

ARIZONA DEPARTMENT OF MINERAL RESOURCES

SUMMARY OF U. S. BUREAU OF MINES REPORT ON MINERAL PRODUCTION
IN ARIZONA IN 1953

Final Annual Figures *

Outstanding features that affected Arizona's mining activities in 1953 were the continued decline in the number of lead-zinc producers and in mining lead-zinc ore and copper-zinc ore, caused by low lead and zinc prices; marked decreases in outputs of asbestos, barite feldspar and perlite; continued rise in production of cement and gypsum; significant increases in the production of fluorspar, lime, pumice and pumicite, sand and gravel, and silica (quartzite); continued increase in quantity of copper ore mined from open pits; and the record production of manganese ore and tungsten, resulting from the Government's purchase program of these two metals.

Despite a decline in 1953 in production of copper, the total value of the State's 1953 mineral output, exclusive of uranium and manganese rose to \$256,573,000, the highest ever recorded. If the estimated value of the 2,089,283 units of manganese purchased at the Wenden (Arizona) depot, \$4,775,520) were added, the total value would be almost 262 million dollars.

Five metals - copper, gold, lead, silver and zinc, valued in all at \$242,572,489 - were based upon average prices as follows: Copper at 28.7cts. per lb., gold at \$35.00 per oz., lead at 13.1 cts. per lb., silver at 90.5 + cts. per oz., zinc at 11.5 cts. per lb.

In 1953 Arizona remained the largest producer of copper in the United States, ranked second in asbestos, fourth in silver, sixth in gold, seventh in lead (barely beating out Oklahoma when final figures were in) and tenth in zinc. It was also a large producer of cement, clay, lime, manganese ore, molybdenum, pumice and pumicite, sand and gravel, silica (quartzite), and tungsten. Manganese ore that was shipped to Government purchase depots for stockpiling and future treatment was not credited to production in 1953, but will be credited to the year in which the beneficiated product is shipped.

The labor supply, both skilled and unskilled, was ample throughout the year. An average of 15,000 employees per month was maintained in 1953 in the mineral industries in Arizona - 13,000 in the copper industry alone.

The total ore, old tailings, and cleanings mined and treated was 45,727,017 short tons in 1953 **, compared with 45,385,327 tons in 1952. Of the total ore, old tailings, etc., 99 percent was copper ore from Ajo, Copper Mountain (Morenci), Eureka (Bagdad), Globe-Miami, Mineral Creek (Ray), Pioneer (Superior), and Warren (Bisbee) districts; the remainder was largely lead-zinc ore from the Arivaipa, Big Bug, Harshaw, and Warren districts, and copper-zinc ore from the Cochise, Cedar Valley, Eureka, and Verde districts. The number of lode mines producing in the State declined from 187 in 1952 to 163 in 1953.

* Prepared by Paul Luff, Nov. 15, 1954, Mineral Industry Division, Region IV. Complete details may be found in Region IV's Area Report D-36 (Advance Summary) issued from 224 New Customhouse, Denver 2, Colorado.

** Again this does not include the over 120,000 long tons of manganese ore shipped to the Government purchase depot at Wenden.

METALLIC MINERALS

Of the total copper (393,525 short tons) produced in 1953, 72 percent came from 6 open pits at Ajo, Bagdad, Inspiration, Miami (Castle Dome), Morenci, and Ray; however, production from this source was 2 percent less than in 1952 because the grade of ore dropped from an average of 0.907 percent to 0.878 percent. The remainder of the 1953 copper production came largely from underground mines at Bisbee, Inspiration, Miami, Ray, and Superior. The Copper Mountain District (Morenci) continued to be the largest copper-producing area in Arizona.

Eighty percent of total Arizona gold production (112,824 ounces) was recovered as a byproduct from the treatment of copper ore that came mainly from the Ajo, Copper Mountain, Globe-Miami, Pioneer and Warren districts. The remainder was recovered chiefly from lead-zinc ore produced from the Iron King mine in the Big Bug district. The Ajo district continued to be the largest gold-producing area in Arizona.

Lead production in 1953 was 9,428 short tons as compared with 16,520 short tons in 1952. The loss resulted from the closing of two large producers and many small producers of lead-zinc ore in 1952 and several producers in 1953. The number of lead-zinc producers dropped from 33 in 1952 to 18 in 1953 and tons of ore from 459,567 to 275,275. Of the total lead produced, 93 percent was recovered from lead-zinc ore mined chiefly from 5 mines in the Aravaipa, Big Bug, California and Harshaw districts; the remainder was recovered mostly from lead ore mined from 4 mines in the Mineral Creek, Swisshelm, and Turquoise districts. The Big Bug district continued to be the largest lead-producing area in Arizona.

Production of silver declined to 4,351,429 ounces in 1953, a 7-percent loss from 1952. A marked decrease of 679,321 ounces in silver production from copper-zinc ore, and lead-zinc ore more than offset an increase of 263,404 ounces from copper ore. 73 percent of total silver produced in 1953 was recovered from copper ore mined chiefly from 8 mines in the Ajo, Copper Mountain, Eureka, Globe-Miami, Mineral Creek, Pioneer, and Warren districts; 19 percent from lead-zinc ore mined largely from 2 mines in the Big Bug and Harshaw districts; 4 percent from siliceous silver ore mined from 1 mine in the Ash Peak district; and most of the remainder from lead ore and copper-zinc ore mined from 6 mines in the Cedar Valley, Cochise, Eureka, Swisshelm, and Verde districts. The Warren district continued to be by far the largest silver-producing area in Arizona.

Zinc production in 1953 was 27,530 tons-as compared with 47,143 tons in 1952. Production recovered from lead-zinc ore declined 10,452 tons - and that from copper-zinc ore 9,282 tons. The loss resulted from the closing in 1952 and 1953 of several large lead-zinc producers-and the suspension of mining copper-zinc ore at several properties, caused by continued reductions in the domestic prices of lead and zinc. Sixty-six percent of the total zinc was recovered from lead-zinc ore mined mainly from 5 mines in the Aravaipa, Big Bug, California, Harshaw and Warren districts; 29 percent from copper-zinc ore mined largely from 4 mines in the Cedar Valley, Eureka, and Verde districts; and most of the remainder from zinc ore mined chiefly from 1 mine in the Silver Bell District. The Big Bug district (Iron King) continued to be by far the largest zinc-producing area in Arizona.

More manganese ore was produced in Arizona in 1953 than in any year in the State's history. All of the output (totaling-over 120,000 long tons) was shipped to the Government's purchase depots at Wenden, Arizona, and Deming, New Mexico. Of the total output, 50 percent came from 25 claims in Yuma County; the remainder came largely from about 100 claims in Mohave, Maricopa, Gila, Santa Cruz, Yavapai, and Coconino Counties. The largest producer was the Doyle property in Yuma County; the ore averaged 15.79 percent Manganese per ton.

MOLYBDENUM: In 1953, as in 1952, all of the molybdenum production in Arizona was a byproduct of copper ore, which came from 3 mines, the Bagdad, Miami and Morenci. Shipments of concentrates, averaging 52.91 percent Mo, totaled 1,367 short tons in 1953 compared with 1,591 tons and 51.84 percent in 1952. The largest producer in both years was the Morenci mine of the Phelps Dodge Corporation.

TUNGSTEN: Arizona's tungsten production 1953 was 8,057 units valued at \$474,836, the largest in any year in the State's history and an 89-percent gain over 1952. This sharp gain resulted mainly from increased activity at mines in the Arivaca and Eureka districts. In 1953 Cochise County produced 1,080 units of tungsten, Mohave County 1,134, Pima County, 2,431, Pinal County 288, Yavapai County 2,484, Yuma County 529, and miscellaneous districts 111 units. The Las Guijas property near Arivaca was the largest producer of tungsten in 1953, followed closely by the Black Pearl mine at Bagdad.

URANIUM: Under regulations of the Atomic Energy Commission uranium production figures cannot be published. However, mines in Arizona continued to produce uranium ore largely from deposits in the Lukachukai Mountains and near Window Rock, Apache County; near Holbrook, Navajo County; near Globe, Gila County; and near Cameron, Coconino County. The ore was hauled to the mill of the Anaconda Copper Mining Co., at Bluewater, New Mexico, and to the millsite of Kerr-McGee Oil Industries, Inc., at Shiprock, New Mexico.

VANADIUM: Some vanadium was recovered from uranium-vanadium ores in 1953, but because of the close relationship between the production of vanadium and uranium, production figures on vanadium have not been published since 1947.

NONMETALLIC MINERALS

Although Arizona's 1953 asbestos production decreased 849 tons (33 percent) from 1952, the value of the production increased \$121,666 (18 percent). The increase in value was due to a uniform market price scale provided by the General Services Administration through the establishment of a Government purchase depot at Globe in December 1952. In 1953, all of Arizona's asbestos production came from several mines north of Globe, Gila County.

Barite production in 1953 was 12,764 tons or 72 percent less than in 1952, owing to a marked decline in output of ore from the Arizona Barite Co.'s mine near Granite Reef Dam (Maricopa County), Arizona's only producer of barite.

A little brucite (46 tons) was produced in 1953 from a property near Oatman, Mohave County; however, operations were abandoned as the ore was too low grade.

Cement production in 1953 was 22 percent greater than in 1952. Arizona has only 1 cement plant -- Arizona Portland Cement Co. at Rillito, Pima County.

Although Arizona's 1953 clay production declined 49,928 tons (20 percent) from 1952, the value of the production increased \$136,073 (23 percent). Of the total output in 1953 (197,401 short tons), 134,850 tons (68 percent) was bentonite produced from the McCarrell open pit near Sanders, Apache County; the remainder was chiefly miscellaneous clay produced by 3 brick companies in Maricopa and Pima Counties.

Feldspar production in 1953 was 35 percent less than in 1952. As in past years, the entire production came from the Consolidated Feldspar Corp.'s property near Kingman, Mohave County.

Fluorspar production increased from 434 short tons in 1952 to 1,911 tons in 1953. This marked gain resulted from new production that came from the treatment of 10,405 tons of old tailings and waste dump material at the old DeLuce property in the Castle Dome district, Yuma County. Some fluorspar was produced also from properties in Graham and Greenlee Counties.

Various types of gem stones were marketed in 1953 from claims in Coconino, Gila, Greenlee, Mohave, and Pinal Counties.

Arizona's gypsum production continued to expand in 1953-- it has increased from 6,686 short tons in 1951 to 13,484 tons in 1953. Production in 1953 was 2,170 tons (19 percent) more than in 1952. As in past years, the total output came from the Arizona Gypsum Corp.'s mine near Winkelman, Pinal County.

The number of lime producers increased from 3 in 1952 to 4 in 1953, and as a result production rose from 53,019 short tons to 96,408 tons. The largest producer was the Phelps Dodge Corp., Greenlee County. Other producers were the Paul Lime Plant, Cochise County; Hoopes & Co., Gila County; and Grand Canyon Lime & Cement Co., Yavapai County.

As a result of a new producer in Maricopa County, Arizona's mica production increased to 3,721 short tons in 1953, a 20-percent gain over 1952. All of the 1953 production was scrap mica from 4 operations in Maricopa, Mohave, Pima, and Yuma Counties.

The number of perlite producers declined from 4 in 1952 to 2 in 1953, and as a result output of crude perlite dropped to 1,511 short tons in 1953, a loss of 1,236 tons (45 percent) from 1952. All of the output in both years came from properties near Superior, Pinal County; the largest producer was the Perlite Industries of Arizona.

Pumice and pumicite, used mainly as an aggregate for making concrete blocks, were produced from 3 properties in 1953 compared with 1 in 1952. The 3 properties -- 2 in Coconino County and 1 in Graham County -- produced and used 123,797 short tons of pumice and pumicite in 1953; all of the 1952 output (14,500 tons) came from Coconino County. The Haigler property in Coconino County was by far the largest producer in 1953.

In 1953, 7 counties produced a total of 3,446,821 short tons of sand and gravel, an increase of 1,622,491 tons (89 percent) over 1952. Of the total output, 2,182,395 tons were commercial (produced by private companies) and 1,264,426 tons were noncommercial (produced and used by county highway departments); 74 percent of the total output came from 12 pits in Maricopa County.

Production of crushed silica (quartzite) increased from 3,839 short tons in 1952 to 264,582 tons in 1953, owing to the inclusion in the State production of quartzite used for fluxing purposes at copper smelters in Arizona. The largest producer was the Phelps Dodge Corp., Cochise and Greenlee Counties.

Arizona's 1953 production of stone, which included crushed basalt, crushed granite, crushed limestone, dimension sandstone, and dimension marble, was

182,882 short tons, a decrease of 52,138 tons (22 percent) from 1952. Of the total production, 85 percent was crushed limestone produced from 3 quarries in Cochise, Greenlee, and Pinal Counties and used for flux in copper smelting and for improving roads. The remainder was largely crushed granite from a quarry in Pima County and used for improving roads.

MINERAL FUELS

In 1953, as in 1952, coal was the only mineral fuel produced in Arizona; an estimated 5,000 short tons -- virtually the same as in 1952 -- were produced from a mine in Navajo County.

TABLE 1. -- Mineral production in Arizona, 1952-53, excluding uranium and shipments of manganese ore to the Government purchase depots at Deming, New Mexico, and Wenden, Arizona 1/

	1952		1953	
	Short tons (unless otherwise stated)	Value	Short tons (unless otherwise stated)	Value
METALLIC MINERALS				
Beryllium ore (BeO content) -----			2/	3/
Copper (recoverable content of ores, etc.) -----	395,719	\$191,527,996	393,525	\$225,883,350
Gold (recoverable content of ores, etc.) -----troy ounces-	112,355	3,932,425	112,824	3,948,840
Lead (recoverable content of ores, etc.) -----	16,520	5,319,440	9,428	2,470,136
Manganese ore (35 percent or more Mn)---long tons, gross weight-	203	3/		
Molybdenum (Mo content)-----pounds-	2,022,832	1,987,418	1,446,557	1,425,552
Silver (recoverable content of ores, etc.)-----troy ounces-	4,701,330	4,254,941	4,351,429	3,938,263
Tungsten concentrate (60 percent WO ₃ basis) -----	71	251,136	148	474,836
Vanadium (short ton unit contained in 60-percent WO ₃ concentrate)	2/	3/	2/	3/
Zinc (recoverable content of ore, etc.) -----	47,143	15,651,476	27,530	6,331,900
Undistributed: Minerals whose value must be concealed, indicated in appropriate column by footnote reference 3 -----		24,168		15,123
Total -----		\$222,949,000		244,488,000
NONMETALLIC MINERALS				
Asbestos -----	2/	3/	2/	3/
Barite -----	2/	3/	2/	3/
Brucite -----			46	570
Cement -----376-pound barrels-	2/	3/	2/	3/
Clays -----	247,329	579,175	197,401	715,248
Feldspar -----Long tons-	2/	3/	2/	3/
Fluorspar (concentrate) -----	434	3/	1,911	111,368
Gem Stones -----	4/	3/	4/	3/
Gypsum (crude) -----	11,314	28,285	13,484	43,824
Lime (open-market) -----	53,019	757,390	96,408	1,238,204
Mica (scrap) -----	2/	3/	3,721	114,870
Perlite (crude)-----	2,747	3/	1,511	9,824
Pumice and Pumicite -----	14,500	87,000	123,797	425,985
Sand and Gravel -----	1,824,330	1,635,903	3,446,821	2,680,470

Mineral production of Arizona, 1952-53, excluding uranium and shipments of manganese ore to the Government purchase depots at Deming, New Mexico, and Wenden, Arizona 1/ (Continued)

	1952		1953	
	Short tons (unless otherwise stated)	Value	Short tons (unless otherwise stated)	Value
NONMETALLIC MINERALS (continued)				
Silica (quartz)-----	2/ 235,020	3/ \$ 355,709	264,582	\$334,340
Stone (except limestone for cement and lime) -----			182,882	357,272
Undistributed: Minerals whose value must be concealed, indicated in appropriate column by footnote reference 3 -----		5,276,538		6,020,025
Total -----		8,720,000		12,052,000
MINERAL FUELS				
Coal -----	5,003	33,000	5,000	33,000
Total Arizona -----		231,702,000		256,573,000

- 1/ Production as measured by mine shipments or mine sales (including consumption by producers).
2/ Bureau of Mines not at liberty to publish.
3/ Value included with undistributed.
4/ Weight not recorded.

TABLE 2. --Value of mineral production in Arizona in 1952-53, by counties and minerals 1/ produced in 1953

County	1952	1953	Commodities produced in 1953, in order of value
Apache	\$ 480,430	\$ 652,052	Clay (bentonite), stone.
Cochise	20,717,125	22,649,797	Copper, zinc, silver, gold, lead, lime, silica, limestone, tungsten.
Coconino	241,784	483,010	Pumice & pumicite, sand & gravel, stone, copper.
Gila	47,094,741	51,746,206	Copper, asbestos, molybdenum, lime, silver, sand & gravel, gold, lead, tungsten, zinc.
Graham	792,274	727,521	Zinc, lead, pumice & pumicite, copper, silver, fluorspar, gold.
Greenlee	62,469,489	73,223,532	Copper, molybdenum, silver, lime, gold, stone, silica, fluorspar.
Maricopa	<u>2/</u> 1,305,527	2,129,092	Sand & gravel, mica, clay, barite, copper, silver, gold.
Mohave	790,104	436,109	Copper, zinc, tungsten, silica, feldspar, lead, mica, silver, sand, gravel, gold & brucite.
Navajo	43,100	45,956	Coal, sand & gravel
Pima	40,273,579	46,081,720	Copper, cement, gold, silver, sand & gravel, zinc, tungsten, clay, stone, silica, lead & mica.
Pinal	37,960,627	43,380,407	Copper, silver, gold, sand & gravel, stone, gypsum, lead, tungsten, perlite & zinc.
Santa Cruz	2,879,795	2,327,680	Zinc, lead, copper, silver, gold.
Yavapai	16,523,059	12,480,206	Copper, zinc, lead, gold, silver, lime, tungsten, molybdenum, stone.
Yuma	<u>2/</u> 93,931	163,622	Fluorspar, tungsten, lead, copper, gold, mica & silver.
Undistributed <u>3/</u>	<u>2/</u> 36,392	45,772	
Total	<u>2/</u> 231,702,000	256,573,000	

1/ Exclusive of uranium produced in 1952-53 and manganese ore shipments in 1952-53 to the Government purchase depots at Deming, New Mexico, and Wenden, Arizona.

2/ Revised figure.

3/ Includes value of beryllium ore, gem stones, vanadium, and some tungsten that cannot be assigned to specific counties.

TABLE 3.--Average prices of certain mineral commodities in Arizona, 1952-53 ^{1/}

Mineral	Unit	1952	1953
Asbestos -----	Short ton -----	<u>2/</u>	<u>2/</u>
Clay:			
Fire and common -----	Do -----	\$0.934	\$1.015
Other -----	Do -----	3.393	4.833
Copper <u>3/</u> -----	Recoverable content of ores, pound -----	0.242	0.287
Fluorspar (concentrate)	Short ton -----	43.758	58.277
Gold <u>4/</u> -----	Recoverable content of ores, troy ounce	35.000	35.000
Gypsum (crude) -----	Short ton -----	2.500	3.250
Lead <u>3/</u> -----	Recoverable content of ores, pound -----	0.161	0.131
Lime (quicklime) -----	Short ton -----	12.817	11.706
(hydrated) -----	Do -----	23.299	26.798
Mica (scrap) -----	Do -----	29.832	30.871
Molybdenum -----	Mo content, pound -----	0.982	0.985
Perlite (crude) -----	Short ton -----	4.943	6.502
Pumice & pumicite -----	Do -----	6.000	3.441
Sand and gravel:			
(commercial) -----	Do -----	1.073	0.974
(noncommercial) -----	Do -----	0.276	0.439
Silica (quartz) -----	Do -----	-----	1.264
Silver <u>5/</u> -----	Recoverable content of ores, troy ounce	0.905 +	0.905+
Stone:			
Dimension -----	Short ton -----	10.256	9.875
Crushed and			
miscellaneous -----	Do -----	1.500	1.630
Tungsten -----	Short ton unit contained in 60-percent WO ₃ concentrate -----	58.830	58.930
Zinc <u>3/</u> -----	Recoverable content of ores, pound -----	0.166	0.115

^{1/} Prices are based on average value f.o.b. mines or mills reported by the producers, except as otherwise noted.

^{2/} Price varied from \$150.00 to \$1,500.00 per ton depending upon grade.

^{3/} Yearly average weighted price of all grades of primary metal sold by producers.

^{4/} Price under authority of Gold Reserve Act of January 31, 1934.

^{5/} Treasury buying price for newly mined silver July 1, 1946, to date -- \$0.9050505 (\$0.905 used in 1947 for calculating purposes).

TABLE 4. -- Mine production of gold, silver, copper, lead, and zinc in Arizona in 1953, by counties, in terms of recoverable metal

County	Mines producing		Material sold or treated ^{1/} (short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
Cochise...	18	-----	676,025	31,202	\$1,092,070	1,360,502	\$1,231,323
Coconino..	1	-----	23	-----	-----	1	1
Gila.....	17	-----	11,592,056	2,310	80,850	143,487	129,863
Graham ...	5	-----	16,603	25	875	14,576	13,192
Greenlee .	3	-----	16,201,215	6,526	228,410	537,633	486,585
Maricopa .	7	-----	212	16	560	1,485	1,344
Mohave ...	12	-----	20,253	59	2,065	9,689	8,769
Pima	19	-----	9,621,160	37,376	1,308,160	487,343	441,070
Pinal	25	-----	6,037,878	15,659	548,065	894,033	809,145
Santa Cruz	22	-----	59,347	156	5,460	218,642	197,882
Yavapai ..	25	5	1,473,612	19,290	675,150	679,368	614,862
Yuma	9	1	2,234	205	7,175	4,670	4,227
Total:1953	163	6	45,700,618	112,824	3,948,840	4,351,429	3,938,263
1952	187	7	45,385,327	112,355	3,932,425	4,701,330	4,254,941

County	Copper		Lead		Zinc		Total
	Short tons	Value	Short tons	Value	Short tons	Value	Value
Cochise ..	31,242	\$17,932,908	1,487	\$ 389,594	5,431	\$1,249,130	\$21,895,025
Coconino .	2	1,148	-----	-----	-----	-----	1,149
Gila	87,108	49,999,992	6	1,572	1	230	50,212,507
Graham ...	52	29,848	904	236,848	1,732	398,360	679,123
Greenlee .	123,789	71,054,886	-----	-----	-----	-----	71,769,881
Maricopa .	10	5,740	-----	-----	-----	-----	7,644
Mohave ...	272	156,128	65	17,030	416	95,680	279,672
Pima	66,664	38,265,136	6	1,572	1,336	307,280	40,323,218
Pinal	72,672	41,713,728	78	20,436	9	2,070	43,093,444
Santa Cruz	750	430,500	2,469	646,878	4,552	1,046,960	2,327,680
Yavapai ..	10,951	6,285,874	4,367	1,144,154	14,053	3,232,190	11,952,230
Yuma	13	7,462	46	12,052	-----	-----	30,916
Total:1953	393,525	225,883,350	9,428	2,470,136	27,530	6,331,900	242,572,489
1952	395,719	191,527,996	16,520	5,319,440	47,143	15,651,476	220,686,278

^{1/} Does not include gravel washed or tonnage of precipitates shipped.

TABLE 5. -- Mine production of gold, silver, copper, lead, and zinc in Arizona in 1953, by class of ore or other source material, in terms of recoverable metal

Source	Number of mines 1/	Material sold or treated (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Ore:							
Dry gold	16	2,252	626	1,318	7,200	2,700	-----
Dry gold-silver	4	2,467	778	14,716	2,910	3,560	-----
Dry silver	11	22,497	632	198,616	185,700	-----	-----
Total	31	27,216	2,036	214,650	195,810	6,260	-----
Copper	83	45,187,838	89,724	3,164,255	738,404,453	3,820	55,500
Copper-lead	1	1	-----	8	90	140	-----
Copper-lead-zinc	2	1,260	-----	6,759	54,400	100,200	184,900
Copper-zinc	7	144,910	1,144	73,931	6,517,400	90,420	15,723,200
Lead	31	4,513	1,339	52,240	8,380	1,066,950	49,600
Lead-zinc	18	275,275	17,872	827,866	937,530	17,454,260	36,240,700
Zinc	3	7,279	18	2,030	173,190	1,050	2,706,600
Total	133	45,621,076	110,097	4,127,089	746,095,443	18,716,840	54,960,500
Other "lode" material:							
Old tailings, etc. 2/	----	52,326	582	9,671	323,900	132,900	99,500
Copper precipitates	----	26,399	-----	-----	40,434,847	-----	-----
Total	----	78,725	582	9,671	40,758,747	132,900	99,500
Total "lode" material ..	163	45,727,017	112,715	4,351,410	787,050,000	18,856,000	55,060,000
Gravel (placer operations) ..	6	-----	109	19	-----	-----	-----
Total, all sources	169	45,727,017	112,824	4,351,429	787,050,000	18,856,000	55,060,000

1/ Detail will not necessarily add to totals because some mines produce more than one class of ore.

2/ Old tailings: Silver, 275 tons; copper, 50,005 tons; lead, 1,500 tons; zinc, 340 tons. Cleanings: Copper, 126 tons; lead, 46 tons. Mill cleanings: Lead-zinc, 34 tons.

TABLE 6. -- Mine production of gold, silver, copper, lead, and zinc in the chief mining districts of Arizona, 1952-53, in terms of recoverable metal

District	Material sold or treated ^{1/} (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)	Total Value
Copper Mountain (Morenci)							
1952.....	15,657,262	6,560	402,593	124,882	-----	-----	\$ 61,036,855
1953.....	16,183,756	5,895	369,470	123,789	-----	-----	71,595,600
Globe-Miami							
1952.....	12,149,485	2,717	156,484	93,079	8	5	45,291,297
1953.....	11,564,947	2,197	139,211	86,478	2	1	49,841,662
Ajo							
1952.....	9,341,108	36,372	450,303	63,808	-----	-----	32,563,397
1953	9,574,478	36,599	435,940	64,730	-----	-----	38,830,533
Mineral Creek (Ray)							
1952	5,255,768	1,454	214,030	49,274	43	4	24,108,087
1953	5,604,241	1,021	265,857	47,573	73	9	27,604,570
Warren (Bisbee)							
1952	541,043	26,697	1,242,935	27,440	1,828	4,791	17,519,469
1953	590,174	29,840	1,266,153	29,344	478	1,182	19,430,884
Pioneer (Superior)							
1952	405,976	11,665	606,563	17,716	159	4,175	10,969,127
1953	431,905	14,480	627,890	25,093	-----	-----	15,478,540
Eureka (Bagdad)							
1952	1,240,379	84	74,282	9,228	147	3,520	5,752,249
1953	1,249,978	62	51,373	10,072	18	2,594	6,431,061
Big Bug							
1952	196,186	17,317	581,699	206	4,135	10,862	6,169,687
1953	191,163	17,788	591,388	218	4,339	10,476	4,829,476

Mine production of gold, silver, copper, lead, and zinc in the chief mining districts of Arizona,
1952-53, in terms of recoverable metal (Continued)

District	Material sold or treated ^{1/} (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)	Total value
Cochise (Dragoon)							
1952	77,748	22	26,930	1,838	-----	4,266	\$2,330,812
1953	76,836	12	28,889	1,849	-----	3,893	1,983,282
Harshaw							
1952	48,290	155	176,778	74	1,921	3,924	2,122,303
1953	50,665	121	176,073	206	2,104	4,186	1,796,129
Pima							
1952	55,938	28	128,847	1,090	1,864	3,472	2,397,851
1953	28,811	8	26,771	1,353	6	11	805,247
Verde (Jerome)							
1952	156,842	4,328	233,946	4,524	25	4,360	4,008,240
1953	30,464	797	30,553	626	6	959	637,112
Old Hat (Oracle)							
1952	93,861	1,466	76,726	220	3,913	3,368	2,605,521
1953	69	2	164	3	-----	-----	1,682

^{1/} Does not include tonnage of precipitates shipped.