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PRINTED: 09/06/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: WELLINGTON GROUP

ALTERNATE NAMES:

COCHISE COUNTY MILS NUMBER: 709

LOCATION: TOWNSHIP 20 S RANGE 24 E SECTION 17 QUARTER C
LATITUDE: N 31DEG 41MIN 42SEC LONGITUDE: W 109DEG 52MIN 53SEC
TOPO MAP NAME: GLEESON - 15 MIN

CURRENT STATUS: UNKNOWN

COMMODITY:

GOLD LODE
SILVER
COPPER OXIDE
COPPER SULFIDE

BIBLIOGRAPHY:

ADMMR WELLINGTON GROUP FILE
ADMMR WELLINGTON GROUP COLVO FILE

03/20/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

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COPPER

BIBLIOGRAPHY:

ADMMR WELLINGTON GROUP FILE
ADMMR WELLINGTON GROUP COLVO FILE

Benson Ariz
Jan 27-47

Department of Mineral Resources
Phoenix Ariz



Dear Sir:

Your's rec'd some time ago, find ^{copy of} report enclosed which will explain everything better than I can and is a true report. Now I want \$25000⁰⁰/_{XX} for property and at least \$5000⁰⁰/_{XX} ^{down} ~~at~~ 10 per cent to you and collect it. or if you want to ask more all over \$25000⁰⁰/_{XX} will go to you. I am sole owner now, as Mr Sandercok part away, and his wife my mother in law turned it over to me. I have had different ones offer to put a Mill on property but don't want to put up any money. Well I am out several thousand dollars, so I want a down payment I took a chare so if any one want it they can take a little chare.

best regard yours Truly E Krozier

January 30, 1947

Mr. E. W. Crozier, Sr.
P. O. Box 1081,
Benson, Arizona

Dear Mr. Crozier:

We have received your data and report on the Wellington Group and thank you for same.

We wish to advise, however, that neither this department or any of its personnel make any charges or accept any commissions.

Gold mining is not attracting capital at present due to high costs, and we have practically no demand for gold properties. It is also an unfortunate fact that responsible people will not make cash payments unless there is considerable ore actually developed, or the property has some unusual features.

However we will keep it in mind.

Yours very truly,

Chas. H. Dunning
Director

CHD:LP

23 September 1940

Mr. Wm. G. Heiberling,
150 Muirfield Rd.,
Los Angeles, California.

My dear Mr. Heiberling:

With further reference to your request for information concerning a gold property, I am enclosing herewith a copy of a Reconnaissance Report on the Wellington Group of Mines in Cochise County, Arizona.

I should suggest that you communicate directly with Mr. E. W. Crozier, Box 346, Tombstone, Arizona.


Trusting that the information contained in this report may be helpful to you, I am

Yours very truly,

J. S. Coupal
Director

JSC:jrf
encl.

23 September 1940


Mr. E. X. Crozier,
Box 346,
Tombstone, Arizona.

My dear Mr. Crozier:

Replying to your letter of September 12, copy has been made of the Reconnaissance Report on the Wellington Group of Mines, and I am returning herewith the copy which you sent to us.

A copy of this report has been mailed to GO-8, Mr. Wm. G. Heiberling, 150 Muirfield Rd., Los Angeles, California, with the request that he communicate directly with you regarding this property.

Assuring you of my desire to be helpful, I am, with best wishes,

Yours very truly,

J. S. Coupal
Director

JSC-jrf

Tombstone & Arizona.
Box 346

Sept- 12, 1940.

Mr. J. S. Coupal
Capitol Bldg,
Phoenix Arizona.

Dear Mr. Coupal:

I saw your Inquiries of the Arizona Department of Mineral Resources for Mines and Minerals.

We have a Gold property in Cochise County, near the mining Town of Gleeson, Arizona. The property is known as The Wellington Group of mines, this group consists of 21 claims, and is located about 5 miles west of the mining town of Gleeson, Arizona, and about 10 miles east of the mining town of Tombstone.

I herewith enclose Copy of Engineers Report on the property. This property is located on 7 ledges of Gold-Silver bearing iron quartz, Gold predominate.

This property can be examined at any time, but it will be wise to let me know before hand if possible, so that I can be on hand when the parties arrive to look the property over. We will be pleased to hear from you at any time. KEY-No. GO-8- is the number I think would suit our property.

Very Truly Yours,

E.W. Crozier.

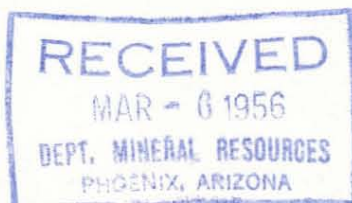
Wellington Group

Cochise
Wellington Group Turquoise Au-Ag 1/47

21 unpatented lode claims---approx. 420 acres
T 20 S -- R 24 E - about 5 miles W from mining
camp of Gleeson & 11 1/2 miles SW from the
Tombstone-Gleeson highway.
12 miles east of Tombstone.

I can find no one who knows anything about this ~~prop~~
property. The belief is expressed, however, that
it has been abandoned by the former owner, and
is now open for location.

Axel.



DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

DEPT. MINERAL RESOURCES
RECEIVED
JAN 30 1947
PHOENIX ARIZONA

Date Jan 27 - 47

1. Mine: WELLINGTON GROUP
2. Location: Sec..... Twp..... Range..... Nearest Town Tombstone City
Distance 12 Miles Direction East Road Condition good all except 3 miles
3. Mining District & County: Cochise Co. Turquoise Mining District
4. Former Name of Mine: Wellington Group
5. Owner: Ellis W Crozier Sr.
Address: Benson Arizona P.O. Box 1081
6. Operator:
Address:
7. Principal Minerals:
8. Number of Claims: 2 Lode Placer
Patented ~~no~~ Unpatented yes
9. Type of Surrounding Terrain:
10. Geology & Mineralization:
11. Dimension & Value of Ore Body:

WELLINGTON GROUP
Au, Ag
Cochise 2 - 4 T 20 S, R 24 E
E. W. Crozier, Box 1081, Benson, Ariz. '47

12. Ore "Blocked Out" or "In Sight":

.....
.....
.....
.....

Ore Probable:.....
.....
.....

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts.....		
Raises.....		
Tunnels.....		
Crosscuts.....		
Stopes.....		

14. Water Supply: *Small Spring on property can develop more water by digging well*

15. Brief History:

Find report envelope which will explain everything, I have many other copies of assays by good assays

16. Signature: *Ellis W Crozier Sr.*

17. If Property for Sale, List Approximate Price and Terms: *\$25000⁰⁰/_{xx}*
5000⁰⁰/_{xx} Down balance to suit.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

MW-28

Date September 12, 1940

1. Mine Wellington Group
2. Mining District & County Turquoise District
Cochise County
3. Former name
4. Location 5 miles west of Gleeson
T 20 S - R 24 E.
5. Owner E. W. Crozier and
Wm. Saundercook
6. Address (Owner) Tombstone, Arizona
Box 346
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Gold (and silver)
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present None.
19. Operations Planned Pending sale - none.
20. Number Claims, Title, etc. 21 unpatented claims - 420 acres
Title free and clear of any indebtedness.
21. Description: Topography & Geography Moderate relief on east and west portions
with abrupt rising portions in center. All
readily accessible.
22. Mine Workings: Amt. & Condition Several thousand feet of development work, mainly in
open cuts and shallow shafts. One main tunnel over 300 ft.
with 47 ft. winze and drifts, showing 154 feet of backs
in tunnel. Workings are accessible.

23. Geology & Mineralization Granitoid rock with intrusions of diorite - quartz porphyry and monzonite. Quartz veins with free milling gold - some silver and a small amount of copper.
24. Ore: Positive & Probable, Ore Dumps, Tailings
- 24-A Vein Width, Length, Value, etc. 7 different veins exposed - varying in width of from 2 to 60 ft. traced on surface for 3500 feet.
25. Mine, Mill Equipment & Flow Sheet None.
26. Road Conditions, Route Good auto dirt road to property - 5 miles westerly from Gleeson 13 miles from Tombstone.
27. Water Supply At 120 ft. shaft - 3 miles from property - tests showed a flow of 1000 gallons per hour.
28. Brief History Numerous small high grade gold ore shipments made. Mr. Wm. Lutly shipped \$10,000 from shallow shaft.
29. Special Problems, Reports Filed Complete report on geology and mill test on file by V. G. Mellgren - mining engineer.
30. Remarks
31. If property for sale: Price, terms and address to negotiate. For sale - see owner for terms and price.
32. Signed..... By letter from E. W. Crozier.
33. Use additional sheets if necessary.

MW-28

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date 9/12/40

1. Mine Wellington Group
2. Mining District & County Turquoise District
Cochise County
3. Former name
4. Location 5 miles west of Gleeson
T 20 S - R 24 E.
5. Owner E. W. Crozier and
Wm. Saundercook
6. Address (Owner) Tombstone, Arizona
Box 346
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
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- 24-A Vein Width, Length, Value, etc. 7 different veins exposed - varying in width of from 2 to 60 ft. traced on surface for 3500 feet.
25. Mine, Mill Equipment & Flow Sheet None
26. Road Conditions, Route Good auto dirt road to property - 5 miles westerly from Gleeson. 13 miles from Tombstone.
27. Water Supply At 120 ft. shaft - 3 miles from property - tests showed a flow of 1000 gallons per hour.
28. Brief History Numerous small high grade gold ore shipments made. Mr. Wm. Lutly shipped \$10,000 from shallow shaft.
29. Special Problems, Reports Filed Complete report on geology and mill test on file by V. G. Mellgren - mining engineer
30. Remarks
31. If property for sale: Price, terms and address to negotiate. For sale - see owner for terms and price.
32. Signed.....By letter from E. W. Crozier.....
33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

MS-28

Date September 12, 1940

1. Mine Wellington Group
2. Mining District & County Turquoise District
Cochise County
3. Former name
4. Location 5 miles west of Gleason
T 20 S - R 24 E.
5. Owner E. W. Crozier and
Wm. Saunderson
6. Address (Owner) Tombstone, Arizona
Box 346
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Gold (and silver)
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present None.
19. Operations Planned Pending sale - none.
20. Number Claims, Title, etc. 21 unpatented claims - 420 acres
Title free and clear of any indebtedness.
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with abrupt rising portions in center. All
readily accessible.
22. Mine Workings: Amt. & Condition Several thousand feet of development work, mainly in
open cuts and shallow shafts. One main tunnel over 300 ft.
with 47 ft. winze and drifts, showing 154 feet of backs
in tunnel. Workings are accessible.

23. Geology & Mineralization Granitoid rock with intrusions of rhyolite - quartz porphyry and monzonite. Quartz veins with free milling gold - some silver and a small amount of copper.
24. Ore: Positive & Probable, Ore Dumps, Tailings
- 24-A Vein Width, Length, Value, etc. 7 different veins exposed - varying in width of from 2 to 60 ft. traced on surface for 3500 feet.
25. Mine, Mill Equipment & Flow Sheet None.
26. Road Conditions, Route Good auto dirt road to property - 5 miles westerly from Gleason 13 miles from Tombstone.
27. Water Supply At 120 ft. shaft - 3 miles from property - tests showed a flow of 1000 gallons per hour.
28. Brief History Numerous small high grade gold ore shipments made. Mr. Wm. Lutly shipped \$10,000 from shallow shaft.
29. Special Problems, Reports Filed Complete report on geology and mill test on file by V. G. Mellgren - mining engineer.
30. Remarks
31. If property for sale: Price, terms and address to negotiate. For sale - see owner for terms and price.
32. Signed..... By letter from E. W. Grézier.
33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

Date 9/12/40

- 1. Mine *Wallington Group*
- 2. Location *5 miles west of Gleece T 20 S - R 24 E.*
- 3. Mining District & County *Turquoise Dist. Cochise County.*
- 4. Former name *—*
- 5. Owner *E. W. Crozier*
- 6. Address (Owner) *Tombstone - P.O. Box 34*
- 7. Operator *& Wm SAUNDERCOOK*
- 8. Address (Operator) *—*
- 9. President, Owing Co. *—*
- 9A. President, Operating Co. *—*
- 10. Gen. Mgr. *—*
- 14. Principal Minerals *Gold (+ silver)*
- 11. Mine Supt. *—*
- 15. Production Rate *—*
- 12. Mill Supt. *—*
- 16. Mill: Type & Cap. *—*
- 13. Men Employed *—*
- 17. Power: Amt. & Type *—*
- 18. Operations: Present *none -*

19. Operations: Planned *Pending Sale - none -*

20. Number Claims, Title, etc. *21 unpatented Claims. - 420 acres.
Title free & clear of any indebtedness*

21. Description: Topography & Geography *Moderate relief on East and west portions with abrupt rising portion in center. All readily accessible.*

22. Mine Workings: Amt. & Condition *Several thousand feet of development work. - mainly open cuts & shallow shafts. - One main tunnel - over 300 ft. in 47 ft. width & drifts. - showing 154 feet of back in tunnel. Workings are accessible.*

Geology & Mineralization

Granitoid rock with intrusions of rhyolite -
Quartz porphyry and monzonite. - Quartz veins
with free milling gold - some silver and a
small amount of copper.

Reference: Positive & Probable, Ore Dumps, Tailings

Dimensions and Value of Ore body

7 Different veins exposed - varying in
width of from 2 to 60 ft. - traced on surface for 3500 feet

Line, Mill Equipment & Flow-Sheet

None

Road Conditions, Route

^{Auto}
Ford dirt road to property - 5 miles westerly
from Gleason - ~~11 1/2 miles south westerly from the
Frontstone Gleason County Highway 13 miles from
Frontstone~~

Water Supply

at 120 ft. shaft - 3 miles from property - tests showed
a flow of 1000 gallons per hour.

Brief History

Numerous small high grade gold ore shipments made -
One ton. Wm. Rutly shipped \$10,000 from shallow shaft.

Special Problems, Reports Filed

Complete report on geology and mill test on file
by V. G. Mellgren - mining engineer.

Remarks

Property for sale: Price, terms and address to negotiate.

In sale - see name for terms and price.

32. Signature by letter from E. W. Crozier.

Use additional sheets if necessary.

Tombstone, Arizona

March 15th, 1938

E. W. Crozier & Wm. Saundercook,
Tombstone, Arizona.

Gentlemen:

Enclosed herewith I submit the report on the
Wellington Group of Mines. located in the Turquoise Mining
District, Cochise County, Arizona.

Respectfully yours.

(Signed) V. G. Mellgren

V. G. Mellgren, E. M.
Mining & Metallurgical Engineer.

Reconnaissance Report on the
Wellington Group of Mines.

Holdings:

The Wellington Group of Mines, consists of 21 unpatented lode claims; mention is here made of the holdings, as shown by the map of Wm. Saundercock at Gleeson, Arizona. The area covered by these holding approximately cover 420 acres.

The property is owned by Wm. Saundercock of Gleeson, Arizona, and E. W. Crozier of Tombstone, Arizona. Title is clear and free of any indebtedness.

Location:

The area embraced within these holdings, is situated in what is known as the Turquoise Mining District, in Township 20 South, Range 24 East and lies about five miles westerly from the mining camp of Gleeson and about 11½ miles south westerly from the Tombstone-Gleeson County Highway. This highway is a good dirt auto road and connects with an easily traveled road to the western extremity of the property. The City of Tombstone lies about 13 miles westward.

Accessability:

From a mining and development standpoint the property is very accessable and this feature of accessability is an important factor in development. Very light expenditures on the mine roads will put them in excellent condition for auto and truck travel.

History:

A brief outline of the past known history may throw a little light on future prospects. The present owners acquired these holdings after the death of Mr. Hamilton the former owner. It was under the ownership of Mr. Hamilton that the tunnel on the Crow Hill No. 3 claim was driven to cut the exposed surface vein.

The area covered by these holdings and adjacent vicinity has been known to contain gold values for the past fifty years or longer; and irregular work has been done in years past with a view of developing shipping ores. Numerous small shipments have been made off these hoodings from the higher grade gold ores and on the eastern extremity of these properties: It is reported that Wm. Lutly and partner shipped about \$10,000.00 from one shallow shaft.

In the writing of a report for Mr. Bertrand Stevenson in 1932,

A period of years during which the writer has conducted an "Assay and Engineering Office", at Tombstone, and from data thus collected it is my belief that the Wellington Group is certainly worthy of a systematic development program. The development done to date, though limited has demonstrated the existence of the gold values in the veins and master fissures. The exposed surface croppings show the magnitude of the width and strike distance, and so, by systematic plan of development the values and extent of these bodies could be readily ascertained.

Respectfully submitted.

V. G. Mellgren

E. M.
A. Z.

Mining and Metallurgical Engineer

on a property about 3 miles south of these holdings, the writer gathered some interesting notes on the history of the area.

In a discussion of geology; the genesis of the ores will be briefly covered, but at this point, since to the writer's point of view there is a similarity in origin or a community of origin and a single metaogenesis of the ore occurrence, in this southern Turquoise area, adjacent data or history will be of interest.

To the south of this group evidence of operation by the old Indian or Spanish Arrasta method is visible on the lower flat country and the remains of an old foundation of a stamp mill is to be seen near the old Arrasta workings.

Inquiry about the Arrasta foundations brought no information as to early workings, but investigation as to past work on the old stamp mill disclosed the fact that the late John Angus, Sr. of Bisbee, Arizona, shipped in a five stamp mill from San Francisco and plated the free milling gold ores to the south of this property, in the early 80's and the ore mined and milled is reported to have given a gold yield of \$58,000.00.

To throw additional light on gold values in the adjacent intrusive areas where selective mining has been done in past years, in the search of the direct shipping ores, assays I have had access to will be given.

Since I have examined the territory to the south of this group I am including these observations for what connection it may throw on the ore deposits of this group.

From observations it appears that the fissures and the master fractures appear to narrow down as they approach the lower rolling hills and pediment slopes, to the south, but still retain the same ore characteristics.

As to what connection there may be in zonal depth I have not definitely determined; but the difference in elevation of the southern extremities to the south, would indicate that several hundred feet of erosion has occurred here, and therefore the surface of fissures and fractures to the north would be in higher position than the exposed surface fissures to the south. If assays on a lower horizon can be taken to be genetically connected with the higher and less eroded areas it may be of interest as history to this point; though not on

Geology.

The formation covering the Wellington Group is a granitoid rock with accompanying intrusions of rhyolite, diorite diabase, felsite, quartz porphyry and associated monzonite and quartz monzonite porphyry.

From a study of the geology of the Turquoise Mining District it appears that a phenomenon apparently genetically connected with the formation of these fault block ranges was due to these batholithic intrusions. This was an upward movement, from deep seated reservoirs beneath, of magmatic material in great volume along their axes, these slowly crystallizing into granite, monzonite, diorite and other granitoid rocks. The accompanying compression and tension were factors in the shaping of the uneroded portions of the present mountain relief.

It appears that this portion of the Turquoise Mining District under discussion is of early Tertiary eruption periods, followed in Mid-Tertiary by collapse. In the collapse of the early Tertiary volcanic covering the underlying older rock formations were broken up, producing a topography in which the salient features, as seen to-day, are the north-west-southwest trending fault block mountains and intermont valleys or plains.

In some cases by later differentiation they were metal rich, and their residual and volcanic constituents, escaping from them, or being forced out, as the magma crystallized, from a state of mineral solution, made their way into the overlying rocks, through fissures, fractures and fault plains to form the overlying ore bodies. It is to this factor that the writer attributes the formation of the ore deposits of the Turquoise Mining District.

The erosion ~~has~~ in the northern area of this district has not been so pronounced as it is in the south, so that in and around the Courtland-Gleeson territory the upper or higher ore bearing formations have been mined in both secondary and primary ores of gold-silver-lead and copper.

It appears to the writer that the genesis of the ore deposits of the Turquoise District as a whole, have a community of origin, and it is the writer's belief that the pathway to the ore depositions has been due to the existing fissures, fractures or fault plains.

To the north and northeast of this group in the Courtland-Gleeson area both sedimentary and igneous rocks are classified; the

the properties under discussion.

Assayed by E. A. Jacobs,

Tucson, Arizona, Jan. 29, 1931.

Samples taken by John W. Bailey.

Gold		
No.1 A	0.91	12" ore Joe Shaft
2 A	4.37	20" ore " "
3 A	0.150	4 feet above 2 A, a 2 A, but 6" N. E.
4 A	0.50 2'	2' out on same vein
5 A	0.160	3 ore in open cut
6 A	0.09	6" stringer 1500' S.W. of Joe Shaft
7 A	0.24	near 6 A, sorted ore dump
8 A	0.35	20" ore in open cut
9 A	0.51	Old dump at 80' shaft on vein paralleling vein No. 8 A

On Sept 9, 1931 S. P. Car No. 45,091 was shipped to the Phelps Dodge Corporation, copper Queen Branch Reduction Works at Douglas, Arizona., which gave the following results:

Gold	Silver	Copper
0.48	0.66	0.29

The larger portion of this carload was gathered from surface float, the balance being grass root ore from veins.

Prior to the shipment of the car above mentioned, samples were taken and assayed by the writer, along surface croppings and shallow workings which gave assay values of from \$2.80 to \$48.00 per ton in gold. (On old gold price of \$20.67 per Oz.) These samples were not taken with a view of determining a general vein average, but merely for the purpose of determining the advisability of mining a few car of ore, for direct shipment to the smelter, under a siliceous rate.

In the following brief discussion of the geology of the area, I am using data and information gathered in a study of the Turquoise Mining District when the writer was engineer for the Calumet and Arizona Mining Co., at Courtland in 1911-1912 and a latter investigation of the territory to the south in 1931-32, in addition to the present examination.

Topography.

The area covered by this group is of a more moderate relief on the eastern and western portions, with a more abrupt approach as you near the central portions; but as a whole the topography is such as to permit access to most parts of the property for initial development

earliest in age being pro-Cambrian; where exposed portions of schist, similar to the Pinal schist of the Bisbee area to the south is visible. This exposed schist underlies Bolza quartz of Cambrian age; accompanied by the younger Abrigo limestones. The next younger observed formation of the northern Turquoise are, being Carboniferous, including Mississippian and Pennsylvanian limestones and resting unconformably upon the older formations; the the northern portions of the area, sedimentary Cretaceous similar to Comanchean occur. (Bulletin No. 123, Geological Series No. 5, Arizona Bureau of Mines-Opus Cit.; pages 19-20-21-22.)

From observed ^{occurrence} ~~occurrence~~ in the northern Turquoise Mining District, the younger Cretaceous and Quarternary formations are visible, which as you approach the Wellington Group under discussion, have been removed by erosion; leaving the igneous intrusion exposed in relief; which as - stated I classify as territary or close to Pre-Cretaceous in age.

The ore occurrence is found mainly in master fissures and shear zones and occur with a general north-south strike, showing a decided tendency to Northeasterly departures, with dip to the west.

Due to the absence of a erosional pedimentary slope in the area under discussion, brings into surface relief the exposed veins; being covered with from a few inches to to 5 or 6 feet of erosional overburden, these exposed surface croppings show persistently along their strike and of ^{different} seven/exposed veins; they vary in width of from 2' up to 60' and can be traced on their strike along the surface for a distance of 3500 feet.

The metal values of the fissure veins are gold, silver, with occassionally traces of copper. Gold values predominate and is classified as "free Milling" gold. On crushing and grinding and panning the iron stained quartz material particles of free native gold are discernible in the pannings.

The intruding dikes show some off-setting by cross-faulting and development may genetically connect vein displacements with the dike off- setting.

The source of ore deposits of this area is attributed to volcanism, that is, to some upward movement of lavas, differentiated deep within the earth's crust from which segregated and freed metalizing

From the portal of the tunnel to the point where the cross-cut cuts the vein it gives a back of approximately 154 feet. with the 46 foot winze this would then give depth development of 200 feet, below the exposed surface croppings.

As previously stated other development work comprises shallow shafts and surface cuts and from a development stand point gives no information on deeper values.

A sample sheet furnished the writer by Wm. Saunderson is here-with given:

FROM THE WELLINGTON MINES.

ASSAY SHEET

Sampled by W. H. Bellah and Ed Halderman.

No.	Gold ozs.	Silver ozs.	Value Gold-Silver.
No. 1-	.03	0.6	\$0.79
" 2-	.12	3.1	3.28
" 3	.35	1.3	7.59
" 4	1.06	1.8	21.74
" 5	.38	2.6	8.58
" 6	.17	Traces	3.40
" 7 Concentrates,	75.38	17.6	1512.97

Figure gold at \$20.00. Silver 25 cts.

No.	Gold ozs.	Silver ozs.	Values Gold-Silver.
No. 1-	0.36	2.7	\$14.49
" 2	0.17	0.6	6.37
" 3	0.10	0.2	3.64
" 4	0.40	1.3 Cop-2-7	19.23
" 5	0.11	0.5	4.20
" 6	0.05	0.4	2.03

Figure gold at \$35.00, Silver 44 $\frac{1}{2}$ cts

No.	Gold ozs.	Silver Ozs.	Value Gold-Silver.
No. 2-	.135	trace	\$4.73
" 3	.11	"	3.85
" 4	.355	0.2	12.43-0.15

Figure Gold at \$35.00, Silver 77cts.

First 6 samples taken from

- No. 1 From Wellington Claim near monument croppings.
- " 2 " Minnie B. small shaft dump.
- " 3 " Minnie A. No. 2 shaft.
- " 4 " Minnie A. No. 1 shaft, quartz in dump.
- " 5 " Wellington claim small shaft on hill, quartz 3 $\frac{1}{2}$ feet.
- " 6 " Wellington claim 20ft. shaft dump ore.

Second 6 samples taken from

- No. 1- From Wellington claim No. 2 shaft honeycomb quartz.
- " 2 " " " near monument a small shaft quartz 3 $\frac{1}{2}$ ft.
- " 3 " " " in open cut above spring 4 ft. quartz.
- " 4 " Indian No. 2 near oak tree shaft.
- " 5 " Craw-Hill incline shaft near top quartz 4 ft.
- " 6 " Minnie A. No. 2 shaft grab, from dump quartz.

Third, 3 samples taken from

- No. 2- from Craw-Hill No. 3-Tunnel, North drift about 4 feet wide.
- " 3 " " " " North side collar of winze, 4 ft wide.
- " 4 " " " " North side of tunnel quartz 10 ft.

The above concentrates was taken from pannings of samples from different places on the property and reduced to one sample. This was done by W.H. Bellah .3.

No.	Gold	Silver
1	0.10 oz.	1.9 oz
2	0.04 "	0.7 "
3	0.13 "	1.8 "
4	0.09 "	1.1 "
5	0.09 "	1.2 "
6	0.07 "	1.0 "
7	0.02 "	0.4 "
8	0.10 "	1.3 "
9	0.11 "	2.0 "
10	0.09 "	1.4 "
11	0.09 "	1.5 "
12	0.09 "	1.5 "
13	0.04 "	1.3 "
14	0.11 "	1.8 "
15	0.20 "	1.9 "
16	0.04 "	1.1 "
17	0.13 "	1.6 "
18	0.18 "	1.6 "
19	0.18 "	1.7 "
20	0.09 "	1.5 "
21	0.16 "	1.7"
22	0.51 "	2.1 "

Assay sheet by
writer in Craw Hill
No. 3 tunnel and
croppings. No selective
samples were taken

- No. 1, Sides and back in 10 feet in the 31.5 foot north drift
- " 2 Sides and back 10 feet north of No. 1 sample.
- " 3 Sides and back in 10 feet north of No. 2
- " 4 Face of north drift
- " 5 At portal of 68 foot south drift
- " 6 Sides and back 10 feet south of No. 5
- " 7 Sides and back 20 feet in on south drift
- " 8 Sides and back 30 feet in on south drift
- " 9 Sides and back 40 feet in on south drift
- " 10 Sides and back 50 feet in on south drift
- " 11 Face of short cross-cut to the west near face of south drift
- " 12 Face of south drift
- " 13 Sides and back 10 feet west of north-south drift
- " 14 Sides and back 10 feet west of No. 13
- " 15 Sides and back 10 feet west of No. 14
- " 156 Sides and back 10 feet west of No. 15
- " 17 Sides and back 10 feet west of No. 16
- " 18 Bottom of Winze
- " 19 Face pf north drift at bottom of winze
- " 20 East side of drift in north drift at bottom of winze
- " 21 Surface croppings, 10 feet wide east of tunnel portal
- " 22 4 feet wide surface croppings at windless on Minnie A claim

Water

I have personally made no calculation as to the amount of water to be handled below the present water level, but I have been able to gather some data as to a probable water flow.

At a test run on a shaft in the low country about three miles to the south of this property, a small pump-jack, powered by a 5 H.P. gasoline engine, on a 10 hour pumping lowered the water in the shaft from the 50 foot level to the 70 foot level on a 1000 gal per hour out put. This covered a ten day pumping test and indications were that at this 70 foot level that the 1000 gals per hour out put was about equaling the flow at this level.

The reported depth of this shaft of 122 feet, would further indicate that water in deeper mining would not be a serious or ex-

phase to show that there would be no complicated or complex metalurgical problems in treatment.

It is not the writer's opinion that copper will increase or become associated with these ores in development depth so as interfere with the treatment but as a matter treatment it will be interesting to know that, due to the high silicious content, that this class of ore is in demand at the Phelps Dodge Smelter at Douglas and the writer in 1931 recieved smelter schedule, as follows:

Base treatment charge \$2.50 per ton.- Pay 2cts aunit for free silica, deduct copper shortage under 10 lbs.

Under this schedule, returns on car S. P. 45,091, 9/9/31 showed a smelter treatment charge of \$1.32 and freight of 60 cts per ton, so that with a copper increase to a point of interference with cyanidation, would give a lower treatment cost, in that the copper penalty would become a pay metal; if a simular or the same schedule was obtained.

Recommendations

I would recommend that initial work be done on the Craw-Hill No. 3 fissure vein. Sinking of a shaft to the 100 foot level at a point to the south of the present Craw-Hill NO.3 tunnel site. The topography of the slope at this point is such that as, from the bottom of the 100 foot shaft, as you drift north along the strike of the vein, at the crest of the hill peak, would put this drift approximately 360 feet below the surface croppings. In addition to depth gained this development would be opening up and developping the vein along the strike.

From results of vein values and vein widths along the vein strike at this level future development could be planned. Raises at 100 foot intervals along this vein drift would block out the Craw-Hill ~~number~~ No. 3 vein systematically. It would be advisable to continue the shaft down to the Minnie A to the 100 foot level and drift north and south at this point along the strike of the Minnie A vein. This to the writer appears to be a stronger mineralized fissure and from samples, the metal values of this vein show up higher than the Craw-Hill NO. 3. The remaining five known veins could be developed at a later date.

Conclusion

The information and data contained herein has been acquired