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Denver, Colorado 80203

A Division of the Department of Natural Resources

Annual Report

For the Year

1964



G. A. FRANZ, JR.

Deputy Commissioner of Mines

Publication Approved by Con Shea, State Controller

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PRINTED BY THE A. B. HIRSCHFELD PRESS—DENVER



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Letter of Transmittal

May 1, 1965

Honorable John A. Love
Governor of Colorado
State Capitol
Denver

Dear Governor Love:

In compliance with the requirements of the 1964 Session Laws of Colorado, Section 102, Page 156, the Report of the State Bureau of Mines for the year 1964 is herewith transmitted.

Respectfully submitted,
G. A. FRANZ, JR.
Deputy Commissioner of Mines

RICHARD T. ECKLES
Coordinator of Natural Resources

Personnel

G. A. FRANZ, JR., <i>Deputy Commissioner</i>	Lakewood
DAVID R. COLE, <i>Senior Inspector</i>	Grand Junction
NORMAN R. BLAKE, <i>Inspector, District No. 1</i>	Black Hawk
JOSEPH L. KEATING, <i>Inspector, District No. 2</i>	Colorado Springs
JOHN W. DOYLE, <i>Inspector, District No. 3</i>	Leadville
ELZIE D. RAY, <i>Inspector, District No. 4</i>	Montrose
JOHN H. PAKKA, <i>Dust & Gas Control Inspector</i>	Telluride
THOMAS D. HIGH, <i>Uranium Mine Inspector</i>	Palisade
WILLIAM E. HORN, <i>Uranium Mine Inspector</i>	Naturita
BERNARD L. JAVERNICK, <i>Uranium Mine Inspector</i>	Nucla
CALVIN T. WARNICA, <i>Uranium Mine Inspector</i>	Nucla
MARGARET G. LAWRENCE, <i>Office Manager</i>	Denver
THELMA L. MACMANUS, <i>Senior Account Clerk</i>	Denver
CATHERINE C. CLARK, <i>Senior Statistical Clerk</i>	Denver
FERN F. COLBURN, <i>Receptionist</i>	Denver
GWEN J. BRITO, <i>Clerk Typist</i>	Delta

Commissioners of Mines

HARRY A. LEE.....	May 11, 1895 - May 10, 1903
E. L. WHITE.....	May 10, 1903 - May 10, 1907
T. J. DALZELL.....	May 10, 1907 - May 10, 1911
T. R. HENAHEN.....	May 10, 1911 - May 10, 1915
FRED CARROLL	May 10, 1915 - May 10, 1919
HORACE F. LUNT.....	June 1, 1919 - June 1, 1923
JOHN T. JOYCE.....	June 1, 1923 - June 12, 1939
EDWARD P. ARTHUR.....	June 12, 1939 - August 26, 1943
FRED JONES	September 27, 1943 - April 25, 1950
WALTER E. SCOTT, JR.....	May 3, 1950 - May 31, 1959

Directors of Natural Resources

DR. EDWARD L. CLARK.....	October 15, 1959 - March 7, 1962
FELIX L. SPARKS.....	August 2, 1962 - June 30, 1963

Coordinator of Natural Resources

RICHARD T. ECKLES.....	August 15, 1963
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Deputy Commissioner of Mines

G. A. FRANZ, JR.....	June 1, 1959
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Districts of Inspection

DISTRICT NO. 1, all of the following counties: Adams, Arapahoe, Boulder, Cheyenne, Clear Creek, Denver, Douglas, Gilpin, Grand, Jackson, Jefferson, Larimer, Logan, Morgan, Phillips, Sedgwick, Washington, Weld, Yuma, and that part of Park County lying north of Fairplay.

DISTRICT NO. 2, all of the following counties: Baca, Bent, Conejos, Costilla, Crowley, Custer, Elbert, El Paso, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Otero, Prowers, Pueblo, Teller, and that part of Park County lying south of Fairplay.

DISTRICT NO. 3, all of the following counties: Alamosa, Chaffee, Eagle, Garfield, Lake, Mineral, Moffat, Pitkin, Rio Blanco, Rio Grande, Routt, Summit, and that part of Gunnison County in the extreme northwest corner and lying north of the 39th degree of latitude, and that part of Saguache County lying south and east of the Continental Divide.

DISTRICT NO. 4, all of the following counties: Archuleta, Delta, Dolores, Hinsdale, La Plata, Mesa, Montezuma, Montrose, Ouray, San Juan, San Miguel, and Gunnison County, except the extreme northwest corner lying north of the 39th degree of latitude, and that part of Saguache County lying north and west of the Continental Divide.

Publications

Bulletins and circulars concerning specific subjects related to the mining industry of Colorado have been published from time to time as the need has become apparent. All of these publications may be consulted in most libraries in Colorado and many libraries in other states, as well as in the office of the Colorado Bureau of Mines. The following bulletins and circulars are the only ones presently in print:

Bulletin No. 17, Safety Rules and Regulations (Condensed), G. A. Franz, Jr., Deputy Commissioner of Mines, 1959.

Circular No. 2, Minerals of Colorado and Area Locations, G. A. Franz, Jr., Deputy Commissioner of Mines, 1960.

Bulletin No. 18, Oil Well Safety Laws, G. A. Franz, Jr., Deputy Commissioner of Mines, 1961.

Circular No. 3, Location Regulations for Lode and Placer Mining Claims, Tunnel Sites and Mill Sites, G. A. Franz, Jr., Deputy Commissioner of Mines, 1961.

Bulletin No. 19, Colorado Mining Laws with Safety Rules and Regulations, G. A. Franz, Jr., Deputy Commissioner of Mines, 1962.

Colorado Bureau of Mines Annual Reports cover the mining activity of the State and have been published regularly since May, 1895, except for the years 1925, 1936, 1938, 1940, 1944, 1945 and 1948. Reports are printed in limited quantity but may be consulted in most libraries in the United States and in the Colorado Bureau of Mines office. A complete list of the publications can be found in the Annual Report for 1963.



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Foreword

For those interested, the Colorado Bureau of Mines maintains a current information file on all mineral activity in Colorado as well as on all mineral found in this and other states and countries. These information files contain unpublished reports and papers of interest to the industry and state. They also contain engineers' reports on a number of areas and properties in Colorado. A complete set of quadrangle maps and detailed section maps of Colorado are on file and this is in addition to the many area and property maps we have accumulated over the years. We also have geological maps of most areas in Colorado, as well as some detailed sections. Our map department is continually being improved and we are collecting maps of underground workings from all active and inactive mining properties in the State. These maps are available for reference only on written permission from the present operators or owners.

Our library contains bound volumes of all United States Geological Survey Bulletins and Professional Papers covering Colorado and the neighboring states. We have a complete set of Colorado Geological Survey Bulletins, Colorado Scientific Society papers, and U.S.G.S. Annual Reports. We also have a set of U.S.G.S. Mineral Resources and most all of the U. S. Bureau of Mines Bulletins pertaining to Colorado. In addition to this we have many current volumes on metallurgy, mineral facts and problems, as well as a complete set of Mineral Yearbooks giving the United States and world production of the mineral industry.

The most important source of information in our office consists of some 33,000 Inspection, Information and Operator's Annual Reports on all properties dating from 1895 to the present date. From these reports it is possible to secure a year to year description of activities, production, employment, and development from the day an individual property started to the present. Information on the owners and operators, type of ground, size of vein, and the condition of the country rock pertaining to these mines is in many cases available from no other source. These reports are filed by mine names and a cross-index gives a complete listing of mine operations since 1895.

The Bureau of Mines welcomes personal calls, phone calls or letters requesting information on any subject pertaining to the mineral industry in Colorado. All of the above facilities are available to the public for reference at the Bureau of Mines offices in Denver. We do not allow any item to be removed from the premises. Special arrangements can be made to secure copies or certified copies of any report when extraordinary conditions warrant this service. The Bureau of Mines also has circulars for distribution on Colorado minerals, placer locations, the manner of locating a mineral claim, and other items of interest to both students and potential operators. Information on mining and oil well safety laws in Colorado is freely

given and assistance along this line may be had from any of our Mine Inspectors throughout the State.

During the last year a genuine interest in sampling and reopening old silver, lead, and zinc mines was evident throughout the mineral areas of the State. The Bureau of Mines office was called upon many times to supply information on properties that had not operated for many years and in this respect our files on hundreds of long inactive properties were consulted and many copies of these reports were made for interested parties. A substantial increase in the price of lead, zinc, and copper coupled with the fact that silver remained at the Treasury monetary price of \$1.293 per ounce during the year brought many of these long inactive properties within the scope of profitable operation. New activity was recorded in practically all base metal and silver producing areas of the State and several of these properties were brought into production.

In addition to this revived interest in Colorado standby minerals, the oil shale industry started what will no doubt be a big assist to Colorado economy. During the year our Colorado School of Mines, in cooperation with Socony Mobil Oil Company, Humble Oil and Refining Company, and others secured a lease on the government oil shale property and plant at Anvil Point, Garfield County. Extensive research on recording and mining was under way at the end of the year. The Colony Development Company owned by Standard Oil of Ohio, Cleveland Cliffs Iron Company, and the Oil Shale Development Company started mine development and plant construction on October 1 at their property on Parachute Creek in Garfield County. Their present plans call for a one-thousand ton per day pilot plant which is a forerunner to the installation of a much larger commercial plant and a start towards developing another industry in Colorado. Other valuable and promising research work on the in-situ recovery of oil from oil shale during the year was done by the Sinclair Oil Company on their leased ground north of Grand Valley, Colorado.

For their interest and support of mine safety we wish to thank the Governor of this State and the Colorado Legislature. For their assistance to our programs during the year acknowledgment is gratefully given to the Occupational Health Section of the Colorado Health Department, the United States Bureau of Mines and the United States Public Health Service.

Information in this report and the compilation of the same came from the generous contribution and untiring efforts of every member of this department, both clerical and inspection. Their unqualified support and loyalty are gratefully acknowledged.

G. A. FRANZ, JR.

Minerals in 1964

The value of Colorado's mineral production in 1964 dropped slightly less than one per cent under 1963 to \$338,012,523. Increased prices for lead, zinc, copper, and molybdenum helped materially to maintain production value. Metallic minerals accounted for 44 per cent of the total, mineral fuels accounted for 41 per cent, and nonmetallics and industrial minerals accounted for 15 per cent. Metallic minerals gained 4 per cent over 1963 and nonmetallics increased one per cent. Mineral fuels decreased nine per cent with a small increase in gas sold.

Of the metallic minerals produced in Colorado in 1964, molybdenum, vanadium, zinc, lead, tungsten, copper, gold, silver, and tin increased while uranium, iron, and beryllium decreased. Decreased uranium production was somewhat offset by the increased vanadium production which is not affected by the Atomic Energy Commission uranium stretch-out program. Although the Wellington operations in Summit County were idle during the year, the increased silver, lead, and zinc production came from a full year of operation at the Keystone mine and stepped up production from other base metal operations over the State. Increased tonnage at the Climax operations, Climax, Colorado, maintains this property as the largest underground producing mine in the United States.

Exploration and sampling of many of the old and long inactive base and precious metal mines in the State continued throughout the year and will no doubt result in several of these properties reopening. With the world demand for gold, silver, lead, copper, and zinc now exceeding world production the future production of these minerals at a price that will support expanded production seems inevitable. Certainly Colorado has these minerals and we can expect increased activity in several districts in the State.

With a slight production increase in sand and gravel, stone, peat and gemstones, nonmetallic mineral production was steady and equalized the slight drop in cement, limestone, clay, and fluorspar production. Sand and gravel in varying amounts was produced in every county of the State while clay production generally came from the Hogback area east of the Front Range. Stone production was evident on both sides of the Continental Divide and reflects the increasing demand for Colorado's varicolored stones for the building trade. Nonmetallic mineral production in Colorado has shown a steady increase for the past ten years and is more than double what it was in 1954.

Mineral fuel production in Colorado again declined for the fourth consecutive year, a condition resulting from leveling off from our regular producing fields and a lag in opening new fields. Of importance to the mineral fuel industry was the establishment of Cache oil field in Montezuma County. This field is an extension of Aneth

field in New Mexico and promises to become a major producer in Colorado. Of further importance to the mineral fuel industry is the rapidly developing oil shale industry in Garfield County. Several major oil companies hold leases on the Green River formation and methods of mining and extraction are being tested. Colony Development Company is rapidly completing their one thousand ton per day oil shale mining and retorting installation on Parachute Creek and plans call for production to start late in 1965. The Colorado School of Mines Research Foundation has leased the government Anvil Point operation and is conducting retorting and mining experiments in cooperation with Socony-Mobil Oil Company, Humble Oil and Refining Company, Continental Oil Company, Phillips Petroleum Company, and Sinclair Research Incorporated.

Colorado's mineral production is calculated by multiplying the units of production by the average yearly price of the mineral. Some average prices used in 1964 are as follows: Gold—\$35.00 per ounce, Silver—\$1.29 per ounce, Copper—.319¢ per pound, Lead—.130¢ per pound, Zinc—.135¢ per pound, Molybdenum—\$1.55 per pound, Uranium—\$8.00 per pound, Vanadium—\$1.80 per pound.

Information in this report is gathered by Bureau of Mines inspectors and office personnel and although the production figures cannot be accepted as final they are as nearly accurate as is possible to secure at this early date. They are intended as a preliminary indication and cannot be used for tax or other evaluation purposes. Petroleum production is supplied by the Colorado Oil and Gas Conservation Commission. Coal production is supplied by the State Coal Mine Division. Metallic and nonmetallic mineral production figures are received directly from the operator and in some cases where these reports are incomplete, an estimate from inspection reports is used.

Production of Metals, Nonmetallics, Mineral Fuels

State Totals

Metallics	1964 Production	Cumulative Through 1964
Molybdenum	\$ 72,889,066	\$ 752,315,359
Uranium	28,076,240	843,244,852
Vanadium	14,735,223	105,267,194
Zinc	14,838,934	405,540,262
Tungsten	1,561,670	44,212,515
Lead	6,106,656	344,295,894
Copper	3,840,975	108,049,693
Gold	1,922,295	918,996,970
Silver	3,816,317	601,986,637
Pyrite	765,000)	
Iron	140,000)	8,980,143
Beryl	22,650	1,303,134
Tin	135,138	638,371
Miscellaneous Metallics	1,211,139	14,941,259
Total Metallic Mineral Production	\$150,061,303	\$4,149,772,283
Nonmetallics		
Cement	\$ 15,490,669	\$ 175,762,715
Sand and Gravel	20,500,001	172,186,331
Stone	5,103,806	33,259,370
Limestone	2,302,744	38,149,659
Clay	1,316,195	19,858,487
Fluorspar	565,740	31,880,572
Feldspar, Mica, Gypsum	753,345	11,289,509
Volcanic Scoria, Pumicite	96,300	3,673,826
Peat Moss	168,270	563,709
Gemstones	98,300	432,503
Perlite	21,000)	
Miscellaneous Nonmetallics	1,230,139)	7,173,238
Total Nonmetallic Mineral Production	\$ 47,646,509	\$ 494,229,919
Mineral Fuels		
Crude Oil	\$100,094,319	\$1,977,581,091
Gas Sold	10,057,736)	
Gas (All classes, well head value)	7,797,090)	184,891,511
Coal	22,355,566	2,153,356,624
Total Mineral Fuel Production	\$140,304,711	\$4,315,829,226
TOTAL STATE MINERAL PRODUCTION	\$338,012,523	\$8,959,852,428

County Activity and Production

ADAMS (1)

*Brighton

Area 1,250 square miles

Plants, petroleum — 79 men

The sand and gravel operations of Boise Cascade Sand and Gravel Company, Cooley Gravel Company, and Brannan Sand & Gravel Company were steady during the year. Gold was recovered from some of these operations during the gravel washing procedure. Sand and gravel was supplied to the building trade and road construction projects. The Kimbark Exploration Company was active on oil well drilling in the county during part of the year.

Miscellaneous	\$ 3,100
Sand and Gravel	\$ 3,102,531
Petroleum	1,417,487
Gas	249,849
Total	\$ 1,667,336
TOTAL PRODUCTION FOR COUNTY	\$ 4,772,967

ALAMOSA (2)

*Alamosa

Area 723 square miles

Mill, placer — 9 men

Sand and gravel for highway surfacing was produced by the Highway Department and by the Construction Investment Company from the Sand Dunes Pit, 18 miles northeast of Alamosa.

Sand and Gravel	\$ 154,435
Peat Moss	256
Total	\$ 154,691
TOTAL PRODUCTION FOR COUNTY.....	\$ 154,691

ARAPAHOE (1)

*Littleton

Area 820 square miles

Plants — 25 men

Sand and gravel production came from the Englewood and Littleton plants of the Cooley Gravel Company.

Sand and Gravel	\$ 1,007,503
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,007,503

ARCHULETA (4)

*Pagosa Springs

Area 1,364 square miles

Projects, petroleum — 105 men

Work started on the intake end of the Azotea Tunnel this year which will eventually divert water from the Navajo River in Colorado

*County Seats

to Azotea Creek in New Mexico. The tunnel will ultimately be 13 miles long and will be driven by a mole or boring machine from the New Mexico side. Nielson Inc. are the contractors on the intake preparation project in Colorado. Archuleta County petroleum production was steady from Gramps Field in the southern part of the county and sand and gravel operations supplied aggregate for construction and road building projects.

Sand and Gravel	\$ 148,858
Petroleum	\$ 202,715
TOTAL PRODUCTION FOR COUNTY.....	\$ 351,573

BACA (2)

*Springfield

Area 2,565 square miles

Petroleum — 61 men

Oil well drilling activity by the Baker & Taylor Drilling Company, Kerr-McGee Oil Company, Horizon Oil & Gas Company, and Rip C. Underwood added to oil exploration in Baca County. 197,028 barrels of petroleum and 1,042,984 million cubic feet of gas were produced from 21 wells in the county. Sand and gravel production for highway and private construction work was steady.

Sand and Gravel	\$ 246,207
Petroleum	567,441
Gas	88,314
Total	\$ 655,755
TOTAL PRODUCTION FOR COUNTY.....	\$ 901,962

BENT (2)

*Las Animas

Area 1,543 square miles

Petroleum — 30 men

Petroleum and gas production in Bent County increased materially in 1964 over last year. Sand and gravel production added to the county mineral economy.

Sand and Gravel	\$ 43,257
Petroleum	16,494
Gas	35,570
Total	\$ 52,064
TOTAL PRODUCTION FOR COUNTY.....	\$ 95,321

BOULDER (1)

*Boulder

Area 758 square miles

Mines, plants, quarries, placer, project, petroleum — 203 men

Although base and precious metal production in Boulder County was low for the year, considerable sampling, exploration, and de-

velopment work was evident at many of the county's previously idle mines. Fluorspar production was light due to curtailed production from the Burlington Mine and Valmont Mill. Electronic mineral separation at the Marion Mill near Sugar Loaf, as well as some base metal concentration, kept this plant in operation most of the year. There were 31 separate mining and milling operations inspected by the Bureau of Mines in 1964. Early in the year plans were consummated for the erection of a twenty million dollar cement plant near Lyons, Colorado. The plant will be constructed for the Rocky Mountain Cement Company, a subsidiary of Martin-Marietta Company. The plant, when completed, will materially aid the economy of the county. Stone production from Boulder County's many quarries was steady as was oil production from a few producing wells in the county. Peat, clay, sand and gravel added to the total county mineral production.

Uranium	_____
Miscellaneous	\$ 8,500
Sand and Gravel	967,982
Fluorspar	565,740
Stone	257,209
Clay	137,657
Peat	30,445
Gemstones	1,300
Total	\$ 1,960,333
Petroleum	\$ 5,743
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,974,576

CHAFFEE (3)

*Salida

Area 1,040 square miles

Mine, plants, quarries, placers, projects — 159 men

The Goddard Tunnel and Homestake Conduit segments of the Homestake Reclamation Project in Chaffee County were started in 1964, creating noticeable increased county employment. General increased interest in precious metals in the county was evident which should create more actual employment and mineral production in 1965. The Monarch Quarry operated by the Colorado Fuel & Iron Corporation was active most of the year producing limestone for use as a flux at their Pueblo Plant. During the year Reynolds Mining Company began dismantling their fluorspar plant southeast of Poncha Springs, which was operated in 1952-54. Cotter Corporation, Alpine Industries, Inc., Colorado Granite Company, L & V Products Company, and William Wyble were other operators in the county during the year.

*County Seats

Silver	\$ 411
Lead	6,874
Zinc	8,620
Total	\$ 15,905
Sand and Gravel	3,055
Limestone	815,358
Stone	150,600
Gemstones	2,100
Total	\$ 971,113
TOTAL PRODUCTION FOR COUNTY.....	\$ 987,018

CLEAR CREEK (1)

*Georgetown

Area 395 square miles

Mines, plants, placer, projects — 616 men

Activity in Clear Creek County was higher in 1964 and employment from mining activity and projects exceeded any period within the last 30 years. The rehabilitation and development of the Urad molybdenum mine west of Berthoud Pass by American Metals Climax, Inc. was a major boost to the mineral activity in the county. This property will be in operation and production by 1967 with a daily production of 5,000 tons. The many projects in the county, including the Straight Creek pioneer bore for the Colorado Highway Department, a portion of the Interstate Highway 70, the Cabin Creek hydroelectric project for the Public Service Company of Colorado, consisting of two dams and a connecting tunnel, and the rebuilding of Highway 6 and 40 from Idaho Springs to Empire Junction, also a part of Interstate 70, were a significant boost to the county and State economy. In addition to this activity, many long inactive mines were opened and evaluated for future production. The announcement of a high grade silver discovery and subsequent shipping of ore from the Johnny Bull west of Silver Plume was positive evidence that our silver reserves in Colorado are still abundant.

Gold	\$ 1,408
Silver	172,973
Copper	577
Lead	6,862
Zinc	2,000
Miscellaneous	40,000
Total	\$ 223,820
Sand and Gravel	69,245
Gemstones	8,000
Total	\$ 77,245
TOTAL PRODUCTION FOR COUNTY.....	\$ 301,065

*County Seats

CONEJOS (2)

*Conejos

Area 1,274 square miles
 Plant, petroleum — 44 men

The Great Lakes Carbon Corp. plant, located one mile south of Antonito, maintained steady operations at their perlite processing plant during the year. Perlite ore was trucked in from New Mexico, crushed and exfoliated for the construction trade. Sand and gravel operations and some turquoise production added to the mineral output of this county.

Sand and Gravel	\$	88,521
TOTAL PRODUCTION FOR COUNTY.....	\$	88,521

COSTILLA (2)

*San Luis

Area 1,220 square miles
 Plant, petroleum — 27 men

Volcanic scoria was crushed and processed at the Mesita Hill Plant of the Colorado Aggregate, Inc. and several sand and gravel plants were in operation during the year. Limited oil and gas drilling activity was noted in 1964.

Sand and Gravel	\$	79,521
Scoria		46,300
Total	\$	125,821
TOTAL PRODUCTION FOR COUNTY.....	\$	125,821

CUSTER (2)

*Westcliffe

Area 738 square miles
 Mines, plant, quarry — 27 men

Exploration and development work on the Game Ridge, Lady Franklin, and Vidlar tunnels by the Cotter Corporation, as well as development work on the Keystone by Cowan and Rusler, on the Silver Cliff by Rimlite, Inc., and on the Tomboy by Charles and Lyman Akin was the result of a more favorable mineral market for Colorado's base and precious metals. Rancite production from the Abbit pit by Schmidt Construction Company and perlite production from the Rosita quarry by Persolite Products, Inc. added to the county economy. Sand and gravel production was normal.

Silver	\$	4,665
Lead		5,534
Zinc		3,950
Total	\$	14,149
Sand and Gravel		55,838
Stone		300
Perlite		21,000
Total	\$	77,138
TOTAL PRODUCTION FOR COUNTY.....	\$	91,287

*County Seats

DELTA (4)

*Delta

Area 1,161 square miles

Plant, petroleum — 35 men

Sand, gravel, coal and CO₂ gas comprise Delta County's mineral production in 1964.

Sand and Gravel	\$ 82,362
Coal	\$ 317,886
TOTAL PRODUCTION FOR COUNTY.....	\$ 400,248

DENVER (1)

*Denver

Area 80 square miles

Plants — 177 men

Although many mining and oil companies have their main offices in Denver, there was no mineral production from this county, outside of sand and gravel, in 1964. The Globe Plant of the American Smelting & Refining Company and the Denver plant of the General Chemical Division, Allied Chemical Corporation, operated all during the year on minerals shipped in from other counties in the State. The Globe Plant refines metals from other plants and extracts cadmium. The General Chemical plant manufactures sulphuric acid from pyritic ore originating at Climax in Lake County.

Sand and Gravel	\$ 348,307
TOTAL PRODUCTION FOR COUNTY.....	\$ 348,307

DOLORES (4)

*Dove Creek

Area 1,029 square miles

Mines, mills, projects — 116 men

Intermittant operations at the Rico Argentine Mining Company's Mountain Springs Mine and St. Louis Tunnel supplied lead and zinc ore for the Rico Mill and Ramco sulphuric acid plant in 1964. Some work was done on the Barlow vanadium claims by the Vanadium Corporation of America. The Rock of Ages Mine, owned by Everett Blackburn, and the St. Louis mine, owned by Myron Jones and partners, were idle during 1964. Some development and exploration work was done on the Sambo property by William Swank and Sons.

Gold	\$ 2,000
Silver	21,600
Copper	2,000
Lead	265,200
Zinc	128,700
Pyrite	260,000
Total	\$ 679,500
Sand and Gravel	\$ 31,000
TOTAL PRODUCTION FOR COUNTY.....	\$ 710,500

*County Seats

DOUGLAS (1)

*Castle Rock

Area 844 square miles

Mines, plant, quarry, project — 84 men

Clay production by Helmer Brothers, Robinson Brick & Tile Company, Stroud-Whisenhunt, Denver Brick & Pipe Company, and Waterton Sand & Clay Company, again ranks first in county mineral production. These mines are located along the Hogback in the western part of Douglas County. Varicolored stone was produced by M & S Inc. from their Rusty Pick and Skeleton #2 pits southwest of Sedalia. Sand and gravel operations along the South Platte were steady during the year. The Aurora Rampart Water Tunnels No. 1 and 2, which will eventually divert water to the city of Aurora, were started this year by Fred Linneman, contractor in charge of the project.

Sand and Gravel	\$ 236,588
Clay	292,215
Gemstones	2,900
Miscellaneous	43,589
Total	\$ 575,292
TOTAL PRODUCTION FOR COUNTY.....	\$ 575,292

EAGLE (3)

*Eagle

Area 1,686 square miles

Mine, mill, quarries, projects — 710 men

The Eagle Mine and Mill operated by the New Jersey Zinc Company at Gilman, Colorado, the largest producing zinc mine in the State, has been in continuous operation for the last 50 years. In excess of 1,210.0 tons of ore is mined from this property on Battle Mountain each day and is concentrated in their underground mill located in the property. Zinc concentrates are shipped to Canon City for further processing at a company owned plant. During the year the New Jersey Zinc Company and the American Smelting & Refining Company joined in a joint venture to drive an incline shaft from the 24 level of the Eagle property. The company enjoyed an envious safety record during 1964. The Dotsero and Roaring Fork quarries, operated by Lava Products Inc. and E. H. Bone respectively, were steady producers of volcanic cinders during the year. Reclamation projects consisting of the Homestake Dam, Homestake Intake Project, Missouri Creek Tunnel, and Ruedi Dam added materially to employment in the county.

Gold	\$ 175,200
Silver	833,000
Copper	400,000
Lead	1,173,136
Zinc	6,696,360
Total	\$ 9,277,696
Sand and Gravel	\$ 103,794
TOTAL PRODUCTION FOR COUNTY.....	\$ 9,381,490

*County Seats

ELBERT (1)

*Kiowa

Area 1,864 square miles

Mines — 17 men

Clay was mined in Elbert County from the Buffalo and Tucker pits, located north and east of Kiowa. The Robinson Brick & Tile Company and the Denver Brick & Pipe Company operated their properties most of the year. Sand and gravel operations were steady.

Sand and Gravel	\$ 11,046
Clay	80,298
Total	\$ 91,344
TOTAL PRODUCTION FOR COUNTY.....	\$ 91,344

EL PASO (2)

*Colorado Springs

Area 2,159 square miles

Mines, plant, quarry, project — 365 men

Most all of the major excavation work at the North American Defense project (NORAD) in Cheyenne Mountain was completed in 1964, leaving the installation of buildings and equipment for the final phase. In excess of one million tons of granite was excavated to house this huge underground installation. Mineral products of El Paso County in 1964 included sand and gravel, concrete aggregate, clay, stone, limestone, and silica. The operation of these properties was steady all during the year and production from the same was average.

Miscellaneous	\$ 81,000
Sand and Gravel	1,053,998
Limestone	563,020
Clay	27,560
Miscellaneous	7,860
Total	\$ 1,652,438
Coal	\$ 5,796
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,739,234

FREMONT (2)

*Canon City

Area 1,562 square miles

Mines, mills, quarries — 336 men

Additions in the form of base and precious metal concentration were made to the Cotter Corporation Mill, located near Canon City, during the year. The company has expanded their uranium plant to include base metal separation and during the year they were active in evaluating, exploring and developing silver, lead and zinc mines in the Wet Mountain area and other parts of the State. Limestone and shale were quarried from the Ideal Cement Company pits at Portland where one of Colorado's largest cement plants is located. Silica sand, limestone, marble, dolomite, gypsum, granite, uranium,

mica, beryl, feldspar, clay, travertine, perlite, quartz, bentonite, and varicolored stone were all produced from this versatile mineral county in 1964. A complete listing of operators and producers is found in the back pages of this report. The New Jersey Zinc Company sintering plant and the Fibreboard plant, both near Canon City, were steady operators during the year. Petroleum production of 2,000 barrels per month continued at the Florence field.

Uranium	
Miscellaneous	\$ 12,151
Total	\$ 12,151
Cement	7,181,694
Sand and Gravel	95,581
Limestone	764,449
Stone	179,750
Clay	24,975
Feldspar, Mica, Etc.	989
Gypsum	712,256
Miscellaneous	8,325
Total	\$ 8,968,019
Petroleum	69,149
Coal	1,487,099
Total	\$ 1,556,248
TOTAL PRODUCTION FOR COUNTY.....	\$10,536,418

GARFIELD (3)

*Glenwood Springs

Area 3,000 square miles

Mines, plants, quarries, placers, projects, petroleum — 282 men

The development of an oil shale industry in Colorado centered in Garfield County during the year. In addition to the reopening of the old U. S. Bureau of Mines Oil Shale Mine and Plant by the Colorado School of Mines Research Foundation in cooperation with several large oil companies, the Colony Development Company started the opening of their mine and erection of a 1,000-barrel per day retort plant on Parachute Creek. This plant should be operational late in 1965 and is the first probable forerunner to a 50,000-barrel a day plant, should the operation prove satisfactory. Bechtel Corporation of San Francisco has been awarded the contract for primary construction which will use the patented Tosco retorting process. Several other oil companies have been active on process and recovery development. Limestone was produced from the Glenwood Springs Lime Quarry by Frank H. Norberg and from the Basic Chemical Quarry by the Basic Chemical Corporation. Operations at the Rifle uranium-vanadium plant owned by the Union Carbide Corporation, Nuclear Division, were steady during the year and their Rifle Creek Mine was opened for further production. The Northwestern Engineering Company started work on the Rifle Creek Dam for the

*County Seats

Bureau of Reclamation and Colorado Constructors, Inc. started work on the Glenwood Springs highway tunnels east of Glenwood Springs.

Sand and Gravel	\$ 87,707
Limestone	369,856
Total	\$ 457,563
Gas	165,637
Coal	41,829
Total	\$ 207,466
TOTAL PRODUCTION FOR COUNTY.....	\$ 665,029

GILPIN (1)

*Central City

Area 149 square miles

Mines, plants, placers — 95 men

Mineral activity in Gilpin County increased during the year as a result of higher mineral prices and expanded demand for all minerals. The Nye Metals Inc., operators of the Wilma molybdenum mine on Dakota Mountain at Apex, made several shipments of molybdenum ore which were reported to carry values in excess of one per cent. The Boodle, Golden Gilpin, and Glory Hole mills operated intermittently during the year on ores from the many development operations in the county. Thirty-five separate mineral operations were inspected in Gilpin County during the year, which indicates a renewed activity in this once richest square mile on earth. Peat production was steady and placer or gulch mining showed some renewed activity with the larger operations moving into the lower areas.

Gold	\$ 3,154
Silver	171
Copper	1,000
Lead	1,521
Zinc	2,990
Molybdenum	56,280
Total	\$ 65,116
Sand and Gravel	3,300
Peat	18,719
Gemstones	3,000
Total	\$ 25,019
TOTAL PRODUCTION FOR COUNTY.....	\$ 90,135

GUNNISON (3 & 4)

*Gunnison

Area 3,243 square miles

Mines, mills, quarries, placer, projects — 643 men

The Keystone Mine and Mill, located three miles northwest of Crested Butte, maintained steady production during the year with

*County Seats

development work keeping up with production. This property, owned by the American Smelting & Refining Company, was reopened last year by McFarland and Hullinger, the largest base metal operation in the county. The Atlas Mill, operated by the Elk Mountain Mining Company at Crested Butte, milled ore from their Micawber property west of Crested Butte and many other properties were opened for evaluation and development work along with some production. Of great importance to the economy of Gunnison County are the reclamation projects on the Gunnison River below Gunnison. Work continued on schedule on the Blue Mesa Dam, Curecanti Project and on the Morrow Point Dam a few miles below. Over 600 men were at work on the various projects and mineral operations in 1964.

Gold	\$ 4,424
Silver	618,166
Copper	298,155
Lead	647,143
Zinc	600,226
Total	\$ 2,168,114
Sand and Gravel	423,956
Stone	3,000
Gemstones	3,000
Total	\$ 429,956
Coal	\$ 2,354,108
TOTAL PRODUCTION FOR COUNTY.....	\$ 4,952,178

HINSDALE (4)

*Lake City

Area 1,062 square miles

Mines, mill, project — 49 men

Exploration and development work in Hinsdale County showed a marked improvement over 1963, which was in the most part due to more attractive base and precious metal prices and a heavier demand for these minerals. During the summer months, evaluation and development work was in progress on the Ajax #2, Bell of the West, Golden Fleece, Last Chance, Lead King, Pelican, Pride of America, and the Sterling Group. Some very interesting geophysical work was carried on at the head of the Lake Fork by Ted Buder and Associates.

Miscellaneous	\$ 4,000
Sand and Gravel	\$ 10,000
TOTAL PRODUCTION FOR COUNTY.....	\$ 14,000

*County Seats

HUERFANO (2)

*Walsenburg

Area 1,580 square miles

Mine, projects — 25 men

Clay mining at the Huerfano Pit northwest of Walsenburg, operated by the Empire Clay Products Inc., and at the Standard Fire Brick Company's Chamblin Mine located on the Huerfano-Pueblo county line, was steady during the year. Sand and gravel for construction purposes and highway projects added to the county mineral production.

Uranium	_____
Sand and Gravel	\$ 404,092
Clay	1,000
Gemstones	700
Total	\$ 405,792
Coal	\$ 257,815
TOTAL PRODUCTION FOR COUNTY.....	\$ 663,607

JACKSON (1)

*Walden

Area 1,628 square miles

Petroleum — 65 men

Petroleum production from 40 wells was steady during 1964 with an average of completions and abandonments. Mining is still at a standstill awaiting renewed interest in fluorspar prices.

Sand and Gravel	\$ 6,568
Petroleum	1,021,729
Gas	1,005
Total	\$ 1,022,734
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,029,302

JEFFERSON (1)

*Golden

Area 791 square miles

Mines, plants, quarries, project — 339 men

Uranium, sand and gravel, clay, stone and beryl ore were the principal minerals produced in Jefferson County during 1964. The Schwartzwalder uranium mine, operated by the Denver-Golden Corporation, was active all year, shipping crude ore to the Cotter Mill in Canon City. The Lee Sand & Gravel Company, Brannan Sand & Gravel Company, Bear Valley Gravel Company, Rio Grande Gravel Company, Table Mountain Incorporated, and the State Quarry were steady producers during the year. Rocky Mountain Aggregates, Inc. produced varicolored crushed stone and the Beryl Ores Company maintained steady production during 1964. Clay, a major county mineral, was produced by the Denver Brick & Pipe

*County Seats

Company, Wesley D. Conda, George W. Parfet Estate, John L. Harvey, Lakewood Brick & Tile Company, Robinston Brick & Tile Company, Colorado Brick Company, G. C. Bennetts and Sons, and others. The Idealite Company, north of Golden, produced lightweight aggregate from their pit and plant on Rocky Flats. Expanded shale was produced at the Clalite Aggregate Company Plant east of Golden and exploration work was conducted at the Malachite & Morrison Mine south of the Kiowans Reservation. Some activity was shown at the Augusta Mine near Evergreen and a mill was placed in operation during the fall.

Gold	\$	2,000
Silver		109
Uranium		
Total	\$	2,109
Sand and Gravel		2,325,894
Stone		1,250,428
Clay		586,680
Feldspar, Mica, Etc.		39,000
Gemstones		3,000
Total	\$	4,205,002
TOTAL PRODUCTION FOR COUNTY.....	\$	4,207,111

KIOWA (2)

*Eads

Area 1,794 square miles

Petroleum — 10 men

Oil well exploration was carried on in the county by the Davis Drilling Company.

Sand and Gravel	\$	167,334
Gemstones		2,000
Total	\$	169,334
Petroleum		44,997
Gas		188,451
Total	\$	233,448
TOTAL PRODUCTION FOR COUNTY.....	\$	402,782

LAKE (3)

*Leadville

Area 384 square miles

Mine, plants, placer, projects — 3,717 men

Mineral activity and employment in Lake County continued high during the year. The Climax Molybdenum Company, a division of American Metal Climax, Inc., initiated a twenty million dollar expansion program calculated to treat tremendous oxide ore reserves. Production from the new Ceresco Tunnel, added to tonnage from the

*County Seats

Phillipson and Storke levels of the Climax Mine, was responsible for the greatest yearly total produced so far from this property. On May 23 this company successfully detonated the largest underground blast in mining history, resulting in the breaking or releasing of better than one and one-half million tons of molybdenum ore for processing. A fire in the Storke level ventilation shaft on July 8 was responsible for a short shutdown of operations until damage could be repaired. The Homestake Reclamation Project as well as parts of the Fryingpan-Arkansas project continued during the year and were responsible for much increased employment in the county. Sand and gravel produced by C. Ryan and Son was used for aggregate at the various Climax construction projects. Peat moss was produced by the Mt. Elbert Peat Moss Incorporated.

Molybdenum	\$ 72,832,786
Tungsten	1,561,670
Pyrite	305,000
Tin	135,138
Total	\$ 74,834,594
Sand and Gravel	127,282
Peat Moss	89,100
Gemstones	1,000
Total	\$ 217,382
TOTAL PRODUCTION FOR COUNTY.....	\$75,051,976

LA PLATA (4)

*Durango

Area 1,691 square miles

Mines, plants, placers, projects, petroleum — 443 men

Increased prices for lead, silver, copper, and zinc had a stimulating effect on La Plata County exploration and development work during the year. Nine mines and one placer were inspected by the Bureau of Mines in addition to three plants, one peat moss operation and three projects. Employment in the mineral industry dropped considerably in La Plata County with the closing of the Vanadium Corporation of America plant at Durango early in 1963. Petroleum and gas production was steady with the average amount of completions and abandonments. The American Mining & Dredging Company started operations early in 1964 on their placer property in the Hermosa area. Fifteen men were employed at this property. Development work continued at the Bessie G, Black Hawk, Brawner Tunnel, Lady Eleanor, Grassy Hill, Jenny Lind, Rosenite, Sarah G, Thomas Property, and Western Belle mine.

*County Seats

Gold	\$ 4,991
Silver	1,545
Lead	280
Total	\$ 6,816
Sand and Gravel	301,891
Peat	2,550
Gemstones	8,000
Total	\$ 312,441
Petroleum	124,321
Gas	4,029,299
Coal	148,453
Total	\$ 4,302,073
TOTAL PRODUCTION FOR COUNTY.....	\$ 4,621,330

LARIMER (1)

*Fort Collins

Area 2,640 square miles

Mines, plants, quarries, petroleum — 365 men

Cement production from the Boettcher Quarry and Plant at La Porte, north of Fort Collins, ranked first in Larimer County mineral production with stone from the county's many quarries ranking second. Red, pink, and variegated stone found in the Lyons area is becoming increasingly popular in Colorado home and business construction and most quarries in the county were active all year. Sand and gravel, beryl, and limestone production added to the county total. Gypsum was produced from the Goodwin and Loveland Quarries and limestone was produced from the Holly, Boettcher, Rex, and Union Pacific Quarries. Beryl and mica were mined at Yo-Jo, Big Boulder, Corral Pole, and Langston properties and the Jolex Mica Plant operated part of the year. Some gold, silver, and uranium development was evident and petroleum was produced from 55 wells in the county. Several new wells were brought in in the Berthoud-Loveland area and drilling remained steady.

Uranium	_____
Beryllium	\$ 2,150
Total	\$ 2,150
Cement	8,308,975
Sand and Gravel	419,866
Limestone	787,061
Stone	1,240,891
Feldspar, Mica, Etc.	1,100
Miscellaneous	120,565
Total	\$10,878,458
Petroleum	\$ 1,130,901
TOTAL PRODUCTION FOR COUNTY.....	\$12,011,509

*County Seats

LAS ANIMAS (2)

*Trinidad

Area 4,798 square miles

Mines, petroleum — 40 men

Clay production from the pits of Empire Clay Products Incorporated and Raymond Moore, south of Trinidad, and from the Scott Mining Company Santa Fe mine at Starkville, remained steady during 1964. Sand and gravel and gas production along with coal, the principal county product, held Las Animas County production to a steady average.

Sand and Gravel	\$ 16,287
Clay	28,410
Total	\$ 44,697
Gas	8,231
Coal	4,086,479
Total	\$ 4,094,710
TOTAL PRODUCTION FOR COUNTY.....	\$ 4,139,407

LOGAN (1)

*Sterling

Area 1,849 square miles

Mines, petroleum — 456 men

Petroleum production of 3,495,586 barrels from 371 wells in the county was a 20 per cent decrease from 1963. Several new wells were brought in at the Tomahawk Field which was some encouragement towards eventual increased quantity production. Sand and gravel added to the county's total mineral production.

Sand and Gravel	\$ 101,156
Petroleum	10,067,288
Gas	676,756
Total	\$10,744,044
TOTAL PRODUCTION FOR COUNTY.....	\$10,845,200

MESA (4)

*Grand Junction

Area 3,334 square miles

Mines, plants, quarries, projects, petroleum — 1,277 men

Uranium and vanadium production continued to be first in Mesa County's production despite the Atomic Energy Commission stretch-out production program, which will continue in existence until 1970. Some thirty mines were active on Outlaw, Calamity, Tenderfoot, and Beaver Mesas. Ore from these properties was treated at the Climax Uranium Mill in Grand Junction and at the Union Carbide Corporation, Nuclear Division mill at Uravan. Gas production from the county's 11 fields was steady and sand and gravel production showed an increase over 1963. State and Federal highway projects continued through the year and added to county employment. The general

*County Seats

offices of the Union Carbide Corporation, Nuclear Division, are located in Grand Junction as are the offices of the Climax Uranium Company and many others. Three quarries in the county produced stone for the building trades.

Uranium	\$ 4,333,840
Vanadium	2,445,093
Total	\$ 6,778,933
Sand and Gravel	746,833
Stone	9,953
Clay	1,000
Total	\$ 757,786
Gas	251,362
Coal	475,859
Total	\$ 727,221
TOTAL PRODUCTION FOR COUNTY.....	\$ 8,263,940

MINERAL (3)

*Creede

Area 923 square miles

Mines, plant, placer, project — 73 men

The Commodore and Amethyst mines, operated by the Emperius Mining Company, had steady production during 1964 and their ore was concentrated in the Emperius Mill located southwest of Creede. Development and exploration work was conducted by the Homestake Mining Company at the Bull Dog Mine, owned by Bull Dog Mountain Incorporated. Frank and Lee Davis worked the Mexico property during the summer months. Increased metal prices have made many of Mineral County's long inactive mines attractive for possible future production.

Gold	\$ 18,340
Silver	383,488
Copper	155,000
Lead	433,967
Zinc	610,987
Total	\$ 1,601,782
Sand and Gravel	1,800
Gemstones	2,500
Total	\$ 4,300
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,606,082

MOFFAT (3)

*Craig

Area 4,761 square miles

Mine, plant, petroleum — 126 men

The Union Carbide Corporation, Nuclear Division, Maybell uranium pit mining operations were suspended on August 15, and

*County Seats

the Maybell Mill was closed on November 13, 1964, due to a diminishing demand for uranium metal and low grade ore. This operation was started in 1956 and the mill started production in 1957. The cost of the plant was in excess of two and two-tenths million dollars. The closing of this operation will have a material effect on mineral production in the county. Petroleum and gas production from Iles Dome, Sundance Unit and others continued steady during the year from 130 active wells. Exploration drilling in the county was average with an average ratio of success. Sand and gravel production added to the total mineral production of the county.

Uranium	
Sand and Gravel	\$ 189,285
Miscellaneous	1,800
Total	\$ 191,085
Petroleum	2,464,260
Gas	1,473,274
Coal	891,398
Total	\$ 4,828,932
TOTAL PRODUCTION FOR COUNTY.....	\$ 5,020,017

MONTEZUMA (4)

*Cortez

Area 2,097 square miles

Mines, plants, projects, petroleum — 451 men

Exploration, development and appraisal work in Montezuma County continued in 1964 on properties that have a potential production under the advanced price of lead, zinc, and silver. The Schmidt Construction Company, contractors on the road from the Four Corners area to Aneth Oil Field, were active all year with completion of this new road scheduled for early in 1965. Sand and gravel operations had a steady production for highway and industrial construction. Petroleum production came from wells in the southern part of the county. Considerable new drilling activity was noted in Montezuma County with completions above average.

Gold	\$ 7,000
Uranium	
Total	\$ 7,000
Sand and Gravel	\$ 47,473
Petroleum	1,477,241
Gas	126,353
Total	\$ 1,603,594
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,658,067

*County Seats

MONTROSE (4)

*Montrose

Area 2,240 square miles

Mines, plants, placers, projects, petroleum — 1,292 men

Steady production from the 97 active carnotite mines in Montrose County held this county first in uranium and vanadium production again in 1964. The active areas were Long Park, Monogram Mesa, Carpenter Ridge, Martin Mesa, Bull Canyon, and the Dolores Rim. The Uravan Mill of Union Carbide Corporation, Nuclear Division, held a steady production of uranium and vanadium concentrate from ores in Montrose, Mesa, and San Miguel Counties. Offices, warehouses, and shops are maintained at Uravan for administrative mine and mill repair of the Nuclear Division mines in the area. Vanadium Corporation of America maintained offices and warehouses at their Naturita plant for servicing the many mines operated by them on the Colorado Plateau. Construction work on the Morrow Point Dam on the Gunnison River at Cimarron continued all during 1964 as well as some work on the Crystal Dam below Morrow Point. Johnson-MK are the prime contractors on the Morrow Point Dam for the Bureau of Reclamation. The Colorado Bureau of Mines maintains offices at Ray's Hotel in Naturita for consolidating inspection activities on the Plateau and for Radon Daughter Product Control work in the many uranium mines in Colorado.

Uranium	\$10,771,184
Vanadium	8,392,050
Miscellaneous	3,500
Total	<u>\$19,166,734</u>
Sand and Gravel	\$ 177,600
Coal	\$ 458,287
TOTAL PRODUCTION FOR COUNTY.....	\$19,802,621

MORGAN (1)

*Fort Morgan

Area 1,300 square miles

Petroleum — 425 men

Although petroleum production in Morgan County dropped from 9.7 million barrels in 1963 to 6.5 million barrels in 1964, fourth place in county production was maintained. Gas production dropped from \$1.2 million to slightly more than \$1.0 million. Exploration drilling was steady; however no new fields were opened. Some sand and gravel was produced for highway maintenance and industrial construction.

Sand and Gravel	\$ 32,090
Miscellaneous	40,000
Total	<u>\$ 72,090</u>
Petroleum	6,575,063
Gas	1,011,146
Total	<u>\$ 7,586,209</u>
TOTAL PRODUCTION FOR COUNTY.....	\$ 7,658,299

*County Seats

OTERO (2)

*La Junta

Area 1,276 square miles

Plant, petroleum — 25 men

The Valley Concrete Company produced sand and gravel from their Rocky Ford pit and plant located at Rocky Ford. Other sand and gravel plants produced for highway construction and highway maintenance.

Sand and Gravel	\$ 115,316
TOTAL PRODUCTION FOR COUNTY.....	\$ 115,316

OURAY (4)

*Ouray

Area 504 square miles

Mines, plants — 188 men

Mining activity increased considerably in Ouray County in 1964, with the opening of the Camp Bird and Hidden Treasure properties, the Senorita and Black Girl Mines, the Bachelor Mine, and many others. Federal Resources, Incorporated continued exploration and development work on the Revenue property by opening over 7,000 feet of tunnel to the Virginia Shaft and Cumberland workings. Considerable drifting was done on the Virginia's vein. They have also started exploration work on the Hidden Treasure property from the lower Camp Bird crosscut. Carl Dismant has rebuilt the old Bay City Mill north of Ouray and is milling ore from the Bachelor and Senorita Mines. The Idarado Mining Company, although closed for a short time during August and September due to a strike, has maintained average production and holds first place in the production of gold, silver, copper, and lead in Colorado. Development work at their Pandora property has kept pace with production. Some high grade ore was shipped from the Wewissa property operated by John Crim. The Mountain Top property was purchased by Howard Noble and Associates early in the year and exploration work was started.

Gold	\$ 287,270
Silver	241,659
Copper	397,438
Lead	598,413
Zinc	942,166
Miscellaneous	1,000
Total	\$ 2,467,946
Sand and Gravel	1,600
Gemstones	1,500
Total	\$ 3,100
TOTAL PRODUCTION FOR COUNTY.....	\$ 2,471,046

*County Seats

PARK (1 & 2)

*Fairplay

Area 2,178 square miles

Mines, plant, quarries, placers, project — 80 men

Placer mining in Park County increased considerably during the year with active operations at the Collins Placer, Como Silver Heels, Frisbee, Golden Stake 1 and 2, Grand Union, Little Lori, and Penn Hill placers. Of interest to the Como area was the operation of McCulloch Oil Corporation on the Silver Heels property. Conversion of the Tarryall Mill, located 11 miles north of Lake George, to a lead, zinc, silver concentrator by Mineral Concentrates & Chemical Company, Inc. to be operated as a custom plant, will no doubt be of assistance to many small mining properties in the area. Development and exploration work was in progress at the Double Eagle property northwest of Alma, the Evening Star west of Fairplay, the Hock Hocking in Mosquito Gulch, the Shawnee No. 1, and the Boss Tunnel west of Lake George. Production of lead-silver from the Hilltop Mine continued through the year. Exploration was carried on at the Twinkle Tunnel and the Boomer Mine. Peat and quarrying operations, as well as sand and gravel operations added to county activity.

Gold	\$	3,200
Silver		500
Beryllium		12,500
Miscellaneous		8,000
Total	\$	24,200
Sand and Gravel		90,591
Stone		1,215
Peat		22,200
Total	\$	114,006
TOTAL PRODUCTION FOR COUNTY.....	\$	138,206

PITKIN (3)

*Aspen

Area 975 square miles

Mines, placer — 35 men

Improved metal prices for silver, lead, and zinc, have no doubt been responsible for increased mineral exploration and development work in Pitkin County. Work on the Highland Tunnel by Minerals Engineering Company continued all year, as did work at the Pride of Aspen mine by the B & C Leasing Company. The Aspen Consolidated Mining Company conducted development work at the old Smuggler Mine and the Snow Mass Mining Company started operations at the Snow Mass property ten miles south of Snow Mass.

Sand and Gravel	\$	61,848
Gas		50,231
Coal		3,337,600
Total	\$	3,387,831
TOTAL PRODUCTION FOR COUNTY.....	\$	3,449,679

*County Seats

PROWERS (2)

*Lamar

Area 1,636 square miles

Plant, petroleum — 37 men

The sand and gravel operation of the Valley Concrete Company at Lamar was the only mineral operation reported in Prowers County in 1964.

Sand and Gravel	\$ 160,998
Petroleum	\$ 11,851
TOTAL PRODUCTION FOR COUNTY.....	\$ 172,849

PUEBLO (2)

*Pueblo

Area 2,414 square miles

Mines, plants, project, drilling — 118 men

Clay mines and pits operated by the Standard Fire Brick Company near Mustang and east of Beulah, the Denver Brick & Pipe Company north of Mustang, Arthur L. Wands, General Refractories Company, and Walter H. Everhart near Stone City were steady clay producers in 1964. Sand and gravel pits and plants were operated by the Certified Concrete Company of Pueblo, the Fountain Sand & Gravel Company near Fountain and Jess Hunter at Pueblo. Several highway and road construction projects added to the county employment.

Miscellaneous	\$ 6,000
Sand and Gravel	1,052,414
Clay	136,400
Miscellaneous	8,000
Total	\$ 1,196,814
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,202,814

RIO BLANCO (3)

*Meeker

Area 3,264 square miles

Mine, petroleum — 313 men

The unitized Rangely Field operated by the California Company maintained a steady but somewhat lower total production of petroleum and gas than in 1963. Water flooding and gas injection procedures are calculated to double the life of the field and the result of this recovery aid should be evident in 1965. Production from Rio Blanco County in 1964 was 18,109,360 barrels of oil from 533 wells. The Baker Well Service, Colorado Well Service, Peacock Well Service, and the R & R Well Service were active in servicing the many wells in the county. Other active drilling companies were the Arapahoe Drilling Company, the Equity Oil Company, the Gulick Drilling Company, Hegwer Drilling Company, Mead Drilling Company, and the Willard Pease Drilling Company. Sand and gravel operations

*County Seats

as well as production and exploration work on the Midnight uranium mine added to county employment.

Uranium	_____
Vanadium	_____
Miscellaneous	\$ 43,888
Sand and Gravel	\$ 40,000
Petroleum	52,154,957
Gas	1,189,197
Coal	36,662
Total	\$53,380,816
TOTAL PRODUCTION FOR COUNTY.....	\$53,464,704

RIO GRANDE (3)

*Del Norte

Area 916 square miles

Mine, placer — 14 men

Exploration and development work on the Summitville property by the W. S. Moore Company under an OME contract was fairly steady in 1964. The Summitville property formerly produced in excess of seven million dollars in base and precious metals and is considered a very probable future producer. Some sand and gravel pits were active during the summer months.

Sand and Gravel	\$ 76,520
Gemstones	2,000
Total	\$ 78,520
TOTAL PRODUCTION FOR COUNTY.....	\$ 78,520

ROUTT (3)

*Steamboat Springs

Area 2,231 square miles

Mines, placer, project — 84 men

Exploration and development work continued during 1964 on the Elk Horn, Farwell, Greenville, and Little Red Park properties of W. A. Bowes. The Little Red Park is a placer property located in Section 33, Township 11 North, Range 85 West and was started this year. Petroleum production from the Curtis, Sage, Grass Creek, and Tow Creek properties was steady.

Sand and Gravel	\$ 18,007
Petroleum	234,020
Coal	4,567,809
Total	\$ 4,801,829
TOTAL PRODUCTION FOR COUNTY.....	\$ 4,819,836

*County Seats

SAGUACHE (3 & 4)

*Saguache

Area 3,146 square miles

Mines, placer — 16 men

Rawley Metals Inc. kept the Rawley #2 lead, zinc, and silver property owned by Reed Johnston & Company, at Bonanza on a standby basis with some production noted. This property was formerly owned by the American Industrial Leasing Company. The Cotter Corporation of Canon City conducted exploration and sampling work at the Gibraltar Mine located 12 miles east of Sargent, and the Pinnacle Exploration Company completed assessment work on the Pitch Mine located on Indian Creek. The Villa Grove turquoise lode eight miles north of Villa Grove operated intermittently during the year with some turquoise production.

Uranium	
Sand and Gravel	\$ 163,162
Gemstones	29,000
Total	\$ 192,162
TOTAL PRODUCTION FOR COUNTY.....	\$ 192,162

SAN JUAN (4)

*Silverton

Area 392 square miles

Mines, plants, project — 152 men

Colorado Bureau of Mines inspectors recorded 16 mines, two plants and several projects in San Juan County during the year. The largest of these operations was the Standard Metals Inc. operation of the old Sunnyside, Gold King, and Shenandoah mines and the Standard Mill. Their production increased during 1964 and development work kept pace with production. Ore mined is hauled through the American Tunnel and transported by truck to the Standard Mill located at the mouth of Arasta Gulch. Some development work was done on the old Shenandoah Dives property connected to the mill with a 2½ mile aerial tramway. Increased metal prices have influenced mine owners in the county to step up exploration work on the Silver Wing, May Day and Osceola properties with production coming from the Silver Wing and Osceola mines.

Gold	\$ 50,348
Silver	341,572
Copper	394,126
Lead	1,194,175
Zinc	2,035,587
Total	\$ 4,015,808
Sand and Gravel	\$ 44,759
TOTAL PRODUCTION FOR COUNTY.....	\$ 4,060,567

*County Seats

SAN MIGUEL (4)

*Telluride

Area 1,284 square miles

Mines, plant, placers, projects, petroleum — 751 men

San Miguel County maintained first place in the production of copper, lead, gold, and silver and second place in uranium and vanadium in 1964. Uranium and vanadium was produced from the many small and large mines in the west end of the county. Production areas were Slick Rock, Bull Canyon, and Gypsum Valley. The largest producer of lead, zinc, copper, silver, and gold was the Idarado Mining Company Pandora workings, which consists of the Old Smuggler, Black Bear, Argentine, Ajax, Montana, Flat Vein, and others located between Telluride and Red Mountain. Ore mined in their vast underground workings is transported underground through the mill tunnel to their 1,800 ton per day mill located on the Telluride side. Offices, warehouses and shops are maintained on the Red Mountain side at the portal of the Treasury Tunnel. Like most counties in the mineral belt, extensive sampling and exploration work on precious and base metals was evident in 1964. Production continued from the Iron Springs Placer at Old Ophir.

Gold	\$ 862,549
Silver	670,267
Copper	1,192,679
Lead	1,764,296
Zinc	2,804,780
Uranium	5,125,624
Vanadium	2,089,242
Total	<u>\$14,509,437</u>
Sand and Gravel	\$ 150,935
TOTAL PRODUCTION FOR COUNTY.....	\$14,660,372

SUMMIT (3)

*Breckenridge

Area 616 square miles

Mines, plant, projects — 353 men

With the closing of the Wellington Mine and Mill in March of 1964, mineral activity in this county consisted mostly of evaluation and development work. The Chautauqua, Recruit, Shoe Basin, and Silver Wing properties were active on development work with some production. These properties are in the Montezuma area. Projects in the county included the west portal of the Straight Creek Pilot Bore Highway Tunnel, which was driven from the East Portal and holed through early in 1965. The Wellington property in the Brecken-

*County Seats

ridge area is being maintained on a standby basis. Placer activity was noted on the Blue River, near Breckenridge.

Silver	\$ 12,602
Lead	9,255
Zinc	2,568
Total	\$ 24,425
Sand and Gravel	162,408
Gemstones	5,000
Total	\$ 167,408
TOTAL PRODUCTION FOR COUNTY.....	\$ 191,833

TELLER (2)

*Cripple Creek

Area 555 square miles

Mines, quarries, placers, petroleum — 36 men

The stabilized price of \$35 per ounce for gold has halted all metallic mineral production from this one time record gold producing county. Sand and gravel, peat moss, stone, and some gemstones were the only minerals produced in 1964. A considerable amount of exploration work was done by the Great Divide Explorations, Inc. on the El Paso shaft and property. The shaft was partially retimbered to the first level and geologic work was done on some of the upper levels. Al Goodwin and Associates conducted exploration and evaluation work at the Havilah Mine near Victor. Some work was done in an adit tunnel located on the property.

Sand and Gravel	\$ 1,000
Stone	2,460
Gemstones	20,000
Peat	5,000
Total	\$ 28,460
TOTAL PRODUCTION FOR COUNTY.....	\$ 28,460

WASHINGTON (1)

*Akron

Area 2,530 square miles

Petroleum — 339 men

Petroleum production in Washington County again showed a decrease from the previous year. Production in 1964 was 6,223,849 barrels or a decrease of 944,726 barrels of oil from 1963. Exploration drilling was above average.

Sand and Gravel	\$ 118,811
Petroleum	17,924,685
Gas	249,658
Total	\$18,174,343
TOTAL PRODUCTION FOR COUNTY.....	\$18,293,154

WELD (1)

*Greeley

Area 4,033 square miles

Petroleum — 75 men

Renewed petroleum exploration activity was evident in the northern end of the county with a fair measure of success. Despite this new exploration work, the production of petroleum decreased 198,102 barrels from 1963.

Sand and Gravel	\$ 1,861,849
Stone	8,000
Gemstones	3,000
Total	<u>\$ 1,872,849</u>
Petroleum	4,583,978
Gas	225,172
Coal	3,888,486
Total	<u>\$ 8,697,636</u>
TOTAL PRODUCTION FOR COUNTY.....	\$10,570,485

*County Seats

Safety Awards

Two bronze plaques were awarded in 1964 to the large operator and to the small operator who obtained the best safety record during the year. The New Jersey Zinc Company won the award in the large operator class for their safety achievements at the Eagle Mine and Mill operations while the small operator plaque went to Oral Clark for his various Colorado operations.

Only one Safety Achievement Award was given this year. It was presented to Lucius Pitkin, Inc. for operating the U. S. Atomic Energy Commission compound over one million man-hours without a lost-time accident.

Safety awards for operating in excess of 30,000 man-hours without a lost-time injury were presented to:

Boise Cascade Sand & Gravel Company—Derby Pit
 Colorado Fuel & Iron Corporation—Monarch Quarry
 Continental Consolidated Corporation—NORAD Phase II
 Fountain Sand and Gravel Company—Sand & Gravel Plant
 General Chemical Division, Allied Chemical Corporation—Denver Plant
 General Chemical Division, Allied Chemical Corporation—Valmont Mill & Burlington Mine
 Grafe-Wallace-Foster—NORAD Phase IIA
 Idarado Mining Company—Pandora Mill
 Ideal Cement Company—Portland Plant
 E. J. Longyear Company—Drilling Operations
 New Jersey Zinc Company—Canon City Plant
 Union Carbide Corporation, Mining & Metals Division—Grand Junction Facilities
 Union Carbide Corporation, Mining & Metals Division—Maybell Plant
 U. S. Atomic Energy Commission

Awards of Merit for cooperative safety endeavor were issued to:

American Metals Climax, Inc.—Urad Mine
 American Smelting & Refining Company—Globe Plant
 Asphalt Paving Company—Golden Plant
 David Blake—Rim Rock Blues # 17 & Teapot Dome # 2

Brannan Sand & Gravel Company—Sand & Gravel Operations
Burnett Construction Company—Gravel Pit
Castle Concrete Company—Castle Quarry & Plant
Climax Uranium Company—Beaver Mesa—Bonanza
Colorado Fuel & Iron Corporation—Canon Dolomite Quarry
Colorado Springs Public Utilities—Rampart Range Diversion Tunnel
Denver Brick & Pipe Company—Colorado Operations
Fibreboard Paper Products Corporation—Coaldale Quarry
Gardner Construction Company—Colorado Operations
Great Lakes Carbon Corporation—Antonito Plant
H. O. L. Mining Company—Cherokee Mine
Hathaway Company—Red Mesa Oil Field
Jones-Harrison Joint Venture—Cabin Creek Project
Domenic Leone Construction Company, Inc.—Highway Construction
F. H. Linneman, Inc.—Aurora Rampart Tunnels
MacPherson Drilling Company—Colorado Operations
Matterhorn Mining & Development Company—Colorado Operations
Puget Sound Bridge & Dry Dock Company—Ruedi Dam
Robinson Brick & Tile Company—Colorado Operations
Rocky Mountain Aggregates Inc.—Aggregates Mill
C. C. Sanders Mining & Development—Capella & American Eagle
Mines
John I. Schumacher—Sego Lily Lou Mine
Vern W. Smith Construction Company—Highway Projects
Standard Fire Brick Company—Colorado Operations
Steen Mining Company—Cash & Rex Mines
Sterling Sand and Gravel Company—Sand & Gravel Plant
Texaco Inc.—West Wilson Creek Field
Tri-State Drilling Company—Colorado Operations
Union Carbide Corporation, Mining & Metals Division—Rifle Plant
Union Carbide Corporation, Mining & Metals Division—Uravan Plant
U. S. Soil Conditioning Company—Thunder Mountain Quarry
Valley Concrete Company—Gravel Plant
L. L. Washburn Mining Company—Bachelor Shaft

Lost Time Injury Statistics - Mineral Industry

INJURIES

Colorado's mineral industry, exclusive of coal mining, had 128 more lost-time injuries (1 day or more lost time) in 1964 than in the previous year. This was an increase of 19 per cent with an overall man-hour increase of five per cent. Accident frequency increased slightly in underground mining, State and Federal projects and the petroleum industry, but was considerably lower in mine surface operations, quarries, mills, and plants. Severity rates were increased in underground mining, State and Federal projects and the petroleum industry, due to ten underground fatalities, two project fatalities, and two petroleum industry fatalities. Severity was considerably lower in surface mining, quarries, plants, and mills. There were seven more underground fatalities in 1964 than in the previous year, despite all efforts by industry and this department to hold these accidents to a minimum. We are hopeful that the combined efforts of management, employees, and the Bureau of Mines personnel can materially reduce this deplorable accident rate in 1965.

Six of the underground fatalities were directly chargeable to mine haulage, the other four were caused by improper blasting procedures, fall of man, fall of rock, and a flying object. The project fatalities were caused by fall of rock and equipment failure and the two oil well fatalities were caused by faulty and improper equipment, and lack of adequate safety precautions. One fatal accident occurred for every 418 men working underground or one for every 973,680 man-hours worked. One fatal occurred for every 1,556 men working on State and Federal projects or one for every 3,734,400 man-hours worked. One fatal occurred for every 1,570 men working on oil and gas rigs, or one for every 3,769,200 man-hours worked. One lost-time injury occurred for every 21 men working in the industry or one for every 49,302 man-hours worked.

All of the above fatal accidents were promptly investigated by Bureau of Mines inspectors as were all injuries considered of a serious nature. Complete reports covering these accidents and injuries were filed in the Bureau of Mines office by the inspectors and pertinent information as to the cause of these injuries was distributed to all inspectors immediately. Corrective recommendations were left with the operators and all similar situations in the State were corrected.

Specific cause, type, nature, and site of all lost-time injuries are listed in the following table as are the location and number of injuries by district and operation.

LOST TIME INJURY STATISTICS — MINERAL INDUSTRY (Continued)

SUMMARY OF INJURIES

	Total Man-Hours	Fatal Injuries	Lost-Time Injuries	Number of Days Lost	Frequency Rate Per One Million Man-Hours	Severity Rate Per One Million Man-Hours
Mines, Underground	9,736,800	10	380	71,082	39.0	7,300.
Mines, Surface	2,829,600	0	49	808	17.3	282.
Mills—Plants—Smelters	10,629,600	0	26	554	2.4	52.
Quarries—Pits	842,400	0	24	118	29.6	120.
State and Federal Projects	7,468,800	2	183	18,253	24.6	2,443.
Oil and Gas Industry	7,538,400	2	130	16,660	17.1	2,210.
Totals	39,045,600	14	792	107,475	20.2	2,752.

This table includes the loss of 84,000 days due to 14 fatalities and 12,611 days due to 10 permanent partial disabilities.

$$\text{Frequency Rate} = \frac{\text{Number of Injuries} \times 1,000,000}{\text{Number of Man-Hours of Exposure}}$$

$$\text{Severity Rate} = \frac{\text{Total Time Charges in Days} \times 1,000,000}{\text{Number of Man-Hours of Exposure}}$$

Injuries by Districts

	Mines		Mills—Plants —Smelters	Quarries —Pits	Projects	Oil Wells	Totals
	Fatals	Underground					
District 1	0	20	4	17	64	45	160
District 2	0	11	2	9	9	4	35
District 3	6	129	2	1	75	59	279
District 4	8	238	17	0	29	15	318
Totals	14	398	25	27	177	123	792

LOST TIME INJURY STATISTICS — MINERAL INDUSTRY (Continued)

FATAL INJURIES

Date	Name	Age	Employed By	County	Cause of Injury
3-24-64	John Milton Hall	41	American Metals Climax Inc.	Lake	Victim's head was crushed between a loaded and an empty mine car when the loaded car was being pushed on a cage with faulty safety chairs. Improper safety procedure and equipment failure.
3-25-64	Jake Morlang	30	Standard Metals Corporation	San Juan	Return to tunnel face after the blasting line had been connected to the blasting switch area. While at the face another miner, by mistake, connected and fired Morlang's round. Carelessness of all concerned and improper blasting procedure.
5- 4-64	Bobby Lee Cunningham	20	Marion Trone	Montrose	Head and shoulders crushed between a loaded car traveling up an incline shaft and the back of the incline. He was attempting to keep the car from tipping up. Failure to observe all safety rules and improperly operating equipment.
5-12-64	Richard Lee Troyer	26	American Metals Climax Inc.	Lake	Descending a ladder which was tied to a Sullivan pin when the pin pulled loose, dropping both Troyer and the ladder. Troyer fell 200 feet to his death. Improper equipment installation.
6-11-64	Phillip E. Schmitz	25	McFarland & Hullinger	Gunnison	While drilling with a stoper a large slab released and fell on Schmitz, killing him instantly. Improper ground support and safety precautions.
7- 2-64	Robert G. Godfrey	34	Federal Resources Corporation	Ourray	Crushed by an 8-ton locomotive. Godfrey took the locomotive back to the face to get something he left there. The locomotive returned to his work area empty and was stopped by his partner. Godfrey was found back towards the tunnel face. No witnesses.
7- 8-64	Steve V. Videtich	40	American Metals Climax Inc.	Lake	Investigating the source of an underground fire when an explosion hurled a large piece of concrete which hit Videtich in the head, causing instant death. Welding at shaft collar was possible cause of fire.
8-11-64	Vernon F. Gano	52	Union Carbide Corporation, Mining & Metals Division	San Miguel	Gano was hit in the upper body by an oxygen tank which was thrown from a runaway car when the car hit the bottom of an incline shaft. Car became detached from other cars near the incline collar. Lack of safety devices and improper hoisting procedures.

LOST TIME INJURY STATISTICS — MINERAL INDUSTRY (Continued)

Date	Name	Age	Employed By	County	Cause of Injury
8-17-64	Manuel Maestas	49	Idarado Mining Company	San Miguel	Operating a locomotive on an ore train when he leaned out and was caught by a rib projection, and was crushed between the locomotive and a rib, causing instant death. Lack of locomotive safeguard. Inadequate tunnel clearance.
8-22-64	Nelson B. Tootham	41	Silver Bay Mines Inc.	San Juan	When driving a small locomotive into a tunnel, Tootham fell from locomotive and was dragged several feet. His partner, riding in an empty car, became unconscious and when he revived he found Tootham dead. Subsequent checks revealed oxygen deficient atmosphere in the tunnel which probably caused the men to become unconscious. Inadequate tunnel ventilation and carelessness on the part of the two operators.
Projects					
7-28-64	Larry A. Unrein	23	Johnson, Morrison-Knudsen	Montrose	Unrein was hit by a 12 pound rock that fell from the canyon wall above at the Morrow Point Dam site. The rock crashed through the top of the truck cab in which he was sitting, hitting him in the head and causing instant death. Improper traffic control. Carelessness in control methods.
12-23-64	Guy P. Hollenbeck	28	Rippy Construction Company	Garfield	A cable supporting a crane boom failed and dropped the boom, hitting Hollenbeck on the head and causing instant death. Equipment failure, inadequate cable inspection and carelessness.
Oil Wells					
4-26-64	Elmer L. Howard	31	Pioneer Drilling Company	Moffat	Howard opened a 2-inch plug valve under 1,200 pounds pressure. Valve and nipple blew loose hitting Howard in the face, causing instant death. Rig fire followed. Low pressure fittings. Faulty and improper equipment.
6- 5-64	Kenneth Hacking	28	R&R Well Service	Rio Blanco	Working in the derrick when well blew out. Hacking started down the ladder when the well blew the second time and caught fire, causing him to fall to the floor, and instant death. Lack of safety device, safety line and Geronimo.

LOST TIME INJURY STATISTICS — MINERAL INDUSTRY (Continued)

AGENCY CAUSING INJURY (I=Injuries, F=Fatalities)	Mines				Mills-Plants Smelters				Quarries				Projects				Oil Wells				Grand Totals						
	Underground		Surface		I		F		I		F		I		F		I		F		I		F		Totals		
	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	Totals		
Bars-Bins-Chutes.....	2				1																			7	7		
Cables-Hose-Ropes.....	16																								21	21	
Cable overwind.....	3																								3	3	
Cars-Motors-Vehicles.....	63																								101	105	
Chains-Gears-Sprockets.....					2																				4	4	
Bells-Conveyors-Pulleys.....					2																				10	10	
Containers.....																										5	5
Chemicals.....					2																					6	6
Derricks-Headframes.....																										6	6
Doors-Windows-Gates.....	4																								4	4	
Drills-Drilling Equipment.....	15																								46	46	
Dust and Particles.....	5																								11	11	
Explosives-Loading, Firing.....	5																								7	7	
Electricity-Elec. Equipment.....	4																								1	1	
Falls-Floor-Ice-Snow.....	19																								6	6	
Falling or Flying Objects.....	6																								11	11	
Flames-Fire-Hot Substances.....	1																								2	2	
Hoists-Hoisting Apparatus.....	2																								2	2	
Ladders-Manways.....	10																								15	15	
Machinery-Tools.....	54																								100	100	
Materials.....	5																								9	9	
Metal Objects-Tongs.....	15																								22	22	
Platforms-Staging-Scaffolds.....	6																								48	48	
Premature or delayed blast.....	2																								12	12	
Rock-Ore-Ground.....	90																								71	71	
Screens-Tracks.....	5																								4	4	
Shovels, power.....																									181	181	
Tanks-Atmosphere.....					3																				13	13	
Timber-Lumber-Poles.....	26																								5	5	
Unclassified-Insufficient Data.....	4																								39	39	
Totals.....	370	10	49		26							24			181	2	128	2			778	14			6	792	

LOST TIME INJURY STATISTICS — MINERAL INDUSTRY (Continued)

TYPE OF INJURY (I=Injures; F=Fatalities)	Mines				Mills-Plants Smelters				Quarries				Projects				Oil Wells				Grand Totals									
	Underground		Surface		I		F		I		F		I		F		I		F		I		F		I		F		Totals	
	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	Totals	
Burns-Shock.....	5		2		4				1	1			1				2				15				15				15	
Caught in or between.....	58	1	2		3	3			3	3			3	29							98	1			99				99	
Fall on Same Level.....	15		6		2	2								6							32				32				32	
Fall on Different Level.....	14		3		3	3			1	1			1	4							26	2			28				28	
Handling.....	83		12		6	6			5	7			15								128				128				128	
Inhalation-Suffocation.....	4				1																		5						5	
Striking against-Struck by.....	148	1	16		7	7			10	34			54								269	2			271				271	
Slip-Stepping on.....	39		6		6	6			3	2			12								62				62				62	
Unclassified-Insufficient Data.....	3		1		1								1								5				5				5	
Totals.....	369	2	48		26	26			23	51			123								640	5			645				645	
NATURE OF INJURY																														
Foreign Bodies.....	15		2		2				2	1			3								25				25				25	
Cuts-Bruises-Lacerations-Punctures.....	153	1	15		7	7			9	28			64								276	2			278				278	
Strains-Sprains-Dislocations.....	118		23		9	9			5	10			29								194				194				194	
Hernia-Respiratory.....	5				1					1			3								10				10				10	
Fractures.....	87	1	6		3	3			7	11			29								143	3			146				146	
Amputations.....	4												4								8				8				8	
Burns-Scalds-Shock.....	13		3		4	4			1	1			3								25	1			26				26	
Occupational Disease.....	4				1																5				5				5	
Nature Unknown.....	4		2										1								7				7				7	
Totals.....	403	2	51		27	27			24	52			136								693	6			699				699	
SITE OF INJURY																														
Eyes.....	24		3		4				2	1			5								39				39				39	
Head-Face-Neck.....	26	2	4		3	3			2	9			14								58	4			62				62	
Trunk.....	134		20		11	11			5	23			24								217				217				217	
Upper Extremities.....	77		7		6	6			7	10			46								153				153				153	
Lower Extremities.....	127		19		6	6			9	15			41								217				217				217	
General.....	3																				3	1			4				4	
Insufficient Data.....	2																				2				2				2	
Totals.....	393	2	53		30	30			25	58			130								689	5			694				694	

Men Employed

Mineral industry employment in Colorado increased by 3% or 418 over employment in 1963. Although the number of active mines decreased by 83, mine employment increased by 32 men, a condition brought about by the closing of many small uranium mines and increased activity at larger metal mining properties over the State. Decreased employment was noted in oil well drilling activity and quarry operations while plant, mill, placer and project employment showed substantial increases. Employment figures shown below reflect on the job employment and do not include the many people employed who are directly dependent on mineral activity.

	Mines		Mills, Plants, Smelters		Quarries & Pits		Placers		Projects		Oil Wells		Totals	
	No.	Men	No.	Men	No.	Men	No.	Men	Men	Men	Men	Men	Men	Men
District 1	96	422	44	716	37	182	24	57	565	1,517	3,459			
District 2	40	100	25	317	21	117	3	6	324	354	1,228			
District 3	27	2,181	12	2,323	7	36	4	164	789	389	5,883			
District 4	265	2,070	24	1,073	6	16	9	36	1,434	881	5,510			
Totals	428	4,774	105	4,429	71	351	40	263	3,112	3,141	16,080			

TOTAL MEN EMPLOYED

	Underground	Surface	Oil Wells	Totals
District 1	304	1,638	1,517	3,459
District 2	258	616	354	1,228
District 3	2,086	3,408	389	5,883
District 4	1,533	3,096	881	5,510
Totals	4,181	8,758	3,141	16,080

MEN EMPLOYED IN

Gold, Silver, Copper, Lead, Zinc	1,200				
Molybdenum	2,400				
Uranium	4,300				
Petroleum	3,141				
Other	5,039				
Totals	16,080				

DIVISION OF OPERATIONS

Base and Precious Metal Mines102
 Uranium Mines265
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FIRST AID TRAINING

The Colorado Bureau of Mines inspectors, using the standard U. S. Bureau of Mines training course, gave first aid training to 286 men in the mineral industry of the State.

Inspections

Of the 1,403 inspection reports submitted during the year, 858 represented inspections made at as many separate mineral operations. Five hundred forty-five were repeat inspections made at properties requiring additional safety supervision and compliance with earlier safety recommendations. Bureau of Mines inspectors attended many safety meetings, safety conferences and operational procedure meetings during the year which were not covered by the submission of a report. All mineral industry operations were inspected at least once, and as many more times as required and time permitted.

INSPECTIONS

Made By

1964	District 1 Blake	District 2 Keating	District 3 Doyle	District 4 Ray & Pakka	Totals
January	23	22	24	70	139
February	17	20	13	52	102
March	20	19	10	33	82
April	18	25	26	45	114
May	42	34	7	67	150
June	17	31	22	68	138
July	16	34	23	60	133
August	49	16	33	32	130
September	11	20	32	61	124
October	18	26	20	46	110
November	26	27	15	30	98
December	26	23	3	31	83
Totals	283	297	228	595	1,403

	Mines	Mills, Plants, Smelters	Pits & Quarries	Placers & Bogs	Projects			Oil & Gas Wells, Plants	Total
					Road	Tunnel	Dam		
District 1	74	55	54	5	19	23	1	52	283
District 2	93	79	82	3	14	18	..	8	297
District 3	76	32	9	1	8	34	15	53	228
District 4	466	38	9	6	26	6	9	35	595
Totals	709	204	154	15	67	81	25	148	1,403

Information Reports

Bureau of Mines inspectors submitted 698 Information Reports to this office during 1964. This was a decline from 1963, reflecting the decreased number of mines operating. More reports were submitted on plants, pits and quarries, placers, and projects. These reports become part of a permanent record of individual mineral operations, covering the property activity each year, and are exceptionally valuable for determining the extent to which a property is developed. They constitute a progressive report on some 11,500 properties in Colorado, giving pertinent information on each year of activity.

INFORMATION REPORTS

Made By

1964	District 1 Blake	District 2 Keating	District 3 Doyle	District 4 Ray & Pakka	Totals
January	3	..	..	82	85
February	5	..	..	36	41
March	1	3	..	21	25
April	1	4	..	21	26
May	4	8	..	17	29
June	12	7	..	28	47
July	12	10	5	42	69
August	21	3	6	11	41
September	19	12	3	35	69
October	9	22	6	27	64
November	10	2	13	22	47
December	<u>75</u>	<u>12</u>	<u>40</u>	<u>28</u>	<u>155</u>
Totals	172	83	73	370	698

	Mines	Mills, Plants, Smelters	Pits & Quarries	Placers & Bogs	Projects			Oil & Gas Wells, Plants	Total
					Road	Tunnel	Dam		
District 1	63	25	53	26	..	2	..	3	172
District 2	20	25	32	3	..	1	..	2	83
District 3	28	9	9	1	..	8	2	16	73
District 4	<u>311</u>	<u>19</u>	<u>6</u>	<u>12</u>	<u>13</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>370</u>
Totals	422	78	100	42	13	13	6	24	698

Radon Daughter Control Program

The Radon Daughter Control Program initiated in June 1961 continued during 1964 under the same policies and procedures as originally set up.

According to the United States Public Health Service, the 15-year study of the effects of radioactive dusts and gas on the health of uranium miners has yielded conclusive evidence of a lung cancer hazard. In order to control this hazard, periodic evaluation of the mine atmospheres continues to be necessary as evidenced by changes in sample results between surveys. Detailed information concerning this program is tabulated below.

During 1964, the Bureau of Mines continued to receive the results of radon daughter sampling conducted by mine operators in the State. In addition, the instrument calibration service and facilities at the Naturita Field Office remained available to, and were used by mine operators and regulatory agencies within Colorado as well as those in neighboring states.

The cooperation received by the Bureau of Mines in carrying out this program has been excellent and is gratefully acknowledged.

DAVID R. COLE
Senior Inspector

DISTRIBUTION OF MINES BY AVERAGE RADON DAUGHTER CONCENTRATION

(1.0 WL represents 300 micromicrocuries per liter of air)

Range	Number of Mines	Per Cent	Cumulative Per Cent
1.0 WL or less	47	43%	43%
+1.0 WL through 3.0 WL.....	45	41%	84%
+3.0 WL through 10.0 WL.....	18	16%	100%
+10.0 WL and Over.....	0		
Total	110	100%	

COMPARISON OF STATUS OF MINES

Range	Per Cent of Operating Mines			
	12-31-61	12-31-62	12-31-63	12-31-64
1.0 WL or Less.....	45 %	52%	40½ %	43%
+1.0 WL through 3.0 WL.....	27½ %	38%	47 %	41%
+3.0 WL through 10.0 WL....	23 %	10%	12½ %	16%
+10.0 WL and Over.....	4½ %	0%	0 %	0%
Total	100 %	100%	100 %	100%

SAMPLE AND INSPECTION STATISTICS

Inspector	Number of Samples	Number of Inspections
Thomas High	459	212
William Horn	367	170
Bernard Javernick	480	144
Calvin Warnica	527	218
Other	<u>3</u>	<u>2</u>
Total	1,836	746

CORRECTIVE ORDERS ISSUED FOR VENTILATION

General	122
Removal of Men from Area.....	13
Compliance by Specified Date.....	<u>2</u>
Total	137

EQUIPMENT CALIBRATION

Alpha Survey Meters	16
Vacuum Pumps	3

**RADON DAUGHTER SAMPLES RECEIVED
FROM OTHER SOURCES**

Climax Uranium Company	134
Union Carbide Corporation, Mining & Metals Division	513
Vanadium Corporation of America	<u>331</u>
Total	978
Number of Separate Mines Sampled	397
Number of Men Catalogued for Exposure	3,619

Dust and Gas Control Program

The Dust & Gas Control Program, initiated in January 1963, continued during 1964 under the same policies and procedures as originally set up and described in the 1963 Annual Report.

As reported in United States Public Health Service Publication No. 1076, "Silicosis in the Metal Mining Industry," it is known that in recent years substantial numbers of men who had been employed in the metal mining industry were awarded disability compensation for silicosis. In order to control this hazard, the full-time services of the Dust and Gas Inspector were used in order to conduct a continuous evaluation of levels of dust exposure and initiate corrective action when and where necessary. In addition to this, evaluation of the composition of mine atmospheres and gas hazards was conducted through the use of direct reading field instruments. Detailed information concerning this program is tabulated below.

The services of the Occupational Health Section of the Colorado State Department of Public Health in making the free silica determinations and the cooperation of the operators in Colorado's mineral industry in carrying out this program is gratefully acknowledged.

DAVID R. COLE

Senior Inspector

DISTRIBUTION OF DUST SAMPLES BY CONCENTRATION AND FREE SILICA CONTENT

Concentration (mppcf)	Free Silica Content						Total	
	0% thru 5%		+5% thru 50%		+50%		No.	%
	No.	%	No.	%	No.	%		
0 thru 5.....	0	0	48	29	54	32½	102	61½
+5 thru 20.....	0	0	35	21	20	12	55	33
+20 thru 50.....	0	0	2	1	4	2½	6	3½
+50	0	0	3	2	0	0	3	2
Total	0	0	88	53	78	47	166	100

UNDERGROUND DUST CONCENTRATION BY ACTIVITY

Activity	Distribution of Samples (Dust concentration in mppcf)				Total
	0 - 5	+5 - 20	+20 - 50	+50	
Timbering, Rustle Material, Cleanup	3	4	0	0	7
Mantrips, Lunch, Doghouses, Stations, Shop Areas	10	1	0	0	11
Tramming	4	3	0	0	7
Machine and Hand Mucking	19	8	1	0	28
Barring Down and Setting Up.....	5	3	0	0	8
Between Operations	6	0	0	0	6
Drilling, Blowing and Loading Holes	19	9	1	1	30
Loading and Dumping Cars	1	3	0	0	4
Slushing and Breaking Boulders	11	7	2	0	20
Total	<u>78</u>	<u>38</u>	<u>4</u>	<u>1</u>	<u>121</u>

MILL, PLANT & SURFACE DUST CONCENTRATION BY ACTIVITY

Activity	Distribution of Samples (Dust concentration in mppcf)				Total
	0 - 5	+5 - 20	+20 - 50	+50	
Dumping and Bin Areas	1	2	0	0	3
Crushing	8	12	2	2	24
Grinding	5	2	0	0	7
Leaching and Flotation	7	1	0	0	8
Drying, Kilns, Filtering	2	0	0	0	2
Roasting	1	0	0	0	1
Total	<u>24</u>	<u>17</u>	<u>2</u>	<u>2</u>	<u>45</u>

DISTRIBUTION OF RAFTER SAMPLES BY TYPE OF OPERATION

Type of Operation	Number of Samples	Per Cent Free Silica		
		High	Low	Median
Mines, Uranium-Vanadium (Underground)	36	85.3	15.70	67.4
Mines, Metal (Underground)	24	69.1	4.6	28.4
Plants & Mills, Uranium- Vanadium	2	59.2	53.9	56.6
Plants & Mills, Other than Uranium & Vanadium	10	89.9	5.74	34.0
Projects, Underground	3	29.1	8.2	23.1
Projects, Surface	1	24.4	24.4	24.4
All Samples	<u>76</u>	<u>89.9</u>	<u>4.6</u>	<u>49.5</u>

Mineral Operations by County in Colorado

ADAMS COUNTY

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Arvada Plant.....	Arvada.....	Cooley Gravel Co., 5631 Tennyson, Arvada.....	Gold, Sand, Gravel.....	Plant.....
Dahlia Plant.....	Denver.....	Cooley Gravel Co., 5631 Tennyson, Arvada.....	Sand, Gravel.....	Plant.....
Inland.....	Derby.....	Boise Cascade Sand & Gravel Co., 7620 Madison St., Derby.....	Gold, Sand, Gravel.....	Plant.....
Mill at Pit R.....	Denver.....	Brammon Sand & Gravel Co., 4800 Brighton Blvd., Denver.....	Gold, Sand, Gravel.....	Plant.....
Mill at Pit #10.....	Denver.....	Brammon Sand & Gravel Co., 4800 Brighton Blvd., Denver.....	Gold, Sand, Gravel.....	Plant.....

ALAMOSA COUNTY

Mount Blanca.....	Alamosa.....	Harry M. Yenter, Shepard Trailer Court, Rt. 1, Alamosa.....	Peat.....	Peat Bog.....
Sand Dunes.....	Alamosa.....	Construction Investment Co., 1340 S. Lipan, Denver.....	Sand, Gravel.....	Plant.....

ARAPAHOE COUNTY

Englewood Plant.....	Denver.....	Cooley Gravel Co., 5631 Tennyson, Arvada.....	Sand, Gravel.....	Plant.....
Littleton Plant.....	Denver.....	Cooley Gravel Co., 5631 Tennyson, Arvada.....	Sand, Gravel.....	Plant.....

ARCHULETA COUNTY

Navajo Tunnel.....	Chromo.....	Nielson, Inc., Box 684, Dolores.....		Water Diversion Tunnel.....
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BACA COUNTY

F & W.....	Campo.....	F & W Concrete & Construction Co., Box 717, Boise City, Oklahoma.....	Sand, Gravel.....	Plant.....
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BOULDER COUNTY

Beaver Lake.....	Boulder.....	Beaver Lake Peat Co., 2902 6th St., Boulder.....	Peat.....	Peat Bog.....
Boulder Gravel Products.....	Valmont.....	Boulder Gravel Products, Inc., Box 229, Boulder.....	Gold, Sand, Gravel.....	Plant.....
Brainard Lake Plant.....	Ward.....	Western Concrete, Inc., 7075 York St., Denver.....	Base Material.....	Plant.....
Brodies St. Vrain.....	Lyons.....	Sterling Stone Quarries, Box 58, Lyons.....	Stone.....	Quarry.....
Burlington.....	Jamestown.....	General Chemical Div., Allied Chemical Corporation, Box 228, Boulder.....	Fluorspar.....	Mine.....

Caribou.....	Centennial Peat Co., Box 420, Boulder.	Peat.	Peat Bog
Carroll Gore.....	Lyons.	Stone	Quarry
Cash.....	Steen Mining Co., Box 1463, Boulder.	Gold, Silver.	Mine
Fair Day.....	Jamestown.	Uranium, Vanadium.	Mine
Harms.....	W. F. Harms, Rt. 2, Box 75A, Boulder.	Peat.	Peat Bog
Ingersoll.....	University of Colorado, Boulder.	Stone	Quarry
Jacobson & Lyons.....	Jacobson & Lyons Stone Co., Inc., Box 65, Lyons.	Stone	Quarry
Jenkins.....	Marshall.	Clay.	Mine
King Mountain.....	Denver Brick & Pipe Co., Box 2329, Denver.	Stone	Quarry and Plant
Kline Quarries.....	King Mountain Rock Co., Box 7, Lyons.	Stone	Quarry
Lake Eldora.....	Sterling Stone Quarries, Box 58, Lyons.	Stone	Quarry
	McCoy & Jensen, 9800 Morrison Rd., Morrison		
	D. K. & H. A. Shore, Cheryvale Rd., Boulder	Peat.	Peat Bog
Landau Stone Company.....	Lyons.		
	James Thompson, Lyons		
	Willard Trevarton, Lyons		
	Dale Hotchkiss, Lyons		
	Vernon McNeill, Lyons		
	Max E. Bruce, Lyons		
	Ray Linder, Lyons		
	John D. Morgan, Lyons		
	Robert Phillips, 734 Pratt St., Longmont	Stone	Quarry
	Wiley Ferrell, 1510 E. First St., Loveland	Gold, Silver.	Mine
Lands End.....	Dr. Warren M. Gilbert, Rome, Georgia	Gold	Mine
Little Princess.....	Forrest S. Scruggs, Sr., Salina Star Rt., Boulder		
Loukonen Brothers.....	Lyons		
	Loukonen Brothers Stone Co., Box 333, Lyons	Stone	Quarry
McCann.....	Eldorado Springs.	Clay	Mine
Marion.....	Boulder.		
	Colorado Brick Co., Longmont		
	Lenway Mining & Development Corp., 1061 Grant St., Boulder	Molybdenum, Uranium.	Mill
Pastore.....	Valmont.	Gravel	Plant
Pit #1.....	Eldorado Springs.	Clay	Mine
Red Signe.....	Jamestown.	Gold	Mine
Red.....	Summerville.	Gold, Silver.	Mine
Tri-State.....	Boulder.	Stone	Quarry and Plant
Turnpike Pit.....	Boulder.	Aggregate.	Plant
Valmont Plant.....	Valmont.	Fluorspar.	Mill
	General Chemical Div., Allied Chemical Corporation, Box 228, Boulder.		
CHAFFEE COUNTY			
Alpine Industrial, Inc.....	Salida	Granite, Marble.	Plant
Alpine No. 1.....	St. Elmo	Granite.	Quarry
Crystal Granite Quarry.....	Salida	Granite.	Quarry
Goddard Tunnel.....	Trout Creek Pass.		Project
Homestake Conduit.....	Trout Creek Pass.		Project

CHAFFEE COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
L & V Products	Salida	L & V Products Co., Box 626, Salida	Volcanic Ash	Plant
Little Anne Tunnel	Trout Creek Pass	Gene Robinson Construction Co., 212 Cascade, Colorado Springs		Project
Monarch Lime Quarry	Salida	Gibson-Roberts, Inc., Box 786, Buena Vista	Limestone	Quarry
Stonewall Mine	St. Elmo	Colorado Fuel & Iron Corp., Box 489, Salida	Silver, Lead, Zinc	Mine
		Cotter Corporation, Box 751, Canon City		

CLEAR CREEK COUNTY

Alma Lincoln	Idaho Springs	Robert H. DeLashmutt, Box 925, Idaho Springs	Tourist	Mine
Bald Eagle	Idaho Springs	Haef Leavitt et al, Idaho Springs	Gold, Silver, Copper, Lead	Mine
Black Eagle	Idaho Springs	Atlas Machinery & Exploration Co., Inc., Box 1205, Denver	Gold, Silver, Copper, Lead	Mill
Burleigh	Silver Plume	Cotter Corporation, Box 751, Canon City	Gold, Silver, Copper, Lead	Mine
Cabin Creek Project	Georgetown	Jones-Harrison Joint Venture, Box 218, Georgetown	Gold, Silver, Copper, Lead	Mine
Capital Prize	Georgetown	Stone & Webster, Box 278, Georgetown		Project
		Atlas Machinery & Exploration Co., Inc., Box 1205, Denver	Gold, Silver, Copper, Lead, Zinc	Mine
Cascade	Ute Creek	Humphrey's Engineering Co., 910 American National Bank, Denver	Silver	Mine
Dixie	Idaho Springs	Westex Mining & Development, Inc., Box 667, Idaho Springs	Gold, Silver	Mill
Drummond	Lawson	Drummond Mines, c/o J. B. Traynor, 1012 Castle Rock Drive, Fort Collins	Gold, Silver, Lead, Zinc	Mine
Forge Hill	Giipin	Silver Wreath Mining Co., Box 35, Rt. 3, Golden	Gold, Silver, Copper, Lead, Zinc	Mine
Franks	Idaho Springs	Western Placers Co., Inc., 6360 Southwood Drive, Littleton	Gold, Silver	Placer
Johnny Bull	Silver Plume	Silver Lake, Inc., 8010 W. 6th Ave., Denver	Silver, Lead, Zinc	Mine
Lamartine	Idaho Springs	Denver Mining & Milling Co., 3845 Lipan St., Denver	Gold, Silver, Copper, Lead, Zinc	Mine
Little Albert	Idaho Springs	F & E Mining Co., 1154 S. Ogden, Denver	Gold, Silver, Lead, Zinc	Mine
M and E	Spring Gulch	Harold S. Easley, 1129 Ridge Rd., Littleton	Gold, Silver, Lead	Mine
Oregon Lode	Idaho Springs	Joe E. Johnson, Box 83, Idaho Springs	Gold, Silver, Lead	Mine
Poor Man	Idaho Springs	Gibson, Bowland & Grillo, Box 52, Idaho Springs	Silver, Lead	Mine
Silver Belle	Georgetown	Sit-Back Mining Co., Box 394, Georgetown	Silver, Lead, Zinc	Mine
Silver King	Silver Plume	Silver King Mines, Inc., Box 66, Idaho Springs	Tourist	Mine
Straight Creek Tunnel	Loveland Pass	Mid-Valley, Inc., Box 295, Arvada		Project
Urad	Berthoud Falls	Urad Mine, Box H, Empire	Molybdenum	Mine

CONEJOS COUNTY

Antonito.....Antonito.....Perlite.....Plant

COSTILLA COUNTY

Mesita Hill.....Mesita.....Volcanic Scoria.....Quarry and Plant

CUSTER COUNTY

Abbit.....Rosita.....Schmidt Construction Co., 1003 E. Second, Florence.....Ransite.....Quarry
 Game Ridge.....Rosita.....Cotter Corporation, Box 751, Canon City.....Silver, Lead.....Mine
 Keystone.....Silver Cliff.....Pete Cowan - H. D. & Howard Rusler, Box 554, Pueblo.....Silver, Lead.....Mine
 Lady Franklin.....Silver Cliff.....Cotter Corporation, Box 751, Canon City.....Silver, Lead.....Mine
 Rosita.....Rosita.....Persolite Products, Inc., Box 105, Florence.....Perlite.....Mine
 Silver Cliff.....Silver Cliff.....Rimlite, Inc., Box 282, Glenwood Springs.....Vermiculite.....Plant
 Tomboy.....Wetmore.....Charles & Lyman Akin, Wetmore.....Gold, Silver.....Mine
 Vidlar.....Silver Cliff.....Cotter Corporation, Box 751, Canon City.....Silver, Lead.....Mine

DENVER COUNTY

Denver Works.....Denver.....General Chemical Division, Allied Chemical Corporation, Box 9306, So. Denver Station, Denver.....Chemicals.....Plant
 Globe Plant.....Denver.....American Smelting & Refining Co., 495 E. 51st St., Denver.....Cadmium.....Plant

DELTA COUNTY

Delta Sand & Gravel Co.....Delta.....Delta Sand & Gravel Co., Box 103, Delta.....Sand, Gravel.....Plant

DOLORES COUNTY

Barlow Group.....Rico.....Vanadium Corporation of America, Naturita.....Vanadium.....Mine
 Mountain Springs.....Rico.....Rico Argentine Mining Co., Rico.....Gold, Silver, Copper, Lead, Zinc, Iron.....Mine
 Ramco Acid Plant.....Rico.....Rico Argentine Mining Co., Rico.....Sulphuric Acid.....Mill
 Rico Mill.....Rico.....Rico Argentine Mining Co., Rico.....Gold, Silver, Copper, Lead, Zinc.....Mill
 Rock of Ages.....Navajo Basin.....Earl Holz & Ed Netherton, Slick Rock.....Gold.....Mine
 Sambo.....Rico.....William Swank & Sons, Rico.....Gold, Silver, Copper, Lead, Zinc.....Mine

DOLORES COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
St. Louis	Rico	Myron Jones, Robert Fahrion, Harold Johnson, Box 115, Rico	Gold, Silver, Copper, Lead, Zinc	Mine
St. Louis Tunnel	Rico	Rico Argentine Mining Co., Rico	Silver, Lead, Zinc, Iron	Mine

DOUGLAS COUNTY

Aurora Rampart Tunnels	Waterton	F. H. Linneman, Inc., 1300 Harlan St., Denver		Project
Helmer Brothers	Littleton	Helmer Brothers, Rt. 1, Box 94, Littleton	Sand, Fire Clay	Mine and Plant
Hogback #4	Waterton	Robinson Brick & Tile Co., Box 1619, Denver	Clay	Mine
M & S	Sedalia	The M & S, Inc., Box 131, Sedalia	Stone	Plant
Madis	N. E. Parker	Stroud Whisenhunt, 520 Anderson St., Castle Rock	Clay	Mine
Pioneer	Parker	Robinson Brick & Tile Co., Box 1619, Denver	Clay	Mine
Ringsberg	Waterton	Denver Brick & Pipe Co., Box 2329, Denver	Clay	Mine
Rusty Pick	S. W. of Sedalia	The M & S, Inc., Box 131, Sedalia	White Quartz	Quarry
Skeleton #2	S. W. of Sedalia	The M & S, Inc., Box 131, Sedalia	White Quartz	Quarry
Stevens Ranch	Castle Rock	Stroud Whisenhunt, 520 Anderson St., Castle Rock	Clay	Mine
Stroh	Parker	Stroud Whisenhunt, 520 Anderson St., Castle Rock	Clay	Mine
Waterton	Waterton	Waterton Sand & Clay, 5953 S. Rapp, Littleton	Clay, Sandstone	Mine and Plant

EAGLE COUNTY

Dotsero	Dotsero	Lava Products, Inc., Box 390, Glenwood Springs	Volcanic Ash	Quarry
Eagle Mines	Gilman	The New Jersey Zinc Co., Gilman	Silver, Copper, Lead, Zinc	Mine and Mill
Homestake Dam	Pando	Morrison-Knudsen Co., Inc., Box 921, Leadville		Project
Homestake Intake	Pando	Berco, Inc., Box 188, Nucla		Project
Missouri Creek Tunnel	Pando	Boyle Brothers Drilling Co., Box 427, Minturn		Project
Roaring Fork Quarry	Carbondale	E. H. Bone, R. R. 1, Box 79, Carbondale	Pumice	Quarry
Ruedi Dam	Basalt	Puget Sound Bridge & Dry Dock Co., Basalt		Project

ELBERT COUNTY

Buffalo	Kiowa	Robinson Brick & Tile Co., Box 1619, Denver	Clay	Mine
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Tucker	Kiowa	Denver Brick & Pipe Co., Box 2329, Denver	Clay	Mine
Wagner	Kiowa	Lakewood Brick & Tile Co., 1325 Jay St., Lakewood	Clay	Mine
EL PASO COUNTY				
Broderick & Gibbons, Inc.	Colorado Springs	Broderick & Gibbons, Inc., Box 1741, Colorado Springs	Sand, Gravel	Plant
Carson	Ft. Carson	Carson Gravel Co., 136 Steven Drive, Security	Sand, Gravel	Plant
Castle	Colorado Springs	Castle Concrete Co., Box 2379, Colorado Springs	Sand, Gravel, Limestone	Quarry
Castle	Colorado Springs	Gene Schooler, 1412 N. Handcock, Colorado Springs	Sand, Gravel	Plant
Hecla	Air Force Academy	Dale Hoover, 1515 Park Ave., Canon City	Clay	Mine
Lennox Breed	Pike View	Colorado Lime Co., R. R. 1, Colorado Springs	Limestone	Quarry and Plant
NORAD	Colorado Springs	Continental Consolidated Corp., Box 754, Colorado Springs		
		Utah Construction & Mining Co., Box 1580, Colorado Springs		
		Grafe-Wallace-Foster, Box 1639, Colorado Springs		
NORAD Overpass	Colorado Springs	Stegrist Construction Co., 7000 York St., Denver		Project
Rampart Range	Woodland Park	Colorado Springs Public Utilities, 18 S. Nevada, Colorado Springs		Project
Rampart Range Tunnel Site	Woodland Park	Colorado Springs Public Utilities, 18 S. Nevada, Colorado Springs		Water Diversion Tunnel
Sand Pit #2	Colorado Springs	Transit Mix Concrete, Box 849, Colorado Springs	Sand, Gravel	Project
Springs Silica	Colorado Springs	William Eskeldson, 815 N. Pleasant Ave., Colorado Springs	Silica	Plant
White Eagle	Crystola	Colorado Quartz & Minerals Corp., Box 132, Cascade	Quartz, Granite	Mine
FREMONT COUNTY				
Black Dragon	Canon City	Krueger McCormick Mining Co., Box 542, Pueblo	Gold, Silver, Copper, Lead	Mine
Burnito Ganister	Canon City	Ray Sturbaum Mining Co., 225 Main St., Canon City	Ganister	Quarry
Calcite	Howard	Colorado Limestone Co., Box 8, Howard	Limestone	Quarry
Canon Chemical	Canon City	Canon Chemical Co., Box 1074, Colorado Springs	Zinc Slag	Plant
Canon Cream	Canon City	Alex Lockhart & Sons, 313 S. 9th, Canon City	Limestone	Quarry
Canon Dolomite	Canon City	Colorado Fuel & Iron Co., Pueblo	Dolomite	Quarry
Canon Gypsum	Canon City	M. J. Wallace, 1621 Park Ave., Canon City	Gypsum	Mine

FREMONT COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Coaldale	Coaldale	Fibreboard Paper Products, Box 63, Coaldale.	Gypsum	Quarry and Plant
Coleman	Texas Creek	Alex Lockhart & Sons, 313 S. 9th St., Canon City	Granite	Quarry
Cotopaxi	Cotopaxi	Cotter Corporation, Box 751, Canon City	Silver, Copper, Lead	Mine
Cotter	Canon City	Cotter Corporation, Box 751, Canon City	Lead, Zinc, Uranium	Mill
Cowan Travertine	Canon City	Cowan Brothers, 227 Main St., Canon City	Marble	Quarry
Dan - Dick #1 & 2	Salida	William Wyble, Box 562, Longmont	Gypsum	Quarry
Devils Hole	Texas Creek	Ralph J. Pierce, 108 Penn. Ave., Canon City	Quartz, Beryllium, Mica	Quarry
Florence	Florence	M. S. & M. Milling Co., 1014 Zodiac Drive, Colorado Springs	Quartz, Feldspar, Granite	Plant
I & E	Salt Canyon	Irvin Fire Clay, Rt. 1, Penrose	Clay	Mine
Knob Hill	Tallahassee Creek	Climax Uranium Co., Box 989, Grand Junction	Uranium	Mine
Last Chance	Tallahassee Creek	Charles Heisen, 3009 Edgecliff, Farmington, New Mexico	Uranium	Mine
Mica Lode	Royal Gorge Park	S. N. & W. R. Mining Co., Warren Wright, Nucla	Uranium	Mine
New Jersey Zinc Plant	Canon City	Alex Lockhart & Sons, 431 Majestic St., Canon City	Quartz	Quarry
Penrose	Canon City	The New Jersey Zinc Co., Box 319, Canon City	Zinc	Plant
Persolite	Salt Canyon	Dale Hoover, 1515 Park Ave., Canon City	Silica	Quarry
Phantom Canyon	Florence	Standard Fire Brick Co., 24th & Albany, Pueblo	Persolite Products, Inc., Box 105, Florence	Plant
Portland	Canon City	George Stroup, Rt. 1, Box 271, Canon City	Perlite	Plant
Poston	Portland	Ideal Cement Corp., Box 231, Florence	Clay	Mine
Rock Products	Copper Gulch	Poston Mining & Milling Co., Box 510, Canon City	Limestone, Cement	Quarry and Plant
Sunset	Florence	Rock Products, Inc., Box 106, Florence	Iron	Plant
Thorn	Texas Creek	Colorado Granite Co., Inc., 348 W. 5th St., Salida	Quartz	Plant
Thunder Mountain	Tallahassee Creek	Climax Uranium Co., Box 989, Grand Junction	Granite	Quarry
Triangle	Wellsville	U. S. Soil Conditioning Corp., Box 346, Salida	Uranium	Mine
Twelve Mile	Salida	Silver Rocker Bentonite Co., Box 108, Salida	Gypsum	Quarry
Wild Rose	Twelve Mile Park	George Stroup, Rt. 1, Box 271, Canon City	Bentonite	Quarry
Yellow Marble	Devil Hole Canyon	Ralph J. Pierce, 108 Penn. Ave., Canon City	Clay	Mine
	Canon City	Rock Products, Inc., 1435 Lombard, Canon City	Quartz	Quarry
			Marble	Quarry

GARFIELD COUNTY

Anvil Point Plant.....	Rifle.....	Anvil Point Research Foundation, Inc. Box 1012, Rifle.....	Oil Shale.....	Mine and Plant
Basic Chemical Quarry.....	Glenwood Springs.....	Basic Chemical Corp., Box 270, Glenwood Springs.....	Limestone.....	Quarry
Colony Mine.....	Grand Valley.....	Colony Development Co., Box 278, Grand Valley.....	Oil Shale.....	Mine
Glenwood Springs Lime Quarry.....	Glenwood Springs.....	Frank H. Norberg, 703 Guaranty Bank Bldg., Denver.....	Limestone.....	Quarry
Glenwood Springs Tunnel.....	Glenwood Springs.....	Colorado Constructors, Inc., Box 682, Glenwood Springs.....		Project
Rifle Creek Dam.....	Rifle.....	Northwestern Engineering Co., Rifle.....		Project
Rifle Creek Mine.....	Rifle.....	Union Carbide Corp., Nuclear Division, Rifle.....	Uranium, Vanadium.....	Mine
Rifle Mill.....	Rifle.....	Union Carbide Corp., Nuclear Division, Rifle.....	Uranium, Vanadium.....	Mill
Ted Coulter & Son Gravel.....	Rifle.....	Ted Coulter & Son Construction Co., Box 366, Rifle.....	Sand, Gravel.....	Plant

GILPIN COUNTY

Barnes.....	Central City.....	Phillips Mining & Milling Co., 131 W. 10th, Denver.....	Gold, Silver, Copper, Lead.....	Mine
Becker Bates.....	Central City.....	Quartz Hill Nevada Mines, Central City.....	Gold, Copper.....	Mine
Bob Tail.....	Black Hawk.....	Gus Bakos & Robert Hollenback, Black Hawk.....	Tourist.....	Mine
Boodle.....	Central City.....	B & E Mining Co., Idaho Springs.....	Gold, Silver, Copper, Lead.....	Mine and Mill
Couch Placers.....	Black Hawk.....	Stancil Couch, Box 146, Black Hawk.....	Gold, Sand, Gravel.....	Placer
Diamond L.I.....	Central City.....	Wm. C. Russell, Jr., Box 161, Central City.....	Tourist.....	Mine
Durand Brothers.....	Gilpin.....	Durand Brothers, 935 So. Patton Court, Denver.....	Gold.....	Placer
Fools Luck.....	Nevadaville.....	Pat Greene, Box 86, Black Hawk.....	Gold.....	Placer
Fools Luck.....	Central City.....	Ashcraft & Patrick, 6513 Gray St., Arvada.....	Gold.....	Placer
Glory Hole.....	Central City.....	Glory Hole, Inc., Central City.....	Gold, Silver, Copper, Lead, Zinc.....	Mine and Mill
Gold Dollar.....	Central City.....	Phillips Mining & Milling Co., 131 W. 10th, Denver.....	Silver, Lead.....	Mine
Gold Rock.....	Stewart Gulch.....	Frank C. Raedel, 820 W. Van Buren, Colorado Springs.....	Gold.....	Mine
Gold Star Placer.....	Russell Gulch.....	Paul J. James, 1010 Grand Ave., So. San Francisco, Calif.....	Gold.....	Placer
Golden Cycle.....	Perigo.....	G. E. I., 3722 W. Colfax, Denver.....	Gold, Silver, Copper.....	Mine
Golden Gilpin.....	Black Hawk.....	Altwater & Fraser, 4630 Quitman St., Denver.....	Gold, Silver, Copper, Lead, Evergreen.....	Mill
Hamilton.....	Black Hawk.....	Black Hawk Milling Co., Box 59, Evergreen.....	Gold.....	Placer
King Solomon II.....	Russell Gulch.....	Centennial Mining, 5872 Taft, Arvada.....	Gold.....	Placer
		Wanda J. Schug & Katherine Jo Ravithis, 7000 Galapago, Denver.....	Gold.....	Placer

GILPIN COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Little Colonel	Black Hawk	Black Hawk Trading Post, Black Hawk	Tourist	Mine
Lode Star	Missouri Gulch	R. E. Clarida, 3120 W. Arizona, Denver	Gold, Silver, Copper	Mine
National Bank Lode	Central City	Faye Tyson, Box 201, Central City	Tourist	Mine
Patrick's Enterprise	Missouri Gulch	Robert W. Patrick, Rt. 1, Spencer, Indiana	Gold	Mine
Pittsburg	Central City	Goldridge Mining Co., 1507 Mile High Center, Denver	Gold, Silver, Copper	Mine and Mill
Pritchett Tunnel	Missouri Gulch	George C. Pritchett, 4017 W. Ohio Ave., Denver	Gold, Silver	Mine
Pyrenes	Russell Gulch	Walter Turetzky, 2310 Linda Vista Drive, Lakewood	Gold, Lead	Mine
Rider & Lawson	Black Hawk	Chalmers L. Reider, 630 Logan St., Denver	Gold	Placer
Rudolph Ranch	Black Hawk	Gus Rudolph, Black Hawk	Peat	Peat Bog
Silver Bell	Black Hawk	Eiven Jacobson, Black Hawk	Peat	Peat Bog
Snooks Tunnel	Perigo	Bee Vee Mines, Box 135, Rollinsville	Gold, Copper	Mine
Stephens	Missouri Gulch	Walter Stephens, Black Hawk	Gold, Silver, Copper	Mine
Swamp Angel	Central City	Fall River Exploration & Mining Co., Box 32, Idaho Springs	Silver, Lead	Mine
Thunderbird	Missouri Gulch	Marvin B. Pinnt, 1800 W. 83rd Ave., Denver	Gold	Mine
Twin Buttes	Missouri Gulch	Walter Stephens, Black Hawk	Gold	Mine
Wilma	Apex	Nye Metals, Inc., Black Hawk	Molybdenum	Mine
Zacker	Black Hawk	Ralph Zacker, Black Hawk	Gold	Placer
GUNNISON COUNTY				
Atlas	Crested Butte	Elk Mountain Mining Co., Crested Butte	Gold, Silver, Copper, Lead, Zinc	Mill
Baxter	Crested Butte	Hodgson Lease, Crested Butte	Gold, Silver	Mine
Blue Mesa Dam	Sapinero	Tecon Corp., Box 718, Gunnison		Project
Brown Derby	Parlin	L. N. & F. A. Johnson, Box 1394, Englewood	Rare Earths	Mine and Quarry
Bull Domingo	Taylor Park	John Lambertson, Box 567, Gunnison	Silver, Lead	Mine
Carter Mill	Ohio City	Comanche Milling Corp., Ohio City	Gold, Silver, Copper	Mine and Mill
Doctor	Doctor Park	John Lambertson, Box 567, Gunnison	Gold, Silver	Mine
DuPont Tunnel	Powderhorn	Boyles Drilling Co., 2960 W. 7th, Denver	Columbium	Mine
Forest Queen	Crested Butte	Forest Queen Mines, Inc., Crested Butte	Gold, Silver, Lead	Mine
Italian Quarry	Marble	Industrial Minerals, 234 - 31.3 Road, Grand Junction	Marble	Quarry
Keystone	Crested Butte	McFarland & Hullinger Co., Box 268, Crested Butte	Gold, Silver, Copper, Lead, Zinc	Mine and Mill
Leesa Kay	Gothic	Central Mining Co., Box 517, Rangely	Silver, Copper, Lead	Mine
Micawber	Crested Butte	Elk Mountain Mining Co., Crested Butte	Silver, Copper, Lead, Zinc	Mine

Pearl's Placer.....Gold Creek.....William Wright, Ohio City.....Gold.....Placer
 Royal Chance.....Pitkin.....Harold Kane, Box 155, Poncha Springs.....Gold, Silver, Lead.....Mine
 Silent Friend.....Hall Gulch.....Jack McLain, Parlin.....Silver, Lead.....Mine
 Silver Spruce.....Gothic.....B. D. K. Mining Co., Box 2488,
 Victoria, Texas.....Gold, Silver, Copper, Lead.....Mine
 Vermont Marble Quarry.....Marble.....Joy Manufacturing Co.,
 Michigan City, Ind.....Marble.....Quarry
 Whitney.....Iola.....George W. Grover, Rt. 4, Gunnison.....Yttrium Oxide.....Mine

HINSDALE COUNTY

Ajax #2.....Capital City.....Independence Mining Co., Box 333,
 Lake City.....Zinc.....Mine
 Bell of the West.....Lake City.....Lake Park Mining, Inc., Lake City.....Gold, Silver, Copper, Lead,
 Zinc.....Mine
 Golden Fleece.....Lake San Cristobal.....Golden Fleece Mining Co., Lake City.....Gold, Silver, Copper, Lead,
 Zinc.....Mine
 Last Chance.....Lake City.....Cole Brothers, 2485 U. S. Highway 6 & 50,
 Grand Junction.....Silver, Lead.....Mine
 Lead King.....Hansen Creek.....Joe Monteth, Ouray
 Cole Brothers, 2485 U. S. Highway 6 & 50,
 Grand Junction.....Silver, Lead.....Mine
 Pelican.....Lake City.....Lake Park Mining Co., Lake City.....Gold, Silver.....Mine
 Pelican Mill.....Lake City.....Lake Park Mining Co., Lake City.....Gold, Silver, Copper, Lead,
 Zinc.....Mill
 Pride of America.....Hansen Creek.....Lawrence Calopy, Lake City
 Pray & Knapp, Box 357, Lake City.....Silver, Lead, Zinc.....Mine
 Sterling Group.....Lake Fork.....Thirty-two—Thirty-six Development Co.,
 Lake City.....Gold, Silver, Copper, Lead,
 Zinc.....Mine

HUERFANO COUNTY

Huerfano Pit.....Walsenburg.....Empire Clay Products, Inc., Box 156,
 Trinidad.....Clay.....Mine

JEFFERSON COUNTY

Aggregates, Inc.....Golden.....Rocky Mountain Aggregates, Inc., Box 771,
 Golden.....Crushed Stone.....Plant
 Beryl Ores Company.....Arvada.....Beryl Ores Co., 10000 Alkire St., Arvada.....Beryl, Mica.....Plant
 Caldwell.....Plainview.....Denver Brick & Pipe Co., Box 2329, Denver.....Clay.....Mine
 Church.....Rocky Flats.....Wesley D. Conda, Rt. 1, Box 110, Boulder.....Clay.....Mine
 Church's Shale Pit.....Golden.....Duane Bruno, 929 E. Ellsworth, Denver.....Shale.....Mine
 Chalite Aggregate Company.....Golden.....Chalite Aggregate Co., 4250 McIntyre,
 Golden.....Shale.....Plant
 Cooper.....Buffalo.....Earl M. Cooper, 1232 S. Eaton Court,
 Denver.....White Quartz.....Quarry

JEFFERSON COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Dry Creek 71	Golden	Denver Brick & Pipe Co., Box 2329, Denver	Clay	Mine
Evergreen Mill	Evergreen	C & S Mining Co., 1661 So. Clay, Denver	Base Metals Concentrates	Mill
Foot Hills	Idledale	Cotter Corporation, Box 751, Canon City	Uranium	Mine
Green Mountain & Apex	Rooney Road	Geo. W. Parfet Estate, Inc., Box 226, Golden	Clay	Mine
Harvey	Rocky Flats	John L. Harvey, 1550 Depew, Lakewood	Clay	Mine
Johnson Red Pit	Rocky Flats	Denver Brick & Pipe Co., Box 2329, Denver	Clay	Mine
Kilgroe & Atchison	14425 W. 32nd, Jefferson County	Kilgroe & Atchison Construction & Paving Co., Inc., Box 15385, Lakewood	Gravel	Plant
Lakewood	Golden	Lakewood Brick & Tile Co., 1400 Jay St., Lakewood	Clay	Mine
Lariat	Waterton	Robinson Brick & Tile Co., Box 1619, Denver	Clay	Mine
Last Dollar	South Platte	D & D Mining Co., 525 E. Main, Florence	White Quartz	Quarry
Lee	Golden	Lee Sand & Gravel Co., Box 128, Wheatridge	Gold, Silver, Sand, Gravel	Plant
Little Patsy	Buffalo	Forest Hamilton, Box 23, Buffalo Creek	White Quartz	Quarry
McIntyre Plant	Golden	Asphalt Paving Co., 14802 W. 44th Ave., Golden	Sand, Gravel	Plant
Malaehite & Morrison	Kiowans Reservation	Frobex Limited, 85 Richmond St. W., Toronto, Canada	Copper	Mine
Morrison Plant	Morrison	Denver Gravel & Concrete Co., DBA Bear Valley Gravel Co., Box 167, Morrison	Sand, Gravel	Plant
Mt. Carbon	Denver	Duane Bruno, 929 E. Ellsworth, Denver	Clay, Shale	Mine
North Chieftan	Denver	Robinson Brick & Tile Co., Box 1619, Denver	Clay	Mine
Ohman	Golden	L. D. Ohman, 800 Bonnie Brae, Denver	Uranium	Mine
Oregon #1, #2, #3	Buffalo Creek	Forest Hamilton, Box 23, Buffalo Creek	White Quartz	Quarry
Pit #6, #11	Denver	Brannan Sand & Gravel Co., 4800 Brighton Blvd., Denver	Gold, Sand, Gravel	Plant
Platte Canyon Intake Dam	Waterton	F. H. Linneman, Inc., 1300 Harlan, Lakewood		Project
Ramstetter	Guy Hill	James K. Ramstetter, Rt. 1, Box 28, Golden	White Quartz, Mica	Quarry
Red Clay	Golden	Lakewood Brick & Tile Co., 1400 Jay St., Lakewood	Clay	Mine
Rio Grande	Denver	Rio Grande Gravel Co., 123 Santa Fe Drive, Denver	Gold, Sand, Gravel	Plant
Rockwell	Golden	Geo. W. Parfet Estate, Inc., Box 226, Golden	Clay	Mine
Rocky Flats	Boulder	The Idealite Co., Box 1140, Boulder	Shale	Mine
Rubey Standard	Golden	H. M. Rubey Clay Co., Box 226, Golden	Clay	Mine

Schwartzwalder.....	Golden.....	Denver Golden Corp., 2138 Champa, Denver.....	Uranium.....	Mine.....
South Chieftain.....	Rooney Road.....	Robinson Brick & Tile Co., Box 1619, Denver.....	Clay.....	Mine.....
State.....	Marshall.....	Colorado Brick Co., Longmont Evergreen Freight Line, Box 55, Evergreen Ludwick H. Hladik, Box 424, Evergreen	Clay, Gravel.....	Quarry.....
Strainland #1.....	Golden.....	Denver Brick & Pipe Co., Box 2329, Denver.....	Clay.....	Mine.....
Strang.....	Golden.....	G. C. Bennetts & Sons, Box 759, Golden.....	White Quartz.....	Quarry.....
Table Mountain, Inc.....	Golden.....	Table Mountain, Inc., 14425 W. 32nd, Golden.....	Gold, Sand, Gravel.....	Plant.....
Terra Cotta.....	Golden.....	Lakewood Brick & Tile Co., 1400 Jay St., Lakewood.....	Clay.....	Mine.....
Tin Cup.....	Golden.....	Robinson Brick & Tile Co., Box 1619, Denver.....	Clay.....	Mine.....
Two Brothers.....	Golden.....	G. C. Bennetts & Sons, Box 759, Golden.....	Clay.....	Mine.....
White Feather.....	Buffalo.....	D & D Mining Co., 525 E. Main, Florence.....	White Quartz.....	Quarry.....

LAKE COUNTY

Arkansas Plant.....	Climax.....	C. Ryan & Son, 6001 McIntyre, Golden.....	Sand, Gravel.....	Plant.....
Climax Mine.....	Climax.....	Climax Molybdenum Co., Climax Exceter Drilling Co., 1010 Patterson Bldg., Denver.....	Molybdenum.....	Mine.....
Climax Mill.....	Climax.....	Boyles Brothers Drilling Co., Box 594, Vail.....	Molybdenum.....	Core Drilling Mine Shaft Mill.....
Homestake.....	Leadville.....	Climax Molybdenum Co., Climax Rocky Mountain Bridge Co., Inc., Climax Smith-Quad Construction Co., Box 947, Leadville.....	Molybdenum.....	Construction.....
Mt. Elbert Peat Moss.....	Leadville.....	Mt. Elbert Peat Moss, Inc., Box 262, Kremmling.....	Peat.....	Project.....

LA PLATA COUNTY

Animas Sand and Gravel.....	Durango.....	H. F. Hanks, Box 1001, Durango.....	Sand, Gravel.....	Plant.....
Bessie G.....	Durango.....	Silgo, Inc., Box 452, Durango.....	Gold, Silver.....	Mine and Mill.....
Blackhawk.....	Hesperus.....	C. Z. Reed, Hesperus.....	Gold, Silver, Lead.....	Mine.....
Brawner Tunnel.....	Hesperus.....	Steward Brothers, Box 1303, Durango.....	Gold, Silver.....	Mine and Mill.....
Burnett Gravel Pit.....	Durango.....	Burnett Construction Co., E. 6th St., Durango.....	Sand, Gravel.....	Plant.....
Grassy Hill Tunnel.....	Hesperus.....	Copper Age Uranium Co., Box 124, Marvel.....	Gold, Silver.....	Mine.....
Jenny Lind.....	Hesperus.....	Steward Brothers, Box 1303, Durango.....	Gold, Silver, Lead.....	Mine.....
Lady Eleanor.....	Hesperus.....	Kel-Seo Industries, May Day Rt., Hesperus.....	Gold, Silver.....	Mine.....
Mesa Concrete.....	Durango.....	Mesa Concrete Co., Box 278, Durango.....	Sand, Gravel.....	Plant.....
Mountain Valley Moss.....	Durango.....	Mountain Valley Moss Co., c/o Claude Grain, Bayfield.....	Peat.....	Peat Bog.....
Rosenite.....	Hesperus.....	C. Z. Reed, May Day Rt., Hesperus.....	Gold, Silver, Copper.....	Quarry.....

LA PLATA COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Sarah G.....	Durango	Charles C. Goulding, Star Rt., Box 210, Durango.	Silver	Mine
Spaffords Peat Moss.....	Hermosa	Hare Construction Co., Box 55, Rt. 3, Bloomfield, New Mexico	Peat	Peat Bog
Thomas Property.....	Hermosa	American Mining & Dredging Co., R. R. 1, Durango	Gold	Placer
Western Belle.....	Hesperus	Lewis Mt. Mining Co., Inc., Box 1303, Durango.	Gold, Silver, Lead	Mine

LARIMER COUNTY

Bear Cat.....	Manhattan Township	Robinson Ranch Mines, Inc., c/o Flora Robinson, 533 13th Ave., Greeley	Gold, Silver	Mine
Berthoud Quarries.....	Carter Lake	Colorado Stone Co., 1635 N. Main, Longmont.	Stone	Quarry
Berthoud Naive.....	Carter Lake	Berthoud Pink Stone Co., Rt. 2, Box 99A, Berthoud	Stone	Quarry
Big Boulder.....	Crystal Mountain	Helen Alphin, Box 292, Jamestown	Beryl	Mine
Boettcher.....	La Porte	Ideal Cement Co., Box 579, Fort Collins	Limestone	Plant and Quarry
Chance.....	Masonville Road	Weaver Stone Quarries, 759 S. York, Denver	Stone	Quarry
Corral Pole #2.....	Buckhorn Canyon	Arthur Johnson, 625 Mathews, Fort Collins	Beryl, Mica	Mine
Eik Horn #1.....	Livermore	Robinson Ranch Mines, Inc., c/o Flora Robinson, 533 13th Ave., Greeley	Uranium	Mine
Goodwin.....	Fort Collins	Ernest W. Munroe, 101 E. Vine, Fort Collins	Gypsum	Quarry
Holly.....	Fort Collins	Frank H. Norberg Co., 703 Guaranty Bank Bldg., Denver	Limestone	Plant
Kane.....	Lyons	Sterling Stone Quarries, Box 58, Lyons	Stone	Quarry
Lady Moon.....	Livermore	Robinson Ranch Mines, Inc., c/o Flora Robinson, 533 13th Ave., Greeley	Uranium	Mine
Loveland.....	Masonville Road	Colorado Stone Co., 1635 N. Main St., Longmont	Stone	Quarry
Loveland.....	Loveland	U. S. Gypsum Co., Estes Park Rt., Loveland	Gypsum	Quarry
Loveland Plant.....	Loveland	Mineral Concentrates & Chemical Co., 1430 First National Bank Bldg., Denver	Beryllium	Plant
Munroe Plant.....	Fort Collins	Pinion Grove Lime Co., 101 E. Vine, Fort Collins	Limestone	Plant
Ohline Quarries.....	Masonville	Buckhorn-Olin Quarries, Estes Park Rt., Loveland	Stone	Quarry
Pinion Grove.....	Fort Collins	Arthur Ohline, Lyons	Limestone	Quarry
Predigal.....	Manhattan Township	Pinion Grove Lime Co., Box 273, Rt. 2, Fort Collins	Limestone	Quarry
		Robinson Ranch Mines, Inc., c/o Flora Robinson, 533 13th Ave., Greeley	Gold, Silver	Mine

Rex.....	Fort Collins	Frank H. Norberg Co., 703 Guaranty Bank Bldg., Denver	Limestone	Quarry
Rose Stone.....	Lyons	Colorado Stone Co., P.O. Box 596, Longmont	Stone	Quarry and Mill
Spears.....	Lyons	B. H. Spears & Son, Box 283, Lyons	Stone	Quarry
Sprague.....	Carter Lake	Berthoud Pink Stone Co., Rt. 2, Box 99A, Berthoud	Stone	Quarry
Sterling.....	Taft Hill Road	Sterling Sand & Gravel Co., Box 759, Fort Collins	Sand, Gravel	Plant
Stewart.....	Lyons	Stewart Ledge Stone Co., Box 193, Longmont	Stone	Quarry
Thodave.....	Buckhorn Canyon	Mattox, Mattox, Young & Johnson, 395 Grape, Denver	Mica, Beryl	Mine
Troupe.....	Masonville Road	Sterling Stone Quarries, Box 58, Lyons	Stone	Quarry
Union Pacific.....	Fort Collins	Frank H. Norberg Co., 703 Guaranty Bank Bldg., Denver	Limestone	Quarry
Weaver.....	Masonville	Weaver Stone Quarries, 759 S. York, Denver	Stone	Quarry
Wild South.....	Masonville	Wilds Stone Quarries, Estes Park Rt., Loveland	Stone	Quarry
Yo-Jo.....	Buckhorn Canyon	Young & Johnson, 395 Grape St., Denver	Mica, Beryl	Mine

LAS ANIMAS COUNTY

Pit #1, #3, #4.....	Trinidad	Empire Clay Products, Inc., Box 156, Trinidad	Clay	Mine
Santa Fe.....	Starkville	Scott Mining Co., Starkville	Clay	Mine
Trinidad.....	Trinidad	Raymond Moore, Box 248, Kye	Clay	Mine

LOGAN COUNTY

Northeastern.....	Sterling	Northeastern Sand & Gravel Co., Rt. 3, Sterling	Sand, Gravel	Plant
Van Gundy Pit.....	Sterling	Sterling Contracting Co., Box 759, Fort Collins	Gravel	Quarry

MESA COUNTY

Arrowhead #27.....	Calamity Mesa	Carl A. Nichols, Box 382, Fruita	Uranium, Vanadium	Mine
Black Mamma.....	Tenderfoot Mesa	U. & H. Mining Co., Box 205, Montrose	Uranium, Vanadium	Mine
Black Sreak.....	Blue Mesa	Neilson & Klingsmith, Box 337, Uravango Charles Corey, Box 652, Durango Black & Chiles, Box 331, Nucla	Uranium, Vanadium	Mine
Bonanza #2.....	Beaver Mesa	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
Bonanza #3.....	Beaver Mesa	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
McWilliams & Yeager, 2972 D½ Road, Grand Junction.....		McWilliams & Yeager, 2972 D½ Road, Grand Junction	Uranium, Vanadium	Mine

MESA COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Cherokee	Beaver Mesa	H. O. L. Mining Co., Box 567, Grand Junction	Uranium, Vanadium	Mine
Cliffdweller #1	Calamity Mesa	Leonard Foster, 285 Pimion, Grand Junction	Uranium, Vanadium	Mine
Climax Uranium Mill	Grand Junction	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mill
Concho	Gateway	Bruce & Davis Mining Contractors, Box 296, Naturita	Uranium, Vanadium	Mine
Copper Queen	Whitewater	Robert & Lorraine Fracke, 1640 Poplar Dr., Grand Junction	Amethyst Quartz	Mine
Depression #6	Gateway	Matterhorn Mining & Development Co., Box 1648, Grand Junction	Uranium, Vanadium	Mine
Elizabeth	Mesa Creek	Nichols Mining Co., Paradox	Uranium, Vanadium	Mine
Fruita Sand & Gravel	Fruita	Lee Hetzel, Box 455, Clifton	Uranium, Vanadium	Mine
Hubbard	Gateway	Fruita Sand & Gravel Co., S. Carlson, Fruita	Sand, Gravel	Plant
Jody	Mesa Creek	D. P. Mining Co., Gateway	Uranium, Vanadium	Mine
July	Outlaw Mesa	Lee Hetzel, Box 455, Clifton	Uranium, Vanadium	Mine
June Claim	Outlaw Mesa	Luke Cautrell, General Delivery, Clifton	Uranium, Vanadium	Mine
Kelly Stone Company	Uncompahgre Plateau	H. L. Arbogast, 234 - 31.3 Road, Grand Junction	Uranium, Vanadium	Mine
La Sal	Beaver Mesa	Richard Sage, 3025 Highway 50, Grand Junction	Uranium, Vanadium	Mine
Liberty Bell	Tenderfoot Mesa	Sage & Bennett, Slick Rock	Uranium, Vanadium	Mine
Lost Dutchman	Beaver Mesa	James Kelley, 2921 Highway 50, Grand Junction	Stone	Quarry
Lucius Pitkin, Inc.	Grand Junction	Shipman Mining Co., Box 861, Grand Junction	Uranium, Vanadium	Mine
Lumsden Mesa #8	Beaver Mesa	U. & H. Mining Co., 205 N. Willerup, Montrose	Uranium, Vanadium	Mine
New Verde	Calamity Mesa	Argo Mining Co., Box 698, Grand Junction	Uranium, Vanadium	Mine
October Adit	Beaver Mesa	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
Outlaw #23	Outlaw Mesa	Lucius Pitkin, Inc., Box 1351, Grand Junction	Uranium Concentrate	Plant
Packrat	Beaver Mesa	D. P. Mining Co., Gateway	Uranium, Vanadium	Mine
Rajah #30	Beaver Mesa	Ralph Foster & Sons, 2950 A½ Road, Grand Junction	Uranium, Vanadium	Mine
		Siar Mining Co., Box 291, Grand Junction	Uranium, Vanadium	Mine
		Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
		Harold Price, Box 74, Nucla	Uranium, Vanadium	Mine
		H. O. L. Mining Co., Box 212, Gateway	Uranium, Vanadium	Mine
		H. O. L. Mining Co., Box 212, Gateway	Uranium, Vanadium	Mine

Rosebud.....	Eugenio Corta, Redvale	Uranium, Vanadium.....	Mine
W. C. Rump.....	W. C. Rump, 218 Easter Hill Drive, Grand Junction.....	Bentonite.....	Quarry
Snowshoe & MC #3.....	Ralph Foster & Sons, 2950 A½ Road, Grand Junction.....	Uranium, Vanadium.....	Mine
Sunflower.....	O. E. Smart, Box 296, Naturita	Uranium, Vanadium.....	Mine
Thornton.....	Charles V. Woodard & Co., 2909 Highway 50, Grand Junction.....	Uranium, Vanadium.....	Mine
Uncompahgre Stone Co.....	William E. McKittrick, 2917 Highway 50, Grand Junction.....	Stone.....	Quarry
United Sand & Gravel Pits.....	United Sand & Gravel Co., Inc., 714 S. 6th, Grand Junction.....	Sand, Gravel.....	Plant
Ute Tunnel.....	E. E. Lewis, Box 1481, Grand Junction	Water Tunnel.....	Water Tunnel
Western Stone Products.....	Richard Bouse, Palisade C. E. Mendenhall, 3639 Front St., Palisade.....	Stone.....	Quarry
Whitewater Plant.....	Whitewater Sand & Gravel, 910 S. 10th, Grand Junction.....	Sand, Gravel.....	Plant

MINERAL COUNTY

Amethyst & Commodore.....	Creede	Silver, Copper, Lead, Zinc.....	Mine
Bull Dog.....	Creede	Silver, Copper, Lead, Zinc.....	Mine
Creede Mill.....	Creede	Gold, Silver, Copper, Lead, Zinc.....	Mill
Mexico Mine.....	Creede	Gold, Silver, Lead, Zinc.....	Mine

MOFFAT COUNTY

Maybell Mill.....	Maybell	Uranium.....	Mill
Trace Elements Pits.....	Maybell	Uranium.....	Mine

MONTEZUMA COUNTY

Dunn Crusher.....	Four Corners Area	Sand, Gravel.....	Plant
Fritz - Erickson.....	Fritz & Erickson Drilling Co., Box 365, Dove Creek.....	Drilling.....	Drilling
Sexton Brothers Drilling.....	Sexton Brothers Drilling Co., Box 506, Cortez.....	Core Drilling.....	Core Drilling
Spencer & Morris Group.....	Spencer Mining Co., Box 216, Mancos	Gold, Silver.....	Mine
Twin Canyon Group.....	Wesley Potts, Mancos.....	Gold.....	Mine

MONTROSE COUNTY

American Eagle.....	Little Gyp Valley	Uranium, Vanadium.....	Mine
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MONTROSE COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Anna May	Monogram Bench	Cole & Bond, Box 188, Nucla	Uranium, Vanadium	Mine
April	Lower Bull Canyon	Al Bell, Box 614, Nucla	Uranium, Vanadium	Mine
Arrowhead	Long Park	Cole & Bond, Box 188, Nucla	Uranium, Vanadium	Mine
Babe Ruth	Lower Bull Canyon	O. E. Smart, Box 296, Naturita	Uranium, Vanadium	Mine
Baby Fawn	Bull Canyon	Felix Mandisco, Box 196, Naturita	Uranium, Vanadium	Mine
Betty Jean	Martin Mesa	Hickey & Erfurth Mining Co., Box 603, Nucla	Uranium, Vanadium	Mine
		Jerry Mayfield, Naturita		
		Russell Nayfield, Nucla		
		Frank MacKendrick, Box 316, Uravan	Uranium, Vanadium	Mine
Big Bull	Upper Bull Canyon	Lee Reed, Box 298, Naturita	Uranium, Vanadium	Mine
		Jones Brothers, Box 183, Naturita		
Bitter Creek	Bitter Creek	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	Uranium, Vanadium	Mine
		Manning & Wolverton Brothers, Box 248 A, Delta		
Black Diamond	Monogram Mesa	Levi B. Barnes, Box 156, Nucla	Uranium, Vanadium	Mine
Black Rock	Uravan	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Blondie	Martin Mesa	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Bob Tail	Monogram Mesa	Cole & Bond, Box 188, Nucla	Uranium, Vanadium	Mine
Bogus	Uravan	Union Carbide Corp., Nuclear Div., Uravan	Uranium, Vanadium	Mine
		E. J. Johannsen, Nucla		
Brooks	Little Gyp Valley	Fisher & Mitchell, Box 299, Naturita	Uranium, Vanadium	Mine
Butterfly #2	Paradox	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	Uranium, Vanadium	Mine
Camel #6	Bull Canyon	Million & Starks, Box 45, Naturita	Uranium, Vanadium	Mine
Capella	Monogram Bench	Cal Sanders, Box 396, Nucla	Uranium, Vanadium	Mine
Carmack Potash	Bedrock	Carmack Drilling Co., 1129 Colorado Ave., Grand Junction	Potash	Mine
Cliff Dweller	Dolores Rim	Frank MacKendrick, Box 316, Uravan	Uranium, Vanadium	Mine
Cliff Dweller	Little Gyp Valley	Rex Holland, Naturita	Uranium, Vanadium	Mine
Club Sandwich	Dolores Rim	Doug Hager & Ira Smith, Box 111, Naturita	Uranium, Vanadium	Mine
		Orval Care, Box 252, Naturita		
Coloradium	Long Park	Cole & Bond, Box 188, Nucla	Uranium, Vanadium	Mine
Columbus	Long Park	C. N. Athey, Naturita	Uranium, Vanadium	Mine
Crab Orchard	Bull Canyon	Pete Daguerre, Box 77, Naturita	Uranium, Vanadium	Mine
Cripple Creek #2	Long Park	E. J. Johannsen, Nucla	Uranium, Vanadium	Mine
Crystal Dam	E. Portal of Uncompahgre	U. S. Bureau of Reclamation, Montrose		Dam
Deer Shaft	Monogram Mesa	Eckman Mining Co., Box 127, Nucla	Uranium, Vanadium	Mine
Diana	Lower Bull Canyon	Hickey & Erfurth Mining Co., Box 603, Nucla	Uranium, Vanadium	Mine

Doagy #2.....	Naturita.....	Levi B. Barnes, Box 156, Nucla.....	Uranium, Vanadium.....	Mine
Donald L.....	Long Park.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction Bud's Mining Co., Box 13, Nucla.....	Uranium, Vanadium.....	Mine
Duchess #2.....	Martin Mesa.....	Woodrow Gripe, Box 225, Naturita Alvin Joslin, Uravan.....	Uranium, Vanadium.....	Mine
Duggan Adit.....	Monogram Mesa.....	Climax Uranium Co., Box 989, Grand Junction.....	Uranium, Vanadium.....	Mine
Eagle #12.....	Eagle Basin.....	O. E. Smart, Box 147, Naturita.....	Uranium, Vanadium.....	Mine
Echo #3, #6.....	Bull Canyon.....	Lowell Finch & John Kinterknecht, Box 322, Naturita.....	Uranium, Vanadium.....	Mine
Equinox.....	Martin Mesa.....	American Eagle Leasing Co., Norwood.....	Uranium, Vanadium.....	Mine
Eula Belle.....	Mesa Creek.....	Union Carbide Co., Nuclear Div., Uravan.....	Uranium, Vanadium.....	Mine
Eureka.....	Carpenter Ridge.....	Felix Mandisco, Box 172, Naturita.....	Uranium, Vanadium.....	Mine
Fawn Springs.....	Upper Bull Canyon.....	Oral Clark, Box 728, Nucla.....	Uranium, Vanadium.....	Mine
Fawn Springs #29.....	Upper Bull Canyon.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction.....	Uranium, Vanadium.....	Mine
Firecracker.....	Long Park.....	Andress Brothers, Box 495, Nucla.....	Uranium, Vanadium.....	Mine
Good Hope.....	Uravan.....	Wright & Renderle, Box 566, Nucla.....	Uranium, Vanadium.....	Mine
Guadalcanal.....	Long Park.....	D. C. Bunker, Nucla.....	Uranium, Vanadium.....	Mine
Happy Jack.....	Little Gyp Valley.....	Rex Holland, Box 243, Naturita.....	Uranium, Vanadium.....	Mine
Happy Thought.....	Monogram Bench.....	Cole and Bond, Box 188, Nucla.....	Uranium, Vanadium.....	Mine
Hidden Basin.....	Long Park.....	James Herring Mining Co., Box 194, Nucla.....	Uranium, Vanadium.....	Mine
Horsehair #1.....	Upper Bull Canyon.....	U. & H. Mining Co., 205 N. Willerup, Montrose.....	Uranium, Vanadium.....	Mine
Hummer.....	Monogram.....	Lowell Staats Mining Co., Inc., Box 337, Nucla.....	Uranium, Vanadium.....	Mine
Jensen & Jensen Well.....	Bedrock.....	Jensen & Jensen Brine Co., Box 37, Bedrock.....	Salt Brine.....	Mine
Johnson Gravel Crusher.....	Cortez.....	C. B. Johnson Co., Cortez.....	Sand, Gravel.....	Plant
Just Right.....	Long Park District.....	Phil Bunker Mining Co., Box 277, Nucla.....	Uranium, Vanadium.....	Mine
Kaess & Young Placer.....	Uravan.....	Lowell Kaess & Robert Young, Rt. 2, Box 5048, Marysville, Washington.....	Gold.....	Placer
Lark #7.....	Lower Bull Canyon.....	Joe Powell, Box 406, Naturita Frank MacKendrick, Box 316, Uravan.....	Uranium, Vanadium.....	Mine
Lark #8.....	Bull Canyon.....	Reed and Larry Jones, Box 183, Naturita James Galyean, Box 474, Nucla.....	Uranium, Vanadium.....	Mine
Little Buckhorn.....	Carpenter Flats.....	Gerald Randolph, Box 333, Naturita.....	Uranium, Vanadium.....	Mine
Lone Pine.....	Carpenter Ridge.....	Clinton Oliver, Bedrock.....	Uranium, Vanadium.....	Mine
Long Park #1.....	Middle Long Park.....	Cole and Bond, Box 188, Nucla Levi B. Barnes, Box 156, Nucla.....	Uranium, Vanadium.....	Mine
E. J. Longyear, Inc.....	Naturita.....	E. J. Longyear, Inc., Box 398, Naturita.....	Uranium, Vanadium.....	Mine
MacPherson Drilling Co.....	Four Corners Area.....	MacPherson Drilling Co., 601 N. 2nd, Montrose.....	Drilling.....	Drilling
Maggie C #1.....	Long Park.....	Ernest Berry, Box 237, Naturita Hickey & Erturt Mining Co., Box 667, Nucla.....	Uranium, Vanadium.....	Mine

MONTROSE COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Media	Naturita	M & B Mining Co., Uravan		
		Hickey & Erfurt Mining Co., Box 667, Nucla		
Meek Tunnel	Crawford	Tony Ferganchick, Cedaredge	Uranium, Vanadium	Mine
Merry Widow	Eagle Basin	C. N. Athey, Box 23, Naturita	Uranium, Vanadium	Water Tunnel
Mesa	Naturita	John Dillon, Box 326, Naturita	Uranium, Vanadium	Mine
Mill #2	Long Park	Javernick, Javernick & Borgeson, Box 484, Uravan	Uranium, Vanadium	Mine
Mineral Joe #1, #4, #11	Monogram	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
Mineral Joe #2	Monogram	Richards & Richards, Box 608, Nucla	Uranium, Vanadium	Mine
Mineral Park #2	Long Park District	C. C. Sanders, Box 396, Nucla	Uranium, Vanadium	Mine
Miracle Placer	Pinon Bridge	Lee Kitchen & Bob Williams, Box 547, Nucla	Gold	Placer
Modene	Sylvia's Pocket	Gross Mining Co., Box 268, Cortez	Uranium, Vanadium	Mine
Monogram #5	Martin Mesa	Harold Johnson, Slick Rock	Uranium, Vanadium	Mine
Monogram #12, #13	Martin Mesa	Marion Trone, Norwood	Uranium, Vanadium	Mine
Monster	Club Mesa	Glen Gardner, Box 294, Naturita Frank MacKendrick, Box 316, Uravan Matterhorn Mining & Development Co., Box 1648, Grand Junction	Uranium, Vanadium	Mine
Morrow Point Dam	Cimarron	Stocks & Nichols, Paradox	Uranium, Vanadium	Mine
North Star	Dolores Rim	Johnson-MK, Box 259, Cimarron		Project
		Alvy Joslin, Uravan J. B. Burns, Uravan		
Obnoxious	Bull Canyon	Moore & Wagner, Box 111, Naturita	Uranium, Vanadium	Mine
O'Brien Placer	Pinon	Oral Clark, Box 728, Nucla	Uranium, Vanadium	Mine
		O'Brien, 2108 H Rd., Grand Junction T. K. Erickson, 242-17 Hilton, N. E., Albuquerque, New Mexico	Gold	Placer
Opera Box	Monogram Mesa	C. W. Bunker, Box 27, Nucla	Uranium, Vanadium	Mine
Paradox "D"	Monogram	C. W. Bunker, Box 27, Nucla	Uranium, Vanadium	Mine
Paradox 5 & 6	Monogram	Union Carbide Corp., Nuclear Div., Uravan	Uranium, Vanadium	Mine
Park #23-2	Paradox Valley	Carmack Drilling Co., 1129 Colorado Ave., Grand Junction	Potash	Mine
Pay Day	Martin Mesa	Russell Mayfield, Box 396, Nucla	Uranium, Vanadium	Mine
Peanut #3	Bull Canyon	Randolph Brothers, Naturita	Uranium, Vanadium	Mine
Peggy	Long Park	Ernie Berry, Box 361, Naturita	Uranium, Vanadium	Mine
Picket Corral	Lower Bull Canyon	Keith & Don Andrews, Box 87, Nucla	Uranium, Vanadium	Mine
Prayer #9	East of Utah State Line	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	Uranium, Vanadium	Mine
Radium #10	Weddingbell Area	James F. Galyean, Box 474, Nucla	Uranium, Vanadium	Mine
Raven	Dolores	Vanadium Corporation of America, Box 5, Naturita	Uranium, Vanadium	Mine

Red Sox.....	Dolores Bench.....	Orval Care, Box 252, Naturita.....	Uranium, Vanadium.....	Mine.....
Renegade.....	Atkinson Mesa.....	Williams Mining Partnership, Naturita.....	Uranium, Vanadium.....	Mine.....
Republican.....	Naturita.....	James Herring, Nucla.....	Uranium, Vanadium.....	Mine.....
Rex #38.....	Eagle Basin.....	Williams Mining Partnership, Naturita.....	Uranium, Vanadium.....	Mine.....
Rigel.....	Monogram Bench.....	Cole and Bond, Box 188, Nucla.....	Uranium, Vanadium.....	Mine.....
Rim Rock Blues #17.....	Upper Bull Canyon.....	Blake Mining Co., Box 431, Nucla.....	Uranium, Vanadium.....	Mine.....
S. M. R. #3.....	Pinon.....	Uptain Mining Co., 147 S. Maple, Cortez.....	Gold, Silver, Zirconium.....	Placer.....
St. Patrick #9.....	Paradox.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction.....	Uranium, Vanadium.....	Mine.....
Scott Brothers Potash.....	Long Park.....	Scott Brothers Drilling Co., 309 Korber Bldg., Albuquerque, New Mexico.....	Potash.....	Mine.....
September Morn #2.....	Bull Canyon.....	Felix Mandisco, Naturita.....	Uranium, Vanadium.....	Mine.....
Sesmo.....	Long Park.....	William D. Williams, Box 416, Naturita.....	Uranium, Vanadium.....	Mine.....
Sunbeam.....	Eagle Basin.....	Dale Souther, Redvale.....	Uranium, Vanadium.....	Mine.....
T.N.T. #3.....	Long Park.....	O. E. Smart, Naturita.....	Uranium, Vanadium.....	Mine.....
Teapot Dome.....	Bull Canyon.....	Dave Blake, Nucla.....	Uranium, Vanadium.....	Mine.....
Three Jacks.....	Yellow Bird Bench.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction.....	Uranium, Vanadium.....	Mine.....
Uranium Girl.....	Paradox.....	John Newman, Jr., Paradox.....	Uranium, Vanadium.....	Mine.....
Uravan Mill.....	Uravan.....	Union Carbide Corp., Nuclear Div., Uravan.....	Uranium, Vanadium.....	Mine.....
Uravan #2.....	Uravan.....	Fred Bell, Nucla.....	Uranium, Vanadium.....	Mill.....
Vaden View.....	Wild Steer Canyon.....	William D. Williams, Box 416, Naturita.....	Uranium, Vanadium.....	Mine.....
Valley View.....	Carpenter Ridge.....	E. E. Lewis, Box 1481, Grand Junction.....	Uranium, Vanadium.....	Mine.....
Van.....	Long Park.....	O. E. Smart, Box 296, Naturita.....	Uranium, Vanadium.....	Mine.....
Vanadate.....	Middle Long Park.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction.....	Uranium, Vanadium.....	Mine.....
Vanadium King.....	Long Park.....	Hager & Smith, Box 111, Naturita.....	Uranium, Vanadium.....	Mine.....
Watchman.....	Little Gyp Valley.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction.....	Uranium, Vanadium.....	Mine.....
Williams Crusher.....	Redvale.....	Williams Lumber Co., Box 376, Naturita.....	Uranium, Vanadium.....	Mine.....
Windy Day.....	Eagle Basin.....	O. E. Smart, Box 296, Naturita.....	Gravel.....	Crushing Plant.....
Rocky Ford Plant.....	Rocky Ford.....	Valley Concrete Co., Box 550, Rocky Ford.....	Sand, Gravel.....	Plant.....

OTERO COUNTY

OURAY COUNTY

Bachelor.....	Ouray.....	Bachelor Mines, Box 100, Ouray.....	Gold, Silver, Copper, Lead, Zinc.....	Mine and Mill.....
Bonny.....	Ouray.....	Neilson, Klingsmith, Rita, Box 38, Placerville.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Camp Bird.....	Ouray.....	Camp Bird Colorado, Inc., Ouray.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....

OURAY COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Edna #1, #6	Ironton Park	St. Germain Foundation, Ouray	Gold, Silver	Mine
Frank Hough	Engineer Mountain	Skyway Mining, Box 173, Montrose	Gold, Silver, Copper, Lead	Mine
Idarado Mine	Ouray	Idarado Mining Co., Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Keno	Brown Mountain	Joseph Desloge, DBA Columbus Exploration Co., Box 404, Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Mountain Top	Ouray	Andy Sutyac, Box 172, Ouray	Silver, Lead	Mine
National Bell	Red Mountain	F. M. Wright, Moab, Utah	Silver, Copper, Lead	Mine
Patsy-Helen	Gray Copper Gulch	Joseph Desloge, DBA Columbus Exploration Co., Box 404, Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Revenue	Ouray	Camp Bird Colorado, Inc., Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Rouville	Red Mountain	Red Mountain Mining Corp., Box 388, Silverton	Gold, Silver, Copper, Lead, Zinc	Mine
Rutumipa	Ouray	Tom Canavan, Box 223, Ouray	Gold, Silver, Copper, Lead, Zinc, Tourist	Mine
Senorita	Ouray	Willreed Mining Co., Box 313, Naturita	Silver	Mine
Silver King	Gray Copper Gulch	Felix Mandisco & Gene Corta, Naturita	Gold, Silver, Lead	Mine
Silver Tip	Brown Mountain	T. J. Hankins, Egnar	Gold, Silver, Lead	Mine
Wewissa	Ouray	John Crim, Box 50, Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
PARK COUNTY				
Black Prince	Jefferson	Georgia Pass Mining Co., Jefferson	Gold, Silver, Copper, Lead, Zinc	Mine
Bonanza #1	Lake George	Colorado Quartz & Minerals, Box 132, Cascade	Horblende	Quarry
Boomer	Badger Flats	U. S. Beryllium Corp., 306 Bon Durant Bldg., Pueblo	Beryllium	Mine
Boss Tunnel	Lake George	Colorado Quartz & Minerals, Box 132, Cascade	Quartz	Mine
Collins	Buckskin Joe	McLeod Co., Alma	Gold	Placer
Como	Como	McCullock Oil Corp. of California, 6151 W. Century Blvd., Los Angeles	Gold	Mill
Double Eagle	Alma	Triagua Mining Co., Box 20, Alma	Silver	Mine
Evening Star	Fairplay	Ora Plata, 318 Albion St., Denver	Gold, Silver, Lead	Mine
Frisbee	Mosquito Gulch	Ray McLeod, Box 96, Cripple Creek	Gold	Placer
Furman Ranch	Jefferson	Harvey F. Kemp, Rt. 1, Box 340, Morrison	Peat	Peat Bog
Golden Stake #1	Fairplay	Zacker & Couch, Black Hawk	Gold	Placer
Golden Stake #2	Fairplay	Albert E. Christie, 7149 Garden Lane, Commerce City	Gold	Placer
Grand Union	Como	McCullock Oil Corp. of California, Fairplay Hotel, Fairplay	Gold	Placer

Hilltop.....	Four Mile Mining Co., Box 37, Alma	Silver, Lead	.....	Mine
Hock Hocking.....	John T. Oxley, Oxley Petroleum Co., 800-A Enterprise Bldg., Tulsa	Gold, Silver, Lead, Zinc	.....	Mine
Little Lori.....	B. W. Perkins & W. Curtis, Box 231, Fairplay	Gold	.....	Placer
Myers.....	Rock Products, Inc., 1435 Lambard, Canon City	Mica, Beryl, Quartz	.....	Quarry
Penn Hill Placer.....	Hesser, Drake & Cole, Fairplay Hotel, Fairplay	Gold	.....	Placer
Quist & Douglas.....	Carl Quist, Lake George	Quartz	.....	Plant
Shawnee #1.....	Robert J. Ernst, 1913 Stone Ave., San Jose, California	Uranium	.....	Mine
Spruce Lode.....	R. W. Beal & Carl Quist, Lake George	Quartz	.....	Quarry
Sweet Home.....	Douglas Soules Mining Co., Box 103, Fairplay	Granite	.....	Mine
Tarryall.....	Mineral Concentrates & Chemical Co., Inc., Room 1430, First National Bank Bldg., Denver	Beryllium, Quartz	.....	Mine
Twinkle.....	Silver Star Mining Co., Box 251, Fairplay	Silver, Lead	.....	Mine and Plant
Universal Peat Company.....	Universal Peat Co., 5926 W. Arizona, Denver	Peat	.....	Peat Bog

PITKIN COUNTY

Highland Tunnel.....	Aspen	Minerals Engineering Co., Box 150, Aspen R. G. Sullivan, Box 150, Aspen	.....	Silver
Pride of Aspen.....	Aspen	B & C Leasing Co., Box 270, Glenwood Springs	.....	Mine
Smuggler.....	Aspen	Aspen Consolidated Mining Co., Box 799, Aspen	.....	Mine

PROWERS COUNTY

Lamar Plant.....	Lamar	Valley Concrete Co., Box 591, Lamar	Sand, Gravel
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PUEBLO COUNTY

Certified.....	Pueblo	Certified Concrete Co., Box 1340, Pueblo	Sand, Gravel
Chamblin.....	Mustang	Standard Fire Brick Co., 24th & Albany, Pueblo	.....	Clay
Chamblin #2.....	Mustang	Denver Brick & Pipe Co., Box 2329, Denver	.....	Mine
Fountain.....	Pueblo	Fountain Sand & Gravel, Box 535, Pueblo	.....	Mine
Nellie Helen.....	Stone City	Arthur L. Wands, Stone City Rt., Pueblo	.....	Quarry
Open Pir Mine.....	Stone City	General Refractories Co., Box 192, Pueblo	.....	Mine
Pueblo Sand & Gravel.....	Pueblo	Jess Hunter, 11th & Santa Fe, Pueblo	.....	Mine
Red Mountain.....	Stone City	Walter H. Everhart, 2501 Cheyenne Ave., Pueblo	.....	Plant
			.....	Mine
			.....	Plant and Plant

PUEBLO COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Rock Creek	Buelah	Standard Fire Brick Co., 24th & Albany, Pueblo.	Clay	Mine
Siloam	Wetmore	Raymond Moore, Box 248, Rye Harbison-Walker Refractories Co., Box 150, Canon City.	Clay	Mine

RIO BLANCO COUNTY

Midnight	Meeker	Harry H. Harp, Jr., Box 643, Meeker.	Uranium, Vanadium	Mine
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RIO GRANDE COUNTY

Summitville	Del Norte	W. S. Moore Co., Box 340, Del Norte.	Gold, Silver, Copper, Lead, Zinc	Mine
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ROUTT COUNTY

Elkhorn	Hahns Peak	W. A. Boves, Box 97, Steamboat Springs	Silver, Lead	Mine
Farwell	Hamlet	W. A. Boves, Box 97, Steamboat Springs	Silver, Copper, Lead, Zinc	Mine
Greenville	Clark	W. A. Boves, Box 97, Steamboat Springs	Gold, Silver, Copper, Lead	Mine
Little Red Park	Hahns Peak	W. A. Boves, Box 97, Steamboat Springs	Gold	Placer

SAGUACHE COUNTY

Lookout Pitch	Marshall Pass Sargents	Cotter Corporation, Box 751, Canon City Pinnacle Exploration Co., Box 598, Gunnison	Uranium	Mine
Rawley #12, #2	Bonanza	American Industrial Leasing Co., Box 127, Salida Rawley Metals, Inc., 1328 F St., Salida.	Uranium	Mine
Villa Grove Turquoise Lode	Villa Grove	Menless Winfield, Box 42, Salida	Silver, Copper, Lead, Zinc Turquoise	Mine Quarry

SAN JUAN COUNTY

American Tunnel	Gladstone	Standard Metals Inc., Silverton.	Gold, Silver, Copper, Lead, Zinc	Mine
Argentine	Arasta Gulch	Standard Metals Inc., Silverton.	Gold, Silver, Copper, Lead, Zinc	Mine
Black Hawk	Silverton	Silver Bay Mining Co., Box 392, Silverton.	Gold, Silver, Copper, Lead, Zinc	Mine
Graysill	Hermosa Creek	Vanadium Corporation of America, Box 5, Naturita	Vanadium	Mine
Illinois	Howardsville	Jerry Dalla, 425 6th, Durango	Gold, Silver, Copper, Lead, Zinc	Mine

Little Dora.....	Silverton.....	Robert O'Neill, Silverton.....	Tourist.....	Mine.....
London.....	Engineer Mountain.....	Skyways Mining Co., Box 173, Montrose.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Longfellow.....	Red Mountain Pass.....	Bachelor Mines, Box 100, Ouray.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
May Day.....	Silverton.....	Calco Mining Co., Missouri Building, Room 5, Montrose.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Mogul.....	Cement Creek.....	Mogul Contract, Silverton John Distel, Silverton.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Osceola.....	Cunningham Gulch.....	Two-bit Mining Co., Silverton.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Pride Mill.....	Howardsville.....	Silver Wing Mining, Inc., Silverton.....	Gold, Silver, Copper, Lead, Zinc.....	Mill.....
Richardson #1.....	Anvil Mountain.....	Frank Richardson, Box 546, Ouray.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Silent Friend.....	Woods Mountain.....	Cross & Sons, Inc., Box 268, Cortez.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Silver Wing.....	Silverton.....	Silver Wing Mining, Inc., Box 326, Silverton.....	Gold, Silver, Copper.....	Mine.....
Standard Mill.....	Arasta Gulch.....	Standard Metals, Inc., Silverton.....	Gold, Silver, Copper, Lead, Zinc.....	Mill.....
Tinsville.....	Silverton.....	Kendall Columbine Mining Co., Silverton.....	Gold, Silver, Lead, Zinc.....	Mine.....

SAN MIGUEL COUNTY

Andrus.....	Red Mountain Pass.....	Don & Glen Nordlander, Box 163, Ouray.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Atlas & Clara Group.....	Matterhorn.....	Frank & John Montonati, 683 4th Ave., Durango.....	Gold, Silver, Copper, Lead, Zinc.....	Mine.....
Ava Jay.....	Slick Rock.....	Clyde Sanchez Mining Co., Box 314, Dove Creek.....	Uranium, Vanadium.....	Mine.....
Bachelor.....	Wedding Bell.....	Sanchez & Phelps, Box 331, Dove Creek Lark L. Washburn, 1024 - 24 Rd., Grand Junction.....	Uranium, Vanadium.....	Mine.....
Bald Eagle.....	Big Gyp Valley.....	Webb Resources, Inc., 1645 Court Place, Denver.....	Uranium, Vanadium.....	Mine.....
Bean Patch #1, #3, #4, #5.....	Bean Patch.....	Elbert Short, Box 44, Naturita.....	Uranium, Vanadium.....	Mine.....
Bean #6.....	Slick Rock.....	Dulaney Mining Co., Box 505, Dove Creek E. J. Johannsen, Nucla.....	Uranium, Vanadium.....	Mine.....
Bean #10.....	Slick Rock.....	Benny Martinez, Box 224, Dove Creek.....	Uranium, Vanadium.....	Mine.....
Bear Creek Group.....	Vanadium.....	Benny Martinez, Box 224, Dove Creek.....	Uranium, Vanadium.....	Mine.....
Black Bird.....	Egnar.....	Vanadium Corp. of America, Box 5, Naturita.....	Vanadium.....	Mine.....
Bob.....	Egnar.....	E. J. Johannsen, Nucla.....	Uranium, Vanadium.....	Mine.....
		Climax Uranium Co., Box 989, Grand Junction.....	Uranium, Vanadium.....	Mine.....

SAN MIGUEL COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Burro #3, #5, #7	Slick Rock	Union Carbide Corp., Nuclear Div., Urayan Delmar Bunker, Box 153, Nucla		
		Cleghorn & Bond Mining Co., 623 - 26 Rd., Grand Junction	Uranium, Vanadium	Mine
Carmack Potash	Gyp Valley	Carmack Drilling Co., 1129 Colorado Ave., Grand Junction	Potash	Drilling
Carnation	Gyp Valley	Matterhorn Mining & Development Co., Box 1648, Grand Junction	Uranium, Vanadium	Mine
Cliff Dweller	Gyp Valley	Otis Dibler, Box 225, Norwood	Uranium, Vanadium	Mine
Deremo	Egnar Flats	Union Carbide Corp., Nuclear Div., Urayan	Uranium, Vanadium	Mine
Dolores	Slick Rock	Charles Corey, Box 652, Durango	Uranium, Vanadium	Mine
Donavon Placer	Placerville	Lee Hetzel, Box 455, Clifton	Gold, Silver, Platinum	Placer
Dynamo	Telluride	Koskinen Brothers, Box 474, Telluride	Gold	Mine
Favorite	Old Ophir	Rainbow Mining & Exploration Corp., Box 91, Placerville	Gold, Silver, Copper, Lead	Mine and Mill
France	Egnar	Thomas W. Baldrey, Egnar Rt., Dove Creek	Uranium, Vanadium	Mine
G. M. G.	Gyp Valley	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
Garibaldi	Matterhorn	Silver Hat Mining, Inc., Box 664, Ophir	Gold, Silver, Copper, Lead, Zinc	Mine
Gerald T.	Slick Rock	Earl Holz, Slick Rock	Uranium, Vanadium	Mine
Glen #27	Grassy Hill	Arnold & Cecil Hunt, Box 28, Naturita	Uranium, Vanadium	Mine
Ground Hog	Wedding Bell Bench	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	Uranium, Vanadium	Mine
Hangover	Egnar	Fritz & Erickson, Box 365, Dove Creek Hughes Mining Co., Box 886, Grand Junction	Uranium, Vanadium	Mine
Hidden Treasure	Klondyke Basin	Stanley Reed, Box 325, Naturita	Uranium, Vanadium	Mine
Idarado Mine	Telluride	Idarado Mining Co., Ouray	Silver, Copper	Mine
			Gold, Silver, Copper, Lead, Zinc	Mine
Iron Springs Group	Old Ophir	Silver Hat Mining, Inc., Box 664, Ophir	Gold, Silver, Copper, Lead, Zinc	Mine
Iron Springs Placer	Old Ophir	Boyd & Carl Oliver, Norwood	Bog Iron	Quarry
Jack Knife #2	Wedding Bell	Calmes-Putney, Box 213, Naturita	Uranium, Vanadium	Mine
Jack Pot	Gyp Valley	Alex Herrera, 305 E. Empire St., Cortez	Uranium, Vanadium	Mine
Jackie Walls	Slick Rock	Paul Knuckles, Box 264, Dove Creek	Uranium, Vanadium	Mine
Klondike Mines	Gyp Valley	Stanley & Gordon Reed, Box 325, Naturita	Uranium, Vanadium	Mine
			Silver, Copper	Mine
Latricia	Slick Rock	Frank Elder, Nucla	Uranium, Vanadium	Mine
Little Jimmy	Telluride	James D. Dalpez, Box 372, Telluride	Gold, Silver	Mine
Lost Dog	Egnar	Jerry Mayfield, Box 362, Naturita	Uranium, Vanadium	Mine
Lucky Strike	Egnar	Thomas W. Baldrey, Egnar Rt., Dove Creek	Uranium, Vanadium	Mine

Magpie.....	Gyp Valley.....	Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	.....	Uranium, Vanadium.....	.....	Mine
		Eugenio Corta, Box 163, Redvale	.....	Uranium, Vanadium.....	.....	Mine
		Firman Harvey, 761 - 25 Rd., Grand Junction	.....		
		Felix Mandisco, Naturita	.....		
Marne.....	Egnar.....	Frank Elder, Box 247, Nucla	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mine
Morning Star Group.....	Mt. Wilson.....	Gold Leaf Mining Co., c/o Neilson & Klingensmith, Placerville	.....	Uranium, Vanadium.....	.....	Mine
		Matterhorn Mining & Development Co., Box 1648, Grand Junction	.....	Uranium, Vanadium.....	.....	Mine
Murietta.....	Hamm Bench.....	Jack Milling, c/o Vanadium Corp. of America, Box 5, Naturita	.....	Uranium, Vanadium.....	.....	Mine
Mystery.....	Mule Shoe.....	Randy Belisle, Ophir	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mine
New Dominion.....	Old Ophir.....	Jack Kassler, Rt. 2, Box 190, Montrose	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mine
North Slope.....	Hayden Mountain.....	Don & Glen Nordlander, Box 163, Ouray	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mine
Northern Ohio.....	Telluride.....	Idarado Mining Co., Ouray	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mill
Pandora Mill.....	Telluride.....	Jack Milling, Egnar William Williams, Naturita	.....	Uranium, Vanadium.....	.....	Mine
Parrot.....	Horseshoe Bend.....	Woodrow Gripe, Box 225, Naturita	.....	Uranium, Vanadium.....	.....	Mine
Penju.....	Gyp Valley.....	Dulaney Mining Co., Box 315, Dove Creek	.....	Uranium, Vanadium.....	.....	Mine
Radium #4, #9, #24.....	Bean Patch.....	Paul Knuckles, Box 264, Dove Creek	.....	Uranium, Vanadium.....	.....	Mine
Radium #5, #11.....	Bean Patch.....	Benny Martinez, Box 224, Dove Creek	.....	Uranium, Vanadium.....	.....	Mine
Radium #26.....	Bean Patch.....	E. J. Johannsen, Nucla	.....	Uranium, Vanadium.....	.....	Mine
Rainy Day.....	Hamm Canyon.....	Douglas Cleghorn, 623 - 26 Rd., Grand Junction	.....	Uranium, Vanadium.....	.....	Mine
Red Ant.....	Egnar.....	Earl Hotz, Slick Rock	.....	Uranium, Vanadium.....	.....	Mine
Red Rock #5.....	Disappointment Valley.....	William Williams, Naturita	.....	Uranium, Vanadium.....	.....	Mine
Roy Quinn Drilling.....	Weddingbell Mt. Valley.....	Roy Quinn, Box 195, Naturita	.....	Uranium, Vanadium.....	.....	Mine
S. B. Group.....	Dolores Rim.....	Jones Brothers Mining Co., Box 183, Naturita	.....	Uranium, Vanadium.....	.....	Mine
Sage #11.....	Egnar.....	Charles Corey, Box 652, Durango	.....	Uranium, Vanadium.....	.....	Mine
San Miguel.....	Bean Patch.....	Benny Martinez, Box 224, Dove Creek	.....	Uranium, Vanadium.....	.....	Mine
Sarah M.....	Slick Rock.....	Jack Milling, Egnar	.....	Uranium, Vanadium.....	.....	Mine
Sego Lily Lou.....	Hamm Canyon.....	Strategic Minerals & Exploration Co., Box 1648, Grand Junction	.....	Uranium, Vanadium.....	.....	Mine
Silver Hat.....	Matterhorn.....	Silver Hat Mining, Inc., Ophir	.....	Gold, Silver, Copper, Lead, Zinc.....	.....	Mill
Silver Pick.....	Wilson Peak.....	Charlie Chastain & Gordon Smith, Terreton, Idaho	.....		
		Intermountain Resources, Inc., Box 1008, Pocatello, Idaho	.....	Gold.....	.....	Placer
Strawberry Roan.....	Egnar.....	Charles Corey, Box 652, Durango	.....		
		Dade & Shumway Mining Co., 215 Landsdown Rd., Grand Junction	.....	Uranium, Vanadium.....	.....	Mine
Sunday #2.....	Big Gyp Valley.....	Clair Albano, Box 927, Blanding, Utah	.....	Uranium, Vanadium.....	.....	Mine
		Climax Uranium Co., Box 989, Grand Junction	.....	Uranium, Vanadium.....	.....	Mine

SAN MIGUEL COUNTY (Continued)

Name of Property	Location	Operator's Name & Address	Product	Kind of Property
Sunrise #1	Bean Patch	Dulaney Mining Co., Box 315, Dove Creek	Uranium, Vanadium	Mine
Tail Holt	Slick Rock	Harold Johnson, Slick Rock	Uranium, Vanadium	Mine
Valley View Group	Matterhorn	Silver Hat Mining, Inc., Box 664, Ophir	Gold, Silver, Copper, Lead, Zinc	Mine
Vera	Old Ophir	Randy Belisle, Ophir	Gold	Mine
Woods Lake Dam	Woods Lake	M. & B., Inc., 395 Clovis Dr., Durango		Project
Yellow Bird	Bean Patch	Dulaney Mining Co., Box 315, Dove Creek	Uranium, Vanadium	Mine

SUMMIT COUNTY

Blue Lake Dam	Breckenridge	Northwestern Engineering Co., Box 585, Breckenridge		Project
Buffers Lake	Climax	C. Ryan & Son Construction Co., Climax	Sand, Gravel	Plant
Chautauqua Mines	Montezuma	Chautauqua, Inc., 428 American National Bank Bldg., Denver	Silver, Lead, Zinc	Mine and Mill
Recruit	Montezuma	Elmer & Victor Josephson, Box 158, Evergreen	Gold, Silver	Mine
Shoe Basin	Montezuma	Mike Vinson & Don Swanson, Montezuma	Silver, Lead, Zinc	Mine
Silver Wing	Montezuma	George Warren, Box 45, Montezuma	Silver, Lead, Zinc	Mine
Straight Creek West Approach	Loveland Pass	Colorado Constructors, Inc., Box 126, Dillon		Project
Toledo Mill	Montezuma	Chautauqua, Inc., 428 American National Bank Bldg., Denver	Silver, Lead	Mill
Wellington	Breckenridge	Wellington Mine Association, Box 392, Breckenridge	Lead, Zinc	Mine and Mill

TELLER COUNTY

Alpen Meadows	Gillette	Alpen Meadows, Inc., Box 1074, Colorado Springs	Peat	Peat Bog
El Paso	Cripple Creek	Great Divide Explorations, Inc., Box 1, Cripple Creek	Gold	Mine
Havilah	Victor	W. D. Ray, G. M. Myers, A. Goodwin, and Mel Jarvis, Victor	Gold, Silver	Mine
Mollie Kathleen	Cripple Creek	F. W. Ferguson, Box 998, Cripple Creek Black Diamond Mining Co., Box 998, Cripple Creek	Tourist	Mine
Pikes Peak	Florissant	Pikes Peak Granite Co., 2115 N. Tejon, Colorado Springs		
Silver Circle Ranch	Divide	George A. West & Joe Vetter, 130 Bison, Cripple Creek	Granite	Quarry
Strickler	Pikes Peak	Silver Circle Ranch Peat Moss, Box 159, Divide Colorado Springs Public Utilities, 18 So. Nevada, Colorado Springs	Peat	Peat Bog Water Diversion Tunnel

Highway Projects

County	Location	Operator's Name and Address	Project
Mesa	Grand Mesa	Wallace Beard, 2041 8th, Grand Junction	Highway, Dams
Clear Creek	Empire Junction	Blanchard & Kenney Construction Co., Box 268, Commerce City	Highway
Dolores	Barlow Creek	Brasier Bros. Construction Co., Box 25, Norwood	Highway
Montezuma	Roaring Fork Creek		Highway
Gunnison	Spring Creek Dam	C. K. & C. Construction Co., Rt. 1, Brighton	Highway
Gunnison	Iola to Gunnison	Colorado Constructors, Inc., 380 W. 62 Ave., Denver	Highway
Summit	Neversink Resort to Elk Creek		Highway
Pueblo	East of Dillon		Highway
Pueblo	South of Pueblo		Highway
Mesa	Grand Junction	Corn Construction Co., Box 1501, Grand Junction	Office and Shop Roads
Clear Creek	Highway 6 & 40	Gardner Construction Co., Box 1751, Grand Junction	Highway
Gunnison	Parlin		Highway
Mesa	Grand Mesa		Highway
Park	South of Fairplay — Highway 285	Graham Construction Co., 1509 E. 17th, Pueblo	Highway
Mesa	Airport Road West 22 Road East	Herren & Strong, Inc., Box 1537, Grand Junction	Highway Road Work
Mesa	Molina	M. C. Jacobs Construction Co., 1011 S. Gaylord, Denver	Highway
La Plata	Durango North	Peter Kiewit & Sons Co., Box 22167, Denver	Highway
San Miguel	Basin to Gyp Valley 80		Highway
Pueblo	Highway 85-87, South of Pueblo	Domenic Leone Construction Co., 818 Oak St., Trinidad	Highway
Clear Creek	U. S. 6 & 40 from Idaho Springs to Empire	H-E Lowdermilk, 1950 W. Dartmouth, Denver	Highway
La Plata	Durango North		Highway
Boulder	Nederland to Lakewood	Z. H. Lowdermilk, Inc., 1950 W. Dartmouth, Denver	Highway
Mesa	Gateway North		Highway
Mesa	Gateway East	Z. H. and W. A. Lowdermilk, 1950 W. Dartmouth, Denver	Highway

HIGHWAY PROJECTS (Continued)

County	Location	Operator's Name and Address	Project
Ouray	Owl Creek Pass	C. E. Mills Construction Co., Box 354, Rt. 4, Montrose	Highway
La Plata	Red Mesa South		Highway
Summit	Silver Thorn	Morrison-Knudsen Co., Inc., Box 4718, Silver Thorn	Highway
Archuleta	Pagosa Springs South	Nielson, Inc., Box 1750, Dolores	Highway
Montrose and San Miguel	Basin to Naturita		Highway
Montezuma	Mancos		Crusher
Routt	Wolcott Road	Pendleton Construction Co., 750 Pendleton Road, Longmont	Highway
El Paso	Manitou Springs	Pioneer Construction Co., Box 898, Pueblo	Highway
Fremont	North of Penrose		Highway
Huerfano	La Veta Pass, Highway 160		Highway
Las Animas	Raton Pass		Highway
Mesa	Highway 70	Schmidt Construction Co., 8150 W. 49th, Arvada	Highway
Montezuma	Aneth		Highway
Hinsdale	Lake City, Highway 149	Sharpe Construction Co., Box 145, Trinidad	Highway
Archuleta	Pagosa Springs	Siegrist Construction Co., 7000 York, Denver	Highway
Conejos	Cumbres Pass		Highway
Gunnison	Iola South		Highway
La Plata	Hermosa South		Highway
Montrose	Montrose West		Highway
La Plata	Durango	J. D. Simmons, 1135 Main Ave., Durango	Highway, Dams
Gunnison	Sapinero South to West of Powderhorn	Vern W. Smith Construction Co., 1325 W. Quincy, Englewood	Highway
San Juan	Highway 145, Rico	Sterling Construction Co., Box 928, Sterling	Highway
Mesa	Grand Mesa	H. Fred Watts Co., Box 1057, Englewood	Highway
Montezuma	Four Corners Area		Highway
Mineral	South Fork of Rio Grande	George E. Wilson, 1327 S. Wyandot, Denver	Road Work

Oil and Gas Drilling and Producing Companies

Name and Address of Company	County	Operation
Allison Drilling Co., Box 709, Fort Morgan	Larimer	Drilling
	Logan	Drilling
	Morgan	Drilling
	Washington	Drilling
	Rio Blanco	Drilling
	Montezuma	Drilling
	Moffat	Producing
	Morgan	Drilling
	Washington	Drilling
	Baca	Drilling
	Rio Blanco	Drilling
	Logan	Drilling
	Moffat	Drilling
	Montezuma	Drilling
	Rio Blanco	Producing
	Weld	Producing
	Moffat	Drilling
	Garfield	Drilling
	Montezuma	Drilling
	Moffat	Drilling
	Rio Blanco	Drilling
	Baca	Drilling
	Bent	Drilling
	Kiowa	Drilling
	Morgan	Drilling
	Rio Blanco	Producing
	Morgan	Drilling
	Washington	Drilling
	Larimer	Drilling
	Morgan	Drilling
	Washington	Drilling
	Archuleta	Producing
	Mesa	Drilling
	Rio Blanco	Drilling
	Mesa	Drilling
	Logan	Drilling
	Montezuma	Drilling
	La Plata	Producing
	Rio Blanco	Drilling
	Baca	Producing
	Archuleta	Producing
	Baca	Producing
	Adams	Drilling
	Logan	Drilling
	Dolores	Drilling
	Rio Blanco	Drilling
	San Miguel	Drilling
Baker & Taylor Drilling Co., Box 2748, Amarillo, Texas		
Baker Well Service, Rangely		
Briney Well Service, Box 544, Sterling		
Brinkerhoff Drilling Co., Box 1568, Casper, Wyoming		
Cactus Drilling Co., Box 2146, Farmington, New Mexico		
The California Co., Rangely		
Box 548, Ault		
Calvert Western Exploration Co., Box 681, Grand Junction		
Canyon Service Co., 447 N. 23rd, Grand Junction		
Circle A Drilling Co., 340 Denver Hilton Bldg., Denver		
Colorado Well Service, Rangely		
Davis Drilling Co., Box 188, Lamar		
Denver Drilling Co., Box 285, Fort Morgan		
Equity Oil Co., Rangely		
Exeter Drilling Co., 1730 Glenarm Place, Denver		
J. W. Gibson Well Service, Inc., 900 Western Federal Savings Bldg., Denver		
Great Western Drilling Co., Midland, Texas		
Gullick Drilling Co., First National Bank Bldg., Denver		
H & H Drilling Co., Highway 6-50, Grand Junction		
Haas Well Service, Box 264, Sterling		
Harlan Drilling Co., 721 W. Maple, Farmington, New Mexico		
Hathaway Co., Box 7, Marvel		
Hegwer Drilling Co., Rangely		
Horizon Oil & Gas Co., 500 Republic Bank Bldg., Dallas, Texas		
Hughes Brothers, 3955 E. Kentucky Ave., Denver		
Kerr-McGee Oil Co., Kerr-McGee Bldg., Oklahoma City		
Kimbark Exploration Co., 201 University Bldg., Denver		
Lewmont Drilling Co., Suite 1411, 1700 Broadway, Denver		
Loffland Brothers Drilling Co., Tulsa, Oklahoma		

OIL AND GAS DRILLING AND PRODUCING COMPANIES (Continued)

Name and Address of Company	County	Operation
R. L. Manning Co., Box 1700, 2100 Broadway, Denver.....	Mesa	Drilling
	Routt	Drilling
Mead Drilling Co., Rangely.....	Rio Blanco	Drilling
Mesa Drillers, Lubbock, Texas.....	Montezuma	Drilling
Mid-America Drilling Co., 1406 Mile High Center, Denver.....	Logan	Drilling
Miers Well Service, Box 325, Sterling.....	Logan	Drilling
Miracle & Fifer Drilling Co., 416 C. A. Johnson Bldg., Denver.....	Larimer	Drilling
	Weld	Drilling
Miracle & Wooster Drilling Co., Vernal, Utah.....	Moffat	Drilling
	Rio Blanco	Drilling
Moran Brothers, Inc., Box 1319, Farmington, New Mexico.....	La Plata	Drilling
Mt. Fuel & Supply Co., Box 1129, Rock Springs, Wyoming.....	Moffat	Producing
Murfin Drilling Co., 617 Union Center, Wichita, Kansas.....	Weld	Drilling
O'Quinn & Murray, Inc., Box 312, Fort Morgan.....	Adams	Drilling
	Jackson	Drilling
	Larimer	Drilling
	Morgan	Drilling
	Washington	Drilling
Pan American Petroleum Corp., Box 97, Hamilton.....	Moffat	Producing
Park Basin Oil Limited, 451 Clarkson, Denver.....	Jackson	Drilling
Peacock Well Service, Rangely.....	Rio Blanco	Drilling
Pease Drilling Co., Box 1532, Grand Junction.....	Rio Blanco	Drilling
Pioneer Drilling Co., Box 2211, Casper, Wyoming.....	Mesa	Drilling
R & R Well Service, Rangely.....	Moffat	Drilling
Rayco Drilling Co., Box 1741, Farmington, New Mexico.....	Rio Blanco	Drilling
	La Plata	Drilling
	Mesa	Drilling
S. S. Reames Well Service, Bloomfield, New Mexico.....	La Plata	Drilling
Ring West Petroleum Corp., 802 Patterson Bldg., Denver.....	Weld	Drilling
Don Rounds Drilling Co., Inc., 925 Petroleum Club Bldg., Denver.....	Larimer	Drilling
Signal Drilling & Exploration, Inc., 415 Denver Club Bldg., Denver.....	Dolores	Drilling
	Jackson	Drilling
	Montezuma	Drilling
	Rio Blanco	Drilling
Signal Oil Field Service, Petroleum Club Bldg., Denver.....	La Plata	Drilling
Teasley Drilling Co., Box 331, Kimball, Nebraska.....	Weld	Drilling
Texaco, Inc., Box 157, Craig.....	Moffat	Producing
	Rio Blanco	Producing
Tipps Drilling Co., 914 Patterson Bldg., Denver.....	Washington	Drilling
Toltak Drilling Co., 209 C. A. Johnson Bldg., Denver.....	Logan	Drilling
	Weld	Drilling
Rip C. Underwood, Box 1288, Amarillo, Texas.....	Baca	Drilling
Wakefield Drilling Co., 515 Union Bldg., Wichita, Kansas.....	Prowers	Drilling
Western Frontier Drilling Co., 1119 Mile High Center, Denver.....	Mesa	Drilling
Western Production Co., 900 Western Federal Bldg., Denver.....	Weld	Drilling

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