NPS Form 10-900-b
(March 1992)

OMB No. 1024-0018

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United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form

_X_ New Submission ____ Amended Submission

A. Name of Multiple Property Listing

Energy-Related Properties in Northeastern Oklahoma

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Energy Development in Northeastern Oklahoma, 1889-1930

C. Form Prepared by

name/title William Bryans, Oklahoma Preservation Survey, Dept. of History, Dianna Everett, OK SHPO

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city or town Stillwater state OK zip code 74078-0611

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (N/A See continuation sheet for additional comments.)

Blake Wade

Signature and title of certifying official

1 August 1997

Date

Oklahoma Historical Society, SHPO

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Beth Boland

Signature of the Keeper

10/1/97

Date

SECTION E: STATEMENT OF HISTORIC CONTEXTS

ENERGY DEVELOPMENT IN NORTHEASTERN OKLAHOMA, 1889-1930.

Introduction

From the first commercial oil well completed in Bartlesville to the collapse of Oklahoma City's Penn Square Bank and the energy bust of the 1980s to the daily monitoring of the price of crude on the future's market, Oklahoma and the oil industry have been intertwined. One historian has succinctly, and accurately, stated: "Oil and Oklahoma are synonymous."[1] Few states are so popularly identified with a single industry.

Moreover, it may be argued that no one section of the state of Oklahoma is as closely identified with the petroleum industry as the northeastern quadrant, which corresponds to the Oklahoma State Historic Preservation Office's Management Region #3. Once encompassing a major portion of Indian Territory and including part of the Cherokee and Creek nations, Osage Reservation, and other Native American lands, the region today encompasses Adair, Cherokee, Craig, Creek, Delaware, McIntosh, Mayes, Muskogee, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Rogers, Sequoyah, Tulsa, Wagoner, and Washington counties. It covers 14,204 square miles, or slightly more than 20 percent of the State of Oklahoma. Prior to statehood in 1907, it lay entirely in the northern half of Indian Territory. Here, much of the state's petroleum-related history unfolded, from the earliest recorded activity in 1889 to 1930, when most major oil fields in the region either closed or entered a period of decline.[2]

Early Developments

According to the Oklahoma Geological Survey, the first record of drilling for oil in what would become the state of Oklahoma occurred near Chelsea, in Rogers County, in 1889. The Cherokee Oil and Gas Company, operating under a lease from the Cherokee Nation, sank three small wells, ranging in depth from 36 to 120 feet. Production initially totalled between 5 and 10 barrels daily, but a lack of markets and transportation hindered development on a commercial scale.[3]

The Nellie Johnstone Number One in Bartlesville, seat of Washington County, is generally credited as Oklahoma's first commercial oil well. William Johnstone and George Keeler, two early settlers and promoters of the Bartlesville area, secured oil leases from the Cherokee Nation in 1895. After experiencing difficulty in attracting investors, they transferred their leases to the Cudahy Oil Company, which already had been active in petroleum exploration in other parts of Indian Territory. Under the guidance of experienced drillers McBride and Bloom, a well was "spudded in," or begun, on a bend of the Caney River late in January 1897. Evidence of oil at 1,320 feet prompted a decision to "shoot" the well, that is, to attempt to stimulate the movement of crude to the surface by dropping a nitroglycerin charge into the hole. On 15 April 1897, the well was shot, resulting in a shower of rock and debris that eventually subsided and yielded a daily flow of 50-75 barrels of oil. However, as was the case in Chelsea earlier, no sizeable market for the product existed so Cudahy capped the well. The Nellie Johnstone Number One, named for Johnstone's stepdaughter, proved that commercial exploitation was possible but it also underscored the fact that large scale production awaited the arrival of a transportation system by which oil could be transported to distant markets and refineries.[4]

By 1901 an extensive rail network helped resolve this dilemma. As early as 1873 the Missouri, Kansas and Texas Railway had built across Indian Territory in a north-south direction, essentially dividing Management Region #3 into eastern and western halves. As Indian Territory entered the twentieth century, the Katy, as this pioneer line was known, competed with other railroads in the region, including the Saint Louis and San Francisco; Chicago, Rock Island, and Pacific; and several smaller lines that often affiliated with the major carriers. The arrival of rails initially enabled crude to be transported to refineries in southeastern Kansas. Eventually, they stimulated sufficient production that refining and pipeline facilities emerged within the region.[5]

<u>Red Fork</u>

The first major strike in Region #3 occurred at Red Fork, just southwest of present-day Tulsa. It remains unclear just who should be credited with this discovery. Some contend that two local physicians, C. W. Bland and Fred S. Clinton, deserve credit, while others believe two experienced wildcatters, Jessie A. Heydrick and J. S. Wick, should be considered as founders. All, however, agree that a well was spudded in at what became the Red Fork Field on 10 May 1901. Just before midnight of 24 June, it penetrated a grimy lime at the 534 foot level, releasing a pocket of natural gas and oil that gushed 30 feet into the air. This discovery well, dubbed the Sue A. Bland Number One, fostered Oklahoma's first real oil boom.[6]

As a result of the find, the small farming community of Red Fork was transformed overnight. Word of the Sue A. Bland Number One spread quickly, and within 48 hours an estimated 4,800 people descended upon the town. Tents soon appeared wherever vacant land would accommodate them. By the Fourth of July, more than 1,000 representatives from a host of oil companies had descended upon Red Fork to buy and sell leases, as well as conduct other business associated with the boom.[7]

Despite this excitement, the Red Fork boom proved short-lived for several reasons. Many of the early wells in the area proved to be gassers, some producing upwards of 2 million cubic feet of gas daily. At this time, few markets existed for gas so it was typically "flared," or burned off, at the well head. A prominent Oklahoma City businessman, Charles Colcord, attempted to market the plentiful commodity by piping it to Tulsa where it could be used for lighting and heating. In doing so, Colcord and his associates laid the foundation for the Oklahoma Natural Gas Company. This, however, was not enough to sustain the boom. Low profits from the crude oil, coupled with difficulties in gaining title to oil properties in the wake of severalty following the 1887 Dawes General Allotment Act, further limited production. Within five years of its discovery, Red Fork was surpassed by newer and even bigger finds.[8]

The real importance of Red Fork came with the other activity that it engendered. The discovery received considerable national attention and, consequently, generated within the petroleum industry great interest in Indian Territory. More directly, it spurred the building of a road and pedestrian bridge across the Arkansas River, thus joining an already existing rail bridge to link Tulsa with the oil region to its south. Both spans helped transform Tulsa into the self-proclaimed "Oil Capitol of the World" as new fields came into production throughout Management Region #3.[9]

Although not related to Red Fork, another development in 1902 accelerated the pace of petroleum exploration and production throughout the region. As the Indian inhabitants began the transfer from communal land holding to individual ownership due to the Dawes Act, the Department of the Interior lessened its role in regulating, and objecting to, oil leases in Indian Territory. From the oil companies' perspective, this tremendously eased the conduct of business and they were quick to respond to the more relaxed climate.[10]

Cleveland Field

One result, for example, was the development of the Cleveland Field in Pawnee County. On 27 May 1904, the Minnetonka Oil and Gas Company spudded in a well on the "Uncle Bill" Lowrey farm just south of the small town of Cleveland. By working two-man crews in twelve hour shifts, the drilling rapidly progressed. Evidence of oil at various levels encouraged the drillers, W. J. Fellows and John Schnell, to continue sinking their hole deeper and deeper. In late June, only slightly more than a month after work began, they decided to

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shoot the well which already was spewing an estimated 750,000 cubic feet of gas into the air daily. This charge produced an initial flow of 250 barrels a day, drawn from two oil rich strata, the Cleveland and Kelso sands. After this prestigious inauguration, the well leveled at about 50 barrels a day. Nevertheless, a major oil field had been discovered.[11]

In the wake of the Uncle Bill Number One, several local residents formed the Cleveland Oil, Gas and Manufacturing Company to take advantage of the discovery. They, and others hoping to cash in on the boom, drilled in all directions from the discovery well but it soon became evident that the field lay south and west of the original strike. With this established, drilling continued apace and soon upwards of $1,500,000 was spent on developing the field, which by July of 1905 boasted over 220 wells producing some 11,000 barrels of oil daily.[12]

An old problem, however, came to haunt the Cleveland Field, the absence of a ready market for the crude and virtually no market at all for its natural gas. The absence of shipping facilities was, once again, to blame. Under these circumstances many producers simply stored the crude in open earthen pits, resulting in significant losses through seepage and evaporation. Natural gas was simply vented into the atmosphere. Late in 1904, the Prairie Oil and Gas Company extended its pipeline into the Cleveland Field and production was carried through it to shipping facilities in Red Fork. These improvements bolstered the price of oil properties in the area and assured a solid future for the field.[13]

The discovery of the field, of course, effected the surrounding area. The town of Cleveland, formerly a small settlement of less than 1,000 people, mushroomed into a boom town of over 7,000. Bank deposits locally increased by 75 percent. Within six months of the discovery, twenty-five new homes and several new business buildings were under construction. By 1915, the decline of the Cleveland oil field was evident but, more important in the long run of events, the Cleveland oil discovery sparked great interest in further exploration throughout Indian Territory.[14]

Glenn Pool

The next major discovery came with the discovery of the Glenn Pool, ten miles south of Tulsa in present-day Creek County. In the fall of 1905 Robert Galbreath and Frank Chelsey spudded in a well on the Ida Glenn farm. Results proved slow in coming. October and November passed with no signs of oil and, once the well reached the 1,300-foot level, Galbreath publicly announced the abandonment of the project. Although this was a ploy to discourage the army of sightseers, Galbreath and Chelsey did decide to drill only to 1,500 feet and then decide whether to consider their venture a dry hole. As the well reached this level, an oil stain appeared on the bit, followed by a gush of oil and gas that spewed high into the air. Once cased, the Ida Glenn Number One produced about 75 barrels of crude daily, thus ushering in the first giant oil field in Oklahoma history.[15]

The problem of transporting the newly discovered oil to market was encountered once again. However, the solution was fast in coming. Upon completion of the discovery well, the company began work on several storage tanks to hold the oil until a means of transporting it could be found. Then, in February 1906, the Prairie Oil and Gas Company, by now a subsidiary of Standard Oil, extended a two-inch pipeline from Red Fork to the Glenn Pool. From Red Fork, the crude traveled through a six-inch pipeline to a Whiting, Indiana, refinery. In an act symbolic of the line's importance, oil men welcomed the pipeline into Glenn Pool by christening its last link with a bottle of wine, even though liquor was outlawed in Indian Territory.[16]

Indeed, with transportation assured, the field developed rapidly. By the early summer of 1906, three producing wells were being completed daily. The original eighty-acre tract soon spread to cover almost eight thousand. All this helped propel Indian Territory, and the soon-to-be state of Oklahoma, into national prominence. By 1906, production exceeded over 18 million barrels throughout Indian and Oklahoma territories. The following year, as Glenn Pool expanded, output exceeded 43.5 million barrels and the new state of Oklahoma became the nation's leading oil producer.[17]

Developments attributable to the Glenn Pool account in large measure for this meteoric rise. The field was brought into production just as many Gulf Coast and Texas fields began to decline. This convinced southern operators to extend their pipeline networks northward into Oklahoma, thus all the more facilitating production in the region. Also, oil from the Glenn Pool proved rich in gasoline content and, accordingly, was easy to refine into excellent fuel oil. Because of the quality of the crude, large refining companies--such as Texas, Gulf and Standard--began to shift from processing crude for illumination and toward fuel oil and gasoline instead.[18]

By 1915, production at Glenn Pool began to decline. That year slightly less than 6 million barrels were brought to the surface. Nevertheless, the field had played a major role in the state's petroleum industry. It attracted an improved pipeline network, thereby opening new markets for Oklahoma oil. Its initial period of flush production catapulted the young state into the petroleum industry on a national scale. Finally, as occurred earlier, the fabulous discovery at Glenn Pool attracted even greater interest in, and capital for, exploration throughout northeastern Oklahoma.[19]

Cushing

The area around Cushing, a small agricultural community in far eastern Payne County, was among those receiving attention in the wake of Glenn Pool. Earlier attempts to uncover oil in the vicinity failed but in 1912, Thomas B. Slick, self-proclaimed "King of the Wildcatters," made a discovery that thrust Cushing and Oklahoma into the national spotlight.[20]

Before striking it rich, Slick secured leases on Indian allotment land in present-day Creek County that previously had been thought worthless. His attempt to attract investors in the areas' oil prospects collapsed after a 2000-foot well came up dry. Out of capital, and facing disaster, Slick borrowed a few dollars and traveled by train to Chicago in search of new backers. He found one in Charles B. Shaffer, who had made a fortune in the Pennsylvania oil fields and now presided over the firm of Shaffer and Smathers. With $8000 of Shaffer's money in hand, Slick returned to Oklahoma with renewed hope.[21]

In January 1912, the wildcatter secured a lease on the Frank E. Wheeler farm, one mile north of present-day Drumright and twelve miles east of the nearest town, Cushing. Drilling progressed in secrecy. On 12 March 1912, a gigantic oil-bearing sand was struck. Fearing that news of the discovery would create a rush of leasing in the surrounding area, and hoping to capitalize on the discovery to the maximum, Slick hurriedly wired Shaffer to send "lease trappers" to obtain leases on all the lands around the strike. He capped the well and spread dirt over the pools of oil that accumulated around it. In a final strategy to forestall a rush into the newly discovered field before he and Shaffer could obtain more leases, Slick traveled into Cushing and reserved, with cash, all the horses and buggies for hire there. Then, even if news of the discovery leaked out prematurely, the lease hounds would have no way of reaching the surrounding countryside.

On 1 April Slick and Shaffer made known publicly that their discovery well, Wheeler Number One, was producing 400 barrels of crude a day. The rush was on, as lease buyers and oil speculators flooded into the area and began drilling. By mid-summer, five oil supply companies operated out of offices in Cushing and numerous production companies could be found in the field. By December, 49 wells were producing in the area, 59 more were being drilled and another 80 awaited crews. Output that month totalled 8,500 barrels a day.

As the year 1913 began the Cushing Field quickly established itself as the nation's premier producer. In January 1913, some 20,000 barrels daily were drawn from the ground. Daily production eventually peaked in April 1915 at 300,000 to 330,000 barrels. This equaled two-thirds of the high-grade crude produced in all of North, Central, and South America. In its heyday, the Cushing Field supplied 90 percent of the existing refineries in Oklahoma and Kansas and attracted to the immediate area a dozen new refineries and several new pipelines. More than 40,000 barrels a day left the field through three of the largest pipeline companies pipelines and two hundred tank cars left Cushing with crude for distant markets.

On the strength of the prodigious Cushing Field, Oklahoma led the nation in oil production in 1915. Most came from the 1,056 wells in the Cushing Field which yielded slightly more than 49 million barrels that year. This represented 17 percent of all the petroleum sold in the United States. As the area of discovery fanned out to the north and south to include present-day Oilton, Pemeta and Shamrock, production continued to grow. As a result, in 1916 and 1917, Oklahoma was again the nation's leading oil producer. However, by June 1916, the field's once-spectacular production began to decline. Nevertheless, from 1912 to 1920, the Cushing Field dominated the nation's oil industry. Indeed, during that nine-year span, it provided no less than three percent of the world's petroleum supply.

Naturally, the phenomenal success of the Cushing Field impacted the surrounding communities. The town of Cushing, in Payne County and outside Management Region #3, received most of the attention because it enjoyed rail access.

The spectacular success of the Cushing Field forestalled exploration and discovery throughout the region until the end of World War I. Therefore, it was not until 1920 that the next major oil field came to light. This time, the center of attention shifted northward to the Osage Reservation, an area essentially encompassed in present-day Osage County.

Osage County and the Burbank Field

Interest in oil within the Osage Nation dated back at least to 1896. In that year Henry Foster signed a blanket lease with the Osage Council, giving him the right to "mine" petroleum and gas on 1.5 million acres of land over a ten-year period. In return, the Osage were to receive fifty dollars for each well drilled and a ten percent royalty on all oil produced. The lease served as the foundation for the Phoenix Oil Company, which promptly drilled two dry holes and a small producer. By this time Henry Foster had died and his brother, Edwin B. Foster, oversaw operations. With little immediate success because of the chronic problem of transportation and a lack of market for its production, the Phoenix Oil Company ceased operations late in 1896.[22]

Five years later, Foster initiated another extensive exploration program in the Osage Nation, this time under the banner of the recently organized Indian Territory Illuminating Oil Company, a predecessor of Cities Services. By 1905, numerous small pools had been brought into production, including the Skiatook, Barnsdall, Hominy, Pawhuska, Avant, Wiser and Okesa. While not as spectacular as Glenn Pool or Cushing, these discoveries convinced many operators that plenty of oil lay beneath the Osage Nation. The only problem was that Foster enjoyed exclusivity under his blanket lease.[23]

A harbinger of change was the 1906 Osage Agreement, Foster's attempt to renegotiate. Under its terms, the Osage tribe retained ownership of its mineral wealth and collected all royalties. This contrasted markedly with the Indian allotment leases that were more common elsewhere in the former Indian Territory; many of these leases enabled oil men to cheat allottees who were basically unfamiliar with Euro-American laws and business practices.

In 1915, the Department of the Interior finally revoked the Indian Territory Illuminating Oil Company's exclusive lease. Thereafter, competition for leases increased and, consequently, so did the prices they commanded. The Osage disposed of leases by auctioning them at regular intervals in all-day affairs beneath a huge elm tree outside the Council House in Pawhuska. On a single day in June 1924, the auction netted $10,880,000 worth of leases, most of that sum representing bonus payments. These, together with all royalties, were collected by the Council and distributed annually to enrolled members of the nation on a per capita basis. Headright payments reached as much as $12,400 in 1923 and were the major source of income for most Osage.[24]

The Burbank Field ultimately became the leading producer in the Osage Nation. After World War I, and as America entered the automobile age, a number of major oil firms secured leases on the western fringes of Osage County. Credit for discovering what became the Burbank Field belongs to E. W. Marland, noted Oklahoma oil man and politician. In May 1918, the Marland Oil Company brought in a well on the Bertha Hickman farm, located in the SE 1/4 of Section 36, Township 27 North, Range 5 East of the Indian Meridian. The rig tapped the petroleum-rich Bartlesville sand at 3,000 feet, setting off a flurry of activity. Drilling fanned out in every direction from Marland's find but it soon became evident that the main field extended north. By June 1922, over 100,000 acres of the area were under lease.[25]

The Burbank Field soon developed into one of the state's leading producers. Over 134,000 barrels were brought to the surface during its first year of operation and in 1921 production reached almost 5 million. The following year, the volume skyrocketed to over 24,230,563 barrels, peaking in 1923 at 26,206,741. By 1930, two thousand wells, scattered over a thirty-three square mile area, were tapping petroleum from six producing horizons. Although entering a period of decline, the Burbank Field had by then returned almost $286 million to producers on an investment of about $78 million. For their part, the Osage had collected more than $45 million in royalties.[26]

Smaller Pools and Fields

Burbank was the last major discovery in Region #3. While historians of the petroleum industry tend to focus on such monumental finds, to do so overlooks the development of smaller fields and pools which contributed to the region's oil-related history through 1930. Many of these resulted from the general exploration and speculation spurred by the better-known discoveries.

In this narrative, the history of these smaller fields and pools will be related on a county-by-county basis. Also, it should be noted that five counties in Management Region #3 failed to produce petroleum prior to 1930 -- Adair, Cherokee, Delaware, Ottawa and Mayes. The latter, however, hosted a major refinery.

Craig County experienced little petroleum activity during the period under consideration. In 1914, the Kansas-Oklahoma Oil and Gas Company opened the Weimer Field, the only notable discovery in the county. Although penetrating seven different horizons, the firm was only able to sustain a daily production of 20 barrels of oil and up to 3 million cubic feet of gas.[27]

Many of the smaller finds in Creek County stemmed from extensions of the Cushing and Glenn Pool fields. The Drumright, Shamrock, Pemeta, Markham, Oilton and Olive pools, for instance, were all considered part of the Cushing Field. Similarly, the Sapulpa Pool, opened in 1909, and the Kiefer Pool, opened one year later, developed as extensions of the Glenn Pool. J. J. Curl of Bartlesville drilled the first well in the Bristow Pool in 1905 but abandoned the hole at the 1,000 foot level. One year later, Mattson, Barnes and Freeland brought in a gas well which soon supplied the town of Bristow with fuel. The community also took advantage of another gasser opened in 1907 which produced up to 1 million cubic feet of gas a day. In 1915, the town of Mounds likewise took advantage of the discovery of a pool bearing its name. That same year, the Aiko Oil Company uncovered the Kellyville Pool. Its seven producing horizons daily yielded 50 to 200 barrels of crude. Finally, yet another pool in Creek County entered production in 1922 with the discovery of the Mannford Pool, whose initial production was 1,000 barrels of oil a day.[28]

Four minor pools in McIntosh County contributed to the area's production prior to 1930. All, in fact, were discovered prior to World War I. The first well in the county was sunk near Eufaula and yielded minor amounts of oil and natural gas. The Gladys-Belle Oil Company developed the Quapaw Pool in 1912, which proved to be primarily a gas pool capable of producing up to 5 million cubic feet a day. The Gundrich Oil Company tapped three producing horizons in the Kusa Pool in 1914. Oil from it flowed at the rate of 400 barrels a day. That same year, Sinclair and White drilled the first well in the Stidham Pool. Twelve years later, the Simpson Fell Oil Company started deep drilling in the Stidham Pool.[29]

Muskogee County also experienced only minor activity during this period. Pools discovered by 1930 included the Boynton (1914), Haskell (1909), Council Hill (1919), Jolly-Patton (1920), Summers (1914), Timber Ridge (1910), Keefeton (1925), Terra-Oklahoma (1919), Transcontinental (1918), Wainwright (1910), and Yahola (1914). Of these, the Boynton Pool, discovered by H. H. Galbreath, created the most excitement. Its discovery well produced up to 10 million cubic feet of gas a day. Credit for opening the Council Hill Pool belongs to the Prairie Oil and Gas Company, whose initial well was completed in April 1911. Timber Ridge originally produced 800 barrels of crude daily but, by 1930, had slumped to only 20 barrels. The Gladys-Belle Oil Company opened the Yahola Pool which primarily produced natural gas, upwards of 40 million cubic feet a day.[30]

Beyond the pioneering activity around Chelsea, Nowata County contained several pools brought into production by 1930. In 1904, for example, the Bearea Oil and Gas Company opened the Lenapah District, a minor producer of 500 barrels daily. Between 1905 and 1906, the Coody Bluff-Alluwe-Chelsea District was among the most active pools in what was soon to become Oklahoma. All of the nearly 1,500 wells drilled in the district yielded some oil but never enough to make it into a giant field. Drilling in the Delaware-Childer Pool began in 1908 and, within two years, over 475 wells were active. By 1916, however, the pool had been virtually exhausted. Other, lesser pools found in Nowata County included the Elliot (1909), Adair (1911) and South Coffeyville (1915).[31]

The discovery of the Paden Pool in 1914 marked the beginning of petroleum production in Okfuskee County. The Prairie Oil and Gas Company sank its discovery well, which initially yielded 25 barrels of oil and 7 million cubic feet of gas a day. In 1920, Dr. J. J. Deaner of Okmulgee opened the Deaner-

Clearwater Pool. Although small, it enjoyed a tremendous success rate, as all 50 of its first wells produced either oil or gas in paying quantities. Dr. Deaner, in fact, used his profits to open a dental clinic. The Riverland Oil and Gas Company was also an active developer of this pool. Other less notable pools in the county were Garrison (1922), Josey (1923), North Baltimore (1920), 32 Okemah (1921), Okfuskee (1917) and Weleetka(1913).[32]

In Okmulgee County, exploration and discovery was relatively extensive. In 1906, the Okmulgee and Lucky pools were opened, paving the way for the leasing of Indian allotments in the county. Indeed, the dissolution of Indian Territory into the State of Oklahoma launched a flurry of petroleum activity. In 1907, the Tulsa Fuel and Manufacturing Company uncovered the Morris Pool with a well that flowed at a daily rate of 5,000 barrels of crude. One year later, Joe Burns and Lou Canton discovered the Bald Hill Pool. The year 1910 proved especially productive in discovering new Okmulgee County pools. In that year, the Smith and Swan Oil Company sank the first well in the Coalton Pool, known as the "picnic well" because of a company picnic held on the site on the day of discovery. The Henryetta Pool was also opened in 1910 and contributed to the county's oil and gas production. By 1913, a total of 471 wells dotted the pool. Other pools discovered through 1910 included the Schulter (1907), Tiger Flats-Turkey Pen Hollow (1908), Preston (1909) and Salt Creek-Gypsy Hill (1910).

The rapid pace of discovery in Okmulgee County continued through 1920. Over 40 wells were drilled in the Beggs Pool in 1910-1911, and it remained an active producer through 1919. The Sterling Oil and Gas Company opened the Hoffman Pool in 1917 and, two years later, H. F. Wilcox uncovered a pool and a producing horizon that bears his name. In 1920, Oklahoma Natural Gas and the Olean Petroleum Company joined to bring the Olean Pool into production. Other Okmulgee County pools discovered between 1910 and 1930 included the French (1912), Natura (1914), Youngstown (1915), Hector (1918), Spencer (1917), 13 Phillipsville (1920) and Pollyanna (1921).[33]

While the giant Burbank Field dominated Osage County, other pools and fields were brought into production by 1930. The Indian Territory Illuminating Oil Company opened the Pershing Pool in March 1917. Within two years, the Carter Oil Company brought in a well there that initially produced 5,500 barrels daily and leases sold for upward of $40,000 for a quarter section. The Pawhuska Pool entered production in 1917 with the New England Oil and Pipeline Company's discovery well. Not long afterwards, the Marland Oil and Refining Company paid a then-record $620,000 for a 160-acre lease in the pool. The Marland firm also played a role in opening the Petit Pool in 1919. Leases for its productive oil and gas lands sold for $100,000 to $150,000 per quarter section. Smaller pools were also discovered in the 1910-1920 period, including the Hominy (1916), Myers Dome (1916), Gilliland (1919), Nelagoney (1917), Pearsoma (1919), South Elgin (1915) and Wynona (1917).

During the 1920s several larger fields were also brought into production within Osage County. The Tidal Oil Company is generally credited with developing the Frankfort Pool beginning in 1921. That same year, the Madalene and Prue fields were brought into production. The latter contained some of the county's largest gas wells. In 1922, the Foraker Field was uncovered and, two years later, the Atlantic Oil Company opened the Atlantic Pool. All these new pools and fields combined with the Burbank Field to make Osage County an important center of the Oklahoma petroleum industry through 1930.[34]

The Cleveland Field was Pawnee County's most prolific producer, but it was joined by several pools during the period under consideration. A man named J. M. Critchlow opened the Ralston Pool in 1909 and Charles Page drilled the discovery well for the Lauderdale Pool in 1915. The latter primarily produced natural gas. Partners, simply known as Pomeroy and Hamilton, uncovered the Keystone Pool in 1919 and, in 1922, the Turner Investment Company initiated the Hallet Pool with a well on the McMillan farm. All these were joined by the discovery of other pools, including the Terlton (1912), Morrison (1917) and Maramee (1920).[35]

Rogers County experienced limited petroleum activity prior to 1930. The Catoosa Pool, opened in 1913, became its major gas producer with a daily capacity of up to 15 million cubic feet. The Claremore Pool emerged in 1904 as its premier oil find, yielding 20 to 60 barrels of crude daily. Other pools in the county included Oologah (1906), Vinita (1910), Talala (1913), Inola (1913), 36 Sageeyah (1920) and Taneha (1923).[36]

Petroleum production was extremely limited in Sequoyah County. Indeed, the Webbers Falls-Muldrow-Vian District was the only significant find prior to 1930. A major gas pool, it initially yielded 3.5 million cubic feet daily.

The Red Fork strike generated a great deal of interest in present-day Tulsa County and, consequently, new areas were brought into production. The Jenks, Broken Arrow and Tulsa pools opened in 1901 as extensions of Red Fork. Over 1,000 wells covered the Bird Creek-Flat Rock Pool shortly after its 1906 discovery but it only yielded several hundred barrels of crude daily. Charles Page, local businessman and philanthropist, developed the Sand Springs Pool in 1916. Much of its production benefitted the Sand Springs Orphanage. Close to the growing city of Tulsa -- the self-proclaimed "Oil Capitol of the World" --

emerged the Bruner-Vern District and Country Club Pool. The Shaffer Oil and Refining Company uncovered the former, while the Munn Brothers are credited with discovering the latter. The Collinsville Pool covered a 25 square mile area and supplied gas to nearby zinc smelters. Other pools in the county included the Bixby (1916), Sperry (1919), Turkey Mountain (1922) and Sunray-Oakhurst 17 (1925).[37]

In Wagoner County, a dozen pools had been developed by 1930. One of the first was the Coweta Pool with an initial daily production of 700 barrels. The Mission Oil Company lent its name to the Mission Pool upon its discovery in 1914. In 1915, Wilson-Rhodes and Gillispie opened the Redbird Pool, a gas producer. The same year, B. C. Goble discovered the Stone Bluff Pool. Then in 1919, the Okay Pool was developed on the Maney Brothers Ranch and became a producer of high grade lubricating oil. Other pools brought into production in Wagoner County during this period included the Oneta (1916), Webster (1917), Stryker (1917), Seltzer (1923) and Gillette (1924).[38]

Washington County, of course, was the site of Oklahoma's first commercial oil well, the Nellie Johnstone Number One. By 1904, this pioneer well was one of more than a hundred in the Dewey-Bartlesville Pool. When statehood in 1907 formally created the county, it also hosted the Canary-Caney Pool, a gas field, the Copan Pool and the Hogshooter Pool. The latter was one of the largest gas fields in the state and supplied fuel to zinc smelters in Bartlesville, Dewey and Miami. By 1930 other pools discovered in Washington County included the Ochelata (1910), Ramona (1911), Vera (1915) and Oglesby (1919).[39]

Conclusion

Despite the numerous small discoveries throughout Management Region #3, the petroleum industry began a period of decline in 1930. By that year, production in many fields and pools declined, stabilized or, in some cases, entirely ceased. Still, the petroleum industry had by then exerted a profound impact on the region's history in a number of ways. The fabulous Red Fork, Glenn Pool, Cushing, Cleveland and Burbank fields helped make Oklahoma one of the nation's leading oil producing states. In the process, these discoveries attracted considerable capital into an otherwise economically underdeveloped area. This obviously included not only the oil and natural gas coaxed out of the ground but also the auxiliary enterprise associated with the petroleum industry -- pipelines, refineries, petrochemical plants, railroad spurs, supply houses and thousands of retail establishments in oil dependent towns. Indeed, the petroleum industry played a significant role in town building. Some communities proved to be short-lived boom towns, others became permanent additions to the landscape. Tulsa, on the basis of housing the corporate offices of many firms, proclaimed itself the "Oil Capitol of the World." Even the region's earliest inhabitants were effected. Much of the early exploration in Indian Territory occurred under the auspices of the sovereign Five Civilized Tribes. In the early twentieth century, allotment shattered Indian self-determination and consequently facilitated petroleum development, often at the expense of Native Americans. The Osage were, of course, the exception. By retaining tribal ownership of its mineral wealth, the Osage converted the oil of the "underground reservation" into an important source of community revenue. In all these ways, the petroleum industry shaped northeastern Oklahoma between 1889 and 1930.

ENDNOTES

1. Kenny A. Franks, The Oklahoma Petroleum Industry (Norman: University of Oklahoma Press, 1980), xiii.

2. For overviews of Oklahoma's oil history see: Franks, The Oklahoma Petroleum Industry; C. B. Glasscock, Then Came Oil: The Story of the Last Frontier (Indianapolis: Bobbs-Merrill Co., 1938); Carl Coke Rister, Oil! Titan of the Southwest (Norman: University of Oklahoma Press, 1949); Charles E. Bowles, "Oklahoma Petroleum--An Industrial Survey", in Oil and Gas in Oklahoma, Bulletin 40, Volume 1 (Norman: Oklahoma Geological Survey, 1928), 79-99; and, Kenny A. Franks, "Oklahoma Oil" in Drill Bits, Picks, and Shovels: A History of Mineral Resources in Oklahoma, edited by John W. Morris (Oklahoma City: Oklahoma Historical Society, 1982), 11-48.

The specific energy-related history is capsulized in George O. Carney, et al., "Historic Context for Energy Development: Management Region #3, 1897--1930", submitted to State Historic Preservation Office, Oklahoma Historical Society, Oklahoma City, 1987. This document serves as the foundation of the narrative.

3. Bess Mills-Bullard, "Digest of Oklahoma Oil and Gas Fields," in Oil and Gas in Oklahoma, 1:129.

4. Carney, "Historic Context for Energy Development", 4; Elmer Stark, The Nellie Johnstone Well No. 1 in Oklahoma (n. p., 1972); Washington County Historical Society, Oklahoma's First Commercial Oil Well: Nellie Johnstone No. 1 (Bartlesville: Washington County Historical Society, 1981); Kenny A. Franks, et al., Early Oklahoma Oil: A Photographic History (College Station: Texas A&M University Press, 1981), 19; Glasscock, Then Came Oil, 115-19.

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5. A brief sketch of railroad building in the region can be found in Oklahoma Historic Preservation Survey, Department of History, Oklahoma State University, "Resource Protection Planning Project: Transportation in Oklahoma to 1920, Region Three", Submitted to State Historic Preservation Office, Oklahoma Historical Society, Oklahoma City, 1986, 14-17.

6. Rister, Oil! Titan of the Southwest, 83-84; Franks, The Oklahoma Petroleum Industry, 27-35.

7. Carney, "Historic Context for Energy Development," 6-7; Glasscock, Then Came Oil, 135.

8. Carney, "Historic Context for Energy Development," 6.

9. Glenn S. Dille, "Economic Geology: Oil and Gas in Tulsa County," in Geological and Mineral Resources of Tulsa County, Oklahoma, Bulletin 69 (Norman: Oklahoma Geological Survey, 1952), 122.

10. Franks, The Oklahoma Petroleum Industry, 35.

11. Rister, Oil! Titan of the Southwest, 88; Carney, "Historic Context for Energy Development," 7-10.

12. Franks, The Oklahoma Petroleum Industry, 40; Kenny A. Franks, The Rush Begins: A History of the Red Fork, Cleveland and Glenn Pool Oil Fields (Oklahoma City: Oklahoma Heritage Association, 1984), 34.

13. Franks, The Rush Begins, 34; Rister, Oil! Titan of the Southwest, 89.

14. Franks, The Rush Begins, 34; C. W. Shannon and L. E. Trout, Petroleum and Natural Gas in Oklahoma, Bulletin 19 (Norman: Oklahoma Geological Survey, 1915), 413.

15. The story of the discovery and early development of the Glenn Pool is succinctly discussed in Franks, The Oklahoma Petroleum Industry, 41-46. See also J. Vere Frazier, Jr., "History of the Glenn Pool Field", 1951.

16. Carney, "Historic Context for Energy Development", 12.

17. Franks, The Rush Begins, 72.

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18. Franks, The Oklahoma Petroleum Industry, 46.

19. Carney, "Historic Context for Energy Development", 13.

20. The story of the Cushing field is related in the following: Heather M. Lloyd, "Oklahoma's Cushing Field", M. A. thesis, Oklahoma State University, 1976; C. M. Riggs, et al., History and Potentialities of the Cushing Oilfield, Creek County, Oklahoma, Bureau of Mines Reports of Investigation 5415 (Washington, D.C. : Government Printing Office, 1958); George O. Carney, et al., "Cushing Oil Field: Historic Preservation Survey", Submitted to State Historic Preservation Office, Oklahoma Historical Society, Oklahoma City, 1981; Glasscock, Then Came Oil, 217-225; Morris, Drill Bits, Picks, and Shovels, 28-31. On the colorful character Tom Slick, see Ray Miles, "King of the Wildcatters: Tom Slick and the Cushing Field," The Chronicles of Oklahoma 65 (Summer 1987):158-73.

21. In addition to the sources noted above, the story of Cushing in this narrative also draws upon Carney, "Historic Context for Energy Development," 16-19.

22. Frank F. Finney, Sr. , "The Indian Territory Illuminating Oil Company," The Chronicles of Oklahoma 37 (Summer 1959):154-57; Terry P. Wilson, The Underground Reservation: Osage Oil (Lincoln: University of Nebraska Press, 1985), 99-120.

23. Gerald Forbes, "History of the Osage Blanket Lease," The Chronicles of Oklahoma 19 (March 1941): 70-81; Charles G. Forbes, "The Origin and Development of the Oil Industry in Oklahoma," Ph.D. dissertation, University of Oklahoma, 1939, 114-17.

24. Franks, The Oklahoma Petroleum Industry, 57-67; H. T. Beckwith, "Osage County," in Oil and Gas in Oklahoma, Bulletin 40, Volume 3 (Norman: Oklahoma Geological Survey, 1930): 246-47.

25. Carney, "Historical Context for Energy Development," 15-16.

26. Ibid.

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27. C. W. Shannon and L. E. Trout, Petroleum and Natural Gas in Oklahoma, Bulletin 19 (Norman: Oklahoma Geological Survey, 1915), 148-50; Edward Bloesch, "Nowata and Craig Counties," in Oil and Gas in Oklahoma, Bulletin 40, Volume 3 (Norman: Oklahoma Geological Survey, 1930): 370-76; Carney, "Historic Context for Energy Development," 21. See also Bess Mills-Bullard, "Digest of Oklahoma Oil and Gas Fields," 101-276, for specific information on the various smaller pools and fields in the region.

28. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 150-92; John W. Merritt and O. G. McDonald, "Creek County," in Oil and Gas in Oklahoma, Bulletin 40, Volume 3 (Norman: Oklahoma Geological Survey, 1930) 1-45; Carney, "Historic Context for Energy Development," 21.

29. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 328-29; Robert W. Clark, "McIntosh County," in Oil and Gas in Oklahoma, 3:149-58; Carney, "Historic Context for Energy Development," 22.

30. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 331-39; Hale B. Soyster and Thomas G. Taylor, "Muskogee County," in Oil and Gas in Oklahoma, 3:377-98; Carney, "Historic Context for Energy Development," 22.

31. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 345-51; Bloesch, "Nowata and Craig County," 353-69; Carney, "Historic Context for Energy Development", 22-23.

32. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 352-61; J. Phillip Boyle, "Okfuskee County," in Oil and Gas in Oklahoma, 3:431-50; Carney, "Historic Context for Energy Development," 23.

33. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 366-83; Robert W. Clark, "Okmulgee County," in Oil and Gas in Oklahoma, 3:46-68; Carney, "Historic Context for Energy Development," 19-20.

34. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 383-406; Beckwith, "Osage County," 211-68; Carney, "Historic Context for Energy Development," 23-24.

35. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 408-13; Frank C. Grove, "Pawnee County," in Oil and Gas in Oklahoma, 3:169-90; Carney, "Historic Context for Energy Development," 24.

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36. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 459-63; E. G. Woodruff and C. L. Cooper, "Rogers County," in Oil and Gas in Oklahoma, 3:269-88; Carney, "Historic Context for Energy Development," 24.

37. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 493-501; W. F. Cloud, "Tulsa County," in Oil and Gas in Oklahoma, 3:627-51; Carney, "Historic Context for Energy Development," 25.

38. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 501-506; J. Phillip Boyle, "Wagoner County," in Oil and Gas in Oklahoma, 69-82; Carney, "Historic Context for Energy Development," 25-26.

39. Shannon and Trout, Petroleum and Natural Gas in Oklahoma, 506-16; Everett Carpenter, "Washington County," in Oil and Gas in Oklahoma, 3:133-48; Carney, "Historic Context for Energy Development," 26.

SECTION F: ASSOCIATED PROPERTY TYPES

DRILLING RIGS

Description

Two types of drilling rigs operated in the study area. From about 1900 to the mid-1920s, cable rigs were common. Afterwards, rotary rigs became the preferred technology. Cable rigs (see Diagrams 1 and 2) basically sunk holes using a reciprocating, hammer-like action. A walking beam--in conjunction with a power source, series of wheels, and cable draped over the crown block atop the derrick--lifted a string of drilling tools and then dropped it. A heavy steel or iron bit, from four to eleven feet long, was attached to the string. Every foot or so, the bit was removed for sharpening while debris from the resulting hole was pumped out. The power sources for cable rigs included men and horses, although steam engines were mostly used. Cable drilling, obviously, proved a slow and laborious method of sinking a well, but it worked well at shallow depth and in soft formations.

Deeper drilling required rotary rigs, which became increasingly popular in the 1920s. In this rig, the drilling tools were attached to a series of rigid pipes rather than a flexible cable. Because of the heavier weights borne, rotary derricks were often constructed of steel and were larger than their cable counterparts. At the base of the hole, an engine turned the rotary table, onto which a swivel, a forty-foot hexagonal bar, drilling pipe, and a bit were all attached (see Diagram 3). The hollow drilling pipes enabled the constant infusion of fluids to cool the bit, the residue of which was pumped out using the space created around the pipe by the wider bit. Thus, slush pits for the resulting mud were often part of a rotary drilling site.

Significance

Drilling rigs represent the initial phases of petroleum production in the region. Once the possibility of oil and gas in the area had been established, rigs sought to find it. If the hole came up dry, the equipment was dismantled and hauled to another promising location. If the attempt were successful, at least some of the equipment remained to ensure the hole stayed open and production continued unabated.

Eligibility

To be eligible for inclusion on the National Register, rigs should maintain their integrity of location, design, setting, and material. Regarding integrity of location, it is important to bear in mind that rigs were sometimes

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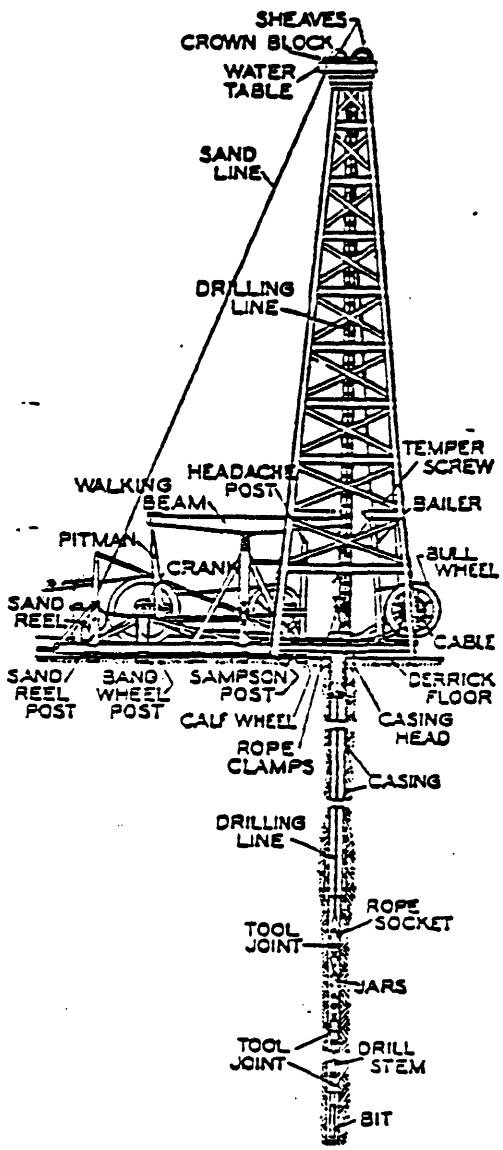
Energy-Related Properties in NE Oklahoma
Name of Multiple Property Listing

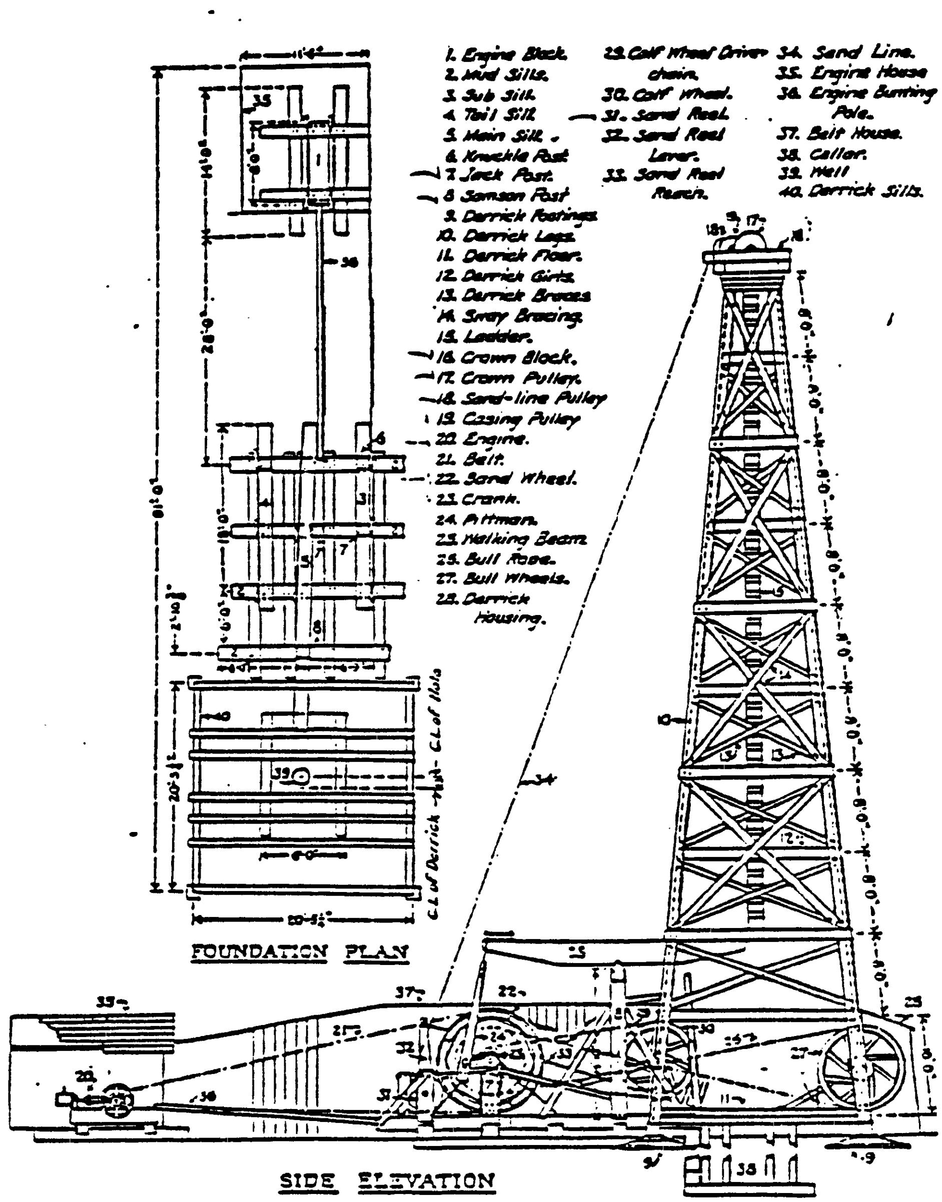
Diagram 1



(After J. E. Brantly in "Elements of the Petroleum Industry," courtesy of Am. Inst. Mining Met. Eng.)

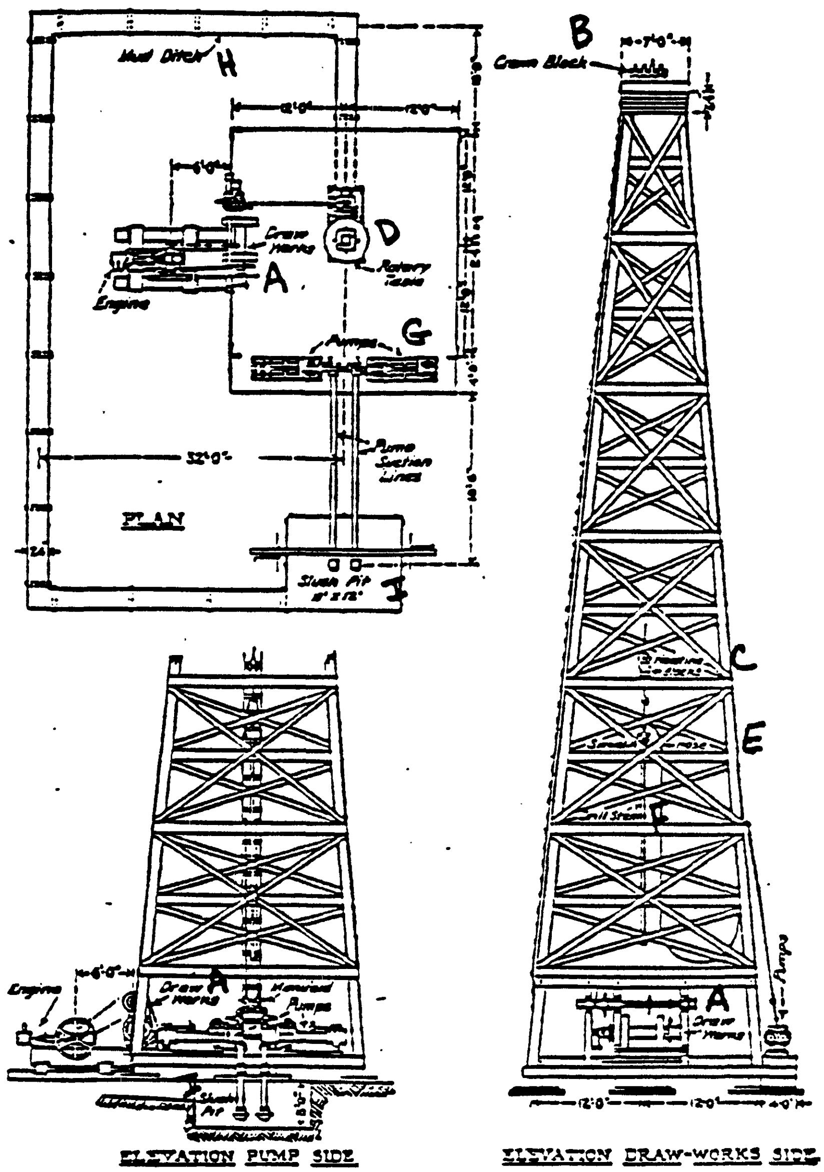
—General features of the American standard cable drilling rig.

Diagram 2



–Plan and elevation of an 82-ft. standard cable rig.

Diagram 3



(Redrawn, with additions, from illustration in National Supply Co.'s catalogue.)
-Plan and elevations of a rotary rig.

moved from place to place. Enough of their components should be extant to convey their original appearance and method of operation. For cable rigs, various wheels, the wooden walking beam, and cable and drilling tools might be present. For rotary rigs, extant resources might include an abandoned rotary table, pipe racks, or a slush pit. Regardless of the kind of rig found, all should be at a well site put into production by 1930.

DERRICKS

Description

Because of their massive scale, and the distinct possibility of their being all that remains of a historic rig or well site, derricks deserve consideration as a separate property type. As explained above, derricks supported both cables and pipe used to drill oil and gas wells. They were four-sided, pyramidal structures whose four upright legs were supported and tied together with a series of horizontal girts and inclined braces. The battering, or upward tapering, of the derrick varied in accordance to the height needed to sink the well to its desired depth. A wooden or concrete substructure at its base supported the derrick and provided work space.

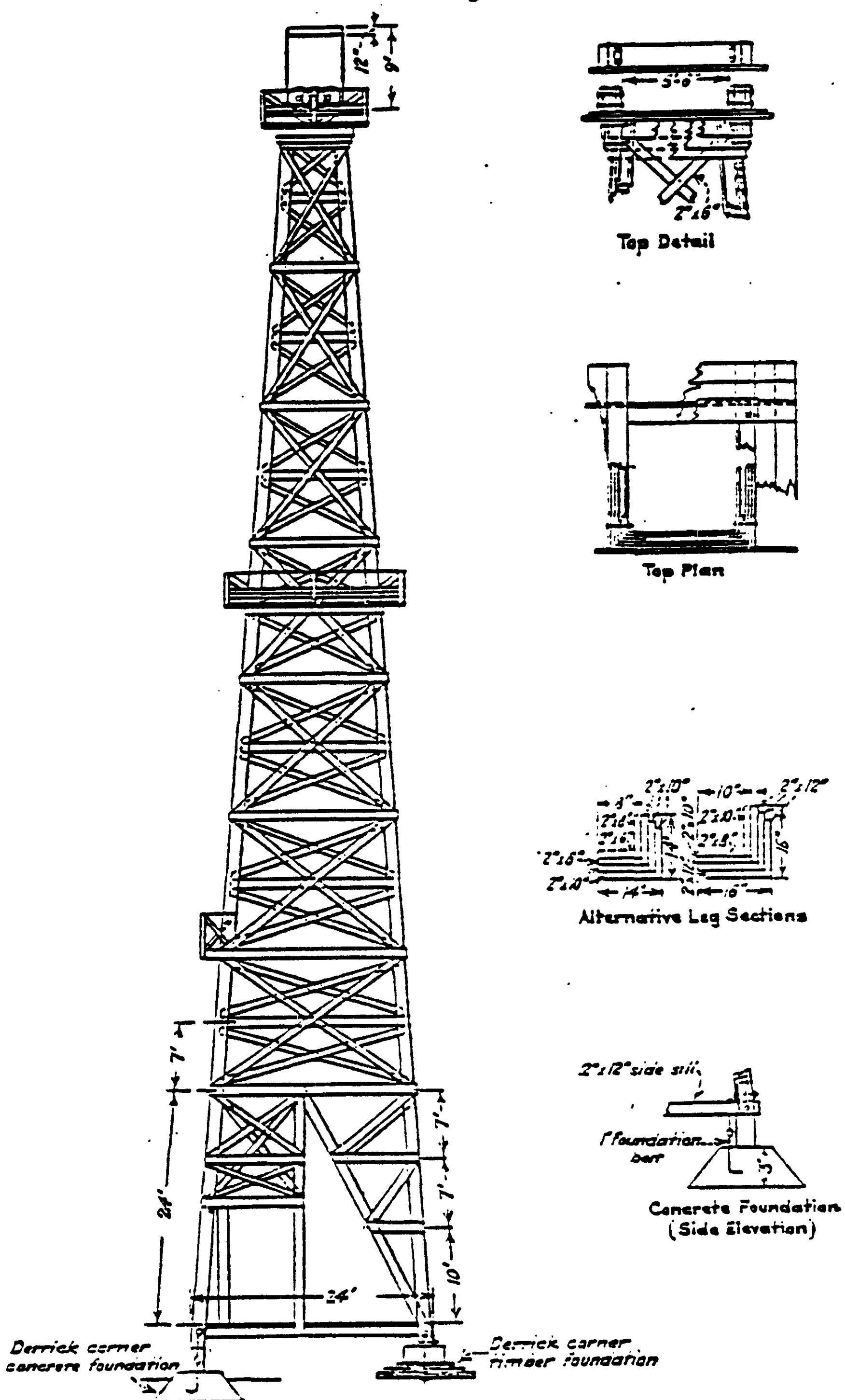
Derricks were typically classified according to their construction material. Timber derricks utilized a combination of 2 X 10 inch and 2 X 12 inch boards in the legs, with 2 inch planks of various lengths forming the girts and braces (see Diagram 4). These derricks typically included engine houses, also of timber, and a wooden substructure. Most commonly used on cable rigs, timber derricks ranged from 74 to 136 feet high.

Structural steel derricks (see Diagram 5) used a low-carbon steel in their construction, the various components being riveted or bolted together. Steel derricks required a concrete substructure, and because of their ability to support heavy equipment, they were usually found on rotary rigs. Their power house typically was constructed of corrugated sheet iron. Rarer were tubular steel derricks, using pipe forms for all its parts, and turnbuckle derricks, built of a combination of wood and steel.

Significance

Derricks are an important property type because they represent a highly visible and fundamental feature of drilling technology. Few understand the complexity of sinking an oil or gas well, but nearly all associate petroleum development with the appearance of derricks towering over the surrounding landscape. Given the ease with which they were dismantled and relocated, extant derricks are also significant by virtue of their scarcity.

Diagram 4



onal Lumber Manufacturers Association.)
–Side elevation and structural details of a 122- by 24-ft. timber derrick.

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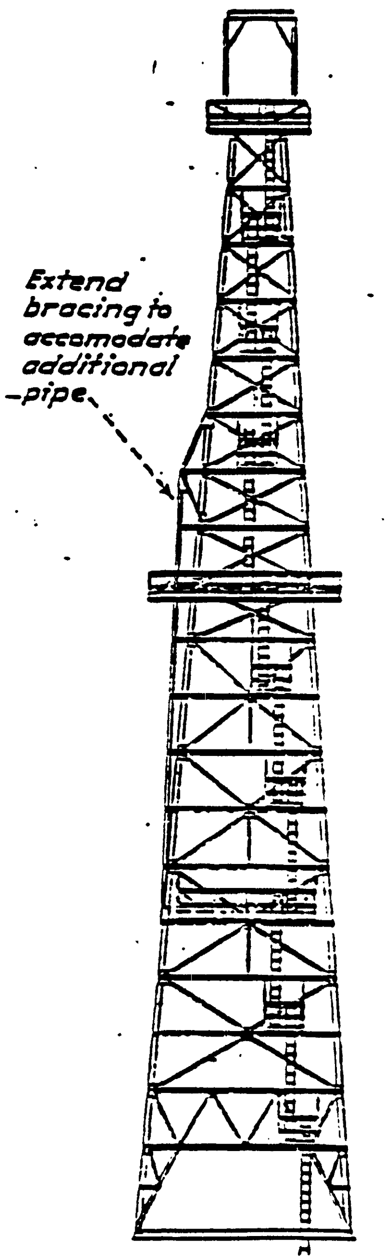
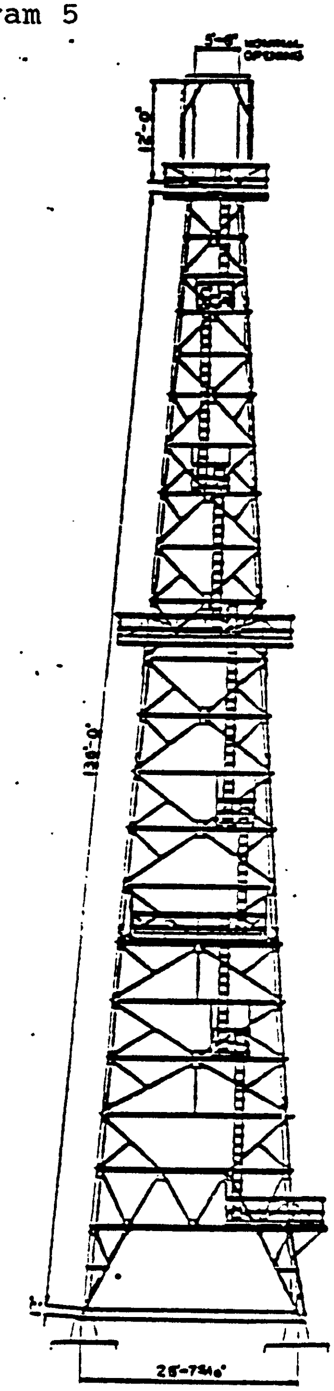
Energy-Related Properties in NE Oklahoma
Name of Multiple Property Listing

Diagram 5



(Courtesy of Emsco Derrick and Equipment Co.)

—Bulge type of structural steel derrick.



(Courtesy of Emsco Derrick and Equipment Co.)

—Standard 138-ft. A.P.I. structural steel derrick, illustrating K-type bracing.

Eligibility

To be eligible for the National Register, derricks should retain their integrity of location, design, materials and settings. Location is a primary concern since derricks were often moved. Thus, a historic derrick on a historic drilling site warrants serious consideration for listing. Obviously, such derricks should also remain sufficiently intact that their structural elements are readily identifiable. Wooden derricks, associated with the earliest petroleum development in the region, especially deserve careful evaluation.

WELL SITES

Description

Not all historic wells will have extant rigs or derricks to mark their location. Yet their site may be historically important as the discovery well for a major field, as a particularly productive well, or as a part of a geographically large field. In most cases, identifying such well sites will require careful study of geological maps and publications. Others might be readily identifiable, thanks to the presence of equipment that transported oil and gas to the surface after drilling equipment was removed. These might include various rod-operated plunger-displacement (suction) pumps, commonly referred to as "pump jacks" or "bobbing horseheads." Other types of pumps, engines, and overflow pits may be present as well. In still other instances, a plugged piece of casing protruding above the ground may be all that remains.

Significance

Well sites contain obvious significance because they mark where historic petroleum production actually occurred. But, since numerous wells operated in the study area between 1889-1930, some criteria for determining their relative importance is in order.

Two factors seem paramount. First, discovery wells for the various fields are important because they opened new areas to commercial development. Subsequent drilling and expansion of a field followed only after the successful completion of this first step. Second, concentrations of identifiable well sites deserve attention as potential petroleum-related districts. Their spatial relationship reveals much about the extent of the operations, and perhaps even the operators' concern for conservation.

Eligibility

For inclusion on the National Register, well sites should retain especially their integrity of location, and, for potential districts, their setting. In the case of location, this is almost a foregone conclusion since a well site by its very nature cannot be removed. Integrity of setting may be important for an individual well site if the surrounding area has subsequently been greatly altered. This is especially important for a number of well sites comprising a district. Important spatial and technological relationships between the resources can only be fully appreciated if the physical setting of the historic period of production remains intact.

STORAGE FACILITIES

Description

Once oil had been brought to the surface, it required storage before being transported elsewhere or processed. Early in the period, earthen reservoirs adjacent to wells provided a temporary solution, but seepage and evaporation losses, together with contamination by (and of) water and soil, rendered these unacceptable. Therefore, a variety of storage facilities were used as the crude made its way from the well to processing.

At the well site, flow tanks usually held three to seven days of production awaiting a pipeline run. Flow tanks were often elevated, to expedite gravity flow of oil outward into other tanks or into a pipeline. At preliminary processing points and at fully developed processing facilities, large stock tanks and treatment tanks contained the oil and allowed the removal of impurities, including water. Oil ready to be shipped to refineries and customers was held in even larger storage or shipping tanks. In places such as Cushing, concentrations of such storage facilities, known as tank farms, were constructed. The size ranged from 100 barrel flow tanks to 134,000 barrel storage tanks.

Early in the period, wood-stave tanks might be used. With a typical capacity of 500 to 800 barrels, these storage containers were constructed by placing wooden staves side-by-side around a circular wooden bottom. Adjustable metal hoops or bands encircled the staves and kept them in place. Later, small- to medium-capacity tanks were made of galvanized sheet metal, usually steel; larger tanks might be constructed of plates that were rivetted together to form semi-circular sections which were then bolted together. Even late in the period, wooden tanks were desirable in fields where the crude oil had a high sulphur content. The largest storage tanks consisted of steel rings rivetted together, one above another, to the desired height, and welded to a steel floor and roof (see Diagram 6).

Significance

Storage facilities represent an important facet of the production process. Almost always, and especially in fields like Cushing and Burbank where overproduction was chronic, oil needed to be stored as it traveled from well to consumer. Thus, several small tanks might be found adjacent to a well, or hundreds might comprise a tank farm near a major refinery or transportation outlet. Whatever their size or function, these storage facilities played a significant role in bringing petroleum to market.

Eligibility

For inclusion on the National Register, storage facilities should retain their integrity of location, design, materials and setting. Tanks should remain upright and maintain their cylindrical shape. Their construction material should be original, and most likely will be steel. Wooden-stave tanks, due to their association with the region's early petroleum history, deserve special attention. Eligible storage facilities should also be found at known historic producing and processing sites. It is possible that a concentration of tank foundations associated with a tank farm will warrant consideration as well.

CENTRAL POWER HOUSES

Description

Some fields utilized central power houses to pump oil simultaneously from as many as 25 wells. A "central pumping power," sheltered by a pump house, consisted of an engine, called a "prime mover," that drove a large-diameter horizontal "band wheel"; between the prime mover and the band wheel was a belt tightener, called a "drive pulley," that kept tension on the belt, or some other type of gear reduction mechanism (see Diagram 7 and 8). Pull lines, called "shackle rods," were attached around the band wheel, each connecting the central power to the pumping unit at a well. Wood or metal posts topped with wooden guide blocks supported the string of shackle rods leading to the well. The operation of the engine and band wheel caused the shackle rod to push

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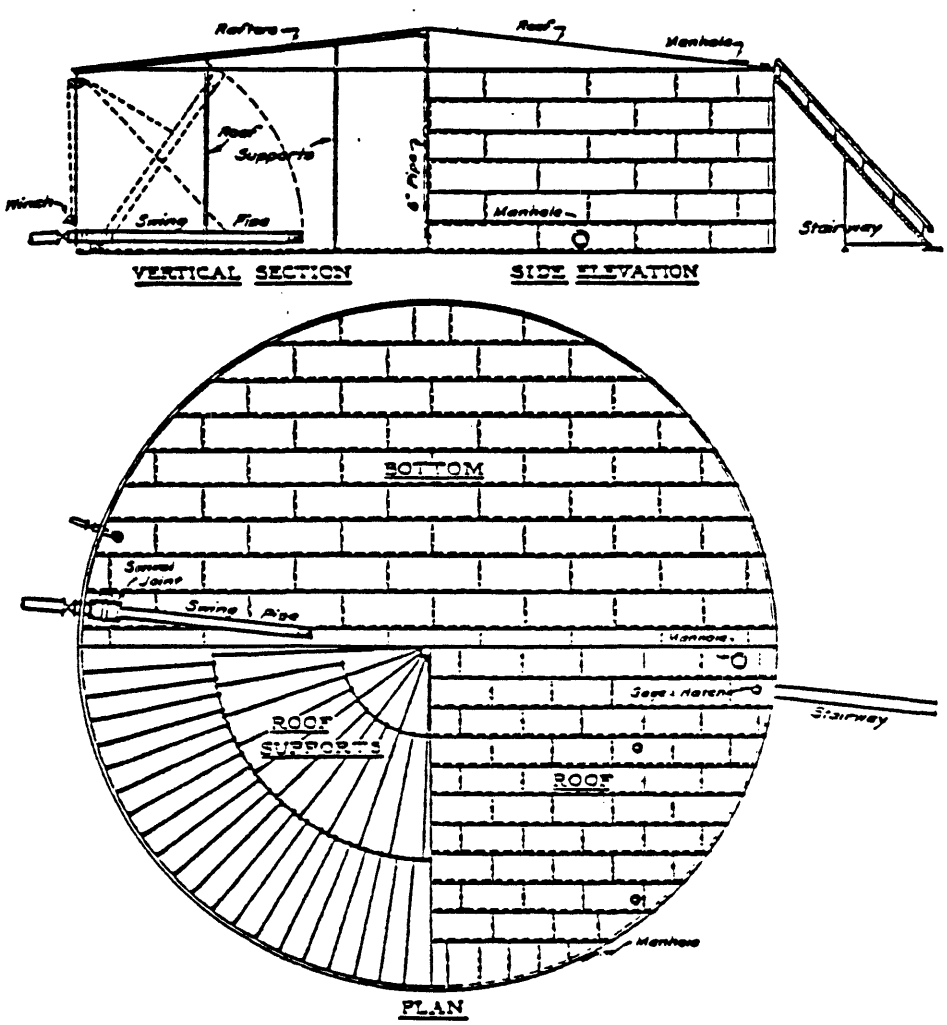
Energy-Related Properties in NE Oklahoma
Name of Multiple Property Listing

Diagram 6



.—Plan and elevation of 55,000-bbl. riveted steel tank.

Diagram 7

FOUNDATION AND SETTING PLAN
12-C Power with 18-Foot Band Wheel

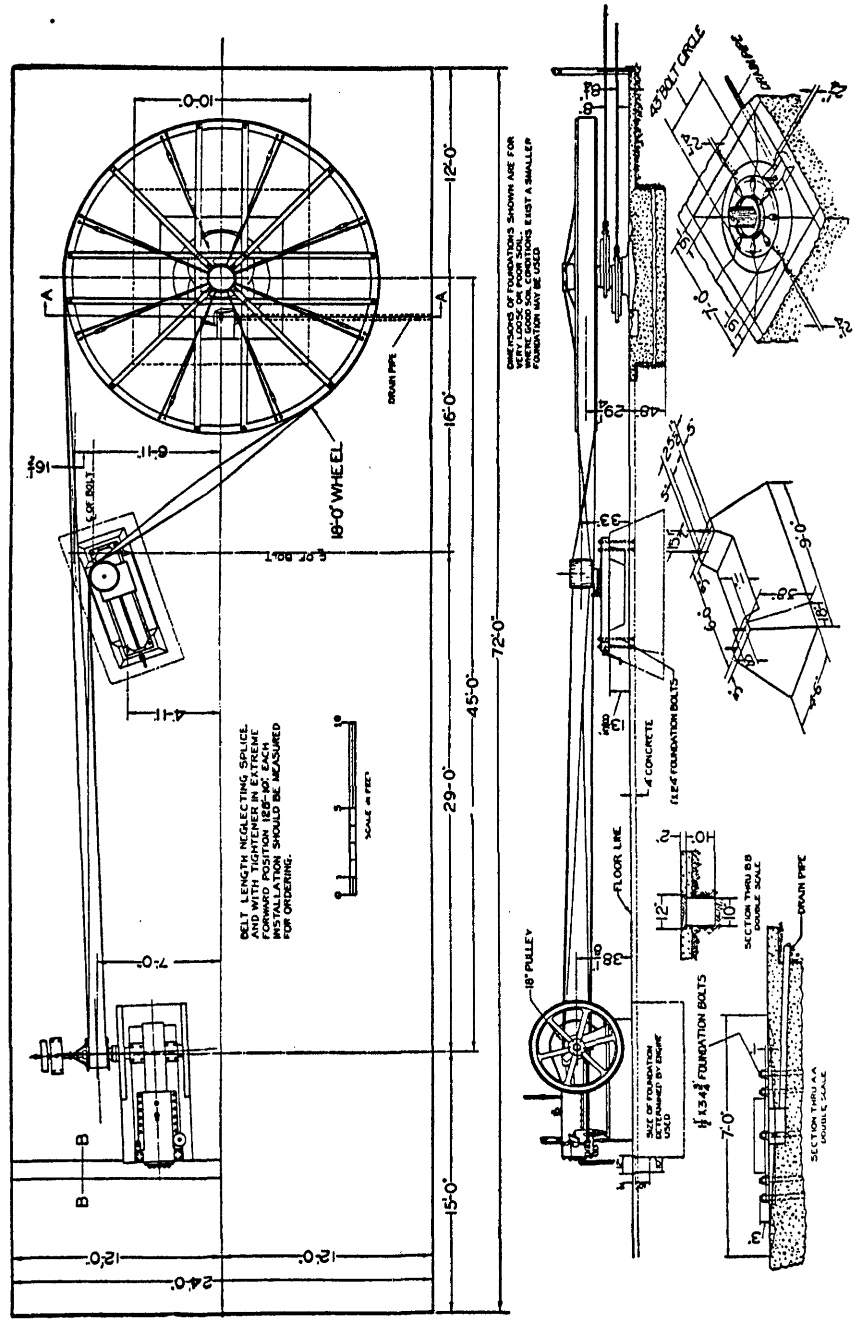
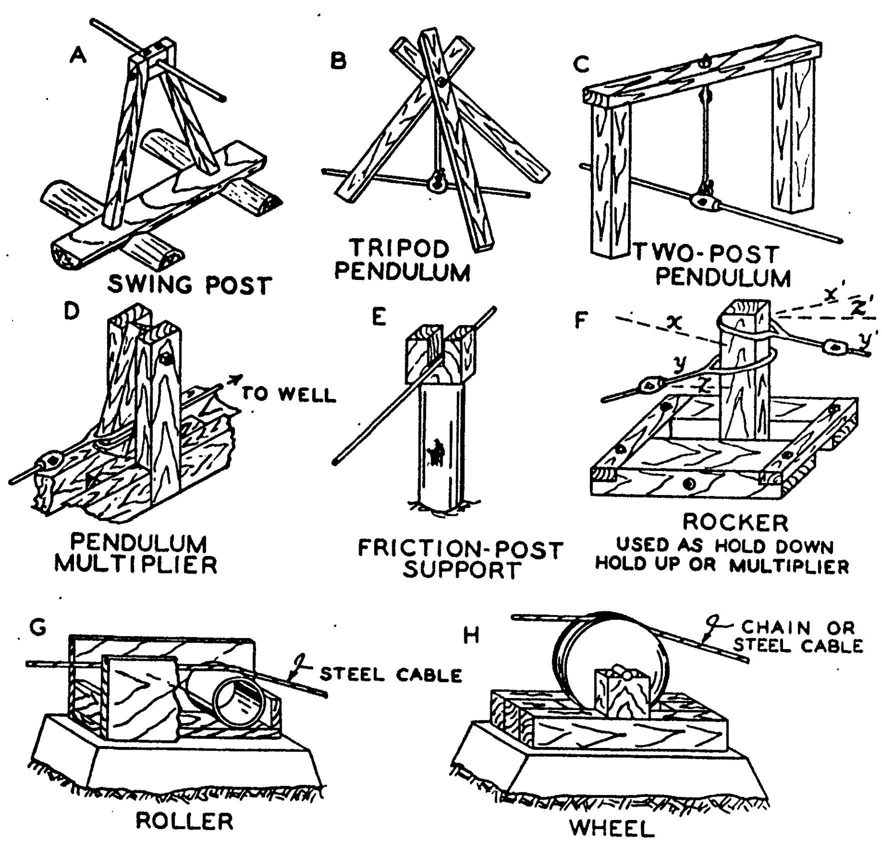


Diagram 8



Courtesy of U. S. Bureau of Mines
A group of wooden rod line supports.

forward and draw back, in turn working a pumping mechanism inside the well casing. When operating, the reciprocating action of the band wheel and the shackle rods allowed simultaneous pumping of wells located hundreds of feet away from the central power.

The central power house was a one-story structure typically constructed of metal siding and roofing material. The mainly rectangular shape usually included a circular section approximately 40 to 50 feet in diameter which housed the band wheel. Openings along the rectangular portion enabled the shackle rods to exit toward the wells. All in all, this spider-like pumping method proved awkward unless the wells were spaced closely together. Thus, this technology was seldom employed after 1930.

Significance

Central power houses represent an attempt to power the pumping operations on several wells with a single device. As such, they manifest early efforts at unitization. They were, of course, part of the overall process of oil extraction. They also derive significance as an antiquated technology.

Eligibility

For inclusion on the National Register, central power houses should retain their integrity of location, design, materials and setting. Their tell-tale combination of rectangular and circular construction should be apparent, and any remaining wall cladding and roof material will likely be corrugated metal. The band wheel and shackle rods will probably be non-extant, the victims of salvaging. Historic central power houses should also be located in known areas of production, probably predating 1930.

PRODUCTION CAMPS

Description

Companies having a series of wells within a field often constructed production camps to service their operations. The complex of buildings in such a facility usually included: a machine shop, for the repair and fabrication of drilling equipment; a forge shop, for sharpening bits and other tools; pipe shop, for threading and cutting pipe lengths; a carpentry shop, for general woodworking; an office building, for managing activity; drayage barns, for housing draft animals; and a laboratory, for analyzing soils and any oil and natural gases encountered. Some also had workers' housing.

These buildings were usually one-story, rectangular or square constructions with wooden frames. Corrugated metal served as the favored wall cladding and as the covering on the gabled roof. Most stood on poured concrete foundations.

Significance

Production camps are an important property type due to their association with oil field operations. Designed largely to be self-reliant, they represent a corporate response to the need to keep production as time- and cost-efficient as possible by locating vital services within the field itself. They also served an important function by sometimes housing workers in oil fields far from incorporated communities.

Eligibility

To be eligible for National Register consideration, production camps should retain their integrity of design, materials and location. They should comprise a group of buildings and should be found in a known historic oil field. If extant, the buildings' wood-frame construction and metal cladding should be evident. It is possible, of course, that only foundations will remain, so the spatial relationship of these deserves special attention. Production camps with multiple extant resources will be nominated as districts.

It is possible also that a single resource may be all that remains of a historic production camp. Lone remaining properties are significant not only for their association with the production camp, but also, possibly, for their historic function. Single resources must maintain their integrity of location, design, workmanship, feeling and association to be eligible for the National Register.

COMPANY HOUSES

Description

Firms often provided up to 20 houses for their workers when an active oil field lay distant from any established community. Often, their dwellings were part of a production camp. They typically utilized one of two vernacular architectural styles, both relatively easy and inexpensive to build. Shotgun houses tended to be one room wide and up to four rooms deep. Each room was usually twelve-feet square. The houses had gabled roofs, side windows, front and rear entrances, and clapboard or board-and-batten siding. Lacking kitchen and bathroom facilities, which were part of the larger production camp, all rooms were used for sleeping.

The second common style of house was the pyramidal. This type of company housing consisted of four equally sized rooms, topped by an equilateral hipped or pyramidal roof. Like their shotgun counterparts, they usually had clapboard or board-and-batten siding.

Significance

Company houses are yet another property type associated with oil field operations. Providing houses within the field facilitated 24-hour operation in isolated areas. Indeed, in the course of a day, three different 8-hour shifts might use the dwelling. Given the intense pace of activity, company housing was most commonly provided during the early stages of a field's development.

Eligibility

For inclusion on the National Register, company housing should maintain integrity of location, design, materials and setting. They should be found in or adjacent to a historic production camp within a known oil field. They should also exhibit either the shotgun or pyramidal style, although other simple vernacular styles are also possible. Wood will be the dominant construction material. Since these houses were easily moved to new producing areas, a careful examination for any foundations or ruins should be included in the documentation of the company houses.

PIPELINES AND PIPELINE STATIONS

Description

Pipelines provided the most efficient means of transporting crude oil out of the field to various consumers. Consequently, a network of such lines crisscrossed the study area. Some collected the production of wells and brought it to a central location for limited processing before shipping for final refinement. Others carried oil and gas directly to refineries and natural gasoline plants both within and outside the region. The diameter of such pipelines ranged from two to twelve inches, depending on the capacity it carried.

To maintain the flow over long distances, pipeline stations became necessary at twelve to sixty mile intervals. Here engine-driven pumps maintained the pressure to keep oil traveling at between one and five miles per hour. In addition to a building housing the pumping machinery, the station complex also typically included several single-story brick or wooden buildings housing gauges and other types of equipment. A water tower and storage area for extra pipe might also be present.

Significance

Pipelines and pipeline stations are important for their association with transporting the region's petroleum products to storage and processing facilities. They represent the most widely used means by which oil and gas were brought to where it could be consumed. Given its ability to deliver directly to a desired point at a relatively low cost, pipelines became the major means of transporting petroleum and petroleum products.

Eligibility

To be eligible for National Register consideration, pipelines and pipeline stations should retain their integrity of location, design, materials and setting. Fully extant pipelines probably do not exist, but the presence of segments in known producing areas or along known rights-of-way deserve attention. Similarly, stations should be located in such areas, and there should remain evidence of one-story brick or wooden buildings. Pumps, machinery, a water tower, and a storage area may also be found. When located together, pipelines and pipeline stations warrant consideration as districts.

LOADING RACKS

Description

While most petroleum produced in the region was transported by pipeline, railroad tank cars were also used. Loading racks facilitated the process of filling these cars.

Basically, a loading rack consisted of a main pipeline running parallel to one side of the railroad track. It was elevated so that it rested a few feet above the tank car's turret. Vertical connections, with appropriate valve controls, were spaced along the main pipeline at intervals equivalent to the length of tank cars, usually thirty-two-and-a-half feet. Loose sleeves and elbows on these connections allowed the oil to be directed precisely into the car. By this means, an entire train of tank cars could be loaded simultaneously. The rack also included an elevated wooden walkway that supported the filling lines and allowed access to them. A small wooden shed along the walkway housed the workers. When the storage tanks for the oil rested at a higher elevation than the rack, such as on an adjacent hill, gravity created the necessary flow. Otherwise, an oil-line pump was installed to bring the crude to waiting cars.

Significance

Loading racks are another property type associated with the transportation of oil to market. They represent a technological solution to the loading of oil onto numerous tank cars in a time- and cost-efficient manner. They are also especially significant as the one resource most directly associated with the transportation of oil by rail.

Eligibility

To be considered for the National Register, loading racks should maintain their integrity of location, design, materials and setting. The vertical standpipes and loading arms should remain, as should evidence of the walkway and workers shed. The main pipeline, however, will probably have been removed and used elsewhere after the rack closed. In short, enough of the rack should remain to illustrate the technology it employed. It also should be located along a historic railroad right-of-way in or near an oil field.

REFINERIES AND PROCESSING PLANTS

Description

The actual transformation of crude oil or natural gas into useable products--including refined oils, solvents, fuels, and petrochemicals--occurred at refineries and processing plants. The refining process was very technical, but basically involved separating oil or natural gas as it left the well into its major components. These were then blended or converted by intricate chemical interactions into salable products. In many respects, it resembled a distillation process.

Refineries and processing plants, including natural gasoline plants, typically contained a number of resources. Buildings housed engine rooms, generators, a tool and workshop, boilers, and an office. Structures for the distillation, cracking, and treating of petroleum and its by-products could also be found. Most visible were the large cooling and blending towers and pipeline terminals. The buildings within such a complex tended to be rectangular or square with wooden frames and metallic cladding. Their gabled roofs had vents, and in engine and boiler houses a breather/muffler device hung on an exterior wall.

Significance

Refineries and processing plants are property types associated with the transformation of crude oil and natural gas into marketable products. Many such plants emerged within the region. Some sold the refined products locally, while others transported them to distant markets via pipelines.

Eligibility

To be eligible for the National Register, refineries and processing plants should retain their integrity of design, materials and location. This property type may be found in both rural and urban areas, but all should consist of a concentration of buildings and structures in sufficient quantity to illustrate the technology employed. This typically will include several single story rectangular or square buildings, distilling tanks, storage facilities, blending and cooling towers, a water tower, and perhaps pipeline terminals. Given the number of resources likely involved, refineries and processing plants should be nominated as districts.

COMPANY/CORPORATE BUILDINGS

Description

As the petroleum industry matured, an increasing number of firms constructed corporate offices near the oil fields in which they operated. From here, the day-to-day and long-range management of production occurred. The style of these office buildings varied, mainly in accordance to the time at which they were constructed and where they were located.

Early in the period, some located in the upper stories of the two- or three-story commercial block buildings so prominent up to 1920. Constructed of brick and having multiple bays along the first-floor facade, these buildings had flat roofs and incorporated such architectural details as parapets, brickwork friezes, dentils, and corbels. Such office buildings were usually found in smaller communities such as Bristow or Cleveland.

In larger settings, Commercial and Sullivanesque skyscrapers might be found. Between 1900 and 1915 five- to sixteen-story Commercial style buildings dominated. They were constructed of brick, had flat roofs, and often exhibited Chicago style windows having a broad, fixed central pane of glass and narrow sidelights with opening sashes. Ornamentation was usually minimal. After 1915

Sullivanesque inspired skyscrapers, with flat roofs and projecting cornices, became more common. Windows formed bands around the building, offset by decorated piers. Terra cotta ornamentation throughout was also widely incorporated into the building design.

Significance

Company and corporate buildings are property types associated with the organization of the petroleum industry. They housed corporate offices, lease buyers, land men, attorneys, clerks, and typists, all of whom played a role in the management of production. The development of the petroleum industry would have been impossible without these managerial functions.

Eligibility

To be considered for the National Register, a company or corporate building should retain its integrity of design, material, and setting. It must have been a corporate or regional headquarters for a petroleum firm active in the study area through 1930. In some cases, only the upper floors of such buildings may be petroleum related. Whatever the architectural style employed, its defining features and characteristics should be extant. This includes sufficient evidence of its original building material and window treatments.

WORKERS' HOUSES

Description

Where communities lay near the producing oil fields, and especially after the automobile eased commuting, oil field workers sometimes lived within towns like Oilton, Shamrock, and Wynona. Those with families particularly preferred to live in towns because schools and other services were more readily available there. Since wages were modest, and employment often sporadic, workers' houses tended to be the simple vernacular shotgun style. Sometimes these homes were moved into town from an abandoned production camp.

Workers' houses usually were one or two rooms wide and up to four rooms deep. They also had gabled roofs, side windows, front and rear entrances, and clapboard or board-and-batten siding. Often several of these dwellings could be found together in sections of oil-related communities.

Significance

Workers' houses reflect the basic need for shelter among those who labored in the oil and gas fields. Their simple, yet functional, style was suited to their relatively modest means and to uncertain employment in the boom and bust petroleum industry. Their presence in towns are also testimony to the increasing mobility of the work force made possible by affordable automobiles after 1920.

Eligibility

To be considered for the National Register, workers' houses should retain their integrity of location, design, materials and setting. They should be found in communities known to have certain concentrations of oil field workers, and they may also be found grouped together in working class neighborhoods. They should maintain their simple shotgun style, and the original building materials should be evident. If found in groups, workers' houses should be nominated as districts.

PETROLEUM EXECUTIVE HOMES

Description

In contrast to workers' homes, those of petroleum executives often exhibited highly stylized architecture. The actual styles employed varied but reflected those popular during the 1912-1930 period. Especially favored were the Revival Styles -- Classical, Spanish, and Colonial. These were typically large, massive homes of at least two stories.

Building materials varied in accordance to the style used, but stone and brick were most popular. Decorative features also matched the style used, and professional architects and landscape architects usually designed these homes and their grounds. In places like Tulsa concentrations of these palatial homes could be found.

Significance

The highly stylized homes of petroleum executives represent the wealth generated by the petroleum industry. Their occupants tended to be the entrepreneurs who founded the industry or the executives who kept it vital. The grand size and formal style of these homes, and in many cases the surrounding grounds, were meant to be a statement of the success of their occupants.

Eligibility

For inclusion on the National Register, executive homes should retain their integrity of location, design, setting, and materials. The original style of the home should be apparent, and any alterations should be minimal. Occupancy by a person or family associated with the petroleum industry should also be firmly established. In the case of estates, special consideration should be given to the grounds in order to determine whether they too incorporate a formal design.

BUSINESS DISTRICTS

Descriptions

In some communities, the prominence of oil and gas production in the local economy spurred a general business expansion. During both booms and periods of prolonged production, new retail stores, financial institutions, and other businesses emerged to serve the growing needs of the community. To the degree that these business districts owed their existence primarily to the ripple effect of the oil industry, they may be considered petroleum related. In smaller communities these business districts consisted of one- to three-story commercial block buildings with several bays along the first floor main facade. They had flat roofs, minimal decorative detail, and brick exteriors. In larger communities, these districts might include Commercial or Sullivanesque skyscrapers of six to thirty-four stories. These larger buildings, while still constructed of brick, were more stylized than their smaller counterparts, often incorporating projecting cornices, bands of windows, and terra cotta ornamentation throughout.

Significance

Business districts which sprang to life based on the infusion of petroleum-related dollars into the local economy represent another manifestation of the wealth generated by the oil industry. They are particularly interesting because they illustrate oil money's pervasive influence. While some buildings within these districts may have housed oil-related concerns, they also included a wide variety of retail and professional establishments.

Eligibility

To be considered for the National Register, oil-related business districts should retain their integrity of location, design, material, and setting. The tie between their emergence and the local economic impact of the petroleum industry should be clear and verifiable. The original architectural styles employed in the district should remain, with defining characteristics and elements intact. As this property type involves a number of resources, it should be nominated as a district.

RAILROAD PROPERTIES

Description

The discovery and development of oil fields often attracted railroads to areas of production. Cushing, for example, enjoyed five rail outlets by the end of 1912. Because transporting crude oil to distant markets provided a lucrative business, many companies did not hesitate to extend their tracks into the fields and nearby communities, which soon became shipping points.

Accessing an oil field or refinery required all procedures normally involved in constructing any railroad. Rights-of-way had to be surveyed and graded. Tracks needed to be laid, bridges erected, water towers for the steam engines built, and stations and yards constructed. Like business districts, petroleum-related transportation facilities reflect the diversity of the industry's impact on the region.

Significance

With the exceptions of pipelines, railroads were the most common means of transporting crude oil to processing facilities and other markets. The extension of lines into previously unserviced areas also represents the pervasive economic influence of the petroleum region.

Eligibility

To be considered for the National Register, petroleum-related railroad properties should retain their integrity of design and setting. Rights-of-way should be clearly visible on the landscape; extant water towers and bridges should maintain their original steel construction and engineering features; and yards and stations should exhibit their original brick or wooden construction. It is especially important that a clear and verifiable link be made between these railroad properties and the petroleum industry. In other words, it should be evident that servicing this industry was the primary reason for their existence.

SECTION G: GEOGRAPHICAL DATA

Oklahoma State Historic Preservation Office Management Region #3, comprising the following Oklahoma counties: Adair, Cherokee, Craig, Creek, Delaware, McIntosh, Mayes, Muskogee, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Rogers, Sequoyah, Tulsa, Wagoner and Washington.

SECTION H: SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The multiple property nomination of Energy-Related Properties in Northeast Oklahoma is based on a 1987 survey and historic context developed for energy-related properties in the Oklahoma State Historic Preservation Office's Management Region #3 by Dr. George O. Carney of Oklahoma State University's Geography Department. This project identified and made preliminary evaluations on 165 relevant resources within a 14 county area. Carney's 1980-1981 survey of the Cushing Oil Field was also consulted since a part of that field extends into Creek County, which is within Management Region #3. However, only general information on the petroleum industry was used as no specific properties identified by that survey are included in this nomination. In April 1993, the Oklahoma State Historic Preservation Office issued a Request for Proposals to prepare a multiple property nomination focusing on twelve of the properties identified in the 1987 project. The Oklahoma Historic Preservation Survey, an adjunct of the History Department at Oklahoma State University, received the contract to undertake the multiple property nomination.

During the preparation of these nominations, each of the twelve sites were visited, photodocumented and re-evaluated for National Register eligibility. As a result, the subgrantee and Oklahoma State Historic Preservation Office agreed, after consultation, that four properties were ineligible: The Doakes and Hughes Well Site/Derrick (1950) is ineligible due to insufficient age; Penrod and Thompson Pump Company is ineligible due to significant alterations to the original building; Uncle Bill Lowery Discovery Well Site #1 is ineligible because of the loss of historic integrity due to the development of a contiguous lake; and the Gulf Pipeline Station (1931) is of insufficient age for the period of significance for this project.

Also over the course of the project it was ascertained that the Nancy Taylor Number One Well Site, which was listed on the National Register of Historic Places on 11/15/89, would not require a supplemental documentation nomination. The multiple property documentation does not provide any new information regarding the significance of the Nancy Taylor Number One Well Site and the existing nomination addresses the significance of the property within the context of energy development in Northeastern Oklahoma.

The nomination for a sixth property, the Barnsdall Oil Company Refinery, cannot be presently submitted because field surveyors have been denied access to the property and a correct resource count cannot be obtained; however, a nomination form has been completed based on the best available information.

For the Multiple Property Documentation Form, the Historic Context Narrative and Property Type Analysis were both revised and updated. Finally, more specialized research on the six remaining resources that are part of this nomination was conducted. In addition to Dr. Bill Bryans of the Oklahoma State University History Department, a graduate student in the department's Applied History program, John Shannon, assisted, as did Research Associate Neysa Clark and Oklahoma SHPO Research Associate Dr. Dianna Everett.

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