MR

MR-058-04

Fairbanks 58

MEMORANDUM ON LOOKOUT GOLD-QUARTZ PROSPECT

58-4

Fairbanks District, Alaska

June 20, 1940

LL 58-11

The following notes refer to the gold-quartz prospect recorded under the name "Lookout", owned by Mr. D. E. Turnbarge (Box 194, Fairbanks), and located on the east side of Emma Creek, tributary to Alder Creek, approximately three and one fourth miles southward from the peak of Ester Dome. The prospect is accessable by unimproved motor road from Berry on the main Ester-Fairbanks road.

Mine Workings - Development work at present, (June 20, 1940), consists (1) of one prospect shaft, 22 feet vertical plus 17 feet inclined at 62°, on the vein; and (2) some 464 feet of horizontal workings from an adit below the shaft. However of this horizontal working about 192 feet are ineffectively employed and an additional footage of about 137 feet is off the vein due to faulting. Actually therefore, only about 135 feet of drifting has been done on the vein in addition to the work in the shaft.

General Geology - The geology of the area adjacent to the prospect is similar in all respects to that of the Ester Dome area in general, and is fully described in U.S.G.S. Bulletin 849, and in other earlier bulletins by the U. S. Geological Survey. All country rock exposed at the Lookout belongs to the Birch Creek schist, the prevailing types ranging from mica schist to quartz-mica schist.

The Vein - The vein under development is a true fissure vein in all respects; it bears distinctly cross-cutting relations to the schist, and is bounded by well defined walls which show little or no alteration. For the most part the vein material breaks free. Like most of the quartz veins in this district the vein here shows evidence of two or more generations of quartz. In a typical cross-section there are two to three inches of sheeted (or brecciated), greenish, slightly iron-stained quartz against slickensided walls, with a center filling of two to four inches of whiter solid vein quartz. There has been no selective sampling to determine whether gold mineralization is associated with any one generation of quartz

Structural Relations - The general attitude of the schist in the mine workings is approximately E-W, with 13° to 15° N dip. There is some local variation from this due to drag near the faults mentioned below.

NOTED

SEP - 1940

B. D. STEWART
Commissioner of Mines

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The general attitude of the vein in the shaft is N-S, with a steep E dip; near the surface this dip is from nearly vertical to 80° E; At about 22 feet below the surface it flattens to 62° E. The attitude of the vein in the face of the drive is the same as in the bottom of the shaft, i.e., N-S, 60° E. Elsewhere in the drive, between the faults mentioned below, the prevailing strike is about N 15E, and the prevailing dip is 75° - 80° E.

In addition to repeated faulting along the vein --which included pre-vein movement, subsequent movement during or between periods of quartz injection, and probably also post-vein movement --there are indications of probably three other sets of faults. At least two of these are post-vein, and both intersect and off-set the vein. One of these is represented by a strong fault or fault-zone, strike N 80 W, dip about vertical, which cuts the vein some 85 feet northeast of the adit entrance. The vein has not been discovered south of this fault. The other set is represented by a more open faulted or sheeted zone which strikes N 40° to 45° E, and dips alternately steep NW or steep SE. Branches of this break cut the vein in the north end of the drive and cause minor offsetting, or step faulting, wherein the north blocks appear to have moved southwest (strong striations dip 30° northeast on the plane of the fault). A projection of the vein from the shaft indicates that no serious faulting intervenes between the present working face and the shaft.

A probable third set of faults is indicated by flat, nearly horizontal or rolling faults, which show up at several places underground. The relationship of these flat faults to the vein and to the other faults is not known.

Present Prospects - At present the vein is partly or completely exposed over a distance of about 150 feet along strike. Its thickness over this distance varies from several inches to about one foot or more, although on the whole it maintains a fairly uniform average thickness of about eight inches. In the technical sense there is no "proved ore blocked out" anywhere in the prospect, although it is fairly certain that there is up to 60 feet of vein over the face in the north end of the drift (indicated by the shaft), and there is probably up to 30 feet over the drive north of the fault in the south end of the drive. The indication everywhere is that the vein follows a strong through-going break and that it is not likely to end abruptly within a short distance beyond the present exposures unless cut by faulting. One is fairly conservative in concluding therefore that, from the present exposures alone, several hundred tons of vein material can be classed as "probable".

The following sample returns indicate the tenor of the vein materials:

Returns from previous sampling by Bruce Thomas for Ernest Patty, - indicated on the sample map as 3P, 4P, etc.

No.	Width	Gold	Silver	Value
3P	?	0.34	2.6	$15.10
4P	?	0.49	1.2	17.75
5P	?	0.39	1.4	14.35
6P	?	0.15	1.2	5.85
7P	?	0.56	1.4	20.30
8P	?	0.35	1.2	12.85
9P	?	0.25	1.2	9.35
10P	?	0.06	0.5	2.35
11P	?	0.08	018	3.20

Returns from samples taken during the present examination; locations shown on the attached sample map at 1A, 2A, etc.

No.	Width	Gold	Silver	Value
1A	6"	0.02	---	$ .70
1Ahanging	4	tr	---	--
1A foot	4	0.26	---	9.10
2A	12"	0.13	---	4.55
2A hanging	4	0.22	---	7.70
2A foot	4	tr	---	--
3A	7"	0.11	----	3.85
3A hanging	4	0.61	---	21.35
3A foot	4	0.58	---	20.30
4A	5"	(true width here 12")		7.70
4A hanging	4	0.03	---	1.05
4A foot	4	0.10	---	3.50
	62			79.80

#12.87 ave. Tenor

Ernest F. Fox
June 19-20, 1940