

UTAH
SAN JUAN BASIN
GALLUP-ZUNI FIELD
SALT LAKE FIELD
DATIL MOUNTAIN FIELD
RIO PUERCO FIELD
TIJERAS FIELD
CERRILLOS FIELD
HAGAN FIELD
SIERRA BLANCA FIELD
ENGLE FIELD
JORNADA DEL MUERTO FIELD
CARTHAGE FIELD

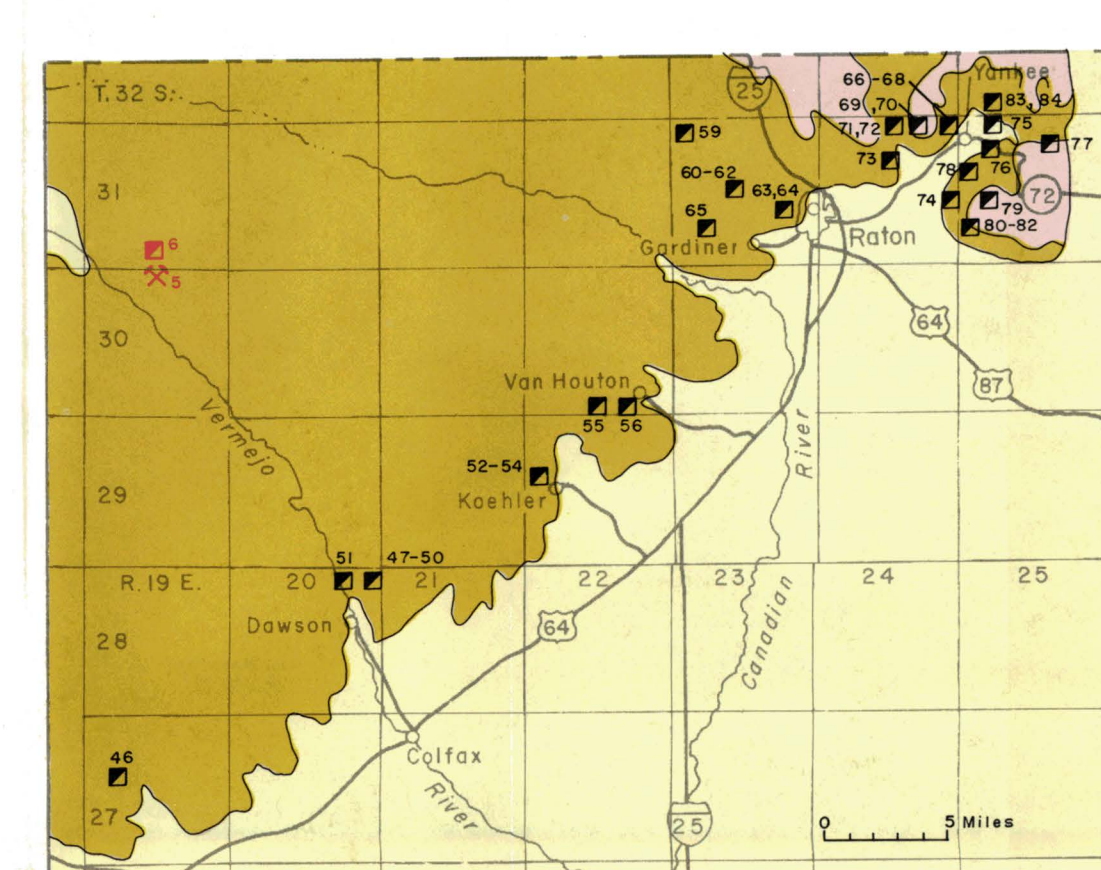


FIGURE 1—RATON AREA

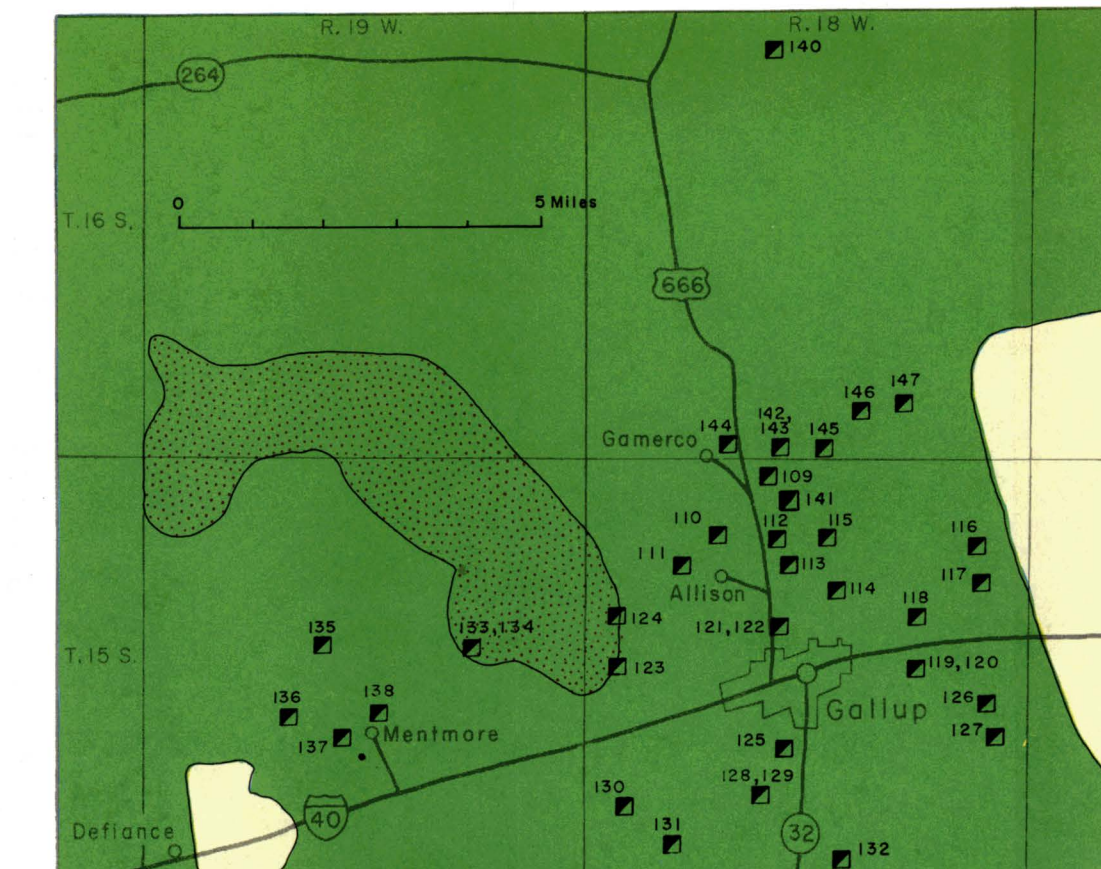


FIGURE 2—GALLUP AREA

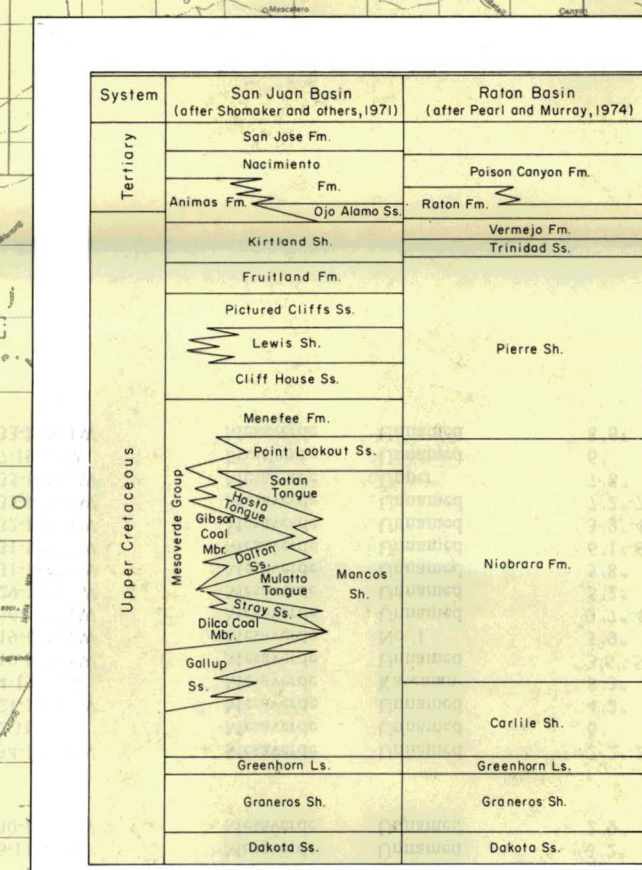


FIGURE 4—COMPOSITE STRATIGRAPHIC COLUMN SHOWING THE RELATIONSHIPS AMONG UNITS IN THE SAN JUAN AND RATON BASINS

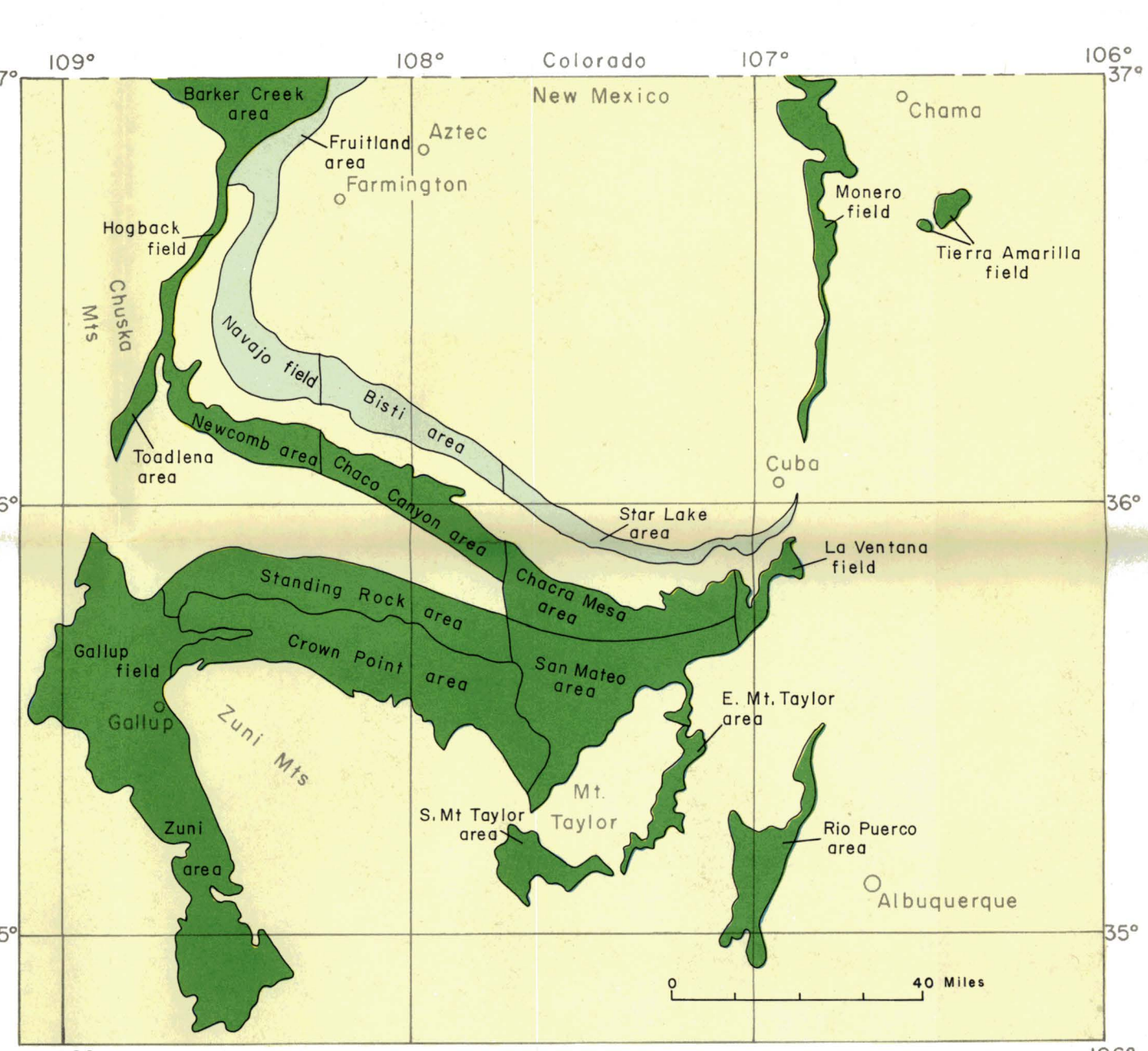


FIGURE 3—COAL FIELDS OF SAN JUAN BASIN

- COAL-BEARING GEOLOGIC UNITS**
 - Raton and Vermejo Formations
 - Fruitland Formation
 - Mesaverde Group
- MINES AND PROSPECTS**
 - 18 Number of mine from Table 1 or 2
 - Active open-pit mine
 - Active underground mine
 - Inactive underground mine
- OTHER SYMBOLS**
 - Stripplable coal (within 250 ft of surface)
 - Intrusive rocks of various ages
 - Extrusive rocks of Tertiary age
 - Isolated coal outcrops in Pennsylvanian rocks

Coal Fields and Mines of New Mexico

by David E. Tabet and Stephen J. Frost
1978

Introduction
Geologic formations containing coal deposits underlie about a fifth of New Mexico. Coal resources, estimated to exceed 282 billion short tons (Shomaker and others, 1971), constitute a major asset in New Mexico's energy future. This map presents an overview of the occurrence and characteristics of coal in New Mexico. The map shows the areas where coal-bearing formations occur. The location of all active and most inactive mines are shown on the map and, in more detail, in figures 1 and 2. The recognized names for the coal basins and fields are given on the map and in figure 3. The mines shown are keyed to a list (tables 1 and 2) that gives the mine name, location, geologic coal-bearing unit, bed mined, and bed thickness. In addition, a synopsis for each field or basin (presented in alphabetical order) provides more information on the geography of the field, history of production, coal occurrence, coal rank, and coal resources. Resource figures cited include measured, indicated, and inferred tonnages combined; these figures neglect tonnages removed by mining.

Annual tonnages and value of coal produced over the past 94 years are listed in table 3. Coal is known to have been mined in New Mexico by the Spanish in the 1700's; small-scale mining is recorded for the Cerrillos field in 1835. Not until 1861 did mining begin on a significant scale, with the opening of a mine in the Carthage field by Union troops stationed at nearby Fort Craig. Demand for coal by railroads and by copper and lead smelters in the Southwest pushed annual production in the state from a million tons in 1899 to a peak of over 4 million tons by 1918. During that era, coal was mined mainly in the Raton and Gallup areas, with significant amounts mined from the Carthage, Cerrillos, and Sierra Blanca coal fields. Following World War I and the discovery of less expensive oil and gas resources indicated the decline of the coal market. This decline continued through the 1950's, bottoming out at 117,000 tons in 1958. In 1960 interest in New Mexico coal was revived when Kaiser Steel Corp. developed coking-coal mines in the Raton field. Also in the early 1960's, large-scale production commenced at new strip-mining operations in the San Juan Basin. The McKinley and Navajo mines opened to supply coal for electric power generation. In 1972 the San Juan mine, north of Farmington, began to supply coal for another mine-mouth power plant. An increasing demand in the Southwest for inexpensive stripplable low-sulfur coal for electric power generation will be the key for opening up the more remote central parts of the San Juan Basin.

This project was funded in part by a grant from the New Mexico Energy Resources Board (BEF proposal No. 124). Recent coal analyses reported here were performed at U.S. Geological Survey and U.S. Bureau of Mines Laboratories under a cooperative sampling program. Finally, we wish to thank Howard Nickelson, Supervising Mining Engineer with the U.S. Geological Survey in Farmington, New Mexico, for his review of the map and his helpful comments.

Coal fields
Carthage field—Located in east-central Socorro County along US-380, the Carthage field, roughly 10 sq mi in area, is situated on the extensively faulted nose of a south-plunging anticline. Two beds, a main bed up to 6 ft thick and a subeconomic seam 1 ft above, occur near the base of the Mesaverde Group. The Carthage bed (main bed) was extensively mined from 1861 to the 1950's; most of the easily mined coal was removed. No mines are active today. Additional resources may occur east and south of the previously mined areas.

The high-volatile C bituminous coal is an excellent coking coal. During the late 1800's and early 1900's smelters in southwestern New Mexico and northern Mexico purchased coking coal from the Carthage field. A typical analysis (as-received basis) follows:

moisture	3.2%
volatile matter	34.0%
fixed carbon	51.8%
ash	10.6%
sulfur	0.7%
BTU/lb	12,910

Cerrillos field—The Cerrillos field is situated in west-central Santa Fe County in the broken foothill country north of the Ortiz Mountains. Coal-bearing units are found in the lower part of the Mesaverde Group. Coal beds of anthracite and bituminous rank average 3-6 ft thick. From the base upward, the three main coal seams are the Cook and White bed, the Peacock bed, and the White Ash bed.

The field is a complex syncline in which the coal-bearing units have been broken by many faults and intruded by swarms of dikes and sills. Near the thick sills the coals have been metamorphosed to semianthracite and anthracite. Anthracite is restricted to the White Ash bed.

The field was mined during the period 1888-1957. Thirty or more mines were opened to supply coal to users throughout the central and western United States. Increased freight costs, mining problems, and competition from natural gas and fuel oil caused the mines to close in 1957. Resources are estimated by Read and others (1950) to be 47.5 million tons of bituminous coal and 5.7 million tons of anthracite. Analyses follow:

Semi-anthracite coal		Bituminous coal	
moisture	5.7%	moisture	2.4%
volatile matter	2.2%	volatile matter	36.6%
fixed carbon	86.1%	fixed carbon	54.0%

Datil Mountain field—The Datil Mountain field is located at the junction of Socorro, Catron, and Valencia Counties, mostly in the upper drainage basin of the Rio Salado. The field covers more than 1,000 sq mi of rough foothills, mountains, canyons, and mesas. The area is reached with difficulty on ranch roads from I-40 on the north and US-60 on the south. Coal occurs in the Gallup Sandstone and the Crevasse Canyon Formation, both in the lower part of the Mesaverde Group. Coals of subbituminous and bituminous rank average 3-5 ft thick.

Geologic structure is complicated by faulting and folding and by intrusion of igneous masses. A thick cover of volcanic tuffs and flows increases to the south. Little coal has been mined. Coal resources may be more than a billion tons (Read and others, 1950), but detailed exploration has not been done in the area. Analysis of coal from the Hot Spots mine gave these results:

moisture	6.6%	volatile matter	32.8%
volatile matter	32.8%	fixed carbon	54.2%
fixed carbon	54.2%	ash	6.4%
ash	6.4%	sulfur	0.5%
sulfur	0.5%	BTU/lb	11,555

Engle field—The Engle field is located in central Sierra County east of the Fra Cristobal and Caballo Mountains on the western edge of the Jornada del Muerto syncline. Coal occurs in the lower part of the Mesaverde Group. Thin beds of coal from 1-2 ft thick have been found. Near the mountain front this field consists of steeply dipping north-south-trending sandstone ridges. The dip of the units comprising these ridges decreases eastward beneath the plain of the Jornada del Muerto Basin. Three small mines operated briefly in the area in the early 1900's. Coal resources have not been calculated for this area because of the lack of information and the uneconomic thickness of the beds.

Hagan field—The Hagan (Keyes, 1904), or Una del Gato (Campbell, 1907), field is located in the Hagan Basin in southeastern Sandoval County, north of the Sandia Mountains. Coal seams 3-5 ft thick occur in the lower part of the Mesaverde Group. The coals are of high-volatile C bituminous rank. Complex geologic structure, including numerous faults, complicates mining. Three small underground mines operated intermittently from 1900-1939; transportation and mining problems forced their closure. Read and others (1950) estimated reserves of 17.3 million tons. A typical Hagan field coal analysis follows:

moisture	6.25%	volatile matter	34.2%
volatile matter	34.2%	fixed carbon	49.6%
fixed carbon	49.6%	ash	14.5%
ash	14.5%	sulfur	5.78%
sulfur	5.78%	BTU/lb	12,520

Jornada del Muerto field—Coal-bearing Upper Cretaceous rocks are exposed on the west-dipping (20-40°) limb of the south-plunging Prairie Springs anticline in the northern part of the Jornada del Muerto Basin. The area of exposure, 5-20 mi northeast of the Carthage field in Socorro County, can be reached by graded ranch roads.

Lenticular coal beds up to 3 ft thick occur in the lower part of the Mesaverde Group; windblown sand conceals the coal beds in the southern part of the field. Limited prospecting and mining was carried out in the 1920's; no production is recorded. Drilling could possibly prove some deep resources in T. 4S., R. 3 E.

The rank of the coal is high-volatile C bituminous, similar to the coal at Carthage to the southwest. Reynolds and others (1946) reported coal from the Law mine has fair to poor coking characteristics. A recent analysis from the Law mine follows:

moisture	2.6%	volatile matter	41.6%
volatile matter	41.6%	fixed carbon	45.2%
fixed carbon	45.2%	ash	10.6%
ash	10.6%	sulfur	0.6%
sulfur	0.6%	BTU/lb	12,410

Raton field—The Raton field is situated in Colfax County on the western edge of the Great Plains province in rugged, dissected plateau country just east of the Raton seam near the base of the Vermejo Formation and the Vermejo seam near the top of the formation. The following series of seams also occurs in the upper part of the Raton Formation (in ascending order): Tin Pan, Yankee, Left Fork, Cottonwood Canyon, Ancho Canyon, York Canyon, and Chimney Divide.

Mining has been continuous in the Raton field since 1870; over 30 mines have operated since then (fig. 1). Today the only active underground coal mine in the state is working the York Canyon seam.

Resources estimated by Pillmore (1969) in the active, northern part of the field total 700 million tons of coking coal. Wanek's (1963) estimate for the whole field is 1.5 billion tons. Including coals down to 14 inches in thickness and including inferred resources, Read and others (1950) estimated a total reserve of 4.7 billion tons. A typical analysis for the York Canyon seam follows:

moisture	1.7%	volatile matter	34.2%
volatile matter	34.2%	fixed carbon	49.6%
fixed carbon	49.6%	ash	14.5%
ash	14.5%	sulfur	5.78%
sulfur	5.78%	BTU/lb	12,520

Sierra Blanca field—Located in southwestern Lincoln and northeastern Otero Counties, the Sierra Blanca field is a circular-shaped basin dipping toward the Sierra Blanca Mountains; dips of 15° are common. Beds of high-volatile C bituminous coal occur in the Mesaverde rocks in the foothills and low mountains to the west, north, and east of the central igneous core of the mountains. Numerous complex dikes, sills, flows, plugs, and faults add complications to possible mining. US-380 traverses the field east-west across the north half of the field, while US-54 runs along the western edge paralleling the Southern Pacific Railroad.

Coal in the 1885-1939 period, coal beds 2.7 ft thick were mined at several places around the basin. Mining problems such as numerous dikes and sandstone rolls (lenses that occupy parts of coal beds) led to a marked

decline in production after 1910. Resources in this field are estimated to be 1.6 billion tons (Read and others, 1950). A representative analysis from a sample taken recently near White Oaks is as follows:

moisture	1.41%
volatile matter	36.9%
fixed carbon	48.9%
ash	12.2%
sulfur	0.6%
BTU/lb	12,437

Tijeras field—The Tijeras field is situated among the rolling eastern foothills of the Sandia Mountains in northeastern Bernalillo County. The field is in a small, downfaulted block called the Tijeras graben. Coal of bituminous rank occurs in the lower part of the Mesaverde Group as 1-2½-ft seams. The steeply dipping coal-bearing units are folded into two synclines and an intervening anticline. In the early 1900's 3 small mines worked the coal for local use. Read and others (1950) estimate resources of 1.6 million tons. Analysis of coal from the Holmes mine gave the following results:

moisture	1.6%
volatile matter	31.1%
fixed carbon	36.2%
ash	31.1%
sulfur	3.24%
BTU/lb	10,050

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(Indicates sources used in compiling this map.)

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ACKNOWLEDGMENTS—The outlines of the coal fields and the names used in this map are modified from those used in maps by Read and others (1950) and Shomaker and others (1971). The information compiled for the inactive mines comes primarily from the New Mexico State Inspector of Mines Annual Reports, dating from 1895 to the present, and from various Bulletins of the U.S. Geological Survey published in the early 1900's.

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TABLE 1—ACTIVE COAL MINES IN NEW MEXICO.

No. on map	Mine	Section—Township—Range	Geologic unit	Bed	Thickness
2	Navajo	29N-15W 28N-15W 28N-16W 27N-16W	Fruitland	Seam 6 Seam 7 Seam 8	7'7" 5'6" 15'
1	San Juan	30N-15W	Fruitland	Main Seam	16'
3	McKinley	16N-20W 16N-21W 17N-20W 17N-21W	Mesaverde	Blue Green Fuschia	8'4"-10'6" 6' ?
4	Amcoal No. 1 (Sundance)	9-14N-17W	Mesaverde	Unnamed	?
6	York Canyon No. 1	34-31N-19E	Raton	York Canyon	6'8"
5	West York Canyon	31N-19E 30N-19E	Raton	York Canyon	6'8"

TABLE 2—INACTIVE COAL MINES AND PROSPECTS IN NEW MEXICO LISTED BY FIELD (locations 205-7 are Pennsylvanian; all others Tertiary or Cretaceous).

No. on map	Mine	Section—Township—Range	Geologic unit	Bed	Thickness
Carthage field					
7	Emerson-Allaire	9,16-5S-2E	Mesaverde	Carthage	6'
8	Carthage No. 3 (Hart or Baca?)	10-5S-2E	Mesaverde	Carthage	5'6"
9	McIntyre (Manilla)	10-5S-2E	Mesaverde	Carthage	5'6"
10	San Antonio-Price	11-5S-2E	Mesaverde	Carthage	?
11	Government	15-5S-2E	Mesaverde	Carthage	6'2"
12	Bernal	15-5S-2E	Mesaverde	Carthage	5'5"
13	Hilton (Carthage)	15-5S-2E	Mesaverde	Carthage	4'6"-5'5"
14	Duffy	15-5S-2E	Mesaverde	Carthage	6'
15	Kinney No. 1	17-5S-2E	Mesaverde	Carthage	?
16	Gilmore (Kinney No. 2)	20-5S-2E	Mesaverde	Carthage	?
Cerrillos field					
17	Blacksmith	1-13N-7E	Mesaverde	Peacock	2'7"
18	Omara (Lewisohn or Block)	32-13N-9E	Mesaverde	Two beds	5' upper 2'6" lower
19	Miller Gulch	23-14N-7E	Mesaverde	Miller Gulch	3'
20	Waldo Gulch (Black Star)	24-14N-7E	Mesaverde	Waldo	3'6"
21	Anthracite No. 1 (Hard Coal No. 1)	25-14N-7E	Mesaverde	White Ash	5'
22	Peacock	25-14N-7E	Mesaverde	Peacock	2'4"
23	Union	25-14N-7E	Mesaverde	White Ash	5'
24	White Ash	25-14N-7E	Mesaverde	White Ash	4'6"
25	Holen	25-14N-7E	Mesaverde	Cook & White	3'5"
26	Ortiz Arroyo	36-14N-7E	Mesaverde	Unnamed	4'2"
27	Anthracite No. 4 (Hard Coal No. 4, Anthracite A28)	36-14N-7E	Mesaverde	White Ash	2'10"-3'
28	Green	25-14N-7E	Mesaverde	White Ash	3'
29	Lucas	36-14N-7E	Mesaverde	White Ash	2'10"
30	Anthracite B33	14N-8E	Mesaverde	White Ash	5'5"
31	Anthracite No. 8	Madrid	Mesaverde	White Ash	4'11"
32	Lamb	Madrid	Mesaverde	Cook & White	3'6"
33	Jones	Madrid	Mesaverde	Cook & White	3'7"
Dutil field					
34	Hot Spots	18-1N-5W	Mesaverde	Unnamed	3'2"
35	Kiley	26-2N-4W	Mesaverde	Unnamed	?
36	Prospect	20-3N-9W	Mesaverde	Unnamed	3'6½"
Engle field					
37	Nogal	17,18-14S-3W	Mesaverde	Unnamed	12"
38	Durham Ranch	29-14S-3W	Mesaverde	Unnamed	?
39	Southwestern	12-14S-4W	Mesaverde	Unnamed	10"-15"
Hagan field					
40	Donnell prospect	17-13N-6E	Mesaverde	Unnamed	3'7"
41	Sloan	17-13N-6E	Mesaverde	Hopewell	3'8"
42	Hagan	33-13N-6E	Mesaverde	Hopewell	3'6"-6'3"
43	Pina Viittos	32-14N-6E	Mesaverde	Hopewell	3'4'-4'

No. on map	Mine	Section—Township—Range	Geologic unit	Bed	Thickness
Jornada del Muerto field					
44	Del Corto (Del Curto)	8-3S-3E	Mesaverde	Unnamed	2'8"
45	Law	3-4S-3E	Mesaverde	Unnamed	3'
Raton field					
46	Cimarron	17-27N-19E	Vermejo	Cimarron	1'6"-2'6"
47-50	Dawson No. 1,2,3,&4 Dawson No. 5	1-28N-20E 2-29N-20E	Vermejo Vermejo	Raton Raton	5'-11' 8'-9"
52-54	Koehler No. 1,2,&3	18-29N-22E	Vermejo	Raton	6'6"-9'6"
55-56	Van Houten No. 1&4 (Willow)	34,35-30N-22E	Vermejo	Raton	6'-11'2"
57	Graphite	7-30-23E	Vermejo	Raton	?
58	Bartlett (Dead Easy)	20-31N-23E	Vermejo	Raton	7'7"
59	Brilliant (Tin Pan)	6-31N-23E	Raton	Tin Pan	5'10½"
60-61	Blossburg No. 1&2 (Swastika)	16-31N-23E	Vermejo	Raton	4'8"
62	Dutchman (Blossburg No. 3)	16,17-31N-23E	Vermejo	Raton	4'-8'
63	Tardiner No. 1	23-31N-23E	Vermejo	Raton	6'
64	Climax (Smith)	23-31N-23E	Vermejo	Unnamed	3'6"
65	Blossburg No. 4	29-31N-23E	Vermejo	Unnamed	4'-8'
66-68	Yankee No. 1,2,&3	1-31N-24E	Raton	Yankee	5'6"
69	Mendelsohn (Honeyfield)	2-31N-24E	?	Unnamed	5'
70	Sunshine	2-31N-24E	?	Unnamed	?
71-72	Sugarite No. 1&2	3-31N-24E	Raton	Sugarite	4'9"-6'
73	Hartzel	10-31N-24E	Raton	Sugarite	8'7½"
74	Sugarite (Latimore)	24-31N-24E	Raton	Unnamed	6'1"
75	Sperry	5-31N-25E	?	Unnamed	?
76	Seven Points	8-31N-25E	?	Unnamed	?
77	Scoop prospect	10-31N-25E	Raton	Unnamed	4'1"
78	Llewellyn	20-31N-25E	Raton	Unnamed	7'3½"
79	Turner	18-31N-25E	Vermejo	Unnamed	4'6"-4'11"
80-81	Yankee No. 4 & 5	30-31N-25E	Raton	Yankee	5'6"-6'
82	Yankee-Reynolds prospect	30-32N-25E	Raton	Yankee	6'5"
83	Klanchnik	32-32N-25E	?	Unnamed	?
84	Block	32-32N-25E	?	Unnamed	?
85	Krek	10 mi E of Raton	Vermejo	Unnamed	4'9"
Rio Puerco field					
86	Canoncito	8-10N-2W	Mesaverde	Unnamed	3'
87	Ferro	18-10N-2W	Mesaverde	Unnamed	?
88	Chavez	1-14N-1E	Mesaverde	Unnamed	2'6"
89	Garcia	4-14N-1E	Mesaverde	Unnamed	3'3"
Sierra Blanca field					
90	Stiles (Oscura)	12-10S-8E	Mesaverde	Unnamed	3'
91	Oscura	30-9S-9E	Mesaverde	Unnamed	2'6"
92	Willow Springs	3-9S-10E	Mesaverde	Unnamed	2'6"-5'
93	Capitan No. 1	4-9S-14E	Mesaverde	Akers	3'6"-6'
94	Gray	7-9S-14E	Mesaverde	Unnamed	3'6"
95	Linderman	7-9S-14E	Mesaverde	Unnamed	3'6"
96	Capitan No. 2 (No. 4)	8-9S-14E	Mesaverde	Akers	5'5"
97	Corner & Smith	8S-10E	Mesaverde	Unnamed	4'10"
98	Old Abe	5-7S-13E	Mesaverde	Old Abe	3'10"-4'
99	Wells & Parker	5-7S-13E	Mesaverde	Unnamed	2'4"
100	Williams	5-7S-13E	Mesaverde	Unnamed	2'6"
101	Price (White Oaks)	31-6S-13E	Mesaverde	Unnamed	2'8"
102	Wildcat	32-6S-13E	Mesaverde	Unnamed	2'1"
Tijeras field					
103	Section 1	1-10N-5E	Mesaverde	Unnamed	1'-2"
104	Tocco	31-11N-6E	Mesaverde	Unnamed	1'-1'2"
105	Holmes	6-10N-6E	Mesaverde	Holmes	1'-2'6"
San Juan Basin—McKinley County					
106	Black Rock	9-10N-17W	Mesaverde	Unnamed	?
107	Zuni Indian School	6-11N-17W	Mesaverde	Unnamed	1'6"-4'
108	Leyba	4-14N-19W	Mesaverde	Unnamed	?
109	Navajo No. 3	4-15N-18W	Mesaverde	Navajo No. 2,5	4'-8"
110	Coal Basin	8-15N-18W	Mesaverde	Coal Basin No. 1	4'2"-5'3"
111	Beddow	8-15N-18W	Mesaverde	Aztec?	3'6"-4'
112	Bartlett	9-15N-18W	Mesaverde	Black Diamond Crown Point	6' 5'6"
113	Black Diamond (Stewart)	9-15N-18W	Mesaverde	Black Diamond	6'
114	Enterprise	10-15N-18W	Mesaverde	Black Diamond	6'
115	Rocky Cliff	10-15N-18W	Mesaverde	Unnamed	5'
116	Noce (Nocci)	12-15N-18W	Mesaverde	Unnamed	5'-5'7"
117	Thatcher	12-15N-18W	Mesaverde	Thatcher Black Diamond	4'6" 4'6"
118	Otero (Wood & Steward)	14-15N-18W	Mesaverde	Crown Point Thatcher Otero	5'6" 4' 5'1"
119	Carreto	14-15N-18W	Mesaverde	Otero	3'6"-4'
120	Boardman	14-15N-18W	Mesaverde	Otero	?
121	McDermott & Floyd	16-15N-18W	Mesaverde	Black Diamond	?
122	Keapers (Mutual)	16-15N-18W	Mesaverde	Black Diamond	3'6"
123	Diamond (Allison)	18-15N-18W	Mesaverde	Aztec?	4'1"-7'2"
124	Casna	18-15N-18W	Mesaverde	Unnamed	4'
125	Atherton (Gallup Southwestern)	21-15N-18W	Mesaverde	Black Diamond	5'6"-7'2"
126	Juliano (Liberty)	24-15N-18W	Mesaverde	Otero	2'10"
127	Red Hill	24-15N-18W	Mesaverde	Black Diamond	4'7"
128	Kennedy	28-15N-18W	Mesaverde	Unnamed	?
129	Union	28-15N-18W	Mesaverde	Black Diamond	6'6"
130	Black Star	30-15N-18W	Mesaverde	Unnamed	3'4"
131	Genko	32-15N-18W	Mesaverde	Unnamed	?
132	Catalpa	34-15N-18W	Mesaverde	Crown Point Thatcher	5' 6'
133	Clark	14-15N-19W	Mesaverde	Clark	4'6"-8'6"
134	Enterprise	14-15N-19W	Mesaverde	Unnamed	?
135	Defiance (No. 1)	16-15N-19W	Mesaverde	Defiance	5'-7'6"
136	Richards	20,21-15N-19W	Mesaverde	Unnamed	?
137	Myers	21-15N-19W	Mesaverde	Myers	2'6"-3'
138	Dilco (Jones)	22-15N-19W	Mesaverde	Defiance	2'6"
139	Tiejien prospect	15N-19W	Mesaverde	Unnamed	4'10"
140	Canavan	4-16N-18W	Mesaverde	Crown Point	4'6"
141	Baudino	4-15N-18W	Mesaverde	Unnamed	3'5"
142-43	Navajo No. 1 and No. 2	33-16N-18W	Mesaverde	Navajo No. 1,2	4'-6'6"
144	Navajo No. 5 (Gallup American No. 5)	32,33-16N-18W	Mesaverde	No. 5	5'-7"
145	Gallup	33,34-16N-18W	Mesaverde	No. 3 No. 3½ No. 5 No. 2	5' 5' 6' 3'
146	Weaver	34-16N-18W	Mesaverde	No. 3 No. 3½ No. 5	4'10"-5' 5' 6'
147	Heaton	35-16N-18W	Mesaverde	No. 2 No. 3 No. 3½	3'-3'10" 5' 5'-7"
148	St. Michael's Indian School	16N-20W	Mesaverde	Unnamed	4'5"-5'5"