

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO

(MINE REPORT)

By CHAS. W. HENDERSON AND A. J. MARTIN

SUMMARY OUTLINE

	Page		Page
Summary.....	415	Metallurgic industry.....	420
Calculation of value of metal production.....	415	Review by counties and districts.....	424
Mine production by counties.....	418		
Mining industry.....	419		
Ore classification.....	420		

The mine production of recoverable gold in New Mexico in 1938 increased in both quantity and total value over 1937, as the price remained the same in both years. The production of recoverable zinc also gained in quantity, but the total value was less than in 1937 because of the reduced average price. The output of recoverable silver, copper, and lead decreased in both quantity and value. The decrease in quantity is attributable almost entirely to curtailment of production by three important producers in the Central district, Grant County; and part of the large decrease in total value of each of these three metals resulted from the decline in average price. There was an increased output of zinc in the Central district; of gold and silver in the Mogollon district, Catron County, and Steeple Rock district, Grant County; and of copper, gold, and silver in the Lordsburg district, Hidalgo County. Production of gold, silver, copper, lead, and zinc from the Pecos mine in the Willow Creek district, San Miguel County, was slightly higher than in 1937.

All tonnage figures are short tons and "dry weight"; that is, they do not include moisture.

The value of metal production herein reported has been calculated at the following prices.

Prices of gold, silver, copper, lead, and zinc, 1934-38

Year	Gold <sup>1</sup>	Silver <sup>2</sup>	Copper <sup>3</sup>	Lead <sup>3</sup>	Zinc <sup>3</sup>
	<i>Per fine ounce</i>	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1934.....	\$34.95	* \$0.646+	\$0.080	\$0.037	\$0.043
1935.....	35.00	.71875	.083	.040	.044
1936.....	35.00	.7745	.092	.046	.050
1937.....	35.00	.7735	.121	.059	.065
1938.....	35.00	†.646+	.098	.046	.048

<sup>1</sup> 1934: Yearly average weighted Government price; 1935-38: Price under authority of Gold Reserve Act of Jan. 31, 1934. Treasury legal coinage value of gold from Jan. 18, 1837, to Jan. 31, 1934, was \$20.67+ (\$20.671835) per fine ounce.

<sup>2</sup> 1934 and 1938: Treasury buying price for newly mined silver; 1935-37: Yearly average weighted Treasury buying price for newly mined silver.

<sup>3</sup> Yearly average weighted price of all grades of primary metal sold by producers.

\* \$0.646464.

The following table shows the number of mines in New Mexico producing gold, silver, copper, lead, and zinc; the annual output from 1934 to 1938; and the total production from 1848 to 1938.

*Mine production of gold, silver, copper, lead, and zinc in New Mexico, 1934-38, and total, 1848-1938, in terms of recovered metals*

Year	Mines producing		Ore (short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1934.....	153	328	1,397,709	27,307.01	\$954,380	1,061,775	\$686,400
1935.....	150	234	440,799	33,435.00	1,170,225	1,061,902	763,242
1936.....	136	169	514,966	33,037.00	1,156,295	1,163,255	900,941
1937.....	159	160	4,191,092	41,171.00	1,440,985	1,243,766	962,053
1938.....	166	164	2,414,857	43,050.00	1,506,750	1,229,860	795,061
1848-1938.....			(1)	2,048,013.00	45,014,648	61,139,542	48,253,596

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1934.....	23,630,000	\$1,890,400	18,729,000	\$692,973	53,043,000	\$2,280,849	\$6,505,002
1935.....	4,505,000	373,915	14,578,000	583,120	44,252,000	1,947,088	4,837,590
1936.....	6,332,000	582,544	13,252,000	609,592	41,336,000	2,066,800	5,316,172
1937.....	64,106,000	7,756,826	13,024,000	708,416	47,854,000	3,110,510	14,038,790
1938.....	40,878,000	4,006,044	9,898,000	455,308	56,472,000	2,710,656	9,473,619
1848-1938.....	<sup>2</sup> 827,976	266,154,991	<sup>2</sup> 230,802	22,110,531	<sup>2</sup> 514,299	62,334,762	443,868,528

<sup>1</sup> Figures not available.

<sup>2</sup> Short tons.

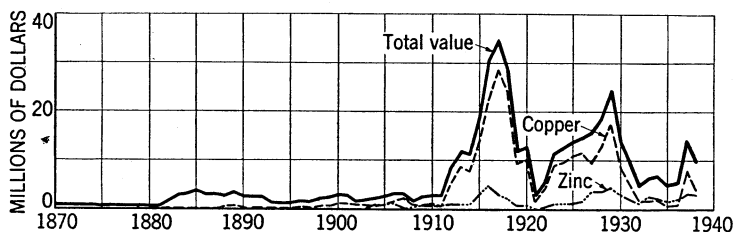


FIGURE 1.—Value of mine production of copper and zinc and total value of gold, silver, copper, lead, and zinc in New Mexico, 1870-1938. The value of gold, silver, and lead produced annually has been relatively small.

*Gold and silver produced at placer mines in New Mexico, 1934-38, in terms of recovered metals*

Year	Gold		Silver		Total value	Year	Gold		Silver		Total value
	Fine ounces	Value	Fine ounces	Value			Fine ounces	Value	Fine ounces	Value	
1934.....	2,587.64	\$90,438	212	\$137	\$90,575	1937.....	3,027.00	\$105,945	203	\$157	\$106,102
1935.....	3,554.40	124,404	302	217	124,621	1938.....	2,626.00	91,910	167	108	92,108
1936.....	3,378.00	118,230	235	182	118,412						

*Gold.*—The principal gold-producing districts in New Mexico in 1938 were: Willow Creek (Pecos mine), in San Miguel County, which yielded 32 percent of the State total recoverable output of gold; Mogollon, Catron County, 21 percent; Steeple Rock, Grant County, 13 percent; Lordsburg, Hidalgo County, 8 percent; Mount Baldy, Colfax County, 8 percent; and the Hillsboro district, Sierra County (mostly from placers), 6 percent. The table under the heading Review by Counties and Districts lists all the mining districts of the State that produced in 1938 and shows the production of each district. The principal gold-mining districts of New Mexico are described in Information Circular 6987, issued by the Bureau of Mines.<sup>1</sup> Dry and siliceous ores yielded 49 percent of the total gold; zinc-lead ore, 32 percent; copper ore, 12 percent; and placers, together with a small quantity from lead and lead-copper ores, 7 percent.

*Silver.*—Silver production (in terms of recoverable metal) in New Mexico in 1938 decreased 1 percent from 1937. Substantial increases in the Mogollon, Lordsburg, and Steeple Rock districts were more than offset by a large decrease in the Central district. The Mogollon district produced 35 percent of the State total, Willow Creek 26 percent, Steeple Rock 19 percent, and Lordsburg 11 percent. Dry and siliceous ore, chiefly from the Mogollon and Steeple Rock districts, yielded 59 percent of the total; zinc-lead ore, largely from the Willow Creek and Central districts, 27 percent; copper ore, mostly from the Lordsburg district, 12 percent; and lead-copper and lead ores, together with a very small quantity from placers, 2 percent.

*Copper.*—The Chino Mines Division of the Nevada Consolidated Copper Corporation at Santa Rita produced the bulk of the State output of recoverable copper in 1938 but reduced its production considerably from that of 1937. The total copper output of New Mexico in 1938 decreased 36 percent in quantity and 48 percent in value from 1937. The second-largest producer of copper in the State in 1938 was the Banner Mining Co., operating the Bonney mine 6 miles south of Lordsburg. Most of the remainder of the copper was recovered in concentrates produced from zinc-lead ore of the Pecos mine at Tererro. Copper ore yielded more than 96 percent of the total copper, zinc-lead ore 3 percent, and other types of ore less than 1 percent.

*Lead.*—The production of recoverable lead in New Mexico in 1938 decreased 24 percent in quantity and 41 percent in value from 1937. Most of the decrease in quantity was caused by the shut-down of the Ground Hog-San Jose group and Combination mine in the Central district, Grant County, after April 1938. The Pecos mine in the Willow Creek district, San Miguel County, yielded 86 percent of the State total lead in 1938.

*Zinc.*—The quantity of recoverable zinc in ores and concentrates shipped from New Mexico mines and mills in 1938 increased 18 percent over 1937, but the total value was 13 percent less because of the decline in average price. Two of the large zinc-producing mines—the Pecos at Tererro, San Miguel County, and the Hanover in the Central district, Grant County—were operated continuously in 1938. The Pewabic mine, also in the Central district and an important

<sup>1</sup> Metzger, O. H., Gold Mining in New Mexico: Bureau of Mines Inf. Circ. 6987, 1938, 71 pp.

producer during the year, was in operation from March to June, inclusive, and from October 15 to December 31. The other mines in New Mexico that produced recoverable zinc in 1938—comprising the Ground Hog-San Jose, Combination, and Peerless groups, also in the Central district; Grandview in the Swartz district, also in Grant County; Waldo at Magdalena, Socorro County; and Iron King in the Kingston district, Sierra County—shipped ore for only a few months in the first part of the year.

### MINE PRODUCTION BY COUNTIES

*Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1938, by counties, in terms of recovered metals*

County	Mines producing		Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer	Fine ounces	Value	Fine ounces	Value
Bernalillo.....	1	-----	4. 40	\$154	3	\$2
Catron.....	6	-----	8, 960. 40	313, 614	429, 847	277, 881
Colfax.....	4	8	3, 387. 40	118, 559	1, 205	779
Dona Ana.....	1	-----	112. 60	3, 941	322	208
Grant.....	70	22	8, 764. 80	306, 768	307, 426	198, 740
Hidalgo.....	29	-----	4, 131. 60	144, 606	138, 736	89, 688
Lincoln.....	5	46	167. 20	5, 852	458	296
Luna.....	3	-----	397. 40	13, 909	13, 676	8, 841
Otero.....	1	2	11. 60	406	1	1
Rio Arriba.....	1	1	7. 40	259	3	2
Sandoval.....	2	-----	164. 20	5, 747	1, 700	1, 099
San Miguel.....	1	-----	13, 847. 20	484, 652	322, 400	208, 420
Santa Fe.....	8	15	321. 20	11, 242	2, 718	1, 757
Sierra.....	22	69	2, 611. 20	91, 392	9, 283	6, 001
Socorro.....	10	-----	108. 80	3, 808	268	173
Taos.....	2	1	38. 40	1, 344	1, 409	911
Torrance.....	1	-----	14. 20	497	405	262
Total, 1937.....	166	164	43, 050. 00	1, 506, 750	1, 229, 860	795, 061
	159	160	41, 171. 00	1, 440, 985	1, 243, 766	962, 053

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Bernalillo.....	-----	-----	-----	-----	-----	-----	\$156
Catron.....	500	\$49	-----	-----	-----	-----	591, 544
Colfax.....	27, 500	2, 695	300	\$14	-----	-----	122, 047
Dona Ana.....	6, 500	637	-----	-----	-----	-----	4, 786
Grant.....	33, 161, 400	3, 249, 817	825, 400	37, 968	33, 421, 000	\$1, 604, 208	5, 397, 501
Hidalgo.....	6, 380, 400	625, 279	159, 600	7, 342	-----	-----	866, 915
Lincoln.....	100	10	5, 800	267	-----	-----	6, 425
Luna.....	6, 000	588	256, 700	11, 808	-----	-----	35, 146
Otero.....	-----	-----	-----	-----	-----	-----	407
Rio Arriba.....	-----	-----	-----	-----	-----	-----	261
Sandoval.....	-----	-----	-----	-----	-----	-----	6, 846
San Miguel.....	1, 184, 000	116, 032	8, 554, 500	393, 507	22, 581, 000	1, 083, 888	2, 286, 499
Santa Fe.....	88, 800	8, 702	39, 400	1, 812	-----	-----	23, 513
Sierra.....	17, 400	1, 705	42, 100	1, 937	35, 000	1, 680	102, 715
Socorro.....	700	69	14, 200	653	435, 000	20, 880	25, 583
Taos.....	-----	-----	-----	-----	-----	-----	2, 255
Torrance.....	4, 700	461	-----	-----	-----	-----	1, 220
Total, 1937.....	40, 878, 000	4, 006, 044	9, 898, 000	455, 308	56, 472, 000	2, 710, 656	9, 473, 819
	64, 106, 000	7, 756, 826	13, 024, 000	768, 416	47, 854, 000	3, 110, 510	14, 038, 790

*Gold and silver produced at lode mines in New Mexico in 1938, by counties, in terms of recovered metals*

County	Ore sold or treated	Gold	Silver
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>
Bernalillo.....	11	4. 40	3
Catron.....	64,855	8,960. 40	429,847
Colfax.....	18,941	3,337. 40	1,191
Dona Ana.....	133	112. 60	322
Grant.....	2,004,701	8,580. 80	307,392
Hidalgo.....	113,760	4,131. 60	138,736
Lincoln.....	64	4. 20	447
Luna.....	3,645	397. 40	13,676
Rio Arriba.....	25	1. 40	3
Sandoval.....	276	164. 20	1,700
San Miguel.....	203,900	13,847. 20	322,400
Santa Fe.....	1,374	252. 00	2,715
Sierra.....	857	470. 80	9,179
Socorro.....	1,239	108. 80	268
Taos.....	1,029	36. 60	1,409
Torrance.....	47	14. 20	405
Total, 1937.....	2,414,857 4,191,092	40,424. 00 38,144. 00	1,229,693 1,243,563

*Gold and silver produced at placer mines in New Mexico in 1938, by counties, in fine ounces, in terms of recovered metals*

County	Sluicing and hydraulic		Drift mining		Dry-land dredges <sup>1</sup>		Total	
	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver
Colfax.....	48. 82	14	-----	-----	1. 18	-----	50. 00	14
Grant.....	90. 27	22	-----	-----	93. 73	12	184. 00	34
Lincoln.....	129. 95	9	-----	-----	33. 05	2	163. 00	11
Otero.....	11. 60	1	-----	-----	-----	-----	11. 60	1
Rio Arriba.....	6. 00	-----	-----	-----	-----	-----	6. 00	-----
Santa Fe.....	65. 48	3	3. 72	-----	-----	-----	69. 20	3
Sierra.....	195. 62	11	-----	-----	1,944. 78	93	2,140. 40	104
Taos.....	1. 80	-----	-----	-----	-----	-----	1. 80	-----
Total, 1937.....	549. 54 492. 05	60 62	3. 72 19. 93	----- 3	2,072. 74 2,515. 02	107 138	2,626. 00 3,027. 00	167 203

<sup>1</sup> Dragline and power-shovel excavators with sluices or special amalgamators.

## MINING INDUSTRY

Separation of the 166 lode properties producing 2,414,857 tons of ore in New Mexico in 1938 into groups according to quantity of ore sold or treated shows: 10 mines operated by the larger companies, which have invested much money in equipment, maintain staffs of engineers, geologists, and metallurgists, and employ many men, produced 2,392,329 tons of ore; about 30 mines worked by owners, lessees, and small companies, which employed several men and in general used air compressors, air drills, and gasoline or electric hoists (and in some instances operated small ore-reduction mills), produced about 19,150 tons; and the remaining 126 operations, comprising chiefly individuals working alone or in small groups on widely scattered mines, prospects, and dumps and using man power in their operations, produced about 3,378 tons. The ore produced by the 10 mines in the first group yielded 86 percent of the State total output of gold from lode mines, 91 percent of the silver, 93 percent of the lead, 99 percent of the zinc, and more than 99 percent of the copper.

The output of gold from placers also came mostly from properties equipped for large-scale production; four operators, handling approximately 353,000 cubic yards of gravel during the year and using draglines and power shovels and land washing plants, recovered 79 percent of the State total placer gold. Specific data on yardage handled at small-scale placer operations are not obtainable because of lack of knowledge by the operators of the quantity of gravel sluiced.

### ORE CLASSIFICATION

Details of ore classification are given in the chapter of this volume on Gold and Silver.

*Ore sold or treated in New Mexico in 1938, with content in terms of recovered metals*

Source	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous gold ore.....	26, 149	7, 003. 31	19, 669	93, 719	49, 625	-----
Dry and siliceous gold-silver ore.....	82, 017	14, 011. 17	697, 500	37, 545	210, 720	-----
Dry and siliceous silver ore.....	523	4. 63	7, 969	1, 090	3, 670	-----
	108, 689	21, 019. 11	725, 138	132, 354	263, 915	-----
Copper ore.....	1, 904, 374	5, 337. 57	150, 094	39, 434, 566	96, 160	-----
Lead ore.....	962	193. 12	6, 258	4, 030	239, 125	-----
Lead-copper ore.....	303	13. 00	11, 225	45, 000	161, 000	-----
Zinc ore.....	182, 822	-----	-----	-----	5, 300	32, 583, 000
Zinc-lead ore.....	217, 707	13, 861. 20	336, 978	1, 262, 050	9, 132, 500	23, 889, 000
	2, 306, 168	19, 404. 89	504, 555	40, 745, 646	9, 634, 085	56, 472, 000
Total, lode mines.....	2, 414, 857	40, 424. 00	1, 229, 693	40, 878, 000	9, 898, 000	56, 472, 000
Total, placers.....	-----	2, 626. 00	167	-----	-----	-----
	2, 414, 857	43, 050. 00	1, 229, 860	40, 878, 000	9, 898, 000	56, 472, 000
Total, 1937.....	4, 191, 092	41, 171. 00	1, 243, 766	64, 106, 000	13, 024, 000	47, 854, 000

### METALLURGIC INDUSTRY

Most of the ore-reduction plants operating in New Mexico in 1938 were straight flotation mills and were used to treat ores containing all or a large part of their value in copper, lead, and zinc. The Aztec mill in the Mount Baldy district, Colfax County, treated gold-silver-copper ore by flotation but used a jig and amalgam barrel in the ball mill-classifier circuit to recover some of the gold and silver. The Little Fanny mill at Mogollon, Catron County, was the only cyanidation mill in operation in the State during the year.

*Mine production of metals in New Mexico in 1938, by methods of recovery, in terms of recovered metals*

Method of recovery	Material treated	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Ore amalgamated.....	19, 705	671. 84	136	-----	-----	-----
Ore cyanided.....	64, 352	8, 604. 11	424, 174	-----	-----	-----
Concentrates smelted.....	146, 061	21, 198. 54	485, 661	40, 567, 850	9, 145, 260	55, 850, 000
Ore smelted.....	27, 808	9, 949. 51	319, 722	310, 150	752, 740	622, 000
Placer.....	-----	2, 626. 00	167	-----	-----	-----
	-----	43, 050. 00	1, 229, 860	40, 878, 000	9, 898, 000	56, 472, 000
Total, 1937.....	-----	41, 171. 00	1, 243, 766	64, 106, 000	13, 024, 000	47, 854, 000

<sup>1</sup> Cyanide used was 235,600 pounds of Aero Brand calcium cyanide, approximately 48 to 49 percent NaCN.

Construction work on the new copper smelter at the Chino concentrator at Hurley, Grant County, which was in progress throughout 1938, was completed early in 1939, and the smelter began treating Chino concentrates May 2. All markets for other New Mexico ore and concentrates are outside the State.

*Mine production of metals from amalgamation and cyanidation mills (with or without concentration equipment) in New Mexico in 1938, by counties, in terms of recovered metals*

County	Ore treated	Recovered in bullion		Concentrates smelted and recovered metal				
		Gold	Silver	Concentrates produced	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Catron.....	64,352	8,604.11	424,174	77				
Colfax.....	18,356	474.60		337	2,305.85	820	27,200	
Dona Ana.....	41	44.60	20	4	9.60	27	400	
Grant.....	785	56.31	22	183	53.20	1,008	1,200	23,760
Lincoln.....	30	3.10	1					
Santa Fe.....	415	60.68	7					
Sierra.....	12	16.48	2					
Socorro.....	66	16.07	7	(1)	1.10	1		
Total, 1937.....	84,057 77,209	9,275.95 8,348.78	424,310 258,167	524 23	2,369.75 118.86	1,856 70	28,800	23,760 200

<sup>1</sup> Less than ½ ton.

*Mine production of metals from concentrating mills in New Mexico in 1938, by counties, in terms of recovered metals*

County	Ore treated	Concentrates smelted and recovered metal					
		Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Grant.....	1,986,253	95,120	1,875.00	39,001	33,025,000	434,000	33,234,000
Hidalgo.....	111,529	13,186	3,065.79	119,145	6,327,000	93,000	
Rio Arriba.....	25	1	1.40	3			
San Miguel.....	203,900	37,104	13,847.20	322,400	1,184,000	8,554,500	22,581,000
Sierra.....	254	103	2.00	2,162	3,050	40,000	35,000
Socorro.....	15	1	12.30	79			
Taos.....	1,016	22	25.10	1,015			
Total, 1937.....	2,302,992 4,057,612	145,537 173,807	18,828.79 22,121.19	483,805 621,941	40,539,050 61,485,020	9,121,500 11,379,850	55,850,000 46,270,000

*Gross metal content of concentrates produced from ores mined in New Mexico in 1938,  
by classes of concentrates smelted*

Class of concentrates	Concen- trates produced	Gross metal content				
		Gold	Silver	Copper (wet assay)	Lead (wet assay)	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	16	23. 00	120	443	382	-----
Dry gold-silver.....	22	25. 10	1, 015	57	9	-----
Copper.....	72, 605	7, 244. 24	146, 577	40, 709, 154	187, 189	-----
Lead.....	235	47. 00	2, 863	5, 894	69, 893	19, 038
Lead-copper.....	12, 749	13, 070. 30	280, 543	1, 070, 962	9, 986, 640	2, 830, 645
Zinc.....	60, 434	1, 195. 40	90, 962	506, 047	554, 897	65, 705, 428
Total, 1937.....	146, 061	21, 605. 04	522, 080	42, 292, 557	10, 799, 010	68, 555, 111
	173, 830	22, 737. 81	681, 893	65, 051, 836	13, 564, 988	59, 808, 582

*Mine production of metals from New Mexico concentrates shipped to smelters in 1938,  
in terms of recovered metals*

## BY COUNTIES

	Concen- trates	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Colfax.....	337	2, 305. 85	820	27, 200	-----	-----
Dona Ana.....	4	9. 60	27	400	-----	-----
Grant.....	95, 303	1, 928. 20	40, 009	33, 026, 200	457, 760	33, 234, 000
Hidalgo.....	13, 186	3, 065. 79	119, 145	6, 327, 000	93, 000	-----
Rio Arriba.....	1	1. 40	3	-----	-----	-----
San Miguel.....	37, 104	13, 847. 20	322, 400	1, 184, 000	8, 554, 500	22, 581, 000
Sierra.....	103	2. 00	2, 162	3, 050	40, 000	35, 000
Socorro.....	1	13. 40	80	-----	-----	-----
Taos.....	22	25. 10	1, 015	-----	-----	-----
Total, 1937.....	146, 061	21, 198. 54	485, 661	40, 567, 850	9, 145, 260	55, 850, 000
	173, 830	22, 240. 05	622, 011	61, 485, 020	11, 380, 050	46, 270, 000

## BY CLASSES OF CONCENTRATES SMELTED

		Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	16	23. 00	120	400	340	-----
Dry gold-silver.....	22	25. 10	1, 015	-----	-----	-----
Copper.....	72, 605	7, 244. 24	146, 577	39, 304, 600	83, 000	-----
Lead.....	235	47. 00	2, 863	3, 850	63, 420	-----
Lead-copper.....	12, 749	13, 070. 30	280, 543	853, 000	8, 988, 500	-----
Zinc.....	60, 434	788. 90	54, 543	401, 000	-----	55, 850, 000
Total, 1937.....	146, 061	21, 198. 54	485, 661	40, 567, 850	9, 145, 260	55, 850, 000

*Gross metal content of New Mexico crude ore shipped to smelters in 1938, by classes  
of ore*

Class of ore	Ore		Gross metal content				
			Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Percent of total</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous gold.....	7, 161	25. 75	4, 047. 75	18, 622	70, 226	91, 994	4, 012
Dry and siliceous gold-silver.....	15, 892	57. 15	5, 282. 23	271, 284	40, 603	214, 383	1, 229
Dry and siliceous silver.....	523	1. 88	4. 63	7, 969	1, 282	6, 450	-----
Copper.....	1, 383	4. 97	408. 78	4, 364	163, 594	6, 102	-----
Lead.....	962	3. 46	193. 12	6, 258	5, 820	266, 217	5, 342
Lead-copper.....	303	1. 09	13. 00	11, 225	56, 558	178, 642	83, 806
Zinc.....	983	3. 54	-----	-----	-----	7, 556	543, 531
Zinc-lead.....	601	2. 16	-----	-----	-----	148, 934	233, 510
Total, 1937.....	27, 808	100. 00	9, 949. 51	319, 722	338, 083	920, 308	871, 730
	56, 271	100. 00	7, 555. 57	363, 509	2, 659, 764	2, 776, 520	4, 245, 424



# GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO 423

Mine production of metals from New Mexico crude ore shipped to smelters in 1938,  
in terms of recovered metals

## BY COUNTIES

	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Bernalillo.....	11	4. 40	3			
Catron.....	503	356. 29	5, 673	500		
Colfax.....	585	556. 95	294	300	300	
Dona Ana.....	92	58. 40	275	6, 100		
Grant.....	17, 663	6, 596. 29	267, 361	135, 200	367, 640	187, 000
Hidalgo.....	2, 231	1, 065. 81	19, 591	53, 400	66, 600	
Lincoln.....	34	1. 10	446	100	5, 800	
Luna.....	3, 645	397. 40	13, 676	6, 000	256, 700	
Sandoval.....	276	164. 20	1, 700			
Santa Fe.....	959	191. 32	2, 708	88, 800	39, 400	
Sierra.....	591	452. 32	7, 015	14, 350	2, 100	
Socorro.....	1, 158	79. 33	181	700	14, 200	435, 000
Taos.....	13	11. 50	394			
Torrance.....	47	14. 20	405	4, 700		
Total, 1937.....	27, 808 56, 271	9, 949. 51 7, 555. 17	319, 722 363, 385	310, 150 2, 620, 980	752, 740 1, 643, 950	622, 000 1, 584, 000

## BY CLASSES OF ORE

Dry and siliceous gold.....	7, 161	4, 047. 75	18, 622	66, 119	49, 525	
Dry and siliceous gold-silver.....	15, 892	5, 282. 23	271, 284	36, 345	186, 960	
Dry and siliceous silver.....	523	4. 63	7, 969	1, 090	3, 670	
Copper.....	1, 383	408. 78	4, 364	157, 566	3, 160	
Lead.....	962	193. 12	6, 258	4, 030	239, 125	
Lead-copper.....	303	13. 00	11, 225	45, 000	161, 000	
Total to copper and lead plants.....	26, 224 983	9, 949. 51	319, 722	310, 150	643, 440	
Zinc.....	601				5, 300	435, 000
Zinc-lead.....					104, 000	187, 000
	27, 808	9, 949. 51	319, 722	310, 150	752, 740	622, 000

## REVIEW BY COUNTIES AND DISTRICTS

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1938, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore sold or treated	Gold			Silver			Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total	Lode	Placer	Total				
			<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Bernalillo County: Coyote	1	-----	11	4.40	-----	4.40	3	-----	3	-----	-----	-----	\$156
Catron County: Mogollon	6	-----	64,855	8,960.40	-----	8,960.40	429,847	-----	429,847	500	-----	-----	591,544
Colfax County: Mount Baldy	4	8	18,941	3,337.40	50.00	3,387.40	1,191	14	1,205	27,500	300	-----	122,047
Dona Ana County: Organ	1	-----	133	112.60	-----	112.60	322	-----	322	6,500	-----	-----	4,786
Grant County:													
Burro Mountain	5	-----	338	230.80	-----	230.80	8,186	-----	8,186	1,100	200	-----	13,487
Central	10	3	1,987,688	2,029.40	9.20	2,038.60	52,645	3	52,648	33,114,400	679,500	33,389,000	4,984,526
Gold Hill <sup>1</sup>	5	-----	17	7.20	-----	7.20	187	-----	187	-----	400	-----	391
Lone Mountain	1	-----	1	-----	-----	-----	68	-----	68	-----	-----	-----	44
Pinos Altos	35	15	1,834	626.60	76.40	703.00	7,176	19	7,195	11,900	81,800	-----	34,185
Red Rock	2	-----	3	-----	-----	-----	11	-----	11	700	-----	-----	76
Steeple Rock	11	-----	14,740	5,686.80	-----	5,686.80	239,119	-----	239,119	33,300	38,500	-----	358,654
Swartz	1	-----	80	-----	-----	-----	-----	-----	-----	25,000	-----	32,000	2,686
White Signal	-----	4	-----	-----	98.40	98.40	-----	12	12	-----	-----	-----	3,452
Hidalgo County:													
Gillespie	1	-----	143	2.60	-----	2.60	1,488	-----	1,488	700	23,300	-----	2,194
Gold Hill <sup>1</sup>	3	-----	69	23.60	-----	23.60	51	-----	51	100	3,700	-----	1,039
Lordsburg	20	-----	112,157	3,402.40	-----	3,402.40	134,849	-----	134,849	6,346,300	113,200	-----	833,403
San Simon	1	-----	15	59.60	-----	59.60	20	-----	20	-----	100	-----	2,104
Sylvanite	4	-----	1,376	643.40	-----	643.40	2,328	-----	2,328	33,300	19,300	-----	28,175
Lincoln County:													
Jicarilla	-----	45	-----	-----	162.20	162.20	-----	11	11	-----	-----	-----	5,684
Nogal	4	-----	41	3.20	-----	3.20	195	-----	195	-----	2,300	-----	344
White Oaks	1	1	23	1.00	.80	1.80	252	-----	252	100	3,500	-----	397
Luna County:													
Cooks Peak	2	-----	50	-----	-----	-----	393	-----	393	-----	46,700	-----	2,402
Victorio	1	-----	3,595	397.40	-----	397.40	13,283	-----	13,283	6,000	210,000	-----	32,744
Otero County: Orogrande	-----	2	-----	-----	11.60	11.60	-----	1	1	-----	-----	-----	407
Rio Arriba County: Headstone	1	1	25	1.40	6.00	7.40	3	-----	3	-----	-----	-----	261
Sandoval County: Cochiti	2	-----	276	164.20	-----	164.20	1,700	-----	1,700	-----	-----	-----	6,546
San Miguel County: Willow Creek	1	-----	203,900	13,847.20	-----	13,847.20	322,400	-----	322,400	1,184,000	8,554,500	22,581,000	2,286,499

Santa Fe County:													
Ortiz Mountains (Cer-	1	5	32	16.80	5.00	21.80	20	20	300				805
rillos).....													
San Pedro.....	7	10	1,342	235.20	64.20	299.40	2,695	3	2,698	88,500	39,400		22,708
Sierra County:													
Chloride.....	4		20	42.20		42.20	594		594	100	400		1,889
Kingston.....	3		540	3.80		3.80	6,367		6,367	3,300	40,600	35,000	8,120
Lake Valley.....	1		29				215		215	100	1,100		200
Las Animas (Hillsboro)	14	32	268	424.80	2,072.80	2,497.60	2,003	101	2,104	13,900			90,138
Pittsburg.....		37			67.60	67.60		3	3				2,368
Socorro County:													
Good Fortune.....	1		2				1		1	550			55
Hansonberg.....	1		4	.11		.11	11		11		3,000		149
Magdalena.....	6		1,181	79.49		79.49	163		163	150	11,200	435,000	24,297
San Mateo Mountains..	2		52	29.20		29.20	93		93				1,082
Taos County: Red River..	2	1	1,029	36.60	1.80	38.40	1,409		1,409				2,255
Torrance County.....	1		47	14.20		14.20	405		405	4,700			1,220
Total New Mexico...	166	164	2,414,857	40,424.00	2,623.00	43,050.00	1,229,693	167	1,229,830	40,878,000	9,898,000	56,472,000	9,473,819

<sup>1</sup> District lies in both Grant and Hidalgo Counties.

## BERNALILLO COUNTY

*Coyote district.*—Sinking of a 10-foot shaft on each of four newly discovered claims 14 miles east of Albuquerque in sec. 6, T. 9 N., R. 5 E., New Mexico principal meridian, resulted in the shipment of 11 tons of oxidized gold ore to the El Paso smelter in 1938.

## CATRON COUNTY

*Mogollon district.*—The Mogollon was the largest silver-producing district in New Mexico in 1938 and ranked second in gold production. The output of silver increased from 310,450 fine ounces in 1937 to 429,847 ounces in 1938, and gold from 7,559 to 8,960 ounces. The Black Hawk Consolidated Mines Co., the only larger operator in the district in 1938, maintained steady shipments of gold-silver bullion to the Denver Mint throughout the year from the Little Fanney 200-ton cyanide mill at Mogollon. The company holds the mill and the Consolidated group, comprising the Andrew Jackson Consolidated, Lexington Contention, and Lexington Gunboat claims on the Queen vein, under lease from the Lehigh Metals Co. The mill treated 64,352 tons of ore in 1938 compared with 45,508 tons in 1937. In 1938 the mill feed included 4,135 tons of custom ore from the Maud S group and 2,312 tons from the Last Chance, both worked by lessees—the Maud S for the entire year and the Last Chance from April 1 to December 31. Some of the ore produced at the Last Chance group was shipped crude to the El Paso smelter. The 150-ton Deadwood flotation mill, which was run part of 1937 by the Mogollon Consolidated Mines Co., was idle all of 1938. The Bearup mine was operated on a small scale during January, February, and March 1938 and produced about 60 tons of ore, of which 21 tons containing 4.43 ounces of gold and 164 ounces of silver were shipped to the El Paso smelter during the year. Small lots of ore were shipped from two other claims in the district in 1938.

## COLFAX COUNTY

*Mount Baldy district (Baldy, Elizabethtown, Eagle Nest).*—The Aztec mine, owned and operated by the Maxwell Land Grant Co., continued in 1938 to be the principal producer in the Mount Baldy district. The ore was treated in the company 140-ton flotation mill. During the year the company installed a jig in the ball mill-classifier circuit and an amalgam barrel to treat the jig concentrates. The yield from 17,831 tons of newly mined ore and 525 tons taken from dumps was 337 tons of concentrates, containing 2,305.85 ounces of gold, 820 ounces of silver, and 28,288 pounds of copper, shipped to the El Paso smelter and amalgam retorts and metallics, containing 474.60 fine ounces of gold and 77 ounces of silver, shipped to the Denver Mint. Some of the ore treated came from the Montezuma mine and Ponil group dumps. Additional ore from the Montezuma mine, operated continuously by I. E. Pippert under lease from the Maxwell Land Grant Co., was shipped to the El Paso smelter. A lessee at the Virginia Hutchinson mine, also owned by the Maxwell Land Grant Co., shipped 2 tons of smelting ore and recovered a few ounces of gold by hand methods. The French Henry mine was under develop-

ment from July to December. Some placer mining was done on Willow, Ute, and South Ponil Creeks.

#### DONA ANA COUNTY

*Organ district.*—The Mormon mine was operated on a small scale in 1938. It is opened by three shafts—one 205 feet, one 150 feet, and one 110 feet deep—but they were accessible in 1938 only to the water level 90 feet from the surface. Stoping and drifting above the water level yielded 48 tons of ore, most of which was treated in a 6-ton amalgamation mill at the mine. The remainder of the ore and some old tailings from previous operations were shipped to the El Paso smelter.

#### GRANT COUNTY

*Burro Mountain district (Tyrone).*—The Standard Silver Lead Mining Co. purchased the Malone mine in January 1938 and operated it to the end of the year. The company did 880 feet of development work and shipped gold-silver ore to the El Paso smelter. Small lots of ore were shipped from the Calcutta, Little Wonder, Petanke, and Shamrock properties.

*Central district (Bayard, Fierro, Georgetown, Hanover, Santa Rita).*—The Chino open-pit mine of the Nevada Consolidated Copper Corporation, an operating subsidiary of the Kennecott Copper Corporation, at Santa Rita is the largest producer of copper in New Mexico. The ore is mined with electric shovels, 11 of which were in use in 1938, and is transported 10 miles over the Atchison, Topeka & Santa Fe Ry. to the company 15,000-ton flotation mill at Hurley for treatment. The concentrates produced contain, besides copper, a little gold and silver and some molybdenite. The separation of molybdenite from the copper concentrates at Chino was first reported in the annual report of the Kennecott Copper Corporation for 1937. The Twenty-Fourth Annual Report of the Kennecott Copper Corporation, dated March 21, 1939, contains the following paragraphs pertaining to its domestic mining operations and Chino property in 1938:

A total of 16,681,931 tons of ore having a calculated average assay of 1.10 percent copper was treated at the five domestic properties of the Corporation. Copper production amounted to 334,816,884 pounds, a reduction of about 44 percent compared to the 598,733,371 pounds produced in 1937. A relatively heavy stripping program carried on at the power shovel properties in Utah, Nevada, and New Mexico resulted in the removal of approximately 30,225,000 tons of noncommercial overburden. In terms of ratio, 1.95 tons of overburden were removed for each ton of ore mined by shovels at these properties in 1938 whereas in 1937 the ratio was 1.10 tons to 1.

Copper production at the Chino property in New Mexico was suspended from June 22 until October 15 and during the remainder of the year was curtailed in keeping with the general production policy. The new coarse-crushing plant and car dumper operated efficiently. A number of new wells were drilled and a water supply developed which is adequate for the treatment of fully 20,000 tons of ore per day. Construction of the new smelter has progressed without interruption and will be completed in advance of the expiration on March 22, 1939, of the contract with the El Paso smelter which provides that all concentrates produced prior to expiration be shipped to El Paso. Consequently it will probably be May 1 before sufficient concentrates can be accumulated to form a working stock for the steady operation of the new plant. Capital expenditures at the Chino property amounted to \$2,622,000, most of this representing outlay on the new smelter.

The Hanover zinc mine and 300-ton flotation mill of the Empire Zinc Co. were operated continuously in 1938. The concentrates

produced were shipped to plants of the New Jersey Zinc Co. at Palmerton, Pa., and Depue, Ill. (Mineral Point Zinc Division); to the American Zinc Co., East St. Louis, Ill. (for roasting); and to the American Zinc & Chemical Co., Langeloth, Pa. The Peru Mining Co. operated its Pewabic mine at Hanover and 500-ton mill at Wemple near Deming during March, April, May, and June 1938 and then suspended production. The property was shut down until October 15, when the mine and mill were leased to the Callahan Zinc-Lead Co., which operated them to the end of the year. The mill product is lead-free zinc concentrates, which are roasted at Wemple and shipped to the zinc smelter of the Illinois Zinc Co. (parent company of the Peru Mining Co.) at Dumas, Tex. The mine and mill were again shut down early in 1939 and were still idle when this report was written (May 1939).

The Ground Hog and San Jose mines, operated as a unit by the American Smelting & Refining Co. for the past 10 years, have been important producers of silver, lead, zinc, and copper, and a large part of the ore has been treated in custom mills. In April 1938 the company ceased shipping to the 200-ton Combination custom mill of the Black Hawk Consolidated Mines Co. at Hanover, which had received the bulk of its mill feed from these mines since 1930, and as a result the mill was closed. The Combination mine, operated by the Black Hawk Consolidated Mines Co. from January to April 30, also was closed. Later in 1938 the American Smelting & Refining Co. leased the mill and made some changes necessary for the handling of Ground Hog ore which changed somewhat in character as development proceeded downward to the 1,600-foot level. In April 1939 the mill was placed in operation on company and custom ores. The Peerless Mining & Milling Co. continued developing the Peerless mine from January to June 1938 and shipped zinc-lead-silver ore to the Combination mill and zinc-lead ore to the Ozark Smelting & Mining Co. pigment plant at Coffeyville, Kans. From July 1 to the end of the year the development work was financed by the American Smelting & Refining Co. under an option to purchase. Development as of January 1, 1939, comprised a 330-foot shaft and 1,395 feet of drifts and crosscuts. Ore was shipped direct to smelters from the Hanover-Bessemer Iron & Copper Co. group, Gold Frog group, and one other property in the Central district. Elayer & Matthews, working the Cash and Gold Spot claims near Vanadium, recovered a few ounces of gold by washing ore in a sluice box and also mined some ore to be shipped to the smelter in 1939. Individuals recovered a little gold from small placers in 1938.

*Gold Hill district (see also Hidalgo County).*—Small lots of ore were shipped in 1938 from the Old Spanish, Robert Lee, Silver Dollar, and Yellow Queen claims and a prospect in the Gold Hill district to the El Paso smelter, to Ira L. Wright at Silver City, and to Hawley & Hawley at Douglas, Ariz.

*Lone Mountain district.*—A lessee at the My Chance claim shipped a 1-ton lot of silver ore in 1938.

*Pinos Altos district.*—The metal output of the Pinos Altos district in 1938 was derived chiefly from ore produced by many small-scale operations and shipped direct to the El Paso smelter or sold in small lots to Ira L. Wright at Silver City and Hawley & Hawley at Douglas, Ariz. The Calumet 20-ton gravity-concentration mill was operated by lessees part of the year as a custom plant and treated about 580

tons of ore from the Mammoth tailings dump and Campo Santo and Mountain Key mine dumps and 180 tons from the Silver Hill and Ohio mines. Remodeling of the mill to include flotation was completed early in 1939. Other producing mines and dumps included the Bonanza No. 3, Florence, Geo. Schafer, Golden Rule, Hazard, Houston-Thomas, Kept Woman, Langston, Lupita group, Oak Grove, Rich Gulch, and Wild Horse. Individuals continued to work small placers near Pinos Altos intermittently with rockers and sluices.

*Red Rock district.*—Three tons of copper-silver ore—2 tons from the Friendship claim and 1 ton from the Good Luck—were shipped from the Red Rock district in 1938.

*Steeple Rock district.*—Shipments of dry and siliceous gold-silver ore from the Steeple Rock district to smelters in Arizona and Texas were continued in 1938. Production from the East Camp group, operated throughout the year by the East Camp Exploration Syndicate, was 8,029 tons of ore averaging 0.36 ounce of gold and 23.71 ounces of silver to the ton; the ore also contains a little copper and lead. The mine is developed by a vertical shaft 300 feet deep, 100 feet of winzes, 1,400 feet of raises, and 3,000 feet of drifts. Veta Mines, Inc., continued to ship newly mined ore and old tailings from the Carlisle group. The ore contains principally gold and silver, with minor quantities of pyrite, galena, chalcopyrite, and sphalerite. As the ore shipped in 1938 went to copper smelters none of the zinc was saved. The section of the mine from which production was made in 1938 is opened by an incline shaft 140 feet deep, 500 feet of drifting, and a 90-foot winze. The old workings on the property were not reopened. Lessees at the Alabama and Laura mines shipped a substantial quantity of ore during the year. Other producers of a car or more of ore in 1938 included the Gold King, Norman King, and Twin Peaks mines.

*Swartz (or Carpenter or Camp Monarch) district.*—The Black Range Development Co. drove 200 feet of tunnel at the Grandview group 30 miles east of Santa Rita and shipped 80 tons of ore, containing 35,662 pounds of lead and 39,826 pounds of zinc, to the Ozark Smelting & Mining Co. pigment plant at Coffeyville, Kans.

*White Signal district.*—Placer ground of Sunset Gold Fields, Inc., in Gold Gulch was under development by a lessee from February 1 to December 31, 1938. The property is equipped with a power shovel and portable Ainalay bowl recovery plant, which was run for a period and produced nearly all the metal output of the White Signal district in the year. The remainder was recovered by individuals sluicing at small placers in the same area.

#### HIDALGO COUNTY

*Apache district.*—The development work begun in 1937 by the United States Smelting, Refining & Mining Exploration Co. on the Monarch and Copper Crown claims of the Apache group was continued to June 3, 1938, when work was discontinued and the lease terminated.

*Gillespie district.*—The Red Hill Mining Co. operated the Red Hill group, opened by a 500-foot vertical shaft and several thousand feet of drifts and crosscuts, from July 1 to September 1, 1938, and shipped lead-silver-gold ore to the El Paso smelter.

*Gold Hill district* (see also *Grant County*).—The Sweet Mining Co. shipped 62 tons of gold-silver-lead ore from a prospect to the El Paso smelter in 1938. The remainder of the output of the Gold Hill district comprised 2 tons of gold-silver ore from the Big Chief claim and 5 tons of gold-silver-lead ore from the Oro Grande.

*Lordsburg district*.—The Banner Mining Co. operated the Bonney mine and flotation mill 6 miles south of Lordsburg continuously in 1938. Although the company maintained production at a higher rate than in 1937, it proceeded with development of the lower levels of the mine and sank the vertical main shaft an additional 150 feet, giving it a total depth of 1,020 feet at the end of 1938; development work done during the year totaled 6,272 feet. The product of the mill is copper-gold-silver-[iron] concentrates, which are sold to the El Paso smelter. Lessees working the Belle, Depression, Nellie Bly, Silver Dollar, and other properties in the Lordsburg district on a small scale continued to make intermittent shipments of newly mined and sorted dump ore to the El Paso smelter and to Hawley & Hawley at Douglas, Ariz.

*San Simon district* (Steins).—Prospecting and development were continued at the Paint Horse group in 1938, and small lots of high-grade gold ore were shipped.

*Sylvanite district*.—The Sylvanite Gold Mining Co. operated its Buckhorn-Barney-Woods group 16 miles southwest of Hachita from January 1 to December 15, 1938. Most of the ore produced was shipped direct to the El Paso smelter. The mine is opened by a vertical shaft 200 feet deep, a tunnel, and drifts. It is equipped with a 20-ton concentration mill. A car of silver-lead ore from the Eagle claim and small lots of the same type of ore from the Last Chance and Dodge claims were shipped to the El Paso smelter.

#### LINCOLN COUNTY

*Jicarilla district*.—Placer miners continued to recover gold by rocking, sluicing, and drift mining in 1938 in the Jicarilla Mountains southeast of Ancho. At a few placers machinery was used to handle the gravel. Most of the gold produced was sold in small lots to merchants at Jicarilla and Ancho.

*Nogal district*.—During July 1938 Great Western Mines, Inc., treated in a small amalgamation mill 30 tons of ore from an open-cut on its property. Only 11 tons of ore were shipped to smelters from mines and prospects in the Nogal district in 1938.

*White Oaks district*.—The Lincoln County Mining & Milling Co. shipped a car of lead-silver-gold-copper ore to the El Paso smelter in 1938, and a little gold was recovered at a placer mine in the White Oaks district.

#### LUNA COUNTY

*Cooks Peak district*.—Lead-silver ore was shipped in 1938 from the Lookout mine and Ethel-"85" group to the El Paso smelter and to Ira L. Wright at Silver City.

*Deming*.—The Peru 500-ton selective flotation mill at Wemple near Deming was operated in 1938 by the Peru Mining Co. at an average daily rate of 330 tons from March to June, inclusive; it was idle from July to October 15, when it was started up under lease by the Callahan Zinc-Lead Co. and treated an average of 323 tons daily to the



end of the year. The ore treated by both companies was lead-free zinc sulfide ore from the Pewabic mine at Hanover, Grant County.

*Victorio district.*—In 1938 Shanks Carpenter continued to ship oxidized gold-silver-lead-[zinc]-iron-lime ore from the Victorio group 4 miles south of Gage to the El Paso smelter. The mine is developed by a 300-foot vertical shaft, a 700-foot adit, and 4,000 feet of other workings.

#### OTERO COUNTY

*Orogrande district.*—A lessee worked the Center placer with a dry washer and pan from January 1 to April 15, 1938, and recovered 6.50 ounces of dust 0.915 fine in gold. About the same quantity of gold was recovered from another placer in the Orogrande district in 1938.

#### RIO ARRIBA COUNTY

*Headstone district.*—The A. J. S. Mining Co. erected a mill at the Badger-Hidden Treasure group in 1938 and operated it for a short period late in the year. An individual prospecting on placer ground near Tres Piedras recovered a little placer gold.

#### SANDOVAL COUNTY

*Cochiti (Bland) district.*—Lessees shipped several cars of gold-silver ore from the Lone Star mine to the El Paso smelter in 1938. A lessee at the old Cossak cyanidation mill cleaned up and shipped to the smelter 4 tons of high-grade gold- and silver-bearing material.

#### SAN MIGUEL COUNTY

*Willow Creek district (Tererro).*—The Pecos mine of the American Metal Co. of New Mexico was operated continuously in 1938, its twelfth year of production. The mine has been productive to a depth of 1,700 feet, but the levels below 1,200 feet were abandoned prior to 1938 and operations during 1938 were conducted on levels 1,200 to 400, inclusive. The flow of water continued at an average rate of 1,800 gallons per minute, most of which was pumped from the 1,200-foot level. The ore is treated in the company 600-ton selective flotation mill in Alamitos Canyon. The mill feed in 1938 was 203,900 tons of ore averaging 0.086 ounce of gold and 2.27 ounces of silver to the ton, 0.51 percent copper (wet assay), 2.99 percent lead (wet assay), 8.07 percent zinc, and 11.32 percent iron. The yield was 24,819 tons of zinc concentrates—averaging 0.048 ounce of gold and 3.53 ounces of silver to the ton, 0.96 percent copper (wet assay), 1.03 percent lead (wet assay), 53.52 percent zinc, and 7.53 percent iron—and 12,285 tons of lead-copper concentrates—averaging 1.06 ounces of gold and 21.96 ounces of silver to the ton, 4.08 percent copper (wet assay), 38.68 percent lead (wet assay), 11.08 percent zinc, and 12.32 percent iron. On May 31, 1939, the mine was closed.

#### SANTA FE COUNTY

*Ortiz Mountains district (Cerrillos).*—A small output of gold-silver ore was made from the Chord mine in 1938, and some gold was recovered at small placers in the Ortiz Mountains district.

*San Pedro or New Placers district.*—Lessees at the San Pedro copper mine on the south slope of the San Pedro Mountains 20 miles west of Stanley continued to ship copper-gold-silver ore to the El Paso smelter in 1938. In the first part of the year the mine was purchased by John J. Raskob, who had made geophysical and geological examinations of the mine followed by diamond drilling in 1939. A lessee at the Lincoln-Lucky-Amazon group shipped several cars of lead-silver-gold-copper ore. A few tons of copper-gold-silver ore were shipped from the Delgado and other properties in the San Pedro district. Ore from the Old Timer dump and Captain Davis claim was treated in small amalgamation mills. Most of the output from placers in 1938 was made by lessees sluicing at the Lazarus placer. Individuals continued to recover small lots of dust from other placers.

#### SIERRA COUNTY

*Chloride (Apache, Cuchillo Negro) district.*—In 1938 individuals residing at Winston hauled a few truckloads of ore obtained from leasing and prospecting operations in the Chloride district to the El Paso smelter.

*Kingston district.*—During the first few months of 1938 the lessee on the Iron King mine in the Kingston group of the Empire Zinc Co. continued to ship zinc-lead-silver-copper ore to the Black Hawk Consolidated Mines Co. concentrator at Hanover, Grant County, for treatment. J. H. Moffitt, owner of the Cumberland group, shipped about 7 cars of silver-gold-lead-copper ore to the El Paso smelter. A 2-ton lot of lead ore was shipped to the smelter from another property in the Kingston district.

*Lake Valley district.*—A car of silver-lead-copper ore was shipped from the Lake Valley group to the El Paso smelter in 1938.

*Las Animas district (Hillsboro).*—The chief producer of gold in the Las Animas district in 1938, as in each year since 1934, was the John I. Hallett Construction Co. placer operation on a consolidated group of leased properties (including the Gold Dust, Graf Von Luxemburg, and others), 8 miles east of Hillsboro. The equipment consists of two gasoline-powered dragline excavators of 1 and 1¼ cubic yards capacity, a Coulter-Ainlay four-bowl recovery plant mounted on wheels, water-storage tanks, and pumps. Clarence Berg operated a ¾-cubic yard dragline and home-made portable dry-washing plant at the Gordon-Sylvia (or Wilder) placer from March 29 to May 27 and recovered 76 fine ounces of gold. Sluicing, panning, and dry washing at small placers produced some gold.

The Wicks lode mine in Wicks Gulch was shut down from January 1 to October 27, 1938; then it was leased to Drunzer & Everhart, who shipped some ore to the El Paso smelter before the end of the year. Small-scale operations, mostly by lessees, at the Biglow, Bonanza, Duke, El Oro, Gold Coin, Litel King, Lucky Strike, M. K. T., Ready Pay, Sherman, and other properties in the Hillsboro district yielded many small lots of gold-silver-copper ore, which were sold to the El Paso smelter, to Hawley & Hawley at Douglas, Ariz., and to Ira L. Wright at Silver City, N. Mex.

*Pittsburg district.*—Most of the output of gold and silver from the Pittsburg district in 1938 was contained in small lots of placer dust

recovered by individuals sluicing and panning over a considerable area; the dust was marketed through a general store at Hatch.

#### SOCORRO COUNTY

*Good Fortune district* (40 miles west of Tularosa).—A lessee worked the Belle Vista prospect during July and August 1938 and shipped a 2-ton lot of oxidized copper ore to the El Paso smelter.

*Hansonberg district* (17 miles southeast of Carthage).—In 1938 one of the owners of the Louise-Halsbad group worked at the property 30 days in May and June and 6 days in November. The ore shipped contained about 43 percent lead and 2.50 ounces of silver and 0.025 ounce of gold to the ton.

*Magdalena district.*—During January and February 1938 lessees at the Waldo mine of the Ozark Smelting & Mining Co. continued to ship zinc ore to the company pigment plant at Coffeyville, Kans.; the mine was idle from March to the end of the year. The Mistletoe mine was worked by lessees for a period and produced most of the gold-silver-lead ore shipped from the Magdalena district in 1938. A few lots of ore were shipped from prospects during the year.

*San Mateo Mountains district.*—The Panky group of the Springtime Mining Co., closed late in 1936, was idle until the last quarter of 1938 when a lessee did some repair work and made several test runs in the mill, resulting in the shipment of about a ton of high-grade gold-silver concentrates. Ellison Warren worked his claim from January to August and installed a 10-ton amalgamation-gravity concentration mill which he removed after having treated a small quantity of ore; he also shipped some gold-silver ore to the El Paso smelter.

#### TAOS COUNTY

*Red River district.*—The Memphis mine was operated by a lessee from January to March 1938. The ore produced was treated in a 30-ton gravity- and flotation-concentration mill at Red River; the product was gold-silver concentrates, sold to the El Paso smelter. The Taos Mining & Milling Co. shipped 13 tons of gold-silver ore to smelters in 1938. A little placer gold was recovered by sluicing at a placer in Box Canyon near Red River.

The Molybdenum Corporation of America continued production of molybdenum ore from the Phyllis group on Sulphur Creek. The ore is treated in the company 40-ton (per 24 hours) flotation mill at the junction of Sulphur Creek and Red River above Questa.

#### TORRANCE COUNTY

A car of copper-gold-silver ore, presumably from a prospect in the Manzano Range near Abo Pass, was shipped from Scholle to the El Paso smelter in 1938.

