N1/2 Sec 10 T7N; R2W Garfias Mnt Quad 7.5 Ariz
W1/2 Sec 11 E1/2 3 W1/2 2

E1/2 Sec 28
N1/2 Sec 27 T9N R3W Morgan Butte 7.5
SE1/4 Sec 27
E1/2 Sec 34

Intrusive on Castle Road

Wickstrom, Phillip — Myrtle group — LF 76704
Cousins, A.W — Hall group — ~1968
Hughes, John C — L. Asses. 1980
Castle Mining Co — ~30 claims Sec 10 → 8 → 12 1980

nothing Sec 12
" " Sec 2

Hagerty William — LF 38883
Johnson, Lyda — 1962-1968
Haddock Rev Opal — L. Asses 1980

Allexander W Moll — Mols 1 → 20 — LF 129546 3/18/81

R Bluff Mines Sec 20 Tied up
Bronco Bills Bonanza 1 → 36 (25)
Cordelias Con. 1 → 36 (26)
9/18/80

Jack & Do Devault Sec 27, 28 1973 located LF 37368
Gold Bar 1 → 68 Last Asses 1979

	Ser #			Lead File	Book/P.
Sec 2	22952	LD	Blue Glory #1, #2, #3	22952	1130/190
NW 1/4	53		Hallelujah People		1132/525
	54		PHette place Rev Bill		1132/526

3/78 last assess 79

Sec 2	114892	LD	Day #3	[Uranerz USA Inc]	114872	1332/507
SW 1/4			Day #6			1332/513

8/28/80

Sec 8	123145	LD	G group	[Cyetkov, Eugene]	123101	1347/903→
↑	↓					957
Sec 7	123172					

12/26/80

	129623		Dis#1→ Dis#27	[Alex W Mcl]	129546	1378/588→
	↓					630
	129644					

3/05/81

~~SAFA~~

a few Claim in w 1/2 of Sec 35 - Leviathan open?

Also T7N R2W, Secs 2, 3, 10, 11, 4, 9 [redacted] look under Locator Index for Random stuff in Mountain City.

12AM.

Areas in AZ to BLM MTP Quads - Yavapai Cty.

Sec. 2 T8N R3W - Red Bluff prop. check areas to N. T9N, R3W (Sec. 35) T7, 6N R2W

Sec. 35 T10N R5W - Leviathan prop.
Sec. 36

Sec. 18, Sec. 7 T7N R2W - Gold Slipper ~~[illegible]~~

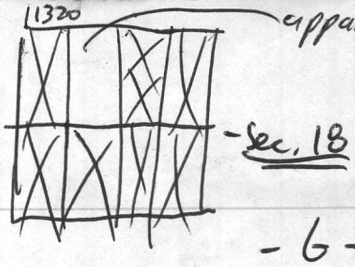
- call Karl at Best Western in Wickenburg on Thurs. night. -

Red Bluff - Lead file { 22952 - Blue Glories 1, 2, 3 Hallelujah Rebecca Rev. Bill
114872 Day 3, 6 - Uranerz USA loc. 80

Gold Slipper - { 123101 - G group - Cvetkov, Eugene loc. 80
~~121546~~ - Doctors 1-24 - Alec W. Melt Mass 5, 80
129623

Leviathan - no unpat. { all patented

- Morristown -



claims 1320' long x 600' wide

Mr. Eugene Cvetkov
247 E. Greenway Rd.
Phoenix, AZ 85422

- G-1 thru G-93
all loc. 12/26/80

claims in Sec. 18, T 7N, R2W
G-45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73
none in Sec. 7 w/ this group

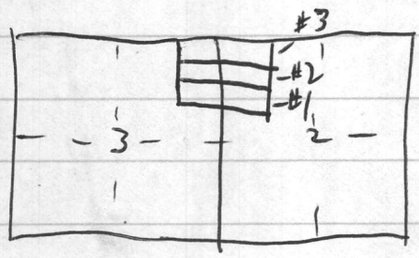
Uranerz U.S.A. Inc.
445 Union Blvd. Suite 230
Denver, CO. 80228

T8N, R3W

see map - what relation is at West claims 1-29, North claims 1-25, Three Bucks 1-15 South 1-8 not known, but prob. Uranerz and staked later with separate land file #

Ranch Challenge Hallelujah People
P.O. Box 2320
Wickenburg, AZ 85358 - Rev. Jack M. Oliphant

Blue Glories 1, 2, 3, 4, 5 - BLM not recognize #4, 5, no loc. notice, etc. received for these



approx.

Dr. W. Mel Alexander
14241 E. Imperial Hwy. Suite I
La Mirada, CA 90638

Dr. 1-24 claims

March 5, 10, 1981

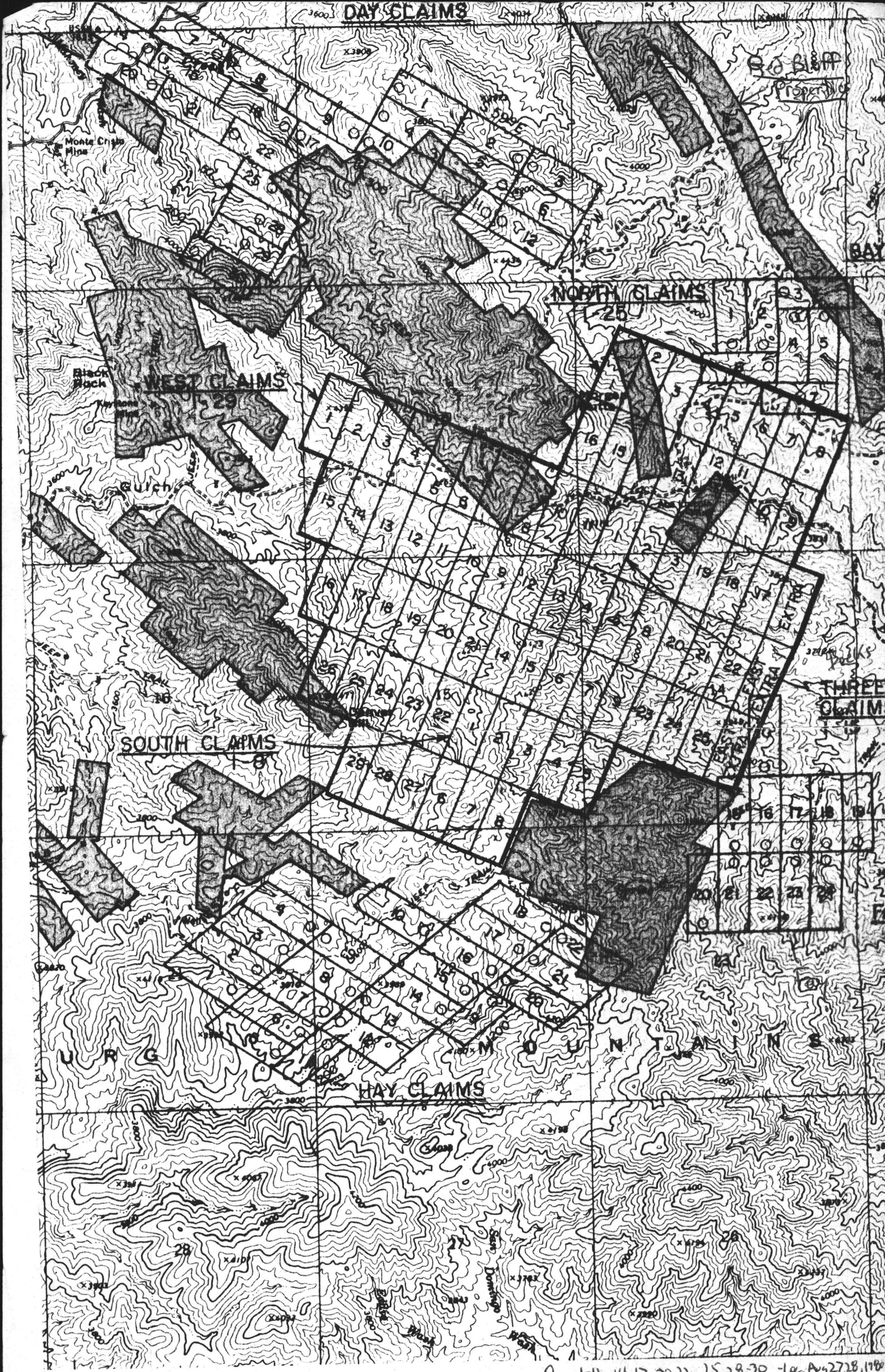
see Map

~~O'brien - Geo Wash group Sec 29~~

Sec 33 & 34 open ground → was Devault but not assessed since 79

SE 1/4 & SW 1/4 of 35 - Red Bluff Mines

Sec 2 open



Hay 1-22 Loc. Aug 23, 24, 1980

Day 1-12, 14-17, 20-22, 25, 28-30 - Loc. Aug 27, 28, 1980
Loc. Aug 28, 1980

Bay 1-7
Fay 10, 15-24
Loc. Aug 26, 1980

SURVEY MAP

OF

LODE MINING CLAIMS

WITHIN

ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

APR 1 1981

Nothing in Sec 2

34328 LD Hagerty William 34321
Big Ruth Ext #2 3 (776:263)
9/5/72 → 81

Sec 3

~~34328~~ LD ~~Hagerty Wm~~
~~38886~~
Lyda Johnson
Rev Opal Haddock.

Lucky Day Group 1-12 38883
111630
1962 → 1968 → 80

Castle Mining Co. 76704
505; 586

Alex W Moll Mol 14 → 20 129546
3/18/81 1378:654 →

Amonite Mnt Mines #1 → 7 ~~145~~ 145053
(Bonch Betty)
11/5/81 1423
1424

Castle area

Garfias Mnt Quad 7.5

T 7N R2W

~~2~~	1
11	12

3	2
10	11

Open

J-10

MERIDIAN: GILA-SALT R. GEOGRAPHIC INDEX

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK:PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
6 N	2 W	26	NE	13	2	120825	LD	WIN NO 719	RANCHERS EXPL DEV	120494	4963;664	12/14/1980		
			NE			120826	LD	WIN NO 720		120494	4963;666	12/14/1980		
			NE			120827	LD	WIN NO 721		120494	4963;668	12/14/1980		
			E2			120828	LD	WIN NO 722		120494	4963;670	12/14/1980		
			SE			120829	LD	WIN NO 723		120494	4963;672	12/14/1980		
			SE			120830	LD	WIN NO 724		120494	4963;674	12/14/1980		
			SE			120842	LD	WIN NO 736		120494	4963;698	12/14/1980		
		27	NW			120800	LD	WIN NO 694		120494	4963;614	12/23/1980		
7 N	2 W	3	S2	25		34328	LD	BIG RUTH EXT NO 2	HAGERTY WILLIAM	34321	776;263	9/05/1972	1981	
			SE			38885	LD	LUCKY DAY NO 1	JOHNSON LYDA HADDOCK REV OPAL	38883	271;230	10/11/1962	1980	
			S2			38886	LD	LUCKY DAY NO 2	JOHNSON LYDA HADDOCK REV OPAL	38883	271;231	10/11/1962	1980	
			S2			38887	LD	LUCKY DAY NO 3	JOHNSON LYDA HADDOCK REV OPAL	38883	271;232	10/11/1962	1980	
			SE			38888	LD	LUCKY DAY NO 4	JOHNSON LYDA HADDOCK REV OPAL	38883	280;260	1/28/1963	1980	
			SE			38889	LD	LUCKY DAY 5	JOHNSON LYDA HADDOCK REV OPAL	38883	280;261	1/28/1963	1980	
			NW			38890	LD	LUCKY DAY #6	JOHNSON LYDA HADDOCK REV OPAL	38883	280;262	1/28/1963	1980	
			SE			38891	LD	LUCKY DAY 9	JOHNSON LYDA HADDOCK REV OPAL	38883	440;466	4/17/1967	1980	
			SW			76739	LD	HALL #72A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;586	7/19/1968	1980	
			SE			111630	LD	LUCKY DAY #8	JOHNSON LYDA		1312;525-	7/10/1980		
			SE			111631	LD	LUCKY DAY #9		111630	1312;523-	7/10/1980		
			SE			111632	LD	LUCKY DAY #10		111630	1312;521-	7/10/1980		
			SE			111633	LD	LUCKY DAY #11		111630	1312;527-	7/10/1980		
			SE			111634	LD	LUCKY DAY #12		111630	1312;517-	7/10/1980		
			SE			129594	LD	MEL #1	ALEXANDER W MEL	129546	1378;654	3/18/1981		
			SE			129595	LD	MEL #2		129546	1378;656	3/18/1981		
			SE			129596	LD	MEL #3		129546	1378;658	3/18/1981		
			SE			129597	LD	MEL #4		129546	1378;660	3/18/1981		
			NE			129598	LD	MEL #5		129546	1378;662	3/18/1981		
			NE			129599	LD	MEL #6		129546	1378;664	3/18/1981		
			SE			129600	LD	MEL #7		129546	1378;666	3/18/1981		
			SE			129601	LD	MEL #8		129546	1378;668	3/18/1981		
			SE			129602	LD	MEL #9		129546	1378;670	3/18/1981		
			SE			129603	LD	MEL #10		129546	1378;672	3/18/1981		
			SW			129604	LD	MEL #11		129546	1378;674	3/18/1981		
			SW			129605	LD	MEL #12		129546	1378;676	3/18/1981		
			SW			129606	LD	MEL #13		129546	1378;678	3/18/1981		
			SW			129607	LD	MEL #14		129546	1378;680	3/18/1981		

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K-10

MERIDIAN: GILA-SALT R. GEOGRAPHIC INDEX

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK:PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
7 N	2 W	3	NW	25	2	129608	LD	MEL #15	ALEXANDER W MEL	129546	1378;682	3/18/1981		
			NW			129609	LD	MEL #16		129546	1378;684	3/18/1981		
			SW			129610	LD	MEL #17		129546	1378;686	3/18/1981		
			SW			129611	LD	MEL #18		129546	1378;688	3/18/1981		
			SW			129612	LD	MEL #19		129546	1378;690	3/18/1981		
			SW			129613	LD	MEL #20		129546	1378;692	3/18/1981		
			SE			145053	LD	AMORITE MTN MINES #1	BENCH BETTY		1423;990	11/05/1981		
			S2			145054	LD	AMORITE MTN MINES #2		145053	1423;993	11/05/1981		
			S2			145055	LD	AMORITE MTN MINES #3		145053	1423;996	11/05/1981		
			SE			145056	LD	AMORITE MTN MINES #4		145053	1423;999	11/05/1981		
			SE			145057	LD	AMORITE MTN MINES #5		145053	1424;3	11/05/1981		
			S2			145058	LD	AMORITE MTN MINES #6		145053	1424;4	11/05/1981		
			SE			145059	LD	AMORITE MTN MINES #7		145053	1424;7	11/05/1981		
		4	NE			38890	LD	LUCKY DAY #6	JOHNSON LYDA HADDOCK REV OPAL	38883	280;262	1/28/1963	1980	
			SW			41036	LD	LITTLE LISA A I	ALLISON WILLIAM A SR		1202;951	3/07/1979		
			SW			41037	LD	LITTLE LISA A II			1202;953	3/07/1979		
			SE			41039	LD	LUCKY D B	WOOD STEPHEN C.		1202;881	3/07/1979	1980	
			SE			76737	LD	HALL #69A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;490	4/30/1968	1980	
			SW			76789	LD	MYRTLE #31A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;56	7/26/1968	1980	
			S2			76790	LD	MYRTLE #32A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;56	7/26/1968	1980	
			S SE			76777	LD	MAY 23	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	993;236	10/25/1975	1980	
		7	SW			39799	LD	PICACHO #1	COVER M CLIFFORD		1200;976	2/19/1979		
			SE			129633	LD	DR#5 #11	ALEXANDER W MEL	129546	1378;608	3/05/1981		
			SE			129634	LD	DR#5 #12		129546	1378;610	3/05/1981		
			SW			129645	LD	DR#5 #23		129546	1378;632	3/10/1981		
			SW			129646	LD	DR#5 #24		129546	1378;634	3/10/1981		
		8	NE			76704	LD	CASTLE #7	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO		981;81	9/07/1975	1980	
			NE			76705	LD	CASTLE #8	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981;82	9/07/1975	1980	

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C-11

REPORT DATE: JAN 20, 1982 UNITED STATES DEPARTMENT OF THE INTERIOR PAGE NO: 1502

STATE: ARIZONA PCN: LT892PP1 BUREAU OF LAND MANAGEMENT

MERIDIAN: GILA-SALT R. GEOGRAPHIC INDEX

- -LEGAL DESCRIPTION- -					GEO BLM	SERIAL	CASE			LEAD	COUNTY	LOCATION	LATEST	CASE
TWNSHP	RANGE	SEC	SUBDV	CTY	DIST	NO.	TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	FILE	BOOK:PAGE	DATE	ASSMT-YR	CLOSED
7 N	2 W	10	NW	25	2	34321	LD	BIG RUTH	HAGERTY WILLIAM		765:338	7/12/1972	1981	
			N2			34322	LD	BIG RUTH NO 2		34321	776:257	9/05/1972	1981	
			W2			34323	LD	BIG RUTH NO 3		34321	776:259	9/05/1972	1981	
			SW			34324	LD	BIG RUTH NO 4		34321	776:825	9/09/1972	1981	
			SW			34325	LD	BIG RUTH # 5		34321	780:151	9/11/1972	1981	
			N2			34326	LD	BIG RUTH EXTENSION		34321	771:743	8/15/1972	1981	
			NW			34327	LD	BIG RUTH EXT NO 1		34321	776:261	9/05/1972	1981	
			N2			34328	LD	BIG RUTH EXT NO 2		34321	776:263	9/05/1972	1981	
			SW			34329	LD	BIG RUTH NO 1-A		34321	805:89	10/01/1972	1981	
			SW			34335	PL	BIG RUTH PLACER NO 1		34321	874:517	10/16/1973	1981	
			NW			38886	LD	LUCKY DAY NO 2	HAGERTY RUTH JOHNSON LYDA MADDOCK REV OPAL	38883	271:231	10/11/1962	1980	
			NW			38887	LD	LUCKY DAY NO 3	JOHNSON LYDA MADDOCK REV OPAL	38883	271:232	10/11/1962	1980	
			N2			38888	LD	LUCKY DAY NO 4	JOHNSON LYDA MADDOCK REV OPAL	38883	280:260	1/28/1963	1980	
			NE			38889	LD	LUCKY DAY 5	JOHNSON LYDA MADDOCK REV OPAL	38883	280:261	1/28/1963	1980	
			NE			38891	LD	LUCKY DAY 9	JOHNSON LYDA MADDOCK REV OPAL	38883	440:466	6/17/1967	1980	
			NW			76721	LD	HALL 74	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:87	9/01/1975	1980	
			NW			76723	LD	HALL 90	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:89	9/01/1975	1980	
			NW			76725	LD	HALL 92	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:79	9/01/1975	1980	
			N2			76727	LD	HALL 94	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:92	9/01/1975	1980	
			SW			76729	LD	HALL 96	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:94	9/01/1975	1980	
			SW			76731	LD	HALL 98	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:96	9/01/1975	1980	
			SW			76732	LD	HALL 100	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981:97	9/01/1975	1980	

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D-11

REPORT DATE: JAN 20, 1982 UNITED STATES DEPARTMENT OF THE INTERIOR PAGE NO: 1503

STATE: ARIZONA PCN: LT892PP1 BUREAU OF LAND MANAGEMENT

MERIDIAN: GILA-SALT R. GEOGRAPHIC INDEX

- -LEGAL DESCRIPTION- -					GEO BLM	SERIAL	CASE			LEAD	COUNTY	LOCATION	LATEST	CASE
TWNSHP	RANGE	SEC	SUBDV	CTY	DIST	NO.	TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	FILE	BOOK:PAGE	DATE	ASSMT-YR	CLOSED
7 N	2 W	10	SW	25	2	76732	LD	HALL 100	COUSINS A W HUGHES JOHN C	76704	981:97	9/01/1975	1980	
			N2			76733	LD	141	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	981:104	9/01/1975	1980	
			ALL			76734	LD	HALL 143	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	981:105	9/01/1975	1980	
			S2			76735	LD	HALL 145	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	981:106	9/01/1975	1980	
			S2			76736	LD	HALL 147	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	981:107	9/01/1975	1980	
			NW			76739	LD	HALL #72A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	505:586	7/19/1968	1980	
			NW			76741	LD	HALL #90A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	505:588	7/19/1968	1980	
			NW			76743	LD	HALL #92A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	505:590	7/19/1968	1980	
			W2			76745	LD	HALL #94A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	505:592	7/19/1968	1980	
			N2			76746	LD	HALL #139A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	492:492	4/30/1968	1980	
			NW			76747	LD	HALL #141 A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C	76704	492:494	5/09/1968	1980	
			ALL			76748	LD	HALL #143 A	CASTLE MINING CO WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492:496	5/09/1968	1980	

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REPORT DATE: JAN 20, 1982 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 1504
STATE: ARIZONA — PCN: LT892PP1 — BUREAU OF LAND MANAGEMENT

MERIDIAN: GILA-SALT R. — GEOGRAPHIC INDEX

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK:PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
7 N	2 W	10	S2	25	2	76749	LD	HALL #145 A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;499	5/09/1968	1980	
			S2			76750	LD	HALL #1[illegible]9 A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;501	4/30/1968	1980	
			S2			76751	LD	HALL #151 A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;503	4/30/1968	1980	
			SW			76755	LD	HALL #96AA	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;594	7/19/1968	1980	
			NP			76776	LD	DON 121A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;484	5/09/1968	1980	
			SW			76788	LD	MYRTLE 102	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981;98	9/06/1975	1980	
			SW			76794	LD	MYRTLE #98A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;595	7/18/1968	1980	
			SW			76795	LD	MYRTLE #100A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;596	7/18/1968	1980	
			SW			76796	LD	MYRTLE #102A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	505;600	7/18/1968	1980	
			S2			76797	LD	MYRTLE #147 A	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	492;499	4/30/1968	1980	
			NE			111633	LD	LUCKY DAY #11	JOHNSON LYDA	111630	1312;527-	7/18/1980		
			NE			111634	LD	LUCKY DAY #12		111630	1312;517-	7/18/1980		
			NE			111635	LD	LUCKY DAY #13		111630	1312;519-	7/18/1980		
			NW			145054	LD	AMORITE MTN MINES #2	BENCH BETTY	145053	1423;993	11/05/1981		
			NW			145055	LD	AMORITE MTN MINES #3		145053	1423;996	11/05/1981		
			N2			145056	LD	AMORITE MTN MINES #4		145053	1423;999	11/05/1981		

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REPORT DATE: JAN 20, 1982 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 1505
STATE: ARIZONA — PCN: LT892PP1 — BUREAU OF LAND MANAGEMENT

MERIDIAN: GILA-SALT R. — GEOGRAPHIC INDEX

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK:PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
7 N	2 W	10	NE		25	2	145057	LD	AMORITE MTN MINES #5	BENCH BETTY	145053	1424;3	11/05/1981	
			NW			145058	LD	AMORITE MTN MINES #6		145053	1424;4	11/05/1981		
			SW			145059	LD	AMORITE MTN MINES #7		145053	1424;7	11/05/1981		
		12	SW			101397	PL	GOLDEN WEB #1	JORDAN MARVIN K		1280;358	2/21/1980		
		13	NW			101397	PL	GOLDEN WEB #1			1280;358	2/21/1980		
			NW			135068	LD	WEDNESDAY #1	JORDANOV JORDAN	135038	1396;252	5/14/1981		
			S2			135069	LD	WEDNESDAY #2		135038	1396;254	5/14/1981		
			SW			135070	LD	WEDNESDAY #3		135038	1396;256	5/14/1981		
			S2			135071	LD	WEDNESDAY #4		135038	1396;258	5/14/1981		
			SW			135072	LD	WEDNESDAY #5		135038	1396;260	5/14/1981		
			S2			135073	LD	WEDNESDAY #6		135038	1396;262	5/14/1981		
			SW			135074	LD	WEDNESDAY #7		135038	1396;264	5/14/1981		
			S2			135075	LD	WEDNESDAY #8		135038	1396;266	5/14/1981		
			SW			135076	LD	WEDNESDAY #9		135038	1396;268	5/14/1981		
			S2			135077	LD	WEDNESDAY #10		135038	1396;270	5/14/1981		
			SE			135094	LD	WEDNESDAY #27		135038	1396;304	5/15/1981		
			SE			135095	LD	WEDNESDAY #28		135038	1396;306	5/15/1981		
			SE			135096	LD	WEDNESDAY #29		135038	1396;308	5/15/1981		
			SE			135097	LD	WEDNESDAY #30		135038	1396;310	5/15/1981		
			SE			135098	LD	WEDNESDAY #31		135038	1396;312	5/16/1981		
			SE			135099	LD	WEDNESDAY #32		135038	1396;314	5/16/1981		
			SE			135100	LD	WEDNESDAY #33		135038	1396;316	5/16/1981		
			SE			135101	LD	WEDNESDAY #34		135038	1396;318	5/16/1981		
			SE			135102	LD	WEDNESDAY #35		135038	1396;320	5/16/1981		
			SE			135103	LD	WEDNESDAY #36		135038	1396;322	5/16/1981		
		19	SW			34331	LD	BIG RUTH NO 5A	HAGERTY WILLIAM	34321	805;97	10/15/1972	1981	
			SW			34334	LD	BIG RUTH NO 6A		34321	805;99	10/15/1972	1981	
		15	NW			34329	LD	BIG RUTH NO 1-A		34321	805;89	10/01/1972	1981	
			N2			34330	LD	BIG RUTH NO 2-A		34321	805;91	10/01/1972	1981	
			SE			34331	LD	BIG RUTH NO 5-A		34321	805;93	10/01/1972	1981	
			SE			34332	LD	BIG RUTH NO 9A		34321	805;95	10/15/1972	1981	
			SE			34333	LD	BIG RUTH NO 5A		34321	805;97	10/15/1972	1981	
			NW			34336	PL	BIG RUTH PLACER NO 2		34321	874;519	10/15/1973	1981	
			NW			76711	LD	CASTLE 104	HAGERTY RUTH WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981;99	9/06/1975	1980	
			NW			76712	LD	CASTLE 106	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981;100	9/06/1975	1980	
			NW			76713	LD	CASTLE 108	WICKSTROM PHILIP COUSINS A W HUGHES JOHN C CASTLE MINING CO	76704	981;101	9/06/1975	1980	

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PART II

VALUE AND CONTENT OF ORES

METAL PRICES[1]
1850-1934

Year	Gold[2] per oz.	Silver[3] per oz.	Copper[4] per lb.	Lead[5] per lb.	Zinc[6] per lb.	Year	Gold[2] per oz.	Silver[3] per oz.	Copper[4] per lb.	Lead[5] per lb.	Zinc[6] per lb.
1850	$20.67+	$1.32	$0.220	$0.05	.....	1893		$0.780	$0.108	$0.037	$0.04
1851		1.34	.166	.05	.....	1894		.630	.095	.033	.035
1852		1.33	.220	.05	.....	1895		.650	.107	.032	.036
1853		1.35	.220	.06	$.055	1896		.680	.108	.03	.039
1854		1.35	.220	.06	.....	1897		.600	.120	.036	.041
1855		1.34	.270	.07	.....	1898		.590	.124	.038	.046
1856		1.34	.270	.066	.....	1899		.600	.171	.045	.058
1857		1.35	.250	.060	.....	1900		.62	.166	.044	.044
1858		1.34	.230	.06	.....	1901		.60	.176	.043	.041
1859		1.36	.220	.055	.....	1902		.53	.122	.041	.048
1860		1.35	.230	.056	.....	1903		.54	.137	.042	.054
1861		1.33	.220	.05	.....	1904		.58[7]	.128[8]	.043[9]	.051
1862		1.35	.220	.06	.....	1905		.61[10]	.156	.047	.059
1863		1.345	.340	.06	.....	1906		.68[11]	.193	.057	.061
1864		1.345	.470	.07	.139	1907		.66	.200	.053	.059
1865		1.337	.392	.066	.....	1908		.53	.132	.042	.047
1866		1.339	.342	.07	.....	1909		.52	.130	.043	.054
1867		1.330	.254	.065	.....	1910		.54	.127	.044	.054
1868		1.326	.230	.065	.....	1911		.53	.125	.045	.057
1869		1.325	.242	.06	.....	1912		.615	.165	.045	.069
1870		1.328	.312	.06	.....	1913		.604	.155	.044	.056
1871		1.325	.341	.06	.....	1914		.553	.133	.039	.051
1872		1.322	.356	.064	.....	1915		.507	.175	.047	.124
1873		1.297	.280	.06	.....	1916		.658	.246	.069	.134
1874		1.278	.220	.06	.....	1917		.824	.273	.086	.102
1875		1.240	.227	.058	.07	1918		1.00	.247	.071	.091
1876		1.160	.210	.061	.072	1919		1.12	.186	.053	.073
1877		1.200	.190	.055	.06	1920		1.09	.184	.080	.081
1878		1.150	.166	.036	.049	1921		1.00	.129	.045	.050
1879		1.120	.186	.041	.052	1922		1.00	.135	.055	.057
1880		1.150	.214	.05	.055	1923		.82	.147	.070	.068
1881		1.130	.182	.048	.052	1924		.67	.131	.080	.065
1882		1.140	.191	.049	.053	1925		.694	.142	.087	.076
1883		1.110	.165	.043	.045	1926		.624	.140	.080	.075
1884		1.110	.130	.037	.044	1927		.567	.131	.063	.064
1885		1.070	.108	.040	.043	1928		.585	.144	.058	.061
1886		.990	.111	.046	.044	1929		.533	.176	.063	.066
1887		.980	.138	.045	.046	1930		.385	.130	.050	.048
1888		.940	.163	.044	.049	1931		.290	.091	.037	.038
1889		.940	.135	.039	.05	1932	$20.67+	.282	.063	.030	.030
1890		1.050	.156	.045	.055	1933	25.56	.350	.064	.037	.042
1891		.990	.128	.043	.05	1934	34.95	.646	.080	.037	.043
1892		.870	.116	.041	.046						

[1] See *Mineral Resources of the United States*, 1931, page A115, and later volumes.

[2] Price $20.671835 unless otherwise noted.

[3] Commercial price of silver at New York. In 1934 U. S. Mint price $0.646464646.

[4] U. S. Geological Survey computations for electrolytic copper 1904-15. Since 1915 average price all marketable grades.

[5] New York price.

[6] New York price 1875-1904. St. Louis price since 1904. For 1915 and later years, average price all grades.

[7] $0.5725 used by U. S. Geol. Survey in calculations of metal values in *Mineral Resources of the United States*.

[8] .125 used (as above).

[9] .04375 used (as above).

[10] .604 used (as above).

[11] .67 used (as above).

TONNAGES BY KINDS OF ORE
1910-33

Year	Siliceous	Copper	Lead	Copper-lead	Zinc-lead[1]	Total tonnage
1910	255,391	3,644,495	6,240	1,193	7,650	3,914,969
1911	243,900	4,274,209	22,039	129	26,862	4,567,139
1912	250,142	6,542,154	20,960	315	26,511	6,840,082
1913	297,288	7,553,935	28,551	4,834	47,254	7,931,862
1914	428,805	7,508,020	26,687	4,892	41,523	8,009,927
1915	340,798	9,134,425	48,536	426	88,374	9,612,559
1916	336,304	16,491,971	73,747	3,900	127,888	17,033,810
1917	317,716	15,245,297	82,285	1,610	123,285	15,770,193
1918	295,548	18,647,039	79,811	916	15,172	19,038,486
1919	294,675	13,347,182	76,247	7,261	2,038	13,727,403
1920	280,701	14,516,580	116,269	5,108	1,820	14,920,478
1921	233,201	5,181,177	40,511	141	.....	5,455,030
1922	246,286	10,431,729	67,138	435	457	10,746,045
1923	566,293	16,331,974	115,369	229	1,313	17,015,178
1924	239,755	19,460,836	114,670	5,244	.....	19,820,505
1925	124,990	20,634,428	127,944	24,565	15,455	20,927,382
1926	139,949	22,031,292	157,854	25,020	28,570	22,382,685
1927	151,701	21,677,976	137,195	4,449	20,553	21,991,874
1928	146,825	22,584,270	50,651	22,083	24,937	22,828,766
1929	89,904	25,669,975	46,476	18,608	35,809	25,860,772
1930	53,753	19,703,349	21,807	1,309	22,701	19,802,919
1931	69,686	13,606,755	13,951	218	.....	13,690,610
1932	60,129	4,343,070	11,362	18	.....	4,414,579
1933	96,090	888,508	11,029	.....	101	995,728
Total	5,559,830	319,450,646	1,497,329	132,903	658,273	327,298,981

[1] The caption Zinc-lead in this and all other tables includes zinc ores, lead-zinc ores, and small amounts of copper-lead-zinc ores.

YAVAPAI COUNTY

Year	Tons ore, tailing	Gold					Silver	
		Lode		Placer		Total value	Lode and placer	
		Ounces	Value	Ounces	Value		Ounces	Value
1900	600,000	106,638	$ 2,204,403	7,043	$ 145,597	$ 2,350,000	1,130,000	$ 700,600
1901	600,000	109,689	2,267,476	3,992	82,524	2,350,000	1,182,400	709,440
1902	400,000	129,159	2,669,956	1,011	20,907	2,690,863	1,483,100	786,043
1903	450,000	136,919	2,830,360	3,908	80,781	2,911,144	1,725,785	931,924
1904	439,622	97,177	2,008,830	238	4,917	2,013,747	953,622	545,948
1905	364,697	66,002	1,364,373	1,291	26,697	1,391,070	786,707	475,171
1906	396,788	59,926	1,238,775	863	17,848	1,256,623	708,439	474,654
1907	375,398	54,326	1,123,015	1,020	21,087	1,144,102	647,488	427,342
1908	314,113	53,362	1,103,085	663	13,708	1,116,793	602,645	319,402
1909	323,489	45,310	936,644	755	15,599	952,243	578,580	300,862
1910	417,308	42,104	870,375	561	11,595	881,970	699,702	377,839
1911	245,165	32,900	680,103	463	9,581	689,684	764,744	405,314
1912	406,053	22,571	466,578	770	15,923	482,501	748,872	460,556
1913	447,659	24,526	507,006	494	10,210	517,216	854,049	515,845
1914	459,982	26,358	544,874	590	12,190	557,064	786,917	435,165
1915	614,843	37,635	777,974	673	13,910	791,884	1,343,363	681,085
1916	967,558	49,912	1,031,771	173	3,580	1,035,351	1,735,302	1,141,829
1917	1,176,644	49,328	1,019,702	182	3,762	1,023,464	2,207,583	1,819,048
1918	1,301,828	53,963	1,115,510	106	2,191	1,117,701	2,502,968	2,502,968
1919	738,221	29,648	612,885	101	2,083	614,968	1,252,894	1,403,241
1920	1,038,243	31,753	656,396	152	3,145	659,541	1,555,075	1,695,032
1921	191,964	5,182	107,129	283	5,855	112,984	383,193	383,193
1922	601,389	22,171	458,324	279	5,777	464,101	949,331	949,331
1923	1,594,268	91,811	1,897,893	217	4,485	1,902,378	2,879,763	2,361,406
1924	1,407,479	59,837	1,236,931	108	2,226	1,239,157	2,269,788	1,520,758
1925	1,544,507	65,155	1,346,866	114	2,351	1,349,217	2,762,143	1,916,927
1926	1,595,826	72,168	1,491,840	228	4,706	1,496,546	2,770,949	1,729,072
1927	1,575,476	66,648	1,377,734	194	4,007	1,381,741	2,584,676	1,465,511
1928	1,890,830	67,759	1,400,708	189	3,912	1,404,620	2,619,217	1,532,242
1929	2,255,441	81,694	1,688,770	224	4,634	1,693,404	2,810,859	1,498,188
1930	1,395,527	58,328	1,205,749	406	8,384	1,214,133	1,930,906	743,399
1931	431,174	21,285	440,008	584	12,064	452,072	565,737	164,064
1932	264,213	14,074	290,940	2,287	47,274	338,214	381,057	107,458
1933	257,125	16,444	420,307	3,042	77,748	498,055	383,563	134,247
1934	315,552	32,685	1,142,346	.....	.....	1,142,346	511,038	330,368
Total	27,398,382	1,934,447	$40,535,636	33,204	$ 701,261	$41,236,897	48,052,455	$31,945,472
Prior 1900	.....	477,703	9,875,000	193,500	4,000,000	13,875,000	9,739,693	8,702,611
Total	27,398,382	2,412,150	$50,410,636	226,704	$4,701,261	$55,111,897	57,792,148	$40,648,083

Note: 1934 placer gold included with lode production.

YAVAPAI COUNTY

Year	Copper		Lead		Zinc		Total value (major metals)
	Pounds	Value	Pounds	Value	Pounds	Value	
1900	39,980,455	$ 6,636,756	1,500,000	$ 66,000	.....	.....	$ 9,753,356
1901	35,117,278	5,864,585	2,090,000	89,870	.....	.....	9,013,895
1902	20,059,899	2,447,308	752,076	30,835	.....	.....	5,955,049
1903	23,864,589	3,269,449	841,404	35,339	.....	.....	7,147,856
1904	30,826,286	3,853,286	497,905	21,783	.....	.....	6,434,764
1905	34,279,734	5,347,638	697,806	32,797	110,000	$ 6,490	7,253,166
1906	42,080,740	8,121,583	729,787	41,598	.....	.....	9,894,458
1907	35,734,416	7,146,883	521,307	27,629	140,786	8,307	8,754,263
1908	36,248,440	4,784,794	362,334	15,218	.....	.....	6,236,207
1909	37,125,964	4,826,375	409,890	17,625	.....	.....	6,097,105
1910	40,824,556	5,184,719	264,911	11,656	.....	.....	6,456,184
1911	36,103,649	4,512,956	318,089	14,314	47,165	2,688	5,624,956
1912	34,043,005	5,617,096	481,827	21,682	292,705	20,197	6,602,032
1913	38,719,973	6,001,596	242,369	10,664	211,533	11,846	7,057,167
1914	34,057,952	4,529,708	169,959	6,628	.....	.....	5,528,565
1915	59,229,103	10,365,093	161,750	7,602	48,580	6,024	11,851,688
1916	109,525,718	26,943,327	265,023	18,287	583,741	78,221	29,217,015
1917	159,612,146	43,574,116	686,874	59,071	950,762	96,978	46,572,677
1918	148,882,695	36,774,026	348,389	24,736	357,380	32,522	40,451,953
1919	80,227,549	14,922,324	237,605	12,593	1,717,000	125,341	17,078,467
1920	114,937,080	21,148,423	238,296	19,064	1,457,296	118,041	23,640,101
1921	26,576,298	3,428,342	172,150	7,747	.....	.....	3,932,266
1922	76,607,502	10,342,013	82,199	4,521	.....	.....	11,759,966
1923	147,718,492	21,714,618	226,953	15,887	.....	.....	25,994,289
1924	143,348,230	18,778,618	118,041	9,443	.....	.....	21,547,976
1925	154,017,340	21,870,462	510,893	44,448	184,466	14,019	25,195,073
1926	155,368,073	21,751,530	731,614	58,529	3,985,491	298,912	25,334,589
1927	141,641,714	18,555,065	110,327	6,951	141,232	9,039	21,418,307
1928	165,296,914	23,802,756	162,780	9,441	21,207	1,294	26,750,353
1929	208,171,605	36,638,203	153,613	9,678	.....	.....	39,839,473
1930	117,690,154	15,299,720	236,620	11,831	9,930	476	17,269,559
1931	44,575,966	4,056,413	16,579	613	.....	.....	4,673,162
1932	35,808,937	2,255,963	60,667	1,820	.....	.....	2,703,455
1933	33,257,843	2,128,502	195,838	7,246	.....	.....	2,767,794
1934	26,397,887	2,111,831	454,108	16,802	.....	.....	3,601,347
Total	2,667,958,182	$434,606,077	15,049,983	$789,948	10,259,274	$830,395	$509,408,789
Prior 1900	210,000,000	27,920,000	.....	.....	.....	.....	50,497,611
Total	2,877,958,182	$462,526,077	15,049,983	$789,948	10,259,274	$830,395	$559,906,400

PART VI

PARTIAL PRODUCTION BY DISTRICTS

SUMMARY OF PRODUCTION OF MAJOR METALS BY MINING DISTRICTS

District	Date	Tons[1]	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
Cochise Co.								
California	1908-33	14,291	$ 418	83,901	117,129	5,858,069	106,591	$ 550,518
Cochise	1908-33	301,725	23,282	318,250	25,600,644	869,576	67,286	5,799,025
Dos Cabezas	1908-33	68,416	177,962	93,491	3,346,152	746,961	----	991,056
Tombstone	1908-33	604,644	1,151,951	6,362,955	2,287,992	21,367,505	1,058,234	7,722,944
Turquoise	1908-33	1,558,139	1,410,053	5,253,953	48,819,090	4,364,025	360,180	13,921,876
Warren	1902-33	39,355,735	23,215,240	44,531,919	3,872,407,999	158,120,842	14,944,997	688,957,615
Gila Co.								
Banner	1912-33	1,045,501	$ 220,447	417,354	49,021,038	19,953,295	35,333	$ 10,913,021
Globe-Miami	1911-33	136,374,057	2,299,146	8,076,643	2,943,279,753	2,261,654	249,086	528,617,016
Graham Co.								
Aravaipa	1915-33	29,811	$ 2,707	145,802	354,763	9,639,306	1,214,797	$ 916,291
Greenlee Co.								
Copper Mt.[2]		----	----	----	----	----	----	----
Maricopa Co.								
Vulture	1925-33	102,035	$ 330,856	143,000	681,259	6,427,025	----	$ 902,273
Mohave Co.								
Bentley	1908-33	15,043	----	12,214	6,037,221	----	----	$ 1,111,588
San Francisco	1908-33	2,573,023	$32,026,938	861,195	276	----	----	33,722,361
Wallapai	1908-33	516,514	1,037,468	1,913,345	966,235	35,990,504	95,587,344	13,360,978
Pima Co.								
Ajo	1909-33	33,235,827	$ 2,518,134	1,439,042	775,466,149	----	----	$121,851,611
Baboquivari	1911-33	3,685	74,566	87,582	78,753	7,268	----	142,037
Empire	1915-33	13,929	10,215	96,981	114,550	6,223,700	74,614	595,166
Greaterville	1903-33	1,162	65,031	8,667	17,910	182,138	----	93,366
Helvetia	1908-33	75,895	2,761	101,954	9,626,287	243,219	725,280	2,337,386
Pima	1908-33	347,380	12,595	661,011	34,941,059	3,963,982	2,311,040	7,556,769
Silver Bell	1908-33	1,092,226	16,493	643,846	64,890,614	1,404,740	----	11,940,972
Pinal Co.								
Bunker Hill	1917-33	7,214	$ 6,656	134,510	1,074,272	2,833,853	----	$ 492,402
Casa Grande	1908-33	12,747	2,988	62,929	421,042	72,988	11,322	179,732
Mineral Creek	1911-33	51,109,505	290,834	604,419	1,162,780,740	6,548,836	----	199,400,993
Old Hat	1908-33	18,735	83,197	5,500	158,120	6,512	----	135,480
Pioneer	1908-33	2,921,671	2,434,778	10,897,670	355,505,620	1,383,525	----	60,265,282

SUMMARY OF PRODUCTION OF MAJOR METALS BY MINING DISTRICTS (continued)

District	Date	Tons[1]	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
Santa Cruz Co.								
Harshaw	1908-33	42,039	$ 9,454	685,942	290,374	3,899,624	----	$ 826,424
Oro Blanco	1909-33	88,836	132,569	502,478	353,560	7,782,555	5,960,002	1,310,999
Patagonia	1908-33	152,159	27,541	513,804	10,846,542	5,461,465	3,686,519	3,414,379
Tyndall	1908-33	10,027	15,452	90,320	329,859	2,939,925	148,192	357,331
Yavapai Co.								
Big Bug	1901-33	1,303,664	$ 3,988,689	2,638,769	59,406,091	5,481,502	214,297	$ 17,440,329
Black Canyon	1904-33	22,602	148,816	111,476	26,965	334,893	----	243,564
Black Hills	1904-33	17,471	1,852	57,628	1,502,492	27,063	----	285,421
Cherry Creek	1908-33	3,534	33,907	1,014	7,486	----	----	48,335
Eureka	1910-33	40,280	48,923	43,202	663,029	465,940	8,630,386	897,017
Hassayampa	1904-33	71,714	493,705	372,258	1,715,491	1,760,018	538,466	1,135,644
Peck	1904-33	258,976	319,061	858,663	11,747,211	262,314	----	3,986,610
Pine Grove-Tiger	1901-33	149,169	1,079,927	631,875	654,467	161,582	1,311,868	1,794,857
Turkey Creek	1906-33	2,389	16,626	90,067	53,667	67,024	----	95,105
Verde	1908-33	6,261,471	18,948,725	31,577,707	2,289,490,993	213,779	----	411,549,007
Walker	1905-33	117,361	460,881	520,849	3,611,928	979,243	72,415	1,303,430
Weaver	1908-33	41,827	247,795	13,143	19,550	73,936	----	415,899
Yuma Co.								
Castle Dome	1903-33	25,191	$ 36,436	72,736	14,957	3,751,294	----	$ 332,334
Cienega	1909-33	6,084	87,055	1,878	1,212,767	288	----	373,189
Ellsworth	1908-33	53,464	211,423	15,385	1,575,032	98,482	----	600,206
Kofa	1908-33	937	1,619,359	48,816	318	----	----	1,643,526
Planet	1910-33	515,084	12,688	13,213	27,687,596	779	----	5,168,838
Plomosa	1908-33	4,727	39,995	18,717	350,674	38,033	----	218,542

[1] Tonnage is incomplete for several districts.

[2] Substantially the same as Greenlee County.

PRODUCTION OF ORO BLANCO DISTRICT, SANTA CRUZ COUNTY
1909-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1909	2	----	147	$ 1,523	1,272	668	330	----	$ 2,285
1910	2	----	57	1,780	203	----	804	----	1,925
1911	1	2		*1,000*					
1912	2	----	2,951	7,555	8,872	13,315	3,883	----	15,383
1913	8	----	493	12,704	*300*	*10,000*	*3,000*	----	14,497
1914	9	----	234	2,485	4,321	6,357	12,851	----	6,221
1915	8	----	169	6,100	219	----	----	----	6,211
1916	3	----	----	6,057	----	----	----	----	6,057
1917	3	----	----	----	3,360	----	560,434	322,346	83,845
1918	4	----	----	----	44,275	----	817,764	849,295	179,622
1919	----	----	----	----	----	----	----	----	----
1920	----	----	----	----	----	----	----	----	----
1921	1	----	----	*300*	----	----	----	----	*300*
1922	2	----	----	*1,000*	----	----	----	----	*1,000*
1923	1	----	----	*300*	*1,000*	----	----	----	*1,000*
1924	----	----	----	----	----	----	----	----	----
1925	2	----	----	----	*300*	----	*12,000*	----	*1,252*
1926	----	----	----	----	----	----	----	----	----
1927	----	----	----	----	----	----	----	----	----
1928	4	----	23,440	15,188	80,320	73,450	1,394 956	1,055,649	226,374
1929	----	----	*37,000*	36,115	217,470	149,675	3,026,533	2,278,046	519 372
1930	----	----	*24,000*	*30,000*	*140,000*	*100,000*	*1,950,000*	1,454,666	*235,000*
1931	----	----	----	----	----	----	----	----	----
1932	8	----	145	3,315	163	95	----	----	3,367
1933	17	----	200	7,147	403	----	----	----	7,288
Total			88,836	$132,569	502,478	353,560	7,782,555	5,960,002	$1,310,999

PRODUCTION OF PATAGONIA DISTRICT, SANTA CRUZ COUNTY
1908-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1908	8	----	192	$ 548	1,443	24,449	5,882	----	$ 4,787
1909	2	----	96	----	----	----	----	----	2,559
1910	10	----	213	408	2,795	27,737	32,127	10,853	7,440
1911	3	----	52	145	595	18,915	1,483	----	2,891
1912	12	----	1,957	840	6,302	266,984	20,912	----	49,710
1913	2	----	*3,800*	*1,000*	*9,000*	*880,000*	*25,000*	----	*145,000*
1914	9	----	2,448	292	11,142	520,506	2,537	----	75,780
1915	6	----	13,400	1,703	27,588	716,321	1,092,707	432,582	216,043
1916	6	----	17,340	1,494	46,036	1,244,774	175,807	1,489,435	549,715
1917	4	----	38,563	21	173,429	3,059,619	626,099	1,622,843	1,197,576
1918	10	----	30,000	8,252	----	----	----	----	----
1919	8	----	9,203	1,262	83,176	787,896	656,498	----	275,862
1920	12	----	8,550	440	70,607	836,331	960,408	----	308,120
1921	2	----	350	210	2,975	67,689	18,136	----	12,523
1922	7	----	1,715	765	14,951	115,853	457,881	----	56,539
1923	10	----	3,400	512	----	----	----	----	----
1924	9	----	1,868	886	21,657	59,044	535,191	----	65,946
1925	3	----	584	68	2,750	13,672	130,715	----	15,290
1926	6	----	1,135	402	3,425	88,366	120,607	----	24,559
1927	6	----	3,337	1,624	4,749	522,358	47,954	----	75,767
1928	10	----	5,062	2,239	9,384	668,514	218,809	----	116,686
1929	11	----	5,137	1,565	7,344	604,441	8,830	----	112,417
1930	7	----	3,157	991	8,046	302,670	170,168	130,806	58,223
1931	5	2	487	1,246	4,369	14,005	117,949	----	8,152
1932	1	1	34	94	961	1,476	16,333	----	948
1933	4	1	79	434	1,080	4,922	19,432	----	1,846
Total			152,159	$27,541	513,804	10,846,542	5,461,465	3,686,519	$3,414,379

PRODUCTION OF TYNDALL DISTRICT, SANTA CRUZ COUNTY
1908-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1908	3	----	407	$ 587	762	152	61,327	----	$ 3,587
1909	1	----	2	----	----	----	----	----	----
1910	3	----	15	----	----	----	----	----	----
1911	5	----	428	103	4,069	44,135	180,971	16,844	16,881
1912	4	----	----	----	----	----	----	----	----
1913	10	----	891	1,219	6,115	67,918	368,616	----	31,660
1914	7	----	1,383	2,473	5,056	24,753	230,961	116,983	23,535
1915	3	----	179	*2,000*	----	----	----	----	7,710
1916	6	----	413	227	3,699	30,962	104,268	----	17,473
1917	5	----	989	744	4,525	25,770	225,925	----	30,938
1918	2	----	----	*500*	----	----	----	----	*500*
1919	1	----	66	*250*	----	----	----	----	*250*
1920	3	----	196	392	----	----	----	----	12,639
1921	5	----	153	*350*	----	----	----	----	9,467
1922	9	----	505	1,798	13,252	29,269	138,722	----	26,631
1923	5	----	----	*1,500*	----	----	----	----	*1,500*
1924	5	----	552	589	8,365	11,888	276,140	----	29,842
1925	15	----	1,181	603	13,812	18,405	451,927	14,365	53,213
1926	9	----	1,105	693	13,845	25,588	359,456	----	41,671
1927	7	----	727	482	9,503	10,291	315,514	----	27,095
1928	7	----	391	295	3,120	6,219	145,494	----	11,455
1929	6	----	125	392	1,746	12,771	29,198	----	5,410
1930	8	----	189	152	1,092	18,152	18,032	----	3,834
1931	5	----	71	75	1,085	3,101	13,861	----	1,185
1932	2	----	3	6	57	79	2,567	----	104
1933	3	----	56	22	217	406	16,946	----	751
Total			10,027	$15,452	90,320	329,859	2,939,925	148,192	$357,331

PRODUCTION OF BIG BUG DISTRICT, YAVAPAI COUNTY
1901-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1901	----	----	11,580	$ 236,548	58,533	70,000	285,000	----	$ 295,613
1902	----	----	13,425	249,013	53,135	103,597	391,000	----	304,886
1903	----	----	16,038	187,494	94,877	155,833	732,359	----	292,072
1904	----	----	23,939	409,067	129,578	86,934	139,380	----	479,361
1905	----	----	20,431	234,894	99,336	210,423	384,830	----	346,514
1906	----	----	60,349	445,384	195,257	992,209	574,403	----	600,443
1907	----	----	68,577	398,260	193,380	1,399,127	443,192	140,786	837,510
1908	----	----	13,429	161,271	41,152	22,634	292,383	----	198,349
1909	----	----	17,888	284,375	72,495	319,816	337,184	----	378,148
1910	20	6	37,837	106,696	58,296	2,069,919	119,611	----	406,324
1911	23	8	42,338	81,168	63,423	2,733,644	67,106	8,913	460,014
1912	21	5	23,480	40,638	40,639	1,216,074	27,086	54,343	260,394
1913	20	3	38,817	30,943	37,965	2,010,633	17,296	----	366,283
1914	21	7	56,690	50,261	57,488	3,694,229	26,559	----	574,421
1915	18	3	83,598	53,154	80,467	4,285,668	78,170	----	847,616
1916	18	----	76,118	71,696	98,182	3,612,616	131,618	10,255	1,035,460
1917	18	----	109,736	146,400	191,870	6,774,730	256,194	----	2,176,035
1918	25	1	141,338	227,167	254,027	7,936,339	169,004	----	2,453,470
1919	10	1	127,437	137,955	197,448	5,716,132	206,656	----	1,433,252
1920	17	----	116,184	122,070	182,495	5,016,344	144,999	----	1,255,598
1921	5	----	1,607	3,318	23,134	981	102,226	----	31,178
1922	15	3	26,571	29,128	54,862	1,529,984	80,599	----	294,971
1923	12	3	85,062	57,834	148,238	4,874,836	207,357	----	910,505
1924	4	----	10,385	14,361	20,184	852,394	7,152	----	140,120
1925	10	4	21,883	53,414	50,945	793,342	45,831	----	205,412
1926	15	2	44,617	59,670	59,695	1,953,501	24,685	----	372 337
1927	11	1	2,997	13,252	8,883	179,335	3,480	----	42,000
1928	10	2	1,673	5,339	7,910	264,814	7,825	----	48,554
1929	8	3	2,322	4,587	20,788	159,938	60,175	----	47,607
1930	11	8	3,983	16,564	38,773	355,160	149,887	----	85,157
1931	12	7	1,122	12,933	3,185	10,478	9,220	----	15,151
1932	6	24	421	10,462	206	2,191	----	----	10,658
1933	6	6	1,772	33,373	1,923	2,266	19,595	----	34,916
Total			1,303,664	$3,988,689	2,638,769	59,406,091	5,481,502	214,297	$17,440,329

.148 oz/T 2.02 oz/T 2.28% .21%

PRODUCTION OF BLACK CANYON DISTRICT, YAVAPAI COUNTY
1904-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1904	---	---	667	$ 10,460	2	---	---	---	$ 10,461
1905	---	---	4,016	20,672	162	---	---	---	20,770
1906	---	---	2,157	22,908	540	---	---	---	23,275
1907	---	---	1,548	3,350	112	29	---	---	3,430
1908	4	---	268	3,899	463	---	6,288	---	4,407
1909	1	---	26	35	2	---	3,120	---	170
1910	1	---	69	1,748	2,930	61	12,808	---	3,901
1911	2	---	191	2,606	7,448	319	33,667	---	8,108
1912	3	---	224	924	11,096	1,092	25,258	---	9,065
1913	3	---	61	184	5,700	---	8,258	---	3,990
1914	2	---	27	417	870	---	---	---	898
1915	1	---	2	103	2	---	---	---	104
1916	---	---	---	---	---	---	---	---	---
1917	2	---	10	68	91	918	295	---	420
1918	2	---	94	333	7,583	---	10,332	---	8,650
1919	2	---	142	124	5,496	609	3,979	---	6,603
1920	2	---	109	45	5,544	264	---	---	6,138
1921	4	---	93	703	9,074	139	12,273	---	10,347
1922	7	---	129	1,130	4,619	383	---	---	5,801
1923	4	---	71	879	937	2,936	---	---	2,079
1924	4	---	161	550	3,948	274	---	---	3,231
1925	4	---	208	---	---	---	---	---	9,202
1926	2	---	---	---	---	---	---	---	---
1927	1	---	---	---	---	---	---	---	---
1928	3	---	*200*	---	---	---	---	---	---
1929	5	---	158	784	1,250	5,282	536	---	2,414
1930	6	---	114	1,383	1,420	1,217	5,485	---	2,362
1931	4	1	1,581	8,693	4,369	1,314	2,397	---	10,168
1932	12	2	3,718	26,094	10,298	5,206	47,467	---	30,750
1933	7	4	6,558	40,724	27,520	6,922	162,730	---	56,820
Total			22,602	$148,816	111,476	26,965	334,893	---	$243,564
				.132 oz/T	4.93 oz/T	.06%	.74%		

PRODUCTION OF BLACK HILLS DISTRICT, YAVAPAI COUNTY
1904-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1904	---	---	4,012	---	11,310	278,050	---	---	$ 42,150
1905	---	---	7,505	---	13,076	373,600	---	---	66,180
1906	---	---	3,063	---	11,085	285,303	---	---	62,601
1907	---	---	779	$ 111	7,429	149,302	---	---	35,320
1908	3	---	61	119	926	34,060	8,420	---	5,106
1909	---	---	68	484	685	1,739	---	---	1,539
1910	1	---	---	---	---	---	11,010	---	484
1911	1	---	73	15	654	2,599	---	---	687
1912	1	---	30	49	39	4,151	---	---	758
1913	1	---	48	31	604	11,975	---	---	3,252
1914			---	---	---	---	---	---	---
1915	---	---	---	---	---	---	---	---	---
1916	---	---	---	---	---	---	---	---	---
1917	1	---	24	5	88	3,488	---	---	1,030
1918	1	---	33	13	177	6,486	---	---	1,792
1919	1	---	67	138	753	19,594	---	---	4,626
1920	1	---	54	21	561	16,826	---	---	3,728
1921	2	---	40	248	2	---	---	---	250
1922	1	---	773	332	8,095	265,988	---	---	44,335
1923	2	---	26	234	64	2,058	---	---	589
1924	---	---	---	---	---	---	---	---	---
1925	1	---	*40*	---	---	---	---	---	---
1926	1	---	*30*	---	---	---	---	---	---
1927	---	---	---	---	---	---	---	---	---
1928	3	---	117	52	880	15,873	7,633	---	3,296
1929	1	---	628	---	*1,200*	*31,400*	---	---	6,166
1930	2	---	---	---	---	---	---	---	1,532
1931	---	---	---	---	---	---	---	---	---
1932	---	---	---	---	---	---	---	---	---
1933	---	---	---	---	---	---	---	---	---
Total			17,471	$1,852	57,628	1,502,492	27,063	---	$285,421
				.005 oz/T	3.30 oz/T	4.30%	.08%		

PRODUCTION OF CHERRY CREEK DISTRICT, YAVAPAI COUNTY
1908-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1908	6	---	464	$ 5,775	86	---	---	---	$ 5,821
1909	4	---	330	7,646	242	---	---	---	7,772
1910	6	---	1,332	6,352	93	394	---	---	6,452
1911	4	---	531	---	---	---	---	---	9,402
1912	3	---	---	---	---	---	---	---	---
1913	2	---	---	---	---	---	---	---	---
1914	4	---	---	---	---	---	---	---	2,866
1915	5	---	86	---	---	---	---	---	958
1916	2	---	---	---	---	---	---	---	---
1917	---	---	---	---	---	---	---	---	---
1918	---	---	---	---	---	---	---	---	---
1919	---	---	---	---	---	---	---	---	---
1920	---	---	---	---	---	---	---	---	---
1921	1	---	---	---	---	---	---	---	---
1922	---	---	---	---	---	---	---	---	---
1923	1	---	---	---	---	---	---	---	---
1924	---	---	---	---	---	---	---	---	---
1925	2	---	---	---	---	---	---	---	---
1926	2	---	---	---	---	---	---	---	---
1927	---	---	---	---	---	---	---	---	---
1928	---	---	---	---	---	---	---	---	---
1929	---	---	---	---	---	---	---	---	---
1930	3	---	201	1,897	74	4,155	---	---	2,465
1931	1	---	40	---	---	---	---	---	---
1932	6	---	223	3,023	96	968	---	---	3,111
1933	14	---	327	9,214	423	1,969	---	---	9,488
Total			3,534	$33,907	1,014	7,486	---	---	$48,335
				.46 oz/T	1.29 oz/T	.11%			

PRODUCTION OF EUREKA DISTRICT, YAVAPAI COUNTY
1910-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1910	2	---	77	$ 1,291	869	11	2,349	---	$ 1,864
1911	3	---	610	9,186	4,348	1,044	11,085	---	12,120
1912	3	---	---	---	---	---	---	---	---
1913	3	---	---	---	---	---	---	---	---
1914	3	2	388	8,816	2,896	113	4,037	---	10,952
1915	2	---	---	---	---	---	---	---	---
1916	4	---	460	---	---	---	---	---	5,470
1917	1	---	---	---	---	---	---	*900,000*	*92,000*
1918	1	---	---	---	---	---	---	*340,000*	*31,000*
1919	1	---	---	---	---	---	---	*1,700,000*	*124,000*
1920	1	---	---	---	---	---	---	*1,450,000*	*118,000*
1921	1	---	---	---	---	---	---	---	---
1922	---	1	---	---	---	---	---	---	---
1923	1	---	---	---	---	---	---	---	---
1924	---	---	---	---	---	---	---	---	---
1925	3	---	---	---	---	---	---	*150,000*	*12,000*
1926	5	---	5,134	2,687	29,665	126,557	353,207	3,949,154	362,985
1927	5	---	329	1,603	2,161	8,126	39,727	141,232	15,435
1928	3	---	105	3,149	155	170	7,002	---	3,671
1929	5	---	11,562	2,003	1,176	278,248	26,900	---	53,297
1930	5	---	20,731	2,485	1,175	246,021	15,003	---	35,670
1931	5	---	218	5,348	704	1,184	3,642	---	5,795
1932	5	2	299	4,989	273	571	2,367	---	5,173
1933	9	4	367	7,366	380	984	621	---	7,585
Total			40,280	$48,923	43,202	663,029	465,940	8,630,386	$897,017

PRODUCTION OF HASSAYAMPA AND GROOM CREEK DISTRICTS, YAVAPAI COUNTY
1904-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1904	---	---	7,490	$101,135	20,436	-----	358,525	-----	$ 128,405
1905	---	---	5,122	36,486	14,818	60,269	262,760	-----	67,188
1906			3,586	21,910	3,435	10,000	21,053	-----	27,376
1907			4,508	25,363	16,890	254,934	58,775	-----	90,612
1908	10	---	470	6,534	595	4,453	787	-----	7,470
1909	---	---	3,510	7,050	2,092	585	33,208	-----	9 642
1910	13	---	1,341	8,718	1,593	392	14,723	-----	10,276
1911	13	1	1,871	19,583	3,143	1,330	45,609	38,252	25,646
1912	10	---	2,570	22,016	14,916	68,519	157,706	292,705	69,789
1913	15	---	1,646	13,433	18,352	80,173	102,573	117,227	48,023
1914	15	---	1,371	16,483	15,337	36,717	69,938	-----	32,545
1915	19	---	2,209	20,612	26,294	100,314	49,827	-----	53,840
1916	16	---	1,969	12,369	53,227	76,662	51,112	35,718	74,564
1917	11	---	2,294	10,094	13,873	12,786	163,780	-----	39,101
1918	15	---	2,916	15,072	17,196	10,494	126,964	-----	43 875
1919	12	1	359	3,025	5,589	1,412	6,117	-----	9,872
1920	7	---	1,170	5,151	12,112	11,915	14,474	-----	21,703
1921	4	---	158	2,717	1,095	-----	2,909	-----	3,943
1922	7	---	50	678	1,989	114	-----	-----	2 632
1923	3	2	74	1,165	1,544	461	-----	-----	2,499
1924	2	2	156	2,937	1,017	572	4,174	-----	4,027
1925	11	---	1,239	4,026	10,396	150,164	97,625	-----	41,057
1926	11	1	1,521	10,179	11,670	133,364	51,038	25,987	42,164
1927	17	2	1,716	10,933	30,004	65,321	1,702	-----	36,609
1928	12	2	10,159	19,702	25,185	331,955	18,498	18,647	84,448
1929	9	2	4,638	24,690	10,453	148,726	10,690	-----	57,111
1930	12	3	1,722	25,042	11,993	40,474	21,835	9,930	36,489
1931	8	2	2,550	22,837	14,266	71,762	-----	-----	33,505
1932	15	8	706	12,301	3,085	3,873	3,967	-----	13,534
1933	16	9	2,623	11,464	9,663	37,750	9,619	-----	17,619
Total			71,714	$493,705	372,258	1,715,491	1,760,018	538,466	$1,135,644
				.33 oz/T	5.19 oz/T	1.20%	1.23%		

PRODUCTION OF PECK DISTRICT, YAVAPAI COUNTY
1904-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1904	---	---	15	$ 83	-----	-----	-----	-----	$ 83
1905	---	---	3,594	29,829	37,166	-----	-----	-----	52,277
1906	---	---	27,411	52,907	27,660	1,219,040	3,900	-----	307,213
1907	---	---	23,571	53,972	34,933	682,388	-----	-----	213,506
1908	4	---	413	3,064	6,454	-----	-----	-----	6,485
1909	1	---	5	-----	216	-----	-----	-----	112
1910	1	---	1	19	6	119	-----	-----	37
1911	4	---	546	4,352	30,157	5,512	34,140	-----	22,560
1912	2	---	489	290	78,870	1,242	59,535	-----	51,679
1913	2	---	431	465	102,706	1,719	80,898	-----	66,325
1914	2	---	112	127	17,573	644	23,505	-----	10,847
1915	3	---	8,540	6,589	34,772	560,208	19,803	-----	123,185
1916	2	---	34,676	24,347	59,627	1,618,189	14,434	-----	462,652
1917	2	---	44,722	53,022	78,683	2,701,386	11,883	-----	856,357
1918	3	---	45,699	46,903	127,511	2,213,941	10,133	-----	721,977
1919	4	---	28,473	21,358	60,702	1,130,828	176	-----	299,686
1920	3	---	20,316	12,852	41,305	723,548	686	-----	191,062
1921	1	---	39	-----	1,360	38	669	-----	1,395
1922	3	---	151	342	4,407	782	-----	-----	4,855
1923	3	---	561	1,185	46,778	6,507	-----	-----	40,499
1924	1	---	548	52	36,367	1,647	-----	-----	24,634
1925	1	---	-----	-----	-----	-----	-----	-----	-----
1926	2	---	-----	-----	-----	-----	-----	-----	-----
1927	---	---	-----	-----	-----	-----	-----	-----	-----
1928	3	---	12,649	7,151	31,410	878,473	2,552	-----	152,174
1929	2	---	-----	-----	-----	-----	-----	-----	251,858
1930	1	---	*6,000*	-----	-----	-----	-----	-----	*125,000*
1931	---	---	-----	-----	-----	-----	-----	-----	-----
1932	---	---	-----	-----	-----	-----	-----	-----	-----
1933	1	---	14	152	-----	-----	-----	-----	152
Total			258,976	$319,061	858,663	11,747,211	262,314	-----	$3,986,610
				.06 oz/T	3.32 oz/T	2.27%	.05%		

PRODUCTION OF PINE GROVE AND TIGER DISTRICTS, YAVAPAI COUNTY
1901-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1901	---	---	-----	$ 1,344	1,087	-----	-----	-----	$ 1,996
1902	---	---	112	661	822	-----	-----	-----	1,091
1903	---	---	4,000	36,941	8,124	-----	-----	-----	41,291
1904	---	---	5,430	81,635	10,606		-----		85,305
1905	---	---	31,796	279,173	48,638	121,157	-----	140,000	339,166
1906	---	---	16,858	179,551	19,984	40,119	-----	-----	200,630
1907	---	---	8,097	96,652	11,577	21,562	-----	-----	108,605
1908	4	---	5,374	43,046	20,103	-----	16,096	-----	54,377
1909	1	---	1,336	31,361	2,726	4,802	-----	-----	33,403
1910	6	---	3,916	63,666	41,729	16,800	14,281	-----	88 961
1911	5	---	21,568	75,902	169,045	55,332	25,530	-----	173,562
1912	6	---	11,899	33,574	107,530	17,731	70,780	-----	105,816
1913	2	---	3,296	4,162	2,228	16,462	2,982	57,160	11,392
1914	7	---	1,174	6,342	576	391	2,818	-----	6,823
1915	3	---	3,101	4,857	2,173	12,176	-----	48,580	14,114
1916	2	---	9,624	44,191	27,561	123,195	1,372	537,768	164,789
1917	4	---	6,848	35,423	21,805	92,149	20,723	528,360	134,223
1918	4	---	12,440	49,269	88,252	80,613	1,774	-----	157,565
1919	8	---	1,455	5,251	16,153	32,903	-----	-----	29,463
1920	5	---	332	1,077	10,420	17,314	-----	-----	15 621
1921	2	---	145	1,831	8,052	-----	5,226	-----	10,118
1922	9	---	173	1,097	10,362	713	-----	-----	11,555
1923	8	---	82	1,772	2,227	971	-----	-----	3,741
1924	1	---	26	455	12	-----	-----	-----	463
1925	1	---	*30*	-----	-----	-----	-----	-----	-----
1926	1	---	*30*	-----	-----	-----	-----	-----	-----
1927	---	---	-----	-----	-----	-----	-----	-----	-----
1928	2	---	-----	-----	-----	-----	-----	-----	-----
1929	1	---	-----						-----
1930			-----						-----
1931	2	---	-----						-----
1932									726
1933	1	3	27	694	83	47			
Total			149,169	$1,079,927	631,875	654,467	161,582	1,311,868	$1,794,857
				.35 oz/T	4.24 oz/T	.22%	.05%		

PRODUCTION OF TURKEY CREEK DISTRICT, YAVAPAI COUNTY
1906-33

Year	Producers		Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
	Lode	Placer							
1906	---	---	4	$ 474	163	-----	-----	-----	$ 585
1907	---	---	51	275	1,810	247	2,600	-----	1,657
1908	2	1	458	3,075	778	-----	2,006	-----	3,571
1909	3	1	134	2,310	1,099	520	4,342	-----	3,136
1910	1	1	1	52	343	-----	-----	-----	237
1911	8	1	38	306	4,761	6	3,795	-----	3,001
1912	6	---	48	177	5,124	137	-----	-----	3,351
1913	1	1	23	351	2,860	-----	55	-----	2,079
1914	5	---	17	85	2,189	-----	1,113	-----	1,339
1915	5	---	64	896	992	22	2,628	-----	1,527
1916	2	---	16	164	1,662	-----	1,244	-----	1,344
1917	4	---	46	714	996	1,074	577	-----	1,878
1918	1	---	22	8	2,769	79	-----	-----	2,798
1919	2	---	52	11	3,827	292	7,999	-----	4,774
1920	9	---	221	1,116	9,196	669	4,725	-----	11,461
1921	3	---	100	607	13,355	970	20,700	-----	15,019
1922	9	---	310	778	18,315	7,570	1,600	-----	20,203
1923	3	---	470	3,573	2,985	35,249	-----	-----	11,203
1924	1	---	184	1,600	1,560	6,348	8,640	-----	4,167
1925	1	---	14	-----	200	-----	5,000	-----	575
1926	1	---	-----	-----	-----	-----	-----	-----	-----
1927	---	---	-----	-----	-----	-----	-----	-----	-----
1928	1	---	*100*	-----	*14,000*	-----	-----	-----	-----
1929	---	---	-----	-----	-----	-----	-----	-----	556
1930	1	1	7	-----	-----	-----	-----	-----	-----
1931	---	---	-----	-----	-----	-----	-----	-----	-----
1932	---	---	-----	-----	-----	-----	-----	-----	464
1933	1	1	9	54	1,083	484	-----	-----	
Total			2,389	$16,626	90,067	53,667	67,024	-----	$95,105
				.34 oz/T	37.7 oz/T	1.12%	1.40%		

PRODUCTION OF VERDE OR JEROME DISTRICT, YAVAPAI COUNTY
1908-33

Year	Producers Lode	Producers Placer	Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
1908	1	----	----	$ 420,343	494,574	36,183,089	----	----	$ 5,460,818
1909	1	----	----	351,832	495,479	38,695,259	----	----	5,370,766
1910	2	----	----	398,284	398,247	38,663,880	----	----	5,624,449
1911	4	----	----	315,018	461,145	33,167,987	----	----	4,705,395
1912	2	----	----	311,773	484,222	31,565,539	----	----	5,817,855
1913	2	----	----	427,204	641,074	35,334,694	----	----	6,291,252
1914	1	----	----	442,377	646,572	32,448,170	----	----	5,115,499
1915	5	----	----	587,163	922,273	50,266,821	----	----	9,851,397
1916	3	----	----	779,817	1,250,000	103,000,000	----	----	25,992,986
1917	6	----	949,094	753,314	1,884,673	145,983,703	205,817	----	42,177,535
1918	7	----	1,011,966	771,578	1,986,845	133,780,865	7,962	----	35,802,862
1919	4	----	566,445	437,144	949,436	72,332,704	----	----	14,954,395
1920	4	----	870,129	503,599	1,275,323	107,084,032	----	----	21,597,163
1921	3	----	189,474	98,421	319,646	26,567,602	----	----	3,845,288
1922	3	----	572,246	420,560	843,151	74,793,982	----	----	11,360,899
1923	4	----	1,465,006	1,745,004	2,480,692	140,425,401	----	----	24,421,705
1924	3	----	----	1,075,514	1,839,844	142,238,947	----	----	20,941,417
1925	4	----	----	1,172,879	2,097,951	151,920,324	----	----	24,201,438
1926	2	----	----	1,148,031	1,971,914	150,289,756	----	----	23,416,169
1927	3	----	----	1,106,171	1,920,901	141,261,930	----	----	20,700,536
1928	3	----	----	1,274,915	2,195,595	163,312,041	----	----	26,076,159
1929	4	----	----	1,558,677	2,749,290	211,542,611	----	----	40,255,410
1930	3	----	----	1,050,000	1,530,000	117,600,000	----	----	16,925,000
1931	2	----	----	375,000	1,050,000	44,100,000	----	----	4,525,000
1932	3	----	----	210,000	350,000	35,750,000	----	----	2,560,000
1933	3	----	243,245	314,107	338,860	33,201,656	----	----	2,537,614
Total			6,261,471	$18,048,725	31,577,707	2,289,490,993	213,779	----	$411,549,007

PRODUCTION OF WALKER DISTRICT, YAVAPAI COUNTY
1905-33

Year	Producers Lode	Producers Placer	Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
1905	----	----	4,000	$ 20,444	12,006	96,000	----	----	$ 42,672
1906	----	----	158	846	2,442	----	----	----	2,507
1907	----	----	321	4,171	994	2,430	----	----	5,312
1908	4	----	592	28,842	1,139	----	5,860	----	29,694
1909	3	2	280	8,366	629	3,860	14,485	----	9,818
1910	13	----	9,295	60,281	7,840	8,325	94,477	----	69,730
1911	12	----	2,634	31,998	3,282	3,745	23,589	35,269	34,911
1912	8	5	361	9,132	1,680	5,235	963	----	11,072
1913	2	----	596	12,261	4,056	7,270	27,202	37,146	19,115
1914	2	6	310	6,686	1,879	1,784	6,615	----	8,219
1915	3	6	899	15,519	4,635	16,440	7,378	----	21,093
1916	6	----	323	5,019	990	1,916	5,381	----	6,512
1917	4	6	132	4,239	1,697	6,331	4,165	----	7,723
1918	12	3	89	3,970	1,440	3,181	5,356	----	6,575
1919	1	2	175	1,871	249	254	7,778	----	2,609
1920	1	----	13	726	158	269	----	----	947
1921	2	3	148	2,026	1,867	87	2,003	----	3,994
1922	2	5	139	2,263	625	2,757	----	----	3,260
1923	5	5	9,155	50,597	77,165	438,298	13,520	----	174,249
1924	7	5	6,075	20,456	22,873	133,463	80,791	----	----
1925	6	2	24,351	70,227	127,767	806,852	318,187	----	301,152
1926	6	2	29,574	70,482	148,295	1,039,656	280,440	----	331,005
1927	1	3	3,836	5,603	17,514	124,069	41,069	----	34,374
1928	1	2	----	----	----	----	----	----	874
1929	1	2	----	----	----	----	----	----	451
1930	2	3	23,619	20,508	78,476	908,377	36,693	----	170,645
1931	2	4	36	1,882	266	1,234	615	----	2,094
1932	6	1	28	1,348	805	48	----	----	1,578
1933	2	1	222	1,118	80	47	2,676	----	1,248
Total			117,361	$460,881	520,849	3,611,928	979,243	72,415	$1,303,430
				.19 oz/t	4.44 oz/t	1.54%	.42%		

PRODUCTION OF WEAVER DISTRICT, YAVAPAI COUNTY
1908-33

Year	Producers Lode	Producers Placer	Tons	Gold (value)	Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
1908	5	----	20,069	$158,000	7,312	----	38,914	----	$161,863
1909	----	----	3,205	34,112	----	----	----	----	34,438
1910	4	4	1,842	----	----	----	----	----	26,448
1911	3	1	313	12,236	369	1,442	5,148	----	12,844
1912	----	5	----	4,839	----	----	----	----	4,839
1913	1	5	----	----	----	----	----	----	7,506
1914	----	5	----	4,199	19	----	----	----	4,210
1915	3	5	151	----	----	----	----	----	7,168
1916	3	----	2,153	19,102	498	2,995	7,616	----	20,693
1917	1	3	3,500	----	----	----	----	----	13,375
1918	1	----	----	----	----	----	----	----	----
1919	----	2	----	*1,000*	----	----	----	----	*1,000*
1920	----	----	----	----	----	----	----	----	----
1921	----	----	----	----	----	----	----	----	----
1922	2	4	----	----	----	----	----	----	1,301
1923	2	4	----	----	----	----	----	----	----
1924	----	3	----	250	----	----	----	----	----
1925	----	----	----	----	----	----	----	----	----
1926	2	1	----	901	----	----	----	----	901
1927	----	----	----	----	----	----	----	----	----
1928	2	2	501	4,245	211	375	1,916	----	4,533
1929	2	2	9,199	72,701	4,203	7,826	19,966	----	77,576
1930	3	4	102	3,488	105	5,300	----	----	4,218
1931	5	8	198	6,860	130	669	----	----	6,958
1932	9	24	213	13,778	156	318	133	----	13,846
1933	11	12	381	12,084	140	625	243	----	12,182
Total			41,827	$347,795	13,143	19,550	73,936	----	$415,899

APPROXIMATE PRODUCTION OF SANTA CRUZ COUNTY BY MINES

	Copper (pounds)	Lead (pounds)	Gold (value)	Silver (value)	Total value
Harshaw District					
World's Fair, 1903-30	400,000	100,000	-----	$ 725,000	$ 800,000
Flux, 1882-1925	-----	4,500,000	-----	100,000	300,000
Hardshell, 1880-1920	-----	5,000,000	-----	250,000	500,000
Trench, 1905-20	-----	1,500,000	-----	80,000	200,000
January, 1882-1910	-----	-----	-----	10,000	10,000
Black Eagle, 1918-21	-----	-----	-----	50,000	50,000
Josephine, 1885-1930	-----	2,000,000	-----	525,000	625,000
Hermosa, 1880-1930	-----	-----	-----	1,000,000	1,000,000
Salvadore, 1880-1910	-----	-----	-----	25,000	25,000
American, 1880-1910	-----	-----	-----	75,000	75,000
Blue Nose	-----	500,000	-----	225,000	250,000
Total	400,000	13,600,000	-----	$3,065,000	$ 3,835,000
Patagonia District					
Duquesne, 1899-1925	15,000,000	12,000,000	-----	$ 350,000	$ 4,000,000[1]
Pride of the West, 1899-1907	6,000,000	5,000,000	-----	275,000	1,400,000
Santo Nino, 1926-30	1,700,000	-----	-----	-----	300,000[2]
Mowry, 1858-1930	-----	10,000,000	-----	500,000	1,000,000
Humboldt, 1887-89	-----	-----	-----	10,000	10,000
Jarilla, 1904-5	-----	-----	-----	-----	5,000
Morning Glory, 1896-1925	500,000	-----	-----	15,000	100,000
Total	23,200,000	27,000,000	-----	$1,150,000	$ 6,815,000
Palmetto District					
Three R, 1909-30	10,000,000	-----	-----	$ 65,000	$ 2,500,000
Red Rock District					
La Plata, 1883				$ 10,000	$ 10,000
Tyndall District					
Wandering Jew, 1917	25,000	200,000		$ 3,000	$ 25,000
Salero, 1880	-----	-----	-----	10,000	10,000
Alto, 1906-7	-----	-----	-----	-----	14,000[3]
Bland, 1889-1909	-----	-----	-----	-----	4,000[4]
Montosa, 1902-4	-----	200,000	-----	15,000	25,000
Total	25,000	400,000	-----	$ 28,000	$ 78,000
Wrightson District					
Mansfield, early	-----	-----	-----	$ 25,000	$ 25,000
Ivanhoe, 1905-11	-----	-----	-----	-----	15,000[5]
Total	-----	-----	-----	$ 25,000	$ 40,000
Oro Blanco District					
Montana (Goldfield Cons.), 1917-18	-----	1,250,000	$ 20,000	$ 43,000	$ 265,000[6]
Montana (Eagle Picher), 1927-30	400,000	6,500,000	80,000	250,000	1,000,000[7]
Austerlitz	-----	-----	90,000	-----	90,000
Oro, to 1916	-----	-----	50,000	-----	50,000
Total	400,000	7,750,000	$ 240,000	$ 293,000	$ 1,405,000
Summary of Production by Mines					
Total lode mines, 1858-1933	34,025,000	48,750,000	$ 240,000	$4,636,000	$14,683,000
Total placer mines	-----	-----	3,687	-----	3,687
Undistributed	4,944,797	561,890	1,071,849	1,088	1,905,758
County total, 1858-1933	38,969,797	49,311,890	$1,315,536	$4,637,088	$16,592,445

[1] Includes about 3,000,000 pounds of zinc.
[2] Includes a little molybdenum.
[3] Includes copper, lead, and gold.
[4] Includes copper and silver.
[5] Includes silver, lead, and gold.
[6] Includes 1,300,000 pounds of zinc.
[7] Includes 4,800,000 pounds of zinc.

APPROXIMATE PRODUCTION OF YAVAPAI COUNTY BY MINES

	Copper (pounds)	Lead (pounds)	Gold (value)	Silver (value)	Total value
Verde (Jerome) District					
United Verde, 1883-1933	1,980,000,000	-----	$20,330,000	$21,500,000	$360,000,000
United Verde Ext., 1915-33	730,000,000	-----	2,735,000	4,050,000	125,000,000
Verde Central, 1929-30	8,600,000	-----	-----	18,000	1,338,000
Copper Chief, 1916-23	-----	-----	530,000	372,000	902,000
Jerome Verde, 1900-1920	1,500,000	-----	10,000	14,000	345,000
Equator, 1904-5	1,300,000				185,000
Total	2,721,400,000	-----	$23,605,000	$25,954,000	$487,770,000
Big Bug District					
Blue Bell, 1896-1926	67,000,000	-----	$ 1,000,000	$ 1,200,000	$ 14,000,000
Lelan-Dividend, 1900-1931	400,000	600,000	500,000	100,000	700,000
Butternut	1,200,000	-----	60,000	10,000	225,000
Henrietta (Big Bug)	-----	-----	1,200,000	50,000	1,250,000
McCabe-Gladstone, 1880-1926	1,200,000	500,000	2,200,000	600,000	3,000,000
Little Jessie, 1867-1915	-----	-----	950,000	50,000	1,000,000
Poland, 1900-1912	-----	1,000,000	300,000	400,000	750,000
Silver Belt, 1870-80		1,000,000		300,000	350,000
Iron King	5,000		50,000	50,000	100,000
Arizona National, 1921-26	-----	1,000,000	-----	60,000	115,000
Union	-----	-----	150,000	-----	150,000
Sterling, 1900-1920	-----	-----	100,000	-----	100,000
Merchants Home	-----	400,000	-----	50,000	70,000
Mesa, 1900-1910	-----	-----	40,000	-----	40,000
Pocahontas, 1906-21	100,000	150,000	8,000	20,000	50,000
Hackberry (Boggs), 1930-31	100,000	-----	5,000	-----	20,000
Total	70,005,000	4,650,000	$ 6,563,000	$ 2,890,000	$ 21,920,000
Hassayampa District					
Howard (Harlan), 1900			$ 40,000		$ 40,000
Blue Dick			25,000	$ 175,000	200,000
Buzzard				25,000	25,000
Dos Oris	-----	-----	20,000	200,000	220,000
Davis Dunkirk, 1874-1930	-----	-----	150,000	50,000	200,000
Senator, 1883-99	-----	-----	500,000	30,000	530,000
Cash, 1900-1925	-----	-----	200,000	-----	200,000
Crook, 1902-25	-----	500,000	200,000	25,000	250,000
Mt. Union	-----	-----	125,000	25,000	150,000
Oro Flame-Sterling	-----	-----	200,000	-----	200,000
Jersey Lily	-----	-----	10,000	-----	10,000
Venezia	-----	-----	100,000	-----	100,000
Starlight	-----	500,000	75,000	-----	100,000
Consolidated Bodie	-----	500,000	-----	50,000	75,000
United Gold	-----	-----	100,000	-----	100,000
Storm Cloud	-----	-----	75,000	25,000	100,000
N. C. 4	-----	-----	-----	100,000	100,000
Total	-----	1,500,000	$ 1,820,000	$ 705,000	$ 2,600,000
Pine Grove District					
Wildflower, 1917-19	400,000	-----	$ 15,000	$ 30,000	$ 104,000
Crown King, 1893-1922	-----	-----	1,100,000	100,000	1,200,000
Lincoln, 1902-8	-----	-----	100,000	35,000	135,000
Del Pasco	-----	-----	200,000	-----	200,000
Philadelphia	-----	-----	100,000	-----	100,000
Total	400,000	-----	$ 1,515,000	$ 165,000	$ 1,739,000

APPROXIMATE PRODUCTION OF YAVAPAI COUNTY BY MINES (Continued)

	Copper (pounds)	Lead (pounds)	Gold (value)	Silver (value)	Total value
Tiger District					
Tiger	200,000	----	$ 50,000	$ 700,000	$ 780,000
Oro Belle-Gray Eagle	----	----	640,000	60,000	700,000
Lukes (Bradbury)	----	----	----	200,000	200,000
Cougar (Bond)	----	100,000	----	95,000	100,000
Total	200,000	100,000	$ 690,000	$ 1,055,000	$ 1,780,000
Peck District					
Peck, 1875-85	----	----	----	$ 1,000,000	$ 1,000,000
Swastika, 1875-1929	----	200,000	----	900,000	910,000
Breslin, 1925	----	50,000	----	25,000	30,000
De Soto, 1890-1930	18,200,000	----	$ 250,000	150,000	3,250,000
Total	18,200,000	250,000	$ 250,000	$ 2,075,000	$ 5,190,000
Black Canyon District					
Gillespie, early	----	----	$ 80,000	----	$ 80,000
Richinbar, 1905-8	----	----	50,000	$ 10,000	60,000
Hidden Treasure	----	----	20,000	----	20,000
American Flag	----	----	10,000	10,000	20,000
Old Brooks	----	----	10,000	10,000	20,000
Golden Belt, 1931-33	----	175,000	65,000	10,000	80,000
Total	----	175,000	$ 235,000	$ 40,000	$ 280,000
Walker District					
Sheldon, 1900-1930	3,500,000	700,000	$ 270,000	$ 270,000	$ 1,075,000
Mudhole, 1897-1903	----	----	450,000	50,000	500,000
Amulet, 1887-91	----	----	10,000	90,000	100,000
Total	3,500,000	700,000	$ 730,000	$ 410,000	$ 1,675,000
Groom Creek District					
Victor, 1902-3	----	----	----	----	----
Empire, 1902-7	----	----	----	----	----
Midnight Test, 1900-1931	----	----	$ 75,000	$ 50,000	$ 125,000
Climax, 1905-20	----	----	----	----	----
King-Kelly-Monte Cristo, 1920-27	----	----	----	15,000	15,000
Total	----	----	$ 75,000	$ 65,000	$ 140,000
Cherry Creek District					
Several mines, 1908-33	----	----	$ 50,000	$ 1,000	$ 51,000
Black Hills District					
Yaeger, 1890-1922	10,000,000	----	$ 52,000	$ 50,000	$ 1,500,000
Agua Fria District					
Binghampton	8,000,000	----	$ 150,000	$ 100,000	$ 1,750,000
Stoddard	5,000,000	----	100,000	50,000	1,000,000
Total	13,000,000	----	$ 250,000	$ 150,000	$ 2,750,000
Turkey Creek District					
War Eagle, 1872-1924	----	----	$ 25,000	$ 75,000	$ 100,000
Goodwin	----	----	10,000	50,000	60,000
Morgan	----	----	15,000	60,000	75,000
Roach	----	----	10,000	50,000	60,000
Total	----	----	$ 60,000	$ 235,000	$ 295,000
Eureka District					
Hillside, 1890-1933	----	----	$ 75,000	$ 150,000	$ 225,000
Crossly	----	----	10,000	----	10,000
Comstock-Dexter	----	----	5,000	----	5,000
Copper King	----	400,000	----	30,000	575,000[1]
Bagdad, 1927-30	600,000	----	----	----	80,000
Total	600,000	400,000	$ 90,000	$ 180,000	$ 895,000
Martinez District					
Congress, 1887-1910	----	----	$ 8,500,000	$ 210,000	$ 8,710,000

[1] Includes about 8,000,000 pounds of zinc.

APPROXIMATE PRODUCTION OF YAVAPAI COUNTY BY MINES (Continued)

	Copper (pounds)	Lead (pounds)	Gold (value)	Silver (value)	Total value
Weaver District					
Octave, 1895-1929	----	----	$ 1,825,000	$ 75,000	$ 1,900,000
Monica, 1916-17	----	----	30,000	----	30,000
Total	----	----	$ 1,855,000	$ 75,000	$ 1,930,000
Black Rock District					
Monte Cristo, 1926-27	----	----	----	$ 15,000	$ 15,000
Oro Grande	----	----	$ 45,000	----	45,000
Gold Bar (O'Brien)	----	----	150,000	----	150,000
Total	----	----	$ 195,000	$ 15,000	$ 210,000
White Picacho District					
Golden Slipper	----	----	$ 15,000	----	$ 15,000
Bradshaw District					
Tuscumbia, 1883	----	----	----	$ 50,000	$ 50,000
Lane, 1883	----	----	$ 10,000	40,000	50,000
Buster	----	----	----	20,000	20,000
Mohawk	----	----	10,000	----	10,000
Total	----	----	$ 20,000	$ 110,000	$ 130,000
Castle Creek District	----	----	----	----	$ 350,000
Humbug District	----	----	$ 50,000	----	$ 50,000
Tiptop District					
Tiptop, 1875-90	----	----	$ 200,000	$ 2,000,000	$ 2,200,000
Placer Districts					
Weaver Creek	----	----	$ 1,100,000	----	$ 1,100,000
Rich Hill	----	----	1,000,000	----	1,000,000
Lynx Creek	----	----	1,030,000	----	1,030,000
Big Bug Creek	----	----	600,000	----	600,000
Minnehaha Creek	----	----	100,000	----	100,000
Hassayampa	----	----	250,000	----	250,000
Groom Creek	----	----	100,000	----	100,000
Copper Basin	----	----	50,000	----	50,000
Placerita	----	----	50,000	----	50,000
Black Canyon	----	----	50,000	----	50,000
Miscellaneous	----	----	371,261	----	371,261
Total	----	----	$ 4,701,261	$ 30,000	$ 4,731,261

Summary of Production by Mines

Total lode mines	2,837,305,000	7,775,000	$46,820,000	$36,385,000	$542,180,000
Total placer mines	----	----	4,701,261	30,000	4,731,261
Undistributed	14,255,295	6,820,875	2,448,290	3,902,715	9,393,792
County total	2,851,560,295	14,595,875	$53,969,551	$40,317,715	$556,305,053

The property was developed as a copper prospect, the ore containing bornite, chalcopyrite and pyrite. The deposit is considered small (62, pp. 347, 348).

Yavapai County

Introduction, Precambrian Taconite- and Jaspilite-Like Iron Formations in Yavapai and Maricopa Counties

Magnetite and some hematite were noted in low-grade taconite, semitaconite- to jaspilite-like iron formations, observable in an interrupted pattern more than 70 miles through Yavapai and extending south into Maricopa County (fig. 19) as part of the great Yavapai series. Geographically, the iron formation centers around Cleator-Crown King and extends north beyond Lynx Creek into Tps 16 and 17 N, Rs 1 and 2 W, and south into the Hieroglyphic Mountains, T 6 N, Rs 1 and 2 W, in Maricopa County, Gila and Salt River meridian and baseline. The east-west limits extend beyond Mayer and Stanton.

The Yavapai series consists of metamorphosed volcanic and sedimentary rocks, including diorite, rhyolite, greenstone, quartzite, phyllite, argillite, graywacke, mica schist, hornblende schist, and amphibolites.

The iron-rich formations investigated varied from jaspilite-like beds to predominantly taconite-like occurrences. The area, approximately 35 miles wide and 70 miles long (fig. 19) was too great for comprehensive evaluation and would necessitate extensive geologic investigation, correlation, and basic exploration. However, a number of outcrop areas were given a reconnaissance examination to develop information as to their extent and continuity and were character sampled to form some idea as to their mineral potential. The chemical analyses of character samples in this taconite and jaspilite iron formation are summarized as table 16. The areas investigated X-1-X-21, fig. 19) are mostly in Yavapai County. The 100-million-ton (20) Hieroglyphic Mountains occurrence (X-21) and the extensive Big Boulder taconite (X-20) are reported in Maricopa County.

The jaspilite- and taconite-like areas investigated in Yavapai County (X-1-X-19, fig. 19) are discussed as follows:

Black Hills Magnetite-Hematite Jaspilite

General

Magnetite and hematite occur in numerous jaspilite beds about 8 miles northeast of Dewey in the Precambrian Grapevine Gulch formation (figs. 34, 35, and 36) in the Black Hills, Tps 14, 14½, and 15 N, R 2 E. The beds are part of a thick sequence of steeply dipping fine-grained tuffaceous rocks and chert that trend south-southeast through Yaeger Canyon Ranger Station, Kendall Camp, and beyond the old Black Chief (Warrior) mine. The best exposures are in secs 2, 3, 4, 9, 11, 12, 24, T 14 N, R 2 E, and secs 17, 19, T 15 N, R 2 E, and are reached from Dewey and Yaeger Canyon Ranger Station over difficult access roads and trails.

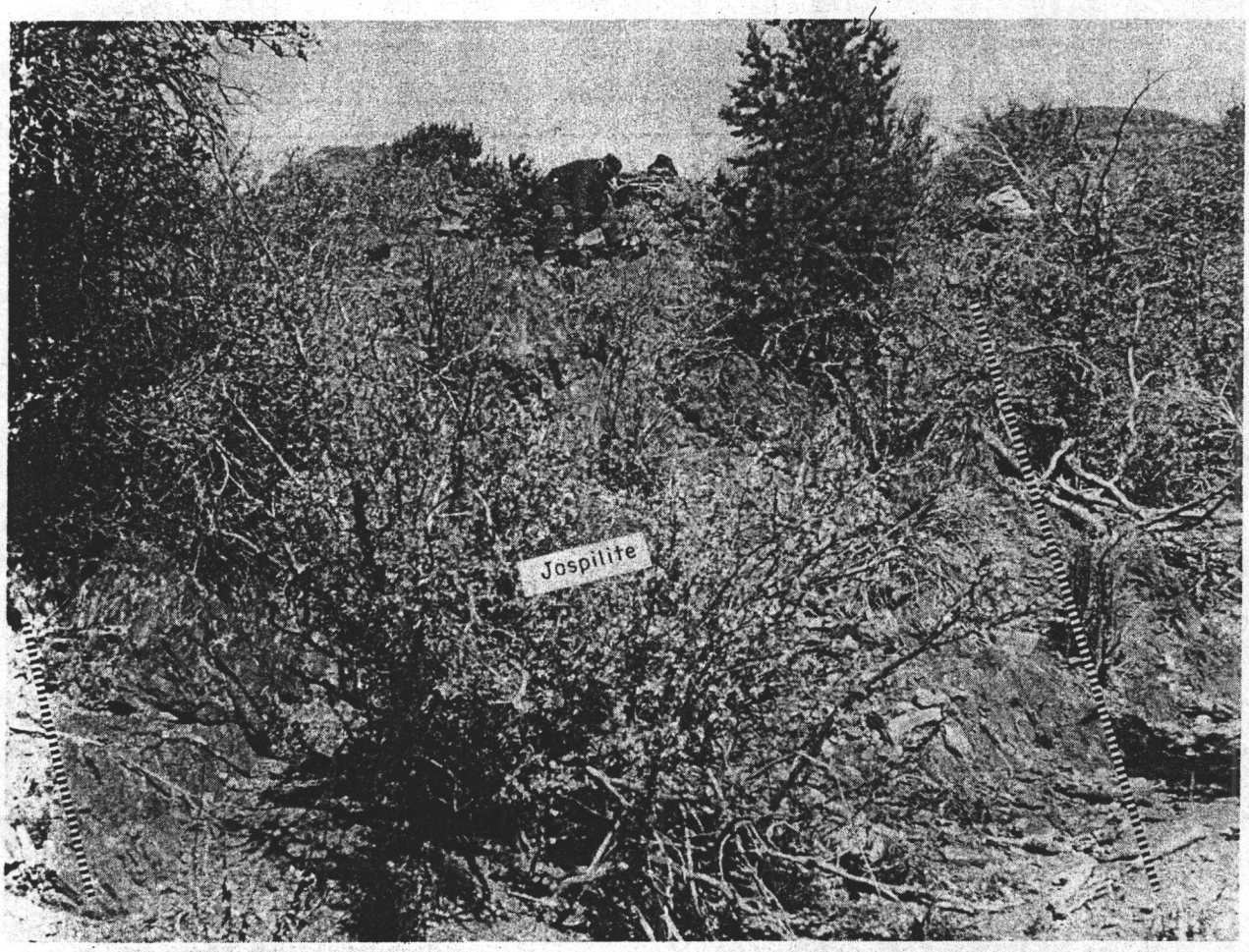


FIGURE 34. - Jaspilite on the Paul Vojnich Claims, Sec 20, T 15 N, R 2 E, Yavapai County, Ariz.

Individual jaspilite magnetite-hematite beds are as much as 30 feet thick, and some persistent beds can be traced well over a mile. In places the beds show evidence of folding and distortion. Magnetite occurs as streaks and bands and disseminations in microcrystalline quartz. Some hematite is present as separate streaks adjacent to the magnetite or as microscopic inter-growths. In places, parts of the beds consist of bands of almost pure magnetite, however, most is low-grade siliceous and jaspilite-like material manganiferous in part. In places the beds contain more jasper than iron and manganese oxides and may grade along the strike into pure jasper. Other magnetite jaspilite beds contain interbeds of fine-grained tuffaceous rock a fraction of an inch thick. The outcrops of the magnetite-hematite jaspilite beds (fig. 34) form ridges that stand above the surrounding rock. Strike of the beds varies widely due to local folding. The beds dip variously between 30° to vertical. The magnetite-hematite beds were examined in 5 places (83, 88, 81, 102, 82, fig. 1) and correspond to locations X-1 through X-5 on figures 19 and 35. Their descriptions follow:

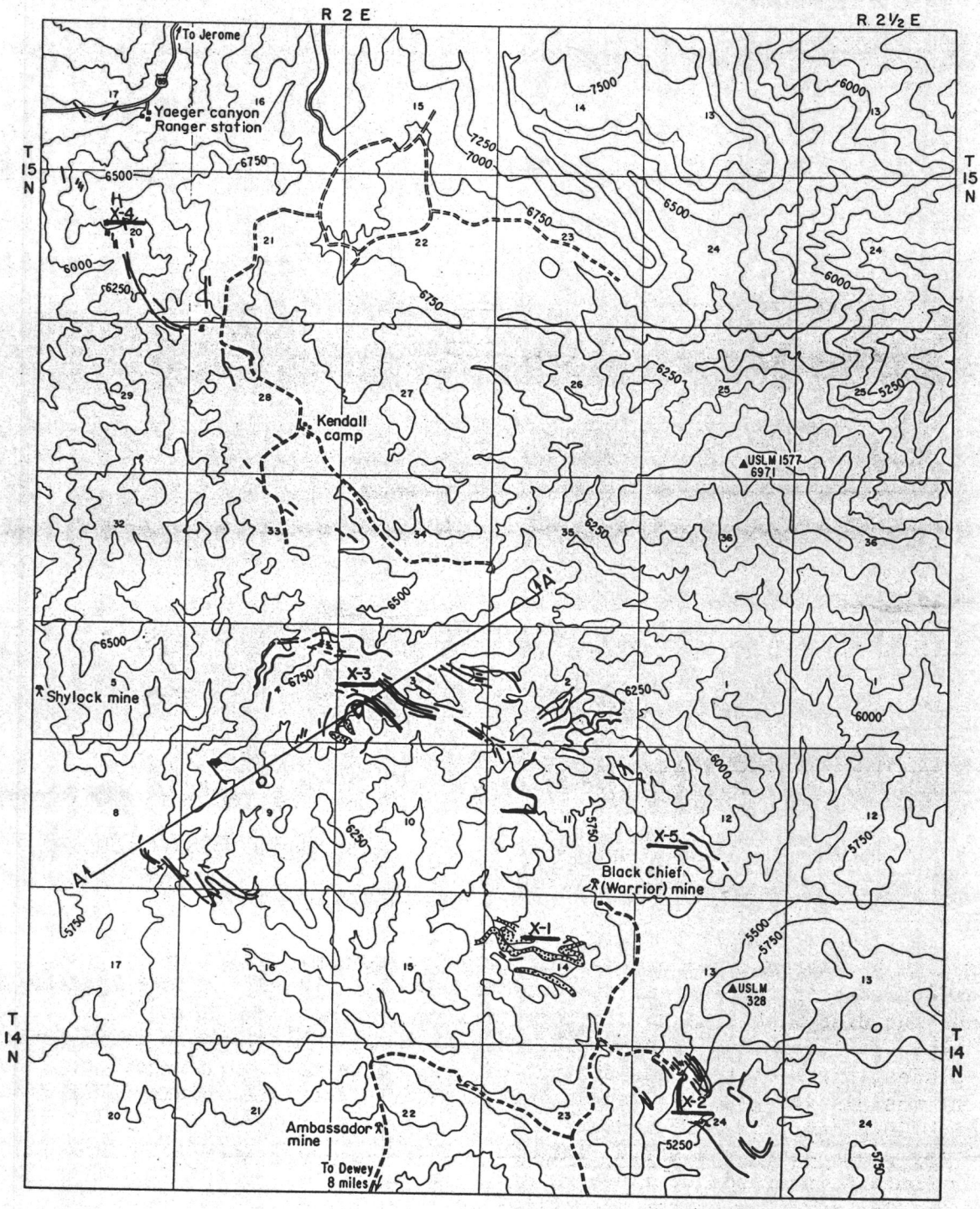


FIGURE 35. - Location of Jaspilite Magnetite-Hematite Beds, Black Hills, Tps 14 and 15 N, R 2 E, Yavapai County, Ariz. (1).

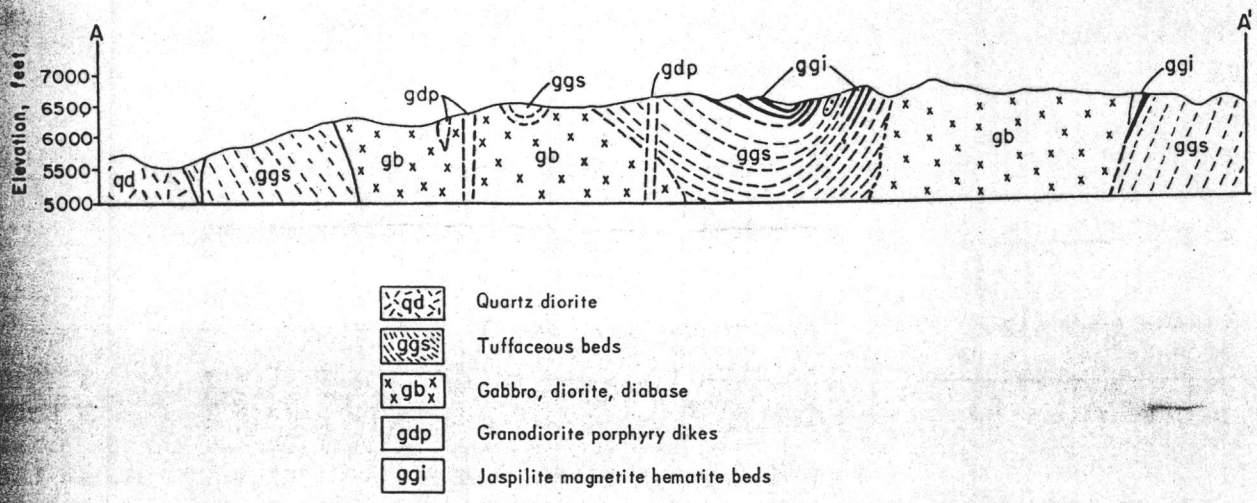


FIGURE 36. - Section Showing Relationship of Jaspilite Magnetite-Hematite Beds, Black Hills, Tps 14 and 15 N, R 2 E, Yavapai County, Ariz. (1).

Black Gold Magnetite-Hematite Jaspilite

At the Black Gold group of claims (83, fig. 1, X-1, figs. 19 and 35), secs 13 and 14, T 14 N, R 2 E, at the head of Ash Creek and ¼ mile south-southwest of the Bottleneck ranch, magnetite, hematite, and some manganese oxides occur as a hard, black-to-red, and banded jaspilite iron formation in a dioritic rock. The formation can be traced along its N 65° W strike for more than one-half of a mile in thicknesses from 6 to 25 feet. The formation dips 40° to 80° NE.

Analyses of 2 character samples taken by the Bureau in 1944 appear in table 22.

TABLE 22. - Analyses of character samples, Black Gold group, head of Ash Creek, Yavapai County, Ariz.

Sample	Width, feet	Chemical analyses, percent			Remarks
		Fe	Mn	SiO_2	
1.....	8	33.5	4.5	28.5	Discovery cut near Ash Creek.
2.....	25	33.6	3.4	35.1	Across formation at top of ridge.

Cash Reserve Magnetite Jaspilite

Magnetite occurs on the Cash Reserve group of claims (88, fig. 1, X-2, figs. 19 and 35) in the NW¼ sec 24, T 14 N, R 2 E. The magnetite occurs in a jaspilite-iron formation that can be traced northwest as several beds for about a mile. Thickness ranges from 6 to 30 feet; much is masked by overburden. A character sample taken by the Bureau in 1961 contained 36.2 percent iron, 2.9 percent manganese, 0.3 percent titania, 0.21 percent phosphorus, 0.12 percent sulfur, and 37.4 percent silica. Spectrographic analysis of the

sample indicates the presence of 1 to 10 percent manganese, magnesium, calcium and aluminum; 0.1 to 1.0 percent titanium; 0.01 to 0.1 percent cobalt, nickel, and copper; and 0.001 to 0.01 percent vanadium.

Mineral content of the sample was calculated as 44 percent magnetite, 6 percent hematite, and 0.5 percent ilmenite.

Big Buck-Three Points Magnetite-Hematite Jaspilite

Magnetite and hematite were noted on the Big Buck-Three Points group of claims (81, fig. 1; X-3, figs. 19 and 35), sec 3, T 14 N, R 2 E, as a series of paralleling beds with a synclinal structure trending northwest. The beds are as much as 30 feet thick. Analyses of three character samples taken in 1957 by Elwood Wright of Post, Tex., operator of the Seligman hematite mine, are reported in table 23.

The iron in the samples was estimated as 23.2 percent magnetite and 76.8 percent hematite.

TABLE 23. - Analyses of Big Buck-Three Points magnetite-hematite jaspilite beds, sec 3, T 14 N, R 2 E, Black Hills, Yavapai County, Ariz.[1]

Sample	Chemical analyses, percent										
	Fe	Mn	SiO_2	Al_2O_3	CaO	TiO_2	Cu	Pb	Zn	P	S
1.....	37.1	2.9	25.20	3.62	9.1	0.22	Trace	0.2	0.08	0.02	0.05
2.....	37.4	3.0	25.46	3.81	8.8	.28	do	.3	.10	.02	.07
3.....	37.3	2.9	25.31	3.86	8.7	.32	do	.3	.07	.02	.04
Average.....	37.26	2.93	25.32	3.76	8.86	.27	do	.29	.083	.02	.053

[1] Courtesy Elwood Wright, Post, Tex., operator of the Seligman hematite mine, 1961

Yaeger (Vojnich) Hematite-Magnetite Jaspilite

Hematite and some magnetite were noted in jaspilite beds on the Paul Vojnich group of claims (102, fig. 1; X-4, figs. 19 and 35), sec 20, T 15 N, R 2 E. The jaspilite iron formation (fig. 34) occurs as a series of steeply dipping and northwest trending beds in a gray schist. Where observed, the beds were about 30 feet thick. The magnetite-hematite may not be limited to the jaspilite beds since blebs and streaks of iron oxides were noted in the adjacent schist. The beds were traced more than a mile to where they were masked by overlying formations. The jaspilite beds are fissile and break readily into plates from 1/8 inch to 4 inches thick. Portions are black from manganese staining. Two character samples taken by the Bureau in 1961 are shown in table 24.

Mineral content of sample 1 was calculated as 32 percent magnetite and 1.0 percent ilmenite.

Spectrographic analysis indicates the presence of 1 to 10 percent manganese and aluminum; 0.1 to 1.0 percent calcium and titanium; 0.01 to 0.1 percent cobalt, copper and nickel; and 0.001 to 0.01 percent vanadium.

(1) ATTACH RECEIPTS FOR ANY EXPENDITURE EXCEEDING $25.00.
(2) ATTACH ALL LODGING RECEIPTS
(3) PURPOSE OF TRIP, ENTERTAINMENT DETAILS, PORTION CHARGEABLE TO OTHERS ETC.

TABLE 24. - Analyses of Yaeger (Vojnich) hematite-magnetite jaspilite, Yavapai County, Ariz.

Sample	Chemical analyses, percent					
	Fe	Mn	TiO_2	P	S	SiO_2
1.....	26.9	1.1	0.4	0.15	0.11	53.0
2.....	34.6	.9	-	.30	-	36.6

Black Chief (Warrior) Magnetite Jaspilite

Magnetite, noted northeast of the old Black Chief (Warrior) mine (82, fig. 1; X-5, figs. 19 and 35), in two parallel jaspilite beds, was traceable more than half a mile northwest in sec 12, T 14 N, R 2 E. A character sample taken by the Bureau in 1961 contained 37.2 percent iron, 4.1 percent manganese, 0.3 percent titania, 0.42 percent phosphorus, 0.09 percent sulfur, and 32.6 percent silica. Spectrographic analysis of the sample indicates the presence of 1 to 10 percent manganese, magnesium, calcium, and aluminum; 0.1 to 1.0 percent titanium; 0.01 to 0.1 percent cobalt, nickel, and copper; and 0.001 to 0.01 percent vanadium.

The mineral content of the sample was calculated as 48 percent magnetite, 4 percent hematite, and 0.5 percent ilmenite.

Potential

Iron and manganese oxides prominent in jaspilite beds of the Yavapai-series can be traced more than 9 miles northwest in the Black Hills area of Yavapai County. Considerable local interest is shown by the numerous mining claim locations in the area. While consideration as individual and isolated beds of low-grade, iron-manganese formation would be relatively unimportant, several observations on admittedly cursory evidence should be included in an evaluation of the potential of the area as a large low-grade source of iron-manganese. These are as follows:

1. Extent for more than 9 miles.

2. Occurrence of the beds as several paralleling structures.

3. Accompanying trace elements.

4. Observations of blebs and streaks of iron oxides outside the jaspilite beds.

5. Resemblance of this iron formation to other midwestern taconite and jaspilite iron formations (1, pp. 9, 17, 19, 92, pl. 1).

Lynx Creek Magnetite Taconite

A band of magnetite taconite (95, fig. 1; X-6, fig. 19) parallels the Walker road in T 13 N, R 1 W. The low-grade iron occurrence is reached from Prescott by driving about 4 miles east on Arizona Highway 69 to its junction

with the Walker road, then about 1 mile south-southeast along the Walker road, at which location the iron formation crosses the road. The iron formation (fig. 37) can be traced more than 4 miles south-southeast between and paralleling the Walker road and Lynx Creek, in secs 5, 8, 16, 17, 21, 28, and probably farther.

The iron formation (X-6, fig. 19) on the composite taconite map, has a N 10° W strike and 50° W to vertical dip. Where accessible the formation appears about 300 feet thick. A character sample taken by the Bureau in 1961 contained 36.2 percent iron, 1.9 percent manganese, 0.3 percent titania, 0.10 percent phosphorus, 0.08 percent sulfur, and 52.0 percent silica. A spectrographic analysis of the above mentioned sample indicates the presence of 0.001 to 0.01 percent copper, vanadium and zirconium; 0.01 to 0.1 percent cobalt, nickel and titanium; 0.1 to 1.0 percent calcium and magnesium; and 1 to 10 percent manganese and aluminum.

This taconite-like iron occurrence is one of several outcroppings within a 35 mile wide by 70 mile long area (fig. 19) that could be a future low-grade source of iron. At this stage further engineering, geological, and metallurgical investigations would be necessary to raise its potential above conjecture.

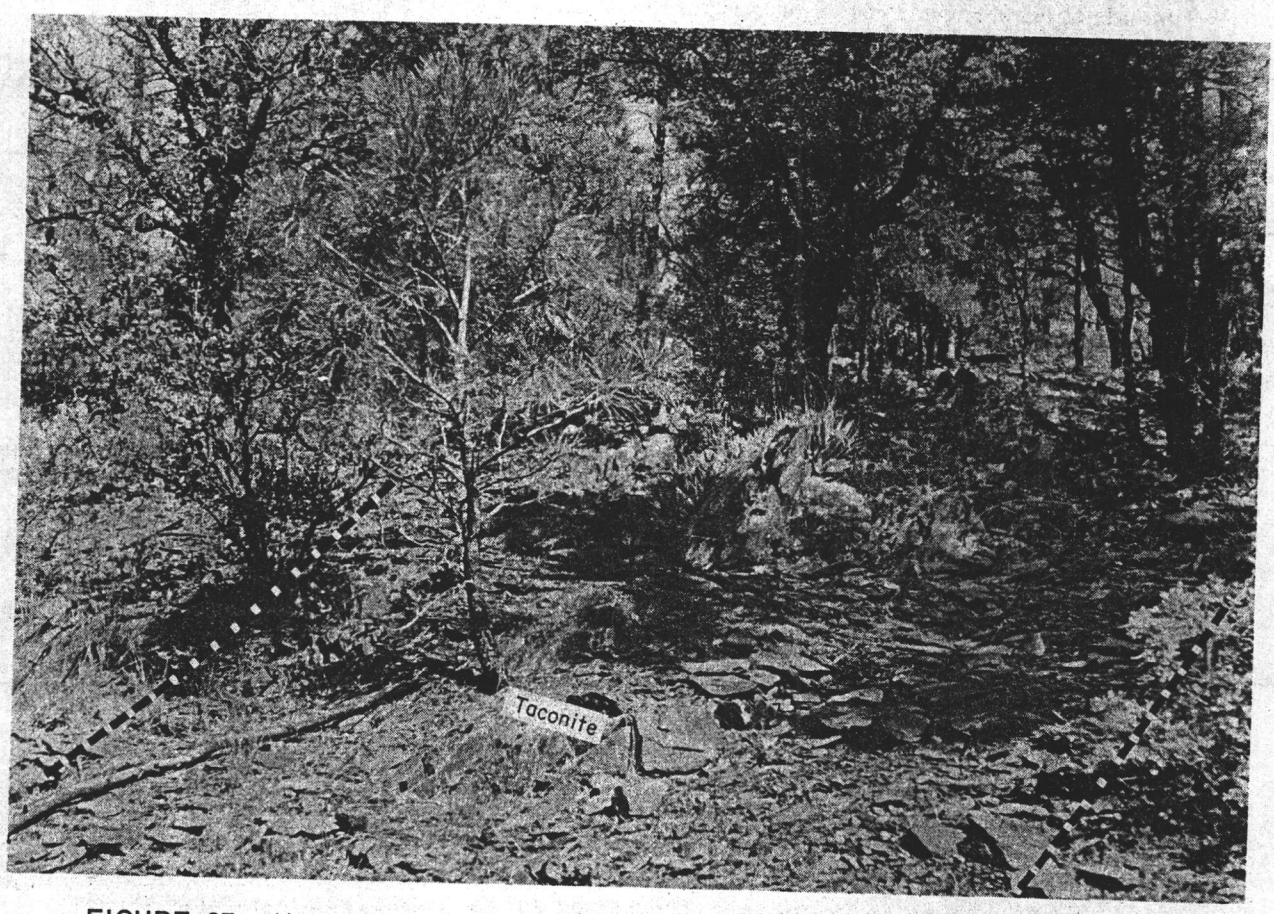


FIGURE 37. - Magnetite Taconite Outcrop Vicinity Lynx Creek, Approximate Sec 17, T 13 N, R 1 W, Yavapai County, Ariz.

Mayer-Stoddard Magnetite Taconite

A band of magnetite-hematite taconite (96, fig. 1; X-7, fig. 19) crosses the Stoddard mine road about 2 miles northeast from Mayer along a ridge occupying the center of sec 24, T 12 N, R 1 E. The taconite (X-7, fig. 19) is about 2 miles north of the Blue Bell-siding taconite (X-9, fig. 19) and is probably an extension of it. The hard, siliceous taconite iron formation (fig. 38) crosses the Stoddard mine road with a N 20° E strike and 70° W dip; its width of approximately 300 feet was traced about a mile.

A character sample taken by the Bureau in 1961 contained 27.2 percent iron, 1.4 percent manganese, 0.20 percent titania, 0.02 percent copper, 0.10 percent phosphorus, 0.09 percent sulfur, and 51.0 percent silica.

This taconite-like iron occurrence is one of several outcroppings in Yavapai schist within a 35 mile wide by 70 mile long area (fig. 19) that could be a future low-grade source of iron. At this stage further engineering, geological, and metallurgical investigations would be necessary to raise its potential above conjecture.

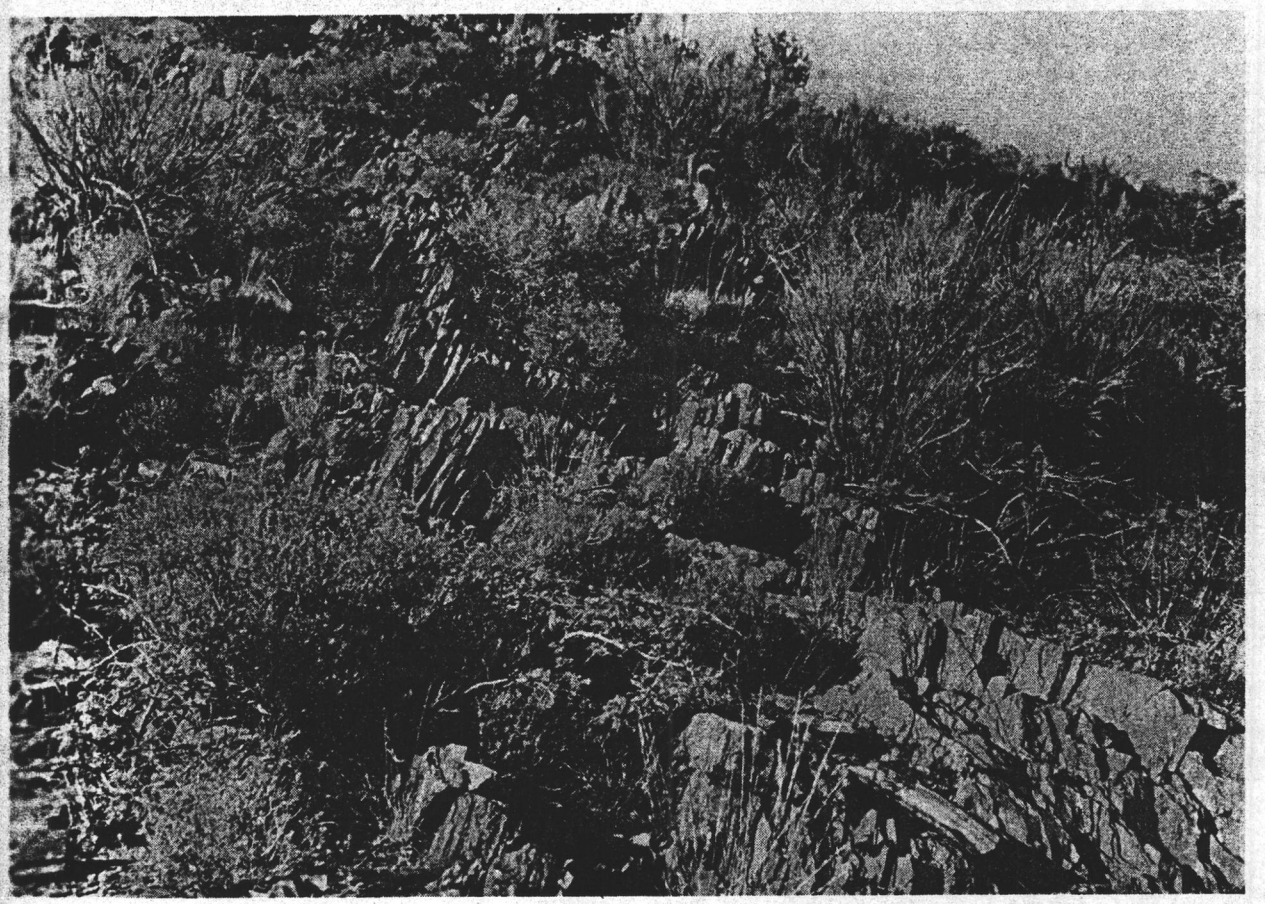


FIGURE 38. - Stoddard Magnetite-Hematite Taconite, Sec 24, T 12 N, R 1 E, Yavapai County, Ariz.

Copper Mountain Taconite-Jaspilite

Laminated magnetite-hematite iron formation (89, fig. 1) occurs within the Precambrian Yavapai (schist) series at many places in the vicinity of Copper Mountain in T 12 N, R 2 E, about 3 miles east-northeast of Mayer.

Large pieces of magnetite occur near the Stoddard mine on Copper Mountain, (X-8, fig. 19) about 4.5 miles east-northeast of Mayer by road.

A detailed examination of the area was not advisable at this stage, however, the occurrences appear similar to the Mayer-Stoddard taconite occurrence and, like it, are considered part of the potentially large taconite-like iron formation delineated in part by the outcrop areas X-1 through X-21 on figure 19 (29, 11 pp.; 41, pp. 26, 35-36, 156).

Blue Bell Siding Magnetite-Hematite Taconite

A taconite-like iron formation (86, fig. 1; X-9, fig. 19) was noted just east of the old Blue Bell railroad siding (fig. 39) and was traced more than a

FIGURE 39. - South Along Blue Bell Siding Magnetite-Hematite Taconite, T 12 N, R 1 E, Yavapai County, Ariz.

mile through the W½ secs 25 and 36, T 12 N, R 1 E. The iron formation follows a ridge that is crossed by Arizona Highway 69 and is also dissected by Big Bug Creek, in sec 36. It extends from a point east of the old Mayer smelter stack, south beyond Blue Bell siding, and across the Mayer-Cordes-Crown King road, about 1.1 miles south of the junction with Arizona Highway 69.

Hard, siliceous magnetite and some hematite are prominent as bands from 1/8 inch to as much as 6 inches thick comprising a slaty to schistose and taconite-like iron formation in the Yavapai series. The magnetite-rich formation is about 300 feet thick and was traced more than 1.5 miles. The formation strikes N 10° E and dips 75° W. In places the formation appears either as a schist, banded and slaty, or as a jaspilite. Where dissected by Big Bug Creek it is hard and more or less banded and contains streaks and blebs of white quartz.

Two character samples taken about a mile apart by the Bureau in 1961 contained 27.3 and 35.6 percent iron; 0.2 and 0.3 percent titania; 1.9 and 1.8 percent manganese; 0.17 percent phosphorus; 0.10 percent sulfur; and 39.0 percent silica respectively. Spectrographic analysis of a character sample indicated the presence of 1 to 10 percent aluminum and manganese; 0.1 to 1.0 percent calcium and magnesium; 0.01 to 0.1 percent cobalt, copper, nickel and titanium; and 0.001 to 0.01 percent vanadium and zirconium. The mineral content was calculated as 29 percent magnetite, 9 percent hematite, and 0.5 percent ilmenite.

This taconite-like iron formation (X-9, fig. 19) is one of many outcroppings in Yavapai schist within a 35 mile wide by 70 mile long area that could be a future low-grade source of iron. At this stage, further investigations would be necessary to raise its potential above conjecture.

Blue Bell Mine Magnetite-Hematite Taconite

Taconite-like iron formation (85, fig. 1; X-10, fig. 19) was noted as part of the Yavapai series between the Blue Bell and Jubilee mines, approximately in secs 15, and 22, T 11 N, R 1 E, about halfway between Mayer and Cleator. The area is reached by driving about 6 miles south-southwest from Blue Bell siding.

At the Jubilee mine, sec 22, T 11 N, R 1 E, a steep west-dipping iron formation occurs in amphibolitic tuff, agglomerates, quartzites, graywacke, and argillite and can be traced in an interrupted pattern more than a mile (30, p. 109).

The iron formation strikes N 20° E and dips 75° NW. The hard, siliceous, banded formation (fig. 40), containing magnetite and some hematite, was traced an estimated 2 miles between the Blue Bell and Jubilee mines. It is about 300 feet wide. A character sample taken by the Bureau in 1961 contained 29.0 percent iron, 0.9 percent manganese, 0.6 percent titania, 0.10 percent phosphorus, 0.11 percent sulfur, and 52.4 percent silica. Spectrographic analysis indicated the presence of 1 to 10 percent aluminum and manganese; 0.1 to 1.0 percent calcium and magnesium; 0.01 to 0.1 percent cobalt, copper, nickel and titanium; and 0.001 to 0.01 percent vanadium and zirconium.

FIGURE 40. - Blue Bell Mine Taconite, T 11 N, R 1 E, Yavapai County, Ariz.

This taconite-like iron formation (X-10, fig. 19) is one of many outcroppings within a 35 mile wide by 70 mile long area that could be a future low-grade source of iron. Further geologic and metallurgical investigations would be necessary to raise the potential above conjecture.

De Soto Mine Magnetite Taconite

Magnetite was noted (90, fig. 1; X-11, fig. 19) as a low-grade taconite-like iron formation at the De Soto Copper Co. property near the summit of the high ridge dividing Peck canyon from Crazy Basin. Cursory investigation indicated a formation width of about 100 feet. The iron formation strikes N 23° E and dips 70° NW. A character sample taken by the Bureau across the formation in 1961 contained 28.3 percent iron, 0.9 percent manganese, and 0.2 percent titania. The mineral composition was calculated as 25 percent magnetite, 15 percent hematite, and 0.5 percent ilmenite.

The property is approximately in secs 31 and 32, T 11 N, R 1 E, about 3 miles west of Cleator. This taconite-like iron outcropping (X-11, fig. 19) is

one of many within a 35 mile wide by 70 mile long area that could be a future low-grade source of iron. At this stage, further geologic, engineering, and metallurgical investigations would be necessary to raise the potential above conjecture.

Los Felice (Townsend Butte) Manganiferous Magnetite-Hematite

Magnetite, hematite, and manganese oxides are prominent (94, fig. 1; X-12, fig. 19) in a 200 to 300 foot wide taconite-like zone within the Yavapai series on the Los Felice-St. John Gold & Copper Co. property in sec 1, T 11 N, R 1 E, about 1 mile east of Cleator (formerly Turkey Creek Station), at Townsend Butte on the Crown King Highway. The property comprises 12 lode claims owned by Mrs. John Slak, Mayer, Ariz.

The siliceous iron-manganese formation (fig. 41), estimated as 300 feet wide, can be traced north along its strike more than 7,000 feet, and is exposed vertically through a relief of more than 300 feet. The formation dips 80° W to vertical. The property was explored for gold and copper by an inclined shaft and short adits.

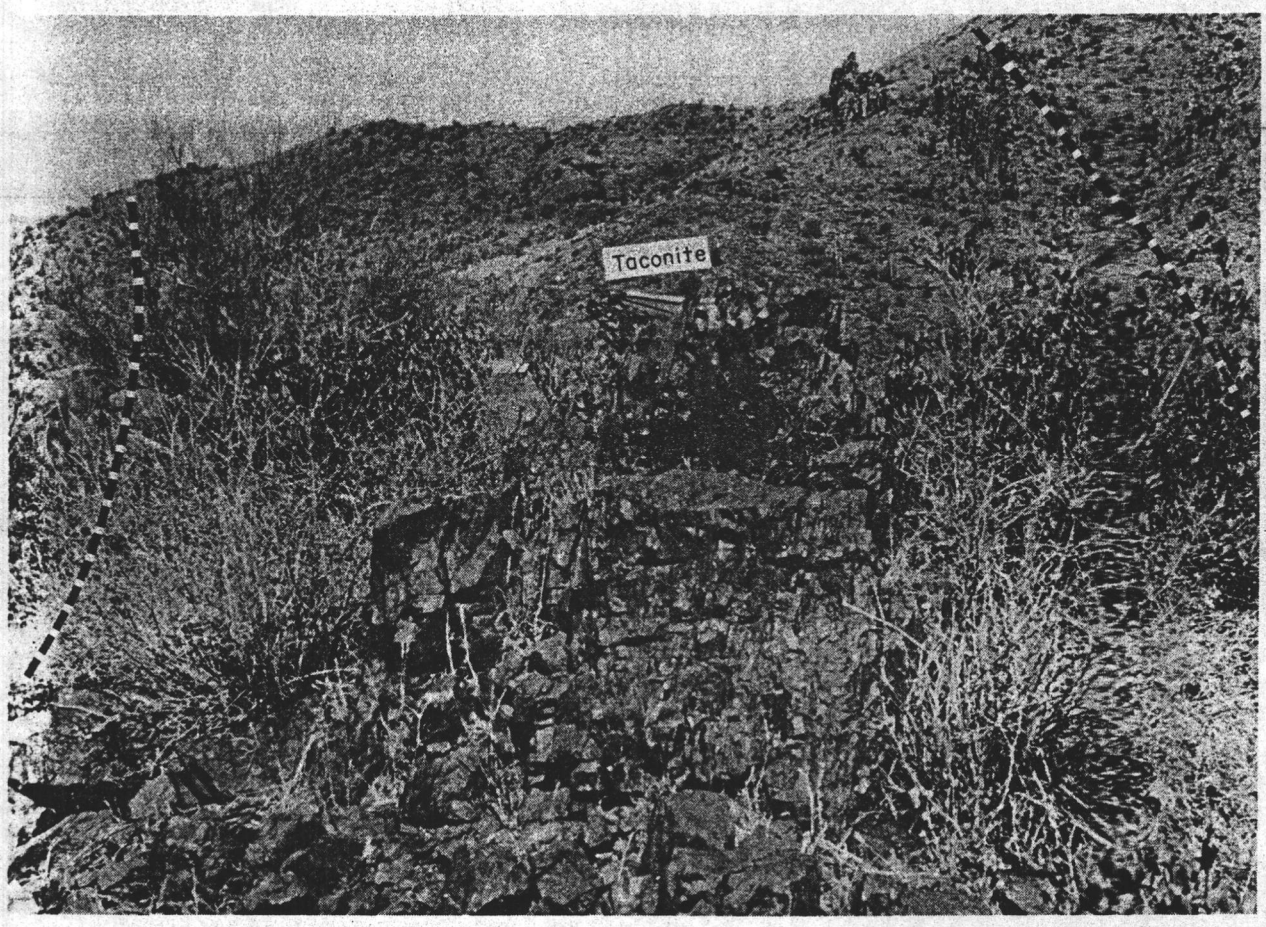


FIGURE 41. - Manganiferous Magnetite-Hematite Taconite, Townsend Butte, 1 Mile East of Cleator, T 11 N, R 1 E, Yavapai County, Ariz.

Results of sampling by John Slak and the Bureau compiled in table 25 indicate the quality of the deposit.

TABLE 25. - Results of sampling iron-manganese formation at the Townsend Butte-Los Felice-St. John Gold and Copper Co. property, Cleator, Ariz.

Sample	Width, feet	Chemical analyses, percent						Remarks
		Fe	Mn	Insol	TiO_2	P	S	
1....	10	32.75	5.8	36.0	-	-	-	In 100-foot adit; in schist about 150 feet east of shaft and 50 feet below its collar; Bureau of Mines, July 1943.
2....	10	38.32	1.9	35.2	-	-	-	100 feet down inclined shaft; Bureau of Mines, July 1943.
3....	20	32.78	4.3	39.6	-	-	-	In canyon, 300 feet south of inclined shaft and 125 feet below its collar; Bureau of Mines, July 1943.
4....	-	38.88	10.91	-	-	-	-	South of road, in canyon, John Slak, owner-operator, Cleator, Ariz., July 3, 1945.
5....	-	24.60	9.72	-	-	-	-	Along road and north of it; John Slak, Cleator, Ariz., July 3, 1945.
6....	-	26.92	9.78	-	-	-	-	North of road; John Slak, Cleator, Ariz., July 3, 1945.
7....	-	27.20	6.65	-	-	-	-	South of road; John Slak, Cleator, Ariz., July 3, 1945.
8....	-	32.75 38.32	1.9 5.8	-	-	-	-	Large composite samples, John Slak, Cleator, Ariz., July 3, 1945.
9....	-	35.4	3.9	35.0	0.2	0.3	0.13	Character sample, Bureau of Mines, 1959.
10....	-	29.4	1.3	51.2	.2	.22	.09	Character sample, Bureau of Mines, 1961.
11....	-	25.1	3.6	49.0	.3	.26	.25	Do.

Sample 10, the hanging-wall segment of the formation, consisted of 36 percent magnetite, 0.5 percent ilmenite, and 5 percent hematite. Sample 11 in the footwall segment of the formation contained 21 percent magnetite, 0.5 percent ilmenite, and 14 percent hematite.

Spectrographic analysis indicated the presence of 1 to 10 percent aluminum and manganese; 0.1 to 1.0 percent calcium, magnesium, and titanium; 0.01 to 0.1 percent cobalt, nickel and copper; and 0.001 to 0.01 percent vanadium.

This taconite-like iron outcropping (X-12, fig. 19) is one of many within a 35 mile wide by 70 mile long area that could be a future low-grade source of iron. At this stage, further geologic, engineering, and metallurgical investigations would be necessary to raise the potential above conjecture (42, p. 36, 156).

Banded magnetite taconite was also noted along the road 1 mile southeast of Cleator, approximately in secs 6 and 11, T 10 N, R 1 E (42, p. 36).

Black Canyon Magnetite-Hematite Taconite

Magnetite is prominent (92, fig. 1; X-13, fig. 19) 1 mile south of the old Howard Copper Mine, approximately in sec 31, T 10 N, R 1 W, and it is reached with difficulty about 4 miles west from Bumble Bee.

The magnetite occurs as a laminated, crinkled, and folded structure with much red jasper. The formation can be traced for about a mile north along its strike; it is about 200 feet thick. The iron formation is part of the Yavapai series, extending for many miles in the area.

This outcropping of iron formation (X-13) like the many others shown on fig. 19, is part of an extensive area that may be a large low-grade source of iron for the future. Like the others, more detailed investigations are necessary to raise the potential above conjecture (29, 11 pp.; 42, p. 156).

Precambrian Yavapai schist is prominent in a north-northwest trending band dipping 80° W to vertical. It is about 2 miles wide and can be traced more than 20 miles between Rock Springs and Cleator-Townsend Butte in the Black Canyon area of Yavapai County. The Yavapai sequence includes mica, hornblende, and siliceous schists; quartzite, slate, sandstone, phyllite, argillite, banded ferruginous and specularitic quartzite, and graywacke, hornfels, tuffs, and agglomerates interbedded with magnetite-hematite-rich iron formations. Where metamorphosed, the rocks are amphibolitic and contain hornblende, garnet, tourmaline, epidote and mica.

Two bands of magnetite-hematite iron formation were identified and mapped by Jerome (30) in the Black Canyon area west of Black Canyon Creek. Jerome's main band of iron formation (Yif, fig. 19) starts north of Soap Creek, about 4 miles northwest of Rock Springs, and extends north-northwest for approximately 14 miles through secs 20, 17, 8, 7, and 6, T 9 N, R 2 E, secs 31, 30, and 19, T 9½ N, R 1 E, and secs 36, 25, 24, 13, 12, and 1, T 10 N, R 2 E. A second band of iron formation (Yq-if, fig. 19) parallels the first about 1¼ miles west and can be traced for about 6 miles north-northwest between Soap and Castle Creeks, approximately in secs 19, 18, and 7, T 9 N, R 2 E, and secs 36, 25, and 24, T 9½ N, R 1 E.

The main iron formation (Yif, fig. 19) dips 80° W to vertical, is about 1,000 feet wide, and consists of light gray, banded, ferruginous and specularitic quartzite, amphibolitic tuff, and argillite that is interbedded with magnetite-hematite-rich members as much as 200 feet thick that appear discontinuously along the strike of the formation. North of the Thunderbolt mine, in sec 24, T 10 N, R 1 E, occurs a single band of iron-rich beds. South of the Thunderbolt mine, several iron-rich zones appear in parts of the main iron formation. In some localities this increase in magnetite-hematite-rich members may be the result of duplication by folding and faulting. The iron-rich members are banded, comprising thin bands made up of 75- to 90-percent magnetite-hematite with 25- to 10-percent quartz, alternating with bands made up of

75- to 90-percent quartz and 25- to 10-percent magnetite-hematite. Late limonite and calcite are common, and the iron-rich members are stained and coated with manganese oxides at many locations. The banded, iron-rich units occur as magnetite- and garnet-rich rock, ferruginous chert, jasper, jasperoid, and jaspilite and a mixture of granular quartz, limonite, and manganese oxides.

Similar iron-rich units are found both east and west of the main iron formation. East of the main band of iron formation (Yif, fig. 19) thin-bedded, iron-rich units occur interbedded in a sequence of tuffs, agglomerates, quartzites, graywacke, and andesite and dacite. West of the main band of iron formation, thin-bedded iron-rich beds occur in a 1,000-foot wide zone of interbedded tuff, agglomerate, ferruginous quartzite, and graywacke.

The second band of iron formation (Yq-if, fig. 19) about 1¼ miles west of the main formation (Yif, fig. 19) comprises about 800 feet of quartzite and graywacke interbedded with bands and lenses of siliceous, amphibolitic, and magnetite-hematite-rich rock.

Magnetite in all the iron-rich units occurs generally as masses and coarse-to-fine octahedral crystals with some hematite, comprising about 25 percent of the rock. Locally, thin beds contain as much as 90 percent magnetite.

At the Thunderbolt mine, sec 24, T 10 N, R 1 E, several zones of magnetite-hematite iron formation were noted across a 2,000-foot sequence of argillites, tuffs, agglomerates, quartzites, and graywacke. The bands of iron formation, as much as 200 feet thick, dipping steeply westward, appear discontinuously along their north-northwest strike.

Drag-folded bands of magnetite-hematite iron formation were noted in the argillite in the Columbia mine area.

Magnetite-hematite iron formation was noted in argillite 0.5 mile northwest of Bland Hill approximately in secs 18, 19, 20, and 29, T 10 N, R 2 E.

Magnetite-hematite-rich beds were noted as crinkly drag-folded iron formation in argillite about ¼ mile northwest of Arrastre Creek and in the vicinity of the Valencienne mine, approximately in sec 9, T 9 N, R 2 E.

Deposits of magnetitic sand and alluvium were noted along creeks comprising the Black Canyon drainage area (29, 30, 42).

Goodwin Magnetite Taconite

Magnetite crops out (91, fig. 1, X-14, fig. 19) as a low-grade, taconite-like iron formation in the Yavapai series (fig. 42) just west of the old ghost town of Goodwin, 12.2 miles west of Mayer, approximately in sec 28, T 12 N, R 1 W.

The magnetite taconite crops out (fig. 42) as a hard, siliceous, and laminated iron formation with a slaty cleavage. The formation strikes N 30° E

FIGURE 42. - Magnetite Taconite, T 12 N, R 1 W, Vicinity of Goodwin, Yavapai County, Ariz.

and dips 70° NW. A grab sample taken by the Bureau across a 50-foot exposure contained 20.8 percent iron, 0.7 percent manganese, 0.6 percent titania, 0.12 percent phosphorus, 0.17 percent sulfur, and 50.6 percent silica. The mineral content of the sample comprised 24 percent magnetite, 4 percent hematite, and 1 percent ilmenite.

To the south the iron content of the formation increases. This outcropping (X-14) like the many others shown on figure 19 is part of a much larger taconite area that may be a large low-grade source of iron for the future. Like the others, it requires more detailed geologic and metallurgical investigations.

Blind Indian Arrastra Creek-Longfellow Ridge Magnetite Taconite

Taconite-like magnetite was traced interruptedly more than 15 miles south from the outcrop west of Goodwin. The outcrops are in difficult terrain with heavy forest and underbrush.

The Blind Indian-Arrastra Creek outcropping of the iron formation (84, fig. 1; X-15, fig. 19) is prominent along the ridge at the head of Blind Indian and Arrastra Creeks at about 5,500 feet altitude, approximately in sec 8, T 11 N, R 1 W. It is reached by driving 4 miles south of Goodwin and walking westward over a mile up the steep slopes towards Longfellow Ridge and Spring.

Magnetite with some hornblende, epidote, tourmaline, and garnet occur as a laminated, banded, siliceous, and taconite-like iron formation (fig. 43) in a hornblendic facies of the Precambrian Yavapai series. Reconnaissance for a mile north and south indicates that the formation is probably as much as 500 feet wide and is continuous along its N 10° E strike and 70°-80° W dip. In places the formation is highly contorted. A character sample taken by the Bureau in 1961 contained 34.0 percent iron, 0.1 percent manganese, 0.3 percent titania, 0.1 percent phosphorus, 0.1 percent sulfur, and 39 percent silica.

This outcropping (X-15) like the many others shown on figure 19 is part of a much larger taconite area that may be a large low-grade source of iron

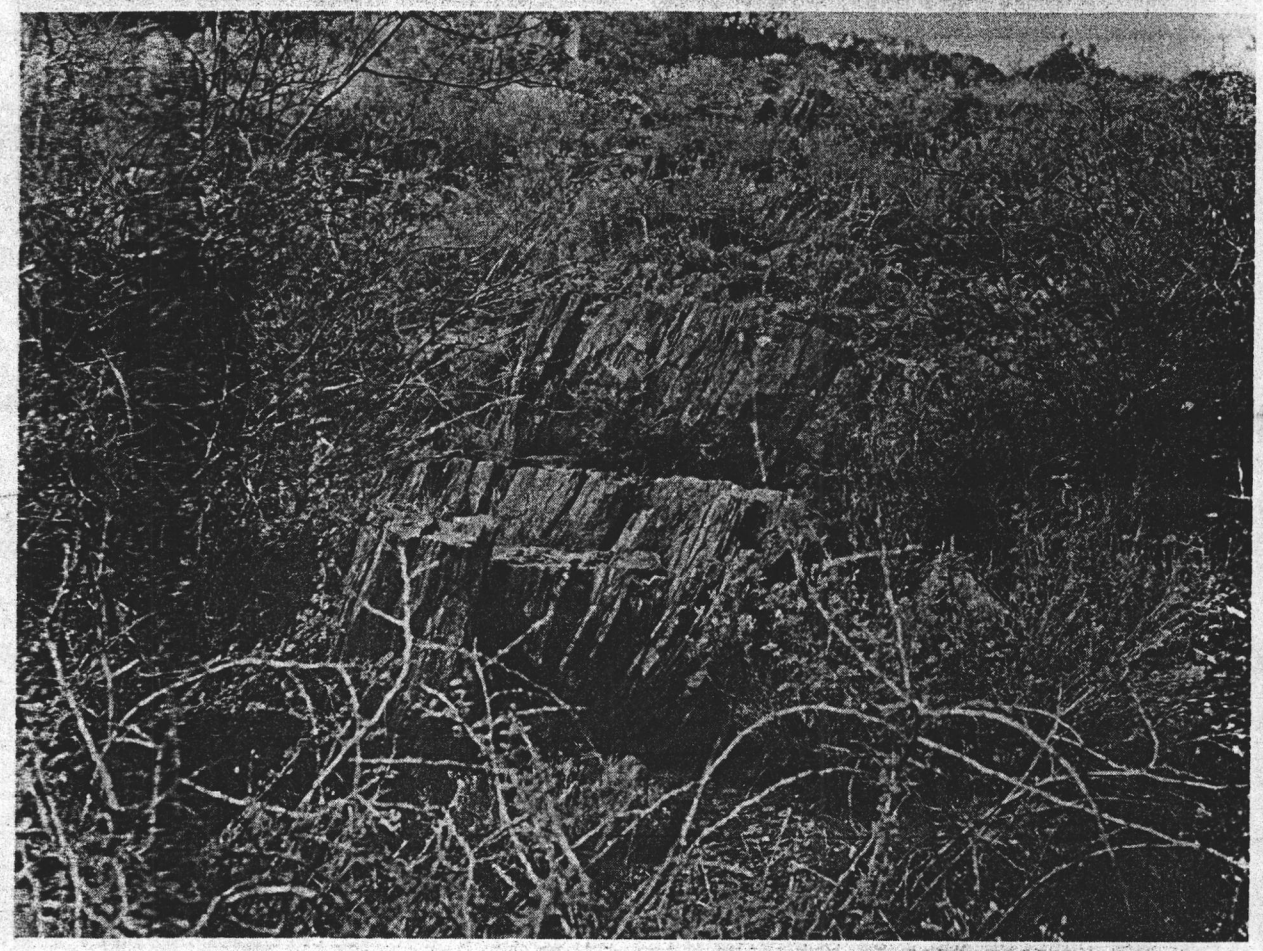


FIGURE 43. - Magnetite Taconite Outcrop, Longfellow Ridge at Head of Blind Indian Creek, T 11 N, R 1 W, Yavapai County, Ariz.

for the future. Like the others, more detailed engineering, geologic, and metallurgical investigations are necessary to raise its potential above conjecture (29, p. 11).

Pine Creek Magnetite Taconite

Taconite-like, siliceous and banded magnetite iron formation (fig. 44) was traced interruptedly through heavy forest and underbrush about 3 miles (97, fig. 1; X-16, fig. 19) west of Pine Creek, from Walnut Spring south to the junction of the Pine Creek road with the Senator Highway, through secs 29, 32, T 11 N, R 1 W, and sec 5, T 10 N, R 1 W.

The magnetite iron formation is part of the Yavapai series and is similar to the Blind Indian-Arrastra Creek-Longfellow Ridge outcropping 2 miles to the north. The Pine Creek occurrence is probably its extension. The iron formation has a north strike with evidences of folding. Dips range from 80° W to vertical. The iron formation was estimated as 300 to 500 feet wide and a character sample, takin in 1961 by the Bureau, in sec 29, contained 33.8 percent iron, 0.1 percent manganese, 0.3 percent titania, 0.11 percent phosphorus,

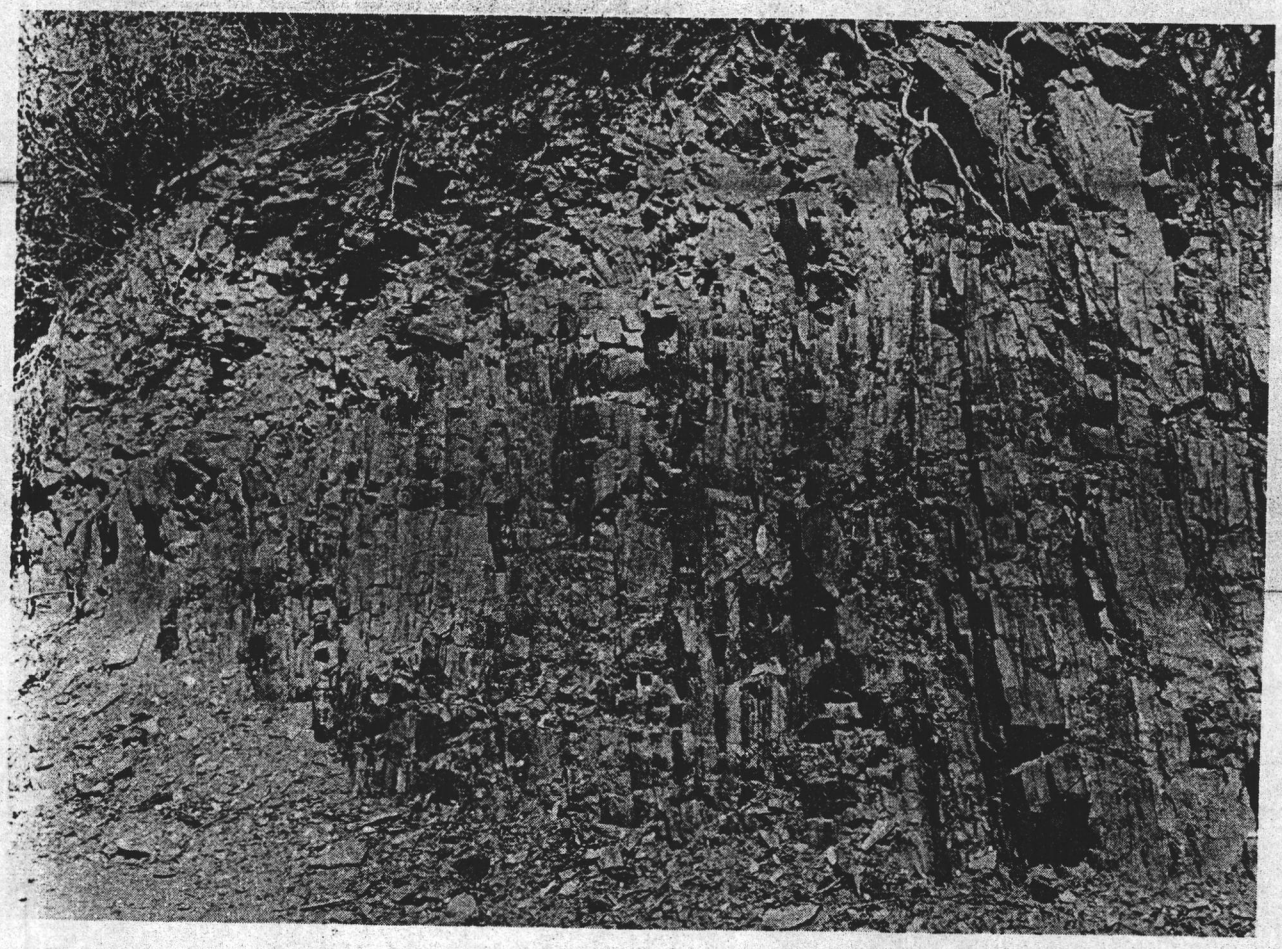


FIGURE 44. - Magnetite-Hematite Taconite, Pine Creek Drainage, Tps 10 and 11 N, R 1 W, Yavapai County, Ariz.

0.08 percent sulfur, and 38.2 percent silica. Spectrographic analysis indicated the presence of 1 to 10 percent aluminum, calcium, and magnesium; 0.1 to 1.0 percent manganese and titanium; 0.01 to 0.1 percent cobalt, copper, and nickel; and 0.001 to 0.01 percent vanadium and zirconium.

This outcropping (X-16) like many others shown on figure 19 is part of a much larger taconite area that may be a large low-grade source of iron for the future. Like the others, more detailed investigations are necessary to raise the potential value above conjecture.

Ash Creek Magnetite Taconite

Taconite-like, siliceous and banded magnetite iron formation (79, fig. 1; X-17, fig. 19) was traced west of Ash Creek and the Minnehaha Flat road about 4 miles through secs 18, 19, 30, 31, T 10 N, R 1 W. The iron formation is probably a continuation of other occurrences traced south from Goodwin.

The magnetite iron formation is part of the Yavapai series and is similar in character and mineral content to the Pine Creek and Blind Indian-Arrastra Creeks-Longfellow Ridge outcropping occurrences 2 and 6 miles north, respectively.

This outcropping (X-17, fig. 19) is part of a much larger taconite-like iron formation area that may be a large low-grade source of iron for the future, however, more detailed investigations are necessary to raise the potential value above conjecture.

Stanton Magnetite Taconite

Magnetite is prominent in the Yavapai series in the vicinity of Stanton and north along the Stanton-Yarnell road, in secs 24, 25, 35, 36, T 10 N, R 5 W (100, fig. 1; X-19, fig. 19). The magnetite (fig. 45) occurs in a laminated, siliceous, taconite-like iron formation that can be traced north for 3 or more miles as a taconite, schist, quartzite, and greenstone sequence in the Yavapai series. Dips range from 50° W to vertical. The Precambrian formation appears about a mile wide, west of Rich Hill; the better magnetite (fig. 45) is exposed in a 200-foot width along the steep slope west of the road. The magnetite iron-formation (X-19, fig. 19) is similar to the outcroppings (X-6-X18, fig. 19). Character samples of the Stanton taconite taken by the Bureau in 1961 contained 20.6 and 30.6 percent iron, 0.2 and 0.4 percent titania, 1.8 and 2.9 percent manganese, 0.11 and 0.27 percent phosphorus, 0.10 and 0.08 percent sulfur, and 59.2 and 43.8 percent silica respectively. Semiquantitative spectrographic analysis indicates the presence of 1 to 10 percent manganese and aluminum; 0.1 to 1.0 percent calcium, magnesium, and titanium; 0.01 to 0.1 percent cobalt, copper, and nickel; and 0.001 to 0.01 percent vanadium. The mineral content of the sample was calculated as 16 percent magnetite, 13 percent hematite, and 0.5 percent ilmenite.

The deposit appears low-grade and large, however, its full potential can be established only by more detailed exploration and sampling.

FIGURE 45. - Taconite-Like Outcrop, Sec 25, T 10 N, R 5 W, North of Stanton and West of Stanton-Yarnell Road, Yavapai County, Ariz.

Wasson Peak-Oro Belle Taconite

A siliceous magnetite taconite-like iron formation (101, fig. 1; X18, fig. 19) was noted along the road south of Wasson Peak and 0.8 mile west of the Oro Belle mine, approximately in sec 34, T 10 N, R 1 W. The formation has a due north strike and a vertical dip. The iron formation (X-18, fig. 19) appears similar to those in the area that have been previously discussed; it is one more indication of continuity.

Big Iron Hematite

Hematite was noted on the Big Iron group of claims (80, fig. 1), in the SE¼ sec 16, T 22 N, R 8 W, near Markhams Well. The property is reached from Seligman by driving 17 miles southwest along the old Kingman road. The claims were located by Clive W. Stephens in 1959.

Hematite, red jasper, and white quartz replace Paleozoic limestone in a zone about 100 feet wide that can be traced north more than 1,000 feet. The hematite occurs irregularly and ranges from a red coloration to almost pure clusters of hematite. A character sample of hematite matrix with quartz and gray limestone contained 36.5 percent iron, 22.2 percent silica, and 41.3 percent lime.

The Big Iron property is in the prospect stage and is developed by small, shallow assessment pits. Hematite replaces the limestone host rock erratically in the surface exposures, and the deposit appears to be a small source of iron that would require sorting.

Boulder Creek-Milholland Creek Titaniferous Magnetite-Hematite

Titaniferous magnetite and hematite crop out as discontinuous lenticular bodies (87, fig. 1) in a gabbro mass about 2½ miles northwest of Bagdad, in the SW¼, T 15 N, R 9 W. The deposits occur centrally along a northeast trending band of gabbro as much as 4,000 feet wide and more than 4 miles long. The gabbro is intrusive into schists and is cut by granite and aplite dikes.

Northeast of Centipede Mesa, on the south side of Boulder Creek just below its confluence with Copper Creek, a coarse-grained magnetite-hematite-ilmenite-rich facies of the gabbro is exposed. The lenticular bodies of titaniferous magnetite are about 20 feet thick and several hundred feet long. The magnetite contains some specularite and hematite as an intergrowth. The magnetite is associated with ilmenite, hematite, pyrite, and apatite; all of these minerals plus hornblende, epidote, chlorite, zoisite, leucoxene, and uralite are accessory minerals in the gabbro (3). Two samples of the best titaniferous magnetite contained 60.09 and 62.02 percent iron with 9.80 and 8.20 percent titania, respectively, and a trace of manganese.

A second outcrop of massive titaniferous magnetite, including dark red bands of secondary hematite occurs southwest of Centipede Mesa on Milholland Creek and is about 1¼ miles southwest of the first mentioned exposure. The gabbro at this exposure is gneissic and the magnetite occurs as discontinuous, parallel, and steeply-dipping lenticular bodies 3 to 8 feet thick. The magnetite occurs with ilmenite, hematite, pyrite, and some enstatite. A sample of the best titaniferous magnetite contained 60.35 percent iron, 8.40 percent titania, and a trace of manganese.

Similar bodies of titaniferous magnetite and hematite occur in other areas within the gabbro. They are parallel to the banding in the enclosing gabbro and grade into it. A trenching program (2) during 1952 indicated that the deposits investigated were larger and that the titania content was higher below the outcrops.

Further exploration, sampling, and metallurgical investigation are necessary to determine the full potential of these occurrences. At present the deposits, in aggregate, appear to be a substantial source of low-grade iron, high in titania.

Jerome and Bradshaw Area Iron Oxides

Jarosite and limonite are common in the gossan over many sulfide deposits in the Jerome and Bradshaw area (93, fig. 1).

Specular hematite is present in late veins at the United Verde mine and is common as veinlets in all the Precambrian rocks south of Jerome.

Magnetite is an accessory mineral in altered facies of the Spud mountain rhyolite 2.5 miles east of the Iron King mine where it is present as crystals and irregular masses (1, p. 92).

Santa Margarita District Alluvial Magnetite

Magnetite-rich alluvium is prominent in the sand and gravel of the piedmont area in the Weaver and Date Creek Mountains (98, fig. 1). Magnet Mining Corp., Melvin H. Jones, President, of Congress, Ariz., has located 55 sections as placers in the drywash drainage area of Martinez, Antelope, and Stanton Creeks, in Tps 8, 9, and 10 N, Rs 5 and 6 W, in the Santa Margarita district northwest of Wickenburg. The magnetite-rich area is crossed by U.S. Highway 89 and the Atchison, Topeka & Santa Fe Railroad.

Magnetite occurs concentrated in thin layers in sand-gravel alluvium and also disseminated in lesser amount through the tan- to buff-colored sand and gravel. The layered sequence and stratification of concentrated magnetite (dark) and lighter colored and lower-grade magnetite in sand and gravel is shown in the 6-foot deep back-hoe pit (fig. 46).

Channel samples from 19 locations scattered throughout sec 6, T 8 N, R 5 W, to depths as much as 25 feet, indicate that the deposit contains 1.7 to 10.9 percent magnetite by weight, averaging 5.5 percent magnetite by weight. Data on several wells in the area indicates alluvium as much as 3,000 feet thick in places.

A composite of samples taken in creek bottoms averaged 1.75 percent magnetite. A more general composite of samples averaged 1.55 percent magnetite. A spectrographic analysis made by the Bureau in 1961 indicated the presence of more than 10 percent iron and silicon, 1 to 10 percent aluminum and titanium, 0.1 to 1.0 percent calcium, magnesium, and manganese, 0.01 to 0.1 percent cobalt, nickel, vanadium, and zirconium, and 0.001 to 0.01 percent copper.

Microscopic examination of the sample indicated the presence of magnetite, ilmenite, hematite from magnetite alteration, quartz, feldspar, micas, minor clay, and garnet, and traces of specularite, epidote, and zircon.

Pioneer magnetic separation tests on the samples yielded concentrates containing 60.48 and 60.70 percent iron, 0.05 percent titania, 0.50 percent manganese, 0.24 percent phosphorus, and 11.20 percent silica.

Part of the area, 5 miles north of Wickenburg, in a gulch joining with Martinez Creek, in secs 14, 23, 25, 36, T 9 N, R 6 W, and secs 6, 8, 17, T 8 N,

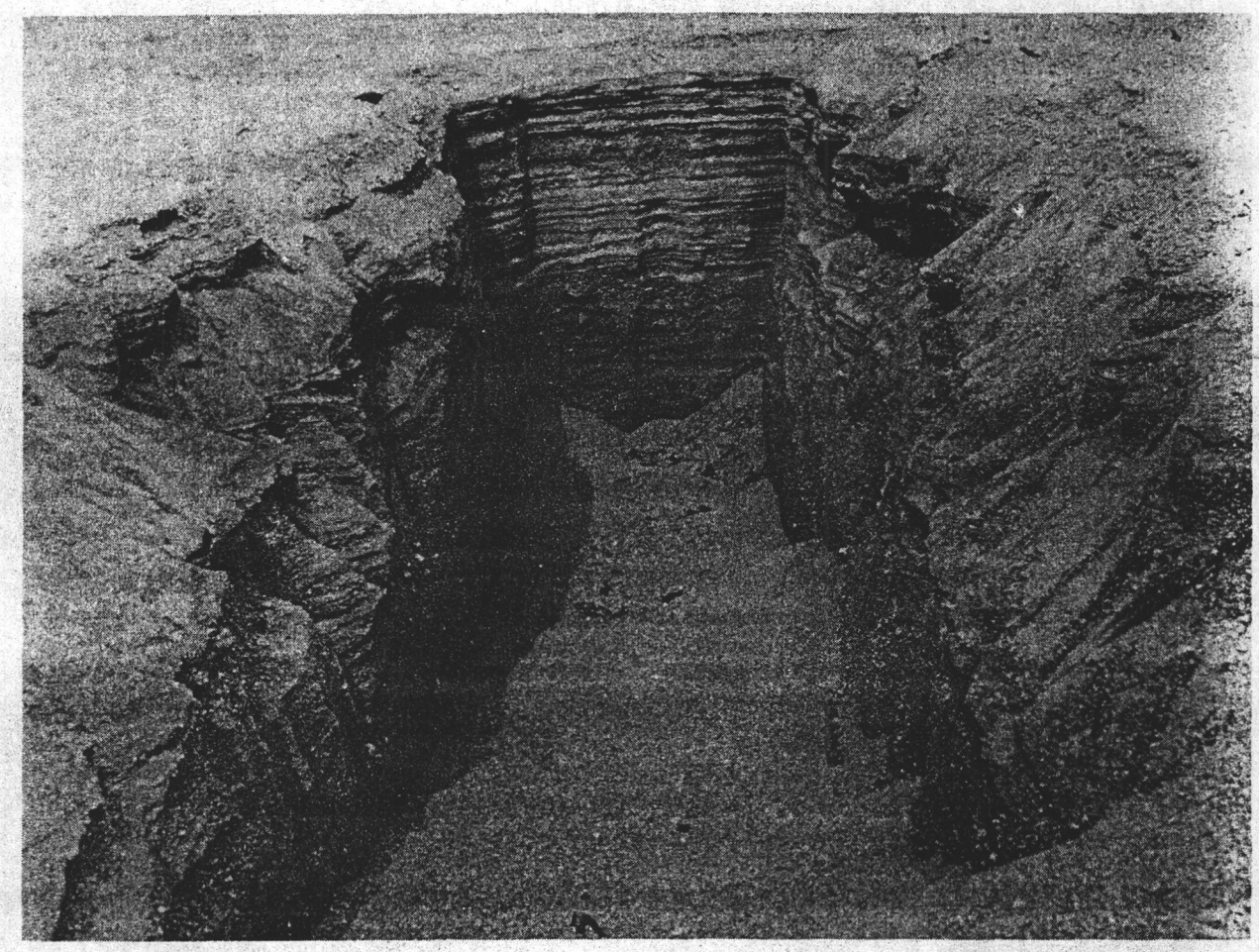


FIGURE 46. - Magnetite Stratification, Magnet Mining Co. Property, Tps 8, 9, and 10 N, Rs 5 and 6 W, Santa Margarita District, Yavapai County, Ariz.

R 5 W, was located in 1943 as the Magnetite Iron-Desert Iron group of 12 placer claims by C. C. Findly. This alluvial deposit averages 50 feet in width more than 6 miles. A composite sample from various test pits averaged 28.1 percent iron.

Alluvium in the area is a potentially large source of magnetite sand, which could be mined cheaply and beneficiated by screening and magnetic separation into a high-grade iron product. Agglomeration or pelletizing may be necessary to make the iron acceptable as a furnace feed.

Seligman (Juniper Mountains, Cowden) Hematite

Hematite occurs (99, fig. 1) prominently in the Juniper Mountains, 18.6 road miles south of Seligman on the Walnut Creek road, at about 5,600 feet altitude. Seligman is the nearest shipping point, on the Atchison, Topeka & Santa Fe Railroad. The occurrence has been known also as the Cowden and Iron Chancellor deposit. The deposit is covered by 13 patented claims (Mineral

Survey 2282) and 16 located claims in secs 15, 21, 22, 23, 26, and 27, T 20 N, R 6 W, in the Chino mining district. The patented group includes the Iron Chancellor, Iron Horse, Camp Bird, Fairview, Federal 1 and 2, Ben Franklin 1-2, Hematite, Lone Jack 1 and 2, Machias, and Monitor; the unpatented lode locations comprise the Ben Franklin 3-11, Hematite 2-3, and Iron Horse 2-6. The deposit is the property of Cowden Livestock Company (E. Roy Cowden) of Phoenix and was leased in 1961 to E. P. Campbell Drilling Co., Lubbock, Tex.

High-grade red to bluish black hematite, 2 to 40 feet thick in drill holes and pits, occurs as lenticular contact-metamorphic pyrometasomatic replacements, as much as 1,000 feet long, in gently eastward dipping Paleozoic Redwall limestone along its contact with irregular, sill-like intrusive masses of andesite. Andesite and alluvium cover part of the claims. The hematite bodies are prominently exposed (fig. 47) along the Walnut Creek road more than half a mile in secs 22 and 27, T 20 N, R 6 W. Ore bodies are indicated by outcrops, float, and hematite-rich, red soil. Favorable areas for exploration are the vicinity of limestone-intrusives contacts. Hematite deposits in the area have been explored by numerous test pits, adits, a limited amount of rotary- and wagon-drilling, and 7 diamond-drill holes. Ore bodies on the Iron Chancellor, Iron Horse, and Lone Jack claims (figs. 47 and 48) have been mined

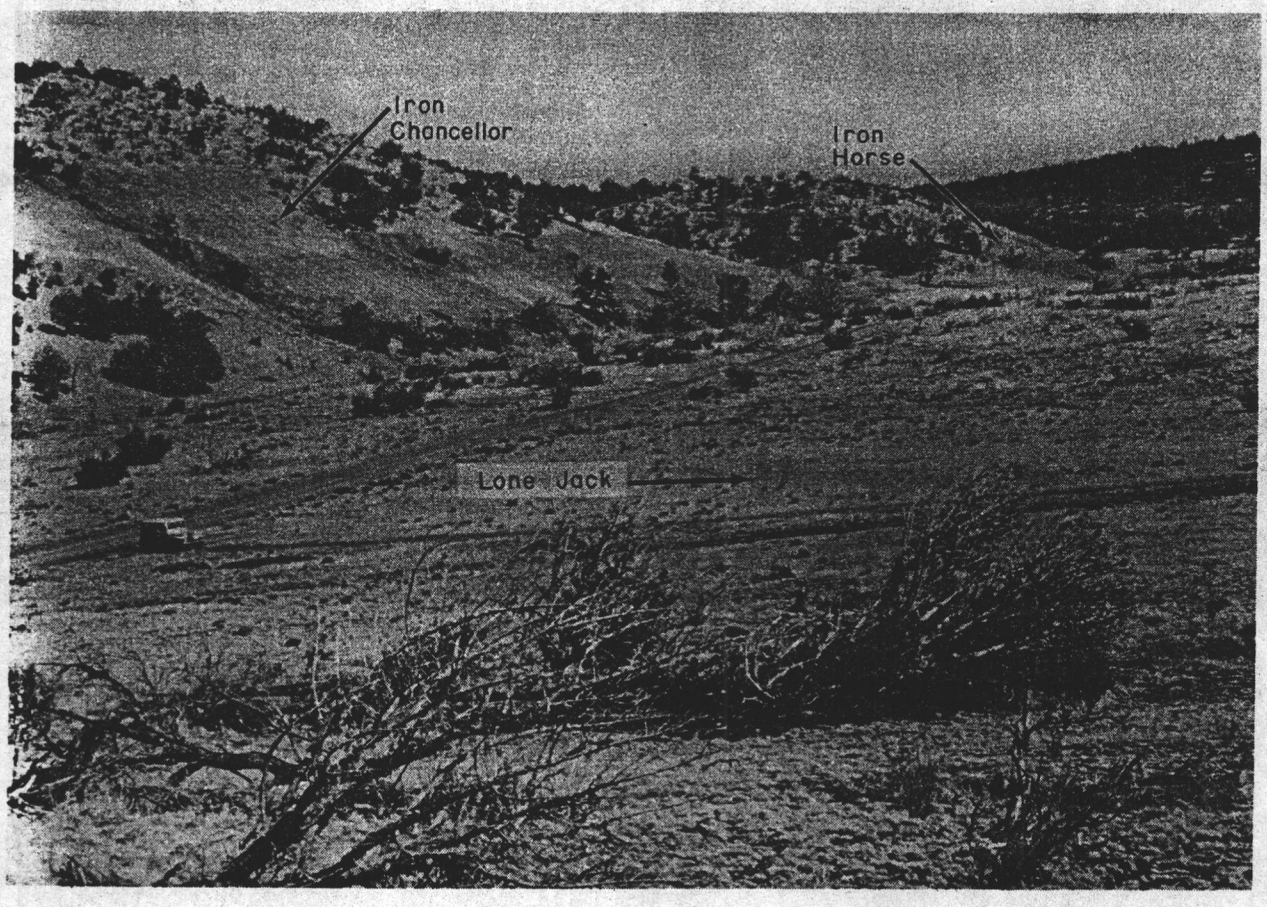


FIGURE 47. - Outcrop and Mining Area, Iron Chancellor Claim, Seligman (Cowden) Hematite Deposit, T 20 N, R 6 W, Yavapai County, Ariz.

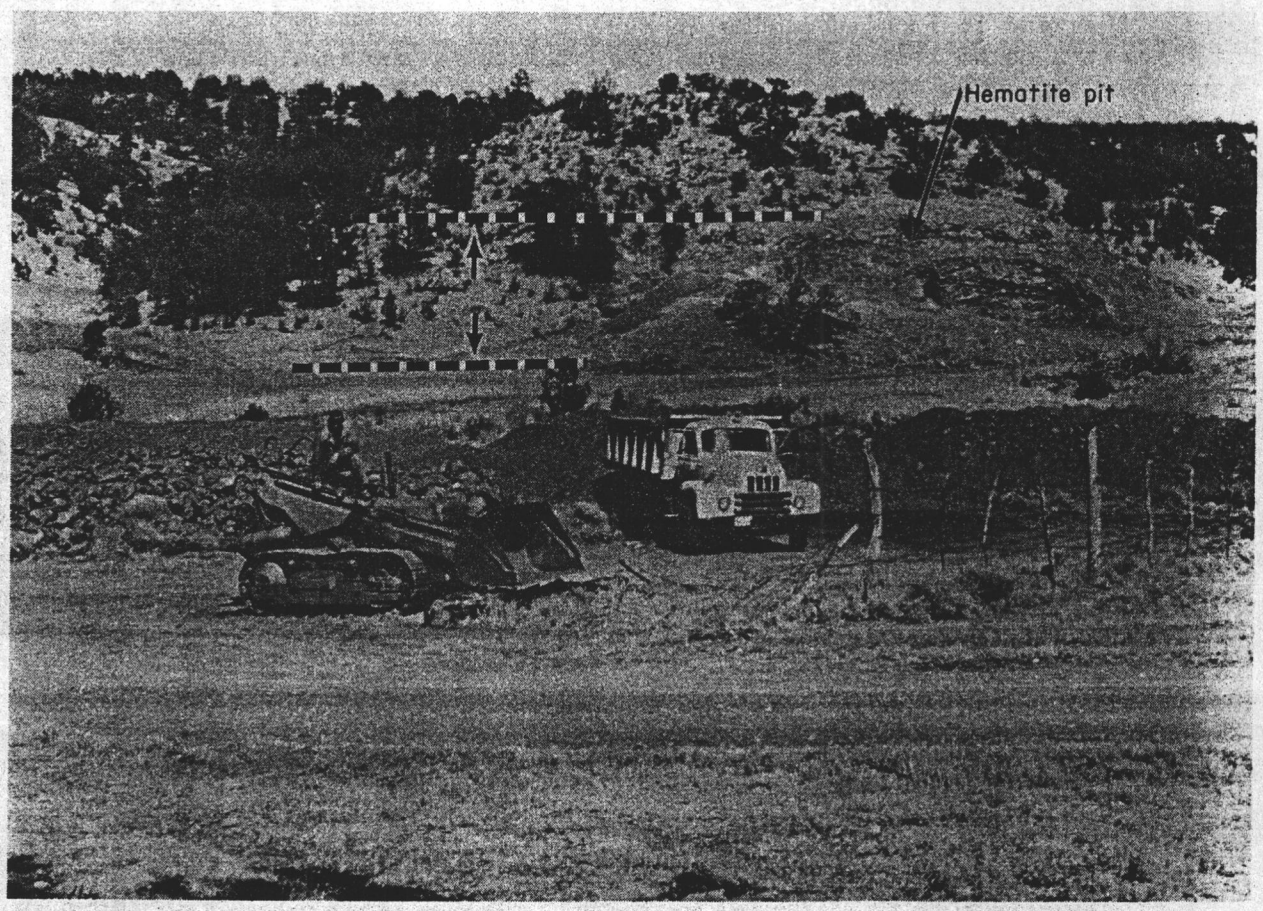


FIGURE 48. - Mining Area and Equipment, Seligman-Cowden Hematite Deposit, T 20 N, R 6 W, Yavapai County, Ariz.

chiefly in open cuts and were the source of production in 1961. A very high-grade hematite has been produced. This product is used principally as mineral pigment although other markets are being developed. The quality of the ore is shown by analyses in table 26.

In addition, qualitative spectrographic analyses by various laboratories indicated the presence of as much as 0.01 percent lead, 0.03 percent zinc, 0.16 percent copper, 0.05 percent arsenic, 0.10 percent titanium, 0.01 percent molybdenum, 0.005 percent chromium, and 0.005 percent vanadium. The 1960 iron content and specific gravity of the hematite iron ore in different sizes is compared in table 27.

The Seligman (Cowden) occurrence comprises a number of small to intermediate sized replacement bodies of very high-quality, massive to powdery hematite that in the aggregate are a source of abundant iron for special uses and a statewide iron ore market.

Deposits in the Juniper Mountains area, including low-grade hematite, may have a potential of second category magnitude.

TABLE 26. - Analyses of Seligman (Cowden) hematite, Yavapai County, Ariz.

Sample	Chemical analyses, percent							Remarks
	Fe	Mn	P	S	SiO_2	CaO	Al_2O_3	
1....	62.0	-	0.01	Trace	8.7	0.6	-	Bureau of Mines character sample, 1943; sample more than 15 feet in thickness.
2....	63.1	-	.01	-	1.8	4.6	-	Bureau of Mines character sample, 1943; sample more than 20 feet in thickness.
3....	55.52	0.1	.005	0.02	5.35	3.64	1.95	Bureau of Mines, 1943; composite of 11 samples.
4....	59.20	-	-	-	-	-	-	Bureau of Mines, 1948; Iron Chancellor adit J; sample more than 5 feet in thickness.
5....	60.92	-	-	-	-	-	-	Bureau of Mines 1948; Iron Chancellor north side adit Q; sample more than 4.8 feet in thickness.
6....	61.0	-	-	-	2.0	4.5	-	Bureau of Mines character sample, 1948; McBride group of claims.
7....	58.3	.06	-	.04	5.08	4.23	3.19	Composite sample, 1956; Western Drilling Co.; courtesy Elwood Wright, mine operator, Post, Tex.
8....	64.3	.03	.03	.03	2.9	.07	.5	The Colorado Fuel and Iron Corp., 1904; courtesy Elwood Wright, Post, Tex.
9....	63.8	.04	.026	.01	3.1	1.5	.9	Do.
10....	68.4	.07	.02	.1	1.5	.3	.1	Lone Jack claim character sample; courtesy Elwood Wright, Post, Tex.
11....	60.6	.14	.032	.1	2.20	-	1.93	Columbia-Geneva Division, U.S. Steel Corp.; courtesy Elwood Wright, Post, Tex.

TABLE 27. - Seligman (Cowden) hematite iron ore characteristics[1]

Size	Fe, percent	Specific gravity
Plus 1-inch.....	63.2 to 66.4	4.21 to 4.79
Plus ¼-inch.....	64.4 to 66.9	4.21 to 4.23
Minus ¼-inch.....	63.1 to 64.7	4.59 to 4.70

[1] Courtesy Elwood Wright, mine operator, Post, Tex.

Miscellaneous

Gold placer operations in the Arizona City, Columbia, Black Canyon Creek, Skull Valley, Walker, Bridle Creek, Musquette Gulch and Prescott districts indicate the presence of abundant magnetite and some hematite and ilmenite in the alluvium of the areas (17, pp. 1180-1181).

GSA Cordill.

OSA Cord II 1987

TOWNSHIP 14 NORTH RANGE 6 WEST OF THE GILA AND SALT RIVER MERIDIAN, ARIZONA

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

YAVAPAI COUNTY

Lat. 34°30'03" N
Long. 112°49'58" W

SCALE
10 5 0 10 20 30 60
30 chains to the inch

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

DIST. NO. 2

RECEIVED
BLM ARIZONA STATE OFFICE
JUN 13 10 09 AM '03
PHOENIX, ARIZONA

CURRENT TO	BY
OG	

T. 14 N.
R. 6 W.

Yavapai County

E&MJ MARCH 1984

NICOR MINERAL VENTURES

One of the NICOR basic energy companies

2659-G Pan American Freeway, N.E. Albuquerque, New Mexico 87107 Phone 505 344 7803

April 26, 1984

Mr. Don French
Westworld Inc.
4044 One Shell Plaza
Houston, Texas 77002

Dear Mr. French,

I wish to thank you for giving NICOR Mineral Ventures the opportunity to evaluate your Sugarloaf Peak and Hillside prospects. At this time these two prospects do not meet the requirements of NICOR, although both properties do show some promise and should be more fully evaluated. Please keep us informed as to the significant results from your further exploration of these prospects.

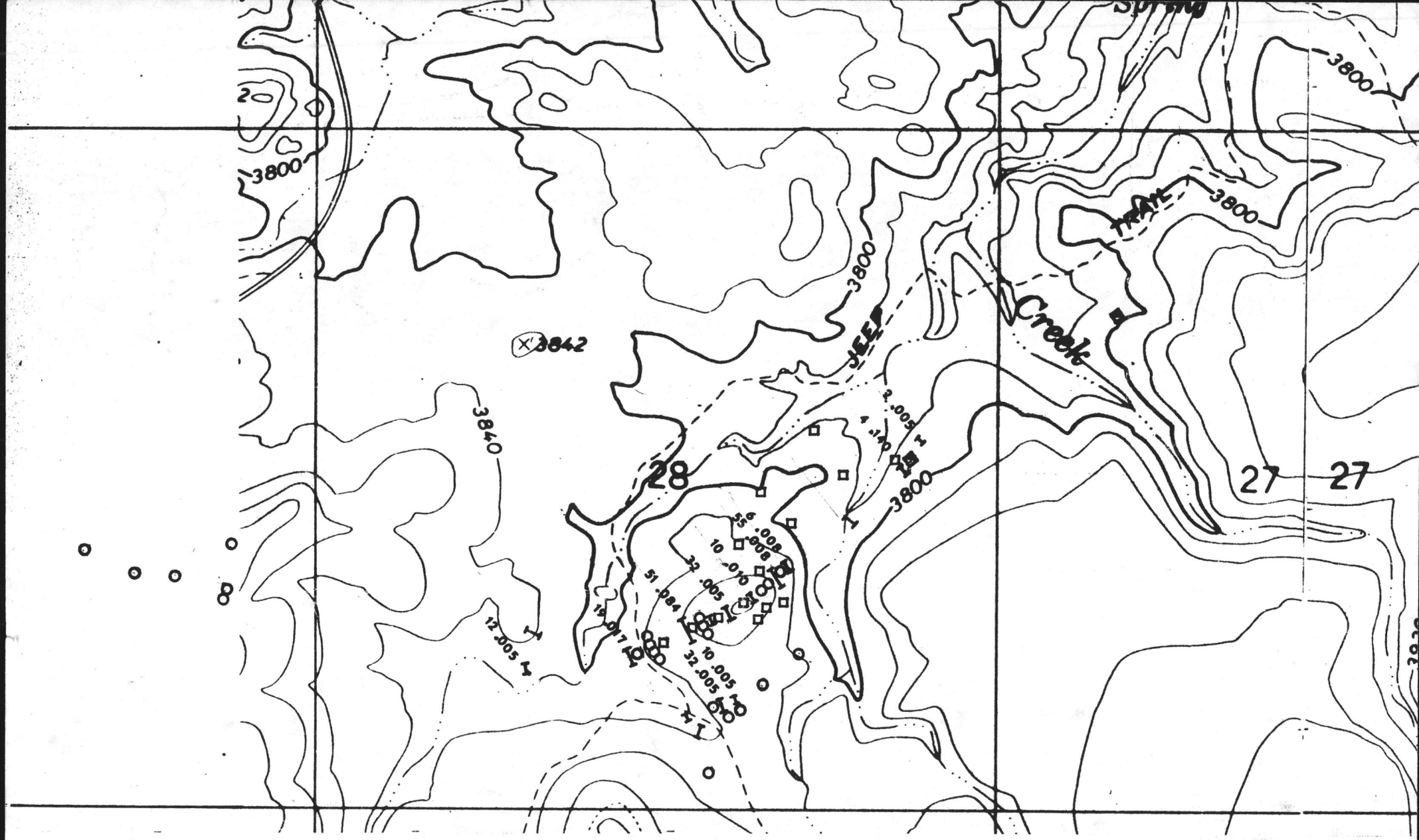
Again, I want to thank you and your staff for their assistance. If Westworld has now or in the future any additional properties which you feel may be of interest to NICOR please let us know.

Sincerely yours,

Gary A. Parkison

Gary A. Parkison
District Geologist

P.S. I have forwarded our copy of the Sugarloaf prospect report to Mr. David Spatz with Rio Algam in Golden, Colorado.



EXPLANATION

□ Dausinger/Felmont sample
○ Amselco sample

I ft oz/T Au — Westworld (JWA-HEM) sample

Quartz - pyrite vein zone

oz/T Au
< .01
.01 – .03
.03 – .08
> .08

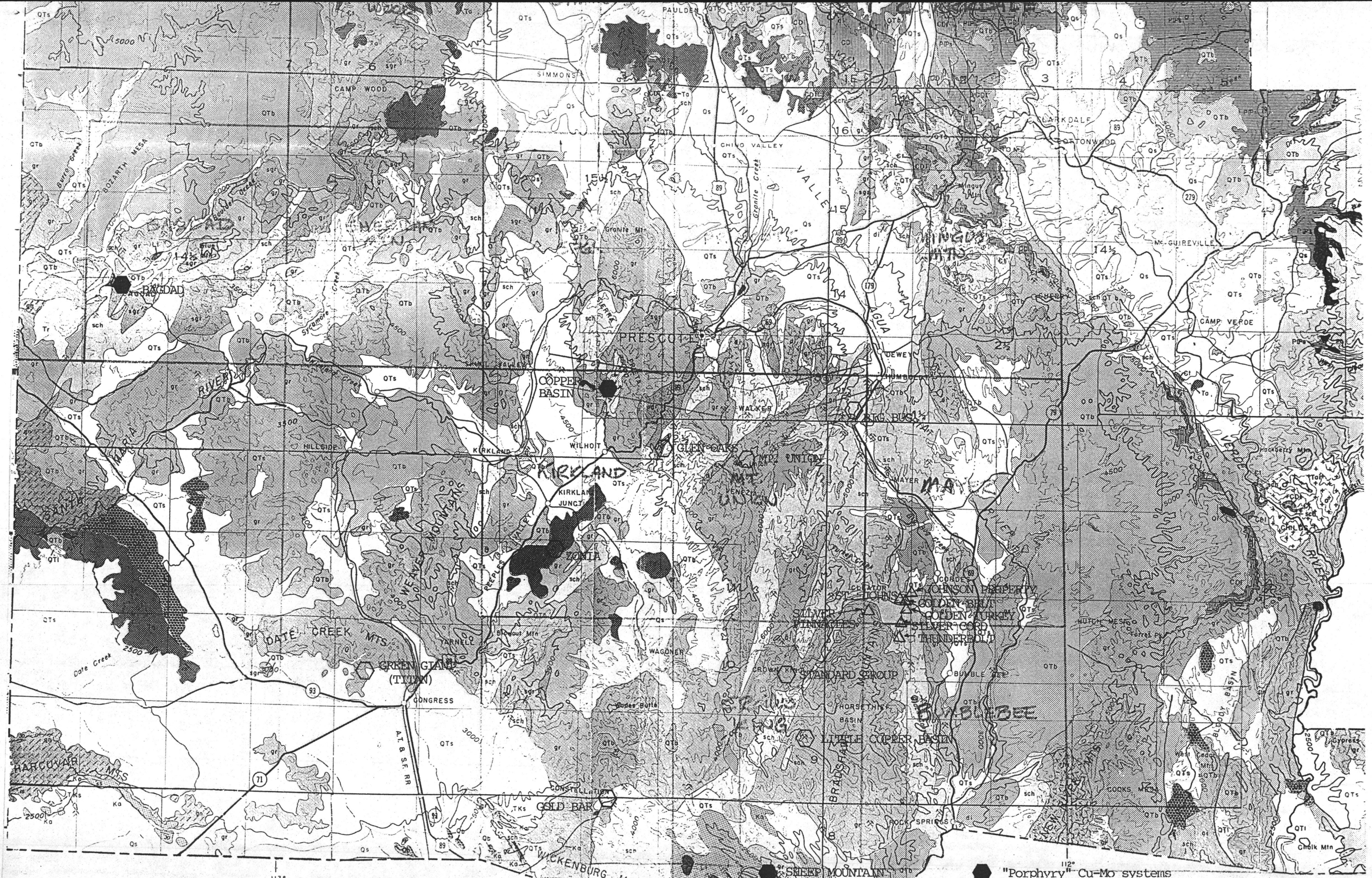
HILLSIDE PROSPECT

YAVAPAI CO, ARIZONA

11-2-83

J.W. ALLAN
H.E. MATSON

0 1000 2000 3000
1" = 1000'



COMPILED BY R.J. LUNDIN, PRESIDENT, WALLABY ENTERPRISES INC. 1/15/85

From Rich Lundin, Wallaby Enterprises

MARCH RESOURCES LTD. (MHL-V)

FUNDS SOUGHT TO PRODUCE PLACER GOLD IN ARIZONA - March Resources Ltd. management reports that the company can acquire from consulting geologist D.J. Fulton of West Vancouver, 68% net revenue interest in a 635-acre placer gold property 35 miles south of Prescott, Arizona, by funding the approximate $500,000 U.S. required to place it in production. Negotiations to obtain the required financing through a third party are underway An early production start is expected.

Management say extensive testing has resulted in an average yield of 5.457 grams of gold per yard of gravel with reserves estimated to exceed 2,000,000 yards of gravel. The property covers a complete creek and gulch system of a valley in which gold has been produced both in placer form and from a former hard rock property known as the "Button" mine.

Management project that moving 2,000 yards of gravel daily, with an average yield of only 1.0 gram per yard, wou yield a net profit of $3,700,000 annually, with gold at $300 U.S. per ounce.

BRACE RESOURCES LTD

PAST GOLD-SILVER PRODUCER ACQUIRED - Steve Radvak has signed a letter of intent to acquire a gold-silver property in Yavapi county, Arizona, called the Postmaster Mine, this former gold-silver producer comprises 3 lode claims and 1 mine site claim all patented. The mine portal is at the 5,916 foot elevation.

Originally, the property was in production from 1898 to 1905 producing some 12,500 tons of ore worth about $256,000 at the then low prices for metals. The Postmasterr Mining Co. came into being in 1940 and in 2 years produced 2,044 tons of ore averaging 0.69 oz. of gold/ton and 13.4 oz. of silver. The company's records dated 15Dec41 completed by their engineer, M.B.Lovelace, states that 86,265 tons of proven ore were developed in the mine prio to its shut-down.

PRONTO EXPLORATIONS LIMITED (PEX-V)

JOINT VENTURE PLANNED FOR ARIZONA PROPERTY - Robert H. Fasken, president, reports that Pronto Explorations Limited have agreed in principle with NevCan Explorations Inc., a wholly owned subsidiary corporation of FALCONBRIDGE COPPER, to form a joint venture to explore Pronto's Bluebell mine property in Yavapai county, Arizona. The Bluebell is a volcanogenic massive sulphide deposit which was partially minéd in the early 1900's. It produced about 1,200,000 tons grading 3% copper, 1.5 oz.silver per ton, and 0.06 oz.gold/t and contains zinc and lead which was not recovered in the early days.

Subject to formal agreement, NevCan could earn 50% interest in the property by spending $1,000,000 U.S. within 5 years and could buy 67,000 Pronto common shares for $100,000 U.S. by way of private placement.

Property work is to start immediately.

NOR-QUEST RESOURCES LTD.

FUNDS PROVIDED TO EVALUATE PAST GOLD-SILVER PRODUCER IN ARIZONA - Nor-Quest Resources Ltd. through their wholly-owned Nor-Ques Arizona, Inc., have agreed that Chicago-based Gladiator Mining Corporation, by providing up to $1,700,000 U.S. for evaluation and development, can earn 50% interest in a gold/silver property near Prescott, Arizona. Nor-Quest will be operator.

The project was assembled by Nor-Quest over the past year and comprises some 700 acres of patented and staked claims.

Exploration and mining by previous operators identified several high grade gold and silver veins. In the late 1930's, the War Eagle vein produced 50,000 tons averaging0.54 oz. gold and 4.7 oz. silver per ton. In 1981, diamond drilling 1,000 feet from the underground workings intersected 4½ feet of 0.90 oz. gold and 3.73 oz. silver per ton. These results are interpreted as being an extension of the War Eagle vein.

The Fairview vein, paralleling the War Eagle some 400 feet east and dipping at 70 degrees has been explored via an underground tunnel for a length of 250 feet. The entire length of the tunnel is in ore averaging 0.67 oz. gold and 3.8 oz. silver per ton across an average width of 3.5 feet. A series of pits and short tunnels has extended the Fairview vein an additional 800 feet and the ore zone is still open at each end. Several other high grade veins exist on the property.

The evaluation program will start immediately and consist of diamond drilling, sampling and surveying to determine ore reserves. Management believe a decision for production of at least 100 tons of ore per day can be made by October this year. Two staff geologists are on site. Diamond drilling is to start by July 15.

CRUISER MINERALS LTD.

ASSAYS LOCATED A GOLD ORE SHOOT ON ARIZONA PROPERTY - M.Kangro, president of Cruiser Minerals Ltd. has reported prelimin results of exploration at the Beehive property, Yavapai county, Arizona. Assay of 112 samples indicate an ore shoot at least 9 feet long and with an average width of 3.8 feet, grading 0.426 oz.gold per ton. The highest value obtained was 3.65 oz. gold per ton over a width of 4.5 feet. Insufficient information is at present available to estimate the tonnage of ore contained in this ore shoot. A drilling program is being planned to delineate this more fully and to test the grade and thickness of mineralized zone at greater depth. Samples from the remainder of the drift are to be assayed

CRUISER MINERALS LTD.

DRILLING & SAMPLING PROGRAM TO BE EXTENDED - Cruiser Minerals Ltd. in the 1983 exploration program at the Beehive mine in Yavapai county, Arizona, took a total of 485 channel samples from the walls of the Beehive main tunnel which confirmed a 1800-foot vein length,a 30° dip and an average 4 foot thickness.

The program confirmed two ore shoots: one, 258 ft.long, 3.6 ft.wide,0.368 oz.gold;two, 173 ft.long, 1.8 ft.wide 0.186 oz.gold. The results appear to have substantiated old records. The company plans to drill to test for down dip extensions and start a channel sampling program on the Twin Shaft and the Nugget tunnels which were driven approximately 300 ft. updip from the main Beehive Tunnel. Indications are that the information contained in the old reports with respect to the Nugget and Twin Shaft tunnels will also be confirmed.

The channel sampling program will commence in early February 1984 and the drilling program will commence in March 1984.

NOR-QUEST RESOURCES LTD. (NQT-V)

MONTHS ENDED 30 SEPTEMBER	1984	1983
l/Gas Lease Sales	$ -	$375,167
l/Gas Production	82,619	71,011
nagement Fees	169,969	48,927
her Income	5,351	3,516
	257,939	498,621
sh Flow (Out)	(42,026)	222,329
t Loss	$ 87,118	$257,802
ss Per Share	2¢	8¢

FINANCING OF ARIZONA GOLD PROJECT IS BEING ARRANGED

Nor-Quest Resources Ltd. has completed the acquisition of the controlling shares of Abitibi Asbestos Mining Company Limited, and it can now be classified as a Nor-Quest subsidiary. Abitibi recently completed a financing and is now listed on the Vancouver and Montreal Stock Exchanges (ABS-V,M) and trades over the counter in New York. Nor-Quest president Rayner B. Carson says management believe this acquisition represents a major underlying asset to Nor-Quest. For every share of Nor-Quest issued there is proximately one share of Abitibi owned by the company.

Nor-Quest is operating partner and has 50% interest in a high grade gold depost in Arizona. Development of the adiator War Eagle mine got off to a good start this year. Surface facilities were installed on site, 300 feet of derground development work was completed and the mining and milling equipment was mobilized. The operation stalled August pending a bank loan which was to be arranged by a partner. After many months of frustrating delays, r-Quest is arranging the project financing using its own resources. Funding is expected to be completed by 30Dec84. Three months of pre-production work are required before start up of a 100 ton per day operation. Mr. Carson pects the project will generate operating profits of $200,000 US per month with $300 gold.

NOR-QUEST RESOURCES LTD.

ARIZONA PROPERTY HAS RETURNED SOME GOOD GOLD VALUES

Nor-Quest Resources Ltd. has reported assays for its drilling program on the Gladiator Prospect located 30 miles south of Prescott, Arizona. Diamond drill hole G14 returned 6 feet 2.2 ounces gold and 1.77 ounces silver per ton from 352.2 to 358.5 feet. Diamond drill hole G15 located 50 feet north returned 5 feet of 0.43 ounce gold and 19 ounces silver per ton from 381.2 to 386.5.

Ray B. Carson, president, stated that a summary of all drilling will be issued by 24Nov83.

NOR-QUEST RESOURCES LTD.

	Tons	Gold Oz/Ton	Silver Oz.Ton	Width
Block A	37,500	0.32	3.7	4 Ft.
Block B	25,000	0.345	3.22	4
Block D	30,000	0.565	4.68	4.5
	92,500			

PLANT OPERATION EXPECTED MAY 1984 AT 100 TON/DAY

Nor-Quest Resources Ltd. president Raynerd B. Carson has reported results of exploration on the Gladiator/Fairview 1100-acre project located 30 miles south of Prescott, Arizona. Sampling and core drilling have confirmed reserves in 3 blocks sufficient to support a 100 ton per day milling operation for 3 years.

The Gladiator vein, dipping at 68° and striking north-south, has been explored along 4,000 feet of length and is still open to the north and to depth. Several parallel veins with excellent gold and silver values are also to be explored.

Underground development work and mobilization of a 100 ton per day mill are planned to commence in January, 1984. This program is expected to take 4 months to complete. Initial year's production will be from the higher grade ore in Block D. Operating costs are estimated to be $88 per ton.

Gladiator Mining Corporation of Chicago, the joint venture partners, will earn a 50% interest in the project for providing up to $1,550,000 US for underground development and mill installation.

TO BE DRILL TESTED

agreement, Bridgewest Development Corporation and Unistar Technologies Corp. have each acquired 50% interest in the Trails End and Gold Ridge gold claims in Yavapai county, Arizona. The companies paid $15,000 U.S. cash and 100,000 common shares each. The negotiated purchase price on the property is between $1,000,000 U.S. and $2,000,000 U.S., depending on the reserves proven up, payable over a 30 year period without interest.

The Trails End property consists of a 155 foot shaft with 228 feet of drifting on the first level with an unknown amount of development on the lower levels.

M.P.Dickson, P.Eng., on 14Dec83 reported a persistent fissure vein of quartz with amphibolite dyke has been traced for 3,500 feet of strike length on the property and potential for an additional 7,000 feet of strike length exists. The mineralized vein is a true fissure. In the area of the Clorinda and Toby Shafts the vein is from 4 to 8 feet in width with quartz sometimes on one wall, but more frequently on both walls, separated by 1 to 3 feet of amphibolite schist forming generally the central part of the vein. Sampling indicated assays over a 200 foot length from 0.28 oz. to 2.68 oz. gold per ton.

Bridgewest and Unistar will commence a rotary percussion drilling program upon approval by regulatory authorities.

BRIDGEWEST DEVELOPMENT CORPORATION (BWD-V)

RILL TEST OF ARIZONA GOLD LAIMS IS TO START THIS WEEK

- Bridge West Development Corporation and Unistar Technologies Corporation have agreed to borrow from Valdez Capital Corporation sufficient funds to complete Phase I of a work program on their Trails End gold property in Arizona. Valdez has the right to back in or 10% carried interest by converting its loan to an investment in the project. In announcing this, Bridgewest resident T.W. Neild says the Trails End property had indicated assays from sampling over a 200-foot length from 0.28 o 2.68 ozs. gold per ton. Bridgewest and Unistar will begin a rotary percussion drilling program this week to prove o values over the 7,000-foot strike length.

In Ontario, assay results from the first 2 holes drilled on the Roche Long Lac gold prospect near Geraldton to est the principal vein structures, show no appreciable gold values. The third hole, drilled from an ice-covered lake, nterected silicified sedimentary rocks and feldspar porphyry containing disseminated sulpfide minerals. This eological environment hosted the principal gold ore bodies at both MacLeod-Cockshutt and Hard Rock, former producing ines situated west of the Roche property. Analytical work on samples from this hole is in progress.

BRIDGEWEST DEVELOPMENT CORPORATION

CURRENT INTERESTS INCLUDE SWISS REAL ESTATE AND ARIZONA GOLD

- Terry W. Neild, president of Bridgewest Development Corporation, announces that negotiations have been concluded, and a letter of intent issued concerning a real estate joint venture by Lake Lucerne, Switzerland, which he expects will show a substantial profit to Bridgewest. Closing is expected in 3 to 4 weeks after which details will be released.

Management are negotiating to buy the Provincial property, a 28-claim gold-silver-copper prospect in Yavapai county, Arizona.

Mr. Neild reports that Plen Dickson, P.Eng., has returned from the Trail End property, Yavapai county, Arizona, and advises Bridegwest and Unistar Technologies Corp. that 6 rotary percussion holes have been drilled for a total of about 950 feet. Three of the holes were drilled in the immediate area of an ore shoot in the main Culrinda shaft. Two holes were drilled on the best targets indicated by back hoe trenching. The other hole was drilled at the showing at the Big Red adit. Surface mapping and trenching show the structure pinches and swells and is offset more than past records indicated. The best looking intersections from the holes drilled were sent for assay - values are low although the material appears similar to the main shaft ore shoot. Hole 6 returned 0.022 oz.gold/ton over 5 feet. Mr. Dickson is reviewing all data.

See compendium volume

Kaaterskill Exploration

Geochemistry • Petrology • Structural Analysis

691 ROBINSON DRIVE • PRESCOTT, ARIZONA 86301 • 602/778-5321

Arizona Precambrian Field Trip to the Prescott-Jerome Area

for: NICOR MINERAL VENTURES INC.

by: Pat O'Hara
April, 1985

April 15:

Morning: Room 171, Yavapai College
1) introduction to stratigraphy and age relations between Precambrian rocks throughout central, Arizona
2) structural models proposed by various workers.
3) metamorphism and the role of fluids during regional and contact metamorphism
4) summary of stratigraphic and structural models
5) ore deposits associated with Precambrian rocks
6) geochemistry of stratabound systems
7) a geochemical ore genesis model

Afternoon: Drive to Mayer and on to Cordes
Stop 1: overlook south of Cordes-discussion of the following:
1) pretectonic intrusive complexes
2) eastern metavolcanic belt
3) Cleator Fm. (informal name)
4) Brady Butte granodiorite
5) Iron King Volcanics
6) Crazy Basin quartz monzonite
7) ductile deformation
8) Shylock fault zone #'s 1-9

Transect of eastern volcanic belt
Stop 2: felsic volcanic rocks within the Shylock fault zone.
Stop 3: isoclinal folding of feruginous chert in the felsic volcanics
Stop 4: at site of the old railroad station of Middleton - folding of layering and various schistosity into broad f3 fold.
Stop 5: high grade regional metamorphic assemblages including staurolite and andalusite.

Return to Mayer and transect the eastern volcanic belt