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NOTES

on

WILD FLOWER

ORE TREATMENT.

*Crown King*

Newson & Co.  
Newmarket  
Toronto

## NOTES ON WILD FLOWER ORE TREATMENT.

Three Samples were taken of the Wild Flower Ore.

# 1- Mine Dump Sample.

# 2- Clean Iron Specimen.

# 3- Clean Zinc Specimen.

A sorting test was run on Specimens # 2 and # 3 in order to find out to what degree the Iron and Zinc were associated chemically and to see which one of the minerals the Gold and Silver were associated with. The Sorting Tests are given below.

	Au	Ag	Insol	Fe	Zn
# 3- Zinc	0.22	2.30	3.8	4.3	57.67
# 2- Iron	0.06	4.80			

We were informed that the analysis of the Wild Flower Mine Dump was as follows;- *(dump contains*

Au	Ag	Cu	Pb	Zn	Fe	Insol
0.5	5.0	0.5	1.0	7.0	6.0	53.0

The sample from the Mine Dump analysed as follows;-

Au	Ag	Cu	Pb	Zn	Fe	Insol
0.38	4.80	0.62	2.1	5.04	6.8	52.8

# 1 Sample was crushed thru 35 mesh and a Sizing Test follows;-

<u>Product</u>	<u>% Solids</u>
On 35	0.0
On 48	0.5
On 65	4.0
On 100	20.5
On 200	30.0
Thru 200	45.0
Total	100.0

The ore was considerably weathered and slimed easily.

Four tests were run on this crushed sample, primarily to determine the ease of flotation of the various minerals. The best follows. From observation, the mineral left was mostly in the coarser sizes.

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Test on Slide Machine.

to determine the ease of flotation of the various minerals.

Pulp- 3.2 parts of water to one of ore.

Four tests were run on this crushed sample, primarily

Oils- Penetration and Anthracene Oils in Acid Circuit.

The ore was considerably weathered and slimed easily.

Product	%	Assay						
		Au	Cu	Pb	Insol	Fe	Zn	
Heads	100.00	0.38	0.62	2.1	52.1	6.8	5.04	
Conc.	26.03	0.96	2.00	7.6	27.1	11.5	11.37	
Tail	73.97	0.24	0.24	1.1	64.8	5.5	1.39	
Total	100.00							

The above test shows that all the minerals are amenable to flotation. On account of the slime, it will be

difficult to concentrate. #1 sample was analyzed as follows:

The presence of lead and low percentage of copper, indicates that concentration should

give a Lead-Iron Concentrate and a Zinc Concentrate. In the

two sorting tests made, the greater part of the Gold seemed to be associated with the Zinc and very little with the

Iron. Hence a straight Iron Concentrate has little value.

We were informed that the analysis of the Wild

The above figures indicate a treatment analogous to the method of treatment suggested for the Crown King Dump, that is, Table and Flotation practice.

Tests are given below.

Flotation Costs would be high on account of the high acid consumption, probably as much as 10 to 15 pounds to the ton of ore treated would be necessitated.

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- # 1- Mine Dump Sample.
- # 2- Clean Iron Specimen.
- # 3- Clean Zinc Specimen.

Three samples were taken of the Wild Flower Ore.

NOTES ON WILD FLOWER ORE TREATMENT.

*J. H. Gray*

Wild Flower Mine

*Mining Property*

District; Crown King, Arizona. Bradshaw Mountains.  
Property: Wild Flower Mine. Gold, silver, Copper.  
Location: Two Miles west of Crown King.  
Owners; Bradshaw Development Company. D.B. Gemmel, Manager.  
Date Visited; Sept. 22, 1918 by J.L. White.

Notes.

The Wild Flower Mine and Camp is situated two miles west of Crown King and consists of a group of five claims. Three claims on the vein strike N 30° E. The nearest mine of any consequence is the Crown King 5500 feet east.

The vein is a fissure in diorite. The foot wall is said to be quartz diorite and the hanging wall hornblend diorite. The vein is traced on the surface for over 4000 feet.

Beginning at the north end there is the Wild Flower Tunnel driven 1000 feet on the vein at an elevation of 6405 feet. No commercial ore was exposed.

3000 feet south on the outcrop is the Wild Flower Shaft 700 feet deep on the vein dip 60° W, Shaft has two compartments. Stations have been cut on the 110 foot, 200 foot, 300 foot, 400 foot, and 480 foot levels. On the 110 level 200 feet of drifting was done on both sides of the shaft; on the 200 level, 350 feet, on the 300 level, 250 feet, and on the 400 level, 100 feet of drifting was done all on the vein, apparently, no commercial ore was found.

The 480 foot level is the main level and nearly all of the work done by the Bradshaw Development Co, was done on, or from this level.

This level extends 1200 feet north from the shaft where a connection was made with the Wild Flower Tunnel 20 feet above. This is all old work.

1000 feet north of the shaft a body of ore 150 feet long was exposed \$ 13.0 average value, assayed about .4 oz. gold 2.6 silver and .5% copper. The ore was developed by three raises one of which went to the surface

All of the ore has been mined by shrinkage stopes . The ore extended to 190 feet above the level and there is now no known commercial ore above the level at this point.

A winze was sunk by the present company , 200 feet to the 700 foot level and drifting done on the 600 and 700 levels . The ore body decreased rapidly with depth and dissapeared just above the 600 level. Two small bunches of ore were cut and mined one on each side of the winze on this level . The 700 drifts are now under these points with no ore showing.

10500 tons of ore were mined in this section of the mine. There is no ore blocked out here and very little even indicated.

The 700 foot drifts are now being advanced.

Driving south on the 480 level a small chute of ore was encountered It was about 60 feet long and was mined for 20 feet high where it failed.

800 feet south of the shaft ore was struck and followed for 300 feet where the drift was stoped in ore. This ore has been stoped 35 feet high for 85 feet on the north end of the ore body and the back is said to be as good as the drift below was.

2000 feet <sup>South</sup> of the Wild Flower Shaft is the Anaconda Tunnel driven on the vein at a point on a level with the 110 level in the shaft . elevation 6685. This tunnel extends north 1300 feet and all but 500 feet of it is impassable. There is no record of any commercial ore in the tunnel although some mineral shows. This tunnel is directly above the ore on the 480 level of the shaft. 250 feet from the face of the tunnel is the Sabronji Winze which was sunk from a crosscut tunnel 200 feet above.

This is eaved and impassable . It has no record of commercial ore.

There is no ore blocked out in the mine.

The only real showing of ore is that on the 480 foot level of the shaft , south, . This ore is aparently about 5 feet wide where exposed.

One half of the drift is timbered. Figuring this ore as 300 feet long

and with a width of 5 feet it represents about 135 tons per vertical foot. The ore is said to average .02oz gold 5.0 oz silver and 1.5% copper or about \$13.0 per ton at present metal prices.

On the Hanging wall of the ore is a width of 5 feet or more of barren gouge which cannot be held in place but must be allowed to come. The true hanging wall is good and will apparently stand. The ore contains chalcopyrite, sphalerite, pyrite and galena. The silver mineral is not recognized.

The vein at this point is very heavy and must be heavily timbered when opened. All ready a block of ore 60 by 20 feet has been lost. Mining will be expensive. The logical method of mining would appear to be striping and filling with the hanging wall. This is the method pursued at present.

The camp appears to have <sup>accommodations</sup> accommodations for about 25 men.

Steam power has been used with wood as a fuel. Two boilers 48 and 60 HP were used to generate the steam for a small hoist and a small two-stage compressor and a small pump on the 480 level.

Electric power will be used in the future, the Arizona Power Co line now runs to the transformer house near the shaft collar.

50 KW transformers with lightning arresters, oil switch, meters, etc. are installed. An electric hoist with 75HP motor is being connected up.

A small two stage air compressor Ingersoll Rand steam driven Imperial type 10 will be belted to a motor 50HP.

CC11 Ingersoll stoper are used in stoping and mounted Jackhammers in drifting. Steel is sharpened by hand.

The drifting on the 700 level in the north end of the mine is being done by contract \$5.0 per foot, the waste delivered to the skip in the winze.

This waste is at present being dumped in a small stope near the collar of the winze. A 1000 pound skip is used with an air hoist.

Ore and waste is generally handled in 16 cu ft. cars to a pocket at the shaft and is then hoisted to the surface to a double bin, one part

being used for waste and the other for ore. The ore from this bin goes to a jaw crusher and from there to the tram bins which deliver to tram buckets

Ore is valued at	\$ 13.00	
Probable mining cost of ore delivered to the mill	3.50	
Probable Milling cost	2.00	
Loss in milling 10%	1.30	
Cost of smelting concentrates per ton of ore.	3.15	
Freight on concentrates	.50	
	Total cost	10.45
	Probable profit per ton of ore	\$ 2.55

DISTRICT Crown King, Arizona - Bradshaw Mountains  
PROPERTY Wild Flower Mine - Gold, Silver, Copper.  
LOCATION Two miles west of Crown King.  
OWNERS Bradshaw Development Company,  
D. B. Gemmel, Manager.  
DATE VISITED Sept. 22, 1918 by J. L. White.

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The Wild Flower Mine and Camp is situated two miles west of Crown King and consists of a group of five claims, three claims on the vein strike N 30° E, and the nearest Mine of any consequence is the Crown King, 5500 feet east.

The vein is a fissure in diorite, and is traced on the surface for over 4000 feet. The foot wall is said to be quartz diorite and the hanging wall hornblend diorite.

Beginning at the north end there is the Wild Flower Tunnel driven 1000 feet on the vein at an elevation of 6505 feet. No commercial ore is exposed. 3000 feet south on the outcrop is the Wild Flower Shaft 700 feet deep on the vein dip 60° W. The shaft has two compartments, and stations have been cut on the 110, 200, 300, 400, and 480 foot levels. On the 110 level 200 feet of drifting was done on both sides of the shaft. On the 200 level - 350 feet; on the 300 level - 250 feet; and on the 400 level - 100 feet of drifting was done all on the vein, apparently no commercial ore was found.

The 480 foot level is the main level, and nearly all of the work done by the Bradshaw Development Company was done on, or from this level. This level extends 1200 feet north from the shaft where a connection was made with the Wild Flower Tunnel 20 feet above; this is all old work. 1000 feet north of the shaft a body of ore 150 feet long was exposed of \$13.00 average value, which assayed about .4 oz. gold, 2.6 silver, and .5 % copper.

The ore was developed by three raises, one of which went to the surface. All of the ore has been mined by shrinkage stopes, the ore extending to 190 feet above the level. There is now no known commercial ore above the level at this point. A winze was sunk by the present Company, 200 feet to the 700 foot level, and drifting was done on the 600 and 700 ft. levels. The ore body decreased rapidly with depth, and disappeared just above the 600 ft. level. Two small bunches of ore were cut and mined one on each side of the winze on the 600 ft. level. The 700 ft. drifts are now under these points with no ore showing. 10500 tons of ore were mined in this section of the mine, but there is no ore blocked out here now, and very little even indicated. The 700 foot drifts are now being advanced.

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#2 - Crown King District - Wild Flower Mine - (cont'd).

2000 feet south of the Wild Flower Shaft is the Anaconda Tunnel driven on the vein at a point on a level with the 110 level in the shaft of an elevation of 6685 feet. This tunnel extends north 1300 feet and all but 500 feet of it is impassable. There is no record of any commercial ore in the tunnel, although some mineral shows. It is directly above the ore on the 480 ft. level of the shaft.

250 feet from the face of the tunnel is the Sabronji Winze, which was sunk from a crosscut tunnel 200 feet above. This is caved and impassable, and has no record of commercial ore.

There is no ore blocked out in the Mine. The only real showing of ore is that on the 480 ft. level of the shaft south. This is apparently about 5 feet wide where exposed. Figuring this ore as 300 feet long and with a width of 5 feet, it represents about 135 tons per vertical foot. It is said to average .02 oz. gold, 5.0 oz. silver and 1.5 % copper, or about \$13.00 per ton at present metal prices. One half of the drift is timbered.

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The camp appears to have accommodations for about twenty-five men. Steam power has been used with wood as a fuel. Two boilers of 48 and 60 HP were used to generate the steam for a small hoist, a two-stage compressor, and a small pump on the 480 ft. level. Electric power will be used in the future as the Arizona Power Company's line now runs to the transformer house near the shaft collar. Three 50 KW transformers with lightning arresters, oil switches, meters, etc. are installed, and an electric hoist with a 75 HP motor is being connected up. A small 2-stage air compressor ( Ingersoll Rand, steam driven, Imperial, type 10) will be belted to a 50 HP motor. CCl1 Ingersoll stopers are used in stoping, and mounted Jackhammers in drifting. The steel is sharpened by hand.

The drifting on the 700 ft. level in the north end of the Mine is being done by contract (\$5.00 per foot), the waste being delivered to the skip in the Winze. This waste is at present being dumped into a small stope near the collar of the Winze. A 1000 pound skip is used with an air hoist. Ore and waste is generally handled in 16 cu. ft. cars to a pocket at the shaft, and is then hoisted to the surface to a double bin, one part being used for waste, and the other for ore. The ore from this bin goes to a jaw crusher and from there to the tram bins, which deliver to tram buckets.

#3 - Crown King District - Wild Flower Mine (cont'd)

Ore is valued at	\$ 13.00
Probable mining cost of ore delivered to the mill	3.50
Probable Milling cost	2.00
Loss in milling 10 %	1.30
Cost of smelting concentrates per ton of ore	3.15
Freight on concentrates	<u>.50</u>
TOTAL COST	10.45
Probable profit per ton of ore	2.55

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WILDFLOWER MINE, Crown King, Yavapai County, Arizona.

Yavapai Gold-Silver-Copper Co., Owners. Bradshaw Reduction Co. (late Randolph-Gemmill Development Co.) lessees. Elevation 6700'.

Visited October 12, 1916 with D. B. Gemmill. Went down shaft to 480' level with Mr. Jackson, Foreman. The caved ground in the north drift was being cleaned out and a point 180' north of the shaft had been reached with caved ground ahead. The stoping width is apparently about five feet but it is not possible to make a close examination at the present time.

It is the intention of the lessees to sample the ore reserves when they have been made accessible, to verify the report of H. J. Meany (on file). Only work to this end is being done.

Mr. Gemmill's sample of the dump at the west shaft, which is said to be a composite of the N-20 ore shoot referred to in Meany's Report, assayed:-

0.45 oz. Au; 2.5 oz. Ag; 1% Pb; 6% Fe; 7% Zn; 0.5% Cu; 53% Insol.

The Wildflower vein has a hornblende diorite hanging wall and a quartz diorite foot wall. The width is said to be from four to twenty feet. It is traceable on the surface for about two miles. Like the Crown King, Old Tiger, and the other important veins of the district, the Wildflower cuts thru the dikes, evidently older than the vein, and the ore bodies where they cross the dikes have a tendency to become small and pinched.

The equipment consists of:

- 1 - 60 HP Boiler
- 1 - 40 HP Boiler
- 1 - 25 HP Single Drum Hoist
- 1 - 540 c.f. Air Compressor

Skips, cars, tools, etc.



Excess value of ore 13.00

Mining	3.50	
Repair	0.25	
Milling	2.50	conc 5 to 1.
Fat in conc.	0.30	(1.50 p. ton)
Smelting	1.25	(6.25 p. ton)
	<u>7.80</u>	

85  
10  
 25 5  
 85  
110 5

Price minus 85% as may say 11.00

Conc. and 1.70 conc. 79% = 1.53  
 20 ~~8.00~~ 90 18.00

7.50% = 6.50% 90 28.60  
 41  
48.60 ✓  
 10.00

8.20  
7.80  
 .40

40  
5  
 2.00  
 170

Smelter pays approx 9.50 p. ton over  
7.80  
 1.70

130<sup>+</sup> @ 2  
22  
 26  
26  
 28.6

1.5  
5  
 7.50  
6.50

18.50  
 5 17  
 5 9  
25 153  
 485  
 20 85  
 765