

**MS.**

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July 28/99  
aug 2/99

(4-683.)

Mineral Survey No. 1358 A and B

Lot No. ....

Prescott

Land District.

FIELD NOTES

OF THE SURVEY OF THE MINING CLAIM OF

Ralph H. Cameron et al

KNOWN AS THE

Last Chance lode and Last Chance mill site

Grand Canon

Mining District,

Cocconino

County,

Arizona

Section

Township

30 N

Range

4 E  
unsurveyed

Surveyed under instructions dated May 8<sup>th</sup>, 1899.

by J. T. McWilliams,

U. S. Deputy Mineral Surveyor.

Claim located April 19, 1890 & Nov 23, 1897, 18

Survey commenced June 8<sup>th</sup>, 1899.

Survey completed June 28<sup>th</sup>, 1899.

6-160

Address of Claimants

Flagstaff  
Arizona



# PRELIMINARY OATHS OF ASSISTANTS. IN SURVEY OF MINING CLAIM.

WE, John Woods and Samuel Parker & James Bressler  
do solemnly swear that we will well and faithfully execute the duties of chain carriers;  
that we will level the chain upon even and uneven ground and plumb the tally-pins,  
either by sticking or dropping the same; that we will report the true distance to all  
notable objects, and the true length of all lines that we assist in measuring, to the best  
of our skill and ability, and in accordance with instructions given us, in the survey of  
the Mining Claim of Ralph H. Cameron et al  
, known as the  
Last Chance Mine and Millsite 1358 A + B.  
situate in Grand Canon mining district,  
Coconino County, Arizona  
in Section \_\_\_\_\_, Township No. \_\_\_\_\_, Range No. \_\_\_\_\_

John Woods, Chairman.

Samuel Parker, Chairman.

James Bressler, Chairman & Axeman

Subscribed and sworn to by the above-named persons before  
me this 25 day of May, 1899

My Commission expires Feb. 6, 1901.

T. E. Pulliam  
Notary Public

I, James Bressler, do solemnly swear that I will well and  
truly perform the duties of axeman, in the establishment of corners and other duties,  
according to instructions given me and to the best of my skill and ability, in the survey  
of the Mining Claim of Ralph H. Cameron et al  
known as the Last Chance Mine & Millsite 1358 A + B  
more fully described in the preceding affidavit.

James Bressler, Axeman & Chairman

Subscribed and sworn to by the said \_\_\_\_\_  
before me this 25 day of

May, 1899

My Commission expires Feb. 6, 1901.

T. E. Pulliam  
Notary Public

I, John Woods, do solemnly swear that I will  
well and truly perform the duties of flagman, in the establishment of corners and other  
duties, according to instructions given me and to the best of my skill and ability, in the  
survey of the Mining Claim of Ralph H. Cameron et al  
known as the Last Chance Mine & Millsite 1358 A + B  
more fully described in the preceding affidavit.

John Woods, Flagman.

Subscribed and sworn to by the said John Woods  
before me this 25 day of

May, 1899.

My Commission expires Feb. 6, 1901.

T. E. Pulliam  
Notary Public





feet

Thence  $N. 37^{\circ} 37' E$   
Var  $14^{\circ} 22' E$ 

750

to West Centre side monument identical with a monument of location, Set Sandstone Slab  $31" \times 12" \times 6$  ins. - 18 ins in ground with mound of stones of the original location monument alongside, Chiseled 5-1358 A, whence:-

A pinon 8 ins diam. bears  $S 76^{\circ} 28' E. 34.8$  ft, blazed & scribed B.T. 5-1358 A.

Discovery point bears  $S 52^{\circ} 23' E. 300$  ft

1500

to Cor  $N^{\circ} 3$ 

Set limestone slab  $33" \times 12" \times 6$  ins - 15 ins in ground with mound of Stone & earth alongside chiseled 3-1358 A  
Whence:- a corner of location bears  $N 37^{\circ} 37' E. 178$  ft

a juniper 16 ins. diam. bears  $S 62^{\circ} 55' W 30.2$  ft blazed and scribed B.T. 3-1358 A.

The South west corner of stone cabin, property of claimants, bears  $N 20^{\circ} 30' W. 257$  ft.

Thence  $S 52^{\circ} 23' E$   
Var  $14^{\circ} 22' E$ 

600

to Cor  $N^{\circ} 4$ 

Set limestone slab  $31" \times 12" \times 6$  ins. - 14 ins in ground with mound of stone alongside, chiseled 4-1358 A  
Whence:- a cor. of location bears  $N. 47^{\circ} 44' E. 397$  ft

a juniper 7 ins. diam. bears  $S 70^{\circ} 07' W. 38.5$  ft blazed & scribed B.T. 4-1358 A.

Thence  $S 37^{\circ} 37' W$   
Var.  $14^{\circ} 22' E$ 

1500

to Cor.  $N^{\circ} 1$  the place of beginning  
Area

Last Chance lode  $20. \underline{66} \underline{00}$  acres



From discovery point the ledge bears N. 37° 37' E  
70 feet and S 37° 37' W about 200 ft. judging  
from surface indications, but as to its being a  
long lead or regular ledge of mineral I am not sure.

The principal mineral or metal in the ore is  
Copper and it looks or appears to me to be a  
vast deposit of Copper ore.

No other claims adjoin this survey claim.  
A claim called the Iron Cap is located a few  
hundred feet from the east side line of this  
claim, and another claim called the North-End  
is located a short distance away from the  
west side line of this claim, both of these claims  
are owned and controlled by the claimants to  
the Last Chance lode, this survey. To have  
obtained the boundary lines to the Iron Cap and  
North-end Claims would have entailed considerable  
unnecessary expense to the claimants, owing to  
the extreme roughness of the ground upon which  
they are located.

Location, — This claim is located on unsurveyed lands in the  
Grand Canon of the Colorado river, about half way down on the  
Grand View trail, sometimes called the Cameron-Berry trail, between the  
South rim of the Grand Canon and the Colorado river. Cor. N° 1 of this claim  
is about 2300 feet lower elevation than N. S. L. M-1.

Grand View trail is at the north end of the Flagstaff-Grand Canon  
Stage line, and is the trail used by nearly all tourists who enter the  
Grand Canon.

The nearest U.S. Land office is at Prescott, Arizona.



Survey 1358 A  
Last Chance lode

5

feet

Beginning at Cor. N°1

Set sandstone slab 34 ins. x 12 ins. x 6 ins - 15 inches in ground with mound of stone alongside chiseled 1-1358 A  
Whence; - Cor N°1 of location S 12° 36' E. 106 ft

a juniper 8 ins. diam bears S 75° 54' W. 34 ft., and a juniper 8 ins diam bears S 57° 31' E 27 ft., Each blazed and scribed B.T. 1-1358 A

Discovery point bears N 15° 49' E 807.8 ft

Centre of a 105 ft Vertical Shaft bears N 24° 23' E 1044 ft

N.S. Location Monument-1<sup>Mo.</sup> bears S. 20° 13' W. 8103.4 ft

Cor. N°1-1358 B Last Chance Millsite bears S 9° 51' 29" W 13444.6 ft.

Station 33+75 - a triangulation point, on N.S. L.M. 1 - Last Chance Millsite Traverse line, bears S 15° 07' W 10265.5 ft

Ayer's Peak in the Grand Cañon, bears S 67° 28' E

Centre of a <sup>fail</sup> tunnel entrance on this lode bears N. 31° 27' E. 684 ft.

Thence N 52° 23' W  
Var. 14° 7' E

102 to top of rim of bluff of Cottonwood Cañon

600 to Cor N°2

Identical with a corner of location

Set limestone slab 35" x 12" x 7 inches - 18 ins. in ground with mound of stones of location corner alongside, chiseled 2-1358 A, whence;

a juniper 14 ins diam bears S 87° 58' E. 75 ft blazed and scribed B.T. 2-1358 A

The entrance of a large cave, near top of a high vertical bluff bears S. 62° 47' W.



Location Cont'd

6

The locus of this claim is probably in T<sub>p</sub> 30 N. R. 4 E.  
G. & S. R. Mer. (Grand Canyon Mng. Dist., Coconino Co., Arizona)

The nearest post office to the claim is at Flagstaff  
Arizona, a manufacturing & agricultural town, and tourist  
resort near the south base of the Saw Francisco mountains  
and situated upon the line of Santa Fe Pacific Railroad.  
Population about 2000

This lode and millsite is located within the boundary lines  
of the Grand Cañon Forest Reservation.



Survey N° 1358 B  
Last Chance millsite

feet

beginning at Cor N° 1

Set Sandstone slab 30" x 12" x 6" ins - 14 ins in  
Cemented gravel, chiseled 1-1358 B, whence  
a corner of location bears N 88° 13' W, 46 ft  
a yellow pine 24 ins. diam. bears S 4° 17' W, 67 ft. and  
a yellow pine 22 ins. diam. bears N 83° 38' W 85 ft. Each  
blazed and scribed B.T. 1-1358 B.

N.W. cor. of 1/2 story log house bears S. 37° 08' E. 22.9 ft.

N.E. cor. of same building bears S 84° 35' E 32.7 ft.

U.S.L. M 1 bears N. 5° 03' W 5664.1 ft

Cor N° 1-1358 A Last Chance lode bears N. 9° 51' 29" E. 13444.6 ft

Thence S 1° 47' W

Var 14° 18' E

310.2 to Cor N° 2

Set limestone slab 32" x 12" x 6" ins - 14 ins  
in ground, chiseled 2-1358 B whence  
a corner of location bears S 12° 25' W 100 ft.  
a yellow pine 24 ins. diam. bears N 7° 16' W 44 ft  
and a yellow pine 24 ins. diam. bears S 82° 47' E 75 ft  
Each blazed + scribed B.T. 2-1358 B.

Thence S 88° 13' E

Var 14° 17' E

242 through scattering pine and Leary oak under brush  
descend into ravine bears N 1° E

580 Cross ravine bears N 34° 50' E

702 1/2 Cor N° 3

Set limestone slab 32" x 14" x 6" ins - 15 ins in  
ground, chiseled 3-1358 B, whence  
a corner of location bears S 18° 46' E. 169 ft.  
a yellow pine 17 ins. diam. bears S 57° 02' W 61 ft  
and a yellow pine 22 ins. diam. bears N 39° 17' E 19.2 ft  
Each blazed and scribed B.T. 3-1358 B

Thence N 1° 47' E

Var 14° 18' E

250 Through scattering pine  
Cross East end of dam, property of Claimants,



feet

bearing N.  $74^{\circ}00'W$ . 60 ft.310.2 To Cor N<sup>o</sup> 4

Set limestone slab  $32" \times 14" \times 6$  ins - 15 ins in ground  
with mound of stone alongside, Chiseled 4-1358 B whence  
a corner of location bears N  $62^{\circ}40'E$ . 183 ft.

A yellow pine 26 ins diam. bears S  $56^{\circ}23'E$  83 ft and

A yellow pine 16 ins diam bears N  $10^{\circ}37'E$  41 ft.

Each blazed & scribed B.T. 4-1358 B.

Rim of Grand Cañon of the Colorado River bears N  $1^{\circ}47'E$ . 75 ft

Thence N  $88^{\circ}13'W$

Var  $14^{\circ}22'E$

through scattering pine & dense oak underbrush,  
up a gradual slope

702 To Cor N<sup>o</sup> 1 the place of beginning

There are no mines, salt springs or <sup>salt</sup>licks on this claim.

Area 5 acres

Thence N  $5^{\circ}03'W$

Var  $14^{\circ}18'E$

through scattering pine and oak underbrush

550 Cross ravine bearing N  $52^{\circ}30'E$

3196 a triangulation point on rim of Grand Cañon whence  
U.S. L M. 1 bears same course, that is N  $5^{\circ}03'W$  inaccessible  
to chain, calculated distance 2468.1 ft

Thence N  $31^{\circ}43'W$

179 to Station 33+75 a triangulation point whence

U.S. L M. 1 bears N  $3^{\circ}03'30''W$  2309.4 ft calculated distance

Cor N<sup>o</sup> 1-1358 A Last Chance lode bears N  $15^{\circ}07'E$  10265.5 ft Cal dist.

1872 to Station 50+68 a triangulation point = Head of Grand View  
trail whence, ~~Thence~~ U.S. L M 1 bears N.  $41^{\circ}31'30''E$ . 1156.8 ft  
calculated distance, inaccessible to chain

\* See note of Polon's observation from this station on page 12



feet

Thence  $N 24^{\circ} 11' E$ Var  $14^{\circ} 16' E$ 

900 to Station 59+68' on traverse line from Cor N° 1358B  
to U.S. L M. 1 & on traverse line from U.S. L M. 1 to Cor N° 1358A

Thence  $N 83^{\circ} 33' E$ Var  $14^{\circ} 18' E$ 

400.7 to Station 63+68.7 = U.S. L. M. 1

on undisturbed land

Set Limestone Monument of Cut Stone 48x12x7 ins.

- 15 ins in surface rock in place, chiseled U.S. L M. 1  
with monument of loose rock 6 ft base by 4 ft high alongside

Whence

A pinon 7 in diam bears  $N 88^{\circ} 38' E$  22 ft  
and a pinon 7 ins diam bears  $N 84^{\circ} 25' W$  39 ft  
Each blazed, marked & scribed BT U.S. L M. 1  
Summit of highest peak of San Francisco Mts  
bears  $S 21^{\circ} 21' E$ .

Navajo Mt. on Indian Reservation bears  $N 40^{\circ} 33' E$ Ayer's Peak in Grand Cañon bears  $N 74^{\circ} 13' E$ 

Top of Grand View trail into Grand Cañon of the  
Colorado bears  $S 41^{\circ} 31' W$  1156.8 ft = Station 50+68  
on traverse line from Cor N° 1-1358B Last Chance  
mill site to U.S. L M. 1

Cor N° 1-1358B Last Chance mill site bears  $S 5^{\circ} 03' E$  5664.1 ftCor N° 1-1358A Last Chance lode bears  $N 20^{\circ} 13' E$  8103.4 ft

Situated on a high limestone point projecting into  
the Grand Cañon, the point is known as Signal point  
from the fact of its being used for several years to  
build signal fires to notify miners that supplies had  
arrived at rim.

Signal point is about 1/2 mile in a southerly direction  
from Grand View point, a place visited by nearly all  
tourists to the Grand Cañon, and about 14 miles in a  
North-easterly direction from Sur N° Eastern Star lode



Traverse line from U.S. L.M. 1 to Cor N<sup>o</sup> 1-1358 A Last Chance  
Cove

Station	Distance feet	Bearing	Variation East feet	Latitude		Departure		Remarks
				Northing feet	Southing feet	Easting feet	Westing feet	
U.S. L.M. 1	400.7	S 83° 33' W	14° 18'		45.00		398.15	
59+68	900	S 24° 11' W	14° 16'		821.02		368.68	
50+68=0	124	N 59° 55' E	14° 20'	62.15		107.30		
1+24	100	S 67° 05' E	14° 25'		38.94	92.11		Top of 1 <sup>st</sup> zigzags in Grand View Trail into the Grand Cañon of the Colorado
2+24	65	N 29° 40' W	14° 10'	56.48			32.17	
2+89	90	N 14° 20' E	14° 10'	87.20		22.28		
3+79	80	S 24° 50' E	14° 20'		72.60	33.60		
4+59	88	N 6° 40' E	13° 55'	87.40		10.22		
5+47	53	S 25° 20' E	14° 20'		47.90	22.68		
6	42	N 23° 25' E	14° 20'	38.54		16.69		
+42	28	S 14° 55' E	14° 20'		27.06	7.21		
+70	25	N 33° 05' E	14° 20'	20.94		13.65		
+95	55	N 16° 30' E	14° 20'	52.73		15.62		
7+50	65	S 5° 20' E	14° 20'		64.72	6.04		
8+15	45	S 63° 00' E	14° 15'		20.43	40.09		
8+60	70	N 21° 35' W	14° 15'	65.09			25.75	
9+30	60	S 38° 55' E	14° 15'		46.68	37.69		
9+90	30	N 13° 10' W	14° 20'	29.21			6.83	
10+20	40	S 53° 30' E	14° 20'		23.79	32.15		
10+60	53	N 2° 50' E	14° 20'	52.94		2.62		
11+13	72	S. 37° 05' E	14° 25'		57.43	43.41		
11+85	282	N 13° 10' E	14° 15'	274.58		64.24		Foot of 1 <sup>st</sup> zigzags
14+67	78	N 33° 10' E	14° 20'	65.29		42.67		
15+45	55	N 16° 20' E	14° 05'	52.78		15.47		
16	105	N 34° 40' E	14° 18'	86.36		59.72		
17+05	119	N 51° 00' E	14° 10'	74.89		92.47		
18+24	85	S 82° 20' E	14° 15'		11.34	84.24		
19+09	76	S 88° 40' E	14° 30'		1.77	75.98		
19+85	67	N 9° 35' E	14° 25'	66.06		11.16		
20+52	158	N 53° 30' E	14° 25'	93.98		127.01		
22+10	85	N 24° 00' E	14° 20'	77.65		34.57		
22+95	48	N 53° 40' W	14° 20'	28.44			38.67	
23+43	97	N 63° 45' W	14° 20'	42.90			86.99	
24+40	132	N 78° 10' W	14° 20'	27.07			129.19	
25+72	75	N 29° 40' W	14° 20'	65.17			37.12	
26+47	117	N 4° 55' E	14° 20'	116.57		10.03		
27+64	71	N 15° 05' E	14° 15'	68.55			18.47	
28+35	180	N 18° 15' E	14° 20'	170.95		56.37		
30+15	217	N 11° 40' E	14° 20'	212.51		43.88		
32+32	110	N 75° 30' E	14° 20'	27.54		106.49		
				2103.97	1278.68	1327.66	1142.02	Totals



Stn	Station	Distance feet	Bearing	Var. East	Latitude		Departure		
					Northing feet	Southing feet	Easting feet	Westing feet	
	33+42	126	S73°35'E	14°15'		35.61	120.86		
	34+68	94	N32°40'E	14°15'	79.13		50.74		
	35+62	104.7	N1°10'W	14°10'	104.68			2.14	
	36+66.7	50.3	N24°55'W	14°10'	45.61			21.19	
	37+17	125.	N43°40'W	14°10'	90.42			86.31	
	38+42	200	N13°20'E	14°10'	194.60		46.12		
	40+42	80	N6°10'E	13°45'	79.53		8.59		Close to Iron bolts in trail timber
	41+22	178	N29°20'W	14°00'	155.18			87.20	
	43	175	N16°30'W	14°00'	167.79			49.70	
	44+75	247	N33°40'W	14°10'	205.57			136.94	
	47+22	59.6	N30°45'W	14°25'	51.22			30.47	
	47+81.6	124.4	N89°55'E	14°20'	0.18		124.40		
	49+06	143.	S63°35'E	14°25'		63.62	128.07		
	50+49	126	N28°15'E	14°20'	110.99		59.64		
	51+75	115	N11°55'W	14°15'	112.52			23.74	
	52+90	130	N4°45'W	14°25'	129.55			10.76	
	54+20	280	N23°00'E	14°15'	257.74		109.39		
	57	28	S71°20'E	14°15'		8.96	26.53		
	57+28	235	S29°20'E	14°10'		204.87	115.12		
	59+63	85	S57°35'E	14°10'		51.64	67.51		
	60+48	135	N85°15'E	14°05'	11.18		134.53		
	61+83	87	S36°50'W	14°18'		69.63		52.15	Top of 2 <sup>nd</sup> zigzags
	62+70	86	N85°40'E	14°30'	6.50		85.75		
	63+56	58	S32°15'W	14°15'		49.05		30.95	
	64+14	59	S75°10'E	14°20'		15.10	57.03		
	64+73	31	S67°30'W	14°20'		11.86		28.64	
	65+04	29	S46°20'E	14°25'		20.02	20.98		
	65+33	32	N71°15'E	14°25'	10.28		30.30		
	+65	40	N49°50'E	14°20'	25.80		30.57		
	66+05	60	S21°00'W	14°20'		56.01		21.50	
	+65	47	S15°35'E	14°15'		45.27	12.62		
	67+12	67	N28°50'E	14°20'	58.69		32.31		
	+79	51	S25°35'E	14°20'		46.00	22.02		
	68+30	166	S70°00'E	14°20'		56.77	155.99		
	69+96	61	N54°00'E	14°20'	35.85		49.35		
	70+57	58	N77°55'W	14°15'	12.14			56.71	
	71+15	117	N59°45'E	14°20'	58.93		101.07		foot of 2 <sup>nd</sup> zigzags
	72+32	83	N71°45'E	14°20'	25.99		78.82		
	73+15	73	N44°25'E	14°20'	52.14		51.09		
	73+88	100	N52°00'E	14°20'	61.57		78.80		
					4247.75	2013.09	3145.86	1780.42	Total



Station	Distance feet	Bearing	Var East	Latitude		Departure		Mating feet		
				Northing feet	Southing feet	Easting feet	Westing feet			
74+88	155	N54°50'E	14°20'	89	28		126	71		
76+43	42	N67°00'E	14°20'	16	40		38	66		
+85	60	S63°45'E	14°25'			26	53	53	81	
77+45	130	S70°45'E	14°25'			42	86	122	73	
78+75	125	S58°20'E	14°30'			65	62	106	39	
80	90	S50°20'E	14°15'			57	45	69	28	
+90	93	S78°40'E	14°30'			18	27	91	18	
81+83	79	N77°55'E	14°25'	16	53			77	24	
82+62	53	N38°55'E	14°25'	41	23			33	29	
83+15	53	N54°55'E	14°30'	30	46			43	37	
+68	80	N69°40'W	14°35'	27	80				75	01
84+48	126	N54°05'E	14°30'	73	91			102	04	
85+74	72	N61°35'W	14°25'	34	26				63	32
86+46	67	N62°35'E	14°25'	30	85			59	47	
87+13	100	N70°55'W	14°20'	32	69				94	50
88+13	133	N59°05'E	14°20'	68	32			114	11	
89+46	97	N54°10'W	14°20'	56	78				78	64
90+43	65	N57°50'E	14°25'	34	60			55	02	
91+08	50	N85°00'E	14°30'	4	36			49	81	
+58	127	N45°40'E	14°30'	88	75			90	84	
92+85	53	N66°25'E	14°30'	21	20			48	57	
93+38	79	N 0°05'W	14°25'	79					0	11
94+17	55	N 86°00'E	14°30'	3	84			54	86	
94+72	124	N20°35'E	14°30'	116	09			43	59	
95+96	68	N8°45'W	14°25'	67	20				10	34
96+64	170	N47°10'E	14°25'	115	58			124	66	
98+34	145	N17°55'E	14°25'	137	97			44	61	
99+79	133	N13°50'E	14°25'	129	14			38	80	
101+12	155	N32°50'E	14°25'	130	24			84	04	
102+67	160	N57°10'E	14°25'	85	18			135	44	
104+27	60	N13°40'W	14°20'	58	30				14	18
+87	39	N23°55'E	14°20'	35	65			15	81	
105+26	78	N33°50'W	14°20'	64	79				43	43
106+04	121	N16°35'W	14°20'	115	96				34	53
107+25	50	N39°10'W	14°20'	38	76				31	58
+75	127	N9°30'W	14°20'	125	26				20	95
109+02	95	N0°25'E	14°20'	95				0	69	
+97	2 24	N27°00'E	14°20'	199	58			101	70	
112+21	85	N5°30'W	14°20'	84	60				8	14
113+06	129	N29°30'W	14°25'	112	28				63	52

Top of 3<sup>rd</sup> zigzag

Foot of 3<sup>rd</sup> zigzag

6109 59 2222 89 5045 58 2218 69 Total



Station	Distance feet	Bearing	Var. East	Latitude		Departure					
				Nothing feet	Southing feet	Easting feet	Westing feet				
114+35	120	N 5° 25' E	14° 25'	119	46	11	33				
115+55	128	N 15° 50' E	14° 25'	123	15	34	92				
116+83	251	N 22° 35' W	14° 25'	231	74		96 40				
119+34	62	N 13° 25' W	14° 25'	60	30		14 38				
+ 96	56	N 18° 05' E	14° 25'	34	22	11	17				
120+32	97	N 40° 50' E	14° 25'	73	39	63	43				
121+29	110	N 7° 20' E	14° 25'	109	10	14	03				
122+39	116	N 3° 05' E	14° 25'	115	83	6	24				
123+55	52	N 39° 40' W	14° 30'	40	03		33 19				
124+07	50	N 57° 25' W	14° 25'	26	92		42 13				
+ 57	71	N 32° 40' E	14° 25'	59	77	38	32				
125+28	135	N 40° 30' E	14° 20'	102	65	87	67				
126+62	276	N 22° 45' E	14° 25'	254	52	106	73				
129+39	279	N 6° 15' E	14° 25'	277	34	30	38				
132+18	138	N 2° 30' E	14° 25'	137	86	6	02				
133+56	131	N 16° 00' E	14° 25'	125	93	36	10				
134+87	71	N 25° 00' W	14° 25'	64	35		30 00				
135+58	128	N 0° 50' E	14° 18'	127	99	1	86				
136+86	175	N 14° 00' W	14° 20'	169	80		42 33				
138+61	112	N 17° 20' W	14° 20'	106	91		33 36				
139+73	370	N 2° 30' W	14° 20'	369	63		16 13				
143+43	270	N 4° 50' E	14° 20'	269	02	22	76				
146+13	148	N 36° 11' W	14° 17'	119	46		87 37				
St. C. L. C. Lode Cor 1-1358 A				9828	96	2223	82	5516.54	2713	96	Totals

Calculations

Total Northings 9828.96  
 " Southings 2223.82  
 Excess Northings 7605.14  
 Total Eastings 5516.54  
 " Westings 2713.96  
 Excess Eastings 2802.58

Log 2802.58 = 3.447558 Easting  
 Log 7605.14 = 3.881107 northing  
 Log Tang = 9.566451 = N 20° 13' E Bearing  
 from U.S.L.M. 1 to Cor N° 1-1358 A Last Chance Lode  
 Log Secant 20° 13' = .027639  
 Log 7605.14 = 3.881107  
 3.908746 = 8105.1ft

Station

By triangulation  
 To U.S.L.M. 1 N 3° 03 1/2' W = 2309.4ft  
 To Cor N° 1-1358 A N 15° 07' E = angle 18° 10 1/2'  
 90° 00'  
 Formula: as the Sin. of angle (18° 10 1/2') opp. given side  
 is to the Sin of angle (90°) opp. required side  
 So is given side 2309.4ft to required side = 720.365ft  
 Log Sin 18° 10 1/2' = 9.494043  
 Log --- 2309.4 = 3.363499  
 Log Sin 90° 00' = 10.000000  
 12.857542  
 2.857542 = 720.365ft

Cor N° 1-1358 A

To U.S.L.M. 1 S 20° 13' W  
 To Station 33+75 S 15° 07' W angle = 5° 06'  
 Log Sin 90° 00' = 10.000000  
 Log --- 720.365ft = 2.857542  
 Log Sin 5° 06' = 8.948874  
 3.908668 = 8103.4ft Dist. U.S.L.M. 1



As great care was observed in making the triangulations to have them correct, the angles being taken successively 6 times and the mean taken, and the fact that the ground chained over on the traverse line down Grand View Trail is exceedingly rough and steep in places, I gave the triangulated distance the preference instead of adding the two results and taking the mean

Calculation of distance between Stations 33+75 and U.S. L.M. 1

How obtained:

	To 59+68	- S 83°33' W	400.7 ft	
U.S. L.M. 1	" 50+68	- S 41°31½' W	42°01½' angle	
	" U.S. L.M. 1	N 41°31½' E	17°20½'	
50+68	" 59+68	N 24°11' E	900 ft	therefore:
Log Cosin	42°01½'	= 9.870903		
Log	400.7 ft	2.602819		
		Log 2.473722 =	297.66 ft	

Log Cosin	17°20½'	= 9.979796	
Log	900 ft	2.954243	
		Log 2.934039 =	859.11

Station 50+68 to U.S. L.M. 1 = 1156.77 ft answer

U.S. L.M. 1	To 50+68	- S 41°31½' W	1156.77 ft
"	" 33+75	- S 3°03½' E =	44°35' angle
33+75	To U.S. L.M. 1	N 3°03½' W =	28°39½' angle
"	" 50+68 ft	N 31°43' W	1693 ft

Therefore

Log Cos	44°35'	= 9.852620	
Log	1156.77	3.063247	
		Log 2.915867 =	823.8

Log Cos	28°39½'	= 9.943245	
Log	1693 ft	3.228657	
		Log 3.171902 =	1485.6
Station	33+75 to U.S. L.M. 1	=	2309.4 ft answer

Calculation of distance between Stations 31+96 + U.S. L.M. 1

U.S. L.M. 1 to	50+68	- S 41°31½' W	1156.77 ft
" "	31+96	- S 5°03' E	46°34½' angle
31+96 to	U.S. L.M. 1	- N 5°03' W	26°40' angle
" "	50+68	- N 31°43' W	1872 ft
Log Cos	46°34½'	= 9.837213	
"	1156.77 ft	3.063247	
		Log 2.900460 =	795.2 ft

Log Cos	26°40'	= 9.951159	
Log	1872 ft	3.272306	
		Log 3.223465 =	1672.9 ft

Station 31+96 to U.S. L.M. 1 = 2468.1 ft + 3196 ft

distance Cor N°1-1358 B Last Chance M.S. to U.S. L.M. 1 = 5664.1 ft



Calculation of Bearing and distance between Cor N<sup>o</sup> 1-1358 A & Cor N<sup>o</sup> 1-1358 B

Station	Distance feet	Bearing	Departure		Total Northings
			Northings	Eastings	
Cor N <sup>o</sup> 1 1358 B	5664.1	N 5° 03' W	5642.1	498.58	13246.3 ft
U.S.L.M. Cor N <sup>o</sup> 1 1358 A	8103.4	N 20° 13' E	7604.2	2800.3	Excess Easting 2103.7 ft
			13246.3		

$$\text{Log } 2103.7 = 3.362049$$

$$\text{Log } 13246.3 = 4.122095$$

$$\text{Log Tang} = 9.239954 = 9^{\circ} 51' = N 9^{\circ} 51' E = \text{Bearing from}$$

Cor N<sup>o</sup> 1-1358 B to Cor N<sup>o</sup> 1-1358 A.

$$\text{Log Secant } 9^{\circ} 51' = .006462$$

$$\text{Log } 13246.3 = 4.122095$$

$$\text{Log } 4.128557 = 13444.6 \text{ ft} = \text{dist. Cor N<sup>o</sup> 1-1358 B to Cor N<sup>o</sup> 1-1358 A}$$

Expenditure of Five hundred dollars

I certify that the value of the labor and improvements upon this claim, placed thereon by the Claimants and their grantors, is not less than five hundred dollars, and that said improvements consist of:

1. A tunnel, the centre of outlet of which bears from Cor N<sup>o</sup> 1  
Least Chance lode N 31° 27' E. 684 feet averaging 4 1/2 ft wide by  
6 ft height, and extending N 40° 09' W 83 ft Value \$498.00

A Vertical Shaft 5 by 5 ft, timbered, in above tunnel

fifty five ft from Entrance + descending 32 ft to 2<sup>nd</sup> level Value \$260.00

A drift on second level 5 x 6 ft. 200 ft in length Value \$1600.00

A Vertical Shaft 2<sup>nd</sup> level to 3<sup>rd</sup> level 5 x 5 x 38 ft deep timbered Value \$380.00

A drift on 3<sup>rd</sup> level 5 x 6 x 40 ft in length Value \$320.00

This drift is in course of construction towards the centre  
line of claim and also towards the <sup>South</sup> <sup>Side</sup> Easterly line of claim to obtain  
both ore, ~~and~~ air and development of this claim.

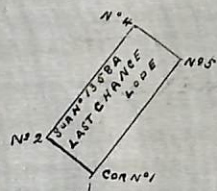
2. A Vertical Shaft 105 ft deep x 7 x 6 ft wide, timbered, the  
centre of which bears from Cor N<sup>o</sup> 1 Least Chance lode

N 24° 23' E 1044 ft

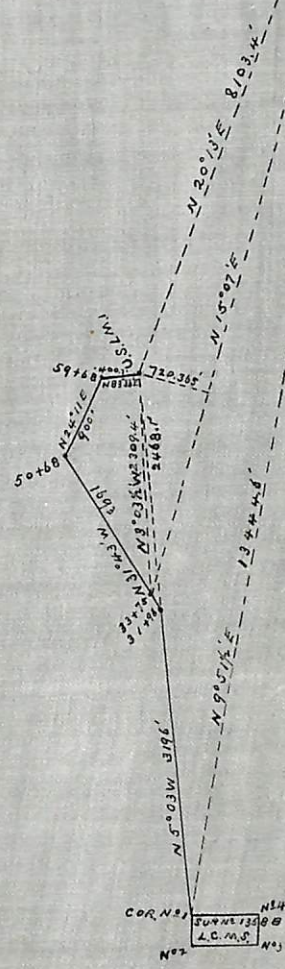
Value \$1500.00



SUR. N<sup>o</sup> 1358 A & B  
 PRESCOTT LAND DISTRICT  
 SURVEYED JUNE 8-28 1899  
 BY *J. T. McWilliams*  
 U.S. DEPUTY MIN. SURVEYOR



MAP SHOWING TRIANGULATIONS





The surface of this claim ascends rapidly from mouth of tunnel towards Cor N<sup>o</sup> 1 and descends into deep canon from mouth of tunnel towards the S.E. side line.

Cor N<sup>o</sup> 2 is located on east side of Cottonwood canon and is about 400 ft lower elevation than Cor N<sup>o</sup> 1

Cor. N<sup>o</sup> 3 is about 150 lower than Cor 1

Corners N<sup>o</sup> 4 & 5 are located on a Mesa about 300 ft lower than Corner N<sup>o</sup> 1. I would not attempt to describe the Grand Canon of which this claim is a part, there is nothing to compare with the Canon.

### Instrument

This survey was made with a Buff & Berger light mountain transit. The courses were deflected from the true meridian as determined by direct solar observations, and said courses checked by observations on Polaris. The distances were measured with 50 ft and 100 ft steel tapes.

Note. - Neither myself nor assistants hold or ever held any interest directly or indirectly in this claim

On account of very high winds during night time I could not take any observation on Polaris until June 16<sup>th</sup>.

It being impossible to lay off a north line from the U.S.L.M. 1 on account of signal point averaging only 50 ft in width, I occupy Station 50+68, on traverse line between Cor N<sup>o</sup> 1-1358 B & U.S.L.M. 1, and observe Polaris at Eastern Elongation June 16<sup>th</sup> 1899 at 1<sup>h</sup> 30<sup>m</sup> am. I go to station and wait for elongation which occurs at 1<sup>h</sup> 45<sup>m</sup> am and mark the direction on a hub set firmly in ground 350 ft north of my station. At 7 am I lay off azimuth of Polaris 1° 31' to the west and mark the true meridian on a wooden hub. Thence direct instrument towards U.S.L.M. 1 and do not discover any appreciable, if any, error in course found with Solar.

J. T. Merrilliams

Deputy U. S. Mineral Surveyor



# FINAL OATHS FOR SURVEYS.

## LIST OF NAMES.

A list of the names of the individuals employed by J. P. McWilliams  
 United States Deputy Mineral Surveyor, to assist in running, measuring, and marking the lines  
 corners and boundaries described in the foregoing field notes of the survey of the mining claim  
 of R. H. Cameron et al  
 known as the Last Chance Mining Claim and Mill Site  
 and showing the respective capacities in which they acted.

Samuel Parker, Chairman.  
John Woods, Chairman.  
Gas Bressler, Axman & Chairman  
John Woods, Flagman.

## FINAL OATHS OF ASSISTANTS.

We, John Woods and Samuel Parker  
 and Gas Bressler, do solemnly swear that we assisted  
J. P. McWilliams, United States Deputy Mineral Surveyor, in marking the corners and  
 surveying the boundaries of the mining claim of R. H. Cameron et al

known as the  
Last Chance Mining Claim and Mill Site, represented  
 in the foregoing field notes as having been surveyed by said deputy mineral surveyor and under  
 his direction; and that said survey has been in all respects, to the best of our knowledge and  
 belief, faithfully and correctly executed, and the corner and boundary monuments established  
 according to law and the instructions furnished by the United States Surveyor-General for  
Arizona

Samuel Parker, Chairman.  
John Woods, Chairman.  
Gas Bressler, Axman & Chairman  
John Woods, Flagman.

Subscribed and sworn to by the above-named persons before me

this 29th day of June, 1899.

My Commission expires Feb. 6, 1901.

J. E. Quinn  
 Notary Public





(4-686.)

## FINAL OATH OF U. S. DEPUTY MINERAL SURVEYOR

I, John T. McWilliams, U. S. Deputy Mineral Surveyor, do solemnly swear that, in pursuance of instructions received from the United States Surveyor General for Arizona, dated May 8<sup>th</sup>, 1899, I have, in strict conformity to the laws of the United States, the official regulations and instructions thereunder, and the instructions of said Surveyor General, faithfully and correctly executed the survey of the Mining Claim of Ralph H. Cameron et al, known as the Last Chance mine and millsite, situate in Grand Canon Mining District, Cocconino County, Arizona, in Section \_\_\_\_\_ Township No. \_\_\_\_\_, Range No. Unsurveyed land, and designated as Survey No. 1358 A + B, as represented in the foregoing field notes, which accurately show the boundaries of said mining claim as distinctly marked by monuments on the ground, and described in the attached copy of the location certificate, which was received by me from the Surveyor General with said instructions, and that all the corners of said survey have been established and perpetuated in strict accordance with the law, official regulations and instructions thereunder; and I do further solemnly swear that the foregoing are the true and original field notes of said survey and my report therein, and that the labor expended and improvements made upon said mining claim by claimants or \_\_\_\_\_ grantors are as therein fully stated, and that the character, extent, location and itemized value thereof are specified therein with particularity and full detail, and that no portion of said labor or improvements so credited to this claim has been included in the estimate of expenditures upon any other claim.

John T. McWilliams  
U. S. Deputy Mineral Surveyor.

Subscribed and sworn to by the said John T. McWilliams  
U. S. Deputy Mineral Surveyor, before me J. E. Pulliam a  
Notary Public for Cocconino Co. Ariz. this 5<sup>th</sup>  
day of July, 1899.

My Commission expires Feb. 6, 1901.

J. E. Pulliam  
Notary Public



# Affidavit of Five Hundred Dollars Improvements.

We Daniel Hogan and Edward J. Babbitt  
of lawful age, being first duly sworn according to law, depose and say: that we are acquainted  
with the Last Chance Mill Site and mining claim, situated in  
Grand Canon Mining district, Coconino County,  
Arizona Territory, for which R N Cameron et al

~~has~~ made application for survey prior to application for patent under the provisions of the  
Act of Congress, approved May 10, 1872; and that the labor done and improvements made thereon  
by the applicants and grantors exceed Five Hundred Dollars in value, and further  
that we are not personally interested in said mine.

Daniel Hogan  
Edward J. Babbitt

TERRITORY OF ARIZONA,  
County of Coconino } ss.

My Commission expires Feb. 6, 1901.

SWORN to and subscribed before me, this

29th day of June 1899

J. E. Pulliam  
Notary Public



NON-MINERAL AFFIDAVIT.

TERRITORY OF ARIZONA,

County of Cocconino } ss.

J. W. Thurber and William Travis of said County and Territory, being first duly sworn, each for himself and not one for the other, deposes and says; that he is well acquainted with the land of the Last Chance mill-site claim, situated in Grand Canon Mining District, Prescott Land District, Gila and Salt River Meridian, in the County of Cocconino and Territory of Arizona, claimed by R. H. Cameron et al

applicant for United States patent therefor; that he is well acquainted with the character of said described land included within the boundary lines as officially surveyed by John T. McWilliams United States Deputy Mineral Surveyor, having frequently passed over the same; that his knowledge of such land is such as to enable him to testify understandingly with regard thereto; that there is not to his knowledge, within the limits thereof, any vein or lode of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin or copper, or any deposit of coal; that there is not within the limits of said land, within his knowledge, any placer, cement, gravel or other valuable mineral deposit; that no portion of said land is claimed under the local customs or rules of miners or otherwise; that no portion of said land is worked for minerals during any part of the year by any person or persons; that said land is essentially non-mineral land, and that there is within the boundaries of said claim improvements, to-wit: One dam & reservoir; and one log building

and that he has no interest whatever in said described mill-site claim.

J. W. Thurber  
William Travis

Subscribed and sworn to before me this 24<sup>th</sup> day of August A. D. 1899, and I hereby certify that the foregoing affidavit was read to the said J. W. Thurber and William Travis

previous to their names being subscribed thereto, and that deponents are reputable persons to whose affidavits full faith and credit should be given.

My commission expires February 6, 1901.

E. Clark  
Notary Public





For center of claim North and South

NOTICE OF LOCATION.

Know all men by these presents: That the undersigned have this day located 1500 feet of this lode, bearing precious metals, with all dips, spurs, angles and variations, with surface grounds 300 feet on each side of vein, with all mineral Deposits contained therein, and all timber and water thereon or appurtenant thereto, according to the provisions of the United States Mining Laws.

The exterior boundaries are as follows:-

Commencing at a monument of stone on North west boundary line distant 300 feet in a North westerly direction from Discovery Monument; thence in a Northeasterly direction parallel with the ledge 750 feet to monument at N. corner; thence in an South easterly direction at right angles across the ledge 600 feet to monument at E. corner; thence in a Southwesterly direction parallel with the ledge 1500 feet to monument at S. corner; thence at right angles across the ledge in a North westerly direction 600 feet to monument at W. corner; thence in a Northeasterly direction parallel with the ledge 750 feet to monument on Northwest boundry and place of beginning.

This claim is in Grand Canon Mining District Yavapai County, Arizona, and may be more generally described as situated about one half mile East of the head of Cottonwood Creek and about one half mile north of the Coconino Rim and shall be known as the Last Chance Mining Claim.

Dated on the ground, this 19<sup>th</sup> Nineteenth day of April A. D. 1890

R. A. Ferguson

P. D. Berry

E. I. Gale

N. J. Cameron

Thomas McMillian

Recorded at request of P. D. Berry June 19<sup>th</sup> A. D. 1890 at 9 o'clock A. M.

In Book 30 of Mines Pages 98 & 99 Records of Yavapai County, Arizona.

( LS )

Chas H. Akers County Recorder

By J. M. Aitkin Deputy



Territory of Arizona: : SS.  
County of Yavapai :

I, Charles H. Akers County Recorder in and for said  
County and Territory, and custodian of the Records thereof, do hereby  
certify that I have compared the above and foregoing with, and the same  
is a full, true and correct copy of the " Last Chance " Mine as the same  
appears of record in Book 30 of Mines page 98 & 99 Records of Yavapai  
County, Arizona.

In Witness Whereof, I have hereunto set my hand and affixed my  
official seal this 15th day of July A. D. 1892.

( Seal (

Chas H. Akers

County Recorder

Recorded at request of R. H. Cameron, Feby., 21st, A. D. 1899 at 5  
o'clock P. M.

T. E. Pulliam, County Recorder

By H. C. Hibben, Deputy.



TERRITORY OF ARIZONA, :  
 : SS.  
 County of Coconino. :

I, T. E. Pulliam, County Recorder in and for the County and Territory aforesaid and custodian of the records thereof do hereby certify; that I have compared the foregoing with, and that the same is a full, true and correct copy of the Location Notice of the Last Chance Mining Claim as the same appears of record in Book 3 of Mines at pages 3 and 4, Records of Coconino County, Arizona Territory.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, this 23rd day of March, A. D. 1899.



*T. E. Pulliam*  
 County Recorder.



Last Chance Mill- Site : Notice of Location of Mill-site:

Know ye, that we, the undersigned, have this day located the Last Chance Mill-site, we claim five acres as provided by the United States Statutes, Commencing at a monument one hundred feet west of this monument and notice, thence Eleven rods in a North-easterly direction to a monument at North corner, thence in a South-easterly direction thirty seven and one half rods to a monument at East corner, thence in a South-westerly direction twenty-one rods to a monument at South corner, thence in a North-westerly direction thirty-seven and one half rods to a monument at West corner, thence in a North-easterly direction ten rods to a monument on West side line and place of beginning.

This Claim is in the Grand Canon Mining District, Coconino County, Arizona Territory, and is more generally described as follows, as situated on the South rim of the Grand Canon two miles west of the Hance Trail and one mile east of the Grand View Toll Road, and about three and one half miles South-east, of the Last Chance Mine. this claim shall be known as the Last Chance Mill-site.

Dated on the Ground, this twenty third day of November, A. D. 1892.

Locators

: P. D. Berry ( S )  
:  
: R. H. Cameron ( S )  
:  
: E. I. Gale ( S )  
:  
: N. J. Cameron ( S )

Recorded Dec., 2nd, 1892, at five o'clock, P. M.

C. A. Bush,

County Recorder



TERRITORY OF ARIZONA, :  
: SS.  
County of Coconino.:

I, T. E. Pulliam County Recorder in and for the County and Territory aforesaid, and custodian of the records thereof, do hereby certify; that I have compared the foregoing with, and the same is a full, true and correct copy of the Notice of Location of the Last Chance Mill-site, as the same appears of record in Book 1 of Mill-sites and Water-rights at page 23, records of Coconino County, Arizona Territory

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, this 23rd day of March, A. D. 1899.



T. E. Pulliam  
County Recorder.





(4-687.)

# Surveyor General's Certificate of Approval of Field Notes and Survey of Mining Claim.

Department of the Interior,

Office of U. S. Surveyor General,

*Tucson, Arizona.*

*September 11th, 1899.*

I, U. S. Surveyor General for *District of Arizona*,

do hereby certify that the foregoing and hereto attached Field Notes and Return of the Survey of the Mining Claim of *Ralph H. Cameron et. al.*

....., known as the

*Last Chance Mine & Last Chance Millsite,*

situate in *Grand Canon* mining district,

*Cochise* County, *Arizona*,

in Section ....., Township No. ....., Range No. *(unsurveyed.)*

....., designated as Survey No. *1358 A. & B.*

executed by *John T. McWilliams*, U. S. Deputy Mineral

Surveyor, *June 8-28*, 1899, under my instructions dated

*May 8*, 1899, have been critically examined and the

necessary corrections and explanations made, and the said Field Notes and Return, and

the Survey they describe, are hereby approved. A true copy of the copy of the location

certificate filed by the applicant for survey is included in the field notes.

*George Christ*

U. S. Surveyor General for *Arizona.*



# POOR QUALITY

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# SURVEY No 1358 A & B

PRESCOTT LAND DISTRICT  
GRAND CANYON MINING DISTRICT, ARIZONA.

SURVEYED JUNE 8-28. 1899

by *J. T. McWilliams*  
U.S. DEPUTY MIN. SURVEYOR





THE COLORADO RIVER

S. 31° 43' E. 1672.0'

RIM OF GRAND CANYON OF THE COLORADO RIVER

To U.S.L.M.-1 N. 5° 03' W. 5664.1'

To COR. N° 1 - 2358 A - 13444.6' - N 89° 51' 29" E

Loc. COR. N° 1

COR. N° 1

Loc. COR. N° 4

COR. N° 4

S. 1° 41' W. 310.2'

LOG HOUSE

SUR. No. 1358 B

LAST CHANCE M. S.

TAM  
RESERVOIR

N. 1° 47' E. 310.2'

N. 88° 13' W. 702'

S. 88° 13' E. 702'

COR. N° 2  
S. 1° 41' W. 310.2'

Loc. COR. N° 2

COR. N° 3

S. 18° 45' E. 169'

Loc. COR. N° 3