

PRESS BULLETIN NUMBER 14.

July 1, 1923.

Corrected to December 1, 1925.

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PRESENT CONDITION OF OIL AND GAS DEVELOPMENTS OF BIG HORN BASIN

The Big Horn Basin contains in the neighborhood of eighty structures, most of which have been considered possibilities for the accumulation of oil or gas, and within the past few years a majority of these structures have been tested by drilling. Many of them have been only tested partially; a large proportion of them have been found to be unproductive, while a considerable number have been developed into commercial oil or gas fields. Some of the fields have been found to be small and have already reached a considerable stage of depletion, while others show indications of steady production for a number of years.

No recent bulletins have been issued covering the oil and gas developments of this territory, and it is the purpose of this bulletin to briefly describe these developments, rather than enter into a discussion of the geology. The geology of the larger part of the Basin has been covered by C.T. Lupton in U.S.G.S. Bulletin #656, and this office has issued bulletins on the Basin-Greybull field, Little Buffalo Basin and Grass Creek fields, Byron field and Oregon Basin field. Other U.S.G.S. bulletins, describing the geology of this territory are Bulletins #341, #541, #621, and Professional Paper #53.

The information set forth in this bulletin is for operators and others contemplating development, and was obtained by a visit to the fields by The State Geologist and by the Oil and Gas Inspector, Mr. Val B. Maghee, in the early part of June 1925. Where information could not be obtained directly on the ground, operators and persons familiar with conditions were interviewed to the fullest extent possible, and while, with the large number of structures to be examined, it is impossible to get all the details, yet it is believed that the information obtained is mainly accurate and reliable.

The oil and gas occurs in a number of different sands at different geological horizons, some of which have been only partially tested by wells not penetrating to the deeper sands, and whenever it is believed that deeper sands offer opportunities for further testing, mention will be made. The locations of these structures can be found on the state map published by the U.S. Geological Survey, entitled "Oil and Gas Fields of the State of Wyoming", also the same map reproduced on a smaller scale by this office, and which is now offered for free distribution. The fields are described in the same general order as in Bulletin 656, beginning in the northeast part of the Basin and proceeding in a clockwise direction.

SHEEP MOUNTAIN ANTICLINE

This is a structure about fifteen miles long, lying north of the town of Greybull and along the Big Horn River, which cuts through the anticline near the north end. The lowest rocks outcropping in the anticline belong to the lower part of the Madison Limestone. It is of probably no importance as a reservoir for the accumulation of oil and gas, as all of the oil and gas bearing formation outcrop at the surface. It has been tested by drilling and probably does not justify further testing.

SHELL CREEK DOME AND CHERRY ANTICLINE

These two structures are located six to eight miles northeast of the town of Greybull and are easily accessible from that point. Shell Creek Dome has been tested by a well about 2000 feet deep, reported to have penetrated the Embar formation. The Cherry Anticline is reported to have been drilled to a depth of about 700 feet without the discovery of any production, but the well is not believed to have reached the Embar formation. Both of these anticlines are mountainward folds which have a very small drainage area, and if as reported the Embar formation is unproductive in the Shell Creek Dome, it is not likely that any lower formation would be found productive in either of the structures.

MORRIS ANTICLINE

This structure is located about ten miles east of Greybull, and has not previously tested. Government permits have been issued for the drilling of this structure, which is situated in Township 52-91, and it is reported that the Doman Oil Company of West Virginia will start drilling a test well this summer, with the intention of drilling 1000 to 1200 feet to test the Embar formation. This is reported to be a closed structure with the Chugwater Redbeds exposed, and will be a black oil proposition.

GREYBULL FIELD

This field was discovered in 1907, yielding a high grade paraffin oil and a large amount of gas, gas being found in the top of the dome, and oil in a lower dome in the west and northwest sides. The lower part of the Frontier formation and the upper part of the Mowry shale are exposed at the highest part of the dome. The Greybull sand, about 850 feet below the surface at the highest part of the dome, contains the oil and gas in this field. The first well produced gas only, the initial flow being estimated at 8,000,000 to 10,000,000 cubic feet per day. This well caught fire soon after completion and burned for more than a year and a half. During 1915, the larger oil wells were discovered. Some of them were reported to have produced 500 bbls. per day, which was soon reduced to about 100 bbls, and has greatly diminished since that time. The limits of the productive areas were located by dry holes, as this structure was fully drilled and tested to the Greybull sands.

The Ashland-Wyoming Oil Company is drilling on the south side of the Greybull River on the southwest side of the structure. According to our information, oil was encountered in the Tensleep formation, at a depth of approximately 3200 feet. Drilling was continued to the Madison formation, and as commercial production was not encountered there, it is planned to endeavor to develop commercial production from the Tensleep. This is a black oil.

The production from 1915 to 1922 inclusive was 179,197 barrels. The Ashland-Wyoming well has been abandoned.

GREYBULL FIELD (continued)

At present there are 12 producing wells operated by the Midwest Refining Company, from which they obtain a daily production of about 25 to 30 barrels. In addition to their production there is at least one other well in the field making about 10 barrels of oil a day. All of this production is from the Greybull sand. In 1919 and 1920 the Midwest Refining Company drilled a deep test on the Lincoln Land in Lot 55, Section 17-52-93. This well passed through the Embar formation and entered the Tensleep sand obtaining water in all of the deeper sands. In view of the results of this test no further deep tests are planned by the Company

LAMB ANTICLINE

This structure is situated about four miles northeast of the town of Basin, and is easily reached from that point. The surface rocks consist of the dark gray Cody shale, which overlies, the Frontier formation, the latter consisting of about 550 feet of sandstones and sandy shales. The upper sandstone was known as the Torchlight sand and the lower as the Peay or A sand. In 1913 a gas well was brought in with an initial production of about 5,000,000 cubic feet per day, from the Peay sand, at a depth of 435 feet. A number of wells have been drilled since, and the gas piped to Basin and Greybull for domestic and refinery uses. The field is not producing at this time, as the gas has been depleted, but it is understood that test wells will be drilled to the Greybull sand or deeper, in the near future. Mr. R.M. Talbot, associated with the Vanguard Oil Company, is now drilling at a depth of about 1300 feet. He reports a little gas at 435 feet and about 200,000 feet of gas at 615 feet, with a showing of oil in the Thermopolis shale, and 20,000,000 feet of dry gas at 1362 feet on June 23, 1923, with an estimated pressure of 500 lbs. This is the first deep test reported since the publication of Bulletin #656 in 1917. This well is located a little to the west of the crest of the anticline.

TORCHLIGHT DOME

This structure lies about three miles east of Basin and has been a considerable producer of high grade paraffin oil. It is a small structure, the original productive area covering about two square miles. It is associated with the Lamb Anticline, being separated from it by a shallow syncline. The rocks at the surface in the highest part of the Torchlight Dome belong to the upper part of the Frontier formation. The Peay sand, which yielded gas in the Lamb Anticline, is of no importance in the Torchlight Dome, as it was probably too near the surface, the top being 200 to 358 feet deep in different wells. The oil in this dome came from the Kimball and Oath-Louie sands which occur in the Mowry shale; the Kimball sand being at a depth of around 440 feet, and the Oath-Louie sand about 45 feet deeper, on the highest part of the structure. The first well developing commercial production was drilled in 1913, and within the next two years 37 wells were drilled, by which time the daily production was believed to have been between 800 and 1000 barrels, but a year later it was reported to be about 200 barrels per day, the total production from 1915 to date being 89,968 barrels. The oil having been exhausted, the wells are being plugged and abandoned. It is reported that three wells have been drilled to the Greybull sand, a depth of approximately 1800 feet, which found this sand to be dry. It is reported that the Bruce Holding Company, in Section 19 on the east side of the structure, operating on Government Permits, is planning to start a twenty inch hole this summer and drill a deep test well.

POTATO RIDGE

This structure is situated about eight miles from Basin, being east of the Lamb Anticline. It is understood that this structure will be tested in the immediate future by the Bruce Holding Company, which is represented by Mr. A.D. Shendell, Minneapolis. It is reported that a deep test will be made.

EIGHT MILE DOME

This structure is called the Dry Dome in Bulletin 656. It is situated about eight miles southeast of Basin. It is a small closed structure, the surface rocks belonging to the Cody shale. It was drilled in 1914 by the Greybull Oil Company, to the top of the Greybull sand, at a depth of 1800 feet, and encountered water in the Peay Sand, Muddy Sand, and Greybull Sand. As this is a mountainward anticline and has been found to be barren of oil down to the Greybull sand, it is not likely that commercial production could be found in any deeper sand.

MERCER ANTICLINE

This structure, located about eighteen miles east of Basin, was not considered promising, as most of the oil sands are exposed at the surface, the only possibilities being in the Chugwater, Embar, Tensleep, and Madison formations, which are beneath the surface and would contain black oil. The Ohio Oil Company has recently completed a test to a depth of 2210 feet, which probably reached the Tensleep formation and encountered water in all sands. This is believed to have been a thorough test and the Ohio Oil Company has abandoned the field.

PAINTROCK ANTICLINE

The Paintrock structure is a northwestward trending anticline, about twelve miles long, the center being situated fifteen to eighteen miles southeast of Basin. The lowest formations outcropping on this structure below to the Sundance formation, which is underlain by the Chugwater formation about 900 feet thick, below which is the Embar, underneath that the Tensleep sandstone; underlying that is the Amsden formation, which overlies the Madison limestone. This is a mountainward fold, being cut off from the drainage area of the Big horn Basin by the Manderson, Bonanza, and Nowood Anticlines. Three wells have been drilled on the Paintrock structure, without encountering oil or gas in any of the formations; one of them reaching the Tensleep sandstone. Further drilling of this structure would not be advisable.

MANDERSON ANTICLINE

This structure is about nine miles in length, the north end being located about three miles north of Manderson, and extends southeasterly. It plunges to the northwest for this entire length but has possibilities of serving as a trap for oil or gas, if lenses or differential cementation of the sands of the Frontier formation, Mowry shale, or Greybull sand occur. The formations exposed are the Mesaverde on the Northwest end of the structure and the Cody shale on the southeast end. Two wells have been drilled on the structure but they have not tested it, as neither one of them reached the Frontier formation. The plunging character of this anticline does not make it as favorable as a closed structure, but it probably justifies test wells drilled deep enough to reach the formations which are productive in other structures in the Basin.

A well in SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17-49-91, Frontier O & O Co.
Abandoned at 2064 feet--water.

BONANZA ANTICLINE.

This structure is about twelve miles southeast of Manderson, being parallel to the Paintrock Anticline, and situated between the Nowood and Manderson Anticlines. The oil seep, situated near the crest of this structure, has yielded some oil which was used by the early settlers for lighting, and stimulated the early testing of this structure. Like the Manderson Anticline, this structure also pitches to the northwest; the lowest rocks exposed on the anticline belonging to the upper part of the Thermopolis shale, the oil seep near the center of the structure coming from the Kimball and Ooth-Louie sands in the Mowry shale. Seven unproductive wells have been drilled on or near the Bonanza Anticline, but it is doubtful if any of these wells were drilled deep enough or in the proper locations to fully test the structure, so that there still remains a possibility of developing production on this anticline. Bulletin #656 contains structure contour map of this anticline and the three neighboring anticlines, which suggestions of possible drilling locations. Well in SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5-38-90 abandoned at 1720 feet in Madison Lime.

ZEISMAN DOME

This is an untested structure about six miles southeast of Hyattville, or about twenty miles east of Manderson, from which it can be reached by a good road. This would be a black oil proposition, as the lowest rocks exposed belong to the Tensleep formation, and the oil if discovered would be in the Amsden or Madison, which contained black oil in some other localities in the Basin and which would be tested by a well 500 feet deep.

BROKEN BACK ANTICLINE

This is another untested structure which lies about five miles southeast of the Zeisman Dome, from which it is separated by a shallow saddle. The Tensleep formation outcrops on this structure also and the Amsden and Madison could be probably tested in a manner similar to the Zeisman Dome.

NOWOOD ANTICLINE

This structure lies southeast of the Bonanza Anticline and has a length of about twelve miles. Two lowest rocks exposed at the surface are in the upper part of the Chugwater formation, the sands beneath the surface being the Embar, Tensleep, Amsden, and Madison, all black oil sands. This structure has been tested by a deep well at the highest part of the structure, which would be the most favorable location for the accumulation of oil or gas.

HIDDEN DOME

This interesting structure is described as the Well Area in Bulletin # 656. The Cody shale outcrops over most of the area with dips which make it impossible to determine whether a structural terrace occurs, a fault, or a small dome. It was drilled in September 1917 and a 20,000,000 gas well brought in and the gas has been piped to Greybull from five wells, having a depth of about 1500 feet. Deeper test are in progress by the Ohio Oil Company, a small amount of oil being report at 1600 feet in a well now 2100 feet deep.

SHERARD DOME

This dome is situated about six miles southeast of the Hidden Dome and has been known as the location of a small oil seep for many years. Several shallow wells found oil at depth of not over 100 feet. It is a very small and faulted structure, the surface rocks belonging to the upper part of the Frontier formation. These small wells do not contain oil in commercial quantities, and a deep test well has since been drilled, reaching the Greybull sand in which water was encountered. It is therefore, apparent that this structure has no commercial possibilities, except possibly the production of a few barrels of oil for local domestic use.

Well in NE $\frac{1}{4}$ Sec. 24-47-89, abandoned at 5031 feet. Two wells in Sec. 19, abandoned at 69 feet and 134 feet.

TENSLEEP ANTICLINE

This structure lies about twelve miles southeast of Hidden Dome and about twenty-eight miles east and a little south of Worland. This structure is believed to be favorable for the accumulation of oil and gas, although there is reported to have been drilled a well, but not deep enough for a thorough test. According to our information, the Kinney Coastal Oil Company has secured leases on this structure and will drill a deep test in the near future. It is a closed structure, the main unfavorable feature being the steep dips on the southwest side. The top of the Torchlight Sandstone of the Frontier formation outcrops along the flank of the structure near the highest part. Underneath the Frontier formation is the Mowry shale which is underlain by the Thermopolis shale and that in turn by the Greybull sands. These in turn are underlain by the Morrison, Sundance, Chugwater, and Embarras formations; consequently there are a number of sands which could be found productive.

BUD KIMBALL ANTICLINES

These anticlines are situated in the extreme southeastern part of the Big Horn Basin directly southeast of the Tensleep Anticline. The structure is about ten miles long, extending southeast and northwest, plunging in a northwesterly direction. The lowest strata exposed belong to the Chugwater formation at the southeastern end of the structure, and all the formations between the Chugwater and the top of the Torchlight sandstone are also exposed, which indicate that it will not be an attractive possibility for the accumulation of oil or gas in commercial quantities. It is understood, however, that a test for this structure is planned for the near future on lands included in Government permits.

MORTON DOME

This is a small structure situated in Sections 6 and 7 Township 44-88, and 1 and 12, Township 44-89. This structure has never been tested but it is believed it will be drilled in the near future, as Government permits have been issued. It is believed that drilling to a depth of 2500 feet will be necessary to reach the first Frontier sands.

MAHOGANY BUTTE ANTICLINE

This is a small anticline about twelve miles long, mainly in Townships 43-88 and 43-89. The oldest rocks exposed belong to the Chugwater formation, and owing to its plunging character it is not likely that the structure will prove to be a reservoir for the accumulation of oil or gas. It is faulted, however, and in places the beds flatten, forming a structural terrace, at which point a 1400 foot hole would probably test the Greybull sand. The structure has not yet been drilled. Test in NW $\frac{1}{4}$ Sec 24-43-90 by J.H. Walker, drilling at 2676 feet.

CHABOT ANTICLINE

This is a small anticline in Township 43-88, paralleling the Mahogany Butte Anticline. The Torchlight sands and the Mowry shale are exposed on this structure, which is narrow and cut off by a fault, near which point the drill might prove a small accumulation of oil or gas. This structure has not been drilled.

LYSITE MOUNTAIN ANTICLINE

This is a structure about four miles long in Township 42-90. The Frontier formation and the Mowry shale are the surface rocks, and oil seep occurring in the lower Frontier near the crest of the structure in the south side of Section 21. The dips in the southeast end of the structure are concealed by Tertiary beds, and it cannot be determined whether this structure closes on the south. C.D. Markham of Thermopolis is moving a rig in and will drill on Section 23. C.T. Lupton gives the central part of Section 21 as the most favorable part to drill. Oil on Section 23-42-90 abandoned in Muddy Sand Creek 1008 feet --- water.

BLACK MOUNTAIN ANTICLINE.

This is a small sharp fold in the southeast part of Township 43-91. The Mowry shale is the oldest formation exposed, which places several possible oil-bearing sands within the reach of the drill at the crest of the structure. It is a closed structure. The Utah Oil and Refining Company of Salt Lake is now drilling this structure in Section 36, and has developed Black Oil production at 3663 feet.

LAKE CREEK ANTICLINE

This is a structure about twelve miles long, paralleling the Black Mountain Anticline, with the highest part of the crest in Sections 28 and 29, Township 43-91. The lowest rocks outcropping are the Frontier formation, which places within the reach of the drill several sands which are productive in other parts of the Basin. It has not been tested on the highest part of the anticline in the sections mentioned, where the accumulation of oil or gas would be expected, although the anticline is narrow and production would be of comparatively small area. A well has been drilled in Section 13-43-92, which is reported to have obtained a showing of oil in the Occh-Louie and Greybull sands, but did not constitute a test of the structure, owing to its location. The Union Oil Company drilled in the NW $\frac{1}{4}$ Sec. 34-43-91, and developed black oil production at 3722 feet.

MURPHY DOME

This structure is situated mainly in the northwest part of the Township 43-91, and is about three miles long trending southeast and northwest. It is not mentioned in Bulletin #656. One well drilled by the Ohio Oil Company to a depth of about 1600 feet has tested the Frontier formations and obtained a gas well in the lower Frontier with an estimated capacity of 2,000,000, cubic feet, with six hundred pound rock pressure. It is believed that this will make a small gas field. It is reported that four other wells have been drilled but did not reach the gas sand. Since structural conditions resulted in the accumulation of gas in the Frontier sands, drilling to deeper sands is probably justified.

HALF DOME

This is described as Wild Horse Butte in Bulletin # 656. It is a small fold in the northeastern part of Township 42-93, with the Chugwater Red Beds exposed at the surface, the crest of the anticline pitching northwest through its entire length. There is a small well 1180 feet deep said to be capable of producing 35 barrels per day or less of thirteen degree gravity oil from the Embar sand, situated in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 2, The Union Oil Company used this oil for fuel and drilled a test in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 3 to reach the Madison Formation. A showing of oil was found in the Embar at a depth of 1285 feet. This well was abandoned at 2070 feet.

BLUE SPRINGS

This is a small structure located in the southwest part of Township 43-92, on which the oldest rocks exposed belong to the Mowry shale. The structure has a small closure and may prove to be productive. It has not been tested, as it was included in a withdrawal and titles were not established for some time. Development is expected to commence in the spring of 1926.

RED SPRING

This is a small structure in the southwest part of Township 43-93, about four miles long with a curved crest. The top of the Embar formation is exposed on the highest part of the anticline and an oil seep occurs in Section 29. It has been drilled in the SW $\frac{1}{4}$ Sec. 28, and oil found in the Amsden formation at 1400 feet of twelve to fourteen degree gravity, very difficult to pump. The field is shut in and is not producing but probably will be capable of small production when there is a greater demand for such heavy oil, and economical means of handling it.

KIRBY CREEK ANTICLINE

This is a small structure about three miles long in the central part of Township 43-92. The Ohio Oil Company has four shallow wells capable of small oil production from the Frontier sands. The Tumbador Oil Company drilled 975 feet northwest of the Ohio and found one of the Frontier sands dry and another containing water. They drilled a water well there also for stock purposes.

ZIMMERMAN BUTTE ANTICLINE

This structure is situated in the southeast part of Township 44-93, having very slight dips which are difficult to interpret, as described in Bulletin #656. It is a small structure, the oldest rocks exposed being the Cody shale. Two wells have been drilled on Section 36, one of them a small gasser, drilled May 1919, the original capacity estimated at two million feet, depth 1790 feet. As this did not appear to be a commercial well, the casing was pulled. The other well, 1180 feet, was drilled in September 1918, and struck water. It is believed, however, that neither of these wells constituted a thorough test of the field, and it is intended to be drilled deeper. Well drilled by Western Oil Company in NW $\frac{1}{4}$ Sec. 17-Township 44-93, was abandoned. Well drilled by Texas-Wyoming Oil Company in SW $\frac{1}{4}$ Sec. 33-44-93, to 2805 and abandoned. In a well now being drilled in NE $\frac{1}{4}$ Sec. 28 at 2347', a showing of oil and gas was encountered at 2078 to 2088 feet.

WARM SPRINGS DOME

This dome is situated on the extreme east end of the Thermopolis Anticline in the southeast part of Township 43-94. The lowest rocks exposed belong to the Embar formation. There are nineteen wells on Section 36, of which fourteen appear to be capable of making a small production of black oil. A pipe line has been laid to a refinery at Thermopolis, and some of this oil has been produced and refined, but the refinery is not running at this time. The productive area is small but may be capable of profitable production under careful management. A well drilled to test the Madison formation was abandoned at a depth of 1900 feet. The Wyoming Premier Oil Company, about a mile west of Section 36, has 24 wells, of which 14 could be pumped with a capacity of about 100 barrels of 21-5/10 gravity oil. They were not producing, however, at the time of our visit in June.

KING DOME

This is situated along the western end of the Thermopolis Anticline, running from Sections 36 to 19, Township 44 Range 96. It was drilled in Sec. 29 by the Oregon Wyoming Company to the Embar, which carried water and abandoned at 1950 feet.

THERMOPOLIS ANTICLINE

This structure is about twenty five miles long, the eastern extremity being near Section 36-43-94, previously described as the Warm Springs Dome, from which point the structure runs nearly straight west close to the town of Thermopolis, where it runs northwest to the eastern part of Township 44-97, including the King Dome. The Red Rose Dome, located in the central part of Township 43-94, is on this structure, the lowest rocks exposed here being the top of the Embar. The Red Rose Oil Company tested this, drilling it into the Amsden formation, getting water and sulphuric gas. The Empire State Oil Company drilled in the town of Thermopolis four blocks south of Broadway in the summer of 1923, the well being started in the lower part of the Thermopolis shale. It was a dry hole and abandoned. This structure is regarded as of doubtful value as a reservoir for oil or gas.

LUCERNE ANTICLINE AND GEBO DOME

This structure is about twelve miles long, running northwest and southeast, the northwest end being known as the Gebo Dome, situated in Township 44-95, while the southeast end along the Big Horn River is known as the Lucerne Anticline. The Lucerne Anticline was tested about six years ago by a well drilled by A.T. Williams and Associates in 16-43-94, water being encountered in several sands. The lowest rocks outcropping on the

Gebo Dome belong to the Cody shale, and the tests indicate a closure of possibly two or three square miles in area. The Lucerne Anticline plunges to the northwest, and the surface rocks exposed include those down to the Morrison Formation, which does not make it an attractive possibility. The Gebo Dome, however, is believed to have possibilities for the accumulation of oil or gas, but has not yet been fully tested, as there has been considerable litigation over the title to the lands. In 1915 and 1916 the Ohio drilled to a depth of 2700 feet on Section 16-44-95, getting water at this depth. A deeper test is now being drilled and encountered water in the Dakota at 2690'.

GYP SPRINGS

This structure is situated in Township 42 Range 95, but is not considered promising for the accumulation of oil, as it is not a closed structure, formations being open to the mountains. It was drilled to the Embar formation and water encountered.

RICHARD DOME

This is situated on the crest of the Copper Mountain Uplift in the southeastern part of Township 41-91. It has been tested, the well started low in the Red Beds, and is reported to have been drilled to the granite without getting production.

NEIBER ANTICLINE

This structure, about ten miles long, has its crest a few miles south of the town of Neiber, and extends nearly east and west. The lowest surface rocks belong to the Fort Union formation, which indicates that most of the productive oil sands are too deeply buried for drilling at this time, but other sands which might prove productive lie within 3500 feet of the surface. The surface dips indicate closure of about three square miles area, and the structure justifies testing, although there is some possibility that the beds may prove to be flattened with depth, as the surface dips are slight and might not prove productive. A well was drilled in 1915 by the Tanberg Oil Company to a depth of about 2000 feet, but this was not on a favorable part of the structure and was not deep enough to constitute a test. It is reported to have come through coal at 1600 feet and to have struck Artesian water. The Wyoming Gas Company and the Midwest Refining Company drilled a well in Section 14-45-93, near the crest of the structure, and abandoned it at a depth of 4325 feet.

COLTER

The Empire State Oil Company is drilling at the State Industrial Farm at Colter at a depth of 2705 feet. it is doubtful if structural conditions here are favorable for the accumulation of oil or gas.

SAND DRAW ANTICLINE

This is a small structure about four miles long running nearly northwest from Section 2-44-96, which is the highest part of the structure, and where a small closure is indicated by the tests in the upper part of the Cody shale. This structure has never been tested, and if the Gebo Dome proves productive, the Sand Draw Anticline would justify testing in Section 2, as the Frontier formation would be within reach of the drill. F.M. McPherson is drilling SW1/4 SW1/4 Sec. 2-44-96 at 306 feet.

WAUGH ANTICLINE

This structure is also known as Ilo Ridge. It is a structure about five miles long running northwest and southeast, and plunging to the northwest. It has been tested by four wells near the crest along the south side of Section 36-47-97, and the north side of Section 2-44-97. Two of the wells penetrated the Frontier formation without finding oil or gas, and it is doubtful if deeper drilling would encounter production.

GOLDEN EAGLE DOME

This structure is situated in the northeast part of Township 45 Range 97 and in the northwest part of 45-96. There are two gas wells in Section 12 and one well drilling in Section 13 at a depth of 516 feet. The first gas well was estimated at twenty million feet, rock pressure being 1175 pounds, the gas at present being used for a carbon black plant situated on the property. The Eagle sands are the surface rocks exposed, and gas was encountered in seven different sands, the upper sand being at a depth of 2265 feet, the principal production being at a depth of 3000 feet.

MUD CREEK DOMES

These are four small structures, one the Mud Creek Dome, one the Kelly Dome, also the Duncan Dome and the Yankee Dome. The Mud Creek Dome and the Duncan Dome are situated in Township 8 N., R. 3 E., the Kelly Dome in the southeast part of Township 8 N., R. 3 E., and the southern part of Township 8 N., R. 4 E., and the Yankee Dome in the eastern part of Township 42 and 43, Range 96. The Kelly Dome is a Red Bed structure running east and west, and was drilled by Simonson and Associates about three years ago, the Embar, obtaining water. The Yankee structure was drilled through the Sundance formation without obtaining production. This structure is not closed, as it open toward the southeast. Duncan Dome covers part of Sections 26, 27, 28, 32, and 33, in Township 8 N., R. 3 E., Wind River Meridian. A well was drilled on this dome to the Embar sand where a considerable quantity of water was found.

EMBAR ANTICLINE

This structure is situated mainly in Township 8 N., Range 2 E., Wind River Meridian, with the west end in the northeast part of Township 8 N., Range 1 E. Practically all of the oil sands productive in the Big Horn Basin are exposed at the surface on this structure, and it is not considered a valuable reservoir for the accumulation of oil or gas.

HAMILTON DOME

This is also known as the Cottonwood Anticline, and is about eight miles long, the highest part of the crest being in Sections 13 and 14, Township 44-98, in which it runs about four miles east and about three miles northwest. It is a closed structure, the top of the Mowry shale being the lowest rock exposed at the surface, while the top of the Torchlight sandstone encircles the structure further out. The first wells, drilled in 1913 and 1916, did not obtain production, and the territory was regarded as unfavorable for further exploration. However, more recent development has encountered black oil, 26 degree gravity, in the Embar sands, at a depth of 2300 to 2400 feet, 22 wells, with one well in the Red Beds at a depth of 1320 feet, yielding 22 gravity oil. Recently the Arkansas Natural Gas Company has developed production in another well. The present production of the field is 400 to 500 barrels per day.

BROOKS STRUCTURE

This structure is situated about five miles due south of Hamilton Dome, and was drilled three years ago to the Greybull sand at the west and to the Embar sand at the east end, without obtaining production. This structure opens towards the mountains and is not regarded as a reservoir for oil or gas.

WAGONHOUND ANTICLINE

This is a small structure with the highest part of its crest situated in Section 6-44-99, from which it extend due north for about three miles. The surface dips indicate a closure area of possibly a little over one square mile, but these dips are so slight that the closure may disappear

with depth. Several wells have been drilled on this structure without obtaining production, the most recent being that of the Midwest Refining Company in 1919, which was carried to a depth of 1740 feet, testing the Greybull sand in which water was found. In view of this fact, any deeper test hardly seems justified.

GRASS CREEK ANTICLINE

This has been found to be one of the best oil fields in the state, and one on which considerable drilling has been done, the Midwest Refining Company alone operating 108 wells on 404 acres of productive oil land, the greater part of production being obtained from sands of the Frontier series, which were encountered between a depth of from 313 to 822 feet. This structure is plainly evident on the ground, being encircled by outcrops of the Mesaverde formation. In 1920 the Ohio Oil Company drilled a well to the Morrison sand and obtained production of black oil, and in 1922 they drilled a well through the Tensleep sand and obtained commercial production of black oil. The Midwest Refining Company is now deepening their deep test in an attempt to reach the Tensleep production, as the Morrison was not productive in their well. There are now two wells of the Ohio Oil Company producing from this deep sand, and it is probable that five or six more wells will be drilled to the Tensleep during 1923. Total production of the Grass Creek field for the years 1915-1922 inclusive amounted to some 14,067,972 barrels. The pipe line runs in June indicated a daily production of about 5100 barrels. To penetrate the Madison limestone in this field would require a hole not to exceed 4500 feet. Such a test is justifiable as possibly six oil bearing horizons are untested in this structure at the present time.

ENOS CREEK ANTICLINE

This is a small but well developed fold in the southwestern part of Township 46-100, the surface rocks exposed being the Cody shale, with the lowest Mesaverde coal vein forming an outcrop around the structure. It was drilled near the crest of the structure in 1916 by the Grass Creek Oil Company, at 2400 feet striking water in the top of the Frontier formation, as it was similar in the southeast end of the structure to the Gooseberry Anticline, about twelve miles north, which yielded water and was not regarded as favorable for the accumulation of oil or gas; but further tests have demonstrated that it is productive. The Producers and Refiners Corporation, drilling in the northeast corner of Section 26 near the E $\frac{1}{4}$ corner at a depth of 2815 feet, has recently encountered a flow of gas estimated at 25,000,000 feet. It is understood, however, that an attempt will be made to drill this well deeper, in the hope of securing production of oil.

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LITTLE GRASS CREEK DOME

This is a small dome-like structure, joining the Grass Creek Anticline on the west. It is not large enough to be a very important reservoir for oil or gas, but according to our information, this field has two wells, capable of making about forty million feet of gas. One in the NW $\frac{1}{4}$ of Section 11-46-99 being shut in, and one in SW $\frac{1}{4}$ Sec. 11, the gas being piped to Thermopolis.

BUFFALO BASIN

This Basin, which is entirely surrounded by outcrops of Mesaverde formation, is about 15 miles northwest of Grass Creek and contains two structures, both of which have been proved to be producers of gas, the original well being drilled in the summer of 1914. The well at the southwest corner of Section 36 was not under control until about three months after it was drilled in. There are now six other gas wells in the field, said to be capable of producing about fifty million cubic feet of gas each, a small amount being piped to Grass Creek. The Texas well drilled on the east side of the Basin has been abandoned and the casing pulled.

GOOSEBERRY STRUCTURE

The Gooseberry Dome and the Gooseberry Anticline are situated about five miles southwest of the Buffalo Basin, and are likewise surrounded by the outcrop of the Mesaverde formation. These structures, however, are not productive, the Anticline having been drilled in 1916 to a depth of 2550 feet through the Frontier formation, but did not reach the Muddy sand in the Thermopolis shale in the SE $\frac{1}{4}$ Sec. 29-47-100. The Prairie Oil & Gas is drilling in NE $\frac{1}{4}$ Sec. 32.

SUNSHINE AND SOUTH SUNSHINE ANTICLINES

The south Sunshine Anticline is situated on Gooseberry Creek, mainly in Township 46 Range 101. This is a narrow symmetrical anticline, on which the beds on the upper part of the Morrison formation are exposed at the crest line. Sunshine Anticline is about seven miles long, pitching more sharply on the west limb than on the east, the Thermopolis shale outcrops on the crest of the structure. These are both mountainward folds, as the Gooseberry and Buffalo Basin Anticlines are situated between them and the Big Horn Basin. On the Sunshine Anticline in Section 22-46-101, the Midwest Refining Company drilled the first test on the structure. The well was commenced in January, 1920, and completed at a depth of 3565 feet in the spring of 1921. A small show of oil was obtained in the Embar formation but the production was not commercial and the well was abandoned. NW $\frac{1}{4}$ Sec. 22, Tp. 47, Range 101, Sunshine Basin, Abandoned at 3665' Drilled by Midwest. Sec. 22, Tp. 46, Range 101, South Sunshine Basin, Abandoned at 3565' show of oil. Drilled by Midwest. SE $\frac{1}{4}$ Sec. 29, Tp. 47, Range 101, Sunshine Basin, Abandoned at 2505' show of Black Oil, of water. Drilled by Washakie Oil Company

FOUR BEAR ANTICLINE

This is an anticline about ten miles long, lying about six miles west of the Sunshine and Pitchfork structures on Greybull River. The Mowry shale is the lowest formation exposed on the crest of the structure, much of the structure being covered by Tertiary beds and rocks of volcanic origin. While it is possible that a synclinal basin existed under the volcanic rocks west of the structure, which would have furnished a gathering ground for the accumulation of oil, the structure has not proven productive, as a well has been drilled on the structure by the Big Horn Development Company, to a reported depth of 1700 feet without obtaining production.

PITCHFORK ANTICLINE

This anticline is in the northeastern part of Township 48 Range 102, near Greybull River. It has a length of about three miles trending north and south. The Mowry shale is the lowest formation exposed on the structure. This structure has never been tested, and the Muddy sand in the Thermopolis shale can be reached at a shallow depth; beneath the Thermopolis shale being the Greybull sand, while the Embar and Tensleep are both within reach of the drill. At this time work has been commenced by the Big Horn Development Company, C.C. Landes, Manager, on a government permit, in Section 14, in preparation for a test of this structure. It is cut off from the Big Horn Basin by the Spring Creek Anticline, but if a syncline trough exists to the northwest, an accumulation of oil or gas might occur from that direction. In SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 14-48-102, well is shut down at 818 feet with show of gas at 780 feet.

SPRING CREEK ANTICLINE

This is a northwestward trending anticline, about twelve miles long, plunging to the southeast. The oldest rocks exposed belong to the upper part of the Mowry shale at the northwest end of the Structure. There is a possibility that the northwest end pitches to the northwest, but this information was not secured. The Peerless Oil Company in 1915 drilled a well in Section 4-48-101 to the depth of 2310 feet, without obtaining production. At present T.N. Clark et al. are drilling at a depth of 2750 feet in the NW $\frac{1}{4}$ Sec. 11-49-102 and T.C. Clark et al. are shut down at 3,000 feet in the NE $\frac{1}{4}$ Sec. 14-49-102.

FROST RIDGE

This dome, situated in the northwest part of Township 50 Range 101, has not been tested. It is a small structure, nearly circular in outline, the lowest rocks exposed being the upper part of the Mesaverde formation, which will involve a depth of approximately 3500 feet to the upper part of the Frontier formation, which for the small size of the structure does not make drilling attractive at the present time.

OREGON BASIN

Bulletin #15 from this office, by Ziegler in 1917, describes this field in detail, and can be obtained from the State Geologist. There are two structures, the south structure being situated near Elk Butte in the southwestern part of Township 51 Range 100, the north structure being about six miles north. There are two gas wells on the south structure, shut in, a pressure of 450 pounds dry gas, and a water well to a depth of 1960 feet in the NW¹/₄ of Section 30. The gas wells are controlled by the Oregon Basin Oil and Gas Company. The north dome is characterized by a fault running northeast and southwest across the anticline. Oregon Basin Oil and Gas Company, well #5, wet gas, depth 1660 feet, stands shut in with a pressure of 850 pounds, having been shut in since 1917. There is also a water well at the camp and a gas well 320 feet deep, pressure about 200 pounds. These wells could supply the town of Cody with gas, as that town is only about ten miles distant to the northwest. The Ohio is drilling now at a depth of 1200 feet on the W¹/₂ of Section 8, on the south side of the fault.

SHOSHONE ANTICLINE

This structure is about two miles east of the town of Cody, the outcrops being partially concealed by gravel beds along the Shoshone River. A number of wells have been drilled on this structure, some of them producing at the present time. Reliable information concerning all of these wells is not complete but it is believed that they have not reached a sufficient depth to fully test the structure, as the Greybull sand has probably not been tested. Several wells have been drilled off this structure. It is possible that a trough separates the north end of the structure from the south end, but this point was not determined. In SE¹/₄ Section 27-53-101, The Ohio Abandoned a dry hole at 2115 feet.

COTTONWOOD ANTICLINE

This structure, situated northwest of Cody, was drilled in the Summer of 1922, without obtaining production by the Union of California, in the S.E. ¹/₄ of Section 10-53-102, where they abandoned the well after drilling through the Amsden to 2053 feet and getting water.

SKULL CREEK STRUCTURE

This is situated about 15 miles northwest of Cody, along Skull Creek. The High Gravity Oil Company in 1920 drilled a well to a depth of 1900 feet without obtaining oil, gas, or water, at which time the rig blew down and the tools are reported to be lost in the hole. This structure may have possibilities for the accumulation of oil and gas, and has apparently not been sufficiently tested. Whether or not this anticline plunges to the north was not determined.

BADGER BASIN

This is a large structure situated in Township 57 Range 101, about twelve miles southwest of the Elk Basin Anticline. It is situated within the Northern Pacific land grant, approximately half of the lands belonging to the Northern Pacific Railroad, some of the lands included in first form withdrawal for irrigation purposes. These conditions have tended to retard the development of the structure, which commenced in 1917, some building and machinery being installed, but no drilling has ever been done. The Mesaverde formation is exposed on this structure, the dips on the sides being low and the structure covering a considerable portion of the township. Unless oil or gas should be encountered in some sands not productive in other parts of the field, it would be necessary to drill thru the Eagle and Cody formations to a depth of about 4000 to 4500 feet to test this structure, which has not yet proved sufficiently attractive.

ELK BASIN

This anticline is situated along the northern boundary of Wyoming in Ranges 99 and 100, and has been producing since 1916, during which year it produced over 720,000 barrels of oil, and up to the end of 1922 has produced 6,534,054 barrels, and is now producing about 2000 barrels per day.

the bulk of this production being obtained from the first and second Frontier sands, the first Frontier sand being a small producer in some parts of the field. The Midwest Refining Company operates 49 wells in 274 acres of productive land. In June 1920 they started a deep test well which reached the first Frontier creek sand at 1110 feet, the second at 1360 feet. At 2345 feet a gas sand was touched, and the well drilled itself in as the largest gas well in the State of Wyoming, producing by actual test 90,000,000 feet of gas, which is thought to be coming from the Greybull sand. Three other tests have been drilled to this sand, one by the Thompson-Elk Basin Company, and two by the Ohio Company. In this field, a test to the top of the Madison limestone is worth while, and this depth can be reached by a hole around 4500 feet. The strong gas pressure, however, will constitute a hindrance in reaching this depth.

LITTLE POLE CAT ANTICLINE

This structure is situated mainly in Sections 30 and 31, Township 57-89, about eight miles north of Garland. It has been tested by a well drilled by the Transark Company, a subsidiary of the Transcontinental Oil Company, 4400 feet in depth, which was stopped in the shale, but which encountered a gas sand at a depth of about 3600 feet, said to be capable of producing two million feet of dry gas per day. This well is now shut in.

POLE CAT STRUCTURE

This structure is also known as the Danker Anticline or McMahon Terrace, and is not believed to be a true anticline, but merely a structural terrace, but it hardly seems probable that the accumulation of gas in this field could be held captive without a reversal of dip or some other form of closure.

The upper beds of the Cody shale outcrop at the surface, and a mesa-verde hogback extends in a northwest-southwest direction, paralleling the axis of the structure.

The first well located Section 27-57-98, was drilled in 1915 and 1916 by the McMahon Oil & Gas Co. to a depth of 2272 feet, obtaining an open flow discharge of 2,500,000 cubic feet of gas per day, from the Frontier "B" sand. Well No. 2, is reported as being in Section 26-57-98, drilled to a depth of 2272 feet and reported as making a open flow discharge of 6,000,000 cu. feet of gas daily. This well could not be located in the field and may be abandoned.

Well No. 3, SE $\frac{1}{4}$ Sec. 21, was drilled in 1917 to a depth of 2948 feet, producing no gas and a strong flow of water, which may come from upper sands. Well No. 4, Sec. 16, was drilled by the D.J. Danker interests in 1918, the gas sand being reached at 2490 feet, producing a flow of 2,000,000 cubic feet of gas daily and having a rock pressure of 700 pounds. When visited by Sec. S. Miller of the U.S. Bureau of Mines, Sept. 27, 1925, the rock pressure was 600 pounds.

Well No. 5, drilled in 1918 by the Danker interests, made an open flow discharge of 400,000 cubic feet of gas per day from the "B" sand at 2580 to 2730 feet.

From the distribution of these gas wells it is probable that this will make a profitable gas field when there is more demand for gas, and when the production of other fields has been somewhat depleted. At present these wells are of small production when compared to those in that vicinity. Some of the gas from the well on Section 16 has been sold locally for drilling purposes. It is probable that this field will be tested to deeper sands, which would be approximately as follows: Thermopolis shale 3500, Greybull sand 3700, and Morrison sand 4000.

FRANNIE ANTICLINE

This structure is situated in the northwest part of Township 57 Range 97, six to ten miles northwest of the town of Cowley, and was drilled by the Big Horn Company in 1919 to a depth of 2374 feet, without obtaining production.

SAGE CREEK ANTICLINE

This is also known as the Cowley Anticline, as it is situated near the town of that name. This structure has been drilled by Julius Williams, but it is believed that this well does not constitute a thorough test of the structure, as it is reported to be drilled to a depth of only 1800 feet. Mr. C.W. Litten of Pittsburgh is preparing to commence a test to a depth of 2500 feet, and had a rig built and was reported to be ready to spud in, when the locality was visited in the early part of June. It is expected to cut the upper Frontier formation at a depth of about 2100 feet.

GARLAND ANTICLINE

The geology of the Byron and Garland Oil and Gas fields is fully described in Bulletin #14 of the State Geologist's Office, written by

Victor Ziegler in 1917, of which this office still has a number of copies for distribution. The Garland structure has been a big producer of gas for a number of years, its supply of gas however being somewhat depleted from its use in the Carbon Black Plant at Cowley. It is believed that this structure has never been completely tested, and the Producers and Refiners Corporation has started a well to test all the formations, which at this time has reached a depth of about 400 feet. The Allen Oil Company is also starting a deep test on lot 52, Township 56 Range 97. This company has oil in a forty acre tract on this lot, this oil being produced from the Peay sands. It has eight wells in this location with a combined production of about 100 barrels per day. On this tract the other sands are reported to be barren to the Muddy sand. Gas is being produced southeast of the river in Section 3, Township 55 Range 97, two gas wells having an estimated capacity of 25,000,000 feet, and a rock pressure of 400 pounds. The gas well in lot 52 has been exhausted and plugged, this gas having come from the Morrison sand. The California Oil Company is drilling at 3295 feet in gray shale, in NE $\frac{1}{4}$ sec. 10-55-97. The Producers and Refiners Wells in NW $\frac{1}{4}$ Sec. 30-56-97 was abandoned at 3123 feet.

BYRON DOME

This is a structure located between the towns of Byron and Garland, northeast of the Garland Anticline, and in common with that structure is believed not to have been fully tested. The northeast corner of the NE $\frac{1}{4}$ of Section 30-56-97, the Rocky Mountain Oil and Development Company, in connection with the Kinney Coastal Oil Company, has started a twenty inch hole with the intention of drilling 2700 feet. The original well drilled on this structure near the lake to a depth of 2590 feet, encountered water and sand at that depth. There have been four wells on the structure, as reported by Mr. Homer Hoskins, Occidental Oil Company, of which one is a commercial well of the Byron Union Company of Idaho Falls, Idaho. This well is shut in with a reported capacity of four million feet of gas, rock pressure 750 pounds. Mr. Homer Hoskins reports their #4 well not a commercial well, as it was drilled into the Peay sand near the fault, and it is their intention to test the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 14 in lot 5.

GYP CREEK

This structure is situated about ten miles north of Cowley, near the Wyoming-Montana boundary line. It is reported to have been drilled in 1917 by H.B. Richardson of Lovell and Associates, the result being a flowing water well.

CROOKED CREEK ANTICLINE

This is an anticline lying toward Prior Mountain in Township 58-95, on which the Red Beds are exposed, and which would be a black oil proposition if productive. It is reported that the Geyser Oil Company started a well on this anticline which it has abandoned.

LOVELL ANTICLINE

This structure is situated in the southeast part of Township 57-96, running close to the town of Lovell. A well has been drilled on this structure near the road from Lovell to Kane, reported to be 1200 feet deep, and is flowing water. A well 2300 feet deep, flowing a warm water carrying salsoda in solution, is also reported at a point two miles east and one mile north of Lovell. On January 1912 W.L. Armstrong completed a well to the Greybull sands, depth 1187 feet, without getting production, on Section 36-57-96.

IONIA ANTICLINE

This is also known as the Mormon Dome and is situated in the southeastern part of Township 57-95. It is a very small structure, and is cut off from the gathering ground of the Big Horn Basin by the Little Sheep Mountain Anticline, which makes it unlikely that the

structure will ever be commercially productive. The Cody shale and the Frontier sands outcrop on the structure, and the Muddy, Greybull and Embar are within reach of the drill. The Transark Oil Company, a subsidiary of the Transcontinental Oil Company, drilled to a depth of 2937 feet in the summer of 1923 and abandoned the well.

LITTLE SHEEP MOUNTAIN ANTICLINE

This is a structure about twelve miles long, running through Township 56-95 and 55-94, forming a very prominent ridge, on which all of the oil bearing formations in the Big Horn Basin are exposed, or are too near the surface for the accumulation of oil or gas. It has been tested and found barren of oil or gas.

ALKALI DOME

This structure is situated in the northeastern part of Township 54 Range 95, near the northwestern end of the Sheep Mountain Anticline. According to the information which we obtained on this structure, it was drilled two years ago by Mr. E.G. Lewis, who obtained black oil, probably in the Tensleep formation, at a depth of a little over 2000 feet. It is reported that the well was drilled deeper and water allowed to enter the oil sand. It is reported that another test will be made. A well was drilled by the Midwest in SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 24-54-95 and abandoned at 1122 feet.

SPENCE ANTICLINE

This is a small structure located in the northern part of Township 54 Range 94, lying between the Sheep Mountain Anticline and the Little Sheep Mountain Anticline, with a limited opportunity for the accumulation of oil. The Red Beds are exposed on the surface, and four wells have been drilled through them to the depth of 465-500 feet, yielding a small amount of black oil.

CRYSTAL CREEK ANTICLINE

This is an anticline with a curved crest, about six miles long, lying in the W $\frac{1}{2}$ of Township 54 Range 93, and being out of from the accumulation of large quantities of oil from the Big Horn Basin by the Sheep Mountain Anticline, as it lies between Sheep Mountain Anticline and the Big Horn Mountains. There are several wells on this structure, drilled to a depth of 500 to 900 feet about seven years ago, which are reported as capable of making eight to ten barrels each per day of black oil. They are, however shut in and not producing; but as this field is not far from the railroad, it is probable that it could be made commercially productive. C.W. Litton has recently installed a Star rig, and it is reported to have drilled to 1080 feet in SW $\frac{1}{4}$ Sec. 5-54-93 and to have abandoned the well at that depth.

ILO RIDGE (WAUGH ANTICLINE)

NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 12-44-97, well drilled by Producers & Refiners Corporation through Greybull sand, and abandoned at 2400 feet.
SE $\frac{1}{4}$ Sec. 1-44-97 well abandoned at 2055 feet.

DRY DOME

This is a small structure about five miles southeast of Torchlight Dome. It was drilled in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 2-50-92 by the Greybull Oil Co. and abandoned at 1900 feet, getting water in three sands.

RED DOME or REG DOME

A well in Sec. 35-55-95 being drilled by the Red Dome Oil Company is shut down at 785 feet.

HALF MOON DOME

This is a small faulted dome in Township 51-102. The lowest rocks exposed belong to the Mowry, with the lower part of the Mowry and the Thermopolis shale to be drilled to reach the Dakota

It has not been thoroughly tested; a well was drilled by the Flathead Valley B.C. Co. in 1916 to a depth of 250 feet, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 26-51-102 and abandoned.