Niobrara	Muddy Sand 1,555 Ft. (Dry)	Dome	Well drilled to 2,340 ft.—abandoned—dry.
Castle Creek 36-38-81					Niobrara	Third Wall Creek (Barren) 2,620 Ft.	Anticline	Drilled to 2,625 ft.
Casper Dome 23-33-79					Pierre	First Wall Creek 2,930 Ft.	Faulted Monocline	Abandoned
Dutton Basin 24-33-90					Chugwater	Amsden 1,750 Ft. (Barren)	Dome Faulted	Myers Pet. drilling
Dewey 36-42-60					Niobrara Shale	Lakota 3,636 Ft. (Barren)	Dome	3 wells drilled by Carter Oil Co.—no production
Emmigrant Gap 9-34-82					Mowry Shale	Amsden 3,319 Ft. (Water)	Sharp Dome Faulted	Several tests drilled on this structure—all unproductive
Freeland 34-31-80					Chugwater		Plunging Anticline	Faulted—not tested and not favorable
Fiddler Creek (Near Upton, Wyo.)					Pierre	Dome		Abandoned
Goose Egg T. 32, R. 81					Chugwater		Plunging Anticline	Test started—never completed
Gothberg					Pierre Shale	First Wall Creek 1,200 Ft. (Water)	Dome	Not fully tested
Glenrock South of 33-75						Dakota (Dry)		Drilled to Dakota—no more information
Graybeal 23-29-81					Pierre	Sundance 2,882 Ft. (Dry)	Dome	Unfavorable. Drilling
Geary Dome 32-34-77					Teapot	First Wall Creek Sand 4,897 Ft. (Dry)	Dome	Drilled by Inland Oil Co. to 4,897 ft. and abandoned
Gose Dome 28-47-65					Pierre		Dome	Drilling at 4,850 ft.
Government Hill 31-40-80					Frontier	Dakota 1,500 Ft. (Water)	Plunging Anticline	Drilling at 1,700 ft.
Harney Creek 35-34-67								Well drilled to 2,996 ft.—dry—abandoned
Indian Creek 35-35-61								Hole drilled to 2,340 ft. and abandoned—dry
Irvine 21-31-70					Fox Hills	First Wall Creek 2,000 Ft. (Water)	Dome	Show of gas at 1,760 ft.—abandoned

TABULATION OF OIL STRUCTURES—Central, Northeastern and Southeastern Wyoming in Alphabetical Order (Continued)

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Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Iron Creek T. 32, R. 83		Sundance	1,431 Ft.	800 A.	Carlisle Shale	Sundance 1,436 Ft.	Sharp Dome	Produces oil and gas.
Kaycee 4-43-82				Morrison	Tensleep 2,530 Ft. (Water)	Dome		Not favorable
Lance Creek		Dakota ? Sand A Sand B	3,465 Ft. 3,965 Ft.	3,000 A.	Pierre	"A" Sand 3,965 Ft.	Dome	Produces oil and gas.
La Prelle 10-32-72								Well drilled to 3,200 ft.
Lux Dome 35-37-86		Third Wall Creek	2,601 Ft. (Gas)		Pierre	Third Wall Creek 2,601 Ft.	Dome	Produces about 2 million gas.
Mule Creek		Lakota	1,336 Ft.	1,000 A.	Carlisle	Lakota 1,337 Ft.	Sharp Anticline	Produces heavy oil.
Moorcroft 25-52-67					Dakota	Madison Lime 2,102 Ft.	Dome	No oil.
Midway 21-35-79					Fox Hills	Second Wall Creek 4,822 Ft.	Dome	Drilled to 4,822—dry.
Notches		Tensleep	2,775 Ft.		Frontier	Tensleep 2,775 Ft. (Oil)	Sharp Anticline	Produces oil from Tensleep.
Near Newcastle 6-44-61					Niobrara			Well drilled to 2,055 ft. and abandoned.
Natrona T. 37, R. 83					Carlisle	Cloverly 1,615 Ft.	Dome	Not favorable.
Newcastle-Salt Creek Structure 10-45-61								Drilling at 240 ft. Shut down.
Old Woman Creek					Morrison	Minnelusa 2,110 Ft. (Some Oil)	Anticline	Hole drilled to 2,100 ft.—found considerable oil. Abandoned.
Oil Mountain 35-35-84					Dakota	Embar 3,200 Ft.	Dome Faulted	Well drilled to 3,200 ft.—water.
Osage	Mowry Shale 150 Ft. to 3,000 Ft.	Newcastle Sand	1,200 Ft.	5,000 A.	Graneros Shale	Minnelusa 2,375 Ft. (Dry)	Terrace	Deep well drilled in Sec. 28-47-64 —shallow wells—have small production.
North Casper Creek					Carlisle Shale	Tensleep	Large Dome	Some gas at 986 ft.. Oil at 3220 feet—favorable.
Poison Spider 33-83		Sundance (Gas)	1,400 Ft.	1,200 A.	Cody Shale	Tensleep 3,366 Ft. (Oil)	Dome	Produces gas and black oil.
Pump Creek					Morrison		Dome	Not tested. Drilling.
Pat O'Connor Ranch 27-42-81					Pierre		Faulted Monocline	Drilling. Shut down.

TABULATION OF OIL STRUCTURES—Central, Northeastern and Southeastern Wyoming in Alphabetical Order (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Powder River Station 25-36-85					Frontier		Dome	Some gas found in Wall Creeks. Abandoned.
Pine Mountain	Embar	Tensleep (Gas & Oil)	1,822 Ft.		Dakota	Amsden 2,315 Ft.	Faulted Dome	Some gas and oil produced — not yet commercial.
Rawhide-Lingle					Tertiary		Slight Doming in Tertiary	Two wells drilling—one probably in Pierre at 1,500 ft. One at 5,000 feet.
Rozet					Tertiary		Dome	Shut down.
Rocky Point Tp. 55 to 57 R. 67 to 69					Pierre		Plunging Anticline	Rig standing built in 1921. Favorable.
Rocky Ford 52-61					Chugwater	Minnelusa	Anticline	Small black oil production.
Red Fork					Morrison		Anticline	Not tested.
South Casper Creek		Sundance	1,460 Ft.	1,280 A.	Cody Shale	Tensleep 3,030 Ft. (Dry)	Dome	Producing gas and black oil.
Salt Creek	Shale Third Wall Creek Shannon	First Wall Creek Second Wall Creek Lakota	1,800 Ft. 2,200 Ft. 2,530 Ft.	22,000 A.	Steele Shale	Sundance 3,680 Ft. (Water)	Dome	Gas and oil. One of the most important fields in the world.
Steel Creek 17-46-82					Pierre	Second Wall Creek 2,720 Ft. (Gas)	Dome	Drilling at 2,800 ft.
Spindle Top 32-30-81		Stray Sand	2,300 Ft.		Mowry	Tensleep 2,700 Ft. (Water)	Faulted Dome	Drilling.
Skull Creek 16-44-62					Niobrara	Lakota 3,692 Ft. (Water)	Dome	Abandoned—3,692 ft.
Stockade Beaver 6-42-61					Pierre	Newcastle 2,738 Ft.	Dome	Show of gas 2,738 ft.—abandoned.
Schnoor 30-29-81					Wall Creek	Sundance 2,485 Ft.	Plunging Dome	Abandoned.
Tisdale Dome 24-41-81					Lakota	Tensleep 1,944 Ft. (Water)	Dome	Abandoned.
Thornton					Morrison	Amsden 2,505 Ft.	Dome	Well drilled to 2,505 ft.—water.
Teapot Dome	Shale Third Wall Creek	First Wall Creek Second Wall Creek	2,600 Ft. 3,000 Ft.	3,600 A.	Shannon	Third Wall Creek (Oil) 3,225 Ft.	Dome Faulted	Gas and oil.
Upton 3-47-65					Mowry	Muddy 360 Ft. (Water)	Dome	Not favorable.
Upton-Thornton					Carlisle Shale	Carlisle Shale 400 Ft.	Dome Shaped Uplift	Oil in shale—not commercial.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Spring Valley	1st and 2nd Aspen (Muddy)	3rd Aspen (Muddy)	600 Ft.	640 A.	Knight (Tertiary)	Bear River (Dakota)	Monocline Favorable	All Aspen Sands appear to be saturated, tight sands, porosity low. Bear River drilled and barren.
Evanston					Evanston (Tertiary)		Plunging Anticline Doubtful	Closure doubtful, deep drilling.
Bear River					Beckwith		Sharp Anticline Unfavorable	Only possibilities lie in Carboniferous Sands.
Bridger Creek					Twin Creek Jurassic		Broad Anticline Doubtful	Black Oil Sands only possibilities, closure doubtful.
Fossil	Wasatch	Hilliard	400 Ft.	80 A.	Basal Tertiary or Upper Cretaceous	Sand Lenses in Hilliard	Faulted Anticline	Heavy dark lubricating oil found in sand at 250 feet. High grade paraffin base oil found 200 feet lower, undoubtedly coming from Cretaceous rocks, migrating up the fault to the west. Possibilities for large production in Cretaceous at 4,000? Wells drilling to shallow sands.
Cumberland					Frontier	Beckwith	Sharp Faulted Anticline Doubtful	Well drilling by G. C. Conger.
Meridian					Beckwith		Sharp Anticline Favorable	Good possibilities for Black Oil.
Fontenelle					Adaville		Sharp Faulted Anticline Doubtful	Fair possibilities for commercial production in Carboniferous.
Wyoming					Hilliard		Sharp Faulted Anticline Doubtful	Several wells drilled in poor locations structurally.
Blank					Beckwith		Open Faulted Anticline	Unfavorable.
La Barge	Stray sand or Sand Lenses in Hilliard	Hilliard	600 Ft.	640 A.	Almy and Adaville with Knight Overlying Unconformably	Hilliard Sands	Sharp Faulted Anticline Favorable	Production found in shallow sands, oil migratory from more heavy saturation in deeper sands, structure badly faulted. Present development confined to shallow sands. Deeper Cretaceous Sands favorable for large production.
Seep Ridge					Almy		Narrow Sharp Anticline Favorable	East Anticline in Double Fold of which La Barge is a part but not directly connected geologically. Should be tested thoroughly.
Kale					Knight and Almy		Narrow Sharp Anticline Favorable	East and north of the LaBarge Anticline crests of both structures about 1 mile apart should be thoroughly tested.
Big Piney or Dry Piney	Sand Lenses in Hilliard	Hilliard	1,000 Ft.	800 A.	Knight Unconformable on Hilliard	Hilliard Sands	Sharp Cretaceous Anticline Favorable	Produces high grade oil from shallow depth. Cretaceous. Abandoned.
Aspen					Wasatch Almy		Sharp Anticline	Olson Bros. drilling.
Aspen					Upper Cret. Adaville		Plunging Anticline	Sandburg Pet. Co. drilling.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Willow Creek, Freedom, Afton, Etna, McAdoo, Smoot and Tygee Domes					Twin Creek Jurassic	Embar on Afton Dome Morrison on Tygee Dome	Sharp Anticlines Doubtful	One well drilled on Afton Dome to Embar at 1,200 ft. Well drilling on Tygee Dome. Rock Salt Bed found at 650 ft. Carboniferous beds only possibilities. Abandoned.
Eden					Wasatch Tertiary		Broad Anticline Arch Doubtful	Dips low, centering in small area at a point about 6 miles west of Eden postoffice. Deep test necessary to reach Cretaceous.
Baxter Basin		Second Wall Creek (Gas)	2,600 Ft.	Not Determined	Baxter Shale Member of Hilliard	Dakota	Broad Anticline Favorable	Large gas production in Frontier. Dakota barren. Structure favorable for deep tests at other points.
Hiawatha					Green River Tertiary		Broad Tertiary Anticline Favorable	Presence of Asphaltum oil seeps indicates possibility of discovering new productive horizons in Wyoming Tertiary. Gas production.
Oregon Buttes					Cathedral Bluffs Wasatch Tertiary		Dome Doubtful	Cretaceous Sands too deep unless unconformity present at base of Tertiary.
Cherokee Ridge					Laney Shale Wasatch Tertiary		Sharp Faulted Anticline Doubtful	Too deep for present development methods.
Wamsutter					Bridger Upper Tertiary		Low Anticline Arch Doubtful	Too deep for present development methods.
Red Desert					Wasatch Tertiary		Broad Anticline Doubtful	Drilling 2,530 ft.
Bear Creek					Wasatch Tertiary		Broad Anticline ? Doubtful	Drilling.
Horsetrack					Adaville	Hilliard	Anticline Unfavorable	Test drilled by Associated Oil Co. found glacial boulders.
Pickett Lake					Benton	Frontier	Sharp Anticline Doubtful	Well drilling found showing of oil and gas in First ? Wall Creek Sand. Shut down.
Buffalo Basin	1st, 2nd & 3rd Wall Creeks	1st Wall Creek	603	Not Determined	Benton	Dakota	Several Small Domes Favorable	Prairie drilling several tests to prove presence and location of Domes—large gas well in Frontier show of oil in Mowry.
Lost Creek					Steele Shale		Sharp Anticline Favorable	Abandoned.
Crooks Gap					Steele Shale	Frontier	Sharp Anticline Favorable	Wells drilling.
Spring Creek					Niobrara	Mowry	Sharp Faulted Anticline Favorable	Cliff Pet. struck heavy gas flow at 1,200 ft. in what appears to be First Wall Creek.
Sheep Creek					Chugwater	Base of Chugwater	Faulted Dome Favorable	Drilling at 3,710 ft.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Lost Soldier	Several Sands Produce Small Quantities of Oil Above Dakota	Dakota	About 1,200 Ft. on Apex of Dome	Frontier Sands 160 A. Mowry Sands 680 A. Dakota, 1,200 A.	Niobrara	Dakota	Dome	All sands, including sandy shales, from Frontier to Dakota, found productive. Potential production about 12,000 bbls. daily. Actual production about 4,500 bbls. Closure about 3,000 ft. Limits of Dakota pool not proven.
Wertz	Mowry Sand Lens (Oil)	Dakota (Gas)	3,400 Ft.	Not Determined	Steele Shale	Dakota	Dome	Producing oil between casings from Mowry Shale, wet gas from Dakota supplies about 100 bbls. gasoline per day from drips gas line to Casper.
Mahoney		Dakota (Gas)	2,200 Ft.	Not Determined	Steele Shale	Dakota	Dome	Small oil production found below gas cap in Dakota Sand. Gas wells average about 30,000,000 cu. ft.
Ferris	Mowry (Oil)	Dakota (Gas)	1,800 Ft.	Small	Niobrara	Sundance ?	Dome	Gas production first developed from Dakota. Oil being taken in small quantity from Mowry.
G. P. Dome		Sandy Shale at Base of Steele Shale	3,200 Ft.	160 A.	Steele	Frontier ?	Plunging Anticline	Small production found at base of Steele Shale. Well drilling to test deep sands.
O'Brien Springs	Frontier (Gas)				Steele	Dakota	Faulted Anticline	Gas showing in Frontier. Abandoned.
Barren Meadows	Frontier (Gas)				Steele	Frontier	Anticline ?	Drilled by Armstrong. Abandoned.
Sherrard					Steele	Frontier	Sharp Anticline	Well being drilled by Good et. al. P. & R.—well abandoned.
Bailey					Steele		Plunging Anticline	Test well drilling.
Bell Springs	Frontier ? (Oil)				Mesa Verde	Mowry ?	Faulted Anticline	Test well plugged back to oil showing at 1,900 ft. Other wells drilling.
Eight Mile Lake	Frontier (Gas)	Frontier (Gas)	3,800 Ft.	Not Determined	Steele Shale	Wall Creeks	Broad Anticline	Two wells drilled to gas in Frontier—third well drilling—gas line to Parco.
Dad					Wasatch	?	Monocline	Oil found on west slope of monocline at shallow depth.
Rawlins					Steele		Broad Faulted Anticline	Test well drilling 3 miles west of Rawlins. Shut down.
Red Dome					Chugwater	Embar	Dome Doubtful	Closure doubtful well drilling. Shut down.
Sheep Mountain					Embar		Faulted Anticline Doubtful	Possible commercial production at shallow depth in Amsden or Madison.
Derby		Embar	1,000 Ft.	640 A.	Chugwater	Tensleep	Dome Favorable	Untested to Amsden and Madison.
Dallas		Embar	800 Ft.	800 A.	Chugwater	Tensleep	Dome Favorable	Untested to Amsden and Madison.
Hudson		Embar	1,400 Ft.	800 A.	Chugwater	Tensleep	Faulted Anticline	Untested to Amsden and Madison.
Megown					Benton Shale	2nd Wall Creek	Faulted Dome	Well drilling.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Plunkett	Mowry Sand Lenses		500 Ft.	160 A.	Mowry	Morrison	Sharp Anticline	Small production taken from sands in Mowry shale—field abandoned.
Sage Creek		Embar	900 Ft.	Not Determined	Chugwater	Embar	Sharp Anticline Favorable	Tensleep, Amsden and Madison sands are untested—small production in Embar.
Winkleman	Dakota (Gas)	Lakota (Gas)	900 Ft.	Not Determined	Mowry	Sundance	Faulted Anticline	Oil showing in Lakota gas in Dakota—possible oil production in Dakota below gas cap.
Pilot Butte		Shannon Sands and Shale	1,200 Ft.	Shallow Productive Area About 320 A.	Pierre Shale	Frontier ?	Dome	Favorable for deep test—land titles in litigation.
Sheldon	Frontier				Pierre Shale	3rd Wall Creek	Sharp Anticline	Two wells drilled, possibly off structure, failed to develop commercial production. Good showing gas and some oil in 2nd Wall Creek sand—3rd well drilling.
Black Mountain					Benton	Sundance ?	Faulted Anticline	Test well off structure area favorable for further investigation.
Maverick Springs		Embar	1,300 Ft.	800 A.	Chugwater	Tensleep	Dome	Large black oil production shut in—no pipe line.
Circle Ridge		Embar	290 Ft.	Not Determined	Embar	Tensleep	Dome	Shallow production in Embar.
Sand Draw		Wall Creeks (Gas)	2,550 Ft.	900	Steele Shale	Mowry	Sharp Anticline	North end untested—several lower sands untested due to heavy gas pressure—gas piped to Riverton and Lander.
Alkali Butte	Oil Showing in Morrison				Mowry	Sundance	Sharp Faulted Anticline	Unfavorable—test drilled found showing of oil and gas.
Conant Creek					Morrison		Open Faulted Anticline	Unfavorable.
Burley					Chugwater	Embar	Dome	Favorable for test to Tensleep, Amsden and Madison. Abandoned.
Logan Gulch					Niobrara		Plunging Anticline	Small structure tested to base of Niobrara.
Buck Springs					Fort Union	Pierre	Plunging Anticline	Favorable but deep.
Dutton Basin					Chugwater	Tensleep ?	Narrow Anticline	Shallow drilling on limb of anticline—recent test by Texas abandoned.
Rattlesnake					Chugwater		Faulted Terrace Doubtful	Some drilling done on east monoclinic limb to Dakota which shows saturation at exposure—results discouraging.
Muskrat	Shannon (Gas)				Pierre	Shannon	Broad Anticline	Test well drilling.
Oil Mt. 17-33-90					Mowry	Mowry		Drilling 492 ft.
Riverton					Fort Union	Lance	Plunging Anticline	Test well abandoned.
Tough Creek					Fort Union	Cloverly	Monoclinic Limb Sealed by Tertiary	Oil showings in Mowry. Test well drilling. Doubtful.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Bridger Creek					Lance	Lance	Tertiary Anticlinal Deposition	Test well abandoned.
Schoening					Fort Union		Sharp Anticline Doubtful	Test well drilling.
Depass	Embar				Chugwater	Embar	Dome	Showing of oil in Embar. Abandoned.
Mid-Northern					Fort Union		Broad Anticline	Test well abandoned.
Rex Lake		Dakota and Lakota	3,800 Ft. and 3,850 Ft.	Not Determined	Steele Shale	Lakota	Small Sharp Anticline	Production about 400 bbl. per well—three wells drilling.
James Lake					Steele Shale	Dakota	Narrow Anticline	Showing of oil in sand possibly Frontier. Not favorable.
Two Rivers					Steele Shale	Dakota	Small Anticline	Tested to and through Dakota—water in all sands
Quealy					Steele Shale	Dakota	Narrow Anticline	Water in all sands—show of oil in Mowry shale.
Cooper Cove	Gas in Shannon Oil Showing in Frontier			1,100 A.	Steele Shale	Frontier	Faulted Anticline	Abandoned.
Rock River	First Muddy 2,550 Ft. Second Muddy 2,650 Ft.	Dakota	2,750 Ft.		Steele Shale	Morrison	Narrow Anticline	Light oil production about 3,500 bbls. per day from about 52 wells—productive area determined.
Dutton Creek		Muddy	4,900 Ft.		Steele Shale	Muddy	Small Narrow Anticline	Test in progress—shows oil.
McGill					Chugwater	Embar	Narrow Anticline	One well drilled to Forelle or Embar sand was dry—deeper sands untested.
Gillespie					Embar	Amsden	Open Plunging Anticline	Tested for black oil and found barren.
Foote Creek					Morrison	Morrison	Small Narrow Anticline	Tested to red beds and found barren.
Medicine Bow		Frontier	4,000 Ft.	Not Determined	Mesaverde	Frontier	Narrow Anticline	Test to Frontier found fair production in Frontier—deeper test in progress.
Como Ridge					Chugwater	Tensleep	Broad Plunging Anticline	Tested—artesian water in Tensleep.
Allen Lake	Muddy (Gas)				Niobrara	Muddy	Narrow Anticline	Gas in two wells from Muddy about 15,000,000 cu. ft. capacity—well drilling.
Big Hollow	Harris				Niobrara	Chugwater	Domes on Anticline	Small production in Harris sand at 900 ft.
Mandell					Steele Shale	Muddy	Small Dome	Tested to Muddy—no production.
Lake Hattie					Steele Shale	Dakota	Terraced Anticline	Showing of oil in Muddy and Dakota.
Centennial					Steele Shale	Dakota	Faulted Anticline	Well drilled to Dakota at 3,000 ft.—found water.

WYOMING OIL STRUCTURES—In the Following Order: Southwestern, Rawlins-Lost Soldier, Lander District, Laramie-Medicine Bow (Continued)

Field	Minor Producing Sands	Major Producing Sands		Approximate Producing Area	Surface Formation	Deepest Sand Tested	Structural Conditions	REMARKS
		Name	Approximate Depth					
Sodergreen					Steele Shale	Dakota	Small Narrow Anticline	Found water bearing and abandoned.
Flattop					Amsden		Dome	Amsden sand exposed—possibilities for oil not favorable.
Oil Springs					Frontier	Muddy	Narrow Faulted Anticline	Gas in Mowry sand lens—water in Muddy—test possibly off structure.
Freezeout Hills					Tensleep		Narrow Dome	Possibilities doubtful and unfavorable due to deep erosion.
Troublesome					Chugwater		Open Plunging Anticline	Not favorable.
Shirley					Niobrara	Lakota	Open Plunging Anticline	Test through Frontier to Lakota—found all sands dry or water bearing.
Simpson Ridge		Shannon (Oil)			Mesaverde		Narrow Anticline	Test well drilling at over 6,000 feet.
Elk Mountain					Pierre Shale	Dakota	Sharp Dome	Tested through Dakota.
Bothwell					Benton Shale	Dakota	Narrow Anticline	Test found water in Dakota.
Walcott					Mesaverde		Overthrust	Very deep—unfavorable—untested.
St. Marys					Mesaverde		Thrust Fault	Drilling.
Cedar Ridge					Mesaverde		Anticline	Favorable but deep—untested.
Miller Hill						Embar.		Tested—abandoned.