



CONTACT INFORMATION  
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The following file is part of the Cambior Exploration USA Inc. records

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*Soils  
Copper (Adul)*

2036 Columbia Street  
Vancouver, B.C.  
Canada V5Y 3E1  
Phone (604) 879-7878  
Fax (604) 879-7898

cc: mmg  
Rm  
NB

## R E P O R T S U M M A R Y

Report: [ 9208930 R ]

## A N A L Y T I C A L R E P O R T

=====

## Origin

Inception Date: [ Nov 04, 1992 ]

Client: [ 135	Cambior Exploration USA, Inc.	]
Contact: [	Nick Barr	]
Project: [ 0	Cu Cad	]
Amount/Type: [ 52	Soil	]
[		]

## Analytical Requisition

Geochemical: [ ICP(AqR)30	]	
Assay: [ None	]	ICP: [ 30 ]
Comments: [ None		]

## Delivery Information

Reporting Date: [ Nov 05, 1992 ]

## Principal Destination (Hardcopy, Fascimile, Invoice)

Company: [ Cambior Exploration USA, Inc.	]
Address: [ 230 South Rock Blvd., Suite 23	]
City/Province: [ Reno, NV	]
Country/Postal: [ USA 89502-2	]
Attention: [ Nick Barr	]
Fascimile: [ 702/856-4549	]

## Secondary Destination (Hardcopy)

Company: [	]
Address: [	]
City/Province: [	]
Country/Postal: [	]
Attention: [	]
Fascimile: [	]

2 data pages in this report.

Approved by: 

B.C. Certified Assayers

iPL CODE: 921105-11:32:58



INTERNATIONAL PLASMA LABORATORY LTD.

2036 Columbia Street  
Vancouver, B.C.  
Canada V5Y 3E1  
Phone (604) 679-7678  
Fax (604) 679-7698

Report: 9200930 R

Customer: Exploration USA, Inc.

Project: Cu Cad

Page 1 of 2 Section 1 of 2

Sample Name

Type

Ag

Cu

Pb

Zn

As

Sb

Hg

Mo

Tl

B1

Cd

Co

Ni

Ba

M

Cr

10000N 6900E

So11

<0.1

16

5

51

<5

<5

<3

2

<10

<2

<0.1

11

18

118

<5

26

10000N 9000E

So11

<0.1

15

6

54

<5

<5

<3

2

<10

<2

<0.1

10

16

123

<5

27

10000N 9200E

So11

<0.1

20

7

64

<5

<5

<3

2

<10

<2

<0.1

17

20

196

<5

30

10000N 9400E

So11

<0.1

23

11

67

<5

<5

<3

2

<10

<2

<0.1

14

22

144

<5

32

10000N 9600E

So11

<0.1

31

10

67

<5

<5

<3

2

<10

<2

<0.1

12

19

166

<5

30

10000N 10000E

So11

0.5

37

6

61

<5

<5

<3

2

<10

<2

<0.1

17

49

375

<5

51

10000N 10200E

So11

<0.1

21

8

67

<5

<5

<3

2

<10

<2

<0.1

12

25

130

<5

27

10000N 10400E

So11

<0.1

21

10

57

<5

<5

<3

2

<10

<2

<0.1

13

24

141

<5

41

10000N 10600E

So11

<0.1

17

8

56

<5

<5

<3

2

<10

<2

<0.1

11

18

124

<5

26

10000N 11000E

So11

<0.1

19

8

64

<5

<5

<3

2

<10

<2

<0.1

13

19

129

<5

30

10000N 11200E

So11

<0.1

19

6

65

<5

<5

<3

2

<10

<2

<0.1

13

20

136

<5

31

10200N 8800E

So11

<0.1

21

10

57

<5

<5

<3

2

<10

<2

<0.1

12

19

144

<5

32

10200N 9000E

So11

<0.1

33

13

64

<5

<5

<3

2

<10

<2

<0.1

13

24

141

<5

41

10200N 9200E

So11

<0.1

25

12

67

<5

<5

<3

2

<10

<2

<0.1

13

26

142

<5

34

10200N 9400E

So11

<0.1

22

9

60

<5

<5

<3

2

<10

<2

<0.1

13

26

125

<5

39

10200N 9600E

So11

<0.1

40

9

70

<5

<5

<3

3

<10

<2

<0.1

16

25

159

<5

41

10200N 9800E

So11

<0.1

30

6

69

<5

<5

<3

3

<10

<2

<0.1

16

26

125

<5

43

10200N 10000E

So11

<0.1

26

9

61

<5

<5



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Report: 920930 R Cambior Exploration USA, Inc.

Project: Cu Ore

Page 1 of 2

Section 2 of 2

Sample Name	V	Mn	La	Sr	Zr	Sc	Ti	Al	Ca	Fe	Mg	K	Na	P
10000N 8900E	52	386	15	61	2	3	0.06	1.50	2.16	2.97	0.72	0.44	0.01	0.13
10000N 9000E	48	315	15	96	2	3	0.07	1.57	2.36	2.63	0.74	0.54	0.01	0.11
10000N 9200E	50	320	17	159	2	4	0.08	2.18	5.71	3.03	0.95	0.63	0.02	0.13
10000N 9400E	62	476	20	53	3	5	0.09	2.19	0.76	3.64	0.74	0.63	0.01	0.12
10000N 9600E	61	454	20	62	3	5	0.08	2.30	0.84	3.57	0.79	0.61	0.01	0.10
10000N 9800E	57	437	17	111	2	4	0.08	2.01	2.96	3.12	0.83	0.62	0.01	0.10
10000N 10000E	82	879	24	75	4	7	0.06	2.89	2.91	4.20	0.93	0.49	0.01	0.12
10000N 10200E	67	355	18	46	3	5	0.07	2.29	0.70	4.09	0.84	0.53	0.01	0.13
10000N 10400E	52	378	15	93	2	3	0.08	1.51	2.39	2.91	0.84	0.47	0.01	0.14
10000N 10600E	42	285	12	237	2	3	0.06	1.41	4.34	2.30	1.41	0.46	0.02	0.11
10000N 10800E	55	394	16	50	2	4	0.06	1.73	0.93	3.11	0.69	0.47	0.01	0.09
10000N 11000E	62	443	18	59	3	4	0.08	1.86	1.20	3.54	0.75	0.59	0.01	0.15
10000N 11200E	64	445	17	69	2	4	0.08	1.93	1.72	3.62	0.79	0.54	0.02	0.15
10200N 8800E	62	403	17	57	2	4	0.07	1.77	2.30	3.70	0.81	0.54	0.01	0.14
10200N 9000E	67	414	24	47	4	5	0.04	2.93	0.63	4.09	0.81	0.63	0.01	0.06
10200N 9200E	57	484	18	40	5	5	0.09	2.01	0.59	3.48	0.83	0.55	0.01	0.15
10200N 9400E	60	455	19	91	4	4	0.08	1.94	1.09	3.49	0.86	0.51	0.01	0.14
10200N 9600E	78	402	22	97	3	5	0.03	3.08	5.53	4.35	1.23	0.57	0.01	0.21
10200N 9800E	91	430	19	54	2	4	0.07	1.97	0.82	5.58	0.85	0.48	0.01	0.21
10200N 10000E	70	397	16	49	3	4	0.07	1.83	0.54	4.14	0.68	0.49	0.01	0.14
10200N 10200E	52	378	16	51	2	4	0.06	1.77	1.36	3.21	0.73	0.50	0.01	0.14
10200N 10400E	53	364	14	32	3	4	0.07	1.57	0.47	3.11	0.55	0.47	0.01	0.13
10200N 10600E	66	379	16	51	3	4	0.08	1.93	0.61	3.87	0.69	0.50	0.01	0.15
10200N 10800E	64	443	17	55	2	5	0.09	1.98	0.89	3.55	0.81	0.49	0.01	0.15
10200N 11000E	69	441	17	40	3	4	0.08	1.91	0.51	3.96	0.62	0.49	0.01	0.15
10200N 11200E	69	455	18	49	3	5	0.09	1.98	0.47	3.97	0.65	0.54	0.01	0.13
10400N 8800E	55	344	20	32	2	4	0.05	1.76	0.29	3.20	0.44	0.37	0.01	0.03
10400N 9000E	48	277	16	31	3	3	0.04	1.42	0.33	2.90	0.40	0.32	0.01	0.04
10400N 9200E	61	382	21	29	4	4	0.05	1.55	0.27	3.38	0.45	0.31	0.02	0.02
10400N 9400E	65	529	24	50	9	6	0.11	2.04	0.59	3.47	0.96	0.26	0.01	0.07
10400N 9600E	65	453	28	42	6	5	0.05	2.17	0.49	3.47	0.81	0.28	0.01	0.04
10400N 9800E	71	440	31	66	4	6	0.02	3.79	0.93	4.10	1.01	0.66	0.01	0.09
10400N 10000E	45	318	13	445	3	4	0.06	2.10	7.62	2.45	1.94	0.52	0.02	0.10
10400N 10200E	52	331	20	107	3	4	0.04	2.82	5.08	3.04	1.00	0.44	0.01	0.09
10400N 10400E	73	612	26	47	8	7	0.06	3.14	0.73	3.89	1.93	0.40	0.01	0.08
10400N 10600E	53	335	18	59	3	4	0.06	2.34	2.25	3.07	0.89	0.43	0.01	0.10
10400N 10800E	53	420	15	53	4	4	0.09	1.80	0.45	3.20	0.69	0.59	0.01	0.12
10400N 11000E	59	459	19	52	4	5	0.06	2.23	0.54	3.52	0.81	0.59	0.01	0.10
10400N 11200E	55	435	16	60	3	5	0.08	1.95	0.75	3.35	0.84	0.57	0.01	0.14
Minimum Detection	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
---No Test	Re=ReCheck	Ins=Insufficient	Sample	W=Est/1000	Z=Est	Z	Max=No Est							





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Report: 9200930 R Cambior Exploration USA, Inc.

Project: Cu Used

Page 2 of 2 Section 1 of 2

Sample Name	Type	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	H ppm	Cr ppm
10600N 8800E	Soil	<0.1	18	9	49	<5	<5	<3	2	<10	<2	<0.1	10	17	116	<5	27
10600N 9000E	Soil	<0.1	19	8	58	<5	<5	<3	2	<10	<2	<0.1	12	27	132	<5	32
10600N 9200E	Soil	<0.1	26	12	57	<5	<5	<3	2	<10	<2	<0.1	16	50	139	<5	47
10600N 9400E	Soil	0.1	23	8	65	<5	<5	<3	2	<10	<2	<0.1	14	37	150	<5	46
10600N 9600E	Soil	<0.1	20	7	65	<5	<5	<3	1	<10	<2	<0.1	13	20	137	<5	31
10600N 9800E	Soil	<0.1	25	10	78	<5	<5	<3	1	<10	<2	<0.1	15	25	166	<5	32
10600N 10000E	Soil	0.1	22	11	65	<5	<5	<3	1	<10	<2	0.1	13	21	148	<5	29
10600N 10200E	Soil	<0.1	30	14	67	<5	<5	<3	2	<10	<2	<0.1	13	27	164	<5	34
10600N 10400E	Soil	<0.1	31	13	69	<5	<5	<3	2	<10	<2	<0.1	16	35	217	<5	42
10600N 10600E	Soil	<0.1	24	8	73	<5	<5	<3	2	<10	<2	<0.1	13	20	150	<5	27
10600N 10800E	Soil	0.1	20	9	73	<5	<5	<3	1	<10	<2	<0.1	13	19	159	<5	25
10600N 11000E	Soil	<0.1	19	8	69	<5	<5	<3	2	<10	<2	<0.1	12	17	151	<5	25
10600N 11200E	Soil	0.1	19	8	64	<5	<5	<3	2	<10	<2	0.2	11	18	131	<5	25

Minimum Detection	0.1	1	2	1	1	5	5	3	1	10	2	0.1	1	1	2	5	1
Maximum Detection	100.0	20000	20000	20000	20000	10000	1000	10000	1000	1000	10000	10000.0	10000	10000	10000	1000	10000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
---No Test	Re-C-RecCheck	Ins=Insufficient Sample	m=Est/1000	2=Est %	Max=No Est												



SURFACE AGREEMENT

THIS AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_, by and between Ashland Exploration, Inc., a Delaware Corporation, hereinafter referred to as the "Company", and \_\_\_\_\_

hereinafter referred to as the "Owner", whether one or more.

WHEREAS, the Owner has an interest in the following described lands (hereinafter referred to as the "Lands") situated in \_\_\_\_\_ County, Wyoming:

WHEREAS, the Company desires a short term agreement in order that it can enter upon the Lands and conduct preliminary mineral exploration; and,

WHEREAS, the Owner has accepted the manner in which the Company has agreed to compensate the Owner for the minimal amount of surface disturbance expected by the operations conducted hereunder;

NOW, THEREFORE, it is mutually agreed between the parties as follows:

1. Owner agrees that during the term of this Agreement the Company has the right to enter upon the Lands to conduct preliminary exploration for minerals, but nothing herein shall be construed in such a manner as to allow the Company to conduct commercial mining operations during the term of this agreement.
2. The Company and its contractors shall be allowed to go upon Lands for the general purposes of prospecting and exploring for minerals by drilling. In the event that minimal amounts of grading or bulldozer work are required such work shall be permitted, but nothing herein is to be construed to allow any substantial amount of surface disturbance.
3. The Owner hereby grants the Company the right of ingress and egress to the Lands for such purposes, and grants the rights of ingress and egress across the Lands for similar operations conducted on adjoining lands not owned by the Owner.

To: Randy Moore - Reno

Randy,

Attached are 3 different versions of Surface Agreements I've seen for Wyoming ranchers during the "Uranium boom" days.

I personally like the shortest one the best. Call if you want me to put something together. Best  
Regards, [Signature]

4. As consideration for the foregoing, the Company agrees to pay the Owner the sum of \$\_\_\_\_\_ for each exploration drill hole drilled on the Lands, such sum to be in lieu of damages that might otherwise be paid for any crops or grass damaged or destroyed.

5. In addition to the damages stated in the foregoing paragraph, the Company agrees to pay all other actual damages caused by its operations on the Lands, including, but not limited to, any damage to buildings, fences, cattle and sheep, and to carry liability insurance, and to indemnify the Owner for any losses incurred by the Company's operations.

6. The Company agrees that it will conduct all exploration operations in a good and workmanlike manner, and that it will comply with all laws, rules, and regulations, including, but not limited to, Wyoming statutes regarding plugging of exploration drill holes, restoration of disturbed areas and such other requirements as may be imposed from time to time by the Wyoming Department of Environmental Quality.

7. The Company agrees that to the greatest extent practicable it will use existing roads and trails. It will obtain the Owner's further consent before building new roads. Without further consent from the Owner the Company will not move equipment on the premises at such time as the ground is sufficiently wet that appreciable surface damage could be caused to the Lands.

8. The Company, its agents, employees, contractors and subcontractors, shall not at any time take firearms onto the Lands without the consent of the Owner. All gates will be left open or closed as found.

9. The parties hereto agree that the total number of exploration drill holes drilled on the Lands pursuant to this agreement shall not exceed \_\_\_\_\_ holes.

10. This agreement shall be binding on and inure to the benefit of the parties hereto, their respective heirs, personal representatives, successors and assigns.

IN WITNESS WHEREOF, the undersigned have executed this Surface Agreement as of the date and year first above written.

ASHLAND EXPLORATION, INC.

OWNER

By \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_

\_\_\_\_\_

The Company's Address for Notice:

The Owner's Address for Notice:

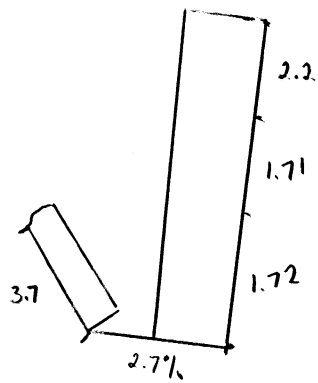
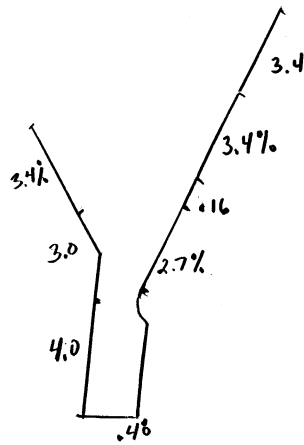
Manager of Minerals Exploration  
Ashland Exploration, Inc.  
Suite 110  
1536 Cole Blvd.  
Golden, Colorado 80401

\_\_\_\_\_


\_\_\_\_\_

\_\_\_\_\_

Telephone: (303) 232-4444



**CAMBIOR** USA

COMPILED BY:		REVISIONS	DATE
	DATE:		
	MAP #:		
		SHEET	OF

# CAMBIOR USA, INC. NO. 06655

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED: ☐ County: \_\_\_\_\_

Project: Last Chance

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 10'

Main pit NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Massive Andesite w/ 60% an

Grass & through R<sub>x</sub>

# CAMBIOR USA, INC. NO. 06656

ROCK: ☐

Date: \_\_\_\_\_

SOIL: ☐

State: \_\_\_\_\_

SED.: ☐

County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N ; R \_\_\_\_\_ E ; \_\_\_\_\_ 1/4 ; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 10' from cut of 55

NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Same as 55



# CAMBIOR USA, INC. NO. 06657

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 12' from end of

56

NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Rec Cu Ox

Fault @ end of sample

seems to end Cu Ox

Fault E-W vert

# CAMBIOR USA, INC. NO. 06658

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

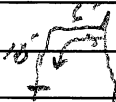
Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

Outcrop Location: 16'  
Face of pit NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_



Andesite more broken than other  
samples but w/ 20% lo. ox.  
little change across pit. Rr  
Slightly more sil. ceous.

# CAMBIOR USA, INC. NO. 06659

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

Outcrop Location: 10' \_\_\_\_\_

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

*E wall of pit*  
*Yogo flow 100% massive*  
*flow unit w/ to ox. Yogo flow*  
*w/ vesicles, now broken and*  
*fragments are in unit.*  
*Just 2' of sample in yogo flow*  
*only mineralization @ contact.*

# CAMBIOR USA, INC. NO. 06660

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 3' \_\_\_\_\_

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: Young / bas unit

Fractured, vesicles large

no 100%

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# CAMBIOR USA, INC. NO. 06661

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N ; R \_\_\_\_\_ E ; \_\_\_\_\_ 1/4 ; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 10' \_\_\_\_\_

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Core on 55 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# CAMBIOR USA, INC. NO. 06662

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:	Dump/ Tailings	Outcrop/ Float	Fresh/ Weathered
-----	-------------------	-------------------	---------------------

Outcrop Location: \_\_\_\_\_ 10'

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: Same Dec 1965

More leaching on surface

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# CAMBIOR USA, INC. NO. 06663

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:	Dump/ Tailings	Outcrop/ Float	Fresh/ Weathered
-----	-------------------	-------------------	---------------------

Outcrop Location: 10' \_\_\_\_\_

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: Flow is fragmental

Different than 2 flows in pit 1

100% less than pit 1

Dams on faces not throughout

Rx

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# COMBIOR USA, INC. NO. 06664

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: \_\_\_\_\_ 10'

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Same as 63

in 100x

throughout Rx



# C//MBIOR

**USA, INC.**

NO. 06665

**ROCK:**

Date: \_\_\_\_\_

**SOIL:**

**State:** \_\_\_\_\_

**SED.:**

**County:** \_\_\_\_\_

**Project:** \_\_\_\_\_

DRILL HOLE NO.

**FROM**

**TO**

Lee: T

**N.**

**D**

**E.**

14.

c

**Quad:**

**Scale**

**RX:**

## Dump/ Tailings

### Outcrop/ Float

## Fresh/ Weathered

**Outcrop Location:**

**NO. \_\_\_\_\_**

### Sample Description:

Shank

# CAMBIOR

**USA, INC.**

**NO. 06666**

**ROCK:** ☐

Date: \_\_\_\_\_

**SOIL:** ☐

**State:** \_\_\_\_\_

**SED.:** ☐

**County:** \_\_\_\_\_

**Project:** \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T  $\frac{N}{S}$ ; R  $\frac{E}{W}$ ;  $\frac{1}{4}$ ; S \_\_\_\_\_

Quad: \_\_\_\_\_ Scale: \_\_\_\_\_

**RX:**

## Dump/ Tailings

### Outcrop/ Float

## Fresh/ Weathered

Outcrop Location: 15'

NO. \_\_\_\_\_

Sample Description: Sue 565

very high CO<sub>2</sub> + 3%

\_\_\_\_\_

\_\_\_\_\_

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Journal compilation © 2006 Blackwell Publishing Ltd

[illegible]

# CAMBIOR USA, INC. NO. 06667

ROCK: ☐ Date: \_\_\_\_\_

SOIL: ☐ State: \_\_\_\_\_

SED.: ☐ County: \_\_\_\_\_

Project: \_\_\_\_\_

DRILL HOLE NO. \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

Loc.: T \_\_\_\_\_ N; R \_\_\_\_\_ E; \_\_\_\_\_ 1/4; S \_\_\_\_\_  
S W

Quad: \_\_\_\_\_ Scale \_\_\_\_\_

RX:

Dump/  
Tailings

Outcrop/  
Float

Fresh/  
Weathered

Outcrop Location: 13' \_\_\_\_\_

\_\_\_\_\_ NO. \_\_\_\_\_

Sample Description: \_\_\_\_\_

Shale 466 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



April 22, 1943

Honorable Carl Hayden  
United States Senate  
Washington, D. C.

Dear Senator Hayden:

I consulted with Charlie Willis regarding the telegram which was just sent you on the Last Chance claim owned by Mrs. Ethel Ferguson.

I am enclosing a report by the Bureau of Mines on the Last Chance which was recently made and I might state that a large part of the information was gathered from data that Mrs. Ferguson had on hand. I examined the property and advised Mrs. Ferguson to the procedure and Charlie Willis has stated the conditions surrounding the property clearly to you.

It is decidedly a court question to settle whether or not the patented script homestead owned by Goff was valid or fraudulently obtained.

The suggestion made by this Department after looking over the property and consulting with the attorneys representing Mrs. Ferguson was to obtain the restraining information against Eberling so that free access might be had to the property and to then plan on diamond drilling to determine the value and extent of the property and when completed and prepared to close negotiations with Goff so as to buy from him whatever portion of the ground as was necessary. I believe that Mr. Goff would be agreeable to some such plan. The script homestead is valuable due to the fact that a well with good water is located on that portion which overlaps the mining claim. The well is located in the best showing of ore and any work done in removing the ore would ruin the well. I believe other water could be easily obtained on other portions of the forty acre script homestead.

Mrs. Ferguson has been fully advised but wants the government to fight the case and prove the validity of her mining claims and I cannot see how this can be done.

With best wishes and kindest regards, I am

Very truly yours,

JSC:kk

J. S. Coupal, Director

# Rich Copper Deposit Reported

El Paso Woman Owns

Most of Claims

Possibility of development of what promises to be extensive copper deposits in the Owl Head mining district of Pinal County, Ariz., was revealed recently in a Bureau of Mines report to Secretary of the Interior Ickes.

The bed of copper ore, which may help substantially the country's urgent need for the important war metal, lies about 37 miles north of Tucson, near U. S. Highway 80, and involves four townships in the region.

The presence of the deposit was brought to the attention of the Bureau of Mines by Mrs. Ethel Ferguson of 3928 Fort boulevard, owner of 60 of the 72 claims in the region. James Owens of Miami, Ariz., owns the other 12 claims.

## Test Surface Deposits

Bureau of Mines engineers examining the region said that at least one million tons of 2½ per cent copper ore could be stripped from one small area without going below the depth of 10 to 15 feet. This would be the minimum percentage, taking everything that comes. Selective mining and sorting would more than double the copper percentage, the engineers said.

As yet the Bureau of Mines engineers have only tested the surface deposits to an average depth of 10 feet, but they report previous workings indicate higher percentage of copper down to 250 feet.

This property has been known and worked to some degree for a long period of time. Considered primarily cattle country, relatively little mining was done.

However, cars of ore shipped from open pit mines averaged up to 5.8 per cent copper plus percentages of gold and silver. Smelter returns showed the percentage of copper to be higher as the pits were deepened.

Geologically, the Bureau of Mines reports the deposits to be a dike of copper-bearing andesite rock 500 feet or more in width and of an indeterminate length and depth. Engineers say that at least 5000 feet of length is in evidence and a depth of at least 250 feet has been indicated by a drill hole down to the true water level.

The Bureau of Mines has recommended diamond drilling of the region to ascertain the exact extent of the copper ore.

August 18, 1943

Ethel Ferguson

1397

aso, Texas

Mrs. Ferguson:

Will you kindly fill out and return the enclosed report for the Jimmie Owens Property. This will be of assistance in presenting the property to interested parties.

I have told a number of people about your Last Chance Mine and they will undoubtedly contact you. Among them were Mudd-Wiseman and W. C. Humphrey of Patagonia. The drilling operation shows a real mine.

Will be back in Tucson next week.

Yours very truly,

George A. Ballam

Assistant to the Director

JE

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine ✓ LAST CHANCE

Date October 30, 1958

District

Engineer FRANK P. KNIGHT

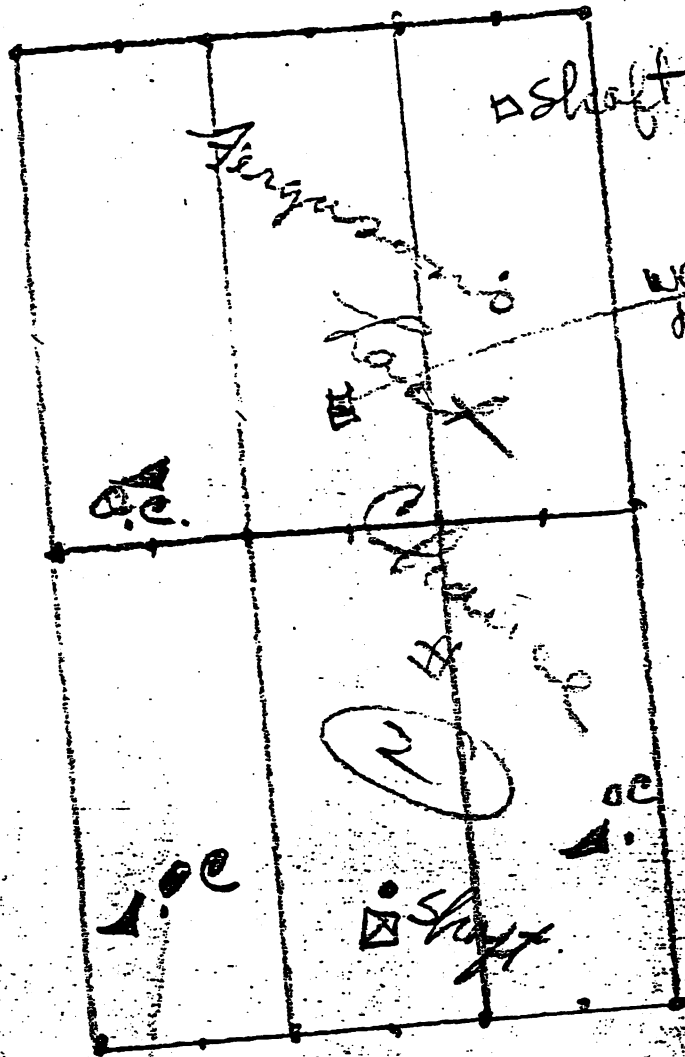
Subject: phone conversation with Mrs. Ferguson

✓  
Mrs. Ethel Ferguson phoned (from El Paso) to say that she had decided to talk with us rather than fill out a mine owner's report form. She said considerable had been done in connection with the Last Chance property in the past ten years but that there was title litigation still pending. She said that the drilling in the immediate vicinity of the Last Chance by Magma Copper Company was close to her property but not on it to her definite knowledge. She said that she understood that Mr. Goff had had them drill on his portion of the Ferguson claims.

Mrs. Ferguson hopes to make a trip to Phoenix and probably will bring some information for the office files. She said she had much information and numerous maps available to anyone interested in the property.

North

O.C.  
open cut



West

South

1 claim  
East Chance  
Sec. 35 - Twp. 5 South  
R. 12 - E

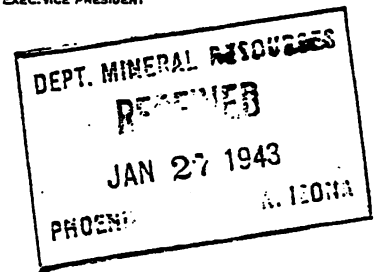


Hotel  
**Paso Del Norte**  
El Paso, Texas



January 25, 1943

W. L. TOOLEY, MANAGER  
PAUL HARVEY, EXEC. VICE PRESIDENT



Mr. J. S. Coupal, Director  
Department of Mineral Resources  
Phoenix, Arizona

Dear Mr. Coupal:

Two weeks are gone - lost and we are not on the property. I've a letter from A. S. & R. and the assays were even a little better than old reports, 4 per cent copper. Mr. Stephen's opinion as to whether the 4% would hold up for shovel working, would have to be seen.

The smelter will buy the ore. I've a party who wants to go to property - and Ebeling and Goff are still holding us up.

What do you want me to do? There should be some one with authority who could put these men in jail until we've found if we have a mine or not.

Ebeling is dangerous. I would say a peace bond would hold Goff.

Have not heard from Mulhern. Please let me know what progress you've made.

With best wishes and kindest regards, I  
am

Very truly yours,

*Mrs. Ethel Ferguson*  
(Mrs.) Ethel Ferguson



*Dry Air Conditioned*

AMERICAN SMELTING AND REFINING CO.

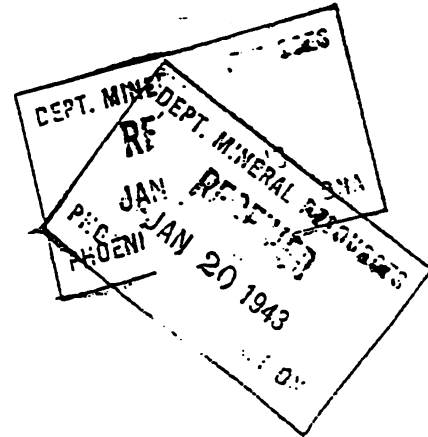
MINING DEPARTMENT OF THE SOUTHWEST

P. O. BOX 2229

TUCSON, ARIZONA

W. H. LOERPABEL  
MANAGER

January 18, 1943



Mr. J. S. Coupal, Director  
Dept. of Mineral Resources  
413 Home Builders Bldg.  
Phoenix, Arizona

✓  
MALONE COPPER MINE  
+ (Mrs. Ethel Ferguson)  
PINAL COUNTY, ARIZONA  
OWL'S HEAD DISTRICT

Dear Mr. Coupal:

The hand specimen of copper ore you left to be assayed ran as follows:

<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Insol.</u>	<u>SiO<sub>2</sub></u>	<u>Fe</u>	<u>CaO</u>	<u>Al<sub>2</sub>O<sub>3</sub></u>
.01	1.51	4.5	73.6	51.2	5.8	0.9	16.0

You will note that the aluminum content is rather high and therefore the ore not particularly desirable as a flux. Mr. Rickard says that we could, however, take a limited quantity of such ore at Hayden allowing, say, 10% free and penalizing the balance at 25¢ per unit making a smelting charge of \$5.00 per ton.

This grade of ore would net the shipper, f.o.b., Hayden:

Smelter pay	\$2.75
Premium	4.28
Total	\$7.03 per ton

This, less mining, hauling, freight royalties, etc. would leave little for profit.

I also doubt that a grade of 4.5% copper could regularly be maintained in a shovel operation.

Yours very truly,

*F. M. Stephens*

F. M. STEPHENS

cc: WHLoerpabel  
BNRickard  
FMS/ap

W.M.R. \_\_\_\_\_

\_\_\_\_\_ 1943

WAR MINERALS REPORT

UNITED STATES DEPARTMENT OF THE INTERIOR \* BUREAU OF MINES

---

Report of the Bureau of Mines to Hon. Harold Ickes,  
Secretary of the Interior.

✓ LAST CHANCE  
Pinal County, Arizona.

- Copper -

SUMMARY

✓  
The Last Chance mine is in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on Highway 80, and 29 miles south of Florence, the County seat of Pinal County.

Ore occurrences are in an andesite dike 500 feet or more in width and an indeterminate length. The surrounding rocks are granite and schist. The andesite has been sheared or cracked in various directions. Copper carbonate and silicates are found in this surface area to an undetermined depth. Shallow pits and cuts generally show these copper ores, although some outcrop areas are leached and very little

---

1. The reports of the War Minerals Series are based upon field work of engineers of the Bureau of Mines together with data available to the Bureau from other sources. The purpose of these reports is to supply information that may be helpful to owners and operators of properties examined, and to others who are especially interested in them. For this reason distribution is limited to those who request the reports individually.

copper mineral is found there. One churn drill hole was put down in the central area but no data are at hand as to the exact results. One report states that ore was about the same to 250 foot depth where a heavy flow of water was struck. This water now stands at about 20 feet below the surface. It is reported 5 feet of 15% chalcocite was passed through at 80 feet depth. Five cars of ore have been shipped from the property with an average grade of 3.45 ounces silver, and 4.2% copper.

This property can be easily diamond drilled and a few holes would quickly determine its possibilities. It would not be necessary to drill over 250 feet in depth and the first few holes might show that all the copper bearing ground can be explored with shallower holes.

Most of the area is covered with debris, but small outcrops are exposed throughout the area.

This property warrants further consideration and has possibilities of developing a large deposit of low-grade copper ore.

It is recommended that the property be prospected by the Bureau of Mines; first, with several trenches to determine possibilities as to the size of the deposit; second, with diamond drill holes if results of trenching are satisfactory.

#### INTRODUCTION

The Last Chance mine was brought to the attention of the Bureau of Mines by the owner. It was examined by a Bureau of Mines engineer on January 23, 1943. Supplementary information was obtained from a private report dated March 1931. This report is based on the information obtained from those two sources.

### LOCATION AND ACCESSIBILITY

This property is situated in section 35, T. 8 S. R. 12 E. in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on highway U. S. 80 and 29 miles south of Florence, the county seat. It is 16 miles over a dirt road to Red Rock, a station on the Southern Pacific Railroad, and thus within easy reach of the smelters at Hayden, Miami and Superior. The exposed copper-bearing ground is just off the highway on a practically flat desert floor.

### OWNERSHIP

The ownership is claimed by Mrs. Ethel Ferguson, P. O. Box 1397, El Paso, Texas. At present there is some dispute over ownership between Mrs. Ferguson and Mr. Goff, a cattleman. Mrs. Ferguson states that she has been awarded a Supreme Court decision on the title.

The area is covered by 60 contiguous lode mining claims held by annual assessment work. The principal dispute is over the Last Chance No. 2 claim on which is located the 250 foot drill hole which is the principal source of water in this area.

### HISTORY

While the property has been known for a long time, little work has been done except in the way of shallow pits and cuts. Some churn drilling was done at one period about 1918. It is reported that several other holes were put down at distant points in addition to the 250 foot hole on the Last Chance No. 2 claim. No data are at hand as to the results from these holes. It would seem that results were not very good or work should have been continued. The property has been held for the last twenty years by Mr. Ferguson and following his death, by Mrs. Ferguson, his wife. The

surface rights were brought up by the use of Government scrip in the late twenties and were purchased later from the original buyer, by Mr. Goff. As the water hole was the thing of most value to Mr. Goff, he has fenced that and has generally prevented entrance to the property by the claimants and other parties. Mr. Goff showed the Bureau Engineer the location of the property and did not interfere in any way with his examination.

#### PRODUCTION

Five cars of ore were shipped from the property by James J. Owens in 1929 and 1930. That ore was mined from open cuts in the area around the 250 foot water hole on the Last Chance No. 2 claim. Mr. Owens had a lease on the property at that time. The ore shipped was taken pretty much as mined as there is very little discarded material around the cuts. The best of the five cars shipped ran 4.8 ozs. silver and 5.2% copper. The lowest, 2.1 lbs. silver and 3.6% copper. The general average was 0.03 ozs. gold, 2.5 ozs. silver and 4.2% copper. This is the total production from the property and little work has been done since that time.

The property has possibilities for the development of a large body of low-grade ore which would require a plant for local treatment or to develop ore of a grade that can be shipped direct to the smelters at Hayden or Superior, in a surface area 10 to 20 feet deep.

#### PHYSICAL FEATURES

This property lies in a flat desert area and a paved highway passes within 1/2 mile of the property. The surface is covered with the usual desert vegetation, with no timber or other growths of any value for mining purposes.

Most of the area is covered with a wash, with scattered outcrops in the dike area. These outcrops are from a few feet to about 15 feet above the wash.

The only substantial amount of water was cut at 250 feet depth by drill hole, although a little water is found 10 to 15 feet below the surface. No definite measurement has ever been made of the capacity of the water well. Regular pumping with a wind mill has no effect on the water level which stands at about 20<sup>1</sup>/<sub>2</sub> of the surface.

#### GEOLOGY AND ORE OCCURRENCES

An andesite dike 500 feet or more in width cuts through the granites and schists of this area. The dike has been sheared and altered, but for the most part it is covered with wash and neither the extent of the shearing nor the length of the dike can be definitely determined.

Large areas of the andesite dike appear to have been mineralized, followed by leaching and erosion. Some of the outcrops have been almost completely leached and at other places copper carbonates and silicates show at the surface. Whether the ore-bearing zone, which is mostly secondary, extends below the sub-surface water could not be definitely determined. The complete leaching of some of the outcrops indicates a possibility of a deeper secondary zone, which might be in the form of the secondary sulphide, chalcocite. It is reported that the 250 foot drill hole passed through 5 feet of 15% copper, in the form of chalcocite, at 80 feet depth. No reliable data concerning this area at hand.

#### DEVELOPMENT

Except for a few drill holes, all development has been in the form of shallow pits and cuts. While it is reported several holes were

drilled over a large area, the location of only one seems to be definitely known. This is the 250 foot hole on the Last Chance No. 2 claim. Some of the pits were started in the outcrops and others were put down through the wash which is only a few feet in depth. All showed some copper pre.

One pit about 20 feet deep had water in the bottom. The dump from this pit showed only a small amount of copper, but the rock showed heavy leaching and alteration from surface waters.

Most of the ore shipped came from two pits, one about 60 feet long and the other about 40 feet long. The 60 foot pit was about 17 feet deep at the deep end. The other cut was only about 4 feet deep.

#### ORE RESERVES

No definite tonnage of ore can be measured. There is an indicated area about 100' x 200' around the drill hole on which some work has been done. Using a factor of 15 cubic feet per ton and an average depth of 10 feet, this block would contain 13,333 tons. It is possible that this area would be greatly extended by further development. Increases in depth would give proportionate increases in tonnage.

Ore carrying 0.02 ozs. gold, 2.5 ozs. silver, and 2.5% copper would give the following smelter returns:

Pay for all gold at \$32.50 for 0.02 ozs.		\$ 0.65
Pay for 95% silver, minimum deduction $\frac{1}{2}$ oz. @ 71¢ 2.5 ozs.		1.42
Pay for 95% copper at assay less 8¢ at 11.55 cts. 2.6¢, 2.5%		3.61
		<u>5.68</u>
Base smelter charge, 50% silica	\$3.50	
Alumina penalty, 16% less 10% @ a 5¢ unit	1.50	
	<u>\$5.00</u>	
Net smelter payment		5.00
Bonus of 5¢ pay for 97% of assay		\$ 0.68
		2.43
		<u>\$3.11</u>
Railroad freight	\$0.85	
Trucking	1.25	
Mining	1.00	
	<u>\$ 3.10</u>	



With the above smelting contract the operation would break even on the above grade of ore. Hence any higher grade of ore would show a profit. Five cars of ore shipped from the mine gave an average value of 3.45 ozs. silver and 4/2% copper. By selective mining and sorting, it should be possible to keep the grade of the ore up to this figure. This grade of ore with an increase of mining costs to \$2.00 per ton would show a net operating profit of \$2.42 per ton of ore mined.

Main possibilities in the way of large tonnages would be best tested by diamond drill holes. This ground should be easily drilled and the maximum depth necessary would probably be around 250 feet, which is indicated as the true water level.

#### OPERATING COSTS

With the present known ores at and near the surface, all mining can be done by open pit and mining would cost about \$1.00 per ton. If large tonnages are developed, mining could be done by block carving or similar methods and the costs would be around 75 cents or under per ton.

The haulage and treatment charges will amount to about \$5.60 per ton if the ores are shipped direct to the smelter.

If oxidized ores are treated at a leaching plant built at the mine, the cost will be about \$1.50 per ton.

If secondary sulphides are found and a flotation plant is erected, the cost of the concentration will be about 75 cents per ton.

A power line which carries power from Parker Dam runs through the property.

Trucking to Florence is 29 miles over good highway. On a small tonnage basis it would probably cost \$1.25 per ton, but on a large tonnage this could be reduced to \$1.00 or less. The rail haul to Hayden or Superior would be 85 cents per ton.

If ore or concentrates were hauled to Red Rock on the main line of the Southern Pacific Railroad the distance would be 16 miles and would cost about 75 cents per ton.

### Sampling

The following samples were taken on the property:

<u>Sample No.</u>	<u>Description</u>	<u>Width</u>	<u>Ozs. Au</u>	<u>Ozs. Ag.</u>	<u>% C</u>
643	Grab of dump at 20' shaft, S. 50 E. 148' to windmill	Grab	trace	0.05	0.20
644	5' shaft, S. 50 E. 130' to windmill	4'	trace	0.40	1.74
645	5' shaft, S. 3 W. 125' to windmill	5'	trace	0.60	1.62
646	Filled shaft dump, grab, S. 22 W to windmill	Grab	trace	0.35	0.93
647	Filled cut, grab dump, S. 37 W to windmill	Grab	trace	0.35	2.20
648	Open cut, bottom, S. 5 W. 63' to windmill	7'	trace	0.70	1.48
649	Same open cut as above, south end, 30' south of No. 648, 15' below surface	5'	trace	1.70	2.98
650	6' shaft, N. 13 E. 32' to windmill	6'	trace	2.80	3.78
651	N. end of open cut, 4' deep, N. 3 W. 40' to windmill	4'	trace	1.00	1.84
652	Open cut 30' south of No. 651	7'	trace	2.30	2.90
653	Above open cut to west of No. 652	10'	trace	1.10	2.25

Excluding No. 643 the general weighted average is 2.22% copper.

Eleven samples by McConnell and Palmer showed 0.02 ozs. gold, 1.7 ozs. silver, and 3.01% copper.

Some sorting of the ore would increase the values probably from  $1\frac{1}{2}$  to 2 times the above values. As more tonnage would have to be mined for ore shipped the costs would go up in the same proportion or more.

### Conclusions and Recommendations

It appears from work done that this property has an indicated area about 200 feet long and 100 feet wide that would produce 13,333 tons of ore with an average value of about 0.02 ozs. gold.  $2\frac{1}{2}$  ozs. silver, and  $2\frac{1}{2}$  copper. By the indicated size of the andesite dike this area might be extended to 500 or more feet in width and 5000 feet or more in length.

Present work does not give any true conception of possible depth and present ground water level does not permit giving any estimate of depth below about 15 feet except on one outcrop which stands about 10 feet above the general level of the country. Hence, there is a possibility that a large tonnage of low grade copper ore could be developed. The country is very good for diamond drilling and the maximum depth of holes would be 250 feet, which is indicated to be the true water level by one churn drill hole.

It is possible that the present ground water level may be the bottom of a zone of secondary enrichment and if such is the case all the ores will be copper carbonates or copper silicates and the general depth of the ore body will be around 10 to 15 feet. Even if the ore is limited to this shallow depth, it is possible that one million or more tons of  $2\frac{1}{2}\%$  copper ore could be mined.

Since there is a possibility of developing a large tonnage of low grade copper ore on this property, it is recommended that primarily 1000 feet of trenching be done by the Bureau of Mines which would cost about \$3.00 per linear foot. The trenches would be from 3 feet to 4 feet in depth. If the trenching should indicate ore bodies under an extensive area, it can be followed up by diamond drilling.

Last Chance,  
Ariz. No. \_\_\_\_\_

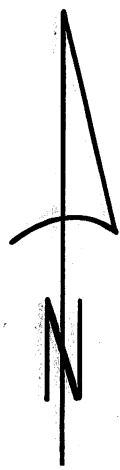
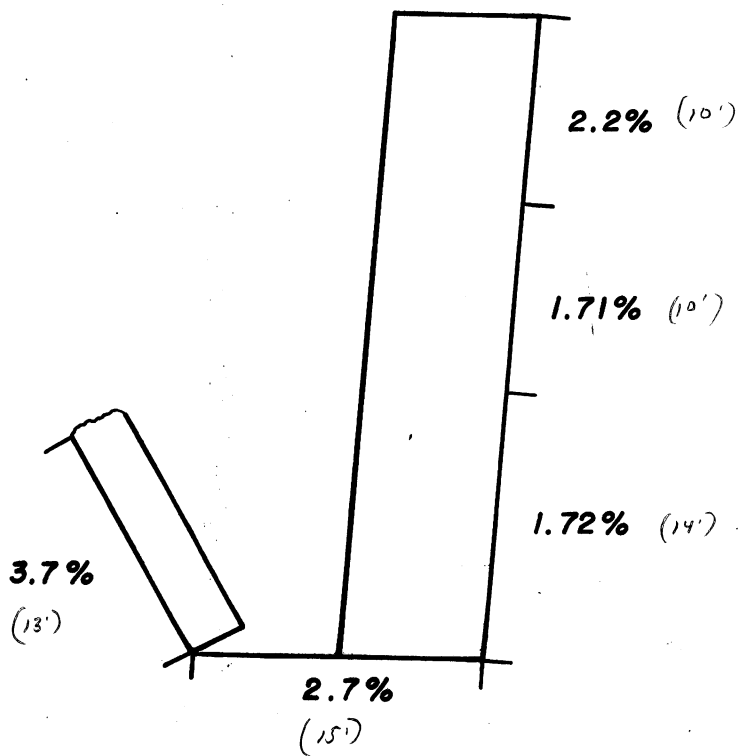
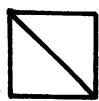
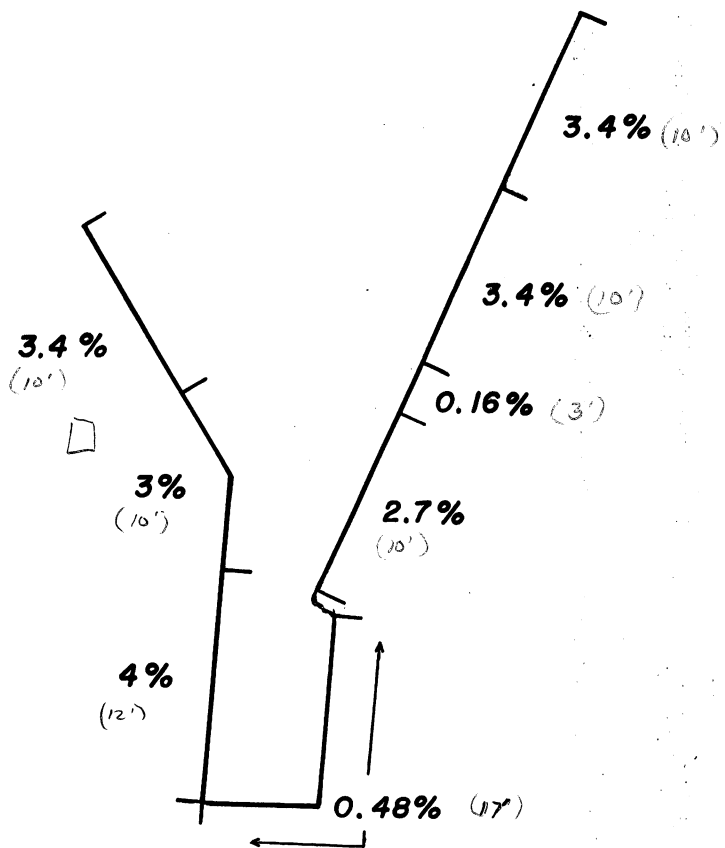
#### Sources of Information:

Information was obtained by personal examination by  
Thos. L. Chapman, on January 23, 1943.

From private report by McConnell and Palmer, Mining Engineers,  
of El Paso and Los Angeles.








Copper in %



**CAMBIOR** Exploration USA

CADILLAC PROJECT

**Last Chance Pits**

COMPILED BY: R. Moore		REVISIONS	DATE
	DATE: 10/19/92		
	MAP #: SW304-	SHEET	OF



R-12-E.

S. 89° 55' W.

■ Goff House.

T-8-S.  
N. 0° 1' W.

35

N. 0° 1' W.  
T-8-S

FERGUSON LAST CHANCE No 2

DISCOVERY SHAFT  
12 FT. SHAFT & DRILLED HOLE  
12 FT. SHAFT & 40 FT. SHAFT

STAR  
LODE CLAIM

100 FT. SHAFT  
OPEN CUT  
12 FT. SHAFT  
OPEN CUTS  
LODGE

STATE HIGHWAY TO TUCSON

N. 89° 54' E.

FRED C. SIEBOTH C.E.  
SEPT. 10, 1923.

SCALE: 1 INCH = 600 FEET.

Leveling Filling Station

FERGUSON LAST CHANCE No 2  
Northeast Quarter of the Southeast Quarter of Sec.  
35 Tsp. 8, Range 12 East, Gila & Salt River Meridian.



FERGUSON COPPER MINE

WORKINGS AT "LAST CHANCE" No. 2 CLAIM

PINAL COUNTY, ARIZONA.

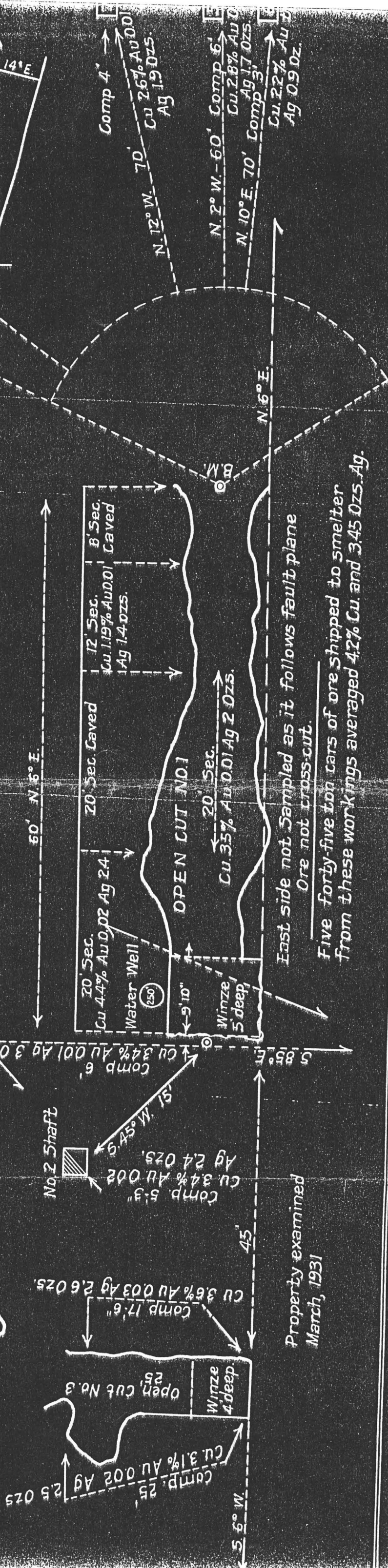
**MCCONNEL & PALMER**

Mining Engineers

El Paso, Texas and  
and operators

Los Angeles, California.

nia.



Property examined  
March, 1931

April 22, 1943

Honorable Carl Hayden  
United States Senate  
Washington, D. C.

Dear Senator Hayden:

I consulted with Charlie Willis regarding the telegram which was just sent you on the Last Chance claim owned by Mrs. Ethel Ferguson.

I am enclosing a report by the Bureau of Mines on the Last Chance which was recently made and I might state that a large part of the information was gathered from data that Mrs. Ferguson had on hand. I examined the property and advised Mrs. Ferguson to the procedure and Charlie Willis has stated the conditions surrounding the property clearly to you.

It is decidedly a court question to settle whether or not the patented script homestead owned by Goff was valid or fraudulently obtained.

The suggestion made by this Department after looking over the property and consulting with the attorneys representing Mrs. Ferguson was to obtain the restraining information against Eberling so that free access might be had to the property and to then plan on diamond drilling to determine the value and extent of the property and when completed and prepared to close negotiations with Goff so as to buy from him whatever portion of the ground as was necessary. I believe that Mr. Goff would be agreeable to some such plan. The script homestead is valuable due to the fact that a well with good water is located on that portion which overlaps the mining claim. The well is located in the best showing of ore and any work done in removing the ore would ruin the well. I believe other water could be easily obtained on other portions of the forty acre script homestead.

Mrs. Ferguson has been fully advised but wants the government to fight the case and prove the validity of her mining claims and I cannot see how this can be done.

With best wishes and kindest regards, I am

Very truly yours,

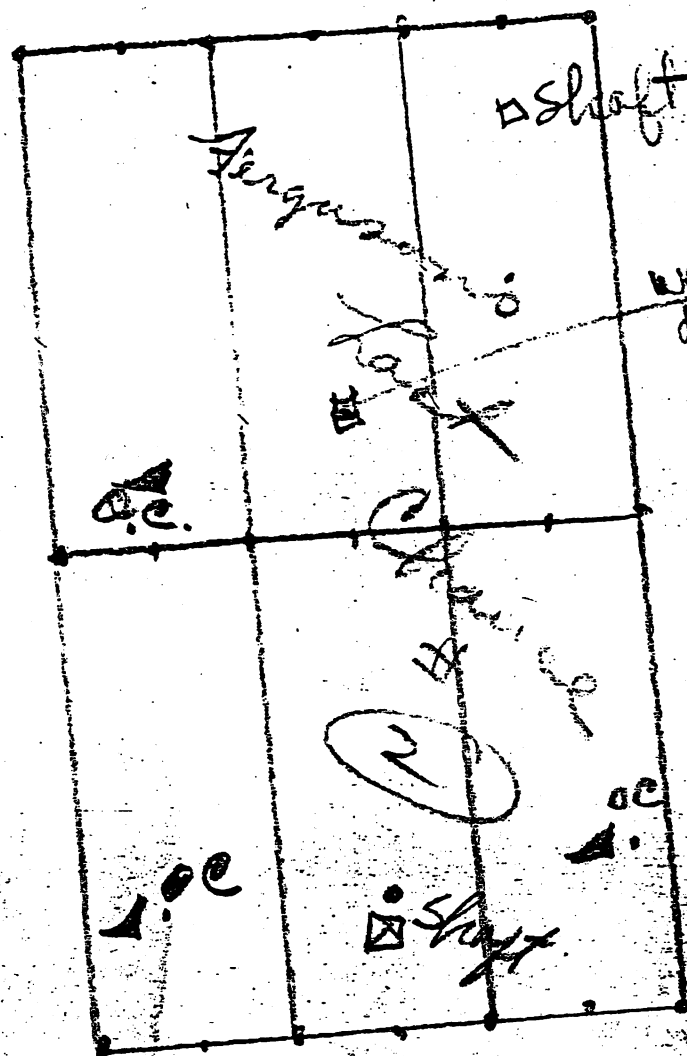
JSC:kk

J. S. Coupal, Director



North

O.C.  
open cut

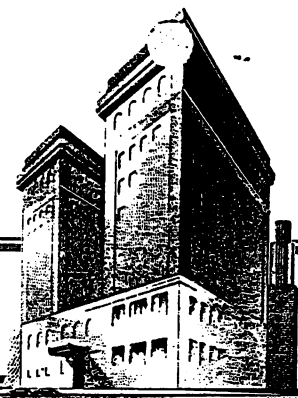


West

1 claim  
East Chance  
Sec. 35 - Twp. 8 South  
R. 12 - E

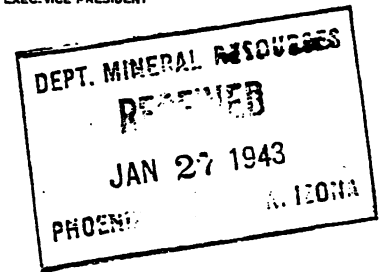
South

Hotel  
**Paso Del Norte**  
**El Paso, Texas**



January 25, 1943

W. L. TOOLEY, MANAGER  
PAUL HARVEY, EXEC. VICE PRESIDENT



Mr. J. S. Coupal, Director  
Department of Mineral Resources  
Phoenix, Arizona

Dear Mr. Coupal:

Two weeks are gone - lost and we are not on the property. I've a letter from A. S. & R. and the assays were even a little better than old reports, 4 per cent copper. Mr. Stephen's opinion as to whether the 4% would hold up for shovel working, would have to be seen.

The smelter will buy the ore. I've a party who wants to go to property - and Ebeling and Goff are still holding us up.

What do you want me to do? There should be some one with authority who could put these men in jail until we've found if we have a mine or not.

Ebeling is dangerous. I would say a peace bond would hold Goff.

Have not heard from Mulhern. Please let me know what progress you've made.

With best wishes and kindest regards, I  
am

Very truly yours,

*Mrs. Ethel Ferguson*  
(Mrs.) Ethel Ferguson



*Dry Air Conditioned*

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine ✓ LAST CHANCE

Date October 30, 1958

District

Engineer FRANK P. KNIGHT

Subject: phone conversation with Mrs. Ferguson

✓  
Mrs. Ethel Ferguson phoned (from El Paso) to say that she had decided to talk with us rather than fill out a mine owner's report form. She said considerable had been done in connection with the Last Chance property in the past ten years but that there was title litigation still pending. She said that the drilling in the immediate vicinity of the Last Chance by Magma Copper Company was close to her property but not on it to her definite knowledge. She said that she understood that Mr. Goff had had them drill on his portion of the Ferguson claims.

Mrs. Ferguson hopes to make a trip to Phoenix and probably will bring some information for the office files. She said she had much information and numerous maps available to anyone interested in the property.

Rich Copper  
Deposit Reported

El Paso Herald-Examiner

Owens

8/18/43

August 18, 1943

Ethel Ferguson

197

o, Texas

Mrs. Ferguson:

Will you kindly fill out and return the en-  
report for the Jimmie Owens Property. This will  
assistance in presenting the property to interested  
s.

I have told a number of people about your Last  
Mine and they will undoubtedly contact you. Among  
were Mudd-Wiseman and W. C. Humphrey of Patagonia.  
he drilling operation shows a real mine.

Will be back in Tucson next week.

Yours very truly,

George A. Ballam

Assistant to the Director

# AMERICAN SMELTING AND REFINING CO.

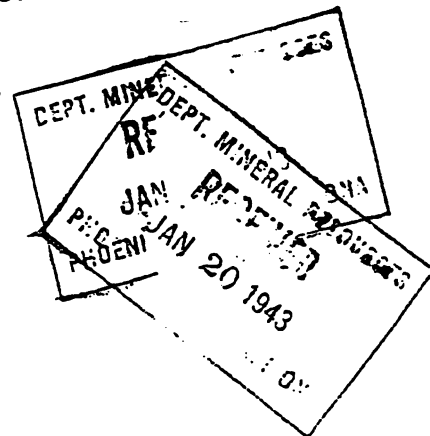
MINING DEPARTMENT OF THE SOUTHWEST

P. O. BOX 2229

TUCSON, ARIZONA

W. H. LOERPABEL  
MANAGER

January 18, 1943



Mr. J. S. Coupal, Director  
Dept. of Mineral Resources  
413 Home Builders Bldg.  
Phoenix, Arizona

✓  
MALONE COPPER MINE  
† (Mrs. Ethel Ferguson)  
PINAL COUNTY, ARIZONA  
OWL'S HEAD DISTRICT

Dear Mr. Coupal:

The hand specimen of copper ore you left to be assayed ran as follows:

<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Insol.</u>	<u>SiO<sub>2</sub></u>	<u>Fe</u>	<u>CaO</u>	<u>Al<sub>2</sub>O<sub>3</sub></u>
.01	1.51	4.5	73.6	51.2	5.8	0.9	16.0

You will note that the aluminum content is rather high and therefore the ore not particularly desirable as a flux. Mr. Rickard says that we could, however, take a limited quantity of such ore at Hayden allowing, say, 10% free and penalizing the balance at 25¢ per unit making a smelting charge of \$5.00 per ton.

This grade of ore would net the shipper, f.o.b, Hayden:

Smelter pay	\$2.75
Premium	<u>4.28</u>
Total	\$7.03 per ton

This, less mining, hauling, freight royalties, etc. would leave little for profit.

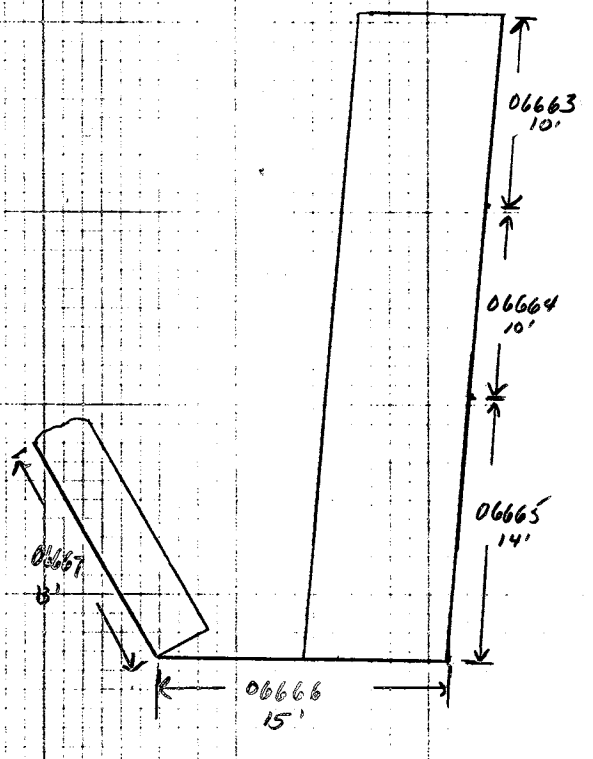
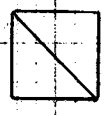
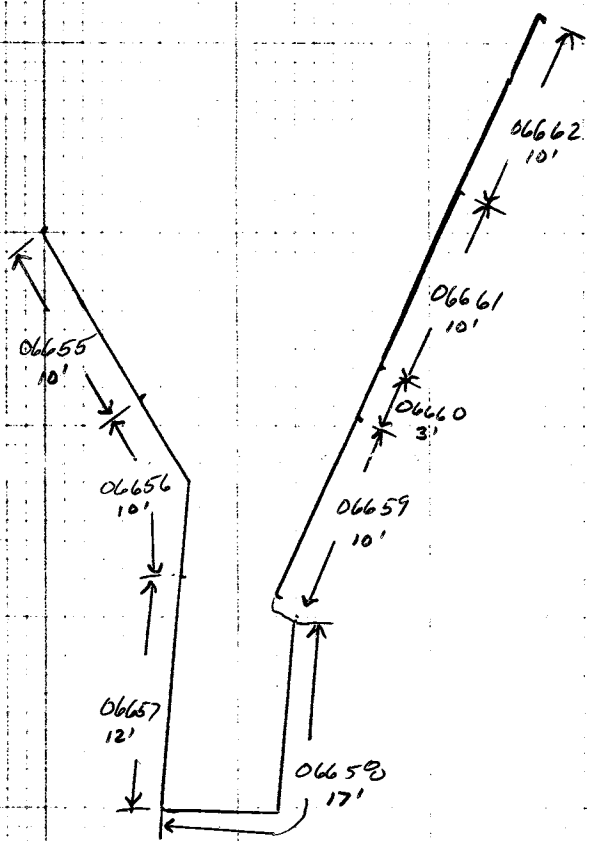
I also doubt that a grade of 4.5% copper could regularly be maintained in a shovel operation.

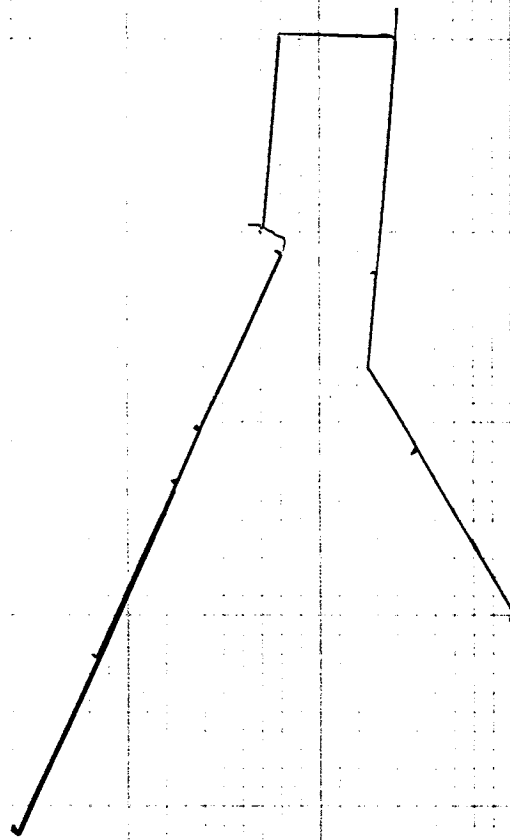
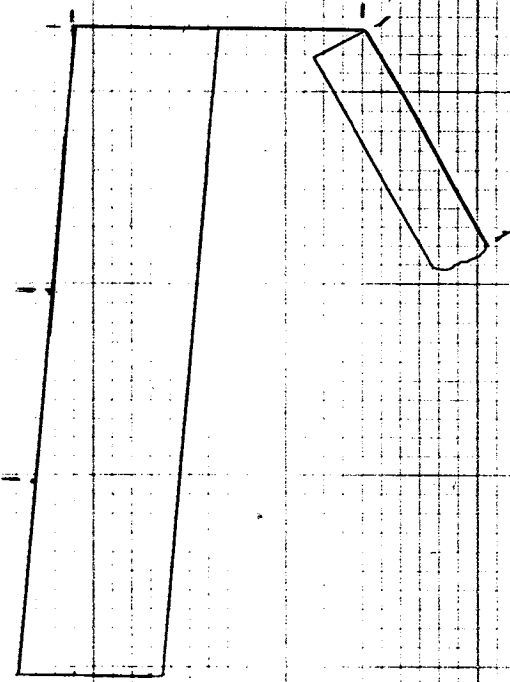
Yours very truly,

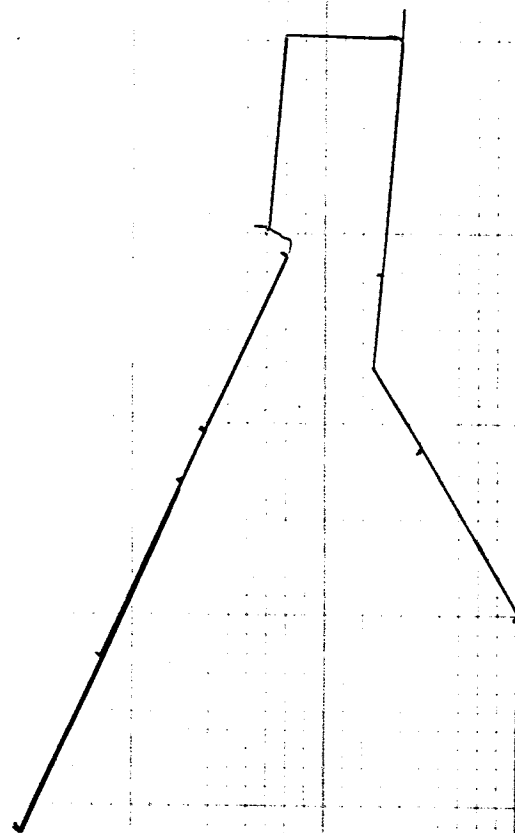
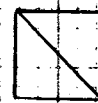
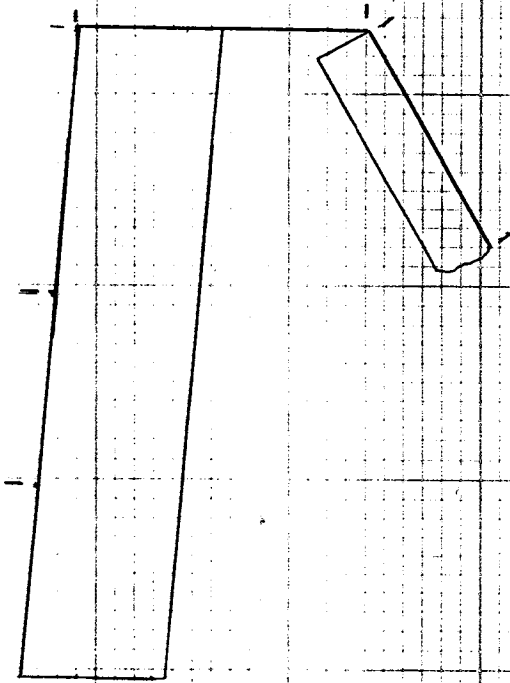
*F. M. Stephens*

F. M. STEPHENS

cc: WHLoerpabel  
BNRickard  
FMS/ap









W.M.R. \_\_\_\_\_

\_\_\_\_\_ 1943

WAR MINERALS REPORT

UNITED STATES DEPARTMENT OF THE INTERIOR \* BUREAU OF MINES

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Report of the Bureau of Mines to Hon. Harold Ickes,  
Secretary of the Interior.

✓ LAST CHANCE  
Pinal County, Arizona.

- Copper -

SUMMARY

✓  
The Last Chance mine is in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on Highway 80, and 29 miles south of Florence, the County seat of Pinal County.

Ore occurrences are in an andesite dike 500 feet or more in width and an indeterminate length. The surrounding rocks are granite and schist. The andesite has been sheared or cracked in various directions. Copper carbonate and silicates are found in this surface area to an undetermined depth. Shallow pits and cuts generally show these copper ores, although some outcrop areas are leached and very little

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1. The reports of the War Minerals Series are based upon field work of engineers of the Bureau of Mines together with data available to the Bureau from other sources. The purpose of these reports is to supply information that may be helpful to owners and operators of properties examined, and to others who are especially interested in them. For this reason distribution is limited to those who request the reports individually.

copper mineral is found there. One churn drill hole was put down in the central area but no data are at hand as to the exact results. One report states that ore was about the same to 250 foot depth where a heavy flow of water was struck. This water now stands at about 20 feet below the surface. It is reported 5 feet of 15% chalcocite was passed through at 80 feet depth. Five cars of ore have been shipped from the property with an average grade of 3.45 ounces of silver, and 4.2% copper.

This property can be easily diamond drilled and a few holes would quickly determine its possibilities. It would not be necessary to drill over 250 feet in depth and the first few holes might show that all the copper bearing ground can be explored with shallower holes.

Most of the area is covered with debris, but small outcrops are exposed throughout the area.

This property warrants further consideration and has possibilities of developing a large deposit of low-grade copper ore.

It is recommended that the property be prospected by the Bureau of Mines; first, with several trenches to determine possibilities as to the size of the deposit; second, with diamond drill holes if results of trenching are satisfactory.

#### INTRODUCTION

The Last Chance mine was brought to the attention of the Bureau of Mines by the owner. It was examined by a Bureau of Mines engineer on January 23, 1943. Supplementary information was obtained from a private report dated March 1931. This report is based on the information obtained from those two sources.

### LOCATION AND ACCESSIBILITY

This property is situated in section 35, T. 8 S. R. 12 E. in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on highway U. S. 80 and 29 miles south of Florence, the county seat. It is 16 miles over a dirt road to Red Rock, a station on the Southern Pacific Railroad, and thus within easy reach of the smelters at Hayden, Miami and Superior. The exposed copper-bearing ground is just off the highway on a practically flat desert floor.

### OWNERSHIP

The ownership is claimed by Mrs. Ethel Ferguson, P. O. Box 1397, El Paso, Texas. At present there is some dispute over ownership between Mrs. Ferguson and Mr. Goff, a cattleman. Mrs. Ferguson states that she has been awarded a Supreme Court decision on the title.

The area is covered by 60 contiguous lode mining claims held by annual assessment work. The principal dispute is over the Last Chance No. 2 claim on which is located the 250 foot drill hole which is the principal source of water in this area.

### HISTORY

While the property has been known for a long time, little work has been done except in the way of shallow pits and cuts. Some churn drilling was done at one period about 1918. It is reported that several other holes were put down at distant points in addition to the 250 foot hole on the Last Chance No. 2 claim. No data are at hand as to the results from these holes. It would seem that results were not very good or work should have been continued. The property has been held for the last twenty years by Mr. Ferguson and following his death, by Mrs. Ferguson, his wife. The

surface rights were brought up by the use of Government scrip in the late twenties and were purchased later from the original buyer, by Mr. Goff. As the water hole was the thing of most value to Mr. Goff, he has fenced that and has generally prevented entrance to the property by the claimants and other parties. Mr. Goff showed the Bureau Engineer the location of the property and did not interfere in any way with his examination.

#### PRODUCTION

Five cars of ore were shipped from the property by James J. Owens in 1929 and 1930. That ore was mined from open cuts in the area around the 250 foot water hole on the Last Chance No. 2 claim. Mr. Owens had a lease on the property at that time. The ore shipped was taken pretty much as mined as there is very little discarded material around the cuts. The best of the five cars shipped ran 4.8 ozs. silver and 5.2% copper. The lowest, 2.1 lzs. silver and 3.6% copper. The general average was 0.03 ozs. gold, 2.5 ozs. silver and 4.2% copper. This is the total production from the property and little work has been done since that time.

The property has possibilities for the development of a large body of low-grade ore which would require a plant for local treatment or to develop ore of a grade that can be shipped direct to the smelters at Hayden or Superior, in a surface area 10 to 20 feet deep.

#### PHYSICAL FEATURES

This property lies in a flat desert area and a paved highway passes within 1/2 mile of the property. The surface is covered with the usual desert vegetation, with no timber or other growths of any value for mining purposes.

Most of the area is covered with a wash, with scattered outcrops in the dike area. These outcrops are from a few feet to about 15 feet above the wash.

The only substantial amount of water was cut at 250 feet depth by drill hole, although a little water is found 10 to 15 feet below the surface. No definite measurement has ever been made of the capacity of the water well. Regular pumping with a wind mill has no effect on the water level which stands at about 20<sup>ft</sup> of the surface.

#### GEOLOGY AND ORE OCCURRENCES

An andesite dike 500 feet or more in width cuts through the granites and schists of this area. The dike has been sheared and altered, but for the most part it is covered with wash and neither the extent of the shearing nor the length of the dike can be definitely determined.

Large areas of the andesite dike appear to have been mineralized, followed by leaching and erosion. Some of the outcrops have been almost completely leached and at other places copper carbonates and silicates show at the surface. Whether the ore-bearing zone, which is mostly secondary, extends below the sub-surface water could not be definitely determined. The complete leaching of some of the outcrops indicates a possibility of a deeper secondary zone, which might be in the form of the secondary sulphide, chalcocite. It is reported that the 250 foot drill hole passed through 5 feet of 15% copper, in the form of chalcocite, at 80 feet depth. No reliable data concerning this area at hand.

#### DEVELOPMENT

Except for a few drill holes, all development has been in the form of shallow pits and cuts. While it is reported several holes were

drilled over a large area, the location of only one seems to be definitely known. This is the 250 foot hole on the Last Chance No. 2 claim. Some of the pits were started in the outcrops and others were put down through the wash which is only a few feet in depth. All showed some copper pre.

One pit about 20 feet deep had water in the bottom. The dump from this pit showed only a small amount of copper, but the rock showed heavy leaching and alteration from surface waters.

Most of the ore shipped came from two pits, one about 60 feet long and the other about 40 feet long. The 60 foot pit was about 17 feet deep at the deep end. The other cut was only about 4 feet deep.

#### ORE RESERVES

No definite tonnage of ore can be measured. There is an indicated area about 100' x 200' around the drill hole on which some work has been done. Using a factor of 15 cubic feet per ton and an average depth of 10 feet, this block would contain 13,333 tons. It is possible that this area would be greatly extended by further development. Increases in depth would give proportionate increases in tonnage.

Ore carrying 0.02 ozs. gold, 2.5 ozs. silver, and 2.5% copper would give the following smelter returns:

Pay for all gold at \$32.50 for 0.02 ozs.		\$ 0.65
Pay for 95% silver, minimum deduction $\frac{1}{2}$ oz. @ 71¢ 2.5 ozs.		1.42
Pay for 95% copper at assay less 8 <sup>th</sup> at 11.65 cts. 2.6¢, 2.5%		3.61
		<u>5.68</u>
Base smelter charge, 50% silica	\$3.50	
Alumina penalty, 16% less 10% @ a 5¢ unit	1.50	
	<u>\$5.00</u>	
Net smelter payment		5.00
Bonus of 5¢ pay for 97% of assay		<u>\$ 0.68</u>
		2.43
		<u>\$3.11</u>
Railroad freight	\$0.85	
Trucking	1.25	
Mining	1.00	
	<u>\$ 3.10</u>	

With the above smelting contract the operation would break even on the above grade of ore. Hence any higher grade of ore would show a profit. Five cars of ore shipped from the mine gave an average value of 3.45 ozs. silver and 4/2% copper. By selective mining and sorting, it should be possible to keep the grade of the ore up to this figure. This grade of ore with an increase of mining costs to \$2.00 per ton would show a net operating profit of \$2.42 per ton of ore mined.

Main possibilities in the way of large tonnages would be best tested by diamond drill holes. This ground should be easily drilled and the maximum depth necessary would probably be around 250 feet, which is indicated as the true water level.

#### OPERATING COSTS

With the present known ores at and near the surface, all mining can be done by open pit and mining would cost about \$1.00 per ton. If large tonnages are developed, mining could be done by block carving or similar methods and the costs would be around 75 cents or under per ton.

The haulage and treatment charges will amount to about \$5.60 per ton if the ores are shipped direct to the smelter.

If oxidized ores are treated at a leaching plant built at the mine, the cost will be about \$1.50 per ton.

If secondary sulphides are found and a flotation plant is erected, the cost of the concentration will be about 75 cents per ton.

A power line which carries power from Parker Dam runs through the property.

Trucking to Florence is 29 miles over good highway. On a small tonnage basis it would probably cost \$1.25 per ton, but on a large tonnage this could be reduced to \$1.00 or less. The rail haul to Hayden or Superior would be 85 cents per ton.

If ore or concentrates were hauled to Red Rock on the main line of the Southern Pacific Railroad the distance would be 16 miles and would cost about 75 cents per ten.

### Sampling

The following samples were taken on the property:

<u>Sample No.</u>	<u>Description</u>	<u>Width</u>	<u>Ozs.Au</u>	<u>Ozs.Ag.</u>	<u>% C</u>
643	Grab of dump at 20' shaft, S.50 E. 148' to windmill	Grab	trace	0.05	0.20
644	5' shaft, S. 50 E. 130' to windmill	4'	trace	0.40	1.74
645	5' shaft, S. 3 W. 125' to windmill	5'	trace	0.60	1.62
646	Filled shaft dump, grab, S.22 W to windmill	Grab	trace	0.35	0.93
647	Filled cut, grab dump, S. 37 W to windmill	Grab	trace	0.35	2.20
648	Open cut, bottom, S. 5 W. 63' to windmill	7'	trace	0.70	1.48
649	Same open cut as above, south end, 30' south of No. 648, 15' below surface	5'	trace	1.70	2.98
650	6' shaft, N. 13 E. 32' to windmill	6'	trace	2.80	3.78
651	N. end of open cut, 4' deep, N. 3 W. 40' to windmill	4'	trace	1.00	1.84
652	Open cut 30' south of No. 651	7'	trace	2.30	2.90
653	Above open cut to west of No. 652	10'	trace	1.10	2.25

Excluding No. 643 the general weighted average is 2.22% copper.

Eleven samples by McConnell and Palmer showed 0.02 ozs. gold, 1.7 ozs. silver, and 3.01% copper.

Some sorting of the ore would increase the values probably from  $1\frac{1}{2}$  to 2 times the above values. As more tonnage would have to be mined for ore shipped the costs would go up in the same proportion or more.

### Conclusions and Recommendations

It appears from work done that this property has an indicated area about 200 feet long and 100 feet wide that would produce 13,333 tons of ore with an average value of about 0.02 ozs. gold.  $2\frac{1}{2}$  ozs. silver, and  $2\frac{1}{2}$  copper. By the indicated size of the andesite dike this area might be extended to 500 or more feet in width and 5000 feet or more in length.



Present work does not give any true conception of possible depth and present ground water level does not permit giving any estimate of depth below about 15 feet except on one outcrop which stands about 10 feet above the general level of the country. Hence, there is a possibility that a large tonnage of low grade copper ore could be developed. The country is very good for diamond drilling and the maximum depth of holes would be 250 feet, which is indicated to be the true water level by one churn drill hole.

It is possible that the present ground water level may be the bottom of a zone of secondary enrichment and if such is the case all the ores will be copper carbonates or copper silicates and the general depth of the ore body will be around 10 to 15 feet. Even if the ore is limited to this shallow depth, it is possible that one million or more tons of  $2\frac{1}{2}\%$  copper ore could be mined.

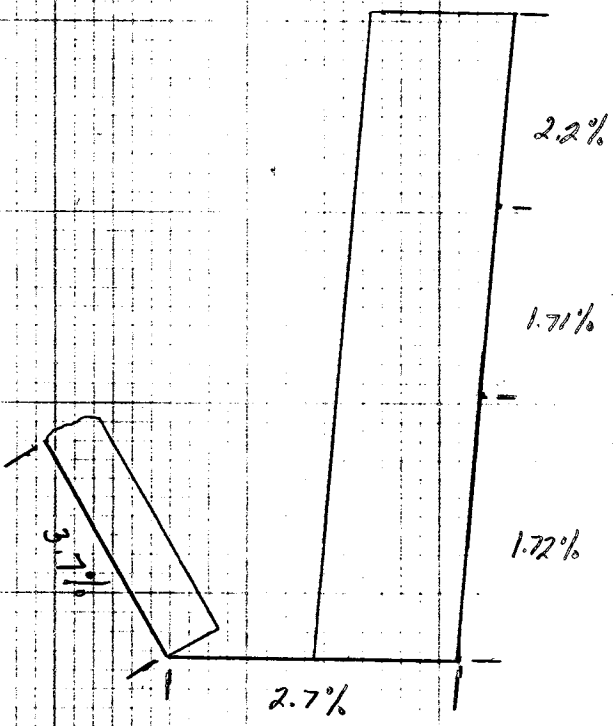
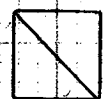
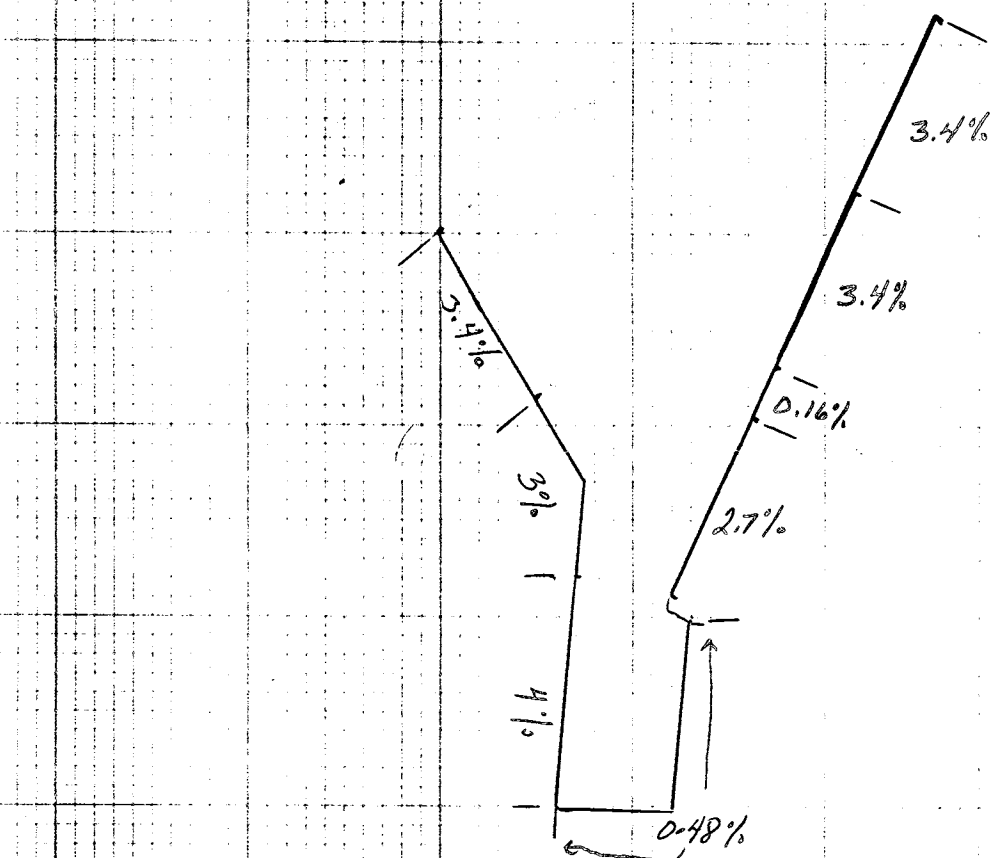
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Last Chance,  
Ariz. No. \_\_\_\_\_

#### Sources of Information:

Information was obtained by personal examination by  
Thos, L. Chapman, on January 23, 1943.

From private report by McConnell and Palmer, Mining Engineers,  
of El Paso and Los Angeles.



*slim  
Dred Keller*

Cadillac Project  
Last Chance pits

Copper in %

1" = 10'

With Hole Payment  
up to — \$/Acre

SURFACE AGREEMENT

THIS AGREEMENT, Made and entered into this \_\_\_\_\_  
day of \_\_\_\_\_, 19\_\_\_\_, by and between \_\_\_\_\_

\_\_\_\_\_ hereinafter referred to as "Owner," (whether one or more) and \_\_\_\_\_

\_\_\_\_\_ hereinafter referred to as "Miner" (whether one or more);

W I T N E S S E T H:

WHEREAS, Owner owns and holds an interest in the surface  
estate in the following described lands situated in the County of  
\_\_\_\_\_, State of \_\_\_\_\_, to-wit:

and

WHEREAS, Miner has the right or proposes to acquire the  
right to explore for and/or extract certain minerals from said  
lands by virtue of a permit, application for permit, lease,  
mining claim(s) [or proposes to locate mining claim(s)], owner-  
ship of minerals, or other title; and

WHEREAS, Owner and Miner wish to agree upon the compensation to be paid to Owner for damage to the surface of said lands resulting from exploration or mining activities conducted thereon by Miner;

NOW, THEREFORE, in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable considerations paid to Owner by Miner, the receipt and sufficiency of which are hereby acknowledged, and the covenants and agreements herein set forth, it is mutually agreed as follows:

1. Pursuant to the permit, lease, mining claim or other title whereby Miner has acquired or will acquire the right to explore for and extract minerals from said lands, Miner shall have the right, without payment of further additional compensation to Owner other than as hereinafter provided, to explore for and extract, develop and mine minerals from said lands by methods deemed desirable by Miner, including strip mining, and Owner hereby grants to Miner the right to use so much of the surface of said lands as may be found reasonably necessary in carrying out such exploration and mining, with the right to construct, use, maintain, repair, replace and relocate on said lands, buildings, shops, facilities and structures of whatever nature necessary, roads, ore bins, shafts, inclines, tunnels, drifts, open pits, waste dumps, ore stockpiles, pipelines, telephone lines, electric transmission lines and transportation facilities and other utilities, and the maintenance thereof, together with such other rights as are reasonably necessary for the purpose of exploring for and extracting, developing and mining said minerals.

2. The facilities to be placed upon the premises covered by this Agreement shall be confined solely to those necessary for exploring, prospecting, mining for, treating and removing the minerals from said lands.

3. Miner shall submit to Owner, prior to construction, the proposed location of any road and Miner shall endeavor to locate such roads at mutually agreeable places consistent with Miner's operation. Owner shall make no unreasonable objections to the location of such roads. Such roads shall be maintained in such manner as to bear the traffic necessary to Miner's operations.

4. It is agreed and stipulated that Miner shall not have the right to the use of water from wells, tanks or reservoirs now belonging to the Owner or hereafter drilled or constructed by Owner, unless Owner shall consent in writing to allow Miner the use of water from such sources, but Miner shall have the right to drill and complete as many water wells on the premises as Miner shall deem necessary for its operations on the premises and shall have the unrestricted right to use water from any such well it has drilled, but Miner agrees that after cessation of its use of any water wells drilled by Miner on the premises and prior to plugging or removing the casing therefrom, to tender such water well or wells to Owner and, if Owner shall elect to accept same, such water well shall be and become the property of Owner without payment of consideration therefor.

5. It is agreed and stipulated that no exploratory or mining operations shall be conducted, nor any facilities necessary to the same constructed, within three hundred feet (300') of any main dwelling house and appurtenant structures thereto, unless the consent of Owner, in writing, shall have first been obtained.

6. It is agreed and stipulated that Miner shall not move exploration equipment onto the premises, nor operate such equipment as shall be already on the premises, following rains in a sufficient amount to soften the ground so that such operations shall result in creating ruts or other appreciable damage to the surface, and Miner covenants that exploratory operations shall not be resumed until the ground has dried sufficiently that damage of such nature shall not occur.

7. It is agreed and stipulated that Miner, its agents, employees, contractors and subcontractors, or their agents for employees, shall not at any time carry onto the premises firearms of any type. Owner, or his duly authorized representative, shall have the right at all reasonable times and at his own risk to inspect vehicles entering upon said premises for the purpose of ascertaining if firearms are being carried on the premises.

8. Miner agrees that it will conduct all exploratory operations in an orderly manner. Miner will pay reasonable compensation for, or make replacement of, any roads, fences, buildings, livestock or other improvements or personal property of Owner that may be damaged or destroyed by virtue of Miner's operations on the leased premises. Should Miner find it necessary to cut any fence or fences on the premises for the purpose of passage, it agrees that prior to cutting such fence there will be installed and braced heavy corner-type posts at each end of the opening to be made, to which a wire fence will be securely fastened in such manner as to prevent sagging and that Miner will install a gate of quality acceptable to Owner at each such opening. In the event Miner desires that such openings provide uninterrupted ingress and egress, then it shall in the alternative install therein cattle guards of sufficient size and substance to bear the type of traffic necessary for its operations and capable of turning domestic livestock. Miner shall properly fence any pits, shafts, fixed machinery or other hazards which it may dig, bore or construct on the premises.

9. Miner agrees that it will conduct all exploratory operations in an orderly manner and that Miner will pay to Owner, as compensation the sum of \$\_\_\_\_\_ for each test hole drilled on the land as damages for any crops or grass damaged or destroyed in such exploratory or development operations. The total of such drilling payments for any acre of land shall not exceed the total payable for such acre if used in actual mining operations as hereinafter provided.

10. It is agreed and stipulated that Miner, if and when actual mining operations are conducted on said lands, will pay to Owner the sum of \$\_\_\_\_\_ for each acre of cultivated land and the sum of \$\_\_\_\_\_ for each acre of pasture land used in actual mining operations. Land used in actual mining operations shall include, by way of explanation but not of limitation, such part of the premises as may be covered by pits, waste dumps, ore stockpiles, buildings, shafts, facilities, structures and roads. From any such sum or sums due Owner under the provisions of this section, there shall be deducted an amount equal to the sum of all payments made under the terms of Section 9 above and any payments due to Owner and made by Miner pursuant to the terms of this section shall be deemed to be full and complete compensation for the damage to and use of such acre for the entire life of this agreement, save and except such additional amounts that may be payable under other provisions as damages to improvements or personal property.

11. Miner agrees to hold Owner harmless against and from any and all loss, damage or claims of whatever nature or character (except surface damage hereinabove provided for) occasioned by or arising out of Miner's operations on the leased premises.

12. The rights of either party hereunder may be assigned in whole or in part, and the provisions hereof shall extend to their heirs, successors and assigns, but no change or division in ownership of the land, however accomplished, shall operate to enlarge the obligations or diminish the rights of Miner, and no change or division in such ownership shall be binding on Miner until thirty (30) days after Miner shall have been furnished by Registered United States Mail at Miner's principal place of business with a certified copy of recorded instrument or instruments evidencing same. In the event of assignment by Miner, in whole or in part, liability for breach of any obligation hereof shall rest exclusively upon the holder of the mining rights or of a portion thereof who commits such a breach.

13. Owner hereby warrants and agrees to defend the title to the surface of said land, and agrees that Miner, at its option, may discharge any tax, mortgage or other lien upon said land either in whole or in part, and in the event Miner does so, it shall be subrogated to such lien with the right to enforce same and apply any payments accruing hereunder toward satisfying same. Without impairment of Miner's rights under the warranty in the event of failure of title, it is understood and agreed that if Owner's title should fail as to any of the lands covered by this Agreement, any payment due hereunder shall not be applicable to lands as to which title has failed and, if Owner owns a lesser interest in any of the surface of the lands covered hereby, than the entirety thereof, any payments, if any, due hereunder shall be reduced proportionately.

14. This Agreement shall remain in full force and effect for so long as Miner shall have the right to explore for and/or mine minerals.

15. This Agreement shall be binding on and shall inure to the benefit of the parties hereto, their respective heirs, personal representatives, successors and assigns.

IN WITNESS WHEREOF, the undersigned parties have executed this Surface Damage Agreement as of the day and year first above written.

\_\_\_\_\_  
OWNER

\_\_\_\_\_  
OWNER

\_\_\_\_\_  
OWNER

\_\_\_\_\_  
MINER

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss.

The foregoing instrument was acknowledged before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_

Witness my hand and official seal.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss.

The foregoing instrument was acknowledged before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_

Witness my hand and official seal.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss.

The foregoing instrument was acknowledged before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_

Witness my hand and official seal.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

## SURFACE AGREEMENT

THIS SURFACE AGREEMENT made and entered into as of the \_\_\_\_\_ day of \_\_\_\_\_, 1976, by and between Douglas C. Hall, Donald H. McMahan, Henry C. Hall, Jr., and John P. Dikeou, hereinafter collectively referred to as the "surface owner," and Ashland Exploration Company, a division of Ashland Oil, Inc., a Kentucky corporation, having an office and place of business at 2510 First of Denver Plaza, 633 Seventeenth Street, Denver, Colorado 80202, hereinafter referred to as the "mining claimant."

### WITNESSETH:

WHEREAS the surface owner owns the surface estate shown upon Exhibit "A" attached hereto and made a part hereof by this reference; and

WHEREAS the mining claimant is the owner of unpatented mining claims to the minerals underlying the surface estate which is shown upon Exhibit "A," paramount title to which is in the United States of America; and

WHEREAS the mining claimant desires to perform assessment work on its mining claims and explore the same; and

WHEREAS the parties desire to enter into a written memorandum covering their responsibilities during the term hereof.

NOW, THEREFORE, it is agreed by and between the parties as follows:

1. The surface owner does hereby give permission to the mining claimant and its contractors or permittees to enter upon the described premises and to conduct such operations as may be necessary, reasonable or proper in connection with performing assessment work on its mining claims and to prospect and explore for uranium bearing ores or materials, including the right to conduct core drilling thereon, together with the right to use surface owner's existing roads crossing the above-described lands.

2. Attached hereto as Exhibit "B" is a plat or statement showing the general area in which the mining claimant intends to perform assessment work and conduct initial exploration activities. The mining claimant shall advise the surface owner of any substantial deviation from said plat and plan before making such deviations so that the surface owner will at all times be fully advised as to the general location of the mining claimant's activities, thereby permitting surface owner to plan its ranching activities accordingly.



3. The mining claimant, for itself, its lessees, licensees, and contractors, agrees:

(a) To be responsible to the surface owner for all damage done to houses, fences, gates, livestock tanks and other improvements of the surface owner located upon the above-described land and pay surface owner for all such damage within thirty days after the completion of the work:

(b) To install and maintain at surface owner's expense adequate cattleguards and gates as directed by surface owner where necessary or convenient for the crossing of surface owner's fences by the mining claimant;

(c) To recognize the right of surface owner to occupy, use, pasture and cultivate said lands and otherwise use the same for all purposes not inconsistent with the rights granted herein;

(d) To limit the width of any roadways used or constructed hereunder to not more than 20 feet and to limit the use of such roads to the mining claimant, its agents, contractors and lessees, and licensees. Such roads are to be used for assessment work and uranium exploration purposes only on the lands covered by this agreement;

(e) Upon the termination of this agreement, to do all things necessary to transfer to the surface owner the ownership of any water wells and appropriation rights therefor discovered, developed or used on the premises by the mining claimant;

(f) That, in accordance with existing or future state and federal regulations, it will not dispose of overburden or any other waste material so as to cause pollution or contamination to existing streams or other natural bodies of water.

4. The mining claimant agrees not to use more than one (1) acre of surface land at any one drilling site. Within thirty (30) days after the completion of the work upon any one section of land subject to this agreement, the mining claimant agrees to pay to the surface owner the following amounts as compensation for damage to grass, forage and growing crops:

- |     |   |          |
|-----|---|----------|
| (a) | For each drill hole drilled to a depth of 500' or less . . . . .                                | \$ 25.00 |
| (b) | For each drill hole drilled to a depth of more than 500' and less than 1000' in depth . . . . . | 30.00    |
| (c) | For each drill hole drilled to a depth of more than 1000' and less than 2500' . . . . .         | 50.00    |

- (d) For each drill hole drilled to a  
depth of 2500' or more . . . . . 100.00
- (e) For each rod that the mining  
claimant drives off of existing roads . . . 1.00
  - (i) Insofar as reasonably practical, payments  
to surface owner under this paragraph 4(e)  
shall be estimated by the mining claimant  
and paid to the surface owner prior to the  
time the mining claimant drives vehicles  
off of existing roads;
  - (ii) The payments to surface owner under this  
paragraph 4(e) shall not exceed \$320.00  
per section of land covered by this agree-  
ment; and
  - (iii) On a section-by-section basis, the pay-  
ments to surface owners under this paragraph  
4(e) shall be a credit against surface damage  
payments under paragraphs 4(a)-4(d).

In the event that mining claimant utilizes more than one (1) acre for a drilling site, mining claimant shall pay for such additional acreage at the rate of \$100.00 per acre for each acre or fraction thereof. It is further agreed that such payments or anything contained herein shall not be construed as conveying any title, or right of way, or easement to the surface by the surface owner to the mining claimant after the term of this agreement, but such payments shall be construed merely as "surface damages." It is agreed that mining claimant shall be liable for any damages to the surface owner's personal property and improvements upon said lands in addition thereto.

All payments to be made and notices to be given by the mining claimant shall be to Douglas C. Hall, 1559 Logan Street, Denver, Colorado, 80203.

5. In the event that any adjacent property which the surface owner may lease from the State of Wyoming or the United States of America is damaged by the mining claimant's activity, then and in such event the mining claimant agrees to indemnify and hold the surface owner harmless against any claims by the State or Federal Government, as the case may be, arising out of the mining claimant's activity.

6. The mining claimant further covenants and warrants that at all times it will save harmless the surface owner from any and all liability on account of actions of every nature or kind occasioned by or arising out of the mining claimant's activities.

7. It is understood and agreed that this agreement relates only to assessment work and exploration activities conducted by the mining claimant and is not to be construed as an agreement to the terms of future mineral development. In the event of any future mineral development the provisions and conditions of such development shall be set forth in a separate agreement to be negotiated between the parties at the appropriate time.

8. The mining claimant agrees to and shall abide by the operational instructions set forth upon the attached sheets designated Exhibit "C" and incorporated herein by this reference.

9. If at any time mining claimant defaults in the performance of the terms and conditions of this agreement, and if, within ten days after written notice of this default is given to mining claimant by surface owner, mining claimant has not commenced activities which will cure the default, then surface owner shall have the right to withdraw from the terms of this agreement.

10. Unless extended by the parties this agreement shall terminate on the 1st day of March, 1977.

IN WITNESS WHEREOF, the parties have executed this agreement as of the date first above written.

SURFACE OWNER:

\_\_\_\_\_  
Douglas C. Hall

\_\_\_\_\_  
Henry C. Hall, Jr.

\_\_\_\_\_  
Donald H. McMahan

\_\_\_\_\_  
John P. Dikeou

MINING CLAIMANT:

ASHLAND EXPLORATION COMPANY,  
A Division of Ashland Oil, Inc.

By

\_\_\_\_\_  
M. Dean Webb,  
Manager, Minerals Exploration

Surface Agreement between Douglas C. Hall, Donald H. McMahan, Henry C. Hall, Jr.  
and John P. Kikes and Ashland Exploration Company, a division of Ashland  
Oil, Inc.

Draw

Creston

**LEGEND:**

○ - Holes Drilled to DATE  
(Aug. 2, 1976)

#26-2

T.D. 490'

857	○	○	856	839	○	○	838
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
	○	○			○	○	
841	○	○	840	823	○	○	822

#26-  
T.D. 40'

#34-2

T.D. 570'

344								360
○	○	○	○	○	○	○	○	○
343								359
326								342
○	○	○	○	○	○	○	○	○
325								341

PIPELINE

PIPELINE

#34-1

T.D. 490'

380	○	○	379
	○	○	
○			○
	○	○	
	○	○	

90								74
8	○	○	○	○	○	○	○	○
89								73
	○	○	○	○	○	○	○	○

EXHIBIT "C"

OPERATIONAL INSTRUCTIONS

1. All pits constructed by mining claimant shall be adequate to contain all drilling mud used by it. Drill sites shall be dressed, leveled, and reseeded after mining claimant's operations have been concluded.

2. All paper, cans, wire, dynamite boxes and other refuse shall be removed.

3. All gates shall be left open or closed as found.

4. All operations shall be conducted in a fair and reasonable manner, and all necessary precautions shall be taken to avoid any damage, other than normal wear and tear, to gates, bridges, roads, culverts, cattle guards, fences, dams, dikes or other stock watering facilities. All damage in excess of ordinary wear and tear to the above-named facilities shall be reported to the surface owner within twenty-four (24) hours and shall be repaired immediately as nearly as possible to the condition existing prior to such operation. Any public hazard, such as a damaged bridge or culvert, caused by operations of the mining claimant, shall be marked or barricaded and proper steps taken for the repair thereof.

5. Under no conditions will it be permissible to drive a vehicle of any type over any net wire fence.

6. Speed of all vehicles shall be held down to a reasonable rate, and extra precautions will be taken when in the vicinity of livestock.

7. Except for the construction of mud pits and sample pads, bulldozers shall not be used without special permission from the surface owner. Bulldozing which would only create gullying or create a bog must be avoided at all times. Mining claimant shall use existing roads wherever possible and upon completion of operations, dams and drainage blockages shall be removed, and surface owner's roads shall be restored to original condition, or better, after the mining claimant's operations are completed.

8. No member of the crew will be permitted to carry firearms, nor will they be permitted to fish on the premises covered by this agreement during the field operations.

9. In the event there are any shot holes or drill holes these shall be capped or plugged at all times when not in use or when abandoned.

10. Water shall not be taken in any amount except by specific permission of the surface owner and shall be taken only from wells or tanks designated by the surface owner.

11. No powder charge shall be exploded within one-eighth (1/8) mile of any water well, spring, reservoir, dam or dwelling, except by special permission of the surface owner.

12. When important alterations have to be made to the land surface (i.e., filling in of a drainage ditch), the surface owner shall be first notified and the land shall be returned as nearly as possible to its original condition by the mining claimant immediately upon completion.

13. The mining claimant shall promptly inform the surface owner of the location of each drill hole. Should any subsurface water or aquifer that appears to have significant quantities of fresh water that would apparently have potential for completion as a water well be encountered in any hole drilled by the mining claimant or its contractors in the above-described lands, it shall so notify the surface owner within a reasonable time. In the event surface owner notifies the mining claimant of its election to have such hole preserved or well completed, then surface owner shall have the right to complete any such well at its cost. When time permits, the mining claimant or its drilling contractor shall set casing furnished by owner at surface owner's cost, and thereafter the mining claimant shall turn over to surface owner full control and responsibility for the operation and maintenance of such well, whether for the production of water or otherwise, and surface owner shall obtain all permits and comply with all applicable laws, rules and regulations governing the operation and maintenance of such well and of subsurface water and aquifers and shall indemnify the mining claimant and its officers, agents, employees and contractors against any and all loss, cost, claims, damages, or liability arising out of or in any way connected with surface owner's failure to comply as aforesaid.

Should the surface owner elect not to have any hole preserved or well completed as aforesaid (and failure to notify the mining claimant shall be deemed to constitute an election not to do so) the mining claimant shall perform whatever operations are necessary to prevent cratering and to comply with applicable laws, rules and regulations.

It is understood and agreed that although the mining claimant will employ its best efforts to give the surface owner notice as above-provided of any subsurface encounters with water or aquifers, the mining claimant shall nevertheless not incur any

liability for failure to give any such notice (provided that the mining claimant has used reasonable care to learn of the existence of such subsurface water or aquifer) or for faulty interpretation of data regarding the quantity or quality of the subsurface water or aquifer (provided the mining claimant provided such information in good faith).

14. Mining claimant shall use its best efforts to notify surface owner of the time that work will commence and when the same will be completed before equipment is removed.

15. Mining claimant agrees to conduct no operations on said lands during the lambing season without the consent of surface owner.

16. All existing and future state and federal reclamation laws will be followed and adhered to as to assure the present and future aesthetic values of the property.

17. All operations conducted under the terms of this agreement shall give due consideration to the enhancement and propagation of wildlife and wildlife habitat in accordance with existing or future state and federal regulations.

18. Mining claimant shall perform all necessary reclamation work so the land affected by its operation is restored as nearly as possible to its original condition. Such reclamation work shall include, but not be limited to, backfilling, regrading and recontouring to assure the reclamation of the land to a use at least equal to its highest previous use, and revegetation and reseeding of affected lands to assure development of a vegetative cover consistent with the surrounding terrain.

EXHIBIT A

to

Surface Agreement between Douglas C. Hall, Donald H. McMahon,  
Henry C. Hall, Jr. and John P. Dikeou and Ashland Exploration Company,  
a division of Ashland Oil, Inc.

Township 21 North - Range 91 West

Section 26: All

Section 34: All

Sweetwater County, Wyoming

---



07/16/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: FERGUSON COPPER PROPERTIES

ALTERNATE NAMES:

LAST CHANCE PROPERTY  
OWENS PROPERTY  
JIMMIE OWENS PROPERTY

PINAL COUNTY MILS NUMBER: 612A

LOCATION: TOWNSHIP 8 S RANGE 12 E SECTION 35 QUARTER SE  
LATITUDE: N 32DEG 41MIN 25SEC LONGITUDE: W 111DEG 04MIN 10SEC  
TOPO MAP NAME: TORTOLITA MTS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER  
SILVER  
GOLD

BIBLIOGRAPHY:

ADMMR FERGUSON COPPER PROPERTIES FILE  
WAR MINERALS REPORT 1943-LAST CHANCE MINE  
(COPPER)  
ADMMR U FILE

MALONE COPPER

Cu, Au, Ag

Pinal

11 - 4

S

T 10 S R 12 E

Mrs. Ethel Ferguson, Box 1397, El Paso, Texas

'43

FERGUSON, Ethel  
Box 1397  
El Paso, Texas

1-20-43

See MALONE COPPER - Re assay by A.S. & R. Co.

See LAST CHANCE

See LAST CHANCE - re mine & El Paso Convention

10-9-45

See LAST CHANCE - re El Paso convention

11-8-45

LAST CHANCE MINE

Cu, Ag, Au

Pinal

11 - 4

S

35, T 8 S, R 12 E

Ethel Ferguson, Box 1397, El Paso, Texas

'45

# AMERICAN SMELTING AND REFINING CO.

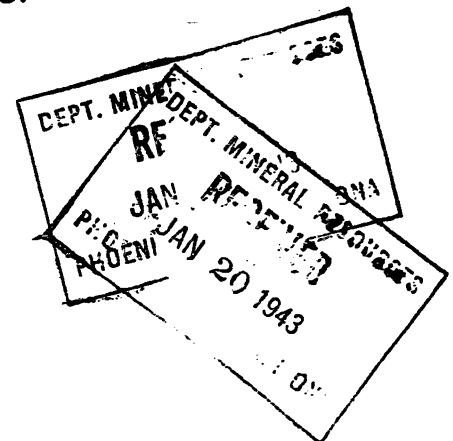
MINING DEPARTMENT OF THE SOUTHWEST

P. O. BOX 2229

TUCSON, ARIZONA

January 18, 1943

W. H. LOERPABEL  
MANAGER



Mr. J. S. Coupal, Director  
Dept. of Mineral Resources  
413 Home Builders Bldg.  
Phoenix, Arizona

✓  
MALONE COPPER MINE  
† (Mrs. Ethel Ferguson)  
PINAL COUNTY, ARIZONA  
OWL'S HEAD DISTRICT

Dear Mr. Coupal:

The hand specimen of copper ore you left to be assayed ran as follows:

<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Insol.</u>	<u>SiO<sub>2</sub></u>	<u>Fe</u>	<u>CaO</u>	<u>Al<sub>2</sub>O<sub>3</sub></u>
.01	1.51	4.5	73.6	51.2	5.8	0.9	16.0

You will note that the aluminum content is rather high and therefore the ore not particularly desirable as a flux. Mr. Rickard says that we could, however, take a limited quantity of such ore at Hayden allowing, say, 10% free and penalizing the balance at 25¢ per unit making a smelting charge of \$5.00 per ton.

This grade of ore would net the shipper, f.o.b, Hayden:

Smelter pay	\$2.75
Premium	<u>4.28</u>
Total	\$7.03 per ton

This, less mining, hauling, freight royalties, etc. would leave little for profit.

I also doubt that a grade of 4.5% copper could regularly be maintained in a shovel operation.

Yours very truly,

*F. M. Stephens*

F. M. STEPHENS

cc: WHLoerpabel  
BNRickard  
FMS/ap

**DEPARTMENT OF MINERAL RESOURCES**

STATE OF ARIZONA

**FIELD ENGINEERS REPORT**

Mine **✓ LAST CHANCE**

Date **October 30, 1958**

District

Engineer **FRANK P. KNIGHT**

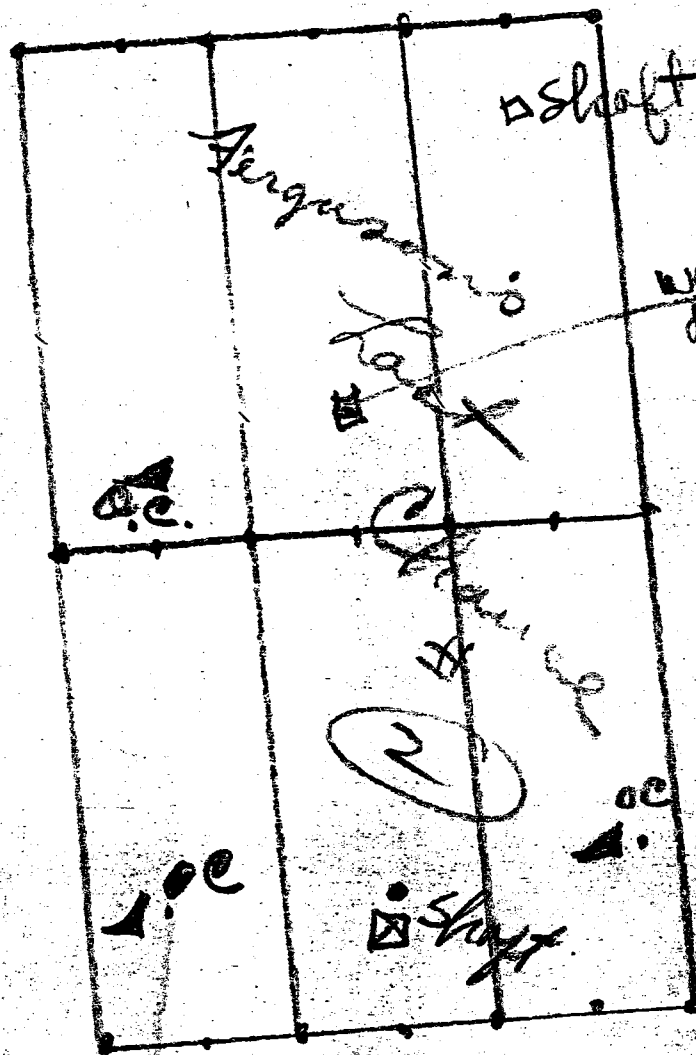
Subject: **phone conversation with Mrs. Ferguson**

**✓**  
Mrs. Ethel Ferguson phoned (from El Paso) to say that she had decided to talk with us rather than fill out a mine owner's report form. She said considerable had been done in connection with the Last Chance property in the past ten years but that there was title litigation still pending. She said that the drilling in the immediate vicinity of the Last Chance by Magma Copper Company was close to her property but not on it to her definite knowledge. She said that she understood that Mr. Goff had had them drill on his portion of the Ferguson claims.

Mrs. Ferguson hopes to make a trip to Phoenix and probably will bring some information for the office files. She said she had much information and numerous maps available to anyone interested in the property.

North

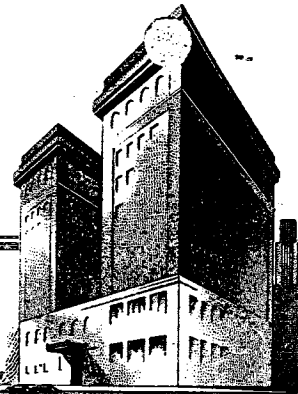
O.C.  
Open Cut



1 claim  
East Chance  
Sec. 35 - Twp. 5 South  
R. 12 - E

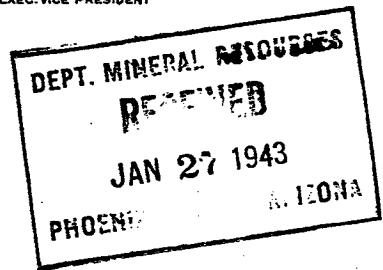
South

Hotel  
**Paso Del Norte**  
El Paso, Texas



January 25, 1943

W. L. TOOLEY, MANAGER  
PAUL HARVEY, EXEC. VICE PRESIDENT



Mr. J. S. Coupal, Director  
Department of Mineral Resources  
Phoenix, Arizona

Dear Mr. Coupal:

Two weeks are gone - lost and we are not on the property. I've a letter from A. S. & R. and the assays were even a little better than old reports, 4 per cent copper. Mr. Stephen's opinion as to whether the 4% would hold up for shovel working, would have to be seen.

The smelter will buy the ore. I've a party who wants to go to property - and Ebeling and Goff are still holding us up.

What do you want me to do? There should be some one with authority who could put these men in jail until we've found if we have a mine or not.

Ebeling is dangerous. I would say a peace bond would hold Goff.

Have not heard from Mulhern. Please let me know what progress you've made.

With best wishes and kindest regards, I  
am

Very truly yours,

*Mrs. Ethel Ferguson*  
(Mrs.) Ethel Ferguson



*Dry Air Conditioned*

April 22, 1943

Honorable Carl Hayden  
United States Senate  
Washington, D. C.

Dear Senator Hayden:

I consulted with Charlie Willis regarding the telegram which was just sent you on the Last Chance claim owned by Mrs. Ethel Ferguson.

I am enclosing a report by the Bureau of Mines on the Last Chance which was recently made and I might state that a large part of the information was gathered from data that Mrs. Ferguson had on hand. I examined the property and advised Mrs. Ferguson to the procedure and Charlie Willis has stated the conditions surrounding the property clearly to you.

It is decidedly a court question to settle whether or not the patented script homestead owned by Goff was valid or fraudulently obtained.

The suggestion made by this Department after looking over the property and consulting with the attorneys representing Mrs. Ferguson was to obtain the restraining information against Eberling so that free access might be had to the property and to then plan on diamond drilling to determine the value and extent of the property and when completed and prepared to close negotiations with Goff so as to buy from him whatever portion of the ground as was necessary. I believe that Mr. Goff would be agreeable to some such plan. The script homestead is valuable due to the fact that a well with good water is located on that portion which overlaps the mining claim. The well is located in the best showing of ore and any work done in removing the ore would ruin the well. I believe other water could be easily obtained on other portions of the forty acre script homestead.

Mrs. Ferguson has been fully advised but wants the government to fight the case and prove the validity of her mining claims and I cannot see how this can be done.

With best wishes and kindest regards, I am

Very truly yours,

JSO:kk

J. S. Goupal, Director

**The El Paso Times**

An Independent Newspaper  
MORNING and SUNDAY

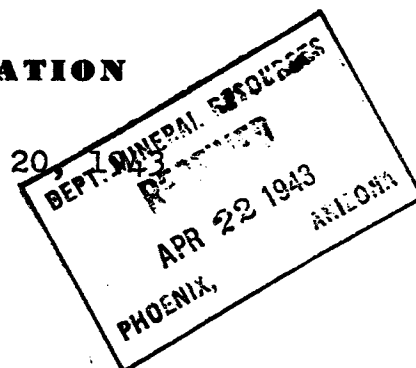
**El Paso Herald-Post**

A Scripps-Howard Newspaper  
EVENING

**NEWSPAPER PRINTING CORPORATION**

**EL PASO, TEXAS**

April 20,



Dear Mr. Coupal,

I was glad to get your letter of April 15th and to learn of the encouraging results of the committee meetings. On account of train schedules the meeting in New Mexico has been held up but I plan to attend. I was told yesterday that the meeting would be held in Silver City instead of Deming.

My trouble goes back to the practice of the General Land Office of issuing stockraising and scrip patents over valid mining claims. In the past the cattlemen had no regard for facts. As in my case you know, having been on the property that there are no improvements or crops. Mr. Goff merely put a fence around 40 acres of scrip and across the Last Chance, I suppose at the advice of his lawyer, and he certainly isn't entitled to any cash consideration for he knew that the country was held by mining claims.

If the heads of the departments, and that also includes Arizona state politics, would face the facts and realize that we're at war and forget their puny little jobs we might be able to do something.

Since January, counting the trip I made to meet you and Mr. Ballam and the past trip, I have spent more than \$500.00. And considering our initial investment in Pinal County and all these years since my husband's death it has cost me at least \$100,000.

Since I have no expense money and have financed these trips solely out of my salary I do not feel like going any further. The property is there on record and I have been "drug" into the courts, not once but twice, without any provocation so you can draw your own conclusions of what I think about the Arizona courts. I have written Senator Hayden to this effect also the Governor. Senator MacFarland knows about the "funny" business for he was the judge in the case. Another angle is the State Highway Department. To my certain knowledge they, along with the State Land Commissioner until Mr. Williams was appointed, played along with these cattlemen at the expense of any decent respectable citizen. But they're "in" and there is nothing that I can do about it. I had hopes when Osborn went in that he would clean up the Highway Department but so



**NEWSPAPER PRINTING CORPORATION**  
**EL PASO, TEXAS**

Page 2.

far as I can see nothing has been done, politics as usual. So as I have said before "in a great many words" I am through, finished. And by the way this is a personal letter, not to be put in your files.

If ~~and~~ when the patent is revoked on this land I will let you know.

About the application for a loan. They told me at the Bureau of Mines that appropriations would be made and that I could get sulphuric acid which the Sierra Metals Company was unable to get. I am sending you a map which was made by the General Surveyor with markings so that you may know over what a vast scope of country development has been held up and delayed. The Ferguson homestead is the Swiso ranch, my cattle ranch, and the draftsman made a mistake. All the country is held by stockraising homestead, Taylor land, and state selected land which comes under Act 8 of the Taylor Bill with all minerals reserved to the government.

Sincerely

*Mrs Ethel Ferguson*

Mrs. Ethel Ferguson  
Box 1397  
El Paso, Texas

*Last Chance*  
April 23, 1943

Mrs. Ethel Ferguson  
Box 1397  
El Paso, Texas

Dear Mrs. Ferguson:

Thank you for your letter of April 20.

Charles Willis just had a long wire from Senator Hayden regarding your property and I assisted him in certain information which was wired back to Senator Hayden. In the wire we called attention to the fact that Senator Macfarlane knew of your case and should be consulted.

You must bear in mind the fact that Mr. Goff has title to the forty acres of script and as the government gave him this title, or at least gave it to the original applicant for the title, it seems useless to expect them to deny the patent which they have granted without process through court.

I see no other answer to this and feel as though the program we outlined to you should get the situation cleaned up. The first step was to get a restraining order on Eberling, then some sort of informal agreement with Goff so that the mineral area might be drilled and proven up. Once it is proven definitely and results warrant the starting of operations I believe Goff is entitled to some reimbursement. You may differ with this opinion but irrespective of what has happened in the past, Mr. Goff is the recognized owner of the forty acres which laps over part of your mining claim.

Mining cannot be done in the best showing without ruining the well which represents the main value of the forty acres in question.

I am in hopes that we may hear something regarding this from Senator Hayden after he gets our wire, a report on the property, and has consulted with Senator Macfarlane on your property.

Very truly yours,

J. S. Coupal, Director

JSC:kk

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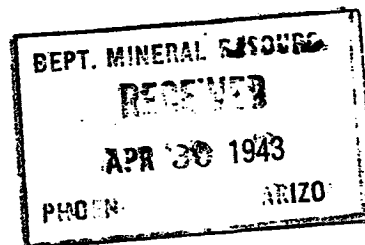
GERALD P. NYE, N. DAK.  
 STYLES BRIDGES, N. H.  
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 RUFUS C. HOLMAN, OREG.  
 WALLACE H. WHITE, JR., MAINE  
 CHAN GURNEY, S. DAK.  
 C. WAYLAND BROOKS, ILL.

EVERARD H. SMITH, CLERK  
 JOHN W. R. SMITH, ASST. CLERK

## United States Senate

COMMITTEE ON APPROPRIATIONS

April 26, 1943



Mr. J. S. Coupal, Director  
 State Department of Mineral Resources  
 413 Home Builders Building  
 Phoenix, Arizona

My dear Sam:

I want to thank you for your good letter of April 22, with which you enclosed a copy of a report made by the Bureau of Mines on the Last Chance property in Pinal County owned by Mrs. Ethel Ferguson. This information has been most helpful to me, and I certainly appreciate your courtesy.

With kindest personal regards, I am,

Yours very sincerely,

*Care Hayden*

# Rich Copper Deposit Reported

El Paso Herald

## El Paso Woman Owns Most of Claims

Possibility of development of what promises to be extensive copper deposits in the Owl Head mining district of Pinal County, Ariz., was revealed recently in a Bureau of Mines report to Secretary of the Interior Ickes.

The bed of copper ore, which may help substantially the country's urgent need for the important war metal, lies about 37 miles north of Tucson, near U. S. Highway 80, and involves four townships in the region.

The presence of the deposit was brought to the attention of the Bureau of Mines by Mrs. Ethel Ferguson of 3928 Fort boulevard, owner of 60 of the 72 claims in the region. James Owens of Miami, Ariz., owns the other 12 claims.

### Test Surface Deposits

Bureau of Mines engineers examining the region said that at least one million tons of 2½ per cent copper ore could be stripped from one small area without going below the depth of 10 to 15 feet. This would be the minimum percentage, taking everything that comes. Selective mining and sorting would more than double the copper percentage, the engineers said.

As yet, the Bureau of Mines' engineers have only tested the surface deposits to an average depth of 10 feet, but they report previous workings indicate higher percentage of copper down to 250 feet.

This property has been known and worked to some degree for a long period of time. Considered primarily cattle country, relatively little mining was done.

However, cars of ore shipped from open pit mines averaged up to 5.8 per cent copper plus percentages of gold and silver. Smelter returns showed the percentage of copper to be higher as the pits were deepened.

Geologically, the Bureau of Mines reports the deposits to be a dike of copper-bearing andesite rock 500 feet or more in width and of an indeterminate length and depth. Engineers say that at least 5000 feet of length is in evidence and a depth of at least 250 feet has been indicated by a drill hole down to the true water level.

The Bureau of Mines has recommended diamond drilling of the region to ascertain the exact extent of the copper ore.

August 18, 1943

Ethel Ferguson

1397  
aso, Texas

Mrs. Ferguson:

Will you kindly fill out and return the enclosed report for the Jimmie Owens Property. This will be of assistance in presenting the property to interested parties.

I have told a number of people about your Last Chance Mine and they will undoubtedly contact you. Among them were Mudd-Wiseman and W. C. Humphrey of Patagonia. The drilling operation shows a real mine.

Will be back in Tucson next week.

Yours very truly,

George A. Ballam  
Assistant to the Director

JE



R-12-E.

S. 89° 55' W.

■ Goff House.

T-8-S.  
N. 0° 1' W.

35

N. 0° 1' W.  
T-8-S

FERGUSON LAST CHANCE N°2

▷ DISCOVERY SHAFT  
12 FT. SHAFT  
12 FT. SHAFT  
12 FT. SHAFT  
40 FT. SHAFT

LODE CLAIM

10 FT. SHAFT  
OPEN CUT  
12 FT. SHAFT  
OPEN CUTS  
OLD ROAD

STATE HIGHWAY To Tucson

N. 89° 54' E.

SCALE: 1 INCH = 600 FEET.

STAR

↑ Eveling Filling Station

FRED C. SIEBOTH C.E.  
SEPT. 10, 1923.

FERGUSON LAST CHANCE N°2  
Northeast Quarter of the Southeast Quarter of Sec.  
35 Tsp. 8, Range 12 East, Gila & Salt River Meridian.



# FERGUSON COPPER MINE WORKINGS AT "LAST CHANCE" CLAIM PINAL COUNTY, ARIZONA.

McCONNELL & PALMER  
Mining Engineers  
and Operators  
El Paso, Texas and  
Los Angeles, California.

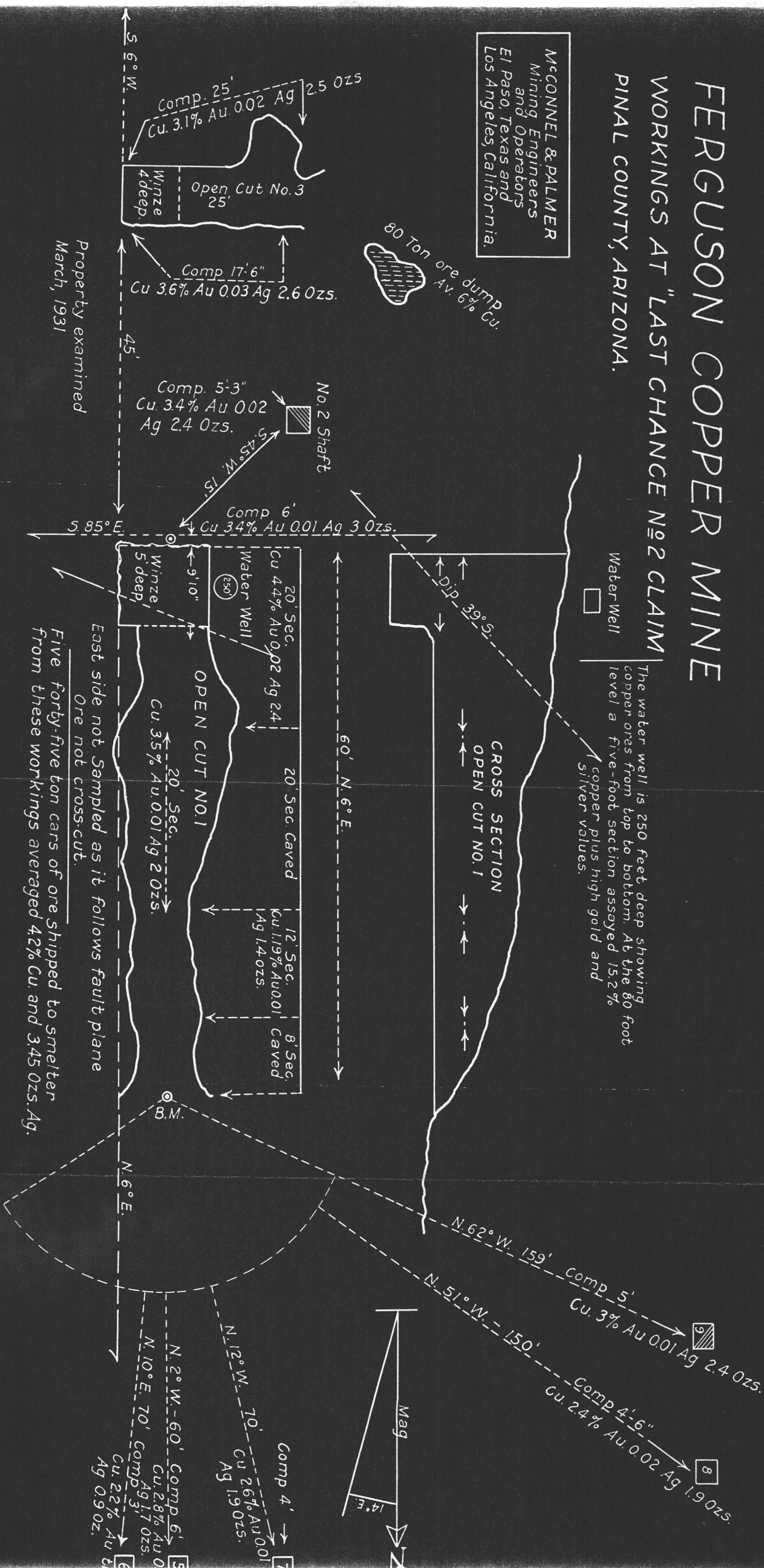
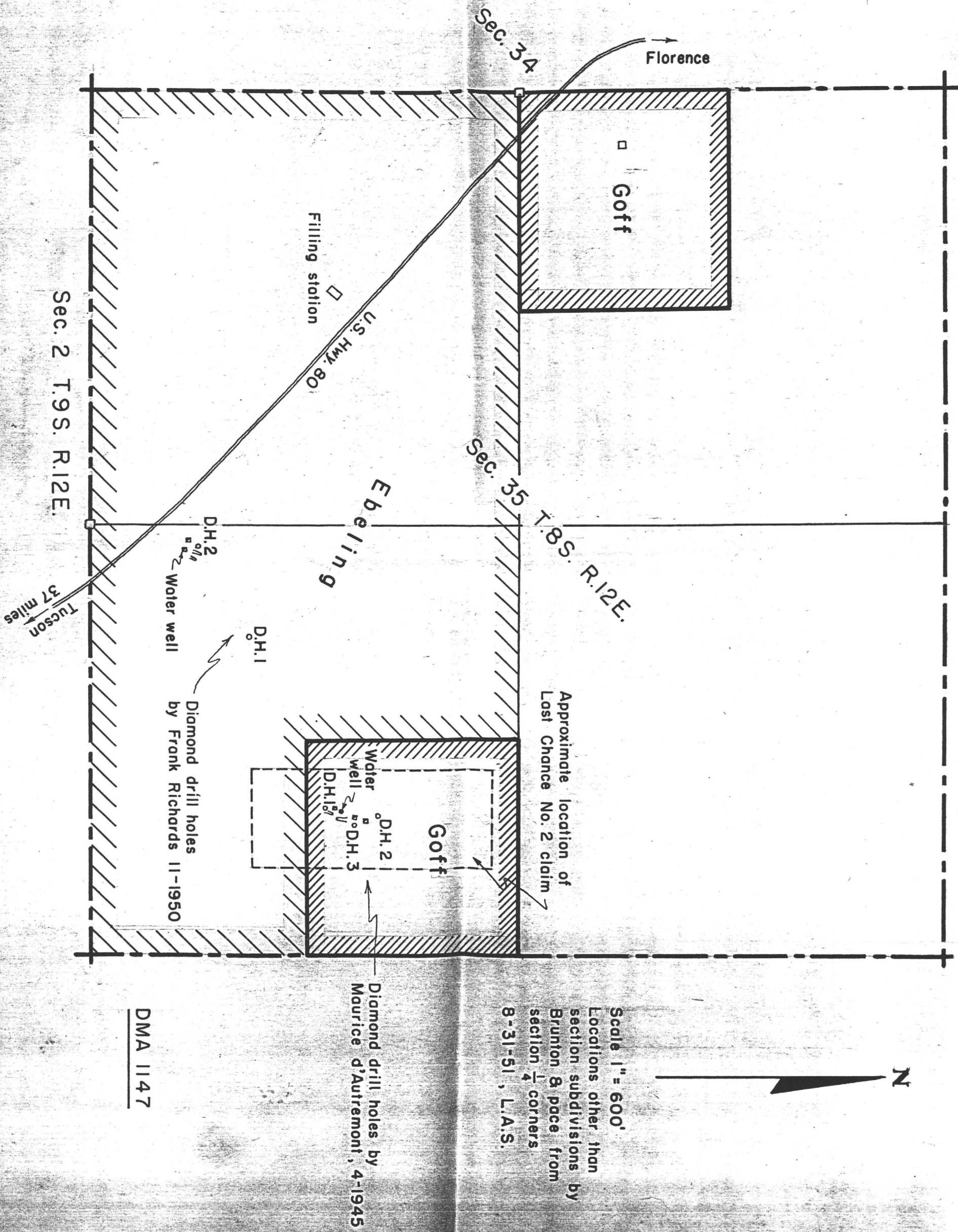




FIG. 1 - Location Map, Ferguson (?), Goff, & Ebelling properties Pinal County, Ariz.

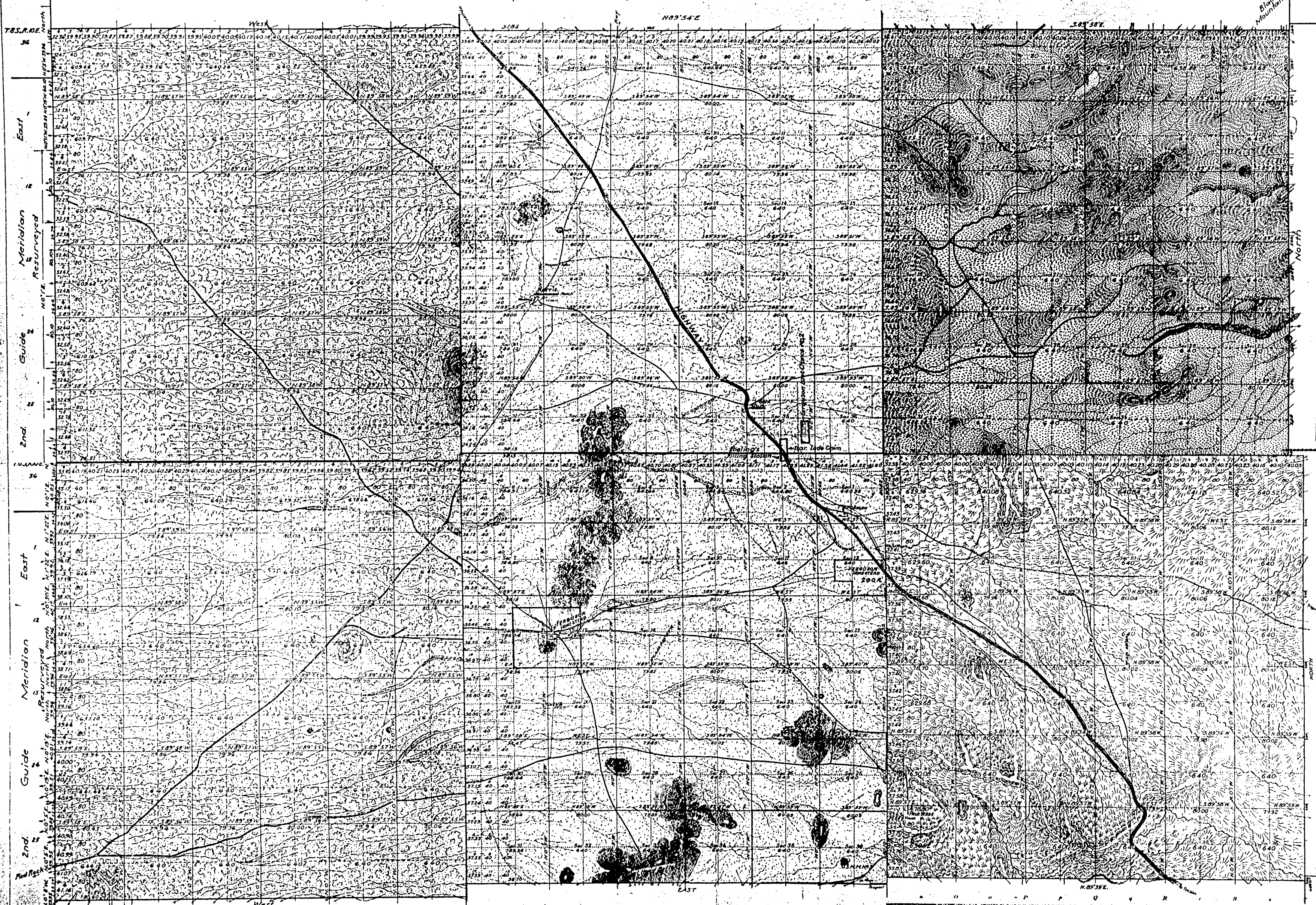




Ferguson Copper Properties

Accepted August 1913

Township No. 8 South - Range No. 12 East, Gila and Salt River Meridian, Arizona  
Township No. 8 South - Range No. 12 East, Gila and Salt River Meridian, Arizona  
Township No. 8 South - Range No. 13 East, Gila and Salt River Meridian, Arizona



Areas in Acres

Public Land	22967.08
Indian Reservation	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	22967.08

Lat. 32° 57' 02" N  
Long. 110° 56' 54" W

Areas in Acres

Public Land	22,967.24
Indian Reservation	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	22,967.24

Lat. 32° 55' 50" N  
Long. 110° 56' 59" W

Survey Designated	By Whom Surveyed	When Surveyed	When Completed
1st 1/4 Sec. 36, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
2nd 1/4 Sec. 36, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
3rd 1/4 Sec. 36, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
4th 1/4 Sec. 36, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
1st 1/4 Sec. 35, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
2nd 1/4 Sec. 35, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
3rd 1/4 Sec. 35, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
4th 1/4 Sec. 35, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
1st 1/4 Sec. 34, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
2nd 1/4 Sec. 34, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
3rd 1/4 Sec. 34, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete
4th 1/4 Sec. 34, T. 8 S., R. 12 E., S. 13	William H. Thorne	Feb. 6, 1919	Complete

The above map of Township No. 8 South Meridian, Arizona is strictly conformable to the field notes of the survey thereof on file in this office, which have been examined and approved by the U.S. Surveyor General's Office, Phoenix, Arizona, May 23, 1921.

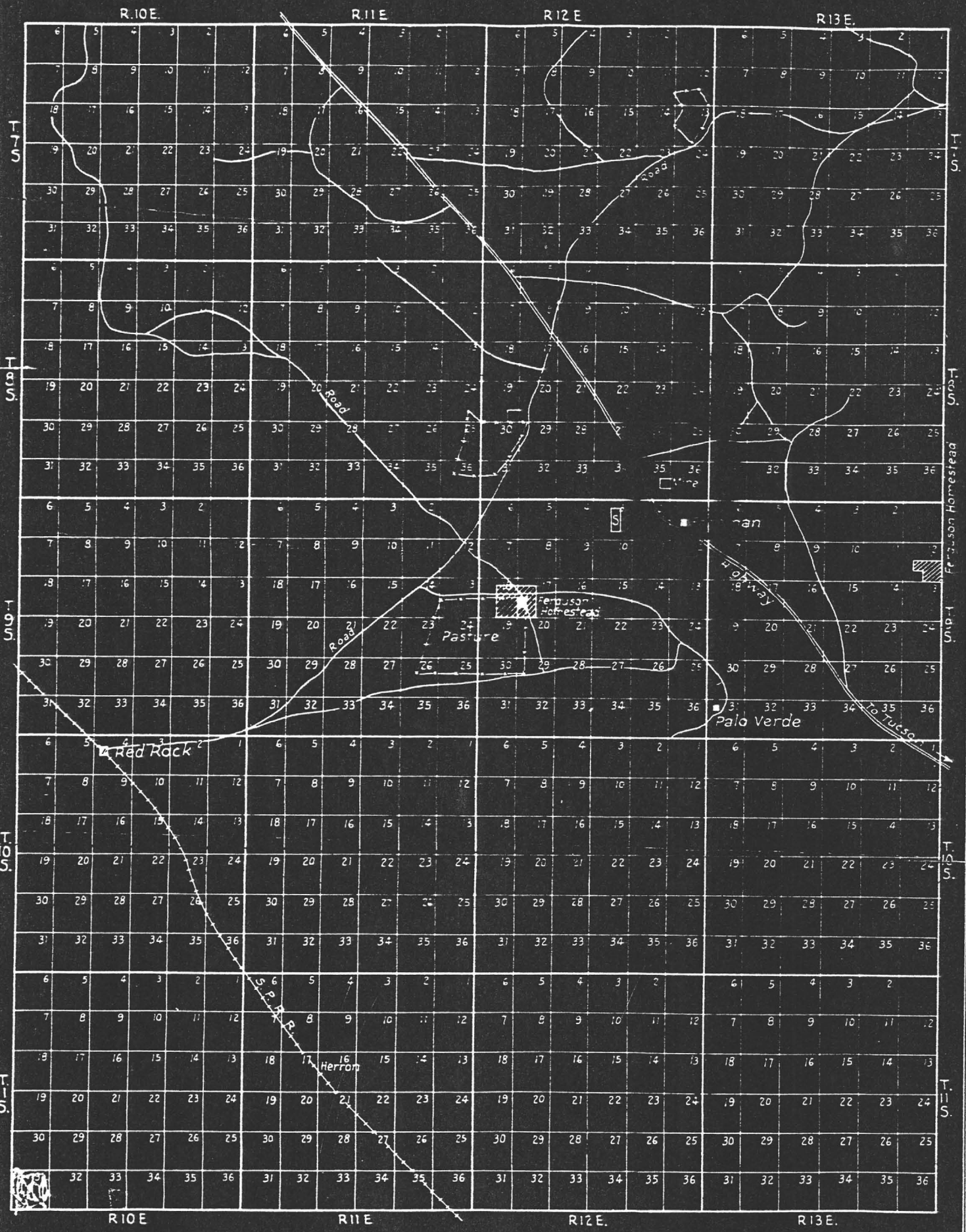
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IN THE SUPREME COURT OF THE STATE OF ARIZONA

June 22, 1942.

ETHEL FERGUSON, :  
Petitioner, :  
-v- :  
THE SUPERIOR COURT OF :  
THE STATE OF ARIZONA, :  
IN AND FOR THE COUNTY :  
OF PINAL, :  
Respondent. :

No. 4513

ORIGINAL PROCEEDING IN CERTIORARI

Alternative writ made permanent.

D. V. Mulhern, B. H. Bibbs, of  
Phoenix, Attorneys for Petitioner.

Hummel, Hummel & Wyatt, of Tucson,  
Attorneys for Respondent.

LOCKWOOD, C. J. :

This matter comes before us on a petition for a writ of certiorari to review the proceedings of the superior court of Pinal county, wherein Ethel Ferguson, petitioner, was adjudged guilty of contempt in the case of Seldon D. Goff and Flora B. Goff, plaintiffs, v. Ethel Ferguson, defendant, case No. 5252 in said superior court.

The factual situation upon which the proceeding is founded, as shown by the records of this court and of the superior court of Pinal county, may be stated as follows: On May 9, 1932 Seldon D. Goff and Flora B. Goff, plaintiffs, filed a complaint against Ethel Ferguson, defendant, seeking to quiet title to certain premises in Pinal county. After various pleadings and proceedings, on January 5, 1935 the minutes of the trial court show the following order:

"IT IS ORDERED that said motion to strike be and the same hereby is sustained; the defendant's third amended answer be and the same hereby is stricken; and that plaintiffs' motion for judgment be and hereby is granted."

No formal written judgment was filed until February 11, 1935 when the trial court, over the objections of defendant, did sign and file a formal written judgment. However, no minute entry showing a rendition of judgment on February 11 was made. Thereafter defendant Ferguson appealed to this court. On October 14, 1935 this court rendered its judgment on the motion to dismiss the appeal, (Ferguson v. Goff, 46 Ariz. 260, 50 Pac. (2d) 20), in the following language:

"....It appearing in the record of the present case that no valid judgment has ever been rendered therein, the appeal was prematurely taken, and the motion to dismiss is granted."

A motion for rehearing was filed on October 28, and denied on November 23, and the mandate was duly issued and sent to the superior court of Pinal county. That court on December 6, 1935, and after the judgment of this court above referred to had become final, made the following order:

"It appearing that the minutes of this Court do not disclose the hearing and proceedings in this ~~net~~ cause had and done on the 11th day of February, 1935, the following minute nunc pro tunc as of February 11, 1935, is hereby ordered made by the Court sua sponte, to wit:

"This cause came on regularly this day for hearing on the entry of judgment and defendant's objection thereto, duly filed; and plaintiffs, by counsel, having waived appearance either in person or by counsel at this hearing, and defendant appearing by H. J. Valentine, Esq., her attorney; and the said H. J. Valentine, Esq., having filed herein his objection to the attorney fee incorporated in the proposed judgment submitted to the Court by plaintiffs, but the said H. J. Valentine, Esq., agreeing in open court that, if the Court finds plaintiffs entitled to recover attorney fees, the Court may fix the same in its discretion without the introduction of any evidence whatever; and the Court having considered the matters now before the Court, and the same having been submitted to the Court for decision, and now being fully advised, FINDS that plaintiff is entitled to recover an attorney fee as prayed for in his com-

plaint, and now at this time hereby fixes the amount thereof at the sum of \$150.00, for which plaintiff is entitled to judgment as prayed; and the Court FURTHER FINDS that plaintiff is entitled to judgment as prayed in his complaint as found by Hon. E. L. Green, former Judge of Court, as evidenced by the minute entry herein made and entered on January 5, 1935; and

"IT IS HEREBY ORDERED that judgment in accordance herewith is hereby given plaintiffs, as more fully appears by the formal written judgment this day signed by the Court, which the Clerk is hereby ordered and directed to file and enter forthwith."

and a certified copy of such order was mailed to the clerk of this court. There was, however, no motion now request addressed to this court that the mandate be recalled and the case reopened for the purpose of correcting the record and reviewing the judgment of this court theretofore entered, and therefor, no action was taken on the communication addressed to the clerk. The matter stood in status quo until January 31, 1942, when Seldon D. Goff applied to the superior court of Pinal county for a citation in cause No. 5252, supra, requiring defendant to appear and show cause why she should not be punished for contempt of the judgment and orders of the superior court of Pinal county, in that she persisted in claiming rights to the property involved in the action above referred to and had trespassed upon said premises under claim of right in 1940 and 1941. A citation was issued, and it appearing that defendant was in the state of Texas, a copy was sent her by registered mail and was duly received by her in Texas. On February 16, the day on which the citation was returnable, the matter came up for hearing before the court, and D. V. Mulhern, a regularly admitted and practicing attorney of this court, appeared to represent defendant, stating that he was prepared to answer on her behalf to the citation, and that she had not been within the state of Arizona from the date of the application for the citation up to the time of hearing. The court held that it was the duty of defendant to appear in person, and refused to listen to her attorney. He thereupon entered a special appearance, objecting to the

jurisdiction of the court on the ground that the judgment of the superior court referred to, and on which the proceedings for contempt were based, was wholly null and void, and that the court had no jurisdiction of the person of defendant. The court denied the special appearance and refused to allow Mulhern to participate in the hearing for contempt which followed, and after hearing testimony on behalf of Goff, entered the following order:

"It is the judgment of the Court that Ethel Ferguson is guilty of contempt; that she be punished therefor by paying a fine of \$25.00 to the Clerk of this Court, or fifty days in the Pinal County jail."

Thereafter this proceeding was filed and al alternative writ of certiorari issued.

There are several questions of law presented by the foregoing statement of facts, but the first and most important is whether the alleged judgment of the superior court, made on February 11, 1935, and on which the contempt proceeding was based, was valid. It will be observed that an appeal was taken from such purported judgment by the defendant, petitioner herein, which appeal came before this court, and it was adjudged by us that there was no valid judgment in the case as of the date of February 11, 1935, for the reason that the record before us showed that the rules of this court in regard to rendition of judgment had not been complied with, and the appeal was dismissed. A motion for rehearing was made and denied, and the mandate of this court, to the effect that no judgment existed, was on November 23, 1935 transmitted to the superior court of Pinal county. That court thereafter made a nunc pro tunc order which, in effect, stated that notwithstanding the record as presented to us on appeal showed that no valid judgment had been rendered on February 11, as a matter of fact the things necessary to make the judgment valid had actually occurred, but by inadvertence on the part of the proper officials of the superior court of Pinal county the record transmitted to us on appeal did not show the true facts. The

action of the superior court of Pinal county since that time necessarily has been based on the theory that it by a nunc pro tunc order may, without our consent, validate a judgment which we have held void.

We had before us, in the case of State v. Superior Court of Pinal County, 22 Ariz. 452, 197 Pac. 537, a question as to the effect of the judgment of this court, and therein we said:

"A judgment of this court imports absolute verity. It must be regarded as free from all error. It is final and conclusive upon the superior courts and the judges thereof, and they may not question such judgment, neither are they permitted to hamper or impede the due and timely execution of such judgment.

"....The rule is, when a judgment is affirmed by this court, all questions raised by the assignments of error and all questions that might have been so raised are to be regarded as finally adjudicated against the appellant...."

and we have followed this rule consistently ever since. Sam v. State, 33 Ariz. 421, 265 Pac. 622; State v. Griffith, 54 Ariz. 436, 96 Pac. (2d) 752.

This court, in the case of Goff v. Ferguson, supra, having held that no judgment was rendered on February 11, 1935, the superior court of Pinal county was without any jurisdiction by any act whatsoever to modify or change our judgment. If, as a matter of fact, a proper judgment had been rendered on February 11, but the records of the superior court of Pinal county failed to show the same, the proper procedure would have been to appeal to this court to recall its mandate and permit the proceedings to be reopened for the sake of correcting the record and to review its opinion and judgment theretofore rendered. But the superior court of Pinal county had no jurisdiction, of its own volition or by its own act, in effect to set aside the judgment of this court. The alleged judgment upon which the contempt proceeding was based being no judgment at all, petitioner could not be in contempt of the superior court of Pinal county for violating its terms.

While it is not necessary to a decision of the precise point involved herein, we might point out that if the Goffs are entitled, on the actual facts, to a judgment in case No. 5252, supra, we have pointed out clearly in the case of Chiricahua Ranches Co. v. State, 44 Ariz. 559, 39 Pac. (2d) 640, the manner in which such judgment might have been secured under the old rules after the decision on appeal, and we think the new rules indicate an appropriate method whereby it may even now be secured.

The alternative writ of certiorari heretofore issued is made permanent.

ALFRED C. LOCKWOOD

CONCURRING:

A. G. McALISTER  
J u d g e.

HENRY D. ROSS  
J u d g e.

Since 1923, I've personally worked my mining claims in NE $\frac{1}{4}$  of SE $\frac{1}{4}$ , Section 35, Township 8, Range East.

At the present time I have three cars of ore on the Ground. I have shipped the following cars: Smelter returns of record at A. S. & R., Hayden, Arizona and also A. S. and R. at El Paso:

June 6, 1929-1 car---	\$270.04
Feb. 15, 1930-1 car---	344.42
Aug. 6, 1929-1 car---	335.57
May 3, 1929-1 car---	222.27
No. 92720-1930-----	376.75
May 7, 1929-----	265.10

As to further mineral character, James Owen, Miami, Arizona, has shipped ore. J. V. McConnell, El Paso; Harry R. Palmer, 1452 West 48th Street, Los Angeles, California; R. T. Mishler, Fresnillo Company, Mexico; all reputable engineers, will testify to the mineral character of the land.

In 1932, eight years later, I was sued by Seldon Goff to quit title to NE $\frac{1}{4}$  of SE $\frac{1}{4}$ . Mr. Goff bought a joining ranch and said he saw the mining work and the well, which is on this claim, was developed by drilling for ore. He said he saw the mining work and admitted to me that he did not know the value. HE THOUGHT he bought the well and mining claims.

When I appealed the judgment of local court, the Supreme Court said the local court judgment was not valid, appeal taken prematurely, and reprimanded the bar and judges. This was ended in 1935. Since that time I've personally worked my mine each year. Goff has my ore fenced, on the strength of patent issued in 1926, "Selection 058477", Phoenix series.

This patent was obtained through fraud. My protest of this patent is on record in the U. S. land Office, Phoenix, dated 1925.

The Stock-raising Homestead Patent No. 1091919 issued August 16, 1937 to Harry E. Ebeling was also obtained through Fraud. This land covers other mining claims and he is also using a mining shaft, claiming it to be a water well. These claims located 1928, filed and recorded Book 5, Aff. of Labor, page 623, Florence, Arizona.

*ely*  
*I've asked General Land if they cancel these patents - They haven't - There should be some pressure brought on Com. Johnson now - He passes the buck to war production board -*



W.M.R. \_\_\_\_\_

\_\_\_\_\_ 1943

WAR MINERALS REPORT

UNITED STATES DEPARTMENT OF THE INTERIOR \* BUREAU OF MINES

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Report of the Bureau of Mines to Hon. Harold Ickes,  
Secretary of the Interior.

✓ LAST CHANCE  
Pinal County, Arizona.

- Copper -

SUMMARY

✓  
The Last Chance mine is in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on Highway 80, and 29 miles south of Florence, the County seat of Pinal County.

Ore occurrences are in an an andesite dike 500 feet or more in width and an indeterminate length. The surrounding rocks are granite and schist. The andesite has been sheared or cracked in various directions. Copper carbonate and silicates are found in this surface area to an undetermined depth. Shallow pits and cuts generally show these copper ores, although some outcrop areas are leached and very little

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1. The reports of the War Minerals Series are based upon field work of engineers of the Bureau of Mines together with data available to the Bureau from other sources. The purpose of these reports is to supply information that may be helpful to owners and operators of properties examined, and to others who are especially interested in them. For this reason distribution is limited to those who request the reports individually.

copper mineral is found there. One churn drill hole was put down in the central area but no data are at hand as to the exact results. One report states that ore was about the same to 250 foot depth where a heavy flow of water was struck. This water now stands at about 20 feet below the surface. It is reported 5 feet of 15% chalcocite was passed through at 80 foot depth. Five cars of ore have been shipped from the property with an average grade of 3.45 ounces of silver, and 4.2% copper.

This property can be easily diamond drilled and a few holes would quickly determine its possibilities. It would not be necessary to drill over 250 feet in depth and the first few holes might show that all the copper bearing ground can be explored with shallower holes.

Most of the area is covered with debris, but small outcrops are exposed throughout the area.

This property warrants further consideration and has possibilities of developing a large deposit of low-grade copper ore.

It is recommended that the property be prospected by the Bureau of Mines; first, with several trenches to determine possibilities as to the size of the deposit; second, with diamond drill holes if results of trenching are satisfactory.

#### INTRODUCTION

The Last Chance mine was brought to the attention of the Bureau of Mines by the owner. It was examined by a Bureau of Mines engineer on January 23, 1943. Supplementary information was obtained from a private report dated March 1931. This report is based on the information obtained from those two sources.

### LOCATION AND ACCESSIBILITY

This property is situated in section 35, T. 8 S. R. 12 E. in the Owlhead Mining District, Pinal County, Arizona. It is about 37 miles north of Tucson on highway U. S. 80 and 29 miles south of Florence, the county seat. It is 16 miles over a dirt road to Red Rock, a station on the Southern Pacific Railroad, and thus within easy reach of the smelters at Hayden, Miami and Superior. The exposed copper-bearing ground is just off the highway on a practically flat desert floor.

### OWNERSHIP

The ownership is claimed by Mrs. Ethel Ferguson, P. O. Box 1397, El Paso, Texas. At present there is some dispute over ownership between Mrs. Ferguson and Mr. Goff, a cattleman. Mrs. Ferguson states that she has been awarded a Supreme Court decision on the title.

The area is covered by 60 contiguous lode mining claims held by annual assessment work. The principal dispute is over the Last Chance No. 2 claim on which is located the 250 foot drill hole which is the principal source of water in this area.

### HISTORY

While the property has been known for a long time, little work has been done except in the way of shallow pits and cuts. Some churn drilling was done at one period about 1918. It is reported that several other holes were put down at distant points in addition to the 250 foot hole on the Last Chance No. 2 claim. No data are at hand as to the results from these holes. It would seem that results were not very good or work should have been continued. The property has been held for the last twenty years by Mr. Ferguson and following his death, by Mrs. Ferguson, his wife. The

surface rights were brought up by the use of Government scrip in the late twenties and were purchased later from the original buyer, by Mr. Goff. As the water hole was the thing of most value to Mr. Goff, he has fenced that and has generally prevented entrance to the property by the claimants and other parties. Mr. Goff showed the Bureau Engineer the location of the property and did not interfere in any way with his examination.

#### PRODUCTION

Five cars of ore were shipped from the property by James J. Owens in 1929 and 1930. That ore was mined from open cuts in the area around the 250 foot water hole on the Last Chance No. 2 claim. Mr. Owens had a lease on the property at that time. The ore shipped was taken pretty much as mined as there is very little discarded material around the cuts. The best of the five cars shipped ran 4.8 ozs. silver and 5.2% copper. The lowest, 2.1 lzs. silver and 3.6% copper. The general average was 0.03 ozs. gold, 2.5 ozs. silver and 4.2% copper. This is the total production from the property and little work has been done since that time.

The property has possibilities for the development of a large body of low-grade ore which would require a plant for local treatment or to develop ore of a grade that can be shipped direct to the smelters at Hayden or Superior, in a surface area 10 to 20 feet deep.

#### PHYSICAL FEATURES

This property lies in a flat desert area and a paved highway passes within 1/2 mile of the property. The surface is covered with the usual desert vegetation, with no timber or other growths of any value for mining purposes.

Most of the area is covered with a wash, with scattered outcrops in the dike area. These outcrops are from a few feet to about 15 feet above the wash.

The only substantial amount of water was cut at 250 feet depth by drill hole, although a little water is found 10 to 15 feet below the surface. No definite measurement has ever been made of the capacity of the water well. Regular pumping with a wind mill has no effect on the water level which stands at about 20<sup>ft</sup> of the surface.

#### GEOLOGY AND ORE OCCURRENCES

An andesite dike 500 feet or more in width cuts through the granites and schists of this area. The dike has been sheared and altered, but for the most part it is covered with wash and neither the extent of the shearing nor the length of the dike can be definitely determined.

Large areas of the andesite dike appear to have been mineralized, followed by leaching and erosion. Some of the outcrops have been almost completely leached and at other places copper carbonates and silicates show at the surface. Whether the ore-bearing zone, which is mostly secondary, extends below the sub-surface water could not be definitely determined. The complete leaching of some of the outcrops indicates a possibility of a deeper secondary zone, which might be in the form of the secondary sulphide, chalcocite. It is reported that the 250 foot drill hole passed through 5 feet of 15% copper, in the form of chalcocite, at 80 feet depth. No reliable data concerning this area at hand.

#### DEVELOPMENT

Except for a few drill holes, all development has been in the form of shallow pits and cuts. While it is reported several holes were

drilled over a large area, the location of only one seems to be definitely known. This is the 250 foot hole on the Last Chance No. 2 claim. Some of the pits were started in the outcrops and others were put down through the wash which is only a few feet in depth. All showed some copper pre.

One pit about 20 feet deep had water in the bottom. The dump from this pit showed only a small amount of copper, but the rock showed heavy leaching and alteration from surface waters.

Most of the ore shipped came from two pits, one about 60 feet long and the other about 40 feet long. The 60 foot pit was about 17 feet deep at the deep end. The other cut was only about 4 feet deep.

#### ORE RESERVES

No definite tonnage of ore can be measured. There is an indicated area about 100' x 200' around the drill hole on which some work has been done. Using a factor of 15 cubic feet per ton and an average depth of 10 feet, this block would contain 12,333 tons. It is possible that this area would be greatly extended by further development. Increases in depth would give proportionate increases in tonnage.

Ore carrying 0.02 ozs. gold, 2.5 ozs. silver, and 2.5% copper would give the following smelter returns:

Pay for all gold at \$32.50 for 0.02 ozs.	\$	0.65
Pay for 95% silver, minimum deduction $\frac{1}{2}$ oz. @ 71¢ 2.5 ozs.		1.42
Pay for 95% copper at assay less 8¢ at 11.55 cts. 2.6¢, 2.5%		3.61
		<u>5.68</u>
Base smelter charge, 50% silica	\$3.50	
Alumina penalty, 16% less 10% @ a 5¢ unit	1.50	
	<u>\$5.00</u>	
Net smelter payment		5.00
Bonus of 5¢ pay for 97% of assay		<u>\$ 0.68</u>
		2.43
		<u>\$3.11</u>
Railroad freight	\$0.85	
Trucking	1.25	
Mining	1.00	
	<u>\$ 3.10</u>	

25C

With the above smelting contract the operation would break even on the above grade of ore. Hence any higher grade of ore would show a profit. Five cars of ore shipped from the mine gave an average value of 3.45 ozs. silver and 4/2% copper. By selective mining and sorting, it should be possible to keep the grade of the ore up to this figure. This grade of ore with an increase of mining costs to \$2.00 per ton would show a net operating profit of \$2.42 per ton of ore mined.

Main possibilities in the way of large tonnages would be best tested by diamond drill holes. This ground should be easily drilled and the maximum depth necessary would probably be around 250 feet, which is indicated as the true water level.

#### OPERATING COSTS

With the present known ores at and near the surface, all mining can be done by open pit and mining would cost about \$1.00 per ton. If large tonnages are developed, mining could be done by block carving or similar methods and the costs would be around 75 cents or under per ton.

The haulage and treatment charges will amount to about \$5.60 per ton if the ores are shipped direct to the smelter.

If oxidized ores are treated at a leaching plant built at the mine, the cost will be about \$1.50 per ton.

If secondary sulphides are found and a flotation plant is erected, the cost of the concentration will be about 75 cents per ton.

A power line which carries power from Parker Dam runs through the property.

Trucking to Florence is 29 miles over good highway. On a small tonnage basis it would probably cost \$1.25 per ton, but on a large tonnage this could be reduced to \$1.00 or less. The rail haul to Hayden or Superior would be 85 cents per ton.

If ore or concentrates were hauled to Red Rock on the main line of the Southern Pacific Railroad the distance would be 16 miles and would cost about 75 cents per ten.

### Sampling

The following samples were taken on the property:

<u>Sample No.</u>	<u>Description</u>	<u>Width</u>	<u>Ozs.Au</u>	<u>Ozs.Ag.</u>	<u>% Cu</u>
643	Grab of dump at 20' shaft, S.50 E. 148' to windmill	Grab	trace	0.05	0.20
644	5' shaft, S. 50 E. 130' to windmill	4'	trace	0.40	1.74
645	5' shaft, S. 3 W. 125' to windmill	5'	trace	0.60	1.62
646	Filled shaft dump, grab, S.22 W to windmill	Grab	trace	0.35	0.93
647	Filled cut, grab dump, S. 37 W to windmill	Grab	trace	0.35	2.20
648	Open cut, bottom, S. 5 W. 63' to windmill	7'	trace	0.70	1.48
649	Same open cut as above, south end, 30' south of No. 648, 15' below surface	5'	trace	1.70	2.98
650	6' shaft, N. 13 E. 32' to windmill	6'	trace	2.80	3.78
651	N. end of open cut, 4' deep, N. 3 W. 40' to windmill	4'	trace	1.00	1.84
652	Open cut 30' south of No. 651	7'	trace	2.30	2.90
653	Above open cut to west of No. 652	10'	trace	1.10	2.25

Excluding No. 643 the general weighted average is 2.22% copper.

Eleven samples by McConnell and Palmer showed 0.02 ozs. gold, 1.7 ozs. silver, and 3.01% copper.

Some sorting of the ore would increase the values probably from  $1\frac{1}{2}$  to 2 times the above values. As more tonnage would have to be mined for ore shipped the costs would go up in the same proportion or more.

### Conclusions and Recommendations

It appears from work done that this property has an indicated area about 200 feet long and 100 feet wide that would produce 13,333 tons of ore with an average value of about 0.02 ozs. gold.  $2\frac{1}{2}$  ozs. silver, and  $2\frac{1}{2}$  copper. By the indicated size of the andesite dike this area might be extended to 500 or more feet in width and 5000 feet or more in length.



Present work does not give any true conception of possible depth and present ground water level does not permit giving any estimate of depth below about 15 feet except on one outcrop which stands about 10 feet above the general level of the country. Hence, there is a possibility that a large tonnage of low grade copper ore could be developed. The country is very good for diamond drilling and the maximum depth of holes would be 250 feet, which is indicated to be the true water level by one churn drill hole.

It is possible that the present ground water level may be the bottom of a zone of secondary enrichment and if such is the case all the ores will be copper carbonates or copper silicates and the general depth of the ore body will be around 10 to 15 feet. Even if the ore is limited to this shallow depth, it is possible that one million or more tons of  $2\frac{1}{2}\%$  copper ore could be mined.

Since there is a possibility of developing a large tonnage of low grade copper ore on this property, it is recommended that primarily 1000 feet of trenching be done by the Bureau of Mines which would cost about \$3.00 per linear foot. The trenches would be from 3 feet to 4 feet in depth. If the trenching should indicate ore bodies under an extensive area, it can be followed up by diamond drilling.

Last Chance,  
Ariz. No. \_\_\_\_\_

#### Sources of Information:

Information was obtained by personal examination by  
Thos. L. Chapman, on January 23, 1943.

From private report by McConnell and Palmer, Mining Engineers,  
of El Paso and Los Angeles.