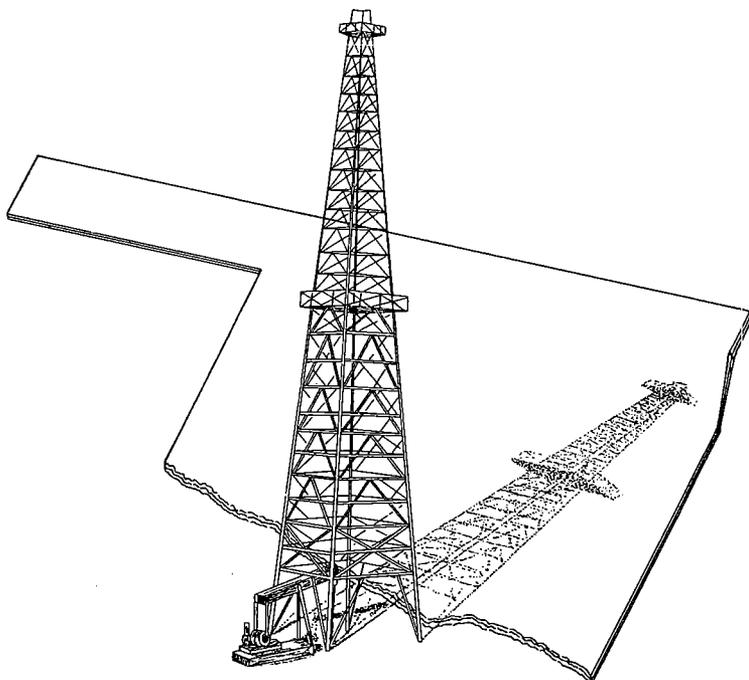


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THE MINERAL INDUSTRIES OF OKLAHOMA IN 1954 AND 1955¹

by

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Part 1

THE MINERAL INDUSTRIES OF OKLAHOMA IN 1954 FINAL ADVANCE SUMMARY

The total 1954 value of Oklahoma mineral production was more than \$661 millions, 2.5 percent less than the record 1953 value. Production of 19 minerals and mineral fuels was reported from 74 of Oklahoma's 77 counties. Crude oil, natural gas liquids, natural gas, coal, and cement were the five principal commodities in value. Mineral fuels continued as the dominant commodities among the State's mineral resources, accounting for 94 percent of the total 1954 value, followed by nonmetals with 4 percent and metals with 2 percent. The decline in Oklahoma crude oil production, the result of decreased allowables by the State regulatory agency, accounted for the major portion of the State's decline in mineral values.

MINERAL FUELS

Coal: The 1954 output and value of Oklahoma coal continued to decline for the 6th consecutive year. Production of 1.9 million tons valued at \$11.5 millions was reported by 56 producers in 14 counties. Okmulgee, Haskell, Rogers, LeFlore and Pittsburg Counties were the 5 principal producers, each reporting over \$1 million in value.

Natural Gas: Marketed production of natural gas amounted to 623 billion cubic feet valued at \$43 millions, 4 percent greater in quantity and value than in 1953. Production was reported from more than 4,000 wells in 54 counties, of which Texas, Garvin, Caddo, Grady and Oklahoma Counties led in the order named. The gas industry continued its search for more reserves in 1954 with 383 gas wells completed out of a total of 8,786 well completions of all types. Estimated proved recoverable reserves of natural gas increased in Oklahoma in 1954 to 12,396,148 million cubic feet according to the Committee on Natural Gas Reserves of the American Gas Association.

¹Prepared under cooperative agreements for the collection of mineral statistics between the United States Bureau of Mines, Department of the Interior, and the Oklahoma Geological Survey.

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TABLE I. MINERAL PRODUCTION IN OKLAHOMA, 1953-54

	1953		1954	
	Short Tons (unless other- wise stated)	Value	Short Tons (unless other- wise stated)	Value
Clays	577,557	637,082	452,050	1,282,848
Coal	2,183,009	12,628,887	1,877,164	11,450,700
Lead (recoverable content of Ores, etc.) ¹	9,304	2,437,648	14,204	3,891,896
Natural Gas Million Cubic Feet	599,955	41,397,000	623,200	43,000,000
Natural Gas Liquids:				
Natural Gasoline Thousand Gallons	433,650	28,066,000	440,614	28,122,000
LP Gases Thousand Gallons	414,036	14,886,000	508,191	19,627,000
Petroleum (crude) Thousand 42 gallon barrels	202,570	546,940,000	186,349	519,910,000
Sand and Gravel ¹	5,011,816	4,258,585	4,746,767	4,089,197
Stone (except Limestone for Cement & Lime)	8,455,916	7,886,658	7,928,522	8,240,294
Zinc (recoverable contents of Ores., etc.) ¹	33,413	7,684,990	43,171	9,324,936
Undistributed:				
Native asphalt, cement, gypsum, lime, pumicite, salt (common), ground sand and sandstone, sulfur, and tripoli	-----	11,754,532	-----	12,717,553
TOTAL VALUE OKLAHOMA	-----	\$678,577,000	-----	\$661,656,000

¹The production total of these commodities for the year 1954 will be compared with the Bureau of the Census total for this commodity when it is available. Differences in the totals will be adjusted or explained.

Natural Gas Liquids: Production of nearly 950 million gallons of natural gas liquids, valued at \$47.7 millions, was reported in Oklahoma in 1954, a 12 percent increase in quantity and an 11 percent increase in value over 1953. Natural gasoline and cycle products accounted for 47 percent of the quantity and 59 percent of the value with L-P gases the remainder. Estimated proved recoverable reserves of natural gas liquids in Oklahoma in 1954 were 334 million barrels, an increase of almost 30 million barrels over 1953 estimates.

Petroleum: Oklahoma crude oil production in 1954 amounted to 186 million barrels valued at nearly \$520 millions, a decrease of 9 percent in quantity and 5 percent in value from 1953. Crude oil production was reported from 57 of Oklahoma's 77 counties in 1954 with Stephens, Carter, Garvin, Osage and Seminole the leading producers. Of the 8,786 wells which were completed in Oklahoma in 1954, 5,417 were oil wells, 2,658 were dry and the remainder were either gas or service wells. Estimated proved reserves of crude oil in Oklahoma were reported at nearly 2 billion barrels, up 11 percent over 1953 estimates. There were 21 refineries operating in the State during 1954 with a daily aggregate throughput of 340,000 barrels.

NONMETALLIC MINERALS

Nonmetallic minerals produced in Oklahoma reached a new record value of \$26,330,000 in 1954, surpassing by nearly 8 percent the old record of \$24,527,000 established in 1953. Increased construction activity and new plants manufacturing diverse nonmetallic products accounted for the new production record. The net gain in nonmetals helped offset the 1954 decline in total Oklahoma value that resulted chiefly from lower production allowables of crude petroleum.

Commodities that established individual all-time high values in 1954 were cement, gypsum, clays, and ground silica, whereas sand and gravel closely approached the previously established record of 1953, and stone likewise was nearly equal to the earlier record set in 1952. In dollar value the leading nonmetallic commodity was cement, followed by stone, sand and gravel, clays, and gypsum. Seven miscellaneous nonmetals made up the remainder of the total.

New Developments

New plants were established, and at many older plants facilities were enlarged or hours of plant operation were increased to supply the expanding markets of 1954.

Two new permanent sand plants were established, one by The Dolese Co., north of Guthrie in Logan County, and another by The Southwest Sand Co. west of Snyder in Kiowa County. The Cookson Hills Stone Co. began production of dimension sandstone from quarries northeast of Muldrow, Sequoyah County, working laminated sandstone from the Atoka formation, which was dressed with mechanized equipment into finished slabs for ashlar construction of residence homes and business buildings. Production of a large tonnage of crushed granite for air base construction at Altus, Jackson County, was begun late in 1954 by the H. D.

Youngman Co. A new plant for the production of expanded shale for use as aggregate in lightweight concrete blocks was completed in October, 1954, by the Chandler Materials Co., near Tulsa, shale from the Senora formation near Catoosa being the raw material used. A new crushed limestone plant was in operation in Payne County by G. M. Baker. In May, 1954, a new carbon black plant was opened at Ponca City, Kay County, by a group headed by the Continental Oil Co. High-abrasion carbon black is produced in a plant costing \$2.75 millions.

Expansion of capacity of the Dewey Portland Cement Co. in Washington County was made during the year. The St. Clair Lime Co. began production of limestone from their new underground mine at Marble City, Sequoyah County, in the spring of 1954 and substantial shipments of lime were made to the newly opened calcium carbide plant of the Midwest Carbide Co. at Pryor. Working by room-and-pillar methods, the St. Clair Lime Co. produces high-purity limestone for chemical use from a 27-foot face in the upper part of the St. Clair limestone.

General gains continue to be reported for the new nonmetallic commodities—high-purity dolomite, expanded clay products, ground high-purity silica, bentonite, and sulfur—that have been put into production in Oklahoma since the end of World War II.

A significant report in the nonmetals field, "Lightweight aggregate from certain Oklahoma shales", by A. L. Burwell, was published as Oklahoma Geological Survey Mineral Report 24, September, 1954.

Commodity Review

Native Asphalt: Output of native rock asphalt (bituminous limestone and bituminous sandstone) was reported from Murray County in 1954. Production and value were greater than in 1953.

Cement: Plants in Pontotoc and Washington Counties reported a slight increase in cement production for a new record high in 1954. The Dewey Portland Cement Co., in Washington County, made several additions to its plant during the year.

Clay: Oklahoma clay production in 1954 was used primarily in the manufacture of brick and tile, and to a lesser extent in the manufacture of portland cement and light weight expanded clay products. Brick and tile was produced in 12 plants in Creek, Custer, Garfield, Greer, Oklahoma, Pittsburg, Pontotoc, Seminole, and Tulsa Counties. Bentonite was produced in Dewey County, and some fire clay production was reported from Pontotoc County. Expanded lightweight aggregate was made from clay in Oklahoma County and from shale in a plant newly established near Tulsa.

Clay sold or used in 1954, including clay used for cement, was 452 thousand tons, valued at \$1,283 thousand. This was a 101 percent increase in value but a 22 percent decrease in tonnage compared with 1953. A new record was set for clay value in Oklahoma in 1954.

Gypsum: An all-time high tonnage and value of gypsum was recorded in Oklahoma in 1954, in response to the higher demand for wallboard, plasters, and portland cement. All production was

from Blaine County, where 3 plants were in operation at Southard, near Watonga, and near Okeene.

Lime: A decrease in lime production in Oklahoma was reported for 1954, during the period of conversion from open-face quarrying to underground mining by the St. Clair Lime Co. in Sequoyah County.

Pumicite: The Dyer and Kite plant in Beaver County reported a slight decrease in pumicite production from that of 1953. Pumicite was used in the manufacture of hand soap, concrete, paints, and filters.

Salt: Output of salt increased in 1954. Three producers reported production from Beckham, Harmon, and Woods Counties for use principally as stock food and for recharging water softeners.

Sand and gravel: Production of sand and gravel was reported from 46 counties in Oklahoma in 1954. Johnston, Tulsa, Oklahoma, Muskogee, Murray, Pontotoc, and Kingfisher were the leading counties, accounting for 59 percent of the total value.

Most of the sand and gravel produced in Oklahoma was used for paving concrete, and mortar. Second in tonnage and value was glass sand, produced at three plants in the Arbuckle Mountain district.

Production of sand and gravel in 1954 of 4,747 thousand tons, valued at \$4,089 thousands, was down slightly below 1953's record-breaking production of 5,012 thousand tons, valued at \$4,259 thousands. A decline in road construction was largely responsible for the loss.

Ground sand and sandstone: For the fifth consecutive year production of ground silica made from high-purity glass sand showed an increase in tonnage and value. New grinding facilities were added in 1954 to the plant of the Pennsylvania Glass Sand Corp. at Mill Creek, Johnston County.

Stone: Oklahoma stone producers reported in 1954 nearly 8 million tons of crushed limestone, dimension granite, dimension sandstone, dimension limestone, crushed sandstone, and miscellaneous stone (chat). The reported value of \$8.24 millions was a 4 percent increase in value and a 6 percent decrease in tonnage compared with 1953. Production was reported from 28 counties with Tulsa, Comanche, Murray, Kiowa, Ottawa, and Atoka accounting for the majority of stone tonnage in Oklahoma. Twenty-seven of the forty-eight stone producers reported production of crushed limestone in 1954, which was used primarily for concrete and road construction.

Sulfur: A slight decrease in tonnage and value of sulfur, produced from waste natural gases by Joe L. Parker at Madill, Marshall County, was reported in 1954.

Tripoli: Tonnage of tripoli produced in Ottawa County showed a slight decrease over that produced in 1953.

METALLIC MINERALS

Mine production of lead and zinc in 1954 in Oklahoma recovered considerably from the marked decline in production experienced from June through December of 1953. Increased prices have stabilized the production of lead and zinc throughout 1954. This

stabilization was brought about by the Government purchase program for long term stock pile objectives and has helped to reduce metal stocks from nearly 200 thousand tons in January to less than 125 thousand tons in December, 1954.

Lead-Zinc: Crude ore production in Oklahoma increased 24 percent in 1954 over that produced in 1953, resulting in a 34 percent increase in recoverable lead to 14,204 tons and a 23 percent increase in recoverable zinc to 43,171 tons. Production of lead and zinc varied little during the months of 1954 and no strikes were reported within the state.

Base metal prices at the beginning of 1954 were quoted at 13½ cents per pound for lead and 10 cents per pound for zinc, same as ending prices of 1953. Prices started declining toward the middle of January until March when they picked up slightly with the rise in the London market and in anticipation of the Government Stockpile program. Lead prices reached a peak of 15 cents in October and continued throughout the year, while zinc prices reached their peak in September of 11½ cents and continued until the last of December when they ended the year at 11¼. Tri-State District of Oklahoma, Kansas, and southwest Missouri produced 4,092,278 tons of crude ore in 1954 compared to 3,454,980 tons produced in 1953. This increased production yielded 24,497 tons of lead concentrates containing 18,314 tons of recoverable lead and 127,053 tons of zinc concentrates (including 360 tons from old tailings remilled), containing 64,322 tons of recoverable zinc. Crude ore production in the District increased 16 percent in 1954 over 1953, lead concentrate recovery was up 29 percent, and zinc concentrate recovery was up 19 percent from that of 1953. Oklahoma accounted for 77 percent of the District's lead concentrates and 66 percent of its zinc concentrates. Kansas produced 22 percent of the District's lead concentrates and 31 percent of its zinc concentrates. Southwest Missouri was responsible for less than 1 percent of the District's lead concentrates and 3 percent of its zinc concentrates. The District's average zinc concentrate recovery was 3.10 and lead concentrate recovery was 0.60 for a combined lead-zinc recovery of 3.70 in 1954, compared to a combined lead-zinc recovery of 3.48 in 1953.

About 60 mines were operating in the Tri-State District in 1954; 5 in Southwest Missouri, 35 in Oklahoma, and 20 in Kansas. The Eagle-Picher Co. was the District's largest producer. The Indian Creek mine in Oklahoma began active production in 1954 and the Quick Seven operation in Southwest Missouri was closed permanently due to depleted ores.

Miscellaneous Metals

Cadmium, germanium, indium, and gallium occurred in small traces in the Oklahoma lead-zinc ore concentrates and were recovered from the flue and zinc dusts of zinc retort smelters and from the precipitate of zinc electrolytic smelters. These small amounts produced are not assigned state origin by the Bureau since their recovery is from the accumulated dusts and residues of ores from several states and foreign countries.

Smelters: Three zinc retort smelters in Oklahoma operated in 1954.

Table II.—Value of Mineral Production in Oklahoma by Counties,
1953 - 1954

COUNTY	1953	1954	PRINCIPAL COMMODITIES PRODUCED IN 1954, IN ORDER OF VALUE
Alfalfa	1	68,010	Sand and gravel, oil
Atoka	1	416,165	Stone, oil
Beaver	1,367,294	1,169,118	Nat. gas, oil, sand & gravel, pumicite
Beckham	25,635,864	17,469,593	Oil, nat. gas liquids, nat. gas, salt
Blaine	1	1	Gypsum
Bryan	2,513,135	1,724,042	Oil, sand & gravel, nat. gas
Caddo	14,531,362	12,461,066	Oil, nat. gas, nat. gas liquids, sand & gravel
Canadian	368,335	440,971	Oil, nat. gas, sand & gravel
Carter	64,854,229	60,234,451	Oil, nat. gas liquids, nat. gas, sand & gravel, stone
Cherokee	1	63,880	Sand and gravel
Choctaw	1	1	Stone
Cimarron	317,994	722,519	Nat. gas, oil, sand & gravel
Cleveland	6,532,446	6,475,826	Oil, nat. gas, nat. gas liquids, sand & gravel
Coal	2,541,155	2,332,919	Oil, stone, nat. gas, coal
Comanche	1,816,800	1,823,072	Stone, oil, sand & gravel, nat. gas
Cotton	5,419,571	5,096,069	Oil, nat. gas, sand & gravel
Craig	75,973	46,745	Coal, oil, nat. gas
Creek	26,487,014	27,372,263	Oil, nat. gas liquids, nat. gas, clay, sand & gravel
Custer	1	1	Clay
Delaware		1	Sand & gravel
Dewey		64,023	Clay, sand & gravel
Garfield	5,248,820	6,650,992	Oil, nat. gas liquids, nat. gas, clay
Garvin	58,929,618	60,237,907	Oil, nat. gas liquids, nat. gas, sand & gravel
Grady	8,802,398	8,564,864	Oil, nat. gas, nat. gas liquids, sand & gravel
Grant	2,554,722	1,308,265	Oil, nat. gas
Greer	112,376	108,089	Stone, clay, oil, sand & gravel

Table II. —Value of Mineral Production in Oklahoma by Counties,
1953-1954 (continued)

COUNTY	1953	1954	PRINCIPAL COMMODITIES PRODUCED IN 1954, IN ORDER OF VALUE
Harmon	¹	192,072	Nat. gas liquids, salt
Harper	¹	16,401	Nat. gas, oil
Haskell	3,288,924	1,909,156	Coal, nat. gas
Hughes	13,277,561	14,181,095	Oil, nat. gas, nat. gas liquids
Jackson	885,833	1,583,705	Oil, stone, nat. gas
Jefferson	2,735,795	2,385,255	Oil, nat. gas
Johnston	755,100	952,529	Sand and gravel, stone, ground sand & sandstone
Kay	9,802,965	11,740,099	Oil, nat. gas liquids, stone, nat. gas, sand & gravel
Kingfisher	1,061,367	1,383,499	Oil, nat. gas, sand & gravel
Kiowa	1,021,104	1,145,091	Stone, oil, sand & gravel, nat. gas.
Latimer	255,399	758,872	Coal, nat. gas
Le Flore	2,449,546	1,750,171	Coal, nat. gas, stone, sand and gravel
Lincoln	26,052,475	25,141,127	Oil, nat. gas liquids, nat. gas, stone
Logan	12,425,894	10,534,739	Oil, nat. gas, nat. gas liquids, sand & gravel
Love	465,041	474,613	Oil
McClain	7,505,241	6,534,968	Oil, nat. gas, sand & gravel
McCurtain	¹	¹	Sand & gravel
McIntosh	632,622	989,382	Coal, nat. gas, oil, sand & gravel
Major	3,681,553	3,285,235	Oil, nat. gas liquids, sand & gravel, nat. gas
Marshall	6,892,370	5,232,515	Oil, nat. gas liquids, sulfur, sand & gravel, stone
Mays	¹	8,462	Stone, sand & gravel, oil
Murray	1,711,842	1,845,493	Stone, native asphalt, sand & gravel, oil
Muskogee	904,244	1,219,361	Oil, sand & gravel, stone, coal, nat. gas
Noble	8,525,356	8,016,105	Oil, nat. gas liquids, nat. gas, sand & gravel
Nowata	11,068,791	11,653,048	Oil, stone, nat. gas, coal
Okfuskee	8,931,807	11,892,205	Oil, nat. gas, nat. gas liquids
Oklahoma	43,552,945	36,268,306	Oil, nat. gas liquids, nat. gas, clay, sand & gravel
Okmulgee	6,146,255	6,634,904	Oil, coal, nat. gas liquids, nat. gas, sand & gravel, stone
Osage	32,977,079	35,999,836	Oil, nat. gas liquids, stone, nat. gas

Table II. —Value of Mineral Production in Oklahoma by Counties,
1953-1954 (continued)

COUNTY	1953	1954	PRINCIPAL COMMODITIES PRODUCED IN 1954, IN ORDER OF VALUE
Ottawa	11,274,775	13,989,467	Zinc, lead, stone, tripoli
Pawnee	5,797,439	6,070,386	Oil, sand & gravel, nat. gas liquids, nat. gas
Payne	13,754,676	13,592,758	Oil, nat. gas, nat. gas liquids, stone, sand & gravel
Pittsburg	1,709,513	1,493,939	Coal, nat. gas, sand & gravel, stone, clay
Pontotoc	17,624,276	19,122,058	Oil, cement, nat. gas liquids, sand & gravel, nat. gas, clay, stone
Pottawatomie	13,910,446	12,492,770	Oil, nat. gas liquids, nat. gas
Pushmataha	¹	¹	Sand & gravel, stone
Rogers	3,690,317	4,523,783	Oil, coal, nat. gas
Seminole	32,802,074	31,473,618	Oil, nat. gas liquids, nat. gas, clay
Sequoyah	1,744,799	1,637,681	Coal, lime, stone, nat. gas
Stephens	95,226,639	65,653,844	Oil, nat. gas liquids, nat. gas, sand & gravel
Texas	18,406,324	22,810,710	Nat. gas, nat. gas liquids, oil, sand & gravel, stone
Tillman	583,937	623,209	Oil, sand & gravel
Tulsa	5,792,308	6,313,546	Oil, stone, sand & gravel, clay, nat. gas, coal, nat. gas liquids
Wagoner	520,264	741,491	Oil, sand & gravel, nat. gas, coal
Washington	15,477,262	15,706,606	Oil, cement, stone, clay, nat. gas
Washita	1,234,123	1,002,510	Oil, nat. gas
Woods	23,769	30,479	Sand & gravel, oil, salt, nat. gas
Woodward	¹	¹	Sand & gravel
Various	-----	108,307	Clay, stone
Undistributed	3,611,344	1,756,228	

¹Included with "Undistributed" to avoid disclosing individual data.

Part 2

THE MINERAL INDUSTRIES OF OKLAHOMA IN 1955

Preliminary Annual Summary

The total value of 1955 mineral production in Oklahoma was a record-breaking \$722.9 millions, 9 percent greater than in 1954 and 7 percent greater than the previous record established in 1953. In the new values mineral fuels accounted for 93 percent of the total, nonmetals for 5 percent, and metals 2 percent. Seventeen of the 19 minerals and mineral fuels produced in 1955 showed value increases over comparative figures for 1954.

MINERAL FUELS

According to the Mid-Continent Oil and Gas Association, 121 new oil and gas pools were opened in Oklahoma in 1955 compared with 155 in 1954. These new discoveries were reported in 33 counties. Lincoln County was the leader with 14 new pools, 9 oil and 5 gas, followed by Osage 11; Beaver 9; Garvin 8; and Grady and Noble 6 each.

Coal: Coal production in Oklahoma increased in 1955 to nearly 2 million tons, valued at slightly more than \$12 millions. Production was reported from 13 counties, of which Okmulgee County had the largest tonnage. Government coal purchasers for foreign aid were made from 8 Oklahoma mines, including the Cedar Creek mines at Stigler, Star and Blackstone mines at Henryetta, Bluebonnet mine at Checotah, the Sequoyah mine at Sequoyah, and the McNabb and Catoosa mines at Catoosa.

The McCurtain mine of the Lone Star Steel Company, one of the larger mines in Oklahoma, was closed by fire late in 1955.

Natural Gas: Marketed production of natural gas in 1955 was 665,000 million cubic feet valued at \$47 millions, 7 percent higher than in 1954. More than 50 counties reported production of natural gas. Texas County was the leading producer.

Natural Gas Liquids: The value of natural gas liquids produced in Oklahoma increased in 1955 to \$52 millions, 9 percent over the 1954 value. Natural gasoline accounted for 46 percent of the production and 60 percent of the value of natural gas liquids, with L-P gases responsible for the remainder. As of January 1, 1956, 68 natural gasoline and cycle plants were operating in the State and 3 plants were idle.

Petroleum: Production of crude oil in Oklahoma in 1955 increased 6 percent over 1954 to 197 million barrels. Oklahoma was the fourth largest oil producer in the Nation for the 10th consecutive year. Crude oil production was valued at \$567 millions which was 79 percent of Oklahoma's total mineral value in 1955. Production was reported from 55 of the State's 77 counties, of which Stephens and Carter Counties were the leading producers. In 1955, 21 refineries were reported active.

TABLE III - MINERAL PRODUCTION IN OKLAHOMA, 1954-1955

	1954		1955	
	Quantity	Value	Quantity	Value
Clays short tons	452,050	1,282,848	475,000	1,349,000
Coal short tons	1,877,164	11,450,700	1,900,000	12,179,000
Lead (recoverable content, etc.)short tons	14,204	3,891,896	15,000	4,470,000
Natural gas million cubic feet	623,200	43,000,000	665,663	47,000,000
Natural gas liquids:				
Natural gasoline thousand gallons	440,614	28,122,000	460,000	30,000,000
LP-gases thousand gallons	508,191	19,627,000	531,000	22,000,000
Petroleum (crude) thousand 42-gallon barrels	186,349	519,910,000	197,000	567,360,000
Sand and gravel short tons	4,746,767	4,089,197	5,400,000	4,815,000
Stone short tons	7,928,522	8,240,294	9,815,000	10,250,000
Zinc (recoverable content, etc.)short tons	43,171	9,324,936	40,570	9,963,000
Undistributed: native asphalt, cement, gypsum, lime, pumicite, salt (common), ground sand and sandstone, sulfur (recovered), tripoli.....		12,717,553		13,550,900
TOTAL VALUE OKLAHOMA		\$661,656,000		\$722,937,000

METALLIC MINERALS

Cadmium, germanium, indium: Several minor metals as cadmium, germanium, and indium occur in minute quantities in the lead and zinc ores of Oklahoma and are recovered in varying amounts from the flue dusts of the zinc smelting operations. It is impossible to assign the State origin of these minor metals, since their minute quantities in the ores preclude competent assay data and because the flue dusts from which these metals are recovered are the combined dusts of both domestic and imported ores.

Lead: There were 15,000 tons of recoverable lead valued at \$4.5 million produced in Oklahoma in 1955. This was 6 percent more in quantity and 15 percent more in value than 1954. Oklahoma was responsible for almost 76 percent of the lead produced in the Tri-State District in 1955.

Zinc: Mine production of recoverable zinc in Oklahoma decreased 6 percent to 40,570 tons in 1955 from 1954 output. This zinc was valued at \$10 million compared to 1954 value of \$9.3 million, an increase of 6 percent.

Uranium: Occurrence of radioactive mineralization has been reported from Custer, Roger Mills, and Washita Counties in Oklahoma in 1955.

Smelters: There were 3 zinc retort smelters operating in Oklahoma in 1955; the Bartlesville smelter of National Zinc Co., Inc., the Henryetta smelter of the Eagle-Picher Co. and the Blackwell smelter of American Metals Co., Ltd.

Tri-State District: Mine production in the Tri-State District of Southwest Missouri, Oklahoma, and Kansas amounted to 3,761,000 tons of zinc-lead ores which yielded 119,333 tons of zinc concentrates contained 63,588 tons of recoverable zinc and 26,880 tons of lead concentrates yielding 19,640 tons of recoverable lead. Zinc concentrates were valued at more than \$9.2 million and lead concentrates at over \$4.6 million. Oklahoma accounted for about 64 percent of the District's recoverable zinc and about 76 percent of the recoverable lead while Kansas was responsible for 36 percent of the District's recoverable zinc and about 24 percent of the recoverable lead. The Eagle-Picher Co. was the District's largest producer of ore followed by American Zinc, Lead and Smelting Co., and National Lead Co. A brief strike at the Eagle-Picher Co. operations idled production for 3 days in July.

Metal prices improved as 1955 progressed, zinc opened at 11.5 cents, East St. Louis on January 1, rose to 12.0 cents on April 6, then started a slow trend upward to 13.0 cents on September 6, at which price it held through December. Lead opened the year at 15.00 cents, New York, holding steady until September 23 when it rose to 15.50 cents at which price it closed 1955.

NONMETALLIC MINERALS

The estimated value of nonmetallic minerals produced in Oklahoma in 1955 was \$29.8 million, an all-time high for the State. The previous record of over \$26.3 million was established in 1954 and was nearly equaled in 1953, indicating that for the past 3 years the production of nonmetallics has shown a significant rising trend. Gains were shown for all nonmetallic minerals except pumicite (volcanic ash) and tripoli which approximated 1954 production totals. The net gain reflects increased activity in the construction field and in the glass industry.

Asphalt (Native): Output of native asphalt from Murray County in 1955 was greater in both quantity and value than in 1954.

Cement: Cement production in Oklahoma in 1955 established a new record as cement plants in Pontotoc and Washington Counties operated above rated capacities to supply an unprecedented highway and building construction demand for concrete. The Ideal Cement Co. announced a \$6.5 million expansion program at its Oklahoma Portland Cement Division operation at Ada, Oklahoma. The Dewey Portland Cement Co. reported increasing its cement storage capacity by 120,000 barrels with construction of 6 new "over the track" silos.

Clays: Production of clays in 1955 was estimated to be 475,000 tons valued at \$1.3 million, up nearly 6 percent in tonnage and 5 percent in value compared with 1954.

Gypsum: Output of gypsum increased in 1955 to establish new records of both quantity and value, as demand for building materials continued unabated. Blaine County accounted for all the State's output.

Lime: Lime production in 1955 increased over 1954 as demand for building materials continued. St. Clair Lime Co. in Sequoyah County remained the only lime producer in Oklahoma.

Pumicite (volcanic ash): Output of pumicite was reported from Beaver County in 1955. Production and value approximated that of 1954.

Salt: Salt was reported from Beckham, Harmon and Woods Counties by 3 producers. The 1955 output and value was slightly greater than 1954.

Sand and Gravel: Records for tonnage and value of sand and gravel in Oklahoma were broken in 1955, with estimated production of 5.4 million tons valued at more than \$4.8 million. The new totals surpass previous records set in 1952, 1953, and 1954. Increases were reported both in the number of plants and in the production per plant, in response to rising construction demands.

Stone: New records are indicated for production of stone in 1955, the estimated 9.8 million tons valued at \$10.2 million, representing a 20 percent increase in quantity and value above 1954. The most important commodities in this group are crushed limestone, chat, and dimension granite.

Sulfur: Sulfur was recovered from waste natural gases in Marshall County in 1955.

Tripoli: The 1955 output and value of tripoli produced in Ottawa County approximated the 1954 figures.