

THE STATE OF WYOMING

Resume of the year 1927

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The year 1927 opened with heavy production of crude oil and gasoline from natural gas all over the Mid-Continent fields, the new Seminole Field in Oklahoma caused the oil market to become weak and districts such as the Rocky Mountain Region, that did not have the transportation facilities of the low freight rates that applied to the Mid-Continent region and some others, found themselves in a precarious state with much high priced oil in storage and a declining market.

Production was accordingly curtailed in the Rocky Mountain Region and especially in Wyoming's oil fields, the production from our State being particularly affected by the conditions in the other parts of the Nation. At Casper, Natrona County, is located the largest refinery in the whole Rocky Mountain Region, the plant of the Standard Oil Company of Indiana with a daily capacity of 55,000 barrels. The Standard Oil Company of Indiana had contracted for several years past with large European marketers of petroleum products for a large amount of the oil products production of this large refinery. This contract necessitated the shipping of solid train loads of sixty cars each of oil products from Casper, Wyoming to Baton Rouge, Louisiana, where the contents of the tank cars was placed on board tank ships and sent to European ports.

The cost of production was such that the gasoline that constituted a large part of these shipments, had to be sold delivered on board the tanker at Baton Rouge, for 11 cents per gallon. Even at this price, the return to the Standard Oil Company of Indiana was relatively small.

When the flood of low priced crude swept through the small refining districts of the Mid-Continent Region, the refiners there were able to contract gasoline delivery at Baton Rouge on board tanker for seven cents per gallon and as a result the large refinery at Casper was compelled to close down the major portion of its plant for a time. Due to intensive business drives for more trade, the Standard Oil Company of Indiana has now placed almost all of its big plant in operation again.

Thus the larger operators in the Wyoming oil fields were conservative in their field operations during the year 1927 and none of the larger companies made any attempt to develop new territory except where they were compelled to do so by the terms of their leases. It was generally considered that the best policy was one of conserving the oil and gas by retaining it in the sands, rather than bringing it to the surface with consequent losses through evaporation and leakage.

This policy was further strengthened by the report of the Conservation Committee of the Rocky Mountain District of the American Petroleum Institute, meeting in Casper January 27, 1927 at which meeting a general appeal to all oil operators to conserve their production to the utmost was made. It was noticeable throughout the year that this policy was carried out in nearly every instance.

In January, the Midwest Refining Company started producing from the new Lakota sand in the Salt Creek Field. This was done at first merely to keep up the production of the field because the lead lines from the wells had frozen, causing a general shutdown of the first and second Wall Creek sand wells, but later on it was decided to keep producing the Lakota sand wells on account of water troubles showing in some of the wells when shut in.

The Mosher interests found a shale well on the west side of the Salt Creek Field, in Section 20-40-79 that started to produce at the rate of 250 barrels daily from a depth of 2,100 feet. As this well is larger than many wells drilled to the regular sands in the heart of the Salt Creek Field, it would appear that the west side of the field still offers good prospective territory for wildcatting in the shale area. The oil will be discovered along fault lines that appear on the surface in a few instances but should be traced by well records in the main.

It appeared to the refiners of petroleum in Wyoming in 1927 that that year would prove a good one for the asphalt trade. Working on this theory, the Standard Oil Company of Indiana increased its runs of black oil by opening up the Hamilton Dome Field in Hot Springs County. The oil from this field was run to Greybull where the refinery there made it into asphalt.

The Producers & Refiners Corporation also enlarged their input of black oil by drilling some of the wells in the Hudson Field near Lander deeper and increasing the production of that field. This oil was then sent by tank car to Casper and then by pipe line from Casper to Parco to the refinery at the latter point.

Early in February, the Ohio Oil Company discovered a heavy flow of black oil in the Embar sand in the Oregon Basin Field. Various estimates were made as to the capacity of this well and such estimates range from 3,000 barrels to 28,000 barrels, but no adequate test has been made as the year closes. There is no doubt but that the well opens anew field of large proportions.

At Dutton Creek, in Carbon County, the Midwest Refining Company proved the productiveness of the Dutton Creek Dome by drilling and producing a well there. This structure was outlined by sinking shallow water holes to learn the undersurface geology.

The Carter Oil Company found a dry hole on Section 35-17-70, on the Horse Creek Dome, Laramie County. This well is located northwest of Cheyenne and on a defined structure but failed to find commercial production.

C. B. Shaffer and others purchased the wells and leases of the Warm Springs Field in Hot Springs County and the expectations are that the field will be producing in 1928 and the Alliance refinery at Thermopolis will be refining the oil.

Early in 1927, the Prairie Oil & Gas Company decided to move its offices from Cheyenne to Parco and completed the plan about the middle of the summer, the offices of the company are all located in Parco at this time. The Carter Oil Company appears to be withdrawing from Wyoming fields after more than ten years spent in development work. This company has sold all its holdings in the Maverick Springs Field in Fremont County to the Midwest Refining Company. The Carter Oil Company, however, still retains its productive territory in the Salt Creek Field and the gas wells in the Billy Creek Field of Johnson County.

The Margalexon Oil Company drilling on the outside of the withdrawn area of the Teapot Dome, strikes a commercial well in the shale about 2,000 feet. This well proves an area long held by many geologists to be oil bearing in the shale.

The United States Government advances its bond required on oil leases on Federal lands from \$1,000 to \$5,000. This advance is considered advisable in order to insure the proper abandonment of the dry holes.

In the spring of 1927, the New York Oil Company purchased the Central Pipe Line Company's pipe line from the Salt Creek Field to Casper. This line was originally laid to carry oil from the leases of the Texas Company and affiliated firms to the Texas refinery at Casper. The New York Oil Company cut the line at Teapot and used same to carry gas from the Teapot compressor plant to Casper.

The Wyomont Oil Company discovered a ten barrel well on Section 14-33-76 in a shallow sand in the Big Muddy Field. The depth of this well is 1,140 feet and it appears that this strike of shallow oil is worthy of further development.

The Producers & Refiners Corporation renovated the wells in the Torchlight Field in the Big Horn Basin, about five miles from Basin City, and the Company plans to drill a deep test some time in the future. The Torchlight oil is a very high grade crude found in lenticular sands at about 500 feet deep. It has long been supposed that the oil has migrated from some large mother pool in the deeper sands.

The Midwest Refining Company, The Ohio Oil Company and The Continental Oil Company have agreed upon unit operation of their holdings in the Elk Basin Field, Park County. In theory the method of unit operation should work to the benefit of the field and all concerned and the test of these companies in Elk Basin will either prove or disprove same.

The Continental Oil Company established a new record for deep well drilling in the Big Muddy Field when a well there was completed in seventeen working days. This well was drilled with a rotary and was equipped with the new differential drive.

The Midwest Refining Company and the Wyoming Gas Company started work on a gas pipe line from the Little Buffalo Basin Field in Hot Springs County to a connection with the Hidden Dome line near Worland. The work was completed in July and the line is now serving the towns in the central part of the Big Horn Basin and also the refineries at Greybull.

The Ohio Oil Company purchased the holdings of the Producers & Refiners on the Enos Creek Dome where the Producers & Refiners drilled a gas well several years ago. The Ohio Oil Company also took over the holdings of the Union Oil Company on the same structure, thereby obtaining control of the whole structure.

The Illinois Pipe Line Company started construction in May on an eight inch pipe line from the Oregon Basin Field to the Burlington Railroad at Cody. This line was laid to carry the oil from that field to the loading rack on the railroad. A four mile water line was laid by the Ohio Oil Company at the same time to furnish water for the Oregon Basin development.

Early in June it was apparent that many small operators were abandoning small producers in various fields of the Rocky Mountain Region because it was no longer profitable to operate same at the low market price for oil. Sunburst Field in Montana was the heaviest sufferer in this respect.

An electric transmission line from the Shoshone Dam above Cody, on the Shoshone River, was built to the Oregon Basin Field by a company formed by Big Horn Basin men, and this line is to furnish electric power for the development of the Oregon Basin Field. It is planned to build it farther down into the Big Horn Basin and eventually furnish power for the Grass Creek and other fields, also the cities and towns.

The Ohio Oil Company has purchased the wells and leases of M. Guiterman, a Cody oil operator. These wells and leases lie on the north bank of the Shoshone River east of Cody and find a small production of light oil in the shale at about 1,200 feet.

On the southeast extremity of the Elk Basin Field, the Local Oil Company found a local high and is developing a small pool there.

The Illinois Pipe Line Company made application to abandon its pipe line from the Pilot Butte Field to Riverton. The application was refused.

An explosion and fire at the Parco refinery of the Producers and Refiners Corporation resulted in the death of twenty-three men and the destruction of the cracking stills and battery at the refinery.

A gas pipe line to furnish natural gas to Salt Lake City is proposed. This line is to take gas from the Hiawatha and Baxter Basin structures and to carry same to Ogden and Salt Lake City, Utah.

The Anthills Dome was discovered by the Buck Creek Oil Company, a subsidiary of the Continental Oil Company. Oil production estimated good for 200 barrels daily was found in the Muddy sand at 3,946 feet on Section 25-37-63. The structure is thought to be rather small and is not expected to develop into a large field.

The Ohio Oil Company has secured by purchase the leases of the Enalpac Oil and Gas Company in the Oregon Basin Field. This deal transfers about 800 acres from the Enalpac Oil & Gas Company to the Ohio Oil Company.

The shale oil plant of the Wyoming Products Company at Green River started operation. This plant has the Trumbull process and has a capacity of 40 tons per day.

The Ohio Oil Company finds a gas well of commercial size on the Hiawatha Dome in Colorado, just across the Wyoming line. This well is expected to lead to a similar development on the Wyoming side of the line as the structure lies across the state line.

The Producers & Refiners Corporation has sold its royalty oil contract for the oil from State of Wyoming lands in the Salt Creek Field to the White Eagle Refining Company.

At the close of the year, the Navy Department took over the Teapot Dome under the Court decision. The Navy Department plans to shut in all wells on the Teapot Dome and hold same without production until such time as the Department may require the oil.

MARKETING OF OIL AND OIL PRODUCTS

During 1927, Wyoming oil products, made in Wyoming, have traveled to practically all parts of the globe. Wyoming made gasoline is driving autos on the streets of London, Paris and Tokyo, besides many other foreign cities. China takes a large proportion of our paraffine wax and Wyoming made lubricants make smooth the wheels of progress in every part of the world.

With the relative small population of about 206,000 people in Wyoming, it is necessary that our State must export our oil products to find a market. The refiners of Wyoming have therefore established markets for Wyoming gasoline in other States.

The competition from other oil regions has limited the market for Wyoming gasoline to adjoining states in the main. The California refiners market gasoline made from California crude oil in Nevada, part of Utah and Idaho. The California gasoline meets the Wyoming products in central Utah and in western Idaho. Montana does not use any California gasoline, but imports some from Wyoming to supply her needs over and above the amount produced at her refineries.

On the south, Mid-Continent refiners contend for trade in New Mexico and the southern part of Colorado, with stocks made from Wyoming crude oil. This condition also exists in northwest Kansas. Arizona takes only a very small portion of Wyoming gasoline, this State being covered by the California stocks.

Nebraska is being sought as a market by both the Wyoming refiners and the Mid-Continent refiners, up to the new year 1928, the Wyoming refiners have been able to sell this territory in spite of the efforts of the Mid-Continent refiners and the Wyoming refiners have sold on through Nebraska and in 1927 were selling in Iowa and Minnesota against the Mid-Continent shipments.

North and South Dakota have always been fertile markets for Wyoming gasoline and lubricants although North Dakota is now in competition between Montana and Wyoming refiners to some extent. The recent purchase of the Argo Oil & Refining Company's warehouses and filling stations by the Midwest Refining Company will, it is believed, do away with much competition against Wyoming products in Montana and North Dakota.

One refining Company of Wyoming has invaded the former California markets on the northwest Pacific coast. This company is now marketing Wyoming petroleum products in Oregon and Washington in successful competition with tanker shipments from southern California points. This same company is also exporting into Canada in spite of the long freight haul and the Canadian refineries.

Crude oil shipments outside of the State of Wyoming are relatively small compared to the total production. The Mule Creek and Osage fields ship practically all the oil produced to Canadian refineries for treatment. The Rock River and Lost Soldier fields export a portion of the production to Utah for refining and all of the LaBarge and Spring Valley field oil is also sent to Utah. Shipments from other fields were made in 1927, but these were more or less sporadic and only to fill a sudden requirement that would not be lasting.

OIL PRODUCTION TABLE - INDUSTRIAL

Wyoming crude oil production in 1927 totaled 20,961,939 barrels. The following table shows the output of both light oil and black oil by fields:

<u>Field</u>	<u>Black</u>	<u>Light</u>
Salt Creek	-	14,352,792
Big Muddy	-	1,071,130
Grass Creek	-	966,190
Elk Basin	-	349,530
Byron	-	21,800
Dallas-Derby	68,940	-
Dutton Creek	-	7,380
Ferris	-	22,110
Greybull	-	6,280
Hamilton Dome	323,170	-
Hudson	113,130	-
LaBarge	-	149,802
Lance Creek	-	264,170
Lost Soldier	-	1,326,020
Mule Creek	-	186,140
Notches	24,120	-
Osage	-	120,720
Pilot Butte	-	15,310

<u>Field</u>	<u>Black</u>	<u>Light</u>
Poison Spider & S. Casper Creek	219,920	-
Rex Lake	-	43,550
Rock Creek	-	971,730
Simpson Ridge	-	21,515
Teapot	-	315,990
Torchlight	-	500
Totals	749,280	20,212,659
Grand Total		20,961,939

WYOMING PIPE LINES

<u>Gas Lines</u>		<u>Size Pipe</u>	<u>Length</u>
<u>From</u>	<u>To</u>	<u>Inches</u>	<u>Miles</u>
Sand Draw	Riverton and Lander	4 & 6	48
Sand Draw	Casper	12	100
Oregon Basin	Cody	4	13
Byron	Powell	6	12
Elk Basin	Billings, Montana	8 & 10	65
Salt Creek	Casper	8	45
Casper	Glenrock	12	28
Lost Soldier	Casper	10,12,14	90
Hidden Dome	Greybull and Basin	8	35
Grass Creek	Thermopolis	4 & 6	34
Lost Soldier	Parco	8 & 10	33
Mahoney Dome	Rawlins and Parco	6 & 8	40
Eight Mile Lake	Parco	8	15
Baxter Basin	Rock Springs	6	22
Boone Dome	Junction	6	15½
Boone Dome	Powder River	4	2½
Ft. Collins	Cheyenne	4	40
Byron	Lovell	6	8
Little Buffalo	Greybull Line	8,12,14	74

OIL LINES

Pilot Butte	Riverton	3	29
Dallas	Wyopo	6	12
Derby	Dallas	4	4

WYOMING PIPE LINES - Cont'd

<u>OIL LINES</u>				
<u>From</u>	<u>To</u>	<u>Size Pipe</u> <u>Inches</u>	<u>Length</u> <u>Miles</u>	
Poison Spider	Casper	4	25	
Elk Basin	Greybull	6	64	
Oregon Basin	Cody	8	15½	
Grass Creek	Chatam	6	29	
Chatam	Greybull	8	50	
Hamilton Dome	Junction	6	14	
Grass Creek	Chatam	3	29	
Byron	Cowley	3	3½	
Elk Basin	Frannie	2	12	
Torchlight	Basin	2	5	
Warm Springs	Thermopolis	4	5	
Notches	Lox	2	4	
Bolton Creek	Casper	6	30	
Salt Creek	Casper	8	44	
Salt Creek	Casper	8	40	
Salt Creek	Casper	6	40	
Salt Creek	Casper	10	40	
Salt Creek	Casper	8	40	
Salt Creek	Casper	8	40	
Salt Creek	Casper	3	40	
Salt Creek	Casper	4	40	
Casper	Parco	6	105	
Casper	Big Muddy	8	20	
Big Muddy	Glenrock	6	2½	
Big Muddy	Glenrock	6	4½	
Brenning Basin	Ft. Fetterman	4 & 6	4½	
Lance Creek	Manville	2	19½	
Lance Creek	Lusk	6	25	
Mule Creek	Dakoming	3	14	
Osage	Clay Spur	3	7	
Rock River	Laramie	6	38	
Rock River Field	Rock River	6	8	
Rock River Field	Rock River	3	8	

WYOMING PIPE LINES- Cont'd

OIL LINES

<u>From</u>	<u>To</u>	<u>Size Pipe Inches</u>	<u>Length Miles</u>
Rex Lake	Hatton	6	3
Dutton Creek	Junction	5	4
Simpson Ridge	Walcott	4	7 $\frac{1}{2}$
Lost Soldier	Junction	6	20

FIELDS OF WYOMING

<u>Fields</u>	<u>Gravity</u>	<u>Number Wells</u>	<u>Date Discovered</u>
Ant Hills	-	1	1927
Buffalo Basin	-	1	1922
Big Muddy	35.5	188	1917
Bremming Basin	34	12	1910
Buffalo Basin (Park Co.)	-	7	1917
Byron	44.2	10	1917
Big Sand Draw	-	5	1918
Billy Creek	-	3	1922
Black Mountain	-	5	1922
Bolton Creek	28	5	1920
Boone Dome	-	6	1917
Circle Ridge	18	1	1922
Crystal Creek	17	4	1919
Dutton Creek	34	1	1926
Dallas	22.2	38	1904
Derby	22.2	4	1919
Dry Piney	48	3	1918
Eight Mile Lake	-	2	1923
Elk Basin	43	145	1917
Enos Creek	-	1	1921
Grass Creek	34 & 26.5	346	1917
Greybull	35	6	1918
Golden Eagle	-	2	1920
Hamilton Dome	26.7	27	1919
Hidden Dome	-	5	1918
Hudson	22.5	26	1916

FIELDS OF WYOMING - Cont'd

<u>Fields</u>	<u>Gravity</u>	<u>Number Wells</u>	<u>Date Discovered</u>
Hiawatha	-	2	1926
Iron Creek	32	3	1919
Kirby Creek	-	5	1919
La Barge	32	45	1919
Lance Creek	45	29	1919
Lost Soldier	32	73	1917
Lamb Dome	-	2	1917
Mule Creek	31.5	41	1919
Moorcroft	22	9	1916
Maverick Springs	21.5	24	1918
Medicine Bow	32	1	1923
Notches	22.5	3	1923
Oregon Basin	23	5	1917
Osage	41.6	89	1919
Pilot Butte	37.2	27	1917
Plunkett	45	4	1919
Pine Mountain	18	3	1917
Poison Spider	19.3	19	1917
Rex Lake	38	4	1923
Rock River	38.2	61	1919
Salt Creek	38.2	2125	1884
Simpson Ridge	23	7	1923
Spring Valley	32	29	1906
Teapot Dome	37	63	1922
Thornton	41	4	1917
Torchlight	41	15	1916
Warm Springs	20	30	1917

REFINERIES OF WYOMING

<u>Location</u>	<u>Firm</u>	<u>Capacity</u>	<u>Cracking</u>
Casper	Standard Oil Co. Ind.	50,000	Burton
Casper	The Texas Company	10,000	Holmes Manley
Casper	White Eagle	6,000	Holmes Manley
Parco	Producers & Refiners Corp.	10,000	Dubbs
Glenrock	Continental Oil Company	10,000	Burton
Greybull	Standard Oil Co. Ind.	14,000	Burton
Laramie	Standard Oil Co. Ind.	4,000	Burton
Osage	Osage Upton Oil Company	300	None
Osage	U. S. Oil & Refining Company	1,000	Cross

THE FOLLOWING REFINERIES ARE SHUT DOWN

Thermopolis	Alliance Oil & Refining Co.	1,000	None
Cowley	Continental Oil Company	3,000	None
Lovell	Allen Oil Company	600	None
Clay Spur	Clay Spur Refining Company	200	None
Lander	Wind River Refining Company	500	None
Riverton	Riverton Refining Company	1,000	None
Ft. Fetterman	Wyatt Oil & Refining Company	300	None

GASOLINE PLANTS IN WYOMING

<u>Firm</u>	<u>Location</u>	<u>Type</u>	<u>Gallons Capacity</u>
Midwest Refining Company	Salt Creek	Compression	60,000
Midwest Refining Company	Elk Basin	Compression	1,500
Ohio Oil Company	Grass Creek	Compression	6,000
Ohio Oil Company	Lance Creek	Absorption	6,000
Ohio Oil Company	Salt Creek	Compression	10,000
Garter Oil Company	Salt Creek	Compression	10,000
Producers & Refiners Corp.	Casper	Absorption	7,000
Producers & Refiners Corp.	Riverton	Absorption	1,000
Continental Oil Company	Rock River	Absorption	4,000
*New York Oil Company	Teapot Dome	Compression	1,500
*Standard Engineering Co.	Casper	Absorption	5,000

*These two plants will probably be shut down indefinitely, as they are operating on Teapot Dome gas.

CARBON BLACK PLANTS IN WYOMING

<u>Location</u>	<u>Firm</u>	<u>Capacity</u>	<u>Production Per Thousand Feet</u>	<u>Status</u>
Lance Creek	J. M. Huber Company	7,000,000	1.8	Operating
Cowley	Preston, et al	-	-	Shut Down
Golden Eagle	Wilson, et al	-	-	Shut Down
Riverton	Teton Gas Prod. Co.	6,000,000	1.8	Operating

PRODUCTION BY MONTHS

January	1,848,500
February	1,673,900
March	1,839,000
April	1,808,000
May	1,895,500
June	1,848,400
July	1,904,400
August	1,708,600
September	1,602,200
October	1,565,300
November	1,565,900
December	<u>1,464,600</u>
	20,724,300

FUTURE DEVELOPMENT

At the close of the year 1927, the fields of Wyoming, with the exception of Ant Hills, LaBarge, Hiawatha and Oregon Basin, were declining in production. The Great Salt Creek Field has passed its peak of production and in order to supply our refineries with the crude oil for their operation, new fields must be found. The incentive to find new fields has been lacking in the past two years, but the year 1929 appears as the beginning of a new period in Wyoming oil history.

Wyoming still presents great areas for the oil prospector. Up to now, the oil men have sought out those geological structures that were prominently displayed by Nature on the surface. Only recently has it been shown that there are structures lying under the surface that can be found by drilling shallow wells to determine the geology and then drilling to the productive sands with wells located by the information gained from the shallow wells.

Three great areas of the state offer possible oil development of this nature. The central part of the Big Horn Basin, the area north of the Platte River, between the Big Horn Mountains and the Black Hills, and the Red Desert country. These three areas are covered with Tertiary overlay that could well hide many fields as large as Salt Creek.

All the area along the east side of the Darby Fault in southwestern Wyoming offers excellent wildcat territory. At present the LaBarge Field is the only development of size in this area, but it seems very doubtful if LaBarge is the only petroleum deposit along this great fault.

Between the Granite Mountains along the north bank of the Sweetwater River and the south flanks of the Rattlesnake Range, there is a virgin area that has never had any wells drilled thereon. The surfacing is recent Tertiary or even Quarternary and there is very little if any surface evidence of petroleum structures.

Several of the small fields of Wyoming that have been idle for many years could be renovated with profit. The Moorcroft Field in Crook County, the Rocky Fork Field in the same County, Crystal Creek in Big Horn County and Big Hollow Field in Albany County, could produce black oil if handled efficiently. Brenning Basin, Plunkette, Shannon and Fossil would produce light oil if operated in the same manner.