PE-119-07

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PRELIMINARY REPORT OF THE CRACKER JACK GROUP, TWELVE MILE ARM, PRINCE OF WALES ISLAND, ALASKA
June 10, 1938

Location and Accessibility:

The Cracker Jack group of nine lode claims and two fractions is located one and a half miles north and west of Hollis, the latter on Twelve Mile Arm, east coast of Prince of Wales Island. An old tramway leads from the mill site on the beach up to the workings and the old camp site. The claim group extends in a northwest-southeast direction, following the vein outcroppings and generally along the strike of the slate formation. Twelve Mile Arm is navigable to ocean-going vessels. This property has the advantage of salt water transportation in being in close proximity to the beach.

Owner:

The owner of this group, the claims of which are patented including the beach mill site, is Maurice McMicken of Seattle, Washington. The claim group (note copy of Mineral Survey No. 1527 A & B) consists of Cracker Jack Nos. 1 to 5, inclusive, the Portal, Goodenough, Hollis, Braintree claims and the Hollis and Cracker Jack fractions.

History:

The early history of the Cracker Jack group is not known. Both the Cracker Jack and Hollis claims were discovered and under development prior to the first examination on record. This survey was by A. H. Brooks in 1901 for the U. S. Geological Survey. A report of these claims is contained in his report in Professional Paper No. 1, "Preliminary Report on the Ketchikan Mining District, Alaska," pp. 91-92. Two veins were reported traced by opencuts across four claim lengths on the Cracker Jack claims, and one tunnel was started on the lower vein. A vein was reported stripped at an altitude of 1600 feet on the Hollis claim.

In 1903 the property was visited by F. E. and C. W. Wright and a short report is contained in U. S. G. S. bulletin 259, "Mineral Resources of Alaska in 1904," p. 66. Development work on this date consisted of four tunnels with a total length of 1720 feet. The ore was treated in a five-ton stamp mill located on the Puyallup property. The ore was transported along the tramway and later a pipe line was used.

The last report on this property is contained in U. S. G. S. bulletin 347, "The Ketchikan and Wrangell Mining Districts, Alaska" by F. E. and C. W. Wright, 1908, pp. 160-161. The year 1908 apparently was the last year that active mining was carried on. Subsequently only assessment work was done until 1926, in which year the group was patented. Since this date it has been idle.

Geology:

The only formation noted within the claim boundaries consisted of slates with inclosed greenstone dikes. These slates have a schistose structure and have been subject to considerable movement to the extent that a graphitic band has developed along the weaker beds, the latter containing the associated dikes and quartz veins. This formation ranges in strike from N. 20 to 30° W. and has a dip ranging from 20 to 35° SW. Movement within the formation has been parallel to the bedding and both minor and major folding is evident in the district. This movement has been the originator of the parallel zones of weakness along which the greenstone dikes were intruded and the veins formed. Included in this graphitic slate band are two parallel quartz veins. These veins conform in strike and dip to that of the schistosity of the slates. The veins, as they outcrop on the surface, are located 250 feet apart. However, the distance between them, measured at right angles to the dips, is slightly over 100 feet. Both veins are associated with green porphyry dikes in which they are contained or are alongside, and with which they conform in both strike and dip. The dikes vary from a few feet to 16 feet in width. A slide taken from the upper dike shows under the microscope a fine scattered mineralization of pyrite, several large phenocrysts in an altered state, not recognizable, a porphyrite ground mass of calcite, chlorite, quartz, epidote, and other crystallites. Thus, with the high calcite content, low quartz and porphyrite ground mass, this dike is classified as an altered dacite porphyrite. The two dikes appear megascopically to be of the same kind. Both weather to a light brown to yellow, due to the iron content and oxidation.

The upper quartz vein has the most development work done on it, and it apparently is the richest. Its width varies from one to five feet and changes from wall to wall of the dike along its strike. The vein is banded and shows various types of quartz. The lower vein is also banded, contains similar quartz bands with less mineralization, and from the few exposures seen appears to have a greater width. Both veins can be traced by opencuts and tunnels over the entire length of the claim group, a distance of one and a half miles.

Showings:

The total showings in this group are extensive, consisting of eight tunnels and numerous opencuts and pits. Several of the cuts were found filled and two short tunnels were missed during this preliminary examination. The purpose of the examination of this claim group was with the intent of gaining information regarding the structure of the veins and their relation to the Free Gold and Humboldt veins contained in the same graphitic slate band to the south on the property of the Kasaan Gold Mining Company. While these two sets of veins have not been definitely proven as the same veins, these evident facts were noted:

1. The two sets of veins are contained in the same band of black graphitic slate.

2. All veins follow the bedding of the slates in both dip and strike and are bedded veins.

3. The same character of green dikes are associated in both sets of veins.

4. The same characteristic banded quartz, mineralization, and associated gangue minerals occur in the veins.

The Free Gold and Humboldt veins do not have the same dip or strike as the veins of the Cracker Jack. This fact is accounted for by taking into consideration that both the Free Gold and Humboldt veins represent only faulted blocks of the upper vein and have been shifted from their original positions by slip rotational faulting. The lower vein of the Free Gold and Humboldt set occurs intact below the faulted blocks and does conform to dip and strike of the Cracker Jack veins.

The following observations were noted in a hasty examination of the six tunnels and a few of the opencuts:

Tunnel No. 1, elevation 440 feet: No. 1 tunnel is located near the south end of the Portal claim on discovery line. The length is 186 feet, of which 40 feet is on the vein. The latter is inclosed in green dike material and averages 12 inches in width over its exposed length. It carries only a slight mineralization and is distinctly banded. The strike is with the formation generally for all tunnels and cuts of both veins, N. 20° W., while the dip varies at different locations. The dip in this tunnel was 29° SW.

Opencuts, elevation 570 feet: Located 500 feet south of tunnel No. 1, and on Cracker Jack claim No. 5, several opencuts were noted along a small creek, exposing the vein for 150 feet. Here the vein is inclosed in a green dike and gradually moves to the footwall of the dike on its upper end. The vein is well banded and varies from 2 to 3 feet in width. The mineralization is strong and massive bunches of pyrite were noted. The vein dip here of 48° was the steepest noted. However, this steep dip may be due to local conditions not noted. Sample No. 418 was taken in the upper cut across banded quartz a width of 3 feet 3 inches and results of 0.06 ounces gold per ton and nil in silver were received.

No. 2 tunnel, elevation 880 feet: No. 2 tunnel is located in a canyon alongside a small stream on Cracker Jack lode claim No. 2. It has a total length of 1091 feet, of which 240 feet is represented in a crosscut from the portal to the vein, and several short crosscuts. Two small stopes were noted. No. 1 stope is up 100 feet on a 33° dip. At the top the vein has a width of 13 inches. Sample No. 416 was taken at the top of the stope across the above width. Results were 0.04 ounces of gold per ton and 0.60 ounces of silver. In this stope a very pronounced rake is evident by small grooving on the hanging wall. The direction of this rake is 38° off horizontal to the west. The movement in relation to the wall could not be determined, however, it is believed the hanging wall moved northeast. Sample No. 417 was taken across the vein in the drift at a point below the center chute of the stope, a width of 22 inches. Results were 0.16 ounces of gold per ton and 0.30 ounces of silver.

<u>Opencuts, elevation 1030 feet</u>: Four opencuts were noted south of the tramway on a line between the Braintree and Cracker Jack No. 3 claims. These cuts are on the lower vein and show brecciated vein quartz with associated dike material. This vein has a width up to 5 feet, however, it is only slightly mineralized.

<u>Tunnel No. 3, elevation 1,000 feet</u>: Directly west of the above cuts and along the south bank of the creek on the Braintree claim, No. 3 tunnel cuts the same vein as shown in the cuts and follows it for a distance of 60 feet. Faulting has been evident along the vein and the vein is broken into pieces which have been recemented making a breccia vein. This tunnel has a length of 286 feet. Sample No. 420 was taken across the face of the vein in the north end of the drift a width of 24 inches. Results were 0.51 ounces gold and 32.80 ounces silver per ton.

<u>Tunnel No. 4, elevation 1040 feet</u>: Tunnel No. 4 is located across the creek from tunnel No. 3 and on the Cracker Jack No. 2 claim. The length is 405 feet, of which 200 feet is crosscut. The vein ranges in width from 1 to 2 feet and pinches on the south end. Considerable crushed dike material was noted within the vein. A fault cuts the vein near the south end. The fault strike is N. 70° E. and the dip is 85° SE. The dip of the vein is 35° SW. Sample 422 from wall of drift at a point 70 feet south of the raise to the surface, across 40 inches, gave results of 0.09 ounces gold and 0.80 ounces silver per ton.

<u>Tunnel No. 5, elevation 1100 feet</u>: A distance of 300 feet up the creek from tunnel No. 4, No. 5 tunnel was driven on the vein for a distance of 141 feet. The vein varies from 6 inches to 2 feet in width and is folded and on the fold two stopes up 15 and 40 feet, respectively, were driven. Sample No. 421 was taken at the top of the second stope 15 feet above the tunnel, across 2 feet. This gave results of 0.01 ounces gold and 0.40 ounces silver per ton.

<u>Tunnel No. 6, elevation 1500 feet</u>: No. 6 tunnel is known as the Hollis tunnel and is located on the Hollis fraction and Hollis claim on the nose of the ridge above Hollis. Its total length is 455 feet driven on the vein. The banded vein varies in width from 6 inches to $3\frac{1}{2}$ feet. Most of the vein above this tunnel has been stoped. The dip of the vein here is 26° and was the least dip noted along the vein. Sample

No. 419 was taken across the vein at a point 30 feet back from the face across 4 feet. Results were 0.02 ounces gold and 0.70 ounces silver per ton.

Mineralization:

The metallic minerals noted in the ore were, in order of abundance, pyrite, chalcopyrite, galena, sphalerite, silver and gold. Further metallics that have been reported are tetrahedrite and sulphantimony or some bismuth mineral. The greater amount of the pyrite mineralization is contained in the schisted walls and in the bands. The gangue minerals noted were quartz of various textures, chlorite, epidote, calcite, graphite and altered dike and slate pieces.

A slide (specimen No. T.D.M. 78) taken from the white ore quartz near the stope in No. 4 tunnel, shows a coarse well formed crystallization. Fine crystallization was lacking and the crystal boundaries were very sharp and distinct. No fine mineralization was noted.

Slide No. T.D.M. 80 represents a hard type of quartz taken from the Hollis tunnel. This quartz was fractured in two directions nearly at right angles to each other and generally it had a strained appearance. Two generations of quartz were noted, one the original vein quartz, and the later filling fractures in association with calcite.

Slide No. T.D.M. 81 represents the white crystalline type of the same character as T.D.M. No. 78, coarse quartz crystals with sharp clear distinct crystal boundaries. Fine crystallization was found lacking. This specimen was obtained from center white quartz band in Hollis tunnel.

Slide No. 82 represents mineralized quartz from No. 1 stope lense in No. 2 tunnel. The mineralization occurs as large individual crystals in the quartz and is lacking in the fractures. This quartz is fractured and recemented with later quartz.

Slide No. 83 represents the main center band of white quartz. Large crystals of quartz with clear sharp borders are the same as in T.D.M. Nos. 78 and 81. This specimen is from No. tunnel, No. 2 lense.

Summary:

The following facts regarding geological events and processes in regard to the vein genesis were noted. Complete information is lacking due to lack of development work and considerable overburden, and further studies of thin sections. The writer is offering these facts, not as a complete hypothesis for the origin of these veins, but as helpful factors that may lead to a better understanding should active mining be attempted:

1. Diorite intrusive forms the central mountain core between Harris and May-Be-So Rivers surrounded by the slate formations.

2. Thrust folding and tilting of the slates followed as a result of the intrusive.

3. Planes of weakness developed along the weakened beds, forming parallel zones on the bedding planes.

4. The intrusive diorite was accompanied by the intrusions of dacite (?) porphyrite dikes along the parallel planes of weakness in the slates.

5. Further pressure resulted in shearing of the dikes and slates forming a schistose structure along the zones of weakness.

6. The result of continued pressure on the schisted dikes began a decomposition which resulted in the alteration of the original ferromagnesium and feldspar minerals, etc. of the dike. A process that resulted in mineralization and epidotization, while in the slates the process of carbonization resulted. As a result of the above processes and accompanying solutions the quartz veins originated.

7. During the early stage of the quartz veining, pressure points developed along the bedded veins which resulted in folds or rolls on the vein. These rolls afforded greater openings for the veins and caused greater alteration resulting in more intense mineralization in these localities.

8. During some stage of the vein forming diabase dikes invaded this slate formation. (Note report of Free Gold showing of Harris Creek mine of Kasaan Gold Mining Co.) They represent a later basic phase of possibly the same magma. While their relation in regard to the quartz veining is not known, with the exception of the Free Gold showing, which was originally believed to have been a rolled portion of the vein and is in close proximity to one of these diabase dikes and contains a higher grade ore. Brooks* mentions both diabase and gray porphyritic dikes cutting the slates or phyllites. However, these dikes were not observed on this property due possibly to the filled cuts and showings, and thus the relation to the veins and ore forming is not known.

9. Periods of re-occurring pressure followed during the vein forming. This resulted in the various quartz bands and the strained appearance of some bands as noticed in thin sections.

*U. S. G. S. Prof. Paper No. 1, "The Ketchikan Mining District," p. 91.

10. Slow growth is indicated under the microscope by the medium to large quartz crystals with well developed crystal boundaries and the absence of finer crystals. This is further shown by the large massive bunches of sulphides within the quartz which occur as segregation bunches representing concentration which carry exceptional values, and the absence of sulphides in the quartz fractures.

11. Generally with the type of sulphide minerals represented and the character of the quartz, these veins are believed to have formed under moderate temperature conditions, probably less than 575° centigrade and during periods of recession in pressure.

12. Ore lenses or shoots appear to be mostly confined to the developed pressure points or rolls as they occur along the vein and the limbs of these rolls. Several of these rolls were noted.

Assays:

The samples taken by the writer do not represent an average for all or any portion of these veins. They were taken merely to locate the areas of better values and these were found to be in the vicinities of the rolls of the veins. It was reported by a person familiar with the workings that the owner had 185 channel samples taken by an engineer in various tunnels and localities and the average value in gold and silver per ton was $7.50 (old price).

In conclusion the writer wishes to mention the comparatively low or flat dip of the veins, ranging from 25° to 48°, with the average less than 35°. This, with the low plunge of 38° of the wall movement, resulting possibly in a decided rake of the orebodies, will present difficult mining problems.

Timber is abundant in the vicinity, while adequate water power is lacking.

Detail geological mapping is essential with further underground information and microscopic work is necessary, before complete and definite conclusions can be reached regarding these veins.

Note - This is copy from Jack 9-11-41 Initials under Sample No. indicate initials of various persons who took samples.

CRACKER JACK

Vein Width and Values

Location	Sample No.	Width	Values Au.	Values Ag.
No. 1 Tunnel El. 880 Drift	B	1.7	0.03	0.69
	W	1.3	0.02	0.10
	W	1.2	0.01	0.07
	J	3.2	0.02	0.20
	B	2.6	0.01	0.57
	W	0.5	0.43	0.60
	J	1.5	0.01	0.30
	J	3.2	0.01	Nil
	W	0.5	Tr.	0.06
	W	1.0	0.04	0.08
	J	5.5	Nil	
	J	4.7	0.01	0.20
	J	3.2	0.08	0.12
	J	2.3	0.01	0.10
	W	2.2	0.03	0.02
	J	3.8	0.39	0.31
	W	2.7	0.89	0.50
	J	4.4	0.26	0.94
	W	2.5	1.61	1.60
	J	5.1	0.60	0.71
	W	1.0	0.29	0.46
	J	5	Nil	
	J	1.8	0.01	Nil
	W	0.9	0.03	0.07
	J	3.7	0.02	0.10
	J	4.0	Nil	
	J	5.0	0.04	Nil
	J	2.0	0.01	0.60
	L	5.0	0.16	0.50
	J	5.5	0.59	29.41
	J	3.0	0.28	6.52
	W	3.0	2.28	20.40
	J	3.6	0.07	0.20
	L	8.0	0.16	5.30
	J	0.5	0.07	4.43
	J	4.5	0.54	4.46
	J	5.0	0.27	0.73
	J	4.0	0.04	0.76
	J	7.0	0.01	0.20
	J	3.0	0.14	1.96
	J	[illegible]	0.03	0.45
	J	[illegible]	0.02	0.10
Crosscut vein drift	J	1.2	0.22	0.44
	J	[illegible]	0.02	0.38
	J	4.5	0.08	Nil
	J	[illegible]	0.02	Nil

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Location	Sample No.	Width	Values Au.	Values Ag.
No. 1 Tunnel	B	2.6	0.01	0.57
Crosscut	W	0.5	1.39	1.07
drift	W	1.0	0.07	0.33
	E	3.0	0.10	0.80
Raise	J	5.7	(8.897)	
	W	1.0	2.34	6.46
	J	4.6	0.04	0.55
	W	3.5	0.09	2.16
	B	2.5	0.01	1.49
Drift	L	5.0	0.10	0.30
Stope	W	1.5	0.075	0.27
	J	1.0	0.23	1.32
	W	2.0	0.035	1.00
Drift	E	6.0	0.16	8.64
Raise	J	2.4	0.03	0.27
	W	2.5	0.06	1.64
	L	6.0	0.055	0.90
	B	2.5	0.01	[illegible]
	J	6.0	0.07	1.73
	E	4.0	0.12	1.04
Drift	E	3.5	0.92	5.90
Crosscut	B	30' -7'	0.72	0.58
	L	6.0	0.15	0.15
	J	5.5	0.02	0.10
	E	3.0	0.02	0.22
	W	0.9	0.07	0.31
Upper vein	E	6.0	0.30	13.60
surface	J	8.0	0.48	0.72
cut	J	8.0	0.07	0.25
	J	4.0	0.24	0.46
	J	4.2	0.19	6.31
	L	15.0	0.04	0.40
	J	5.8	0.04	1.46
	J	7.5	0.09	1.11
	J	5.4	0.06	0.34
	J	6.2	0.02	1.60
	L	5.0	0.34	0.30
	J	5.2	0.17	0.13
	J	8.0	0.10	0.60
	L	5.0	0.13	0.10
	J	3.5	0.28	24.75
	C	3.5	0.83	4.80
	L	4.5	0.21	3.50

CRACKER JACK

Location	Sample No.	Width	Values Au.	Values Ag.
Upper vein surface cuts	B	3.5	Tr.	0.52
	L	6.0	0.05	0.10
	B	2.5	0.38	1.48
	B	2.5	0.05	4.95
	B	2.5	0.09	0.83
	B	2.5	0.07	0.83
Lower vein surface cuts	C	1.0	0.40	0.80
		1.6	0.62	0.60
		1.2	0.60	10.60
		1.1	2.18	11.20
		1.1	3.82	3.00
	C	1.3	0.80	3.04
		1.6	0.90	4.80
		1.0	1.20	3.20
		1.2	0.14	1.20
	C	4.0	Tr.	Tr.
		3.0	0.04	Tr.
		2.0	0.06	Tr.
		1.6	Tr.	0.80
	C 32	1.0	0.54	2.50
	106	1.7	0.60	11.10
	31	1.8	0.10	8.20
	28	2.2	0.22	2.00
	105	1.3	0.52	1.80
	27	1.0	1.12	1.40
	26	2.0	0.30	2.60
	25	0.2	0.02	0.80
	24	2.0	0.04	1.20
	23	2.0	0.04	1.20
	22	0.5	0.02	0.06
	21	1.2	0.06	1.00
	C	0.7	0.34	0.80
	B	1.5	0.81	2.77
	C	1.0	3.41	1.80
	C	.07	14.14	15.00
	C	1.0	4.08	19.70
	E	1.2	3.42	13.00
	C	0.5	8.38	9.10
		1.0	0.78	1.10
	C	0.50	0.76	0.60
	B	0.2	1.16	0.78
	C	2.5	1.82	0.70
		1.0	3.60	22.10
	C	1.0	3.28	17.60
	E	1.2	9.48	21.04
	C	1.1	0.28	0.70
	C	2.0	0.02	0.40

CRACKER JACK

Location	Sample No.	Width	Values Au.	Values Ag.
Surface cuts lower vein	B	4.0	0.08	0.70
	C	1.1	0.14	1.40
	C	1.3	0.18	1.40
	C	1.3	0.22	2.20
	E	1.2	0.20	0.40
	C	1.3	0.18	1.40
	B	2.0	0.19	4.33
	W	4.0	0.15	0.50
	B	4.0	0.12	0.57
	B	1.8	0.16	0.94
	B	3.0	0.94	1.30
	B	4.0	0.40	1.05
No. 2 Tunnel 918' El.	E	2.5	0.14	0.56
	L	5.0	0.01	Nil
	J	3.3	0.31	0.79
	J	5.1	1.03	29.10
	B	5.0	0.09	0.91
	B	3.5	0.04	0.76
	B	2.1	0.22	1.28
	B	4.0	0.05	2.24
	B	3.0	0.02	0.60
	J	3.2	0.08	0.22
	B	2.3	0.14	0.88
	B	3.6	0.04	0.64
	B	2.7	0.03	0.71
	B	3	0.04	0.76
	L	3.5	0.01	Nil
	J	3.5	0.14	0.86
Bawden Tunnel El. 1008	J	1.9	0.04	Nil
	J	2.9	0.88	2.22
	E	1.2	0.06	1.00
	B	1.5	0.04	0.86
	B	4.0	0.01	0.45
	E	1.5	0.02	0.42
	E	3.6	0.02	0.76
	B	2.3	0.02	0.63
	L	2.1	0.03	0.20
	J	2.9	0.12	0.78
Cut below Bawden tunnel	B	25'	1.02	3.52
	J	1.7	1.82	3.78

C O P Y

McMICKEN, RUPP & SCHWEPPE
Attorneys and Counselors at Law
657-671 Colman Building
Seattle, Washington.

September 23, 1940.

Mr. J. C. Roehm
Associate Mining Engineer
Territorial Dept. of Mines
Juneau Alaska.

Dear Mr. Roehm: "CRACKERJACK" - - Hollis, Alaska.

The "Alaska Weekly" reports your return to Juneau so I'll give you the 1940 dope for your department file.

We were not able to come North this year - so decided to have samples of No. 1 Tunnel (by the waterfall) in the vicinity of the #2 Oreshoot taken by J. J. Matuska. I had not sampled this #2 oreshoot in 1939 because we expected James Freeburn to come and join us at Hollis. and I assumed he would want to sample this shoot as he had driven through it, or was part way through it, back in 1903 when his bond on the property was transferred to Sam Silverman.

Back in 1919 I had sampled No. 1 Tunnel at 10-foot intervals - but, because we had no previous data, I had sampled everything contained in approximately a 6-foot cutting - from as high as I could reach to the floor of the tunnel. These samples are credited to Johnson - and are marked "J" on your map which was made by Barquist in 1934.

Matuska sampled in accordance with my instructions to eliminate large bands of slate or porphyry occurring in the vein so as to as closely as possible simulate "mill heads" after reasonable sorting. From the detailed description on the enclosed sheet, you will see that he took generous samples, every 3 feet, which I believe to be representative as I have absolute confidence in his honesty.

All samples were taken along the west wall, starting opposite the small stope, approximately 147 feet south of the main cross-cut from the original adit, and just 60 feet south of my last sample (C-87) of the #1 oreshoot.

Dilution of the "Johnson" samples considered, these Matuska samples check very closely with Johnson and with Wakefield, and bear out James Freeburn's statement that "#2 oreshoot went better than 1 ounce".

We know, now for sure, that two oreshoots were encountered in this No. 1 Tunnel. We know that the values continued upward for some distance. We do not know whether the values go down. That will be left for someone to determine in the future.

With kindest personal regards, and with the hope that should you come South this winter we will have the pleasure of seeing you, I am

Very truly yours,

Wm. E. McMicken

Ore shoot is 50 feet long.

No. 1 Tunnel #2 Oreshoot "CRACKERJACK" - Hollis
July 1940

1. Opp. N. side of stope.

H.W. Porphyry
F.W. Porphyry

Length 22" (22)
Width 3"
Depth 2"
Weight 8 lbs.

Porph

6" Mixed Slate & Quartz
10" White Quartz
6" Slate & quartz.

0.06 8.8 $ 8.26

2. 3' S. of #1.

HW S & P
FW P

32" -4 (28)
3"
2"
10 lbs

S & P

*4" slate
4" white banded S. & Q.
24" white Q. heavily interlaced with slate.

0.10 4.40 $6.58

3. 3' S. of #2.

HW Slate
FW Porphyry

60" - 18 (42)

10 lbs.

Slate

* 18" slate
3 white Q.
39 slate & quartz

0.14 5.10 $8.47

4. 3' S. of #3.

HW Slate
FW porphyry

46" - 11 (35)

8 lbs.

4" white quartz
20" banded w. Q.
11" white quartz
* 11" slate

0.54 31.50 $40.95

5. 3' S. of #4.

HW slate
FW porphyry

56" - 0 (56)

12 lbs.

26" white quartz heavy sulphides
30" slate & quartz

2.46 66.20 $132.44

6. 3' S. of #5.

HW slate
FW porphyry

65" - 35 (30)

12 lbs.

30" white quartz

* 35" banded slate & quartz not taken

0.28 88.00 $71.40

* Not included in Sample.

7. 3' S. of #6.

HW slate
FR porphyry

10 lbs.

65" - 19 (46)

46" white quartz
* 19 slate

0.72 57.40 $64.38

8. 3' S. of #7

HW slate
FW porphyry

10 lbs.

68" - 20 (48)

38" white quartz
* 20 porphyry
4 white quartz
6 quartz & slate

0.80 15.60 $38.92

10. 3' S. of #8

HW slate
FW porphyry

10 lbs.

63" - 14 (49)

* 14" slate
40 white quartz
9 porph. & quartz

0.38 6.60 $17.92

11. 3' S. of #10.

HW slate
FW porphyry

8 lbs.

56" - 0 (56)

23" slate & quartz
14 Q. white with red tinge
19 slate & quartz

0.10 10.10 $10.57

12. 3' S. of #11.

HW slate
FE porphyry

10 lbs.

50" - 14 (36)

* 14" sparsely banded slate
22 white quartz
14 slate & quartz

0.90 17.60 $45.02

13. 3' S. of #12

HW slate
FW porphyry

8 lbs.

48" - 8 (40)

3" quartz
* 6 slate
13 quartz
* 2 slate
24 quartz (reddish)

[illegible] [illegible] $44.66

* Not included in Sample

__14.__ 3' S. of #13

HW slate
FW porphyry

10 lbs.

44" - 10 (34)

6" white quartz
* 6 slate
12 white quartz
* 4 slate
16 white quartz

1.12 32.20 $61.74

__15.__ 3' S. of #14

HW slate
FW porphyry

8 lbs.

50" - 10 (40)

* 4" gangue
2 heavy brassy sulphides
* 6 slate
14 banded quartz
24 white quartz

0.28 3.00 $11.90

__16.__ 3' S. of #15.

HW slate
FW porphyry

12 lbs.

50" - 0 (50)

8" slate & quartz
42 white quartz

0.50 4.70 $20.79

__17.__ 3' S. of #16.

HW slate
FW porphyry

10 lbs.

50" - 0 (50)

4" slate & quartz
46 white quartz

0.48 2.20 $18.24

__18.__ 3' S. of #17

HW slate
FW porphyry

8 lbs.

48" - 0 (48)

16" slate & quartz
12 white quartz
20 slate & quartz

0.34 1.40 $12.88

__20.__ 3' S. of #18

HW slate
FW porphyry

8 lbs.

40" - 4 (36)

14" slate & quartz
22 white quartz (hard as h--l)
* 4 slate

0.68 0.70 $24.29

* Not included in sample

21. 3' S. of #20

HW slate
FW porphyry

10 lbs.

42" - 0 (42)

10" slate & quartz
20 white quartz
12 slate & quartz

0.02 0.60 $1.12

22. 3' S. of #21

HW slate
FW porphyry

8 lbs.

54" - 15 (39)

* 12 slate
9 white quartz
* 3 slate
11 white quartz
19 slate & quartz

0.02 0.80 $1.26

23. 3' S. of #22

HW slate
FW porphyry

8 lbs.

62" - 54 (8)

* 6" slate
8 quartz
* 48 slate sparsely banded by quartz

0.04 0.10 $1.47

24. 3' S. of #23

HW slate
FW porlhyry

8 lbs.

64" - 50 (14)

* 12" slate
7 white quartz
* 28 slate
7 white quartz
* 10 slate

0.04 0.80 $1.96

25. 3' S. of #24

HW slate
FW porphyry

8 lbs.

66" - 5 (61)

* 5" slate
14 white quartz
47 porphyry & quartz(heavy in quartz)

Tr. Tr. $0.00

26. 3' S. of #25

HW slate
FW porphyry

6 lbs.

16" - 0 (16)

12" slate & quartz
4 white quartz

0.01 0.70 $0.84

* Not included in sample

27. 3' S. of #26

HW slate
FW porphyry

8 lbs.

18" - 0 (18)

10" slate & quartz

8 quartz

0.01 0.40 $0.63