

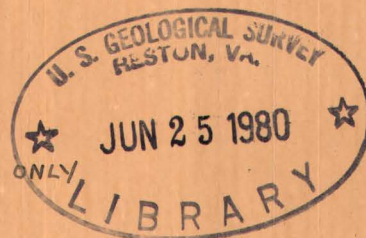
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Compilation of Data on the
Uranium and Equivalent
Uranium Content of Samples
Analyzed by U. S. Geological
Survey during a Program of
Sampling Mine, Mill, and
Smelter Products

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Trace Elements Investigations Report 242

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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Geology - Mineralogy

This document consists of 46 pages
Series A

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

COMPILATION OF DATA ON THE URANIUM AND EQUIVALENT URANIUM CONTENT OF SAMPLES
ANALYZED BY U. S. GEOLOGICAL SURVEY DURING A PROGRAM OF
SAMPLING MINE, MILL, AND SMELTER PRODUCTS*

By

M. L. Hall and A. P. Butler, Jr.

August 1952

Trace Elements Investigations Report 242

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*This report concerns work done partly on behalf of the Division of Raw Materials of the U. S. Atomic Energy Commission

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2

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33

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COMPILATION OF DATA ON THE URANIUM AND EQUIVALENT URANIUM CONTENT OF SAMPLES
ANALYZED BY U. S. GEOLOGICAL SURVEY DURING A PROGRAM
OF SAMPLING MINE, MILL, AND SMELTER PRODUCTS

By

M. L. Hall and A. P. Butler, Jr.

In 1942 the Geological Survey began to collect, in response to a request made by the War Production Board, samples of mine, mill, and smelter products. About 1,400 such samples were collected and analyzed spectrographically for about 20 elements that were of strategic importance, in order to determine whether any of the products analyzed might be possible sources of some of the needed elements. When attention was directed to radioactive elements in 1943, most of the samples were scanned for radioactivity. Part of the work was done on behalf of the Division of Raw Materials of the Atomic Energy Commission.

The sources, mine, mill, smelter, or prospect, from which these samples were collected, the kind of material sampled, i.e. ores, concentrates, middlings, tailings, flue dusts, and so forth, and the radioactivity of the samples are listed in this report. Samples of materials collected in the course of the Geological Survey's investigations for uranium are excluded, but about 500 such samples were analyzed spectrographically for some or all of the same 20 elements sought in the samples that are the subject of this report. Most of the samples were tested only for their radioactivity, but a few were analyzed chemically for uranium. The radioactivity of many of the samples tested in the early screening was determined only qualitatively. Several samples were tested at one time, and if the count obtained did not

exceed a predetermined minimum above background, the samples were not tested individually. If the count was more than this minimum, the samples were tested individually to identify the radioactive sample or samples and to obtain a quantitative value for the radioactivity. In general, the rough screening served as a basis for separating samples in which the radioactivity amounted to less than 0.003 percent equivalent uranium from those in which it exceeded that amount. Some aspects of various phases of the investigation of radioactivity in these samples have been reported in various other reports, as follows:

Nolan, T. B., Summary of results of investigation of copper ores for radioactivity and status of current work: U. S. Geol. Survey Trace Elements Memorandum Rept. 55, March 1948.

_____, Mill sampling program, memorandum to AEC (AEC -274/8): U. S. Geol. Survey Trace Elements Memorandum Rept. 61, June 1948.

Guinan, W. A., Status of mill products and raw materials project: U. S. Geol. Survey Trace Elements Memorandum Rept. 71, October 1948.

_____, Records of spectrographic cobalt (CoO) analyses of samples collected under the Mill and Raw Materials Sampling Project: U. S. Geol. Survey Trace Elements Memorandum Rept. 86, October 1949, and supplemental list, March 1950.

The results of the scanning of the samples included in the collections made at the request of the War Production Board suggested several materials or localities, such as the Phosphoria formation in Montana /, the Chat-

/ Butler, A. P., Jr., and Chesterman, C. W., Investigation of trace elements in the Phosphoria formation in southwestern Montana,--preliminary report: U. S. Geol. Survey Trace Elements Investigations Rept. 5, 1945.

tanooga shale in Tennessee, and several metal mines in western United States that were examined in the course of early reconnaissance investigations for uranium /. Of the various materials examined directly as a

/ Harder, J. O., and Wyant, D. G., Preliminary report on a trace elements reconnaissance in western states: U. S. Geol. Survey Trace Elements Investigations Rept. 4, pp. 2, 12, 28, 29, and 35, 1944.

/ Slaughter, A. L., and Clabaugh, S. E., Preliminary report on a trace elements reconnaissance in central and southwestern states: U. S. Geol. Survey Trace Elements Investigations Rept. 9, p. 39, 1945.

result of the testing of this collection of samples, only the phosphates and the black shales contain a combination of grade of uranium and tonnage of shale that is of possible significance. Although the information has been presented before, it is worth noting that the sampling which is reported on here represents 90 percent or more of the 1942 domestic production of lead, zinc, manganese, mercury, tin, tungsten, and chromium, 85 percent of the copper production, and lesser percentages of the production of aluminum, gold, silver, pegmatite minerals, iron, and coal.

The ultimate sources of much of the information presented in the tabulation that forms the main part of this report are the files of the Geological Survey pertaining to the wartime sampling of mine, mill, and smelter products. Analytical and other data contained in these files were compiled into summary form for each sample by W. A. Guinan, and his compilation has been the immediate source of the data presented here. The measurements of radioactivity were made mainly by or under the supervision of H. Cecil Spicer and to a lesser extent by or under the supervision of Francis J. Flanagan. Chemical analyses were made by various chemists in the laboratories of the Geological Survey.

The localities are listed alphabetically by state, county and mine or mill where such information is available. A geographic location is given when the name of the mine or mill is not specified.

Where the radioactivities of several samples from the same locality are the same or less than the minimum threshold value of 0.003 percent equivalent uranium, only one entry for the radioactivity of all the samples is made. In general, also, a range in grade is given for several products from the same locality rather than the radioactivity of each individual component. However, in a few cases, the radioactivities of individual products are distinguished in the tables. Where analyses for uranium were also made, the results are expressed in this manner: 0.006/0.007U, in which the first number is percent equivalent uranium and the second is percent uranium.

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7

State	County, mine(s), mill or smelter, owner, lessee, mill operator, location of mine	District <u>1/</u>	Mill products	Percent eU, <u>2/</u> or range eU, or percent U <u>3/</u>
Alabama	<u>Cherokee Co.</u> Emerson Mine (aban- doned); no mill, Sidney Hart, owner; Piedmont	Rock Run	Manganese tail- ings	<0.003
	<u>Colbert Co.</u> Alabama mines at Bauxite, Arkansas; Listerhill Reduc- tion Plant, Reynolds Metals Co., owner	?	Sands from bauxite treatment with NaOH; residue red slimes; dried silica, iron titania, from bauxite treat- ed with NaOH; burned alumina	n.t. <u>3/</u> .008 <.003
	<u>Tallapoosa Co.</u> Hog Mountain Gold Mine; no mill speci- fied; J. H. Aldrich, Jr., owner, Lem J. Neil, lessee; not operating; 16 miles NE of Alexander City	?	Gold ore mill feed; gold tail- ings; scheelite material prior to boiling in H ₂ SO ₄ from conc. <u>4/</u> of gold tailings; scheelite conc. formed by boiling in H ₂ SO ₄ gold tails	Do
Arizona	<u>Cochise Co.</u> Copper Queen and other mines; Douglas Smelter; Phelps Dodge Corp., owner; Copper Queen Branch, operator; Bisbee	Warren (Bisbee)	Copper slag	Do

1/ In the column "District" a question mark indicates that the district was not specified in the source of compilation.

2/ eU means equivalent uranium.

3/ n.t. - not tested.

4/ conc. - Abbreviation for concentrates. Carries throughout the paper.

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Arizona	<u>Gila Co.</u> Castle Dome Open Pit Mine; Castle Dome Mill; Castle Dome Copper Co., Inc., wholly-owned subsidiary of Miami Copper Co.; 4 miles W of Miami	Globe-Miami	Copper conc.	<0.003
	Old Mercury Mine and smelter; W. V. Ranney and Assoc., owner; Trobaugh, Harrison and Russel, operators; Tonto Basin	Tonto	Burned rock mercury	Do
	No mine specified; Christmas Copper Co. Mill, owner; not operating since 1931; Winkleman	Banner	Copper tailings	Do
	Morenci Mine (open pit); Phelps Dodge and Defense Plant Corp. Mill and Morenci Smelter; Phelps Dodge Corp., owner; near Morenci	Copper Mtn.	Copper tails, slag, and concretions	Do
	<u>Maricopa Co.</u> Belmont-McNeil (Tonopah-Belmont) Mine; Vulture Mill; East Vulture Mining Co., owner; 15 miles SSW of Wickenburg	Cave Creek	Lead, zinc, copper, gold, silver heads and tailings	.006-.007
	Little Daisy Mine and Mill; Golden Rule Mining Co., owner.	Sun Flower	Gold tailings	<.003
	Red Rover Mine; Red Rover Copper Mill; F. A. Gillespie and Son Co., owner; Cave Creek	Cave Creek	Copper-silver tailings	Do

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Arizona	<u>Maricopa Co. (cont'd.)</u>			
	Vulture Mine and Mill;	Vulture	Gold oxide	0.007
	East Vulture Mining		tailings;	
	Co., owner; 15 miles		mill heads;	.006
	SSW of Wickenburg		sulfide tail-	
			ings; gold-	<.003
			silver tailings	
	<u>Mohave Co.</u>			
	Arizona Magma Mines	Wallapi	Gold tailings	<.003
	and Mill; Arizona			
	Magma Mining Co.,			
	owner; Chloride			
	Goldroad Mine and	San	Do	Do
	Mill; U. S. Smelting,	Francisco		
	Refining and Mining			
	Co., owner; Goldroad			
	Keystone Mine, also	Wallapi	Lead-zinc tail-	Do
	Champion, Cashier		ings	
	and Summit Mines;			
	Alpha-Keystone Mines			
	Inc., owner; Cerbat			
	Range, near Stockton			
	Leland Mitchell,	San	Gold tailings	Do
	Vivian, and Oro Fino	Francisco		
	Mines and Custom			
	Ores; Vivian Mill;			
	Vivian Mining Co.,			
	owner; 2 $\frac{1}{2}$ miles W			
	of Oatman			
	Mossback Mine;	Do	Do	Do
	Lougon Mill; Empire			
	Consolidated Mining			
	Co., owner; (shut			
	down late 1940)			
	Oatman			
	Oro Plata and Middle	Wallapi	Lead-zinc tail-	Do
	Golconda Mines;		ings	
	Davenport Mining and			
	Reduction Co., Mill			
	and owner; 15 miles			
	N of Kingman			

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Arizona	<u>Mohave Co. (cont'd.)</u>			
	Tennessee Mine;	Wallapi	Lead and zinc	0.003
	Tennessee Schuykill		conc., lead-zinc	
	Corp., mill and		tailings	
	owner; 15 miles E of			
	Chloride			
	Tom Reed, Black Eagle,	San	Gold tailings	<.003
	and Ben Harrison Mines;	Francisco		
	Tom Reed Mill; Tom			
	Reed Gold Mines Co.,			
	owner; Oatman			
	Tyro, Portland, Minnie,	Do	Do	Do
	Arabian and Frisco			
	mines; Katherine Mill;			
	Gold Standard Mines			
	Corp., owner; (closed			
	April 1943) Katherine			
	United Eastern and Big	Do	Do	Do
	Jim Mines; United			
	Eastern Mines Corp.			
	Mill and owner; Oatman			
	Williams Tungsten Mine	Aquarius	Tungsten tail-	n.t.
	and Mill; Ed Williams,	Range	ings	
	owner; near Wikieup			
	<u>Pima Co.</u>			
	Leatherwood Mine; Cen-	Catalina	Copper concen-	<.003
	tral Mines Inc.,		trations and	
	Smelter and owner;		tailings	
	Oracle			
	New Cornelia open	Ajo	Copper tailings	Do
	pit; New Cornelia			
	concentrator; Phelps			
	Dodge Corp., owner; Ajo			
	<u>Pinal Co.</u>			
	Bunker Hill Mine and	Bunker Hill	Silver, lead,	Do
	Mill; Bunker Hill		copper, and gold	
	Copper Co., owner;		tailings	
	(not operating) on			
	Mulberry Wash			

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Arizona	<u>Pinal Co. (cont'd.)</u>			
	Childs-Aldwinkle Mine and Mill; Arizona Molybdenum Corp., owners; (not operating), Mammoth	Bunker Hill	Molybdenite ore, copper and molybdenum tailings	<0.003
	Mammoth and Collins Mine; Mammoth-St. Anthony Ltd. Mill and owner; $3\frac{1}{2}$ miles SW of Mammoth	Old Hot	Lead and zinc conc.; Mo-V tailings and table concentrations	Do .005
	Ray Mine; Hayden Mill; Kennecott Copper Corp., Ray Mines Division, owner; Hayden	?	Copper mill tails conc.; leached capping, mill heads, amphibolite schist, schist ore	<.003/.001U Do Do
	<u>Santa Cruz Co.</u> Duquesne, Bonanza, Estella, Holland, Empire, Pride of the West Mines; Callahan Zinc-Lead Co. Mill and owner; Nogales	Patagonia	Lead and zinc conc., zinc-lead-copper tailings	<.003
	<u>Yavapai Co.</u> Old Alvavado Mine; Liberty, Hill Gold Mines, Ltd. Mill; Liberty Hill Gold Mines, owner; Congress Junction	Weaver	Gold-silver tailings	Do
	Atos Mine; Super X Group; Atos Mine Mill; E. O. Albiez, owner; Alfred Schmid; lessee	Black Rock	Do	Do
	Bagdad Mine and Mill; Bagdad Copper Corp., owner; Bagdad via Hillside	Eureka	Copper tailings	Do
	Bingham and Copper Queen Mines; Binghampton Mill; R. H. Pfeffer, owner; 6 miles E of Mayer	Augua Fria	Gold-silver tailings	Do

Arizona	Yavapai Co. (cont'd.)			
	Climax Gold Mine;	Hassayampa	Gold tailings	n.t.
	Golden Age Mining Co.,			
	Mill and owner; near			
	Prescott			
	Congress Mine; Congress	Martinez	Do	<0.003
	Mining Corp., Mill and			
	owner; Congress			
	Crown King, California,		Copper, zinc,	Do
	(silver ore) Tiger,		silver, lead,	
	Golden Crown Mining Co.,		gold tailings	
	mill and owner; Crown			
	King			
	Gladiator Mine; Golden		Zinc conc.,	Do
	Belt Mill; E. H. Moores,		lead, zinc, sil-	
	owner; Humboldt		ver, gold tail-	
			ings	
	Golden Turkey (formerly	Do	Gold-silver tail-	Do
	Buckeye) Mine; Golden		ings	
	Turkey Mill; R. G.			
	Pritchard, owner;			
	(formerly Golden			
	Turkey Mining Inc.),			
	14 miles S of Mayer			
	Iron King Mine and	Big Bug	Lead conc., zinc	Do
	Mill, Shattuck-Denn		conc., lead-zinc-	
	Corp., owner;		iron heads and	
	Humboldt,		tailings, iron	
			(pyrite) conc.	
	Sheldon Mine and	Walker	Gold tailings	Do
	Mill; George French,			
	Sheldon Mines Inc.,			
	owner; 2 miles SW of			
	Walker			
	Silver Cord Mine and	Black	Silver, gold,	Do
	mill; Silver Cord	Canyon	lead, zinc tail-	
	Mining Co., owner;		ings	
	6 miles SW of Cordes			
	Yarnell Mine; Winslow	Weaver	Gold tailings	Do
	Gold Mining Co., Mill			
	and owner; Yarnell			

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13

Arizona	<u>Yavapai Co. (cont'd.)</u> United Verde Mine and Smelter; Phelps Dodge Corp., United Verde Branch, owner; Jerome and vicinity	Verde	Copper tailings and slag	<0.003
	Mine name not known; Tuscavova Gold Mines Co., mill and owner; 4 miles NW of Octave	Weaver	Gold tailings	Do
Arkansas	<u>Boone Co.</u> Gloria Mine and Mill; Noark Mining Co., owner; Zinc	Zinc	Zinc ore, conc. and tailings	Do
	<u>Clark Co.</u> Caddo Mine and Mill; Caddo Quicksilver Co., owner; vicinity of Amity and Shawmut	Antoine Creek	Furnace dust; burned rock (mercury)	Do
	<u>Hot Springs Co.</u> No mine specified; Titanium Alloy Co. Mill; Titanium Alloy of Arkansas, Inc., owner; Malvern	Magnet Cove	Titanium tailings, jig; titanium conc. (rutile); magnetic reject.; roasted sulfides separated magnetically from rutile, sulfide conc., principally pyrite	.004 <.003 .006 <.003
	<u>Independence Co.</u> Aydelotte mine; no mill--shipped directly; Arkansas Manganese Co., owner; Cushman	Batesville	Manganese ore	Do
	Big Jim, Wildcat, Section 16, Ozark, and others; no mill--shipped directly; Walter H. Denison, Manganese and Concentrating Co., Inc., owner; Cushman	Do	Do	Do

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14

Arkansas	<u>Newton Co.</u>			
	Bald Hill Mine and Mill; J. C. Sheperd, owner; Harrison	Cave Creek	Zinc feed, concentrations, and tailings	<0.003
	<u>Pike Co.</u>			
	North American Mine; Black Springs Mill; North American Manganese Corp., owner; Glenwood	Glenwood	Manganese tailings and concentrates	Do
	Parker Hill Mine; Gap Ridge and Parker Hill Mill; Arkansas Quicksilver Mines, owner; Amity	Little Missouri River	Flue dust; burned rock (mercury)	Do
	Ores from almost all mines in district except Gap Ridge and Parker Hill; U. S. Mercury Co., Mill and owner; 7 miles N of Murfreesboro	?	Burned rock (mercury)	Do
	6 miles SW of Amity; Pike Mining Co. Mill and owner	?	Do	Do
	9 miles NE of Murfreesboro; Humphreys Mill and Humphreys Gold Corp., owner	Antoine Creek	Burned rock and dust, probably from furnace	Do
	9 miles NW of Murfreesboro, Big Six Mining Co., owner	?	Burned rock	Do
	10 miles NE of Murfreesboro, Union Mining Co., owner	?	Do	Do
	10 miles NW of Murfreesboro, Ajax Mercury Co., Mill and owner	?	Do	Do

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Arkansas	<u>Pulaski Co.</u>			
	Thorpe, Harley, Dixie, Bauxite		Iron tailings	0.005
	Ratcliffe, Penzeland,		from alumina	
	Coe, and Brown Mines;		production	
	Sweet Home Plant;			
	Dulin Bauxite Co.,			
	Inc., owner; Sweet Home			
	<u>Pulaski and Saline Cos.</u>			
	Fletcher, Hurricane	?	Red mud from	.004
	Creek, Covington and		alumina; brown	
	White Horse Mine in		mud from alumina;	.003
	Saline Co., Busbee		black sand from	
	Mine in Pulaski Co.,		alumina; sinter	<.003
	Hurricane Creek Alumina		from alumina	Do
	Plant; Reynolds Metals			
	Co., owner			
	<u>Saline Co.</u>			
	No mine specified--from Bauxite		Red mud from	.006
	Arkansas producers;		alumina	
	Hurricane Creek Plant;			
	Defense Plant Corp.,			
	owner; Metals Reserve			
	Co., operator; Hurri-			
	cane Creek			
	No mine specified;	Do	Iron tailings	Do
	Swamp Poodle Plant;		alumina pro-	
	American Cyanamid and		duction	
	Chemical Corporation,			
	owner; 2 miles W of			
	Bauxite			
	<u>Sebastian Co. (Smelter</u>			
	site)			
	No mine specified;	?	Slag and smelter	<.003
	zinc conc. from tri-		residue, zinc	
	state and North		smelter	
	Arkansas, Athletic			
	Mining and Smelter Co.			
	mill and owner;			
	Forth Smith			
	<u>Searcy Co.</u>			
	Excelsior Mine and mill;	St. Joe	Zinc feed, mill	Do
	owner - C/O J. C.		run ore, zinc	
	Shepperd--Hurricane		conc. and tail-	
	Mining Co., St. Joe		ings	

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16

California	<u>Amador Co.</u>			
	Argonaut Mine and mill; Argonaut Mining Co. Ltd., owner; Jackson, Arkansas	Mother Lode	Gold cyaniding residue; gold tailings (1917-1942 production)	0.003
	Old Eureka Mine; Central Eureka Mill and Central Eureka Mining Co., owner; Sutter Creek, Arkansas	Do	Gold tailings	Do
	<u>Calvareras Co.</u>			
	Carson Hill Mine (2 adjacent Mines); Carson Hill Gold Mining Corp. Mill and owner; Melones, Arkansas	Do	Do	Do
	Sliger Mine and Mill; H. W. Simpers, owner; (formerly owned by Middle Fork Gold Mining Co.) near Greenwood, California	Do	Do	Do
	<u>Eldorado Co.</u>			
	Funny Bug Mine and Mill; H. H. Smith, owner; Placerville	Do	Copper-gold tailings	Do
	<u>Glenn Co.</u>			
	Gray Eagle Mine and Mill; U. S. Chrome Mines, Inc., owner; Rustless Mining Corp., Operator; Millsaps	?	Chrome heads, ores, tails, concentrations	Do
	<u>Inyo Co.</u>			
	Darwin Mines; Tungsten Mill; West Coast Tungsten Co., owner; mines of Pacific Tungsten Co., Darwin	?	Tungsten tailings	Do
	Thompson Mine--Lower tunnel; no mill or owner specified	Darwin	Lead-silver ore with some scheelite, scheelite ore	Do

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California	<u>Inyo Co. (cont'd.)</u> Tungsten Mine and Mill, Tungsten Mining Co., owner; Bishop	Pine Creek	Tungsten tails	<0.003
	<u>Kern Co.</u> Addlesack and Mayer claims; no mill or owner specified; Greenhorn Mountains	?	Tungsten ore	Do
	Major Tungsten claim; no mill or owner specified; Greenhorn Mountains	?	Tungsten tails	Do
	<u>Lake Co.</u> Sulfur Bank Mine; Bradley Mining Co. mill and owner; Clearlake Park (Oaks)	?	Mercury waste dump rock, dust flue, and burned rock (mercury)	Do
	<u>San Bernardino Co.</u> Scheelite Ray Shaft; no mill or owner specified; Providence Mountains	?	Huebnerite ore	Do
	<u>San Luis Obispo Co.</u> Castro Mine; Castro Chrome Associates Conc. mill and owner	San Luis Obispo	Chromite conc., fines and tail- ings	Do
	<u>Sonoma Co.</u> Mt. Jackson Quick- silver Mine; Sonoma Quicksilver Mines Inc., mill and owner; Guerneville	?	Mercury flue dust, burned rock (mercury)	Do
Colorado	<u>Boulder Co.</u> Copper King Mine; Cobalt Gold Mining Co., mill and owner; Gold Hill	Jamestown	Copper-nickel matte; copper- nickel, cobalt slag flue dust	.005-.067
	Pride Mine; Boulder Tungsten Mills, Inc. mill and owner; vicin- ity of Tungsten and Nederland	Tungsten	Tungsten conc., tailings (ferberite)	.006-.014

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Colorado Boulder Co. (cont'd.)

No mine name specified; Tungsten
about 8 miles owned or
leased by company;
Wolf tongue Mining
Co., mill and owner;
Nederland

Tungsten conc. <0.003-0.030
sand table tails
(ferberite); slimes
from rag plant;
tungsten (ferberite)
to tailings pond

Chaffee Co.

American Mine; Fluor- Brown's
spar Processing Corp., Canyon
mill; American Fluor-
spar Corp., owner;
Salida

Mill heads, fluor-
spar conc. and
tailings, coarse
sorted waste and
metallurgical
grade fluorspar <.003

Colorado Fluorspar
Corp. Mine, Mill and
owner, Salida

Do

Mill heads, fluor-
spar conc. and
tailings, hand
sorted metallurgical
grade fluorspar

Do

Poncha Springs Mine;
Fluorspar Processing
Corp. Mill; American
Fluorspar Corp.,
owner; Poncha Springs

Poncha
Springs

Fluorite mill heads, Do
fluorspar conc. and
tailings

Conejos Co.

No mine specified; or ?
mill or owner; about
6 miles SE of Summit
ville

Copper ore? Do

Hinsdale Co.

No mine, mill or owner ?
specified; Lake City

Manganese-lead-zinc Do
ore, lead-zinc-
silver ore

Jackson Co.

Fluorine Claims No. 1 Northgate
and 2, also Fluorspar
Claim No. 3, Western
Fluorspar Corp.
mill and owner; Cow-
drey

Fluorite heads, tails, Do
slimes, metallurgi-
cal grade fluorspar

Mineral Co.

No mine, mill or owner Creede
specified; Creede

Siliceous lead-zinc Do
ore, mill tailings
(lead, zinc)

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19

Colorado	<u>Rio Grande Co.</u> Summitville Mine and mill; Summitville Consolidated Mines Inc., owner; Summitville	Summitville	Copper-(gold-silver) ore	not specified
	No mine, mill or owner specified; Jasper	?	Lead-zinc-silver ore	<0.003
	<u>Teller Co.</u> Cripple Creek Mines; Golden Cycle Corp., owner; Cripple Creek	Cripple Creek	Gold mill heads, conc., tailings, slimes, flue dust, roaster dust (gold refinery); refinery by-product (gold easily extracted); refinery slag	<.003-.007
Florida	<u>Brevard Co.</u> Vero Beach Mine and Mill; Riz Mineral Co., owner; Palm Bay and Melbourne	Do (Palm Bay)	Ilmenite, rutile and zircon concentrates, heads and tails	<.001-.030
	Mine and Mill at Jacksonville; Florida Rutile Mining Co., owner	Do (Jacksonville)	Rutile and ilmenite heads, conc., and tails	<.001-.058
Georgia	<u>Bartow Co.</u> Appalachian Mine; no mill specified; Appalachian Mining Corp., Inc., owner	Cartersville	Manganese tailings	<.003
	Aubrey Mine, no mill specified; Neel and Neel, owner	Do	Do	Do
	Blue Ridge Mine, no mill specified; Blue Ridge Mining Co., Inc., owner	Do	Do	Do
	Dobbins Mine, no mill or owner specified	Do	Do	Do
	Pauper Farm Mine, no mill or owner specified	Do	Do	Do

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20

Georgia	<u>Bartow Co. (cont'd.)</u> Setterfield Mine, no mill or owner specified	Cartersville	Manganese tailings	<0.003
	<u>Polk Co.</u> Callahan Mine (abandoned); no mill; Jessie Lyons, owner; near Cedertown	Cave Springs	Do	Do
Idaho	<u>Blaine Co.</u> Triumph-North Star-Independence Mine; Triumph Mining Co., mill and owner; Ketchum	Warm Springs	Zinc-lead heads and tailings, zinc and lead conc.	Do
	<u>Bonner Co.</u> Whitedelf Mine and Mill, Whitedelf Mining and Development Co., owner; near Clark	Clark Fork	Lead heads and conc., lead ore specimens	Do
	<u>Caribou Co.</u> Conda Mine; Washoe Reduction Works; Anaconda Copper Mining Co., owner; Conda	?	Washed tailings (phosphate) gypsum and phosphoric acid by leaching with H_2SO_4 ; .0015/.017U vanadium "red cake" essentially V_2O_5	<.001/<.003U
	<u>Custer Co.</u> Empire Mine; White Knob Copper Co. Mill; Mackay Exploration Co., owner; Mackay	Mackay	Copper slag, tailings, flue dust	<.003-.005
	<u>Idaho Co.</u> Kimberly Lode mine; Kimberly Gold Mines, mill and owner; Czizek	Burgdorf-Marshall Lake	Gold-silver ore	<.003
	<u>Lemhi Co.</u> Gibbonsville Tin Prop., no mill specified, Smith-Curtis Co., owner; Gibbonsville	Gibbonsville	Gold conc.	.005-.018

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Lemhi Co. (cont'd.)

Uncle Sam Mine and mill; Black-
 Uncle Sam Mining and bird
 Milling Co., owner;
 mill not operating;
 near Salmon

Copper ore and <0.003
 conc.

Viola mine (no operation for many years)
 Nicholia (Viola)
 Smelter; Wm. Dunne,
 owner; near Nicholia

Lead smelter slag .003

Shoshone Co.

Amazon Mine; Hercules Beaver
 Mill; Hercules Mining
 Co., owner of mill;
 Monitor Mining Co.,
 owner of mine;
 Wallace

Zinc and lead conc., <.003
 zinc-lead heads
 and tailings

Constitution Mine;
 Spokane-Idaho Mining
 Co. Mill and owner;
 E fork of Pine Creek

Yreka

Zinc-lead heads, Do
 tailing and bulk
 conc.

Dayrock Mine, mill
 and owner; Wallace

Placer
 Center

Lead heads, tail- Do
 ings, and conc.

Upper levels of Frisco Lelande
 Mine; Hull Leasing Co.
 Mill; Federal Mining
 and Smelting Co.,
 owner mine; Hull
 Leasing Co., lessee
 mine; Burke

Zinc and lead Do
 conc., zinc-lead-
 silver tailings

Morning Mine and
 Mill; Federal Mining
 and Smelting Co.,
 owner; Mullan

Hunter

Zinc and lead Do
 conc., lead-silver-
 zinc lead tailings

Nabob Mine; Amy
 Matchless Mill;
 Lynch-Pine Creek
 Mining Co., owner;
 Pinehurst on Denver
 Creek

Yreka

Zinc and lead conc., Do
 zinc-lead tailings

Page Mine and Mill;
 Federal Mining and
 Smelting Co., owner;
 Page

Do

Zinc and lead conc., Do
 zinc-lead-silver
 tailings

Idaho	<u>Shoshone Co. (cont'd.)</u>			
	Parrott Mine; Dayrock Mill; Dayrock Mining Co., owner mill; Monitor Mining Co., owner mine; Wallace	Beaver	Zinc and lead conc., <0.003 zinc-lead tailings	
	Sherman Mine and Mill; Sherman Lead Co., owner; Burke	Lelande	Lead conc., zinc-lead-heads and tailings	Do
	Silver Tip Mine; Dayrock Mill; Dayrock Mining Co., mill owner; Monitor Mining Co., mine owner; Wallace	Beaver	Zinc and lead conc., zinc-lead heads and tailings	Do
	Tamarack Mine; Tamarack Placer and Custer Mill; Tamarack and Custer Consolidated Mining Co., owner; west side of Custer peak	Center	Zinc and lead conc., zinc	Do
	Whitedelf Mine and Mill; Whitedelf Mining and Development Co., owner; Clark Fork	Clark Fork	Lead tailings	Do
	<u>Valley Co.</u>			
	Yellow Pine Mine and mill; Bradley Mining Co., owner; near Stibnite	Yellow Pine	Antimony conc., antimony-iron conc., tungsten high grade conc.	Do
Illinois	<u>Hardin Co.</u>			
	Green, Anna L. Davis, Deardorff Mines; no mill specified; Mahoney Mining Co., owner; near Cave in Rock, Tennessee	Rosiclare	Zinc conc., head feed, fluorspar conc., mill tailings, lead-zinc tailings	Do
	<u>LaSalle Co.</u>			
	No mine specified; Custom Smelter; Matthiessen and Hegeler Zinc Co., owner; La Salle	?	Zinc smelter flue dust, zinc oxide from oxide plant	Do

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23

Illinois	<u>Montgomery Co.</u> No mine specified; Hillsboro Smelter; American Zinc Co. of Illinois, owner; Hillsboro	?	Zinc oxide clinker, <0.003 coarse
	<u>St. Clair Co.</u> No mine specified; Granby Smelter; Ameri- can Zinc Co. of Illinois, owner; E. St. Louis,	?	Zinc conc. lead Do sludge; waelz plant clinker (non- volatile mat.), zinc cottrell dust
	<u>Vermillion Co.</u> Custom Zinc conc., from Joplin, Missouri and Wisconsin; The Hegeler Zinc Co., mill; Hegeler Zinc Co., owner; Danville	?	Zinc oxide from Do oxide plant
Indiana	<u>Lake Co.</u> Company and custom ores and conc., U.S.S. Lead Refinery (Smelter), U. S. Smelting Ref. and Mining Co., owner; U.S.S. Lead Refinery Inc., operator	?	Gold-silver ore, n.t. caustic skim from lead, refined lead and lead bullion, blast furnace matte and slag lead
Kansas	<u>Cherokee Co.</u> Billharz Mine; Bilharz- Brewster Mill; Bilharz Mining Co., owner; Baxter Springs	Tri-State	Zinc conc., float <.003 and coarse; lead conc., mixed
	Blue Mound Mine and mill; New Blue Mound Mining Co., owner; 1/2 mile E of Treece	Do	Zinc conc., float Do and coarse; zinc- lead feed, coarse; zinc-lead tailings; lead and zinc conc.
	Brugger Mine; Wade Mill; Wade Bros. Mining Co., owner; Baxter	Do	Zinc conc., mixed Do
	Harris Mine; Mound Mill; Dines Mines Co., Inc., owner; Baxter Springs	Do	Zinc conc., float Do and coarse; lead conc., mixed

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24

Kansas	<u>Cherokee Co. (cont'd.)</u>		
	Hartley Mine; Mound Mill; Dines Mines Co., Inc., owner; Baxter Springs	Tri-State	Zinc conc., float and coarse; lead conc., mixed <0.003
	Homestake Mine; Mound Hill; Dines Mines Co., Inc., owner; Baxter Springs	Do	Zinc conc., float and coarse; lead conc., mixed Do
	McCullah Mine; Wade Mill; Wade Bros. Mining Co., owner; Baxter Springs	Do	Zinc conc., coarse Do
	Peru Mine; Peru-Banning group and Craig and Brugger lessees Madison Mill; Madison Mining Co., Inc., owner; SW of Baxter Springs	Do	Zinc conc., coarse and float; lead-zinc feed, coarse; tailings and lead conc., mixed Do
	Robinson Mine; Youngman Mill; Harris Mining Co., mine lessee; Youngman Mining Co., mill operator; near Treece	Do	Zinc conc., coarse and float; lead conc., mixed Do
	Silver Fox Mine; Youngman Mill; Harris Mining Co., mine lessee; near Treece	Do	Zinc conc., coarse and float; zinc-lead feed, coarse, and tailings, lead conc., mixed Do
	Southern Mine (lease); Mound Mill; Dines Mining Co., Inc., owner; Baxter Springs	Do	Lead conc., mixed; zinc conc. float and coarse Do
	Southside Mine; Wade Mill; Wade Bros. Mining Co., owner; Baxter Springs	Do	Zinc conc. Do
	Wade Mine and Mill; Wade Bros. Mining Co., owner; Baxter Springs	Do	Zinc feed tailing, and conc. Do

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Kansas	<u>Cherokee Co. (cont'd.)</u>			
	White Pay Mine; Wade Mill; Wade Bros. Min- ing Co., owner; Baxter Springs	Tri-State	Zinc conc.	<0.003
	No name specified, Early Bird Tailings Mill; C. Y. Semple; owner; Treece	Do	Zinc conc., coarse and float; zinc feed, coarse, and tailings	Do
	No mine name speci- fied, Captain Tailings Mill; Captain Milling Co., owner; Treece	Do	Zinc conc., coarse; zinc tailings and feed	Do
Kentucky	<u>Owen Co.</u> Twin Valley (Old Gratz) Mine; Twin Valley Mining Co. Mill and owner; near Gratz	Gratz	Lead conc., jig and float; zinc- lead heads and tailings, zinc conc., float	Do
Louisiana	<u>Plaquemines Co.</u> Sulphur Mine, no mill specified; Freeport Sulphur Co., owner; Grand Ecoille	?	Sulfur; raw brine; raw bleed water; treated bleed water; sulfur-bearing mud, salt, gypsum, anhydrite	Do <.001 Do Do Do
Michigan	<u>Houghton Co.</u> Allouez No. 3 mine; Ahmeek Mill; Calumet and Hecla Consoli- dated Copper Co., owner; South Calumet	?	Copper conc., table conc., contains 50 percent Houghton and Iroquois amygdaloid	<.003
	Iroquois Mine; Ahmeek Mill; Calumet and Hecla Consolidated Co., owner; Calumet	?	Copper conc., table conc., native copper basaltic flow top	Do
	Kearsarge Amygdaloid Mine; Ahmeek Mill; Calumet and Hecla Consolidated Copper Co., owner; Calumet	?	Copper conc., table conc., native copper in basaltic flow top	Do
	Quincy Mine and Mill; Quincy Mining Co., Hancock	Copper Range	Copper tailings, copper conc., jig and float	Do

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26

Michigan	<u>Ontonagon Co.</u> White Pine Mine; Freda Mill; Copper Range Co., owner; leased by Calumet and Hecla Consolidated Copper Co.; White Pine	Copper Range	Copper ore and conc.	<0.003
Missouri	<u>Jasper Co.</u> Connor Investment Co., and others; Sciota Mill; Sciota Milling Co., owner	Tri-State	Lead conc., galena- zinc conc., coarse and float, and tailings	Do
	High Grade Mine and Mill; High Grade Mining Co., Chitwood, Missouri	Tri-State- Joplin	Lead and zinc conc., zinc-lead heads, tailings	Do
	Jasper Mine and Mill; Kansas Explorations Inc., owner; near Joplin	Tri-State		
	Ores from small mines in Joplin area and Waco District; St. Louis Mill; St. Louis Mining and Milling Co., owner; Thomas Station	Do	Lead and zinc conc., lead-zinc head feed, tailings	Do
	La Tosca Mine and Mill; Fenix and Martin Mining Co., Oronogo, Missouri	Do	Lead and zinc conc., zinc-lead mill feed, tailings	Do
	Pleasant Valley Mine; Playter Mill; C. C. Playter, owner; Carthage	Do	Zinc ore	Do
	Snapp Mine and Mill; Kansas Explorations Inc., owner; Oronogo	Tri-State- Oronogo	Zinc-lead head feed, lead and zinc conc., fine to coarse	Do
	Waco Mine; Playter Mill; C. C. Playter, owner; Waco	Tri-State- Waco	Lead and zinc conc., zinc-lead mill heads and tails	Do
	No mine specified; Missouri Chitwood Tailings Mill; Missouri Mining Co., owner; Chitwood	Tri-State	Zinc feed; conc., float and coarse, tailings	Do

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27

Missouri	<u>Lawrence Co.</u> Capital Mine and Mill; Tri-State- Capital Mining Co., owner; Stotts City Stotts City,	Zinc-lead heads and tailings, zinc conc.	<0.003
	<u>Moniteau Co.</u> Open Pit Mine; Central Wemhauer Mill; Wemhauer Missouri Mining Corp., lessee; Monarch Coal and Mineral Co., owner; near Versailles	Lead-zinc feed, tailings, zinc and lead conc. (coarse jig conc.)	Do
	<u>Newton Co.</u> Granby American Mine Tri-State and Mill; Federal Mining and Smelting Co., Granby	Lead-zinc feed and tailings, zinc and lead conc., mixed	Do
	Granby Davis Mine; Do Granby American Mill; Federal Mining and Smelting Co., Granby	Lead conc., mixed	Do
	Wentworth Mine and Do Mill; Wentworth Mining and Milling Co., owner; Wentworth	Zinc conc., float and coarse, zinc feed, rough; zinc tailings	Do
Montana	<u>Beaverhead Co.</u> Golden Leaf and adjacent Bannack mines and mill; New York- Montana Mines Co., owner; Bannack Graeter Mine and Mill not operating; Bannack	Gold tailings	Do
	<u>Cascade Co.</u> Broadwater Mine and Montana claim group; Klies Mill; Neihart Mine and Milling Co., owner; Neihart	Lead-zinc heads and tails, lead and zinc conc.	Do
	Butte and Custom Zinc ? Conc. Co.; Great Falls Reduction Works; Anaconda Copper Mining Co., owner; Great Falls	Zinc plant, copper cake and fume from East Helena zinc plant (AS & R)	?

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28

Montana	<u>Cascade Co. (cont'd.)</u> Lexington Mine, also Benton and Snowdrift Mine; Lexington Mill; Montana Leasing Co., operator; Neihart	Montana	Lead-zinc heads, tailings and bulk conc.	<0.003
	Star (or Evening Star) Mine and Mill; Lovetta Rives Syndicate, owner; New London Mining Co., operator; Neihart	Do	Lead-zinc heads, tailings, and bulk conc.	Do
	<u>Fergus Co.</u> Kendal Group Mines (North) Moccasin Mine); Barnes- King Mill; Barnes King Development Co., owner; North Moccasin Mines Syndicate; lessee; (not in operation since Jan. 1943) Kendal	North Moccasin	Gold tailings	Do
	Spotted Horse Mine and Mill; owner not speci- fied; operated in 1920's	Judith Mountains	Gold tailings	Do
	<u>Granite Co.</u> No mine name; Contact Mines Corp., owner; Philipsburg	Flint Creek	Manganese ore	Do
	<u>Lewis and Clark Co.</u> Coeur D'Alene ores; (Zinc Plant residues from Anaconda, and cus- tom ores from Montana) East Helena Smelter Site; American Smelting and Refining Co., owner; East Helena	?	Lead bullion and slag, zinc conc., lead smelter bag- house dust and cottrell dust	.003
	Mike Horse Mine and Mill, owned by same; Mike Horse	Heddeston	Zinc conc.	Do
	<u>Lincoln Co.</u> Liberty Mine and Mill; Liberty Metals Co., owner; Troy	Troy	Lead-silver-zinc ore and zinc conc. copper ore	Do

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Montana	<u>Lincoln Co. (cont'd.)</u>			
	Snowshoe Mine; Standard Silver Lead Mill; Standard Silver Lead Mining Co., owner; Libby	Libby	Lead-zinc tailings, mill-feed, lead and zinc conc.	0.003
	<u>Madison Co.</u>			
	Boaz Mine and Mill; A. J. Theis, S. D. Parker and G. Burrows, owners; Norris	Norris	Lead, gold, silver, zinc ore	Do
	<u>Mineral Co.</u>			
	Gold Hill Mine, Deep Creek No. 1 group; Gold Mountain Mill; Gold Mountain Mines Inc., owner; Superior	Cedar Creek	Gold heads and conc.	Do
	<u>Park Co.</u>			
	No mine name, owned by Anaconda Copper Mining Co., Cooke City	?	Copper conc.	Do
	<u>Phillips Co.</u>			
	Little Ben Mine and Mill; owned by same; (not operating); Landusky	Little Rockies	Gold tailings	<.003
	Ruby Gulch Mine, and mill and owner; (not operating); Zortman	Do	Do	Do
	<u>Sanders Co.</u>			
	Drake Property (formerly Trade Dollar, Eagle and Lucky Strike claims), Green Mountain Copper Mining Co., mill and owner; Dixon	Revais Creek	Copper ore	.003

Montana	<u>Silver Bow Co.</u> Butte Mines; Washoe Reduction Works; Anaconda Copper Mining Co., owner; Butte	Summit Valley	Copper tailings, granulated rever- boratory slag copper, arsenic roaster residue, zinc-lead tailings, iron table conc., zinc and lead conc., flue dust copper, sulfide conc. (pyrite and sphalerite); n. t. copper conc., waste slag ferro- $<0.003-0.004$ manganese metal
	Emma Mine of the Butte Copper and Zinc Co., Washoe Reduction Works; Anaconda Mining Co., owner; Butte	Do	Manganese tailings $<.003$ and conc., sulfide tailings and conc. (pyrite and sphalerite) n.t.
	<u>Stillwater Co.</u> Mouat-Samoson Mine and Mill Defense Plant Corp., owner; Nye	Stillwater	Chrome heads, middlings, tails and conc. .003
Nevada	<u>Clark Co.</u> Green Monster Mine; no mill or owner specified; 15 miles NW of Goodsprings	?	Hydrozincite Low
	<u>Elko Co.</u> Star Tungsten Mine and Mill; Knowles Bros., owner; Harrison Pass	?	Tungsten heads, $<.003$ conc., and tail- ings
	<u>Humboldt Co.</u> Riley Mine; Getchell Mill and Mines Inc., owner; Red House	Potosi	Tungsten heads, Do gold tailings (gold and arsenic ores), flue dust, tungsten tailings, conc., Cu and FeS ₂ sulfide conc.
	<u>Lincoln Co.</u> Tem-Piute mine; Lincoln Mines Inc., Mill and owner; Hiko	Tem-Piute	Scheelite tailing, Do sulfide float tails, scheelite conc.

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31

Nevada

Lincoln Co. (cont'd.)

No mine specified; Pioche Mines Con- solidated Mill and owner (not operating)	Pioche	Gold-silver tail- ings (heads are from old gold-silver tail- ings dump	<0.003
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Mineral Co.

Nevada Scheelite Mine; Nevada Scheelite Inc., Mill and owner; Rawhide	Regent	Scheelite conc.	Do
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Pershing Co.

Majuba Hill Mine; no mill specified; E. J. Myler, owner; NW of Imlay		Copper-uranium ore, copper-uranium-silver ore, copper-tin ore, silver-uranium ore	.00 .002/.014U
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Nightingale mine	Nightingale	Scheelite tails	<.003
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White Pine Co.

Bay State Silver Mine; milled at Cherry Creek Mill; Cherry Creek Tungsten Mining Co., owner; near Cherry Creek	?	Tungsten heads and tailings	Do
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Tie Up Mine (or Cherry Creek Mine), Cherry Creek Tungsten Co., Mill and owner; near Cherry Creek	?	Tungsten heads, conc., tailings	Do
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New Hampshire

Coos Co.

Shelburne Lead Mine; no mill; unknown owner; NW Shelburne on Lead Mine Brook	Shelburne Township	Lead-zinc ore	Do
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Grafton Co.

Orchard Vein (pros- pect), no mill; owner unknown; SW corner Lyman Township	Lyman Township	lead-zinc ore	Do
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Ore Hill or Warren Mine (prospect); no mill; Otto F. Mertsch, owner; 3½ miles W of Warren	Warren Township	Do	Do
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32

New Jersey	<u>Burlington Co.</u> No mine name specified; no mill; Zeolite Chemical Co., owner; near Medford	?	High capacity greensand conc., coarse and fine tails, slime tailings	0.003-0.009
	<u>Gloucester Co.</u> No mine or mill mentioned; Inversand Co., owner; Sewell	?	Greensand, high "A" and "B" sand, tailings	<.003-.003
New Mexico	<u>Grant Co.</u> Bullfrog, Lutz, Slate and Shingle Canyon Mines; Bullfrog Mill; U. S. Smelting, Refining and Mining Co., owner; near Bagdad	Central District	Zinc-lead ore, tailings, zinc and lead tailings	n.t.
	No mine name specified; Hurley Mill; Kennecott Copper Corp., Chiko Mines Division, owner; Hurley	?	Molybdenum tailings and conc., copper ore, flux and mill heads, mill tailings; copper slag	<.003 .001
	<u>Hidalgo Co.</u> Bonney and Anita Nal mines; Banner Mill; Banner Mining Co., owner; 6 miles S of Lordsburg	Lordsburg	Copper, gold, silver, conc., and tailings	<.003
	<u>Sierra Co.</u> Snake, Opportunity, Litel King group mines, etc. in vicinity; Horseshoe Mill; Black Dome Mining Co., owner; (not in operation) near Hillsboro; Horseshoe Mill	Las Animas	Copper, gold, silver, combined concentrates and pulps, heads, and tailings	Do
New York	<u>Essex Co.</u> Stanford Hill Mine; MacIntyre Development Mill; National Lead Co., owner; Tahawus	Stanford Lake	Titanium-iron-vanadium tailings	Do

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33

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34

Ohio	<u>Franklin Co.</u> No special mine; zinc conc. (sulfides) shipped from Mascot, Tenn.; American Zinc Oxide Co. Plant and owner; subsidiary of American Zinc Lead and Smelting Co., Columbus	?	Zinc oxide, clinkers and cleanings	(0.003
	<u>Tuscarawas Co.</u> Bliss Property; no mill or owner specified; 1 mile S of Newcomers- town	?	Upper black band ore	Do
	Harmon Property; no mill or owner specified; 2 miles W of Stone Creek	?	Black band ore (iron siderite)	Do
	McCain Property; no mill or owner specified; 2 miles SE of Newcomers- town	?	Black band ore and shale	Do
Oklahoma	<u>Ottawa Co.</u> Cortez, Commonwealth and Beck tailings; Sooner Tailings Mill; Tri-State Zinc Inc., owner; Picher	Tri-State	Lead conc., mix- tures; zinc conc., tabled and float	Do
	Beck Lease, Sooner Tailings Mill; Tri-State Zinc Inc., owner; Picher	Do	Zinc conc.	Do
	Buffalo Calf Mine; (leased) Lawyers Mill; Lawyers Lead and Zinc Co.; Century	Do	Zinc and lead conc.	Do
	Cluck Mine; Beck Mill; Beck Mining Co., owner; Picher	Do	Zinc conc., coarse	Do
	Dobson Nos. 4, 5, 7 Mines; Beck Mill; Beck Mining Co., owner; Picher	Do	Zinc conc.	Do

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Oklahoma	<u>Ottawa Co. (cont'd.)</u>			
	Douthat Mine; Mound Mill; Dines Mining Co., Inc., owner; near Century	Tri- State	Lead and zinc conc.	<0.003
	Evans-Wallower No. 4 and No. 7 Mine and Golden Rod Tailings; Evans-Wallower No. 4 and No. 7 Mill; Evans- Wallower Zinc Inc., owner; near Cardin	Do	Zinc and lead conc., lead- zinc feed and tailings	Do
	Farmington Mine; Lula Bell Mill and Mining Co., owner; Hocker- ville	Do	Zinc and lead conc.; zinc- lead feed and tailings	Do
	Huttig Mine; Beck Mill; Beck Mining Co., owner; Picher	Do	Zinc and lead conc.	Do
	Jarrett Mine; Beck Mill; Beck Mining Co., owner; Picher	Do	Zinc conc.	Do
	McArthur Mine; Beck Mill; Beck Mining Co., owner; Picher	Do	Do	Do
	Mission Mine "B" Shaft; Mission Mill; Mission Mining and Royalty Co., owner; Quawpaw	Do	Do	Do
	Muskogee Mining Co., Mission Mill; Mission Mining and Royalty Co., owner; Quawpaw	Do	Zinc and lead conc.	Do
	Pelican Mine; Beck Mill; Beck Mining Co., owner; Picher	Do	Do	Do
	Potosi El Mine; Mill and Mining Co., subsidiary of Howe Sound Col., Chihuahua, Mexico	Do	Do	n.t.
	Ritz Mine and Mill; Kansas Explorations Inc., Cardin	Do	Zinc and lead conc., zinc-lead tailings and feed	<.003

Oklahoma	<u>Ottawa Co. (cont'd.)</u>			
	Rialto No. 2, 3, and 3 mines; Rialto No. 2 Mill; Rialto Mining Corp., owner; Picher	Tri-State	Zinc-lead feed and tailings- lead and zinc conc.	<0.003
	Scott Mine and Mill; Jane E. Mining Co., owner; Hockerville	Do	Zinc and lead conc., zinc-lead feed and tailings	Do
	Sevalley Mine; Min- eral Products Co., Mission Mill; Mission Mining and Royalty Co., owner; Quawpaw	Do	Lead and zinc conc.	Do
	Tailings from near Commerce; Britt Tailings Mill, Britt and Britt Milling Co., owner; Cardin	Do	Zinc conc., zinc- lead feed and tailings	Do
	Tailings from Old Woodchuck pile and mine dirt; Big Chief Tailings Co., Mill and owner; Cardin	Do	Zinc and lead conc., zinc-lead feed and tail- ings	Do
	Tailings from the Skeleton Property and Old Skeleton Mill; C. G. and C. Tailings Mining Co., Mill and owner; near Douthart	Do	Zinc conc., sludge and float, lead conc., mixed, zinc-lead feed and tailings	Do
	No mine name specified; Atlas Tailings Mill and Mining Co., owner; Cardin	Do	Zinc feed, conc., tailings	Do
	Tom Buffalo Mine (leased); Lawyers Mill; Lawyers Lead and Zinc Co., owner; Century	Do	Zinc conc., float and coarse, lead conc., mixed, zinc- lead feed and tailings	Do
	Townsite Mine; Wood- chuck Mill; Weidman Mining Co., owner; Cardin	Do	Zinc and lead conc., zinc-lead feed and tailings	Do

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37

Oklahoma	<u>Ottawa Co. (cont'd.)</u> Waxahachie Mine; Mission Mill; Mission Mining and Royalty Co., owner; Quawpaw	Tri-State	Zinc and lead conc.	<0.003
	Woodchuck Mine; Woodchuck Mill; Weidman Mining Co., owner; Cardin	Do	Zinc conc.	Do
	No mine specified; Cardin M and M No. 2 Tailings Mill; Cardin Mining and Milling Co., owner; Cardin	Do	Zinc and lead conc., zinc sludge conc. and tailings, zinc-lead feed and tailings	Do
	No mine specified; Ottawa Tailings Mill; Tri-State Zinc Inc., owner; Picher	Do	Zinc conc., feed and tailings	Do
	No mine specified; Semple Martin Tailings Mill; C. Y. Semple, owner; Picher	Do	Zinc conc., feed and tailings	Do
	No mine specified; Western Tailings Mill; Western Mining and Milling Co., owner; Cardin	Do	Zinc feed, conc., tailings	Do
	<u>Washington Co.</u> Zinc conc. from Tri-State District; Bartlesville Smelter; National Zinc Co., Inc., owner; Missouri, Oklahoma, Kansas	?	Zinc and lead residue, cadmium furnace residue, cadmium sponge, zinc metal, zinc cottrell dust slurry, flue dust from sintering machine in acid solution	Do
Oregon	<u>Coos Co.</u> Lagoons Tailings Deposit; Humphreys Gold Corp. Mill and owner; 14 miles NE of Bandon	Coos	Chrome heads and tailings	<.003-.004

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Oregon	<u>Coos Co. (cont'd.)</u> Seven Devils Mine; Krome Corp. (rough separation) Mill, Krome Corp., owner; 14 miles NE of Bandon	Coos	Chrome ore, heads and tailings, primary chrome conc., zircon conc. 0.004/0.024 U
	Shepard Prospect No. 28; Humphreys Gold Corp., lessee; Bandon	Do	Chromium-bearing sand <.003
	<u>Douglas Co.</u> Bonanza Mines, Mill and owner, E of Sutherlin	?	Mercury heads and tailings Do
	<u>Marion Co.</u> Ruth Gold Amalgamated Mine; no mill; Pacific Smelting and Refining Co., owner; Mehama	Little North Santiam River	Zinc-bearing material Do
Pennsylvania	<u>Lawrence Co.</u> Concentrations from various North and South American Mines; New Castle Plant; the Grasselli Chemicals Co. of I. E. du Pont De Nemours and Co., Inc., owners; New Castle	?	Flue dust, zinc roaster Do
	<u>Lebanon Co.</u> Cornwall Mine (open pit and underground); Bethlehem Steel Corp. Mill; Bethlehem Steel Corp., Cornwall Divi- sion, owner; Cornwall	Cornwall	Copper conc., magnetite conc., pyrite conc. Do
	<u>Washington Co.</u> Utah-Colorado carnotite ores; Vitro Manufactur- ing Co. Plant and owner; Canonsburg	?	Radioactive sludge, 17.1 uranium, polonium, actinium

South Carolina	<u>Lancaster Co.</u> Haile Gold Mine and Mill; Haile Gold Mining Co., Inc., owner; (not operating); Kershaw	?	Gold-silver tails	<0.003
South Dakota	<u>Lawrence Co.</u> Bald Mountain Mining Co. Mine; Trojan Mill; Bald Mountain Mining Co., owner; Trojan	Trojan	Gold heads and tails	Do
	Homestake Mine, South Mill; Homestake Mining Co., owner; Lead	Lead	Gold tailings, charge, gold slime; sand residue	Do
	Maitland Mine and Mill; the Canyon Corp., owner; Deadwood	Maitland	Heads, gold (ore), gold tailings (after roasting and cyanidation)	Do
	No mine specified; Tinton Black Hills Tin Co. Corp., Mill and owner; Tinton		Mill tailings (pegmatite, spodumene conc.)	Do
	<u>Pennington Co.</u> Bullion Gold Mine and Mill; Fremont Clark, owner	Keystone	Gold conc.	Do
	Ingersoll Mine and Mill; Black Hills Keystone Corp., owner; Keystone	Do	Table conc. from muscovite ore; lepidolite conc.; float mica conc.	.193/.040 U .082/.025 U .007
	Ore from Holy Terror Mine; Keystone Holy Terror Mill; Holy Terror Mining Co., owner (not operating)	Do	Conc. gold and jig conc., sulfides, gold tailings	<.003

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40

Tennessee	<u>Claiborne Co.</u> Bunche's Hollow Mine and Mill; Imperial Mining Co. Inc., owner; Goin.	Powell River	Zinc-lead heads, <0.003 slimes; lead and zinc conc.
	<u>Knox Co.</u> Mascot Mine; Mascot No. 2 Mill; American Zinc Co. of Tennessee, owner; Mascot	Mascot	Zinc conc. and tail- ings and slimes; spent medium-fine galena conc. used as medium in sink- float process Do
	<u>McMinn Co.</u> Garrison Mine; L. A. Wood Barite Mill and owner; near Sweetwater	Sweetwater	Barite ore Do
	Spring Creek Mine; L. A. Wood Barite Mill and owner; near Sweetwater	Do	Barite (jig conc.) Do chemical conc. of barite
	<u>Polk Co.</u> Burra Burra, Eureka, Boyd, etc., mines; London Mill; Tennes- see Copper Co., owner; near Copper Hill	Ducktown	Iron conc., sul- fides, acid plant sludge, copper conc. and slag, flue dust, iron and copper-zinc con- cnc., copper-iron- zinc tailings; iron conc. (magne- tite, pyrite and pyrrhotite) Do
	<u>Washington and Unicoi Cos.</u> Embree Mine and Mill Embree Iron Co., owner; Embreeville	Bumpass Cove	Zinc and lead conc. and tailings, man- ganese-lead-zinc tailings and conc. Do
Texas	<u>Brewster Co.</u> Chisos and Rainbow Mines; Chisos Mine Plant; unknown owner; Terlingua	Terlingua	Collector dust, Do mercury

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41

Texas

Moore Co.

No special mine;
Dumas Smelter; Peru
Mining Co., owner;
American Iron Co.
of Illinois; oper-
ator

?

Zinc conc., lead
sludge; cottrell
dust

<0.003

Presidio Co.

Presidio Mine;
American Metals Co.
of Texas; subsidiary
of American Metals
Co. Ltd.; owner;
Shaffer

Presidio

Silver, lead, gold
tailings; mercury
furnace dust

Do

Wharton Co.

No mine or mill
specified; Texas
Gulf Sulfur Co.,
owner; Newgulf

?

Sulfur-bearing
gypsum; salt;
desulfurized water;
input water sulfur-
bearing bleed water

<.001-<.003

Utah

Beaver Co.

Fluorite Mines in
Beaver Co., Western
Fluorite Mill,
Ted Stevens, owner;
Milford

?

Fluorite tailings

Do

Joy-Bee Mine; Western ?
Fluorite Mill; Ted
Stevens, owner;
Milford

?

Millheads
fluorite

Do

Staats Fluorspar Mine; ?
F. Staats, owner; no
mill specified;
Lund

?

Fluorspar vein
workings

.03/.032U

Iron Co.

Iron Mountain Mine; Iron Moun-
Provo and Geneva tain
Plants; Columbia Steel
Co., owner; near
Cedar City

tain

Iron ore (magne-
tite), flue dust,
steel

<.003

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42

Utah	<u>Salt Lake Co.</u>	West Mountain	Zinc conc.	n.t.
	Apex-Delaware Mine (zinc-lead ore), Great Falls Reduc- tion Works; National Tunnel and Mines Co., owner; subsidiary of Anaconda Copper Mining Co., operator; Bingham Canyon			
	U. S. and Lark Proper- Do ty; Midvale Mill; U. S. Smelting and Refining and Mining Co., owner; Bingham Canyon		Copper, lead, iron- zinc conc., zinc- lead-iron tailings; and mill heads	<0.003
	Utah Copper Mine: Do Arthur Plant; Kennecott Copper Corp., owner; Bingham Canyon		Molybdenum tail- ings and conc., copper conc., general mill tail- ings; siliceous conc. from MoS ₂ Plant	Do
	<u>Tooele Co.</u> Ophir Mine and others Camp Snyder Bros. Mill; Floyd Snyder Bros. Mines, Inc., owner; Bingham		Gold tailings	Do
	<u>Utah Co.</u> Tintic Standard Mine; Tintic Harold Mill; Tintic Standard Mining Co., owner (not operating); Harold		Copper, lead, gold, silver tailings	.003
Vermont	<u>Orange Co.</u> Elizabeth Mine; Orange Co. Vermont Copper Co. Copper Mill and owner; South District Stafford		Copper heads, tail- ings, conc.	<.003
Virginia	<u>Bland Co.</u> No mine name speci- Appalachian fied; Biggam Mana- Manganese conc., nese Mining Co., jig mill and owner; Bland			Do

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43

Virginia	<u>Bland Co. (cont'd)</u> Round Mountain Mine; Virginia Hardwood Lumber Co., Mill and owner; Bastian	Do	Do	<0.003
	No mine name speci- fied; Conley Mill; Ray W. Arms, owner; Hollybrook	Do	Do	Do
	<u>Carroll Co.</u> Gossan (Monarat) Mine; no mill specified; General Chemical Co.; owner; Gallax	?	Pyrrhotite ore, conc., dust, tails; mill heads	Do
	<u>Halifax Co.</u> Red Bank Gold Mine, Mill and owner; Virgilina	Virgilina	Gold tails	Do
	<u>Prince Edward Co.</u> No mine speci- fied; Kyanite Products Corp., Mill and owner; Farmville	?	Kyanite conc. and tails	Do
	<u>Smyth Co.</u> Glade Mountain Mine; Mill and owner; near Cedar Springs	Southwest Virginia	Manganese conc.	Do
	<u>Spotsylvania Co.</u> Valzinco lead-zinc mine and mill; Panaminas Inc., owner; subsidiary of La Luz Mines Ltd., controlled by Ventures, Ltd.	Spotsylvania	Lead and zinc conc., lead-zinc ore and tails	Do
Washington	<u>Chelan Co.</u> Holden Mine, Howe Sound Co., Mill and owner; Holden	Chelan Lake	Copper and zinc conc., and zinc tailings	Do
	<u>Ferry Co.</u> Knob Hill Mine and mill; Knob Hill Mines, Inc., owner; Republic	Republic	Gold heads (pyrite conc.)	Do

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44

Washington	<u>Okanogan Co.</u>			
	Bodie or Northern	Cascade	Gold tailings	<0.003
	Gold Mine and mill;			
	Torado Gold Mines			
	Corp. or Northern			
	Gold Corp., owner;			
	Wauconda,			
	 Kaaba Mine; Kaaba-	Loomis-	Lead-zinc heads,	Do
	Texas Mining Co., owner;	Oroville	tails, ores,	
	Nighthawk		conc.	
	 <u>Pend-Oreille Co.</u>			
	Grand View and Bella	Metalline	Lead-zinc tails,	
	May Mine and Mill;		ores, conc.	Do
	Metalline Mining and			
	Leasing Co., owner;			
	Metalline Falls			
	 <u>Snohomish Co.</u>			
	Everett Smelter	Monte	Slag dump, gold,	Do
	(smelter site), W. R.	Cristo	copper, lead, zinc	
	Hocking, owner;			
	Everett			
	 <u>Stevens Co.</u>			
	Blue Ridge Mine	Northport	Zinc-lead heads,	Do
	and Mill; Sierra		tails, conc.	
	Zinc Co., owner;			
	Alladin			
	 Deer Lake Tungsten	Do	Zinc-lead heads,	Do
	Mine and Mill; J.		tails, conc.	
	Keith and W. H.			
	West, owner;			
	Deer Park			
	 Hope Mine or Her-	Do	Tungsten tail-	Do
	cules and Tamarach		ings, slimes,	
	Mine; Northport		and conc.	
	Smelter; Northport			
	Smelting and Re-			
	fining Co., owner;			
	Tamarach and Custer			
	Conservation Mining			
	Co., lessee;			
	Northport			
	 Keith Tungsten Mine,	Deer Trail	Tungsten conc.	Do
	Mill and owner;			
	Spokane Indian			
	Reservation			

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45

Washington	<u>Stevens Co. (cont'd.)</u> Knob Hill or Black Rock or Gorrien Mine; Sierra Zinc Mill; Hamison-Higginbotham Mining Co., owner; Colville	Northport	Zinc ores and lead-silver-zinc ores	<0.003
	Van Stone Mine; L. W. Cook and others; owners; Northport	Do	Lead-zinc ores	Do
	Willow Creek Mines, not in production	Do	Do	Do
West Virginia	<u>Marshall Co.</u> Concentrates from Joplin area; United Zinc Smelting Corp. Plant; United Zinc Smelting Corp., owner; Moundsville	Tri-State	Residue zinc re- tort, unscreened; retort zinc, broken; flue dust, zinc smelter	.003-.005 .004 n.t.
Wisconsin	<u>Iowa Co.</u> Specified mine at mill; Dodgeville Mining Co., Mill; Dodgeville Mining Co., owner; Dodgeville	Upper Mississippi Valley Zinc District	Zinc-lead tailings	<.003
	<u>Lafayette Co.</u> Champion Mine; W. E. Faithorn Mill and owner; New Diggings	Do	Zinc conc., mill feed, zinc heads; zinc-lead tailings	Do
Wisconsin and Illinois	<u>Grant, Iowa, Lafayette Co., Wisconsin; Jo Deviss Co., Illinois</u> Crude ore and zinc- iron-lead rougher jig conc. purchased from operations throughout the active areas; Vinegar Hill Custom Mill; Vinegar Hill Zinc Co., owner; Cubo City	Do Do	Zinc conc. and tailings Zinc conc. and tailings, iron oxide calcines; iron sulfide mag- netic roast (pro- duction prior to 1920)	 Do

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46

Wyoming

Albany Co.

Manganese mine on
west flank of
Laramie Mountains;
no mill or owner
specified; 7 miles
S of Marshall

Not speci-
fied

Manganese ore

0.023/.006U

Crook Co.

Black Rock Mine;
no mill or owner
specified; north
of Warren Peak,
Bear Lodge Moun-
tains

Do

Manganese vein

material; monzon-
ite porphyry;

.055/.012U

Manganiferous
material;

.049/.016U

Manganese monzon-
ite porphyry;

.012

Pegmatitic granite
manganese coatings
and veinlets;

.008

Porphyry with
manganese stains;

.025

Copper stained
porphyry;

.038/.016U

Hardblack and yellow
rock, altered

porphyry;

.128/.011U

Crushed and stained
porphyry in hanging
wall of vein;

.027/.003U

Finely broken man-
ganese and copper
stained porphyry

.056/.010U

Niobrara Co.

Silver Cliff Mine;
no mill or owner
specified; west of
Lusk,

Do

Fine material from
dump

.135-.154/

.076-.09U

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